CERTIFICATE OF AUTHENTICITY

THIS IS TO CERTIFY THAT THE FOLLOWING ELECTRONIC RECORDS ARE TRUE AND ACCURATE REPRODUCTIONS OF THE ORIGINAL RECORDS OF JAMES CITY COUNTY GENERAL SERVICES DEPARTMENT- STORMWATER DIVISION; WERE SCANNED IN THE REGULAR COURSE OF BUSINESS PURSUANT TO GUIDELINES ESTABLISHED BY THE LIBRARY OF VIRGINIA AND ARCHIVES; AND HAVE BEEN VERIFIED IN THE CUSTODY OF THE INDIVIDUAL LISTED BELOW.

BMP NUMBER: **MC062**

DATE VERIFIED: **January 27, 2017**

QUALITY ASSURANCE TECHNICIAN: **Natalie Prevette**

NM Prevette

LOCATION: WILLIAMSBURG, VIRGINIA

RECEIVED
FEB 5 2008
ENVIRONMENTAL DIVISION

SITE PLAN
FOR
MARYWOOD SUBDIVISION
JAMES CITY COUNTY, VIRGINIA

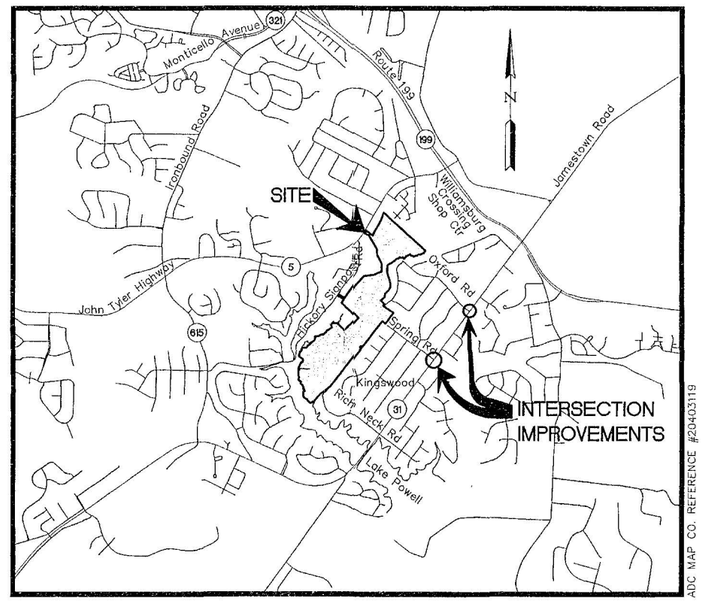
NOTE: PRIOR TO CONSTRUCTION A SEPARATE PLAN TO LOCATE THE PASSIVE RECREATION TRAILS MUST BE SUBMITTED AND APPROVED BY JAMES CITY COUNTY ENVIRONMENTAL DIVISION. THE LOCATION OF PASSIVE RECREATION TRAILS ARE TO BE FIELD VERIFIED BY COUNTY ENVIRONMENTAL STAFF TO ENSURE TRAILS ARE PROPERLY LOCATED OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.

County of James City
Subdivision Construction Plan
DATE of APPROVAL 11/9/2007
Does not constitute final plat approval

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	OVERALL SUBDIVISION LAYOUT & SHEET INDEX
3A	ENVIRONMENTAL INVENTORY PLAN
3B	ENVIRONMENTAL INVENTORY PLAN
4	OVERALL UTILITY PLAN
5	OVERALL DRAINAGE PLAN
6	PRELIMINARY PLAT
7	PRELIMINARY PLAT
8	PRELIMINARY PLAT
9	PRELIMINARY PLAT
10	INITIAL EROSION & SEDIMENT CONTROL PLAN
11	INITIAL EROSION & SEDIMENT CONTROL PLAN
12	INITIAL EROSION & SEDIMENT CONTROL PLAN
13	INITIAL EROSION & SEDIMENT CONTROL PLAN
14	FINAL EROSION & SEDIMENT CONTROL PLAN
15	FINAL EROSION & SEDIMENT CONTROL PLAN
16	FINAL EROSION & SEDIMENT CONTROL PLAN
17	FINAL EROSION & SEDIMENT CONTROL PLAN
18	ROAD AND UTILITY PLAN
19	ROAD AND UTILITY PLAN
20	ROAD AND UTILITY PLAN
21	ROAD AND UTILITY PLAN
22	GRADING AND DRAINAGE PLAN
23	GRADING AND DRAINAGE PLAN
24	GRADING AND DRAINAGE PLAN
25	GRADING AND DRAINAGE PLAN
26	ROAD AND UTILITY PROFILE
27	ROAD AND UTILITY PROFILE
28	ROAD AND UTILITY PROFILE
29	ROAD AND UTILITY PROFILE
30	STORMWATER MANAGEMENT
30A	STORMWATER MANAGEMENT
31	STORMWATER MANAGEMENT DETAILS
32	ROAD AND DRAINAGE NOTES & DETAILS
32A	ROAD AND DRAINAGE NOTES & DETAILS
33	NOTES AND DETAILS
34	GRINDER PUMP NOTES AND DETAILS
35	EROSION & SEDIMENT CONTROL DETAILS SHEET
36	JAMESTOWN ROAD INTERSECTION IMPROVEMENTS
L1	BMP#1 LANDSCAPE PLAN
L2	BMP#2 LANDSCAPE PLAN AND NOTES & DETAILS

DECEMBER 22, 2004



ADC MAP CO. REFERENCE #20403119

VICINITY MAP (APPROX. SCALE 1"=2000')

SITE DATA:

TAX MAP PARCEL No.	(47-2)(1-47)
ZONING:	R-1
PROJECT AREA:	115.28 ACRES / 5,021,410 SF
DISTURBED AREA:	22.72 ACRES / 989,567 SF
WETLAND DISTURBED AREA:	0.40 ACRES / 17,500 SF
WATERSHED:	MILL CREEK (LAKE POWELL) WATERSHED
NUMBER OF LOTS:	90
FLOOD HAZARD MAP:	FEMA PANEL NUMBER 510201 0045 B ZONE X: AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAIN

OWNER INFORMATION:

CENTEX HOMES
3951 WESTERRE PARKWAY, SUITE 160
RICHMOND, VA 23233
ATTENTION: DAVID MURRAY
TELEPHONE: (757) 215-1260
FAX: (757) 215-1261

RESPONSIBLE LAND DISTURBER:

"THE PROFESSIONAL WHOSE SEAL IS AFFIXED HEREON SHALL ACT AS THE "RESPONSIBLE LAND DISTURBER" FOR PURPOSES OF PLAN APPROVAL ONLY. PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT, THE OWNER OR DEVELOPER SHALL PROVIDE THE NAME OF A "RESPONSIBLE LAND DISTURBER" WHO SHALL ASSUME RESPONSIBILITY AS THE "RESPONSIBLE LAND DISTURBER" FOR THE CONSTRUCTION PHASE OF THE PROJECT. THE OWNER OR DEVELOPER SHALL PROVIDE WRITTEN NOTIFICATION SHOULD THE "RESPONSIBLE LAND DISTURBER" CHANGE DURING CONSTRUCTION."

NOTES:

1. SETBACKS:
   FRONT = 35'; SIDE = 15'; REAR = 35'
   IF LOT IS LESS THAN 1 ACRE, MINIMUM WIDTH AT SETBACK LINE IS 100 FT.
   IF LOT IS MORE THAN 1 ACRE, MINIMUM WIDTH AT SETBACK LINE IS 150 FT.
   SPECIAL PROVISIONS FOR CORNER LOTS
   A) OF THE 2 SIDES OF A CORNER LOT, THE FRONT OF THE LOT SHALL BE DEEMED TO BE THE SHORTER OF THE 2 SIDES FRONTING THE STREETS.
   B) EACH CORNER LOT SHALL HAVE A MINIMUM WIDTH AT THE SETBACK LINE OF 125 FT.
2. ALL PROPOSED UTILITIES SHOWN ARE TO BE PLACED UNDERGROUND AS PER THE CURRENT JAMES CITY COUNTY SUBDIVISION ORDINANCE SECTION 19-33.
3. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON THE SITE. CALL 1-800-552-7001.
4. ALL EXISTING UNUSED WELLS SHALL BE ABANDONED IN ACCORDANCE WITH THE STATE PRIVATE WELL REGULATIONS AND THE JAMES CITY COUNTY CODE.
5. ALL DRAINAGE EASEMENTS AND STORM WATER ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION.
6. VDOT DOES NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF THE BMPS OR THEIR STRUCTURES AND SHALL BE SAVED HARMLESS FROM ANY DAMAGES.
7. ALL RESIDENTIAL SUBDIVISION SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE.
8. NEW PROPERTY MONUMENTS WILL BE INSTALLED PER SECTIONS 19-34 THROUGH 19-36 OF THE JAMES CITY COUNTY SUBDIVISION ORDINANCE.
9. ALL NEW STREET SIGNS SHALL BE INSTALLED PER SECTION 19-55 OF THE JAMES CITY COUNTY SUBDIVISION ORDINANCE.
10. THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.
11. WETLANDS AND LAND WITHIN RESOURCE PROTECTION AREAS SHALL REMAIN IN A NATURAL UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES PERMITTED BY SECTION 23-7(c) OF THE JAMES CITY COUNTY CODE.
12. DISTURBANCE TO TOPOGRAPHY WITH SLOPES EQUAL TO OR GREATER THAN 25% IS PROHIBITED UNLESS A WAIVER HAS BEEN OBTAINED FROM JAMES CITY COUNTY. TOPOGRAPHY SHOWN ON THESE PLANS ARE REASONABLY ACCURATE FOR LAND FORM, HOWEVER THIS TOPOGRAPHY MAY NOT ACCURATELY LOCATE OR SHOW STEEPLY SLOPED GROUND PLANES. PRIOR TO ANY LOT DISTURBANCE, THE HOMEOWNER SHALL IDENTIFY AREAS OF 25%, OR GREATER SLOPES AND SHALL SECURE ALL NECESSARY APPROVALS THROUGH THE ENVIRONMENTAL DIVISION TO DISTURB STEEP SLOPES..
13. SECURITY LIGHTS, WHERE NOTED, REFER TO STREET LIGHTS INSTALLED FOR SECURITY AND NIGHT TIME ILLUMINATION OF THE ADJACENT STREET. THESE LIGHTS, POLES AND LUMINARS WILL NOT BE MAINTAINED OR REPLACED BY VDOT.
14. A LAND DISTURBING PERMIT, SILTATION AGREEMENT WITH SURETY, AND A PRE-CONSTRUCTION CONFERENCE IS REQUIRED FOR THIS PROJECT.
15. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON THE EXISTING WATER MAINS AND SANITARY FORCE MAINS.
16. THE CONTRACTOR IS TO PLACE AN RPA BUFFER SIGN AT THE INTERSECTION OF EACH LOT LINE WITH AN RPA BUFFER. THE STANDARD JAMES CITY COUNTY RPA BUFFER SIGN IS TO BE LOCATED AT THE LIMIT OF THE BUFFER. SIGNS ARE AVAILABLE FROM MR. WAYLAND BASS, THE JAMES CITY COUNTY ENGINEER, AT A FEE OF $30 / SIGN. TELEPHONE: 757-253-6671 FOR FURTHER INFORMATION.
17. ALL STORM PIPE SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) SMOOTH WALL UNLESS OTHERWISE NOTED.
18. STORM STRUCTURES SHALL CONFORM TO VDOT ROAD & BRIDGE STANDARDS AND SPECIFICATIONS. ALL MANHOLES SHALL INCLUDE INLET SHAPING (IS-1) AND MANHOLES DEEPER THAN 4 FEET SHALL HAVE STEPS (ST-1). PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT PB-1 AND MANUFACTURERS SPECIFICATIONS.
19. NATURAL OPEN SPACE AREAS SHALL REMAIN IN AN UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES REFERENCED ON THE DEED OF EASEMENT.
20. CENTEX HOMES WILL PROVIDE DEVELOPMENT PLANS (PLOT PLANS) FOR GROUPINGS OF CONSECUTIVE LOTS, NOT TO EXCEED 10 IN NUMBER, WHICH WILL DEPICT INDIVIDUAL LOT LIMITS OF CLEARING AND GRADING ACTIVITIES NECESSARY TO ACHIEVE APPROPRIATE SURFACE RUNOFF FOR THE GROUP OF LOTS. THESE DEVELOPMENT PLANS ARE TO BE SUBMITTED TO THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION FOR REVEIW AND APPROVAL BEFORE APPLICABLE, INDIVIDUAL SINGLE-FAMILY BUILDING PERMIT APPLICATIONS ARE SUBMITTED FOR REVIEW.
21. SURVEY DATA PROVIDED BASED UPON JAMES CITY COUNTY GEODETIC CONTROL NAD-83 ESTABLISHED FROM MONUMENT 318.

THIS PROJECT DOES NOT RELY ON EXISTING LAKE POWELL TO MEET STORMWATER MANAGEMENT CRITERIA

THIS PLAN WAS GRANTED PRELIMINARY APPROVAL BY THE JAMES CITY COUNTY PLANNING COMMISSION ON DECEMBER 5, 2005.

LEGEND

EXISTING		PROPOSED
EX. W	WATER	W
EX. S	SANITARY SEWER	S
	STORM SEWER	
EX. FM	FORCE MAIN	F.M.
	MANHOLE	
	CURB DROP INLET	
	YARD DROP INLET	
	FLARED END SECTION	
	VALVE	
	FIRE HYDRANT ASSEMBLY	
	BLOW-OFF VALVE	
	AIR RELEASE ASSEMBLY	
	GRINDER PUMP CONNECTION	GPC
	CLEAN OUT	CO
	WATER METER	WM
	STREETLIGHT	
	CENTERLINE/BASELINE	
	RIGHT OF WAY	
	PROPERTY LINE	
	℄ DITCH/SWALE	
	CONCRETE LINED DITCH	
	EC-3 LINED DITCH	
	EXISTING TREE LINE	
	LIMITS OF CLEARING	
	REVERSE ROLL TOP GUTTER	
25.1	GROUND ELEVATION	25.1
	PROPOSED TOP OF CURB ELEV.	TOC ELEV.
	STRAW BALE BARRIER	
	RIP RAP	
	GRADING LINE TIE-IN	
80	EXISTING CONTOUR ELEV.	
	PROPOSED CONTOUR ELEV.	80
	SIGN	
	CUT/FILL	C F

EROSION AND SEDIMENTATION CONTROL LEGEND

SF	SILT FENCE (SPEC. 3.05)
SSF	SUPER SILT FENCE (SPEC. 3.05)
IP	INLET PROTECTION (SPEC. 3.07)
CE	CONSTRUCTION ENTRANCE (SPEC. 3.02)
CD	CHECK DAM (SPEC. 3.20)
RR	RIP RAP (SPEC. 3.19)
OP	OUTLET PROTECTION (SPEC. 3.18)
CIP	CULVERT INLET PROTECTION (SPEC. 3.08-1 WITH STONE COMBIN. INSTEAD OF SILT FENCE)
ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
PS	PERMANENT SEEDING (SPEC. 3.32)
TP	TREE PROTECTION (SPEC. 3.38)
SCC	STORMWATER CONVEYANCE CHANNEL (SPEC. 3.17)
SB	SEDIMENT BASIN (SPEC. 3.14)
CRS	CONSTRUCTION ROAD STABILIZATION (SPEC. 3.03)
DD	DIVERSION DIKE (SPEC. 3.12)
BB	BRUSH BARRIER (SPEC. 3.06)

NOTE: SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.) AND DETAILS.

PROJECT NO.: 9272-0
JCC CASE: S-91-04

COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040370
8/23/07
PROFESSIONAL ENGINEER

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

No	DATE	REVISION / COMMENT / NOTE	BY
8	8/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	6/07	REVISED PER JCC COMMENTS 3/07 THROUGH 4/07	JAG
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5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB
1	12/04	REVISED PER JCC COMMENTS 10/18/04	VMB

Phase 1
Phase 4
Phase 3
Phase 2

BOUNDARY LINE TABLE

LINE	DIRECTION	LENGTH	LINE	DIRECTION	LENGTH	LINE	DIRECTION	LENGTH	LINE	DIRECTION	LENGTH
L1	S73°23'12"W	85.95'	L35	N58°32'40"E	67.36'	L69	N02°15'37"W	163.23'	L103	S41°14'08"W	60.00'
L2	N53°39'34"W	105.83'	L36	N23°25'47"E	94.24'	L70	N30°28'07"W	447.84'	L104	N48°15'52"W	21.14'
L3	N45°35'28"W	140.60'	L37	N31°29'54"W	38.84'	L71	N63°56'37"W	123.99'	L105	S49°41'43"W	119.98'
L4	N27°15'25"W	44.73'	L38	N44°01'32"E	31.44'	L72	N30°21'08"E	91.25'	L106	S54°24'03"W	4.37'
L5	N04°48'15"E	108.96'	L39	S89°17'11"E	88.68'	L73	S52°21'21"E	227.02'	L107	S58°12'15"W	220.44'
L6	N69°07'33"E	35.38'	L40	N67°03'37"E	65.18'	L74	N18°52'04"E	99.84'	L108	S04°45'50"W	204.63'
L7	N22°34'06"W	182.62'	L41	N52°50'46"E	31.15'	L75	N31°59'06"E	194.67'	L109	S17°47'24"E	146.85'
L8	N32°32'44"W	145.52'	L42	N80°05'47"E	52.43'	L76	N27°42'45"E	203.04'	L110	S25°09'40"E	78.12'
L9	N40°18'07"W	40.18'	L43	N60°43'53"E	51.91'	L77	N21°00'45"E	209.62'	L111	S08°11'38"E	109.25'
L10	N06°55'17"E	77.22'	L44	N42°29'18"E	103.79'	L78	S47°36'57"E	163.69'	L112	S01°50'37"E	82.90'
L11	N09°42'01"W	126.53'	L45	N57°00'12"E	115.74'	L79	S47°43'24"E	158.54'	L113	S26°13'12"W	81.87'
L12	N06°44'10"E	57.40'	L46	N21°09'30"E	56.51'	L80	S47°40'33"E	144.02'	L114	S45°09'31"W	154.87'
L13	N10°35'40"E	94.89'	L47	N51°55'09"W	33.13'	L81	S47°43'37"E	192.99'	L115	S08°46'34"W	107.38'
L14	N27°24'00"E	239.71'	L48	N00°24'05"W	56.07'	L82	S47°48'53"E	204.10'	L116	S48°28'13"W	135.32'
L15	N50°27'53"W	126.56'	L49	N70°16'34"E	63.66'	L83	S47°40'31"E	703.31'	L117	S44°55'22"E	145.00'
L16	N11°37'56"W	46.90'	L50	N01°34'04"W	22.37'	L84	S39°01'26"W	95.05'	L118	S53°44'12"E	50.00'
L17	N13°55'40"E	48.04'	L51	N60°07'00"E	33.98'	L85	S62°32'57"W	85.10'	L119	S53°44'12"E	294.52'
L18	N05°01'41"E	37.70'	L52	S00°21'23"W	48.81'	L86	N85°25'36"W	43.04'	L120	S35°56'25"W	165.32'
L19	N49°39'26"E	45.62'	L53	N83°53'20"E	82.18'	L87	S56°21'38"W	34.89'	L121	S36°09'37"W	199.61'
L20	N72°50'13"E	26.86'	L54	S46°17'12"E	301.33'	L88	S73°17'39"W	128.22'	L122	N53°50'23"W	108.61'
L21	N14°32'45"E	128.56'	L55	N43°41'06"E	499.81'	L89	N48°34'23"W	43.99'	L123	S36°09'57"W	50.00'
L22	N41°34'29"E	87.60'	L56	N46°18'54"W	589.09'	L90	S87°09'19"W	29.68'	L124	S37°40'57"W	862.40'
L23	N01°08'48"W	38.41'	L57	N33°06'22"E	118.45'	L91	N49°09'56"W	44.78'	L125	N52°22'47"W	50.03'
L24	N63°05'07"E	53.45'	L58	N61°10'36"W	199.94'	L92	S55°32'08"W	38.80'	L126	S37°37'13"W	50.00'
L25	N41°17'30"E	25.05'	L59	N33°01'14"E	50.12'	L93	S77°03'23"W	63.17'	L127	S52°17'39"E	49.98'
L26	N84°16'56"E	27.56'	L60	S61°12'19"E	199.72'	L94	S49°24'10"W	24.75'	L128	S37°40'57"W	1356.01'
L27	S09°04'26"W	32.39'	L61	N33°06'22"E	194.88'	L95	S06°12'58"W	13.13'	L129	S51°13'22"W	160.38'
L28	S21°36'41"E	17.57'	L62	N36°11'07"E	194.24'	L96	S30°33'38"W	12.90'	L130	S56°36'22"W	184.20'
L29	S87°42'41"E	17.04'	L63	N41°41'07"E	384.32'	L97	S50°35'25"W	48.08'	L131	S40°40'52"W	299.74'
L30	N80°56'58"E	23.80'	L64	N81°58'54"E	284.37'	L98	N88°00'19"W	21.94'			
L31	S23°38'48"W	23.78'	L65	N65°37'05"E	229.36'	L99	N36°18'37"W	32.33'			
L32	S64°00'07"E	22.33'	L66	N02°08'39"E	201.29'	L100	S78°32'32"W	43.35'			
L33	N47°18'30"E	40.59'	L67	N23°22'27"W	108.29'	L101	S77°30'19"W	21.20'			
L34	N73°47'38"E	30.25'	L68	N29°02'26"W	178.60'	L102	N48°15'52"W	31.05'			

TOTAL GROSS LAND AREA:	115.27 ACRES
LESS:	
AREA OF RPA–WETLANDS:	12.44 ACRES
AREA OF WETLANDS:	1.26 ACRES
AREA SUBJECT TO FLOODING (OUTSIDE OF WETLANDS):	0.00 ACRES
AREA OF 25% OR STEEPER SLOPES (OUTSIDE OF RPA BUFFER):	2.48 ACRES
AREA OF RPA BUFFER:	27.66 ACRES
YIELD:	
AREA AVAILABLE FOR DEVELOPMENT:	74.43 ACRES
YIELD:	
AREA OF OPEN SPACE REQUIRED (10% OF DEVELOPABLE AREA):	7.44 ACRES
COMPARE TO:	
AREA OF OPEN SPACE PROVIDED:	20.32 ACRES
AREA OF 50% OF PERIMETER BUFFER:	6.69 ACRES
TOTAL OPEN SPACE:	27.01 ACRES

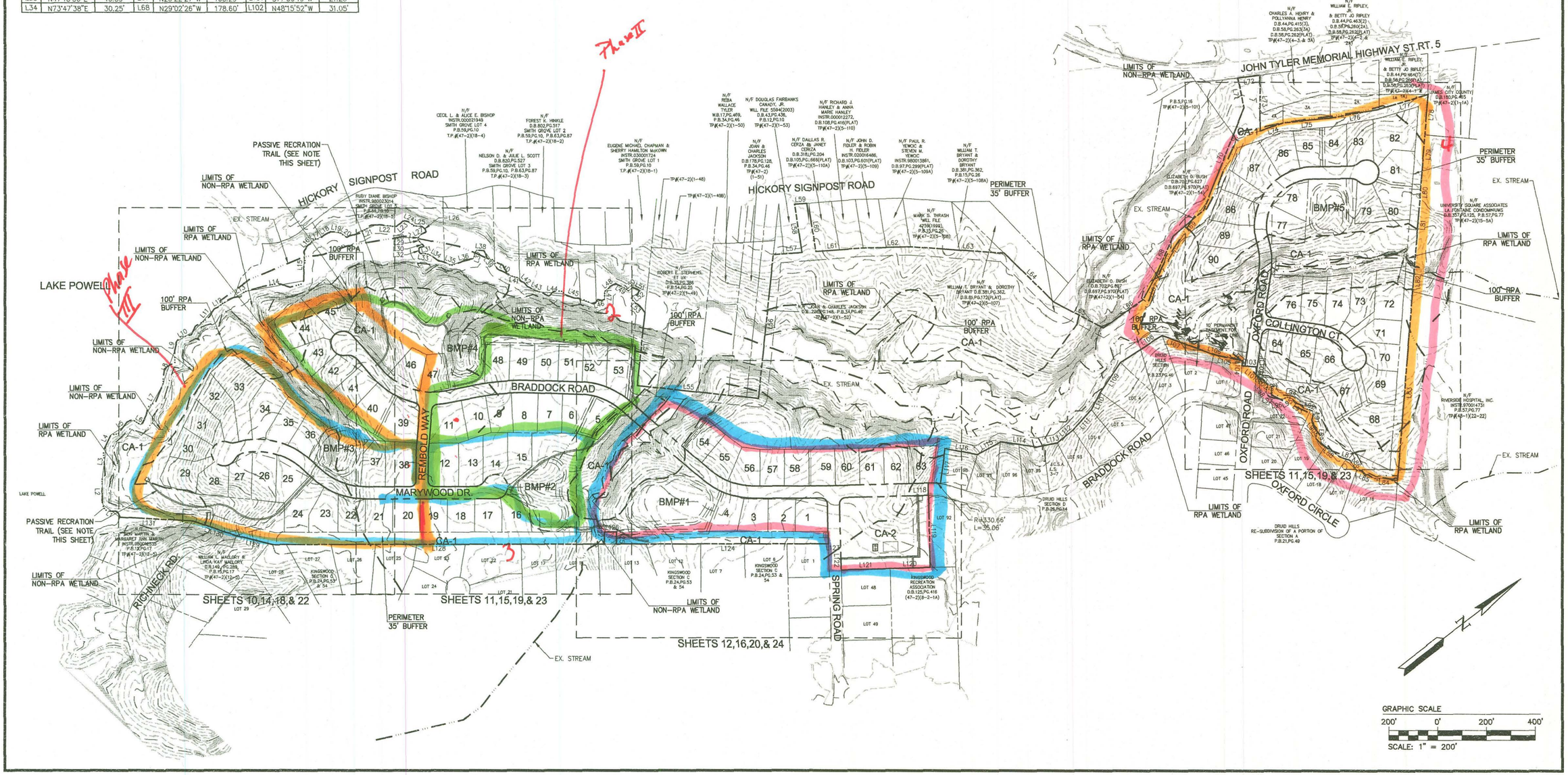
CONSTRUCTION PHASING

THIS PLAN CONSISTS OF 4 PHASES OF CONSTRUCTION:

- PHASE 1 INCLUDES LOTS 1–4 AND 54–63, SPRING ROAD, BRADDOCK ROAD STA. 10+00 TO 23+55, AND TSB/BMP#1.
- 4 PHASE 2 INCLUDES LOTS 64–90, OXFORD ROAD, AND COLLINGTON COURT, AND TSB/BMP#5.
- 2 PHASE 3 INCLUDES LOTS 5–11 AND 39–53, BRADDOCK ROAD STA. 23+55 TO END, REMBOLD WAY STA. 10+00 TO 10+25, TSB/BMB#2, TSB/BMB#3 AND TSB/BMP#4.
- 3 PHASE 4 INCLUDES LOTS 12–38, REMBOLD WAY STA. 10+25 TO END, MARYWOOD DRIVE STA. START TO END.

CONSTRUCTION PHASING IS TO BE SEQUENTIAL STARTING WITH PHASE 1, PHASE 2 SECOND, PHASE 3 THIRD, AND FINALLY PHASE 4. THE INITIAL PHASE AND FINAL PHASE SEQUENCES OF CONSTRUCTION ARE TO BE APPLIED INDEPENDENTLY TO EACH CONSTRUCTION PHASE.

NOTE: PRIOR TO CONSTRUCTION A SEPARATE PLAN TO LOCATE THE PASSIVE RECREATION TRAILS MUST BE SUBMITTED AND APPROVED BY JAMES CITY COUNTY ENVIRONMENTAL DIVISION. THE LOCATION OF PASSIVE RECREATION TRAILS ARE TO BE FIELD VERIFIED BY COUNTY ENVIRONMENTAL STAFF TO ENSURE TRAILS ARE PROPERLY LOCATED OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.



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7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	WAB
3	10/05	REVISED PER JCC COMMENTS 8/05	WAB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	WAB

COMMONWEALTH OF VIRGINIA
JASON A. JAMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

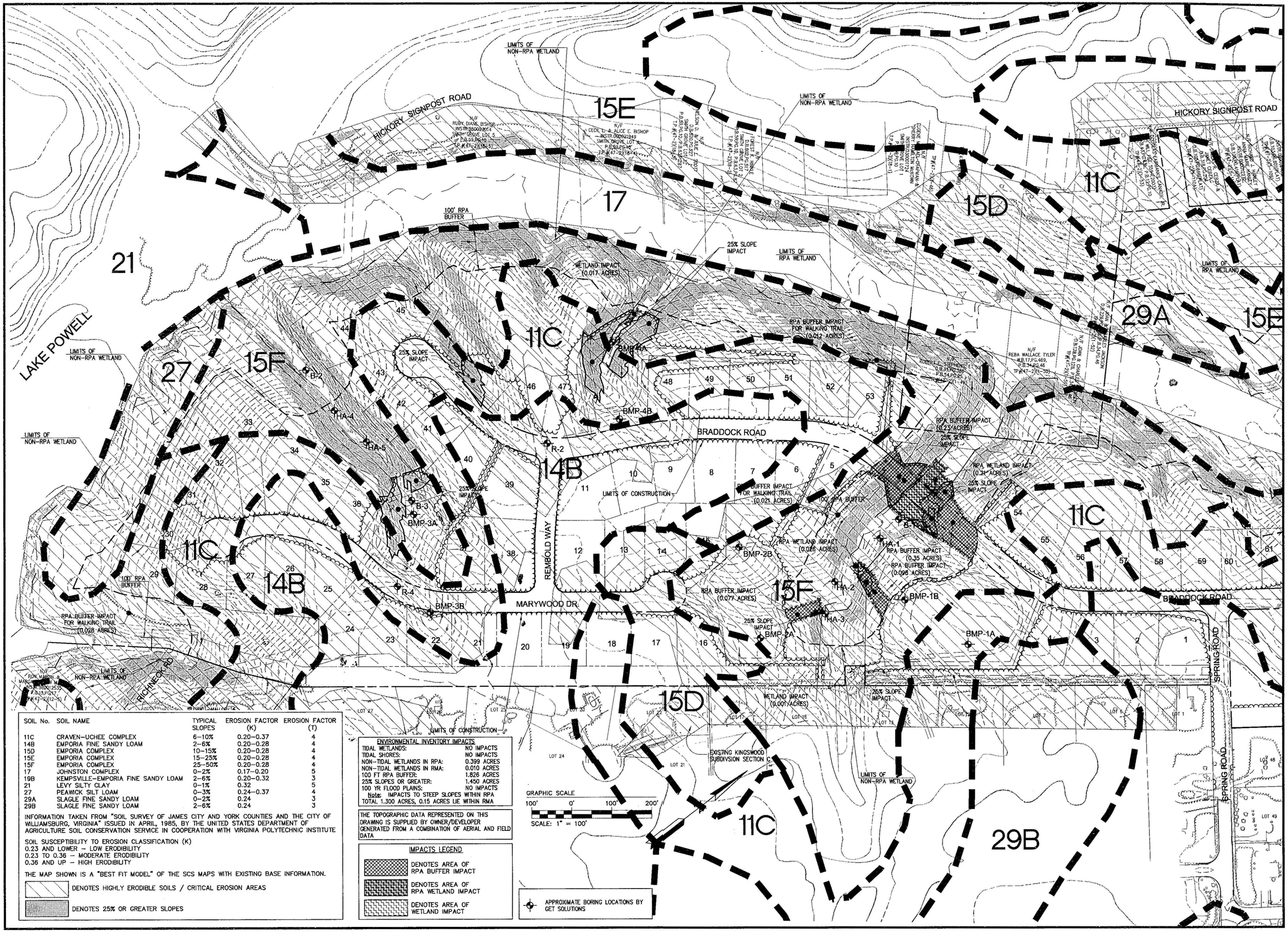
OVERALL SUBDIVISION LAYOUT & SHEET INDEX

MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	AWT
Scale	Date
1" = 200'	8/23/07
Project No.	
9272	
Drawing No.	
2	



SOIL No.	SOIL NAME	TYPICAL SLOPES	EROSION FACTOR (K)	EROSION FACTOR (T)
11C	CRAVEN-UCHEE COMPLEX	6-10%	0.20-0.37	4
14B	EMPORIA FINE SANDY LOAM	2-6%	0.20-0.28	4
15D	EMPORIA COMPLEX	10-15%	0.20-0.28	4
15E	EMPORIA COMPLEX	15-25%	0.20-0.28	4
15F	EMPORIA COMPLEX	25-50%	0.20-0.28	4
17	JOHNSTON COMPLEX	0-2%	0.17-0.20	5
19B	KEMPSVILLE-EMPORIA FINE SANDY LOAM	2-6%	0.20-0.32	3
21	LEVY SILTY CLAY	0-1%	0.32	5
27	PEAWICK SILT LOAM	0-3%	0.24-0.37	4
29A	SLAGLE FINE SANDY LOAM	0-2%	0.24	3
29B	SLAGLE FINE SANDY LOAM	2-6%	0.24	3

INFORMATION TAKEN FROM "SOIL SURVEY OF JAMES CITY AND YORK COUNTIES AND THE CITY OF WILLIAMSBURG, VIRGINIA" ISSUED IN APRIL, 1985, BY THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE IN COOPERATION WITH VIRGINIA POLYTECHNIC INSTITUTE

SOIL SUSCEPTIBILITY TO EROSION CLASSIFICATION (K)
0.23 AND LOWER – LOW ERODIBILITY
0.23 TO 0.36 – MODERATE ERODIBILITY
0.36 AND UP – HIGH ERODIBILITY

THE MAP SHOWN IS A "BEST FIT MODEL" OF THE SCS MAPS WITH EXISTING BASE INFORMATION.

DENOTES HIGHLY ERODIBLE SOILS / CRITICAL EROSION AREAS

DENOTES 25% OR GREATER SLOPES

ENVIRONMENTAL INVENTORY IMPACTS

TIDAL WETLANDS:	NO IMPACTS
TIDAL SHORES:	NO IMPACTS
NON-TIDAL WETLANDS IN RPA:	0.399 ACRES
NON-TIDAL WETLANDS IN RMA:	0.010 ACRES
100 FT RPA BUFFER:	1.826 ACRES
25% SLOPES OR GREATER:	1.450 ACRES
100 YR FLOOD PLAINS:	NO IMPACTS

Note: IMPACTS TO STEEP SLOPES WITHIN RPA TOTAL 1.300 ACRES, 0.15 ACRES LIE WITHIN RMA

THE TOPOGRAPHIC DATA REPRESENTED ON THIS DRAWING IS SUPPLIED BY OWNER/DEVELOPER GENERATED FROM A COMBINATION OF AERIAL AND FIELD DATA

IMPACTS LEGEND

DENOTES AREA OF RPA BUFFER IMPACT

DENOTES AREA OF RPA WETLAND IMPACT

DENOTES AREA OF WETLAND IMPACT

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

APPROXIMATE BORING LOCATIONS BY GET SOLUTIONS

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GRAMES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ENVIRONMENTAL INVENTORY SHEET

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 100'	8/23/07

Project No. 9272

Drawing No. 3A

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

CENTEX HOMES, THROUGH THE SERVICES OF AES CONSULTING ENGINEERS HAS PREPARED A SUBDIVISION PLAN FOR THE DEVELOPMENT OF A 115.3 ACRE TRACT OF LAND IN JAMES CITY COUNTY, VIRGINIA. THIS NEW SUBDIVISION WAS DESIGNED "BY-RIGHT" IN ACCORDANCE WITH THE CURRENT JAMES CITY COUNTY ZONING ORDINANCE UNDER THE R-1 DESIGNATION. THE SITE IS LOCATED TO THE NORTH OF THE EXISTING KINGSWOOD SUBDIVISION OFF JAMESTOWN ROAD, SOUTH OF HICKORY SIGNPOST ROAD, AND TO THE WEST OF THE RIVERSIDE MEDICAL COMPLEX AND THE LA FONTAINE CONDOMINIUM COMPLEX, THE PROPOSED DEVELOPMENT INCLUDES 115 LOTS OF BETWEEN 0.32 TO 1 ACRES IN SIZE.

EXISTING SITE CONDITIONS

THE SITE WAS IS HEAVILY WOODED WITH SOME LOW LYING SWAMP/WETLAND AREAS. THE SITE TOPOGRAPHY IS MILDLY SLOPED. THE SITE CURRENTLY DRAINS TO LAKE POWELL THROUGH A PERINNAL WETLAND SYSTEM. THE SITE IS BOUNDED ON THE WEST BY THE LA FONTAINE CONDOMINUM COMPLEX AND RIVERSIDE MEDICAL COMPLEX (WHICH DRAIN TO TWO BMP FACILITIES DIRECTLY ADJACENT TO THE PROPERTY, TO THE NORTH AND SOUTH THE PROPERTY IS BOUNDED BY SINGLE FAMILY RESIDENTIAL DEVELOPMENT AND TO THE EAST BY LAKE POWELL.

ADJACENT AREAS

ALL THE ADJACENT PARCELS ARE FULLY DEVELOPED.

OFFSITE AREAS:

NO OFF SITE WORK IS REQUIRED FOR THIS PROJECT.

SOILS:

THE SOIL CONSERVATION SERVICE HAS IDENTIFIED THIS SITE AS CONTAINING MAINLY "EMPORIA COMPLEX", "KEMPSVILLE", AND "CRAVEN-UCHEE COMPLEX" SOIL TYPES. (SEE SOIL TABLE ON THIS SHEET)

CRITICAL AREAS:

IN AREAS OF CONCERN SILT FENCE, SUPER SILT FENCE AND DIVERSION DIKES WILL BE USED IN CONJUNCTION WITH THE SEDIMENT BASIN AND TRAP TO PREVENT DOWNSTREAM TRANSPORT OF SEDIMENT.

EROSION AND SEDIMENT CONTROL MEASURES:

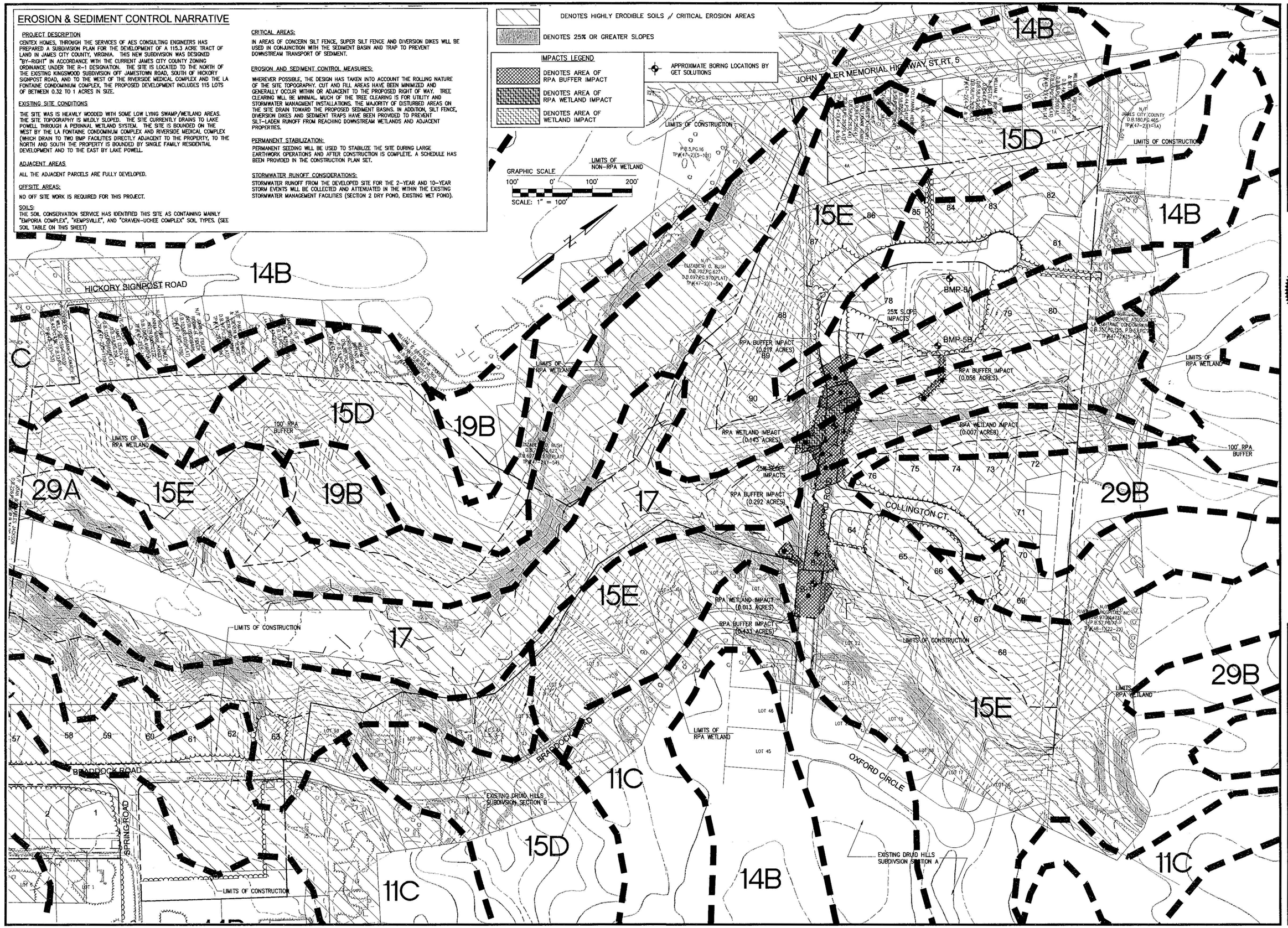
WHEREVER POSSIBLE, THE DESIGN HAS TAKEN INTO ACCOUNT THE ROLLING NATURE OF THE SITE TOPOGRAPHY. CUT AND FILL AREAS HAVE BEEN MINIMIZED AND GENERALLY OCCUR WITHIN OR ADJACENT TO THE PROPOSED RIGHT OF WAY. TREE CLEARING WILL BE MINIMAL. MUCH OF THE TREE CLEARING IS FOR UTILITY AND STORMWATER MANAGMENT INSTALLATIONS. THE MAJORITY OF DISTURBED AREAS ON THE SITE DRAIN TOWARD THE PROPOSED SEDIMENT BASINS. IN ADDITION, SILT FENCE, DIVERSION DIKES AND SEDIMENT TRAPS HAVE BEEN PROVIDED TO PREVENT SILT-LADEN RUNOFF FROM REACHING DOWNSTREAM WETLANDS AND ADJACENT PROPERTIES.

PERMANENT STABILIZATION:

PERMANENT SEEDING WILL BE USED TO STABILIZE THE SITE DURING LARGE EARTHWORK OPERATIONS AND AFTER CONSTRUCTION IS COMPLETE. A SCHEDULE HAS BEEN PROVIDED IN THE CONSTRUCTION PLAN SET.

STORMWATER RUNOFF CONSIDERATIONS:

STORMWATER RUNOFF FROM THE DEVELOPED SITE FOR THE 2-YEAR AND 10-YEAR STORM EVENTS WILL BE COLLECTED AND ATTENUATED IN THE WITHIN THE EXISTING STORMWATER MANAGEMENT FACILITIES (SECTION 2 DRY POND, EXISTING WET POND).



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COMMONWEALTH OF VIRGINIA
JAMES A. COMBS
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ENVIRONMENTAL INVENTORY SHEET

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale 1" = 100'	Date 8/23/07
Project No. 9272	
Drawing No. 3B	

UTILITIES INSTALLATION NOTES

GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS

THE FOLLOWING NOTES SHALL BE PROVIDED ON ALL DEVELOPER CONSTRUCTED WATER DISTRIBUTION AND SANITARY SEWER SYSTEM FACILITY CONSTRUCTION PLANS AND SPECIFICATIONS, AND COMPLIANCE IS REQUIRED BY THE CONTRACTOR/DEVELOPER.

A. ALL COMPONENTS OF THE WATER DISTRIBUTION AND SANITARY SEWER SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AUTHORITY STANDARDS AND SPECIFICATIONS FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS, THE HRPDC REGIONAL STANDARDS, AND THE COMMONWEALTH OF VIRGINIA WATERWORKS AND SANITARY SEWERAGE REGULATIONS. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK. A COPY OF THE JCSA STANDARDS AND REGIONAL STANDARDS MUST BE KEPT ON-SITE BY THE CONTRACTOR DURING FULL TIME OF INSTALLING, TESTING, AND CONVEYING FACILITIES TO THE JCSA.

B. THE DEVELOPER'S REPRESENTATIVE SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS FOR APPROVAL TO THE AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL MATERIALS ORDERED AND INSTALLED PRIOR TO THE AUTHORITY'S REVIEW AND ACCEPTANCE WILL BE AT THE CONTRACTOR'S/DEVELOPER'S RISK.

C. PIPE LINES AND SERVICES SHALL BE INSTALLED AFTER GRADING TO WITHIN 6-INCHES OF FINAL GRADE AND PRIOR TO PLACEMENT OF BASE MATERIAL.

D. ALL APPROVED EROSION AND SEDIMENT CONTROL REQUIREMENTS SHALL BE ADHERED TO DURING CONSTRUCTION.

E. ALL WATER MAINS SHALL BE DISINFECTED AND PRESSURE TESTED, AND SATISFACTORY BACTERIOLOGICAL SAMPLES OBTAINED, IN ACCORDANCE WITH THE AUTHORITY STANDARDS.

F. AFTER TESTING IS COMPLETE AND ALL COMPONENTS OF THE WATER AND SANITARY SEWER SYSTEM ARE ACCEPTABLE, THEN THE RECORD DRAWINGS SHALL BE SUBMITTED TO THE AUTHORITY. NO WATER METERS WILL BE INSTALLED UNTIL COMPLIANCE WITH SECTION 3 HAS BEEN FOUND SATISFACTORY BY THE AUTHORITY. ANY DISCREPANCIES NOTED DURING THE FINAL INSPECTION SHALL BE CORRECTED BY THE DEVELOPER'S REPRESENTATIVE WITHIN 30 DAYS.

G. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY THE AUTHORITY. THESE INSPECTIONS DO NOT RELIEVE THE DEVELOPER FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION AND SANITARY SEWER SYSTEM IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE AUTHORITY.

H. ANY CHANGES TO THE FINAL PLANS SHALL BE APPROVED BY THE AUTHORITY AND SHALL BE ACCURATELY INDICATED ON THE RECORD DRAWINGS.

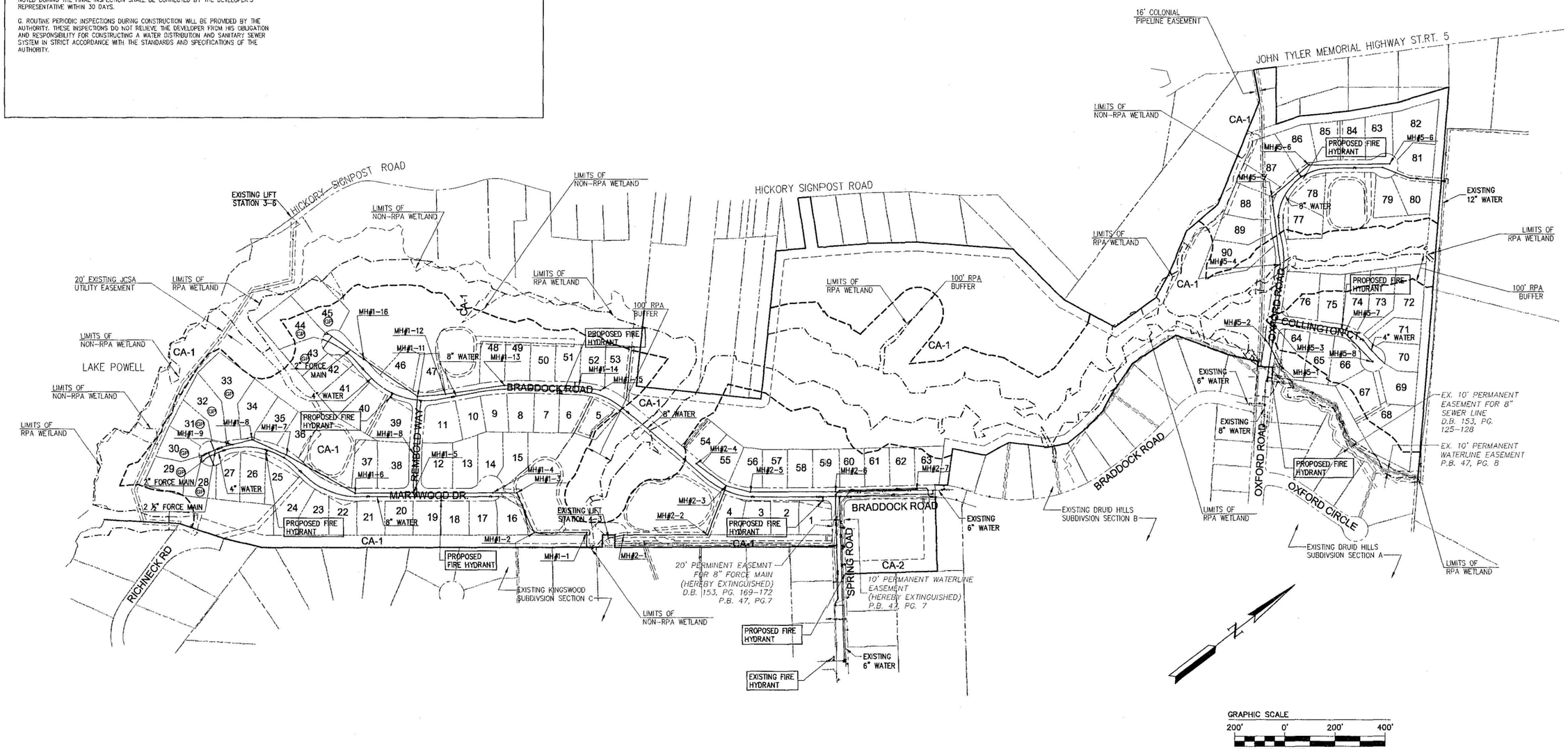
I. ALL LOTS SHALL BE PROVIDED WITH WATER SERVICE AND SANITARY SEWER CONNECTIONS. THE CONNECTIONS SHALL BE EXTENDED FROM THE MAIN TO THE PROPERTY LINE OR EASEMENT LINE, AND SHALL TERMINATE WITH A YOKE IN A METER BOX, OR AT THE CLEAN OUT, SET AT FINAL FINISHED GRADE. METERS FOR ALL LOTS (UNITS) SHALL BE PAID FOR BY THE DEVELOPER OR BUILDER AND INSTALLED BY THE AUTHORITY.

J. THE DEVELOPER IS REQUIRED TO SUBMIT WATER AND SANITARY SEWER DATA SHEETS.

K. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SEWER FACILITIES FROM THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION OF THE OFFICE OF DEVELOPMENT MANAGEMENT, PRIOR TO COMMENCEMENT OF CONSTRUCTION.

L. ANY REQUIRED EASEMENTS, PERMITS, AND APPROVALS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO COMMENCEMENT OF WATER MAIN OR SANITARY SEWER CONSTRUCTION.

M. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THE CONTRACTOR SHALL ALSO NOTIFY "MISS UTILITY" PRIOR TO PERFORMING ANY UNDERGROUND EXCAVATION.



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COMMONWEALTH OF VIRGINIA
JACK R. GAMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

OVERALL UTILITY PLAN

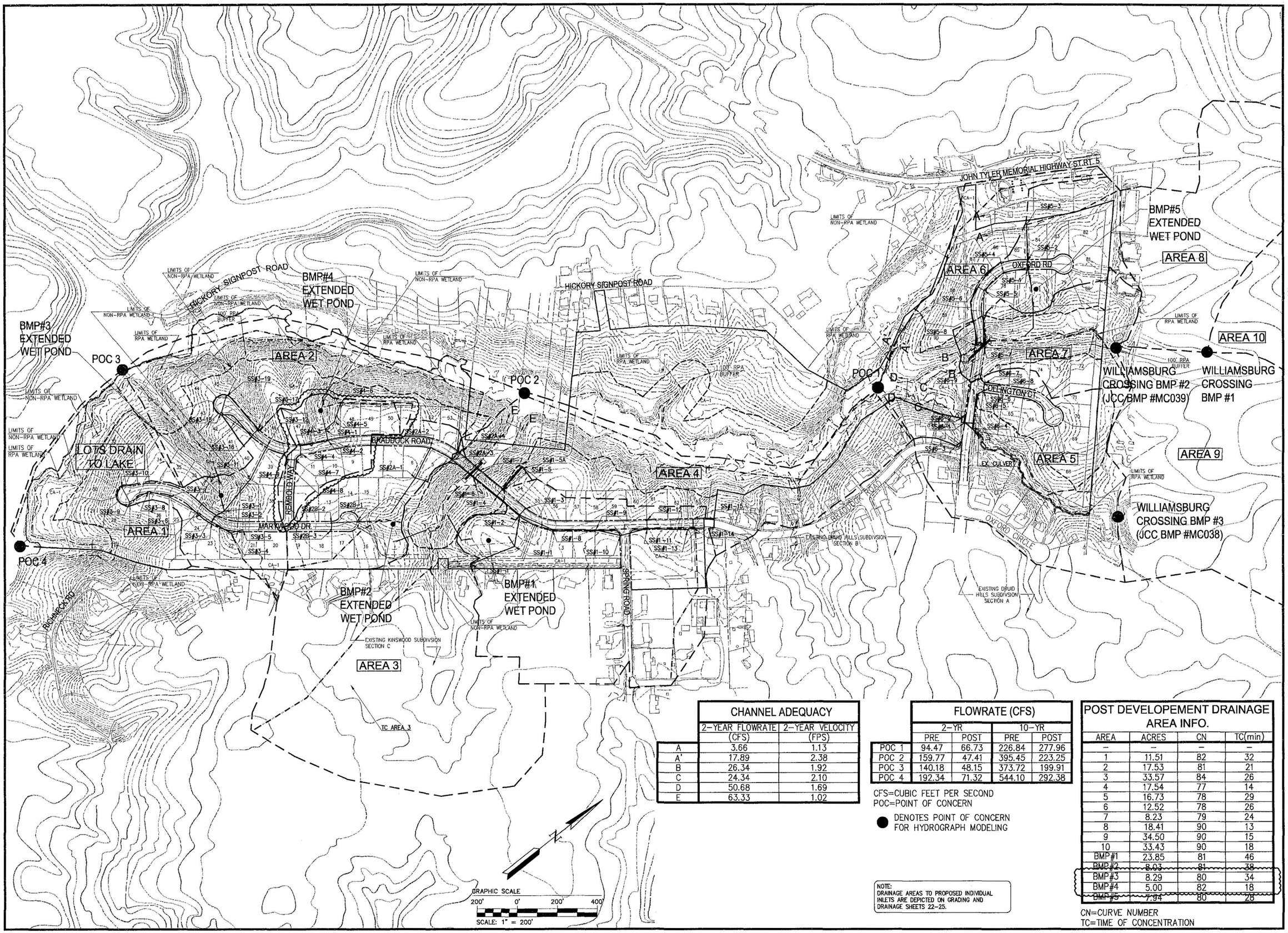
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale 1" = 200'	Date 8/23/07

Project No. 9272

Drawing No. 4



CHANNEL ADEQUACY		
	2-YEAR FLOWRATE (CFS)	2-YEAR VELOCITY (FPS)
A	3.66	1.13
A'	17.89	2.38
B	26.34	1.92
C	24.34	2.10
D	50.68	1.69
E	63.33	1.02

FLOWRATE (CFS)				
	2-YR		10-YR	
	PRE	POST	PRE	POST
POC 1	94.47	66.73	226.84	277.96
POC 2	159.77	47.41	395.45	223.25
POC 3	140.18	48.15	373.72	199.91
POC 4	192.34	71.32	544.10	292.38

CFS=CUBIC FEET PER SECOND
POC=POINT OF CONCERN

● DENOTES POINT OF CONCERN FOR HYDROGRAPH MODELING

NOTE:
DRAINAGE AREAS TO PROPOSED INDIVIDUAL INLETS ARE DEPICTED ON GRADING AND DRAINAGE SHEETS 22-25.

POST DEVELOPEMENT DRAINAGE AREA INFO.			
AREA	ACRES	CN	TC(min)
–	–	–	–
1	11.51	82	32
2	17.53	81	21
3	33.57	84	26
4	17.54	77	14
5	16.73	78	29
6	12.52	78	26
7	8.23	79	24
8	18.41	90	13
9	34.50	90	15
10	33.43	90	18
BMP#1	23.85	81	46
~~BMP#2~~	~~8.03~~	~~81~~	~~38~~
BMP#3	8.29	80	34
BMP#4	5.00	82	18
~~BMP#5~~	~~7.94~~	~~80~~	~~28~~

CN=CURVE NUMBER
TC=TIME OF CONCERTATION

No.	DATE	REVISION / COMMENT / NOTE	BY
11/07		REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG
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COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040070
11/29/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

OVERALL DRAINAGE PLAN

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

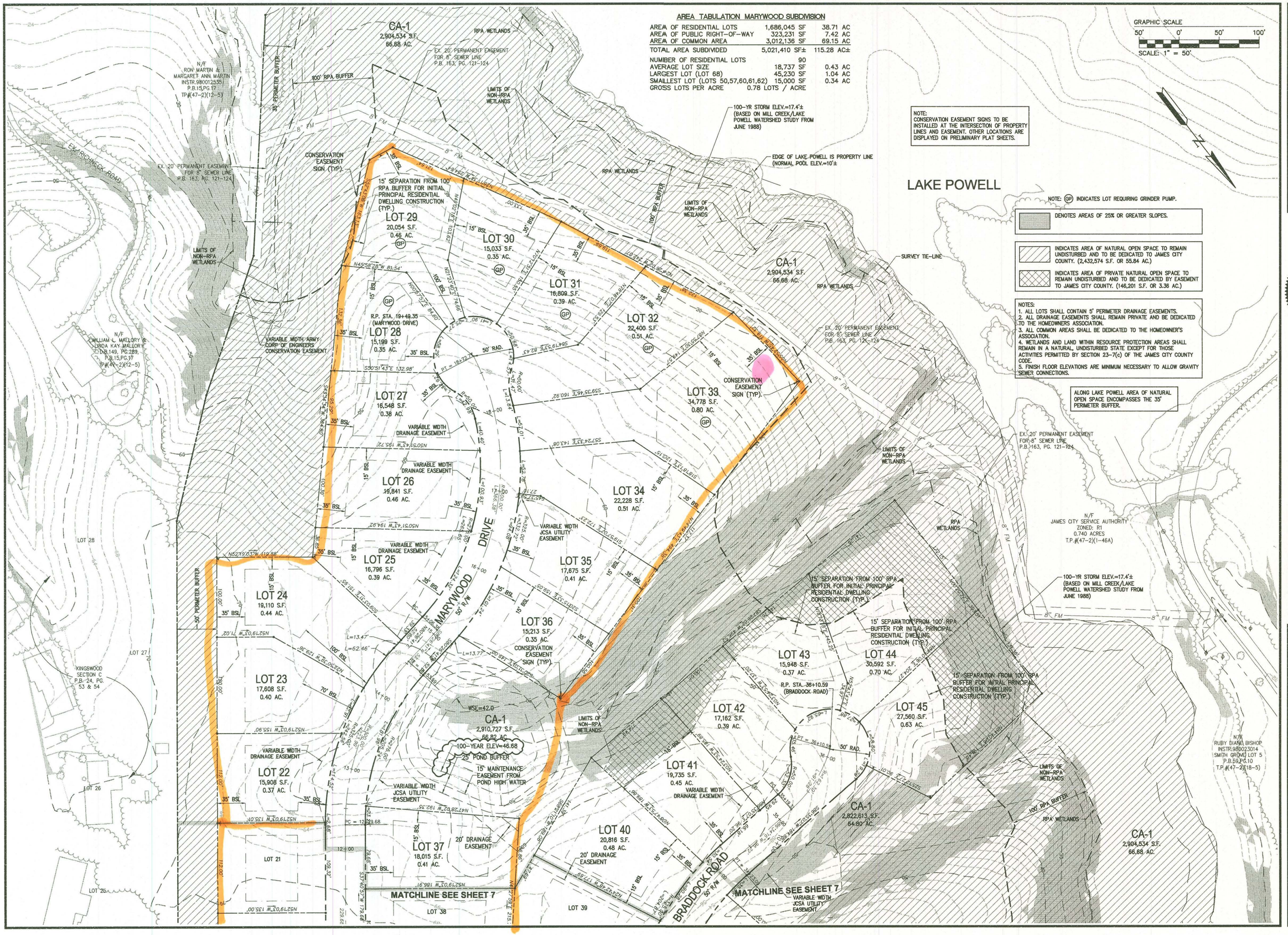
Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 200'	8/23/07

Project No. 9272

Drawing No. 5

AREA TABULATION MARYWOOD SUBDIVISION

AREA OF RESIDENTIAL LOTS	1,686,045 SF	38.71 AC
AREA OF PUBLIC RIGHT-OF-WAY	323,231 SF	7.42 AC
AREA OF COMMON AREA	3,012,136 SF	69.15 AC
TOTAL AREA SUBDIVIDED	5,021,410 SF±	115.28 AC±
NUMBER OF RESIDENTIAL LOTS	90	
AVERAGE LOT SIZE	18,737 SF	0.43 AC
LARGEST LOT (LOT 68)	45,230 SF	1.04 AC
SMAILLEST LOT (LOTS 50,57,60,61,62)	15,000 SF	0.34 AC
GROSS LOTS PER ACRE	0.78 LOTS / ACRE	



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COMMONWEALTH OF VIRGINIA
JASON A. GRAY
No. 040770
11/29/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

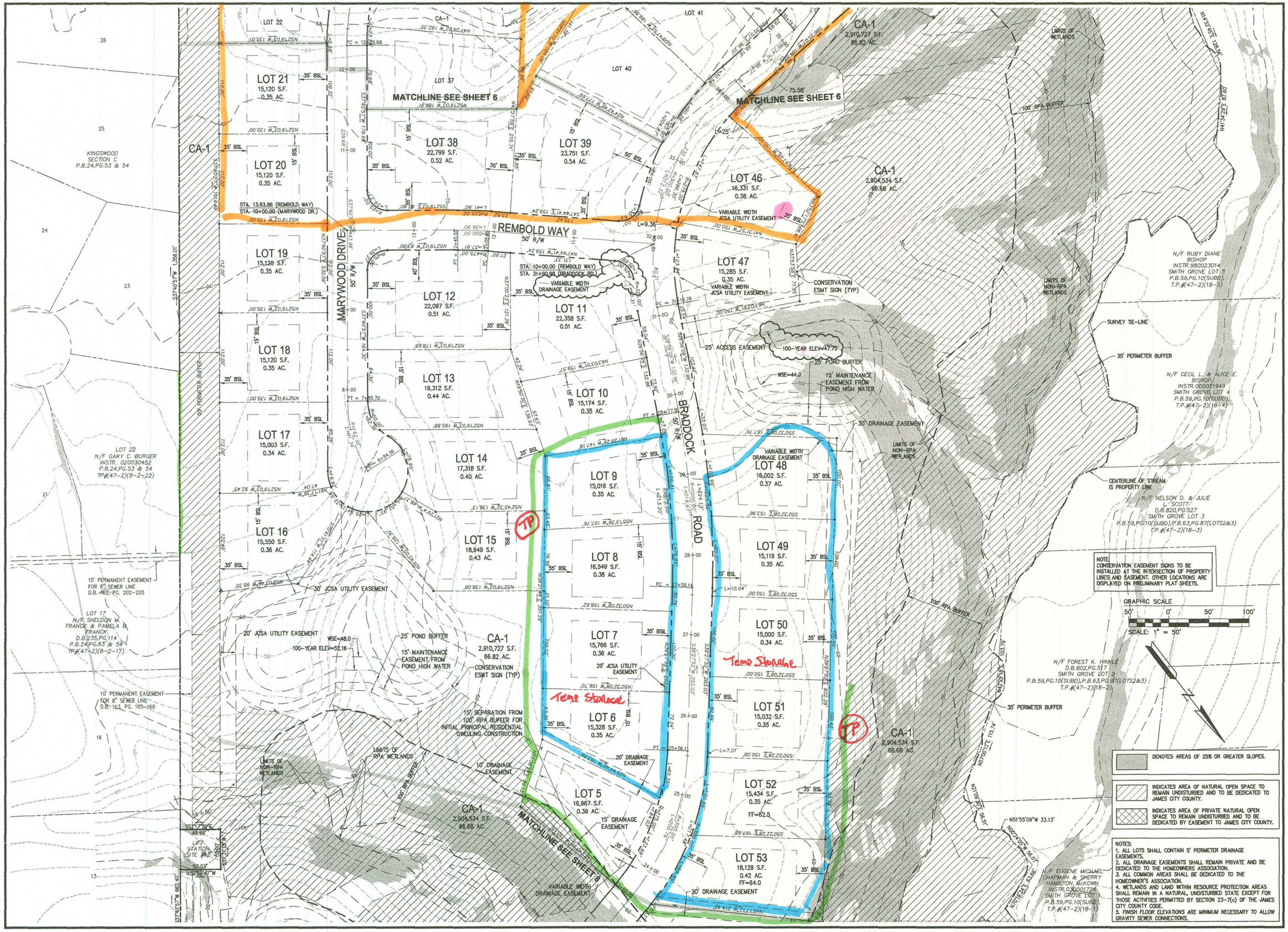
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

PRELIMINARY PLAT

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed JAG/MJR	Drawn AES
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 6	



NOTE:
CONSERVATION EASEMENT SIGNS TO BE INSTALLED AT THE INTERSECTION OF PROPERTY LINES AND EASEMENT. OTHER LOCATIONS ARE DISPLAYED ON PRELIMINARY PLAT SHEETS.

NOTES:
1. ALL LOTS SHALL CONTAIN 5' PERIMETER DRAINAGE EASEMENTS.
2. ALL DRAINAGE EASEMENTS SHALL REMAIN PRIVATE AND BE DEDICATED TO THE HOMEOWNERS ASSOCIATION.
3. ALL COMMON AREAS SHALL BE DEDICATED TO THE HOMEOWNER'S ASSOCIATION.
4. WETLANDS AND LAND WITHIN RESOURCE PROTECTION AREAS SHALL REMAIN IN A NATURAL, UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES PERMITTED BY SECTION 23-7(c) OF THE JAMES CITY COUNTY CODE.
5. FINISH FLOOR ELEVATIONS ARE MINIMUM NECESSARY TO ALLOW GRAVITY SEWER CONNECTIONS.

