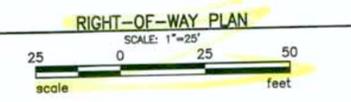


- LAYOUT NOTES:**
- 5 CHES. STD. CG-11 ENTRANCE, SEE DETAIL FOR PAVEMENT SECTION.
 - 11 EXTEND EXISTING 18" RCP 8 FEET ON EACH END. PROP. INV.(EAST)=±9.48 (MG), PROP. INV.(WEST)=9.90
 - 13 UNDERCUT AND FILL EXISTING DITCH TO LIMITS SHOWN.
 - 14 ENTRANCE PROFILE, SEE DETAIL.
 - 15 CHES. STD. ECSB, EROSION CONTROL WITH SAND CEMENT BAGS.
 - 17 ENTRANCE CONNECTION TO WHITTAMORE ROAD TO BE CHES. STD. PC-3 IN ACCORDANCE WITH PFM, VOL. II FOR SAWCUT OF EXISTING PAVEMENT TO FULL DEPTH OF PAVEMENT SECTION.



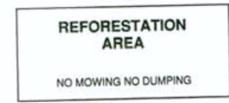
3/03/08 City of Chesapeake Reforestation Guidelines

When reforestation is required, whether it be for uplands or for riparian buffers in non-tidal wetlands as in the Chesapeake Bay Preservation Area (CBPA) Resource Protection Area (RPA), a standard policy has been established. This policy follows guidance from the Virginia Department of Forestry, and the Chesapeake Bay Local Assistance Department's Riparian Buffer Guidance Manual. The reforestation shall be depicted on a landscape plan that is a scale drawing, showing area to be planted, along with a plant list which includes species, size, number, and packaging.

- The basic density of plantings is 300 large canopy trees per acre. This is approximately 12' on center. In order to provide the desired diversity and flexibility in a reforestation project, the following guidelines are provided:
 - The plant list must show a diversity of no more than 20% of any single species of tree. (For example, 10 Live Oaks, 10 Willow Oaks, 10 Loblolly Pines, 10 Bald Cypress, 10 Black Gum, out of a 50 tree requirement).
 - 10 shrubs may be substituted for one large canopy tree.
 - 2 small trees (Dogwood, Red Bud, etc.) may be substituted for one large canopy tree.
 - At least one third of the reforestation should be evergreen.
 - At least two thirds of the reforestation must be large canopy trees.
- Minimum size of required trees is 6-8' (seedlings can be used as per page 2 1c).
- Minimum size of required shrubs is 18-24" or 3 gallon size.
- The entire reforestation area should be covered with 2-4" of organic mulch. This will help retain moisture and provide a beneficial environment for the reforestation.
- For reforesting empty lots within subdivisions and along right of ways, see the Reforestation Supplementary Guidelines on page 2.

City of Chesapeake Reforestation Supplementary Guidelines Page 2

- Criteria for reforesting empty residential lots along right of ways. f. Utilize the reforestation guidelines on page one.
- The area between curb and sidewalk, and a 10' wide buffer adjacent to the sidewalk (away from the street) shall be kept mowed and clear in accordance with Chesapeake City Code 62-2.
- Reforestation by seedlings, (1-3' tall) as opposed to saplings as described on page one is permitted with the following criteria:
 - Density and diversity must be as described on page 1.
 - Establishment of an annual monitoring plan to ensure that the required density is maintained.
- All reforestation areas are to be clearly marked with "Reforestation / no mow" signage at 50' intervals (see sample below minimum dimensions are 8"x4"). Where there is no sidewalk, the signage is to be installed at the edge of the right of way easement. These signs must be visible and be maintained until trees reach an average of 6' height. Failure to maintain these signs could result in action by the city to have the area moved per City Code 62-2.



Mik Lestyan, City Arborist
Department of Neighborhood Services

HIGHWAY SERVICE CODE COMPLIANCE # 2
NO MOW AREA RESERVED FOR REFORESTATION.
TOTAL AREA = ±5.58 ACRES.
SEE REFORESTATION GUIDELINES, THIS SHEET.

PLANT SCHEDULE (REFORESTATION)

QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
20% OF TOTAL	* LIVE OAK	QUERCUS VIRGINIANA	SEE GUIDELINES	SEE GUIDELINES
20% OF TOTAL	* WILLOW OAK	QUERCUS PHellos	SEE GUIDELINES	SEE GUIDELINES
20% OF TOTAL	* LOBLOLLY PINE	PINUS TAEDA	SEE GUIDELINES	SEE GUIDELINES
20% OF TOTAL	* BALD CYPRESS	TAXODIUM DISTICHUM	SEE GUIDELINES	SEE GUIDELINES
20% OF TOTAL	* BLACK GUM	NYSSA SYLVATICA	SEE GUIDELINES	SEE GUIDELINES

* OR APPROVED EQUAL PER THE DISCRETION OF THE CITY ARBORIST.

CURVE TABLE

NO.	RADIUS	DELTA	LENGTH	TANGENT	CHORD	CH. BEARING
1	773.51	118°11'18"	205.04	103.12	205.44	N 175°42'02" E
2	681.62	172°04'00"	203.08	102.29	202.31	N 162°57'34" E
3	45,580.38	0°58'20"	773.43	386.72	773.42	S 80°38'14" E
4	5189.76	5°50'45"	529.51	264.98	529.28	S 78°12'02" E
5	2868.00	8°54'37"	345.90	173.16	345.69	S 71°42'21" E
6	5,388.68	1°19'35"	124.75	62.38	124.74	S 69°01'50" E

PROPOSED 15' DEDICATION FOR ROAD WIDENING (0.3842 ACRES)

215.4517 ACRES
(DB. 5050 PG. 169)
TP #082000000020
CPM VIRGINIA L.L.C.

PLANT SCHEDULE (STREET FRONTAGE, BUFFER "F")

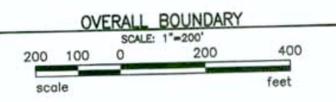
QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
3 PER 100' OF FRONTAGE	** JAPANESE ZELKOVA	ZELKOVA SERRATA	2 1/2" CALIPER	50' O.C.
25 PER 100' OF FRONTAGE	** DWARF BURFORD HOLLY	Ilex Cornuta 'Dwarf Burford'	18"-24" HT.	3' O.C.

** OR APPROVED EQUAL PER THE DISCRETION OF THE CITY ARBORIST.



INSTALL "BUFFER F" LANDSCAPING ALONG ENTIRE LENGTH OF WHITTAMORE ROAD AND CENTERVILLE TURNPIKE. SEE DETAIL FOR TYPICAL 100' SECTION.

