PLANNING COMMISSION WORK SESSIO
Thursday, January 2, 2025 @ **6 PM**
Town Hall – 2nd Floor, East Conference Room

AGENDA

CALL TO ORDER

ROLL CALL

WORK SESSION BUSINESS

- **2400421 –** A request for preliminary plan approval for a major subdivision submitted by Ali Billoo for a subdivision containing nine (9) lots and sixteen (16) dwelling units located at 336 W Strasburg Road, identified on tax map 20A11, section 4, parcel 23B. The property is zoned R-2, Residential District.

- **2400673** – A Special Use Permit Application submitted by Pennoni Associates Inc. c/o Mike Artz for Multi-Family Apartments containing thirty-six (36) units in three (3) separate apartment houses containing twelve (12) units each and an office on a vacant parcel off of Royal Lane, identified by Tax Map 20A17-1-14B1. The property is zoned C-1, Community Business District

- **2400687** – A Rezoning application submitted by Skyline Realty Investments, LLC requesting an amendment to the zoning map to reclassify addresses 10, 30, 44, 52, 60 and a vacant lot on W. Strasburg Road identified by Tax Map 20A12, Section 3, Parcels 22, 26, 27A, 31C, 31 and 23 from C-1, Community Business District to R-3, Residential District.

- Data Center and Solar Discussion.

ADJOURNMENT

2400421 – A REQUEST FOR PRELIMINARY PLAN APPROVAL FOR A MAJOR SUBDIVISION SUBMITTED BY ALI BILLOO FOR A SUBDIVISION CONTAINING NINE (9)LOTS AND SIXTEEN (16) DWELLING UNITS LOCATED AT 336 W STRASBURG ROAD,IDENTIFIED ON TAX MAP 20A11, SECTION 4, PARCEL 23B. THE PROPERTY IS ZONED R-2, RESIDENTIAL DISTRICT.

2400421

TOWN OF FRONT ROYAL
DEPARTMENT OF PLANNING & ZONING
102 EAST MAIN STREET
P.O. BOX 1560
FRONT ROYAL, VA 22630

Main: 540.635.4236
Fax: 540.631.2727
Internet: www.frontroyalva.com

RECEIVED
JUL 11 2024
TOWN OF FRONT ROYAL
PLANNING & ZONING DEPARTMENT

APPLICATION FOR PRELIMINARY PLAN APPROVAL

(involving new streets, utilities or more than 8 lots)

MAJOR SUBDIVISIONS

The undersigned hereby applies for review by the Town of Front Royal Planning Commission of the Preliminary Major Subdivision Plat submitted herewith:

1. Applicant's Name Ali Billoo Phone 703-346-6254

   Address 7214 Sipes Lane, Annandale VA, 22003 billshomes@hotmail.com

2. Present Owner (if other than applicant) _____

   Address _____ Phone _____

3. Interest of applicant if other than owner _____

4. Name and profession of person designing preliminary plat Racey Engineering, PLLC

   Joshua Turner, P.E.: Civil Engineer

   Address 312 West Main Street, Luray VA, 22835 Phone 540-743-9227

5. Location of subdivision 336 West Strasburg Road, Front Royal VA, 22630

6. Total acreage 3.52 Zoning Classification R2

   No. of Lots 9 Tax Map Number 20A114 23B

7. Acreage of adjoining land in same ownership (if any) 0.05853

8. Development Plans:

   (A) Proposed number of dwellings. 14

   (B) Length of new public roads. 340'

   (C) Amount of open space. 1,780 sf

PLEASE COMPLETE REVERSE SIDE

9. Deed restrictions that apply or are contemplated. (If no restrictions, state "none", if "Yes" attach copy) none

10. Date of Sketch Plat Approval _____(Optional)

11. Attach: (A) Two Full Size Copies of Preliminary Plat
(B) Digital Copy of Preliminary Plat
(C) One 11 x 17 Copy of Preliminary Plat
(D) Additional documents required by Section 148-310.C of the Subdivision and Land Development Ordinance.

I hereby state that all of the above information and the statements contained herein submitted with this application are true.

7/11/24
Date

Signature of Applicant

Designated contact for applicant: _____

By submitting this application, the applicant grants permission to Town officials and employees to enter upon the property, which is the subject of this application, during reasonable hours and for purposes related to the application process.

Fee $725.00 * pd check # 3897 725.00 Date Paid 7-11-24

*Preliminary Plat fee is $500 per plat and $25 per lot.

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1. Action of the Town Planning Commission

Date _____ Approved _____ Disapproved _____

2. Notification of approval/disapproval sent to:

Town Council _____ Date _____

Applicant _____ Date _____

3. Amount of performance bond required for approval of final plat $_____

Comments:

_____

_____

_____

_____

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STRASBURG ROAD SUBDIVISION

FOR

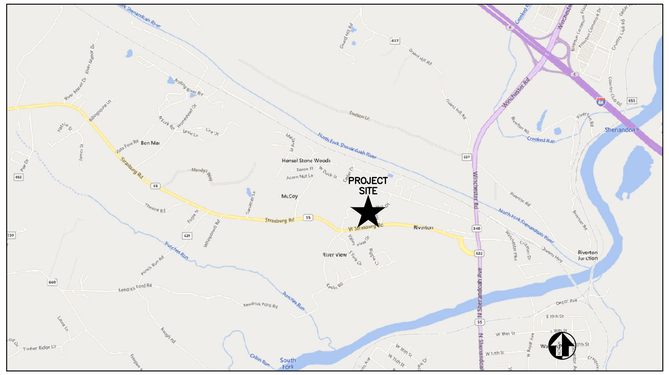
ALI BILLOO

TOWN OF FRONT ROYAL

WARREN COUNTY, VA

PROJECT SITE SUMMARY:

SITE ADDRESS:	336 W. STRASBURG ROAD FRONT ROYAL, VA 22630
OWNER/APPLICANT: ADDRESS:	ALI BILLOO 7214 SIPES LANE ANNANDALE, VA 22003
TELEPHONE NO:	(703) 346-6254
PROJECT ENGINEER: CONTACT: ADDRESS:	RACEY ENGINEERING, PLLC JOSHUA P. TURNER, P.E. 312 WEST MAIN STREET LURAY, VIRGINIA 22835
TELEPHONE NO:	(540) 743-9227
TAX MAP/PARCEL ID:	20A114 23B
DEED BOOK/INST NO:	INST#: 4952
PRESENT ZONING:	R2 (RESIDENTIAL)
MAG DISTRICT:	NORTH RIVER-TOWN
PROPERTY CLASS:	RESIDENTIAL
FLOOD ZONE; FEMA MAP NO.:	X; 51187C0104C
PRESENT USE: PROPOSED USE:	DWELLING SUBDIVISION
PROPERTY AREA:	3.52 ACRES
TOTAL DISTURBED AREA:	2.94 ACRES
SETBACKS:	FRONT – 30' BUILDING BACK – 10' BUILDING SIDE – 25' BUILDING
BEST MANAGEMENT PRACTICES:	[STORMTECH ISOLATOR ROW PLUS, BMP SPEC. NO. 12 – FILTERING PRACTICE] LATITUDE: 38°56'58.92" N LONGITUDE: 78°12'35.64" W



VICINITY MAP

SCALE: 1" = 2000'

PROJECT COORDINATES

38° 56' 56.35" N
78° 12' 37.02" W

PROPOSED USE:

THE PROPOSED SITE INCLUDES THE CONSTRUCTION OF A NEW SUBDIVISION CONSISTING OF 8 DUPLEX UNITS WITH ASSOCIATED PARKING, ACCESS ROADWAY, AND STORMWATER MANAGEMENT. THE ESTIMATED START TIME FOR THIS PROJECT IS MID TO LATE 2024, AND THE ESTIMATED COMPLETION TIME IS EARLY 2025. THERE IS AN EXPECTED 0.84 ACRE INCREASE IN IMPERVIOUS AREA FROM THIS PROJECT.

SINCE THE SITE DISTURBANCE IS GREATER THAN ONE (1) ACRE, A VSMP GENERAL CONSTRUCTION PERMIT IS REQUIRED. CONTRACTOR TO OBTAIN PERMIT COVERAGE NUMBER FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) THROUGH THE VSMP PROGRAM ADMINISTRATOR. SEE "VPDES GENERAL PERMIT REQUIREMENTS" ON SHEET T101 FOR MORE INFORMATION.

TOWN APPROVAL BLOCK

ALL TOWN REAL ESTATE TAXES HAVE BEEN PAID IN FULL

DIRECTOR OF FINANCE DATE

REVIEWED AND APPROVED BY THE TOWN OF FRONT ROYAL

DIRECTOR OF PLANNING & ZONING DATE

PLANNING COMMISSION CHAIR DATE

DIRECTOR OF PUBLIC WORKS DATE

DIRECTOR OF ENERGY SERVICES DATE

AREA TABULATION:
TOTAL SITE AREA: 3.52 AC
NUMBER OF LOTS: 8
TOTAL STREETS: 0.38 AC / 311 LF
OPEN SPACE/COMMON AREA: 1,780 SF
TOTAL RESIDUE: 0 SF

Sheet List Table

Sheet Number	Sheet Title
T100	COVER SHEET
T101	PROJECT NOTES
C100	EXISTING FEATURES
C101	PLAT SHEET
C200	LAYOUT PLAN
C201	UTILITY PLAN
C202	UTILITY PROFILES
C300	GRADING PLAN
C301	STORMTECH UG-1 DETAILS
C302	STORMTECH UG-1 DETAILS
C303	ROAD AND ENTRANCE PLAN
C400	ESC NARRATIVE
C401	ESC PLAN PHASE 1
C402	ESC PLAN PHASE 2
C500	ESC DETAILS
C501	ESC DETAILS
C502	CONSTRUCTION DETAILS
C600	DRAINAGE MAP
C601	VRRM MAP
C602	DEQ COVER SHEET

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
PROFESSIONAL ENGINEER

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
312 WEST MAIN ST - P.O. BOX 387
LURAY, VA 22835
PH: (540) 743-9227 - FAX: (540) 743-6018

CHECKED:JPT
DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION
COVER SHEET
ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276
PUBLISH DATE: 10/15/2024

T100

P:\2022\9276 - Ali Billoo - Strasburg Road Subdivision - 20A114-23B-Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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P:\2022\9276 - Ali Billoo - Strasburg Road Subdivision - 20A114-238-Civil\8. DESIGN\A. DWG\CIVIL\COMPOSITE

GENERAL NOTES AND STANDARDS:

CONSTRUCTION STANDARDS

ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THESE DRAWINGS, PROJECT SPECIFICATIONS, WITH ALL CURRENT APPLICABLE CODES, AND, UNLESS OTHERWISE SPECIFIED, WITH THE LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:

- THE COUNTY OF WARREN / TOWN OF FRONT ROYAL CONSTRUCTION STANDARDS AND SPECIFICATIONS
- VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD & BRIDGE SPECIFICATIONS
- VDOT ROAD AND BRIDGE STANDARDS
- VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)
- VIRGINIA DEPARTMENT OF HEALTH (VDH) SPECIFICATIONS
- VIRGINIA STORMWATER MANAGEMENT HANDBOOK
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- VIRGINIA WORK AREA PROTECTION MANUAL

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE, AND LOCAL CONSTRUCTION STANDARDS AS IDENTIFIED IN THESE PLANS. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING LICENSES AT THEIR EXPENSE, MAINTAIN COPIES OF THE PERMITS AND LICENSES ON-SITE AT ALL TIMES DURING CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL MAINTAIN A SET OF CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND A STORMWATER POLLUTION PREVENTION PLAN (IF APPLICABLE) ON-SITE AT ALL TIMES DURING CONSTRUCTION. A DESIGNATED RESPONSIBLE PERSON SHALL BE AVAILABLE FOR CONTACT BY INSPECTORS OR AGENCY OFFICIALS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT SCOPE PRIOR TO THE START OF CONSTRUCTION. IF ANY DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES ARE FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, SITE CONDITIONS, OR ANY RELATIVE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND CODES.
4. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM. DEVIATIONS FROM OR CHANGES TO THESE PLANS WILL NOT BE ALLOWED, UNLESS OTHERWISE APPROVED BY THE ENGINEER. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED THEREON, WITHOUT FIRST OBTAINING WRITTEN AUTHORIZATION FOR SUCH DEVIATIONS FROM THE OWNER AND ENGINEER, IT SHALL BE RESPONSIBLE FOR THE PAYMENT OF ALL COSTS TO CORRECT ANY WORK DONE, ALL FINES OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ALL SUCH COSTS TO CORRECT ANY SUCH WORK AND FROM ALL SUCH FINES AND PENALTIES, COMPENSATION AND PUNITIVE DAMAGES AND COSTS OF ANY NATURE RESULTING THEREFROM.
5. CONTRACTOR TO VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY. ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND NOTIFY THE OWNER AND THE ENGINEER OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK. CONTRACTOR SHALL NOTIFY ENGINEER AND OWNER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
6. THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE AND IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES ASSOCIATED WITH THE PROJECT WORK SCOPE DURING CONSTRUCTION. AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" OF VIRGINIA @811 FOR PROPER IDENTIFICATION OF EXISTING UTILITIES WITHIN THE PROJECT SITE. A CERTIFIED PRIVATE UTILITY LOCATION COMPANY SHALL BE HIRED TO IDENTIFY ANY ADDITIONAL EXISTING UTILITIES ON PRIVATE PROPERTY. IN ANY SITUATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
7. PROPERLY SECURE THE CONSTRUCTION AREA AT ALL TIMES AGAINST UNAUTHORIZED ENTRY AND ADEQUATELY PROTECT EQUIPMENT, MATERIALS, AND COMPLETED WORK FROM THEFT AND VANDALISM. THE OWNER IS NOT RESPONSIBLE FOR THE LOSS OF ANY MATERIAL STORED AT THE SITE.
8. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION UNTIL CLOSEOUT PROCEDURES ARE COMPLETED.
9. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL REQUEST THE MEETING WITH THE VESCP AUTHORITY AT LEAST ONE WEEK IN ADVANCE. IMMEDIATE SCHEDULING WITH THE VESCP AUTHORITY IS NOT GUARANTEED, AND CONTRACTOR SHOULD PROVIDE AMPLE NOTICE FOR DESIRED MEETING TIMES.
10. ANY DAMAGE OCCURRING TO THE EXISTING SITE INFRASTRUCTURE ON THIS OR THE ADJACENT SITE DURING THE CONSTRUCTION OPERATIONS AND/OR MOBILIZATION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXISTING DAMAGED ITEMS INCLUDING CONCRETE AND/OR PAVEMENT SECTIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS PRIOR TO PROJECT COMPLETION AT THE EXPENSE OF THE CONTRACTOR.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WITH MATCHING MATERIALS ANY PAVEMENT, DRIVEWAYS, WALKS, CURBS, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION INSIDE AND OUTSIDE OF THE LIMITS OF CONSTRUCTION.
12. THE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL THE REMOVED/DEMOLISHED MATERIAL FROM THE PROJECT SITE, UNLESS OTHERWISE NOTED, AND DISPOSE OF THE MATERIAL IN A SAFE, LEGAL MANNER.
13. ANY AND ALL UTILITIES AND/OR OBSTRUCTIONS (POWER POLES, TELEPHONE PEDESTALS, GUY WIRES, WATER METERS, ETC.) THAT ARE REQUIRED TO BE RELOCATED OR ADJUSTED DUE TO CONSTRUCTION SHALL BE DONE SO AT THE OWNERS/DEVELOPERS EXPENSE.
14. DIMENSIONS AND RADII ARE TO FACE OF CURB AND TO OUTSIDE FACE OF BUILDINGS, WHERE APPLICABLE, UNLESS OTHERWISE INDICATED.
15. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL/BUILDING PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY LOCATIONS.
16. SLOPES WITHIN THE LIMITS OF THE HANDICAPPED PARKING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. CROSSWALKS AND SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2.0% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.0% IN DIRECTION OF TRAVEL. SLOPES IN HANDICAP RAMPS SHALL BE BUILT IN CONFORMANCE WITH THE LATEST ADA AND LOCAL DESIGN STANDARDS, THE MORE STRINGENT SHALL APPLY.
17. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". ALL NEW SIGNS SHALL BE MOUNTED ON GALVANIZED POSTS AND IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
18. FIRE LANE DESIGNATION AND MARKING (IF REQUIRED) IS TO BE DETERMINED BY THE LOCAL FIRE DEPARTMENT WITH JURISDICTION, PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
19. ALL GROUND COVER AND LANDSCAPING SHALL BE PROPERLY MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. DEAD PLANT MATERIALS SHALL BE REMOVED AND REPLACED DURING THE NORMAL PLANTING SEASON.
20. ALL GRASS OR TURF AREAS THAT ARE IMPACTED OR DISTURBED BY VEHICLES, EQUIPMENT, OR ACTIVITY SHALL BE REPAIRED, REGRADED, AND RESEEDED TO THE SATISFACTION OF THE OWNER.
21. WHENEVER CONSTRUCTION OPERATIONS ENCROACH ON THE RIGHT-OF-WAY OF ADJACENT ROADWAYS, TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH LOCAL AND STATE STANDARDS.
22. NO MATERIALS OR EQUIPMENT SHALL BE STORED OR STOCKPILED WITHIN THE RIGHT-OF-WAY OF ADJACENT ROADWAYS.
23. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR COMPLETING AND IMPLEMENTING TRAFFIC CONTROL PLAN.

VPDES GENERAL PERMIT REQUIREMENTS:

1. LAND DISTURBANCE SHALL NOT COMMENCE UNTIL A REGISTRATION STATEMENT FOR THE VPDES GENERAL PERMIT FOR DISCHARGE FROM CONSTRUCTION ACTIVITIES (9VAC25-880) HAS BEEN SUBMITTED AND A PERMIT COVERAGE NUMBER FROM THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY IS PROVIDED TO THE PROGRAM ADMINISTRATOR. THIS INCLUDES THE DEVELOPMENT AND IMPLEMENTATION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
2. THE VESCP AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY AND ONE WEEK PRIOR TO FINAL INSPECTION. NO WORK ON-SITE CAN BE CONDUCTED WITHOUT FIRST HOLDING A PRE-CONSTRUCTION CONFERENCE WITH THE VESCP AUTHORITY.
3. THE FULL AND COMPLETE SWPPP SHALL BE KEPT ONSITE AT ALL TIMES DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE APPROVED VERSION OF THIS DOCUMENT FROM THE OWNER OR ENGINEER PRIOR TO BEGINNING CONSTRUCTION. THE SWPPP SHALL BE COMPRISED OF THE FOLLOWING:
   A. EROSION AND SEDIMENT CONTROL NARRATIVE AND PLAN
   B. STORMWATER MANAGEMENT NARRATIVE AND PLAN, ALONG WITH ANY SWM CALCULATIONS, REPORTS, AND/OR SUPPORTING APPENDICES
   C. POLLUTION PREVENTION PLAN (PPP)
   D. ANY ADDITIONAL CONTROL MEASURES NECESSARY TO ADDRESS A TMDL PURSUANT TO 9VAC25-870-54.E OF THE CODE OF VIRGINIA.
4. THE SWPPP SHALL BE AMENDED WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO STATE WATERS AND THAT HAS NOT BEEN PREVIOUSLY ADDRESSED IN THE SWPPP. THE SWPPP MUST BE MAINTAINED AT A CENTRAL LOCATION ONSITE. IF AN ONSITE LOCATION IS UNAVAILABLE, NOTICE OF THE SWPPP'S LOCATION MUST BE POSTED NEAR THE MAIN ENTRANCE AT THE CONSTRUCTION SITE.
5. RETAIN A COPY OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION ON SITE AND ADHERE TO THE STANDARDS LISTED AT ALL TIMES.
6. PRIOR TO ANY LAND DISTURBING ACTIVITY, CONTRACTOR SHALL PROVIDE THE NAME, CERTIFICATION INFORMATION, AND CONTACT INFORMATION OF THE DESIGNATED RESPONSIBLE LAND DISTURBER (RLD) TO THE APPROPRIATE AUTHORITY.

DEMOLITION NOTES:

1. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS SHALL ENSURE THAT COPIES OF ALL APPLICABLE PERMITS AND APPROVALS ARE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW. CONTRACTOR ALSO SHALL HAVE COMPLETED THE PRE-CONSTRUCTION CONFERENCE.
2. CONTRACTOR SHALL INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL AND/OR TREE PROTECTION MEASURES PRIOR TO SITE DISTURBANCE.
3. CONTRACTOR SHALL LOCATE (VERTICALLY AND HORIZONTALLY) ALL UTILITIES AND SERVICES, INCLUDING, BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
4. CONTRACTOR SHALL CONTACT THE APPLICABLE UTILITY SERVICE PROVIDER AND SHALL BE RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
5. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES & ADJACENT LANDOWNERS/BUSINESSES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS WHICH MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE ADJACENT PROPERTY OWNERS/TENANTS.
6. CONTRACTOR SHALL PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA REQUIREMENTS, TO ENSURE THE SAFETY OF THE PUBLIC AND ALL PARTIES INVOLVED.
7. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF THEIR ACTIVITIES.
8. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE WITH DIRECTION BY OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
9. CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
10. USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST DURING DEMOLITION IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
11. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
12. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
13. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND APPLICABLE CODES.

GRADING AND EARTHWORK NOTES:

1. ALL MATERIALS USED FOR FILL OR BACK-FILL SHALL BE FREE OF WOOD, ROOTS, OR ANY OTHER NON-COMPACTIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
2. SATISFACTORY MATERIAL FOR USE AS FILL FOR THIS PROJECT (UNLESS OTHERWISE SPECIFIED) INCLUDE THOSE CLASSIFIED IN ASTM D-2487 AS GW, GP, GM, FC, SW, SP, SM, SC, ML, AND CL GROUPS. THE MOISTURE CONTENT SHALL BE CONTROLLED WITHIN PLUS OR MINUS 2 PERCENTAGE POINTS OF OPTIMUM TO FACILITATE COMPACTION. GENERALLY, UNSATISFACTORY MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS PT, CH, MH, OL, OH, AND ANY SOIL TOO WET TO FACILITATE COMPACTION. CH AND MH SOILS MAY BE USED SUBJECT TO APPROVAL BY A PROFESSIONAL GEOTECHNICAL ENGINEER.
3. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACK-FILL AROUND DRAINAGE STRUCTURES OR IN UTILITY TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACK-FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698. THE CONTRACTOR SHALL PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER.
4. EMBANKMENT FILL AND TRENCH BACK-FILL SHALL BE PLACED IN LIFTS AT A MAXIMUM UN-COMPACTED DEPTH OF 8-INCHES AND 6-INCHES, RESPECTIVELY. DENSITY TESTS SHALL BE CONDUCTED AT THE FOLLOWING MINIMUM FREQUENCIES:
   - EMBANKMENTS FOR ROADS, STREETS, DAMS, ETC: ONE TEST PER LIFT PER 10,000 SQUARE FEET.
   - BACK-FILL AROUND STRUCTURES AND IN TRENCHES: ONE TEST PER LIFT PER 500 LINEAL FEET.
5. THE BUILDING'S STRUCTURAL ENGINEER SHALL DETERMINE SUITABLE SOILS TO BE USED AS FILL UNDER THE BUILDING PAD AND/OR ANY MODIFICATIONS OR TREATMENTS THE SOIL MUST UNDERGO PRIOR TO USE AS FILL.