No.	DATE	REVISION / COMMENT / NOTE	BY
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No. 040170
PROFESSIONAL ENGINEER
11/29/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

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PRELIMINARY PLAT

MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	AES
Scale	Date
1" = 50'	8/23/07
Project No.	
9272	
Drawing No.	
7	

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COMMONWEALTH OF VIRGINIA
JACK A. GRAVES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

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WILLIAMSBURG • RICHMOND

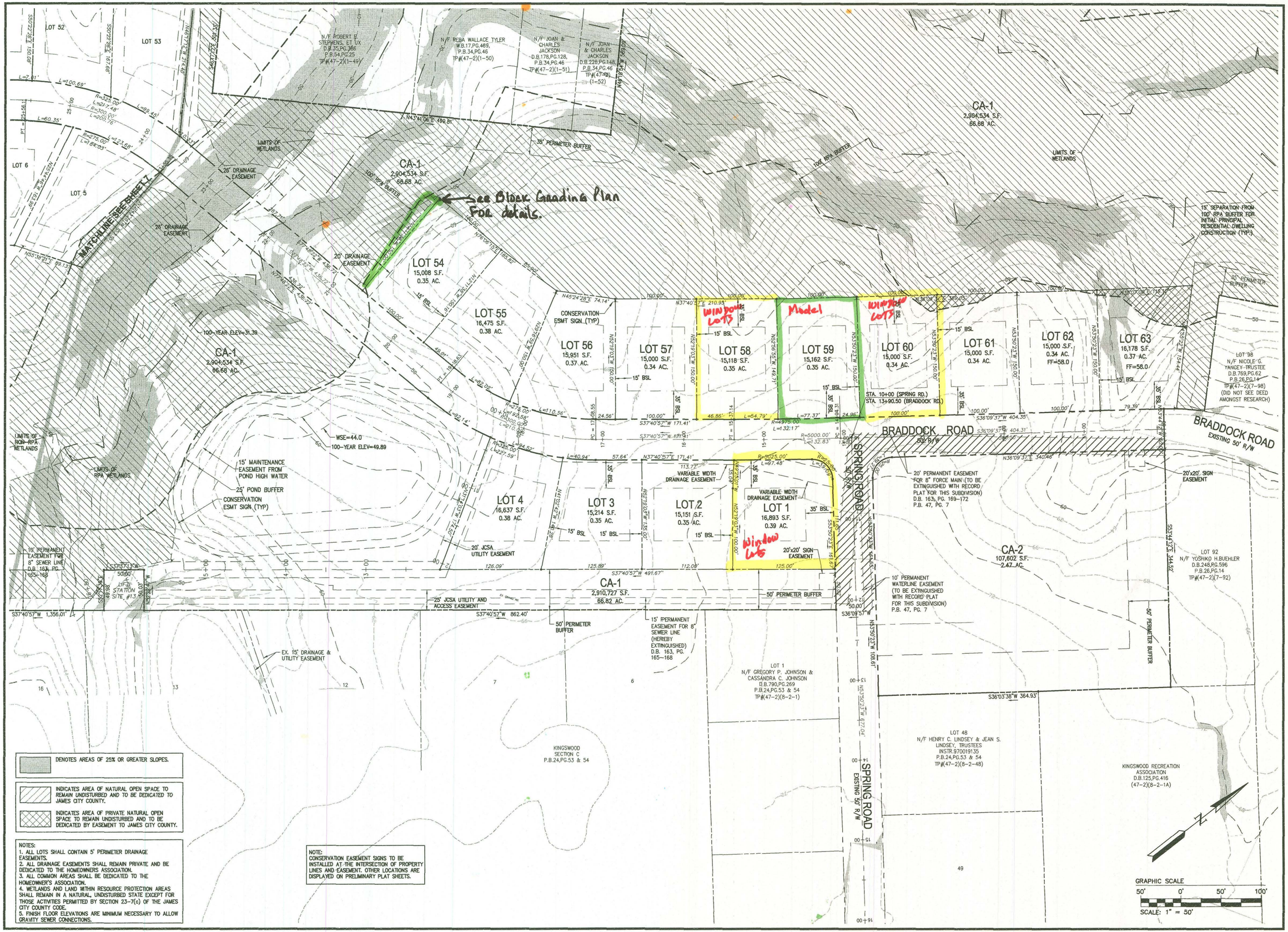
PRELIMINARY PLAT
MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA
JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	AES
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 8



DENOTES AREAS OF 25% OR GREATER SLOPES.

INDICATES AREA OF NATURAL OPEN SPACE TO REMAIN UNDISTURBED AND TO BE DEDICATED TO JAMES CITY COUNTY.

INDICATES AREA OF PRIVATE NATURAL OPEN SPACE TO REMAIN UNDISTURBED AND TO BE DEDICATED BY EASEMENT TO JAMES CITY COUNTY.

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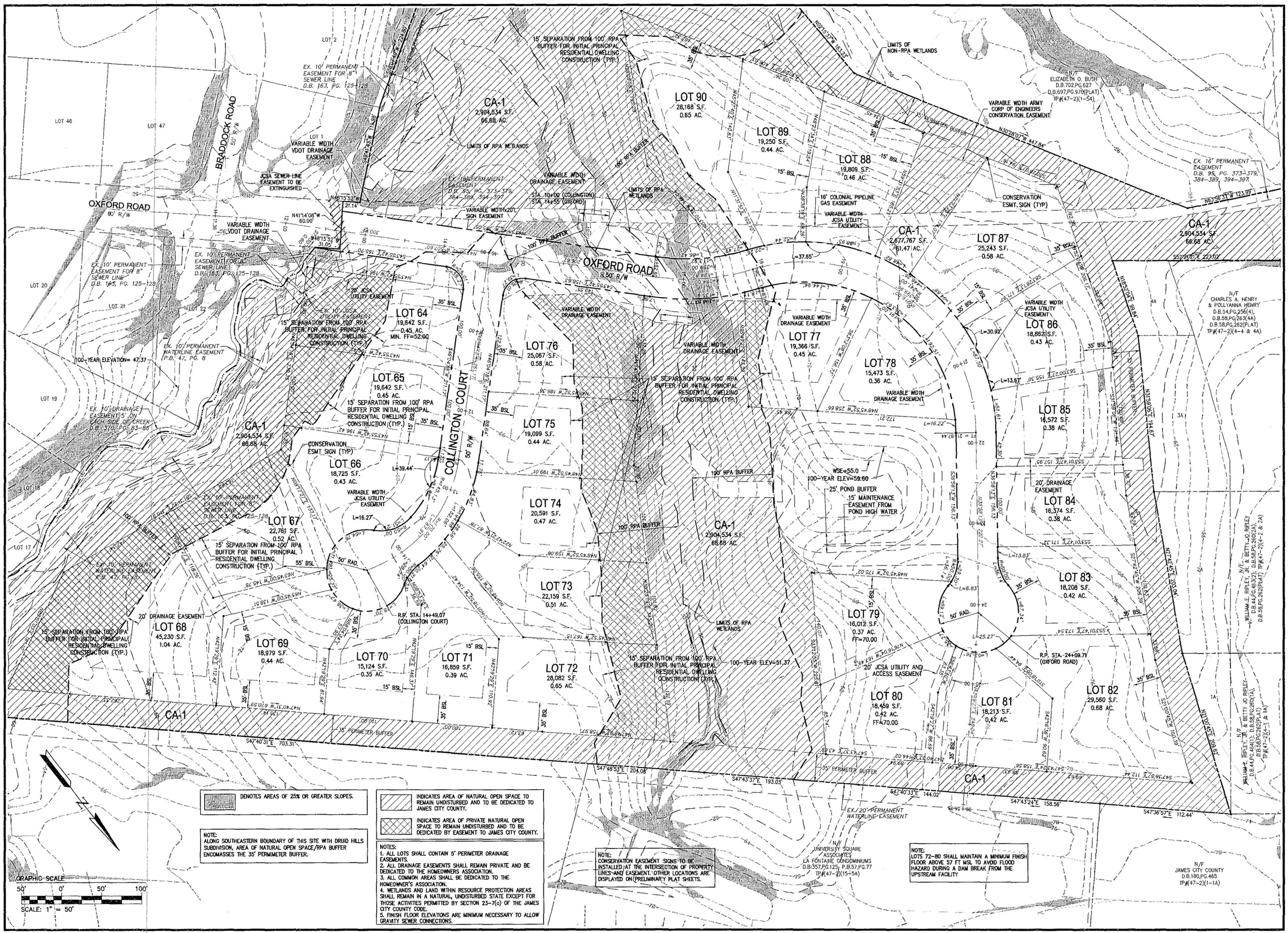

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INDICATES AREA OF PRIVATE NATURAL OPEN SPACE TO REMAIN UNDISTURBED AND TO BE DEDICATED BY EASEMENT TO JAMES CITY COUNTY.

NOTE:
ALONG SOUTHEASTERN BOUNDARY OF THIS SITE WITH DRUID HILLS SUBDIVISION, AREA OF NATURAL OPEN SPACE/RPA BUFFER ENCOMASSES THE 35' PERIMETER BUFFER.

NOTES:
1. ALL LOTS SHALL CONTAIN 5' PERIMETER DRAINAGE EASEMENTS.
2. ALL DRAINAGE EASEMENTS SHALL REMAIN PRIVATE AND BE DEDICATED TO THE HOMEOWNERS ASSOCIATION.
3. ALL COMMON AREAS SHALL BE DEDICATED TO THE HOMEOWNER'S ASSOCIATION.
4. WETLANDS AND LAND WITHIN RESOURCE PROTECTION AREAS SHALL REMAIN IN A NATURAL, UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES PERMITTED BY SECTION 23-7(c) OF THE JAMES CITY COUNTY CODE.
5. FINISH FLOOR ELEVATIONS ARE MINIMUM NECESSARY TO ALLOW GRAVITY SEWER CONNECTIONS.

NOTE:
CONSERVATION EASEMENT SIGNS TO BE INSTALLED AT THE INTERSECTION OF PROPERTY LINES AND EASEMENT. OTHER LOCATIONS ARE DISPLAYED ON PRELIMINARY PLAT SHEETS.

NOTE:
LOTS 72-80 SHALL MAINTAIN A MINIMUM FINISH FLOOR ABOVE 57 FT MSL TO AVOID FLOOD HAZARD DURING A DAM BREAK FROM THE UPSTREAM FACILITY

COMMONWEALTH OF VIRGINIA
JAMES A. MILES
No. 040070
PROFESSIONAL ENGINEER
8/13/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

PRELIMINARY PLAT

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	AES
Scale	Date
1" = 50'	8/23/07
Project No.	
9272	
Drawing No.	
9	

Tree protection

1. Between Lot 39-40
2. Maywood Drive

SF

1. Braddock Rd.
2. Rembold Way / Maywood Dr
3. Braddock / Rembold

CONSTRUCTION PHASING

THIS PLAN CONSISTS OF 4 PHASES OF CONSTRUCTION:

- PHASE 1 INCLUDES LOTS 1–4 AND 54–63, SPRING ROAD, BRADDOCK ROAD STA. 10+00 TO 23+55, AND TSB/BMP#1.
- PHASE 2 INCLUDES LOTS 64–90, OXFORD ROAD, AND COLLINGTON COURT, AND TSB/BMP#5.
- PHASE 3 INCLUDES LOTS 5–11 AND 39–53, BRADDOCK ROAD STA. 23+55 TO END, REMBOLD WAY STA. 10+00 TO 10+25, TSB/BMB#2, TSB/BMB#3 AND TSB/BMP#4.
- PHASE 4 INCLUDES LOTS 12–38, REMBOLD WAY STA. 10+25 TO END, MARYWOOD DRIVE STA. START TO END.

CONSTRUCTION PHASING IS TO BE SEQUENTIAL STARTING WITH PHASE 1, PHASE 2 SECOND, PHASE 3 THIRD, AND FINALLY PHASE 4. THE INITIAL PHASE AND FINAL PHASE SEQUENCES OF CONSTRUCTION ARE TO BE APPLIED INDEPENDENTLY TO EACH CONSTRUCTION PHASE.

SEQUENCE OF CONSTRUCTION

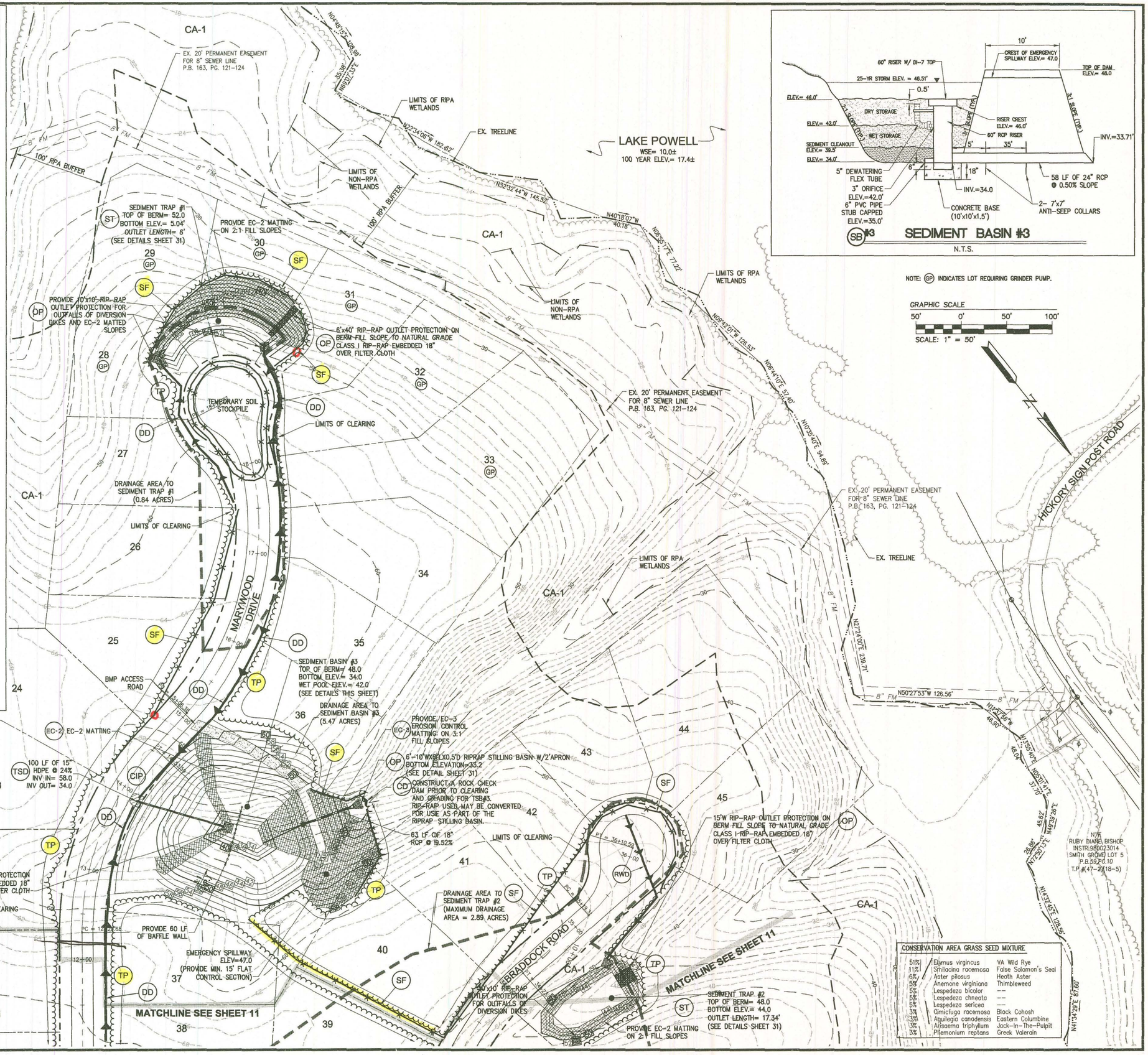
Note: LAKE POWELL SHALL BE MONITORED FOR SIGNS OF SEDIMENTATION, SPECIFICALLY DURING AND AS A RESULT OF CONSTRUCTION. AT ANYTIME SEDIMENTATION IS DISCOVERED, MEASURES SHALL BE TAKEN TO REMOVE AND DISPOSE OF THE SEDIMENT IN ACCORDANCE WITH JAMES CITY COUNTY EROSION AND SEDIMENT CONTROL STANDARD PRACTICES AT THE CONTRACTOR'S EXPENSE. ADDITIONAL SEDIMENT CONTROL MEASURES MAY BE REQUIRED AT THE REQUEST OF JAMES CITY COUNTY ENVIRONMENTAL.

INITIAL PHASE

1. HOLD A PRECONSTRUCTION CONFERENCE AND SECURE ALL NECESSARY DEMOLITION PERMITS (IF APPLICABLE) AND VDOT ENTRANCE PERMITS.
2. INSTALL CONSTRUCTION ENTRANCES AND INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS. STABILIZE ANY EXISTING GRAVEL ROADWAY, OR PARTIALLY COMPLETED ROADWAY CONSTRUCTION RESULTING FROM PRIOR PHASED CONSTRUCTION.
3. STREAM CROSSINGS, IF REQUIRED, SHALL BE COMPLETED IN ACCORDANCE WITH SPEC. 3.24 OF THE VESCH AS SHOWN ON SHEETS 12 AND 13.
4. CLEAR ACCESS TO, AND INSTALL, SEDIMENT TRAPS AND/OR SEDIMENT BASINS AS IS REQUIRED BY EACH PHASE. (NOTE: BMPS SHALL BE INITIALLY CONSTRUCTED AS SEDIMENT BASINS.) CLEARING SHOULD BE LIMITED TO ONLY WHAT IS NECESSARY TO GAIN CONSTRUCTION ACCESS. STONE GABION WALL BARRIER(S), AS DEPICTED, SHALL BE INSTALLED ONCE GRADING OPERATIONS HAVE BEEN COMPLETED.
5. INSTALL REMAINING SEDIMENT TRAPS AND SEDIMENT BASINS, AS REQUIRED IN EACH PHASE.
6. CONSTRUCT ANY ASSOCIATED DIVERSION DIKES.
7. BEGIN REMAING CLEARING AS DEPICTED ON THE PLANS AND DIRECT RUNOFF TOWARDS SEDIMENT TRAPPING FEATURES WITH DIVERSIONS.
8. ESTABLISH TEMPORARY SOIL STOCKPILE (WITHIN EACH PHASE). ESTABLISH ROUGH GRADES ON SITE, ENSURING RUNOFF IS DIRECTED TOWARDS TRAPS AND BASINS CONSTRUCTED WITH EACH PHASE.
9. ONCE ROUGH GRADES HAVE BEEN ESTABLISHED INSTALL STORM SEWER AND REMAINING UTILITIES PER APPROVED PLAN. STORM SEWER SHOULD BE INSTALLED TO DIRECT FLOWS TO TRAPS AND BASINS.
10. ALL SEDIMENT TRAP AND SEDIMENT BASINS SHALL BE MONITORED THROUGHOUT THE CONSTRUCTION PERIOD FOR ACCUMMULATED SEDIMENT. PERIODIC MAINTENANCE OF SEDIMENT TRAPPING MEASURES SHALL BE OBSERVED.

FINAL PHASE

1. INSTALL INLET PROTECTION ON ALL STORM SEWER INLETS.
2. ESTABLISH FINAL DRAINAGE PATTERNS, DIRECTING RUNOFF TOWARDS THE ROADWAYS OR TO THE SEDIMENT BASINS (BY MEANS OF SWALES AND DIVERSIONS).
3. SEDIMENT BASINS SHALL REMAIN IN PLACE UNTIL SUCH TIME AS JAMES CITY COUNTY ENVIRONMENTAL INSPECTOR GIVES WRITTEN PERMISSION TO RETIRE THE BASIN AND CONVERT BASIN TO PERMANENT BMP (BASED ON PERCENT RESIDENTIAL BUILDOUT IN MARYWOOD). ANY DEWATERING OF SEDIMENT TRAPS AND BASINS SHALL BE COMPLETED IN ACCORDANCE WITH VESCH STANDARD AND SPECIFICATION 3.26.
4. FOR PHASE 2, SEDIMENT TRAPS #6 AND #8 SHALL REMAIN UNTIL THE PERCENT OF RESIDENTIAL BUILDOUT IN PHASE 2 OF MARYWOOD (APPROXIMATELY 75%) HAS BEEN ACHIEVED AND WRITTEN PERMISSION FROM JAMES CITY COUNTY ENVIRONMENTAL DIVISION HAS BEEN ACQUIRED TO REMOVE ALL SEDIMENT FOR THESE TRAPS.
5. SEED AND STABILIZE SURROUNDING SLOPES.
6. AT NO POINT DURING CONSTRUCTION SHALL ANY EROSION AND SEDIMENT CONTROL MEASURE BE REMOVED WITHOUT AUTHORIZATION BY THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.
7. SAWCUT EXISTING CURB AND PAVEMENT AT "TIE-INS" TO EXISTING STREETS CONNECTION, AS APPLICABLE. INSTALL ROAD SUB-GRADE AND BASE ASPHALT COURSE ON SITE.
8. SEED AND STABILIZE ANY REMAINING DISTURBED AREAS.
9. BASINS, TRAPS AND WETLANDS SHOULD BE MONITORED THROUGHOUT CONSTRUCTION FOR ANY EVIDENCE OF SILTATION. IF WARRANTED, BMPS SHALL BE DRAINED AND SEDIMENT REMOVED IN ACCORDANCE TO JAMES CITY COUNTY ENVIRONMENTAL GUIDELINES. ANY SEDIMENT IMPACTS TO WETLANDS AREAS SHALL BE CORRECTED IMMEDIATELY AT THE DIRECTION THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.
10. AFTER THE COMPLETION OF CONSTRUCTION AND WITH THE WRITTEN APPROVAL OF THE JAMES CITY COUNTY ENVIRONMENTAL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL MEASURES AND CONVERT SEDIMENT BASINS TO FINAL BMP DESIGNS. DEWATER BASINS AS NECESSARY IN ACCORDANCE WITH MINIMUM STANDARD & SPEC. 3.26 OF THE VESCH.
11. APPLY FINAL ROAD SURFACE ASPHALT AT THE DIRECTION OF THE OWNER.



CONSERVATION AREA GRASS SEED MIXTURE

51%	Elymus virgincus	VA Wild Rye
11%	Smilacina racemosa	False Solomon's Seal
6%	Aster pilosus	Heath Aster
5%	Anemone virginiana	Thimbleweed
5%	Lespedeza bicolor	--
5%	Lespedeza chneata	--
5%	Lespedeza sericea	--
3%	Cimicfuga racemosa	Black Cohosh
3%	Aquilegia canadensis	Eastern Columbine
3%	Arisaema triphylium	Jack-In-The-Pulpit
3%	Pllemonium reptans	Greek Valerain

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB
1			

COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

INITIAL EROSION & SEDIMENT CONTROL

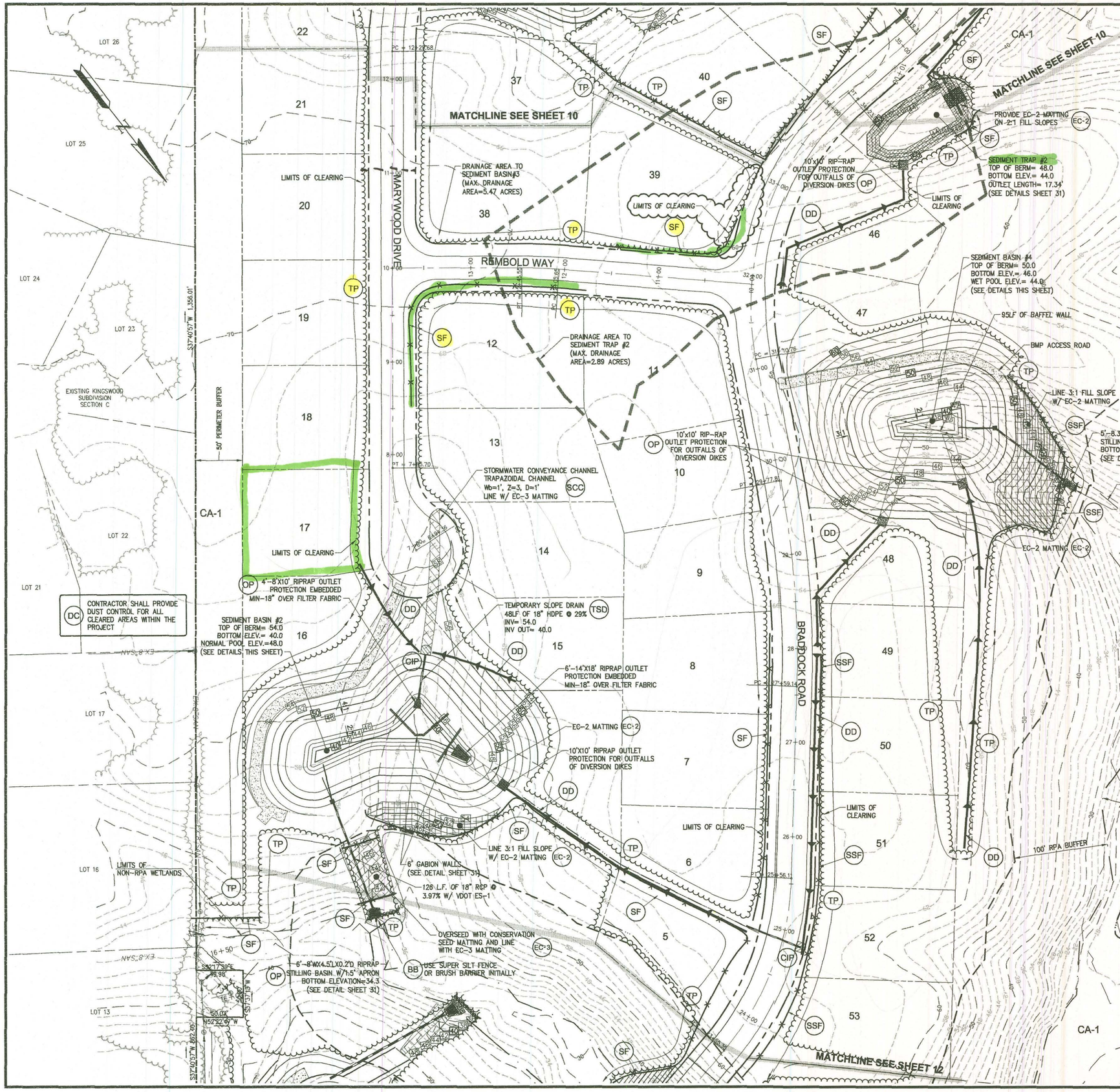
MARYWOOD SUBDIVISION

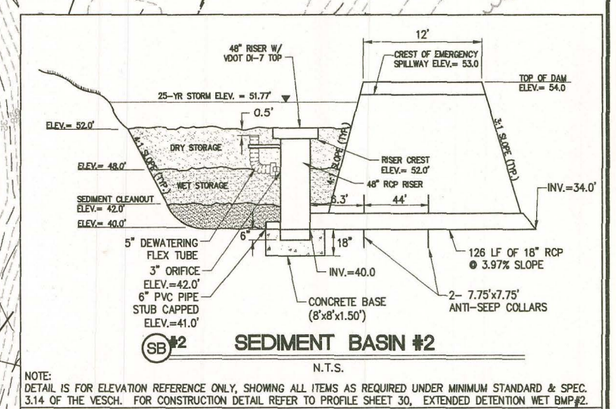
JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

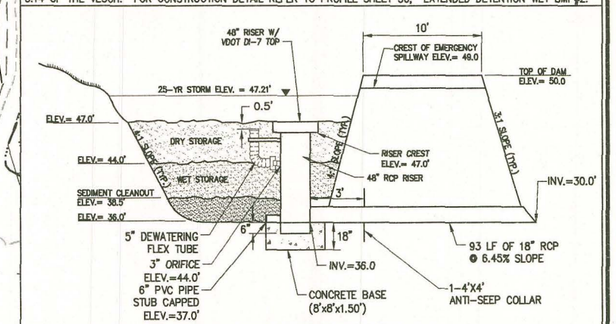
Designed JAG/MJR	Drawn GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 10	

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
1	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG





NOTE:
DETAIL IS FOR ELEVATION REFERENCE ONLY, SHOWING ALL ITEMS AS REQUIRED UNDER MINIMUM STANDARD & SPEC. 3.14 OF THE VESCH. FOR CONSTRUCTION DETAIL REFER TO PROFILE SHEET 30, EXTENDED DETENTION WET BMP#2.



NOTE:
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COMMONWEALTH OF VIRGINIA
JASON A. GAINES
No. 040170
PROFESSIONAL ENGINEER
11/29/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

INITIAL EROSION & SEDIMENT CONTROL

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 11

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 5/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

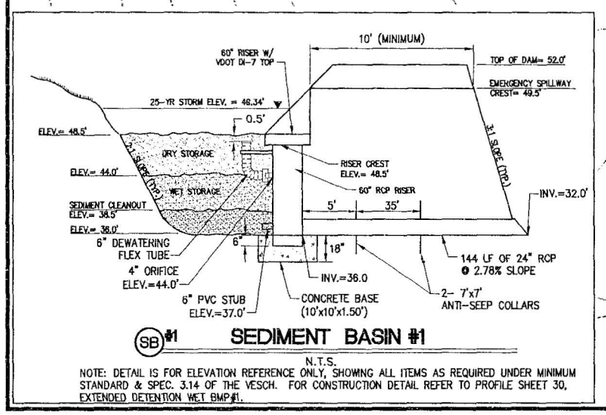
SEQUENCE OF CONSTRUCTION FOR STREAM CROSSING:

1. STREAM CROSSING CONSTRUCTION SHALL BE IN ACCORDANCE WITH MINIMUM STANDARDS AND CONDITIONS AS OUTLINED IN THE WETLAND PERMIT AND ALSO COMPLY WITH MINIMUM STANDARDS AND SPEC 3.24 OF THE VESCH
2. CONTRACTOR SHALL CLEAR PATH TO MINIMUM WIDTH NECESSARY FOR ACCESS.
3. CONTRACTOR SHALL INSTALL CULVERTS AT LEAST 2" BELOW EXISTING GRADE OVER FILTER CLOTH.
4. CULVERTS SHALL BE BACKFILLED WITH CLASS 1 RIP-RAP TO A MINIMUM OF 18" OVER TOP OF PIPES.
5. CONTINUE CONSTRUCTION ROAD OVER STREAM CROSSING PROVIDING THE MINIMUM 6" VDOT #1 STONE.

DC CONTRACTOR SHALL PROVIDE DUST CONTROL FOR ALL CLEARED AREAS WITHIN THE PROJECT

ROAD SHALL BE KEPT FREE OF EQUIPMENT AND OPEN TO RESIDENT TRAFFIC. ROAD SHALL REMAIN STABILIZED THROUGHOUT CONSTRUCTION.

GRAPHIC SCALE
50' 0' 50' 100'
SCALE: 1" = 50'



SB #1 SEDIMENT BASIN #1

N.T.S.

NOTE: DETAIL IS FOR ELEVATION REFERENCE ONLY, SHOWING ALL ITEMS AS REQUIRED UNDER MINIMUM STANDARD & SPEC. 3.14 OF THE VESCH. FOR CONSTRUCTION DETAIL REFER TO PROFILE SHEET 30, EXTENDED DETENTION WET BMP#1.

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-9994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

COMMONWEALTH OF VIRGINIA
JASON A. GRAMES
No. 040770
PROFESSIONAL ENGINEER
8/23/07

INITIAL EROSION & SEDIMENT CONTROL

MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 12

SEQUENCE OF CONSTRUCTION FOR STREAM CROSSING:

1. STREAM CROSSING CONSTRUCTION SHALL BE IN ACCORDANCE WITH MINIMUM STANDARDS AND CONDITIONS AS OUTLINED IN THE WETLAND PERMIT AND ALSO COMPLY WITH MINIMUM STANDARDS AND SPEC 3.24 OF THE VESCH
2. CONTRACTOR SHALL CLEAR PATH TO MINIMUM WIDTH NECESSARY FOR ACCESS.
3. CONTRACTOR SHALL INSTALL CULVERTS AT LEAST 2" BELOW EXISTING GRADE OVER FILTER CLOTH.
4. CULVERTS SHALL BE BACKFILLED WITH CLASS 1 RIP-RAP TO A MINIMUM OF 18" OVER TOP OF PIPES.
5. CONTINUE CONSTRUCTION ROAD OVER STREAM CROSSING PROVIDING THE MINIMUM 6" VDOT #1 STONE.

No.	DATE	REVISION / COMMENT / NOTE	BY
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3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB
1			BY

COMMONWEALTH OF VIRGINIA
JACOB A. GAINES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
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INITIAL EROSION & SEDIMENT CONTROL
MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 13

CONTRACTOR SHALL PROVIDE DUST CONTROL FOR ALL CLEARED AREAS WITHIN THE PROJECT

14' RIP-RAP OUTLET PROTECTION ON BERM FILL SLOPE TO NATURAL GRADE CLASS I RIP-RAP EMBEDDED 18" OVER FILTER CLOTH

12'-25' X 32' RIPRAP OUTLET PROTECTION EMBEDDED MIN 18" OVER FILTER FABRIC

18'-31.3'WX20'LX2'D RIPRAP STILLING BASIN W/10' APRON BOTTOM ELEVATION=39.0 (SEE DETAIL SHEET 31)

SEDIMENT TRAP #4 TOP OF BERM= 54.0 BOTTOM ELEV.= 50.0 OUTLET LENGTH= 9.06' (SEE DETAILS SHEET 31)

150 LF OF DUAL 48" CLASS IV RCP EMBEDDED MIN. 6" BELOW EXISTING GRADE @ 2.00% SLOPE W/ VDOT EW-7S INV IN=44.0 INV OUT=41.0

PROVIDE CLASS 1 RIP-RAP TOE PROTECTION 4' UP FILL SLOPE ADD FILTER CLOTH (SEE SHEET 31)

PROVIDE EC-3 EROSION CONTROL MATTING ON 2:1 FILL SLOPE

EXISTING 16' COLONIAL PIPELINE EASEMENT

SEDIMENT TRAP #6 TOP OF BERM= 70.0 BOTTOM ELEV.= 68.0 OUTLET LENGTH= 4.68' (SEE DETAILS SHEET 31)

PROVIDE EC-2 MATTING ON 2:1 FILL SLOPE

6' RIP-RAP OUTLET PROTECTION ON BERM FILL SLOPE TO NATURAL GRADE CLASS I RIP-RAP EMBEDDED 18" OVER FILTER CLOTH

DRAINAGE AREA TO SEDIMENT TRAP #6 (0.78 ACRES)

10'x10' RIP-RAP OUTLET PROTECTION FOR OUTFALLS OF DIVERSION DIKES

PROVIDE EC-2 MATTING ON 2:1 FILL SLOPE

MAXIMUM DRAINAGE AREA TO SEDIMENT TRAP #4 (1.51 ACRES)

4'-7.3'WX5'LX0.4'D RIPRAP STILLING BASIN W/1.5' APRON BOTTOM ELEVATION=48.6 (SEE DETAIL SHEET 31)

9'x16' RIP-RAP OUTLET PROTECTION ON BERM FILL SLOPE TO NATURAL GRADE CLASS I RIP-RAP EMBEDDED 48" OVER FILTER CLOTH

10'x10' RIP-RAP OUTLET PROTECTION FOR OUTFALLS OF DIVERSION DIKES

SEDIMENT TRAP #5 TOP OF BERM= 66.0 BOTTOM ELEV.= 62.0 OUTLET LENGTH= 9' (SEE DETAILS SHEET 31)

PROVIDE EC-2 MATTING ON 2:1 FILL SLOPE

PROVIDE EC-3 MATTING ON EMERGENCY SPILLWAY

VDOT MH-1 W/BOLT DOWN FRAME & COVER RIM=53.50 INV=48.37 D=5.13'

6'-10'X10' RIPRAP OUTLET PROTECTION EMBEDDED MIN 18" OVER FILTER FABRIC

94 L.F. OF 18" RCP @ 0.67%

55 L.F. OF 18" RCP @ 0.67% W/VDOT ES-1

BMP ACCESS ROAD

SEDIMENT BASIN #5 TOP OF BERM= 61.0 BOTTOM ELEV.= 49.0 NORMAL POOL ELEV.= 55.0 (SEE DETAILS THIS SHEET)

EC-2 EC-2 MATTING

10'x10' RIP-RAP OUTLET PROTECTION FOR OUTFALLS OF DIVERSION DIKES

125LF OF 15" HDPE @ 16.8% INV IN= 71.0 INV OUT= 49.0

DRAINAGE AREA TO SEDIMENT BASIN #5 (1.64 ACRES)

DRAINAGE AREA TO SEDIMENT TRAP #5 (1.44 ACRES)

TEMPORARY SOIL STOCKPILE AREA

10'x10' RIP-RAP OUTLET PROTECTION FOR OUTFALLS OF DIVERSION DIKES

LIMITS OF RPA WETLANDS

LIMITS OF CONSTRUCTION

LIMITS OF CLEARING

100' RPA BUFFER

35' PERIMETER BUFFER

BRADDOCK ROAD

OXFORD ROAD

COLLINGTON COURT

CA-1

N/F ELIZABETH O. BUSH D.B.702,PG.627 D.B.697,PG.970(PLAT) TP#(47-2)(1-54)

N/F CHARLES A. HENRY & POLLYANNA HENRY D.B.54,PG.256(4), D.B.58,PG.263(4A), D.B.58,PG.282(PLAT) TP#(47-2)(4-4 & 4A)

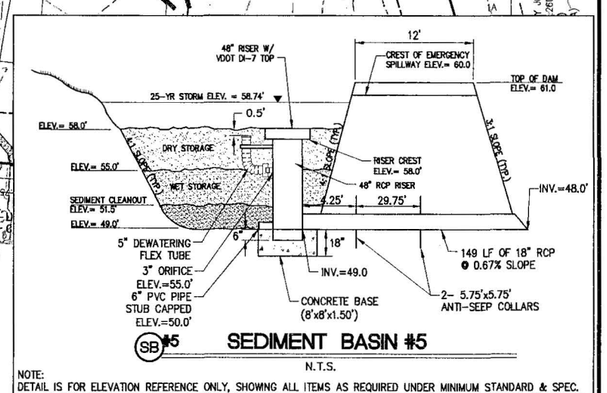
N/F WILLIAM E. RIPLEY, JR. & BETTY JO RIPLEY D.B.45,PG.264(2A), D.B.45,PG.265(2A), D.B.58,PG.283(PLAT) TP#(47-2)(4-2 & 2A)

N/F RIVERSIDE HOSPITAL, INC. INSTR.970014731 P.B.57,PG.77 TP#(48-1)(22-22)

N/F UNIVERSITY SQUARE ASSOCIATES LA FONTAINE CONDOMINIUMS D.B.357,PG.125, P.B.57,PG.77 TP#(47-2)(15-5A)

GRAPHIC SCALE
50' 0' 50' 100'
SCALE: 1" = 50'

CONSERVATION AREA GRASS SEED MIXTURE		
51%	Elymus virginicus	VA Wild Rye
11%	Smilacina racemosa	False Solomon's Seal
6%	Aster pilosus	Heath Aster
5%	Anemone virginiana	Thimbleweed
5%	Lespedeza bicolor	---
5%	Lespedeza cuneata	---
5%	Lespedeza sericea	---
3%	Cimicifuga racemosa	Black Cohosh
3%	Aquilegia canadensis	Eastern Columbine
3%	Arisaema triphyllum	Jack-in-The-Pulpit
3%	Phlemonium reptans	Greek Valerian



SB #5 SEDIMENT BASIN #5

N.T.S.

NOTE:
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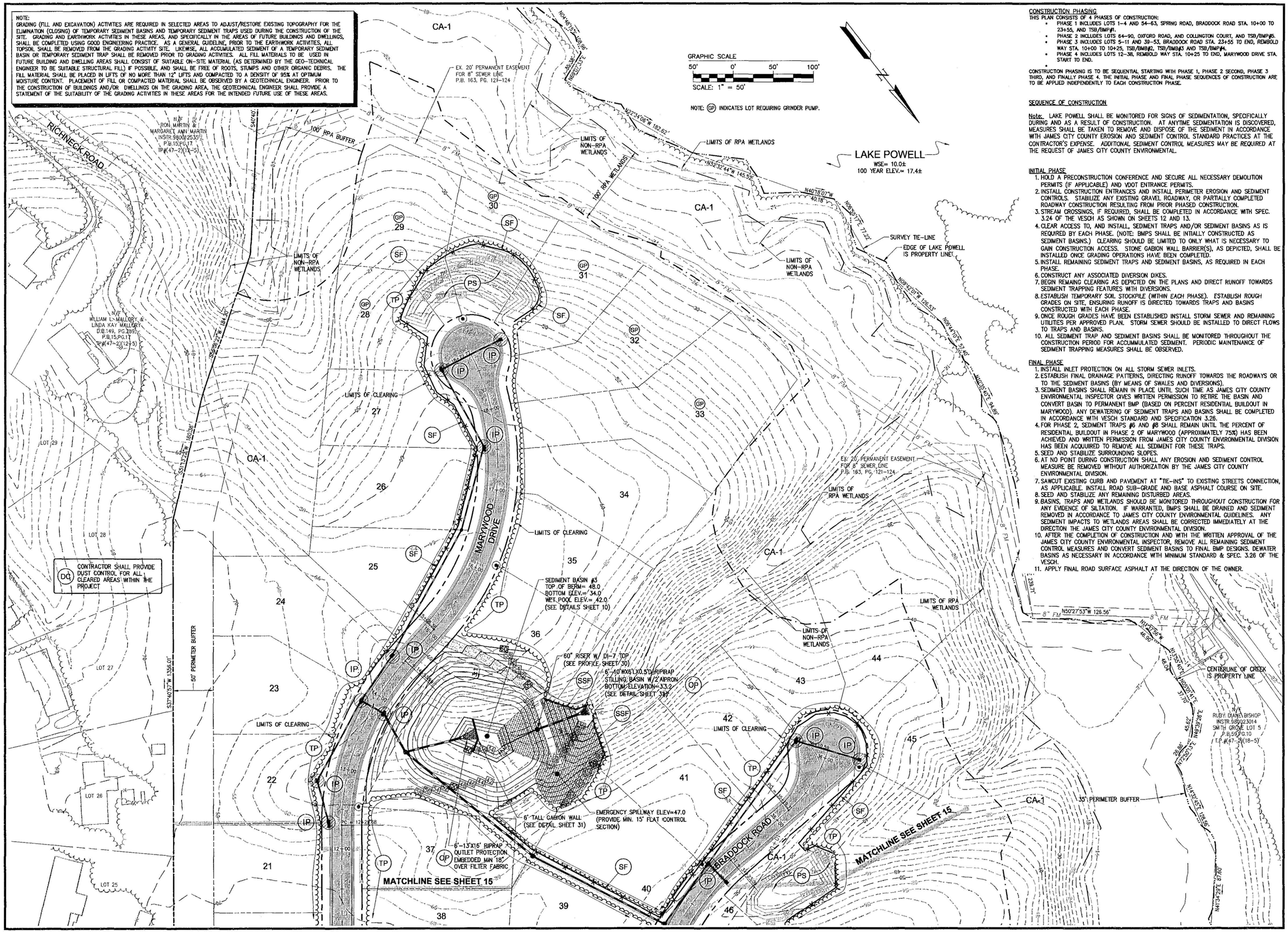
NOTE:
GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (CLOSING) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.



CONSTRUCTION PHASING

THIS PLAN CONSISTS OF 4 PHASES OF CONSTRUCTION:

- PHASE 1 INCLUDES LOTS 1–4 AND 54–63, SPRING ROAD, BRADDOCK ROAD STA. 10+00 TO 23+55, AND TSB/BMP#1.
- PHASE 2 INCLUDES LOTS 64–90, OXFORD ROAD, AND COLLINGTON COURT, AND TSB/BMP#5.
- PHASE 3 INCLUDES LOTS 5–11 AND 39–53, BRADDOCK ROAD STA. 23+55 TO END, REMBOLD WAY STA. 10+00 TO 10+25, TSB/BMB#2, TSB/BMB#3 AND TSB/BMP#4.
- PHASE 4 INCLUDES LOTS 12–38, REMBOLD WAY STA. 10+25 TO END, MARYWOOD DRIVE STA. START TO END.

CONSTRUCTION PHASING IS TO BE SEQUENTIAL STARTING WITH PHASE 1, PHASE 2 SECOND, PHASE 3 THIRD, AND FINALLY PHASE 4. THE INITIAL PHASE AND FINAL PHASE SEQUENCES OF CONSTRUCTION ARE TO BE APPLIED INDEPENDENTLY TO EACH CONSTRUCTION PHASE.

SEQUENCE OF CONSTRUCTION

Note: LAKE POWELL SHALL BE MONITORED FOR SIGNS OF SEDIMENTATION, SPECIFICALLY DURING AND AS A RESULT OF CONSTRUCTION. AT ANYTIME SEDIMENTATION IS DISCOVERED, MEASURES SHALL BE TAKEN TO REMOVE AND DISPOSE OF THE SEDIMENT IN ACCORDANCE WITH JAMES CITY COUNTY EROSION AND SEDIMENT CONTROL STANDARD PRACTICES AT THE CONTRACTOR'S EXPENSE. ADDITIONAL SEDIMENT CONTROL MEASURES MAY BE REQUIRED AT THE REQUEST OF JAMES CITY COUNTY ENVIRONMENTAL.

INITIAL PHASE

1. HOLD A PRECONSTRUCTION CONFERENCE AND SECURE ALL NECESSARY DEMOLITION PERMITS (IF APPLICABLE) AND VDOT ENTRANCE PERMITS.
2. INSTALL CONSTRUCTION ENTRANCES AND INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS. STABILIZE ANY EXISTING GRAVEL ROADWAY, OR PARTIALLY COMPLETED ROADWAY CONSTRUCTION RESULTING FROM PRIOR PHASED CONSTRUCTION.
3. STREAM CROSSINGS, IF REQUIRED, SHALL BE COMPLETED IN ACCORDANCE WITH SPEC. 3.24 OF THE VESCH AS SHOWN ON SHEETS 12 AND 13.
4. CLEAR ACCESS TO, AND INSTALL, SEDIMENT TRAPS AND/OR SEDIMENT BASINS AS IS REQUIRED BY EACH PHASE. (NOTE: BMPS SHALL BE INITIALLY CONSTRUCTED AS SEDIMENT BASINS.) CLEARING SHOULD BE LIMITED TO ONLY WHAT IS NECESSARY TO GAIN CONSTRUCTION ACCESS. STONE GABION WALL BARRIER(S), AS DEPICTED, SHALL BE INSTALLED ONCE GRADING OPERATIONS HAVE BEEN COMPLETED.
5. INSTALL REMAINING SEDIMENT TRAPS AND SEDIMENT BASINS, AS REQUIRED IN EACH PHASE.
6. CONSTRUCT ANY ASSOCIATED DIVERSION DIKES.
7. BEGIN REMAINING CLEARING AS DEPICTED ON THE PLANS AND DIRECT RUNOFF TOWARDS SEDIMENT TRAPPING FEATURES WITH DIVERSIONS.
8. ESTABLISH TEMPORARY SOIL STOCKPILE (WITHIN EACH PHASE). ESTABLISH ROUGH GRADES ON SITE, ENSURING RUNOFF IS DIRECTED TOWARDS TRAPS AND BASINS CONSTRUCTED WITH EACH PHASE.
9. ONCE ROUGH GRADES HAVE BEEN ESTABLISHED INSTALL STORM SEWER AND REMAINING UTILITIES PER APPROVED PLAN. STORM SEWER SHOULD BE INSTALLED TO DIRECT FLOWS TO TRAPS AND BASINS.
10. ALL SEDIMENT TRAP AND SEDIMENT BASINS SHALL BE MONITORED THROUGHOUT THE CONSTRUCTION PERIOD FOR ACCUMMULATED SEDIMENT. PERIODIC MAINTENANCE OF SEDIMENT TRAPPING MEASURES SHALL BE OBSERVED.

FINAL PHASE

1. INSTALL INLET PROTECTION ON ALL STORM SEWER INLETS.
2. ESTABLISH FINAL DRAINAGE PATTERNS, DIRECTING RUNOFF TOWARDS THE ROADWAYS OR TO THE SEDIMENT BASINS (BY MEANS OF SWALES AND DIVERSIONS).
3. SEDIMENT BASINS SHALL REMAIN IN PLACE UNTIL SUCH TIME AS JAMES CITY COUNTY ENVIRONMENTAL INSPECTOR GIVES WRITTEN PERMISSION TO RETIRE THE BASIN AND CONVERT BASIN TO PERMANENT BMP (BASED ON PERCENT RESIDENTIAL BUILDOUT IN MARYWOOD). ANY DEWATERING OF SEDIMENT TRAPS AND BASINS SHALL BE COMPLETED IN ACCORDANCE WITH VESCH STANDARD AND SPECIFICATION 3.26.
4. FOR PHASE 2, SEDIMENT TRAPS #6 AND #8 SHALL REMAIN UNTIL THE PERCENT OF RESIDENTIAL BUILDOUT IN PHASE 2 OF MARYWOOD (APPROXIMATELY 75%) HAS BEEN ACHIEVED AND WRITTEN PERMISSION FROM JAMES CITY COUNTY ENVIRONMENTAL DIVISION HAS BEEN ACQUIRED TO REMOVE ALL SEDIMENT FOR THESE TRAPS.
5. SEED AND STABILIZE SURROUNDING SLOPES.
6. AT NO POINT DURING CONSTRUCTION SHALL ANY EROSION AND SEDIMENT CONTROL MEASURE BE REMOVED WITHOUT AUTHORIZATION BY THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.
7. SAWCUT EXISTING CURB AND PAVEMENT AT "TIE-INS" TO EXISTING STREETS CONNECTION, AS APPLICABLE. INSTALL ROAD SUB-GRADE AND BASE ASPHALT COURSE ON SITE.
8. SEED AND STABILIZE ANY REMAINING DISTURBED AREAS.
9. BASINS, TRAPS AND WETLANDS SHOULD BE MONITORED THROUGHOUT CONSTRUCTION FOR ANY EVIDENCE OF SILTATION. IF WARRANTED, BMPS SHALL BE DRAINED AND SEDIMENT REMOVED IN ACCORDANCE TO JAMES CITY COUNTY ENVIRONMENTAL GUIDELINES. ANY SEDIMENT IMPACTS TO WETLANDS AREAS SHALL BE CORRECTED IMMEDIATELY AT THE DIRECTION THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.
10. AFTER THE COMPLETION OF CONSTRUCTION AND WITH THE WRITTEN APPROVAL OF THE JAMES CITY COUNTY ENVIRONMENTAL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL MEASURES AND CONVERT SEDIMENT BASINS TO FINAL BMP DESIGNS. DEWATER BASINS AS NECESSARY IN ACCORDANCE WITH MINIMUM STANDARD & SPEC. 3.26 OF THE VESCH.
11. APPLY FINAL ROAD SURFACE ASPHALT AT THE DIRECTION OF THE OWNER.

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 5/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB
1			

COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
PROFESSIONAL ENGINEER
8/13/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

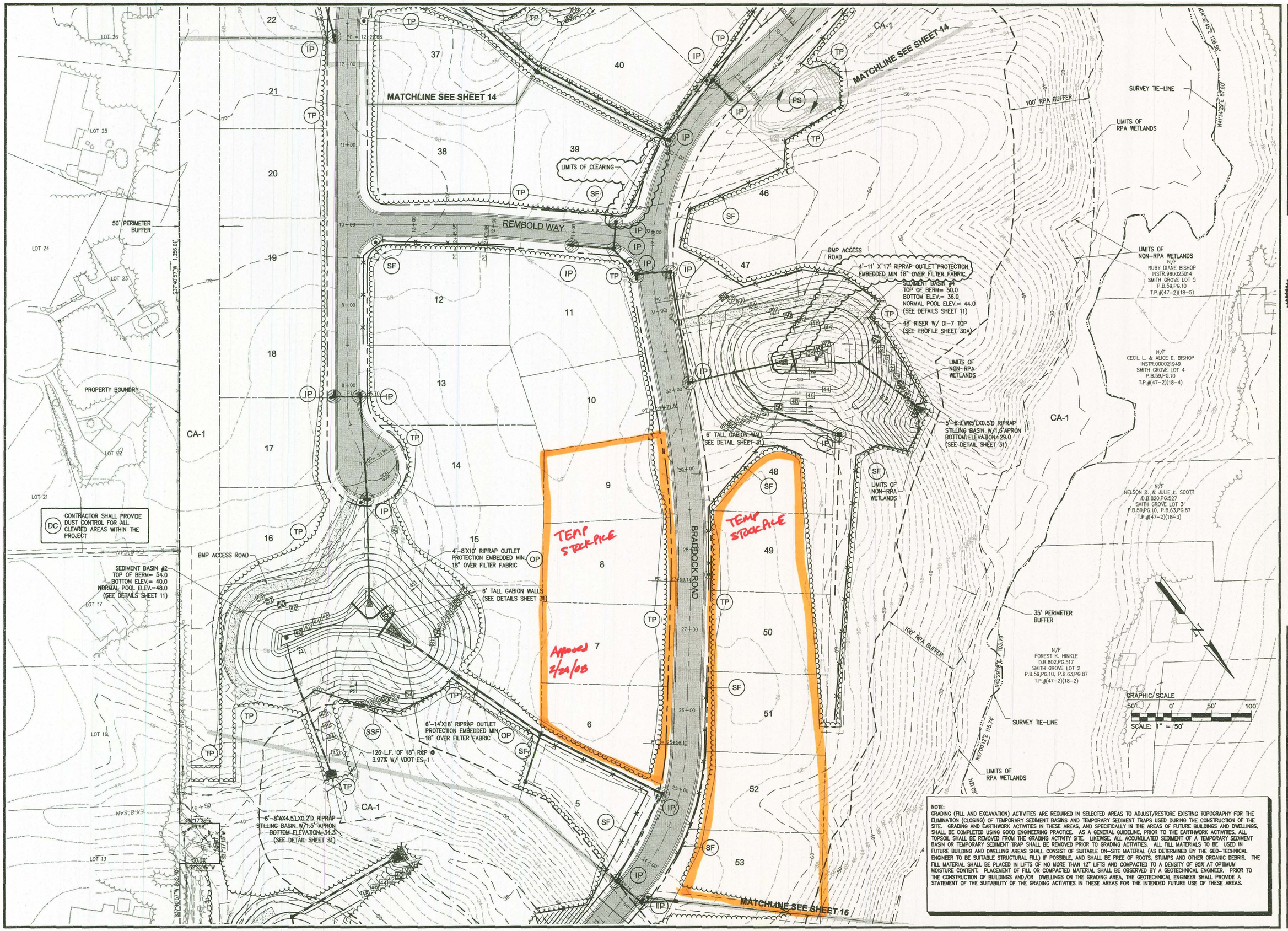
FINAL EROSION & SEDIMENT CONTROL

MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed JAG/MJR	Drawn GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 14	



NOTE:
GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (CLOSING) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.

No.	DATE	REVISION / COMMENT / NOTE	BY
1	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	MB

COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
PROFESSIONAL ENGINEER
11/29/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

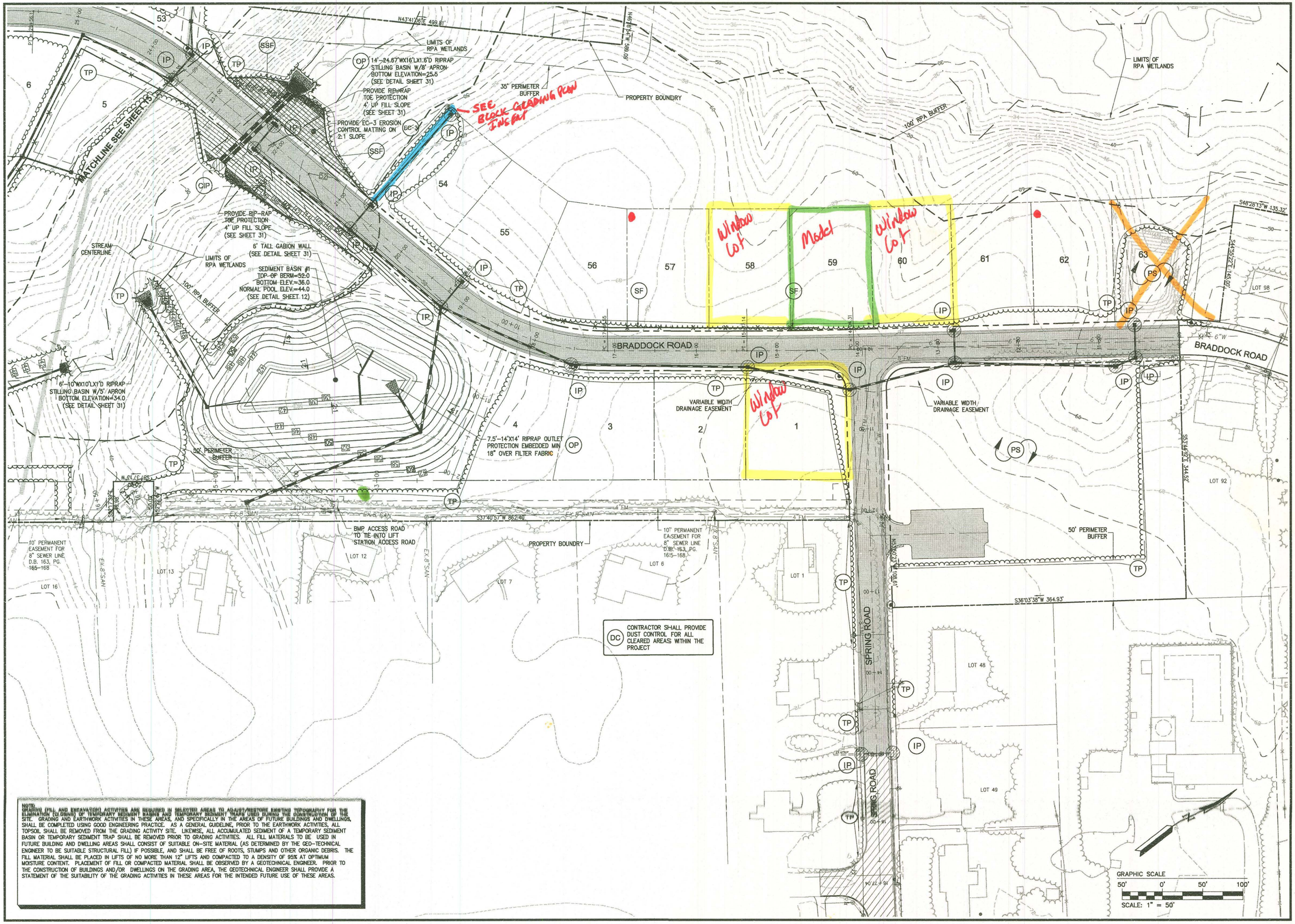
FINAL EROSION & SEDIMENT CONTROL
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 15



NOTE: GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (OLDBIND) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.

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3	10/05	REVISED PER JCC COMMENTS 8/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. JAMES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

FINAL EROSION & SEDIMENT CONTROL

MARYWOOD SUBDIVISION

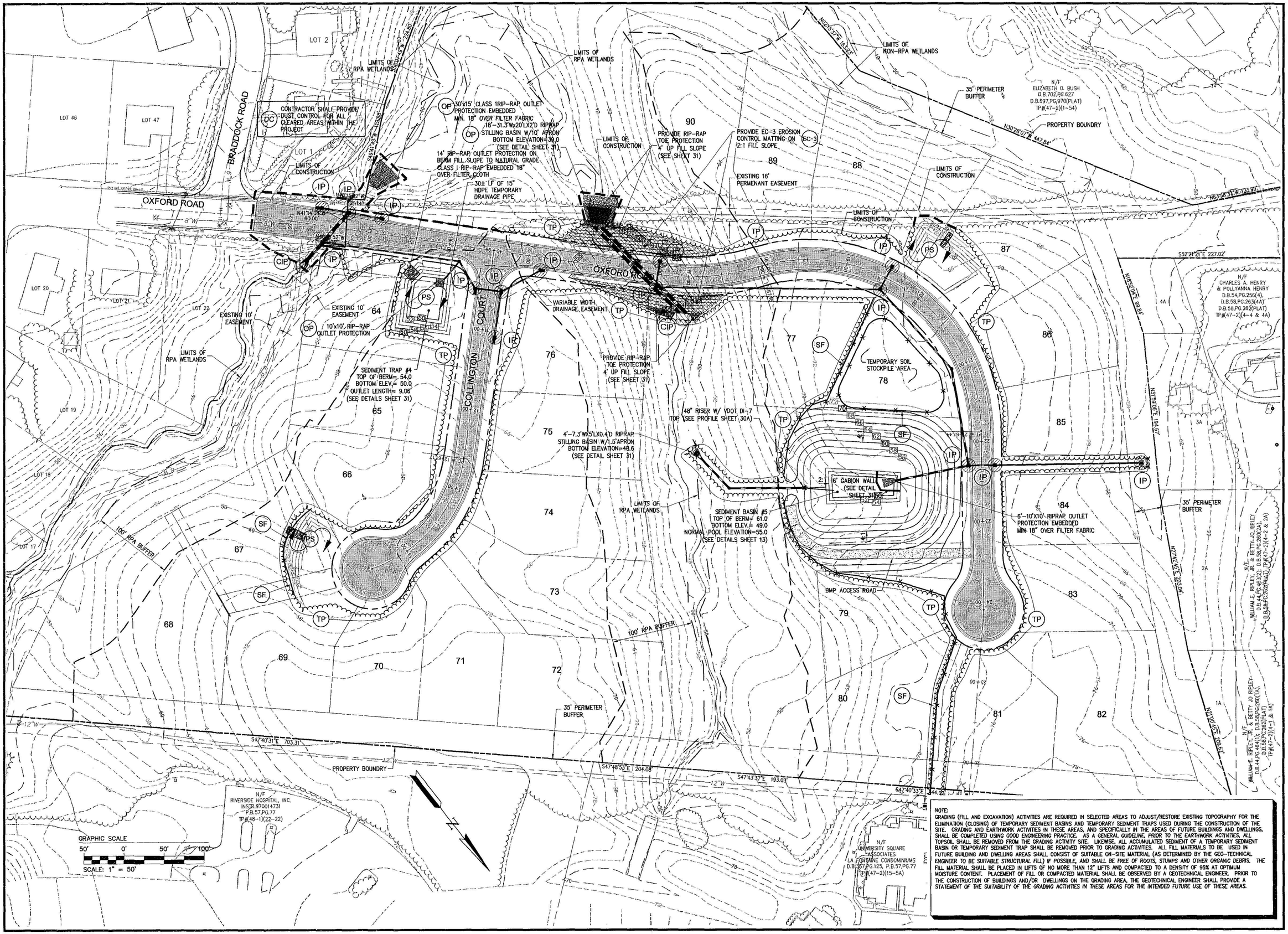
JAMES CITY COUNTY VIRGINIA

JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 16



NOTE:
GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (CLOSING) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.

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4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 8/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GRAMES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

FINAL EROSION & SEDIMENT CONTROL
MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA
JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 17

NOTE:
THE FOLLOWING DETAILS SHALL BE APPLIED TO THE UTILITIES SHOWN ON THESE PLANS:

HRPDC DETAILS

EW_01	PIPE BEDDING DETAIL
WD_01	SINGLE & DUAL CONNECTIONS
WD_05	BLOW-OFF ASSEMBLY
WD_06	FIRE HYDRANT SETTING
WD_09	TEMPORARY MANIFOLD FOR TEST & CHLORINATION
SS_01	STD. PRECAST CONCRETE MANHOLE w/EXTENDED MONO. BASE
SS_03	STRADLE MANHOLE
SS_04	SANITARY SEWER INTERIOR DROP MANHOLE
SS_06	SANITARY SEWER MANHOLE ADJUSTMENT
SS_07	SANITARY SEWER MANHOLE INVERT SHAPING
SS_08	CONNECTION INTO EXISTING MANHOLES
SS_09	SANITARY SEWER MANHOLE CASTING
SS_10	SANITARY SEWER MANHOLE COVER
SS_11	SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER
SS_14	SANITARY SEWER SERVICE CONNECTION
SS_15	DUAL SANITARY SEWER SERVICE CONNECTIONS
SS_16	DEEP SANITARY SEWER CONNECTION
SS_17	FORCEMAIN SAXOPHONE
WS_01	STD. VALVE BOX AND FRAME COVER
WS_02	VALVE SETTING DETAIL
WS_03	MANUAL AIR VENT ASSEMBLY
WS_05	STANDARD THRUST BLOCKS

JCSA DETAILS

W 13.0	TYP. WATER METER INSTALLATION
W 14.0	RESIDENTIAL METER SETTING
W 16.0	WATER SAMPLE STATION DETAIL
S 18.0	DETAIL OF SEWER BRIDGE (SEE SHEET 33)

REQUIRED JOINT RESTRAINT FOR WATER LINE FITTINGS

FITTING TYPE:	RESTRAINT LENGTH REQ'D:
4" G.V. & V.B.	35 LF PRIOR TO VALVE
8" G.V. & V.B.	60 LF PRIOR TO VALVE
8" x 8" TEE	48 LF ALONG BRANCH (5 LF ON RUN)
8" x 6" TEE	22 LF ALONG BRANCH (5 LF ON RUN)
8" CAP & BLOWOFF ASSEMBLY	60 LF PRIOR TO ASSEMBLY
8" x 4" TEE	1 LF PRIOR TO REDUCER (5 LF ON RUN)
4" CAP & BLOWOFF ASSEMBLY	42 LF PRIOR TO ASSEMBLY
8" – 90° BEND	28 LF PRIOR TO REDUCER
8" – 45° BEND	12 LF PRIOR TO REDUCER
8" – 22 1/2° BEND	6 LF PRIOR TO ASSEMBLY

NOTE: WHEN RESTRAINT LENGTHS OVERLAP, THE GREATEST LENGTH DICTATES. FITTINGS ALONG THE LOOPED SYSTEMS (OXFORD AND BRADDOCK) REQUIRE RESTRAINT ON BOTH SIDES OF FITTINGS. (LENGTHS ASSUME PVC PIPING)

NOTE: PROPOSED FIRE HYDRANT LOCATIONS ARE SHOWN APPROXIMATELY. ALL FIXED OBJECTS SHALL BE LOCATED A MIN. OF 7.5' OFF FACE OF CURB.

