

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A NEW 24 UNIT APARTMENT COMPLEX ON A 1.95 ACRE TRACT OF LAND. THE SITE IS LOCATED AT THE REAR OF THE EXISTING PETERS CREEK APARTMENT PHASE II PROJECT OFF OF BARRENS ROAD NEAR ITS INTERCHANGE WITH PETERS CREEK ROAD IN ROANOKE COUNTY VIRGINIA. THE CONSTRUCTION WILL CONSIST OF TWO BUILDINGS WITH ASSOCIATED EXTENSION OF UTILITIES, DRAINAGE AND PARKING IMPROVEMENTS.

AN 8" WATERLINE, ONE FIRE HYDRANT, 8" SANITARY LINE AND OTHER APPURTENANCES WILL BE PROVIDED IN ACCORDANCE WITH THE WESTERN VIRGINIA WATER AUTHORITY STANDARDS. AN EXISTING ENTRANCE AT BARRENS ROAD WILL SERVE THIS DEVELOPMENT BY EXTENDING THE PARKING AREA. SANITARY SEWER WILL TIE TO THE EXISTING SEWER SYSTEM RUNNING IN THE MIDDLE OF PETERS CREEK APARTMENTS PHASE II.

THE STORM MANAGEMENT SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE ROANOKE COUNTY DESIGN CRITERIA AND IS ALREADY SERVING PHASE II. THE SWMF WAS SIZED FOR PHASE III PREVIOUSLY AT A DEVELOPMENT COEFFICIENT OF C=0.75.

EACH ONE OF THE DRAINAGE AREAS IS ROUTED THROUGH THE DETENTION POND. THIS SITE IS IN FLOOD ZONE X ACCORDING TO THE FEMA FLOOD MAP AND IS OUTSIDE THE 500 YEAR FLOOD ELEVATION.

EXISTING SITE CONDITIONS:

THE CONSTRUCTION AREA HAS A DIFFERENCE IN ELEVATION OF 20 FEET WITH THE ENTIRE SITE FLOWING TO AN EXISTING STORM DRAINAGE SYSTEM AT THE SOUTHWESTERN PART OF THE SITE. THE PROPERTY IS CURRENTLY VACANT AND IS SPARELY WOODED OVERALL WITH MOWED GRASS OVER A MAJORITY OF THE AREA. THE SOIL IS LOAMY CLAYS WITH GOOD DRAINAGE.

ADJACENT PROPERTY:

THE ADJACENT PROPERTY TO THE NORTH IS UNDEVELOPED, UP SLOPE OF THE PROPOSED PROJECT AND ZONED R-1. THE PROPERTY TO THE SOUTH AND EAST IS AN EXISTING CONVALESCENT HOME THAT IS DOWN SLOPE FROM THE PROJECT. TO THE WEST IS PETERS CREEK APARTMENTS PHASE II WHICH THIS PROJECT IS CONNECTING THE PROPOSED IMPROVEMENTS.

OFF-SITE AREAS:

NO LAND DISTURBING WILL OCCUR OFF-SITE TO THE PROJECT.

SOILS:

PER USDA SOIL CONSERVATION SERVICES, THE PROMINENT SOILS TO BE FOUND ON THIS SITE ARE LOAMY CLAYS. THE CONTRACTOR IS ENCOURAGED TO PERFORM ON-SITE PRELIMINARY BORINGS TO CONFIRM SOIL CONDITIONS.

CRITICAL EROSION AREAS:

THE SITE IS SITUATED ON A BANK WITH PROPOSED CHANGES IN SLOPE OF 20 FEET. THE LIMITS OF CONSTRUCTION SHALL BE DEFINED BY A DISTANCE OF 90 FEET FROM THE NORTHERN PROPERTY LINE AND THE LOCATION OF THE PROPOSED SILT FENCE, WHICH IS TO BE INSTALLED DURING THE FIRST STAGES OF CONSTRUCTION, WITH ALL AREAS OUTSIDE THE FENCE AREA AND NORTH, OR UP SLOPE OF THE 90 FT. OFFSET FROM THE NORTHERN PROPERTY LINE, TO BE LEFT UNDISTURBED..

