

BOND COST ESTIMATE - PREVIOUS PLANS ALREADY BONDED				
ITEM - E & S	UNITS	UNIT COST	QUANTITY	TOTAL
CONSTRUCTION ENTRANCE	EA	\$ 1,250.00	2	\$ 2,500.00
SILT FENCE	LF	4.50	1,385	\$ 6,232.50
TEMP. DIVERSION DIKE	LF	4.00	1,115	\$ 4,460.00
TEMP. SEDIMENT TRAP	CY	5.00	725	\$ 3,625.00
TEMP. SEDIMENT BASIN	CY	5.00	6,900	\$ 34,500.00
STORMWATER CONVEYANCE CHANNEL	LF	4.00	2,050	\$ 8,200.00
ROCK CHECK DAM	EA	200.00	30	\$ 6,000.00
TEMPORARY SEEDING	ACRE	750.00	9.5	\$ 7,125.00
PERMANENT SEEDING	ACRE	1,500.00	9.5	\$ 14,250.00
SUBTOTAL				\$ 86,892.50
10% CONTINGENCY				\$ 8,689.25
TOTAL				\$ 95,581.75

SOIL EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO REMOVE EXISTING STUMPS CREATED WITH PREVIOUS TREE REMOVAL, PROVIDE GRADING NECESSARY TO CONSTRUCT A SEDIMENT BASIN, AND PRELIMINARY GRADING FOR FUTURE ROADWAYS AND SITE PREPARATION FOR FUTURE CONSTRUCTION. THE AMOUNT OF LAND DISTURBANCE IS ESTIMATED AT 500,000 SQUARE FEET (11.5 ACRES) WHICH IS A PORTION OF THE 31.5 ACRE SITE LOCATED EAST OF SUNDANCE AND WEST OF INTERSTATE I-81, AND TWO ADDITIONAL LOTS OWNED BY TOWNSIDE CONSTRUCTION. SECTION 4, CHEROKEE HILLS INCLUDES THE DEVELOPMENT OF ARROWHEAD TRAIL, FORMERLY ARROWHEAD DRIVE. THE SEDIMENT BASIN WILL BE CONVERTED TO A STORMWATER MANAGEMENT POND AT THE DETERMINATION OF THE COUNTY OF ROANOKE. THE GRADING OF SECTION 5, CHEROKEE HILLS AND WARRIOR DRIVE WILL BE COMPLETED AT THIS TIME; HOWEVER, NO IMPERVIOUS IMPROVEMENTS FOR WARRIOR DRIVE WILL OCCUR AT THIS TIME.

THE SITE WILL UTILIZE AN EXISTING CONSTRUCTION ENTRANCE ON WARRIOR DRIVE AND PROVIDE A CONSTRUCTION ENTRANCE OFF THE EXISTING RIGHT OF WAY OF ARROWHEAD TRAIL. THE CONTRACTOR SHALL INSTALL SILT FENCE, DIVERSION DIKE, SEDIMENT TRAPS, A SEDIMENT BASIN, A STORMWATER CONVEYANCE CHANNEL, ROCK CHECK DAMS, TEMPORARY SEEDING, AND PERMANENT SEEDING. REFERENCE IS DIRECTED TO SHEET C4 FOR THE "OVERALL EROSION & SEDIMENT CONTROL PLAN."