NOTE: THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE JOB SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.

THE TOPOGRAPHIC DATA REPRESENTED ON THIS DRAWING IS SUPPLIED BY OWNER/ DEVELOPER. CONTOUR INTERVAL= 2 FOOT

NOTE: WATERLINES TO BE PLACED UNDER PAVEMENT 5' OFF EDGE OF PAVEMENT (EXCEPT WHERE NOTED).

ALL DRAINAGE EASEMENTS AND ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION

MARYWOOD DR. (STA.12+00 TO END)
REQUIRED WATER MAIN

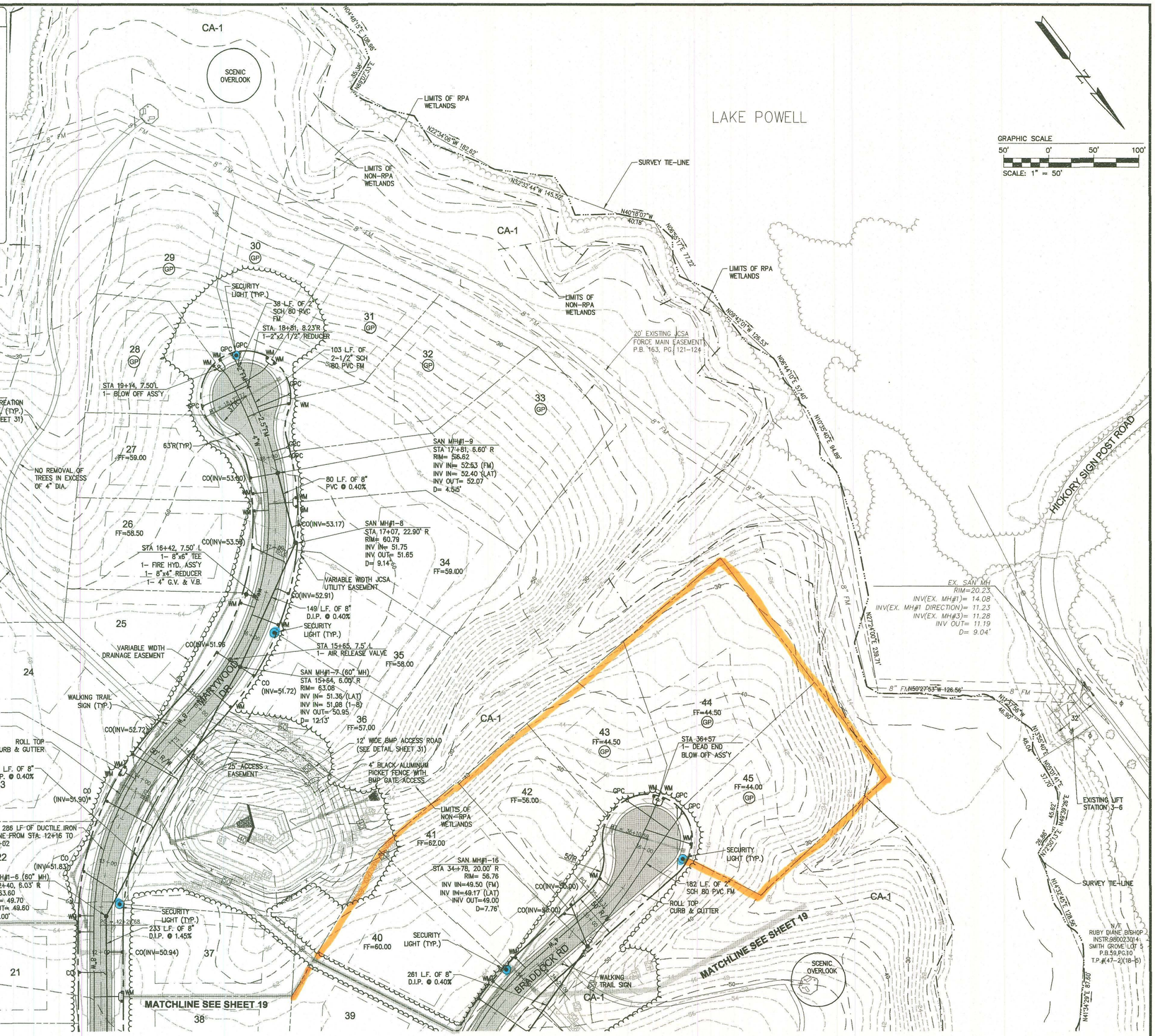
445±	LF OF 8" WATERLINE
265±	LF OF 4" WATERLINE
1 –	8"x6" TEE
1 –	FIRE HYDRANT ASSEMBLY
1 –	8"x4" REDUCER
1 –	BLOW OFF ASS'Y
1 –	4" G.V. & V.B.
1 –	AIR RELEASE VALVE
16 –	5/8" WATER METERS

BRADDOCK ROAD (STA.33+27 TO END)
REQUIRED WATER MAIN

255±	LF OF 4" WATERLINE
1 –	BLOW OFF ASSEMBLY
6 –	5/8" WATER METERS

NOTE: (GP) INDICATES LOT REQUIRING GRINDER PUMP.

NOTE:
SANITARY SEWER LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH HRPDC DETAILS. SANITARY CLEANOUTS TO BE ESTABLISHED AT ASSIGNED INVERT ELEVATIONS TO AVOID POTENTIAL CONFLICTS.



No.	DATE	REVISION / COMMENT / NOTE	BY
8.	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2.	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8934
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ROAD AND UTILITY PLAN
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed JAG/MJR	Drawn GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 18	

NOTE:
THE FOLLOWING DETAILS SHALL BE APPLIED TO THE UTILITIES SHOWN ON THESE PLANS:

HRPDC DETAILS

EW_01	PIPE BEDDING DETAIL
WD_01	SINGLE & DUAL CONNECTIONS
WD_05	BLOW-OFF ASSEMBLY
WD_06	FIRE HYDRANT SETTING
WD_09	TEMPORARY MANIFOLD FOR TEST & CHLORINATION
SS_01	STD. PRECAST CONCRETE MANHOLE w/EXTENDED MONO. BASE
SS_03	STRADLE MANHOLE
SS_04	SANITARY SEWER INTERIOR DROP MANHOLE
SS_06	SANITARY SEWER MANHOLE ADJUSTMENT
SS_07	SANITARY SEWER MANHOLE INVERT SHAPING
SS_08	CONNECTION INTO EXISTING MANHOLES
SS_09	SANITARY SEWER MANHOLE CASTING
SS_10	SANITARY SEWER MANHOLE COVER
SS_11	SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER
SS_14	SANITARY SEWER SERVICE CONNECTION
SS_15	DUAL SANITARY SEWER SERVICE CONNECTIONS
SS_16	DEEP SANITARY SEWER CONNECTION
SS_17	FORCEMAIN SAXOPHONE
WS_01	STD. VALVE BOX AND FRAME COVER
WS_02	VALVE SETTING DETAIL
WS_03	MANUAL AIR VENT ASSEMBLY
WS_05	STANDARD THRUST BLOCKS

JCSA DETAILS

W 13.0	TYP. WATER METER INSTALLATION
W 14.0	RESIDENTIAL METER SETTING
W 16.0	WATER SAMPLE STATION DETAIL
S 18.0	DETAIL OF SEWER BRIDGE (SEE SHEET 33)

REQUIRED JOINT RESTRAINT FOR WATER LINE FITTINGS

FITTING TYPE:	RESTRAINT LENGTH REQ'D:
4" G.V. & V.B.	35 LF PRIOR TO VALVE
8" G.V. & V.B.	60 LF PRIOR TO VALVE
8" x 8" TEE	48 LF ALONG BRANCH (5 LF ON RUN)
8" x 6" TEE	22 LF ALONG BRANCH (5 LF ON RUN)
8" CAP & BLOWOFF ASSEMBLY	60 LF PRIOR TO ASSEMBLY
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8" – 90° BEND	28 LF PRIOR TO REDUCER
8" – 45° BEND	12 LF PRIOR TO REDUCER
8" – 22 1/2° BEND	6 LF PRIOR TO ASSEMBLY

NOTE: WHEN RESTRAINT LENGTHS OVERLAP, THE GREATEST LENGTH DICTATES. FITTINGS ALONG THE LOOPED SYSTEMS (OXFORD AND BRADDOCK) REQUIRE RESTRAINT ON BOTH SIDES OF FITTINGS. (LENGTHS ASSUME PVC PIPING)

NOTE: PROPOSED FIRE HYDRANT LOCATIONS ARE SHOWN APPROXIMATELY. ALL FIXED OBJECTS SHALL BE LOCATED A MIN. OF 7.5' OFF FACE OF CURB.

NOTE: THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE JOB SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.

THE TOPOGRAPHIC DATA REPRESENTED ON THIS DRAWING IS SUPPLIED BY OWNER/ DEVELOPER. CONTOUR INTERVAL= 2 FOOT

NOTE: WATERLINES TO BE PLACED UNDER PAVEMENT 5' OFF EDGE OF PAVEMENT (EXCEPT WHERE NOTED).

ALL DRAINAGE EASEMENTS AND ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION

MARYWOOD DRIVE (STA 5+21 TO STA 12+00) REQUIRED WATER MAIN

310±	LF OF 8" WATERLINE
225±	LF OF 4" WATERLINE
1 –	8" G.V. & V.B.
1 –	8"x6" TEE
1 –	8"x8" TEE
1 –	8"x4" REDUCER
1 –	4" G.V. & V.B.
1 –	FIRE HYDRANT ASSEMBLY
1 –	AIR RELEASE VALVE
1 –	BLOW OFF ASSEMBLY
12 –	5/8" WATER METERS

BRADDOCK ROAD (STA. 23+60 TO STA. 34+00) REQUIRED WATER MAIN

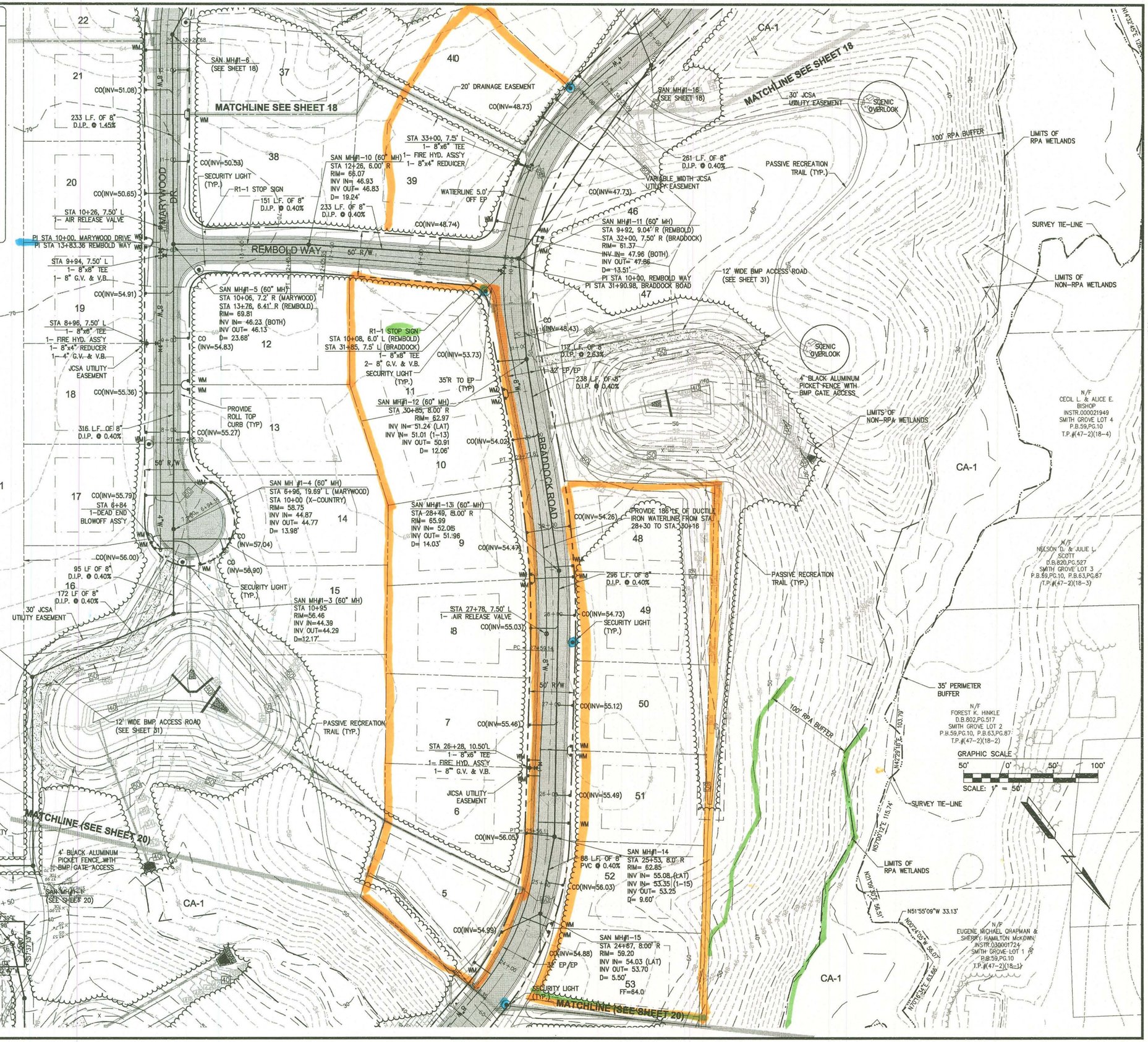
945±	LF OF 8" WATERLINE
100±	LF OF 4" WATERLINE
2 –	8"x6" TEE
2 –	FIRE HYD. ASS'Y
1 –	8"x8" TEE
2 –	8" G.V. & V.B.
1 –	AIR RELEASE VALVE
1 –	8"x4" REDUCER
16 –	5/8" WATER METERS

REMBOLD WAY (STA. 10+00 TO END REQUIRED WATER MAIN

385±	LF OF 8" WATERLINE
2 –	8" G.V. & V.B.

NOTE:
DMH SIGNIFIES A DROP MANHOLE

NOTE:
SANITARY SEWER LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH HRPDC DETAILS. SANITARY CLEANOUTS TO BE ESTABLISHED AT ASSIGNED INVERT ELEVATIONS TO AVOID POTENTIAL CONFLICTS.



No.	DATE	REVISION / COMMENT / NOTE	BY
1	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040170
PROFESSIONAL ENGINEER
11/29/07

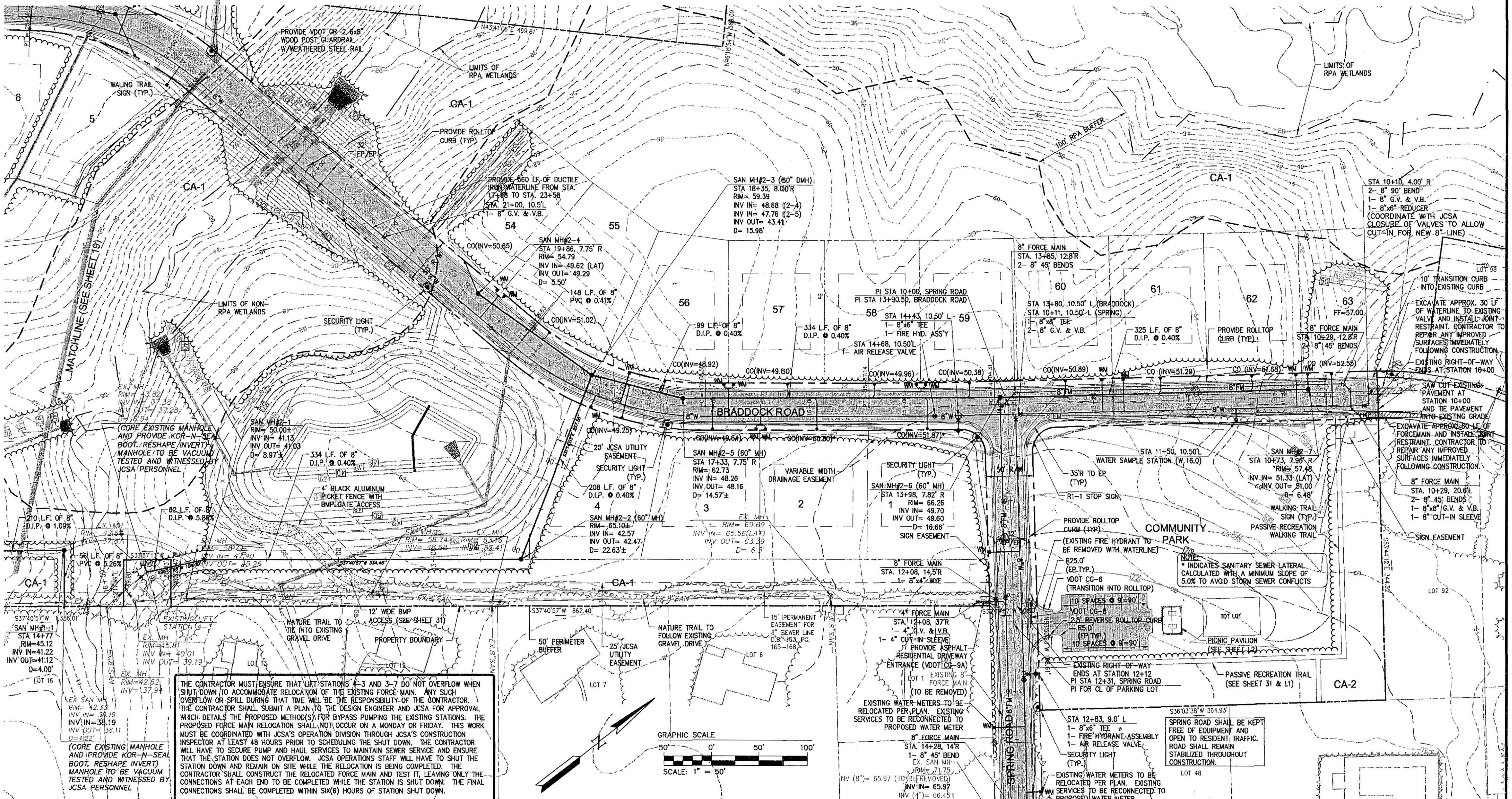
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ROAD AND UTILITY PLAN
MARYWOOD SUBDIVISION

JAMES CITY COUNTY — VIRGINIA
JAMESTOWN DISTRICT

Designed JAG/MJR	Drawn GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 19	



THE CONTRACTOR MUST ENSURE THAT LIFT STATIONS 4-3 AND 3-7 DO NOT OVERFLOW WHEN SHUT DOWN TO ACCOMMODATE RELOCATION OF THE EXISTING FORCE MAIN. ANY SUCH OVERFLOW OR SPILL DURING THAT TIME WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT A PLAN TO THE DESIGN ENGINEER AND JCSA FOR APPROVAL WHICH DETAILS THE PROPOSED METHOD(S) FOR BYPASS PUMPING THE EXISTING STATIONS. THE PROPOSED FORCE MAIN RELOCATION SHALL NOT OCCUR ON A MONDAY OR FRIDAY. THIS WORK MUST BE COORDINATED WITH JCSA'S OPERATION DIVISION THROUGH JCSA'S CONSTRUCTION INSPECTOR AT LEAST 48 HOURS PRIOR TO SCHEDULING THE SHUT DOWN. THE CONTRACTOR WILL HAVE TO SECURE PUMP AND HAUL SERVICES TO MAINTAIN SEWER SERVICE AND ENSURE THAT THE STATION DOES NOT OVERFLOW. JCSA OPERATIONS STAFF WILL HAVE TO SHUT THE STATION DOWN AND REMAIN ON SITE WHILE THE RELOCATION IS BEING COMPLETED. THE CONTRACTOR SHALL CONSTRUCT THE RELOCATED FORCE MAIN AND TEST IT, LEAVING ONLY THE CONNECTIONS AT EACH END TO BE COMPLETED WHILE THE STATION IS SHUT DOWN. THE FINAL CONNECTIONS SHALL BE COMPLETED WITHIN SIX(6) HOURS OF STATION SHUT DOWN.

BRADDOCK ROAD (STA.10+00 TO STA. 23+60) REQUIRED WATER MAIN

1375±	LF OF 8" WATERLINE
2 –	8" 90° BEND
3 –	8" G.V. & V.B.
1 –	8"x8" TEE
1 –	AIR RELEASE VALVE
1 –	8"x6" TEE
1 –	FIRE HYD. ASS'Y
1 –	8"x6" REDUCER
13 –	5/8" WATER METERS

SPRING ROAD (STA. 10+00 TO END) REQUIRED WATER MAIN

660±	LF OF 8" WATERLINE
2 –	8" G.V. & V.B.
1 –	8"x6" TEE
1 –	FIRE HYD. ASS'Y
1 –	AIR RELEASE VALVE
1 –	8" CUT IN TEE
1 –	8"x8" TEE
1 –	5/8" WATER METER

NOTE: PROPOSED FIRE HYDRANT LOCATIONS ARE SHOWN APPROXIMATELY. ALL FIXED OBJECTS SHALL BE LOCATED A MIN. OF 7.5' OFF FACE OF CURB.

NOTE: THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE JOB SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.

THE TOPOGRAPHIC DATA REPRESENTED ON THIS DRAWING IS SUPPLIED BY OWNER/ DEVELOPER. CONTOUR INTERVAL= 2 FOOT

NOTE: WATERLINES TO BE PLACED UNDER PAVEMENT 5' OFF EDGE OF PAVEMENT (EXCEPT WHERE NOTED).

ALL DRAINAGE EASEMENTS AND ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION

NOTE: THE CONTRACTOR SHALL INFORM AND COORDINATE INTERUPTION OF INDIVIDUAL RESIDENTIAL SERVICE WITH EXISTING RESIDENTS AND JCSA REPRESENATIVES.

NOTE: ALL EXISTING WATER SERVICES ALONG SPRING ROAD SHALL BE REPLACED WITH NEW SERVICES BETWEEN THE PROPOSED WATER MAIN AND WATER METER.

REQUIRED JOINT RESTRAINT FOR UTILITY FITTINGS

FITTING TYPE:	RESTRAINT LENGTH REQ'D:
4" G.V. & V.B.	35 LF PRIOR TO VALVE
8" G.V. & V.B.	60 LF PRIOR TO VALVE
8" x 8" TEE	48 LF ALONG BRANCH (5 LF ON RUN)
8" x 6" TEE	22 LF ALONG BRANCH (5 LF ON RUN)
8" CAP & BLOWOFF ASSEMBLY	60 LF PRIOR TO ASSEMBLY
8" x 4" TEE	1 LF PRIOR TO REDUCER (5 LF ON RUN)
4" CAP & BLOWOFF ASSEMBLY	42 LF PRIOR TO ASSEMBLY
8" – 90° BEND	28 LF PRIOR TO REDUCER
8" – 45° BEND	12 LF PRIOR TO REDUCER
8" – 22 1/2° BEND	6 LF PRIOR TO ASSEMBLY

NOTE: WHEN RESTRAINT LENGTHS OVERLAP, THE GREATEST LENGTH DICTATES. FITTINGS ALONG THE LOOPED SYSTEMS (OXFORD AND BRADDOCK) REQUIRE RESTRAINT ON BOTH SIDES OF FITTINGS. (LENGTHS ASSUME PVC PIPING)

NOTE:
A BYPASS IS NEEDED TO MAKE A CONNECTION TO EXISTING LIFT STATION 4-3

NOTE:
SANITARY SEWER LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH HRPDC DETAILS. SANITARY CLEANOUTS TO BE ESTABLISHED AT ASSIGNED INVERT ELEVATIONS TO AVOID POTENTIAL CONFLICTS.

NOTE:
THE FOLLOWING DETAILS SHALL BE APPLIED TO THE UTILITIES SHOWN ON THESE PLANS:

HRPDC DETAILS

EW_01	PIPE BEDDING DETAIL
WD_01	SINGLE & DUAL CONNECTIONS
WD_05	BLOW-OFF ASSEMBLY
WD_06	FIRE HYDRANT SETTING
WD_09	TEMPORARY MANIFOLD FOR TEST & CHLORINATIONI
SS_01	STD. PRECAST CONCRETE MANHOLE w/EXTENDED MONO. BASE
SS_03	STRADLE MANHOLE
SS_04	SANITARY SEWER INTERIOR DROP MANHOLE
SS_06	SANITARY SEWER MANHOLE ADJUSTMENT
SS_07	SANITARY SEWER MANHOLE INVERT SHAPING
SS_08	CONNECTION INTO EXISTING MANHOLES
SS_09	SANITARY SEWER MANHOLE CASTING
SS_10	SANITARY SEWER MANHOLE COVER
SS_11	SANITARY SERVICE LATERAL CLEAN OUT FRAME AND COVER
SS_14	SANITARY SEWER SERVICE CONNECTION
SS_15	DUAL SANITARY SEWER SERVICE CONNECTIONS
SS_16	DEEP SANITARY SEWER CONNECTION
SS_17	FORCEMAIN SAXOPHONE
WS_01	STD. VALVE BOX AND FRAME COVER
WS_02	VALVE SETTING DETAIL
WS_03	MANUAL AIR VENT ASSEMBLY
WS_05	STANDARD THRUST BLOCKS

JCSA DETAILS

W 13.0	TYP. WATER METER INSTALLATION
W 14.0	RESIDENTIAL METER SETTING
W 16.0	WATER SAMPLE STATION DETAIL
S 18.0	DETAIL OF SEWER BRIDGE (SEE SHEET 33)

JCSA REQUIREMENTS FOR CONNECTION INTO WATER SYSTEM

A.) THE ENGINEER AND CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH JCSA PERSONNEL AT LEAST 10 BUSINESS DAYS PROIR TO THE PLANNED SHUTDOWN AND PROVIDE A WRITTEN SCHEDULE OF WORK. THE SCHEDULE SHALL BE A DETAILED WORK PLAN INCLUDING VALVE OPERATION, INSTALLATION PROCEDURES AND TESTING PROCESSES. AN ANTICIPATED TIMELINE OF THE SHUT DOWN SHALL ALSO BE PROVIDED BY THE CONTRACTOR. JCSA SHALL REVIEW THE SCHEDULE AND EITHER APPROVE IT OR SCHEDULE A MEETING WITH THE ENGINEER AND CONTRACTOR WITHIN 3 BUSINESS DAYS FOLLOWING RECEIPT OF THE PLAN TO WORK WITH THE CONTRACTOR TO SATISFACTORILY MODIFY IT.

B.) THE PROPOSED WATERLINE SHUTDOWN SHALL NOT OCCUR ON A MONDAY, FRIDAY, OR WEEKEND.

C.) THE CONTRACTOR'S JCSA CONTACT FOR THIS WORK IS STUART BURCHAM AT 592-1809. CONTRACTOR SHALL CONTACT MR. BURCHAM DURING NORMAL BUSINESS HOURS TO SCHEDULE THE COORDINATION MEETING AND WATERLINE SHUTDOWN.

D.) CONTRACTOR SHALL EXCAVATE THE POINTS OF CONNECTION AND EXISTING UTILITY CROSSINGS TO DETERMINE PIPE MATERIALS AND FEILD CONDITIONS. THIS SHALL BE INCLUDED IN THE PLAN OF THE WORK.

E.) IT WILL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO CONTACT ALL RESIDENTS 48 HOURS IN ADVANCE WHOSE SERVICE COULD BE INTERRUPTED BY THE SHUTDOWN.

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4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

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CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ROAD AND UTILITY PLAN

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07
Project No.	
9272	
Drawing No.	
20	

NOTE:
THE FOLLOWING DETAILS SHALL BE APPLIED TO THE UTILITIES SHOWN ON THESE PLANS:

HRPDC DETAILS

EW_01	PIPE BEDDING DETAIL
WD_01	SINGLE & DUAL CONNECTIONS
WD_05	BLOW-OFF ASSEMBLY
WD_06	FIRE HYDRANT SETTING
WD_09	TEMPORARY MANIFOLD FOR TEST & CHLORINATION
SS_01	STD. PRECAST CONCRETE MANHOLE w/EXTENDED MONO. BASE
SS_03	STRADLE MANHOLE
SS_04	SANITARY SEWER INTERIOR DROP MANHOLE
SS_06	SANITARY SEWER MANHOLE ADJUSTMENT
SS_07	SANITARY SEWER MANHOLE INVERT SHAPING
SS_08	CONNECTION INTO EXISTING MANHOLES
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SS_10	SANITARY SEWER MANHOLE COVER
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SS_14	SANITARY SEWER SERVICE CONNECTION
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WS_01	STD. VALVE BOX AND FRAME COVER
WS_02	VALVE SETTING DETAIL
WS_03	MANUAL AIR VENT ASSEMBLY
WS_05	STANDARD THRUST BLOCKS

JCSA DETAILS

W 13.0	TYP. WATER METER INSTALLATION
W 14.0	RESIDENTIAL METER SETTING
W 16.0	WATER SAMPLE STATION STATION DETAIL
S 18.0	DETAIL OF SEWER BRIDGE (SEE SHEET 33)

REQUIRED JOINT RESTRAINT FOR WATER LINE FITTINGS

FITTING TYPE:	RESTRAINT LENGTH REQ'D:
4" G.V. & V.B.	35 LF PRIOR TO VALVE
8" G.V. & V.B.	60 LF PRIOR TO VALVE
8" x 8" TEE	48 LF ALONG BRANCH (5 LF ON RUN)
8" x 6" TEE	22 LF ALONG BRANCH (5 LF ON RUN)
8" CAP & BLOWOFF ASSEMBLY	60 LF PRIOR TO ASSEMBLY
8" x 4" TEE	1 LF PRIOR TO REDUCER (5 LF ON RUN)
4" CAP & BLOWOFF ASSEMBLY	42 LF PRIOR TO ASSEMBLY
8" – 90° BEND	28 LF PRIOR TO REDUCER
8" – 45° BEND	12 LF PRIOR TO REDUCER
8" – 22 1/2° BEND	6 LF PRIOR TO ASSEMBLY

NOTE: WHEN RESTRAINT LENGTHS OVERLAP, THE GREATEST LENGTH DICTATES. FITTINGS ALONG THE LOOPED SYSTEMS (OXFORD AND BRADDOCK) REQUIRE RESTRAINT ON BOTH SIDES OF FITTINGS. (LENGTHS ASSUME PVC PIPING)

NOTE:
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NOTE: PROPOSED FIRE HYDRANT LOCATIONS ARE SHOWN APPROXIMATELY. ALL FIXED OBJECTS SHALL BE LOCATED A MIN. OF 7.5' OFF FACE OF CURB.

NOTE: THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE JOB SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.

THE TOPOGRAPHIC DATA REPRESENTED ON THIS DRAWING IS SUPPLIED BY OWNER/ DEVELOPER. CONTOUR INTERVAL= 2 FOOT

NOTE: WATERLINES TO BE PLACED UNDER PAVEMENT 5' OFF EDGE OF PAVEMENT (EXCEPT WHERE NOTED).

ALL DRAINAGE EASEMENTS AND ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION

OXFORD ROAD (STA.10+00 TO END)
REQUIRED WATER MAIN

1450±	LF OF 8" WATERLINE
1 –	8"x6" TAPPING SLEEVE & VALVE
1 –	12"x8" TAPPING SLEEVE & VALVE
1 –	8"x6" REDUCER
2 –	8" G.V. & V.B.
1 –	8"x8" TEE
2 –	8"x6" TEE
2 –	FIRE HYD. ASS'Y
2 –	8" 22.5° BEND
15 –	5/8" WATER METERS

COLLINGTON COURT (STA. 10+00 TO END)
REQUIRED WATER MAIN

1685±	LF OF 8" WATERLINE
221±	LF OF 4" WATERLINE
1 –	8" G.V. & V.B.
1 –	8"x8" TEE
1 –	8"x6" TEE
1 –	FIRE HYD. ASS'Y
1 –	8"x4" REDUCER
1 –	BLOW OFF ASS'Y
12 –	5/8" WATER METER

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4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

ROAD AND UTILITY PLAN
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 21

NOTE:
GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (CLOSING) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.

NOTE:
CENTEX HOMES WILL PROVIDE DEVELOPMENT PLANS (PLOT PLANS) FOR GROUPINGS OF CONSECUTIVE LOTS, NOT TO EXCEED 10 IN NUMBER, WHICH WILL DEPICT INDIVIDUAL LOT LIMITS OF CLEARING AND GRADING ACTIVITIES NECESSARY TO ACHIEVE APPROPRIATE SURFACE RUNOFF FOR THE GROUP OF LOTS. THESE DEVELOPMENT PLANS WILL BE PROVIDED WITH THE APPLICATION FOR BUILDING PERMITS FOR THE CONSTRUCTION OF THE RESIDENTIAL STRUCTURES UPON THESE LOTS, AND SHALL BE SUBJECT TO APPROVAL BY THE COUNTY ENGINEER.

GRAPHIC SCALE
50' 0' 50' 100'
SCALE: 1" = 50'

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3	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG

COMMONWEALTH OF VIRGINIA
JASON A. GAINES
No. 040170
11/29/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
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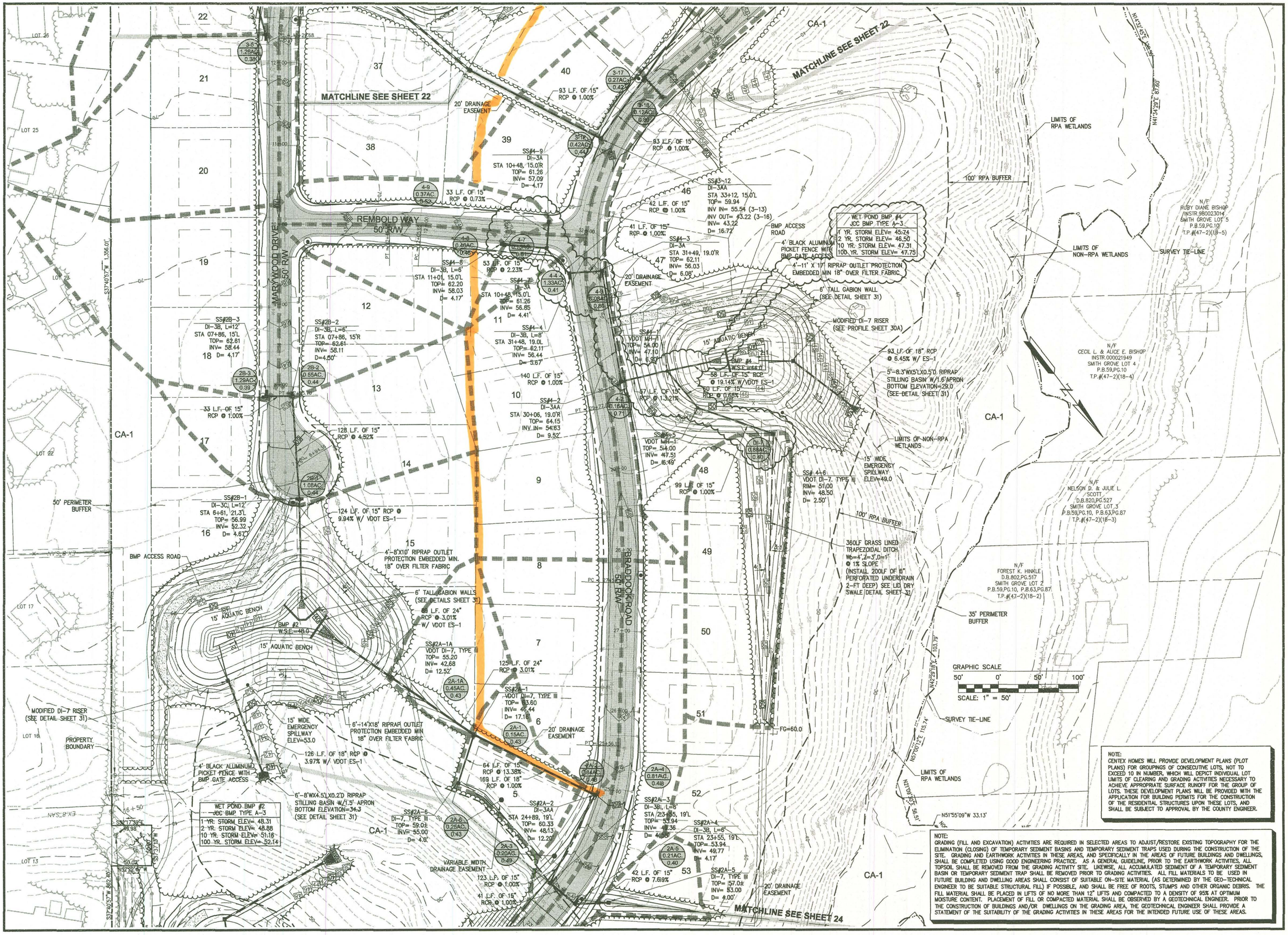
GRADING AND DRAINAGE PLAN
MARYWOOD SUBDIVISION
JAMES CITY COUNTY VIRGINIA
JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 22	



NOTE:
CENTEX HOMES WILL PROVIDE DEVELOPMENT PLANS (PLOT PLANS) FOR GROUPINGS OF CONSECUTIVE LOTS, NOT TO EXCEED 10 IN NUMBER, WHICH WILL DEPICT INDIVIDUAL LOT LIMITS OF CLEARING AND GRADING ACTIVITIES NECESSARY TO ACHIEVE APPROPRIATE SURFACE RUNOFF FOR THE GROUP OF LOTS. THESE DEVELOPMENT PLANS WILL BE PROVIDED WITH THE APPLICATION FOR BUILDING PERMITS FOR THE CONSTRUCTION OF THE RESIDENTIAL STRUCTURES UPON THESE LOTS, AND SHALL BE SUBJECT TO APPROVAL BY THE COUNTY ENGINEER.

NOTE:
GRADING (FILL AND EXCAVATION) ACTIVITIES ARE REQUIRED IN SELECTED AREAS TO ADJUST/RESTORE EXISTING TOPOGRAPHY FOR THE ELIMINATION (CLOSING) OF TEMPORARY SEDIMENT BASINS AND TEMPORARY SEDIMENT TRAPS USED DURING THE CONSTRUCTION OF THE SITE. GRADING AND EARTHWORK ACTIVITIES IN THESE AREAS, AND SPECIFICALLY IN THE AREAS OF FUTURE BUILDINGS AND DWELLINGS, SHALL BE COMPLETED USING GOOD ENGINEERING PRACTICE. AS A GENERAL GUIDELINE, PRIOR TO THE EARTHWORK ACTIVITIES, ALL TOPSOIL SHALL BE REMOVED FROM THE GRADING ACTIVITY SITE. LIKEWISE, ALL ACCUMULATED SEDIMENT OF A TEMPORARY SEDIMENT BASIN OR TEMPORARY SEDIMENT TRAP SHALL BE REMOVED PRIOR TO GRADING ACTIVITIES. ALL FILL MATERIALS TO BE USED IN FUTURE BUILDING AND DWELLING AREAS SHALL CONSIST OF SUITABLE ON-SITE MATERIAL (AS DETERMINED BY THE GEO-TECHNICAL ENGINEER TO BE SUITABLE STRUCTURAL FILL) IF POSSIBLE, AND SHALL BE FREE OF ROOTS, STUMPS AND OTHER ORGANIC DEBRIS. THE FILL MATERIAL SHALL BE PLACED IN LIFTS OF NO MORE THAN 12" LIFTS AND COMPACTED TO A DENSITY OF 95% AT OPTIMUM MOISTURE CONTENT. PLACEMENT OF FILL OR COMPACTED MATERIAL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER. PRIOR TO THE CONSTRUCTION OF BUILDINGS AND/OR DWELLINGS ON THE GRADING AREA, THE GEOTECHNICAL ENGINEER SHALL PROVIDE A STATEMENT OF THE SUITABILITY OF THE GRADING ACTIVITIES IN THESE AREAS FOR THE INTENDED FUTURE USE OF THESE AREAS.

No.	DATE	REVISION / COMMENT / NOTE	BY
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
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11	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG

COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040170
11/29/07
PROFESSIONAL ENGINEER

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CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

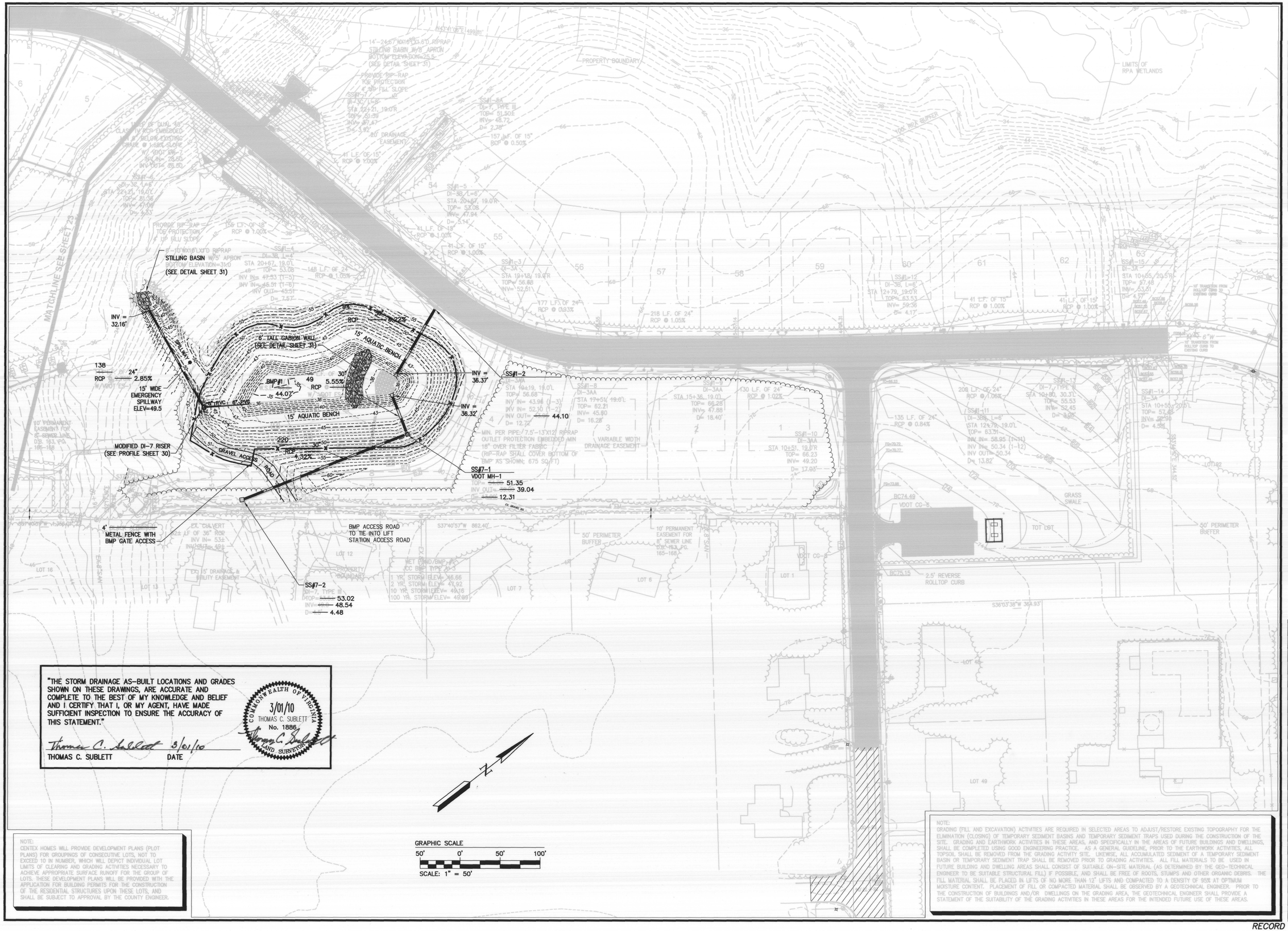
GRADING AND DRAINAGE PLAN
MARYWOOD SUBDIVISION

JAMES CITY COUNTY VIRGINIA
JAMESTOWN DISTRICT

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 23



"THE STORM DRAINAGE AS-BUILT LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS, ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAVE MADE SUFFICIENT INSPECTION TO ENSURE THE ACCURACY OF THIS STATEMENT."

COMMONWEALTH OF VIRGINIA
3/01/10
THOMAS C. SUBLETT
No. 1886
LAND SURVEYOR

Thomas C. Sublett 3/01/10
THOMAS C. SUBLETT DATE

NOTE:
CENTEX HOMES WILL PROVIDE DEVELOPMENT PLANS (PLOT PLANS) FOR GROUPINGS OF CONSECUTIVE LOTS, NOT TO EXCEED 10 IN NUMBER, WHICH WILL DEPICT INDIVIDUAL LOT LIMITS OF CLEARING AND GRADING ACTIVITIES NECESSARY TO ACHIEVE APPROPRIATE SURFACE RUNOFF FOR THE GROUP OF LOTS. THESE DEVELOPMENT PLANS WILL BE PROVIDED WITH THE APPLICATION FOR BUILDING PERMITS FOR THE CONSTRUCTION OF THE RESIDENTIAL STRUCTURES UPON THESE LOTS, AND SHALL BE SUBJECT TO APPROVAL BY THE COUNTY ENGINEER.

NOTE:
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No.	DATE	REVISION / COMMENT / NOTE	BY
1	3/10	RECORD DRAWINGS	VMB

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-9994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

WETPOND BMP #1 AS-BUILT
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

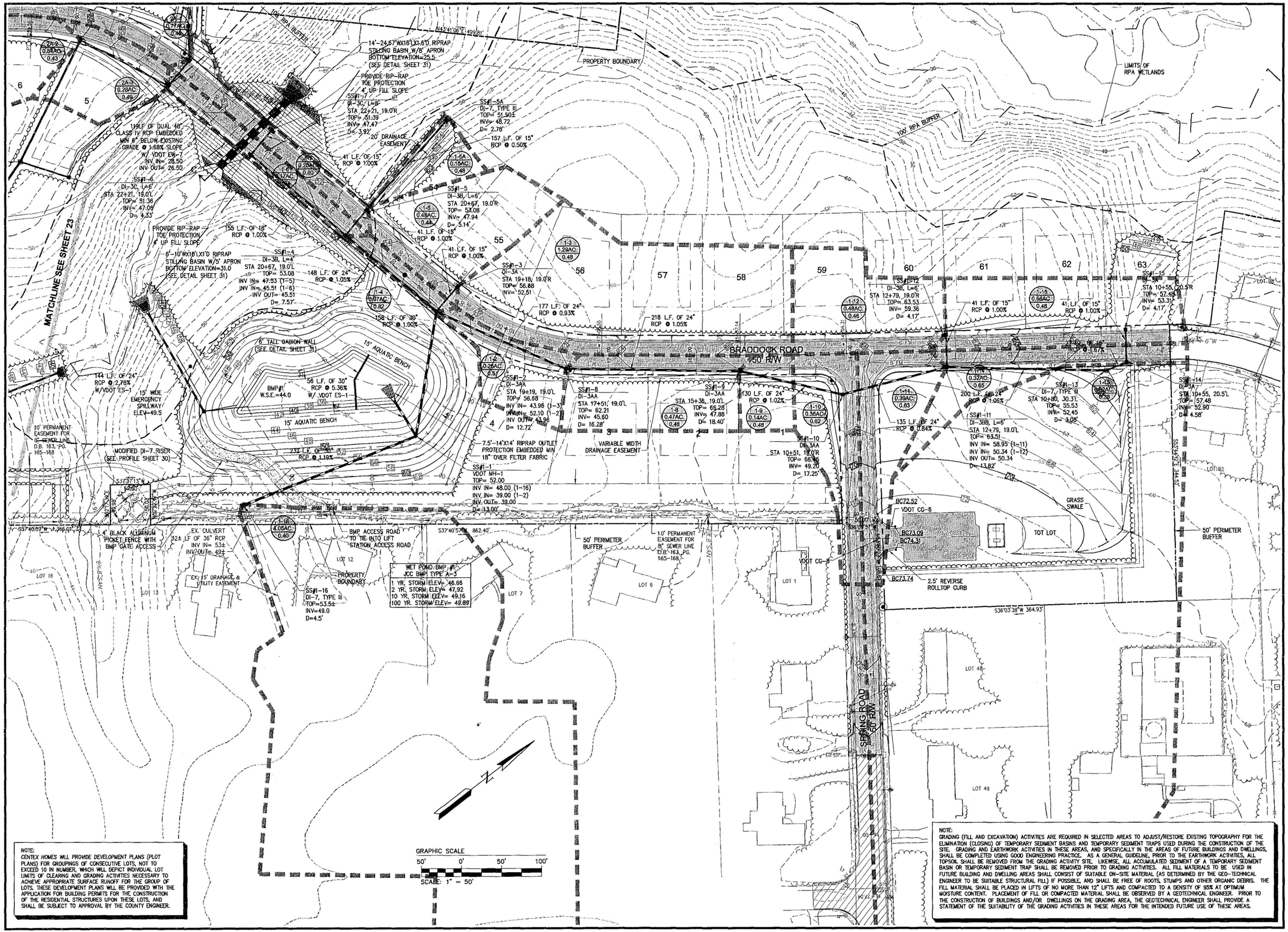
Designed	Drawn
AES	JFS
Scale	Date
1" = 50'	3/01/10

Project No. 9272

Drawing No. 24

RECORD DRAWING-3/10

Use the outer circles for creating the view named "Plot" to be used with the JDL 5000 plotter
Use the inner circles for creating the view named "PlotHalf" to be used with the JDL 5000 plotter for Half scale plots



NOTE:
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3	10/05	REVISED PER JCC COMMENTS 8/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. JAMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

GRADING AND DRAINAGE PLAN

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed JAG/MJR	Drawn GVC/MJR
Scale 1" = 50'	Date 8/23/07
Project No. 9272	
Drawing No. 24	

NOTE:
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3	10/05	REVISED PER JCC COMMENTS 6/05	NMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	NMB
1			

COMMONWEALTH OF VIRGINIA
JAMES A. MATHEWS
No. 040170
PROFESSIONAL ENGINEER
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

GRADING AND DRAINAGE PLAN
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
1" = 50'	8/23/07

Project No. 9272

Drawing No. 25

NOTE:
FROM THE MARYWOOD SUBDIVISION DAM BREACH ANALYSIS PREPARED BY WILLIAMSBURG ENVIRONMENTAL GROUP, INC. THE MAXIMUM RESULTING SURFACE ELEVATION DUE TO A BREACH OF BMP MC 038 IS ESTIMATED AT 50.93 FT MSL. WEG RECOMMENDS THAT FINISHED FLOOR ELEVATION IS HELD ABOVE 52.0 FT.

NOTE:
FROM THE MARYWOOD SUBDIVISION DAM BREACH ANALYSIS PREPARED BY WILLIAMSBURG ENVIRONMENTAL GROUP, INC. THE MAXIMUM RESULTING SURFACE ELEVATION DUE TO A BREASH OF BMP MC 039 IS ESTIMATED AT 55.87 FT MSL. WEG RECOMMENDS THAT FINISHED FLOOR ELEVATION IS HELD ABOVE 57.0 FT.

NOTE:
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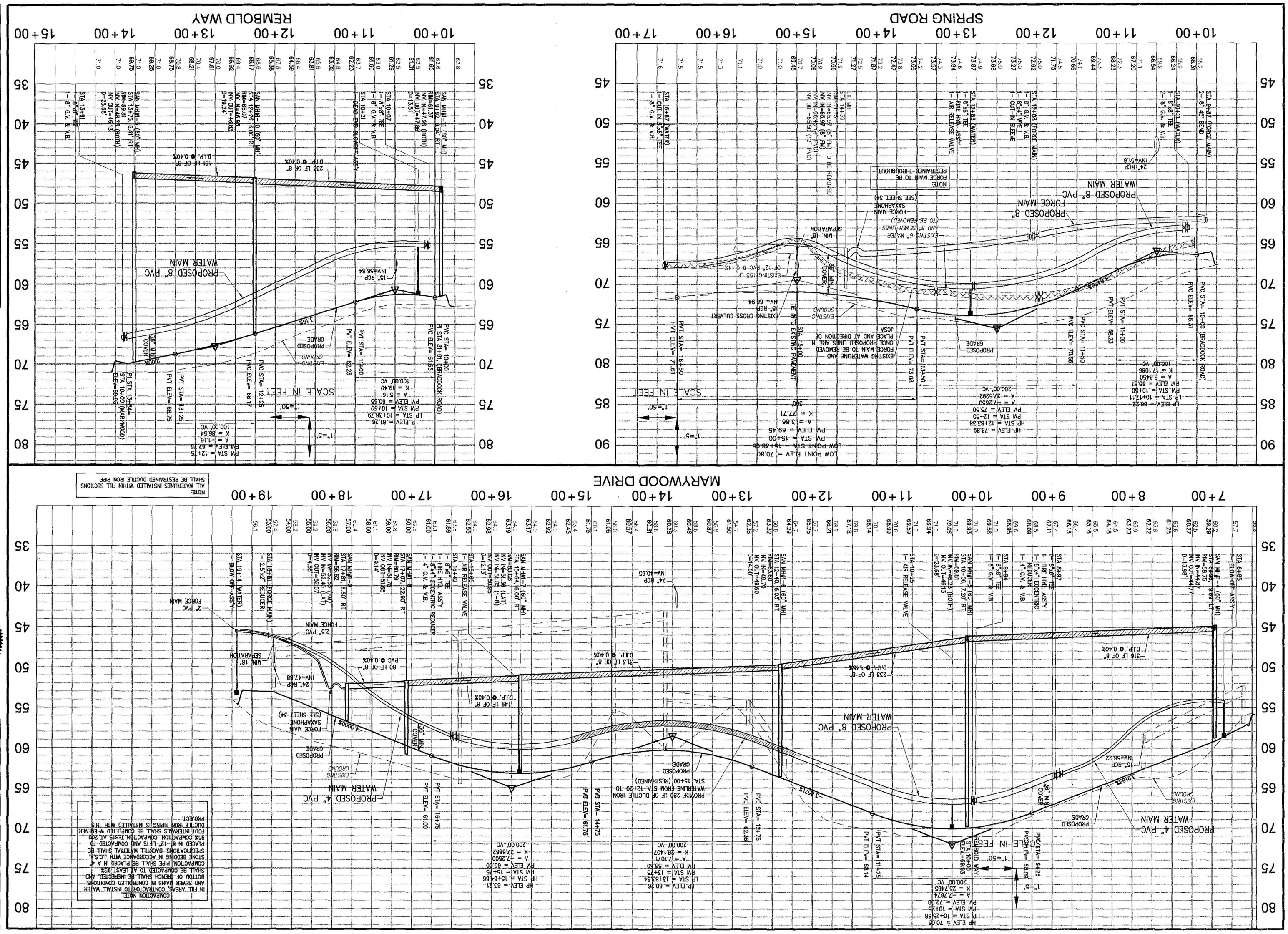
WET POND BMP #5
JCC BMP TYPE A-3
1 YR. STORM ELEV= 57.01
2 YR. STORM ELEV= 57.91
10 YR. STORM ELEV= 58.56
100 YR. STORM ELEV= 59.60

GRAPHIC SCALE
50' 0' 50' 100'
SCALE: 1" = 50'



ROAD AND UTILITY PROFILES

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn	Date	Scale	Project No.	Drawing No.
JAG/MJR	MJR	8/23/07	NOTED	9272	26

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
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WILLIAMSBURG • RICHMOND

COMMONWEALTH OF VIRGINIA — JASON A. GRIMES — No. 040170 — PROFESSIONAL ENGINEER — 8/23/07

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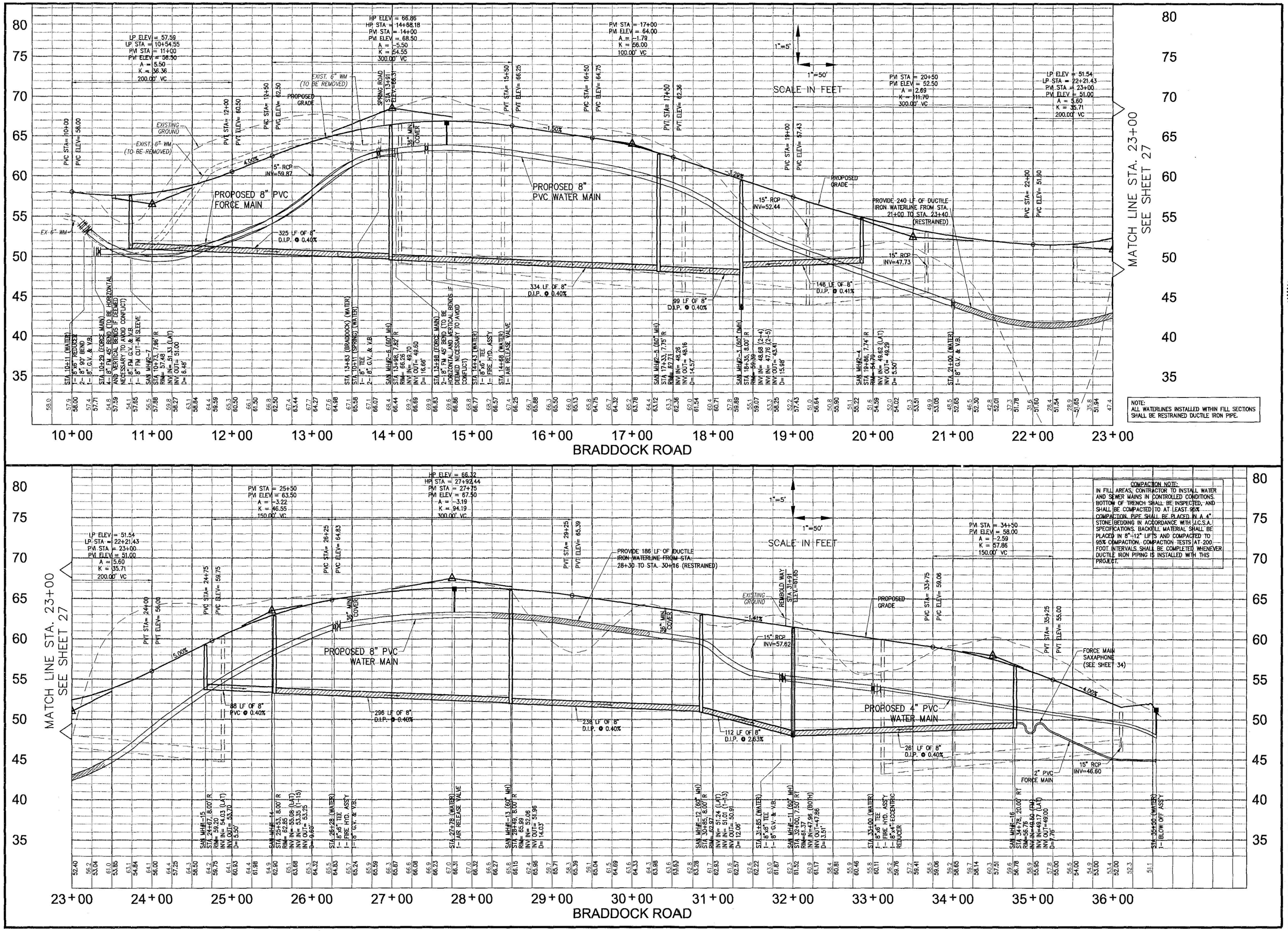

NOTE:
ALL WATERLINES INSTALLED WITHIN FILL SECTIONS SHALL BE RESTRAINED DUCTILE IRON PIPE.