EROSION AND SEDIMENT CONTROL MEASURES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE VESCH HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

STRUCTURAL PRACTICES

1. OUTLET PROTECTION – 3.18
RIPRAP IS TO BE PLACED AT THE OUTLET OF ALL PROPOSED OUTFALL PIPES.

2. SILT FENCE BARRIER – 3.05
SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DURING THE FIRST STAGE OF DOWNSLOPE CONSTRUCTION ON AREAS WITH MINIMAL GRADES TO FILTER SEDIMENT – LADEN RUNOFF FROM SHEET FLOW.

3. TEMPORARY CONSTRUCTION ENTRANCE – 3.02

A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED WHERE THE ACCESS AREA INTERSECTS WITH THE EXISTING PARKING LOT. DURING MUDDY CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES WILL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING THE EXISTING PARKING LOT AREA.

4. STORM DRAIN INLET PROTECTION – 3.07

ALL STORM SEWER INLETS SHALL BE PROTECTED DURING CONSTRUCTION. SEDIMENT-LADEN WATER SHALL BE FILTERED BEFORE ENTERING THE STORM SEWER INLETS.

VEGETATIVE PRACTICES

1. TOPSOILING (STOCKPILE) – 3.30

TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATIONS SHALL BE LOCATED ON-SITE AND ARE TO BE STABILIZED WITH TEMPORARY VEGETATION.

2. TEMPORARY SEEDING – 3.31

ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

3. EROSION CONTROL BLANKETS – 3.36 OR MULCH – 3.35

EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS AND WILL BE APPLIED AS A SECOND STEP IN THE SEEDING OPERATION.

MANAGEMENT STRATEGIES

1. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.

2. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.

3. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.

4. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY THE SILT FENCE LOCATION.

5. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

6. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS WILL BE CLEANED UP AND REMOVED, AND THE SEDIMENT BASINS WILL BE CLEANED OUT AND CONVERTED TO PERMANENT STORMWATER MANAGEMENT BASINS.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. & SPEC. 3.32, PERMANENT SEEDING, OF THE HANDBOOK. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

STORMWATER MANAGEMENT

CALCULATION OF RUNOFF BEFORE AND AFTER DEVELOPMENT INDICATES THAT THERE WILL BE A NET INCREASE IN PEAK RUNOFF AS A RESULT OF PROJECT DEVELOPMENT. CONSEQUENTLY, STORMWATER MANAGEMENT BASINS HAVE BEEN DESIGNED TO DETAIN AND RELEASE THE RUNOFF AT THE 10 YEAR PRE-DEVELOPED RATE.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECK IN PARTICULAR:

1. THE SEDIMENT TRAPS WILL BE CHECKED REGULARLY FOR SEDIMENT CLEANOUT.

2. THE GRAVEL OUTLETS WILL BE CHECKED REGULARLY FOR SEDIMENT BUILDUP WHICH WILL PREVENT DRAINAGE. IF THE GRAVEL IS CLOGGED BY SEDIMENT, IT SHALL BE REMOVED AND CLEANED OR REPLACED.

3. THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.

4. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RESEEDED AS NEEDED.

THE LOCATION OF ALL OFF-SITE FILL OR BORROW AREAS ASSOCIATED WITH THE CONSTRUCTION PROJECT WILL BE PROVIDED TO ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT. AN EROSION CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THIS AREA.

THE FOLLOWING APPLY TO CHAPTER 8 OF THE VESCH.

MS-1: TEMPORARY AND PERMANENT STABILIZATION OF DENUDED AREAS (PERMANENT WITHIN 7 DAYS FOR AREAS AT FINAL GRADE, TEMPORARY FOR AREAS NOT TO BE FINAL FOR 30 DAYS). ARE PRACTICES SHOWN ON THE PLAN? YES, SEE DETAIL.