EXISTING SITE CONDITIONS: THE PROPERTY CURRENTLY HAS THREE DRAINAGE AREAS. A SMALL PORTION OF THE SITE DRAINS TOWARD EXISTING HOMES, CONSTRUCTED DURING SECTION 1 OF CHEROKEE HILLS. SILT FENCE, DIVERSION DIKE, AND SEDIMENT TRAPS SHALL BE UTILIZED TO KEEP SEDIMENT FROM ADJOINING PROPERTIES. ONE DRAINAGE AREA DRAINS TOWARD EXISTING HOMES CONSTRUCTED DURING SECTION 3 CHEROKEE HILLS. SILT FENCE SHALL BE UTILIZED TO KEEP SEDIMENT FROM THE ADJOINING PROPERTIES. THE THIRD AREA, THE LARGEST, INCLUDES UPSTREAM OFF-SITE DRAINAGE FROM THE WEST SIDE OF SUNDANCE ROAD. THE CONTRACTOR SHALL UTILIZE A SEDIMENT BASIN, STORMWATER CONVEYANCE CHANNEL, AND ROCK CHECK DAM TO CONTROL THE RUNOFF AND KEEP SEDIMENT OUTSIDE OF THE I-81 RIGHT OF WAY. THE SITE CONTAINS NATURAL SWALES; HOWEVER, THE DEPARTMENT OF ENVIRONMENTAL QUALITY HAS REVIEWED THE SITE AND DEEMED THE NATURAL SWALES TO BE UNNAMED, INTERMITTENT SWALES AND THAT NO PERMITS ARE REQUIRED TO RELOCATE, AND WORK WITHIN THESE AREAS. THE SITE DRAINS TO THE SOUTH AND EAST, TOWARD AN EXISTING INTERMITTENT DITCH, DRAINING UNDER I-81 AND TOWARD "LITTLE BEAR ROCK BRANCH. EXISTING SLOPES RANGE FROM 2% TO 3:1 GRADE SLOPES.

SOILS: AS IDENTIFIED BY THE U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, GENERAL SOIL MAP, THE BASIC SOIL MATERIAL IS TUMBING-WEIKERT-BERKS.

CRITICAL AREAS: THE CONSTRUCTION ENTRANCE OFF WARRIOR DRIVE IS ALREADY IN PLACE. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION ENTRANCE TO THE MINIMUM REQUIRED STANDARDS. A CONSTRUCTION ENTRANCE OFF ARROWHEAD DRIVE SHALL BE INSTALLED OUTSIDE OF THE STATE MAINTAINED PUBLIC RIGHT OF WAY (SUNDANCE ROAD). A PORTION OF ARROWHEAD DRIVE IS PLATTED BUT DOES NOT MEET STATE STANDARDS AND IS NOT MAINTAINED BY VDOT. GRADING IMPROVEMENTS TO THIS AREA IS SHOWN. THE CONTRACTOR SHALL COORDINATE WITH THE CURRENT ADJACENT LAND OWNER FOR ACCESS FROM THE PRIVATE DRIVEWAY. THE SILT FENCE ALONG THE LOWER LIMIT OF DISTURBANCE (ALONG I-81) AND AS SHOWN ON THE PLANS SHALL BE PLACED TO KEEP SEDIMENT OFF THE ADJACENT PROPERTIES. ALL SILT FENCE SHALL BE INSTALLED AND CHECKED REGULARLY. THE DIVERSION DIKE SHALL BE PLACED AS SHOWN TO KEEP WELL DEFINED DRAINAGE AREAS AND TO PROTECT ADJACENT LAND OWNERS. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURE SUCH AS DIKES AND DIVERSION IMMEDIATELY AFTER INSTALLATION. THE CONTRACTOR SHALL INSTALL SEDIMENT TRAPS AND SEDIMENT BASIN AS SHOWN ON THE PLANS. SEDIMENT TRAP DESCRIPTIONS AND SIZES ARE SHOWN ON SHEET C4. THE STORMWATER CONVEYANCE CHANNEL SHALL BE CONSTRUCTED AS SHOWN TO TRANSPORT RUNOFF TO THE SEDIMENT BASIN. THE STORMWATER CONVEYANCE CHANNEL IS ALSO NECESSARY TO KEEP RUNOFF OFF ADJACENT PROPERTIES. ROCK CHECK DAMS SHALL BE INSTALLED WITHIN THE STORMWATER CONVEYANCE CHANNEL AS SHOWN TO LIMIT THE VELOCITY WITHIN THE STORMWATER CONVEYANCE CHANNEL. THE CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT SEEDING WITHIN SEVEN (7) DAYS OF OBTAINING FINAL GRADES. THE CONTRACTOR SHALL HAVE EQUIPMENT ON-SITE TO KEEP SEDIMENT OFF OF EXISTING PAVED AREAS.

ADJACENT PROPERTY: SEE SHEETS C2 AND C3 FOR ADJOINING PROPERTY OWNERS AND BOUNDARY DESCRIPTION.

EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.

1. REGARDLESS OF FUTURE DEVELOPMENT PLANS, THE CONTRACTOR SHALL IMMEDIATELY INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS. THIS WORK SHALL BE COORDINATED IN ORDER OF THE WORK WHICH IS TO FOLLOW: CONTROL AT CENTERS OF FLOW, AND OTHER POINTS OF CONCENTRATION SHOWN SHALL BE CONSTRUCTED IN PLACE FIRST.

2. AFTER THE INSTALLED CONTROL DEVICES ARE FOUND TO BE FUNCTIONAL, THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH DEMOLITION, CLEARING, AND PRELIMINARY GRADING OPERATIONS. ALL EXPOSED DENUDED AREAS SHALL BE SEEDDED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING, AND SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.

3. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL IN PARTICULAR:

A. MEASURES SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAYS.
B. ALL SILT FENCE BARRIERS AND INLET PROTECTIONS SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP.
C. ALL SEEDDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDDED AS NEEDED.

4. FOLLOWING THE COMPLETION OF DEVELOPMENT AND STABILIZATION OF ALL AREAS AND AFTER IT HAS BEEN DETERMINED THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE SITE OR AT ITS BOUNDARIES AND THAT DRAINAGE FLOWS ARE FUNCTIONING ACCORDING TO DESIGN, THE CONTRACTOR MAY THEN BEGIN TO REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES. THIS WORK SHALL BE DONE IN A CAREFUL, NEAT, ORGANIZED MANNER.

GENERAL COMMENTS:

- THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- THE COUNTY OF ROANOKE RESERVES THE RIGHT TO ADD TO, DELETE, OR OTHERWISE CHANGE EROSION CONTROL DEVICES AS MAY BE DEEMED NECESSARY BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
- NO WORK SHALL PROCEED ON THE SITE UNTIL THE PROPER AUTHORIZATION OR PERMIT HAS BEEN OBTAINED FROM THE COUNTY OF ROANOKE.
- THE ENGINEER, T.P. PARKER & SON, ASSUMES NO RESPONSIBILITY FOR ANY WORK BEING PERFORMED.

GENERAL EROSION & SEDIMENT CONTROL NOTES

- ALL SOIL EROSION & SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED, AS FAR AS PRACTICAL.
- IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.
- FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- REFERENCE IS DIRECTED TO "GRADING & EROSION CONTROL PLAN" FOR SITE DEPICTING EROSION AND SEDIMENT CONTROL MEASURES.