PROPOSED 10' PUBLIC DRAINAGE EASEMENT



NO.	DATE	DESCRIPTION
1	3-19-08	REVISED PER CITY COMMENTS, LTR DATED 1-29-08

SIA SITE IMPROVEMENT
Civil Engineers, Surveyors & Site Constructors

OFFICE: 757.671.9288
800 Juniper Crescent, Suite A • Chesapeake, Va. 23320

EMAIL: cad@siainc.com
OFFICE: 757.671.9000

PROFESSIONAL SEAL

ESAM H. BARBARO
Lic. No. 22912
PROFESSIONAL

RIGHT-OF-WAY PLAN AND OVERALL BOUNDARY FOR BATTLEFIELD GOLF CLUB AT CENTERVILLE CHESAPEAKE VIRGINIA

T.P. #062000000020

JOB #	07106
DWG FILE:	LO-4-REV
DATE:	12/14/07
SCALE:	AS SHOWN
SHEET NUMBER	3 OF 5

GENERAL NOTES:

- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT SPECIFICATIONS AND STANDARDS OF THE DEPARTMENT OF WORKS, CITY OF CHESAPEAKE, VIRGINIA (DOW), EXCEPT WHERE OTHERWISE NOTED. DOW'S CONSTRUCTION STANDARDS ARE SET FORTH IN THEIR PUBLIC UTILITIES MANUAL, VOLUME 1, A COPY OF WHICH MUST BE PURCHASED FROM DOW BY THE CONTRACTOR AND KEPT AT THE JOB SITE AT ALL TIMES. REFERENCES TO VDOT SHALL BE REFERENCES TO VDOT SHALL MEAN THE CURRENT STANDARDS AND/OR SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION.
- ALL STORM SEWER PIPES SHALL BE REINFORCED CONCRETE TONGUE AND GROOVE CONFORMING TO ASTM C-76. PIPES NOT SUBJECT TO TRAFFIC LOADING SHALL BE CLASS II AND PIPES SUBJECT TO TRAFFIC LOAD AND ALL PIPES WITHIN STREET RIGHT-OF-WAY SHALL BE CLASS III. CONCRETE PIPE JOINTS SHALL BE SEALED WITH A RING OF MASTIC-TYPE SUCH AS RAM-NEX, RUBER-NEX, OR BUTYL-TITE, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS, AND CONFORMING TO ASTM C-76. CLEARANCE OF 12" BETWEEN STORM AND OTHER UTILITIES IS REQUIRED UNLESS OTHERWISE NOTED.
- TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS, AS DIRECTED BY THE DOW.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, ETC., THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
- CURBS & GUTTERS SHALL BE CONSTRUCTED IN SECTIONS OF UNIFORM LENGTHS, APPROXIMATELY 10 FEET, AS NECESSARY TO FORM CLOSURES. EXPANSION JOINTS SHALL BE FORMED AT INTERVALS OF APPROXIMATELY 120 FEET USING 5/8" PREMOLDED FIBERGLASS JOINT FILLER.
- THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NON-EXISTENCE, SIZE, TYPE, LOCATION ALIGNMENT OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILITY OWNER'S RECORDS AND/OR ELECTRONIC LINE TRACING, ELECTRONIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM LOCATOR TEST EXCAVATION OR OTHER INVESTIGATION IS NECESSARY TO VERIFY THE INVERTS, LOCATIONS AND CLEARANCES, AND SHALL REPORT IMMEDIATELY ANY DISCREPANCIES TO BENTON, DOWELL, ELGIN & TITUS, LTD. AT 490-3566. UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY EXCAVATION IN THE PROXIMITY OF THEIR UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AT HIS EXPENSE ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN SILT TRAPS SUFFICIENT TO PREVENT SOIL FROM BEING ERODED FROM THE SITE INTO ANY ADJACENT DRAINAGE SYSTEMS, DITCHES OR WATERCOURSES. ANY MATERIAL THAT IS SO ERODED SHALL BE PROMPTLY REMOVED.
- ELEVATIONS AS SHOWN HEREON ARE IN FEET AND ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929, 1972 ADJUSTMENT.
- THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE BELOW PLAN GRADE ANY MATERIALS WHICH ARE UNSUITABLE FOR FOUNDATIONS, SUBGRADE, OR OTHER ROADWAY PURPOSES AND BACKFILL THESE AREAS WITH APPROVED MATERIAL. THE EXTENT OF UNDERCUTTING AND BACKFILLING SHALL BE DETERMINED BY DOW, AS TO STREET RIGHT-OF-WAY AND THE ENGINEER OR ARCHITECT IN OTHER AREAS. COMPENSATION SHALL BE AS SET FORTH IN THE CONTRACT DOCUMENTS.
- EXISTING TREES THAT ARE TO BE RETAINED AFTER CONSTRUCTION SHALL BE PROTECTED DURING CONSTRUCTION IN THE FOLLOWING WAYS: (LEGEND: AND AS PER VIRGINIA EROSION AND SEDIMENT CONTROL STANDARD SPECIFICATION 1.05).
 - PRIOR TO ANY CLEANING OR CONSTRUCTION, PROTECTIVE BARRIERS SHALL BE PLACED AROUND ALL TREES TO BE RETAINED ON THE SITE TO PREVENT THE DESTRUCTION OR DAMAGE OF TREES. THESE BARRIERS WILL BE LOCATED IN A CIRCULAR PATTERN WITH A RADIUS EQUAL TO THE LEAD LENGTH OF THE TREE. PROTECTIVE BARRIERS WILL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT ARE TO BE EXCLUDED TO AVOID SOIL COMPACTION. THE ONLY EXCEPTION TO THIS REQUIREMENT WILL BE THOSE SPECIFICALLY ALLOWED BY THESE STANDARDS AND SPECIFICATIONS.
 - BOARDS OR WRES OF A NON-PROTECTIVE NATURE WILL NOT BE NAILED OR ATTACHED TO TREES DURING BUILDING OPERATIONS.
 - HEAVY EQUIPMENT OPERATORS WILL BE CAUTIONED TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA EQUAL TO TWICE THE TREE CIRCUMFERENCE (MEASURED 4'-12" ABOVE GROUND LINE IN INCHES). EXPRESSED IN FEET, (EXAMPLE - CIRCUMFERENCE OF TEN INCHES WOULD HAVE A 20" CUT ZONE OF TWENTY FEET IN ALL DIRECTIONS FROM THE TREE). THIS SHOULD APPLY TO DITCHING FOR ALL UTILITIES SERVICES, IF FEASIBLE.
 - TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING EQUIPMENT OPERATIONS WILL BE PAINTED IMMEDIATELY WITH A GOOD GRADE OF "TREE PAINT".
 - ALL TREE LIMBS DAMAGED DURING BUILDING OR LAND LEVELING, OR REMOVED FOR ANY OTHER REASON, WILL BE SAWED FLUSH TO TREE TRUNK AND PAINTED WITH A "TREE PAINT".
- ALL STORM WATER PIPES AND INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIAL AT LAST STAGES OF CONSTRUCTION.
- ALL SANITARY SEWER GRAVITY LINES SHALL BE PVC PIPE, MAX. SDR OF 31, ASTM D-3034 OR ABS COMPOSITE PIPE WITH SOLVENT CEMENTED JOINTS (UNLESS OTHERWISE NOTED). PVC JOINTS SHALL CONFORM TO ASTM D-3212-73-1, JOINTS FOR DRAIN & SEWER PLASTIC PIPES USING FLEXIBLE PLASTIC SEALANTS.
- SUB-SURFACE UTILITY WARNING TAPE AS MANUFACTURED BY THE GRIFFOLYN COMPANY OR EQUAL SHALL BE PLACED AT AN ELEVATION NOT LESS THAN 6-INCHES NOR MORE THAN 12-INCHES BELOW THE PROPOSED FINISHED GRADE ABOVE NON-CONDUCTIVE SEWER, WATER AND SEWER FORCE MAIN IN PUBLIC RIGHTS-OF-WAY OR EASEMENTS. THE TAPE SHALL BE OF A DURABLE, METALLIZED, PLASTIC FILM SIMILAR TO TERRA TAPE, D FOR IDENTIFICATION BY ELECTRONIC PIPE LOCATING DEVICE AS WELL AS VISUAL IDENTIFICATION. THE TAPE FOR SEWER FORCE MAIN LINE SHALL BE BRIGHT GREEN WITH THE FOLLOWING PRINTED LEGEND "CAUTION - SEWER LINE BELOW". THE TAPE FOR WATER LINES SHALL BE BRIGHT BLUE WITH THE FOLLOWING PRINTED LEGEND "CAUTION - WATER LINE BELOW".
- FOR LINES LAID ON CURVES, DEFLECTIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.
- A MINIMUM VERTICAL SEPARATION OF 18" SHALL BE MAINTAINED BETWEEN SANITARY SEWER AND WATER LINES AND A FULL JOINT OF WATER LINE PIPE SHALL BE CENTERED ON CROSSING WHERE WATER LINE CROSSES OVER SANITARY SEWER. WHERE CLEARANCE IS LESS THAN 18" BUT GREATER THAN 12", SANITARY SEWER SHALL BE PRESSURE TESTED DUCTILE IRON PIPE 10" FROM WATER MAIN WHEN WATER LINE CROSSES UNDER SANITARY SEWER, 18" MINIMUM CLEARANCE MUST BE MAINTAINED, AND SANITARY SEWER SHALL BE PRESSURE TESTED DUCTILE IRON PIPE 10" FROM WATER MAIN.
- ALL DRAINAGE STRUCTURES INVERTS TO BE SHIPPED IN ACCORDANCE WITH CHESAPEAKE STANDARD IS-1.
- ALL WATER AND FORCE MAINS SHALL BE DUCTILE IRON, OR PVC MEETING THE REQUIREMENTS OF ANSA C-900 POLYVINYL CHLORIDE (PVC) PRESSURE PIPE, CLASS 150 (SDR 18), "BLUE BRUTE" OR APPROVED EQUAL. (PVC JOINTS SHALL BE INTEGRAL BELL & SPOUT TYPE WITH SOLID ELASTOMERIC RING CONFORMING TO ASTM D-1869, RUBBER RINGS FOR ASBESTOS CEMENT PIPE); ALL FITTINGS AND CAST OR DUCTILE IRON PIPE SHALL BE CAST LINED CAST OR DUCTILE IRON CLASS 150/22 AND MANUFACTURED IN ACCORDANCE WITH ANSA C109 (PVC) AND ANSI 21.10 (FITTINGS) EXCEPT WHERE OTHERWISE NOTED, WATER AND SEWER FORCE MAINS SHALL BE LAID WITH A MINIMUM COVER OF 36 INCHES.
- VALVES 10" AND SMALLER SHALL BE METROPOLITAN PATTERN (BY H & H MUELLER, DARLING OR A.P. SMITH) GATE VALVES, OPEN-RIGHT, WITH NON-RISING STEMS, NUT-OPERATED, DOUBLE-DISC).
- VALVES 12" AND OR GREATER SHALL BE DRESSER "450" OR AMERICAN DARLING, CLASS 150-B, OPEN-RIGHT BUTTERFLY VALVES, SWING-TYPE WITH COUNTERWEIGHT.
- FIRE HYDRANTS SHALL BE A.P. SMITH, MUELLER #107 OR AMERICAN DARLING B-508 QUICK FIX, OPEN-RIGHT, 4-1/2" VALVE OPENING WITH BREAKAWAY SAFETY FLANGE, AND INSTALLATION SHALL INCLUDE A 6" GATE VALVE AND VALVE BOX.
- THE FOLLOWING STORM DRAINAGE STRUCTURES, IF LESS THAN 6.0' DEEP, MAY BE CONSTRUCTED OF BRICK IN ACCORDANCE WITH THE FOLLOWING STANDARDS THAT WERE IN EFFECT PRIOR TO PUBLICATION OF VOLUME 1 OF THE DOW PIPES MANUAL:
 - CB-1 CATCH BASIN (12" - 18" PIPE SIZE)
 - MCB-1 TOP & CB-2 STRUCTURE: MULTIPLE CATCH BASIN (21" & LARGER PIPE SIZE)
 - SDI-1 SHALLOW DROP INLET (12" TO 18" PIPE)
 - MH-1 MANHOLE FOR 12" - 48" PIPE CULVERTS
 - CB-2 CATCH BASIN (21" & LARGER PIPE SIZE)
 - MCB-2 MULTIPLE CATCH BASIN
 - SDI-2 SHALLOW DROP INLET (21" TO 24" PIPE)

A TWO (2) YEAR DEFECT BOND MUST BE FURNISHED BY THE OWNER FOR ALL STORM DRAINAGE STRUCTURES CONSTRUCTED OF BRICK. THE 6-FOOT DEPTH LIMITATION AND DEFECT BOND REQUIREMENT SHALL APPLY ONLY TO STRUCTURES IN PUBLIC RIGHT-OF-WAY OR EASEMENT.
- STORM SEWER PIPES AS SHOWN ON THE PLAN VIEW ARE MEASURED FROM THE CENTERLINE OF EACH STRUCTURE. INVERT ELEVATIONS ARE ESTABLISHED BASED ON THIS CENTERLINE DISTANCE. LENGTH CALLOUTS FOR PIPES WITH FLARED END SECTIONS WILL BE MEASURED TO THE JOINT. CONTRACTORS SHALL LOCATE ALL END SECTIONS TO MATCH THE BANK WITH LENGTHS ADJUSTED AS NECESSARY AND THE PIPE SLOPE SHALL REMAIN AS PER THE PLAN.
- CONSTRUCTION OF ON-SITE DRAINAGE STRUCTURES AND PIPE WILL REQUIRE A PERMIT FROM THE PLUMBING INSPECTOR OF THE INSPECTIONS DEPARTMENT.