SHEET 8.
ARE THE LIMITS OF CLEARING AND GRADING SHOWN ON THE PLAN?
YES, SEE SHEET 3.
SEE SPECIFICATIONS? YES, SEE SHEET 8.

MS-2: PROTECTION OF STABILIZATION OF ON-SITE AND OFF-SITE STOCKPILES AND BORROW AREAS. SEE NARRATIVE ABOVE, VEGETATIVE PRACTICES, FOR NOTES AND SPECIFICATIONS.

MS-3: PERMANENT STABILIZATION OF DENUDED AREAS NOT OTHERWISE STABILIZED. SEE NARRATIVE ABOVE, PERMANENT STABILIZATION, AND REFERENCE TO VESCH SPECIFICATIONS.

MS-4: INSTALL E&S MEASURES AS FIRST STEP IN LAND DISTURBING ACTIVITY. SEE NARRATIVE ABOVE, STRUCTURAL PRACTICES, ITEM 2.

MS-5: EARTHEN CONTROLS AND STRUCTURES STABILIZED IMMEDIATELY UPON INSTALLATION. SEE NARRATIVE ABOVE, MANAGEMENT STRATEGIES.

MS-6: SEDIMENT TRAPS (LESS THAN 3 ACRES DRAINAGE) AND BASINS (GREATER THAN 3 ACRES OF DRAINAGE). ARE TRAPS/BASINS PROPERLY SIZED? YES, 1.95 AC. OF PROJECT ALONG WITH DETENTION POND ALREADY PROVIDED.
ARE THE DETAILS SHOWN ON THE PLANS? YES, SEE SHEET 8.
ARE THE CALCULATIONS INCLUDED IN THE NARRATIVE OR PLAN? NO, CALCULATIONS PREVIOUSLY APPROVED FOR SITE.

MS-7: DESIGN AND CONSTRUCTION OF CUT AND FILL SLOPES TO MINIMIZE EROSION. SEE GRADING PLAN, SHEET 3.

MS-8: CONCENTRATED FLOW DOWN CUT AND FILL MUST BE IN ADEQUATE CHANNEL, FLUME OR SLOPE DRAIN. SEE GRADING PLAN, SHEET 3 WITH SWALE AND DITCH CROSS SECTIONS.

MS-9: SLOPES PROTECTED FROM SEEPAGE. SEE GRADING PLAN, SHEET 3.

MS-10: STORM SEWER INLETS MUST HAVE ADEQUATE INLET PROTECTION. SEE INLET PROTECTION DETAIL, SHEET 8.

MS-11: OUTLET PROTECTION AND CHANNEL LINING IS REQUIRED PRIOR TO OPERATION STORM SEWER SYSTEM. SEE NARRATIVE ABOVE, STRUCTURAL PRACTICES, ITEM 4, AND PERMANENT STABILIZATION.

MS-12: MINIMIZE IMPACTS WHEN WORKING IN AND AROUND LIVE WATERCOURSE. NO WATER COURSES ASSOCIATED WITH THIS DEVELOPMENT.
DEQ AND/OR ARMY CORPS OF ENGINEERS PERMITS MAY BE REQUIRED. NO PERMITS REQUIRED SINCE NO WATER COURSES OR WETLANDS ASSOCIATED WITH THIS DEVELOPMENT.

MS-13: TEMPORARY VEHICULAR STREAM CROSSINGS FOR MORE THAN 2 TRIPS IN 6 MONTHS. NOT APPLICABLE TO PROJECT.

MS-14: OTHER FEDERAL, STATE AND LOCAL REGULATIONS MUST BE MET WHEN WORKING IN LIVE WATERCOURSES. NOT APPLICABLE TO PROJECT.

MS-15: THE BED AND BANKS OF DISTURBED WATERCOURSES MUST BE STABILIZED IMMEDIATELY. NOT APPLICABLE TO PROJECT.