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1			

COMMONWEALTH OF VIRGINIA
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8/23/07

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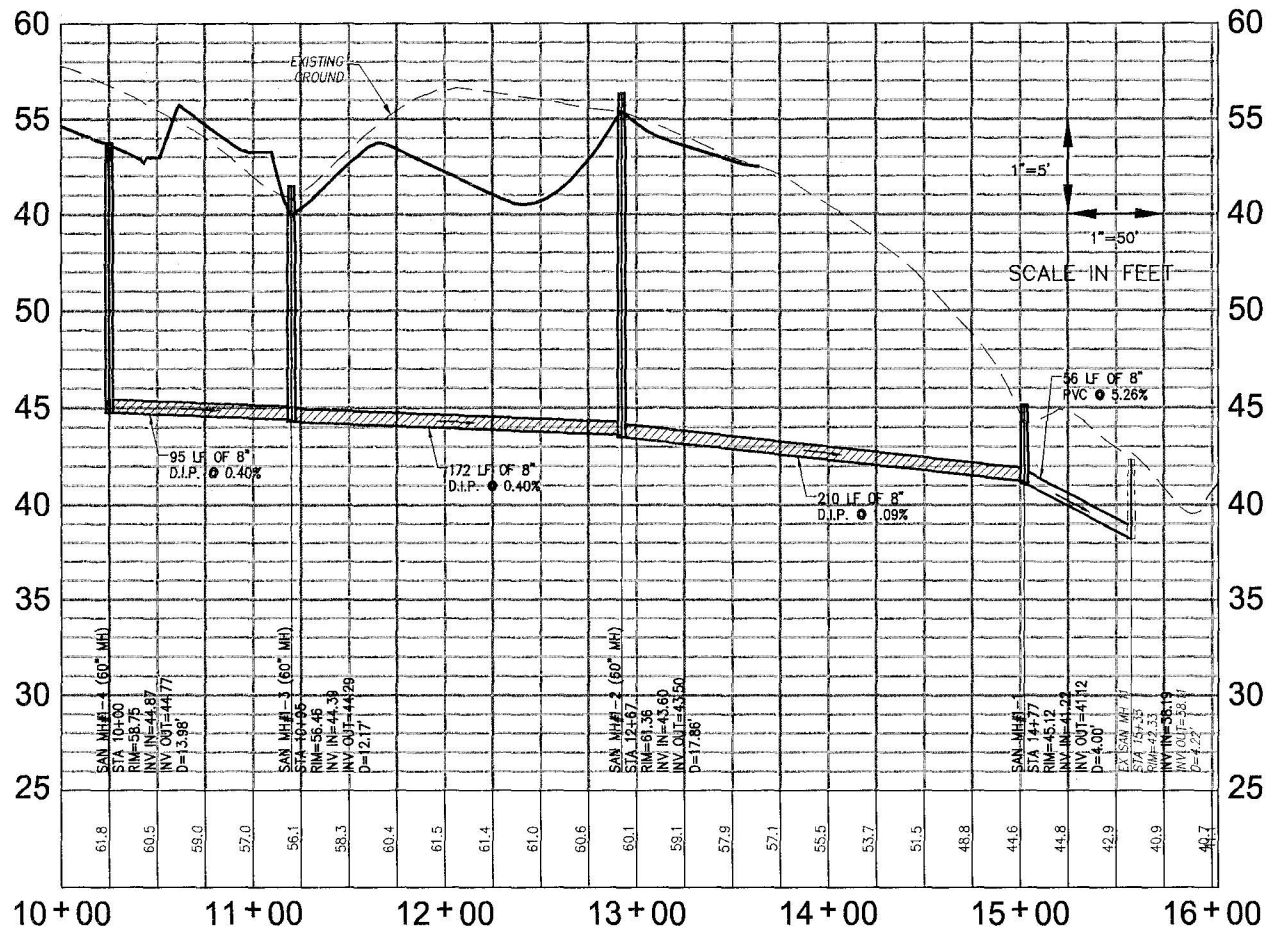
ROAD AND UTILITY PROFILES
MARYWOOD SUBDIVISION
JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

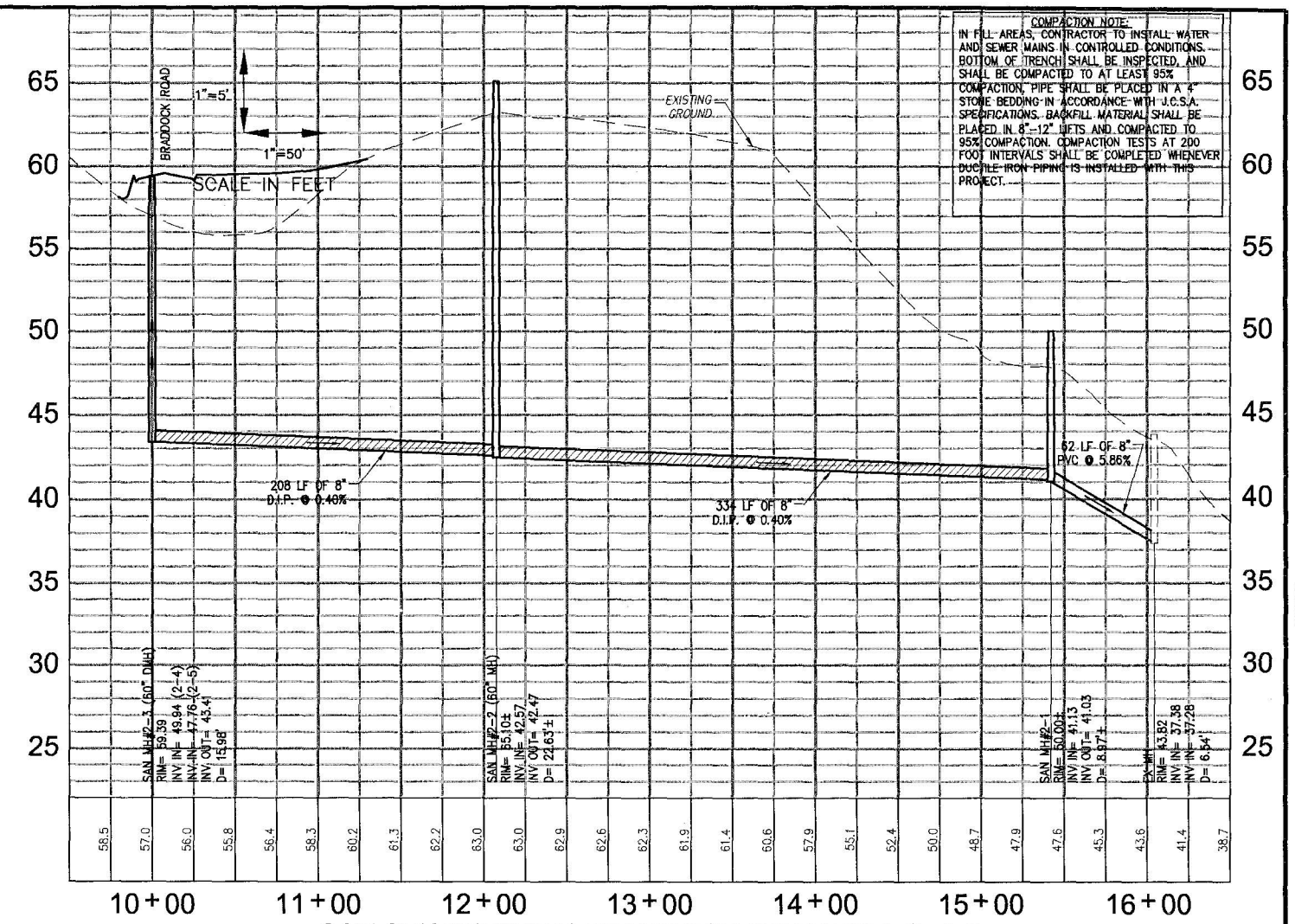
Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

Project No. 9272

Drawing No. 27



SAN SEWER FROM MARYWOOD DRIVE TO LIFT STATION 4-3



SAN SEWER FROM BRADDOCK ROAD TO L.S. 4-3

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COMMONWEALTH OF VIRGINIA
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8/23/07
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ROAD AND UTILITY PROFILES

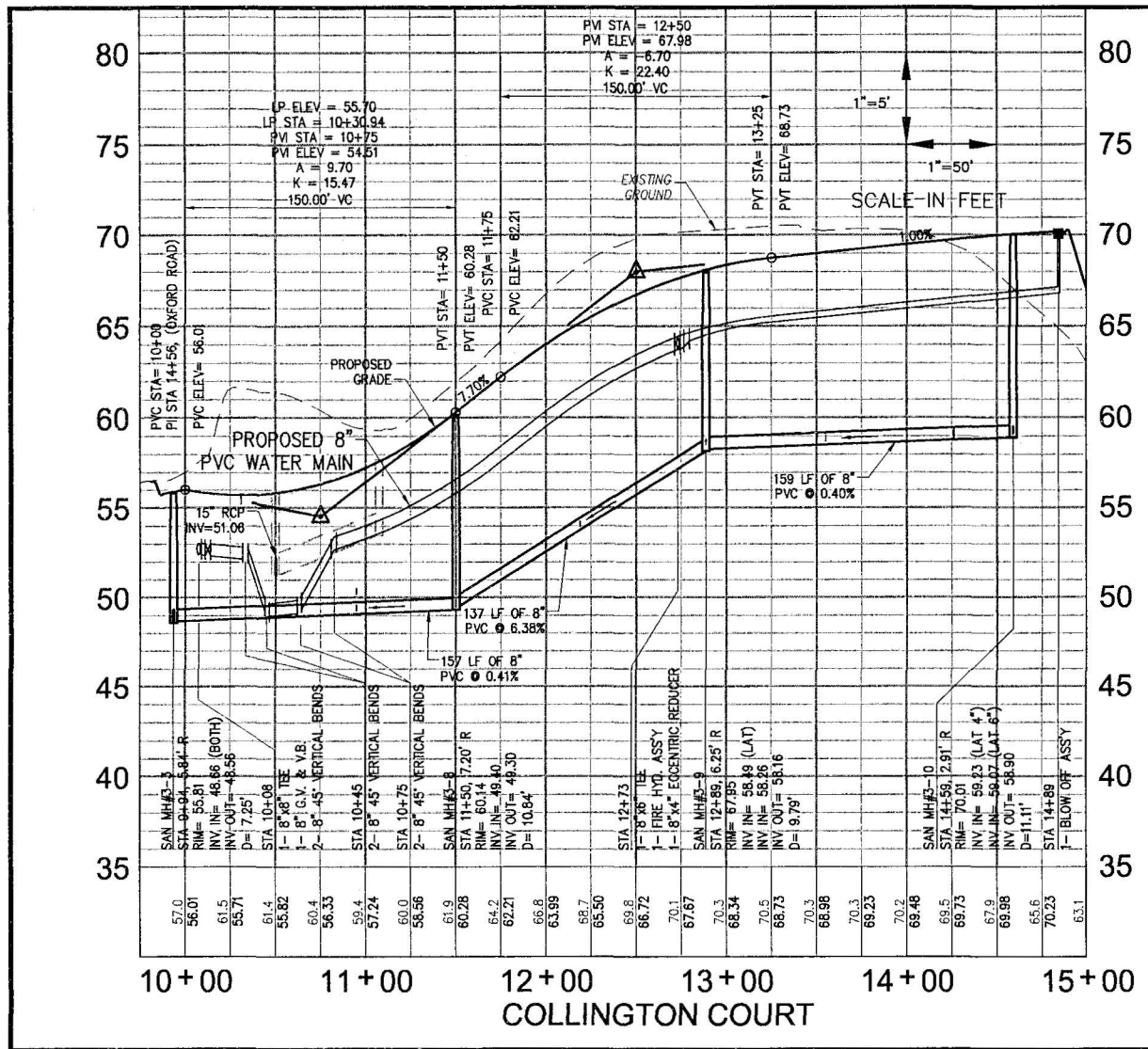
MARYWOOD SUBDIVISION

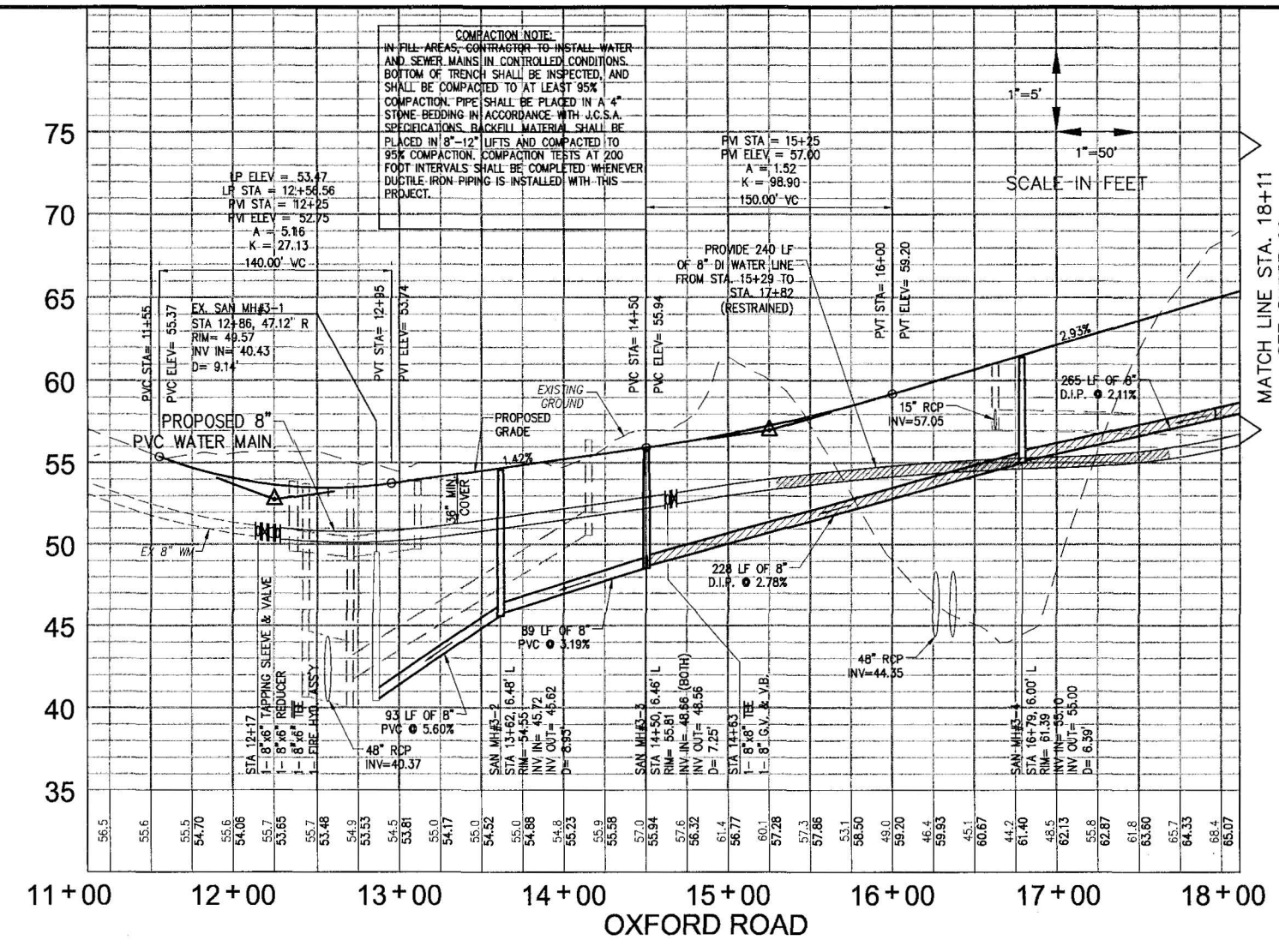
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

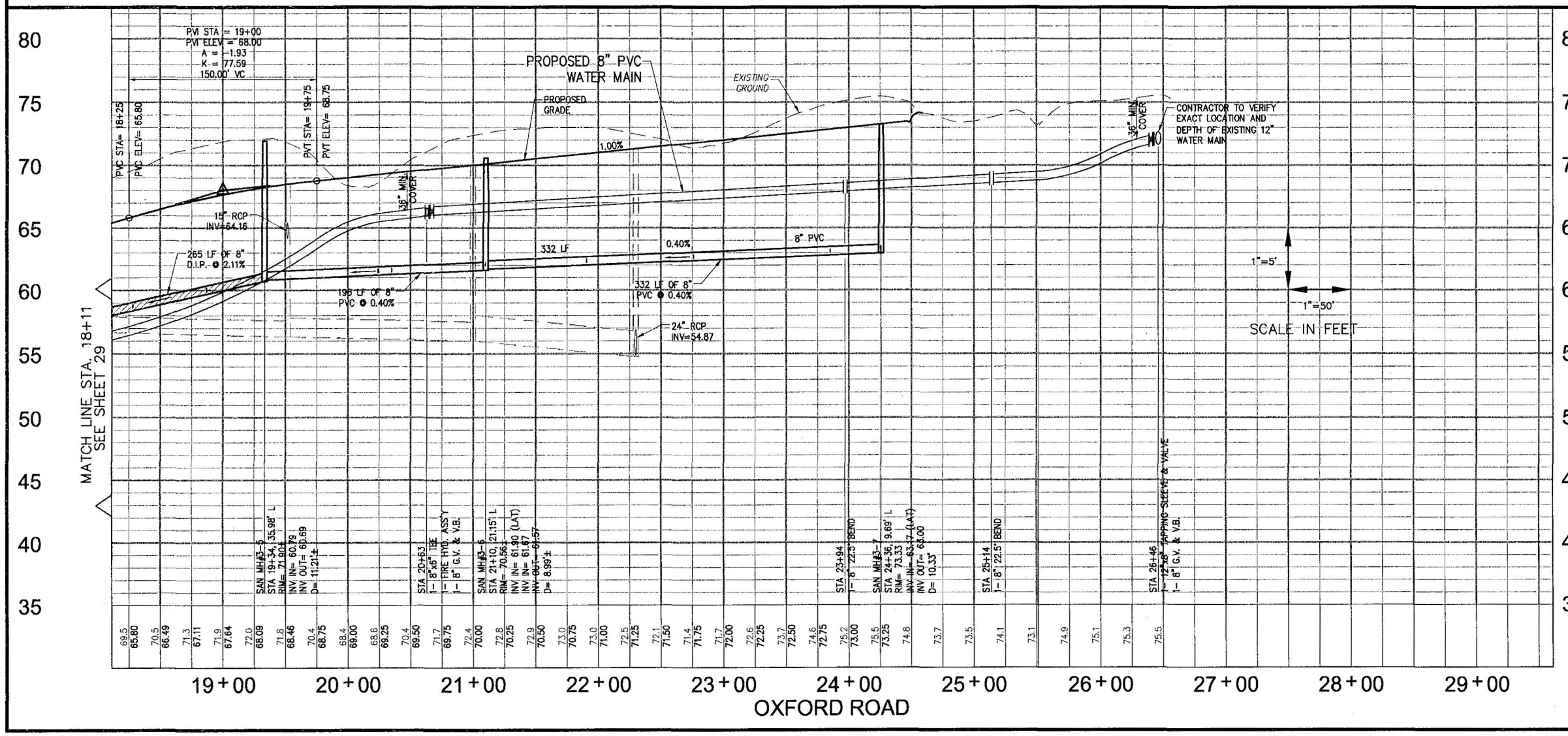
Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

Project No. 9272

Drawing No. 28







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ROAD AND UTILITY PROFILES

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

Project No. 9272

Drawing No. 29

GENERAL NOTES FOR CONSTRUCTION OF STORMWATER BASINS

1. THE CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS NEEDED TO CONSTRUCT THE STORMWATER BASIN, STORMWATER MANAGEMENT PONDS, BEST MANAGEMENT PRACTICES, SEDIMENT BASINS AND SEDIMENT TRAPS. THE WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETION OF GRADING AND EARTHWORK ASSOCIATED WITH THE CONSTRUCTION.

2. THE CONTRACTOR SHALL CONSULT AND PROVIDE FOR THE SERVICES OF A GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PROVIDE TEST RESULTS ON PLACED DAM MATERIALS, IDENTIFYING SOIL CLASSIFICATION, PERMEABILITY, PLASTICITY INDEX, AND COMPACTION. ALL TESTS SHALL BE IN CONFORMANCE WITH ASTM STANDARDS. THE COST OF THE SERVICES OF THE GEOTECHNICAL ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SATISFACTORY GEOTECHNICAL RESULTS ARE NEEDED PRIOR TO FINAL APPROVAL.

3. ALL INSPECTIONS REQUIRED FOR THE WORK SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER AT THE EXPENSE OF THE GENERAL CONTRACTOR.

4. ON-SITE EXCAVATED MATERIAL, IF DETERMINED SUITABLE FOR USE IN DAM CONSTRUCTION BY A GEOTECHNICAL ENGINEER, MAY BE USED FOR DAM CONSTRUCTION. SHOULD ADDITIONAL MATERIAL BE REQUIRED, THE CONTRACTOR SHALL IDENTIFY THE NEED FOR MATERIAL TO THE OWNER, AS ADDITIONAL BORROW MATERIAL MAY BE AVAILABLE ON-SITE. ALL EXCAVATED MATERIAL DETERMINED BY THE GEOTECHNICAL ENGINEER TO BE UNSUITABLE SHALL BE DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILLING SHALL EITHER BE DEPOSITED ON SITE AND SPREAD BY THE CONTRACTOR, OR SHALL BE DEPOSITED IN ANOTHER AREA ON THE SITE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE PROPER STABILIZATION, AND EROSION AND SEDIMENT CONTROL MEASURES AS MAY BE REQUIRED TO CONTROL EROSION AND SEDIMENTATION AT EARTHWORK AND STOCKPILE LOCATIONS PER THE VESCH THIRD EDITION.

5. UNDERCUT FOR THE FOUNDATION OF THE DAM EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. THE FOUNDATION SHALL BE BACKFILLED WITH SOILS CLASSIFIED AS SM, SC, OR CL UNDER THE UNIFIED SOIL CLASSIFICATION SYSTEM, UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER. SOILS SHALL HAVE A MINIMUM OF 15% BY WEIGHT FINES, HAVING A PLASTICITY INDEX OF 30% AND A PERMEABILITY OF 0.0004 IN./SEC. OR LESS. FILL SHALL BE COMPACTED IN 12-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO A DRY DENSITY OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). EXCAVATION FOR THE DAM KEY SHALL BE IN ACCORDANCE TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. HEIGHT, DEPTH, AND WIDTH OF THE KEY SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE KEY SHALL BE FORMED USING SOILS CLASSIFIED AS SC OR CL, WITH A PERMEABILITY OF 0.0004 IN./SEC. OR LESS, UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER.

6. THE DAM CORE SHALL BE AS CONSTRUCTED WITH NON-EXPANSIVE SC OR CL CLAYEY MATERIAL WITH PERMEABILITY OF 0.0004 IN./SEC. OR LESS. THE FILL OF THE CORE SHALL BE MADE IN 12-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). SIZE, SHAPE, WIDTH, DEPTH, AND HEIGHT OF THE DAM CORE SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. TO COVER THE DAM CORE, A SILTY FINE SAND OR CLAYEY SOIL (SM, SC, OR CL) SHALL BE PLACED. A VEGETATIVE COVER USING VDOT EC-2 EROSION CONTROL BLANKETS SHALL BE PLACED ON DAM SLOPES AND CREST TO PREVENT EROSION.

7. UPON COMPLETION, THE CONSTRUCTION OF THE DAM WILL BE CERTIFIED BY A GEOTECHNICAL ENGINEER WHO HAS INSPECTED THE STRUCTURE DURING CONSTRUCTION.

8. A RECORD DRAWING (AS-BUILT) SHALL BE SUBMITTED, REVIEWED, AND APPROVED PRIOR TO RELEASE OF THE POSTED BOND / SURETY.

GEOTECHNICAL ENGINEER'S EARTHWORK RECOMMENDATIONS

1. PRIOR TO INITIATION OF EARTHWORK OPERATIONS, ANY STREAM FLOWS SHOULD BE DIVERTED SO THAT SURFACE WATER DOES NOT ENTER AREAS OF FILL PLACEMENT. THIS COULD BE ACCOMPLISHED WITH DIVERSION DITCHES AND SUMP PUMPS.

2. SUBGRADE PREPARATION SHOULD INCLUDE REMOVAL OF TOPSOIL, ORGANIC MATERIAL, AND ANY STREAM SEDIMENT, COBBLES, OR OTHER POROUS MATERIALS FROM BELOW THE DAM EMBANKMENTS. REMOVAL OF THESE MATERIALS SHOULD BE EXTENDED TO AT LEAST 5 FEET BEYOND THE PLANNED EDGE OF THE DAM EMBANKMENTS. EMBANKMENT SUBGRADES SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO FILL PLACEMENT TO ASSURE THAT SUITABLE SUBGRADE MATERIALS HAVE BEEN EXPOSED.

3. THE FOLLOWING FILL TYPES ARE RECOMMENDED ON THIS PROJECT

DAM EMBANKMENT FILL: INORGANIC SOILD MATERIAL CLASSIFIED AS SC, CL, CH, OR ML CONTAINING AT LEAST 35% FINES (SILT AND CLAY) AND HAVING A MAXIMUM LIQUID LIMIT OF 60. MAXIMUM ROCK SIZE SHOULD BE LIMITED TO 6 INCHES. THE GEOTECHNICAL ENGINEER SHOULD BE CALLED ON AS THE IMPOUNDMENTS ARE MADE TO HELP IDENTIFY FOR THE CONTRACTOR SUITABLE DAM EMBANKMENT FILL MATERIALS.

SOIL LINER FILL (SOIL WHICH WILL BE USED IN POND BOTTOMS TO RESTRICT SEEPAGE): INORGANIC SOILD MATERIAL CLASSIFIED AS CL, ML, MH, OR CH CONTAINING AT LEAST 60% FINES (SILT AND CLAY). MAXIMUM ROCK SIZE SHOULD BE LIMITED TO 6 INCHES. THE GEOTECHNICAL ENGINEER SHOULD BE CALLED ON AS THE IMPOUNDMENTS ARE MADE TO HELP IDENTIFY FOR THE CONTRACTOR SUITABLE SOIL LINER FILL MATERIALS.

4. ALL FILL SHOULD BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS (4 INCHES FOR LIGHT COMPACTION EQUIPMENT) AND MOISTURE CONDITIONED TO WITHIN +/- 3% OF THE SOIL'S OPTIMUM MOISTURE CONTENT PRIOR TO COMPACTION. COMPACTION SHOULD BE ACCOMPLISHED USING SHEEPSFOOT ROLLERS, OR A VIBRATORY DRUM ROLLER FOR MORE GRANULAR SOILS, UNITIL A MINIMUM DENSITY OF 95% OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698) IS ACHIEVED. CARE SHOULD BE EXERCISED TO ACHIEVE THOROUGH COMPACTION ON SLOPING SURFACES. A QUALIFIED SOILS TECHNICIAN UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER SHOULD BE CALLED ON TO PROVIDE COMPACTION TESTING DURING THE FILL PLACEMENT TO ASSURE THAT THE MINIMUM COMPACTION REQUIREMENTS ARE BEING MET. AT LEAST 1 TEST PER 5,000 SQUARE FEET PER LIFT SHOULD BE PERFORMED. COMPACTION TESTING IN TRENCHES SHOULD BE PERFORMED AT A RATE OF AT LEAST 1 TEST PER 50 LINEAR FEET PER LIFT.

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7. IT IS EXPECTED THAT MOST SOILS EXCAVATED FROM THE IMPOUNDMENTS WILL BE WET OF THEIR OPTIMUM MOISTURE CONTENT. EXCESSIVELY WET SOILS SHOULD BE SPREAD, MANIPULATED, AND MOISTURE CONDITIONED TO WITHIN +/- 3% OF THEIR OPTIMUM MOISTURE CONTENT PRIOR TO COMPACTION. THE CONTRACTOR SHOULD CONSIDER THIS IN THE SCHEDULE AND EQUIPMENT PLANNING.

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9. DAM MAINTENANCE IS AN ESSENTIAL REQUIREMENT FOR ASSURING THAT DAMS PERFORM AS INTENDED OVER TIME. THE EMBANKMENT SHOULD BE PERIODICALLY INSPECTED FOR INDICATIONS OF SEEPAGE AND EROSION. TREES SHOULD BE KEPT FROM GROWING ON THE EMBANKMENTS, HEAVY GRASS GROWTH SHOULD BE MAINTAINED, AND ANIMAL BURROWS SHOULD BE FILLED. PIPES SHOULD BE INSPECTED FOR INDICATIONS OF LEAKAGE OR FOR THE PRESENCE OF SEDIMENT, WHICH MIGHT INDICATE LEAKAGE. IF DETERIORATION WHICH MIGHT COMPROMISE THE PERFORMANCE OR SAFETY OF THE DAM IS OBSERVED, A QUALIFIED GEOTECHNICAL ENGINEER SHOULD BE CALLED ON TO ASSIST IN THE REPAIR.

CONVERSION OF SEDIMENT BASIN INTO BMP FACILITIES

THE FACILITY WILL INITIALLY FUNCTION AS A SEDIMENT BASIN UNITIL J.C.C. ENVIRONMENTAL DIVISION GIVES WRITTEN CONCURRENCE TO MODIFY THE SEDIMENT BASIN. AT SUCH TIME ANY EXCESS EARTH OR SEDIMENT SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. POND CONTOURS SHALL BE REGRADED TO FINAL DESIGN (PER PLANS). THE DEWATERING ORIFICE SHALL BE REMOVED AND THE LOW FLOW ORIFICE VALVE SHALL BE OPENED AND THE MICROPOOL CREATED.

POND NOTES:

1. RISER AND BARREL PIPE SHALL BE WATERTIGHT CLASS III CONCRETE MEETING THE REQUIREMENTS OF ASTM C361.
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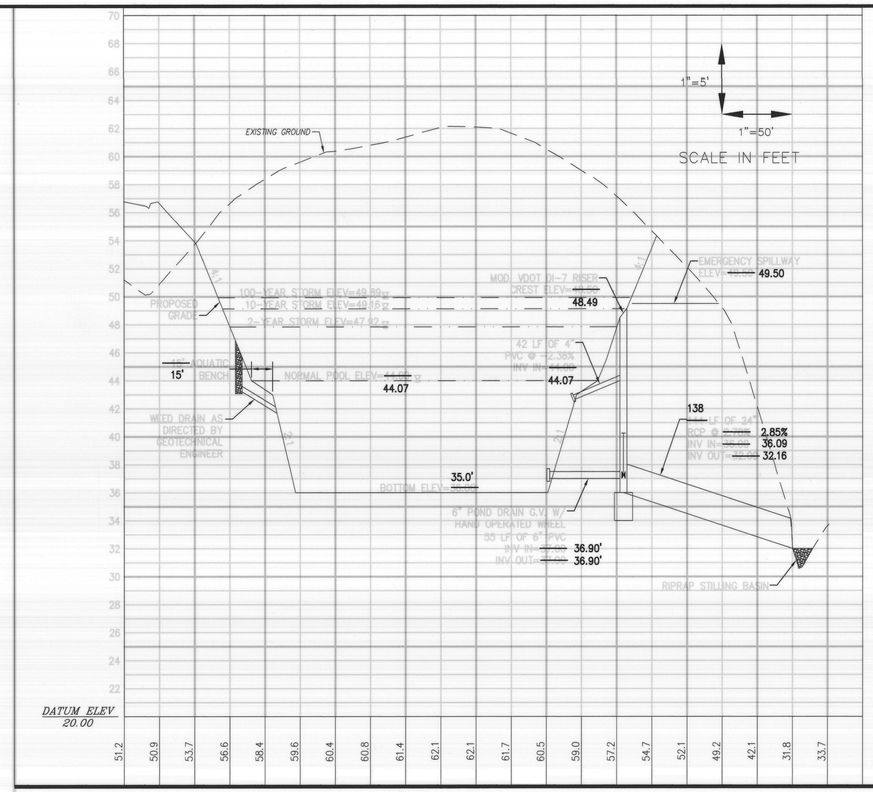
3. *VDOT DOES NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF THE STORMWATER MANAGEMENT POND OR ITS STRUCTURES, AND* SHALL BE SAVED HARMLESS FROM ANY DAMAGE CAUSED BY FAILURE OF THE SAME.



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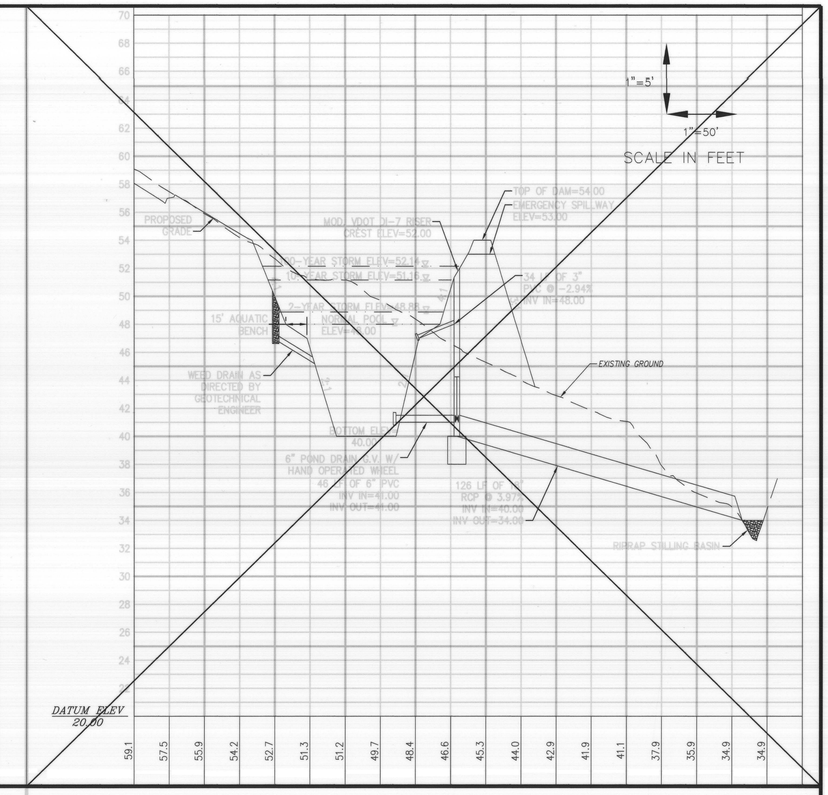

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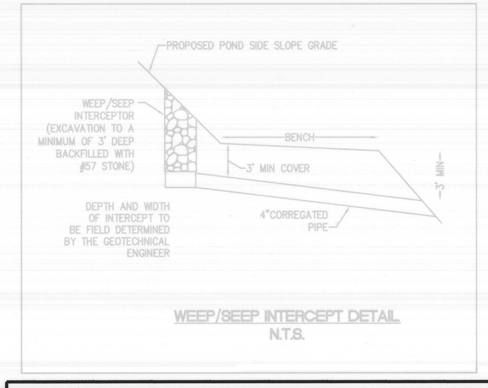


WEEP/SEEP INTERCEPT DETAIL
N.T.S.

"THE STORM DRAINAGE AS-BUILT LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS, ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAVE MADE SUFFICIENT INSPECTION TO ENSURE THE ACCURACY OF THIS STATEMENT."

Thomas C. Sublett 3/01/10
THOMAS C. SUBLETT DATE

COMMONWEALTH OF VIRGINIA
3/01/10
THOMAS C. SUBLETT
No. 1886
LAND SURVEYOR

STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

PROPER MAINTENANCE OF THIS FACILITY IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT IN TO THE FACILITY, SPILLWAY(S) AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION OF THE FACILITY AND ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL FROM THE FACILITY WILL BE REQUIRED ONCE EVERY 10 YEARS. IF OTHER CONSTRUCTION OR RELATED ACTIVITIES ARE PERFORMED ON UPSLOPE PARCELS, ADEQUATE PROTECTION SHOULD BE PROVIDED AND INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY OF THESE NEWLY DISTRIBUTED AREAS AS WELL AS INSPECTIONS FOR ACCUMULATED SEDIMENTS AT THE BMP FACILITY.

A DESIGNATED REPRESENTATIVE OF THE OWNER WILL INSPECT THE BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE, APPROPRIATE ACTION, PERFORMED AT THE COST OF THE OWNER, WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. KEYS TO LOCKED ACCESS POINTS SHALL BE MADE AVAILABLE TO COUNTY INSPECTION PERSONNEL UPON REQUEST. INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

1. THE INSPECTION FOR SEDIMENT BUILDUP WILL BE PERFORMED BY VISUAL INSPECTION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE STORAGE AREA. SEDIMENT REMOVAL IS REQUIRED USING A RUBBER-WHEELED BACKHOE. AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, THE RISER BOTTOM AND OUTLET PIPE SHALL BE CLEANED OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA. SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE IN DEPTHS GREATER THAN 1-FOOT. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE TO PREVENT THE PROPER FUNCTION OF ANY PIPE OR CULVERT.

2. PERFORM MAINTENANCE MOWING OF GRASSED AREAS AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT. TREES AND SHRUBS SHOULD NOT BE PERMITTED TO GROW ON ANY PART OF THE GRADED EMBANKMENT.

3. PERFORM SOIL SAMPLING ON STABILIZED BMP SOIL AREAS ONCE EVERY FOUR (4) YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.

4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDLING RECOMMENDATIONS.

5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "CLOSED" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.

6. PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CONCRETE RISER, ANTI-VORTEX DEVICE, TRASH RACK, ORIFICE/WEIR(S), OUTLET BARREL AND POND EMBANKMENT. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE CONTINUED INTEGRITY OF THE STRUCTURE.

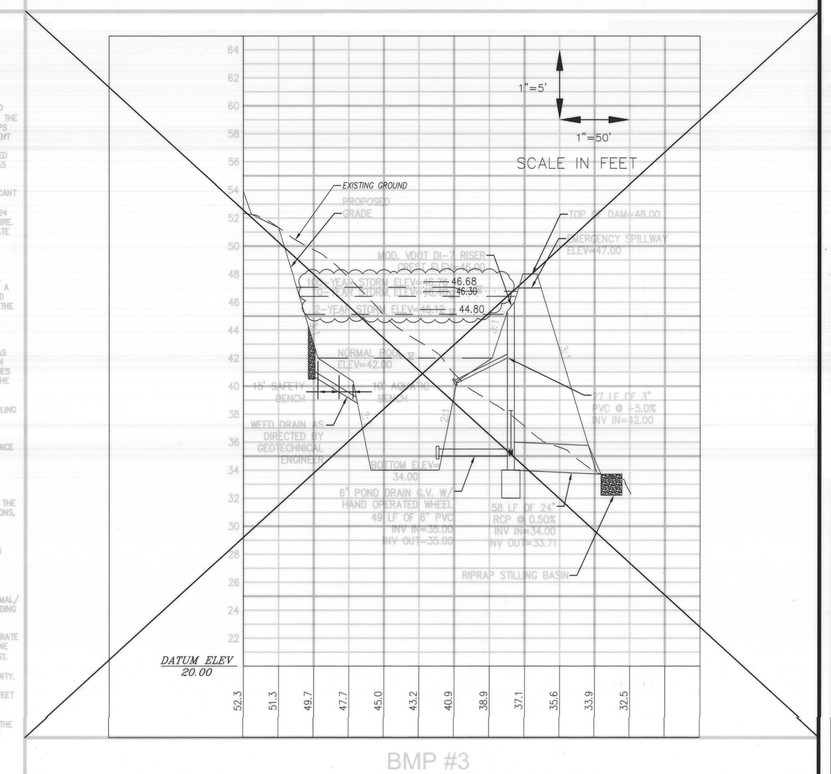
7. PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/ RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING AS APPROPRIATE.

8. RECORD KEEPING. THE LANDOWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OR INSPECTIONS PERFORMED FOR THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.

9. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/APPROVAL OF THE COUNTY.

10. YEARLY INSPECTIONS OF SEDIMENT FOREBAYS SHALL BE PERFORMED. AT ANY TIME MORE THAN 2 FEET OF SEDIMENT HAS ACCUMULATED FOREBAYS SHOULD BE DEWATERED AND SEDIMENT REMOVED.

11. SHOULD MAINTENANCE REQUIRE DEWATERING OF THE FACILITY, A DEWATERING DEVICE APPROVED BY THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION SHALL BE USED THAT IS RATED TO HANDLE THE MAXIMUM DISCHARGE OF THE DEWATERING PUMP. DISCHARGE FROM DEWATERING SHALL BE FOCUSED INTO THE DOWNSTREAM OUTLET PROTECTION OR THROUGH THE BMP OUTFALL BARREL.



BMP #3

No.	DATE	REVISION / COMMENT / NOTE	BY
1	3/10	RECORD DRAWINGS	VMB

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

WETPOND BMP #1 AS-BUILT
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
AES	JFS
Scale	Date
NOTED	3/01/10

Project No. 9272

Drawing No. 30

RECORD DRAWING-3/10

Use the outer circles for creating the view named "PlotHalf" to be used with the JDL 5000 plotter for Half scale plots
Use the inner circles for creating the view named "PlotHalf" to be used with the JDL 5000 plotter

GENERAL NOTES FOR CONSTRUCTION OF STORMWATER BASINS

1. THE CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS NEEDED TO CONSTRUCT THE STORMWATER BASIN, STORMWATER MANAGEMENT PONDS, BEST MANAGEMENT PRACTICES, SEDIMENT BASINS AND SEDIMENT TRAPS. THE WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NEEDED FOR THE COMPLETION OF GRADING AND EARTHWORK ASSOCIATED WITH THE CONSTRUCTION.

2. THE CONTRACTOR SHALL CONSULT AND PROVIDE FOR THE SERVICES OF A GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PROVIDE TEST RESULTS ON PLACED DAM MATERIALS, IDENTIFYING SOIL CLASSIFICATION, PERMEABILITY, PLASTICITY INDEX, AND COMPACTION. ALL TESTS SHALL BE IN CONFORMANCE WITH ASTM STANDARDS. THE COST OF THE SERVICES OF THE GEOTECHNICAL ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SATISFACTORY GEOTECHNICAL RESULTS ARE NEEDED PRIOR TO FINAL APPROVAL.

3. ALL INSPECTIONS REQUIRED FOR THE WORK SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER AT THE EXPENSE OF THE GENERAL CONTRACTOR.

4. ON-SITE EXCAVATED MATERIAL, IF DETERMINED SUITABLE FOR USE IN DAM CONSTRUCTION BY A GEOTECHNICAL ENGINEER, MAY BE USED FOR DAM CONSTRUCTION. SHOULD ADDITIONAL MATERIAL BE REQUIRED, THE CONTRACTOR SHALL IDENTIFY THE NEED FOR MATERIAL TO THE OWNER, AS ADDITIONAL BORROW MATERIAL MAY BE AVAILABLE ON-SITE. ALL EXCAVATED MATERIAL DETERMINED BY THE GEOTECHNICAL ENGINEER TO BE UNSUITABLE SHALL BE DISPOSED OF PROPERLY AT THE CONTRACTOR'S EXPENSE. ALL EXCAVATED MATERIAL NOT REQUIRED FOR BACKFILLING SHALL EITHER BE DEPOSITED ON SITE AND SPREAD BY THE CONTRACTOR, OR SHALL BE DEPOSITED IN ANOTHER AREA ON THE SITE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE PROPER STABILIZATION, AND EROSION AND SEDIMENT CONTROL MEASURES AS MAY BE REQUIRED TO CONTROL EROSION AND SEDIMENTATION AT EARTHWORK AND STOCKPILE LOCATIONS PER THE VESCH THIRD EDITION.

5. UNDERCUT FOR THE FOUNDATION OF THE DAM EMBANKMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. THE FOUNDATION SHALL BE BACKFILLED WITH SOILS CLASSIFIED AS SM, SC, OR CL UNDER THE UNIFIED SOIL CLASSIFICATION SYSTEM, UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER. SOILS SHALL HAVE A MINIMUM OF 15% BY WEIGHT FINES, HAVING A PLASTICITY INDEX OF 30% AND A PERMEABILITY OF 0.0004 IN./SEC. OR LESS. FILL SHALL BE COMPACTED IN 12-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO A DRY DENSITY OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). EXCAVATION FOR THE DAM KEY SHALL BE IN ACCORDANCE TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATION. HEIGHT, DEPTH, AND WIDTH OF THE KEY SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE KEY SHALL BE FORMED USING SOILS CLASSIFIED AS SC OR CL, WITH A PERMEABILITY OF 0.0004 IN./SEC. OR LESS, UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER.

6. THE DAM CORE SHALL BE AS CONSTRUCTED WITH NON-EXPANSIVE SC OR CL CLAYEY MATERIAL WITH PERMEABILITY OF 0.0004 IN./SEC. OR LESS. THE FILL OF THE CORE SHALL BE MADE IN 12-INCH LIFTS, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER, TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). SIZE, SHAPE, WIDTH, DEPTH, AND HEIGHT OF THE DAM CORE SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. TO COVER THE DAM CORE, A SILTY FINE SAND OR CLAYEY SOIL (SM, SC, OR CL) SHALL BE PLACED. A VEGETATIVE COVER USING VDOT EC-2 EROSION CONTROL BLANKETS SHALL BE PLACED ON DAM SLOPES AND CREST TO PREVENT EROSION.

7. UPON COMPLETION, THE CONSTRUCTION OF THE DAM WILL BE CERTIFIED BY A GEOTECHNICAL ENGINEER WHO HAS INSPECTED THE STRUCTURE DURING CONSTRUCTION.

8. A RECORD DRAWING (AS-BUILT) SHALL BE SUBMITTED, REVIEWED, AND APPROVED PRIOR TO RELEASE OF THE POSTED BOND / SURETY.

GEOTECHNICAL ENGINEER'S EARTHWORK RECOMMENDATIONS

1. PRIOR TO INITIATION OF EARTHWORK OPERATIONS, ANY STREAM FLOWS SHOULD BE DIVERTED SO THAT SURFACE WATER DOES NOT ENTER AREAS OF FILL PLACEMENT. THIS COULD BE ACCOMPLISHED WITH DIVERSION DITCHES AND SUMP PUMPS.

2. SUBGRADE PREPARATION SHOULD INCLUDE REMOVAL OF TOPSOIL, ORGANIC MATERIAL, AND ANY STREAM SEDIMENT, COBBLES, OR OTHER POROUS MATERIALS FROM BELOW THE DAM EMBANKMENTS. REMOVAL OF THESE MATERIALS SHOULD BE EXTENDED TO AT LEAST 5 FEET BEYOND THE PLANNED EDGE OF THE DAM EMBANKMENTS. EMBANKMENT SUBGRADES SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO FILL PLACEMENT TO ASSURE THAT SUITABLE SUBGRADE MATERIALS HAVE BEEN EXPOSED.

3. THE FOLLOWING FILL TYPES ARE RECOMMENDED ON THIS PROJECT

DAM EMBANKMENT FILL: INORGANIC SOILD MATERIAL CLASSIFIED AS SC, CL, CH, OR ML CONTAINING AT LEAST 35% FINES (SILT AND CLAY) AND HAVING A MAXIMUM LIQUID LIMIT OF 60. MAXIMUM ROCK SIZE SHOULD BE LIMITED TO 6 INCHES. THE GEOTECHNICAL ENGINEER SHOULD BE CALLED ON AS THE IMPOUNDMENTS ARE MADE TO HELP IDENTIFY FOR THE CONTRACTOR SUITABLE DAM EMBANKMENT FILL MATERIALS.

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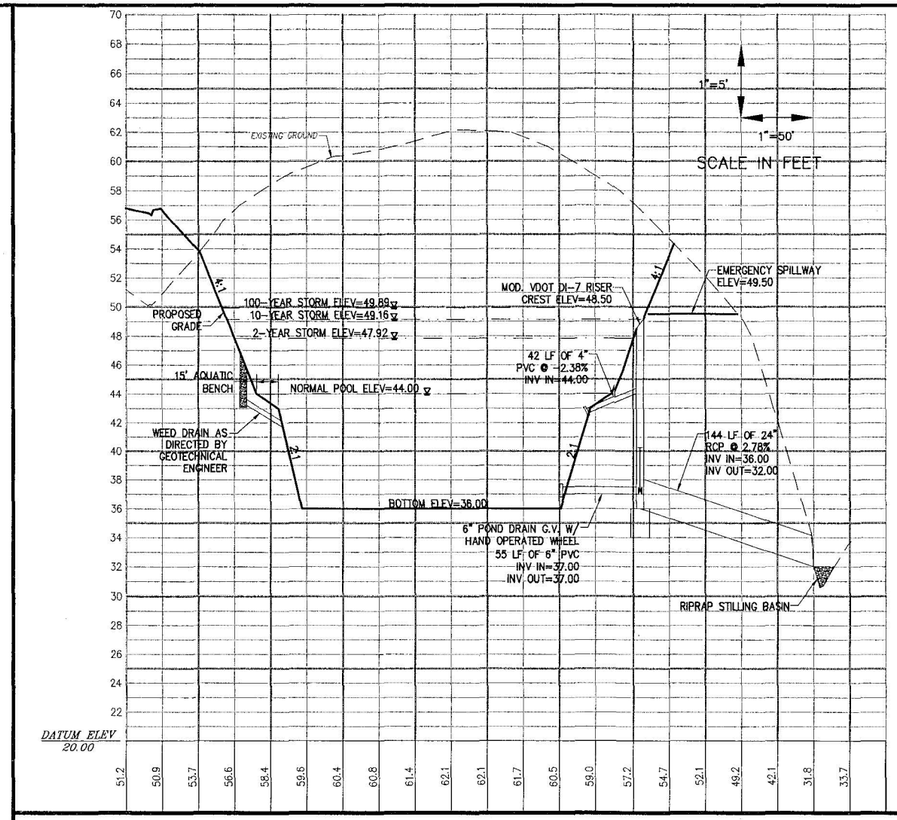

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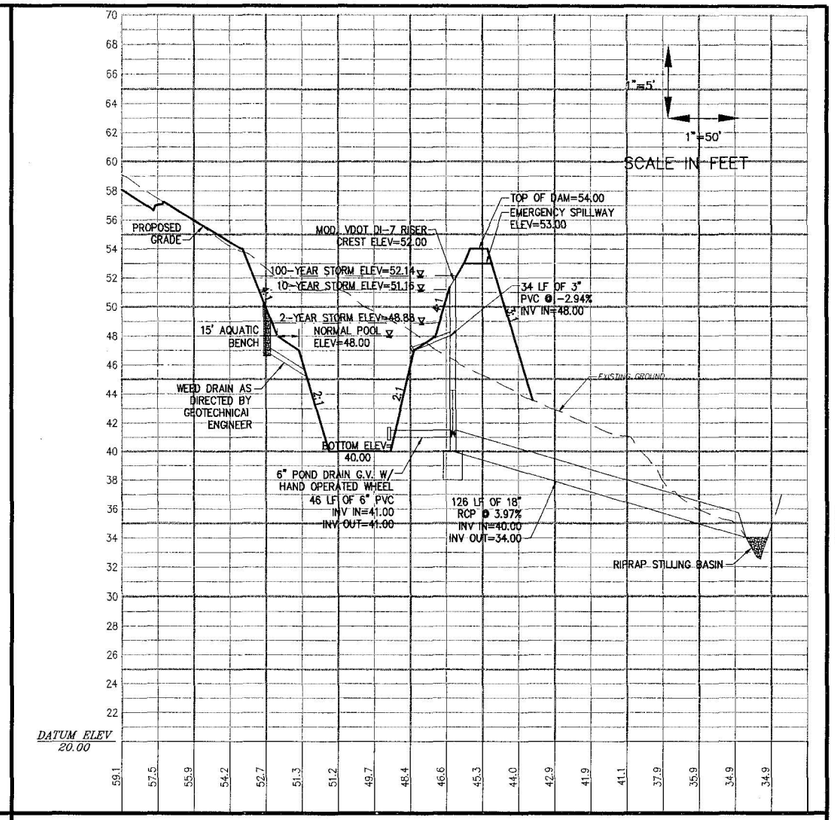

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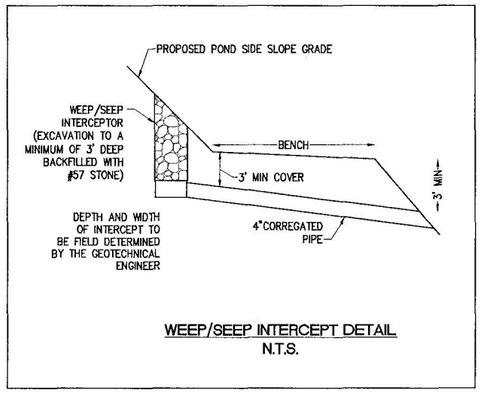

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STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

PROPER MAINTENANCE OF THIS FACILITY IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT IN TO THE FACILITY, SPILLWAY(S) AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION OF THE FACILITY AND ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL FROM THE FACILITY WILL BE REQUIRED ONCE EVERY 10 YEARS. IF OTHER CONSTRUCTION OR RELATED ACTIVITIES ARE PERFORMED ON UPSLOPE PARCELS, ADEQUATE PROTECTION SHOULD BE PROVIDED AND INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY OF THESE NEWLY DISTRIBUTED AREAS AS WELL AS INSPECTIONS FOR ACCUMULATED SEDIMENTS AT THE BMP FACILITY.

A DESIGNATED REPRESENTATIVE OF THE OWNER WILL INSPECT THE BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE. APPROPRIATE ACTION, PERFORMED AT THE COIST OF THE OWNER, WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. KEYS TO LOCKED ACCESS POINTS SHALL BE MADE AVAILABLE TO COUNTY INSPECTION PERSONNEL UPON REQUEST. INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

1. THE INSPECTION FOR SEDIMENT BUILDUP WILL BE PERFORMED BY VISUAL INSPECTION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE STORAGE AREA. SEDIMENT REMOVAL IS REQUIRED USING A RUBBER-WHEELED BACKHOE AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, THE RISER BOTTOM AND OUTLET PIPE SHALL BE CLEANED OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA. SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE IN DEPTHS GREATER THAN 1-FOOT. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE TO PREVENT THE PROPER FUNCTION OF ANY PIPE OR CULVERT.

2. PERFORM MAINTENANCE MOWING OF GRASSED AREAS AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT. TREES AND SHRUBS SHOULD NOT BE PERMITTED TO GROW ON ANY PART OF THE GRADED EMBANKMENT.

3. PERFORM SOIL SAMPLING ON STABILIZED BMP SOIL AREAS ONCE EVERY FOUR (4) YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.

4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDLING RECOMMENDATIONS.

5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "CLOSED" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.

6. PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CONCRETE RISER, ANTI-VORTEX DEVICE, TRASH RACK, ORIFICE/WEIR(S), OUTLET BARREL AND POND EMBANKMENT. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE CONTINUED INTEGRITY OF THE STRUCTURE.

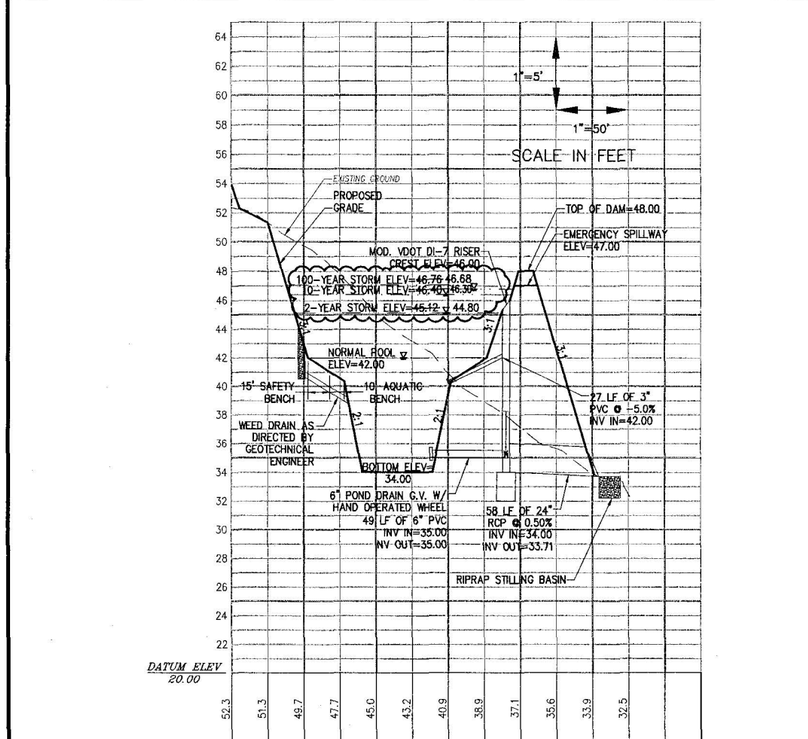
7. PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/ RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING AS APPROPRIATE.

8. RECORD KEEPING. THE LANDOWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OR INSPECTIONS PERFORMED FOR THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.

9. THE FACILITY SHALL NOT BE MODIFIED IN AINY WAY WITHOUT PRIOR CONSENT/APPROVAL OF THE COUNTY.

10. YEARLY INSPECTIONS OF SEDIMENT FOREBAYS SHALL BE PERFORMED. AT ANY TIME MORE THAN 2 FEET OF SEDIMENT HAS ACCUMULATED FOREBAYS SHOULD BE DEWATERED AND SEDIMENT REMOVED.

11. SHOULD MAINTENANCE REQUIRE DEWATERING OF THE FACILITY, A DEWATERING DEVICE APPROVED BY THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION SHALL BE USED THAT IS RATED TO HANDLE THE MAXIMUM DISCHARGE OF THE DEWATERING PUMP. DISCHARGE FROM DEWATERING SHALL BE FOCUSED INTO THE DOWNSTREAM OUTLET PROTECTION OR THROUGH THE BMP OUTFALL BARREL.



BMP #3

No.	DATE	REVISION / COMMENT / NOTE	BY
1	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	MAB

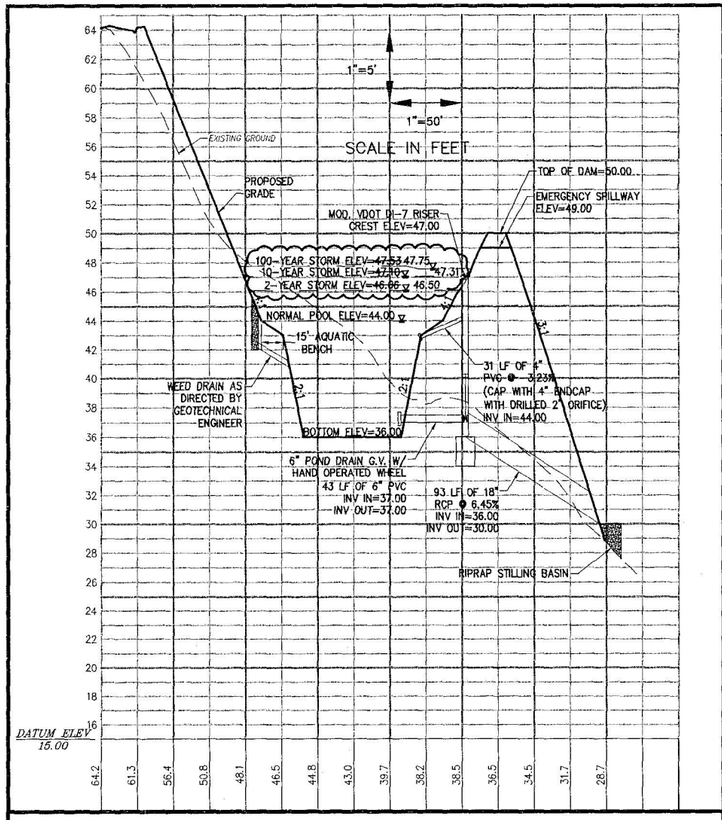
COMMONWEALTH OF VIRGINIA
JASON A. GRIMES
No. 040170
11/29/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

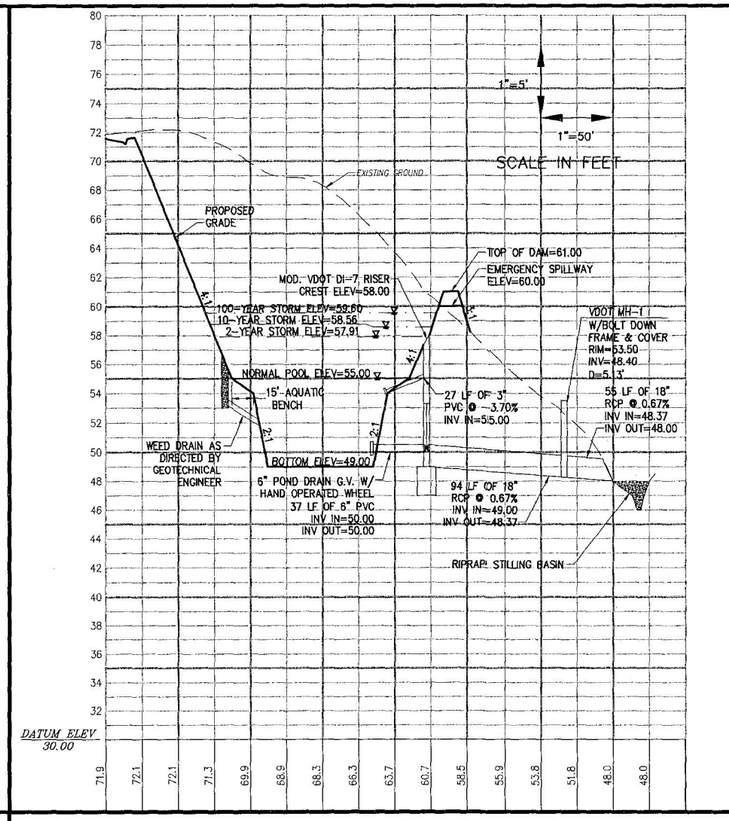
STORM WATER MANAGEMENT
MARYWOOD SUBDIVISION
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

Project No. 9272
Drawing No. 30



BMP #4



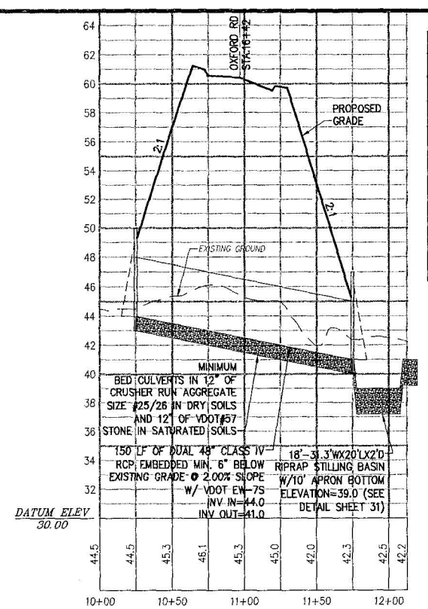
BMP #5

POND NOTES:

1. RISER AND BARREL PIPE SHALL BE WATERTIGHT CLASS III CONCRETE MEETING THE REQUIREMENTS OF ASTM C361.
2. BMP SHALL FUNCTION AS A SEDIMENT BASIN DURING CONSTRUCTION. CONTRACTOR SHALL MONITOR BMP FOR SEDIMENTATION DURING CONSTRUCTION. ONCE WRITTEN DIRECTION TO REMOVE FINAL SEDIMENT CONTROL FEATURS HAS BEEN GIVEN, CONTRACTOR SHALL REMOVE ANY ACCUMULATED SEDIMENT FROM THE FOREBAY AND ESTABLISH AQUATIC PLANTINGS.
3. VDOT DOES NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF THE STORMWATER MANAGEMENT POND OR ITS STRUCTURES, AND SHALL BE SAVED HARMLESS FROM ANY DAMAGE CAUSED BY FAILURE OF THE SAME.

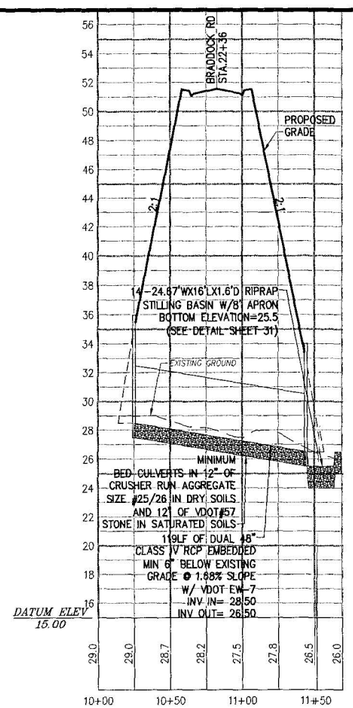
CONVERSION OF SEDIMENT BASIN INTO BMP FACILITIES

THE FACILITY WILL INITIALLY FUNCTION AS A SEDIMENT BASIN UNITIL J.C.C. ENVIRONMENTAL DIVISION GIVES WRITTEN CONCURRENCE TO MODIFY THE SEDIMENT BASIN. AT SUCH TIME ANY EXCESS EARTH OR SEDIMENT SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. POND CONTOURS SHALL BE REGRADED TO FINAL DESIGN (PER PLANS). THE DEWATERING ORIFICE SHALL BE REMOVED AND THE LOW FLOW ORIFICE VALVE SHALL BE OPENED AND THE MICROPOOL CREATED.



PRIOR TO CULVERT INSTALLATION, THE GENERAL CONTRACTOR SHALL SECURE ADDITIONAL GEOTECHNICAL EVALUATIONS OF THE SUB-SURFACE SOILS. THESE EVALUATIONS SHALL IDENTIFY THE SUITABILITY OF THE SOILS ABILITY TO SUPPORT THE PIPE AND ROADWAY FROM BANKMENT PRISM. SHOULD ADDITIONAL MEASURES BE NEEDED, THE GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS TO VDOT'S SATISFACTION, AND FORWARD RECOMMENDATION TO THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL IMPLEMENT MEASURES AS MUTUALLY AGREED BY VDOT AND THE GEOTECHNICAL ENGINEER. WORK PERFORMED AT THIS LOCATION WITHOUT FOLLOWING THESE GUIDELINES IS AT THE GENERAL CONTRACTORS RISK.

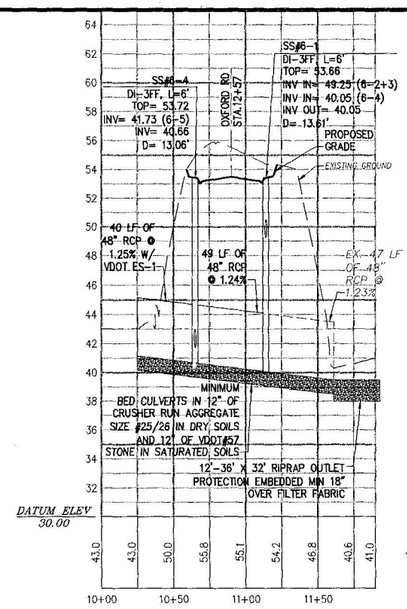
SECTION B-B
DUAL CULVERTS "A" (OXFORD RD)



NOTE:
ONSITE GEOTECHNICAL ENGINEER SHALL TEST SOILS DURING CONSTRUCTION TO VERIFY COMPACTION AND PIPE BEDDING REQUIREMENTS

PRIOR TO CULVERT INSTALLATION, THE GENERAL CONTRACTOR SHALL SECURE ADDITIONAL GEOTECHNICAL EVALUATIONS OF THE SUB-SURFACE SOILS. THESE EVALUATIONS SHALL IDENTIFY THE SUITABILITY OF THE SOILS ABILITY TO SUPPORT THE PIPE AND ROADWAY FROM BANKMENT PRISM. SHOULD ADDITIONAL MEASURES BE NEEDED, THE GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS TO VDOT'S SATISFACTION, AND FORWARD RECOMMENDATION TO THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL IMPLEMENT MEASURES AS MUTUALLY AGREED BY VDOT AND THE GEOTECHNICAL ENGINEER. WORK PERFORMED AT THIS LOCATION WITHOUT FOLLOWING THESE GUIDELINES IS AT THE GENERAL CONTRACTORS RISK.

SECTION C-C
DUAL CULVERTS "B" (BRADDOCK RD)



NOTE:
ONSITE GEOTECHNICAL ENGINEER SHALL TEST SOILS DURING CONSTRUCTION TO VERIFY COMPACTION AND PIPE BEDDING REQUIREMENTS

PRIOR TO CULVERT INSTALLATION, THE GENERAL CONTRACTOR SHALL SECURE ADDITIONAL GEOTECHNICAL EVALUATIONS OF THE SUB-SURFACE SOILS. THESE EVALUATIONS SHALL IDENTIFY THE SUITABILITY OF THE SOILS ABILITY TO SUPPORT THE PIPE AND ROADWAY FROM BANKMENT PRISM. SHOULD ADDITIONAL MEASURES BE NEEDED, THE GEOTECHNICAL ENGINEER SHALL PROVIDE RECOMMENDATIONS TO VDOT'S SATISFACTION, AND FORWARD RECOMMENDATION TO THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL IMPLEMENT MEASURES AS MUTUALLY AGREED BY VDOT AND THE GEOTECHNICAL ENGINEER. WORK PERFORMED AT THIS LOCATION WITHOUT FOLLOWING THESE GUIDELINES IS AT THE GENERAL CONTRACTORS RISK.

SECTION A-A
EX. 48" CULVERT (OXFORD)

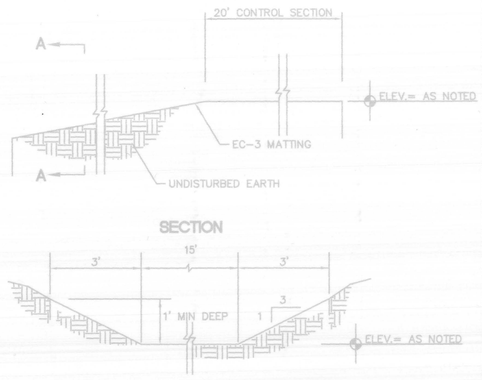
No.	DATE	REVISION / COMMENT / NOTE	BY
1	11/07	REVISED STORM SYSTEM #4 FOR CONSTRUCTION PHASING	JAG
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB

COMMONWEALTH OF VIRGINIA
JASON M. MARKS
No. 040170
11/29/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

STORM WATER MANAGEMENT
MARYWOOD SUBDIVISION
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale: NOTED	Date: 8/23/07
Project No. 9272	
Drawing No. 30A	



CROSS-SECTION AT CONTROL SECTION

EMERGENCY SPILLWAY

N.T.S.

CROSS SECTION OF OUTLET

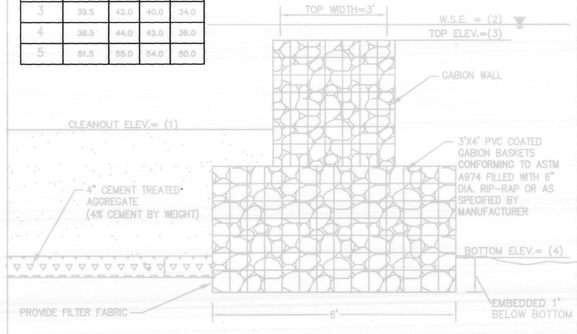
SEDIMENT TRAP #	TOP OF BERM (1)	BOTTOM ELEV. (2)	DEPTH (3)	BERM HEIGHT (4)	LENGTH (FT)	DRAIN AREA (ACRES)	WET VOLUME (CU. FT.)	TOTAL VOLUME (CU. FT.)
1	52.0	48.0	2'	2'	6.0	0.77	3,849	6,383
2	48.0	44.0	2'	2'	15.0	2.84	6,102	14,219
3	50.0	46.0	2'	2'	14.0	2.30	4,028	5,618
4	50.0	46.0	2'	2'	18.0	2.98	5,319	7,119
5	66.0	62.0	2'	2'	9.0	1.44	3,413	8,196
6	64.0	60.0	2'	2'	13.0	2.05	3,922	6,522
7	70.0	66.0	2'	2'	6.0	0.86	3,360	7,462
8	54.0	50.0	2'	2'	14.0	2.30	4,440	10,497

ST

SEDIMENT TRAP

N.T.S.

BMP #	(1) CLEANOUT ELEV.	(2) W.S.E.	(3) TOP ELEV.	(4) BOTTOM ELEV.
1	36.5	44.07	42.0	36.2
2	42.0	48.0	46.0	40.0
3	39.5	52.0	40.0	34.0
4	38.5	44.0	42.0	36.0
5	51.5	55.0	54.0	50.0



FOREBAY BARRIER

N.T.S.

PRE-CAST CONCRETE ANTI-SEEP COLLAR

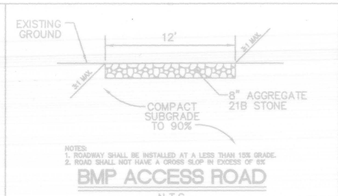
N.T.S.

WALKING TRAIL SIGN DETAIL

N.T.S.

PASSIVE RECREATION TRAIL

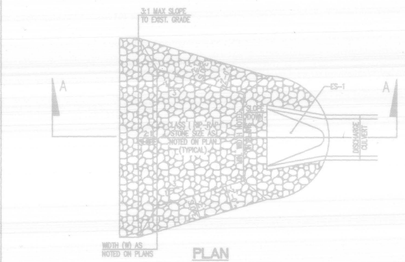
N.T.S.