EROSION AND SEDIMENT CONTROL NOTES:

- MANAGEMENT STRATEGIES AND SEQUENCES OF EROSION CONTROL MEASURES AND STANDARDS OF THE DEPARTMENT OF WORKS, CITY OF CHESAPEAKE, VIRGINIA (DOW), PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE LATEST EDITION OF THE VEASOR AND VEASC HANDBOOK.
- THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN PROJECT LIMITS:
- TEMPORARY CONSTRUCTION ENTRANCE(S) SHALL BE PROVIDED AT THE LOCATION(S) SHOWN ON THE PLANS. THIS ENTRANCE(S) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (STD. & SPEC. 3.02). WASH RACKS ARE TO BE PROVIDED WHERE WATER IS AVAILABLE.
 - WHEN CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE, WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROAD BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS LARGER LAND-DISTURBING ACTIVITIES.
 - CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS. ALL TRAFFIC IS PROHIBITED FROM CROSSING DRAINAGE CHANNELS AND STREAMS EXCEPT WHERE ABSOLUTELY NECESSARY (STD. & SPEC. 3.24 VEASC HANDBOOK).
 - TEMPORARY SEDIMENT TRAPS, SEDIMENT BARRIERS, CONSTRUCTION ENTRANCE, AND EROSION CONTROL STONE ARE TO BE PLACED PRIOR TO CLEANING AND GRUBBING PRIOR OR THE FIRST PHASE OF CONSTRUCTION.
 - ALL PERMANENT STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL ARE TO BE INSTALLED AND MADE OPERATIONAL AT THE START OF CLEANING OPERATIONS, INCLUDING APPROVED SEDIMENT BARRIERS.
 - THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN THIRTY (30) DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.
 - PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.
 - DURING CONSTRUCTION OF PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR EROSION PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES OR SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
 - A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. VEGETAL COVER SHALL BE ESTABLISHED AS FOLLOWS:

SEED	PER VOLUME III OF THE PFM
TOPSOIL	4 TONS/AC PER VDOT SPEC. 602(C) CLASS B)
LIME	4000#/AC
FERTILIZER	1000#/AC OF 10-10-10
MULCH	2000#/AC

(HYDROSEEDING MAY BE USED IN PLACE OF MULCHING ON AREA OTHER THAN DITCH BANKS). STABILIZATION MEASURES SHALL BE APPLIED TO EXPOSED SOIL SURFACES AS WELL AS PERMANENT STABILIZATION OF WATERCOURSE BEDS AND BANKS IMMEDIATELY AFTER INSTALLATION (STD. & SPEC. 3.36 VEASC HANDBOOK).
 - ALL STORM SAN INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
 - BEFORE NEWLY CONSTRUCTED CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
 - CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MANAGE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE (1) WEEK PRIOR TO THE FINAL INSPECTION.
 - CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.
 - PERIODIC INSPECTIONS AND REQUIRED MAINTENANCE MUST BE PROVIDED, ESPECIALLY AFTER EACH SIGNIFICANT STORM. THE PROJECT SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
 - THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE (1) WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE (1) WEEK PRIOR TO THE FINAL INSPECTION.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED. TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- MAINTENANCE:
- IN GENERAL, ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE:
- THE SEDIMENT TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANOUT.
 - THE SEDIMENT BASIN WILL BE CLEANED OUT WHEN THE LEVEL OF SEDIMENT BUILDUP REACHES THE CLEANOUT POINT INDICATED ON THE RISER PIPE.
 - EROSION AND SEDIMENT CONTROL WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OR BUILDUP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY.
 - ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEED AS NEEDED.
 - ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED AND VEGETATION IS ESTABLISHED.
- CONSTRUCTION SEQUENCING**
- ACQUIRE NECESSARY PERMITS.
 - INSTALL E & S MEASURES AS SHOWN. ADDITIONAL E & S MEASURES MAY BE REQUIRED IN THE FIELD PER THE CITY INSPECTOR.
 - CLEAR AND GRUB.
 - ROUGH GRADE.
 - INSTALL UNDERGROUND UTILITIES AND STORM DRAINAGE AND PROVIDE APPROVED PROTECTIVE MEASURES AT NEW DRAINAGE STRUCTURES. COMPLETE ALL TESTING AND BACKFILL.
 - DRESS AND OVERSEED ALL DISTURBED AREAS AND IMMEDIATELY ESTABLISH PERMANENT VEGETATIVE COVER. MAINTAIN VEGETATIVE COVER THROUGHOUT DURATION OF PROJECT.
 - REPAIR ANY INADVERTENT EROSION AND REMOVE ANY INADVERTENT SEDIMENTATION.
 - REMOVE REMAINING TEMPORARY SEDIMENT AND EROSION MEASURES WITHIN THIRTY (30) DAYS AFTER FINAL SITE IS STABILIZED WITH VEGETATIVE COVER.
 - ANY AND ALL MATERIAL OR DEBRIS TRACKED ONTO A PUBLIC ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY AND BE TRANSPORTED TO A SEDIMENT CONTROLLED AREA.
 - ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF IN A LAWFUL MANNER.