MS-16: UTILITY INSTALLATIONS.
NO MORE THAN 500 FEET OF OPEN TRENCH AT ANY ONE TIME. NOT APPLICABLE TO PROJECT SINCE LONGEST RUN OF SANITARY SEWER OR WATER IS LESS THAN 400 FEET.
EXCAVATED MATERIAL SHALL BE PLACED ON UPHILL SIDE OF TRENCH. SEE NOTE 2B, SHEET 4.
EFFLUENT OF DEWATERING SYSTEM MUST BE FILTERED. SEE OUTLET PROTECTION DETAIL AND SEDIMENT BASIN SCHEMATIC, SHEET 8.
PROPER BACKFILL AND COMPACTION. STANDARD CONSTRUCTION REQUIREMENTS PER THE WESTERN VIRGINIA WATER AUTHORITY SO NOTED ON SHEET 1.
RE-STABILIZATION IMMEDIATELY. SEE NARRATIVE ABOVE, MANAGEMENT STRATEGIES, ITEM 3.

MS-17: KEEP PAVED OR PUBLIC AREAS CLEAN (CONSTRUCTION ENTRANCE). SEE NARRATIVE ABOVE, STRUCTURAL PRACTICES, ITEM 3.

MS-18: TEMPORARY MEASURES SHOULD BE REMOVED WITHIN 30 DAYS WHEN NO LONGER NEEDED.
SCHEDULE FOR MAINTENANCE. SEE NARRATIVE ABOVE, MAINTENANCE.

MS-19: ADDRESS INCREASES IN STORMWATER VOLUME, VELOCITY AND PEAK RUNOFF.
ARE OFFSITE CONTRIBUTING AREAS ACCOUNTED FOR? YES, SEE PREVIOUSLY APPROVED DRAINAGE CALCULATIONS AND DRAINAGE AREA MAP.
ARE OFFSITE RECEIVING AREAS AND CHANNELS DESCRIBED AND ADEQUATE. YES, PREVIOUSLY APPROVED WITH PHASE 1 AND 2 OF THE PETERS CREEK APARTMENT COMPLEX.

ARE CALCULATIONS INCLUDED IN THE NARRATIVE OR PLAN AND ADEQUATE? CALCULATIONS PREVIOUSLY APPROVED FOR THE PETERS CREEK APARTMENTS AND NOT SHOWN ON PLANS OR NARRATIVE.

THE LIMITS OF CLEARING AND GRADING MUST BE SHOWN. SEE SHEET 3 OF THE PLANS.

EXISTING AND PROPOSED CONTOURS MUST BE SHOWN. SEE SHEET 3 OF THE PLANS.

