23133-comp-01-cv01.plt

County of Roanoke, Va

GENERAL NOTES

PRE-CONSTRUCTION MEETING AND CONSTRUCTION COMMENCEMENT:

1. All construction methods and materials shall conform to the Construction Standards and Specifications of Roanoke County, the Western Virginia Water Authority, and the Virginia Department of Transportation.
2. Stormwater Management Agreements with an attached 8 1/2" x 11" or 8 1/2" x 14" plat must be approved and recorded prior to the pre-construction meeting.
3. Once all required items are submitted to the County of Roanoke, the developer must contact the Development Review Coordinator to indicate that a pre-construction meeting needs to be scheduled. The pre-construction meeting will be scheduled with the owner/developer two (2) working days later.
4. Please note the 2001 General Assembly revisions to Va Erosion and Sediment Control Law. Effective July 1, 2001, all land disturbing projects that require approval of an erosion and sediment control plan, grading or clearing permit shall require that the applicant provide the name of an individual who will be responsible for land disturbing activities and that this individual hold a Responsible Land Disturber (RLD) Certificate from the Department of Conservation and Recreation. The Responsible Land Disturber can be anyone from the Project team that is certified by the State of Virginia to be in charge of carrying out the land disturbing activity for the project.
5. It is the responsibility of the owner/developer to notify the certified Responsible Land Disturber and the Utility Contractor to attend the pre-construction meeting.
6. The Development Review Coordinator will schedule the pre-construction meeting with the County Review Engineer, the County Inspector, and the Western Virginia Water Authority and the Town of Vinton Public Works Department if applicable.
7. An approved set of plans and all permits must be available at the construction site at all times.
8. The developer and/or contractor shall supply all utility companies with copies of approved plans, advising them that all grading and installation shall conform to approved plans.
9. The project engineer will inform the owner/developer verbally and in writing of the County's obligation to perform inspections on site. Everyone in the meeting will be required to sign a pre-construction checklist indicating their knowledge of Roanoke County's obligation to perform inspections on site.
10. The Erosion Control Permit is given to the developer at this pre-construction meeting.
11. The developer MUST contact the project inspector 24 hours before beginning any grading or construction on the property.
12. The project inspector will visit the site within 48 hours of the developer's call to ensure that all necessary erosion and sediment control measures are properly installed according to the approved plan.
13. All work shall be subject to inspection by Roanoke County, the Western Virginia Water Authority and the Virginia Department of Transportation Inspectors.
14. Contractors shall notify utilities of proposed construction at least two (2), but not more than ten (10) working days in advance. Area public utilities may be notified thru "Miss Utility": 1-800-552-7001.
15. 100 year Floodway and Floodplain information shall be shown where applicable. FIRM Index Date shall be shown on the plans. The 100 year Floodway shall be staked prior to any construction.
16. Grade stakes shall be set for all curb and gutter, culvert, sanitary sewer and storm sewer at all times of construction.
17. The Department of Community Development shall be notified when a spring is encountered during construction.
18. Construction debris shall be containerized in accordance with the Virginia Litter Control Act. No less than one litter receptacle shall be provided on site.
19. The contractor shall provide adequate means of cleaning mud from trucks and/or other equipment prior to entering public streets or rights of ways. It is the contractors responsibility to insure that the streets are in a clean, mud and dust free condition at all times.
20. Plan approval in no way relieves the developer or contractors of the responsibilities contained within the erosion and sediment control policies.
21. Field construction shall honor proposed drainage divides as shown on plans.
22. Field corrections shall be approved by the Roanoke County Engineering Division and/or the Western Virginia Water Authority and the Professional of Record. prior to such construction.
23. The developer or contractor shall supply the County and the Western Virginia Water Authority with correct As-Built plans before final acceptance.

VIRGINIA DEPARTMENT OF TRANSPORTATION:

24. Plan approval by Roanoke County does not guarantee issuance of any permits by the Virginia Department of Transportation.
25. A permit must be obtained from the Virginia Department of Transportation, Salem Residency Office prior to construction in the highway right-of-way.
26. The preliminary pavement designs should be based on a predicted sub-grade CBR value of 7.0 and with a Resiliency Factor (RF) of 2.0 as shown in Appendix I of the 2000 Virginia Department of Transportation Pavement Design Guide for Subdivision and Secondary Roads. The sub-grade soil is to be tested by an independent laboratory and the results submitted to the Virginia Department of Transportation prior to base construction. Should the sub-grade CBR value and/or the RF value be less than the predicted values, additional base material will be required in accordance with Departmental specifications. Refer to the same manual as the number and locations of the required soil samples to be tested. All pavement designs shall be submitted to the Department for review and approval. The sub-grade shall be approved by the Virginia Department of Transportation prior to placement of the base. Base shall be approved by the Virginia Department of Transportation for depth, template, and compaction before the surface is applied.
27. Standard guardrail with safety end sections may be required on fills or in areas where hazards exist as deemed necessary. After completion of rough grading operations, the County Engineer and Virginia Department of Transportation shall be contacted to schedule a field review. Where guard rail is warranted, the standard shoulder width shall be provided and the guard rail shall be installed in accordance with the 2001 VDOT Road and Bridge Standards as part of this development.
28. Standard street and traffic control signs shall be erected at each intersection by the developer prior to final street acceptance.
29. All traffic devices shall be in accordance with current edition of the manual: "Uniform Traffic Control Devices (MUTCD)"
30. All unsuitable material shall be removed from the construction limits of the roadway before placing embankment.

See Sheet N/A for Stormwater Site Statistics Table.

See Sheet N/A for New BMP Information Table.

The Project Engineer shall provide electronic copies of the approved plans to the Development Review Coordinator within 5 working days of the pre-construction meeting.

This sheet may not be modified.

NAME OF DEVELOPMENT:	DEVELOPMENT PLAN FOR PEBBLE DRIVE DRAINAGE IMPROVEMENTS
MAGISTERIAL DISTRICT(S):	VINTON MAGISTERIAL DISTRICT
OWNER (name, address, telephone):	VARIOUS
DEVELOPER (name, address, telephone):	ROANOKE COUNTY DEVELOPMENT SERVICES — P.O. BOX 29800 ROANOKE, VA 24018
ENGINEER, ARCHITECT OR SURVEYOR (name, address, telephone):	LUMSDEN ASSOCIATES, P.C. (540) 774-4411 — 4664 BRAMBLETON AVENUE ROANOKE, VA 24018
TAX MAP NO(S):	VARIOUS

I, Bristol Workman, OWNER/DEVELOPER, AM AWARE OF THE SITE DESIGN REQUIREMENTS IMPOSED BY THIS SITE DEVELOPMENT PLAN AND OTHER APPLICABLE ROANOKE COUNTY CODES. I HEREBY CERTIFY THAT I AGREE TO COMPLY WITH THESE REQUIREMENTS AND THE THIRTY (30) POINTS SHOWN ON THIS COVER SHEET UNLESS MODIFIED IN ACCORDANCE WITH LOCAL LAW.