508.5.7 Dry Hydrant installation, testing and maintenance.

(a) When a dry hydrant is required by the City of Chesapeake Public Facilities Manual to meet fire flow requirements, as per NFPA 1142, the plan for the dry hydrant system must be submitted, reviewed and approved by the Fire Department prior to construction. The responsible party for the property shall also be responsible for demonstrating the proper operation of the dry hydrant before a certificate of occupancy approval is granted from the Fire Department. This test shall contain, at a minimum, the following elements:

- A written plan must be submitted and approved by the Fire Official which details how the responsible party will ensure that the water supply for the dry hydrant system shall be maintained with an adequate amount of water during drought conditions.
- The dry hydrant test shall be composed of 2 parts.
 - Part A: The dry hydrant shall be tested and certified by an independent third party testing agency. A Fire Department representative must witness this test.
 - This test shall be conducted using a centrifugal pump.
 - The dry hydrant shall be flushed before testing.
 - The dry hydrant must deliver the required fire flow for a minimum of 15% of the required fire flow rate period (30 minutes) as required by NFPA standards. The water flow must reach the pump within 1 minute. No more than 3 attempts shall be made to draw water in the pump.
 - If the testing pump is damaged during this test, the required fire flow (gpm) is not obtained or sufficient water is not present for a 2-hour supply of water, the dry hydrant system shall not be accepted.
 - Any damage sustained to the pump as a result of this test must be documented and submitted to the Fire Department.
 - Part B: The dry hydrant shall be successfully tested by a Fire Department pump. The pump operator must adhere to all Fire Department policies and procedures. A member of the Fire Marshal's Office must witness this test.
 - When a dry hydrant is grounded and/or required to meet fire flow requirements, the responsible party for the property shall be responsible for demonstrating the proper operation of the dry hydrant annually. This test shall contain, at a minimum, the elements as listed in NFPA 1142 Figure B-5.4.1 Maintenance Record for Dry Hydrant. A copy of this test shall be provided to the Fire Department.
- The dry hydrant shall be tested and certified by an independent third party testing agency. This test shall contain, at a minimum, the following elements:
 - Part A: The dry hydrant shall be tested and certified by an independent third party testing agency. A Fire Department representative must witness this test.
 - This test shall be conducted using a centrifugal pump.
 - The dry hydrant shall be flushed before testing.
 - The dry hydrant must deliver the required fire flow for a minimum of 15% of the required fire flow rate period (30 minutes) as required by NFPA standards. The water flow must reach the pump within 1 minute. No more than 3 attempts shall be made to draw water in the pump.
 - If the testing pump is damaged during this test, the required fire flow (gpm) is not obtained or sufficient water is not present for a 2-hour supply of water, the dry hydrant system shall not be accepted.

PRECAST CONCRETE WHEEL STOP DETAIL

NOT TO SCALE

TEMPORARY SEDIMENT FENCE

NOT TO SCALE

EXPLODED VIEW OF DRY HYDRANT CONSTRUCTION

NOTE: INSPECTION OF FIRE HYDRANT INSTALLATION AND TESTING ARE TO BE WITNESSED BY THE FIRE PREVENTION BUREAU. CONTRACTOR TO INSTALL DRY HYDRANT PER NFPA 1142 STANDARDS FOR PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCE AND NFPA 1231 WATER SUPPLIES FOR SUBURBAN AND RURAL FIRE FIGHTING.

DRY HYDRANT DETAIL

NOT TO SCALE

ACCESSIBLE PARKING STALL DETAIL

NOT TO SCALE

DRY HYDRANT CONSTRUCTION

VOLUME REQUIRED (EXISTING SOURCE) = (1500 GPM)(2 HOURS)(80 MIN/1 HOUR)(1 CF / 7.48 GAL) = 24,004 CF. VOLUME PROVIDED (ELEV. 8.0 TO 12) = 386,680 CF.

THE PROPOSED PRIVATE DRY FIRE HYDRANT AND LINE SHALL BE MAINTAINED BY THE GOLF COURSE.

City of Chesapeake Fire Department FIRE LANE SIGNAGE AND PAVEMENT MARKING DETAIL

I. FIRE LANE SIGNAGE: REQUIRED POSTING AT ALL FIRE LANES AND AT 75-100 FT. SPACING

TYPE 1 SIGN: FIRE LANE TOWING ENFORCED. PENALTY \$250 FINE.

TYPE 2 SIGN: NO PARKING FIRE LANE. TOWING ENFORCED. PENALTY \$250 FINE.

NOTE: SIGN COLORS: RED LETTERS AND BORDER ON A REFLECTING WHITE BACKGROUND. LETTERS: TWO (2) INCH.

II. PAVEMENT MARKINGS: REQUIRED FOR ALL FIRE LANES AT 75-100 FT. SPACING

COLOR: YELLOW REFLECTIVE TRAFFIC PAINT IN ACCORDANCE WITH VDOT STANDARDS.

NO PARKING FIRE LANE: 18" TALL LETTERS, 4" WIDE LINE.

TYPE 1 PAVEMENT MARKING: NO PARKING FIRE LANE.

TYPE 2 PAVEMENT MARKING: FIRE LANE DETAIL.

NOTE: FIRE LANE MIN. WIDTH IS 20 FT., BUT MAY BE INCREASED IN ACCORDANCE WITH THE PFM. FOR AESTHETIC PURPOSES, FIRE LANE BOUNDARIES MAY BE DESIGNATED BY PAINTING OPPOSITE DRIVE ABLE CURBING INSTEAD OF BY A 4" LINE ON THE DRIVE ABLE PAVEMENT.

TABLE 3.32-E (Revised June 2003) PERMANENT SEEDING SPECIFICATIONS FOR COASTAL PLAIN AREA

LAND USE	SEED SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue ¹ or Bermudagrass ²	175-200 lbs.
High-Maintenance Lawn	Tall Fescue ¹ or Bermudagrass ² (seed) or Bermudagrass ² (by other vegetative establishment method, see Std. & Spec. 3.34)	75 lbs. 40 lbs. (unhulled) 30 lbs. (hulled)
General Slope (3:1 or less)	Tall Fescue ¹ Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ³	120 lbs. 2 lbs. 93-108 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue ¹ Bermudagrass ² Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop ³ Sericea Lespedeza ⁴	0-15 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.

1- When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (V CIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by V CIA. A current turfgrass variety list is available at the local County Extension office or through V CIA at 804-746-4364 or at <http://www.vcia.com/vcia/html/TurfGrassPublicationsPublications2.html>

2- Use seasonal nurse crop in accordance with seeding dates as stated below:

Seeding Period	Annual Ryegrass	Foxtail Millet	Annual Ryegrass	Winter Ryegrass
February, March - April	Annual Ryegrass			
May 1 st - August		Foxtail Millet		
September, October - November 15 th		Annual Ryegrass		
November 16 th - January			Winter Ryegrass	

3- May through October, use hulled seed. All other seeding periods, use unhulled seed. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 30-40 lbs/acre.

FERTILIZER & LIME

- Apply 10-20-10 fertilizer at a rate of 500 lbs./acre (or 12 lbs./1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 krs/acre (or 90 lbs./1,000 sq. ft.)