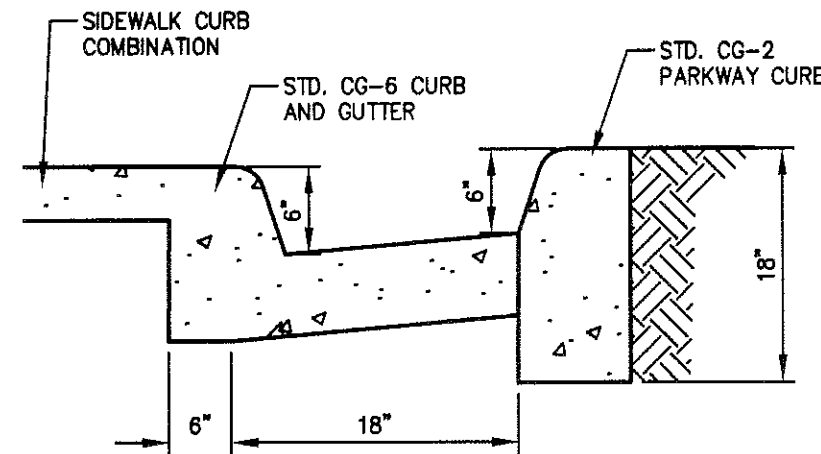
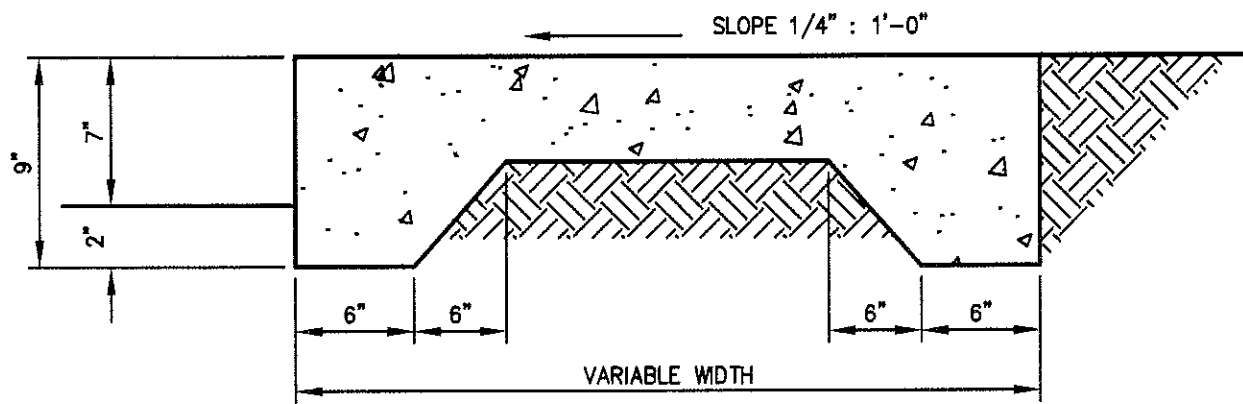
EXISTING VEGETATION (TREES, GRASSED AREAS OR UNIQUE VEGETATION) MUST BE SHOWN. SEE SHEETS 3 AND 6 OF THE PLANS.

LOCATIONS OF ALL EROSION CONTROL PRACTICES. SEE SHEETS 3 AND 8 OF THE PLANS.