WATER NOTES

All water facilities shall be installed according to the Western Virginia Regional Design and Construction Standards/ (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering valve vaults after paving and adjustment to final grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with the (State Water Works Regulations, Section 12VAAC5-590-1150, where lines cross.

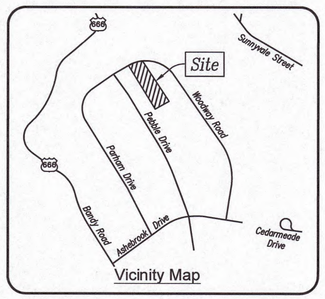
All trenches in existing or future highway right-of-ways shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

Water main shall be minimum Class 350 Ductile Iron in accordance to AWWA C151 or DR-14 PVC in accordance with AWWA C-900.

Ductile Iron Pipe in accordance with the Western Virginia Water Authority Design and Construction Standards shall be required for all pipe with a working pressure equal to or greater than 100 p.s.i.

Western Virginia Water Authority
Availability letter number: N/A



Vicinity Map

LEGEND

Property Line	P
Right-of-way	R/W
Centerline	CL
Minimum Building Line	MBL
Existing Storm Sewer	18"SD
Existing Sanitary Sewer	8"SS
Existing Water Main	4"W
Existing Contour	1045
Proposed Contour	1045
Proposed Drainage Divide	
Proposed Limits of Clearing	
Proposed Storm Sewer	24" S.D.
Proposed Sanitary Sewer	8" M.H.
Proposed Water Main	HYDRANT, VALVE, BLOWOFF

SEWER NOTES

All sanitary sewer facilities shall be installed according to the Western Virginia Water Authority Design and Construction Standards. (Latest Edition).

A minimum cover of three (3) feet is required over proposed lines.

Contractor shall be responsible for locating and uncovering all manholes after paving. Manhole tops shall be adjusted to grade if necessary.

All existing utilities may not be shown in their exact location. The contractor shall comply with (State Water Works Regulations, Section 12VAAC5-590-1150, where lines cross.)

All trenches in existing or future rights-of-way shall be compacted according to Virginia Department of Transportation standards.

Lines shall be staked prior to construction.

PRIVATE UTILITIES

Underground utilities installed on private property or in private utility easements and building related storm drains shall be designed and installed per the current edition of the Virginia Uniform Statewide Building Code. Design and installation requirements issued by the Western Virginia Water Authority that meet or exceed the USBC requirements are acceptable for private utilities. All private utilities are to be permitted through and inspected by the Roanoke County Inspections Office. Vaults, valves and other devices installed by or under the control of the Western Virginia Water Authority may not substituted for the code required devices.

SHEET No.	DESCRIPTION
1.....	COVER SHEET
2.....	NOTES & DETAILS
3.....	STORM DRAINAGE PLAN
4.....	EROSION & SEDIMENT CONTROL PLAN
5.....	EROSION & SEDIMENT CONTROL NARRATIVE NOTES AND DETAILS

Index

SURVEY INFORMATION

Horizontal and vertical control surveys were performed in year: 2023
by: Lumsden Associates, P.C.

All vertical elevations must be referenced to the National Geodetic Vertical Datum of 1929 or 1988. All horizontal elevations must be referenced to the North American Datum of 1927 or 1983.

Source of topographic mapping is dated: 2023

Boundary was performed by: Lumsden Associates, P.C., dated: 2023

Benchmark Information: See Sheet 3

The professional seal and signature certifies the boundary survey and topographic mapping to be accurate and correct.

QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT	UNIT PRICE	COST	BONDABLE
SUBTOTAL					
10% CONTINGENCY					
ESTIMATED TOTAL					

BY SEALING THE PLANS, THE DESIGN PROFESSIONAL HEREBY CERTIFIES THAT THE FOREGOING ESTIMATE REFLECTS THE CURRENT IMPROVEMENT COSTS OF THIS PROJECT.

4664 BRAMBLETON AVENUE, SW
P.O. BOX 20669
ROANOKE, VIRGINIA 24018
PHONE: (540) 774-4411
FAX: (540) 772-9445
E-MAIL: MAIL@LUMSDENPC.COM

LUMSDEN ASSOCIATES, P.C.
COMMISSION NUMBER:
2023-133

Lumsden Associates, P.C.
ENGINEERS | SURVEYORS | PLANNERS

COMMONWEALTH OF VIRGINIA
ANDREW P. LUMSDEN
Lic. No. 052216
12/7/23
PROFESSIONAL ENGINEER

PLAN DATE: DECEMBER 7, 2023

APPROVED

PLAN APPROVED
Denise Lawler
REVIEW COORDINATOR, 12/12/2023

DEVELOPMENT PLAN
FOR
PEBBLE DRIVE
DRAINAGE IMPROVEMENTS
PREPARED FOR
ROANOKE COUNTY DEVELOPMENT SERVICES
SITUATED IN
ROANOKE COUNTY, VIRGINIA

SHEET
1
OF
5

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02-rd01

SITE AND ZONING TABULATIONS

TAX MAP ID: 079.01-01-57.00, 079.01-01-58.00, 079.01-01-59.00, 079.01-01-60.00, 079.01-01-61.00, 079.01-01-62.00, 079.01-01-63.00, 079.01-01-64.00, 079.01-01-65.00, 079.01-01-66.00
CURRENT ZONING: R-1 LOW DENSITY RESIDENTIAL
EXISTING USE: SINGLE FAMILY RESIDENTIAL
PROPOSED USE: UNCHANGED

GENERAL NOTES

1. OWNER/DEVELOPER: ROANOKE COUNTY DEVELOPMENT SERVICES, BOX 29800 ROANOKE, VA 24018
2. THE BOUNDARIES ARE THE DIRECT RESULT OF A FIELD SURVEY BY LUMSDEN ASSOCIATES, PC.
3. TOPOGRAPHY DATA BASED ON A FIELD SURVEY BY LUMSDEN ASSOCIATES, P.C. IN 2023.
4. NO CURRENT TITLE REPORT HAS BEEN FURNISHED FOR THE SUBJECT PROPERTIES.
5. NO PORTION OF THE SUBJECT PROPERTY IS LOCATED WITHIN THE LIMITS OF FLOOD HAZARD AREA. THIS OPINION IS BASED ON AN INSPECTION OF THE FLOOD INSURANCE RATE MAP #51161C0256G, DATED SEPTEMBER 28, 2007.
6. NO CONSTRUCTION/FIELD REVISIONS ARE ALLOWED WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER, ROANOKE COUNTY, AND/OR THE VIRGINIA DEPARTMENT OF TRANSPORTATION.
7. ANY NEW ALIGNMENTS, CHANGES IN GRADES, ALTERNATE PIPE SIZES, MANHOLES, OR ESC MEASURES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. PLAN SHEETS CAN BE 8.5 x 11 IF THE INFORMATION IS LEGIBLE AND WITHIN THE LIMITS OF THE APPROVED PLANS.
8. ANY TOPOGRAPHIC CHANGES FROM THE APPROVED PLANS MAY REQUIRE ADDITIONAL DRAINAGE STRUCTURES AND EASEMENTS AS DEEMED NECESSARY BY ROANOKE COUNTY.