BOND COST ESTIMATE - ADDED FOR THIS PLAN

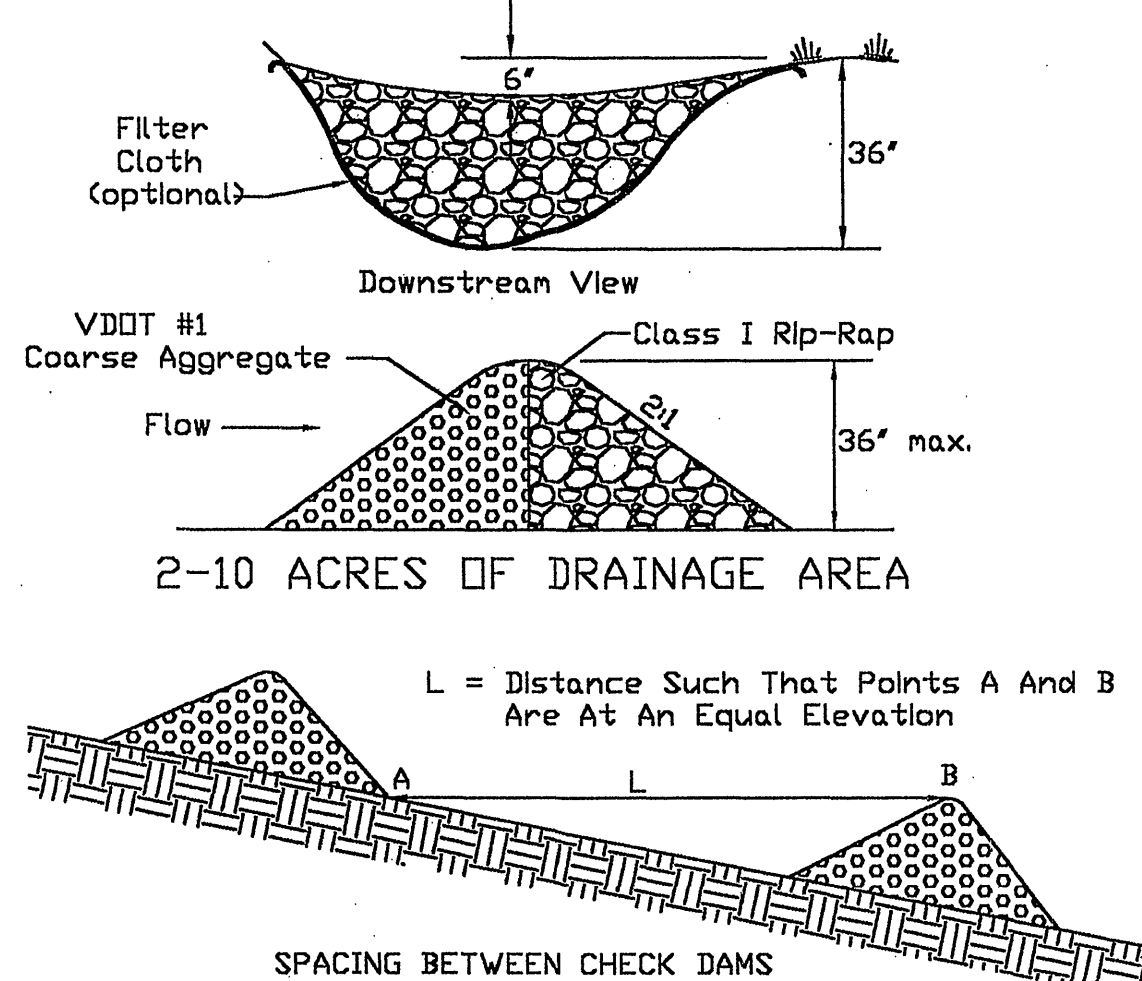
ITEM - E & S	UNITS	UNIT COST	QUANTITY	TOTAL
INLET PROTECTION	EA	\$ 200.00	20	4,000.00

SEE PROFILE SHEET C14 FOR DETAILS
ON INLET PROTECTION

(IP) INLET PROTECTION

SEE SEDIMENT BASIN DETAILS ON SHEET C8
OF PREVIOUSLY APPROVED PLANS
WITH PROFILE FOR SEDIMENT BASIN AREA

(SB) SEDIMENT BASIN



(CD) STONE CHECK DAM

TYPE A (SLOPES FLATTER THAN 3:1)

15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BORZO WINTER RYE @ 1/2 LB / 1000 SF

1 FEBRUARY TO 1 JUNE
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

1 JUNE TO 1 SEPTEMBER
K-31 FESCUE @ 5 LB / 1000 SF
GERMAN MILLET @ 1/2 LB / 1000 SF

1 SEPTEMBER TO 15 OCTOBER
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

TYPE B (SLOPES 3:1 OR STEEPER)

15 MARCH TO 1 MAY
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

15 AUGUST TO 1 OCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF

38-0-0 @ 7 LB / 1000 SF

MULCH: SHALL BE USED OVER ALL SEEDDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3rd ED.

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, THIRD EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED. MAX. SEEDING DEPTH SHALL BE 1/4 INCH.