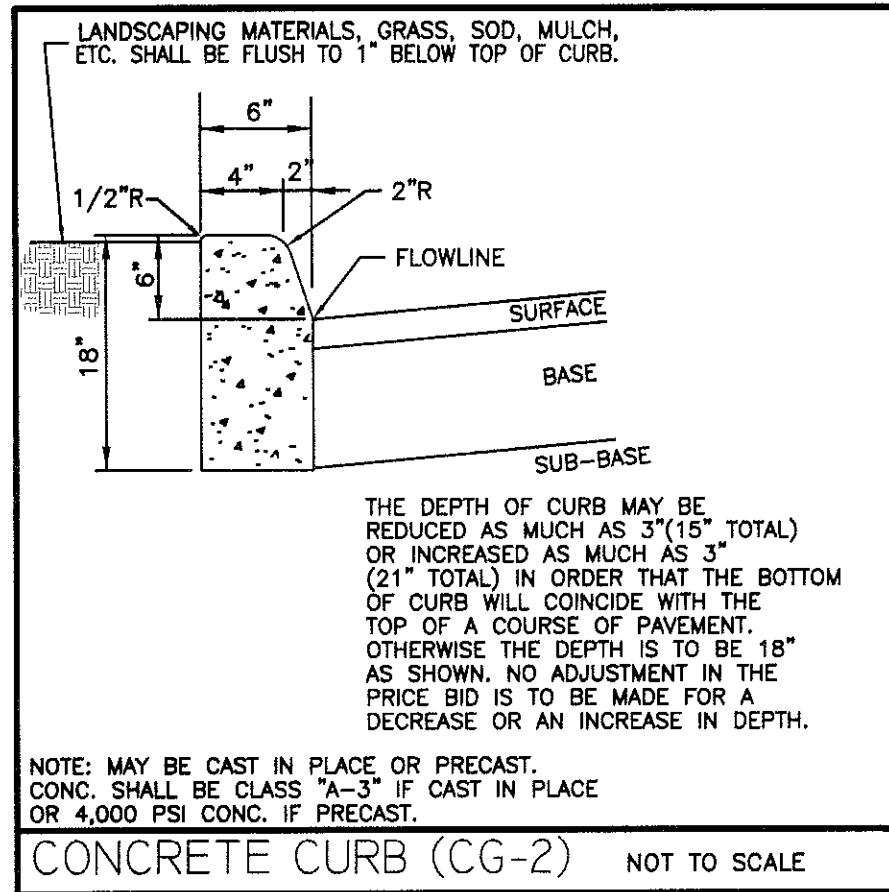
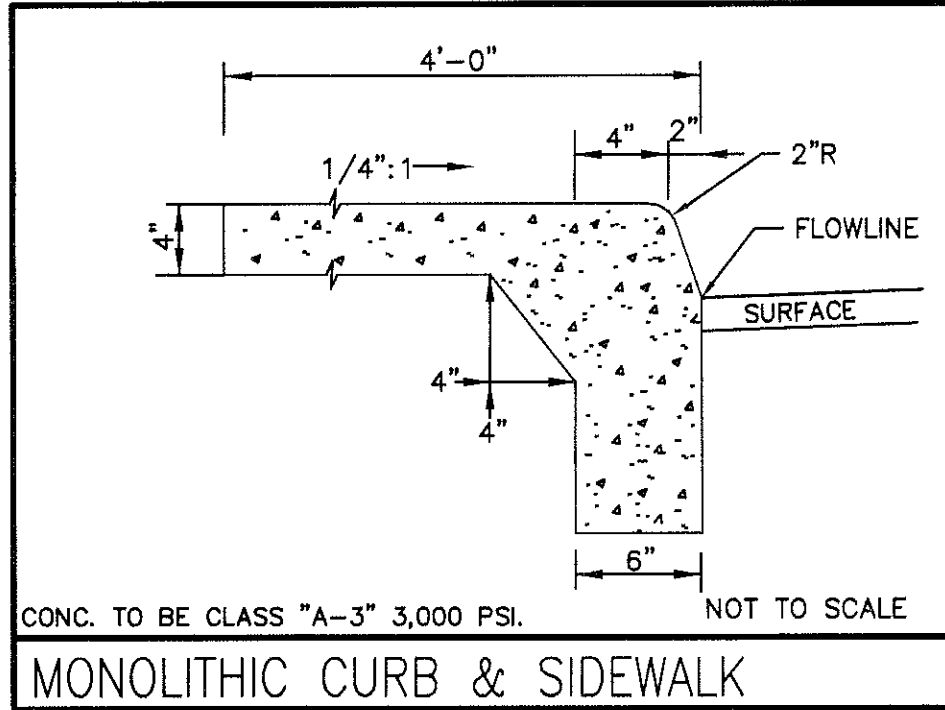
THE ESC PLAN SHOULD COVER ALL PHASES OF CONSTRUCTION. (CH 8, ESC PLAN) SEE SHEET 3, 7 AND 8 OF THE PLANS.

CURRENT ESC DETAIL SHEET IS INCLUDED WITH APPROPRIATE BOND AMOUNTS. (REFER TO ROANOKE COUNTY ESC ORDINANCE). SEE SHEET 8 OF THE PLANS.