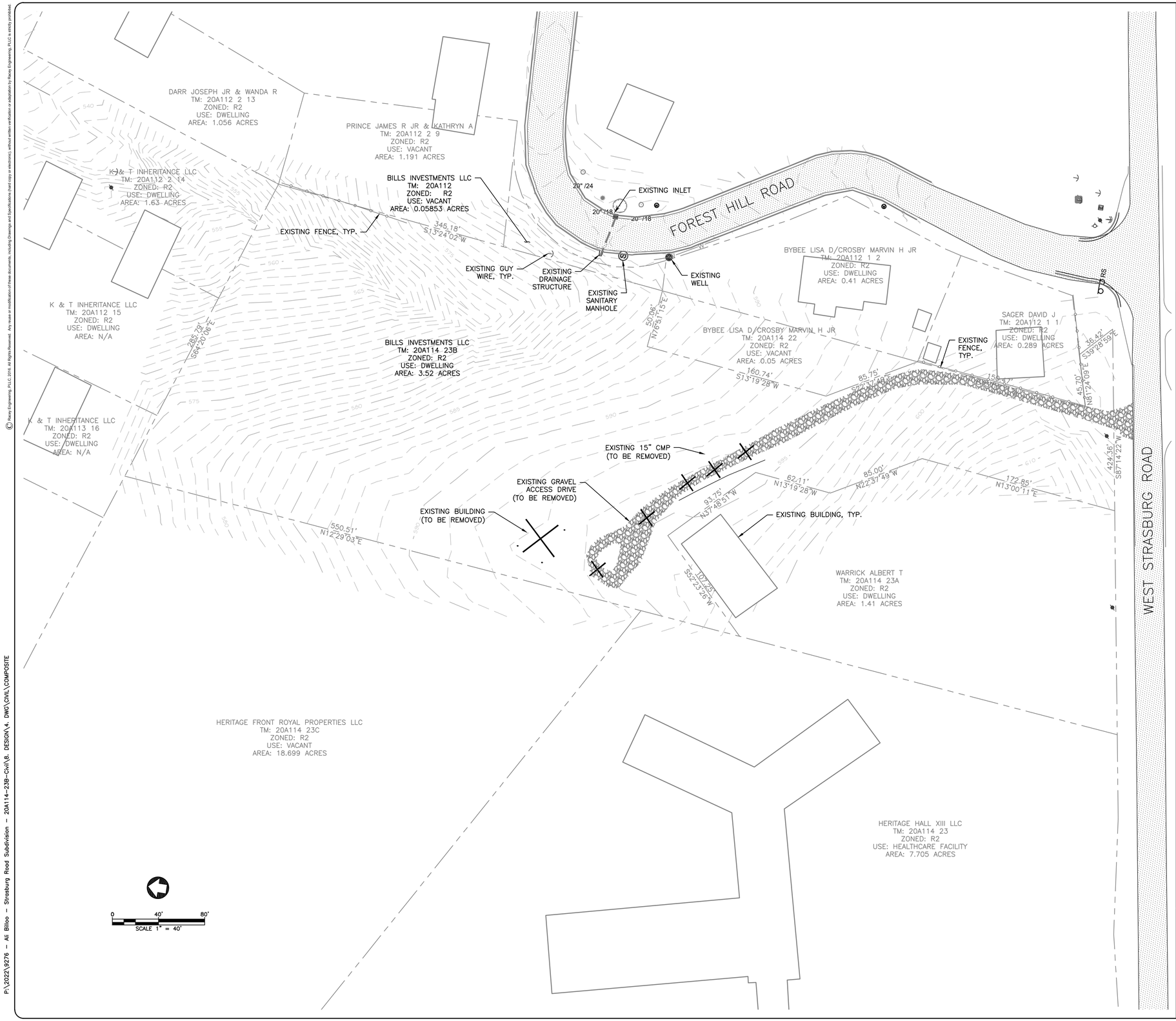
PAVEMENT AND DRAINAGE NOTES:

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S, LATEST EDITION, EXCEPT WHERE TOWN OF FRONT ROYAL STANDARDS ARE APPLICABLE.
2. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN RIGHT-OF-WAY PRIOR TO EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING START.
3. ALL STORM SEWER SHALL BE DUAL WALL HDPE PIPE WITH SMOOTH INTERIOR AND CORRUGATED EXTERIOR WALLS, EXCEPT AS NOTED. MINIMUM COVER IN PAVED AREAS SHALL BE 2' UNLESS OTHERWISE NOTED.
4. STORM DRAIN PIPE AND FLARED END SECTIONS ARE TO BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR HDPE PIPE AND END SECTIONS, OR SECTION 302 OF VDOT ROAD AND BRIDGE SPECIFICATIONS AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-76 FOR REINFORCED CONCRETE CULVERT AND STORM DRAIN PIPE.
5. CONCRETE DRAINAGE STRUCTURES MAY BE EITHER PRECAST OR CAST-IN-PLACE. ALL SHALL BE VDOT STANDARD (PER SECTION 100 OF THE ROAD AND BRIDGE STANDARDS).
6. ALL EXISTING STORM SEWER PIPES, DROP INLETS, AND CURB INLETS BEING UTILIZED BY A PART OF THE DRAINAGE SYSTEM SHALL BE CLEANED OF ERODED MATERIAL AT ALL STAGES OF CONSTRUCTION, AS DIRECTED BY THE ENGINEER. THE COST INCIDENTAL TO THIS IS TO BE INCLUDED IN THE CONTRACT PRICE FOR THE OTHER DRAINAGE ITEMS.
7. ALL STORM SEWER SHALL HAVE A MINIMUM OF 6" AGGREGATE BEDDING MATERIAL.
8. FOR STORM SEWER LINES WITH OVER 8' OF COVER, REFER TO THE MANUFACTURERS GUIDELINES FOR PROPER BACKFILL.
9. DRAIN BASINS AND INLINE DRAINS SHALL BE NYLOPLAST OR APPROVED EQUAL.
10. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING (UNLESS OTHERWISE NOTED) AND BE INSTALLED ACCORDINGLY.
11. STORM SEWER PIPES AS SHOWN ON THE PLANS ARE MEASURED FROM THE CENTERLINE OF EACH STRUCTURE AND INVERT ELEVATIONS ARE ESTABLISHED BASED ON THIS CENTER LINE DISTANCE. LENGTH CALL OUTS FOR PIPES WITH FLARED END SECTIONS WILL BE MEASURED TO THE JOINT. CONTRACTOR SHALL LOCATE ALL END SECTIONS TO MATCH THE BANK SLOPE AND THE PIPE SLOPE SHALL BE ADJUSTED AS NECESSARY.
12. ALL DROP INLETS AND CURB INLETS SHALL HAVE VDOT STD. IS-1 SHAPING AND ST-1 STEPS, WHERE APPLICABLE.
13. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
14. BOOT CONNECTIONS SHALL BE PROVIDED FOR ALL PLASTIC PIPES THAT TIE INTO A CONCRETE STRUCTURE.
15. ALL STORM SEWER PIPES, MANHOLES, AND CURB INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGES OF CONSTRUCTION.
16. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURE IN OPERABLE CONDITIONS.
17. ALL CURB AND GUTTER SHALL BE VDOT STANDARD, EXCEPT AS NOTED.
18. THE PAVEMENT DESIGN IS SUBJECT TO CHANGE DUE TO SOIL CONDITIONS AT THE TIME OF CONSTRUCTION, AS DETERMINED BY THE INSPECTORS FOR THE OWNER OR THE LOCALITY.
19. ANY NECESSARY PAVEMENT WIDENING BETWEEN THE EXISTING PAVEMENT AND PROPOSED IMPROVEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.
20. WHERE PAVEMENT IS BEING REMOVED, THE CONTRACTOR SHALL REMOVE AGGREGATE BASE MATERIAL TO SUB-GRADE.
21. EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT TO BE REMOVED) SHALL BE REPAIRED TO LIKE-NEW CONDITION.
22. IN ACCORDANCE WITH HANDICAP ACCESSIBILITY REQUIREMENTS, ALL APPLICABLE CODES AND REQUIREMENTS FOR ACCESSIBILITY FOR DISABLED PERSONS SHALL BE STRICTLY COMPLIED WITH.
23. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE SO THAT RUNOFF WILL DRAIN BY GRAVITY FLOW ACROSS NEW PAVEMENT AREAS TO NEW OR EXISTING DRAINAGE INLETS OR SHEET FLOW OVERLAND.
24. ALL UNSUITABLE MATERIAL UNDER STRUCTURES AND/OR PAVED AREAS SHALL BE DISPOSED OF OFFSITE AT THE CONTRACTOR'S EXPENSE.
25. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORM RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.
26. WHEN TYING INTO EXISTING PAVEMENT, THE CONTRACTOR SHALL NEATLY SAW CUT TO A STRAIGHT LINE THE EXISTING PAVEMENT, AND ALL PAVING ON THE NEW PAVEMENT SIDE OF THE CUT SHALL BE COMPLETELY REMOVED AND REPLACED WITH SPECIFIED MATERIAL. THE CUT LINE SHALL BE FULL-DEPTH AND COATED WITH A TACK COAT TO FURNISH A BOND BETWEEN THE EXISTING SURFACE COURSE AND THE NEW SURFACE COURSE.
27. WHEN TYING TO EXISTING CURB/GUTTER, THE CONTRACTOR SHALL NEATLY SAW CUT THE EXISTING PAVEMENT AND IT SHALL BE REMOVED FOR A DISTANCE OF 2'0" FROM FACE OF THE CURB AND 2'0" FROM THE EDGE OF CURB AND GUTTER AND THE SUBGRADE, BASE COURSE, AND PAVING SHALL BE REPLACED WITH NEW PRODUCTS.

GENERAL UTILITY NOTES:

1. NOTHING ON THESE CONTRACT DRAWINGS SHALL BE CONSTRUED AS A GUARANTEE THAT UTILITIES INDICATED AS EXISTING ARE IN THE LOCATION INDICATED OR THAT THEY ACTUALLY EXIST, OR THAT OTHER EXISTING UTILITIES ARE NOT WITHIN THE AREA OF OPERATIONS. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL MAKE ALL NECESSARY INVESTIGATIONS TO DETERMINE THE EXISTENCE, LOCATIONS, AND ELEVATIONS OF EXISTING UTILITIES IN THE WORK AREA. CONTACT THE ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS TO PERMIT REVISIONS.
2. CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN HEREON AND ANY OTHER EXISTING UTILITIES NOT SHOWN ON THESE PLANS. IF A UTILITY IS DAMAGED DURING CONSTRUCTION, IMMEDIATE REPAIRS SHALL BE MADE AND THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF DAMAGE TO UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.
3. THE CONTRACTOR SHALL PROVIDE THE TOWN OF FRONT ROYAL A MINIMUM OF 96 HOURS NOTIFICATION PRIOR TO ANY INTERRUPTION OF WATER SERVICES, SEWER SERVICES, STREET TRAFFIC, OR STORM WATER. AND THE WORK SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF THE TOWN OF FRONT ROYAL.
4. THE CONTRACTOR SHALL COORDINATE WATER, SEWER, AND STORM WATER CONNECTIONS/CONSTRUCTION WITH THE TOWN OF FRONT ROYAL FOR PURPOSES OF ON-SITE INSPECTION.
5. THE CONTRACTOR SHALL CONTACT THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
6. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES/SERVICES WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND ENSURE PROPER DEPTHS ARE ACHIEVED. THE JURISDICTION UTILITY REQUIREMENTS SHALL ALSO BE MET, AS WELL AS COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, THE ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE.
7. THE CONTRACTOR SHALL PERFORM WHATEVER TEST EXCAVATION OR OTHER INVESTIGATION IS NECESSARY TO VERIFY TIE-IN INVERTS, CROSSINGS, LOCATIONS AND CLEARANCES, AND SHALL REPORT IMMEDIATELY ANY DISCREPANCIES TO THE ENGINEER.

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SURVEY SOURCE AND INFORMATION:

SOURCE: THIS TOPOGRAPHIC SURVEY WAS COMPLETED BY RACEY ENGINEERING, PLLC ON OR BEFORE FEBRUARY 9, 2024, FROM ACTUAL CONVENTIONAL AND RTK GPS SURVEY METHODS FROM RACEY ENGINEERING, PLLC ESTABLISHED CONTROL. THIS MAP MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

HORIZONTAL AND VERTICAL DATUM: VA NAD83, NAVD88 BASED UPON GPS OBSERVATION PERFORMED BY RACEY ENGINEERING, PLLC.

CONTOUR INTERVAL: 1 FT.

THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE COMMITMENT OR TITLE REPORT AND DOES NOT THEREFORE, NECESSARILY INDICATE ALL EASEMENTS AND ENCUMBRANCES ON THE PROPERTY THAT MIGHT BE DISCLOSED IN A TITLE SEARCH.

UTILITIES SHOWN HEREON ARE BASED ON VISIBLE, PHYSICAL EVIDENCE. UNDERGROUND UTILITIES WERE NOT MARKED AS PART OF THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO HAVE UTILITIES MARKED PRIOR TO LAND DISTURBANCE OF ANY KIND. SEE SHEET T101 FOR MORE INFORMATION.

PROPERTY LINES SHOWN HEREON ARE COMPILED FROM RECORD PLAT (DEED BOOK 306, PAGE 41) AND TOWN/COUNTY GIS OVERLAY.

RACEY ENGINEERING, PLLC MAY PROVIDE BENCHMARKS FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHOWN ON THESE PLANS. ALL OTHER EXISTING ELEVATIONS ARE FOR REFERENCE TO EXISTING CONDITIONS ONLY. DO NOT USE SPOT ELEVATIONS, FINISH FLOOR ELEVATIONS, ELEVATIONS ON MANHOLES, ELEVATIONS ON SURVEY NAILS, SURVEY HUBS, CONTROL POINTS (HORIZONTAL POINTS PROVIDED) OR ANY OTHER POINTS FOR CONSTRUCTION OTHER THAN THE PROVIDED BENCHMARKS. FAILURE TO UTILIZE AND VERIFY THE PROVIDED BENCHMARKS COULD RESULT IN DAMAGES AND ADDITIONAL COST THAT ARE THE CONTRACTOR'S RESPONSIBILITY.

DEMOLITION NOTES:

1. PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS SHALL ENSURE THAT COPIES OF ALL APPLICABLE PERMITS AND APPROVALS ARE MAINTAINED ON SITE AND AVAILABLE FOR REVIEW. CONTRACTOR ALSO SHALL HAVE COMPLETED THE PRE-CONSTRUCTION CONFERENCE.
2. CONTRACTOR SHALL INSTALL THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL AND/OR TREE PROTECTION MEASURES PRIOR TO SITE DISTURBANCE.
3. CONTRACTOR SHALL LOCATE (VERTICALLY AND HORIZONTALLY) ALL UTILITIES AND SERVICES, INCLUDING, BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.
4. CONTRACTOR SHALL CONTACT THE APPLICABLE UTILITY SERVICE PROVIDER AND SHALL BE RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
5. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES & ADJACENT LANDOWNERS/BUSINESSES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS WHICH MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE ADJACENT PROPERTY OWNERS/TENANTS.
6. CONTRACTOR SHALL PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA REQUIREMENTS, TO ENSURE THE SAFETY OF THE PUBLIC AND ALL PARTIES INVOLVED.
7. THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE.
8. THE DEMOLITION CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN AS A RESULT OF THEIR ACTIVITIES.
9. IN THE ABSENCE OF SPECIFICATIONS, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE WITH DIRECTION BY OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
10. CONTRACTOR SHALL CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.
11. USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST DURING DEMOLITION IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
12. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
13. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
14. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND APPLICABLE CODES.

X TO BE REMOVED

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1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
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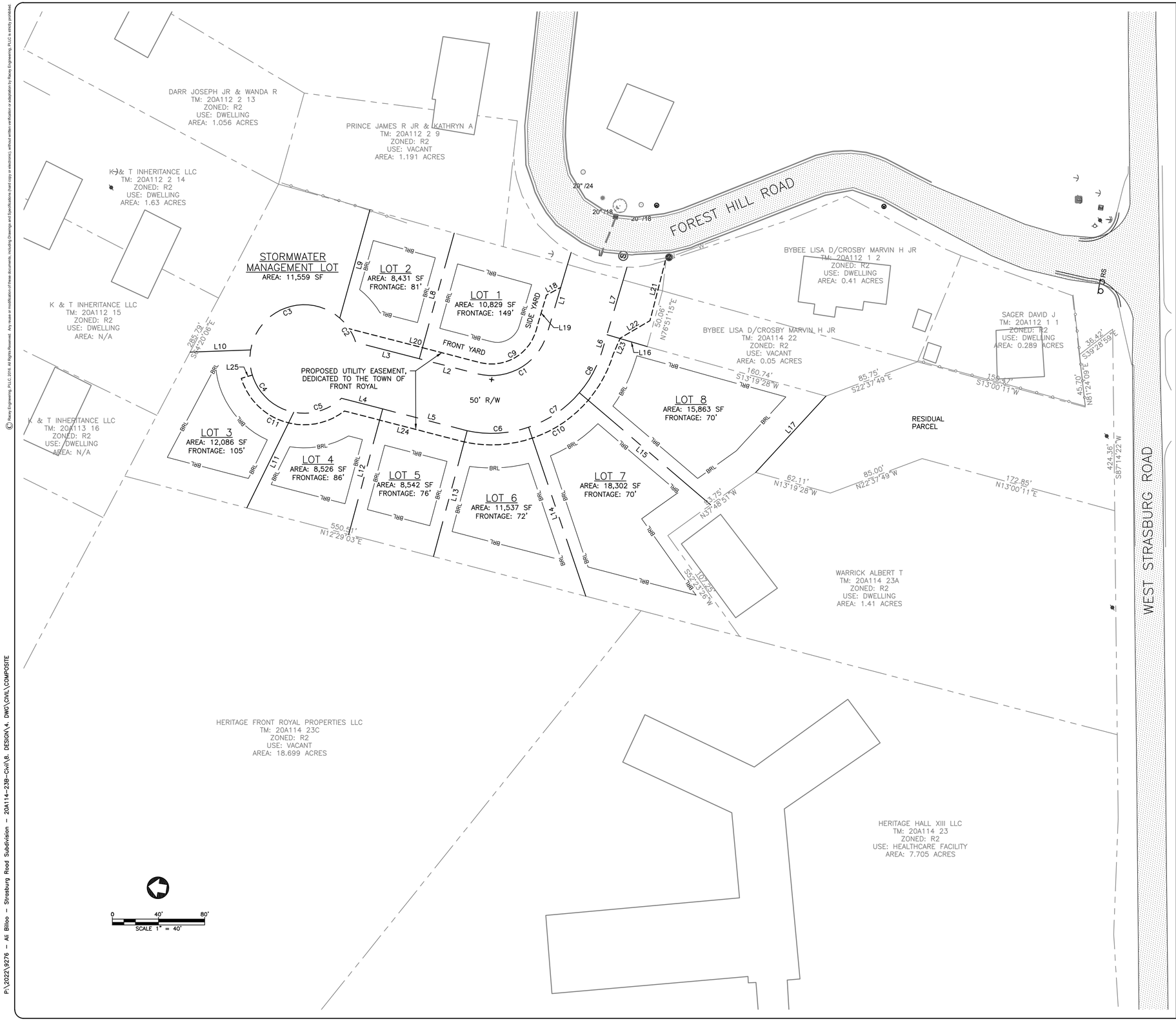
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STRASBURG ROAD SUBDIVISION
EXISTING FEATURES
ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

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PARCEL LINE DATA		
SEGMENT	LENGTH	DIRECTION
L1	62.96'	S82° 30' 26"E
L2	51.79'	S5° 28' 51"W
L3	56.89'	S5° 28' 51"W
L4	36.80'	N5° 28' 49"E
L5	75.67'	N5° 28' 49"E
L6	14.36'	N82° 30' 26"W
L7	61.08'	N82° 30' 26"W
L8	113.03'	S83° 28' 50"E
L9	97.52'	N83° 25' 14"W
L10	52.49'	S11° 06' 00"E
L11	92.32'	N72° 52' 29"W
L12	112.67'	S83° 51' 58"E
L13	112.83'	N83° 57' 50"W
L14	154.58'	N62° 18' 59"E
L15	149.44'	N31° 27' 54"E
L16	36.31'	N7° 29' 34"E
L17	89.96'	S56° 20' 11"E
L18	14.14'	S37° 30' 26"E
L19	32.33'	S82° 30' 26"E
L20	117.17'	S5° 28' 51"W
L21	53.58'	S84° 31' 11"E
L22	29.85'	S39° 31' 11"E
L23	14.94'	S75° 12' 18"E
L24	107.47'	S5° 28' 49"W
L25	10.00'	N26° 10' 45"W

PARCEL CURVE DATA						
SEGMENT	LENGTH	RADIUS	CENTRAL ANGLE	TANGENT LENGTH	CHORD LENGTH	CHORD BEARING
C1	76.78'	50.00'	87.99°	48.27'	69.46	S38° 30' 48.57"E
C2	25.48'	47.00'	31.07°	13.06'	25.17	S47° 37' 13.45"W
C3	99.61'	47.00'	121.44°	83.82'	81.98	S28° 38' 07.81"E
C4	72.67'	47.00'	88.60°	45.86'	65.64	N46° 20' 42.31"E
C5	44.80'	47.00'	54.61°	24.26'	43.12	N25° 15' 36.18"W
C6	53.94'	100.07'	30.88°	27.64'	53.29	N12° 18' 14.48"W
C7	53.85'	100.23'	30.78°	27.59'	53.20	N43° 07' 26.36"W
C8	41.84'	100.39'	23.88°	21.23'	41.53	N70° 31' 16.46"W
C9	61.43'	40.00'	87.99°	38.62'	55.57	S38° 30' 48.74"E
C10	164.78'	110.13'	85.73°	102.21'	149.84	S39° 37' 07.72"E
C11	110.04'	57.00'	110.62°	82.34'	93.73	S08° 30' 40.19"W

CURRENT ZONING – R2
TAX MAP NUMBER: 20A114-23B

PER ZONING ORDINANCE:
FRONT SETBACK: 30'
SIDE SETBACK: 10'
REAR SETBACK: 25'
MINIMUM FRONTAGE: 70'
MINIMUM LOT SIZE: 8,000 SF

CORNER LOTS:
FRONT SETBACK: 30'
SIDE SETBACK: 10'
ROAD-ADJACENT SETBACK: 25'
REAR SETBACK: 25'
MINIMUM FRONTAGE: 100'

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COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
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DESIGNED:HV | DRAWN:HV | CHECKED:JPT

STRASBURG ROAD SUBDIVISION

PLAT SHEET

ALI BILLOO
WARREN COUNTY, VA

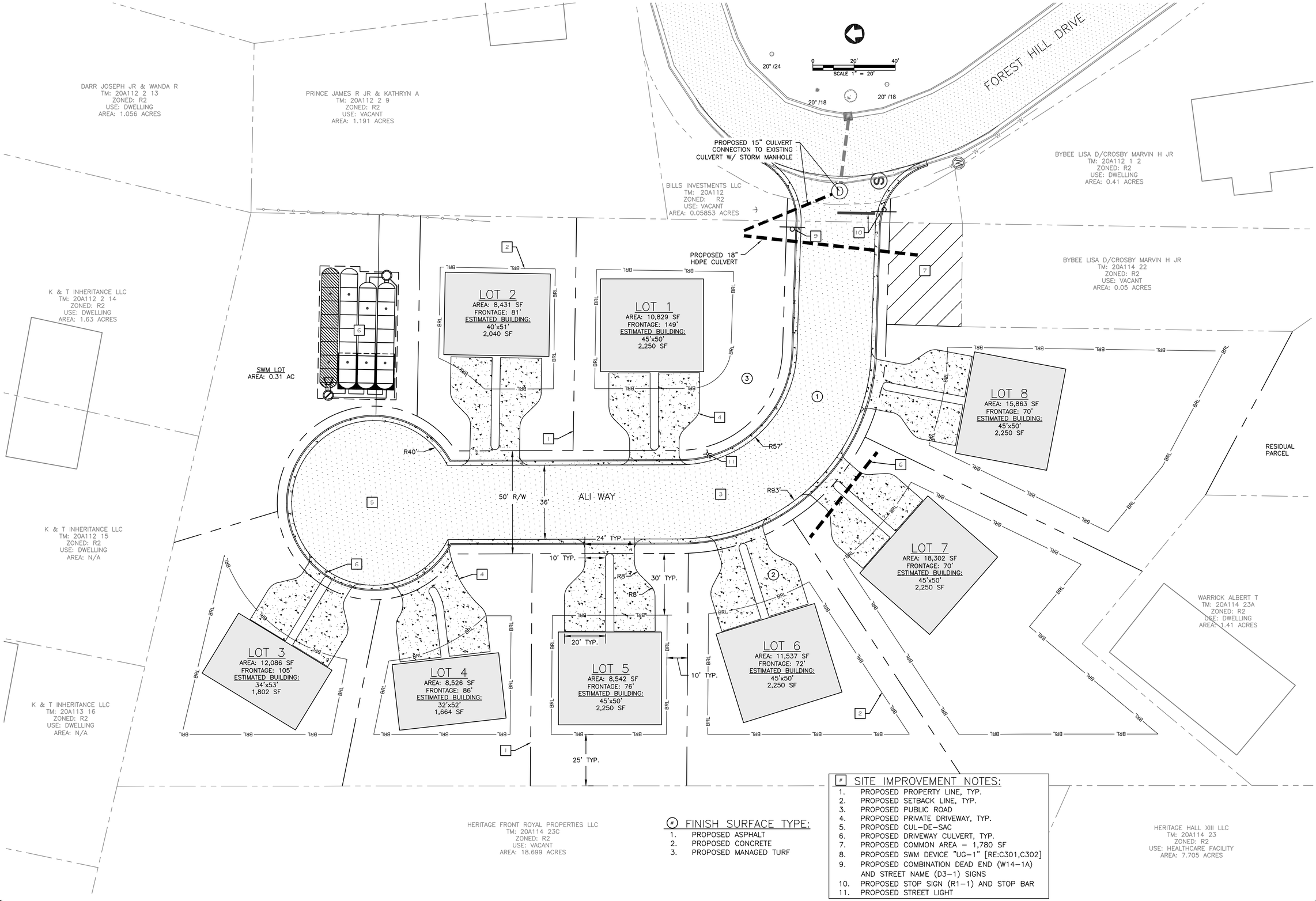
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SITE IMPROVEMENT NOTES:

1. PROPOSED PROPERTY LINE, TYP.
2. PROPOSED SETBACK LINE, TYP.
3. PROPOSED PUBLIC ROAD
4. PROPOSED PRIVATE DRIVEWAY, TYP.
5. PROPOSED CUL-DE-SAC
6. PROPOSED DRIVEWAY CULVERT, TYP.
7. PROPOSED COMMON AREA – 1,780 SF
8. PROPOSED SWM DEVICE "UG-1" [RE:C301,C302]
9. PROPOSED COMBINATION DEAD END (W14-1A) AND STREET NAME (D3-1) SIGNS
10. PROPOSED STOP SIGN (R1-1) AND STOP BAR
11. PROPOSED STREET LIGHT

(#) FINISH SURFACE TYPE:

1. PROPOSED ASPHALT
2. PROPOSED CONCRETE
3. PROPOSED MANAGED TURF

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STRASBURG ROAD SUBDIVISION

LAYOUT PLAN

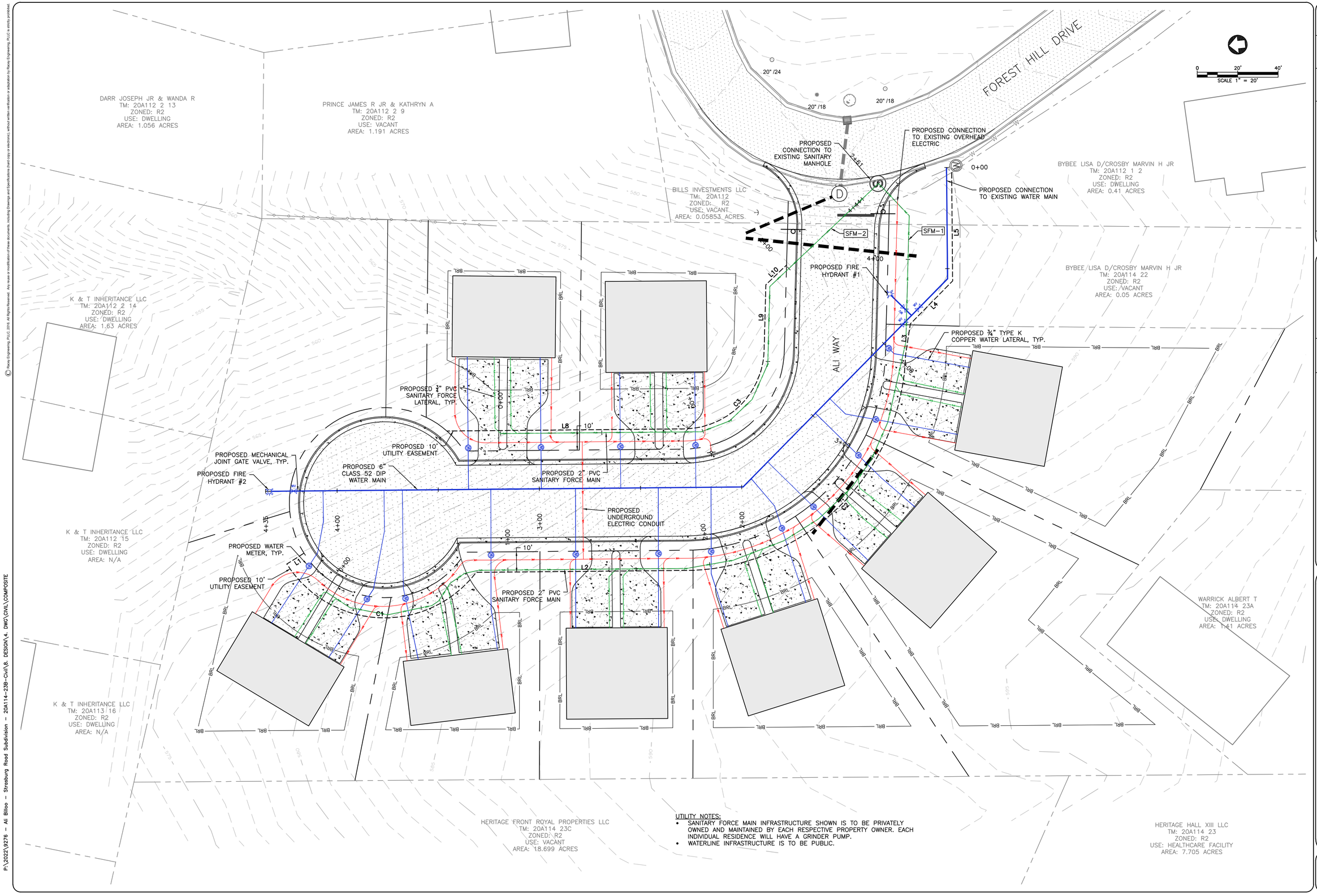
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WARREN COUNTY, VA

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UTILITY NOTES:

- SANITARY FORCE MAIN INFRASTRUCTURE SHOWN IS TO BE PRIVATELY OWNED AND MAINTAINED BY EACH RESPECTIVE PROPERTY OWNER. EACH INDIVIDUAL RESIDENCE WILL HAVE A GRINDER PUMP.
- WATERLINE INFRASTRUCTURE IS TO BE PUBLIC.

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STRASBURG ROAD SUBDIVISION

UTILITY PLAN

ALI BILLOO
WARREN COUNTY, VA

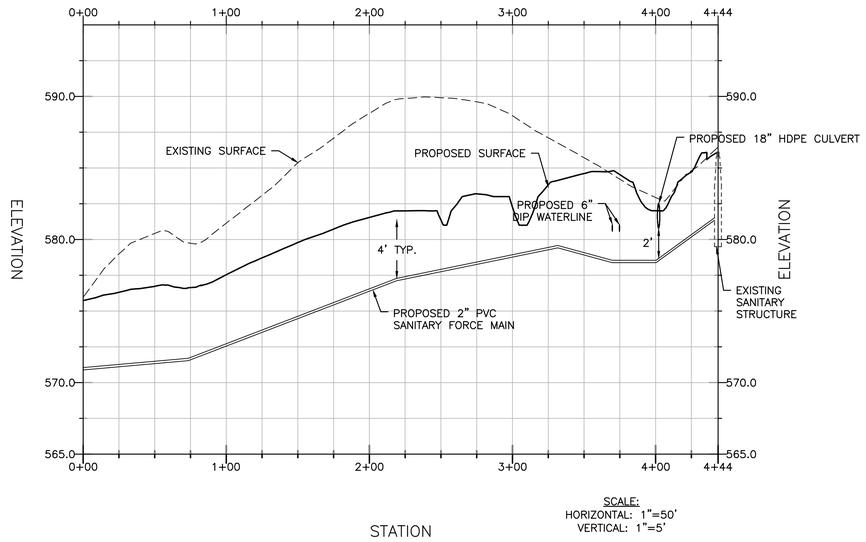
RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

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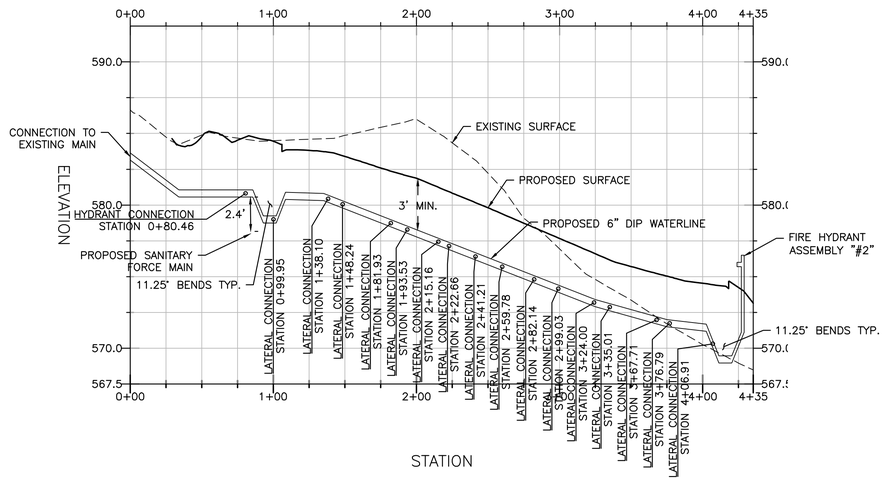
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SANITARY SEWER SFM-1 PROFILE



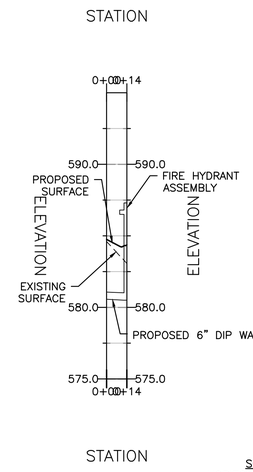
SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

WATER MAIN PROFILE



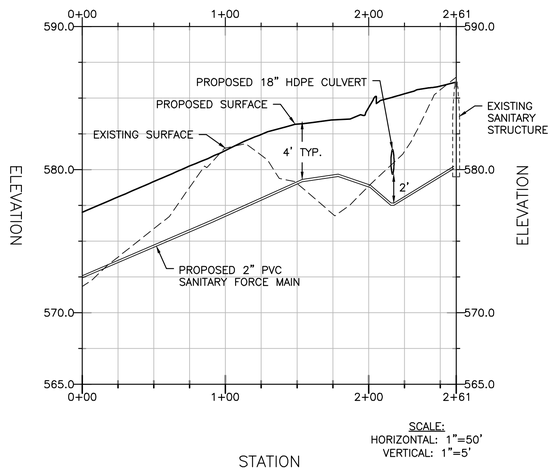
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HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

FIRE HYDRANT #1



SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

SANITARY SEWER SFM-2 PROFILE



SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

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1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
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10/15/24
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DESIGNED:HV

STRASBURG ROAD SUBDIVISION

UTILITY PROFILES

ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276
PUBLISH DATE: 10/15/2024

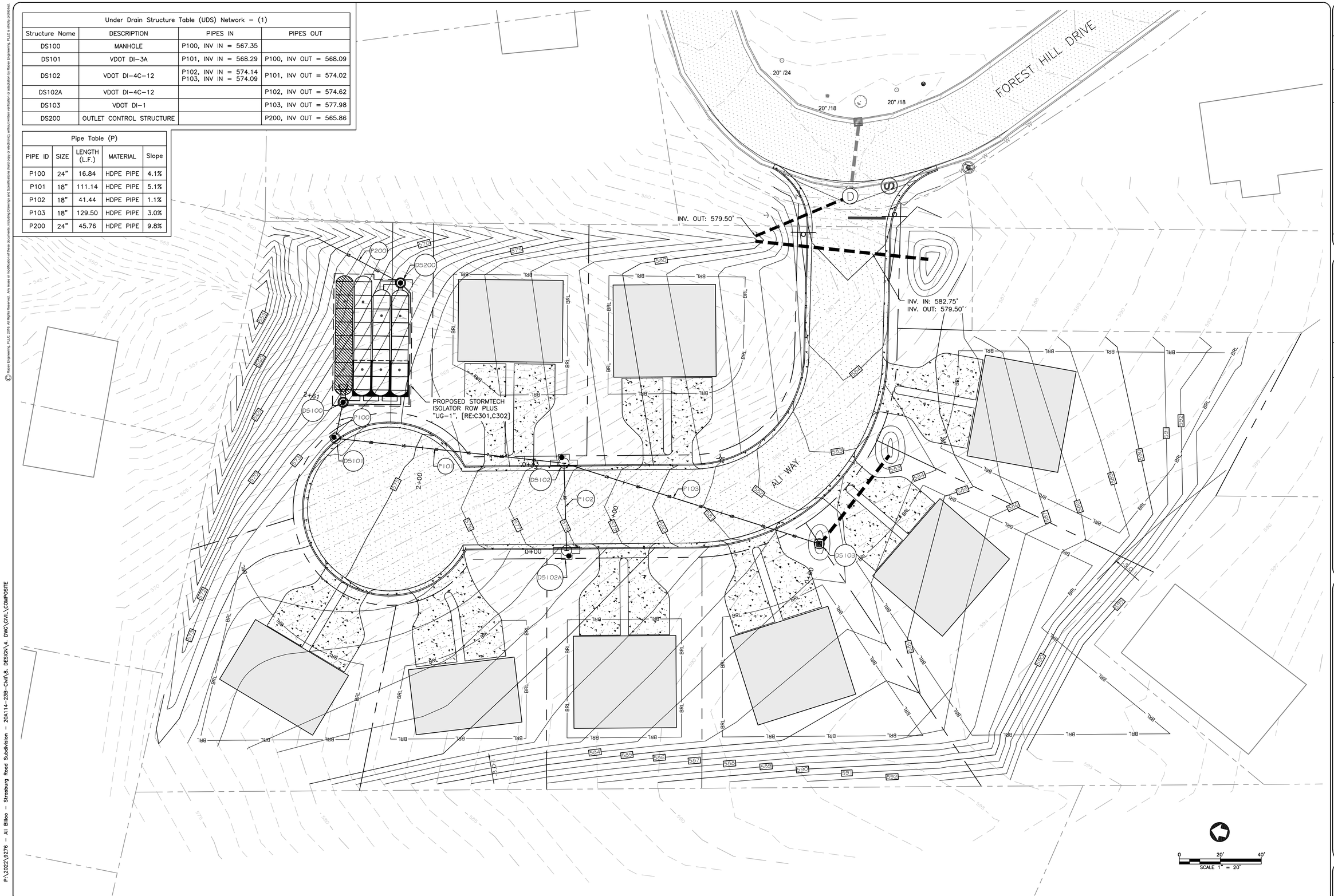
C202

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Under Drain Structure Table (UDS) Network – (1)			
Structure Name	DESCRIPTION	PIPES IN	PIPES OUT
DS100	MANHOLE	P100, INV IN = 567.35	
DS101	VDOT DI-3A	P101, INV IN = 568.29	P100, INV OUT = 568.09
DS102	VDOT DI-4C-12	P102, INV IN = 574.14 P103, INV IN = 574.09	P101, INV OUT = 574.02
DS102A	VDOT DI-4C-12		P102, INV OUT = 574.62
DS103	VDOT DI-1		P103, INV OUT = 577.98
DS200	OUTLET CONTROL STRUCTURE		P200, INV OUT = 565.86

Pipe Table (P)				
PIPE ID	SIZE	LENGTH (L.F.)	MATERIAL	Slope
P100	24"	16.84	HDPE PIPE	4.1%
P101	18"	111.14	HDPE PIPE	5.1%
P102	18"	41.44	HDPE PIPE	1.1%
P103	18"	129.50	HDPE PIPE	3.0%
P200	24"	45.76	HDPE PIPE	9.8%



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STRASBURG ROAD SUBDIVISION

GRADING PLAN

ALI BILLOO

WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

C300

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

ADS SiteAssist® FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

9276 - FRONT ROYAL SUBDIVISION

FRONT ROYAL, VA, USA

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-7200.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

1. STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

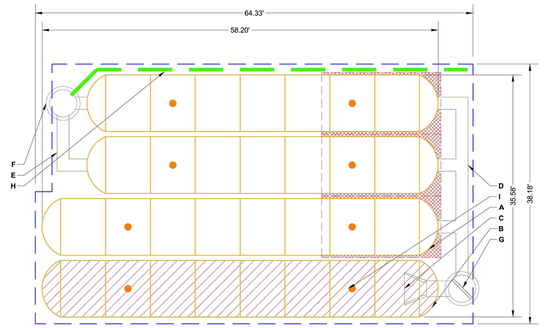
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS:	
30	STORMTECH MC-7200 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.75
8	STORMTECH MC-7200 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	8.25
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	7.75
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	7.75
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	7.75
9864	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	6.75
		TOP OF MC-7200 CHAMBER:	5.75
		24" ISOLATOR ROW PLUS INVERT:	0.94
		18" x 18" BOTTOM MANIFOLD INVERT:	0.91
2410	SYSTEM AREA (SF)	18" x 18" BOTTOM MANIFOLD INVERT:	0.91
205.0	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	0.91
		BOTTOM OF MC-7200 CHAMBER:	0.75
		UNDERDRAIN INVERT:	0.00
		BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	18" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP18B / TYP OF ALL 18" BOTTOM CONNECTIONS	1.97"	
PREFABRICATED END CAP	B	24" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.26"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP		
MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.97"	
MANIFOLD	E	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.97"	
CONCRETE STRUCTURE	F	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		8.0 CFS OUT
CONCRETE STRUCTURE	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		16.5 CFS IN
WEIR	H			
UNDERDRAIN	I	6" ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		
INSPECTION PORT	J	4" SEE DETAIL (TYP 8 PLACES)		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

9276 - FRONT ROYAL SUBDIVISION
FRONT ROYAL, VA, USA
DATE: DRAWN: HV CHECKED: N/A
PROJECT #:

No.	Submittal / Revision	DATE	DRW	CHK	By	Appr'd	Date
1	1ST SUBMITTAL TOWN				HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN				HV	JPT	10/15/24

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0 10 20

SHEET 2 OF 5

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
PROFESSIONAL ENGINEER

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DESIGNED:HV
PUBLISH DATE: 10/15/2024

STRASBURG ROAD SUBDIVISION
STORMTECH UG-1 DETAILS
ALI BILLOO
WARREN COUNTY, VA

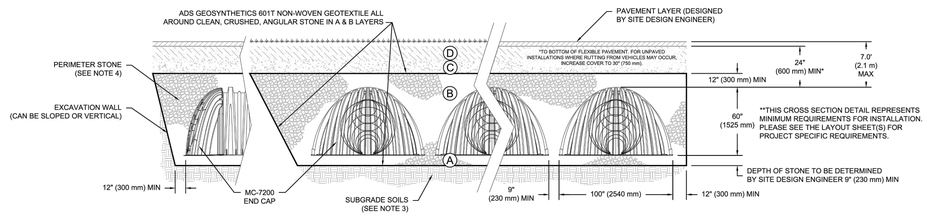
RACEY PROJECT NUMBER: 9276

C301

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

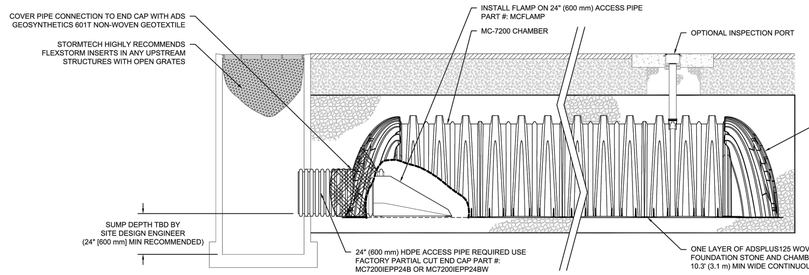
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



MC-7200 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

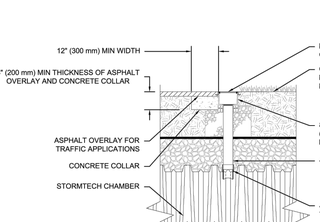
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL (MC SERIES CHAMBER)
NTS

9276 - FRONT ROYAL SUBDIVISION
FRONT ROYAL, VA, USA
DATE: DRAWN: HV CHECKED: N/A
PROJECT #:

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

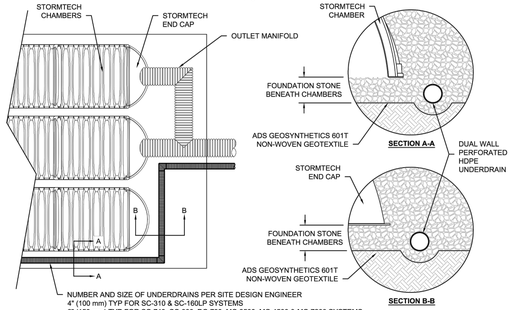
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SHEET 4 OF 5

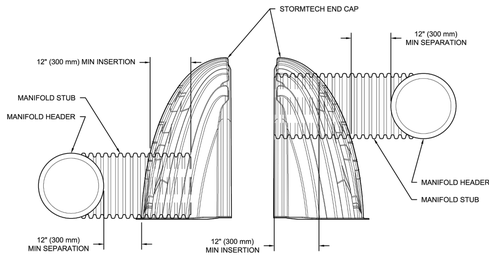
P:\2022\9276 - Ali Billoo - Strasburg Road Subdivision - 20A114-23B-Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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UNDERDRAIN DETAIL
NTS

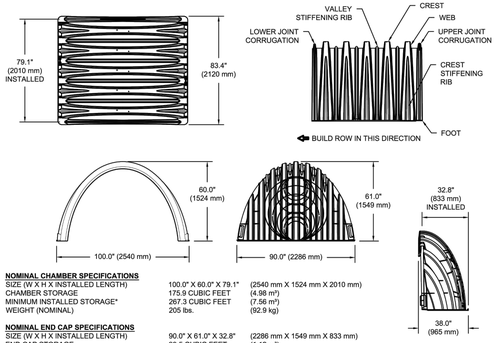


MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

MC-7200 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	100.0" X 60.0" X 79.1"	(2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE	175.9 CUBIC FEET	(4.98 m³)
MINIMUM INSTALLED STORAGE*	267.3 CUBIC FEET	(7.56 m³)
WEIGHT (NOMINAL)	205 lbs.	(92.9 kg)

NOMINAL END CAP SPECIFICATIONS

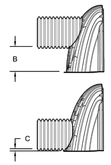
SIZE (W X H X INSTALLED LENGTH)	90.0" X 61.0" X 32.8"	(2286 mm X 1549 mm X 833 mm)
END CAP STORAGE	39.5 CUBIC FEET	(1.12 m³)
MINIMUM INSTALLED STORAGE*	115.3 CUBIC FEET	(3.26 m³)
WEIGHT (NOMINAL)	90 lbs.	(40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW			
MC7200IEPP18B		---	1.97" (50 mm)
MC7200IEPP18BW			
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW			
MC7200IEPP24B		---	2.26" (57 mm)
MC7200IEPP24BW			
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

9276 - FRONT ROYAL SUBDIVISION
FRONT ROYAL, VA, USA
DATE: DRAWN: HV
PROJECT # CHECKED: N/A

No.	DESCRIPTION	DATE	DRW	CHK
1	1ST SUBMITTAL TOWN	06/28/24	HV	JPT
2	2ND SUBMITTAL TOWN	10/15/24	HV	JPT

THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMISSION TO THE ENGINEER. THE CONTRACTOR SHALL DETERMINE AND VERIFY ALL FIELD CONDITIONS AND DIMENSIONS. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

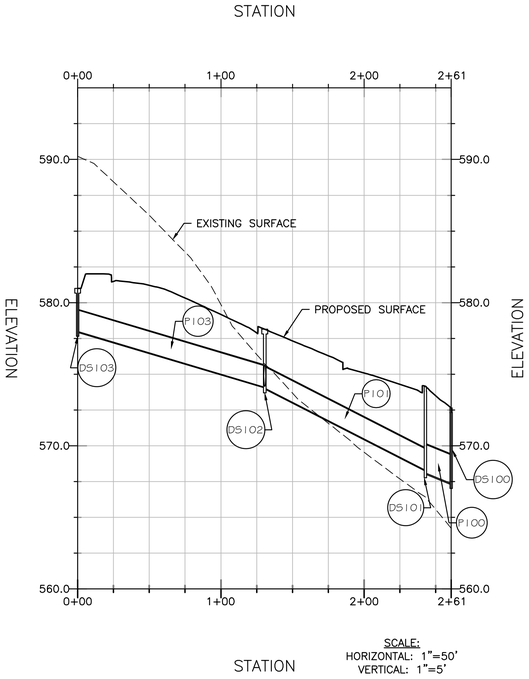
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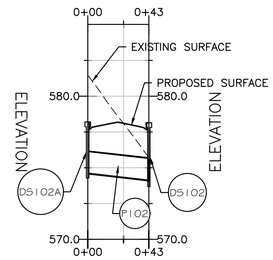
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SHEET
5 OF 5

STORMWATER PROFILES



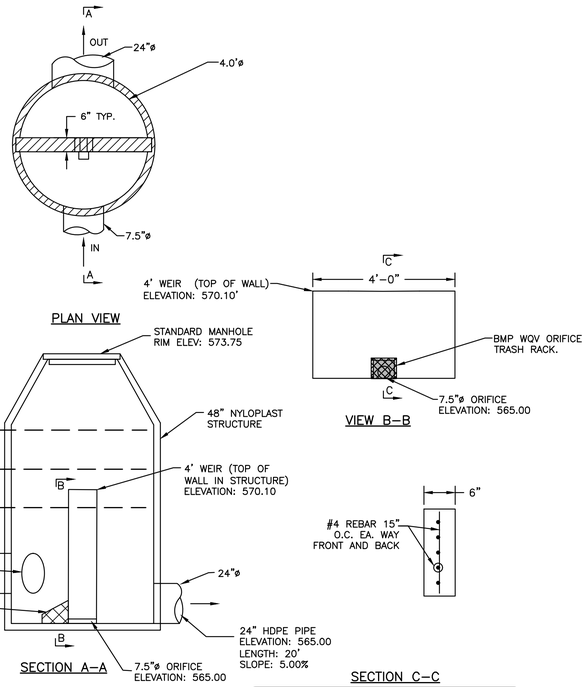
SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'



SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

Pipe Table (P)				
PIPE ID	SIZE	LENGTH (L.F.)	MATERIAL	Slope
P100	24"	16.84	HDPE PIPE	4.1%
P101	18"	111.14	HDPE PIPE	5.1%
P102	18"	41.44	HDPE PIPE	1.1%
P103	18"	129.50	HDPE PIPE	3.0%
P200	24"	45.76	HDPE PIPE	9.8%

Under Drain Structure Table (UDS) Network – (1)			
Structure Name	DESCRIPTION	PIPES IN	PIPES OUT
DS100	MANHOLE	P100, INV IN = 567.35	
DS101	VDOT DI–3A	P101, INV IN = 568.29	P100, INV OUT = 568.09
DS102	VDOT DI–4C–12	P102, INV IN = 574.14 P103, INV IN = 574.09	P101, INV OUT = 574.02
DS102A	VDOT DI–4C–12		P102, INV OUT = 574.62
DS103	VDOT DI–1		P103, INV OUT = 577.98
DS200	OUTLET CONTROL STRUCTURE		P200, INV OUT = 565.86



DS200 – OUTLET CONTROL STR DETAIL
N.T.S. NYLOPLAST CONTROL STRUCTURE

NOTE: CONTRACTOR MUST PROVIDE SHOP DRAWINGS FOR THIS CONTROL STRUCTURE FOR APPROVAL BEFORE INSTALLATION

Project: 9276 - FRONT ROYAL SUBDIVISION

ADS StormTech

Chamber Model -	MC-7200
Units -	Imperial
Number of Chambers -	30
Number of End Caps -	60
Voids in the stone (porosity) -	40 %
Base of Stone Elevation -	0.00 ft
Amount of Stone Above Chambers -	12 in
Amount of Stone Below Chambers -	9 in
Area of system -	2410 sf Min. Area - 2068 sf min. area

StormTech MC-7200 Cumulative Storage Volumes

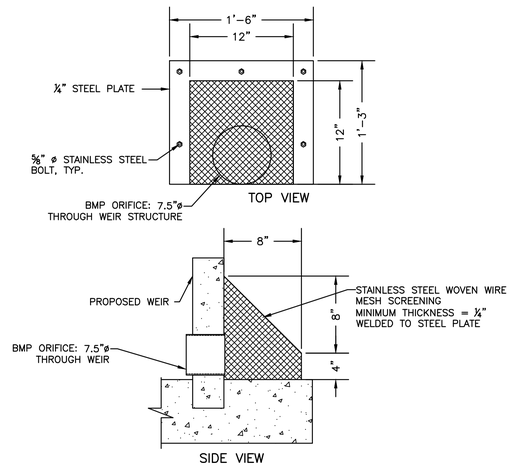
Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental CH, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
81	0.00	0.00	0.00	0.00	80.34	80.34	9852.80	6.75
80	0.00	0.00	0.00	0.00	80.34	80.34	9783.46	6.67
79	0.00	0.00	0.00	0.00	80.34	80.34	9703.12	6.58
78	0.00	0.00	0.00	0.00	80.34	80.34	9622.77	6.50
77	0.00	0.00	0.00	0.00	80.34	80.34	9542.43	6.42
76	0.00	0.00	0.00	0.00	80.34	80.34	9462.09	6.33
75	0.00	0.00	0.00	0.00	80.34	80.34	9381.75	6.25
74	0.00	0.00	0.00	0.00	80.34	80.34	9301.40	6.17
73	0.00	0.00	0.00	0.00	80.34	80.34	9221.06	6.08
72	0.00	0.00	0.00	0.00	80.34	80.34	9140.72	6.00
71	0.00	0.00	0.00	0.00	80.34	80.34	9060.37	5.92
70	0.00	0.00	0.00	0.00	80.34	80.34	8980.03	5.83
69	0.06	0.01	1.78	0.10	79.59	81.47	8899.69	5.75
68	0.19	0.03	5.71	0.27	77.95	83.93	8818.22	5.67
67	0.28	0.05	8.28	0.41	76.87	85.54	8734.29	5.58
66	0.36	0.07	10.72	0.53	75.84	87.09	8648.74	5.50
65	0.51	0.09	15.27	0.74	74.11	90.12	8561.65	5.42
64	0.74	0.11	22.25	0.84	71.11	94.20	8472.66	5.33
63	1.10	0.13	32.89	1.06	66.76	100.71	8378.46	5.25
62	1.32	0.16	39.55	1.29	64.01	104.85	8277.75	5.17
61	1.50	0.19	44.95	1.51	61.76	108.22	8172.90	5.08
60	1.65	0.22	49.63	1.75	59.79	111.17	8064.68	5.00
59	1.79	0.25	53.82	1.98	58.02	113.82	7953.51	4.92
58	1.91	0.28	57.31	2.19	56.53	116.03	7839.69	4.83
57	2.04	0.30	61.12	2.41	54.83	118.47	7723.48	4.75
56	2.15	0.33	64.36	2.62	53.55	120.53	7605.01	4.67
55	2.25	0.35	67.43	2.84	52.24	122.50	7484.48	4.58
54	2.34	0.38	70.29	3.07	51.00	124.36	7361.98	4.50
53	2.43	0.41	73.00	3.27	49.83	126.11	7237.62	4.42
52	2.52	0.44	75.67	3.53	48.70	127.90	7111.51	4.33
51	2.60	0.47	78.07	3.79	47.62	129.48	6983.61	4.25
50	2.68	0.50	80.35	3.86	46.62	130.83	6854.30	4.17
49	2.75	0.52	82.58	4.17	45.65	132.39	6723.37	4.08
48	2.82	0.54	84.70	4.36	44.72	133.78	6590.98	4.00
47	2.89	0.57	86.74	4.53	43.83	135.11	6457.20	3.92
46	2.95	0.59	88.69	4.69	42.98	136.35	6322.10	3.83
45	3.01	0.61	90.46	4.86	42.17	137.63	6185.75	3.75
44	3.06	0.63	92.06	5.06	41.38	138.79	6048.11	3.67
43	3.14	0.64	94.09	5.14	40.65	139.88	5909.31	3.58
42	3.19	0.66	95.75	5.42	39.87	141.05	5769.43	3.50
41	3.25	0.70	97.35	5.60	39.16	142.11	5628.38	3.42
40	3.30	0.72	98.89	5.78	38.48	143.14	5486.27	3.33
39	3.34	0.74	100.17	6.00	37.84	144.01	5343.13	3.25
38	3.39	0.76	101.79	6.12	37.18	145.09	5199.03	3.17
37	3.44	0.79	103.17	6.28	36.56	146.01	5053.91	3.08
36	3.48	0.80	104.49	6.42	35.96	146.89	4907.89	3.00
35	3.53	0.82	105.76	6.56	35.41	147.73	4761.01	2.92
34	3.57	0.84	106.99	6.71	34.87	148.56	4613.27	2.83
33	3.61	0.85	108.17	6.81	34.35	149.33	4464.71	2.75
32	3.65	0.87	109.31	6.97	33.85	150.13	4315.38	2.67
31	3.68	0.89	110.40	7.12	33.34	150.86	4165.33	2.58
30	3.71	0.90	111.45	7.23	32.87	151.55	4014.48	2.50
29	3.75	0.92	112.46	7.34	32.42	152.22	3862.93	2.42
28	3.78	0.92	113.43	7.36	32.03	152.82	3710.71	2.33
27	3.81	0.94	114.36	7.55	31.58	153.49	3557.89	2.25
26	3.84	0.96	115.25	7.65	31.18	154.08	3404.40	2.17
25	3.87	0.97	116.11	7.77	30.80	154.68	3250.32	2.08
24	3.90	0.98	116.92	7.85	30.43	155.21	3095.64	2.00
23	3.92	0.97	117.70	7.77	30.15	155.63	2940.46	1.92
22	3.95	1.00	118.45	8.03	29.75	156.23	2784.83	1.83
21	3.97	1.01	119.16	8.09	29.44	156.69	2628.61	1.75
20	3.99	1.02	119.84	8.15	29.14	157.14	2471.92	1.67
19	4.02	1.03	120.48	8.24	28.85	157.57	2314.77	1.58
18	4.04	1.04	121.09	8.32	28.58	157.99	2157.20	1.50
17	4.06	1.05	121.66	8.37	28.33	158.36	1999.22	1.42
16	4.07	1.05	122.21	8.43	28.09	158.73	1840.86	1.33
15	4.09	1.05	122.72	8.40	27.90	159.01	1682.13	1.25
14	4.11	1.06	123.20	8.45	27.68	159.34	1523.12	1.17
13	4.12	1.08	123.66	8.60	27.44	159.70	1363.78	1.08
12	4.14	1.08	124.10	8.66	27.24	160.00	1204.08	1.00
11	4.15	1.09	124.50	8.72	27.06	160.28	1044.08	0.92
10	4.17	1.11	125.15	8.80	26.75	160.73	883.82	0.83

StormTech Isolator Row Plus

Chamber Model	Chamber Storage	Chamber Footprint	Treatment Rate
SC-160LP	15.9 cf (0.42 m³)	11.45 sf (1.06 m²)	0.11 cfs (3.11 L/s)
SC-310	31.0 cf (0.88 m³)	17.7 sf (1.64 m²)	0.16 cfs (4.53 L/s)
SC-740	74.9 cf (2.12 m³)	27.8 sf (2.58 m²)	0.26 cfs (7.36 L/s)
DC-780	78.4 cf (2.22 m³)	27.8 sf (2.58 m²)	0.26 cfs (7.36 L/s)
MC-3500	175.0 cf (4.96 m³)	42.9 sf (3.99 m²)	0.40 cfs (11.32 L/s)
MC-4500	162.6 cf (4.60 m³)	30.1 sf (2.80 m²)	0.28 cfs (7.93 L/s)
MC-7200	267.3 cf (7.57 m³)	50.0 sf (4.65 m²)	0.45 cfs (12.74 L/s)

ISOLATOR ROW SIZING:

UG–1 FIRST 1" RAIN: 0.83 CFS
CHAMBERS REQUIRED: 1.84
CHAMBERS PROVIDED: 2



1. STEEL FRAME SHALL BE FIXED TO FIT THE EW–1 WITH NO GAP EXCEEDING ⅜" BETWEEN CONCRETE AND TRASH RACK. ASPHALT SEALANT SHALL BE APPLIED BETWEEN CONCRETE AND FRAME.
2. OPENINGS IN WIRE MESH SCREENING SHALL BE APPROXIMATELY ½ THE DIAMETER OF THE BMP ORIFICE.
3. INSTALL OPTIONAL HINGED GATE WITH A LOCKING MECHANISM ON FRONT FACE OF CAGE FOR EASIER MAINTENANCE.
4. ALTERNATIVE DESIGNS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

2 BMP WQV ORIFICE TRASH RACK
N.T.S.

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
PROFESSIONAL ENGINEER

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
312 WEST MAIN ST - P.O. BOX 387
LURAY, VA 22835
PH: (540) 743-9227 - FAX: (540) 743-6018

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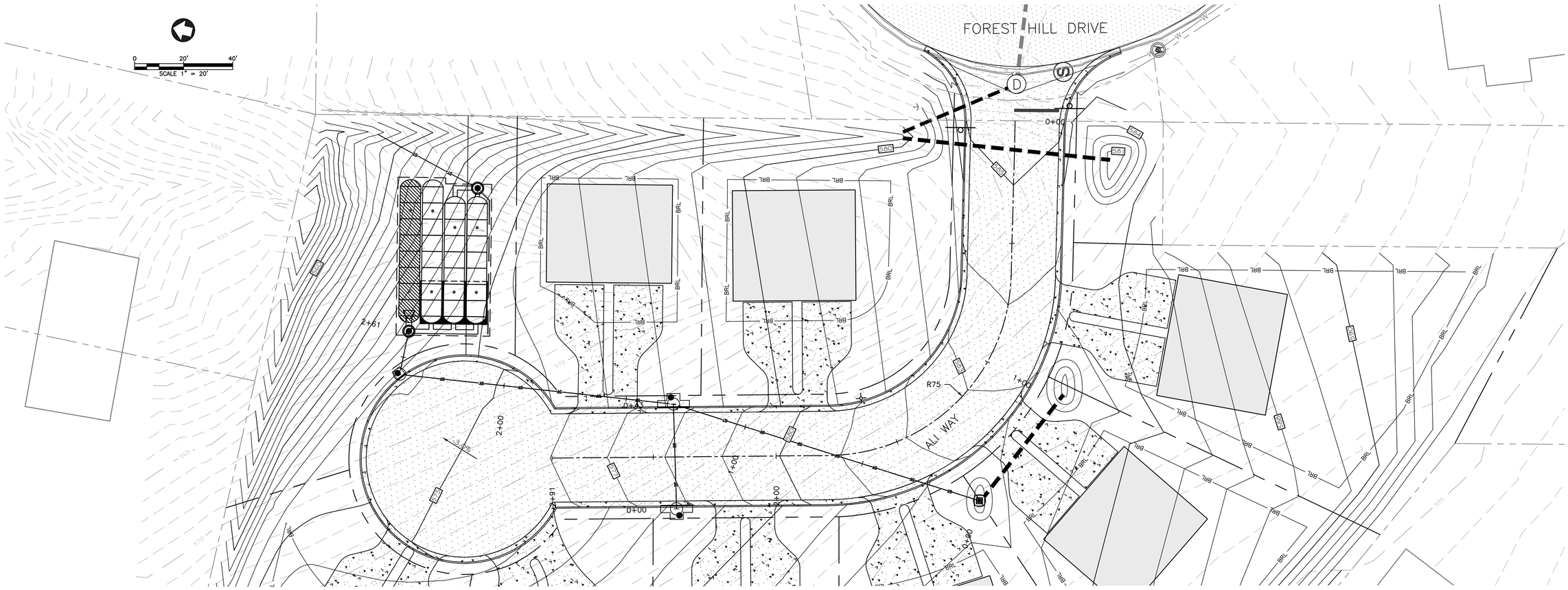
STRASBURG ROAD SUBDIVISION
STORMTECH UG–1 DETAILS
ALI BILLOO
WARREN COUNTY, VA
PUBLISH DATE: 10/15/2024
RACEY PROJECT NUMBER: 9276

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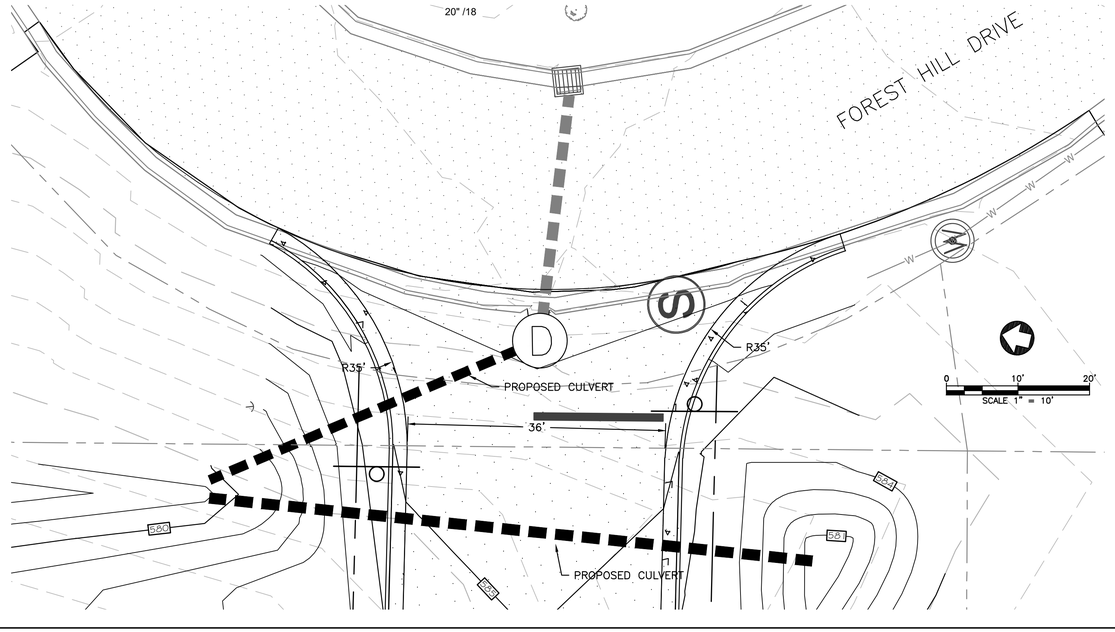
P:\2022\9276 – Ali Billoo – Strasburg Road Subdivision – 20A114–23B–Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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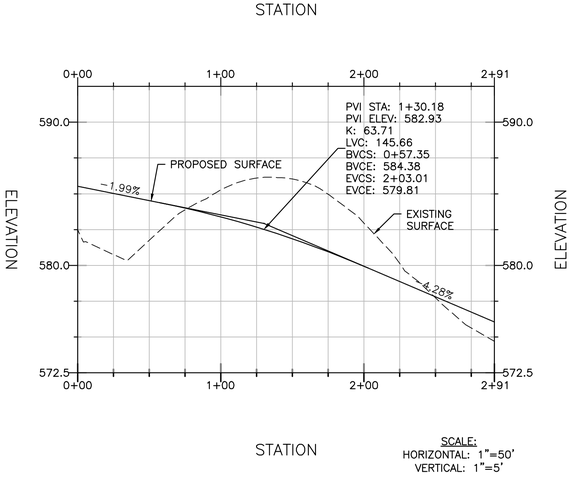
ROAD PLAN



ENTRANCE PLAN

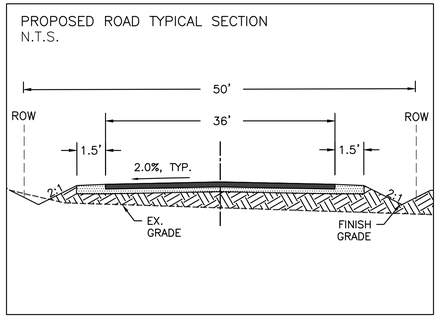


ROAD PROFILE



SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

PROPOSED ROAD TYPICAL SECTION
N.T.S.



No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

Joshua Perry Turner
Lic. No. 042465
10/15/24

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
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DESIGNED:HV | DRAWN:HV | CHECKED:JPT

STRASBURG ROAD SUBDIVISION
ROAD AND ENTRANCE PLAN
ALI BILLOO
WARREN COUNTY, VA

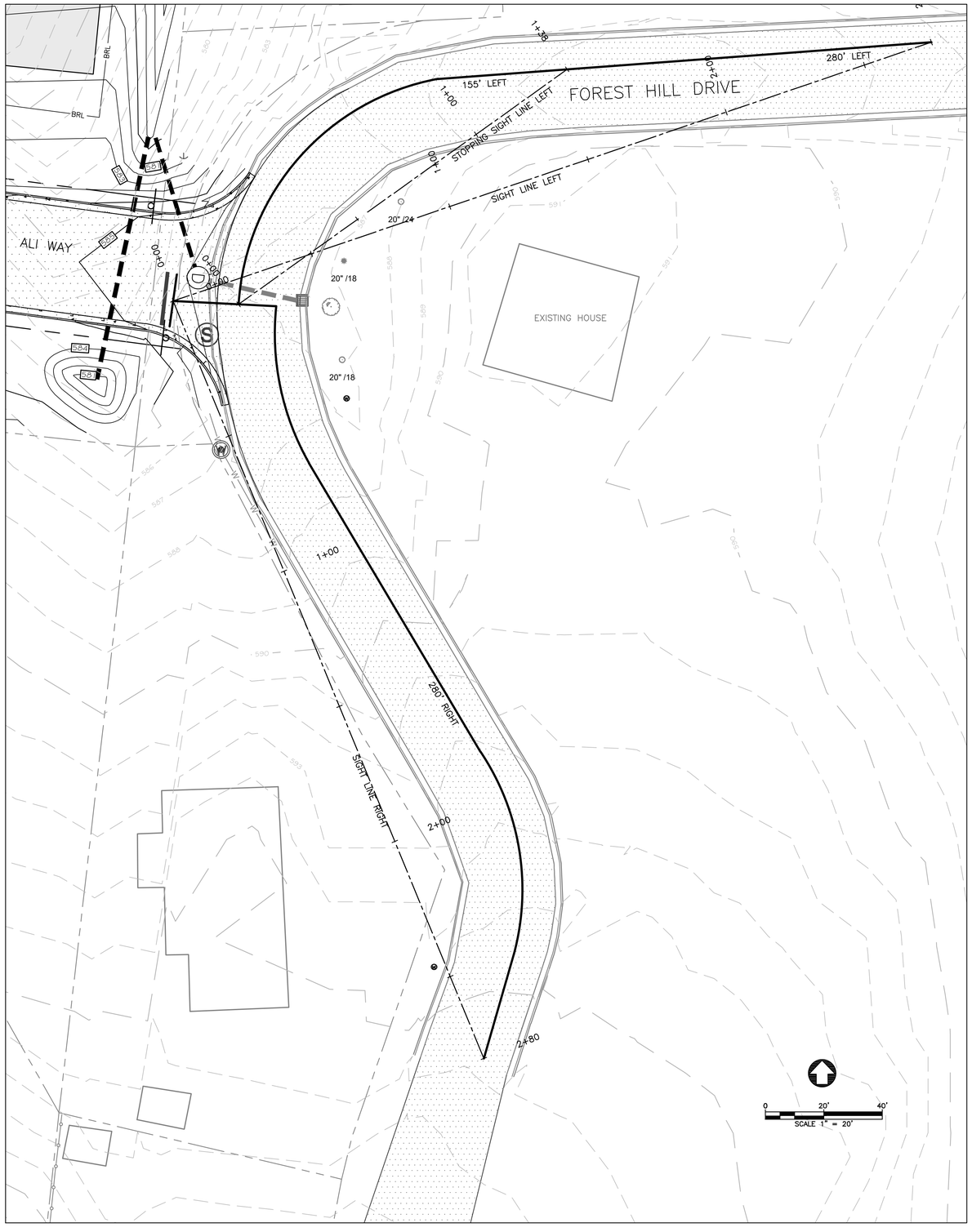
RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

C303

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SIGHT DISTANCE PLAN VIEW:



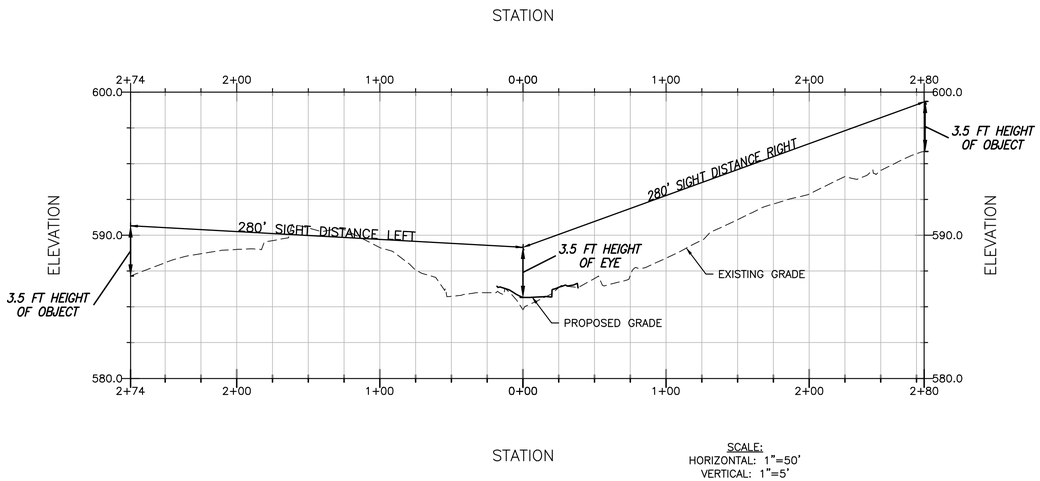
TRIPS GENERATED FROM DEVLOPEMENT:

DWELLING UNITS PROPOSED: 16
CARS ASSUMED PER DWELLING UNIT: 2 (PER TOWN CODE 148-870)
WEEKDAY PEAK HOUR TRIPS/CAR: 6.02 (PER ITE TRIP GENERATION MANUAL, CODE 210)

PROPOSED ADT: 193

*PER VDOT 24VAC30-155, A TRAFFIC IMPACT ANALYSIS IS NOT WARRENTED

SIGHT DISTANCE PROFILE VIEW:



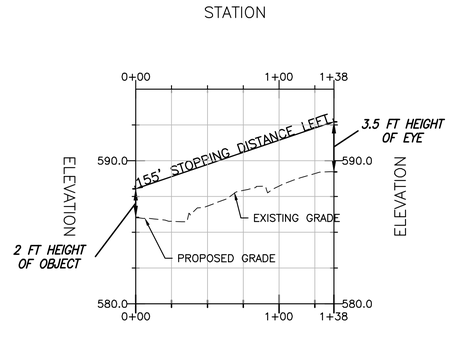
SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

SPEED LIMIT: 25 MPH

SIGHT DISTANCE LEFT: REQUIRED = 280' PROVIDED = 175'
SIGHT DISTANCE RIGHT: REQUIRED = 280' PROVIDED = 280'

SIGHT DISTANCE LEFT < 280' → USE STOPPING DISTANCE (155')

STOPPING DISTANCE LEFT PROFILE VIEW:



SCALE:
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
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DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION
SIGHT DISTANCE AND TRAFFIC IMPACT
ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276
PUBLISH DATE: 10/15/2024

C304

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**TERMS OF ENGINEER DESIGNS (INDUSTRY STANDARDS):
THE ENGINEER IS PROVIDING NOTICE TO THE CLIENT OF THE FOLLOWING SPECIFIC TERMS: THE PLAN PREPARATIONS HAVE BEEN MADE WITH ALL REASONABLE AND PROFESSIONAL CARE GIVEN TO DESIGN DETAILS AND COORDINATION. HOWEVER, UNINTENTIONAL ERRORS, OR OMISSIONS, ARE A NORMAL PART OF ANY WELL PREPARED ENGINEERING DESIGN/CONSTRUCTION DOCUMENTS. THIS PLAN REPRESENTATION IS BASED ON THE CLIENT'S UNDERSTANDING AND ACCEPTANCE OF THIS PREMISE, AND THAT THE CONSTRUCTION CONTRACT BUDGET WILL CONTAIN A REASONABLE CONTINGENCY COST TO COVER THESE TYPES OF NORMAL DESIGN OR COORDINATION ERRORS OR OMISSIONS.