(PS) PERMANENT SEEDING MIXTURE

01 MARCH TO 30 APRIL
WINTER RYE (SECALE CERALE) @ 2 1/2 LB / 1000 SF
OR ANNUAL RYEGRASS (LOLIUM MULTI-FLOSUM) @ 1 1/2 LB / 1000 SF
OR KOREAN LESPEDEZA (LESPEDEZA STIPULACEA) @ 1 1/2 LB / 1000 SF

01 MAY TO 15 AUGUST
GERMAN MILLET (SETARIA ITALICA) @ 1 LB / 1000 SF
OR WEEPING LOVEGRASS (ERAGROSTIS CLIVULA) @ 5 1/2 OZ / 1000 SF
OR KOREAN LESPEDEZA (LESPEDEZA STIPULACEA) @ 1 1/2 LB / 1000 SF

15 AUGUST TO 01 NOVEMBER
WINTER RYE (SECALE CERALE) @ 1 LB / 1000 SF
AND ANNUAL RYEGRASS (LOLIUM MULTI-FLOSUM) @ 1 LB / 1000 SF

MULCH: SHALL BE USED OVER ALL SEEDDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3rd ED.

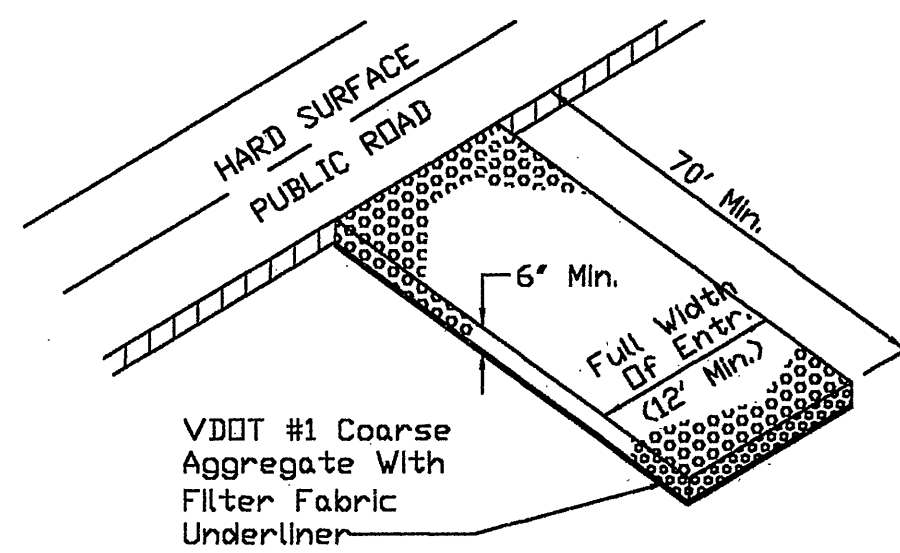
SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED. MAX. SEEDING DEPTH SHALL BE 1/4 INCH.

(TS) TEMPORARY SEEDING

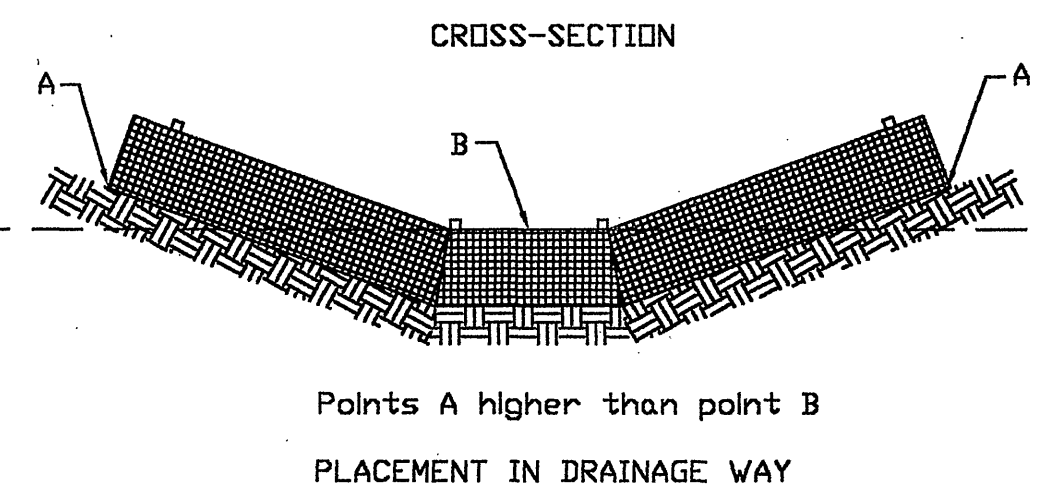
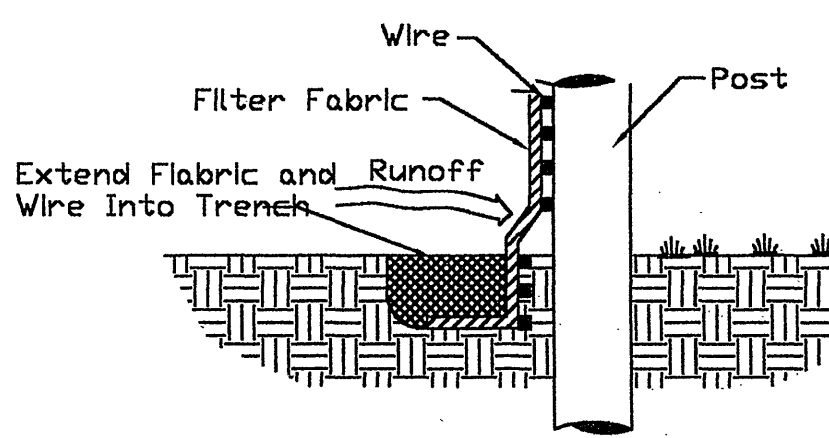
EROSION AND SEDIMENT CONTROL MEASURES:

PROVIDE THE FOLLOWING:

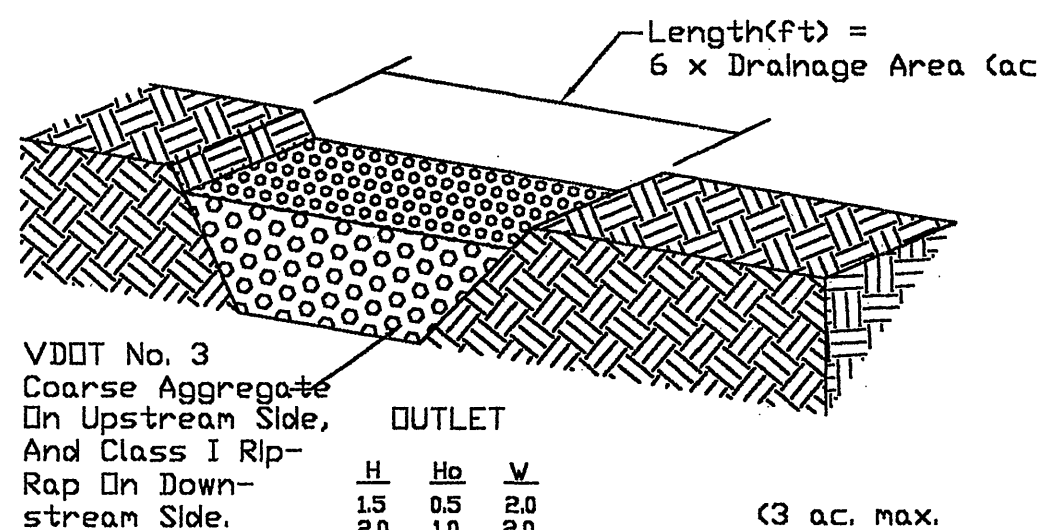
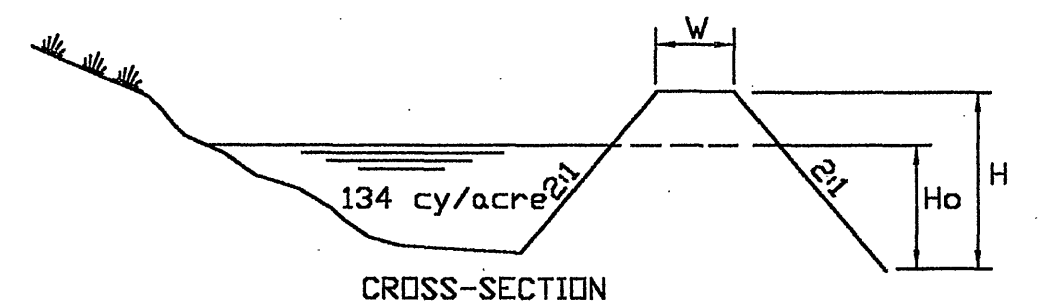
- (CE) CONSTRUCTION ENTRANCE, VA ESCH STD. 3.02
- (SF) SILT FENCE, VA ESCH STD. 3.05
- (DD) TEMPORARY DIVERSION DIKE, VA ESCH STD. 3.09
- (ST) TEMPORARY SEDIMENT TRAP, VA ESCH STD. 3.13
- (SB) TEMPORARY SEDIMENT BASIN, VA ESCH STD. 3.14
- (SCC) STORMWATER CONVEYANCE CHANNEL, VA ESCH STD. 3.17
- (CD) ROCK CHECK DAM, VA ESCH STD. 3.20
- (TS) TEMPORARY SEEDING, VA ESCH STD. 3.31
- (PS) PERMANENT SEEDING, VA ESCH STD. 3.32
- (IP) INLET PROTECTION, VA ESCH STD. 3.07