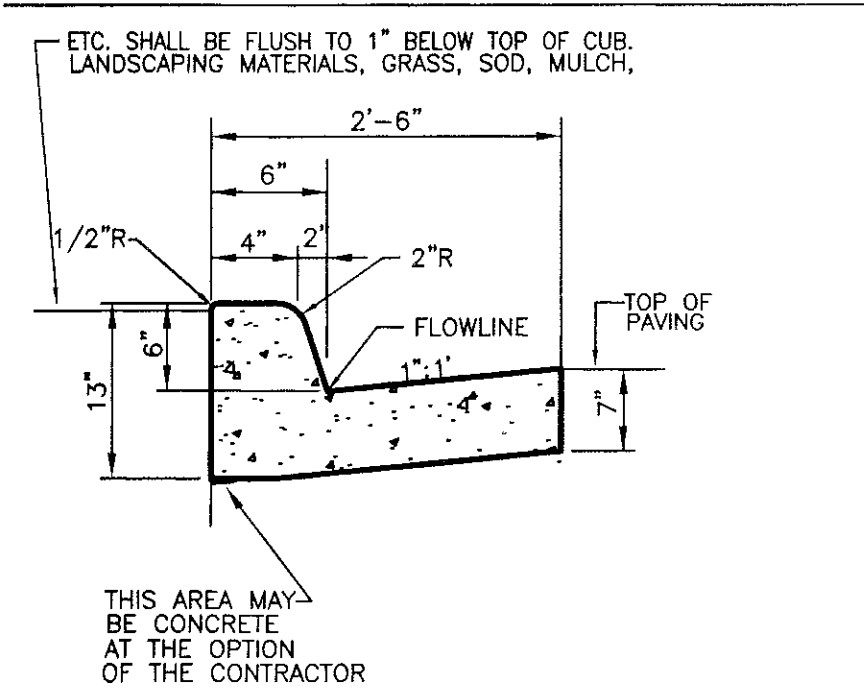
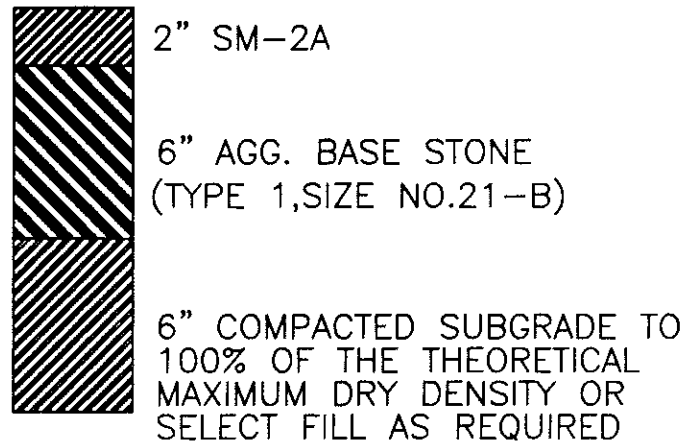
A MAINTENANCE SCHEDULE FOR THE EROSION CONTROLS MEASURES MUST BE SET FORTH. SEE NARRATIVE ABOVE, MAINTENANCE.