NOTES:
1. ROADWAY SHALL BE INSTALLED AT A LESS THAN 15% GRADE.
2. ROAD SHALL NOT HAVE A CROSS SLOP IN EXCESS OF 6%

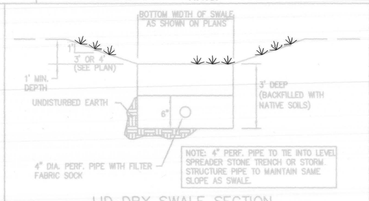
BMP ACCESS ROAD

N.T.S.



SECTION A-A STILLING BASIN DETAIL

NOT TO SCALE

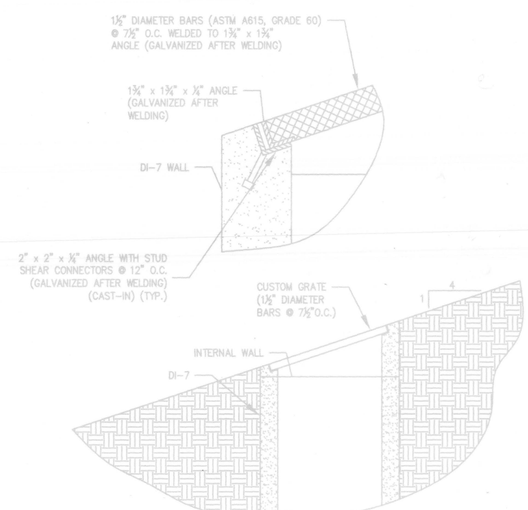


LID DRY SWALE SECTION

NOT TO SCALE

TOE PROTECTION DETAIL

NOT TO SCALE



MODIFIED DI-7 (BMP #1-5) TRASH RACK DETAIL

"THE STORM DRAINAGE AS-BUILT LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS, ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAVE MADE SUFFICIENT INSPECTION TO ENSURE THE ACCURACY OF THIS STATEMENT."

COMMONWEALTH OF VIRGINIA
3/01/10
THOMAS C. SUBLETT
No. 1886
LAND SURVEYOR

Thomas C. Sublett 3/01/10
THOMAS C. SUBLETT DATE

No.	DATE	REVISION / COMMENT / NOTE	BY
1	3/10	RECORD DRAWINGS	WJB

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

WETPOND BMP #1 AS-BUILT
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

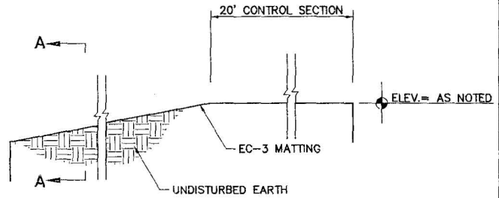
Designed	Drawn
AES	JFS
Scale	Date
NOTED	3/01/10

Project No. 9272

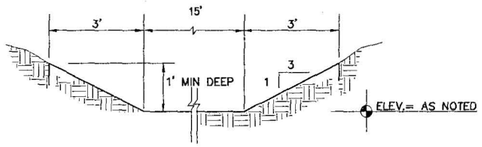
Drawing No. 31

RECORD DRAWING–3/10

Use the outer circles for checking the view printed. This is to be used with the JDL 5000 plotter.
Use the inner circles for creating the view named "PlotHalf" to be used with the JDL 5000 plotter for Half scale plots



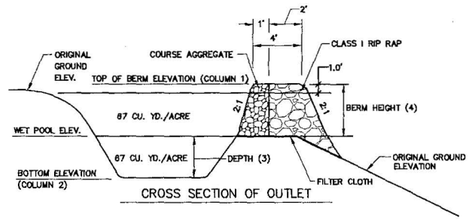
SECTION



CROSS-SECTION AT CONTROL SECTION

EMERGENCY SPILLWAY

N.T.S.



CROSS SECTION OF OUTLET

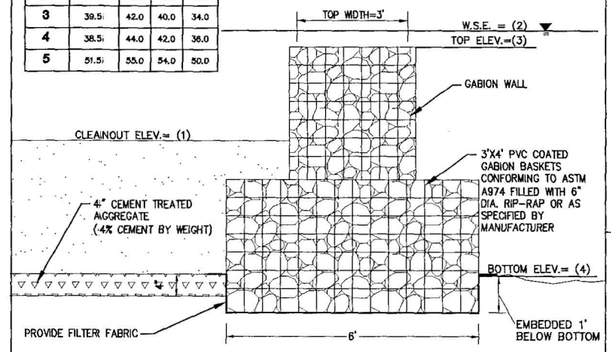
SEDIMENT TRAP #	TOP OF BERM (1)	BOTTOM ELEV. (2)	DEPTH (3)	BERM HEIGHT (4)	LENGTH (FT)	DRAIN AREA (ACRES)	WET VOLUME (CU. FT.)	TOTAL VOLUME (CU. FT.)
1	52.0	48.0	2'	2'	6.0	0.77	3,849	6,383
2	48.0	44.0	2'	2'	15.0	2.94	6,102	14,219
3	50.0	46.0	2'	2'	14.0	2.30	4,028	5,618
4	50.0	46.0	2'	2'	18.0	2.98	5,319	7,119
5	66.0	62.0	2'	2'	9.0	1.44	3,413	8,196
6	64.0	60.0	2'	2'	13.0	2.05	3,922	6,822
7	70.0	66.0	2'	2'	6.0	0.88	3,360	7,462
8	54.0	50.0	2'	2'	14.0	2.30	4,440	10,497

(ST)

SEDIMENT TRAP

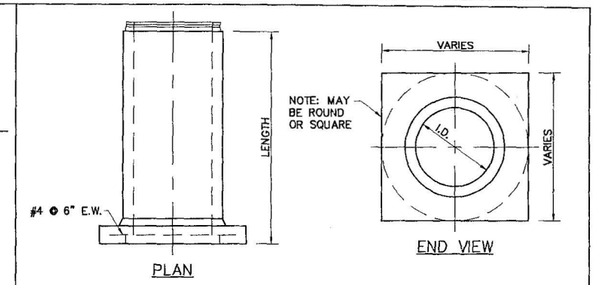
N.T.S.

BMP #	(1) CLEANOUT ELEV.	(2) W.S.E.	(3) TOP ELEV.	(4) BOTTOM ELEV.
1	38.5	44.0	42.0	38.0
2	42.0	48.0	46.0	40.0
3	39.5	42.0	40.0	34.0
4	38.5	44.0	42.0	36.0
5	51.5	53.0	54.0	50.0



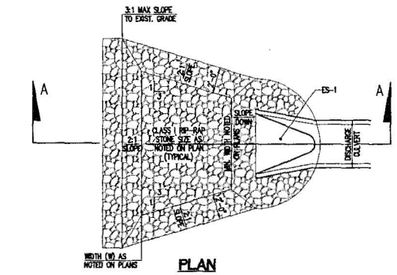
FOREBAY BARRIER

N.T.S.

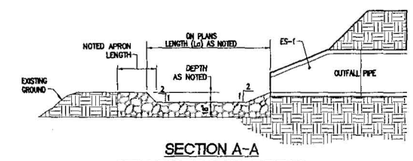


PRE-CAST CONCRETE ANTI-SEEP COLLAR

N.T.S.



PLAN



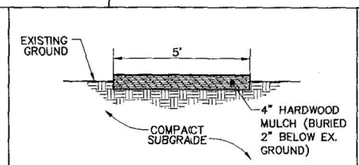
SECTION A-A

STILLING BASIN DETAIL

NOT TO SCALE

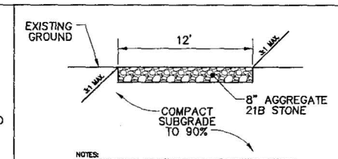
WALKING TRAIL SIGN DETAIL

N.T.S.



PASSIVE RECREATION TRAIL

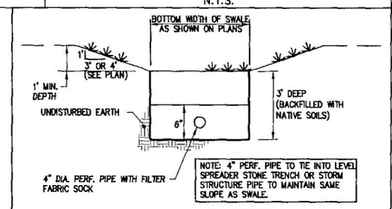
N.T.S.



NOTES:
1. ROADWAY SHALL BE INSTALLED AT A LESS THAN 15% GRADE.
2. ROAD SHALL NOT HAVE A CROSS SLOP IN EXCESS OF 6%

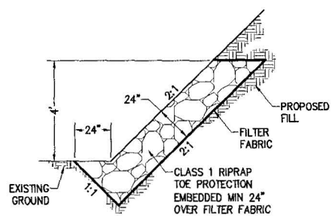
BMP ACCESS ROAD

N.T.S.



LID DRY SWALE SECTION

NOT TO SCALE



TOE PROTECTION DETAIL

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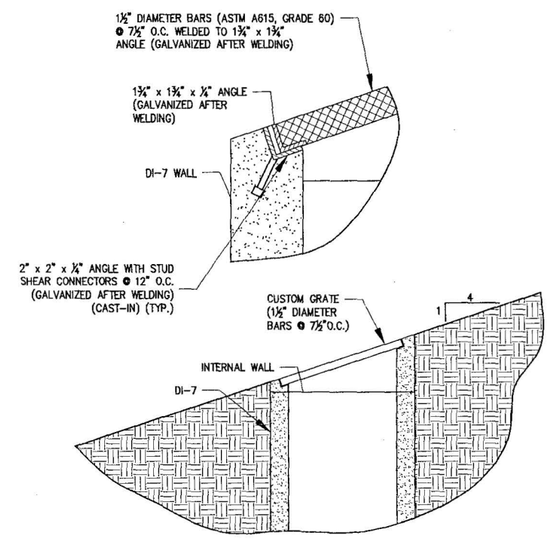


MODIFIED DI-7 (BMP #1-5) TRASH RACK DETAIL

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
JASON A. GAMES
No. 040170
8/23/07
PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

STORM WATER MANAGEMENT

MARYWOOD SUBDIVISION

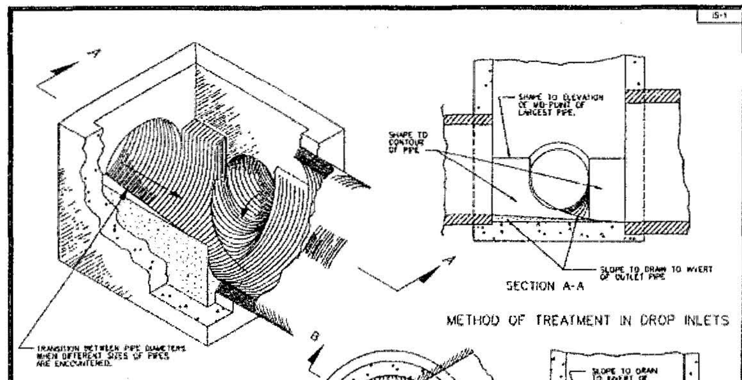
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

Project No. 9272

Drawing No. 31

IS-1



NOTES:
SHAPING OF MANHOLE AND INLET INVERTS IN ACCORDANCE WITH THIS DRAWING IS TO APPLY TO THOSE STRUCTURES SPECIFIED ON PLANS OR WHERE INVERT OF PIPE IS ABOVE INVERT OF STRUCTURE.

MANHOLE OR DROP INLET IS TO BE FORMED AND CONSTRUCTED IN ACCORDANCE WITH APPLICABLE STANDARD OR SPECIAL DRAWING. THE INVERT SHAPING AS DETAILED HEREON IS TO CONSIST OF A PORTLAND CEMENT CONCRETE MIX CONFORMING TO CLASS A3 OR CLASS C1 EXCEPT THAT 25% OF COARSE AGGREGATE MAY BE UP TO 4" IN DIAMETER AND CONSIST OF STONE, BROKEN BRICK, BROKEN CONCRETE OR BROKEN CONCRETE BLOCK. THE SURFACE SHALL BE LEFT SMOOTH BY MEANS OF HAND TROWELLING. NONE OF THE COARSE AGGREGATE SHALL REMAIN EXPOSED.

DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE OR DROP INLET IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.

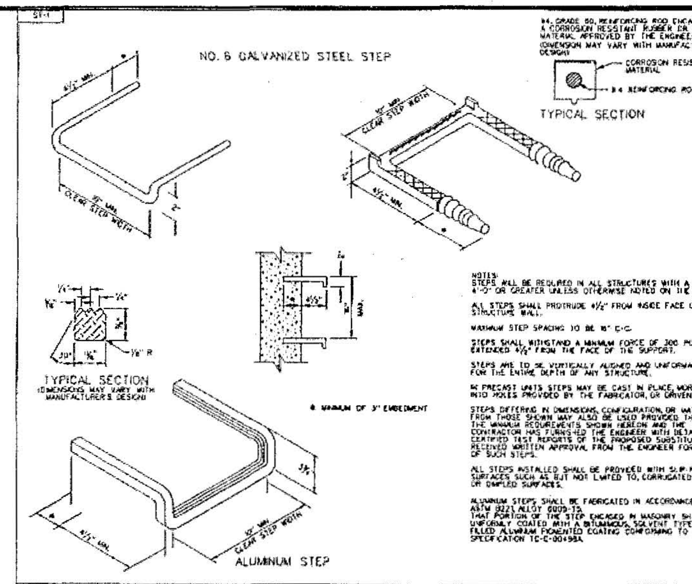
SPECIFICATION REFERENCE 302

STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

106.06

ST-1



#4, GRADE 60, REINFORCING ROD ENCASED IN A CORROSION RESISTANT RUBBER OR OTHER MATERIAL APPROVED BY THE ENGINEER. DIMENSION MAY VARY WITH MANUFACTURER'S DESIGN.

NOTES:
STEPS WILL BE REQUIRED IN ALL STRUCTURES WITH A DEPTH OF 4'-0" OR GREATER UNLESS OTHERWISE NOTED ON THE PLANS.

ALL STEPS SHALL PROTRUDE 4½" FROM INSIDE FACE OF STRUCTURE WALL.

MAXIMUM STEP SPACING TO BE 16" C-C.

STEPS SHALL WITHSTAND A MINIMUM FORCE OF 300 POUNDS WHEN EXTENDED 4½" FROM THE FACE OF THE SUPPORT.

STEPS ARE TO BE VERTICALLY ALIGNED AND UNIFORMLY SPACED FOR THE ENTIRE DEPTH OF ANY STRUCTURE.

IN PRECAST UNITS STEPS MAY BE CAST IN PLACE, MORTARED INTO HOLES PROVIDED BY THE FABRICATOR, OR DRIVEN.

STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THEY MEET THE MINIMUM REQUIREMENTS SHOWN HEREON AND THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS AND CERTIFIED TEST REPORTS OF THE PROPOSED SUBSTITUTE AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.

ALL STEPS INSTALLED SHALL BE PROVIDED WITH SLIP-RESISTANT SURFACES SUCH AS BUT NOT LIMITED TO, CORRUGATED KNURLED, OR DIMPLED SURFACES.

ALUMINUM STEPS SHALL BE FABRICATED IN ACCORDANCE WITH ASTM B221 ALLOY 6005-T5. THAT PORTION OF THE STEP ENCASED IN MASONRY SHALL BE UNIFORMLY COATED WITH A BITUMINOUS, SOLVENT TYPE, ASBESTOS FILLED ALUMINUM PIGMENTED COATING CONFORMING TO FEDERAL SPECIFICATION TC-C-00494A.

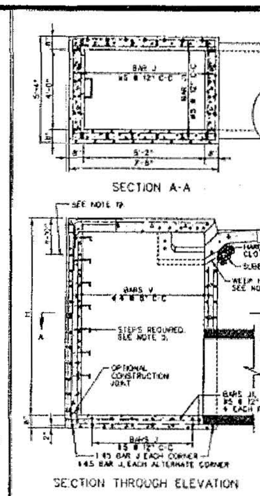
STANDARD STEP

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE NONE

106.03

DI-4DD,4EE,4FF



NOTES

1. DEPTH OF INLET (H) TO BE SHOWN ON PLANS. MINIMUM DEPTH (H) TO BE 8'-0", MAXIMUM DEPTH TO BE 16'-0". FOR INLETS LESS THAN 8' USE STANDARD DI-4D, 4E, AND 4F.
2. THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.
3. WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
4. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.
5. STEPS ARE TO BE PROVIDED. FOR DETAILS SEE STANDARD ST-1.
6. THIS ITEM MAY BE PRECAST OR CAST-IN-PLACE.
7. # 4 X 8" SMOOTH DOWELS AT APPROXIMATELY 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT. IN LIEU OF DOWELS A 2" X 4" NOTCH MAY BE PROVIDED. SEE STANDARD T-DI-3, 4 FOR ALTERNATE DESIGN.
8. 3" DIAMETER WEEP HOLE TO BE LOCATED TO DRAIN SUBBASE MATERIAL. WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH 1/4" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAMETER 0.03", NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO THE OUTSIDE OF THE STRUCTURE.
9. ALL REINFORCING STEEL SHALL HAVE A MIN. COVER OF 2".
10. ALL REINFORCING STEEL TO BE CUT CLEAR OF ALL OPENINGS BY 2".
11. CAST-IN-PLACE CONCRETE IS TO BE CLASS A3 (3000 PSI). PRECAST CONCRETE IS TO BE 4000 PSI.
12. LENGTH OF SLOT (L) WILL, IN EVERY CASE, BE SHOWN ON PLANS.
13. IF INLET IS CONSTRUCTED IN MEDIAN CURB OR WITH INTEGRAL CURB, GUTTER IS TO BE OMITTED (SEE DETAIL WITH STANDARD DI-4D, 4E, 4F).
14. IF OPTIONAL CONSTRUCTION JOINT IS USED IT IS TO BE KEYED. ALL SPLICES IN BARS V TO BE A MINIMUM OF 40 DIAMETER (20").
15. FOR PLAN VIEW OF INLET SEE STANDARD DI-4D, 4E, 4F.
16. CONCRETE QUANTITIES SHOWN ARE FOR DEPTH (H) OF 8'-0" WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES. FOR INLETS OF DIFFERENT DEPTHS ADD OR SUBTRACT 0.28 CUBIC YARDS OF CONCRETE FOR EACH FOOT OF DEPTH.
17. FOR NUMBER OF BARS A-N REQUIRED AND LENGTH SEE TABLE OF QUANTITIES FOR STANDARD DI-4D, 4E, 4F.
18. FOR DESCRIPTION AND LOCATION OF DIMENSION L SEE SHEET STANDARD DI-4D, 4E, 4F.
19. FOR ALL DETAILS, DIMENSIONS AND REINFORCING STEEL ABOVE THIS LINE, SEE STANDARD DI-4D, 4E, AND 4F.
20. INLET MAY BE USED WITH LARGER LONGITUDINAL PIPE 1/2 MAXIMUM, PROVIDED UTILITY SPACE CLEARANCE IS NOT NEEDED, HORIZONTAL CLEARANCE BETWEEN ADJACENT PIPES IS ADEQUATE AND MINIMUM HEIGHT (H) EQUALS PIPE DIAMETER PLUS 3 FEET.
21. PROVIDE SAFETY SLABS WHEN SPECIFIED ON THE PLANS.

SCHEDULE OF REINFORCING STEEL (SEE NOTE 17)

BARS J		BARS J1		BARS V	
NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
4H + 6	5'-0"	4H+6	7'-2"	72	H-7-4"

APPROXIMATE QUANTITIES FOR MINIMUM 8' DEPTH INLET

TYPE	DIMENSION L SEE NOTE 18	REINFORCING STEEL	CONC.
DI-	LIN. FT.	LBS.	CU. YDS.
4DD	4'-0"	966	8.18
4EE	5'-0"	1029	8.61
4FF	8'-0"	1081	7.02

INCREMENTS TO BE ADDED FOR EACH ADDITIONAL FOOT OF DEPTH (H) AND/OR SLOT LENGTH (L)

H		L	
CONC. CU. YDS.	STEEL LBS.	CONC. CU. YDS.	STEEL LBS.
0.560	93	—	—
0.580	93	0.22	23.5
0.560	93	0.22	23.5

SPECIFICATION REFERENCE 233 302

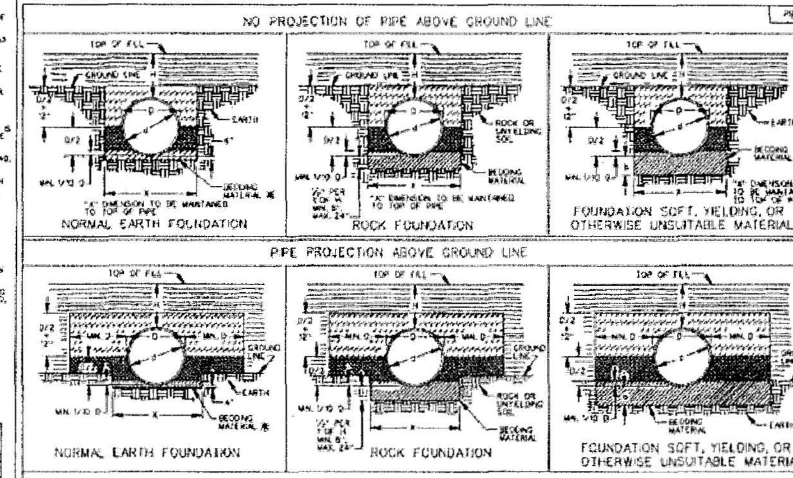
STANDARD CURB DROP INLET (WITH UTILITY SPACE)
36" - 48" PIPE: DEPTH (H) 8' TO 16'

VIRGINIA DEPARTMENT OF TRANSPORTATION

104.20

REVISED ON 1/01   REVISED ON 7/05

PB-1



CULVERTS LESS THAN ∅ = 36": X = D + 24"
CULVERTS WHERE ∅ = 36" AND OVER: X = D + 36"
METHOD "A" PIPE BEDDING SHALL BE USED AS FOLLOWS UNLESS OTHERWISE NOTED ON PLANS:
RIGID PIPE: WHEN H IS LESS THAN OR EQUAL TO 30'
FLEXIBLE PIPE: AS SHOWN ON TABLES
H = HEIGHT OF COVER MEASURED FROM TOP OF DRAINAGE STRUCTURE TO FINISHED GRADE.
D = OUTSIDE DIAMETER OF PIPE.
∅ = INSIDE DIAMETER OF PIPE.
b = DEPTH AS SHOWN ON PLANS OR TO FIRM BEARING SOIL.
BEDDING MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
CLASS I BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS.
CLASS II BACKFILL MATERIAL IN ACCORDANCE WITH SECTION 302 OF THE ROAD AND BRIDGE SPECIFICATIONS. ✱✱
EMBANKMENT
✱ MAY BE ELIMINATED UNDER ENTRANCE PIPE EXCEPT FOR PLASTIC PIPE INSTALLATIONS, WHERE DIRECTED BY THE ENGINEER.
✱✱ FOR PLASTIC PIPE INSTALLATIONS, CLASS I BACKFILL MATERIAL SHALL BE USED IN LIEU OF CLASS II.

SHEET 1 OF 4

SPECIFICATION REFERENCE 302 303

INSTALLATION OF PIPE CULVERTS AND STORM SEWERS
CIRCULAR PIPE BEDDING AND BACKFILL - METHOD "A"

VIRGINIA DEPARTMENT OF TRANSPORTATION

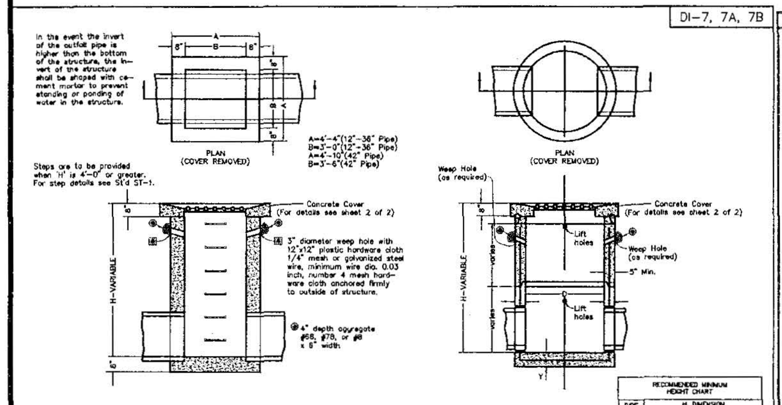
107.01

NOTE:
THE BEDDING MATERIAL FOR 36" TO 48" PIPES SHALL BE 12" OF CRUSHER RUN AGGREGATE SIZE #25/26 IN DRY SOILS AND 12" OF VDOT NO. 57 STONE IN SATURATED SOILS.

DI-7, 7A, 7B

In the event the invert of the outfall pipe is higher than the bottom of the structure, the invert of the structure shall be shaped with cement mortar to prevent standing or ponding of water in the structure.

Steps are to be provided when 'H' is 4'-0" or greater. For step details see St'd ST-1.



Pipe Size	12"	15"	18"	24"	30"	36"	42"
Minimum Depth H	2'-0"	2'-3½"	2'-6½"	3'-1"	3'-7½"	4'-2"	4'-8½"
Cu. Yds. Conc.	.947	1.045	1.143	1.339	1.535	1.731	1.927

Increment per foot of additional depth (H) { =0.362 cu. yds. (12"-36" Pipe) =0.410 cu. yds. (42" Pipe)
Reinforcing concrete footing may be precast or cast in place. Two lifting hooks of fabricators design to be provided in precast footing.

For details of Precast DI-7 not shown hereon see Precast Unit Assembly Diagram, page 103.01, Precast General Notes, page 103.02 and Applicable Precast Base, Riser, and Top Details, pages 103.07 thru 103.12.

RECOMMENDED MINIMUM HEIGHT CHART

PIPE SIZE	H. DIMENSION CONC.	CORR. METAL
12"	2'-6"	2'-5"
15"	2'-9 1/4"	2'-8"
18"	3'-1/2"	2'-11"
21"	3'-3 3/4"	3'-2"
24"	3'-7"	3'-5"
27"	3'-10 1/4"	3'-8"
30"	4'-1 1/2"	3'-11"
33"	4'-4 3/4"	4'-2"
36"	4'-8"	4'-5"
42"	5'-2 1/2"	4'-11"

DI-7 — No gutter
DI-7A — Single gutter when drop inlet is on a grade.
DI-7B — Double gutter when drop inlet is in a sag between two grades.

The type of inlet detailed hereon to be constructed will be at the option of the contractor.

GENERAL NOTES
When specified on plans the invert is to be shaped in accordance with St'd. IS-1.

For details of concrete cover, collar and grate, and method of placing approach gutter see sheet 2 of 2.

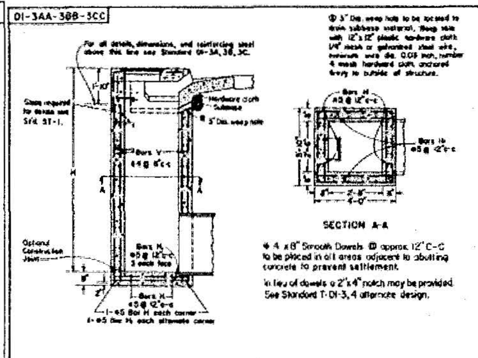
Increments shown are for inlets without pipes. Pipe displacements must be deducted to obtain true quantities.
Paved ditches are to be transitioned to meet inlet gutter as shown in St'd. PG-1.
Safety Slabs are to be provided at 8' minimum and 12' maximum vertical intervals and are to be spaced so as not to conflict with openings for pipes as directed by the Engineer.

STANDARD MEDIAN DROP INLET

NOT TO SCALE

D-2X6

DI-3AA-3BB-3CC



⊕ 3" Dia. weep hole to be located to drain subbase material. Weep hole with 12"x12" plastic hardware cloth 1/4" mesh or galvanized steel wire, minimum wire dia. 0.03 inch, number 4 mesh hardware cloth anchored firmly to outside of structure.

✱ 4 x 8" Smooth Dowels @ approx. 12" C-C to be placed in all areas adjacent to abutting concrete to prevent settlement.

In lieu of dowels a 2"x4" notch may be provided. See Standard T-DI-3, 4 alternate design.

NOTES
All cast in place concrete to be Class A3. For acceptable alternate see Precast Standard Designs.
Minimum depth (H) to be 8'-0". Maximum depth to be 20'-0". For inlets less than 8' use St'd. DI-3A, 3B, 3C.

Length of slot (L) will, in all cases, be shown on plans.
When inlet is used in 4' median, back of inlet is to be shaped to conform with proposed curb.
For plan view of inlet see St'd. DI-3A, 3B, 3C.
If optional construction joint is used it is to be keyed. All splices in Bars V to be a minimum of 40d (20").
When specified on plans invert is to be shaped in accordance with Standard Plan IS-1.
This item may be precast or cast in place.
See St'd. SL-1 for applicability of safety slabs.

TYPE	APPROXIMATE QUANTITIES FOR MINIMUM 8' DEPTH INLET: DIMENSION L ✱	REINFORCING STEEL	CONCRETE	INCREMENTS TO BE ADDED FOR EACH ADDITIONAL FOOT OF DEPTH (H) AND/OR SLOT LENGTH (L): H Cu. Yds. Conc.	H Lbs. Steel	L Cu. Yds. Conc.	L Lbs. Steel
DI-	Lin. Ft.	Lbs.	Cu. Yds.				
3AA	2'-6"	452	3.14	0.317	54	—	—
3BB	4'-0"	494	3.47	0.317	54	0.22	23.5
3CC	6'-0"	541	3.89	0.317	54	0.22	23.5

SCHEDULE OF REINFORCING STEEL✱✱

BARS H		BARS H1		BARS V	
NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH	NO. REQ'D.	LENGTH
4x(H+1)	3'-6"	4x(H+1)	3'-8"	36	H-1'-4"

The "H" dimension shown on the Standards and specified on the plans will be measured from the invert of the outfall pipe to the top of the structure. Plan "H" dimensions are approximate only for estimating purposes and the actual dimensions shall be determined by the contractor from field conditions.

✱ For description and location of dimension L see sheet 104.09.
✱✱ For number of Bars A-G required and lengths see sheet 104.10.
Quantities shown are for minimum inlets of each type. For inlets of greater depth (H) or longer slots (L) increments shown per foot must be added.
The amount of concrete and steel displaced by pipes must be deducted to obtain true quantities.

In the event the invert of the outfall pipe is higher than the bottom of the structure, the invert of the structure shall be shaped with cement mortar to prevent standing or ponding of water in the structure.

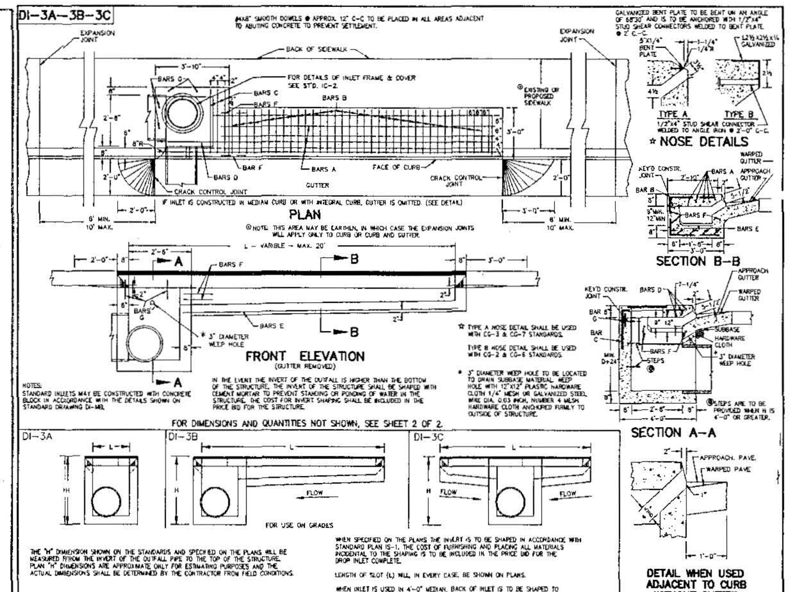
STANDARD CURB DROP INLET
12"-30" PIPE DEPTH (H) 8' TO 20'
VIRGINIA DEPARTMENT TRANSPORTATION

SPECIFICATION REFERENCE 233 302

104.11

DI-3A-3B-3C

#4x8" SMOOTH DOWELS @ APPROX. 12" C-C TO BE PLACED IN ALL AREAS ADJACENT TO ABUTTING CONCRETE TO PREVENT SETTLEMENT.



☆ TYPE A NOSE DETAIL SHALL BE USED WITH CG-3 & CG-7 STANDARDS.
TYPE B NOSE DETAIL SHALL BE USED WITH CG-2 & CG-6 STANDARDS.

✱ 3" DIAMETER WEEP HOLE TO BE LOCATED TO DRAIN SUBBASE MATERIAL. WEEP HOLE WITH 12"X12" PLASTIC HARDWARE CLOTH 1/4" MESH OR GALVANIZED STEEL WIRE DIA. 0.03 INCH, NUMBER 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE.

NOTES:
STANDARD INLETS MAY BE CONSTRUCTED WITH CONCRETE BLOCK IN ACCORDANCE WITH THE DETAILS SHOWN ON STANDARD DRAWING DI-MB.

IN THE EVENT THE INVERT OF THE OUTFALL IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE. THE COST FOR INVERT SHAPING SHALL BE INCLUDED IN THE PRICE BID FOR THE STRUCTURE.

FOR DIMENSIONS AND QUANTITIES NOT SHOWN, SEE SHEET 2 OF 2.

THE "H" DIMENSION SHOWN ON THE STANDARDS AND SPECIFIED ON THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE. PLAN "H" DIMENSIONS ARE APPROXIMATE ONLY FOR ESTIMATING PURPOSES AND THE ACTUAL DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD CONDITIONS.

WHEN SPECIFIED ON THE PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STANDARD PLAN IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE PRICE BID FOR THE DROP INLET COMPLETE.

LENGTH OF SLOT (L) WILL, IN EVERY CASE, BE SHOWN ON PLANS.

WHEN INLET IS USED IN 4'-0" MEDIAN, BACK OF INLET IS TO BE SHAPED TO CONFORM WITH PROPOSED CURB.

THIS ITEM AY BE PRECAST OR CAST IN PLACE.

SHEET 1 OF 2

STANDARD CURB DROP INLET
12"-30" PIPE MAXIMUM DEPTH (H)=8'
VIRGINIA DEPARTMENT OF TRANSPORTATION

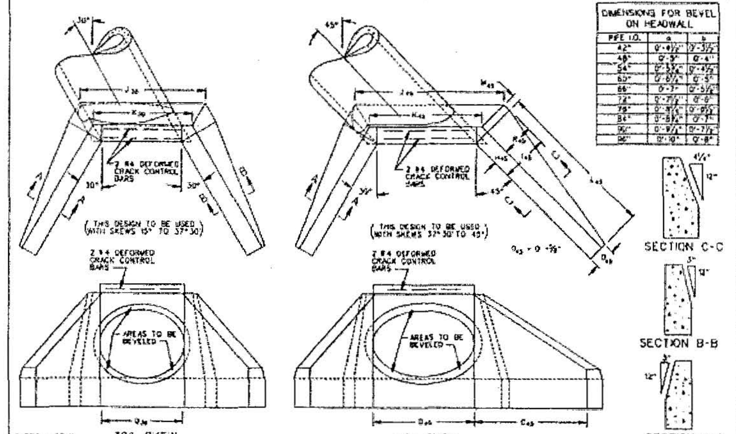
SPECIFICATION REFERENCE 233 302

EW-2S

NOTES:
1. ALL DETAILS AND DIMENSIONS NOT SHOWN ARE THE SAME AS STANDARD EW-2. FOR TABLES OF DIMENSIONS AND VOLUMES SEE SHEET 2 OF 2. FOR DETAILS OF BEVEL REFER TO STANDARD EW-1 (APC SHEET 101.02).
2. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
3. ALL CAST IN PLACE CONCRETE TO BE CLASS A3. FOR PRECAST SEE SHEET 101.10.
4. COST OF BARS FOR CRACK CONTROL TO BE INCLUDED IN PRICE BID PER CUBIC YARD CONCRETE.
5. HEADWALL TO BE BEVELED IN ALL AREAS EXCEPT WHERE A CONFLICT WITH INVERT OR WINGWALLS OCCUR.
6. BEVEL EDGE IS REQUIRED ON THE HEADWALL AT THE INLET END OF THE CULVERT WHERE THE FLOW ENTERS THE CULVERTS.
7. HEADWALL AT THE OUTLET END OF THE CULVERT MAY BE EITHER SQUARE EDGE OR BEVEL EDGE.
8. ON SHALLOW FILLS, WHERE ENDWALLS ARE 1' OR LESS BELOW SHOULDER LINE, THE TOP OF THE ENDWALL SHALL BE CONSTRUCTED PARALLEL TO THE GRADE OF THE ROAD.
9. IN NO CASE SHALL TOP OF ENDWALL PROJECT ABOVE FILL SLOPE, DITCH SLOPE, OR SHOULDER.
10. ¾" CHAMFER MAY BE PROVIDED ON ALL EDGES AT MANUFACTURER'S OPTION.

DIMENSIONS FOR BEVEL ON HEADWALL

PIPE I.D.	a	b
42"	0'-4½"	0'-3½"
48"	0'-5"	0'-4"
54"	0'-5½"	0'-4½"
60"	0'-6½"	0'-5"
66"	0'-7"	0'-5½"
72"	0'-7½"	0'-6"
78"	0'-8½"	0'-6½"
84"	0'-8¾"	0'-7"
90"	0'-9½"	0'-7½"
96"	0'-10"	0'-8"



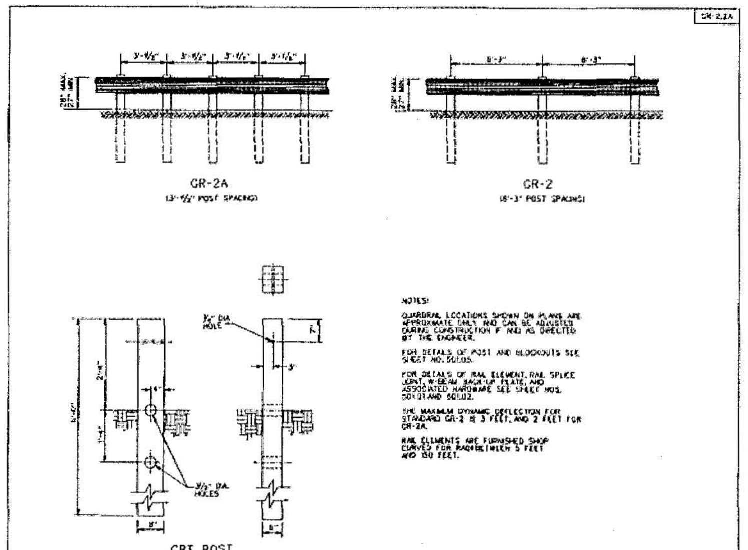
SHEET 1 OF 2

STANDARD ENDWALLS FOR 42"-96" PIPE CULVERTS
30° AND 45° SKEW
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE 105 302

101.06

GR-2,2A



NOTES:
GUARDRAIL LOCATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND CAN BE ADJUSTED DURING CONSTRUCTION IF AND AS DIRECTED BY THE ENGINEER.

FOR DETAILS OF POST AND BLOCKOUTS SEE SHEET NO. 501.05.

FOR DETAILS OF RAIL ELEMENT, RAIL SPLICE JOINT, W-BEAM BACK-UP PLATE, AND ASSOCIATED HARDWARE SEE SHEET NOS. 501.01 AND 501.02.

THE MAXIMUM DYNAMIC DEFLECTION FOR STANDARD GR-2 IS 3 FEET, AND 2 FEET FOR GR-2A.

RAIL ELEMENTS ARE FURNISHED SHOP CURVED FOR RADII BETWEEN 5 FEET AND 150 FEET.

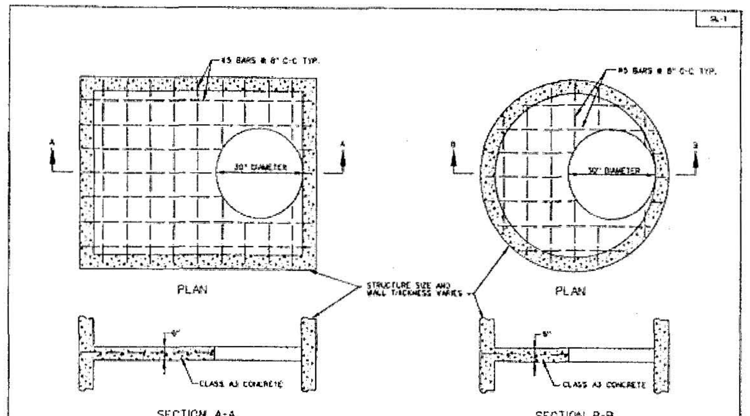
SHEET 1 OF 2

SPECIFICATION REFERENCE 221 505

STANDARD BLOCKED-OUT W BEAM GUARDRAIL (STRONG POST SYSTEM)
VIRGINIA DEPARTMENT OF TRANSPORTATION

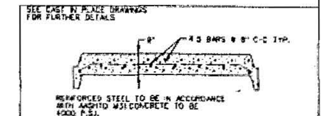
501.04

SL-1



NOTES:
1. STANDARD SL-1 MANHOLE SAFETY SLABS SHOULD BE REQUIRED AS PART OF THE DRAINAGE DESIGN FOR MANHOLES, JUNCTION BOXES AND DROP INLETS WITH HEIGHTS GREATER THAN 10 FEET. THE SPACING OF THE SLABS SHOULD BE 8' TO 12'. THE SLABS SHOULD BE LOCATED SO AS TO NOT TO INTERFERE WITH THE FLOW INTO OR THROUGH THE STRUCTURE. ON TALL STRUCTURES, WHERE PIPES INFLOW AT VARIOUS LOCATIONS VERTICALLY, THE SLABS SHOULD NOT BE PLACED BELOW A 30" OR LARGER PIPE OPENING.
2. THE COST OF THE SL-1 IS INCLUDED IN THE STRUCTURE. THE DRAINAGE DESCRIPTIONS SHOULD BE USED TO SPECIFY HOW MANY SAFETY SLABS ARE NEEDED FOR EACH STRUCTURE AND THE QUANTITY SHOULD BE NOTED IN THE REMARKS COLUMN ON THE DRAINAGE SUMMARY.
3. ACCESS HOLES ARE TO BE STAGGERED FROM ONE SIDE OF STRUCTURE TO THE OTHER WHERE APPLICABLE. STEPS ARE TO BE STAGGERED ACCORDINGLY.
4. MAY BE PRECAST OR CAST IN PLACE.

SEE CAST IN PLACE DRAWINGS FOR FURTHER DETAILS



REINFORCED STEEL TO BE IN ACCORDANCE WITH AASHTO M31 CONCRETE TO BE 4000 P.S.I.

TYPICAL PRECAST UNIT

SPECIFICATION REFERENCE 302

TYPICAL CONCRETE SAFETY SLAB
FOR DROP INLETS, MANHOLES AND JUNCTION BOXES
VIRGINIA DEPARTMENT OF TRANSPORTATION

106.14

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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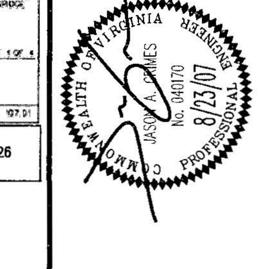
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB



AES CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

ROAD AND DRAINAGE NOTES & DETAILS

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT   JAMES CITY COUNTY   VIRGINIA

Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
NOTED	8/23/07
Project No. 9272	
Drawing No. 32 A	

JAMES CITY COUNTY ENVIRONMENTAL DIVISION
EROSION AND SEDIMENT CONTROL NOTES
REVISED 7/6/01

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINE SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES. IN ADDITION TO THESE NOTES, ALL PROVISIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL APPLY TO THIS PROJECT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT, INCLUDING MINIMUM STANDARDS 1 THROUGH 19. IF THE APPROVED ROSION AND SEDIMENT CONTROL PLAN IS FOUND TO BE INADEQUATE IN THE FIELD, THE MINIMUM STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.

2. AS A PREREQUISITE TO APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN FOR LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATE OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. PERMITS OR PLANS WITHOUT THIS INFORMATION ARE DEEMED INCOMPLETE AND WILL NOT BE APPROVED UNTIL PROPER NOTIFICATION IS RECEIVED. ALSO, IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE ENVIRONMENTAL DIVISION SHALL BE INFORMED OF THE CHANGE, IN WRITING, 24-HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING.

3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE COUNTY, THE DEVELOPER, THE PROJECT ENGINEER, THE RESPONSIBLE LAND-DISTURBER AND THE CONTRACTOR PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION TO THE COUNTY FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.

4. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FROM VDOT IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD & SPEC 3.02).

5. SEDIMENT BASINS AND TRAPS (STD & SPEC 3.13 AND 3.14), PERIMETER DIKES (STD & SPEC 3.09 AND 3.12), SEDIMENT FILTER BARRIERS (STD. & AND SPEC 3.05) AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND MUST BE MADE FUNCTIONAL PRIOR TO ANY UPSLOPE LAND DISTURBANCE TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION.
PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE MADE TO ASSESS THEIR CONDITION. ANY NECESSARY MAINTENANCE OF THE MEASURES SHALL BE ACCOMPLISHED IMMEDIATELY AND SHALL INCLUDE THE REPAIR OF MEASURES DAMAGED BY ANY SUBCONTRACTOR INCLUDING THOSE OF THE PUBLIC UTILITY COMPANIES.

6. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD. & SPEC. 3.10) AND SLOPE DRAIN (STD. & SPEC. 3.15) SHALL BE INSTALLED PRIOR TO THE END OF EACH WORKING DAY.

7. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. ENVIRONMENTAL DIVISION APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLAN.

8. THE CONTRACTOR SHALL PLACE SOIL STOCKPILES AT THE LOCATIONS SHOWN ON THE PLAN. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. OFF-SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.

9. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF THE SAME (STD & SPEC 3.18). THIS INCLUDES INSTALLATION OF EROSION CONTROL STONE OR PAVED DITCHES WHERE REQUIRED. ANY DRAINAGE OUTFALLS REQUIRED FOR A STREET MUST BE COMPLETED BEFORE STREET GRADING OR UTILITY INSTALLATION BEGINS.

10. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAT 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

11. NO MORE THAN 300 FEET OF SANITARY SEWER, STORM DRAIN, WATER OR UNDERGROUND UTILITY LINES ARE TO BE OPEN AT ONE TIME. FOLLOWING INSTALLATION OF ANY PORTION OF THESE ITEMS, ALL DISTURBED AREAS ARE TO BE IMMEDIATELY STABILIZED (I.E., THE SAME DAY).

12. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD & SPEC 3.35). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.

13. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIME AND FERTILIZER (STD & SPEC 3.32). IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.

14. ALL SLOPES STEEPER THAN 3H:1V SHALL REQUIRE THE USE OF EROSION CONTROL BLANKETS AND MATTINGS TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION SHALL BE IN ACCORDANCE WITH STD. & SPEC. 3.35, MULCHING, STD. & SPEC. 3.36, SOIL STABILIZATION BLANKETS AND MATTING AND MANUFACTURER=S INSTRUCTIONS. NO SLOPES SHALL BE CREATED STEEPER THAN 2H:1V.

15. INLET PROTECTION (STD & SPEC 3.07 AND 3.08) SHALL BE PROVIDED FOR ALL STORM DRAIN AND CULVERT INLETS FOLLOWING CONSTRUCTION OF THE SAME.

16. TEMPORARY LINERS, SUCH AS POLYETHYLENE SHEETS, SHALL BE PROVIDED FOR ALL PAVED DITCHES UNTIL THE PERMANENT CONCRETE LINER IS INSTALLED.

17. PAVED DITCHES SHALL BE REQUIRED WHEREVER ACCELERATED EROSION IS EVIDENT. PARTICULAR ATTENTION SHALL BE PAID TO THOSE AREAS WHERE GRADES EXCEED 3 PERCENT.

18. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.

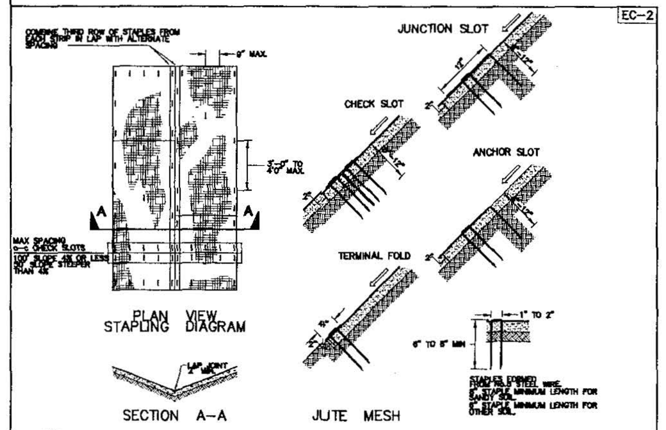
19. NO SEDIMENT TRAP OR SEDIMENT BASIN SHALL BE REMOVED UNTIL A) AT LEAST 75 PERCENT OF THE LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN SOLD TO A THIRD PARTY (UNRELATED TO THE DEVELOPER) FOR THE CONSTRUCTION OF HOMES AND/OR B) 60 PERCENT OF THE SINGLE FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN COMPLETED AND THE SOIL STABILIZED. A BULK SALE OF THE LOTS TO ANOTHER BUILDER DOES NOT SATISFY THIS PROVISION. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL NOT BE REMOVED WITHOUT THE EXPRESS AUTHORIZATION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.

20. RECORD DRAWINGS (AS-BUILTS) AND CONSTRUCTION CERTIFICATIONS ARE BOTH REQUIRED FOR NEWLY CONSTRUCTED OR MODIFIED STORMWATER MANAGEMENT/BMP FACILITIES. CERTIFICATION ACTIVITIES SHALL BE ADEQUATELY COORDINATED AND PERFORMED BEFORE, DURING AND FOLLOWING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER MANAGEMENT/BMP FACILITIES, RECORD DRAWING AND CONSTRUCTION CERTIFICATION, STANDARD FORMS & INSTRUCTIONS.

21. DESIGN AND CONSTRUCTION OF PRIVATE-TYPE SITE DRAINAGE SYSTEMS OUTSIDE VDOT RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER DRAINAGE CONVEYANCE SYSTEMS (NON-BMP RELATED), GENERAL DESIGN AND CONSTRUCTION GUIDELINES.

PROVIDE ONE NATURAL OPEN SPACE EASEMENT SIGN WHERE DEPICTED ON THE PRELIMINARY PLAT SHEETS.
ALL SIGNS TO BE MOUNTED ON STANDARD JCC POSTS.
PLEASE CONTACT JCC FOR DETAILS CONCERNING SIGNS

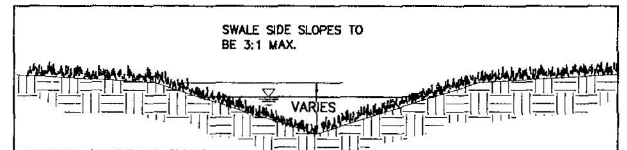
NATURAL OPEN SPACE EASMENT SIGN DETAIL
N.T.S.



(EC-2) PROTECTIVE COVERING INSTALLATION CRITERIA
N.T.S.

SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE.

D-EC2.dwg



TYP. SWALE DETAIL
N.T.S.

D-swale.dwg

(PS) SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	175-200 LBS.
OR	
-COMMON BERMUDA GRASS **	75 LBS.
HIGH-MAINTENANCE LAWN	
-KENTUCKY 31 OR TURF-TYPE TALL FESCUE	200-250 LBS.
OR	
-HYBRID BERMUDAGRASS (SEED)**	40 LBS. (UNHULLED)
OR	
-HYBRID BERMUDAGRASS (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	30 LBS. (HULLED)
GENERAL SLOPE (3:1 OR LESS)	
-KENTUCKY 31 FESCUE	128 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
-KENTUCKY 31 TALL FESCUE	93-108 LBS.
-COMMON BERMUDAGRASS **	0-15 LBS.
-RED TOP GRASS	2 LBS.
-SEASONAL NURSE CROP *	20 LBS.
-SERICEA LESPEDEZA **	20 LBS.
	150 LBS.

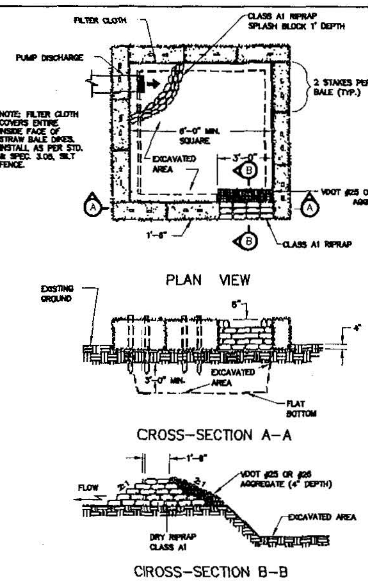
* USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

FEBRUARY, MARCH THROUGH APRIL	ANNUAL RYE
MAY 1ST THROUGH AUGUST	FOXTAIL MILLET
SEPTEMBER, OCTOBER THROUGH NOVEMBER 15TH	ANNUAL RYE
NOVEMBER 16TH THROUGH JANUARY	WINTER RYE

** MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

VA DSWC
PG. III - 304

D-PS



STRAW BALE/SILT FENCE PIT
N.T.S.

STB-SF.dwg

SPECIES	SEEDING RATE		SOUTH[b]			PLANT CHARACTERISTICS
	Acre	1000 ft^2	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15	
OATS (Avena sativa)	3 bu. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	–	–	Use spring varieties (e.g., Noble).
RYE (Secale cereale)	2 bu. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	–	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	–	X	–	Warm-season annual. Dies at first frost. May be added to summer mixes.
ANNUAL RYEGRASS (Lolium multi-florum)	60 lbs.	1-1/2 lbs.	X	–	X	May be added in mixes. Will mow out of most stands.
WEEPING LOVEGRASS (Eragrostis curvula)	15 lbs.	5-1/2 ozs.	–	X	–	Warm-season perennial. May bunch. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.
KOREAN LESPEDEZA (Lespedeza stipulacea)	25 lbs.	approx. 1-1/2 lbs.	X	X	–	Warm-season annual legume. Tolerates acid soils. May be added to mixes.

b SOUTHERN PIEDMONT AND COASTAL PLAIN.
c MAY BE USED AS A COVER CROP WITH SPRING SEEDING.
d MAY BE USED AS A COVER CROP WITH FALL SEEDING.
X MAY BE PLANTED BETWEEN THESE DATES.
– MAY NOT BE PLANTED BETWEEN THESE DATES.

(TS) TEMPORARY SEEDING
N.T.S.

SOURCE: VA. DSWC
TABLE 3.31-C

d-ts.dwg

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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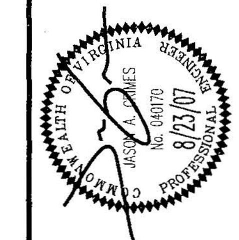

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

AES CONSULTING ENGINEERS
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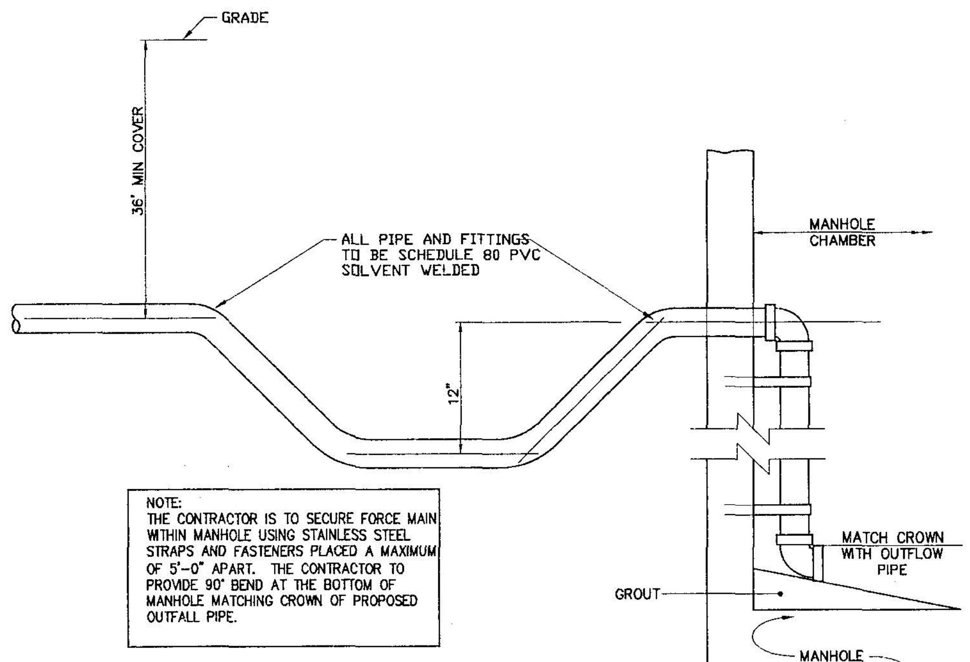
NOTES AND DETAILS

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

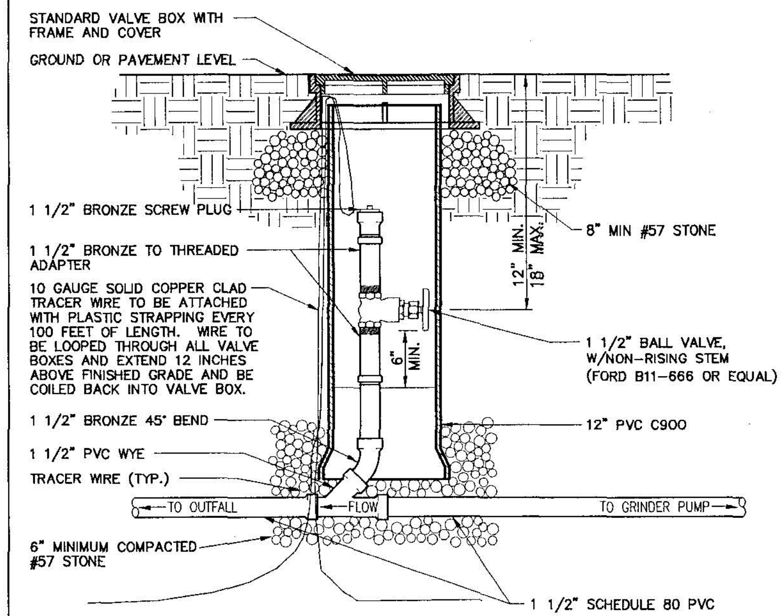
Designed	Drawn
JAG/MJR	GVC/MJR
Scale	Date
NOTED	8/23/07
Project No.	9272
Drawing No.	33



NOTE:
THE CONTRACTOR IS TO SECURE FORCE MAIN WITHIN MANHOLE USING STAINLESS STEEL STRAPS AND FASTENERS PLACED A MAXIMUM OF 5'-0" APART. THE CONTRACTOR TO PROVIDE 90° BEND AT THE BOTTOM OF MANHOLE MATCHING CROWN OF PROPOSED OUTFALL PIPE.

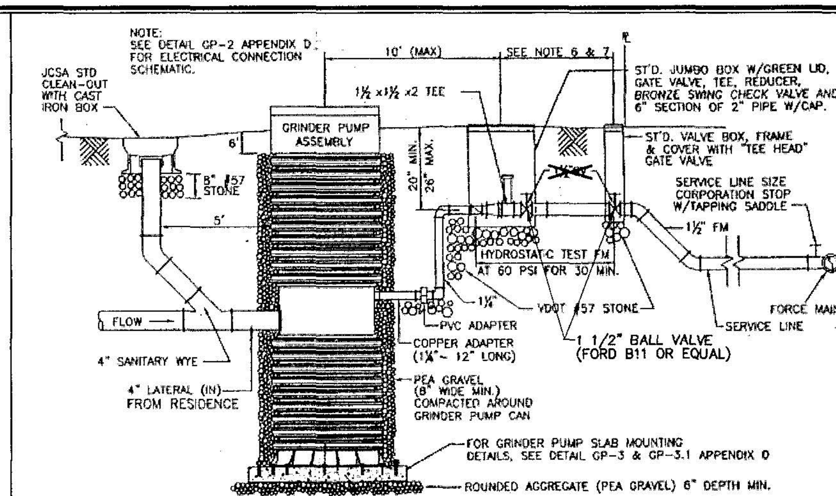
FORCE MAIN TRAP DETAILS

NOT TO SCALE

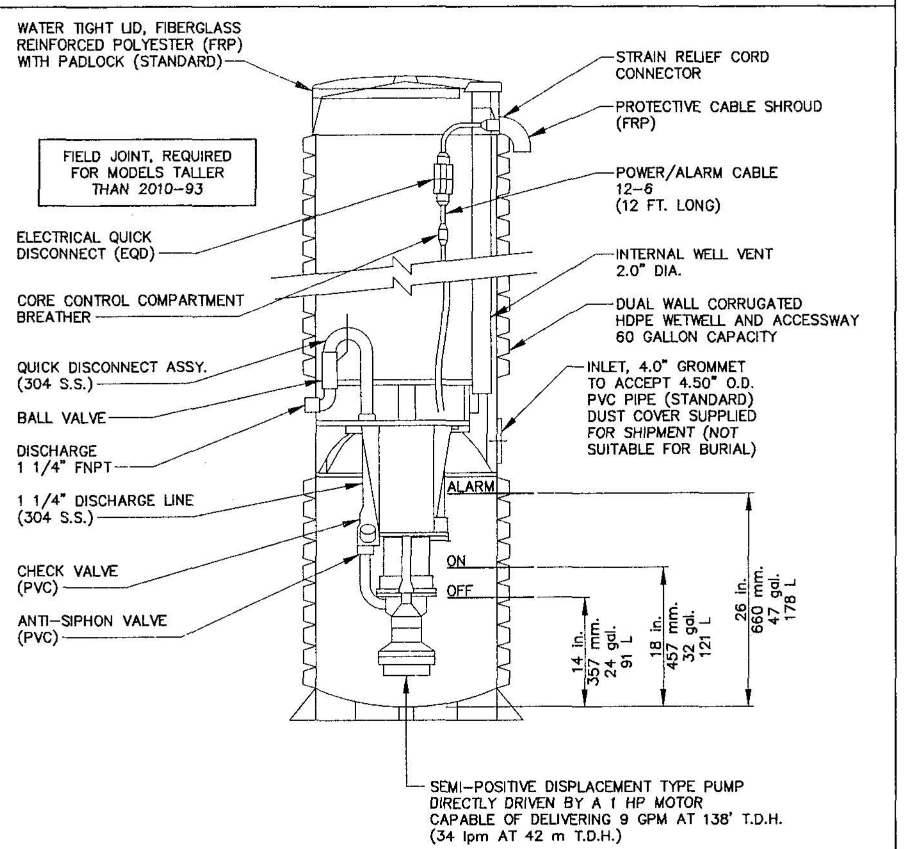


GRINDER FORCE MAIN END OF LINE CLEANOUT AND VALVE VAULT

NOT TO SCALE



NOTES:
1. GRINDER PUMPS SHALL BE LOCATED ON EACH LOT/PARCEL AS SHOWN ON THE APPROVED DEVELOPMENT PLANS.
2. FORCE MAIN TRAP IS REQUIRED WHEN DISCHARGING INTO A GRAVITY SYSTEM
3. GRINDER PUMP ASSEMBLIES SHALL BE "ENVIRONMENT-1" MODEL 2010 OR MODEL 210 AS MANUFACTURED BY ENVIRONMENT ONE CORPORATION.
4. SADDLES MAY BE USED FOR CONNECTIONS TO GRAVITY SEWERS.
5. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS
6. SHUT OFF VALVE SHALL BE LOCATED AT PROPERTY LINE.
7. SHUT OFF VALVE MAY BE DELETED WHEN JUMBO VALVE BOX CONNECTION IS LOCATED ON/AT THE PROPERTY LINE.
8. THE LOCK AND PUMP WRENCH DELIVERED WITH THE GRINDER PUMP ARE TO BE LEFT IN THE CAN UNTIL JCSA PERSONNEL ARRIVE.



1. DO NOT SCALE DRAWING.
2. DISCHARGE LINE TO BE BELOW FROST LINE.
3. ENVIRONMENT ONE MODEL 2010 AVAILABLE IN DEPTHS FROM 59" TO 159".
4. ALL JOINTS IN TANK AND ACCESSWAY ARE MANUFACTURED AND FACTORY TESTED FOR WATERTIGHT INTEGRITY. NO FIELD PENETRATIONS SHALL BE ACCEPTABLE.
5. *TWO (2) LIFTING HOOKS WITH NYLON LIFT-OUT HARNESS TO BE PROVIDED.*
6. ALL DIMENSIONS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.
7. ALL FRP PARTS TO BE AVOCADO GREEN.

GRINDER PUMP DETAILS

NOT TO SCALE

GENERAL NOTES - GRINDER PUMP SYSTEMS

GRINDER PUMPS ACCEPTED: ENVIRONMENT/ONE, MODEL: GP-2010.

THE PUMP IS TO BE A SEMI-POSITIVE DISPLACEMENT TYPE; 15 GPM AT 0 FT.TDH; 11 GPM AT 92 FT.TDH; 9 GPM AT 138 FT.TDH.

THE TANK SHALL BE 60 GALLON; NON-CORROSIVE, HEAVY-DUTY, HIGH DENSITY POLYETHYLENE WITH INTEGRAL FRP LID.

THE GRINDER SHALL CONSIST OF TWO HARDENED STAINLESS STEEL CUTTERS ROTATING AT MOTOR SPEED IN PRECISION RELATIONSHIP TO HARDENED ALLOY SHEDDING RING TO PRODUCE A FINELY DIVIDED SLURRY.

PIPING CONNECTIONS: INLET FOR 4-INCH LATERAL; DISCHARGE IS 1-1/4-INCH NPT.

THE MOTOR SHALL BE 1 HP, 1725 RPM, HIGH-TORQUE, CAPACITOR-START, 240 VOLT, 60 HERTZ, 8 AMP, 1 PHASE; WITH INTEGRAL, AUTOMATIC RESET, THIERMAL PROTECTOR.

THE CONTROLS SHALL BE NON-FOULING STATIC SENSOR AND PRESSURE SWITCH SYSTEM WITH NO MOVING PARTS IN CONTACT WITH SEWAGE; SELF-CONTAINED UNIT.

TWO CHECK VALVES SHALL BE PROVIDED: ONE INTEGRAL ON DISCHARGE PIPE INSIDE TANK; ONE FOR SEWER SYSTEM USE BETWEEN PRESSURE MAIN AND GRINDER PUMP. CHECK VALVES SHALL BE FULL-PORTED, NONCLOGGIING, CLAPPER TYPE.