THE STANDARDS OF CARE FOR ALL PROFESSIONAL ENGINEERING AND RELATED SERVICES PERFORMED OR FURNISHED BY ENGINEER ARE OF THE CARE AND SKILL ORDINARILY USED BY MEMBERS OF THE SUBJECT PROFESSION PRACTICING UNDER SIMILAR CIRCUMSTANCES AT THE SAME TIME AND IN THE SAME LOCALITY. ENGINEER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN CONNECTION WITH ENGINEER'S SERVICES. ENGINEER AND ITS CONSULTANTS MAY USE OR RELY UPON THE DESIGN SERVICES OF OTHERS, INCLUDING, BUT NOT LIMITED TO, CONTRACTOR'S, MANUFACTURERS, AND SUPPLIERS.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE PROJECT IS LOCATED ON FOREST HILL DRIVE APPROXIMATELY 500 FT FROM THE INTERSECTION WITH WEST STRASBURG ROAD IN FRONT ROYAL, VA ON LAND HAVING TAX MAP# 20A114 23B. THE AREA OF THE PROPERTY IS 3.52 ACRES. THE PROJECT CONSISTS OF CONSTRUCTING A SUBDIVISION WITH ASSOCIATED ACCESS, PARKING, UTILITIES, AND STORMWATER BMP'S. THE EXPECTED LIMITS OF DISTURBANCE AS OUTLINED ON THE SITE PLAN IS 2.94 ACRES. THE PROJECT WILL HAVE A 0.83 ACRE INCREASE IN IMPERVIOUS AREA IN THE POST-DEVELOPMENT CONDITION.

EXISTING SITE CONDITIONS:
THE EXISTING SITE CURRENTLY IS COVERED BY WOODS WITH ONE EXISTING BUILDING AND AN EXISTING GRAVEL ACCESS DRIVE. EXISTING SLOPES RANGE FROM 4% TO 20%.

ADJACENT AREA:
THE IMMEDIATE ADJACENT AREAS TO THE NORTH, EAST, AND SOUTH ARE A RESIDENTIAL NEIGHBORHOOD. THE ADJACENT AREA TO THE WEST IS A COMMUNITY CENTER BUILDING.

OFF-SITE AREAS:
NO OFF-SITE CONSTRUCTION IS PROPOSED, BUT IF BORROW FILL OR A WASTE PIT IS UTILIZED OFF-SITE, THE AREA SHALL BE CONTROLLED UNDER A SEPARATE OR EXISTING LAND DISTURBING PERMIT.

SOILS:
THE SOILS MAP AND SOILS DESCRIPTIONS HAVE BEEN INCLUDED ON THIS SHEET. THE SOIL DATA WAS OBTAINED FROM THE USDA (WEB) SOIL SURVEY.

Note: K-factor is a factor that indicates susceptibility of soil to sheet and rill erosion by water with values ranging from 0.02 to 0.69 (the higher the value the more susceptible the soil is to erosion). Hydrologic Soil Groups indicate runoff potential of the soil with Group A having high infiltration, Group B having Moderate Infiltration, Group C having slow infiltration, and Group D having very slow infiltration. The pH value is used to approximate the required lime rate to be applied to the soil when seeding.

CRITICAL AREAS:
ALL SLOPES STEEPER THAN 3:1 ARE CONSIDERED TO BE CRITICAL AND HAVE ADDITIONAL MEASURES PROPOSED TO ENSURE ADEQUATE STABILIZATION IS ACHIEVED. EXTRA CARE SHOULD BE TAKEN DURING CONSTRUCTION TO ENSURE THAT THE PERIMETER EROSION AND SEDIMENT CONTROLS ARE BEING IMPLEMENTED CORRECTLY TO PREVENT SEDIMENT FROM ESCAPING THE PROJECT WORK AREA AND PASSING THROUGH OR ACCUMULATING IN THE EXISTING DRAINWAY. GOOD JUDGMENT PERTAINING TO WEATHER AND SITE CONDITIONS SHOULD ALWAYS BE USED WHEN PERFORMING A LAND DISTURBING ACTIVITY.

EROSION AND SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THIS PLAN DEPICTS ADEQUATE PERIMETER CONTROLS WITH THE UNDERSTANDING THAT FIELD CONDITIONS MAY REQUIRE ADDITIONAL CONTROLS OR MODIFICATIONS TO MEASURES AS SPECIFIED HEREIN. THE ENGINEER, LOCAL EROSION AND SEDIMENT CONTROL ADMINISTRATOR, AND DEQ RESERVES THE RIGHT TO PRESCRIBE ADDITIONAL MEASURES DURING CONSTRUCTION.

STRUCTURAL MEASURES:
TEMPORARY CONSTRUCTION ENTRANCE (3.02) SHALL BE INSTALLED AS SHOWN ON THE PLANS TO AID IN PREVENTING MUD AND SEDIMENT FROM BEING TRACKED ONTO THE STATE HIGHWAY. EXTRA PRECAUTIONS MAY BE REQUIRED BY THE CONTRACTOR TO ENSURE THAT NO MUD IS BEING TRACKED ONTO THE HIGHWAY BY CONSTRUCTION VEHICLES.

SILT FENCE (3.05) SHALL BE INSTALLED AS SHOWN ON THE PLANS TO FILTER SEDIMENT LADEN RUNOFF FROM DISTURBED AREAS BEFORE IT LEAVES THE SITE.

STORM DRAIN INLET PROTECTION (3.07) SHALL BE INSTALLED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

CULVERT INLET PROTECTION (3.08) SHALL BE INSTALLED AS A SEDIMENT FILTER LOCATED AT THE INLET TO STORM SEWER CULVERTS.

TEMPORARY DIVERSION DIKE (3.09) SHALL BE INSTALLED AS INDICATED ON THE SITE PLAN TO DIVERT SEDIMENT LADEN RUNOFF INTO THE PROPOSED SEDIMENT TRAP. TEMPORARY DIVERSION DIKES MUST BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.

TEMPORARY RIGHT-OF-WAY DIVERSION (3.11) SHALL BE INSTALLED AS SHOWN ON THE PLAN TO SHORTEN THE FLOW LENGTH WITHIN A SLOPING RIGHT-OF-WAY, THEREBY REDUCING THE EROSION POTENTIAL BY DIVERTING THE STORM RUNOFF TO A STABILIZED OUTLET.

TEMPORARY SEDIMENT TRAP (3.13) SHALL BE INSTALLED AS SHOWN ON THE SITE PLAN AND MUST BE CONSTRUCTED TO AT LEAST THE MINIMUM SIZE REQUIREMENTS PROVIDED. THE SEDIMENT TRAP WILL SERVE AS THE PRIMARY EROSION AND SEDIMENT CONTROL FOR THE AREA. ONCE THE DESIRED GRADE IS REACHED IN THE FILLING OPERATION, ALL DISTURBED AREAS ARE TO BE PERMANENTLY SEEDED. ONCE STABILIZED, THE SEDIMENT TRAP MAY BE FILLED IN.

OUTLET PROTECTION (3.18) SHALL BE INSTALLED TO PREVENT SCOUR AT STORMWATER OUTLETS, TO PROTECT THE OUTLET STRUCTURE, AND TO MINIMIZE THE POTENTIAL FOR SOWNSTREAM EROSION BY REDUCING THE VELOCITY AND ENERGY OF CONCENTRATED STORMWATER FLOWS.

TEMPORARY ROCK CHECK DAM (3.20) SHALL BE INSTALLED ALONG DITCHLINES AND DIVERSION DIKES AS SHOWN ON THE PLAN. THEY SHOULD BE REMOVED UPON COMPLETION OF CONSTRUCTION.

PERMANENT SEEDING (3.32) SHALL BE USED IN DISTURBED AREAS WHERE PERMANENT, LONG-LIVED VEGETATION COVER IS NEEDED AND ROUGH-GRADED AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR MORE THAN 6 MONTHS TO REDUCE EROSION, DECREASE SEDIMENT YIELD, AND PERMANENTLY STABILIZE DISTURBED AREAS

MULCHING (3.35) SHALL BE USED IN AREAS OF TEMPORARY AND PERMANENT SEEDING TO PREVENT EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW. THIS WILL PROMOTE GROWTH OF VEGETATION BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT AND COLD.

SOIL STABILIZATION BLANKET MATTING (3.36) SHALL BE USED ON ALL SLOPES STEEPER THAN 3:1 AS OUTLINED ON THE PLANS TO AID IN CONTROLLING EROSION ON CRITICAL SLOPES.

DUST CONTROL (3.39) SHALL BE USED TO PREVENT DUST AND AIRBORNE SUBSTANCES FROM SPREADING OUTSIDE OF THE LIMITS OF DISTURBANCE.

VEGETATIVE MEASURES:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE [FIVE (5) DAYS FOR CUT OR FILL SLOPES]. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT SOIL STABILIZATION SHALL BE APPLIED TO ALL AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN SIX (6) MONTHS. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. VEGETATIVE STABILIZATION SHALL BE UNIFORM, MATURE ENOUGH TO SURVIVE, AND ADEQUATE TO INHIBIT EROSION.

TOPSOIL THAT HAS BEEN STOCKPILED SHALL BE SURROUNDED WITH SILT FENCE ON THE DOWNSTREAM SIDE AND PROTECTED BY MULCH AND/OR TEMPORARY VEGETATION IMMEDIATELY AFTER GRADING. TOPSOIL SHALL NOT BE STOCKPILED IN DRAINWAYS.

MAINTENANCE:
ALL CONTROL MEASURES SHALL BE INSPECTED DAILY BY THE SITE SUPERINTENDENT OR HIS REPRESENTATIVE AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ½ INCH OF RAIN PER 24 HOUR PERIOD. IT IS RECOMMENDED THAT THE CONTRACTOR UTILIZE INSPECTION REPORTS AND KEEP QUALITY RECORDS OF ALL MAINTENANCE. ANY DAMAGED STRUCTURAL MEASURES ARE TO BE REPAIRED BY THE END OF THE DAY. SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. ALL AREAS SHALL BE FERTILIZED AND RE-SEEDED AS NEEDED UNTIL GRASS IS ESTABLISHED.

TEMPORARY SILT FENCE (AND ALL PERIMETER CONTROL MEASURES) SHALL BE CHECKED REGULARLY FOR SEDIMENT BUILD-UP. IF THE TEMPORARY SILT FENCE IS CLOGGED BY SEDIMENT ½ THE HEIGHT OF THE INSTALLATION, IT SHALL BE REMOVED AND CLEANED OR REPLACED IMMEDIATELY.

THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING PUBLIC ROADS IN A CLEAN, DUST, AND MUD FREE CONDITION AT ALL TIMES.

TEMPORARY STABILIZATION:
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH TEMPORARY SEEDING IF THE AREA WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 14 DAYS. SEEDING REQUIREMENTS SHALL FOLLOW TABLE 3.31-B AND 3.31-C SHOWN ON SHEET C500.

PERMANENT STABILIZATION:
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINAL GRADING. SEEDING SHALL BE DONE ACCORDING TO SPECIFICATION NO. 3.32 OF THE VESCH AND TABLE 3.32-C ON SHEET C500. IN LIEU OF TESTING THE TOPSOIL TO DETERMINE IF AND WHAT RATE TO APPLY SOIL SUPPLEMENTS, THE CONTRACTOR CAN PROVIDE THE FOLLOWING MINIMUM SPECIFICATIONS:

TOPSOIL SHALL BE SPREAD AT A MINIMUM DEPTH OF 4" UNLESS OTHERWISE SPECIFIED IN ANY AREA WHERE THE EXISTING TOPSOIL HAS BEEN STRIPPED DURING CONSTRUCTION.

PULVERIZED AGRICULTURE LIMESTONE SHALL BE INCORPORATED INTO THE SOIL AT A MINIMUM RATE OF 92 LBS PER 1000 SF (2 TONS PER ACRE). FERTILIZE WITH 10-20-10 AT A MINIMUM RATE OF 23 LBS PER 1000 SF (1000 LBS PER ACRE)

STORMWATER MANAGEMENT:

SWM NARRATIVE:
THE TOTAL SITE HAS BEEN MANAGED FOR WATER QUANTITY IN ACCORDANCE WITH VIRGINIA STORMWATER MANAGEMENT ACT. THE SITE IS LOCATED WITHIN THE NORTH FORK SHENANDOAH RIVER WATERSHED. THE HUC 8 CODE OF THE WATERSHED IS 02070007.

WATER QUANTITY:
THE PROJECT SITE IS ANALYZED AT ONE (1) EVALUATION POINT TO THE NORTH OF THE SITE IN AN EXISTING SWALE. THE SITE MEETS CHANNEL PROTECTION BY 9VAC25-66-B.3.A. WHERE THE UNDERGROUND DETENTION TANKS AND OUTLET CONTROL STRUCTURE ARE UTILIZED TO SATISFY THE ENERGY BALANCE EQUATION. THE SITE MEETS FLOOD PROTECTION BY 9VAC25-870-66.C.1. WHERE THE SITE UTILIZES THE DETENTION FROM THE UNDERGROUND STORAGE TO RELEASE THE PEAK FLOWRATE FROM THE 10-YR 24-HOUR STORM EVENT AT LESS THAN THE PRE-DEVELOPMENT 10-YR 24-HOUR STORM EVENT TO AN EXISTING DRAINWAY THAT DOES NOT EXPERIENCE LOCALIZED FLOODING.

WATER QUALITY:
THE TOTAL SITE, WHICH CONSISTS OF 2.94 ACRES OF DISTURBANCE, HAS BEEN MANAGED FOR WATER QUALITY IN ACCORDANCE WITH THE VIRGINIA STORMWATER MANAGEMENT ACT. THE VIRGINIA RUNOFF REDUCTION METHOD RE- DEVELOPMENT WORKSHEET – V3.0 WAS USED TO DETERMINE THE NUTRIENT LOAD REMOVAL REQUIRED. THE PHOSPHORUS LOAD REDUCTION REQUIRED WAS DETERMINED TO BE 2.19 LB/YR. THE STORMTECH ISOLATOR ROW PLUS WILL PROVIDE A REDUCTION OF 1.84 LB/YR. THE REMAINING 0.35 LB/YR WILL BE OFFSET WITH THE PURCHASE OF NUTRIENT CREDITS.

MANAGEMENT STRATEGIES AND SITE USE REQUIREMENTS:
SEQUENCE OF CONSTRUCTION:

1. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD PRIOR TO ANY LAND DISTURBANCE ON-SITE. CONTRACTOR TO SCHEDULE THIS MEETING WITH THE WARREN COUNTY E&S ADMINISTRATOR, DEQ, THE OWNER, AND ENGINEER AT LEAST 2 WEEKS PRIOR TO START OF CONSTRUCTION.
2. PERIMETER EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED (LOD MARKED, SILT FENCE, SEDIMENT TRAPS, DIVERSIONS, ETC.) AS A FIRST STEP IN THE LAND DISTURBANCE ACTIVITY.
3. DEMOLITION WORK MAY COMMENCE FOLLOWING INSTALLATION OF PERIMETER CONTROLS.
4. CLEAR AND GRUB. STRIP AND STOCKPILE TOPSOIL FOR RE-SPREAD USE UPON CLOSEOUT. TOPSOIL MAY BE USED, SHAPED AND COMPACTED AS DIVERSION BERMS AND DIKES IN THE FIELD.
5. BEGIN CONSTRUCTION AND GRADING OPERATIONS. (NOTE: R-TANK STORAGE CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURERS REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS).
6. ONCE ENTIRE AREA IS STABILIZED, THE TEMPORARY SEDIMENT TRAP CAN BE REMOVED AND FINAL GRADES CAN BE REACHED.

CONSTRUCTION SHALL BE SEQUENCED SUCH THAT GRADING OPERATIONS WILL BEGIN AND END AS QUICKLY AS POSSIBLE.

THE SITE SUPERINTENDENT AND THE DEQ CERTIFIED RESPONSIBLE LAND DISTURBER SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL MEASURES. MAINTENANCE OF THESE MEASURES THROUGHOUT THE PROJECT IS CRITICAL TO THE EFFECTIVENESS OF THE PROGRAM.

DEVICES SPECIFIED IN THIS PLAN ARE CONSIDERED MINIMUM EROSION AND SEDIMENT CONTROLS. ADDITIONAL CONTROL MEASURES MAY BE NECESSARY DUE TO CONTRACTOR PHASING OR OTHER UNFORESEEN CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADDITIONAL MEASURES TO THOSE SHOWN, AS NEEDED, IN ORDER TO CONTROL THE EROSION ON THE SITE. ALL MEASURES SHALL BE INSTALLED ACCORDING TO THE STANDARDS AND SPECIFICATION OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

ALL APPLICABLE EROSION AND SEDIMENT CONTROLS SHALL BE ADHERED TO THROUGHOUT THE LIFE OF THE PROJECT.

IN NO CASE SHALL ANY, DESIGNATED OR STIPULATED, HAZARDOUS MATERIALS BE PLACED AT ANY LOCATION ON THE PROJECT SITE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS EROSION AND SEDIMENT CONTROL REGULATIONS (9VAC25-840).

ES-2: THE PLAN-APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION. THE NAME OF THE RESPONSIBLE LAND DISTURBER MUST BE PROVIDED TO THE PLAN-APPROVING AUTHORITY PRIOR TO ACTUAL ENGAGEMENT IN THE LAND-DISTURBING ACTIVITY SHOWN ON THE APPROVED PLAN. IF THE NAME IS NOT PROVIDED PRIOR TO ENGAGING IN THE LAND-DISTURBING ACTIVITY, THE PLAN'S APPROVAL WILL BE REVOKED.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS SOON AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF SITE BORROW OR WASTED AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7: ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED, AFTER WHICH, UPON APPROVAL OF THE PLAN-APPROVING AUTHORITY, THE CONTROLS SHALL BE REMOVED. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST EVERY 2 WEEKS AND IMMEDIATELY AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

ES-10: THE CONTRACTOR IS RESPONSIBLE FOR THE DAILY REMOVAL OF SEDIMENT THAT HAS BEEN TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE.

ES-11: SEEDING OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR AN ANTICIPATED DURATION OF GREATER THAN 14 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.

ES-12: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOILS WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS, OR HARM ANIMAL OR PLANT LIFE.

ES-13: A VSMP IS REQUIRED FOR PROJECTS DISTURBING 2,500 SQUARE FEET OR GREATER IN A DESIGNATED CHESAPEAKE BAY PRESERVATION AREA (CBPA) OR 1 ACRE, OR GREATER OUTSIDE THE CBPA, UNLESS THE DEVELOPMENT IS WITHIN A COMMON PLAN OF DEVELOPMENT. FOR MORE INFORMATION VISIT THE VIRGINIA STORMWATER MANAGEMENT PROGRAM PERMITTING WEB PAGE AT: HTTP://WWW.DEQ.VIRGINIA.GOV/PROGRAMS/WATER/STORMWATERMANAGEMENT/VSMPPERMITS/CONSTRUCTIONGENERALPERMIT.ASPX

VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS
SECTION 9VAC25-840-40
MINIMUM STANDARDS

A VESCP must be consistent with the following criteria, techniques and methods:

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven 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.

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.

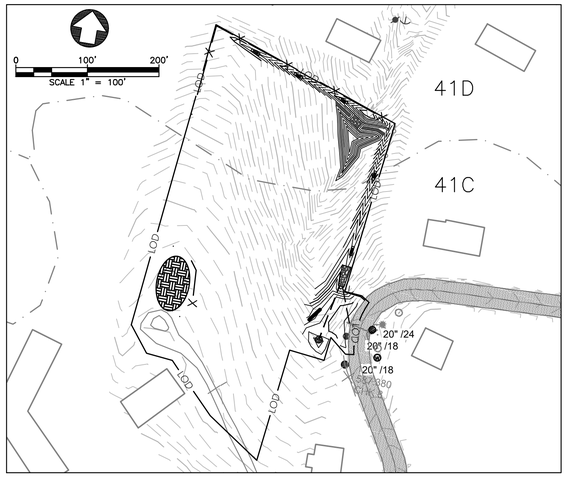
3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.

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.

5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.

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.

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.



SOILS PROPERTIES

MAP UNIT	SOIL DESCRIPTION	pH	K-FACTOR	HYDROLOGIC SOIL GROUP
41C	WEIKERT-BERKS CHANNERY SILT LOAMS, 8 TO 15 PERCENT SLOPES	5.0	0.17	D
41D	WEIKERT-BERKS CHANNERY SILT LOAMS, 15 TO 25 PERCENT SLOPES	4.3	N/A	D

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.

9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

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.

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.

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. Nonerodible 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.

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.

14. All applicable federal, state and local requirements pertaining to working in or crossing live watercourses shall be met.

15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

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 this chapter.
   f. Applicable safety requirements shall be complied with.

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.

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.

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 the channel, the bed, or the 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 condition 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 dissipators 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 management 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 or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 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 a 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) Regulations.
   n. Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) Regulations shall be deemed to satisfy the requirements of subdivision 19 of this subsection.

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
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DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION
ESC NARRATIVE
ALI BILLOO
WARREN COUNTY, VA

PUBLISH DATE: 10/15/2024
RACEY PROJECT NUMBER: 9276

C400

P:\2022\9276 - Ali Billoo - Strasburg Road Subdivision - 20A114-23B-Civil\8_ DESIGN\4. DWG\CIVIL\COMPOSITE

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SEDIMENT TRAP CALCULATIONS			
ELEVATION	AREA (SF)	INCR. VOLUME (CY)	CUMMULATIVE VOLUME (CY)
555	152	0	0
558	886	57.67	57.67
559	1,252	39.59	97.26
560	1,674	54.19	151.44
561	2,171	71.20	222.65
562	2,745	91.04	313.69

SEDIMENT TRAP DRAINAGE AREA	2.33 AC
REQUIRED WET STORAGE	156.11 CY
REQUIRED DRY STORAGE	156.11 CY
REQUIRED OUTLET WEIR LENGTH	13.98 FT
CLEANOUT ELEVATION	558.51 FT
WET STORAGE ELEVATION	560.07 FT
DRY STORAGE ELEVATION	561.98 FT
TOP OF EMBANKMENT ELEVATION	562 FT
EMBANKMENT TOP WIDTH	4.5 FT
CUT/FILL SLOPES (X:1)	2:1
BOTTOM DIMENSIONS (APPROX.)	25'x14'

0 20' 40'
SCALE 1" = 20'

PROPOSED LOD = 2.94 AC (127,959 SF)

PHASE 1 – SEQUENCE OF CONSTRUCTION

1. STAKE LOD AND SET ALL PERIMETER CONTROLS (CE, DD, SF, ETC).
2. INSTALL SEDIMENT TRAP.
3. BEGIN CLEARING & GRUBBING SITE.
4. ONCE SITE IS CLEARED, TEMPORARY STABILIZE ALL DENUDED AREAS.