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT COUNTY OF ROANOKE STANDARDS AND SPECIFICATIONS AND THE CURRENT EDITION OF VDOT'S ROAD AND BRIDGE STANDARDS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
3. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION.
5. SEE VDOT ROAD AND BRIDGE STANDARDS FOR STORM DRAIN DETAILS.
6. THE CONTRACTOR AND OR OWNER SHALL PROVIDE A STORAGE CONTAINER FOR TEMPORARY STORAGE AND DISPOSAL OF LAND CLEARANCE DEBRIS AND BUILDING MATERIALS. ON-SITE BURIAL OF MATERIAL SHALL NOT BE PERMITTED.
7. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK BY CONTACTING MISS UTILITY. CONTACT SITE ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" OF CENTRAL VIRGINIA AT 1-800-552-7001.
8. IT SHALL BE THE THE RESPONSIBILITY OF THE DEVELOPER TO CLEAN OUT ANY EXISTING STORM SEWER SYSTEM IN THE EVENT THEY BECOME SILTED OR BLOCKED IN ANY WAY DUE TO THE PROPOSED DEVELOPMENT.
9. ROANOKE COUNTY DEVELOPMENT SERVICES SHALL COORDINATE REMOVAL AND RELOCATION OF SMALL LANDSCAPING PLANTS CONFLICTING WITH CONSTRUCTION WITH INDIVIDUAL PROPERTY OWNERS.
10. ROANOKE COUNTY DEVELOPMENT SERVICES SHALL COORDINATE WITH SURVEYOR TO RESET PROPERTY MONUMENTATION LOST IN THE COURSE OF CONSTRUCTION.

GRADING NOTES

1. AREAS TO BE GRADED SHALL BE CLEARED OF ALL VEGETATION, STRUCTURES, AND OTHER PHYSICAL FEATURES IN PREPARATION OF GRADING.
2. TOPSOIL SHALL BE REMOVED FROM THE CLEARED AREA AND STOCKPILED FOR FUTURE USE.
3. FILL MATERIAL SHALL BE FREE FROM ORGANIC MATTER AND ROCKS LARGER THAN 6 INCHES IN DIAMETER.
4. FILL MATERIAL SHALL BE PLACED AND COMPACTED IN EIGHT (8) INCH LOOSE LIFTS AND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698, STANDARD PROCTOR. MAINTAIN MOISTURE CONTENT OF FILL MATERIAL WITHIN THREE (3) PERCENT OF OPTIMUM TO ATTAIN REQUIRED COMPACTION DENSITY.
5. A QUALIFIED GEOTECHNICAL ENGINEER, LICENSED IN THE STATE OF VIRGINIA, SHOULD BE CONSULTED CONCERNING SOIL STABILITY, SLOPE STABILIZATION, SOIL COMPACTION, TESTING, AND OTHER SOIL CHARACTERISTICS. LUMSDEN ASSOCIATES ASSUMES NO RESPONSIBILITY OR LIABILITY RELATING TO FAILURES RESULTING FROM SAME.

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COMMONWEALTH OF VIRGINIA
ANDREW P. LUMSDEN
Lic. No. 052216
12/7/23
PROFESSIONAL ENGINEER

NOTES & DETAILS

DEVELOPMENT PLAN
FOR
PEBBLE DRIVE DRAINAGE IMPROVEMENTS
PREPARED FOR
ROANOKE COUNTY DEVELOPMENT SERVICES
SITUATED IN
ROANOKE COUNTY, VIRGINIA

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DATE: DECEMBER 7, 2023
SCALE: AS SHOWN
COMM. NO.: 2023-133
SHEET: 2 OF: 5

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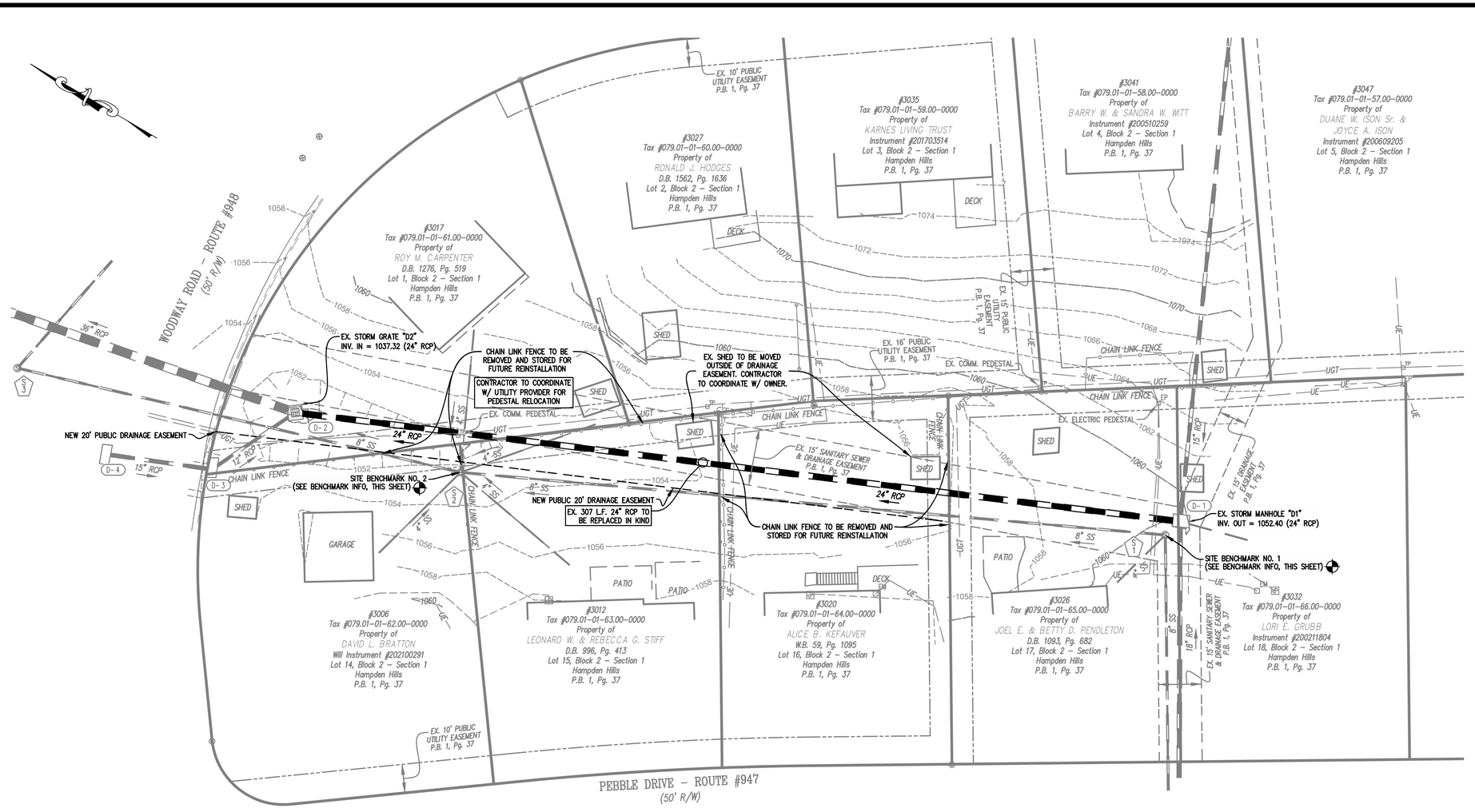
APPROVED, 12/12/2023