AN ANTI-SIPHON VALVE SHALL BE INCLUDED ON THE DISCHARGE PIPE INSIDE THE TANK.

HIGH WATER LEVEL, POWER FAILURE AND PUMP ALARMS SHALL BE PROVIDED. A REMOTE PANEL WITH AN ALARM TEST FUNCTION SHALL ALSIO BE PROVIDED; AS SHALL A REMOTE DISPLAY WITH AUDIBLE ALARM. THE ALARM SYSTEM SHALL BE PROVIDED WITH A BACK-UP POWER SUPPLY. THE INDIVIDUAL ALARM SYSTEMS FOR THE GRINDER PUMPS WILL NOT BE CONNECTED TO THE JAMES CITY SERVICE AUTHORITY CENTRAL ALARM SYSTEM.

ELECTRIC TESTING SHALL BE PERFORMED BY THE ELECTRICAL SUBCONTRACTOR (A MASTER ELECTRICIAN) IN THE PRESENCE OF THE JAMIES CITY COUNTY ELECTRICAL INSPECTOR. TESTING WILL BE TO ASSURE THAT THE STATION OPERATIONS AS INTENDED AND TO COMPLY WITH ALL POSSIBLE OTHER REQUIREMENTS RELATING TO SUCCESSFUL OPERATION AS OUTLINED IN THE VIRGINIA SEWERAGE REGULATIONS.

THE CONTROL CONSOLE AND ALARM SYSTEM SHALL BE LOCATED ON AN INSIDE WALL OF THE BUILDING IN AN ACCESSIBLE AND VISIBLE LOCATION WITHIN 100 FEET OF GRINDER PUMP. IF THIS IS NOT POSSIBLE, PLEASE LOCATE THE PANEL NEXT TO THE PUMP STATION.

THE WET WELL OF THE GRINDER PUMP SHALL BE VENTED THROUGH THE BUILDING PLUMBING SYSTEM AS REQUIRED BY THE BOCA PLUMBING CODE.

A DISCONNECT SHALL BE PROVIDED ADJACENT TO THE PUMP PER NEC CODE. THE PUMP CONTROLS ARE LOCATED IN THE TOP HOUSING OF THE CORE UNIT INSIDE A WATERPROOF ACCESS COVER. THEY MAY ALSO BE LOCATED ADJACENT TO THE DISCONNECT, IN A NEMA 4 BOX.

ALL ELECTRICAL EQUIPMENT MUST BE UL LISTED.

ALL EQUIPMENT SHALL BE TESTED IN ACCORDANCE WITH THE NEC.

ALL FORCE MAIN PIPING SHALL CONFORM TO THE HRPDC REGIONAL STANDARDS (SECTION 200-5.10).

ALL PIPING SHALL BE TESTED IN ACCORDANCE WITH THE HDRPC REGIONAL STANDARDS (SECTION 803-2.7).

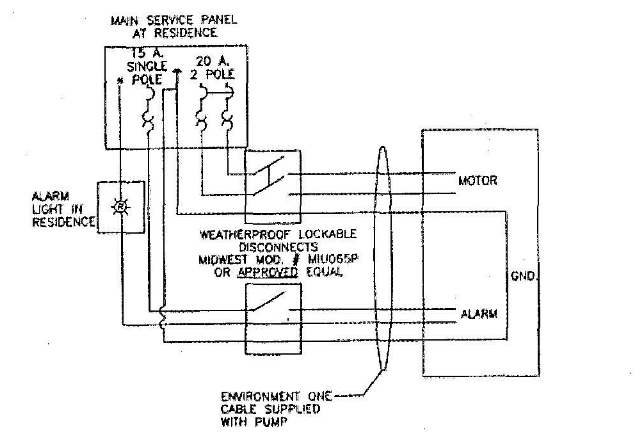
THRUST RESTRAINT SHALL BE PROVIDED FOR GASKETED TYPE PIPING AT ALL BENDS, TEES AND CHANGES OF DIRECTION.

GRINDER PUMP SYSTEM

MANUFACTURER/MODEL - ENVIRONMENT / ONE, MODEL GP-2010

PUMP	SEMI-POSITIVE DISPLACEMENT TYPE; 15 GPM @ 0 FT.TDH.; 11 GPM @ 92 FT.TDH. 9 GPM @ 138 FT.TDH.
TANK	60 GAL; NON-CORROSIVE, HEAVY-DUTY, HIGH DENSITY POLYETHYLENE; INTEGRAL FRP LID. AVAILABLE IN DEPTHS FROM 59" TO 159".
GRINDER	TWO HARDENED STAINLESS STEEL CUTTERS ROTATING AT MOTOR SPEED IN PRECISION RELATIONSHIP TO HARDENED AND GROUND CHROME SHEDDING RING PRODUCE A FINELY DIVIDED SLURRY.
PIPING CONNECTIONS	INLET FOR 4 INCH DWV PIPE; DISCHARGE IS 1-1/4 INCH NPT.
MOTOR	1 HP, 1725 RPM, HIGH-TORQUE, CAPACITOR-START, 240 VOLT, 60 HERTZ, 8 AMP, 1 PHASE; WITH INTEGRAL, AUTOMATIC RESET, THERMAL PROTECTOR.
CONTROLS	NON-FOULING STATIC SENSOR AND PRESSURE SWITCH SYSTEM HAS NO MOVING PARTS IN CONTACT WITH SEWAGE; *COMPLETELY SELF-CONTAINED -- NO EXTERNAL* PANELS NEEDED.
CHECK VALVES	TWO PROVIDED: ONE INTEGRAL ON DISCHARGE PIPE INSIDE TANK, ONE IN "JUMBO BOX" BETWEEN FORCE MAIN AND GRINDER PUMP; FULL-PORTED, NON-CLOGGING, CLOPPER TYPE.
ANTI-SIPHON VALVE	INTEGRAL ON DISCHARGE PIPE INSIDE TANK.
ALARM	HIGH LEVEL INDICATOR LIGHT FURNISHED FOR REMOTE DISPLAY. REMOTE DISPLAY WITH AUDIBLE ALARM TO BE PROVIDED. ALARM SYSTEM TO BE PROVIDED WITH BACK-UP POWER SUPPLY.

1. ALL COMPONENTS OF THE GRINDER PUMP SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE HRPDC, JCSA STANDARDS AND SPECIFICATIONS FOR SANITARY SEWER SYSTEMS AND THE VIRGINIA SEWAGE HANDLING & DISPOSAL REGULATIONS DATED 7/1/00.
2. ALL JOINTS IN TANK AND ACCESSWAY ARE MANUFACTURED AND FACTORY TESTED FOR WATERTIGHT INTEGRITY. NO FIELD PENETRATIONS SHALL BE ACCEPTABLE.
3. TWO LIFTING HOOKS WITH NYLON LIFT-OUT HARNESS TO BE PROVIDED BY SUPPLIER.
4. STATION SHALL BE FASTENED TO SLAB WITH 3/8" DIA. STAINLESS STEEL HARDWARE AT ALL EIGHT (8) MOUNTING POSITIONS.
5. ONCE STATION IS FASTENED TO SLAB, UNIT SHALL BE LIFTED INTO PLACE USING THE EYE BOLTS, NOT THE TANK.
6. ALL FRP PARTS TO BE GREEN.
7. DISCHARGE LINE TO BE BELOW FROST LINE.
8. GRINDER PUMPS SHALL BE LOCATED ON EACH LOT / PARCEL AND SHOWN ON THE PLOT PLANS.
9. FORCE MAIN TRAP IS REQUIRED WHEN DISCHARGING INTO A GRAVITY SYSTEM.
10. GRINDER PUMP ASSEMBLIES SHALL BE "ENVIRONMENT-1" MODEL 2010 OR MODEL 210 AS MANUFACTURED BY ENVIRONMENT ONE CORPORATION.
11. SADDLES MAY BE USED FOR CONNECTIONS TO GRAVITY SEWERS.
12. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.
13. SHUT OFF VALVE SHALL BE LOCATED AT PROPERTY LINE.
14. SHUT OFF VALVE MAY BE DELETED WHEN JUMBO VALVE BOX CONNECTION IS LOCATED ON / AT THE PROPERTY LINE.
15. THE LOCK AND PUMP WRENCH DELIVERED WITH THE GRINDER PUMP ARE TO BE LEFT IN THE CAN UNTIL JCSA PERSONNEL ARRIVE.



NOTES:

THE ELECTRICAL PORTION OF GRINDER PUMP INSTALLATIONS CONSISTS OF TWO CIRCUITS.

a) MOTOR CIRCUIT, 240 VOLT, FED FROM A DEDICATED 2 POLE 20 AMP BREAKER IN MAIN SERVICE PANEL TO 2 POLE LOCKABLE OUTDOOR DISCONNECT, MODEL #MIU065P MANUFACTURED BY MIDWEST OR APPROVED EQUAL. DISCONNECT SHALL BE MOUNTED ON A SALT TREATED POST WITH BOTTOM OF DISCONNECT BOX A MINIMUM OF 6 INCHES ABOVE FINISHED GRADE OR ON THE NEAREST WALL OF THE DWELLING (50 FEET MAXIMUM) AND BE VISIBLE FROM THE GRINDER PUMP CAN. PUMP CABLE IS THEN ROUTED FROM DISCONNECT TO GRINDER PUMP CAN. SEE SCHEMATIC DIAGRAM ABOVE.

b) ALARM CIRCUIT, 120 VOLT, FED FROM A DEDICATED SINGLE POLE 15 AMP BREAKER IN MAIN SERVICE PANEL TO A 2 POLE LOCKABLE OUTDOOR DISCONNECT, MODEL #MIU065P MANUFACTURED BY MIDWEST OR APPROVED EQUAL. DISCONNECT SHALL BE MOUNTED ON A SALT TREATED POST WITH THE BOTTOM OF THE DISCONNECT BOX AT LEAST 6 INCHES ABOVE FINISHED GRADE OR ON THE NEAREST WALL OF THE DWELLING (50 FEET MAXIMUM) AND BE VISIBLE FROM THE GRINDER PUMP CAN. THIS CIRCUIT IS A SWITCH LEG THROUGH AN ALARM CONTACT INTERNAL TO THE GRINDER PUMP CONTROLS. THE SUPPLY WIRE FEEDS FROM THE LIGHTING PANEL THROUGH THE DISCONNECT SWITCH AND INTO THE GRINDER PUMP. THE RETURN LEG LEAVES THE PUMP AND IS CONNECTED TO THE HOT SIDE OF THE ALARM LIGHT IN THE HOUSE. THE NEUTRAL CONDUCTOR IS FED DIRECTLY FROM THE LIGHTING PANEL TO THE ALARM LIGHT. THE RED ALARM LIGHT SUPPLIED WITH THE GRINDER PUMP SHOULD BE INSTALLED IN A CONSPICUOUS PLACE. SEE SCHEMATIC DIAGRAM ABOVE.

ALL BREAKERS AND SWITCHES SHALL BE CLEARLY MARKED.

THE LOCK AND PUMP WRENCH DELIVERED WITH THE GRINDER PUMP ARE TO BE LEFT IN THE CAN UNTIL JCSA PERSONNEL ARRIVE.

FOR QUESTIONS, CONTACT HOWARD ANBY AT JCSA OPERATIONS, 229-7421

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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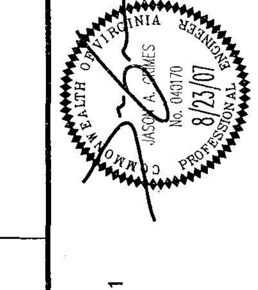
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB



5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

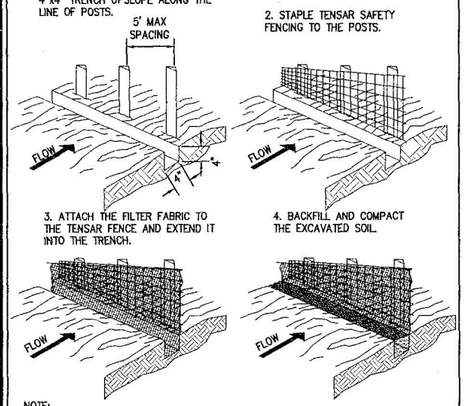
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

GRINDER PUMP NOTES & DETAILS

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

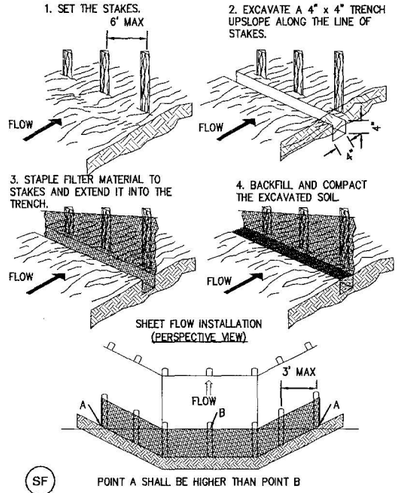
Designed: JAG/MJR	Drawn: MJR
Scale: NOTED	Date: 8/23/07
Project No. 9272	
Drawing No. 34	



NOTE:
1. METAL POST TO BE MIN. 6' IN LENGTH.
2. FILTER FABRIC TO BE 42" HIGH. SILT FENCE SUPPORT TO CONSIST OF TENSAR DX-2050 SAFETY
3. FENCE, OR EQUIVALENT. MIN. TENSILE STRENGTH: 850 lb/ft (WIDTH) 1050 lb/ft (LENGTH)

CONSTRUCTION OF SUPER SILT FENCE (WITH TENSAR SUPPORT)

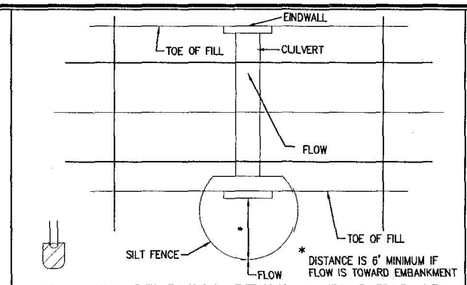
(SSF) N.T.S.



SOURCE: VA. DSWC PLATE. 3.04-1

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

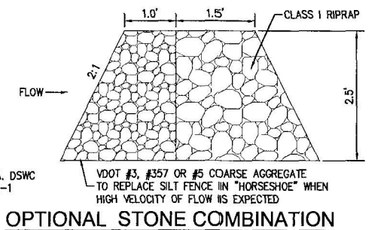
(SF) N.T.S.



SILT FENCE CULVERT INLET PROTECTION

N.T.S.

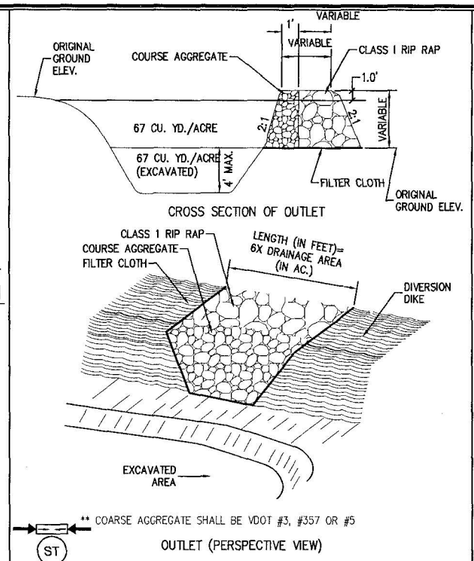
(CIP)



SOURCE: VA. DSWC PLATE. 3.08-1

OPTIONAL STONE COMBINATION

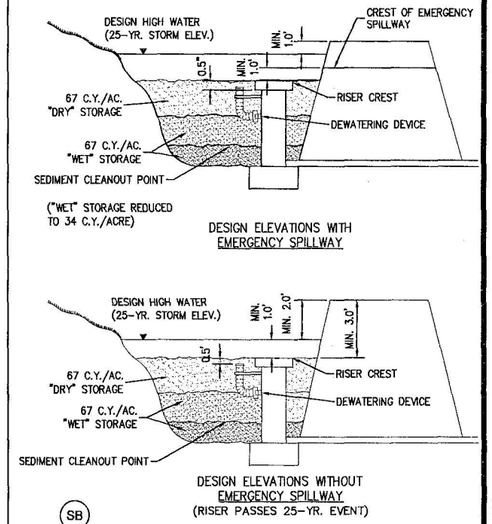
N.T.S.



(ST) N.T.S.

SOURCE: VA. DSWC PLATE. 3.13-2

TEMPORARY SEDIMENT TRAP



(SB)

SOURCE: VA. DSWC PLATE. 3.14-2

SEDIMENT BASIN SCHEMATIC ELEVATIONS

N.T.S.

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
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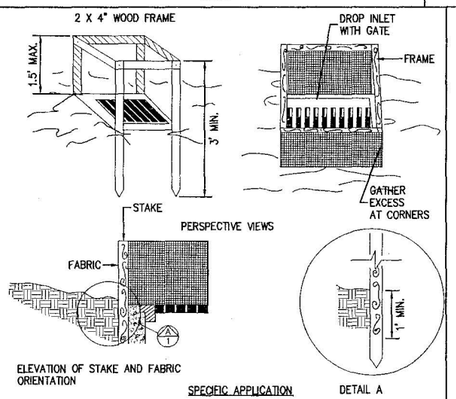
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB
1			



SPECIFIC APPLICATION

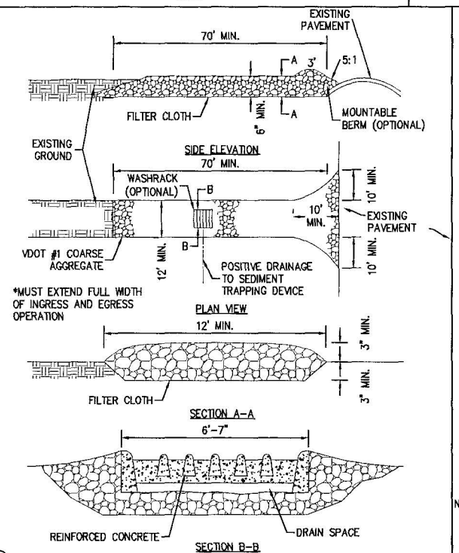
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

(IP)

SOURCE: N.C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL PLATE. 3.07-1

SILT FENCE DROP INLET PROTECTION

N.T.S.

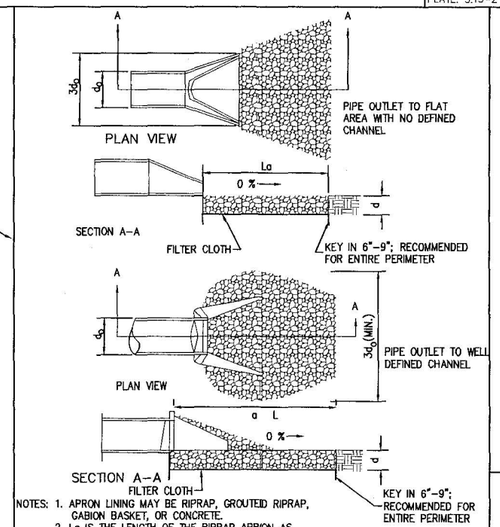


(CE)

SOURCE: VA. DSWC PLATE. 3.02-1

STONE CONSTRUCTION ENTRANCE

N.T.S.



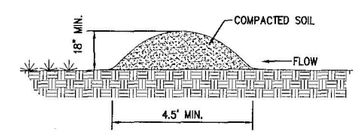
NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

(OP)

SOURCE: VA. DSWC PLATE. 3.18-1

PIPE OUTLET CONDITIONS

N.T.S.

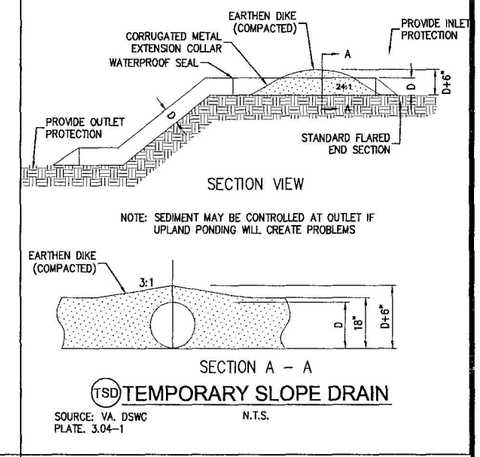


(DD)

SOURCE: VA. DSWC PLATE. 3.09-1

TEMPORARY DIVERSION DIKE

N.T.S.

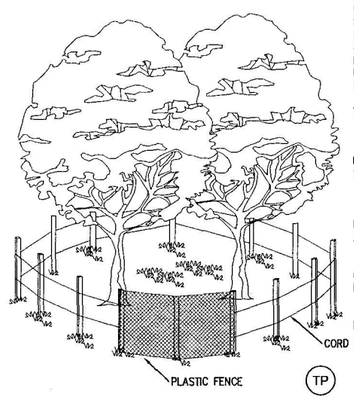


(TSD)

SOURCE: VA. DSWC PLATE. 3.04-1

TEMPORARY SLOPE DRAIN

N.T.S.

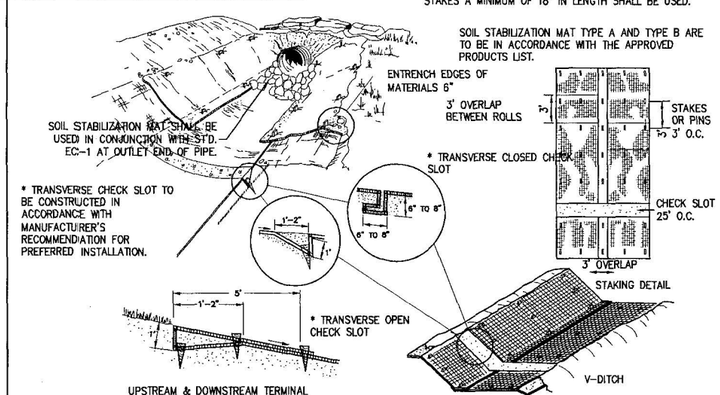


(TP)

TREE PROTECTION

N.T.S.

NOTE: STAKES SHALL BE WOOD OR METAL AS RECOMMENDED BY THE MANUFACTURER AND SHALL BE A MINIMUM OF 12" IN LENGTH. IN SANDY SOILS METAL STAKES A MINIMUM OF 18" IN LENGTH SHALL BE USED.

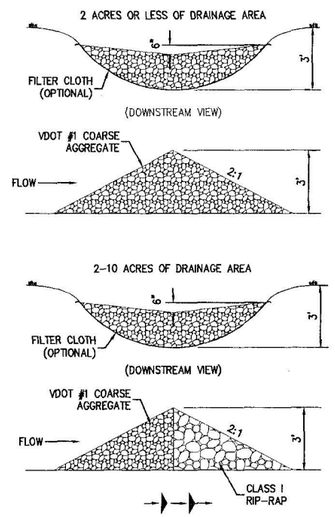


(EC-3)

SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE.

SOIL STABILIZATION MAT INSTALLATION

N.T.S



(CD)

SOURCE: VA. DSWC PLATE. 3.20-1

ROCK CHECK DAM

N.T.S.

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

COMMONWEALTH OF VIRGINIA
JASON A. JAMES
No. 040070
8/23/07
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL DETAILS SHEET

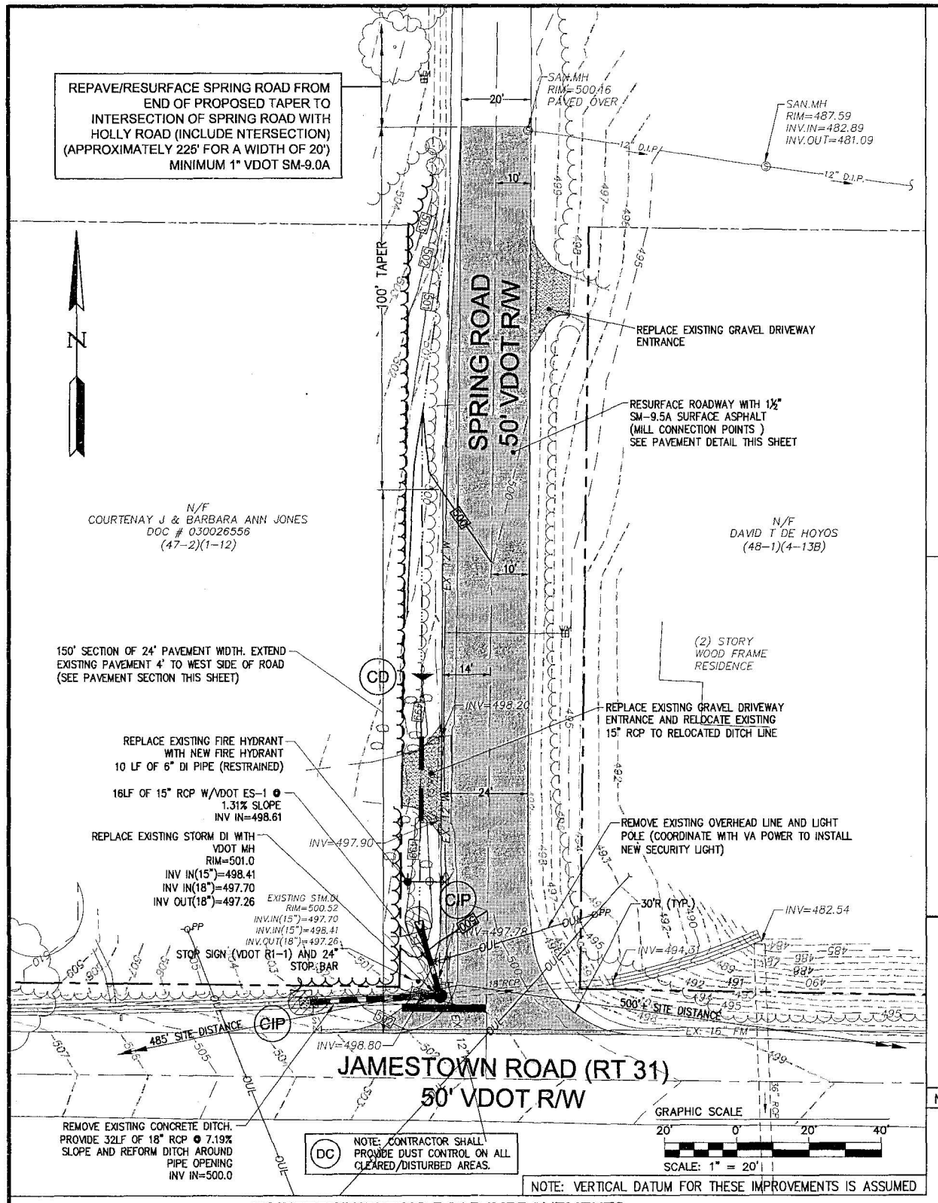
MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale	Date
NOTED	8/23/07

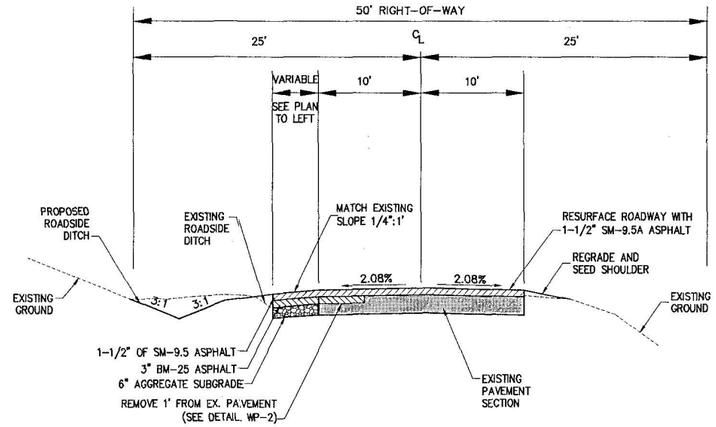
Project No. 9272

Drawing No. 35



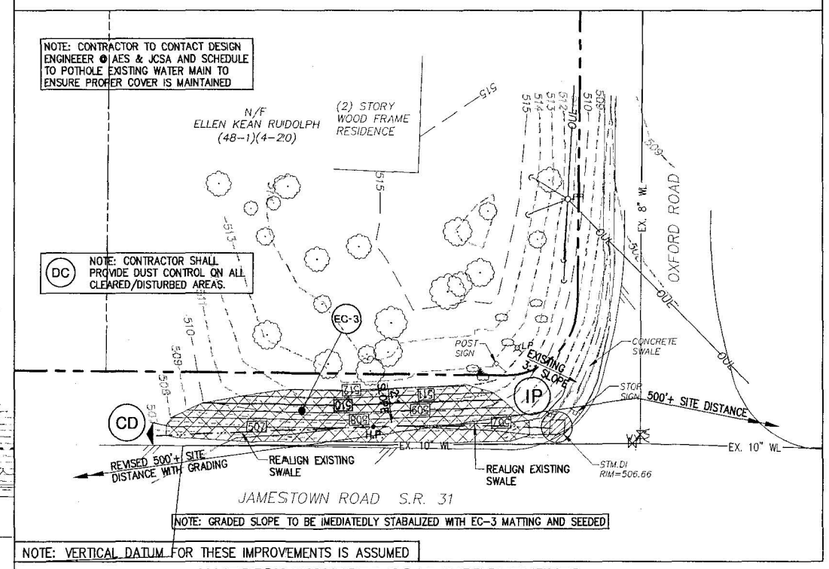
JAMESTOWN/SPRING ROAD IMPROVEMENTS

SCALE 1"=20'



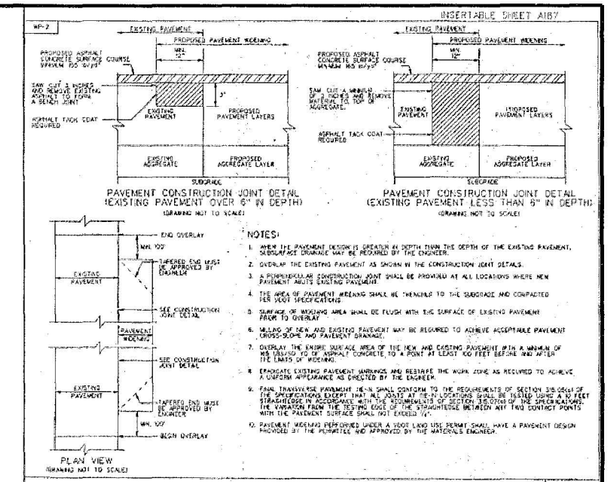
SPRING ROAD PAVEMENT SECTION

N.T.S.



JAMESTOWN/OXFORD ROAD IMPROVEMENTS

SCALE 1"=20'



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3	10/05	REVISED PER JCC COMMENTS 8/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/27/05	VMB

COMMONWEALTH OF VIRGINIA
JAMES A. JONES
No. 040170
PROFESSIONAL ENGINEER
8/23/07

AES CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

JAMESTOWN ROAD INTERSECTION IMPROVEMENTS

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT — JAMES CITY COUNTY — VIRGINIA

Designed	Drawn
JAG/MJR	MJR
Scale	Date
AS NOTED	8/23/07

Project No. 9272

Drawing No. 36

NOTE: PRIOR TO CONSTRUCTION A SEPARATE PLAN TO LOCATE THE PASSIVE RECREATION TRAILS MUST BE SUBMITTED AND APPROVED BY JAMES CITY COUNTY ENVIRONMENTAL DIVISION. THE LOCATION OF PASSIVE RECREATION TRAILS ARE TO BE FIELD VERIFIED BY COUNTY ENVIRONMENTAL STAFF TO ENSURE TRAILS ARE PROPERLY LOCATED OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.

WETPOND BMP #1 AS-BUILT

FOR

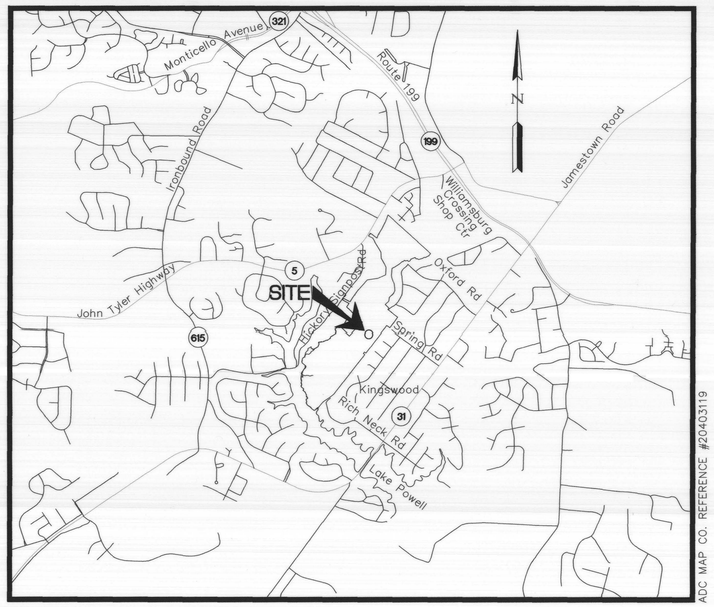
MARYWOOD SUBDIVISION

JAMES CITY COUNTY, VIRGINIA

INDEX OF SHEETS

SHEET NUMBER	DESCRIPTION
1	COVER SHEET
2	OVERALL SUBDIVISION LAYOUT & SHEET INDEX
3A	ENVIRONMENTAL INVENTORY PLAN
3B	ENVIRONMENTAL INVENTORY PLAN
4	OVERALL UTILITY PLAN
5	OVERALL DRAINAGE PLAN
6	PRELIMINARY PLAT
7	PRELIMINARY PLAT
8	PRELIMINARY PLAT
9	PRELIMINARY PLAT
10	INITIAL EROSION & SEDIMENT CONTROL PLAN
11	INITIAL EROSION & SEDIMENT CONTROL PLAN
12	INITIAL EROSION & SEDIMENT CONTROL PLAN
13	INITIAL EROSION & SEDIMENT CONTROL PLAN
14	FINAL EROSION & SEDIMENT CONTROL PLAN
15	FINAL EROSION & SEDIMENT CONTROL PLAN
16	FINAL EROSION & SEDIMENT CONTROL PLAN
17	FINAL EROSION & SEDIMENT CONTROL PLAN
18	ROAD AND UTILITY PLAN
19	ROAD AND UTILITY PLAN
20	ROAD AND UTILITY PLAN
21	ROAD AND UTILITY PLAN
22	GRADING AND DRAINAGE PLAN
23	GRADING AND DRAINAGE PLAN
24	GRADING AND DRAINAGE PLAN
25	GRADING AND DRAINAGE PLAN
26	ROAD AND UTILITY PROFILE
27	ROAD AND UTILITY PROFILE
28	ROAD AND UTILITY PROFILE
29	ROAD AND UTILITY PROFILE
30	STORMWATER MANAGEMENT
30A	STORMWATER MANAGEMENT
31	STORMWATER MANAGEMENT DETAILS
32	ROAD AND DRAINAGE NOTES & DETAILS
32A	ROAD AND DRAINAGE NOTES & DETAILS
33	NOTES AND DETAILS
34	GRINDER PUMP NOTES AND DETAILS
35	EROSION & SEDIMENT CONTROL DETAILS SHEET
36	JAMESTOWN ROAD INTERSECTION IMPROVEMENTS
L1	BMP#1 LANDSCAPE PLAN
L2	BMP#2 LANDSCAPE PLAN AND NOTES & DETAILS

DECEMBER 22, 2004



ADC MAP CO. REFERENCE #20403119

VICINITY MAP (APPROX. SCALE 1"=2000')

PROJECT NO.: 9272-0
JCC CASE: S-91-04

"THE STORM DRAINAGE AS-BUILT LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS, ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAVE MADE SUFFICIENT INSPECTION TO ENSURE THE ACCURACY OF THIS STATEMENT."

Thomas C. Sublett 3/01/10
THOMAS C. SUBLETT DATE

COMMONWEALTH OF VIRGINIA
3/01/10
THOMAS C. SUBLETT
No. 1886
LAND SURVEYOR

AES
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

LEGEND

EXISTING		PROPOSED
EX. W	WATER	W
EX. S	SANITARY SEWER	S
	STORM SEWER	
EX. FM	FORCE MAIN	F.M.
	MANHOLE	
	CURB DROP INLET	
	YARD DROP INLET	
	FLARED END SECTION	
	VALVE	
	FIRE HYDRANT ASSEMBLY	
	BLOW-OFF VALVE	
	AIR RELEASE ASSEMBLY	
	GRINDER PUMP CONNECTION	GPC
	CLEAN OUT	CO
	WATER METER	WM
	STREETLIGHT	
	CENTERLINE/BASELINE	
	RIGHT OF WAY	
	PROPERTY LINE	
	℄ DITCH/SWALE	
	CONCRETE LINED DITCH	
	EC-3 LINED DITCH	
	EXISTING TREE LINE	
	LIMITS OF CLEARING	
	REVERSE ROLL TOP GUTTER	
251	GROUND ELEVATION	251
	PROPOSED TOP OF CURB ELEV.	TC ELEV.
	STRAW BALE BARRIER	
	RIP RAP	
	GRADING LINE TIE-IN	
80	EXISTING CONTOUR ELEV.	
	PROPOSED CONTOUR ELEV.	80
	SIGN	
	CUT/FILL	C F

EROSION AND SEDIMENTATION CONTROL LEGEND

SF	SILT FENCE (SPEC. 3.05)
SSF	SUPER SILT FENCE (SPEC. 3.05)
IP	INLET PROTECTION (SPEC. 3.07)
CE	CONSTRUCTION ENTRANCE (SPEC. 3.02)
CD	CHECK DAM (SPEC. 3.20)
RR	RIP RAP (SPEC. 3.19)
OP	OUTLET PROTECTION (SPEC. 3.18)
CIP	CULVERT INLET PROTECTION (SPEC. 3.08-1 WITH STONE COMBIN. INSTEAD OF SILT FENCE)
ST	TEMPORARY SEDIMENT TRAP (SPEC. 3.13)
PS	PERMANENT SEEDING (SPEC. 3.32)
TP	TREE PROTECTION (SPEC. 3.38)
SCC	STORMWATER CONVEYANCE CHANNEL (SPEC. 3.17)
SB	SEDIMENT BASIN (SPEC. 3.14)
CRS	CONSTRUCTION ROAD STABILIZATION (SPEC. 3.03)
DD	DIVERSION DIKE (SPEC. 3.12)
BB	BRUSH BARRIER (SPEC. 3.06)

NOTE: SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.) AND DETAILS.

SITE DATA:

TAX MAP PARCEL No.	(47-2)(1-47)
ZONING:	R-1
PROJECT AREA:	115.28 ACRES / 5,021,410 SF
DISTURBED AREA:	22.72 ACRES / 989,567 SF
WETLAND DISTURBED AREA:	0.40 ACRES / 17,500 SF
WATERSHED:	MILL CREEK (LAKE POWELL) WATERSHED
NUMBER OF LOTS:	90
FLOOD HAZARD MAP:	FEMA PANEL NUMBER 510201 0045 B ZONE X: AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAIN

OWNER INFORMATION:

CENTEX HOMES
7025 HARBOUR VIEW BLVD., SUITE 115
SUFFOLK, VA 23435
ATTENTION: DAVID MURRAY
TELEPHONE: (757) 215-1260
FAX: (757) 215-1261

RESPONSIBLE LAND DISTURBER:

"THE PROFESSIONAL WHOSE SEAL IS AFFIXED HEREON SHALL ACT AS THE "RESPONSIBLE LAND DISTURBER" FOR PURPOSES OF PLAN APPROVAL ONLY. PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT, THE OWNER OR DEVELOPER SHALL PROVIDE THE NAME OF A "RESPONSIBLE LAND DISTURBER" WHO SHALL ASSUME RESPONSIBILITY AS THE "RESPONSIBLE LAND DISTURBER" FOR THE CONSTRUCTION PHASE OF THE PROJECT. THE OWNER OR DEVELOPER SHALL PROVIDE WRITTEN NOTIFICATION SHOULD THE "RESPONSIBLE LAND DISTURBER" CHANGE DURING CONSTRUCTION."

NOTES:

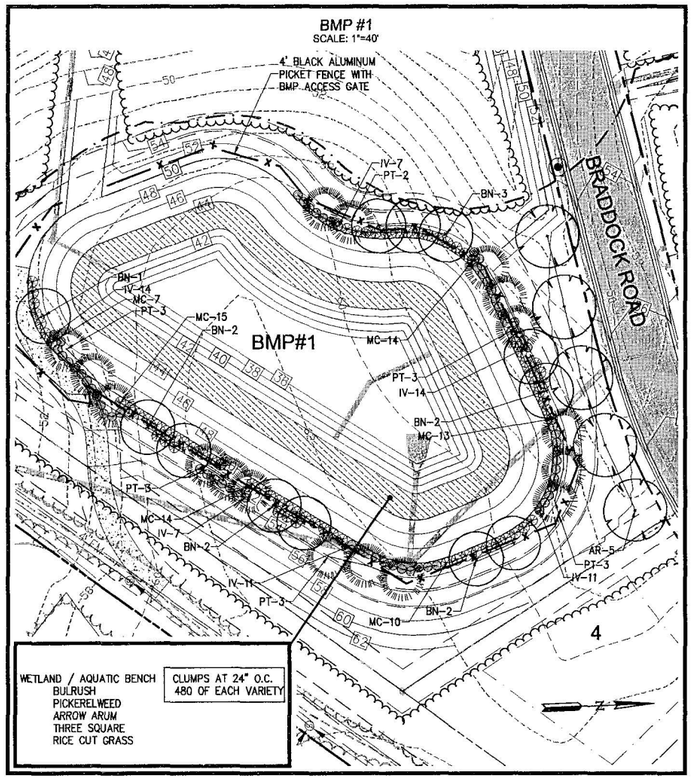
1. SETBACKS:
   FRONT = 35'; SIDE = 15'; REAR = 35'
   IF LOT IS LESS THAN 1 ACRE, MINIMUM WIDTH AT SETBACK LINE IS 100 FT.
   IF LOT IS MORE THAN 1 ACRE, MINIMUM WIDTH AT SETBACK LINE IS 150 FT.
   SPECIAL PROVISIONS FOR CORNER LOTS
   A) OF THE 2 SIDES OF A CORNER LOT, THE FRONT OF THE LOT SHALL BE DEEMED TO BE THE SHORTER OF THE 2 SIDES FRONTING THE STREETS.
   B) EACH CORNER LOT SHALL HAVE A MINIMUM WIDTH AT THE SETBACK LINE OF 125 FT.
2. ALL PROPOSED UTILITIES SHOWN ARE TO BE PLACED UNDERGROUND AS PER THE CURRENT JAMES CITY COUNTY SUBDIVISION ORDINANCE SECTION 19-33.
3. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY EXCAVATION ON THE SITE. CALL 1-800-552-7001.
4. ALL EXISTING UNUSED WELLS SHALL BE ABANDONED IN ACCORDANCE WITH THE STATE PRIVATE WELL REGULATIONS AND THE JAMES CITY COUNTY CODE.
5. ALL DRAINAGE EASEMENTS AND STORM WATER ATTENUATION BASINS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION.
6. VDOT DOES NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF THE BMPS OR THEIR STRUCTURES AND SHALL BE SAVED HARMLESS FROM ANY DAMAGES.
7. ALL RESIDENTIAL SUBDIVISION SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE.
8. NEW PROPERTY MONUMENTS WILL BE INSTALLED PER SECTIONS 19-34 THROUGH 19-36 OF THE JAMES CITY COUNTY SUBDIVISION ORDINANCE.
9. ALL NEW STREET SIGNS SHALL BE INSTALLED PER SECTION 19-55 OF THE JAMES CITY COUNTY SUBDIVISION ORDINANCE.
10. THE CONTRACTOR SHALL AT ALL TIMES POSSESS AND MAINTAIN A CURRENT COPY OF THE HRPDC REGIONAL STANDARDS AND THE JAMES CITY SERVICE AUTHORITY STANDARDS AND SPECIFICATIONS AT THE SITE AND READILY AVAILABLE FOR IMMEDIATE REFERENCE.
11. WETLANDS AND LAND WITHIN RESOURCE PROTECTION AREAS SHALL REMAIN IN A NATURAL UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES PERMITTED BY SECTION 23-7(c) OF THE JAMES CITY COUNTY CODE.
12. DISTURBANCE TO TOPOGRAPHY WITH SLOPES EQUAL TO OR GREATER THAN 25% IS PROHIBITED UNLESS A WAIVER HAS BEEN OBTAINED FROM JAMES CITY COUNTY. TOPOGRAPHY SHOWN ON THESE PLANS ARE REASONABLY ACCURATE FOR LAND FORM, HOWEVER THIS TOPOGRAPHY MAY NOT ACCURATELY LOCATE OR SHOW STEEPLY SLOPED GROUND PLANES. PRIOR TO ANY LOT DISTURBANCE, THE HOMEOWNER SHALL IDENTIFY AREAS OF 25%, OR GREATER SLOPES AND SHALL SECURE ALL NECESSARY APPROVALS THROUGH THE ENVIRONMENTAL DIVISION TO DISTURB STEEP SLOPES..
13. SECURITY LIGHTS, WHERE NOTED, REFER TO STREET LIGHTS INSTALLED FOR SECURITY AND NIGHT TIME ILLUMINATION OF THE ADJACENT STREET. THESE LIGHTS, POLES AND LUMINARS WILL NOT BE MAINTAINED OR REPLACED BY VDOT.
14. A LAND DISTURBING PERMIT, SILTATION AGREEMENT WITH SURETY, AND A PRE-CONSTRUCTION CONFERENCE IS REQUIRED FOR THIS PROJECT.
15. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON THE EXISTING WATER MAINS AND SANITARY FORCE MAINS.
16. THE CONTRACTOR IS TO PLACE AN RPA BUFFER SIGN AT THE INTERSECTION OF EACH LOT LINE WITH AN RPA BUFFER. THE STANDARD JAMES CITY COUNTY RPA BUFFER SIGN IS TO BE LOCATED AT THE LIMIT OF THE BUFFER. SIGNS ARE AVAILABLE FROM MR. WAYLAND BASS, THE JAMES CITY COUNTY ENGINEER, AT A FEE OF $30 / SIGN. TELEPHONE: 757-253-6671 FOR FURTHER INFORMATION.
17. ALL STORM PIPE SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) SMOOTH WALL UNLESS OTHERWISE NOTED.
18. STORM STRUCTURES SHALL CONFORM TO VDOT ROAD & BRIDGE STANDARDS AND SPECIFICATIONS. ALL MANHOLES SHALL INCLUDE INLET SHAPING (IS-1) AND MANHOLES DEEPER THAN 4 FEET SHALL HAVE STEPS (ST-1). PIPE BEDDING SHALL BE IN ACCORDANCE WITH VDOT PB-1 AND MANUFACTURERS SPECIFICATIONS.
19. NATURAL OPEN SPACE AREAS SHALL REMAIN IN AN UNDISTURBED STATE EXCEPT FOR THOSE ACTIVITIES REFERENCED ON THE DEED OF EASEMENT.
20. CENTEX HOMES WILL PROVIDE DEVELOPMENT PLANS (PLOT PLANS) FOR GROUPINGS OF CONSECUTIVE LOTS, NOT TO EXCEED 10 IN NUMBER, WHICH WILL DEPICT INDIVIDUAL LOT LIMITS OF CLEARING AND GRADING ACTIVITIES NECESSARY TO ACHIEVE APPROPRIATE SURFACE RUNOFF FOR THE GROUP OF LOTS. THESE DEVELOPMENT PLANS ARE TO BE SUBMITTED TO THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION FOR REVEIW AND APPROVAL BEFORE APPLICABLE, INDIVIDUAL SINGLE-FAMILY BUILDING PERMIT APPLICATIONS ARE SUBMITTED FOR REVIEW.
21. SURVEY DATA PROVIDED BASED UPON JAMES CITY COUNTY GEODETIC CONTROL NAD-83 ESTABLISHED FROM MONUMENT 318.

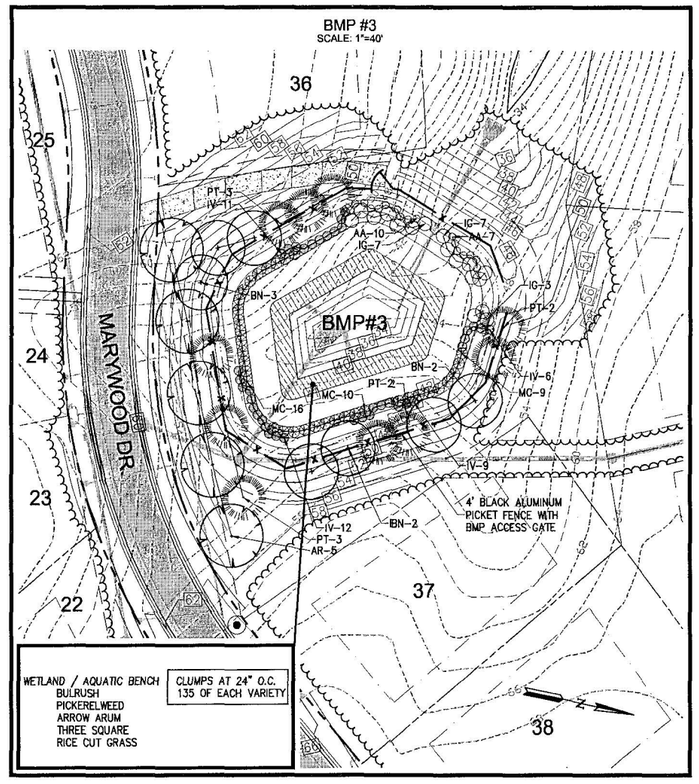
THIS PROJECT DOES NOT RELY ON EXISTING LAKE POWELL TO MEET STORMWATER MANAGEMENT CRITERIA.

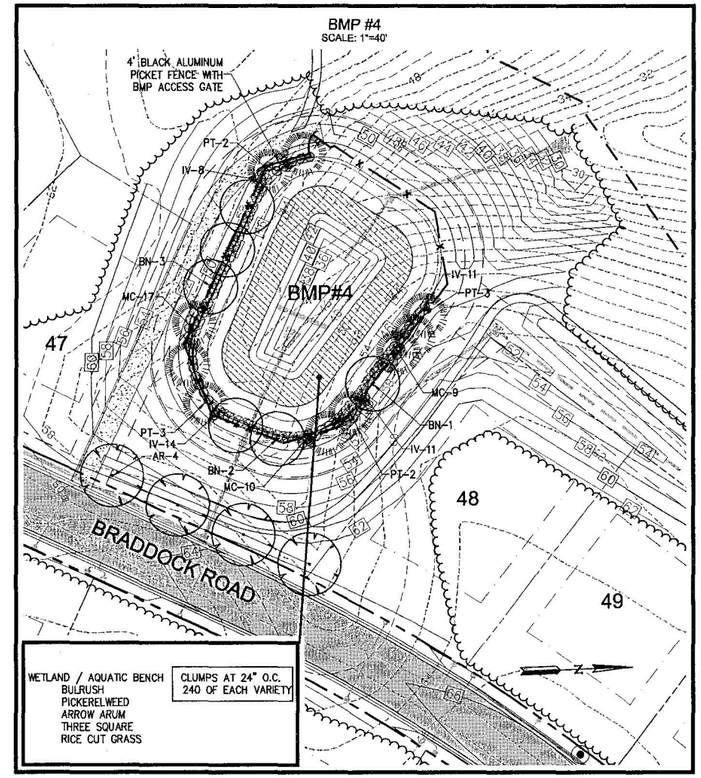
THIS PLAN WAS GRANTED PRELIMINARY APPROVAL BY THE JAMES CITY COUNTY PLANNING COMMISSION ON DECEMBER 5, 2005.

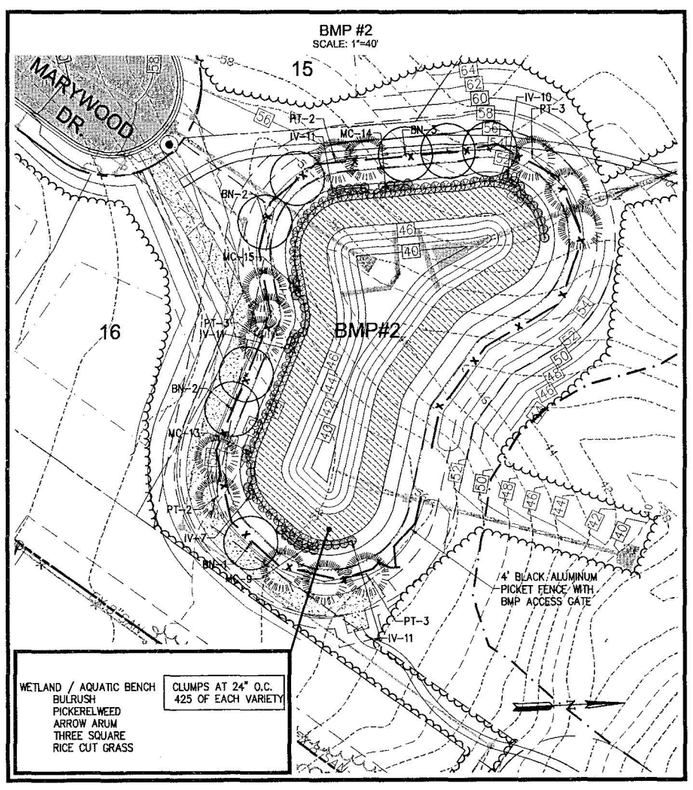
No.	DATE	REVISION / COMMENT / NOTE	BY
1	3/10	RECORD DRAWINGS	VMB

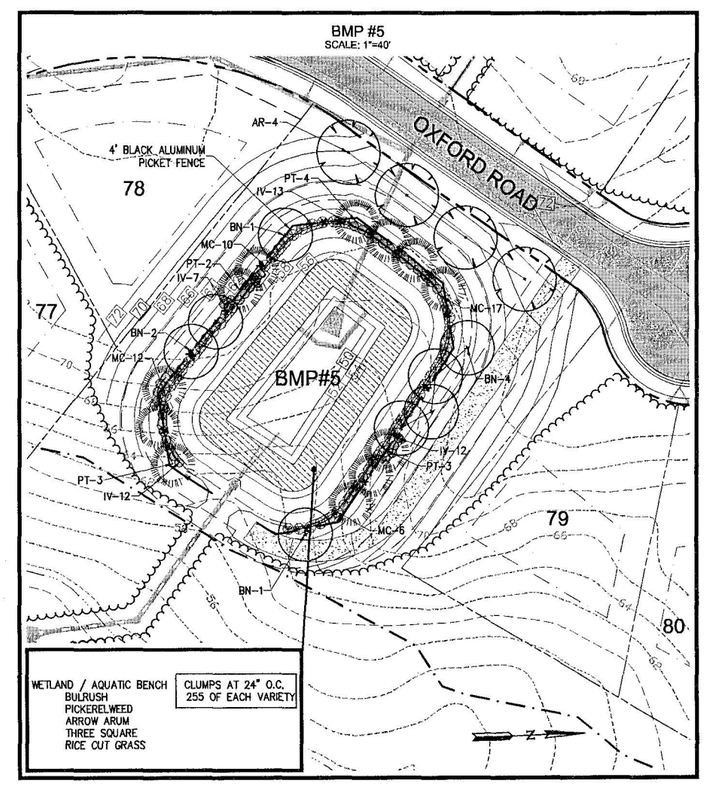
RECORD DRAWING-3/10











SEE SHEET L2 FOR PLANT SCHEDULE AND NOTES AND DETAILS.

No.	DATE	REVISION / COMMENT / NOTE	BY
8	08/07	REVISED PER JCC ENVIRONMENTAL COMMENTS 8/13/07	JAG
7	06/07	REVISED PER JCC COMMENTS 3/07 THROUGH 5/07	JAG
6	02/07	REVISED PER JCC COMMENTS 11/06 THROUGH 1/07	JAG
5	10/06	REVISED PER JCC COMMENTS 8/06 THROUGH 10/06	JAG
4	2/06	REVISED PER JCC COMMENTS 11/05 THROUGH 1/06	VMB
3	10/05	REVISED PER JCC COMMENTS 6/05	VMB
2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. BASIC
No. 001103
LANDSCAPE ARCHITECT
8/23/07

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

BMP LANDSCAPE PLAN

MARYWOOD SUBDIVISION

JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed	Drawn
CMB/GRR	GRR
Scale	Date
1" = 40'	8/23/07

Project No. 9272

Drawing No. L1

PLANT SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENT
TREES:						
AR	30	ACER RUBRUM 'RED SUNSET'	'RED SUNSET' RED MAPLE	1-1/2" CAL.	B & B	SINGLE STEM
BN	41	BETULA NIGRA 'DURAHEAT'	'DURAHEAT' RIVER BIRCH	1-1/2" CAL.	B & B	3 STEMS, MAX
PT	64	PINUS TAEDA	LOBLOLLY PINE	6' HT.	B & B	SINGLE STEM
QP	2	QUERCUS PHELLOS	WILLOW OAK	1-1/2" CAL.	B & B	SINGLE STEM
SHRUBS:						
AA	17	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	15-18" HT./ W	CONT.	DENSE, FULL
IG	25	ILEX GLABRA	INKBERRY HOLLY	15-18" HT./ W	CONT.	M & F FORM
IV	240	ITEA VIRGINICA 'HENRY'S GARNET'	'HENRY'S GARNET' VIRGINIA SWEETSPIRE	15-18" HT./ W	CONT.	DENSE, FULL
MC	240	MYRICA CERIFERA	SOUTHERN WAXMYRTLE	15-18" HT./ W	CONT.	DENSE, FULL
WETLAND/AQUATIC BENCH:						
–	1,535	LEERSIA ORYZOIDES	RICE CUT GRASS	1 QT. POT	CONT.	24" O.C.
–	1,535	PELTANDRA VIRGINICA	ARROW ARUM	1 QT. POT	CONT.	24" O.C.
–	1,535	PONTEDERIA CORDATA	PICKERELWEED	1 QT. POT	CONT.	24" O.C.
–	1,535	SCIRPUS AMERICANUS (S. OLNEYI)	BULRUSH	1 QT. POT	CONT.	24" O.C.
–	1,535	SCIRPUS PUNGENS (S. AMERICANUS)	THREE SQUARE	1 QT. POT	CONT.	24" O.C.

NOTE: IT IS NOT NECESSARY FOR ALL LANDSCAPE MATERIAL TO BE SPECIMEN QUALITY, OTHER THAN IN THE COMMUNITY PARK.

JAMES CITY COUNTY LANDSCAPE REQUIREMENTS

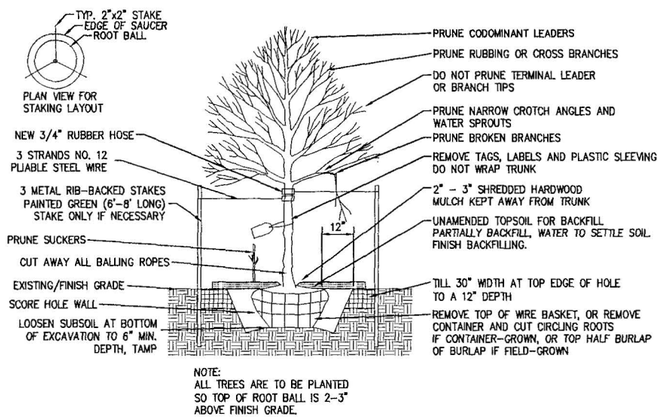
AREAS			TREES AND SHRUBS		
LANDSCAPE YARD	COUNTY REQ	TOTAL QTY PROVIDED	RATIO	MIN. NUMBER REQUIRED	NEW PLANTINGS PROVIDED
PARKING LOT	N/A	20 SPACES	1 TREE:5 SPACES AND 2 SHRUBS:5 SPACES	4 TREES 30% DCIDUOUS 70% 2 LG EVERGREEN 2 DECID SHADE 8 SHRUBS 50% 4 EVERGREEN	4 TREES 30% DCIDUOUS 70% 2 LG EVERGREEN 2 DECID SHADE 8 SHRUBS 100% 8 EVERGREEN

GENERAL NOTES:

1. ALL PLANT MATERIAL SHALL BE INSTALLED AS SPECIFIED IN THE VNLA STANDARDIZED LANDSCAPE SPECIFICATIONS, LATEST EDITION.
2. GROUPINGS OF PLANTS SHALL BE MULCHED IN CONTINUOUS BEDS.
3. AREAS NOT PLANTED, AREAS OUTSIDE EXISTING TREE LINES AND NOT COVERED IN SITE CONTRACT ARE TO BE SODDED OR SEEDED WITH AGRUM FESCUE OR APPROVED SUBSTITUTE.
4. SINGLE STEM DECIDUOUS SHADE TREES SHALL BE STAKED AS DETAILED IN TREE PLANTING METHOD.
5. PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. ALL INSTALLED PLANT MATERIAL SHALL BE SUBJECT TO REGULAR MAINTENANCE, INCLUDING FERTILIZATION, PRUNING, REPLACEMENT, INSECT AND DISEASE CONTROL, WATERING, MULCHING, AND WEED CONTROL.

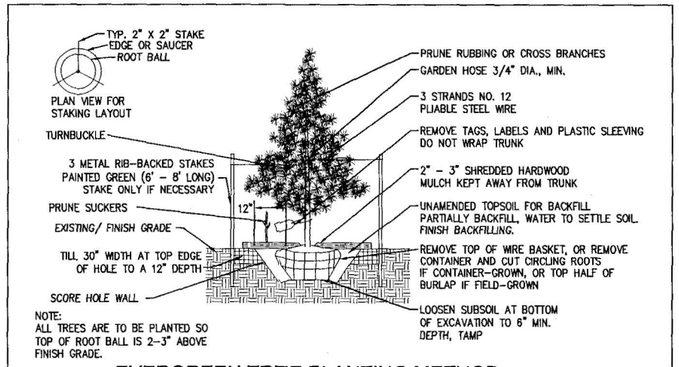
GENERAL NOTES FOR WETLANDS & AQUATIC BENCH PLANTING:

1. ALL WOODY PLANT MATERIAL SHALL BE INSTALLED A SPECIFIED IN THE VNLA STANDARDIZED LANDSCAPE SPECIFICATIONS, LATEST EDITION. ALL WETLAND & AQUATIC BENCH PLANTING SHALL BE INSTALLED AS SPECIFIED IN MINIMUM STANDARD 3.05 OF THE VIRGININA STORMWATER MANAGEMENT HANDBOOK.
2. ALL PLANT MATERIAL SHALL BE OBTAINED FROM LOCAL AQUATIC PLANT NURSERIES AND TRANSPLANTED/ INSTALLED BETWEEN APRIL & JUNE.
3. ONE PLANT SPECIES SHOULD BE PLANTED WITHIN A PLANTING ZONE, BASED ON THEIR APPROX. DEPTH REQUIREMENTS.
4. PLANT SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.



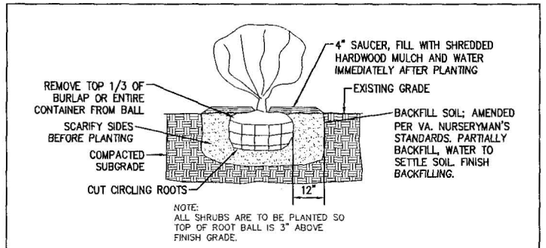
NOTE:
ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 2-3" ABOVE FINISH GRADE.

DECIDUOUS TREE PLANTING METHOD
N.T.S.



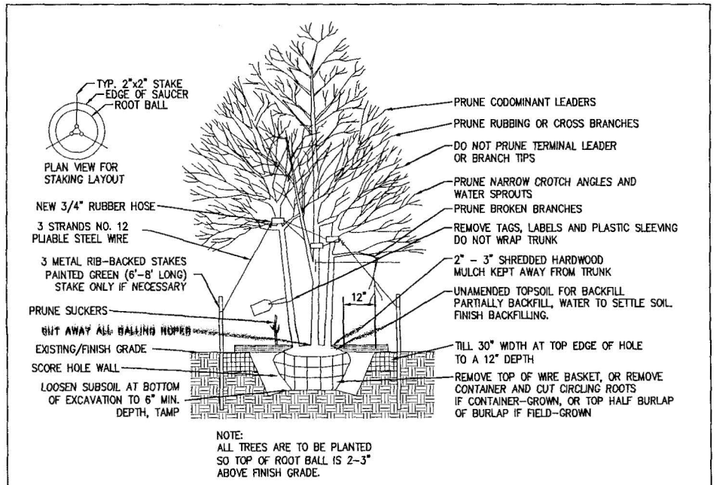
NOTE:
ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 2-3" ABOVE FINISH GRADE.

EVERGREEN TREE PLANTING METHOD
N.T.S.



NOTE:
ALL SHRUBS ARE TO BE PLANTED SO TOP OF ROOT BALL IS 3" ABOVE FINISH GRADE.

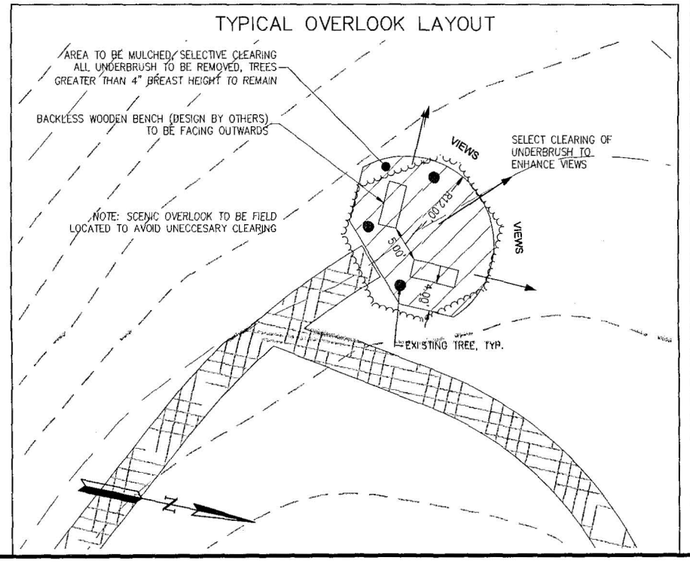
SHRUB PLANTING METHOD
N.T.S.