SEDIMENT TRAP DRAINAGE AREA: 2.33 AC

TOPSOIL STOCKPILE

SOIL BOUNDARY LINE, TYP.

41D 41C

EROSION & SEDIMENT CONTROL LEGEND

NO.	KEY	SYMBOL	DESCRIPTION
3.02	CE		STONE CONSTRUCTION ENTRANCE
3.05	SF		SILT FENCE (WITH WIRE SUPPORT)
3.07	IP		STORM DRAIN INLET PROTECTION
3.08	CIP		CULVERT INLET PROTECTION
3.09	DD		DIVERSION DIKE
3.11	RWD		RIGHT OF WAY DIVERSION
3.13	ST		SEDIMENT TRAP
3.17	SCC		STORMWATER CONVEYANCE CHANNEL
3.18	OP		OUTLET PROTECTION
3.20	CD		ROCK CHECK DAM
3.32	PS		PERMANENT SEEDING
3.35	MU		MULCHING
		LOD	LIMITS OF DISTURBANCE
		810	EXISTING CONTOURS (1' INTERVAL)
		810	PROPOSED CONTOURS (1' INTERVAL)

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STRASBURG ROAD SUBDIVISION
ESC PLAN PHASE 1
ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

C401

P:\2022\9276 – Ali Billoo – Strasburg Road Subdivision – 20A114-23B-Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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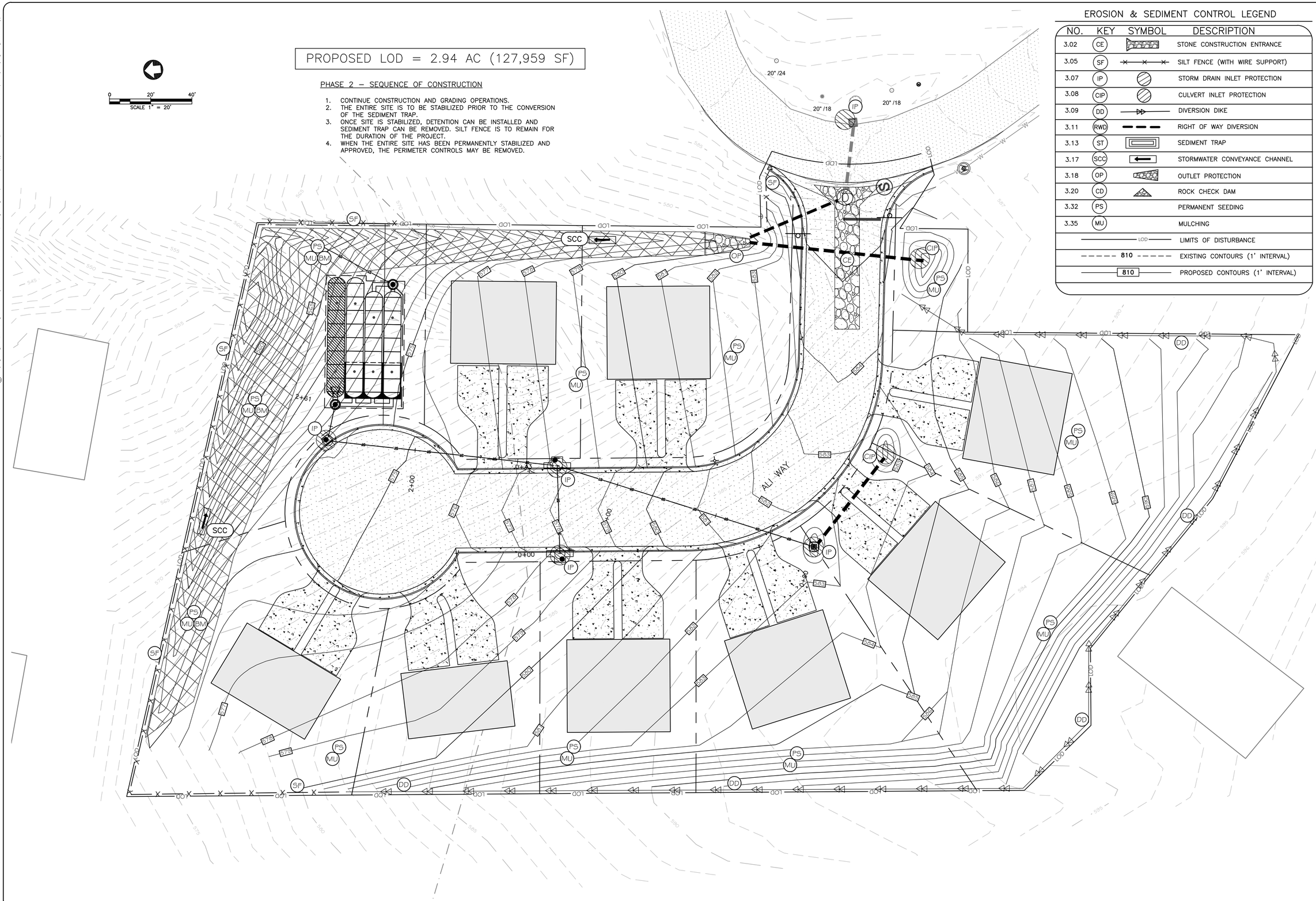
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0 20' 40'
SCALE 1" = 20'

PROPOSED LOD = 2.94 AC (127,959 SF)

PHASE 2 – SEQUENCE OF CONSTRUCTION

1. CONTINUE CONSTRUCTION AND GRADING OPERATIONS.
2. THE ENTIRE SITE IS TO BE STABILIZED PRIOR TO THE CONVERSION OF THE SEDIMENT TRAP.
3. ONCE SITE IS STABILIZED, DETENTION CAN BE INSTALLED AND SEDIMENT TRAP CAN BE REMOVED. SILT FENCE IS TO REMAIN FOR THE DURATION OF THE PROJECT.
4. WHEN THE ENTIRE SITE HAS BEEN PERMANENTLY STABILIZED AND APPROVED, THE PERIMETER CONTROLS MAY BE REMOVED.



EROSION & SEDIMENT CONTROL LEGEND

NO.	KEY	SYMBOL	DESCRIPTION
3.02	CE		STONE CONSTRUCTION ENTRANCE
3.05	SF		SILT FENCE (WITH WIRE SUPPORT)
3.07	IP		STORM DRAIN INLET PROTECTION
3.08	CIP		CULVERT INLET PROTECTION
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		LOD	LIMITS OF DISTURBANCE
		810	EXISTING CONTOURS (1' INTERVAL)
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STRASBURG ROAD SUBDIVISION

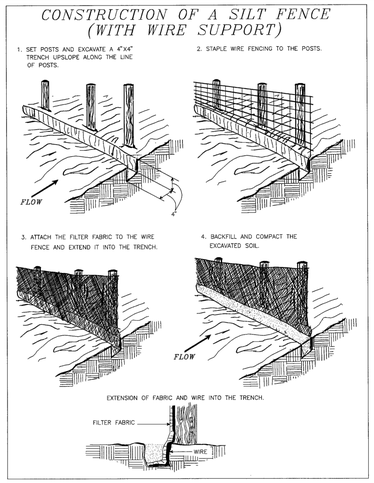
ESC PLAN PHASE 2

ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 | PUBLISH DATE: 10/15/2024

C402

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Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-1

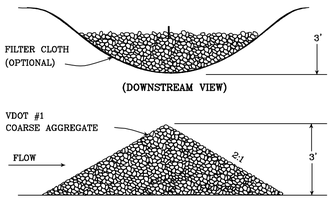
SF

1 SILT FENCE - WITHOUT WIRE SUPPORT

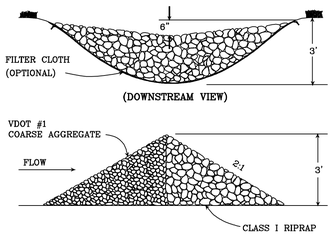
N.T.S. - SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - PLATE 3.05-2

ROCK CHECK DAM

2 ACRES OR LESS OF DRAINAGE AREA:



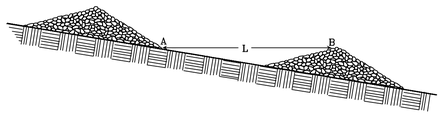
2–10 ACRES OF DRAINAGE AREA:



SOURCE: VA. DSWC PLATE. 3.20–1

SPACING BETWEEN CHECK DAMS

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

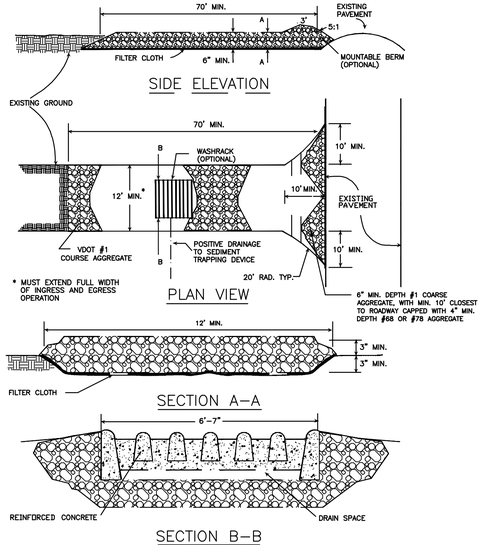


SOURCE: VA. DSWC PLATE. 3.20–2

CD

2 ROCK CHECK DAM

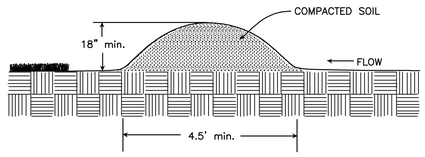
N.T.S. - SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - PLATE 3.20



CE

3 TEMPORARY STONE CONSTRUCTION ENTRANCE

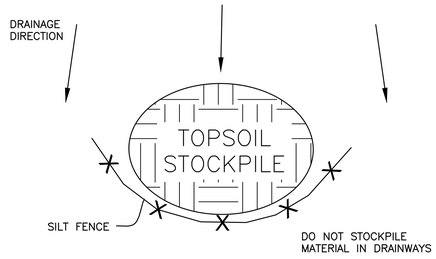
N.T.S. - SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - PLATE 3.02-1



DD

4 TEMPORARY DIVERSION DIKE

N.T.S. - SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - PLATE 3.09-1



5 MATERIAL STOCKPILE

N.T.S.

Table C-SSM-09-2 Liming

Liming Requirements for Temporary Sites

pH Test	Recommended Application of Agricultural Limestone
below 4.2	3 tons per acre
4.2 to 5.2	2 tons per acre
5.2 to 6	1 ton per acre

Source: Va. DSWC

Table C-SSM-09-3 Plant Material for Temporary Seeding

Acceptable Temporary Seeding Plant Materials "Quick Reference for all Regions"

Planting Dates	Species	Rate (pounds per 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

* The shift date for annual rye to German millet should be April 15 for the Piedmont and Coastal Plain, rather than May 1.

Table C-SSM-09-4 Temporary Seeding Applications

Temporary Seeding Plant Materials, Seeding Rates, and Dates

Species	Seeding Rate		North[a]			South[b]			Plant Characteristics
	lbs./ acre	lbs./ 1,000 ft²	3/1 – 4/30	5/1 – 8/15	8/15 – 11/1	2/15 – 4/30	5/1 – 9/1	9/1 – 11/15	
Oats (*Avena sativa*)	50 – 100	2.0	X	-	--	X	-	-	Use spring varieties (e.g., Noble).
Rye[d] (*Secale cereale*)	50 – 110	2.5	X	-	X	X	-	X	Use for late fall seedings, winter cover. Tolerates cold and low moisture.
German millet (*Setaria italica*)	50	1.0	-	X*	-	-	X*	-	Warm-season annual. Dies at first frost. May be added to summer mixes.
Annual ryegrass[c] (*Lolium multi-florum*)	60	1.5	X*	-	X	X*	-	X	May be added in mixes. Will mow out of most stands.
Korean Lespedeza[c] (*Lespedeza stipulacea*)	25	1.5	X	X	-	X	X	-	Warm-season annual legume. Tolerates acid soils. May only be used in a mix with another grass (e.g., annual or cereal rye); it is not suitable as a pure seeding for this purpose.

a. Northern Piedmont and Mountain regions. See Figure C-ENV-01-1 and Figure C-ENV-01-2.
b. Southern Piedmont and Coastal Plain.
c. May be used as a cover crop with spring seeding.
d. May be used as a cover crop with fall seeding.
Xe.May not be planted between these dates.
-f May be planted between these dates.

*** The shift date for annual rye to German millet should be April 15 for the Piedmont and Coastal Plain, rather than May 1.**

6 TEMPORARY SEEDING

Table C-SSM-10-6 Suggested and Example Site-Specific Seeding Mixtures for Appalachian/Mountain Area

Site Condition	Seed Mix		Application Rate (pounds per acre)
Minimum-Care Lawn Commercial or Residential	Turf-Type Tall Fescue	90-100%	150 – 200
	Improved Perennial Ryegrass*	0-10%	
	Kentucky Bluegrass	0-10%	
High-Maintenance Lawn	Bluegrass – minimum of three to five varieties from VCIA list for use in Virginia		125
	Improved VCIA Turf-Type Tall Fescue		150 – 200
General Slope (3H:1V or less)	Tall Fescue****		50 – 75
	Red Top and/or Hard Fescue		10 – 20
	White Clover and/or Birdsfoot Trefoil***		10 – 20
	Seasonal Nurse Crop **		30 – 40
Low-Maintenance Slope (> 3:1) or Inaccessible Area***	Tall Fescue****		50 – 75
	Red Top or Hard Fescue		10 – 20
	Annual Lespedeza		10 – 15
	White Clover and/or Birdsfoot Trefoil***		10 – 20
	Seasonal Nurse/Cover Crop**		30 – 40

* Perennial ryegrass will germinate faster and at lower soil temperatures than fescue, thereby providing cover and erosion resistance for seedbed.

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

March 1 through May 15 – annual/cereal rye

May 16 through August 15 – foxtail/German millet

August 16 through February 28 – annual/cereal rye

*** All legume seed must be properly inoculated. Legumes recommended unless periodic N fertilization maintenance intended.

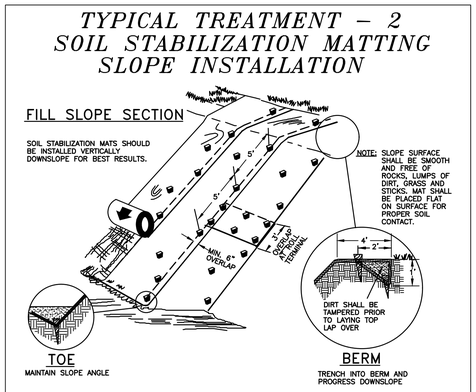
Flatpea at 20 lbs/acre may be utilized where warranted. All legume seed must be properly inoculated. Weeping lovegrass may also be included in any slope or low-maintenance mixture during warmer seeding periods; add 10 to 20 lbs/acre in mixes.

**** Increase seeding rate if Kentucky 31 is used rather than VCIA/VDOT improved varieties.

Note: Seed mixes are suggested and subject to modification based on site-specific conditions by an agronomist or other qualified revegetation professionals. All seed rates expressed as PLS (Pure Live Seed; see Table C-SSM-10-9).

7 PERMANENT SEEDING

TYPICAL TREATMENT – 2 SOIL STABILIZATION MATTING SLOPE INSTALLATION



SOURCE: VDOT ROAD AND BRIDGE STANDARDS PLATE: 3.36–5

8 EC-3 STABILIZATION MATTING

N.T.S. - SOURCE: VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK - PLATE 3.36-5

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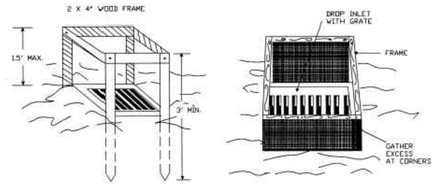
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C500

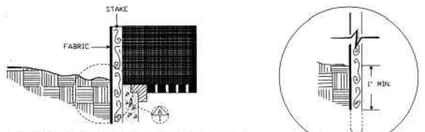
P:\2022\9276 - Ali Billoo - Strasburg Road Subdivision - 20A114-23B-Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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SILT FENCE DROP INLET PROTECTION



PERSPECTIVE VIEWS



ELEVATION OF STAKE AND FABRIC ORIENTATION

DETAIL A

SPECIFIC APPLICATION

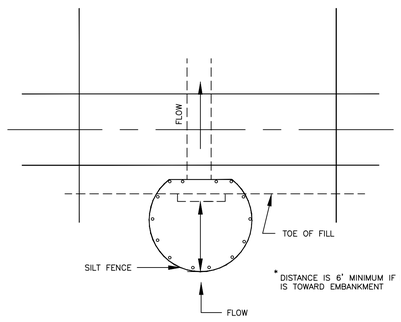
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

Source: N.C. Erosion and Sediment Control Planning and Design Manual, 1988

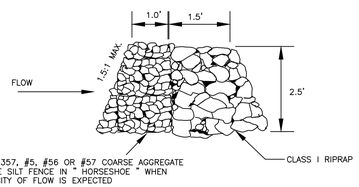
Plate 3.07-1

IP 9 DROP INLET PROTECTION

N.C EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL 1988 - PLATE 3.07-1



*OPTIONAL STONE COMBINATION



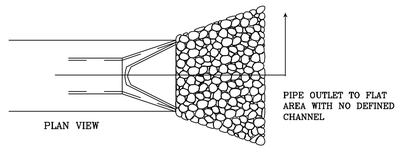
*VDOT #3, #357, #5, #56 OR #57 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

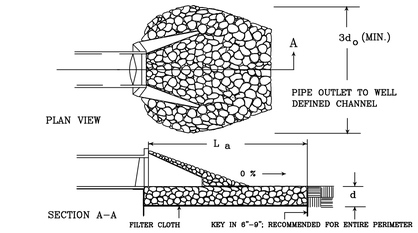
SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSWC

PLATE. 3.08-1

IP 10 CULVERT INLET PROTECTION

N.T.S.





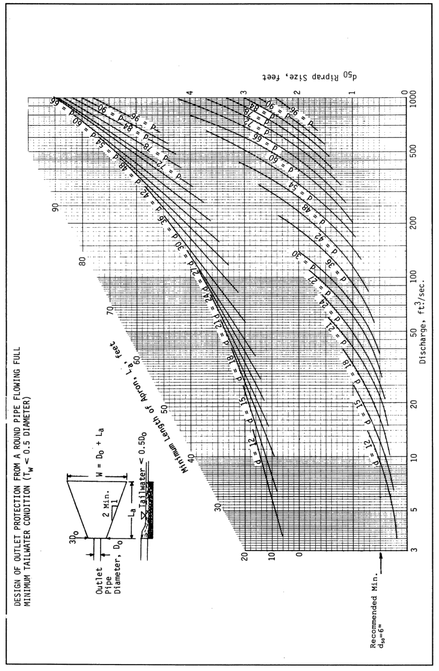
NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

Source: Va. DSWC

Plate 3.18-1

OP 11 OUTLET PROTECTION

N.T.S.



Source: USDA-SCS

Plate 3.18-3

OP 12 OUTLET PROTECTION SIZING GRAPH

N.T.S.

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
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CHECKED:JPT
DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION

ESC DETAILS

ALI BILLOO

WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 PUBLISH DATE: 10/15/2024

C501

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Typical Traffic Control
Stationary Operation on a Shoulder
(Figure TTC-4.1)
NOTES

Standard

1. **For long-term stationary work (more than 3 days) on divided highways having a median wider than 8', sign assemblies on both sides of the roadway shall be required as shown (ROAD WORK AHEAD (W20-1), RIGHT SHOULDER CLOSED AHEAD (W21-5bR), RIGHT SHOULDER CLOSED (W21-5aR)[1]), even though only one shoulder is being closed. For operations less than 3 days in duration, sign assemblies will only be required on the side where the shoulder is being closed and a RIGHT SHOULDER CLOSED (W21-5aR)[1] sign shall be added to that side.**

Guidance

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*

Option:

3. The SHOULDER WORK (W21-5) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or[1] oscillating lights is used.

Standard:

5. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or[1] oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or[1] oscillating, lights.**
6. **Taper length (L) and channelizing device spacing shall be at the following:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ½ L Minimum				

Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

7. **The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
8. **A truck-mounted attenuator (TMA) shall be used on the shadow vehicle on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph for operations with a duration greater than 60 minutes.**
9. **When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.**

1: Revision 1 – 4/1/2015

Typical Traffic Control
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)
NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*

Option:

3. Where Right-of-Way or geometric conditions prevent the use of 48" x 48" signs, 36" x 36" signs may be used.

Standard:

4. **Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).**
5. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).**
6. **Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6.**
7. **A shadow vehicle with at least one high intensity amber rotating, flashing, or[1] oscillating light shall be parked 80'-120' in advance of the first work crew.**

Option:

8. A supplemental flagger may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the portable temporary rumble strips (PTRS)[1], should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-36 for additional information on highway-rail crossings).*

Standard:

11. **At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).**

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

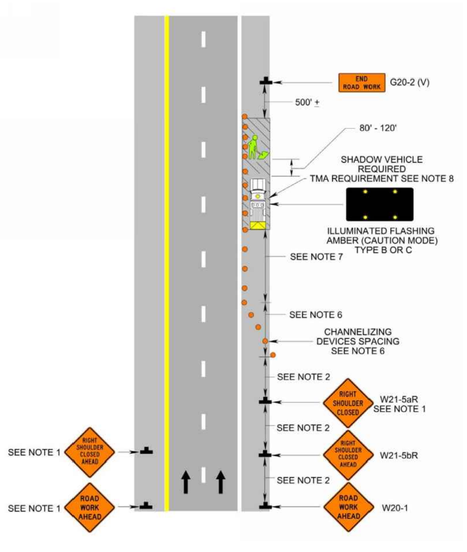
Standard:

14. **When approved for use, three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.**

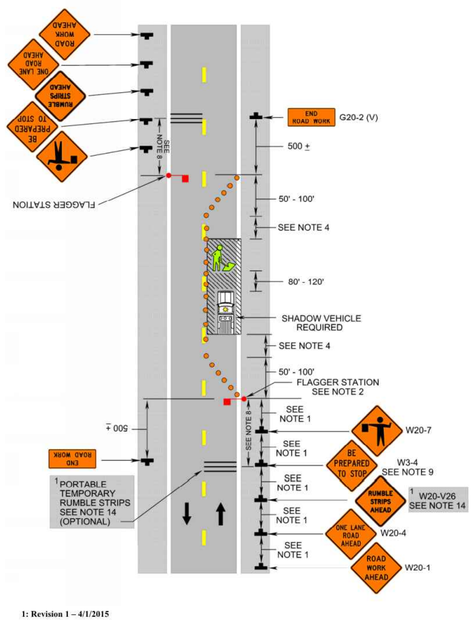
Posted Speed	0 – 35 mph	36 – 55 mph
PTRS Spacing (Center to Center)	5 Feet	8 Feet

1: Revision 1 – 4/1/2015

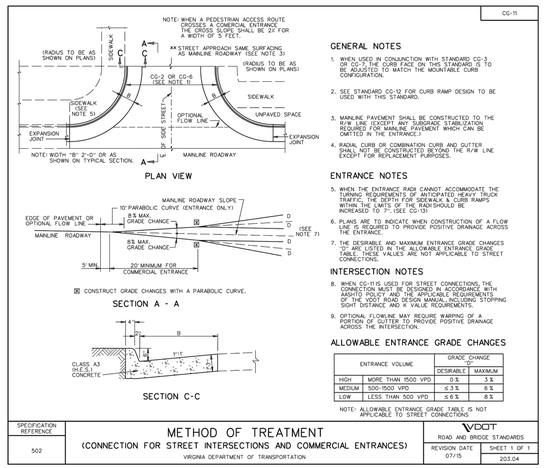
Stationary Operation on a Shoulder
(Figure TTC-4.1)