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SITE BENCHMARK

BENCHMARK No. 1: EXISTING CENTER OF SEWER MANHOLE LID.
ELEVATION = 1060.31'
NORTHING: 3613814.07' EASTING: 11070064.81'

BENCHMARK No. 2: EXISTING CENTER OF SEWER MANHOLE LID.
ELEVATION = 1052.38'
NORTHING: 3614037.65' EASTING: 11069959.08'

NOTE: FIELD VERIFY BEFORE USE.

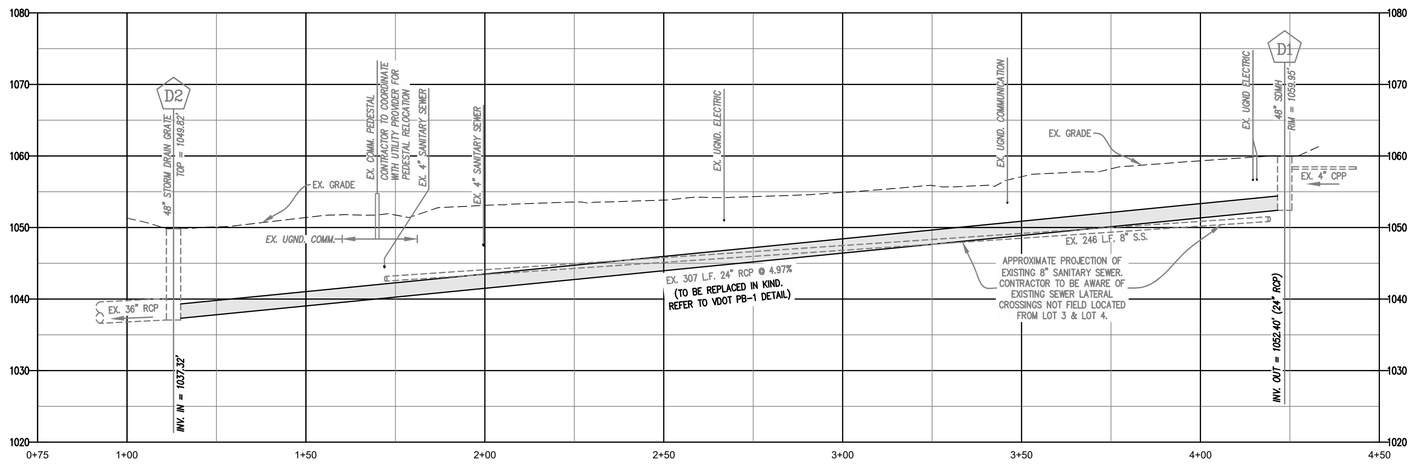
ABBREVIATIONS

D.E.	DRAINAGE EASEMENT
W.L.E.	WATER LINE EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
P.U.E.	PUBLIC UTILITY EASEMENT
ESM'T.	EASEMENT
M.B.L.	MINIMUM BUILDING LINE
R/W	RIGHT OF WAY
VAR.	VARIABLE
EXIST.	EXISTING
D.B.	DEED BOOK
P.B.	PLAT BOOK
PG.	PAGE
No.	NUMBER
TYP.	TYPICAL
STA	STATION
LT.	LEFT
RT.	RIGHT
RCP	REINFORCED CONCRETE PIPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
W	WATER LINE
TC	TOP OF CURB
TP	TOP OF PAVEMENT
BW	BOTTOM OF WALL
TW	TOP OF WALL

LEGEND

ITEM	EXISTING	PROPOSED
Pavement		
Heavy Duty Pavement		
Curb and Gutter		
Curb		
Storm Drain Line	EX. 24" CONC.	24" CONC.
Sanitary Sewer Manhole	S	
Sanitary Sewer Line	EXIST. 8" SS	
Waterline	EXIST. 8" W	
Hydrant		
Gate Valve		
Underground Electric Line	-UE-	
Overhead Electric Line	-OHE-	
Underground Telephone Line	-UGT-	
Underground Gas Line	-GAS-	
Utility Pole		
Fence	-x-x-	
Contours	1216	1216
Spot Elevation	1214.8	TC=14.80

STORM DRAIN PIPE PROFILE



Sanitary Sewer Data Table

#	STRUCTURE	RIM	INV.IN(1)	INV.IN(2)	INV.IN(3)	INV.IN(4)	INV.IN(5)	INV.OUT	WVWA#
1	SSMH	1060.31	1051.05 (8"RCP)	1052.80 (4"METAL)				1050.84 (8"PIPE)	15-3048.0
2	SSMH	1052.38	1044.38 (4"METAL-NE)	1042.93 (8"PVC)	1045.93 (4"METAL-NW)	1047.43 (4"METAL-SE)	1044.70 (4"METAL-SW)	1042.50 (8"PVC)	15-3047.0
3	SSMH	1046.37	1024.96 (8"PVC-E)	1025.97 (8"PVC-SE)				1024.61 (8"PVC)	15-3046.0

Stormdrain Data Table

#	RIM	TOP	STRUCTURE	INV.IN	INV.IN(2)	INV.IN(3)	INV.OUT	THROAT
1	1059.95		SD MANHOLE	1055.00 (15"RCP)	1052.72 (18"RCP)	1058.15 (4"CPP)	1052.40 (24"RCP)	
2		1049.82	SD GRATE	1037.32 (24"RCP)	1041.32 (12"RCP)		1037.07 (36"RCP)	
3	1052.32		CURB INLET	1047.89 (15"RCP)			1046.34 (12"RCP)	6'
4	1052.15		CURB INLET				1048.85 (15"RCP)	6'
5	1038.75		SD MANHOLE	1033.55 36"RCP)			1021.69 (36"RCP)	

NOTE: THE EXISTING DRAINAGE PIPE DOES NOT CURRENTLY EXPERIENCE CAPACITY ISSUES; HOWEVER, MULTIPLE FAILURES EXIST REQUIRING REPLACEMENT, AND SHALL BE CONSIDERED A MAINTENANCE PROJECT ONLY.