(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



(SF) SILT FENCE



(ST) SEDIMENT TRAP

RESPONSIBLE LAND DISTURBER CERTIFICATION

THE PERSON NAMED SHALL BE RESPONSIBLE FOR ALL LAND DISTURBANCE ACTIVITIES AND EROSION CONTROL MEASURES. THE PERSON NAMED SHALL HOLD A "RESPONSIBLE LAND DISTURBER CERTIFICATE" UNDER THE GENERAL ASSEMBLY REVISIONS TO THE VIRGINIA EROSION & SEDIMENT CONTROL LAW AS REVISED JULY 1, 2001. THE PERSON NAMED WILL BE IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT ALL EROSION CONTROL MEASURES. THE PERSON NAMED SHALL AFFIX SIGNED AND PRINTED NAME TO ONE COPY OF THIS EROSION CONTROL SHEET AND SUBMIT TO THE CITY OF ROANOKE. NO LAND DISTURBING ACTIVITY CAN OCCUR UNTIL THIS NAME HAS BEEN PROVIDED TO THE GOVERNING AGENCY.

JERRY GRUBB JR
PRINTED NAME

SIGNATURE

18739 EXPIRES 04/14/07

RESPONSIBLE LAND DISTURBER CERTIFICATE #

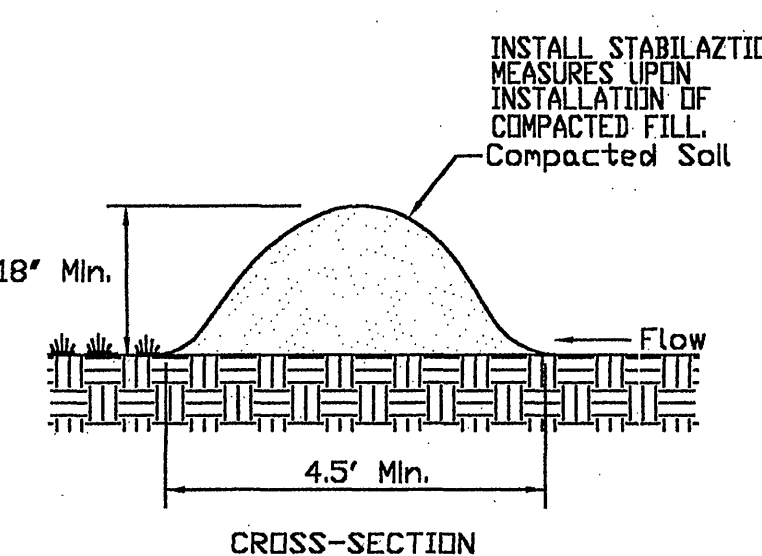
TOWNSIDE CONSTRUCTION CO., INC.

711-A 5TH STREET, N.E.