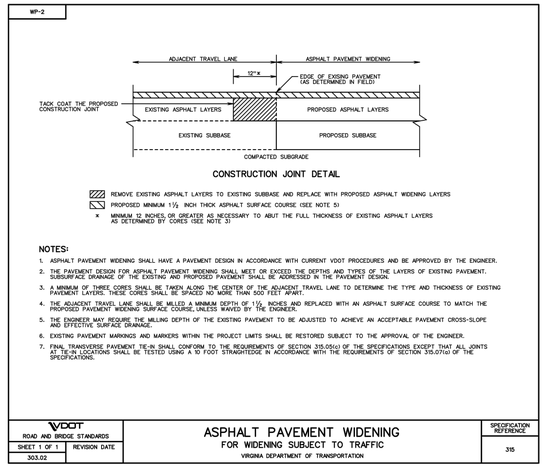


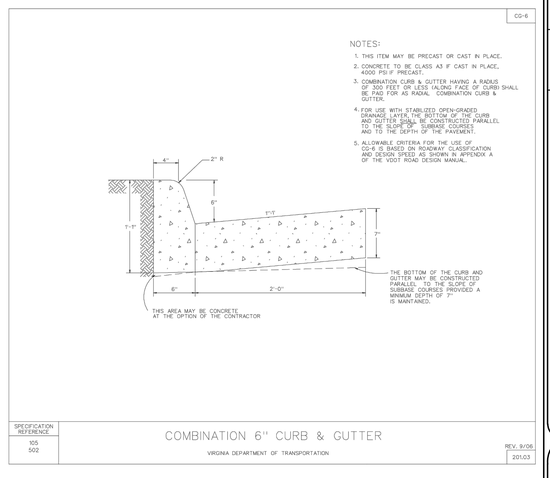
Lane Closure on a Two-Lane Roadway Using Flaggers
(Figure TTC-23.1)

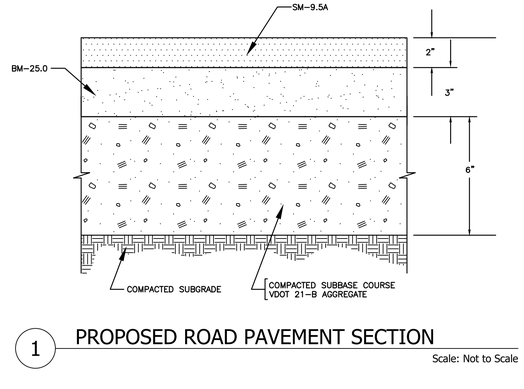


1: Revision 1 – 4/1/2015









1 PROPOSED ROAD PAVEMENT SECTION

Scale: Not to Scale

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042465
10/15/24
PROFESSIONAL ENGINEER

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
312 WEST MAIN ST - P.O. BOX 387
LURAY, VA 22835
PH: (540) 743-9227 - FAX: (540) 743- 6118

CHECKED:JPT
DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION
CONSTRUCTION DETAILS
ALI BILLOO
WARREN COUNTY, VA

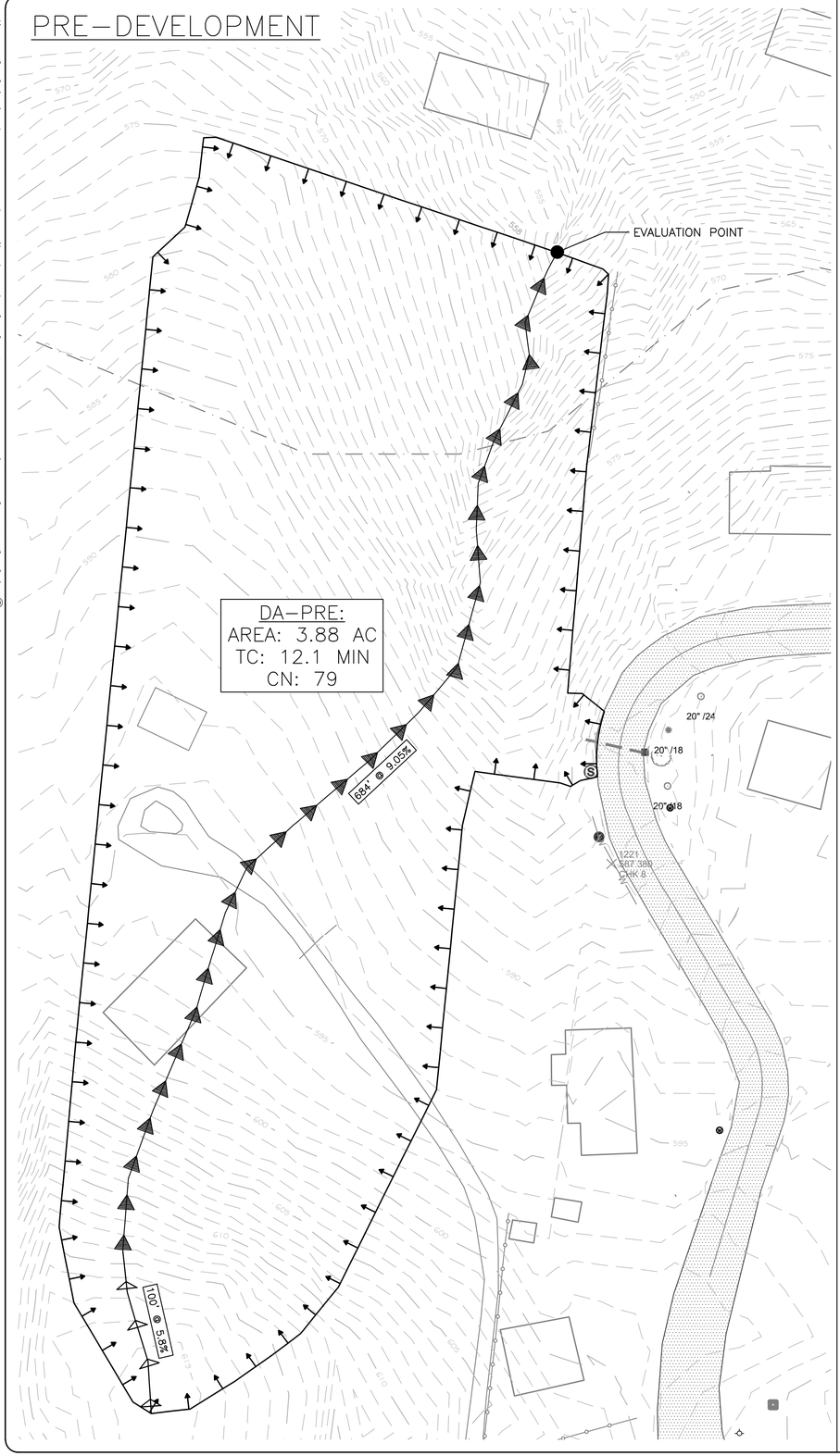
RACEY PROJECT NUMBER: 9276 PUBLISH DATE: 10/15/2024

C502

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PRE-DEVELOPMENT



EVALUATION POINT
CHANNEL PROTECTION – 9VAC25-66-B-3.A. **
FLOOD PROTECTION – 9VAC25-870-66.C.1. **
**SEE STORMWATER QUANTITY NARRATIVE THIS SHEET

Tc FLOW PATH LEGEND

- SHEET FLOW
- SHALLOW CONCENTRATED FLOW
- CHANNEL FLOW

Tc FLOW PATH COMPUTATIONS CAN BE FOUND IN THE 1-YEAR HYDROGRAPH REPORTS SECTION OF THE COMPUTATIONS BOOK.

STORMWATER MANAGEMENT (SWM) PLAN NARRATIVE:

THE TOTAL SITE HAS BEEN MANAGED FOR WATER QUANTITY IN ACCORDANCE WITH VIRGINIA STORMWATER MANAGEMENT ACT. THE SITE IS LOCATED WITHIN THE SHENANDOAH WATERSHED. THE HUC 8 CODE OF THE WATERSHED IS 02070006.

WATER QUANTITY NARRATIVE:

FOR WATER QUANTITY ANALYSIS, THE PROJECT SITE AREA (2.94 ACRES) IS ANALYZED AT ONE (1) SITE EVALUATION POINT. THE EVALUATION POINT IS LOCATED TO THE NORTH OF THE SITE IN AN EXISTING SWALE.

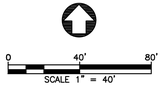
CHANNEL PROTECTION:

THE SITE MEETS CHANNEL PROTECTION BY SECTION 9VAC25-66-B-3.A. WHERE THE SITE UTILIZES THE DETENTION FROM THE PROPOSED UNDERGROUND STORAGE CONTROL STRUCTURE TO RELEASE FLOW UNDER THE Q-ALLOWABLE DETERMINED USING THE ENERGY BALANCE EQUATION.

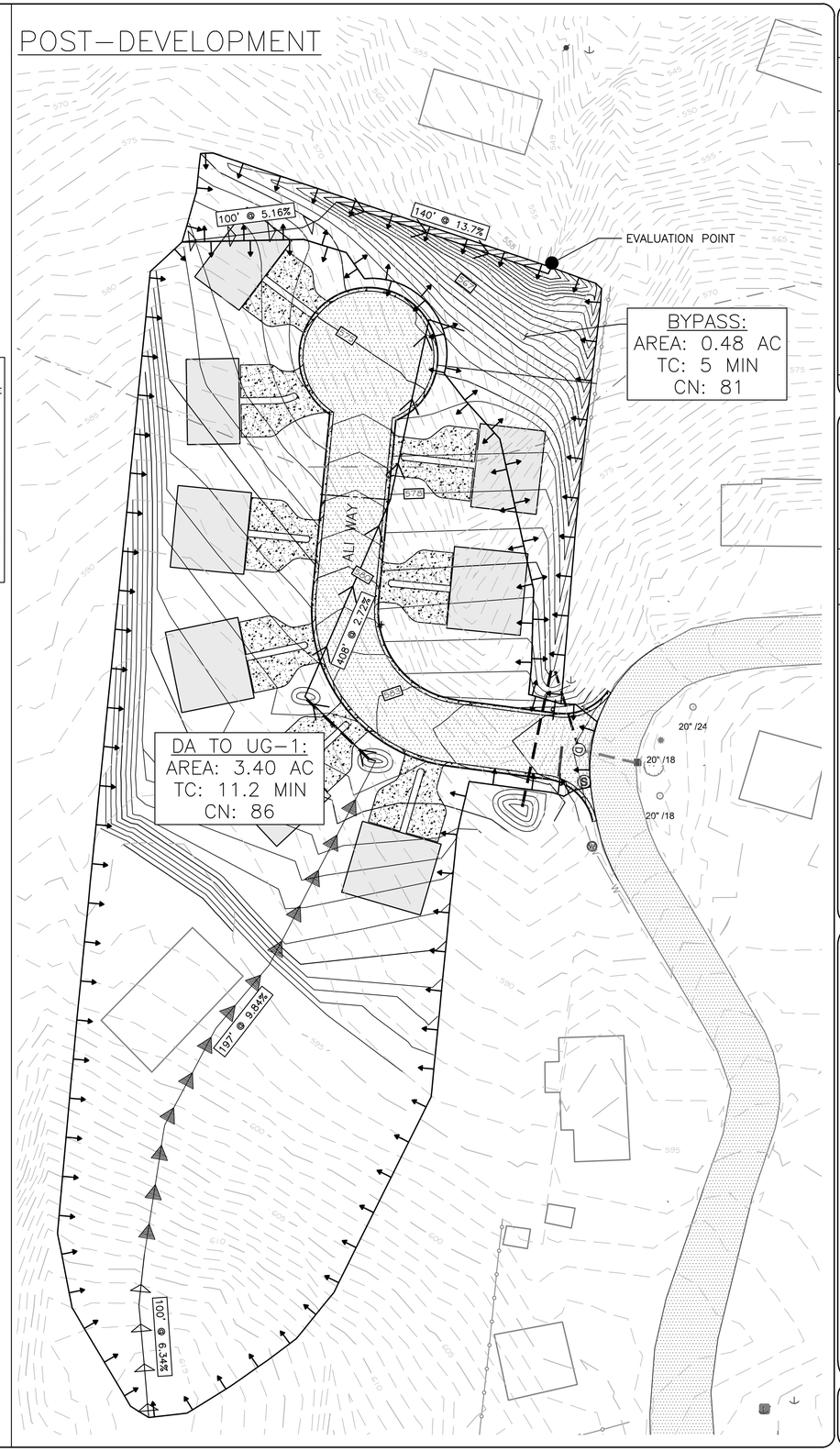
FLOOD PROTECTION

THE SITE MEETS FLOOD PROTECTION BY 9VAC25-870-66.C.1 WHERE 10-YEAR POST DEVELOPMENT FLOW RATE IS RELEASED AT LESS THAN THE PRE-DEVELOPMENT 10-YEAR FLOWRATE DUE TO THE DETENTION FROM THE PROPOSED UNDERGROUND STORAGE. DOWNSTREAM CONVEYANCE HAS BEEN ANALYZED AND SHOWS NO SIGN OF FLOODING AND THEREFORE, IN ACCORDANCE WITH METHODOLOGY ESTABLISHED IN 9VAC25-870-66.C.1 FLOOD PROTECTION HAS BEEN MET.

DRAINAGE SUMMARY TABLE					
EVALUATION POINT					
DRAINAGE AREA ID	AREA	1 YR (CFS)	2 YR (CFS)	10 YR (CFS)	100 YR (CFS)
PRE-DEVELOPMENT					
DA PRE	3.88	4.262	6.245	12.470	24.830
TOTAL AREA PRE	3.88				
POST-DEVELOPMENT					
DA TO UG-1	3.40	5.776	7.826	13.780	24.840
UG-1 OUT		2.106	2.578	11.700	24.430
BYPASS	0.48	0.724	1.019	1.928	3.689
DA POST		2.208	2.757	12.220	27.080
TOTAL AREA POST	3.88				



POST-DEVELOPMENT



No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
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PH: (540) 743-9227 - FAX: (540) 743- 6118

CHECKED:JPT
DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION

DRAINAGE MAP

ALI BILLOO

WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276
PUBLISH DATE: 10/15/2024

C600

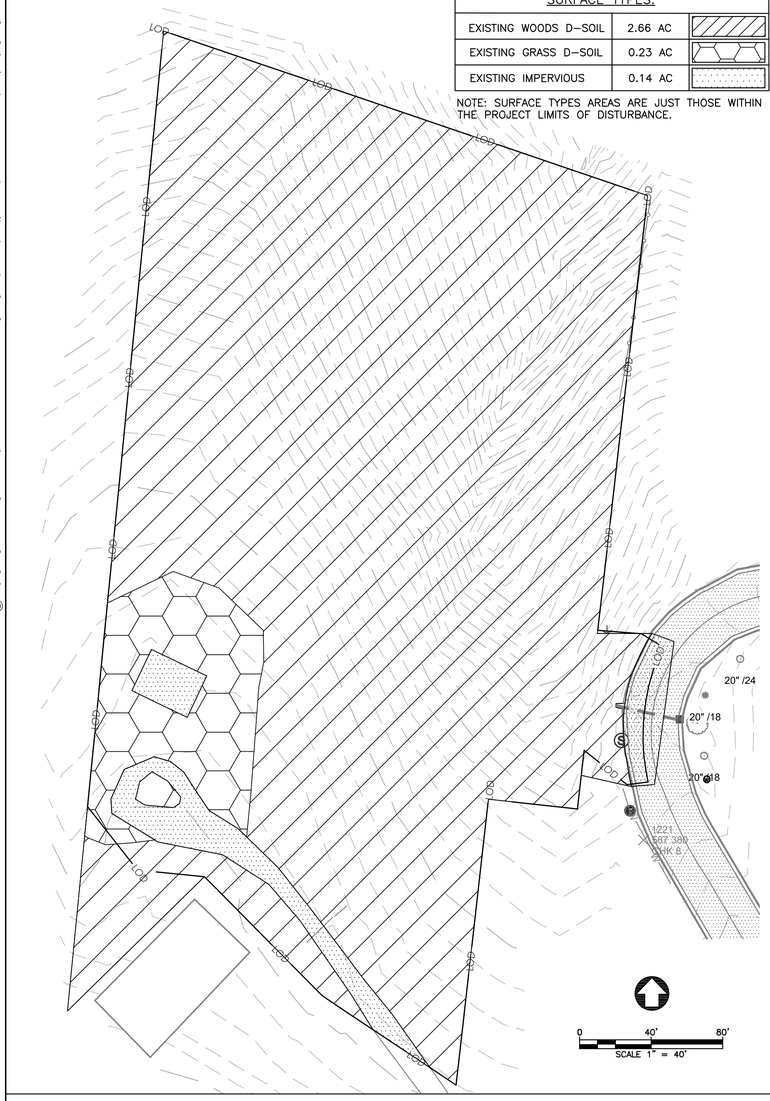
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PRE–DEVELOPMENT

SURFACE TYPES:	
EXISTING WOODS D–SOIL	2.66 AC
EXISTING GRASS D–SOIL	0.23 AC
EXISTING IMPERVIOUS	0.14 AC

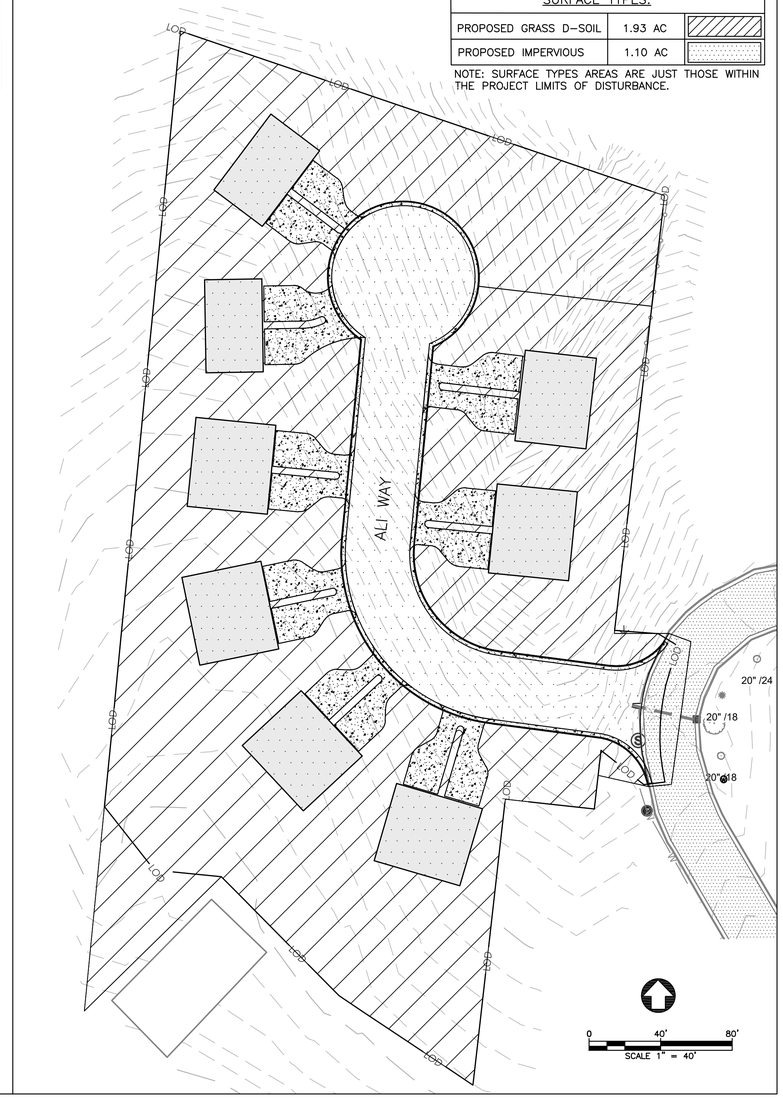
NOTE: SURFACE TYPES AREAS ARE JUST THOSE WITHIN THE PROJECT LIMITS OF DISTURBANCE.



POST–DEVELOPMENT

SURFACE TYPES:	
PROPOSED GRASS D–SOIL	1.93 AC
PROPOSED IMPERVIOUS	1.10 AC

NOTE: SURFACE TYPES AREAS ARE JUST THOSE WITHIN THE PROJECT LIMITS OF DISTURBANCE.



CREDIT AVAILABILITY LETTER TO BE SUBMITTED PRIOR TO SITE PLAN APPROVAL

WATER QUALITY:

THE TOTAL SITE (3.52 ACRES), WHICH CONSISTS OF 2.94 ACRES OF DISTURBANCE, HAS BEEN MANAGED FOR WATER QUALITY IN ACCORDANCE WITH VIRGINIA STORMWATER MANAGEMENT ACT. THE SITE IS LOCATED WITHIN THE NORTH FORK SHENANDOAH WATERSHED. THE HUC8 CODE FOR THE WATERSHED IS 02070006.

THE VIRGINIA RUNOFF REDUCTION METHOD RE–DEVELOPMENT WORKSHEET – V3.0 WAS USED TO DETERMINE THE NUTRIENT LOAD REMOVAL REQUIRED. THE PHOSPHORUS LOAD REDUCTION REQUIRED WAS DETERMINED TO BE 2.24 LB/YR. THE STORMTECH ISOLATOR ROW PLUS WILL PROVIDE A REDUCTION OF 1.84 LB/YR. THE REMAINING 0.40 LB/YR WILL BE OFFSET WITH THE PURCHASE OF NUTRIENT CREDITS.

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

BMP Design Specifications List: **2013 Draft Stds & Specs**

Site Summary

Project Title: STRASBURG ROAD SUBDIVISION
Date: 45457

Total Rainfall (in):	**43**
Total Disturbed Acreage:	**3.03**

Site Land Cover Summary

Pre-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	2.66	2.66	88
Managed Turf (acres)	0.00	0.00	0.00	0.23	0.23	8
Impervious Cover (acres)	0.00	0.00	0.00	0.14	0.14	5
					3.03	100

Post-ReDevelopment Land Cover (acres)

	A soils	B Soils	C Soils	D Soils	Totals	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.00	1.93	1.93	64
Impervious Cover (acres)	0.00	0.00	0.00	1.10	1.10	36
					3.03	100

Site Tv and Land Cover Nutrient Loads

	Final Post-Development (Post-ReDevelopment & New Impervious)	Post-ReDevelopment	Post-Development (New Impervious)	Adjusted Pre-ReDevelopment
Site Rv	0.50	0.30	0.95	0.13
Treatment Volume (ft³)	5,545	2,234	3,311	1,000
TP Load (lb/yr)	3.48	1.40	2.08	0.63
	Baseline TP Load (lb/yr):	0.8487*	*Reduction below new development load limitation not required	

Pre-ReDevelopment TP Load per acre (lb/acre/yr)	Final Post-Development TP Load per acre (lb/acre/yr)	Post-ReDevelopment TP Load per acre (lb/acre/yr)
0.30	**1.15**	**0.68**

Total TP Load Reduction Required (lb/yr)	**2.24**	0.56	1.69

	Final Post-Development Load (Post-ReDevelopment & New Impervious)	Pre-ReDevelopment
TN Load (lb/yr)	24.92	5.28

Site Compliance Summary

Maximum % Reduction Required Below Pre-ReDevelopment Load	20%

** Note: % Reduction will reduce post-development TP load to less than or equal to baseline load of 0.85 lb/yr (0.41 lb/ac/yr) (Required reduction for Post-ReDev. = Post-ReDev TP load - baseline load of 0.8487 lb/yr), baseline load = site area x 0.41 lb/ac/yr*

Total Runoff Volume Reduction (ft³)	0
Total TP Load Reduction Achieved (lb/yr)	1.84
Total TN Load Reduction Achieved (lb/yr)	0.00
Remaining Post Development TP Load (lb/yr)	1.64
Remaining TP Load Reduction (lb/yr) Required	0.40

**Reduction below new development load limitation not required*

Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Managed Turf (acres)	1.93	0.00	0.00	0.00	0.00	1.93
Impervious Cover (acres)	1.10	0.00	0.00	0.00	0.00	1.10
Total Area (acres)	**3.03**	**0.00**	**0.00**	**0.00**	**0.00**	**3.03**

Drainage Area Compliance Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
TP Load Reduced (lb/yr)	1.84	0.00	0.00	0.00	0.00	1.84
TN Load Reduced (lb/yr)	0.00	0.00	0.00	0.00	0.00	0.00

Drainage Area A Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest/Open (acres)	0.00	0.00	0.00	0.00	0.00	0
Managed Turf (acres)	0.00	0.00	0.00	1.93	1.93	64
Impervious Cover (acres)	0.00	0.00	0.00	1.10	1.10	36
					3.03	

BMP Selections

Practice	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	BMP Treatment Volume (ft³)	TP Load from Upstream Practices (lbs)	Untreated TP Load to Practice (lbs)	TP Removed (lb/yr)	TP Remaining (lb/yr)	Downstream Treatment to be Employed
14.b. Manufactured Treatment Device-Filtering	**0.21**	**1.88**	**6,643.49**	**0.00**	**4.17**	**1.67**	**2.50**	

Total Impervious Cover Treated (acres)	1.00
Total Turf Area Treated (acres)	1.59
Total TP Load Reduction Achieved in D.A. (lb/yr)	1.84
Total TN Load Reduction Achieved in D.A. (lb/yr)	0.00

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042405
10/15/24
PROFESSIONAL ENGINEER

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
312 WEST MAIN ST - P.O. BOX 387
LURAY, VA 22835
PH: (540) 743-9227 - FAX: (540) 743- 6018

CHECKED:JPT | DRAWN:HV | DESIGNED:HV

STRASBURG ROAD SUBDIVISION
VRRM MAP
ALI BILLOO
WARREN COUNTY, VA

PUBLISH DATE: 10/15/2024
RACEY PROJECT NUMBER: 9276

C601

P:\2022\9276 – Ali Billoo – Strasburg Road Subdivision – 20A114–23B–Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