STORM DRAIN NOTES:

1. ALL STORM DRAINS AND STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED IN ACCORDANCE WITH VDOT STANDARDS.
2. CONTRACTOR SHALL UTILIZE VDOT STD. PB–1 DETAIL FOR PIPE BEDDING AND BACKFILL. NOTE, ROANOKE COUNTY DOES NOT ALLOW VDOT 57 STONE FOR BEDDING.
3. MAINTAIN A MINIMUM OF 18" CLEARANCE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE AT ALL WATER, SANITARY SEWER, AND STORM DRAIN CROSSINGS.
4. ALL NEW DROP INLETS AND STORM DRAIN MANHOLES SHALL HAVE VDOT STD. IS–1, INLET SHAPING.
5. ALL DRAINAGE STRUCTURES DEEPER THAN 4.0 FEET SHALL HAVE STEPS (VDOT STD. ST–1) INSTALLED.
6. SAFETY SLABS (VDOT STD. SL–1) ARE REQUIRED IN ALL DRAINAGE STRUCTURES WITH A DEPTH OF 12.0 FEET OR GREATER. THE SPACING OF THE SLABS SHOULD BE 8 TO 12 FEET WITH NO SAFETY SLAB LOCATED WITHIN 6 FEET FROM THE TOP OR BOTTOM OF THE STRUCTURE.
7. ALL NEW STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH VDOT STANDARDS AND ROANOKE COUNTY STANDARDS.
   7.1. ALL RCP PIPE SHALL BE CLASS III UNLESS OTHERWISE INDICATED.

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COMMONWEALTH OF VIRGINIA
ANDREW P. LUMSDEN
Lic. No. 052216
12/7/23
PROFESSIONAL ENGINEER

DEVELOPMENT PLAN FOR
PEBBLE DRIVE DRAINAGE IMPROVEMENTS
PREPARED FOR ROANOKE COUNTY DEVELOPMENT SERVICES
SITUATED IN ROANOKE COUNTY, VIRGINIA

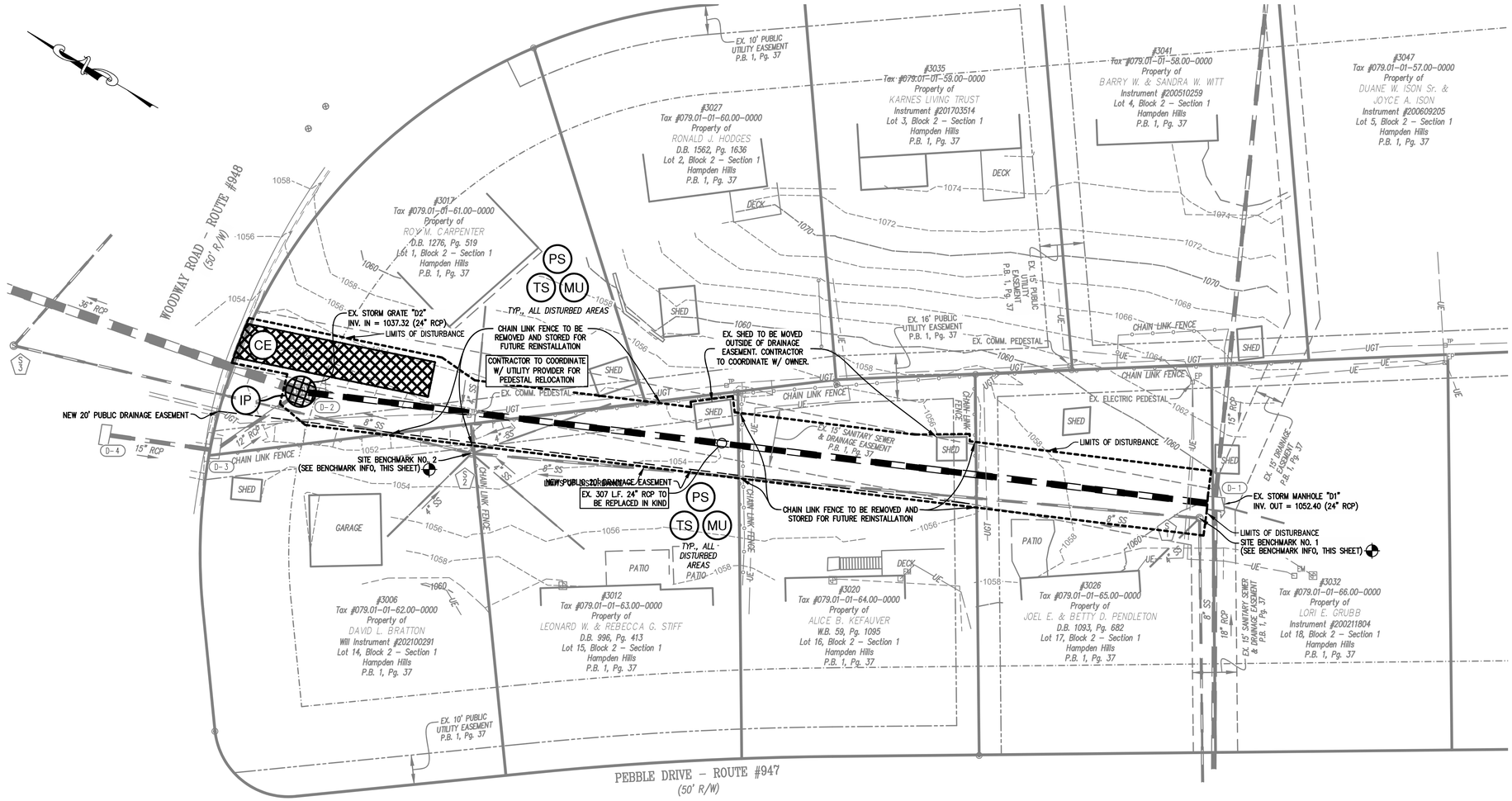
STORM DRAINAGE PLAN

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DATE: DECEMBER 7, 2023
SCALE: 1" = 20'
COMM. NO.: 2023-133
SHEET: 3 OF: 5

APPROVED, 12/12/2023



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SITE BENCHMARK

BENCHMARK No. 1: EXISTING CENTER OF SEWER MANHOLE LID.
ELEVATION = 1060.31'
NORTHING: 3613814.07' EASTING: 11070064.81'

BENCHMARK No. 2: EXISTING CENTER OF SEWER MANHOLE LID.
ELEVATION = 1052.38'
NORTHING: 3614037.65' EASTING: 11069959.08'

NOTE: FIELD VERIFY BEFORE USE.