NOTE: - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4-8 inches of the soil by disking or by other means. - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4.2003 Nutrient Management for Development Sites at <http://www.dcr.state.va.us/nwm/4.htm#uba>

SHOULDER WORK WITH MINOR ENCROACHMENT

- THE TREATMENT SHOWN MAY BE USED ON A MINOR ROAD HAVING LOW SPEEDS. FOR HIGHER SPEED TRAFFIC CONDITIONS, A LANE CLOSURE SHOULD BE CONSIDERED.
- THE PROCEDURE SHOWN SHOULD BE ADEQUATE TO CARRY BI-DIRECTIONAL TRAFFIC AT REDUCED SPEED THROUGH THE AREA, PROVIDED THE LANES ARE AT LEAST 10 FEET WIDE.
- WHERE THE OPPOSITE SHOULDER IS SUITABLE FOR CARRYING TRAFFIC AND OF ADEQUATE WIDTH, TRAFFIC LANES MAY BE SHIFTED BY USE OF CLOSELY SPACED CHANNELING DEVICES, PROVIDED 10-FOOT WIDE LANES ARE MAINTAINED.
- ADDITIONAL ADVANCE WARNING MAY BE APPROPRIATE, SUCH AS A ROAD NARROW SIGN.
- PORTABLE CONCRETE BARRIERS MAY BE USED ALONG THE WORK SPACE.
- THE PROTECTION VEHICLE IS OPTIONAL IF A TAPER AND CHANNELING DEVICES ARE USED. FOR SHORT-DURATION WORK, THE TAPER AND CHANNELING DEVICES ARE OPTIONAL IF THE PROTECTION VEHICLE WITH AN ACTIVATED FLASHING YELLOW LIGHT IS USED.
- MINIMUM LANE WIDTH OF LANE ADJACENT TO CONSTRUCTION TO BE 10' THE OPPOSING LANE IS TO HAVE NO CHANGE IN WIDTH.
- ALL TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL AND THE CURRENT MUTCD.
- ANY AND ALL DAMAGED OR REDUCED TRAFFIC CONTROL DEVICES AND/OR PAVEMENT MARKINGS ARE TO BE RESTORED BY THE CONTRACTOR.
- WORK MAY ONLY BE PERFORMED ON WEDNESDAYS BETWEEN THE HOURS OF 9:00 AM AND 3:00 PM.

DOOR ENTRANCE SECTION FOR HANDICAP ACCESSIBLE DOORS

FORMULAS FOR L**

ROAD TYPE	DISTANCE BETWEEN SIGNS
URBAN (LOW SPEED)**	200 200 200
URBAN (HIGH SPEED)**	350 350 350
RURAL	500 500 500
EXPRESSWAY/FREEWAY	1,000 1,600 2,600

SPEED FORMULA: L = $\frac{WS^2}{60}$

40 MPH OF LESS

45 MPH OR GREATER L = W x S

** SPEED CATEGORY TO BE DETERMINED BY STATE HIGHWAY AGENCY IN COOPERATION WITH LOCAL JURISDICTIONS.

** L = TAPER LENGTH IN FEET

S = WIDTH OF OFFSET IN FEET

S = POSTED SPEED, THE OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

ABOVE GROUND HANDICAP SIGN

NOT TO SCALE

NORMAL DUTY PAVEMENT SECTION

NOT TO SCALE

TRAFFIC CONTROL DETAILS

NOT TO SCALE

SA SITE IMPROVEMENT

Civil Engineers, Surveyors & Site Contractors

800 Juniper Crescent, Suite A • Chesapeake, Va. 23320

EMAIL: csd@siteimprovement.net Office: 757.671.9288 Fax: 757.671.9288

COMMITTEE OF THE VIRGINIA BATTLEFIELD GOLF CLUB AT CENTERVILLE

CHESAPEAKE, VIRGINIA T.P. 062000000020

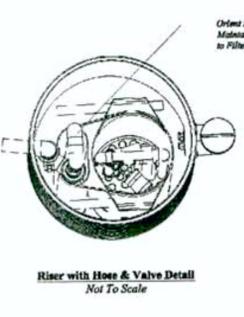
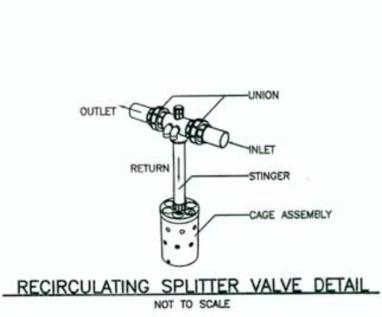
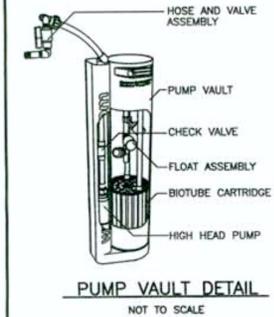
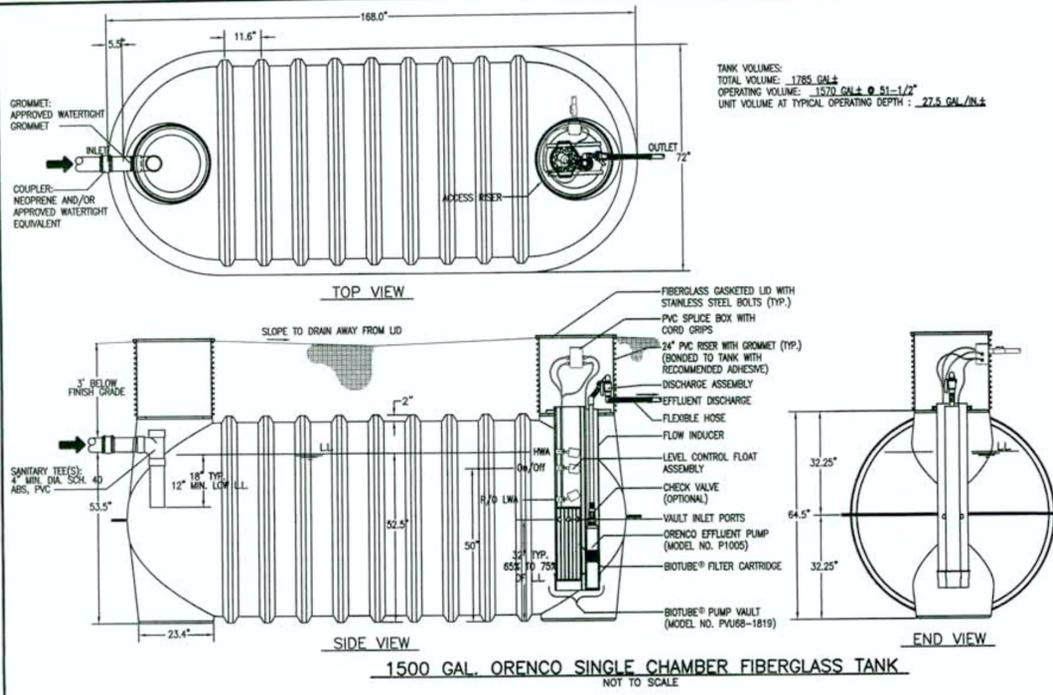
DETAILS AND GENERAL NOTES FOR BATTLEFIELD GOLF CLUB AT CENTERVILLE