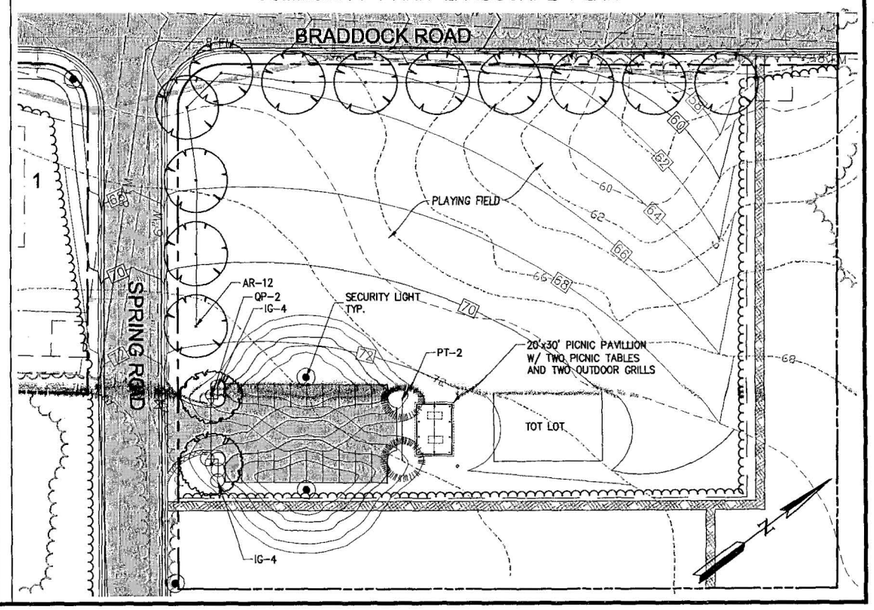
NOTE:
ALL TREES ARE TO BE PLANTED SO TOP OF ROOT BALL IS 2-3" ABOVE FINISH GRADE.

MULTI-STEM TREE PLANTING METHOD
N.T.S.

TYPICAL OVERLOOK LAYOUT



COMMUNITY PARK LANDSCAPE PLAN



No.	DATE	REVISION / COMMENT / NOTE	BY
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2	4/05	REVISED PER JCC COMMENTS 2/17/05	VMB

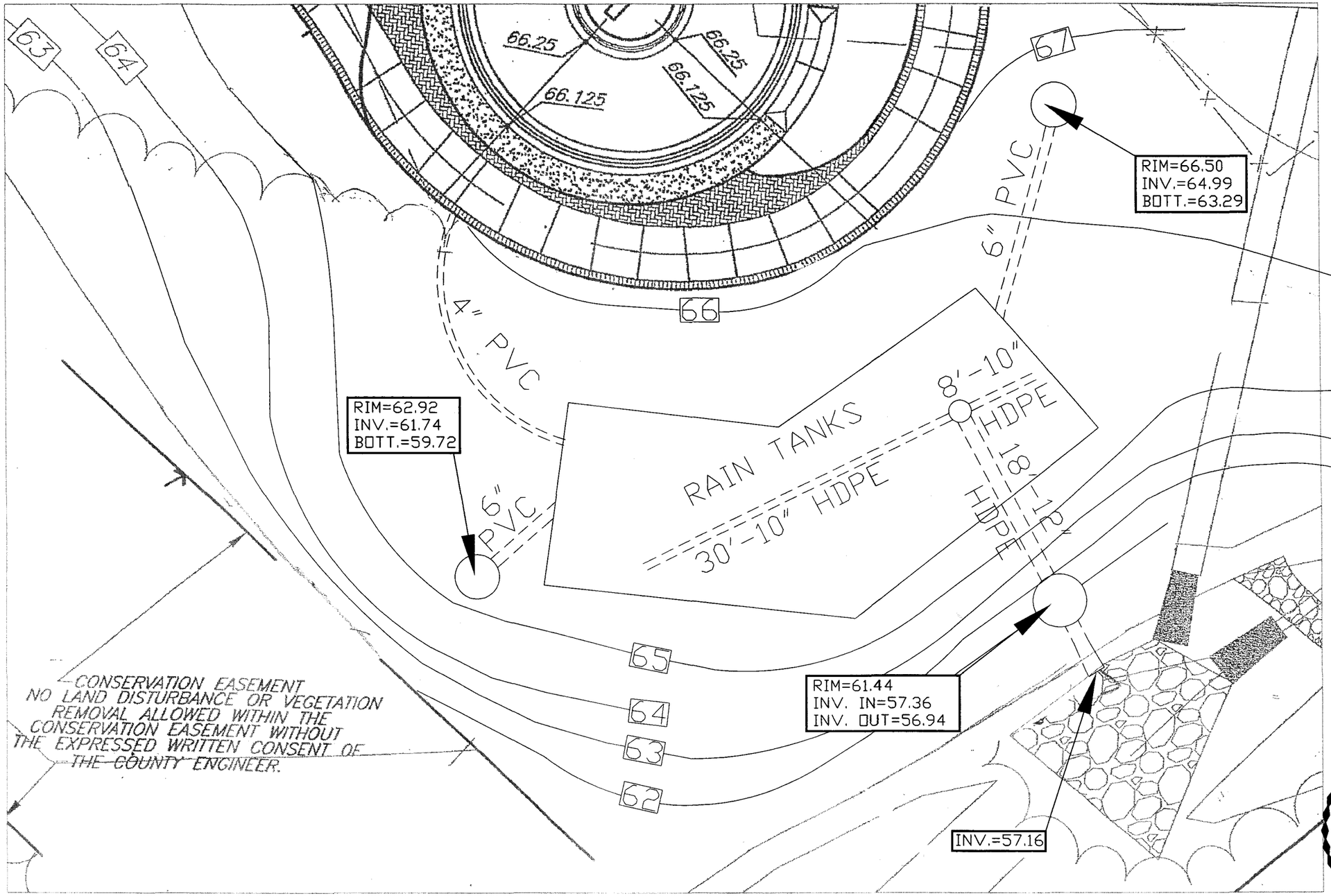
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND

LANDSCAPE PLAN AND NOTES & DETAILS
MARYWOOD SUBDIVISION
JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

Designed CMB/GRP Drawn GRP
Scale 1" = 40' Date 8/23/07
Project No. 19272
Drawing No. L2

RECORD INFORMATION

SP-122-03
SUT REVIEW SET MC 057



COMMONWEALTH OF VIRGINIA
8/5/06
PETER FARRELL
No. 002036
Peter Farrell
LAND SURVEYOR

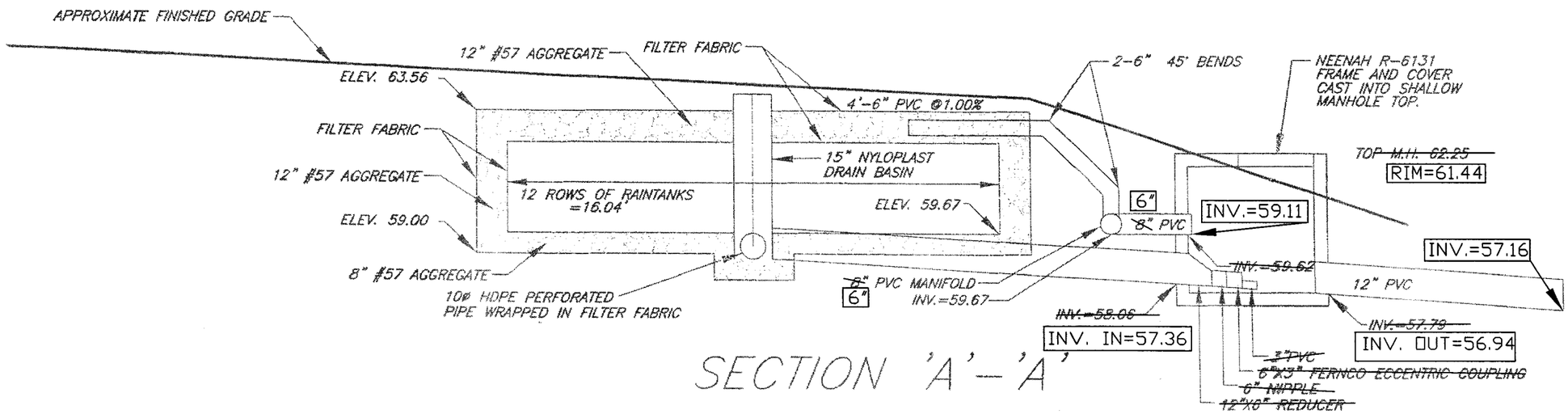
LANDMARK
DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Consultants

4029 Ironbound Road
Suite 100
Williamsburg, VA 23188
Tel. (757) 253-2975
Fax (757) 229-0049
Email: lmdg@landmarkdg.com

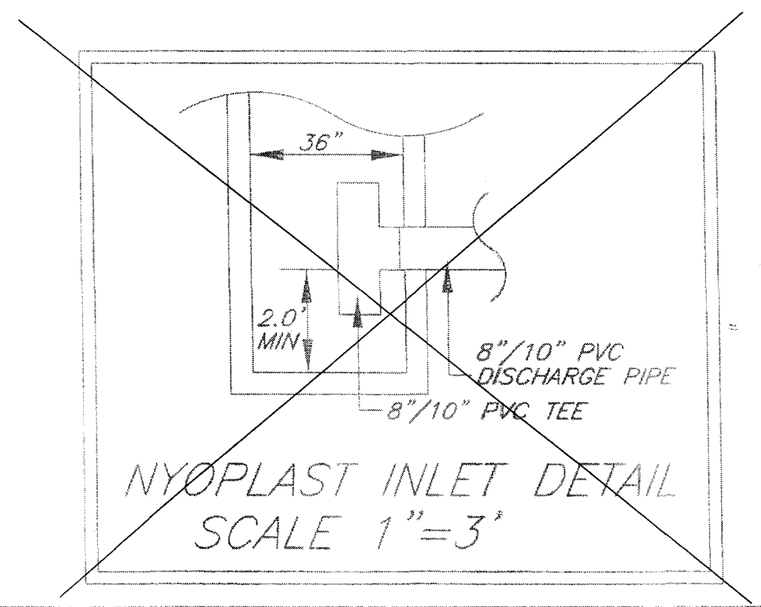
RECORD DRAWINGS
ST. BEDE CHURCH
PRAYER GARDEN
"RAIN TANKS"
JAMES CITY COUNTY, VA
9/05/06
SHEET 1 OF 2

THESE RECORD DRAWINGS ARE BASED ON A FIELD SURVEY BY LANDMARK DESIGN GROUP, INC. PERFORMED 8-31-06 AND INFORMATION SUPPLIED BY CONTRACTOR.

17358W



SECTION 'A'-'A'



NYOPLAST INLET DETAIL
SCALE 1"=3'

COMMONWEALTH OF VIRGINIA
8/5/06
PETER FARRELL
No. 002036
LAND SURVEYOR

THESE RECORD DRAWINGS ARE BASED ON A FIELD SURVEY BY LANDMARK DESIGN GROUP, INC. PERFORMED 8-31-06 AND INFORMATION SUPPLIED BY CONTRACTOR.

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Consultants

4029 Ironbound Road
Suite 100
Williamsburg, VA 23188
Tel. (757) 253-2975
Fax (757) 229-0049
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RECORD DRAWINGS
ST. BEDE CHURCH
PRAYER GARDEN
"RAIN TANKS"
JAMES CITY COUNTY, VA
9/05/06
SHEET 2 OF 2

RECORD INFORMATION

17358W

LANDMARK DESIGN GROUP
TRANSMITTAL

To: Scott Thomas

Company: JCC Environmental

From: Peter Farrell

Date: 9/5/06

Subject: St Bede Prayer Garden

LMDG Job No.: 1970077-000.43

RECEIVED
SEP 5 2006
ENVIRONMENTAL DIVISION

SP-28-01
SP-122-03
PC 204

Attached please find:
- X Prints
- ☐ Plans
- ☐ Specifications
- ☐ Drawings
- ☐ Report
- ☐ Letter
- ☐ Original Plat

Transmitted as checked below:
- ☐ For your use
- ☐ As requested
- X For review and comment
- ☐ For approval
- ☐ Approved
- ☐

Copies	Date	Drawing No.	Description
3	9/5/06	17358W	Record Drawing, St Bede Prayer Garden, Rain Tanks
1ea.	-	-	Color Photographs of construction supplied by contractor.

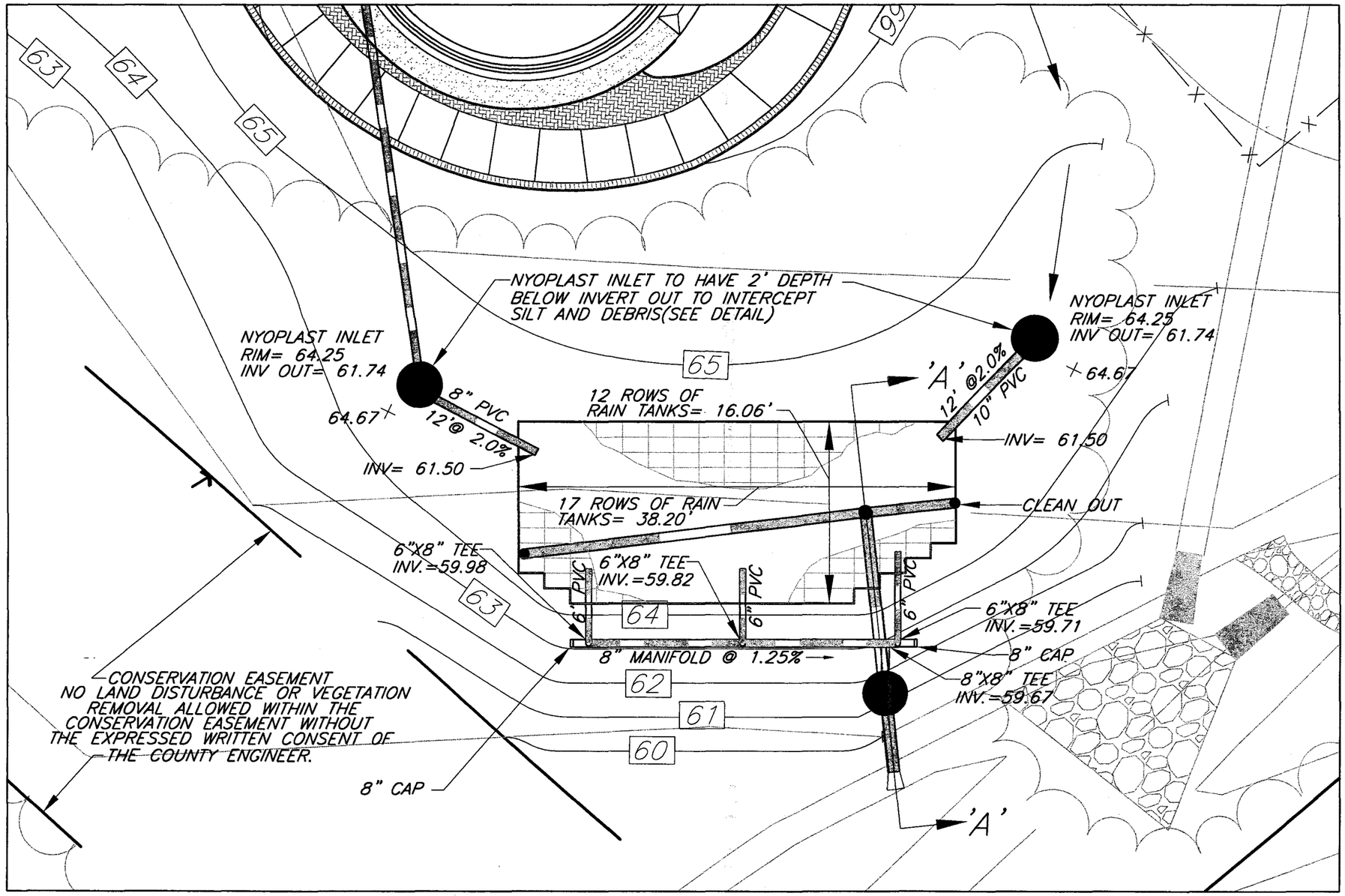
Notes: Submitted at the request of Linwood Burton with Bush Construction.

Copies	Enclosures
1. File:	☐
2.	☐
3.	☐
4.	☐
5.	☐

LandMark Design Group, Inc.

By: PF

Engineers ♦ Planners ♦ Surveyors ♦ Landscape Architects ♦ Environmental Scientists
4029 Ironbound Road, Suite 100, Williamsburg, VA 23188 (757) 253-2975 FAX: (757) 229-0049 lmdg@landmarkdg.com



SP-122-03
Pc204

THIS SKETCH MODIFIES WORK SHOWN ON SHEET C-1.0 ST. BEDE PRAYER GARDEN

Rain Tank Manufactured BMP System to replace Bioretention Basin on SP amend SP-18-03

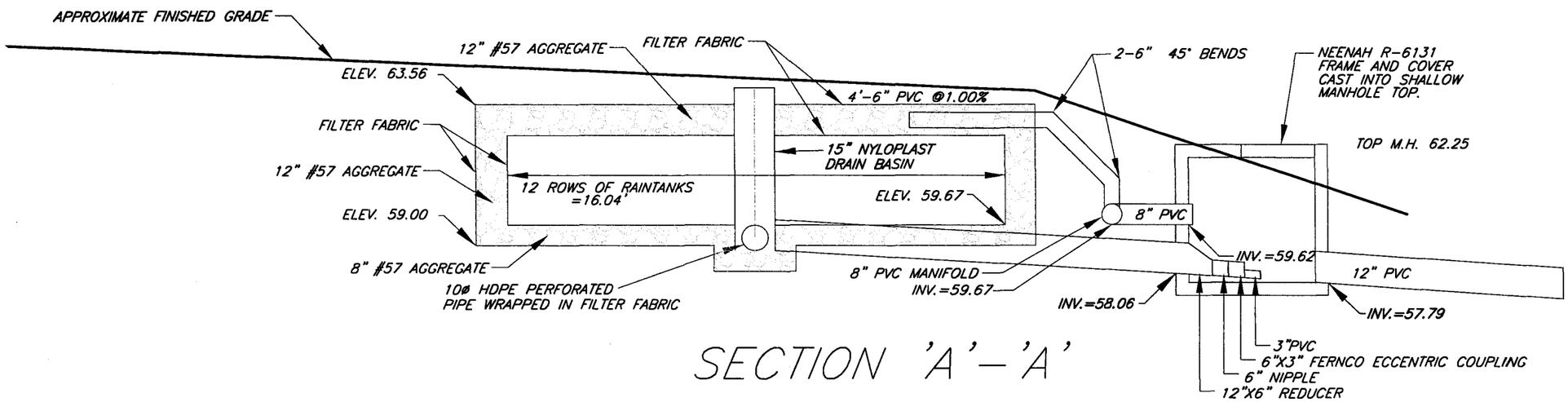
APPROVED
James City County
Environmental Division
By:
Date: 05-20-05

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Scientists

4029 Ironbound Road
Suite 100
Williamsburg, VA 23188
Tel. (757) 253-2975
Fax (757) 229-0049
Email: lmdg@landmarkdg.com

Sketch No.: 1 OF 2
Project Name: ST BEDES PRAYER GARDEN REVISION OF STORMWATER MANAGEMENT
Project No.: 1970077
Drafted by: RRJ
Checked by: WFB
Date: 5/17/05

GRAPHIC SCALE
0 10 20
1 inch = 10 ft. (IN FEET)

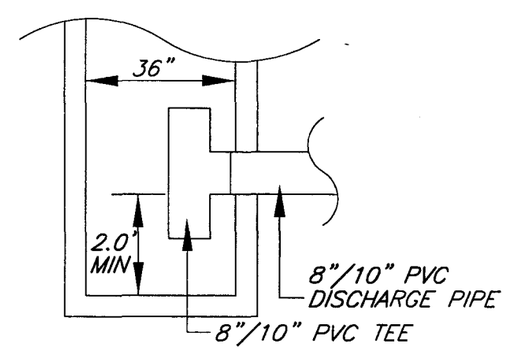


SECTION 'A'–'A'

NOTES:

1. AS BUILT AND CONSTRUCTION CERTIFICATIONS WILL BE REQUIRED UPON COMPLETION OF CONSTRUCTION.

2. ALL INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND INSTALLATION GUIDE LINES.



NYOPLAST INLET DETAIL
SCALE 1"=3'

APPROVED
James City County
Environmental Division
By: [signature]
Date: 05-20-05

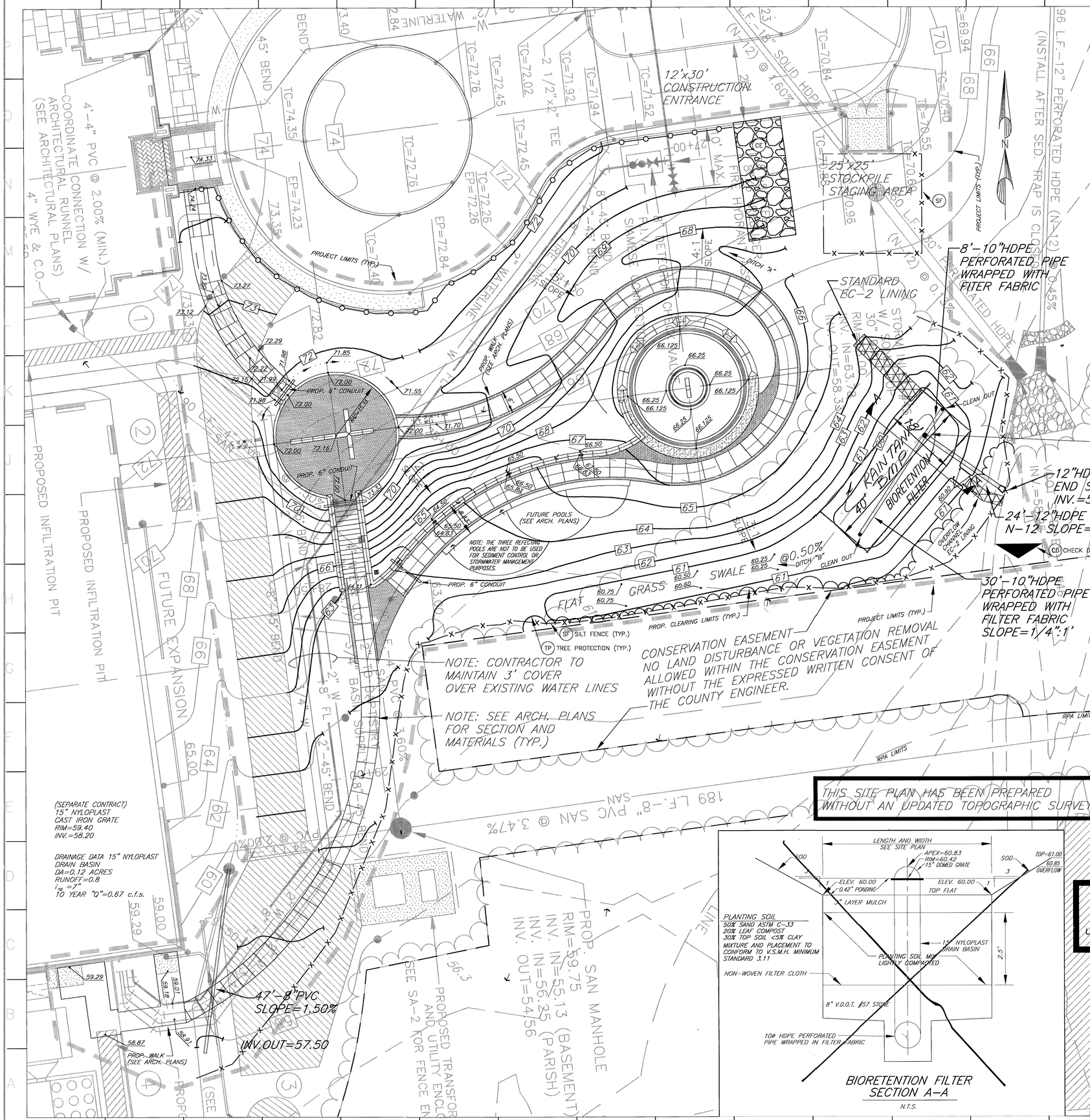
THIS SKETCH MODIFIES WORK SHOWN
ON SHEET C-1.0 ST. BEDE PRAYER GARDEN

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Scientists

4029 Ironbound Road
Suite 100
Williamsburg, VA 23188
Tel. (757) 253-2975
Fax (757) 229-0049
Email: lmdg@landmarkdg.com

Sketch No.: 2 OF 2
Project Name: ST. BEDE PRAYER GARDEN REVISION OF STORMWATER MANAGEMENT
Project No.: 1970077
Drafted by: RRJ
Checked by: WFB
Date: 5/17/05

GRAPHIC SCALE
0 4 8
1 inch = 4 ft. (IN FEET)



NOTE: BASE PLAN DATA IS FROM SITE PLAN TITLED "ST. BEDE CATHOLIC CHURCH WILLIAMSBURG, VIRGINIA" DATED MARCH 21, 2001 BY LANDMARK DESIGN GROUP

NOTE: THE STORMWATER MANAGEMENT/BMP FACILITY AS PROPOSED FOR THIS PROJECT WILL REQUIRE SUBMISSION, REVIEW AND APPROVAL OF A RECORD DRAWING (AS-BUILT) AND CONSTRUCTION CERTIFICATION PRIOR TO RELEASE OF THE POSTED BOND/SURETY.

NOTE: ALL SLOPES STEEPER THAN 3:1 (HOR:VERT.) SHALL RECEIVE EC-2 MATTING.

NOTE: DO NOT EXCAVATE FOR THE BIORETENTION FILTER UNTIL ALL OTHER CONSTRUCTION HAS BEEN COMPLETED AND THE AREA STABILIZED. SILT DEPOSITS AND UNNECESSARY COMPACTION OF THE FILTER MEDIA WILL REDUCE THE PERFORMANCE OF THE BIORETENTION FILTER.

15" NYLOPLAST DRAIN BASIN DOMED GRATE REQ'D. RIM=60.42 APEX=60.83 INV.=56.25

DRAINAGE DATA 15" NYLOPLAST DRAIN BASIN DA=0.39 ACRES RUNOFF=0.50 i_{10} =7" 10 YEAR "Q"=1.37 c.f.s.

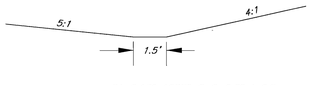
THIS SITE PLAN HAS BEEN PREPARED WITHOUT AN UPDATED TOPOGRAPHIC SURVEY

BIORETENTION FILTER SECTION A-A

N.T.S.

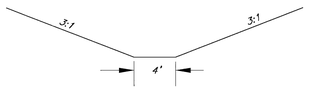
AMENDED SITE PLAN
J.C.C. CASE # SP-18-03

PLAN SCALE: 1"=10'
GRAPHIC SCALE IN FEET



DA=0.139 ACRES @ C=0.35 i=6.5
Q_{10} =0.316
N=0.5
S =0.0667 1/1
D=0.07'
V=1.20 ft./sec.

DITCH "A"
N.T.S.



DA=0.25 ACRES @ C=0.45 i=6.5
Q_{10} =0.73
N=0.5
S =0.005 1/1
D=0.19'
V=1.03 ft./sec.

DITCH "B"
N.T.S.

SEQUENCE OF CONSTRUCTION

1. CONTRACTOR MUST ORGANIZE A PRE-CONSTRUCTION MEETING BETWEEN OWNER, THE ENGINEER, THE CONTRACTOR AND THE JAMES CITY COUNTY INSPECTOR PRIOR TO STARTING ANY CONSTRUCTION, CLEARING AND GRUBBING OR EARTHWORK.

2. FLAG LIMITS OF CLEARING AND INSTALL SILT FENCE AND TREE PROTECTION WHERE REQUIRED AT PERIMETER OF WORK AREAS AS INDICATED, OR AS OTHERWISE NECESSARY TO PREVENT SEDIMENT FROM MIGRATING INTO ADJACENT AREAS. THE OWNER MUST BE NOTIFIED PRIOR TO ANY CLEARING OPERATION.

3. INSTALL CONSTRUCTION ENTRANCE AS INDICATED ON THE EROSION AND SEDIMENT PLANS.

4. CLEAR AND GRUB WITHIN FLAGGED LIMITS OF CLEARING. PROTECT TREES WITHIN THESE AREAS AS INDICATED BY OWNER TO BE SAVED.

5. INSTALL STORM PIPES, EXCEPT FOR THE BIORETENTION FILTER PIPES.

6. ROUGH GRADE FOR WALKS, GATHERING AREA, STAIRS AND COLUMBARIUM.

7. ALL DENUDED AREAS THAT WILL REMAIN DENUDED FOR A LONGER PERIOD OF TIME THAN 7 DAYS MUST RECIEVE TEMPORARY SEEDING.

8. CLEAN AND REMOVE SEDIMENT FROM INLETS, STILLING BASINS AND ALL EROSION AND SEDIMENT CONTROL DEVICES AS NECESSARY.

9. FINE GRADE FOR WALKS, GATHERING AREA, STAIRS AND COLUMBARIUM.

10. ALL DISTURBED AREAS MUST RECEIVE PERMANENT SEEDING AS SOON AS FINISHED GRADES ARE ACHIEVED.

11. COMPLETE PERMANENT SEEDING. FERTILIZE AND MULCH AS REQUIRED.

12. AFTER AN ACCEPTABLE AND STABLE GROUND COVER HAS BEEN ESTABLISHED, REMOVE SILT FENCE, TREE PROTECTION, DIVERSIONS AND SEDIMENT CONTROL MEASURES.

13. CONSTRUCTION BIORETENTION FILTER AND LANDSCAPE.

SITE PLAN REVIEW SET
SEPTEMBER 12, 2003

No.	Revisions	Date
1	REVEISED PER COUNTY COMMENTS	11/17/03

SAINT BEDE PRAYER GARDEN

JAMES CITY COUNTY, VIRGINIA

HOPKE & ASSOCIATES INC.
ARCHITECTURE/PLANNING/INTERIORS
1156 Jamestown Road, Suite C
Williamsburg, VA 23185
Phone (757)229-1100
Fax (757)229-0869

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Scientists
4029 Ironbound Road
Suite 100
Williamsburg, VA 23188
Tel.: 1-757-253-2975
Fax: 1-757-229-0049

Seal: COMMONWEALTH OF VIRGINIA — RICHARD S. PHILLIPS No. 023631 — PROFESSIONAL ENGINEER

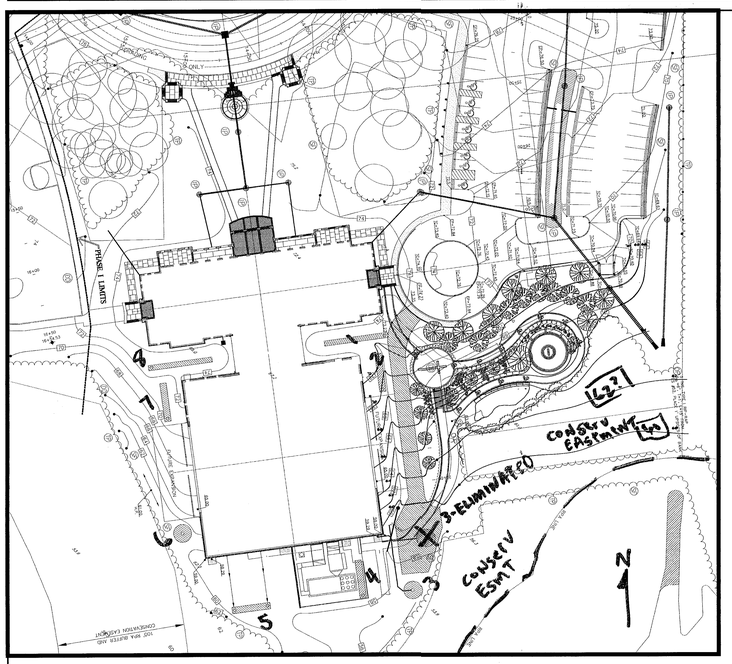
Project Number	22067
File	
Date	09/12/03
Drawn	
Reviewed	
Sheet	C1.0

Conceptual Plan for the Saint Bede Prayer Garden

James City County, Virginia

April 1, 2003 H & A 22067

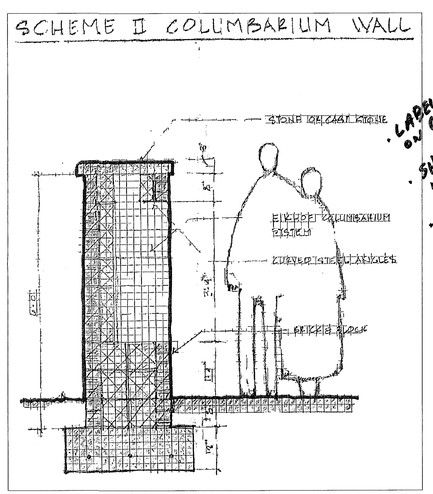
HOPKE & ASSOCIATES INC.
ARCHITECTURE/PLANNING/INTERIORS
1156 Jamestown Road, Suite C
WILLIAMSBURG, VA 23185
(757) 229-1100



Context Plan

1" = 50'-0"

Similar Prefabricated Columbarium



- LABEL INFIL PIT 1-8 ON CONCEPT PLAN
- SHOW PROP. ADDT'L IMPERV AREA
- CONSTRUCT AFTER REMOVAL OF TSP #2
- WILL NEED E+SC SPECIFIC TO THIS AREA
- ADDITIONAL PROPOSED IMPERV AREA.
- BYPASS-INFIL CONCEPT AROUND BUILDING OR DIRECT TO EXIST-NEW INFIL PIT

PREFER INFIL PAVERS

RPA

Garden Plan

1" = 10'-0"

DEV. SP-28-01; AMEND SP-18-03
5.1 AC impervi.

SP-44-03
C

TRANSMITTAL

APR 2003
RECEIVED
ENVIRONMENTAL DIVISION

DATE: April 17, 2003

TO: Environmental (Scott)

FROM: Christopher Johnson, Senior Planner

SUBJECT: C-44-03. St. Bede Catholic Church Prayer Garden

ITEMS ATTACHED: Conceptual Plan

INSTRUCTIONS: Please review and comment. This plan requires DRC review as it is inconsistent with the approved Master Plan for the site. Please call me to discuss any immediate concerns you may have.

RETURN BY: April 25, 2003

RECEIVED APR 22 2003
Due April 25

ST BEDE PRAYER GARDEN
BIORETENTION FILTER CALCULATIONS

DA = 0.39 ACRES

SITE IMPERVIOUS AREA = 0.11 ACRES

WQV = 0.11 AC. x 43560 / 12 x 0.5 = 199.65 cu. ft.

MINIMUM POOL AREA 0.11 ACRES x 43560 x 0.04 = 191.66 cu. ft

BIORETENTION FILTER VOLUME REQUIRED = 199.65 cu. ft.
BIORETENTION FILTER VOLUME PROVIDED = 2358.75 x 40% VOIDS =943.5 cu. ft.

POOL VOLUME PROVIDED @ 0.42' DEPTH = 314.6 cu. ft.

MIN SIZE = 5% impervious Area = 0.0055 AC
= 239.5 sq. Ft.

SIZE AVAIL = 40 x 18 = 720 sq ft. > 239.5

SIZE OK.

ST BEDE PRAYER GARDEN
BIORETENTION FILTER CALCULATIONS

SITE IMPERVIOUS AREA = 0.11 ACRES

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POOL VOLUME PROVIDED @ 0.42' DEPTH = 314.6 cu. ft.

7/13/2001

PROJECT NAME ST Bedes
LMDG JOB NO. 1970077

TABLE 2

WORKSHEET FOR BMP POINT SYSTEM

JUL 2001 RECEIVED ENVIRONMENTAL DIVISION

TOTAL SITE	=	42.8	ACRES	
RPA	=	10.47	ACRES	(form. 11.13ac.)
STRUCTRUAL SITE AREA	=	32.33	ACRES	

REDUCED DUE TO REMOVAL OF CULVERT AT ENT. ROAD (14 AC.)

A. STRUCTURAL BMP POINT ALLOCATION

	BMP	BMP POINTS		FRACTION OF SITE SERVED BY BMP				WEIGHTED BMP POINTS
C-4	Pond #1 Infiltration Basin, 1"/ac	* ~~10~~ 9.3357	x	14	/	32.33	=	4.0427 ~~4.330~~
D-1	Median biofilters/swales to creek	8	x	1.55	/	32.33	=	0.384
D-1	Median biofilters/swales for future lot	8	x	1.14	/	32.33	=	0.282
C-2	Rear roof runoff treatment - infiltration trench @ 1 "/imp. ac	10	x	0.50	/	32.33	=	0.155

TOTAL WEIGHTED STRUCTURAL BMP POINTS: 4.8637 ~~5.151~~

B. NATURAL OPEN SPACE CREDIT

FRACTION OF SITE			NATURAL OPEN SPACE CREDIT		POINTS FOR NATURAL OPEN SPACE
20.45 /	42.8	x	(0.1 per 1%)	=	4.778
0.54 /	42.8	x	(0.15 per 1%)	=	~~0.189~~ 0.33

0.94/ac.
SEE MAP

TOTAL NATURAL OPWN SPACE CREDIT: ~~4.967~~ 5.108

C. TOTAL WEIGHTED POINTS

4.8637 ~~5.15~~	+	5.108 ~~4.97~~	=	9.9717 ~~10.118~~
STRUCTURAL BMP POINTS		NATURAL OPEN SPACE POINTS		TOTAL

* 9.3 weighted due to series-treatment train approach. 50% REMOVAL EFFICIENCY FOR D.A. TO POND #1 thru bioretention cells.

∴ 10 points achieved.

01-30-01

7/13/2001

PROJECT NAME ST Bedes
LMDG JOB NO. 1970077

TABLE 2

WORKSHEET FOR BMP POINT SYSTEM

TOTAL SITE	=	42.8	ACRES
RPA	=	10.47	ACRES
STRUCTRUAL SITE AREA	=	32.33	ACRES

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BMP	BMP POINTS		FRACTION OF SITE SERVED BY BMP				WEIGHTED BMP POINTS
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Median biofilters/swales for future lot	8	x	1.14	/	32.33	=	0.282
Rear roof runoff treatment - infiltration trench @ 1 "/imp. ac	10	x	0.50	/	32.33	=	0.155

TOTAL WEIGHTED STRUCTURAL BMP POINTS: 5.151

B. NATURAL OPEN SPACE CREDIT

FRACTION OF SITE			NATURAL OPEN SPACE CREDIT		POINTS FOR NATURAL OPEN SPACE
20.45 /	42.8	x	(0.1 per 1%)	=	4.778
0.54 /	42.8	x	(0.15 per 1%)	=	0.189

TOTAL NATURAL OPWN SPACE CREDIT: 4.967

C. TOTAL WEIGHTED POINTS

5.15	+	4.97	=	10.118
STRUCTURAL BMP POINTS		NATURAL OPEN SPACE POINTS		TOTAL

HOPKE & ASSOCIATES
■ ARCHITECTURE/PLANNING/INTERIORS

November 18, 2003

Mr. Chris Johnson
Senior Planner
James City County
Department of Development Management
P.O. Box 8784
Williamsburg VA 23187-8784
via: Hand delivery

NOV 2003
RECEIVED
PLANNING DEPARTMENT

RE: St Bede Garden
H&A #22052

Dear Mr. Johnson,

Attached please find the response to the County's comments prepared by LandMark Design Group and Hopke & Associates. Mr. Brown of LandMark has covered the majority of the issues in his letter to you dated November 18, 2003 (enclosed). I wish to address a few comments that pertain specifically to the drawings prepared by our firm:

4. Site Information

A north arrow has been added to Sheet L1.1 as requested. The Resource Protection Area has been indicated and labeled on Sheet C1.1.

9. Standard E&SC Notes

A sentence has been added to the "Erosion & Sediment Control" section of the General Notes requiring compliance with the James City County Erosion Control notes dated 7/6/01.

15. Rock Construction Entrance

A section has been added to the General Notes on Sheet T1.1 requiring a construction entrance and the general location of the entrance has been indicated on Sheet C1.1. As construction will take place in phases, the location of the access point may vary throughout the project. The Contractor is to coordinate the location of the entrance with the Owner to minimize conflict with the church's daily operations.

18. Safety Fence

A note requiring the use of orange safety fence at the west and north perimeters of the project site has been added to the General Notes on Sheet T1.1.

■
1156 Jamestown Road
Suite C
Williamsburg, VA 23185
p (757) 229-1100
f (757) 229-0869
www.hopke.com

23. Cell Pavers

The polypropylene honeycomb pavers are to be installed at the Columbarium Plaza as noted in the General Notes on Sheet T1.1. The area has been hatched on Sheet C1.1 and the note has been changed to better define the extent of installation.

24. Reflecting Pools

The note on Sheet C1.1 has been changed to prohibit using these pools for sediment control or stormwater management.

Should you have any additional questions, please do not hesitate to contact Mr. Brown or me.

Very truly yours,

Holly Williams Leppo

Holly Williams Leppo
Associate

HOPKE & ASSOCIATES, Inc.

encl: see attached transmittal

TRANSMITTAL

SEP 2003
RECEIVED
ENVIRONMENTAL DIVISION

DATE: September 25, 2003

TO: Environmental
JCSA (2)
County Engineer
Fire Department
Health Department
Lee Schnappinger

FROM: Christopher Johnson, Senior Planner

SP-122-03

SUBJECT: AMENDS SP-28-01. St. Bede Catholic Church

ATTACHMENTS: Site Plan

INSTRUCTIONS: Please review and comment or approve and sign.

RETURN BY: October 9, 2003

RECEIVED SEP 29 2003
DVE OCT 16

Is this development served by Newport News Waterworks? ____(JCSA please check if yes)

If checked, planner will fax a copy of preliminary approval letter with Fire Department comments, and the JCSA completed water data sheet to Newport News Waterworks as soon as all three are available.

CONCEPT PLAN REVIEW COMMENTS

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDE CATHOLIC CHURCH PRAYER GARDEN
COUNTY PLAN NO. C - 44 - 03
April 22, 2003

General Comments:

1. Conservation Easements. Label the two conservation easements on the Context Plan (1" = 50' scale) and Garden Plan (1" = 10' scale). The conservation easements are situated to the south of the prayer garden. One conservation easement area is situated to the north of the sanitary sewer corridor and the second is situated to the south of the sanitary sewer corridor. Clearing and grading will not be permitted within either of the conservation easement areas due to work associated with this plan.

2. NO Infiltration Pits. Based on approved County Plan No. SP-28-01, there were 8 infiltration pits proposed around the main building periphery. As a result of site plan amendment SP-18-03, Infiltration Pit # 3 was relocated due to use of grass pavers along the access road on the east side of the main building. Show the location of Infiltration Pits # 1 through # 8 on the 1" = 50' scale context plan.

3. Impervious Area. Provide an impervious cover estimate for impervious area associated with this plan (gathering plaza, sidewalk, columbarium, walls & steps). This area is additional impervious area not approved by previous plans.

4. An erosion and sediment control plan, specific to work at this area, will be necessary for the plan of development.

5. Sediment Trap. The location of the conceptual Prayer Garden coincides with the location of Temporary Sediment Trap # 2 which is currently servicing the site. Work for the Prayer Garden can not commence until there is adequate site stabilization and approval for removal of Temporary Sediment Basin # 2.

6. Stormwater Management. The basic concept of stormwater management for the St. Bedes project was that most of the impervious cover associated with the site is being conveyed to two primary onsite BMPs. One is a large infiltration basin near the front entrance to the site and the second is a series of linear bioretention facilities through the center of the main parking area. Due to site topography, impervious areas associated with the most of the main building and areas around the main building were not able to be conveyed to the primary onsite BMPs. Impervious area associated with most of the main building and it's surrounding area was controlled by smaller sized infiltration pits (ie. rear roof runoff treatment) placed at strategic locations around the back and sides of the building. These smaller BMPs, in combination with the larger BMPs and conservation easement open space, achieved water quality requirements for the overall plan of development. The same general concept is to be followed for additional impervious area as proposed for the Prayer Garden. If impervious area runoff from this area cannot be conveyed to the primary site BMPs, then small size secondary BMPs must be a component for the proposed amendment. Alternatives, which are based on the premise of promoting infiltration in accordance with Sections 23-9(a) and 23-9(b)(3) of the Chesapeake Bay Preservation ordinance, include: 1) Since the sidewalks represent the largest portion of new impervious cover, instead of brick and concrete sidewalk use sidewalk surfacing material which promotes infiltration; 2) provide new infiltration pits, dry swales, bioretention consistent with the County BMP manual to promote infiltration at this location; 3) direct runoff to existing Infiltration Pit # 3; 4) utilize the reflecting pool as a quasi-stormwater management device; 5) any other unique method which fits the character of the garden, yet promotes infiltration of runoff from impervious areas as proposed.

7. Runoff. Ensure the final plan of development addresses concentrated flow which may be directed to the southwest corner of the main building from the sidewalk to the south of the Gathering Plaza.

1970077-001.00

LANDMARK DESIGN GROUP

RE: FIELD OBSERVED BIORETENTION FACILITIES DEFICIENCIES

August 29, 2003

Mr. Robert L. Morris
C/o St. Bede's Catholic Church
3686 Ironbound Road
Williamsburg, VA 23188

Re: St. Bede's Catholic Church Site Plan

Dear Bob:

On Monday, July 21, 2003, Dick Phillips and I met with you at St. Bede's Catholic Church to inspect the damage created by a severe storm event. This storm occurred Friday night July 18, 2003 and continued into the early morning hours of Saturday, July 19, 2003.

NOT SUBMITTED TO COUNTY YET.

I have visited the site on several different occasions, including other storm events. Visiting the site during a storm event was very beneficial, as I was able to observe the drainage routes and flow patterns. Also, I have compared the as-built drawings to the original site plans. With this information, along with the site visits, I was able to make several conclusions.

First, let me briefly describe how the bioretention basins were designed to operate. The top of the inlets have been set higher than the filter medium to allow for 6" of ponding above the filter medium. The water then percolates through the filter medium providing the nonpoint source pollutant removal required by the Virginia State Stormwater Management Regulations. The treated water then flows through the stone bedding, into the conveyance channel and discharges down stream. The timbers across the bioretention basin are designed as small dams to support the ponding process. This ponding process will require the bioretention basin to be depressed at least 6" below the drive/parking lots edge of pavement, including the ends, as shown on the detail titled "DETAIL INFILTRATION TRENCH SECTION" on Sheet LA-4 of Michael Vergason, Landscape Architect drawings. Without this ponding process, the water will not rise to the elevation of inlets.

My first observation and the most critical is that there are several areas where the filter medium is higher than or even with the parking lot surface. This is not allowing the ponding process to work. The drainage is just bypassing the inlets that were designed to intercept it and this is overwhelming other drainage systems down stream.

My second observation is none of the inlets within the bioretention basins have domed grates. On Sheet C-11 there is a note within the Nyloplast Drain Basin Detail, which states, "ALL DRAIN BASINS TO HAVE DOMED GRATES UNLESS OTHERWISE NOTED". The domed grates where specified to prevent a build-up of mulch from completely blocking a grate. With the domed grates installed at the correct height, (we intended for the rim elevation to be the apex of the grate), the drainage would have been intercepted by the grate and into the system sooner.

I do know the bioretention basins were constructed early in the construction phase. They sat for some length of time with the assumption that they would not become clogged with silt. They were protected with silt fencing, but I do not know if the silt fence failed at any time or not. A bioretention basin needs to be maintained and protected from a silt build-up as this will clog the filter medium. Also, the filter medium must be protected from excess compaction. Each of these conditions will reduce the percolation process and would have major impact on the ability of the filter medium to act as a retention system. This is why we put large bold notes on Sheets C-4 and C-5, which state "Note #1: DO NOT BEGIN CONSTRUCTION OF BIOREMEDIATION INFILTRATION TRENCHES UNTIL ALL CONTRIBUTING DRAINAGE AREAS ARE STABILIZED. TEMPORARY SWALES MAY BE CUT THROUGH AREAS TO DIVERT RUNOFF AS NEEDED".

Starting at the northernmost parking bays and working back to the church, Structure #12, as shown on the as-built drawing, is almost 1' higher than called out on the site plan. This end of the bioretention basin is higher than the parking lot and most of the water intended to filter through the bioretention medium is running across the parking lot. This may create icing conditions during winter periods. It is also creating a larger than design load on any down stream drainage structures and/or systems.

The northernmost end of this bioretention basin needs to be lowered to elevation 77.25 at the surface, with a rim elevation of a domed grate at elevation of 78.08. The surface of the bioretention basin must be at least 6" below the edge of the parking lot pavement.

Continuing on southward, Structures#11 and #12 grates need to be replaced with domed grates, with the rim elevation of #11 being 80.66 and #12 being 83.65.

The bioretention basin with structures #40, #41 and #42 is the one causing the most problem. Again, the basin is not depressed sufficient to allow for the ponding of the water. This drainage is flowing straight out the south end of the basin and continuing down stream to drainage structures that were not designed to handle the additional flow. Also, some of the overflow is gong into the next bioretention basin down stream.

For this basin a berm should be constructed at the southern end at least up to elevation 76.00. This berm must wrap around the sides to assure the water will pond up and drain into the structures, as designed, and not down to the next parking bay. Again, the drainage basins need

the domed grates with the rims set as follows: Basin #40 Rim Elevation should be 83.27, Basin #41 Rim Elevation should be 79.67 and Basin #42 the rim should be 75.78.

The southern most basin seems to be constructed and operating as designed. Had it not been for the other drainage from up stream overwhelming this basin, it would have operated as designed. I feel the blow out at the lower end was caused by the attempt to plug the 12" hole in basin #44 with filter fabric, which failed.

The only repairs to this basin would be to replace the flat grates with domed grates, with the rim of Structure #43 set at elevation 72.83 and the rim of Structure #44 set at elevation 70.51. Structure #44 should receive a 12" long 12" diameter nipple in the open hole and be plugged/capped to prevent flow through the hole and prevent future medium washout.

Please give me a call if you need any additional information or if I can be of further assistance. I will be glad to meet with you at any time.

Sincerely,

The LandMark Design Group, Inc.

William F. Brown, Jr.
Project Engineer

WFB/tmp

Copy: Mr. Bill Miller, E.T. Gresham
Mr. Doug Hayes, Michael Vergason
Mr. Sean Reilly, Kerns Group
Mr. John Hopke, Hopke & Assoc.

LANDMARK
DESIGN GROUP

LANDMARK DESIGN GROUP
FACSIMILE

TO: Scott Thomas
COMPANY: JCC - Environmental
FROM: Bill Brown
DATE: 11-13-03
SUBJECT: St. Bede's Catholic Church
LMDG JOB NO.: 1970077-00100

FACSIMILE NUMBER:
TELEPHONE NUMBER:
NUMBER OF PAGES: 4 (including cover)

ORIGINAL: ☐ WILL ☒ WILL NOT BE MAILED

MESSAGE:

Engineers • Planners • Surveyors • Landscape Architects • Environmental Scientists
4029 Ironbound Road, Suite 100, Williamsburg, VA 23188 (757) 253-2975 FAX: (757) 229-0049 lmdn@landmarkd

LANDMARK
DESIGN GROUP

FEB 2003
RECEIVED
PLANNING DEPARTMENT

February 11, 2003

Mr. Chris Johnson
Senior Planner
James City County
Department of Development Management
P.O. Box 8784
Williamsburg, VA 23187-8784

Re: Amendment to St. Bede's Catholic Church Site Plan
James City County Case No. SP-28-01

Dear Chris:

Enclosed are thirteen sets of the amended site plans for the above referenced project. The plans have been amended to show the following changes.

1) All parking bays are now paved with 2" of SM-2A asphalt paving.

2) The loop road in front of the structure has been completed and paved with 2" of SM-2A asphalt paving. This road now forms a complete loop and ties back into the entrance road.

3) A small section of sidewalk (10'-15') has been added to the west side of the main entrance. This mirrors the east side of the main entrance.

4) The grading along the lower level (east and west sides) has been revised to provide a 65.00' elevation at the front basement wall.

5) The area of trees to be saved to the west of the main entrance (future building area) has been cleared.

6) A grass paver access road has been provided along the east side of the main structure to provide vehicular access to the transformer.

7) The location of the grass paver access road required the relocation of infiltration pit #3.

8) The CG-2 curb around the small circular drive to the east side of the structure has been removed.

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9) The proposed walk from the east side entrance to the rear basement entrance will be designed by Hopke & Associates.

10) The new lighting layouts will be provided by Bansal and Associates.

All revisions have been clouded to help make these changes clearer. If I can be of further assistance, please do not hesitate to call.

Sincerely,

The LandMark Design Group, Inc.

William F. Brown, Jr.
Project Engineer

WFB/tmp

Copy: Mr. Bob Morris, St. Bede
Mr. Bill Miller, E.T. Gresham
Mr. Jonathan Glick, Kerns Group
Mr. Ron Stump, Hopke & Assoc.

Scott Thomas

From: Scott Thomas
Sent: Wednesday, September 13, 2006 5:00 PM
To: 'pfarrell@landmarkdg.com'
Subject: St. Bedes Prayer Garden
Attachments: AsbuiltConstCertforms.body.pdf

Project: St. Bedes Prayer Garden – Columbarium
County Plan No.: SP-122-03
County BMP ID Code: MC 057

Peter

I received your package with the record drawing for the manufactured BMP (Rain Tanks) for the above referenced project on September 5, 2005. Need the record drawing/construction certification forms completed (pages 1-3), including the completed asbuilt certification statement (page 3). Will also need construction certification whether that is your firm or others.

Scott J. Thomas, P.E.
Chief Engineer - Stormwater
James City County
Environmental Division

Visit:
http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html
and
www.protectedwithpride.org

LANDMARK
DESIGN GROUP

NOV 2003
RECEIVED
PLANNING DEPARTMENT

November 18, 2003

Mr. Chris Johnson
Senior Planner
James City County
Dept. Development Management
P.O. Box 8784
Williamsburg, VA 23187-8784

Re.: SP-122-03 St. Bede's Columbarium Prayer Garden

Dear Chris:

We are returning 14 sets of revised site plans for the above referenced project. The plans have been revised to address the comments of Scott Thomas with the James City County Environmental Division.

General

1. We acknowledge your statement that this project can be considered an amendment to the active land disturbing permit for St. Bed's Church (County plan No. SP-28-01 amended SP-18-03), and a separate land disturbing permit with surety will not be required. There could be additional land disturbing permit fees and rider to the existing erosion and sediment control bond.

2. Dick Phillip's name has been added to the cover sheet to act as the responsible land disturber through the review process.

3. We acknowledge the need for record drawings and construction certification. We have noted on the plans the contractor must retain an engineer and surveyor to provide as-built details and engineering certification of the proposed bioretention filter and grass swale.

4. I do not know where the calculations went for this project the impervious area for this project is 0.09 acres and the bioretention filter has been calculated using 0.09 acres impervious area. A north arrow has been added to the landscape plan sheet L1.1 and the RPA area has been labeled as requested.

Chesapeake Bay Preservation

5. An Environmental Inventory has been provided with the earlier submittals and I have included this sheet with these plans. The sheet is titled as exhibit #1.

Erosion and Sediment Control Plan

6. The Erosion and Sediment Control and Storm Water Management Design Plan checklist is enclosed.

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7. The old topo has been removed.

8. Proposed grading has been corrected as requested.

9. The new E & S notes have been added as requested.

10. I have shown a 30' X 12' construction entrance along with a 25' X 25' stockpile/staging area around the dumpster pad.

11. Clearing and/or construction limits are shown on sheet C1.0.

12. A sequenced of construction has been added to sheet C~~2.0~~ 1.0 the existing sediment trap has been filled, graded and seeded.

13. Silt fencing has been added as requested.

14. The rock check dam has been added as requested.

15. A 30' X 12' rock construction entrance has been added along the drive accessing the side entrance to the church.

16. Slope labels are shown as requested.

17. The Drainage area is 0.39 acres with a 0.50 CFS runoff ~~and~~ For a 7" rainfall. The discharge from the 12" pipe within the bioretention filter is 1.37 cfs, which is below the minimum discharge of 3.0 cfs on plate 3.18-3.

18. We have shown safety fencing along the north side of this project.

Stormwater Management/Drainage

19. The arrows were added to show the direction of flow only. I had intended for this to be a 4' to 5' flat bottom grass swale to act as pre-treatment and also to provide additional storage. With a rim elevation at the bioretention filter overflow of 60.42, the water will pond up to the 60.50± elevation. In addition this grass swale will intercept drainage that presently drains due south and would bypass the bioretention filter.

20. The design calculations were submitted with the site plan and a copy is attached. The Prayer Garden Gathering Area and Columbarium site produces 0.09 acres of impervious area most of which is within a 0.39 acre drainage area. The other area drains to the existing infiltration pit #3.

21. A clean out has been added to each end of the 10" perforated pipe.

22. No perk rates or boring were obtained within this area. We have always thought of this as a bioretention filter and not a bioretention basin. The runoff would filter through the filter median, collect in the stone base and drain out through the 10" perforate pipes.

23. This comment is been addressed by Hopke and Associates.

24. A note has been added that in the future reflecting pools are not to be used for sediment control and/or stormwater management purposes.

25. Landscaping for the bioretention filter has been added to sheet L1.1

26. The calculations have been shown for the stormwater conveyance channels and swales. These calculations are in the upper right hand corner of sheet ~~C-1.1.~~ C1.0

If you need any additional information or I can be of further assistance please do not hesitate to call me.

Sincerely,

The LandMark Design Group, Inc.

William F. Brown, Jr.
Project Engineer

Copy: Bob Morris, St. Bede's Catholic Church
Holly Williams Leppo, Hopke & Associates
File 1970077-000.41

HOPKE & ASSOCIATES
■ ARCHITECTURE/PLANNING/INTERIORS

November 18, 2003

Mr. Chris Johnson
Senior Planner
James City County
Department of Development Management
P.O. Box 8784
Williamsburg VA 23187-8784
via: Hand delivery

NOV 2003
RECEIVED
PLANNING DEPARTMENT

RE: St Bede Garden
H&A #22052

Dear Mr. Johnson,

Attached please find the response to the County's comments prepared by LandMark Design Group and Hopke & Associates. Mr. Brown of LandMark has covered the majority of the issues in his letter to you dated November 18, 2003 (enclosed). I wish to address a few comments that pertain specifically to the drawings prepared by our firm:

4. Site Information

A north arrow has been added to Sheet L1.1 as requested. The Resource Protection Area has been indicated and labeled on Sheet C1.1.

9. Standard E&SC Notes

A sentence has been added to the "Erosion & Sediment Control" section of the General Notes requiring compliance with the James City County Erosion Control notes dated 7/6/01.

15. Rock Construction Entrance

A section has been added to the General Notes on Sheet T1.1 requiring a construction entrance and the general location of the entrance has been indicated on Sheet C1.1. As construction will take place in phases, the location of the access point may vary throughout the project. The Contractor is to coordinate the location of the entrance with the Owner to minimize conflict with the church's daily operations.

18. Safety Fence

A note requiring the use of orange safety fence at the west and north perimeters of the project site has been added to the General Notes on Sheet T1.1.

■
1156 Jamestown Road
Suite C
Williamsburg, VA 23185
p (757) 229-1100
f (757) 229-0869
www.hopke.com

23. Cell Pavers

The polypropylene honeycomb pavers are to be installed at the Columbarium Plaza as noted in the General Notes on Sheet T1.1. The area has been hatched on Sheet C1.1 and the note has been changed to better define the extent of installation.

24. Reflecting Pools

The note on Sheet C1.1 has been changed to prohibit using these pools for sediment control or stormwater management.

Should you have any additional questions, please do not hesitate to contact Mr. Brown or me.