TOTAL PROPOSED
DISTURBANCE = 7,600 S.F.

NO.	TITLE	KEY	SYMBOL
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.07	INLET PROTECTION	IP	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.35	MULCHING	MU	

THIS SHEET IS FOR EROSION & SEDIMENT CONTROL ONLY

TO TS PS MU

NOTE:
ALTHOUGH TOPSOILING, TEMPORARY & PERMANENT SEEDING AND MULCHING SYMBOLS ARE SHOWN IN SPECIFIC LOCATIONS ON THE PLANS, ALL DISTURBED AREA NOT RECEIVING PAVEMENT, HARDSCAPE OR OTHER PERMANENT STABILIZATION SHALL BE TOPSOILED, SEEDED AND MULCHED

CONSTRUCTION SEQUENCE

1. THE CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL BE NAMED AND THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS.
2. INSTALL CONSTRUCTION ENTRANCE (CE) AND INLET PROTECTION (IP) TO PREVENT SEDIMENT TRANSPORT OFFSITE.
3. REMOVE CHAIN LINK FENCE AS SHOWN AND STORE FOR FUTURE REINSTALLATION.
4. COMMENCE REMOVAL OF EXISTING STORM DRAIN PIPE AND INSTALLATION OF REPLACEMENT STORM DRAIN PIPE. THE CONSTRUCTION PROCESS SHOULD BE SEQUENCED AS MUCH AS POSSIBLE SO THAT EACH AREA IS SEEDED AND STABILIZED PRIOR TO BEGINNING GRADING AND STORM DRAIN PIPE REPLACEMENT OPERATIONS IN ANOTHER AREA. CONTRACTOR SHALL ENSURE CONSTRUCTION TIMING IS DURING A FORECASTED DRY PERIOD AS BEST PRACTICAL.
5. COMPLETE FINAL GRADING AND INSTALL PERMANENT SEEDING AS SOON AS IS PRACTICABLE.
6. CONTRACTOR SHALL COORDINATE AND REINSTALL CHAIN LINK FENCE, LANDSCAPING, AND PERSONAL PROPERTY WITH INDIVIDUAL PROPERTY OWNERS.
7. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN–PLACE AND FUNCTIONAL UNTIL ALL DISTURBED AREAS ARE FULLY STABILIZED. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ONLY WITH THE PRIOR APPROVAL OF THE ROANOKE COUNTY INSPECTOR.

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COMMONWEALTH OF VIRGINIA
ANDREW P. LUMSDEN
Lic. No. 052216
12/7/23
PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL PLAN

DEVELOPMENT PLAN
FOR
PEBBLE DRIVE DRAINAGE IMPROVEMENTS
PREPARED FOR
ROANOKE COUNTY DEVELOPMENT SERVICES
SITUATED IN
ROANOKE COUNTY, VIRGINIA

REVISIONS		
NO.	DATE	DESCRIPTION
1		
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DATE: DECEMBER 7, 2023
SCALE: 1" = 20'
COMM. NO.: 2023-133
SHEET: 4 OF: 5

APPROVED, 12/12/2023

05-en01

CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE FOLLOWING MINIMUM STANDARDS:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within 7 days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within 7 days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. APPLY SEEDING MIXTURES IN ACCORDANCE WITH SPECIFICATIONS 3.31 AND 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH) TO ALL AREAS THAT DO NOT HAVE A NON-ERODABLE SURFACE AS SHOWN ON THE PLAN.
2. During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site. ONSITE SOIL STOCKPILE(S) SHALL BE PROTECTED WITH SILT FENCE INSTALLED AT THE TOE OF THE PILE ON ALL DOWN GRADIENT SLOPES THOUGH NO STOCKPILES ARE PROPOSED FOR THIS PROJECT..
3. 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 is uniform, mature enough to survive and will inhibit erosion. SEE MINIMUM STANDARD 1.
4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. NO SEDIMENT TRAPS, BASINS, OR DIKES ARE PROPOSED WITH THIS PROJECT.
5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation. APPLY TEMPORARY SEEDING TO ANY EARTHEN STRUCTURES IMMEDIATELY FOLLOWING CONSTRUCTION.
6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.
   a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.
   b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25-year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

   NO SEDIMENT TRAPS OR BASINS ARE PROPOSED WITH THIS PROJECT.
7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected. AREAS TO RECEIVE PERMANENT SEEDING ARE TO BE INSPECTED PERIODICALLY. RESEED ANY AREAS THAT DO NOT HAVE AN ESTABLISHMENT OF A GOOD STAND OF GRASS AFTER INITIAL APPLICATION OF PERMANENT SEEDING. ADDITIONAL SLOPE STABILIZATION MEASURES ARE TO BE CONSIDERED AS CONDITIONS DICTATE.
8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. NO CONCENTRATED RUNOFF SHALL FLOW DOWN CUT OR FILL SLOPES AND SHALL BE DIVERTED AS NECESSARY.
9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. SEEPAGE THROUGH SLOPES IS NOT ANTICIPATED TO BE ENCOUNTERED ON THIS PROJECT. SHOULD SEEPAGE BE ENCOUNTERED, THE CONTRACTOR SHOULD CONTACT THE DESIGN ENGINEER IMMEDIATELY.
10. All storm sewer 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. INLET PROTECTION SHALL BE APPLIED TO ALL NEW STORM SEWER INLETS BEFORE BEING MADE OPERABLE AND EXISTING INLETS ASSOCIATED WITH THE STORM SEWER NETWORK.
11. Before newly constructed stormwater conveyance channels or pipes 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. NO OUTLET PROTECTION IS ASSOCIATED WITH THIS PROJECT.
12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodable material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials. NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.
13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided. NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.
14. All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met. NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.
15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed. NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN OR ADJACENT TO THIS PROJECT.
16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Excavated material shall be placed on the uphill side of trenches.
   c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
   d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
   e. Restabilization shall be accomplished in accordance with these regulations.
   f. Applicable safety regulations shall be complied with.

   UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS ABOVE.
17. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads 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 development lots as well as to larger land-disturbing activities. ADEQUATE MEANS SHALL BE PROVIDED FOR THE CLEANING OF MUD AND SEDIMENT FROM CONSTRUCTION VEHICLES PRIOR TO ENTERING PUBLIC STREETS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MUD AND SEDIMENT TRANSPORTED FROM THIS SITE ONTO THE PUBLIC STREETS.
18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the VESCP authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. REMOVE TEMPORARY MEASURES IN ACCORDANCE WITH ABOVE REQUIREMENTS AND ONLY WITH THE PRIOR APPROVAL OF ROANOKE COUNTY.

MINIMUM STANDARDS CONTINUED:

19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:
   a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
   b. Adequacy of all channels and pipes shall be verified in the following manner:
      (1) The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or
      (2) (a) Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
      (b) All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
      (c) Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system.
   c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
      (1) Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel bed or banks; or
      (2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;
      (3) Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
      (4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.
   d. The applicant shall provide evidence of permission to make the improvements.
   e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the subject project.
   f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
   g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipater shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
   h. All on-site channels must be verified to be adequate.
   i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
   j. In applying these stormwater runoff criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
   k. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.
   l. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural and man-made channels if the practices are designed to
      (i) detain the water quality volumes and release it over 48 hours;
      (ii) detain and release over 24-hour period the expected rainfall resulting from the one year, 24-hour storm and;
      (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to 62.1-44.15:54 or 62.1-44.15:65 of the Act.
   m. For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of 62.1-44.15:52 A of the Act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (62.1-44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 9VAC25-870-48 of the Virginia Stormwater Management Program (VSMP) Permit Regulations.
   n. Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) Permit Regulations shall be deemed to satisfy the requirements of Minimum Standard 19.

NO STORMWATER MANAGEMENT IS ASSOCIATED WITH THIS PROJECT AS THE LIMITS OF DISTURBANCE PROPOSED IS UNDER 1-ACRE. ADDITIONALLY, THE WORK ASSOCIATED WITH THIS PLAN IS FOR MAINTENANCE PURPOSES ONLY AND DOES NOT PROPOSE ANY NEW IMPERVIOUS AREA WHICH WOULD INCREASE THE AMOUNT OF RUNOFF VOLUME, VELOCITY, OR PEAK FLOW RATES..

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT IS LOCATED WITHIN ROANOKE COUNTY, BETWEEN THE STREETS OF PEBBLE DRIVE AND WOODWAY ROAD WITHIN AN EXISTING RESIDENTIAL SUBDIVISION. THE PROJECT CONSISTS OF IMPROVEMENTS TO AN EXISTING WATERCOURSE BY REPLACING AGING/FAILING STORM DRAINAGE PIPE. THE TOTAL DISTURBANCE AREA IS APPROXIMATELY 7,600 S.F. (0.18 ACRES).

EXISTING SITE CONDITIONS
THE PROJECT AREA IS LOCATED BEHIND EXISTING RESIDENTIAL HOUSES. DRAINAGE FROM THESE HOUSES GENERALLY SLOPES TOWARDS AN EXISTING BROAD SWALE WHICH FLOWS BETWEEN THE HOMES FROM SOUTHEAST TO NORTHWEST.

ADJACENT AREAS
THE PROJECT SITE IS BORDERED BY PEBBLE DRIVE TO THE SOUTHWEST, WOODWAY ROAD TO THE NORTHEAST, AND RESIDENTIAL HOMES TO THE NORTHWEST AND SOUTHEAST.

OFF-SITE AREAS
NO OFF-SITE AREAS ARE ASSOCIATED WITH THIS PROJECT. ANY OFFSITE CUT AND/OR FILL NEEDED FOR THIS PROJECT WILL BE REQUIRED TO BE PERMITTED SEPARATELY.

SOILS
SOILS INFORMATION IS BASED ON AN INSPECTION OF THE USDA WEB SOIL SURVEY AND HAS NOT BEEN FIELD VERIFIED. THE ONSITE SOIL IN THE PROJECT AREA IS INDICATED TO BE HAYESVILLE-URBAN LAND COMPLEX (MAP UNIT 29D, 15 TO 30% SLOPES).

THE HAYESVILLE SOIL, HYDROLOGIC SOIL GROUP B, POSSESSES THE FOLLOWING CHARACTERISTICS AND PROPERTIES:
DEPTH TO RESTRICTIVE FEATURE: MORE THAN 80 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
DRAINAGE CLASS: WELL DRAINED
AVAILABLE WATER CAPACITY: MODERATELY HIGH TO HIGH
RUNOFF CLASS: HIGH

TYPICAL PROFILE: 0 TO 8 INCHES – FINE SANDY LOAM; 8 TO 51 INCHES – CLAY; 51 TO 62 INCHES – SANDY CLAY LOAM.

CRITICAL AREAS
PERIMETER CONTROLS ARE CRITICAL. ROANOKE RIVER IS DOWN GRADIENT AND NEARBY. SEDIMENT TRANSPORT OFFSITE SHOULD BE MONITORED TO ENSURE NO SEDIMENT IS INADVERTENTLY DISCHARGED.

GENERAL STANDARDS
UNLESS OTHERWISE INDICATED, ALL EROSION AND SEDIMENT CONTROL PRACTICES AND PROCEDURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SEE DEQ MINIMUM STANDARDS LISTED ON THIS SHEET.

EROSION AND SEDIMENT CONTROL MEASURES

CONSTRUCTION ENTRANCE (3.02) – A CONSTRUCTION ENTRANCE WILL BE INSTALLED TO MINIMIZE THE AMOUNT OF MUD TRANSPORTED INTO EXISTING ROADS.

INLET PROTECTION (3.07) – INLET PROTECTION WILL BE INSTALLED AT THE STORM DRAIN INLET TO MINIMIZE THE AMOUNT OF SEDIMENT LADEN RUNOFF FROM ENTERING THE STORM DRAIN SYSTEM.

TEMPORARY SEEDING (3.31) – TEMPORARY SEEDING SHALL BE APPLIED TO TEMPORARY DIVERSION DIKES, TOPSOIL STOCKPILES, AND ALL AREAS TO BE ROUGH GRADED, BUT NOT FINISHED GRADED DURING THE INITIAL PHASE OF CONSTRUCTION. TEMPORARY SEEDING SHALL BE FAST GERMINATING, TEMPORARY VEGETATION AND INSTALLED IMMEDIATELY FOLLOWING GRADING, OR INSTALLATION IF A TEMPORARY MEASURE. SEE ALSO MINIMUM STANDARDS.

PERMANENT SEEDING (3.32) – PERMANENT SEEDING SHALL BE INSTALLED ON ALL DISTURBED AREAS OF THE SITE NOT OTHERWISE STABILIZED.

MULCHING (3.35) – ALL DISTURBED AREAS SHALL BE MULCHED AFTER SEEDING. STRAW MULCH SHALL BE APPLIED AT A RATE OF TWO TONS PER ACRE AND ANCHORED WITH 750 LBS PER ACRE OF FIBER MULCH OVER THE SEEDED AREA.

