EROSION AND SEDIMENT CONTROL/ STORM WATER MANAGEMENT NARRATIVE Roanoke County Public Safety Building Roanoke, Virginia HURT & PROFFITT COMM. No. 20040857 PROJECT DESCRIPTION:
This project consists of the disturbance of approximately 12.40 Acres for a future building, parking, and an access road for the Roanoke County Public Safety Building. This set of plans is specifically for the demolition, utility relocation, E&S installation, rough grading, fine grading storm system, detention facility and full construction of the project. The site is approximately 700 feet southeast of the intersection of Ponderosa Drive Rt. 17, and 🔾 Cove road Rt. 780. The total area to be disturbed for construction is approximately 12.40 Acres. This includes all offsite areas to be disturbed for road improvements, utility extensions and construction lay down areas. **EXISTING SITE CONDITIONS:** The proposed site is currently mostly clear and grassed with a warehouse/maintenance facility and residential house. A portion of the site is covered with mature hardwoods. The site currently drains to the east to a large

receiving swale that begins onsite. There are currently no storm water management measures onsite.

To the North of the site is the Roanoke County School Administration office. To the east of the site is Glen Cove Elementary School. To the South and west are established single family residential subdivisions. The site is

bound by Route 781, Cove Road, to the south.

The area to the west of the existing entrance to the Roanoke County Administration office will be used as the contractor's office and parking area. This area is off of the proposed property for the public safety building. This area will be utilized during construction and must be restored back to original condition.

The area to the north of the site on the School Administration office property will have disturbance for the construction of the 4' high landscape berm and for the relocation of utilities during the construction phase. The elementary school to the east of the site will be disturbed for the construction of relocated water and sanitary sewer lines. These areas will have to be seeded and restored after construction.

Cove Road will be regarded to achieve a safer road to all traffic by eliminating the vertical blind spot at the

crest of the road and also increasing sight distance for the proposed entrance to the site.

No other offsite areas are expected to be utilized during construction as part of this project.

No soils data at this time. A geotechnical investigation is scheduled.

A regional detention basin will be constructed in the existing portion of the channel that has been disturbed. The pond will detain for the public safety building improvements as well as route (not detain just convey) the runoff from the school administration office and detain the runoff from the proposed school warehouse pad site. The pond will treat for water quantity. The pond will be built as part of the final site plan once the site has

The pond will be utilized as a sediment basin during construction and will be converted to the permanent detention basin after permanent stabilization of the site.

The site will drain into the detention basin and existing receiving channel to the east of the site. The channel is classified as a perennial channel. The channel was analyzed for adequacy using the 2—year storm for erosive resilience and the 10—year storm for adequacy. The calculations follow this report. The channel was found to be adequate for the runoff. There were no obvious signs of erosion in the channel downstream from the release point of the pond during t he pre-developed condition. The post-developed release rate from the detention facility is much less than the runoff rate from the pre-developed condition. Therefore, based upon visual evidence and based upon the supporting calculations, the channel appears to be adequate for the release rate as proposed.

EROSION AND SEDIMENT CONTROL

3.02 Construction Entrance (CE) — One construction entrance is proposed and shall be installed prior to any work beginning onsite. A wash rack will be utilized on this construction entrance for all exiting traffic when necessary. 3.05 Silt Fence (SF) - A temporary sediment barrier constructed of posts, filter fabric with wire support fence. placed across or at the toe of a slope or in a minor drainage way to intercept and detain sediment and decrease flow velocities from drainage areas of limited size. Silt fence is to be installed along the downhill side of any disturbed area.

3.09 Temporary Diversion Dike (DD) — Temporary Diversion Dikes are utilized throughout the project to direct sediment-laden water to the temporary sediment trap & basin. 3.10 Temporary Fill Diversion (FD) — A channel with a supporting ridge on the lower side, constructed along

the top of an active earth fill constructed in order to divert runoff away from the unprotected fill slope to a stabilized outlet or sediment trapping structure; applicable where the area at the top of the fill drains toward the exposed slope and continuous fill operations make the use of a TEMPORARY DIVERSION DIKE infeasible, maximum 3.14 Temporary Sediment Basin (SB) — One sediment basin will be utilized onsite (Refer to attached calculations). The basin is to remain during construction and must not be removed until final stabilization of the site has been