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DATE: 12/14/07
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SHEET NUMBER 4 OF 5

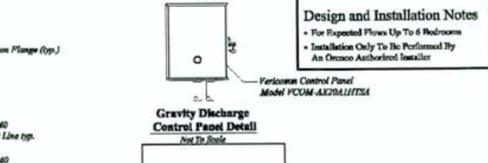
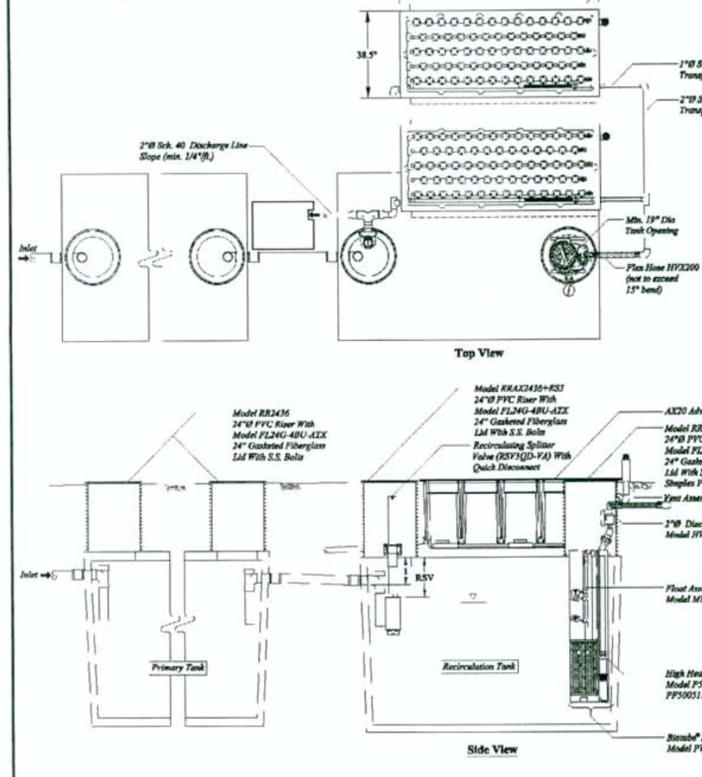
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REVISIONS