THRU ISLAND
NOT TO SCALE



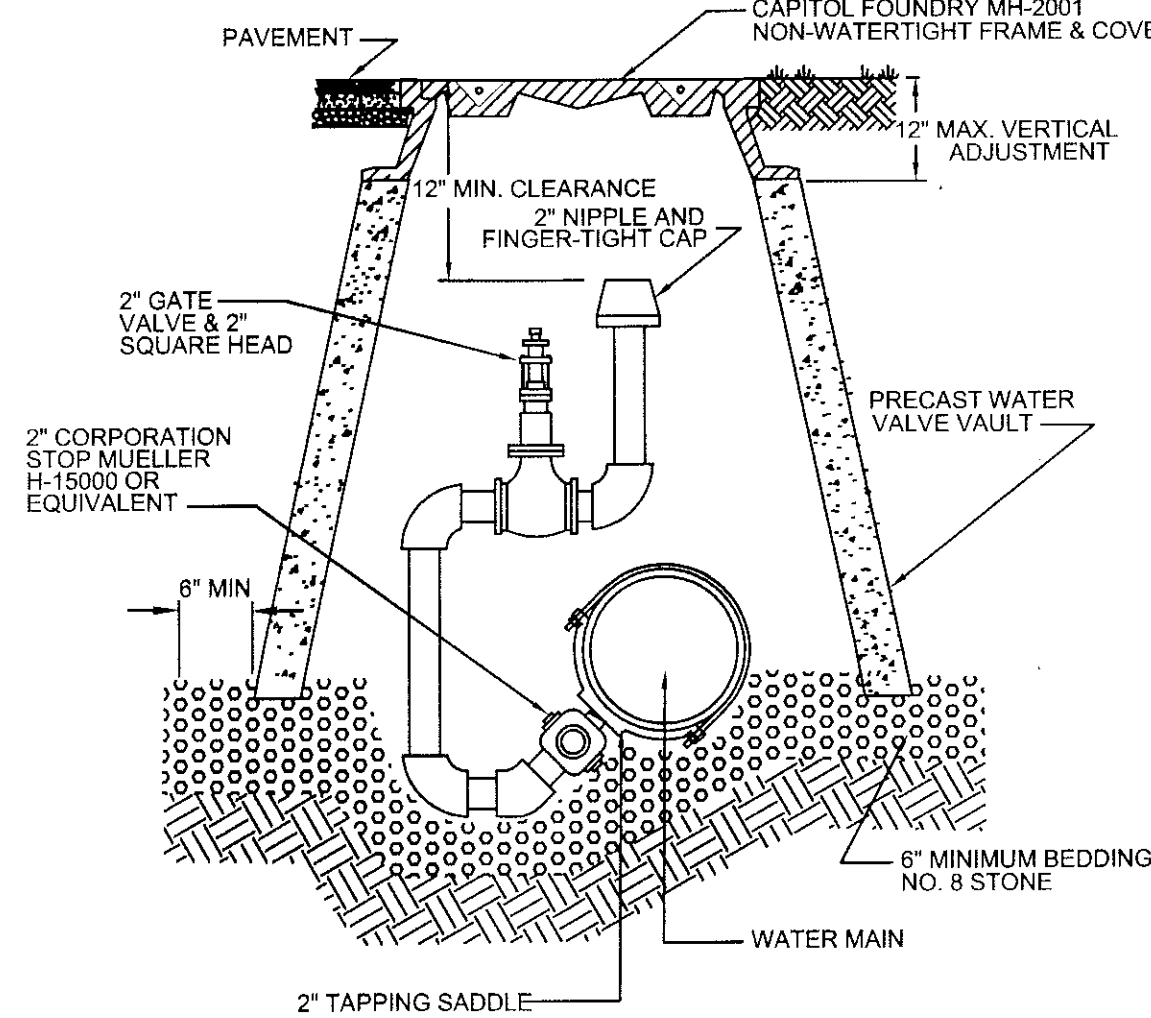
PAVEMENT SECTION



NOTE: MAY BE CAST IN PLACE OR PRECAST. CONC. TO BE CLASS "A-3" IF CAST IN PLACE OR 4,000 PSI CONC. IF PRECAST.

CONCRETE CURB & GUTTER (CG-6) NOT TO SCALE

1. FIRE HYDRANTS MAY BE USED AT LOWPOINTS IN PLACE OF BLOW-OFFS WHERE IT IS DEMONSTRATED THAT A MINIMUM FLUSHING VELOCITY OF 4 FTS IS PROVIDED.



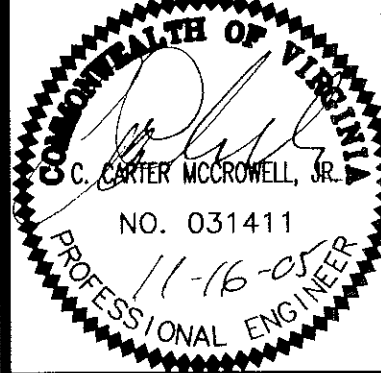
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE		IN-LINE BLOW-OFF ASSEMBLY	W-11
07/01/04			

SITE IMPROVEMENT ASSOCIATES, INC.

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SIA



GENERAL DETAILS AND EROSION AND SEDIMENT CONTROL NARRATIVE FOR PETERS CREEK APARTMENTS PHASE III HOLLINS MAGISTERIAL DISTRICT ROANOKE COUNTY, VIRGINIA

JOB # 05184

DWG FILE: 01-COVER

DATE: 07-24-05

SCALE: AS SHOWN

SHEET NUMBER

8 OF 11