3.18 Outlet Protection (OP) — Outlet protection will be placed below storm drain outlet to reduce erosion and under—cutting from scouring at outlets and to reduce flow velocities. Outlet protection will be concrete ditches and concrete energy dissapators. 3.31 Temporary Seeding (TS) - The Contractor is to implement temporary seeding if disturbed land is left

exposed for over 14 days and construction is not complete in this area. 3.32 Permanent Seeding (PS) — Establishment of perennial vegetative cover by planting seed on rough-graded areas that will not be brought to final grade for a year or more or where permanent, long-lived vegetative cover is needed on fine-graded areas. 3.35 Mulching (MU) - Application of plant residues or other suitable materials to disturbed surfaces to prevent

erosion and reduce overland flow velocities. Fosters plant growth by increasing available moisture and providing insulation against extreme heat or cold.

VEGETATIVE MEASURES: Temporary Seeding/Permanent Stabilization

Seeding measures shall be taken on disturbed soil at cut/fill slopes, sides of sediment basins, ditch lines, or areas outside of on—going construction practices within seven (7) days of completed grading. All areas disturbed by construction will be stabilized with permanent seeding immediately following final grading.

Unless otherwise indicated, all erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the latest edition of the Virginia Erosion and Sediment Control Handbook.

Erosion and sediment control will be discussed between the grading contractor and the owner prior to any excavation so that limits of construction and erosion control methods are clearly understood by both parties.

Construction will be sequenced so that grading operations can begin and end as quickly as possible.

There is to be no tracking of mud or dirt by construction equipment onto any paved drives or roads.

Sediment trapping measures will be installed as a first step in grading and will be seeded and mulched immediately following installation.

Seeding or other stabilization will-follow-immediately after grading. Areas, which are not to be disturbed, will be clearly marked by flags, signs, etc.

After achieving adequate stabilization, the temporary E&S controls will be cleaned up and removed. PERMANENT STABILIZATION:

All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. 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.

The grading contractor_is_responsible for maintaining-all-erosion and sediment control-measures.—These shall-bechecked daily and after each significant rainfall; any deficiencies shall be repaired immediately in accordance with

the latest edition of the VESCH or as deemed necessary by the local approving authority. SITEWORK Construction Sequence 1. Install construction entrance.

2. Install sediment basin, temporary diversion dikes, and silt fence and immediately seed the areas as shown

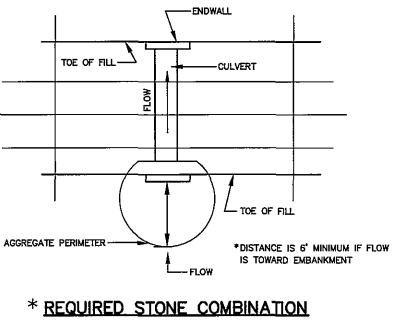
on the plans. Apply surface roughening to the slopes of the basin. 3. Begin clearing and grading of site.

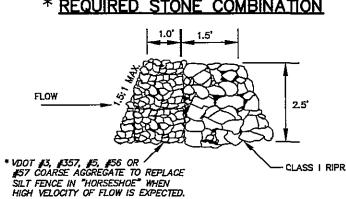
4. Temporary and permanent seeding and mulching to be placed on all disturbed areas. 5. Contractor to restore all areas back to existing conditions or proposed grades after completion of the project. All disturbed area, haul roads, construction roads, lay down area, etc. shall be restored.

All temporary erosion control devices shall be removed, AFTER final stabilization of site has been achieved.

PLATE, 3.08-1







SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSWC

HURT

*engineering >> surveying>> plannin CL PROFFITT INCORPORATED 2524 LANGHORNE ROAD LYNCHBURG VA 24501

800.242.4906 TOLL FREE

434.847.7796 MAIN

REVISIONS

12/08/05

DVA JOB NO.

DRAWING

03/16/05 PER COUNTY COMMENTS

3/29/05 PER COUNTY COMMENTS

4/27/05 PER COUNTY COMMENTS

7/26/05 PER COUNTY COMMENTS

./09/05 PER COUNTY COMMENT

2/08/05 PER COUNTY COMMENTS

16/06 PER VDOT COMMENTS

20040857

ISSUED: HURT & PROFFITT NUMBER:

NOT TO SCALE

SHEET <u>13</u> OF <u>18</u>

ATTACHED. ALL AROUND ISOMETRIC

TEMPORARY SEDIMENT BASIN WITH RCP RISER

CONTRACTOR SHALL REMOVE THE DE-WATERING DEVICE AND PLUG THE HOLE FOR THE DE-WATERING

3. CONTRACTOR SHALL UNPLUG THE 18" CULVERT IN THE INVERT OF THE RISER FOR DETENTION POND USE.

24" RCP

1. ONCE SITE IS STABLIZED AND TEMPORARY SEDIMENT BASIN IS TO BE CONVERTED TO THE PERMANENT

RISER INV. = 1156.00

-EMBED RISER 6'

96"x96"x18" CONC. BASE

POND INV. - 1156.00

EROSION AND SEDIMENT CONTROL DEVICES:

EROSION AND SEDIMENT CONTROL MAINTENANCE:

CONTROL HANDBOOK.

PERIMETER EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CHECKED WEEKLY AND AFTER EACH SIGNIFICANT ALL TO INSURE THAT ALL DEVICES ARE IN

SHALL BE MAINTAINED PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. IN GENERAL, IF THE SILT BUILT UP BEHIND A BARRIER BECOMES AS DEEP AS 9 INCHES, THE SILT IS TO BE REMOVED AND THE BARRIER REPAIRED OR REPLACED. AFTER COMPLETION OF THE PROJECT, AND PERMANENT SEEDING HAS BEEN ESTABLISHED, EROSION CONTROL DEVICES AND ANY SILT BUILT UP SHALL BE REMOVED. DISTURBED AREAS DUE TO THIS CLEANUP OPERATION SHALL BE REPAIRED, RESEEDED AND REMULCHED.

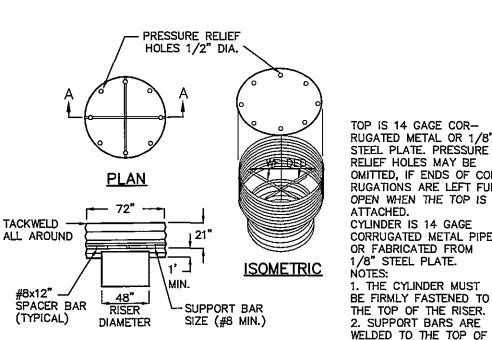
AND DISTURBING ACTIVITY. AS CONSTRUCTION PROCEEDS, ALL ADDITIONAL EROSION AND

SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS SOON AS POSSIBLE. EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN ARE A MINIMUM AND THE PROJECT

PLACE AND FUNCTIONING AS REQUIRED. ALL EROSION AND SEDIMENT CONTROL DEVICES

CONDITION MAY DICTATE ADDITIONAL CONTROL. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT

ANTI - VORTEX DEVICE DESIGN #1



SECTION A

STEEL PLATE, PRESSURE OMITTED, IF ENDS OF COR-RUGATIONS ARE LEFT FULLY OPEN WHEN THE TOP IS

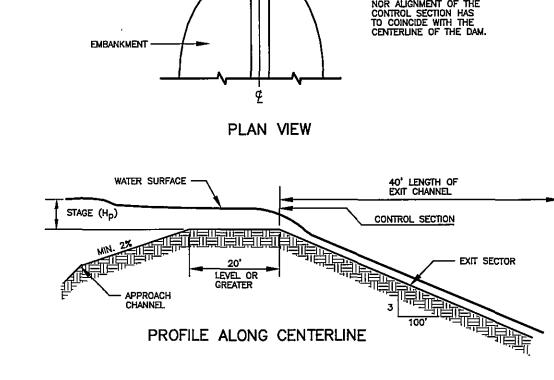
THE RISER OR ATTACHED

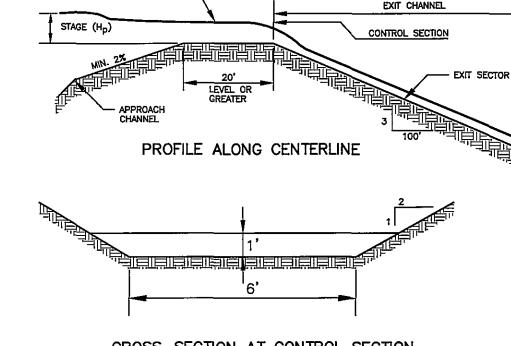
BY STRAPS BOLTED TO

TOP OF RISER.

PROFILE ALONG CENTERLINE

CROSS-SECTION AT CONTROL SECTION





EXCAVATED EARTH SPILLWAY FOR SEDIMENT BASIN #1