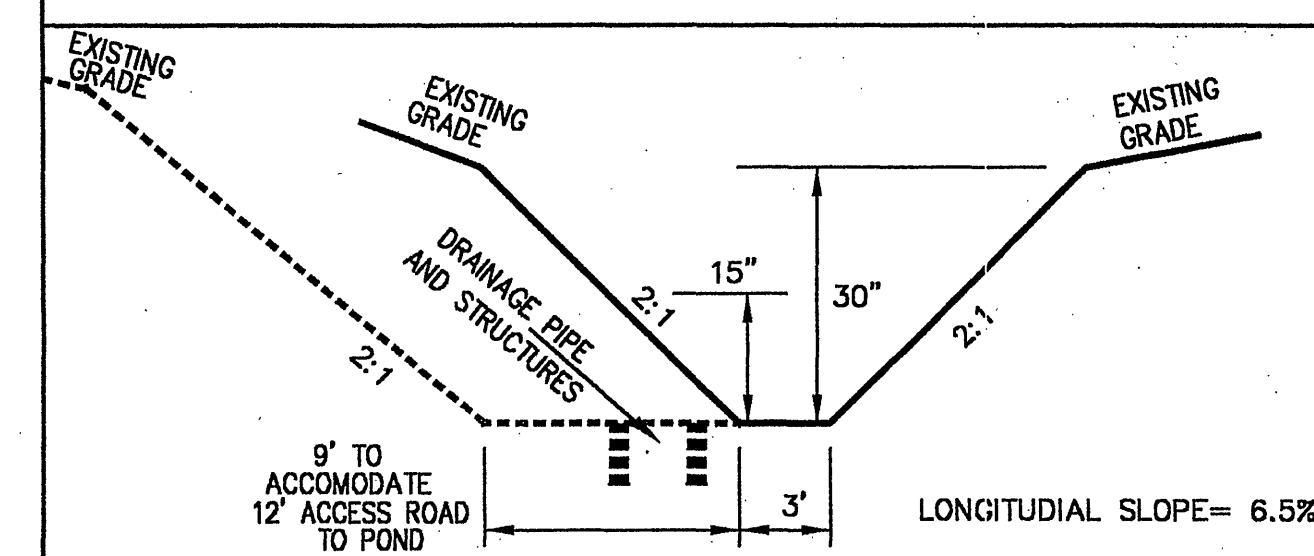
ROANOKE, VA 24016

293-0790

COMPANY NAME
CONTACT ADDRESS
PHONE NUMBER



(DD) TEMPORARY DIVERSION DIKE



NOTE: CHANNEL LOCATION IS ADJACENT TO RIGHT HAND SIDE OF PROPOSED ARROWHEAD DRIVE AND 5' ADJACENT TO PERIMETER PROPERTY LINE. UTILIZE EXISTING DITCH EXCEPT AS SHOWN ON "OVERALL EROSION & SEDIMENT CONTROL PLAN."

WITH THIS DITCH DESIGN, (3' BOTTOM WIDTH) A WATER DEPTH OF 15" (1.25') AND A FREEBOARD OF 15" (1.25') WILL TRANSPORT WATER AT A RATE OF 112 CFS. THE TOTAL EXISTING RATE OF RUNOFF FOR THE 25-YR STORM EVENT IS 89 CFS. THE DITCH DESIGN IS ADEQUATE. ADD ROCK CHECK DAMS TO CONTROL THE VELOCITY FROM AN UNCONTROLLED VELOCITY OF 16 FPS.

CHANNEL DIMENSIONS ARE TO ACCOMMODATE FUTURE DRAINAGE PIPE AND ACCESS ROAD.

(SCC) STORMWATER CONVEYANCE CHANNEL

SECTION 4
CHEROKEE HILLS

SITUATE ALONG SUNDANCE ROAD, OFF WARRIOR DRIVE,
AND OFF ARROWHEAD DRIVE, ADJOINING CHEROKEE HILLS
CATAWBA MAGISTERIAL DISTRICT
ROANOKE COUNTY, VIRGINIA

REVISED: 19 MAY 2005 SCALE: AS SHOWN

DESIGNED BY: J.B. P.B.

DRAWN BY: J.B.

CHECKED BY: P.B.

W.O. #: 04-0071

N.B. PORTION 05.04-05-01

TAX NO.

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04-0071/0071-DESIGN-5-CVR.DWG

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SURVEYORS
PLANNERS