No.	Date	Description
1	3-19-08	REVISED PER CITY COMMENTS. LTR DATED 1-29-08

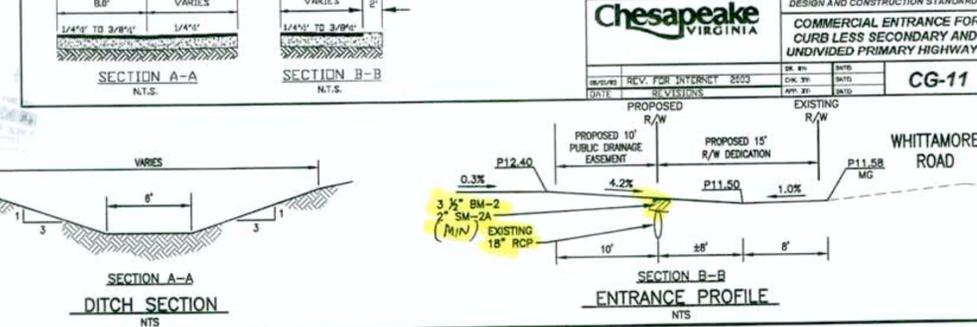
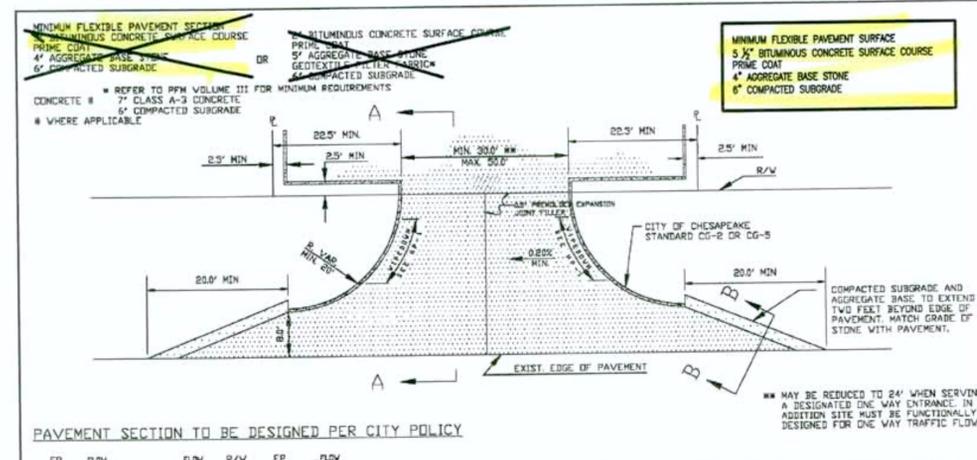
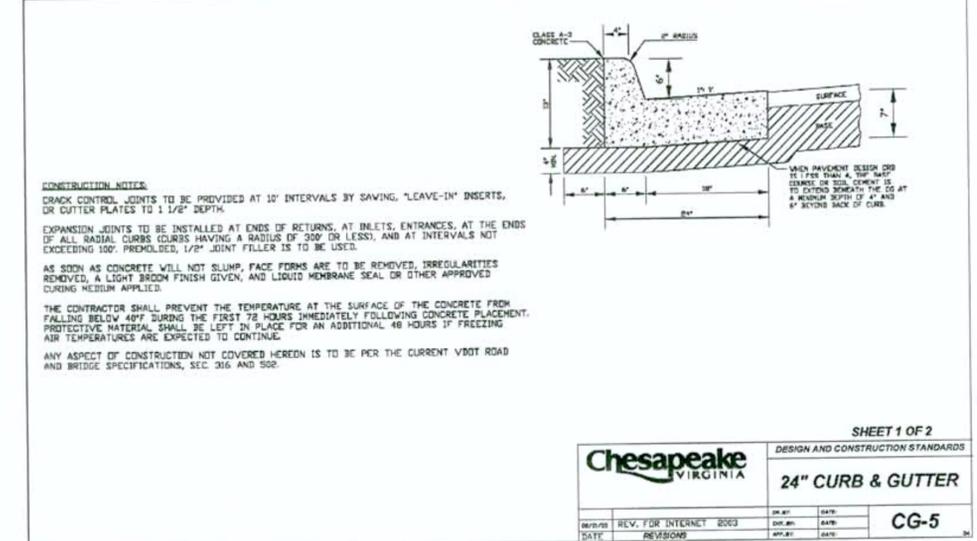
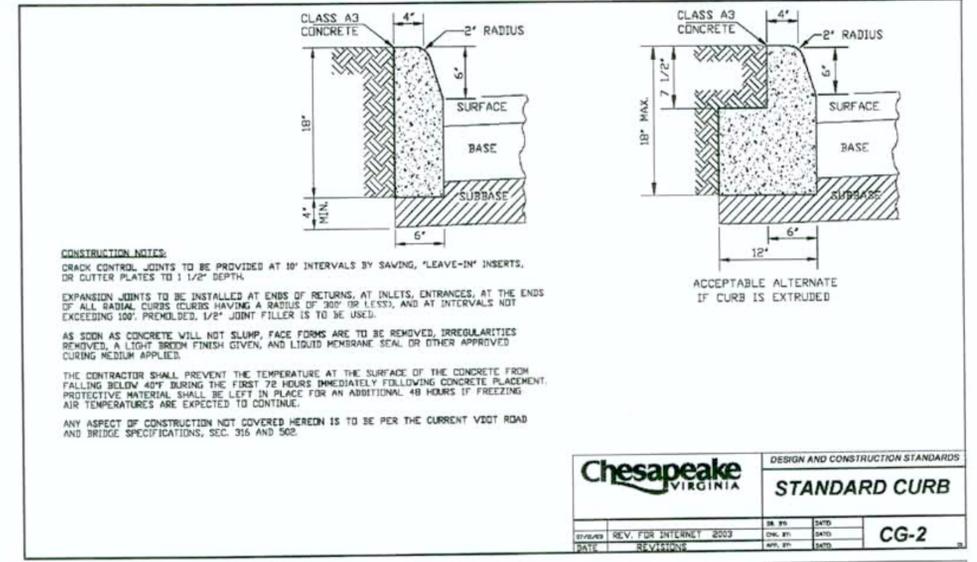
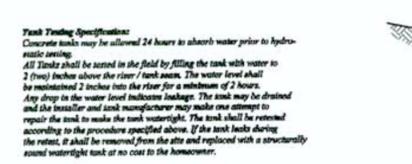
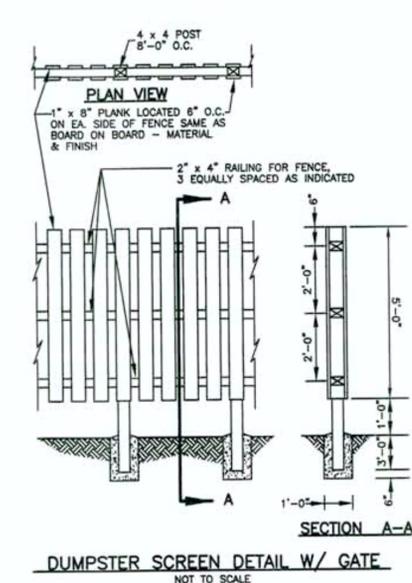
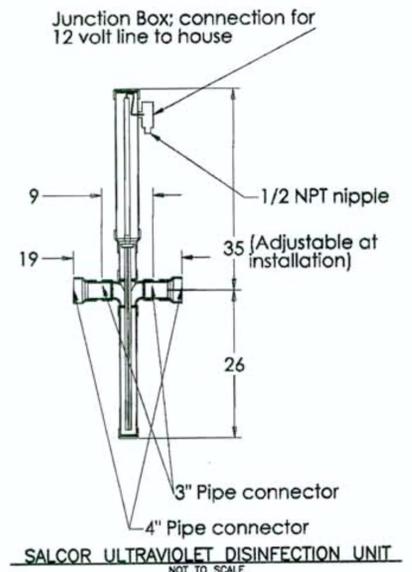
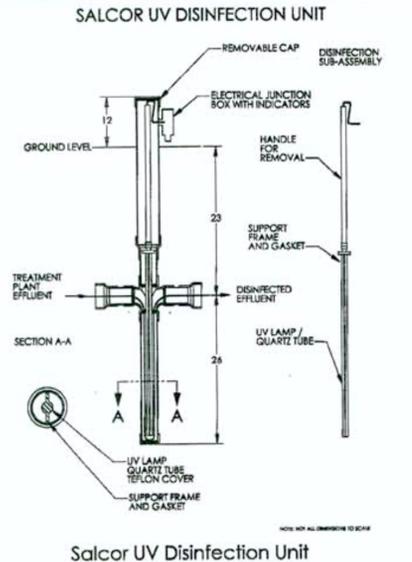


AdvanTex® AX20 (2) - Virginia 2 Pod / 2 Tank



Note: Only tanks from the manufacturers listed below shall be used.

Task	Septic Tank Size (3 Nozzles)	Septic Tank Size (4 & 6 Nozzles)	I	D	Y	G	W	BSV	Emergency Transfer
Central VA Concrete	1500 Gal.	N/A	1500 Gal.	17\"/>					



Chesapeake VIRGINIA
DESIGN AND CONSTRUCTION STANDARDS
STANDARD CURB
CG-2

Chesapeake VIRGINIA
DESIGN AND CONSTRUCTION STANDARDS
24\"/>

Chesapeake VIRGINIA
DESIGN AND CONSTRUCTION STANDARDS
COMMERCIAL ENTRANCE FOR CURB LESS SECONDARY AND UNDIVIDED PRIMARY HIGHWAYS
CG-11

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No.	Date	Description
1	3-19-08	REVISED PER CITY COMMENTS, UTR DATED 1-29-08

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DETAILS FOR BATTLEFIELD GOLF CLUB AT CENTERVILLE
CHESAPEAKE, VIRGINIA
T.P. 062000000020

JOB # 07106
DWG FILE: LO-4-REV
DATE: 12/14/07
SCALE: NONE
SHEET NUMBER 5 OF 5