Very truly yours,

Holly Williams Leppo

Holly Williams Leppo
Associate

HOPKE & ASSOCIATES, Inc.

encl: see attached transmittal

Date Record Created:

Created By:

WS_BMPNO: MC062

Print Form

PRINTED ON:
Friday, March 12, 2010
12:02:27 PM

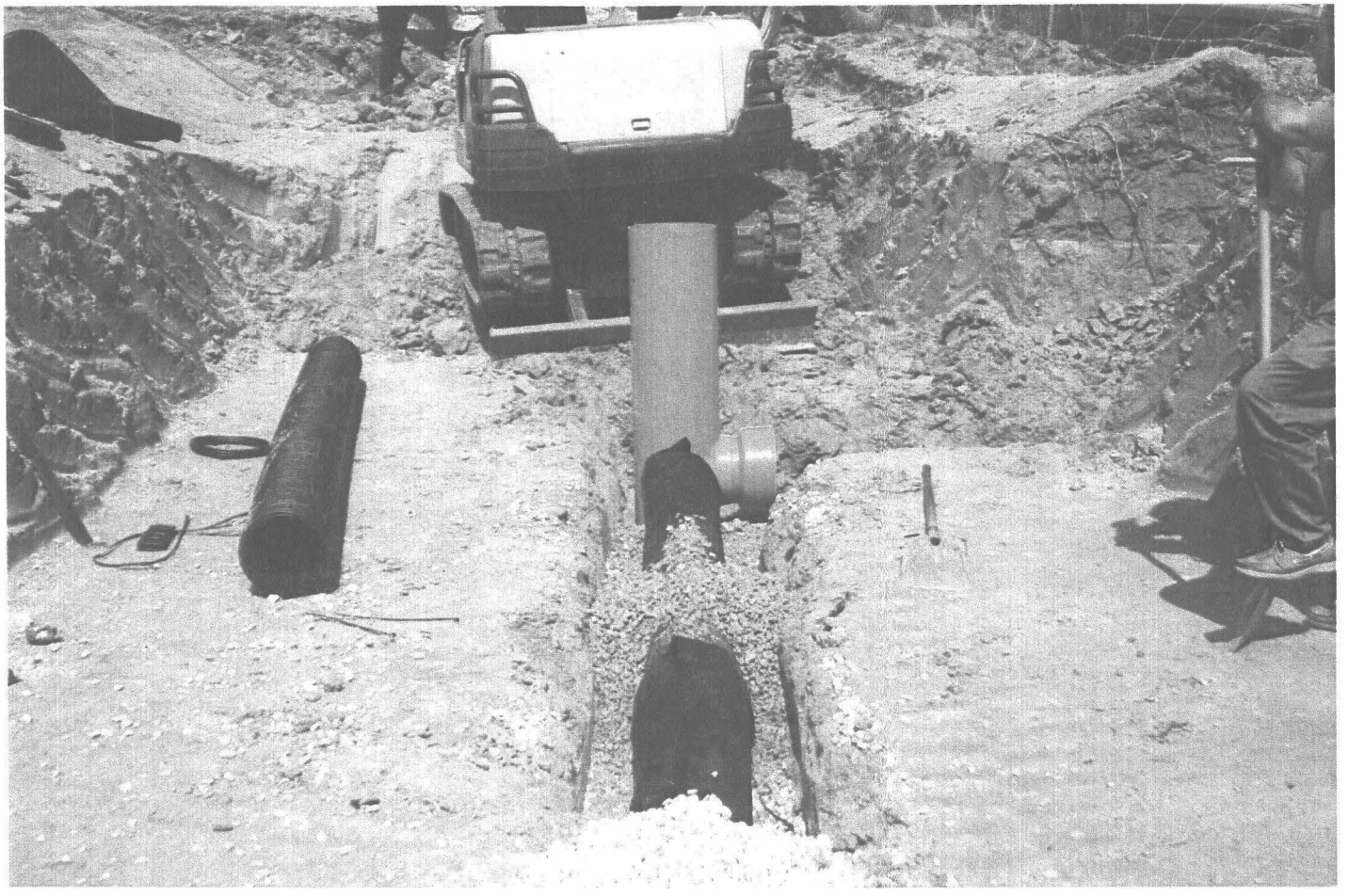
WATERSHED	MC
BMP ID NO	062
PLAN NO	SP-122-03
TAX PARCEL	
PIN NO	
CONSTRUCTION DATE	
PROJECT NAME	St. Bedes Prayer Garden
FACILITY LOCATION	
CITY-STATE	
CURRENT OWNER	
OWNER ADDRESS	
OWNER ADDRESS 2	
CITY-STATE-ZIP CODE	
OWNER PHONE	
MAINT AGREEMENT	No
EMERG ACTION PLAN	No

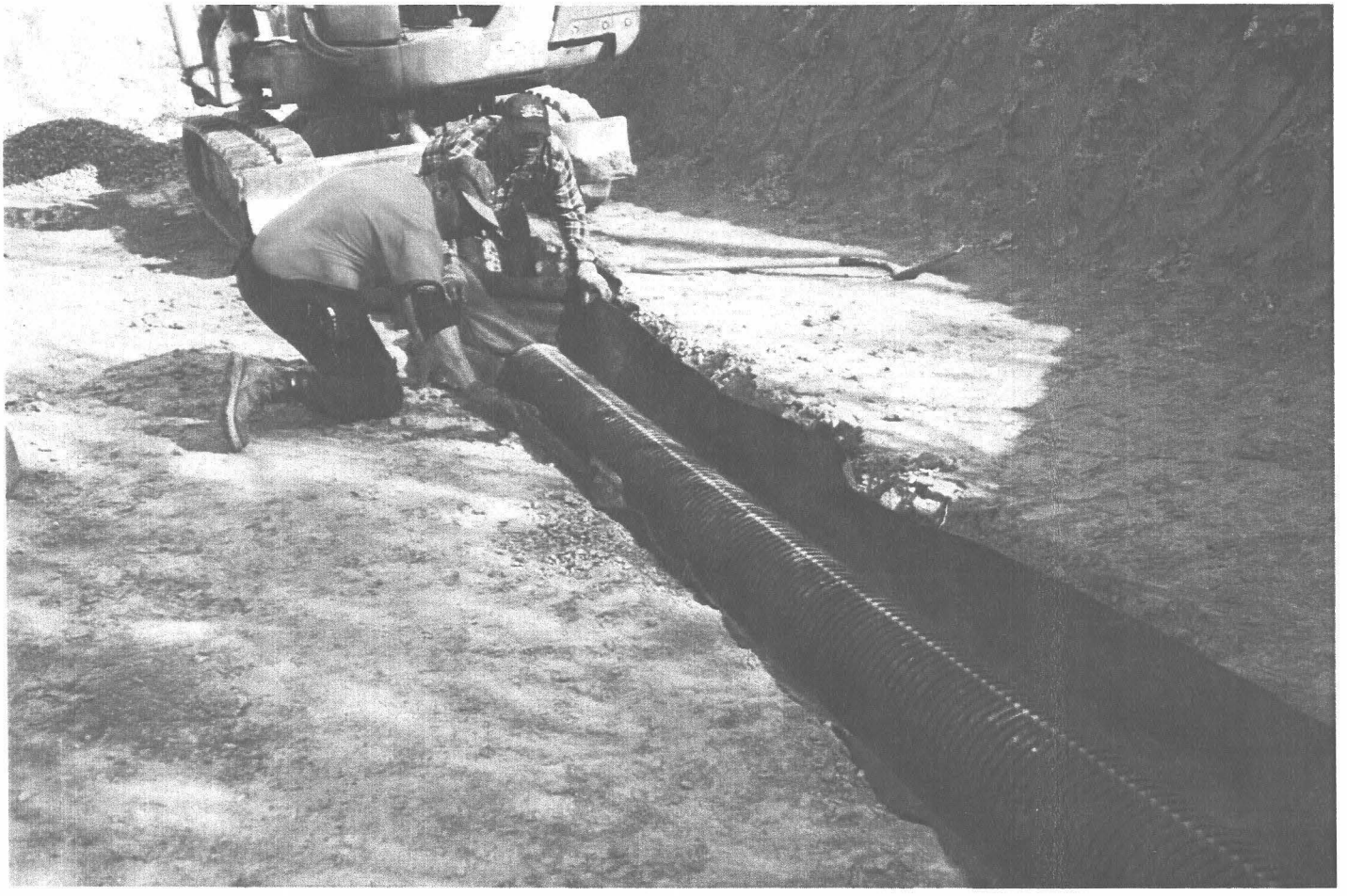
MAINTENANCE PLAN	No	CTRL STRUC DESC	
SITE AREA acre		CTRL STRUC SIZE inches	
LAND USE		OTLT BARRL DESC	
old BMP TYP	Manufactured BMP	OTLT BARRL SIZE inch	
JCC BMP CODE	ZI Manuf BMP systems		
POINT VALUE		EMERG SPILLWAY	No
		DESIGN HW ELEV	
		PERM POOL ELEV	
SVC DRAIN AREA acres		2-YR OUTFLOW cfs	0.00
		10-YR OUTFLOW cfs	0.00
		REC DRAWING	No
SERVICE AREA DESCRI			
IMPERV AREA acres	0.00	CONSTR CERTIF	No
RECV STREAM			
EXT DET-WQ-CTRL	No	LAST INSP DATE	Inspected by:
WTR QUAL VOL acre-ft		INTERNAL RATING	
CHAN PROT CTRL	No	MISC/COMMENTS	
CHAN PROT VOL acre-ft		Rain Tanks.	
SW/FLOOD CONTROL	No		
GEOTECH REPORT	No		

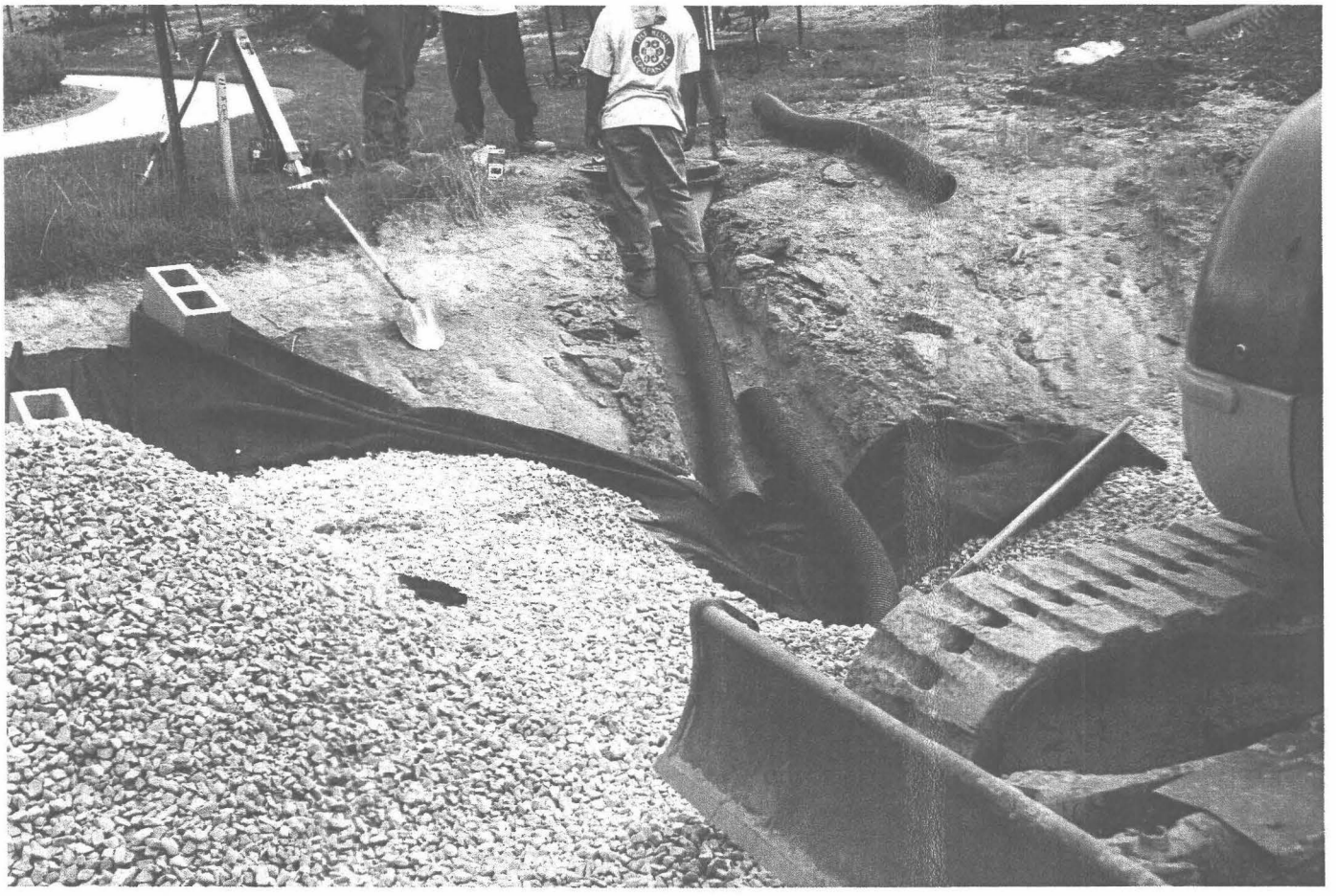
Get Last BMP No

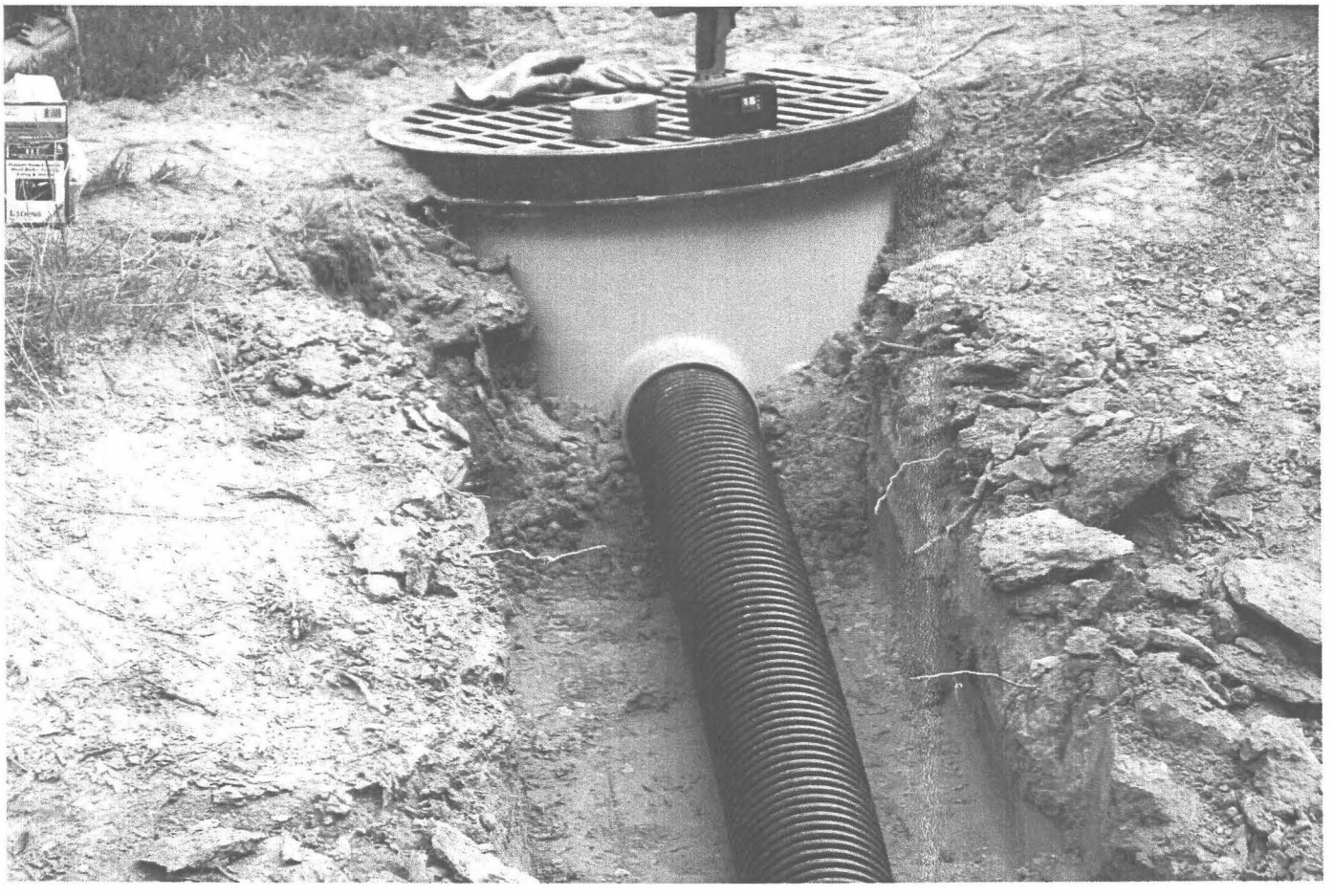
Return to Menu

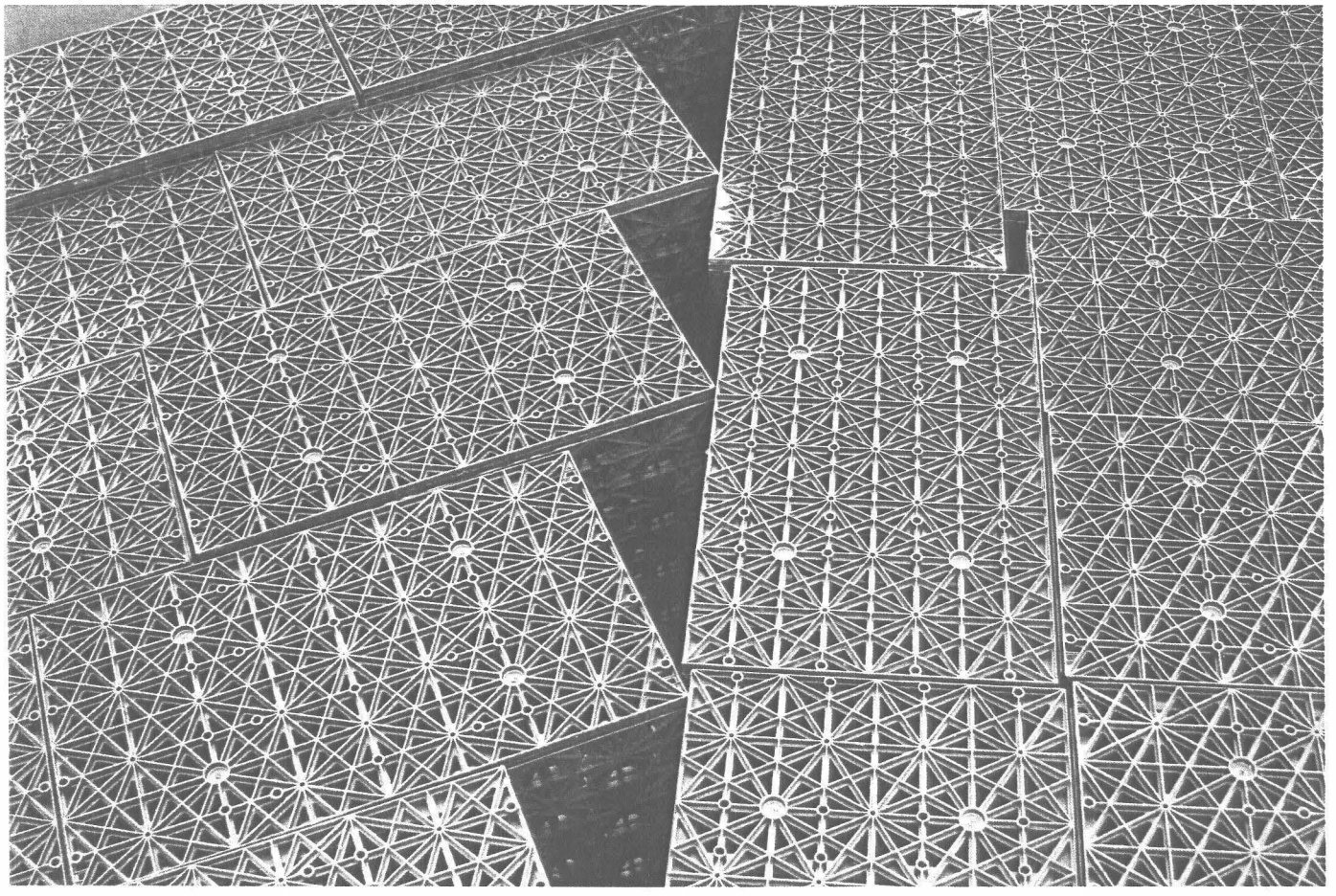
Additional Comments:

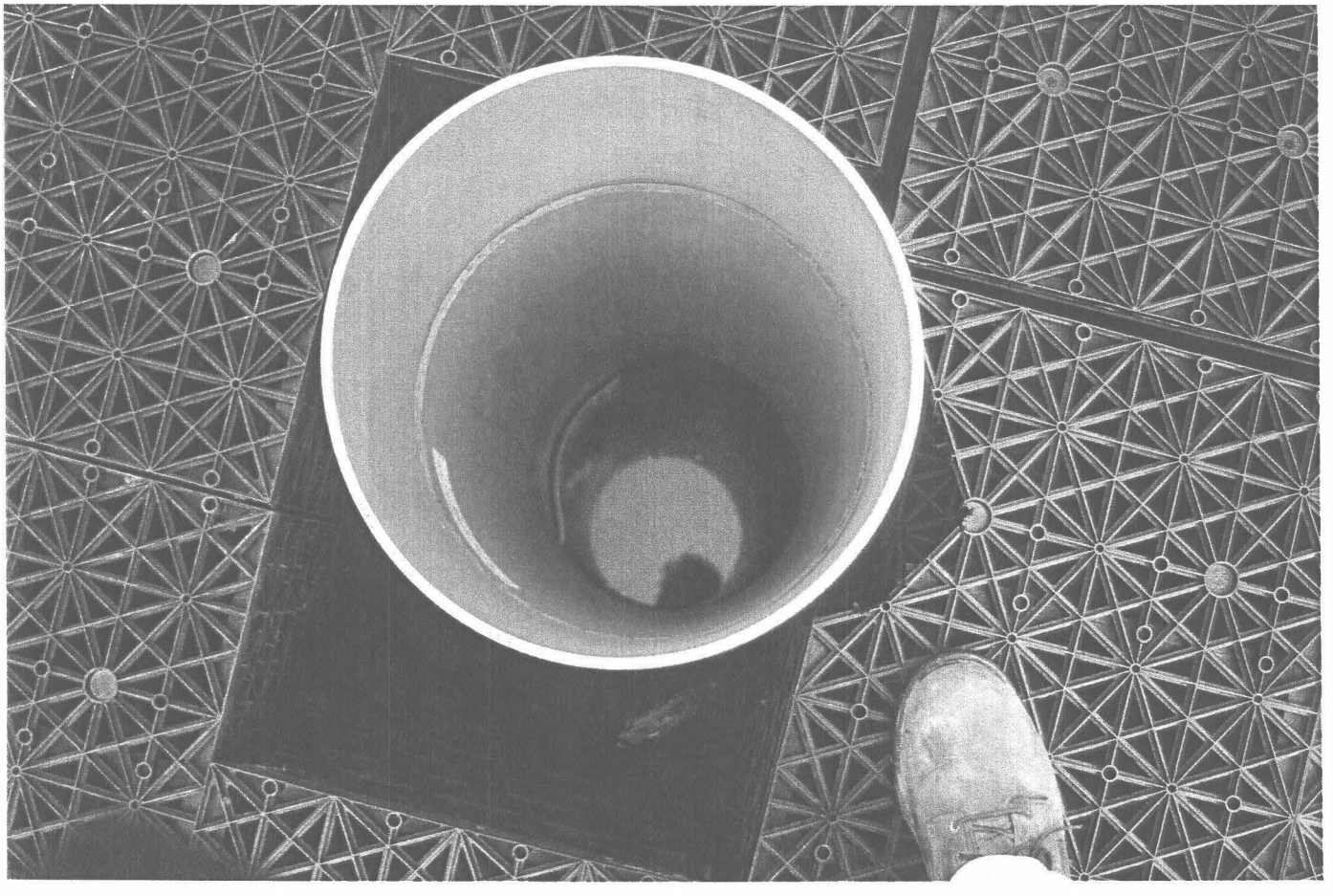


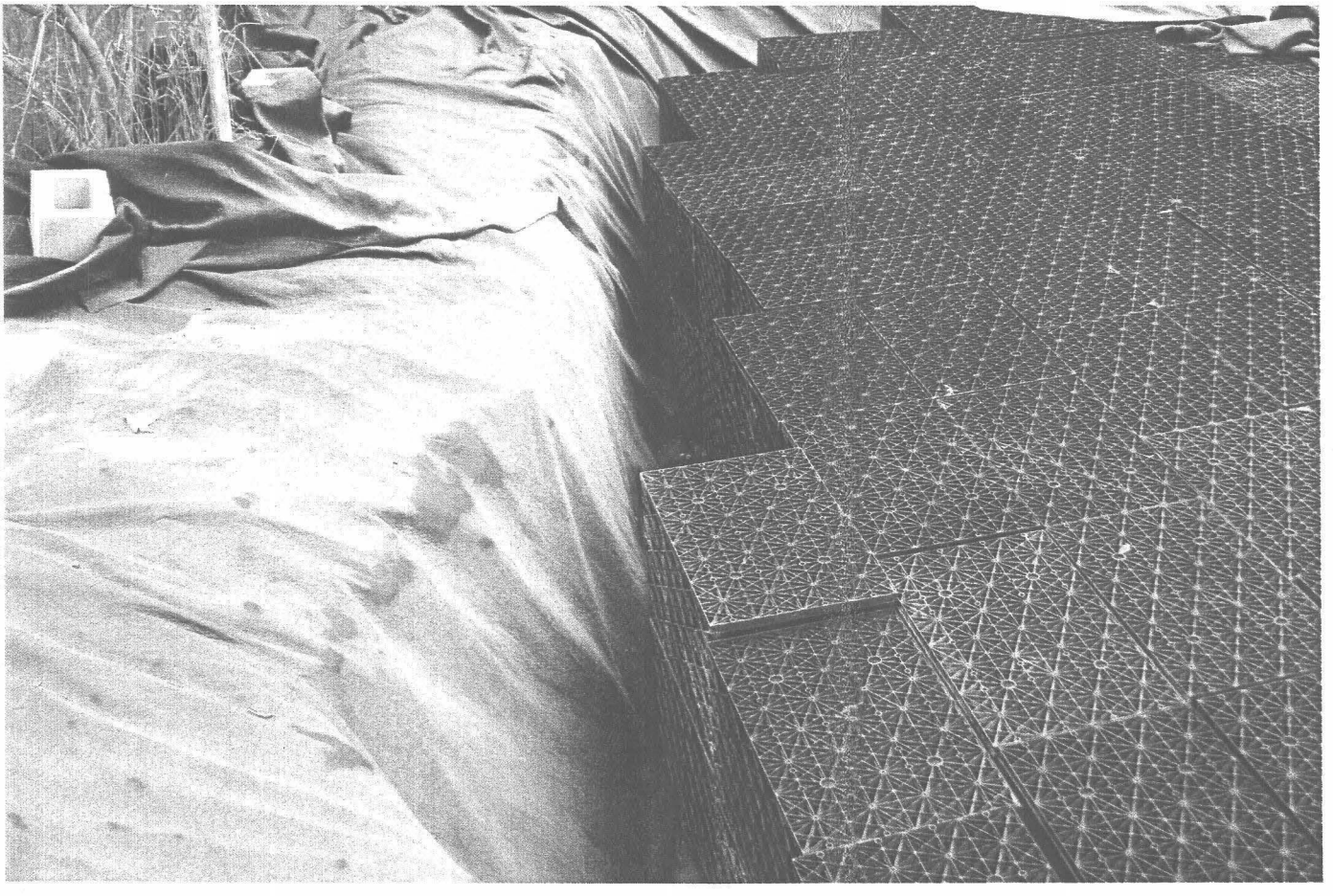


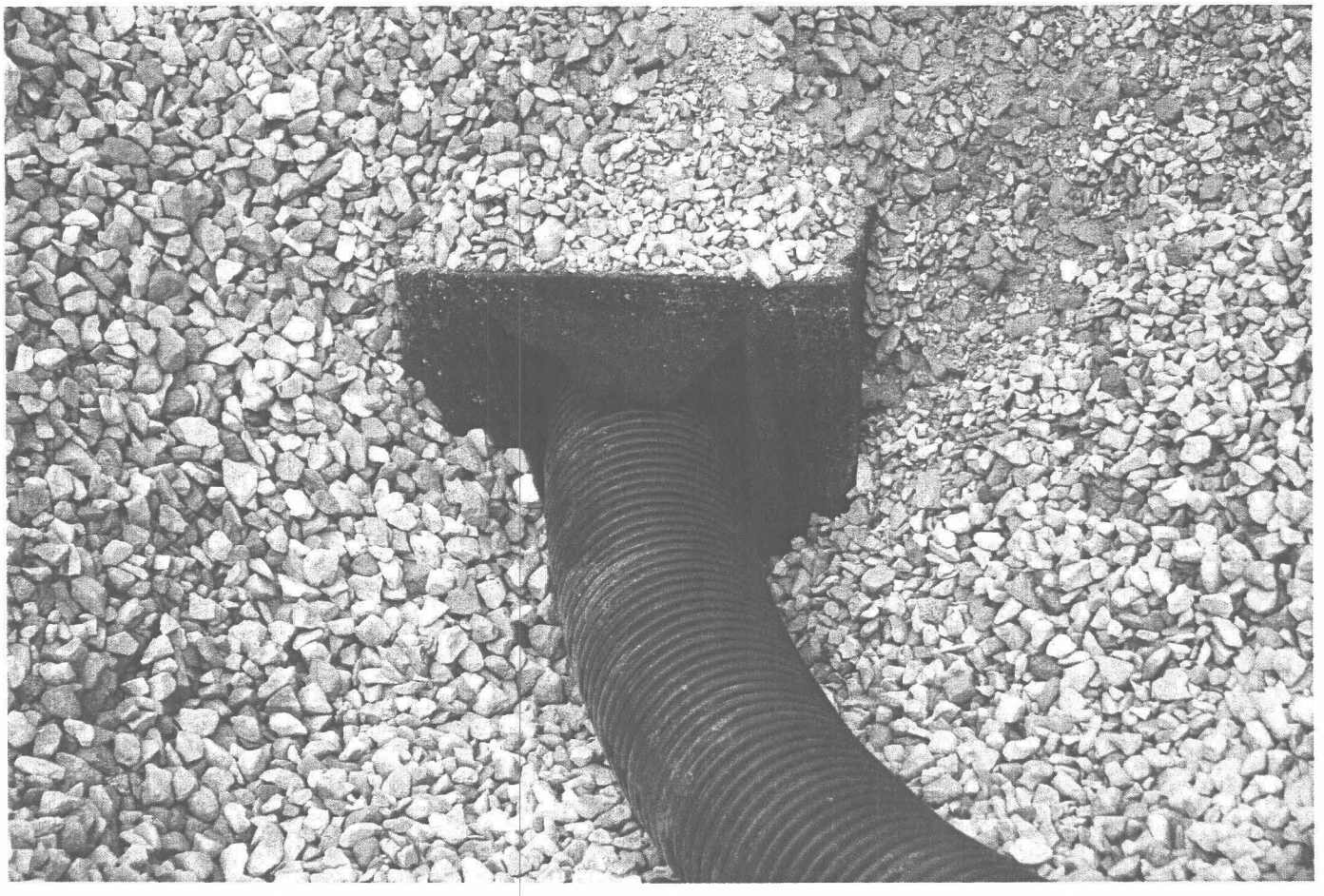


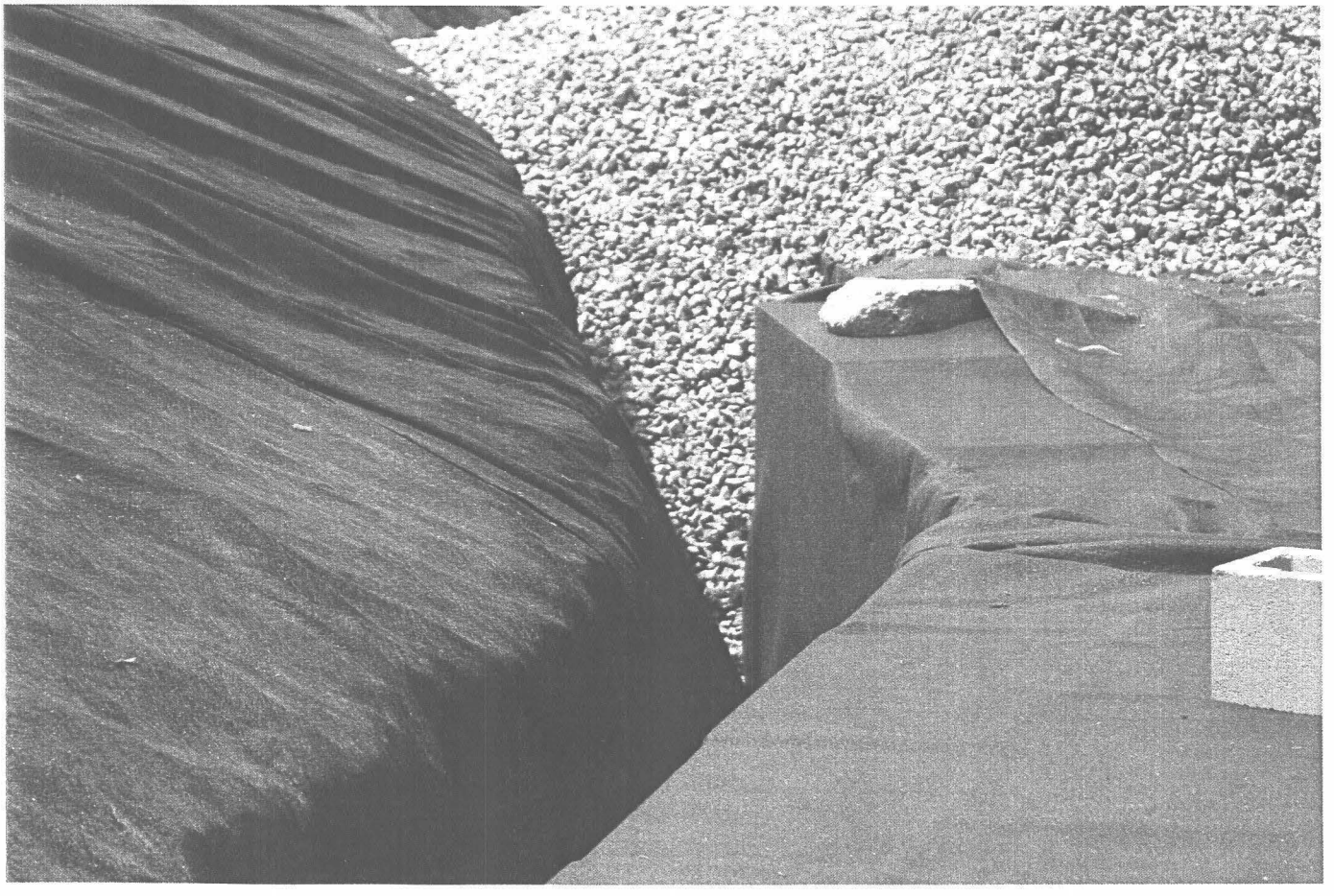


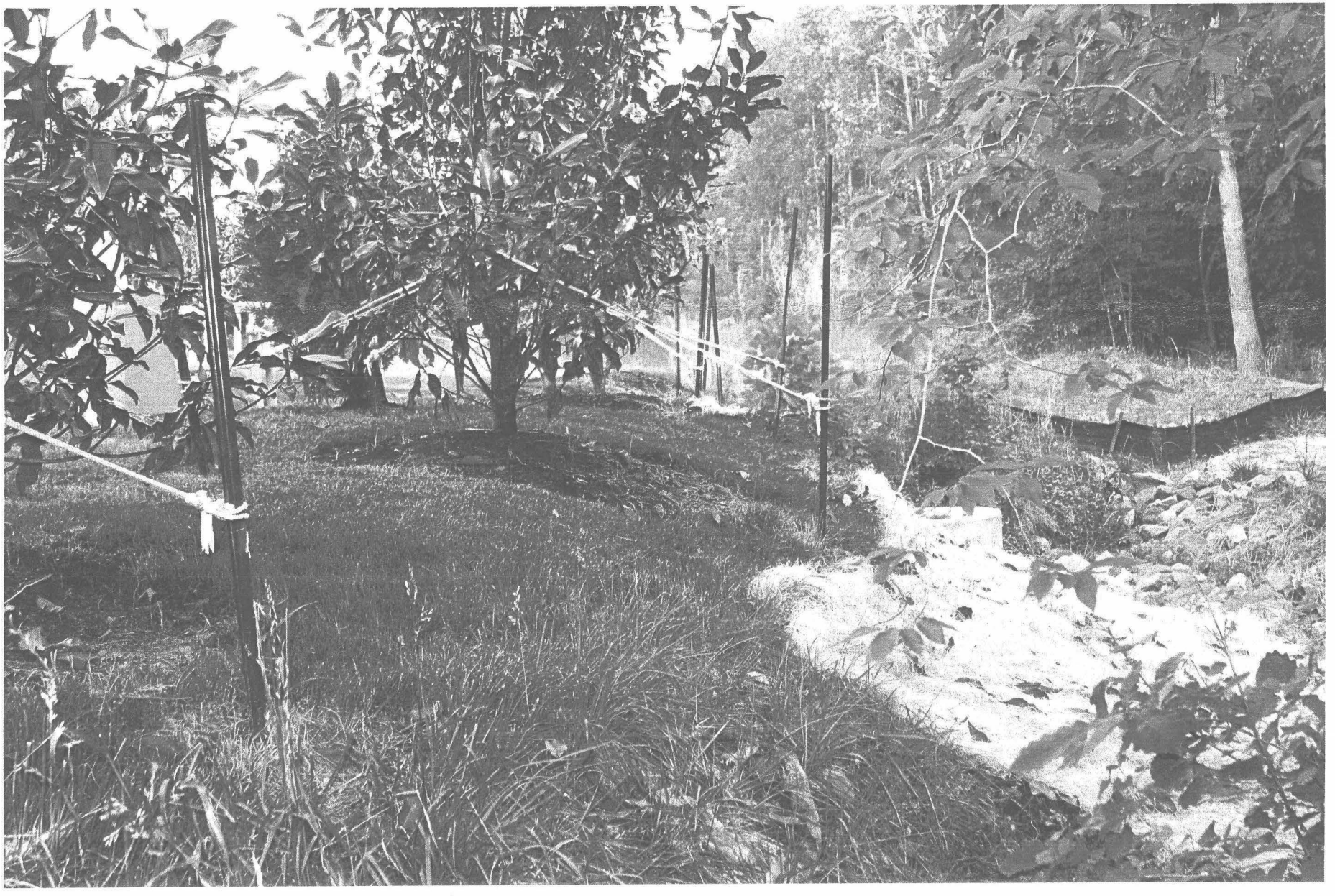


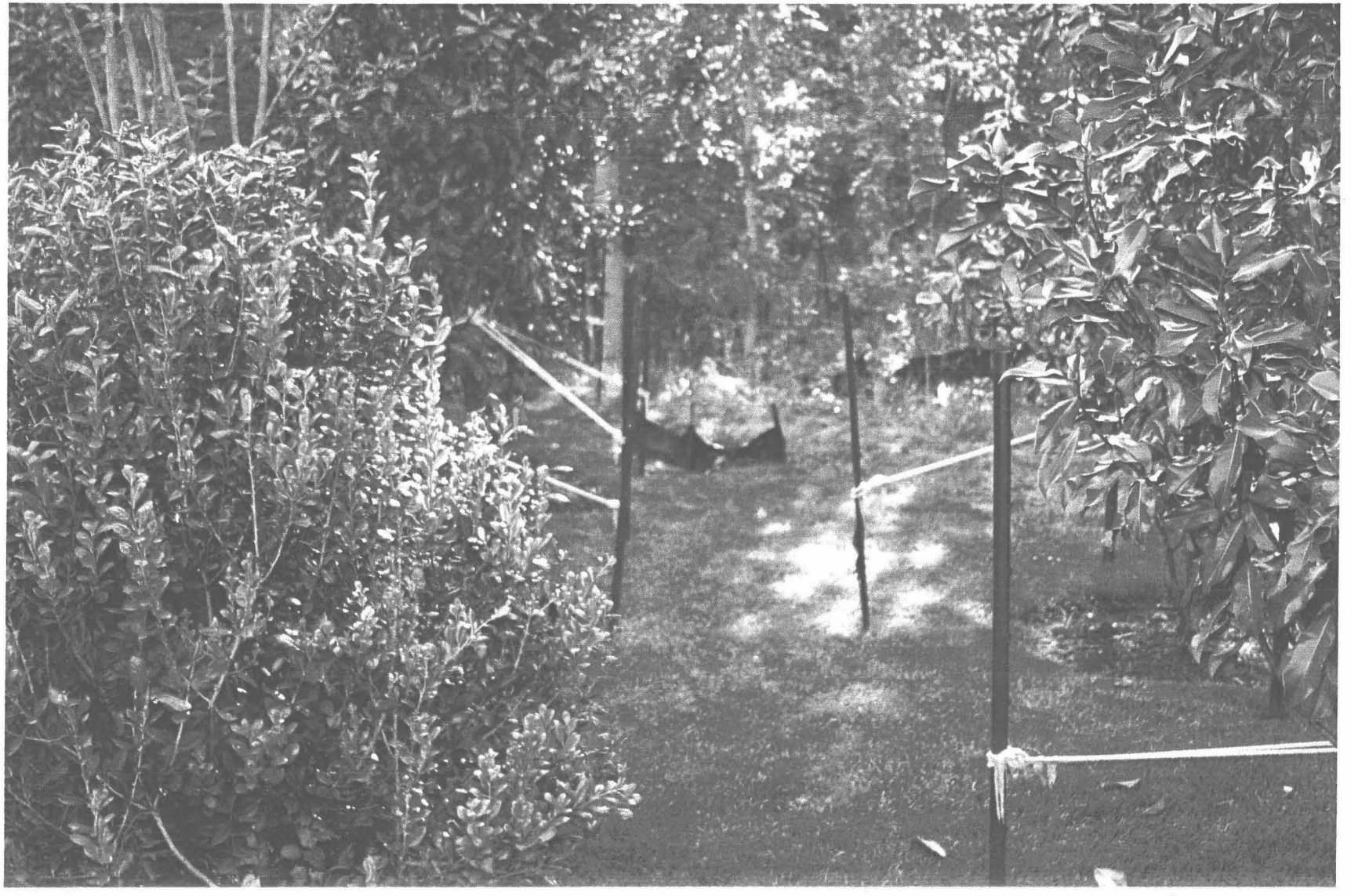


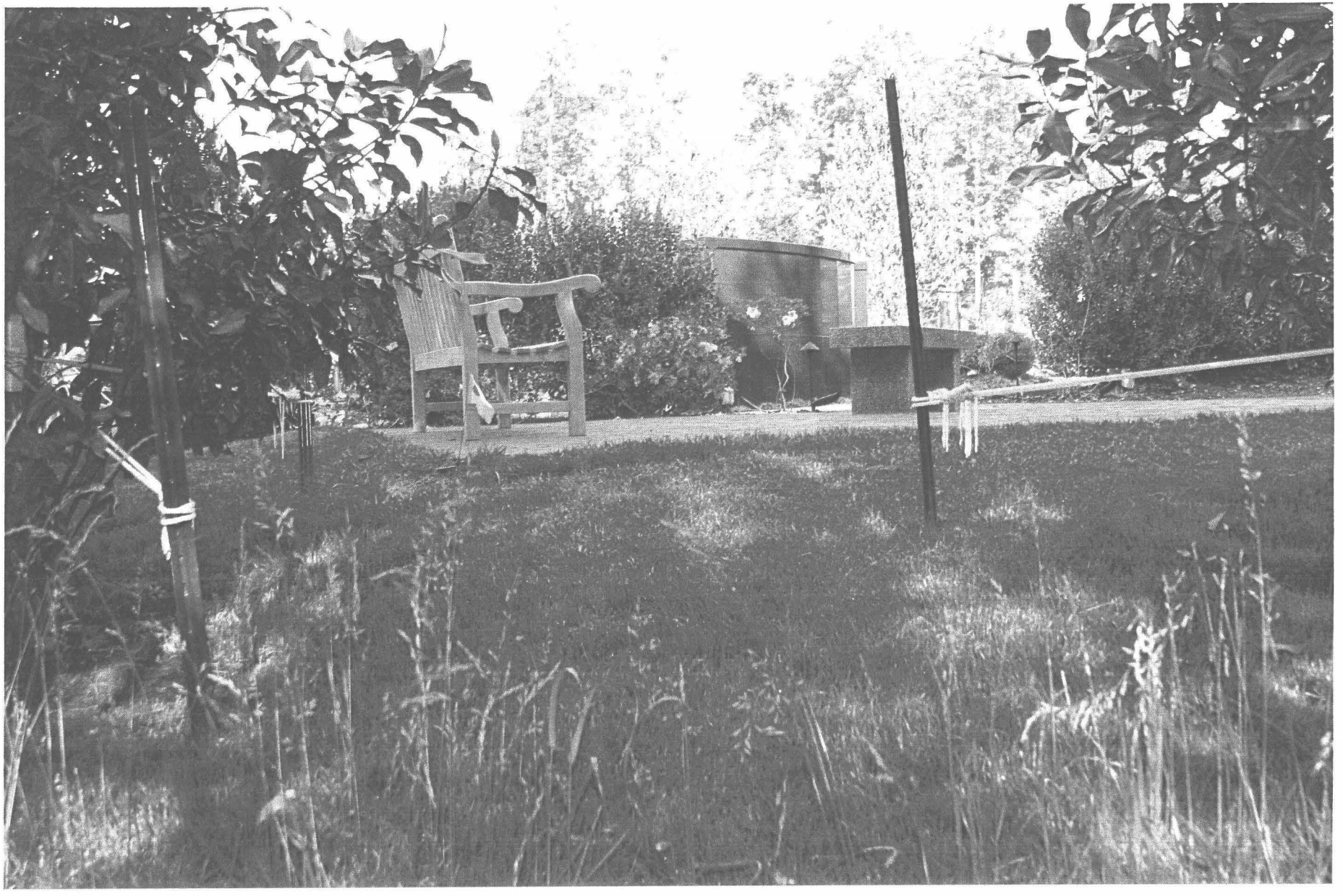












ASSEMBLY

Need
Const Cert

PC 204

- Need Forms
- Need CC
- AB Cert.

Previous Comments.

WAC/SJT

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDE COLUMBARIUM PRAYER GARDEN
COUNTY PLAN NO. SP – 122 – 03
October 21, 2003

General Comments:

1. ✓ Land-Disturbing. As this project can be considered an amendment to the active land-disturbing permit for St. Bedes Church, County Plan No. SP-28-01 (amended SP-18-03), a separate land-disturbing permit with surety will not be necessary. However, additional land-disturbing permit fees and rider to the existing erosion and sediment control bond may be necessary.

2. ✓ Responsible Land Disturber. Provide the name of an individual who will be in charge of and responsible for carrying out the land-disturbing activity. Plans without this information are deemed incomplete and not approved until proper notification is received.

3. ✓ Record Drawing and Construction Certification. The stormwater management/BMP facility as proposed for this project will require submission, review and approval of a record drawing (as-built) and construction certification prior to release of the posted bond/surety. Provide notes on the plan accordingly to ensure this activity is adequately coordinated and performed before, during and following construction in accordance with current County guidelines.

4. ✓ Site Information. Provide proposed impervious cover and disturbed area estimates for the project. Provide a north arrow on landscape plan Sheet L1.1. Label Resource Protection Area (RPA) adjacent to the conservation area to the south of the project site.

Chesapeake Bay Preservation:

5. ✓ Environmental Inventory. Due to the size and location of the project, an environmental inventory per Section 23-10(2) of the Chesapeake Bay Preservation ordinance would be required. The inventory can be simple in nature, such as list of components and whether there are impacts or not. If an environmental inventory is not to be provided for this project, at a minimum, this plan should reference the approved plan and sheet which contains the environmental inventory for the overall project.

Erosion & Sediment Control Plan:

6. ✓ Design Checklist. Please provide a completed standard James City County Erosion and Sediment Control and Stormwater Management Design Plan Checklist, specific to this project. The intent of the checklist is to ensure the plan preparer has provided all items necessary for a complete and expeditious review.

7. ✓ Topography. Show only existing and proposed contours. It appears three generations of contour data are shown on the plans.

8. ✓ Grading. Proposed grading to the west of the "Gathering Area" and the steps which lead south from the "Gathering Area" appears incorrectly labeled.

9. ✓ Standard E&SC Notes. Replace the Erosion Control Notes on Sheet C2.0 with revised James City County Erosion Control Notes dated 7/06/01. Contact the Environmental Division at 757-253-6639 if you need a hard or electronic copy of the standard notes.

10. ✓ Temporary Stockpile Areas. Show any temporary soil stockpile, staging and equipment storage areas (with required erosion and sediment controls) or indicate on the plans that none are anticipated for the project site.

11. ✓ Limits of Work. Show and label a distinct limit of work (clearing and grading) around the site periphery. Be sure to include work associated with installation of erosion and sediment control measures. Limits of landscaping as shown on landscaping sheet L1.1 are not consistent with the limit of work indicated on Sheet C1.0, especially in the area of the bioretention basin.

12. ✓ Sequence of Construction. Provide a sequence of construction outlining installation of erosion and sediment control measures for the project, including removal of the existing sediment trap to the northeast of the prayer garden, if this feature is still in place during the time of construction of this site. sheet C1.0

13. ✓ E&SC. Provide silt fence or other appropriate erosion and sediment control measures to provide for construction runoff control for the west and southwestern portions of the project site below areas proposed for grading. This portion of the site is relatively steep.

14. ✓ Rock Check Dam. A single, temporary rock check dam placed in the natural channel below the proposed bioretention basin outfall (12-inch, invert El. 54) would provide for E&S control during construction of the basin.

15. ✓ Rock Construction Entrance. Provide a rock construction entrance in accordance with VESCH Minimum Standard 3.02.

16. ✓ Slope Labels. Label all graded cut and fill slopes with slope indicators as intended (ie. 3H:1V, 2H:1V, etc.). Slopes steeper than 3H:1V require matting.

17. ✓ Outlet Protections. Provide riprap outlet protection at the end of 6-inch sidewalk culvert, the end of the EC-2 lined portion of the stormwater conveyance channel prior to it's entry into the bioretention basin and also at the end of the 12-inch diameter outfall pipe from the basin. Specify riprap class and thickness, pad dimensions and amount of stone to be used in accordance with requirements of the VESCH, Minimum Standards 3.18 and 3.19.
None necessary either case based on comps.

18. ✓ Safety Fence. Use of orange colored safety fence in accordance with VESCH Minimum Standard 3.01 may be warranted along the west and north perimeters of the site due to the project's proximity to the parking lot and the side entrance(s) to the church.
ADDED.

Stormwater Management / Drainage:

19. ✓ Channel. Just south of the "three pool" reflecting pond water features, plan Sheet C1.0 shows a drainage swale along the northern limit of the conservation easement area. This stormwater conveyance channel cannot just dead end onto a flat slope. The channel configuration must discharge into an adequate channel or receiving facility in conformance with the provisions of Minimum Standard 19 of the Virginia Erosion and Sediment Control regulations.

20. Bioretention Basin. Provide computations to show proper design of the bioretention basin consistent with the provisions of the County BMP manual and the Virginia Stormwater Management Handbook. Focus on showing results for peak inflows, water quality treatment and control of postdevelopment discharges from the basin. Outflows should not exceed predevelopment levels for the 2-year storm within the design drainage area. Ensure the receiving natural channel is adequate to accept flow from the basin proposed basin discharge pipe. Provide information for water surface elevations for larger storm events to ensure the facility does not overtop and erode natural downstream areas.

21. Bioretention Basin. Add clean-out devices at each end of the 10-inch perforated drain pipe at the bottom of the bioretention basin. Z ADDED.

22. Bioretention Basin. No data was submitted to show Initial Feasibility Testing and/or Concept Design Testing requirements were met in accordance with the Appendix E of the JCC BMP manual or to substantiate design infiltration-percolation rates for the infiltration or filtering type BMP. Please submit a copy of the report or data, logs and testing results as necessary. SMALL BASIN, ACTS AS FILTER W/ UNDERDRAIN NOT RQD.

23. Cell Pavers. Information on the cover sheet indicates use of polypropylene honeycomb cell pavers. The construction plan is unclear where this product is to be installed (sidewalk, gathering area, columbarium area, etc.). #23 Hopke.

24. Reflecting Pools. Provide a note on the plans to indicate that the three reflecting pools are not to be used for sediment control or stormwater management purposes. ADDED

25. Landscaping Plan. Provide a landscape plan for the bioretention basin, consistent with the provisions of the County BMP manual and Minimum Standards & Specs. 3.05 and 3.11 of the VSMH.

26. Stormwater Conveyance Channels. Provide calculations to support the design of all proposed stormwater conveyance channels and swales. Specify lining type required (ie. grassed, EC-2, EC-3, etc.) for all onsite open channels.

V ~ 1.0 fps.

Previous Comments.

WAC/SJT

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDE COLUMBARIUM PRAYER GARDEN
COUNTY PLAN NO. SP – 122 – 03
October 21, 2003

General Comments:

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2. Responsible Land Disturber. Provide the name of an individual who will be in charge of and responsible for carrying out the land-disturbing activity. Plans without this information are deemed incomplete and not approved until proper notification is received.

3. Record Drawing and Construction Certification. The stormwater management/BMP facility as proposed for this project will require submission, review and approval of a record drawing (as-built) and construction certification prior to release of the posted bond/surety. Provide notes on the plan accordingly to ensure this activity is adequately coordinated and performed before, during and following construction in accordance with current County guidelines.

4. Site Information. Provide proposed impervious cover and disturbed area estimates for the project. Provide a north arrow on landscape plan Sheet L1.1. Label Resource Protection Area (RPA) adjacent to the conservation area to the south of the project site.

Chesapeake Bay Preservation:

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12. ✓ Sequence of Construction. Provide a sequence of construction outlining installation of erosion and sediment control measures for the project, including removal of the existing sediment trap to the northeast of the prayer garden, if this feature is still in place during the time of construction of this site. sheet C1.0

13. ✓ E&SC. Provide silt fence or other appropriate erosion and sediment control measures to provide for construction runoff control for the west and southwestern portions of the project site below areas proposed for grading. This portion of the site is relatively steep.

14. ✓ Rock Check Dam. A single, temporary rock check dam placed in the natural channel below the proposed bioretention basin outfall (12-inch, invert El. 54) would provide for E&S control during construction of the basin.

15. ✓ Rock Construction Entrance. Provide a rock construction entrance in accordance with VESCH Minimum Standard 3.02.

16. ✓ Slope Labels. Label all graded cut and fill slopes with slope indicators as intended (ie. 3H:1V, 2H:1V, etc.). Slopes steeper than 3H:1V require matting.

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None necessary either case based on comps.

18. ✓ Safety Fence. Use of orange colored safety fence in accordance with VESCH Minimum Standard 3.01 may be warranted along the west and north perimeters of the site due to the project's proximity to the parking lot and the side entrance(s) to the church.
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Stormwater Management / Drainage:

19. ✓ Channel. Just south of the "three pool" reflecting pond water features, plan Sheet C1.0 shows a drainage swale along the northern limit of the conservation easement area. This stormwater conveyance channel cannot just dead end onto a flat slope. The channel configuration must discharge into an adequate channel or receiving facility in conformance with the provisions of Minimum Standard 19 of the Virginia Erosion and Sediment Control regulations.

20. Bioretention Basin. Provide computations to show proper design of the bioretention basin consistent with the provisions of the County BMP manual and the Virginia Stormwater Management Handbook. Focus on showing results for peak inflows, water quality treatment and control of postdevelopment discharges from the basin. Outflows should not exceed predevelopment levels for the 2-year storm within the design drainage area. Ensure the receiving natural channel is adequate to accept flow from the basin proposed basin discharge pipe. Provide information for water surface elevations for larger storm events to ensure the facility does not overtop and erode natural downstream areas.

21. Bioretention Basin. Add clean-out devices at each end of the 10-inch perforated drain pipe at the bottom of the bioretention basin. 2 ADDED.

22. Bioretention Basin. No data was submitted to show Initial Feasibility Testing and/or Concept Design Testing requirements were met in accordance with the Appendix E of the JCC BMP manual or to substantiate design infiltration-percolation rates for the infiltration or filtering type BMP. Please submit a copy of the report or data, logs and testing results as necessary. SMALL BASIN, ACTS AS FILTER W/ UNDERDRAIN NOT RQD.

23. Cell Pavers. Information on the cover sheet indicates use of polypropylene honeycomb cell pavers. The construction plan is unclear where this product is to be installed (sidewalk, gathering area, columbarium area, etc.). #23 Hopke.

24. Reflecting Pools. Provide a note on the plans to indicate that the three reflecting pools are not to be used for sediment control or stormwater management purposes. ADDED

25. Landscaping Plan. Provide a landscape plan for the bioretention basin, consistent with the provisions of the County BMP manual and Minimum Standards & Specs. 3.05 and 3.11 of the VSMH.

26. Stormwater Conveyance Channels. Provide calculations to support the design of all proposed stormwater conveyance channels and swales. Specify lining type required (ie. grassed, EC-2, EC-3, etc.) for all onsite open channels.

V ~ 1.0 fps.

ENVIRONMENTAL DIVISION PROJECT REVIEW and COMMENTS - TRACKING SLIP

Plan Type: ☐ C (Concept Plan) ☐ M (Master Plan) ☐ Other, Specify: _____
☐ SP (Site Plan) ☐ SUP (Special Use Permit)
☐ S (Subdivision) ☐ Z (Rezoning)

☐ **EXPEDITED REVIEW STATUS (TOP PRIORITY)**
☐ **DRC Case REVIEW STATUS**

Project Information:
Case No.: SP . 122 . 03
Project Name: ST. BEDE'S COLUMBARIUM PRAYER GARDEN
Planner: CHRIS JOHNSON Extension: 6689

☑ Original Plan (1st Submission, 1st Plan Review)
☐ Revised Plan 1 (2nd Submission, 2nd Plan Review)
☐ Revised Plan 2 (3rd Submission, 3rd Plan Review)
☐ Revised Plan 3 (4th Submission, 4th Plan Review)

☐ "Slip-Sheet to Env. Div.
☑ Amendment to Prev. Approved Plan
SP-28-01; SP-18-03
C-44-03

Date Tracking:

	Date	
Transmittal Date:	Sept 25 '03	(from Planning)
Received Environmental Division:	Sept 25 '03	(Date Stamped Env Div)
Due / Return Date (Planning):	Oct 09 '03	(Planning Return Date)
21 days from Transmittal Date:	Oct 16 '03	(Env Div Goal Date)
Erosion & Sediment Control Plan Review Complete:	Sept 29 '03	(E&SC Review Complete)
Stormwater Management/Drainage Review Complete:	Oct 21 '03	(SWM Review Complete)
Environmental Division Completion Date:	Oct 21 '03	(All Personnel)

☑ Forwarded to Planning
☑ Email ☑ Fax to Professional

Chris Johnson
Dick Phillips LANDMARK

Environmental Review Computer File Setup:

☐ Old Files	(Previous Reviews, Old files)	File: _____
☑ Original Plan	(1st Submission, 1st Review)	File: SP-122-03 .0 ← MS WORD
☐ Revised Plan 1	(2nd Submission, 2nd Review)	File: _____ .1
☐ Revised Plan 2	(3rd Submission, 3rd Review)	File: _____ .2
☐ Revised Plan 3	(4th Submission, 4th Review)	File: _____ .3

Erosion & Sediment Control Plan Review (William A. Cain / Mike D. Woolson)
Date Received: Sept 25 '03 (Received for E&SC Plan Review)
Review Complete: ? (E&SC Plan Review Complete)

Stormwater Management / Drainage Plan Review (Scott J. Thomas)
Date Received: Sept 29 '03 (Received for SWM Plan Review)
Review Complete: Oct 21 '03 (SWM Plan Review Complete)

Comments: E+SC, Drainage + Bioret Basin Comments

10-21-03

SCOTT,
I TOOK A SHOT AT THESE PLANS.
COMMENTS ARE IN THE G:\SP-122-03.0
AS WE DISCUSSED AND ARE WORD. DOC.

NOT BAD! BILL

TRANSMITTAL

DEC 2003
RECEIVED

DATE: December 30, 2003

TO: Environmental
JCSA (2 copies)
Records Management

FROM: Patrick Foltz, Development Management Assistant

SUBJECT: **SP-122-03, St. Bede Prayer Garden**

TAX MAP: (38-3)(1-18)

ACTION: For your files.

SURETY REQUEST FORM

Project Name: St. Bede Prayer Garden

Requested By: Basel Const. - Linwood

Phone Number: 220-2874 (871-5579)

Date Requested: 1/5/04

Date Completed & Requester Notified: _____

Action Requested

☐ Subdivision Surety — Calculate ☐ Reduce ☐ Release ☐

Checklist

☐ JCSA $ _____
☐ Streetlights / Street Signs _____
☐ Street Dedication / VDOT _____

Surety Amount Needed $ _____

Comments _____

☑ Erosion Control Surety — Calculate ☑ Reduce ☐ Release ☐

Checklist

☐ BMP Certification / Record Drawings _____

Surety Amount Needed $ _____

Comments _____

INDICATE YOUR APPROVAL BY INITIALING THE APPROPRIATE BLANK:

INSP. _____ DEC _____ ST _____ PTM _____

Forms 2/02

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDES CATHOLIC CHURCH SITE PLAN AMENDMENT # 1
COUNTY PLAN NO. SP -18- 03
March 3, 2003

GEL/SJT

General Comments:

1. Serious concern is warranted about grading and use of SM-2A paving in the parking lot to the west of Bioretention Area # 1 (15 ft. x 365 ft.). This area is situated in the far north corner of the parking lot area closet to dry pond BMP # 1. Although original approved plan SP-28-01 called for for gravel surfacing of the parking lots surrounding this bioretention BMP, design runoff computations and design of the bioretention basin utilized runoff coefficients that were compatible for a change from compacted gravel to asphalt surfacing. However, asphalt surfacing and actual grading of the parking area to the west of Bioretention Cell # 1 has resulted in runoff from the surface of the "west parking lot" to follow the path of least resistance. Instead of runoff following the cross-slope in a sheet flow manner in an east direction across the parking lot for conveyance in a incremental fashion into the bioretention cell, it appears that grading is such that runoff is collecting in a concentrated fashion in a longitudinal direction toward the north corner of the west parking lot near Storm Inlet # 12 (see plan Sheet C-4 at proposed spot elevation 78.50). The purpose of the bioretention cell is for runoff to sheet flow across paved parking area in a non-erosive velocity for pretreatment first into pea gravel diaphragm and then into the bioretention basin for primary water quality treatment (filtering). Based on observations during rainstorm events, runoff from is collecting into this corner of the parking area and is bypassing treatment in a majority of Bioretention Basin # 11. This condition requires investigation, evaluation and resolve prior to approval of this site plan amendment.

ENVIRONMENTAL DIVISION PROJECT REVIEW and COMMENTS - TRACKING SLIP

Plan Type:
- ☒ C (Concept Plan)
- ☐ SP (Site Plan)
- ☐ S (Subdivision Plan)
- ☐ M (Master Plan)
- ☐ SUP (Special Use Permit)
- ☐ Z (Rezoning)
- ☐ AFD (Agricultural Forest District)
- ☐ Other, Specify _____
- ☐ EXPEDITED REVIEW STATUS (TOP PRIORITY)
- ☐ D.R.C. REVIEW STATUS

Project Information:

Case No.: C-44-03

Project Name: St. Bede Catholic Church Prayer Garden

Planner: Chris Johnson Extension: 6689

- ☒ Original Plan (1st Submission, 1st Plan Review)
- ☐ Revised Plan 1 (2nd Submission, 2nd Plan Review)
- ☐ Revised Plan 2 (3rd Submission, 3rd Plan Review)
- ☐ Revised Plan 3 (4th Submission, 4th Plan Review)
- ☐ "Slip-Sheet to Env. Div.
- ☐ Amendment to Prev. Approved Plan SP-28-01; SP-18-03

Date Tracking:

	Date	
Transmittal Date:	April 17 '03	(from Planning)
Received Environmental Division:	April 18 '03	(Date Stamped Env Div)
Due / Return Date (Planning):	April 25 '03	(Planning Return Date)
21 days from Transmittal Date:	April 25 '03	(Env Div Goal Date)
Erosion & Sediment Control Plan Review Complete:	April 21 '03	(E&SC Review Complete)
Stormwater Management/Drainage Review Complete:	April 22 '03	(SWM Review Complete)
Environmental Division Completion Date:	April 22 '03	(All Personnel)

- ☒ Forwarded to Planning — Chris Johnson
- ☐ Email/Fax to Professional — ??

Environmental Review Computer File Setup:

		File:
☐ Old Files	(Previous Reviews, Old files)	_____
☐ Original Plan	(1st Submission, 1st Review)	_____ .0
☒ Revised Plan 1	(2nd Submission, 2nd Review)	C-044-03 .1 ←
☐ Revised Plan 2	(3rd Submission, 3rd Review)	_____ .2
☐ Revised Plan 3	(4th Submission, 4th Review)	_____ .3

Erosion & Sediment Control Plan Review (~~Gerry Lewis~~ / Mike D. Woolson)

Date Received: April 18 '03 (Received for E&SC Plan Review)

Review Complete: April 21 '03 (E&SC Plan Review Complete)

Stormwater Management / Drainage Plan Review (Scott J. Thomas)

Date Received: April 22 '03 (Received for SWM Plan Review)

Review Complete: April 27 '03 (SWM Plan Review Complete)

Comments: Typical comments. New impervious area expansion.

4/21/03

Scott.

Comments in

C-044-03.0

Mike

TRANSMITTAL

SEP 2003
RECEIVED
ENVIRONMENTAL DIVISION

DATE: September 25, 2003

TO: Environmental
JCSA (2)
County Engineer
Fire Department
Health Department
Lee Schnappinger

FROM: Christopher Johnson, Senior Planner

SP-122-03

SUBJECT: AMENDS SP-28-01. St. Bede Catholic Church

ATTACHMENTS: Site Plan

INSTRUCTIONS: Please review and comment or approve and sign.

RETURN BY: October 9, 2003

RECEIVED SEP 29 2003
DNE OCT 16

Is this development served by Newport News Waterworks? ____(JCSA please check if yes)

If checked, planner will fax a copy of preliminary approval letter with Fire Department comments, and the JCSA completed water data sheet to Newport News Waterworks as soon as all three are available.

CONCEPT PLAN
REVIEW Comments

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDE CATHOLIC CHURCH PRAYER GARDEN
COUNTY PLAN NO. C - 44 - 03
April 22, 2003

General Comments:

1. Conservation Easements. Label the two conservation easements on the Context Plan (1" = 50' scale) and Garden Plan (1" = 10' scale). The conservation easements are situated to the south of the prayer garden. One conservation easement area is situated to the north of the sanitary sewer corridor and the second is situated to the south of the sanitary sewer corridor. Clearing and grading will not be permitted within either of the conservation easement areas due to work associated with this plan.

2. NO Infiltration Pits. Based on approved County Plan No. SP-28-01, there were 8 infiltration pits proposed around the main building periphery. As a result of site plan amendment SP-18-03, Infiltration Pit # 3 was relocated due to use of grass pavers along the access road on the east side of the main building. Show the location of Infiltration Pits # 1 through # 8 on the 1" = 50' scale context plan.

3. Impervious Area. Provide an impervious cover estimate for impervious area associated with this plan (gathering plaza, sidewalk, columbarium, walls & steps). This area is additional impervious area not approved by previous plans.

4. An erosion and sediment control plan, specific to work at this area, will be necessary for the plan of development.

5. Sediment Trap. The location of the conceptual Prayer Garden coincides with the location of Temporary Sediment Trap # 2 which is currently servicing the site. Work for the Prayer Garden can not commence until there is adequate site stabilization and approval for removal of Temporary Sediment Basin # 2.

6. Stormwater Management. The basic concept of stormwater management for the St. Bedes project was that most of the impervious cover associated with the site is being conveyed to two primary onsite BMPs. One is a large infiltration basin near the front entrance to the site and the second is a series of linear bioretention facilities through the center of the main parking area. Due to site topography, impervious areas associated with the most of the main building and areas around the main building were not able to be conveyed to the primary onsite BMPs. Impervious area associated with most of the main building and it's surrounding area was controlled by smaller sized infiltration pits (ie. rear roof runoff treatment) placed at strategic locations around the back and sides of the building. These smaller BMPs, in combination with the larger BMPs and conservation easement open space, achieved water quality requirements for the overall plan of development. The same general concept is to be followed for additional impervious area as proposed for the Prayer Garden. If impervious area runoff from this area cannot be conveyed to the primary site BMPs, then small size secondary BMPs must be a component for the proposed amendment. Alternatives, which are based on the premise of promoting infiltration in accordance with Sections 23-9(a) and 23-9(b)(3) of the Chesapeake Bay Preservation ordinance, include: 1) Since the sidewalks represent the largest portion of new impervious cover, instead of brick and concrete sidewalk use sidewalk surfacing material which promotes infiltration; 2) provide new infiltration pits, dry swales, bioretention consistent with the County BMP manual to promote infiltration at this location; 3) direct runoff to existing Infiltration Pit # 3; 4) utilize the reflecting pool as a quasi-stormwater management device; 5) any other unique method which fits the character of the garden, yet promotes infiltration of runoff from impervious areas as proposed.

7. Runoff. Ensure the final plan of development addresses concentrated flow which may be directed to the southwest corner of the main building from the sidewalk to the south of the Gathering Plaza.

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ST. BEDE CATHOLIC CHURCH PRAYER GARDEN
COUNTY PLAN NO. C - 44 - 03
April 22, 2003

MOW/SJT

General Comments:

1. Conservation Easements. Label the two conservation easements on the Context Plan (1" = 50' scale) and Garden Plan (1" = 10' scale). The conservation easements are situated to the south of the prayer garden. One conservation easement area is situated to the north of the sanitary sewer corridor and the second is situated to the south of the sanitary sewer corridor. Clearing and grading will not be permitted within either of the conservation easement areas due to work associated with this plan.

2. Infiltration Pits. Based on approved County Plan No. SP-28-01, there were 8 infiltration pits proposed around the main building periphery. As a result of site plan amendment SP-18-03, Infiltration Pit # 3 was relocated due to use of grass pavers along the access road on the east side of the main building. Show the location of Infiltration Pits # 1 through # 8 on the 1" = 50' scale context plan.

3. Impervious Area. Provide an impervious cover estimate for impervious area associated with this plan (gathering plaza, sidewalk, columbarium, walls & steps). This area is additional impervious area not approved by previous plans.

4. An erosion and sediment control plan, specific to work at this area, will be necessary for the plan of development.

5. Sediment Trap. The location of the conceptual Prayer Garden coincides with the location of Temporary Sediment Trap # 2 which is currently servicing the site. Work for the Prayer Garden can not commence until there is adequate site stabilization and approval for removal of Temporary Sediment Basin # 2.

6. Stormwater Management. The basic concept of stormwater management for the St. Bedes project was that most of the impervious cover associated with the site is being conveyed to two primary onsite BMPs. One is a large infiltration basin near the front entrance to the site and the second is a series of linear bioretention facilities through the center of the main parking area. Due to site topography, impervious areas associated with the most of the main building and areas around the main building were not able to be conveyed to the primary onsite BMPs. Impervious area associated with most of the main building and it's surrounding area was controlled by smaller sized infiltration pits (ie. rear roof runoff treatment) placed at strategic locations around the back and sides of the building. These smaller BMPs, in combination with the larger BMPs and conservation easement open space, achieved water quality requirements for the overall plan of development. The same general concept is to be followed for additional impervious area as proposed for the Prayer Garden. If impervious area runoff from this area cannot be conveyed to the primary site BMPs, then small size secondary BMPs must be a component for the proposed amendment. Alternatives, which are based on the premise of promoting infiltration in accordance with Sections 23-9(a) and 23-9(b)(3) of the Chesapeake Bay Preservation ordinance, include: 1) Since the sidewalks represent the largest portion of new impervious cover, instead of brick and concrete sidewalk use sidewalk surfacing material which promotes infiltration; 2) provide new infiltration pits, dry swales, bioretention consistent with the County BMP manual to promote infiltration at this location; 3) direct runoff to existing Infiltration Pit # 3; 4) utilize the reflecting pool as a quasi-stormwater management device; 5) any other unique method which fits the character of the garden, yet promotes infiltration of runoff from impervious areas as proposed.

7. Runoff. Ensure the final plan of development addresses concentrated flow which may be directed to the southwest corner of the main building from the sidewalk to the south of the Gathering Plaza.

Scott,

I do not know of any changes that were permitted since the rain tanks were complete upon my arrival but it doesn't look like they made any changes to the approved design plan upon inspection.

Tina
9/18/06

- VENTURE LANE
  - STILLING FABRINS
- IRONBOUND SQUARE
  - TALK TO SJT
-

- Colonial heritage. 4-1
- Pottery
- Pavilion @ Williamsburg place *
- Fords Colony. St. Andrews *
- Harlin Coffee
- FREEDOM PARK
- STORMWATER INSPECTIONS