PERMANENT STABILIZATION
ALL AREAS DISTURBED SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISHED GRADING. PERMANENT SEEDING SHALL BE APPLIED IN ACCORDANCE WITH MINIMUM STANDARD 3.31, 3.32 & 3.35.

MAINTENANCE
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EVERY RUNOFF PRODUCING RAINFALL. A LOG OF DATES AND INSPECTIONS SHALL BE KEPT. ANY DEFICIENCIES THAT ARE FOUND SHALL BE CORRECTED IMMEDIATELY.

ALL DITCHES, SWALES, AND NATURAL WATERCOURSES DOWNSTREAM OF THIS PROJECT SHALL BE FIELD INSPECTED DURING AND AFTER CONSTRUCTION BY THE RLD TO ENSURE COMPLIANCE WITH DEQ'S MS-19. IF EROSION OR SCOUR IS OCCURRING THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL AFTER ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED AND THEN TEMPORARY MEASURES PROPERLY REMOVED.

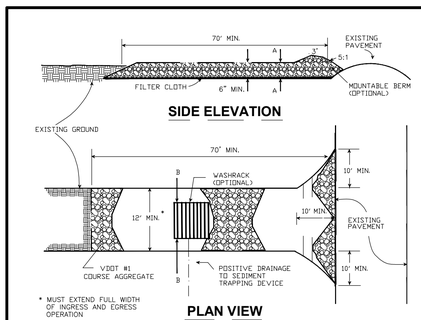
STORM WATER MANAGEMENT CONSIDERATION
NO STORMWATER MANAGEMENT IS REQUIRED AS THE AMOUNT OF LAND DISTURBANCE PROPOSED IS UNDER 1-ACRE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

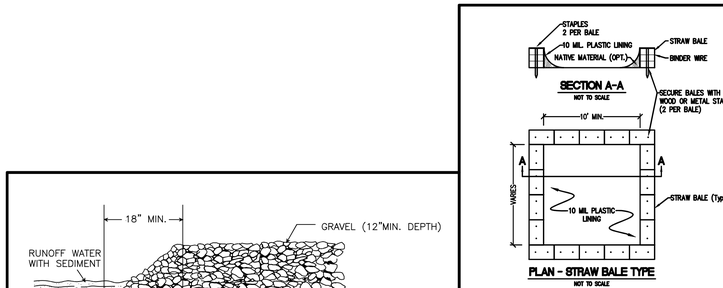
1. ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
2. THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
3. 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.
4. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
5. 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.
6. 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. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO ROANOKE COUNTY.
7. 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.

TOTAL DISTURBED AREA = 0.18 AC. = 7,600 SQ. FT.

NO.	TITLE	KEY	SYMBOL
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE	
3.07	INLET PROTECTION	IP	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.35	MULCHING	MU	

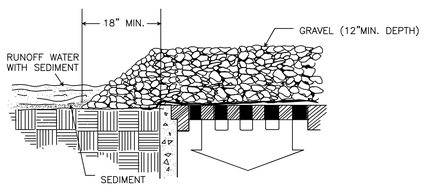


CE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



CONCRETE WASHOUT NOTES:

1. TEMPORARY CONCRETE WASHOUT ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. TEMPORARY WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50' FROM STORM DRAIN INLETS, OPEN DRAINAGE CHANNELS AND WATERCOURSES.
3. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
4. MATERIALS AND PROCEDURES USED TO CONSTRUCT ABOVE-GRADE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE ADEQUATE FOR THE ANTICIPATED VOLUME OF USE FOR THE PROJECT.
5. PLASTIC LINING MATERIAL SHALL BE A MINIMUM 10 MIL POLYETHYLENE SHEETING, FREE OF TEARS, HOLES OR OTHER DEFECTS THAT WOULD COMPROMISE THE INTEGRITY OF THE LINING.
6. ONCE CONCRETE WASTE MATERIAL HAS HARDENED, THE CONCRETE SHALL BE BROKEN UP, REMOVED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH ALL DISPOSAL REGULATIONS.
7. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE AND DISPOSED OF OR RECYCLED IN ACCORDANCE WITH ALL DISPOSAL REGULATIONS.
8. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED AND STABILIZED TO PREVENT EROSION.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

IP DROP INLET SEDIMENT FILTER

TEMPORARY STABILIZATION

TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

TS TEMPORARY SEEDING MIXTURE

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT. 1 – FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50 – 100
FEB. 16 – APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60 – 100
MAY. 1 – AUG. 31	GERMAN MILLET (SETARIA ITALICA)	50

LIME: 90 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE
FERTILIZER: 10-10-10 @ 10 LB / 1000 SF

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION WILL BE STABILIZED WITH PERMANENT SEEDING WITHIN 7 DAYS OR IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING WILL BE DONE ACCORDING TO STANDARD AND SPECIFICATION 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. PERMANENTLY SEEDED AREAS SHALL BE PROTECTED DURING ESTABLISHMENT WITH STRAW MULCH.

PS PERMANENT SEEDING MIXTURE

SEEDING AREA:	SEEDING RATE:
GENERAL TURF	
K-31 FESCUE	200 lbs/Ac
(Optional) PERENNIAL RYEGRASS	20 lbs/Ac
GENERAL SLOPE (3:1 or less)	
K-31 FESCUE	128 lbs/Ac
RED TOP GRASS	2 lbs/Ac
SEASONAL NURSE CROP	20 lbs/Ac
STEEP SLOPE (Greater than 3:1)	
K-31 FESCUE	108 lbs/Ac
RED TOP GRASS	2 lbs/Ac
SEASONAL NURSE CROP	20 lbs/Ac
CROWNVETCH	20 lbs/Ac

SEASONAL NURSE CROP SCHEDULE:

March, April – May 15th	ANNUAL RYE
May 16th – August 15th	FOXTAIL MILLET
August 16th – September, October	ANNUAL RYE
November – February	WINTER RYE

LIME: 90 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE
FERTILIZER: 10-20-10 @ 12 LB / 1000 SF
MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST 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. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

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COMMONWEALTH OF VIRGINIA
ANDREW P. LUMSDEN
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PROFESSIONAL ENGINEER

EROSION & SEDIMENT CONTROL NOTES AND DETAILS

DEVELOPMENT PLAN FOR
PEBBLE DRIVE DRAINAGE IMPROVEMENTS
PREPARED FOR
ROANOKE COUNTY DEVELOPMENT SERVICES
SITUATED IN
ROANOKE COUNTY, VIRGINIA

REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
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DATE: DECEMBER 7, 2023
SCALE: AS SHOWN
COMM. NO.: 2023-133
SHEET: 5 OF: 5

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APPROVED, 12/12/2023