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PLAN SUBMISSION CHECKLIST

[SEE DEQ GUIDANCE MEMO NO. 22–2012 FOR ADDITIONAL INSTRUCTIONS]

A. APPLICATION TYPE

_X_ INITIAL SUBMISSION
___ RESUBMISSION DEQ PLAN # :_____
___ MODIFICATION with ACREAGE INCREASE DEQ PLAN # :_____
___ MODIFICATION without ACREAGE INCREASE DEQ PLAN # :_____

B. DESIGN PROFESSIONAL

CONTACT NAME: JOSHUA P. TURNER, P.E.
MAILING ADDRESS: 312 WEST MAIN STREET, LURAY VA
TELEPHONE NO: 540–743–9227
EMAIL ADDRESS: JTURNER@RACEYENGINEERING.COM

C. PROJECT DEVELOPER

PROJECT DEVELOPER:
CONTACT NAME:
MAILING ADDRESS:
TELEPHONE NO:
EMAIL ADDRESS:

D. PROPERTY OWNER

PROPERTY OWNER: ALI BILLOO
CONTACT NAME: ALI BILLOO
MAILING ADDRESS: 7214 SIPES LANE, ANNANDALE VA
TELEPHONE NO: 703–346–6254
EMAIL ADDRESS: BILLSHOMES@HOTMAIL.COM

E. PROJECT INFORMATION

PROJECT NAME: STRASBURG ROAD SUBDIVISION
ADDRESS (911 ADDRESS IF AVAILABLE):
COUNTY (IF NOT LOCATED WITHIN A CITY):
TAX MAP NO. (OR GPIN): 20A114 23B
LATITUDE (6 DIGITS, DECIMAL DEGREES): 38.9490
LONGITUDE (6 DIGITS, DECIMAL DEGREES): 78.2103
TOTAL LAND AREA OF DEVELOPMENT (1/100th ACRE): 3.52 AC
ESTIMATED AREA TO BE DISTURBED (1/100th ACRE): 2.94 AC
PROJECT STATUS: ___ FEDERAL ___ STATE ___ PUBLIC _X_ PRIVATE
PART OF A LARGER COMMON PLAN OF DEVELOPMENT? ___ YES ___ NO
OFFSITE IMPROVEMENTS PROPOSED? ___ YES ___ NO

F. OFFSITE SUPPORT ACTIVITY INFORMATION

OFFSITE SUPPORT ACTIVITY NAME:
ADDRESS (911 ADDRESS IF AVAILABLE):
COUNTY (IF NOT LOCATED WITHIN A CITY):
TAX MAP NO. (OR GPIN):
LATITUDE (6 DIGITS, DECIMAL DEGREES):
LONGITUDE (6 DIGITS, DECIMAL DEGREES):
ESTIMATED AREA TO BE DISTURBED (1/100th ACRE):

G. PLAN INFORMATION

GENERAL PLAN INFORMATION	SHEET NO.
1. VICINITY MAP	T100
2. NORTH SCALE	T100
3. PLAN LEGEND	T101
4. PLAN SCALE	T100
5. SHEET INDEX	T100

PRE–DEVELOPMENT SITE INFORMATION	SHEET NO.
6. NARRATIVE OF PRE–DEVELOPMENT SITE CONDITIONS	C400
7. EXISTING PROPERTY BOUNDARIES (INC. LEASE BOUNDARIES)	C100
8. EXISTING TOPOGRAPHY (EXISTING CONTOURS)	C100
9. EXISTING STREAMS, PONDS, DITCHES, WETLANDS & OTHER WATERS	N/A
10. EXISTING KARST FEATURES	N/A
11. EXISTING 100–YEAR FEMA FLOODPLAIN	N/A
12. RESOURCE PROTECTION AREAS	N/A
13. EXISTING IMPROVEMENTS (BUILDINGS, ROADS, PARKING & UTILITIES)	C100
14. EXISTING VEGETATIVE AREAS (FOREST, OPEN SPACE & TURF)	C601
15. EXISTING LAND COVER / USE TABULATION	C601
16. EXISTING EASEMENTS (DEED BOOK/PAGE REF. OR INSTRUMENT #)	T100
17. PRE–DEV. DRAINAGE AREAS (ACREAGE, DIVIDES & FLOW PATHS)	C600

POST–DEVELOPMENT SITE INFORMATION	SHEET NO.
18. NARRATIVE OF POST–DEVELOPMENT SITE CONDITIONS	C400
19. PROPOSED PROPERTY BOUNDARIES (INC. LEASE BOUNDARIES)	C100
20. PROPOSED LIMITS OF LAND DISTURBANCE (CLEARING & GRADING)	C401
21. PROPOSED GRADING (PROPOSED CONTOURS INC. SWM PRACTICES)	C300
22. PROPOSED 100–YEAR FLOODPLAIN	N/A
23. PROPOSED IMPROVEMENTS (BLDGS, ROADS, PARKING & UTILITIES)	C200
24. PROPOSED VEGETATIVE AREAS (FOREST, OPEN SPACE & TURF)	C601
25. PROPOSED LAND COVER / USE TABULATION	C601
26. PROPOSED EASEMENTS	N/A
27. POST–DEV. DRAINAGE AREAS (ACREAGE, DIVIDES & FLOW PATHS)	C600

EROSION & SEDIMENT CONTROL INFORMATION	SHEET NO.
28. NARRATIVE OF PROP. EROSION & SEDIMENT CONTROLS	C400
29. MINIMUM STANDARDS (9VAC25–840–40)	C400
30. CRITICAL EROSION AREAS (VESCH, CHAPTER 6)	C400
31. PROP. EROSION & SEDIMENT CONTROLS (VESCH, CHAPTER 3)	C401
32. EROSION & SEDIMENT CONTROL DETAIL DRAWINGS	C500
33. HYDROLOGIC & HYDRAULIC COMPUTATIONS	COMPS BOOK
34. INSPECTION, OPERATION & MAINTENANCE REQUIREMENTS	C400

G. PLAN INFORMATION (CONT.)

POST–DEVELOPMENT WATER QUANTITY & WATER QUALITY INFO.	SHEET NO.
35. NARRATIVE OF PROP. SWM FACILITIES / PRACTICES	C600
36. PROP. SWM FACILITIES / PRACTICES	C600
37. HYDROLOGIC & HYDRAULIC COMPUTATIONS *	COMPS BOOK
38. LONG–TERM INSP., OPERATION & MAINTENANCE REQUIREMENTS	C400
39. OUTFALL SUMMARY TABLE WITH PRE, POST, AND ALLOWABLE DISCHARGE RATES USED FOR QUANTITY ASSESSMENT; IDENTIFY THE TYPE OF CONVEYANCE SYSTEM AT EACH POINT OF DISCHARGE	C600

* STORM DRAIN DESIGN COMPUTATIONS AND HYDRAULIC GRADE LINE COMPUTATIONS SHOULD BE PROVIDED AND SHOULD INCLUDE EACH PIPE SEGMENT. IN ADDITION, STORM SEWER LONGITUDINAL PROFILES WITH HYDRAULIC GRADE LINE ELEVATIONS SHOULD BE INCLUDED FOR VISUAL REPRESENTATION. DESIGN CALCULATIONS AND CROSS–SECTIONS SHOULD BE PROVIDED FOR ALL OPEN MANMADE CHANNELS. CROSS–SECTIONS SHOULD SHOW AND LABEL THE 1–YEAR, 2–YEAR, AND 10–YEAR WATER SURFACE ELEVATIONS.

SOILS & GEOTECHNICAL INFORMATION	SHEET NO.
40. SOILS MAP (INC. NRCS SOIL TYPES)	C400
41. SOILS TABULATION	C400
42. GEOTECHNICAL INVESTIGATION / REPORT	COMPS BOOK

OTHER SUPPORTING INFORMATION	SHEET NO.
43. BOUNDARY SURVEY (18VAC10–20–370)	C100
44. PHYSICAL IMPROVEMENT SURVEY (18VAC10–20–380)	C100
45. TOPOGRAPHIC SURVEY (18VAC10–20–382)	C100

H. LAND COVER TABULATION

EXISTING LAND COVER / USE	ACRES
1. IMPERVIOUS COVER	0.14
IMPERVIOUS COVER (% OF TOTAL LAND AREA OF DEVELOPMENT)	4.6%
2. MANAGED TURF	0.23
3. OPEN SPACE	0
4. FOREST COVER	2.66
5. PRIME FARMLAND (NRCS FARMLAND CLASSIFICATION)	N/A

PROPOSED LAND COVER / USE ("SITE" TAB OF VRRM SPREADSHEET)	ACRES
1. IMPERVIOUS COVER	1.10
IMPERVIOUS COVER (% OF TOTAL LAND AREA OF DEVELOPMENT)	36.3%
2. MANAGED TURF	1.93
3. OPEN SPACE	0
4. FOREST COVER	0

I. SOILS TABULATION

MAP UNIT SYMBOL	MAP UNIT NAME	HSG	K FACTOR	ERODIBILITY	ACRES IN LOD	% OF LOD
41C	WEIKERT–BERKS CHANNERY SILT LOAMS	D	0.17	LOW	0.94	32%
41D	WEIKERT–BERKS CHANNERY SILT LOAMS	D	N/A	LOW	2.00	68%

J. EROSION & SEDIMENT CONTROL

ESC PLAN VARIANCE REQUEST: ___ YES _X_ NO

IF "YES", PLEASE PROVIDE JUSTIFICATION FOR THE VARIANCE REQUEST:

K. STORMWATER MANAGEMENT

APPLICABLE DESIGN CRITERIA:
___ PART II B
___ PART II C (GRANDFATHERING)
___ PART II C (TIME LIMITS ON APPLICABILITY)
___ "SAFE HARBOR"

OFFSITE COMPLIANCE OPTION(S)? ___ YES _X_ NO

IF "YES", PLEASE DESCRIBE THE OFFSITE COMPLIANCE OPTION(S):

DISCHARGE TO A KARST FEATURE(S)? ___ YES _X_ NO

IF "YES", PLEASE DESCRIBE THE KARST FEATURE(S):

IF "YES", PLEASE DESCRIBE ANY KNOWN NATURAL HERITAGE RESOURCES IN THE KARST FEATURE(S):

SWM PLAN EXCEPTION REQUEST? ___ YES _X_ NO

IF "YES", PLEASE PROVIDE THE JUSTIFICATION FOR THE EXCEPTION REQUEST:

L. STORMWATER MANAGEMENT FACILITIES / PRACTICES

FACILITY NO.	FACILITY TYPE	LAT.	LONG.	REC. WATER	TOT. ACRES TREATED	IMP. ACRES TREATED	PLAN SHEET NO.
12	FILTER DEVICE	38.9497	–78.2099	02070006	3.40	1.16	C301

M. OWNER / DEVELOPER CERTIFICATION

I hereby certify that coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities will be obtained, if required, prior to commencing land-disturbing activities.

I hereby certify that all wetlands permits required by law will be obtained, if required, prior to commencing land disturbing activities.

I hereby certify that permission to construct any offsite improvements, if proposed, will be obtained prior to commencing land disturbing activities.

I hereby certify that all offsite nonpoint source nutrient credits will be obtained, if proposed, prior to commencing land disturbing activities.

I hereby certify that construction record drawings (as-built drawings) for all permanent stormwater management facilities/practices will be prepared and submitted to DEQ prior to project closeout. The construction record drawings will be appropriately sealed and by a professional registered in the Commonwealth of Virginia, certifying that the stormwater management facilities/practices have been constructed in accordance with the approved plan(s).

I hereby certify that a long-term maintenance agreement(s) for all permanent stormwater management facilities/practices and other techniques specified to manage the quality and quantity of runoff will be submitted to DEQ, if required, prior to project closeout. The long-term maintenance agreement(s) will be recorded in the local land records prior to termination of coverage under the General VPDES Permit for Discharges of Stormwater from Construction Activities.

OWNER / DEVELOPER NAME:
OWNER / DEVELOPER TITLE:
SIGNATURE:
DATE:

N. DESIGN PROFESSIONAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I hereby certify that the plans and hydrologic & hydraulic computations herein are in compliance with the Stormwater Management Act and attendant regulations, the Erosion and Sediment Control Law and attendant regulations, and applicable DEQ guidance.

DESIGN PROFESSIONAL NAME:
LICENSE NO.:
SIGNATURE:
DATE:

O. DUAL COMBINED ADMINISTRATOR (DCA) CERTIFICATION

[INCLUDE THIS SECTION / CERTIFICATION IF REQUESTING A STREAMLINED PLAN REVIEW IN ACCORDANCE WITH DEQ GUIDANCE MEMO NO. 22–2011, OTHERWISE DELETE]

I hereby certify that I have reviewed the plans and hydrologic & hydraulic computations herein for compliance with the Stormwater Management Act and attendant regulations, the Erosion and Sediment Control Law and attendant regulations, and applicable DEQ guidance, and recommend the plans and computations for DEQ approval.

DCA NAME:
DCA CERTIFICATION NO.:
SIGNATURE:
DATE:

APPROVAL BLOCK
DEQ PLAN # 20___ – 0___

DEPT. OF ENVIRONMENTAL QUALITY

DATE

No.	Submittal / Revision	By	Appr'd	Date
1	1ST SUBMITTAL TOWN	HV	JPT	06/28/24
2	2ND SUBMITTAL TOWN	HV	JPT	10/15/24

COMMONWEALTH OF VIRGINIA
Joshua Perry Turner
Lic. No. 042405
10/15/24
PROFESSIONAL ENGINEER

PERMIT REVIEW SET

RACEY ENGINEERING PLLC
312 WEST MAIN ST - P.O. BOX 387
LURAY, VA 22835
PH: (540) 743-9227 - FAX: (540) 743-6018

CHECKED:JPT
DRAWN:HV
DESIGNED:HV

STRASBURG ROAD SUBDIVISION
DEQ COVER SHEET
ALI BILLOO
WARREN COUNTY, VA

RACEY PROJECT NUMBER: 9276 PUBLISH DATE: 10/15/2024

C602

P:\2022\9276 – Ali Billoo – Strasburg Road Subdivision – 20A114–23B–Civil\8. DESIGN\4. DWG\CIVIL\COMPOSITE

Town of Front Royal, VA | Dept. of Planning & Zoning
102 E. Main St | Front Royal, VA 22630
Office: (540) 635-4236

Strasburg Road Subdivision

Permit #2400421 (Owner-Ali Billoo)

DATE: 19 December 2024

TO: Joshua P. Turner P.E. and Bradley Ritchie CE

CC: Lauren Kopishke, Director of Planning & Zoning

FROM: John M. Ware, Deputy Zoning Administrator

RE: Comments on Preliminary Plan dated October 15, 2024 (2nd Submittal)

Mr. Turner,

We have reviewed the above-noted submission and offer the following comments:

1. Comments are based on Policy Guidelines for a Major Subdivision Preliminary Plan per 148-300, Street Design per 148-820, Utilities and Services per 148-840, Street Improvements 148-850 and Zoning per Chapter 175 of the Towns Municipal Code and the associated checklist. All other Local Agencies' Comments (Warren County Building and E&S, Fire Marshall's Office, VDOT, DEQ) from the previous submittal still apply.

2. As per Checklist 148-1010-1 item (e), Provide minimum lot size requirements on the Cover Sheet.

3. As per Checklist 148-1010-1 item (i), provide an area tabulation showing total area and number of lots, streets, open space and residue on the Cover Sheet. *Provide a tabulation list showing the area (square footage) of all the lots, streets, open space, etc. on the Cover Sheet.*

4. As per Checklist 148-1010 item (12), Show location type, grade, and all proposed and existing sanitary sewers, manholes, gas lines, storm sewers, inlets ditches, culverts and other unities. Show location of proposed connections to existing utilities. *Provide invert information, type, size, percent of grade, length of pipe, etc. for the culverts shown on the plans.*

5. As per Checklist 148-1010 item (25), provide typical street section of proposed street showing entire width of right-of-way, depth and type of pavement, base and subbase and curb line or ditch section, sidewalk and cut or fill slope. *The Typical Road Section provided on Sheet C303 needs to include curb and gutter.*

6. As per Checklist 148-1010 item (37), Show significant physical features on the property (watercourses, wetlands, wooded areas, etc.) and other significant man-made or natural features within the subdivision. *Since most of the parcel is wooded, show the wooded areas on an appropriate sheet.*

As per PUBLIC WORKS COMMENTS

7. Sheet C200 needs to have the CG-6 curb and gutter and CG-9 driveway aprons labeled and shown.

8. Sidewalk still needs to be shown on the plans, there's no approved waiver for the sidewalk at this time.

9. Town standards need to be added to the detail sheet, W-6, S-10, S-1, RC-1, RC-2, RC-4, and RC-5.

Please resubmit with corrections at your earliest convenience.

Respectfully,

John M. Ware, ESCA0307, SWPA0226, CZO
Deputy Zoning Administrator

2400421
D. Beahm Comments

Connie Potter

From: David Beahm <Dbeahm@warrencountyva.gov>
Sent: Monday, July 15, 2024 1:09 PM
To: Connie Potter
Cc: Gerry Maiatico; Gordon Foster; Inspections; Kevin Perry; Matthew Byers
Subject: RE: Request for Comments – Major Subdivision Preliminary Plan Review – Tax Map 20A114----23B – 336 West Strasburg Rd., Front Royal, VA – 2400421
Attachments: 2400421_Application_Preliminary Plan_Major Subdivision_336 W Strasburg Rd.pdf; 2400421_Plan_STRASBURG ROAD SUBDIVISION_062824.pdf; 2400421_Stormwater Computations Packet.pdf

Comments – Ali Billoo – Preliminary Plan Approval Major Subdivision – 2400421:

- Erosion and Sediment Control (ESC) Items:
  - Application and permits are required for ESC permit, which would be a normal submission including a full plan review application.
  - The area of disturbance exceeds one (1) acre, more than two dwellings and a new subdivision which will additionally require a Stormwater permit through the Department of Environmental Quality (DEQ). Approval by DEQ (Construction General Permit) would be required prior to any ESC Permit and any type of Building Permit being issued by Warren County.
  - Each lot when developed for a residential dwelling unit would then be required to have an Agreement In Lieu Of which would be obtained at that time.

- Site Plan Review:
  - If or when any building construction related activity were to take place, a Site Plan Review and Permit for Building Code Compliance would be required to be completed for including emergency access, utilities, structure placement for required fire separation, fire hydrants, fire lane markings, required fire signage, etc.

- Building Inspections Items:
  - If or when any building construction related activity (structure, electrical, plumbing, mechanical, fire suppression, energy, etc.) were to start, it would be subject to the normal requirements of application, review and approval prior to work beginning.

- Fire Marshal's Office Comments (standard):
  - We would defer all comments for the site development/new construction/retrofit/change of use to the Building Official. Upon approval and issuance of the CO, the facility (as applicable) shall be maintained in accordance with the Virginia Statewide Fire Prevention Code.

If anything should change in the scope, additional requirements may be required.

Respectfully,

David C. Beahm, CBO
Building Official
County of Warren
540-636-9973
Fax 540-636-4698
dbeahm@warrencountyva.gov
www.warrencountyva.gov

Connie Potter

From: Spielman, Joseph (VDOT) <Joseph.Spielman@vdot.virginia.gov>
Sent: Monday, August 5, 2024 1:55 PM
To: Connie Potter; Lauren Kopishke
Cc: Funkhouser, Rhonda (VDOT); Johnson, Joseph (VDOT)
Subject: Major Subdivision Preliminary Plan Review

Connie,

We have reviewed the above referenced Major Subdivision Preliminary Plan, Application #2400421, for impacts to the transportation system.

While we do not have any general objections to the proposal, we would recommend that you have a turn lane warrant analysis conducted for all users on Fisher Road, to see if it would warrant a turn lanes or tapers, if so, we would recommend they would be included as a condition for the application/permit. The subdivision could add 130 additional trips daily.

Also, looking at the road in person, it is curb and gutter for its entirety, the entrance should be installed to a CG-11 commercial entrance standard, providing an entrance profile to verify grades.

Please reach out if you have any further concerns or questions.

Thanks
Ryan

Joseph Ryan Spielman
Land Development Engineer / Edinburg Residency
Virginia Department of Transportation
540-535-1829
joseph.spielman@vdot.virginia.gov

2400673 – A SPECIAL USE PERMIT APPLICATION SUBMITTED BY PENNONI ASSOCIATES INC. C/O MIKE ARTZ FOR MULTI-FAMILY APARTMENTS CONTAINING THIRTY-SIX (36)UNITS IN THREE (3) SEPARATE APARTMENT HOUSES CONTAINING TWELVE (12) UNITS EACH AND AN OFFICE ON A VACANT PARCEL OFF OF ROYAL LANE, IDENTIFIED BY TAX MAP 20A17-1-14B1. THE PROPERTY IS ZONED C-1, COMMUNITY BUSINESS DISTRICT.

TOWN OF FRONT ROYAL
DEPARTMENT OF PLANNING & ZONING
102 EAST MAIN STREET
P.O. BOX 1560
FRONT ROYAL, VA 22630

Main: 540.635.4236
Fax: 540.631.2727
Internet: www.frontroyalva.com

#24006473

RECEIVED
NOV 27 2024
TOWN OF FRONT ROYAL
PLANNING & ZONING DEPARTMENT

SUP

SPECIAL USE PERMIT REQUEST

APPLICANT

NAME Pennoni Associates Inc. c/o Mike Artz PHONE 540-667-2139

ADDRESS 117 E. Piccadilly St., Suite 200, Winchester, VA 22601

E-MAIL MArtz@pennoni.com

PROPERTY DESCRIPTION

PROPERTY ADDRESS Royal Lane (vacant)

TAX MAP 20 SECTION A BLOCK 171 LOT 14B1

SUBDIVISION NAME _____ ACREAGE 3.601

REQUEST

ZONING DISTRICT C-1

PROPOSED USE OF PROPERTY Residential Apartments

SPECIFIC SPECIAL USE PERMIT REQUEST Three 12 unit apartment buildings and an office.

ATTACHMENTS --The following ***must*** be submitted with the application. Additional information may be required depending on the nature of the request.

1. Survey/Plat of property showing all **existing** improvements. (10 copies if larger than 11" X 17")
2. Site Plan Application
3. Application Fee of $400.00 (Checks payable to the Town of Front Royal)
4. Additional information as required by the Department of Planning & Zoning.

CERTIFICATION Pd $400.00 on 11/27/24 Ck# 24802

I certify that the information provided with this application is correct to the best of my knowledge and should the special use permit be granted, the project will comply with the conditions imposed upon it and will be implemented only as approved by Town Council.

Signature Michael M. Artz Date 11/27/24

By submitting this application, the applicant grants permission to Town officials and employees to enter upon the property, which is the subject of this application, during reasonable hours and for purposes related to the application process.

Receipt # _____ Date Paid _____

Revised 2-15-13

0 REMOUNT RD

Property Details

Current Owner

Name: BEEREN & BARRY INVESTMENTS LLC

Mailing Address: 11654 PLAZA AMERICA DR #653 N/A
RESTON, VA 20190

Physical Address: 0 REMOUNT RD
FRONT ROYAL, VA 22630

Tax Map #: 20A171 14B1

Account #: 31140

Total Acres (Includes all Sublots): 3.4984

Zoning: C-1

Occupancy Code: Vacant Commercial

Magisterial Code: Shenandoah-Town

Land Use: Commercial/Industrial

School Zone: HJB Elem., WC Middle, WC High

Legal Repository

Legal Description: L 14B1 F H L INC LR02-4781

Legal Description 2: SURVEY LR05-929 & BDY

Legal Description 3: ADJ LR18-4507

Legal Description 4: N/A

Instrument Type and Year: LR 2024

Instrument Number: 2398

Slide Number: N/A

Slide Index: N/A

Deed Book No: N/A

Deed Book Page: 0

Will Book No: N/A

Will Book Page: 0

Valuation & Sales

Land	Improvements	Total Value
$437,300	N/A	$437,300

Grantor	Sale Price	Sale Date
CAMPBELL JEANNETTE M TTEE/CAMPBELL	$603,000	6/17/2024

Number of Parcels Involved in Sale

1

Building

Year Built: N/A
Story Height: N/A
Number of Rooms: N/A
Number of Bedrooms: N/A
Full Bathrooms: N/A
Half Bathrooms: N/A
Basement: N/A
Finished Basement SQ FT: N/A
Garage Capacity: N/A
Garage Type: N/A

Foundation Type: N/A
Water: Public Available
Sewer: Public Available
Heating: N/A
Air Conditioning: N/A
Fuel Type: N/A
Floor Type: N/A
Exterior Wall Type: N/A
Interior Wall Type: N/A
Roof Type: N/A
Roof Material: N/A

ROYAL LANE APARTMENTS – IMPACT ANALYSIS STATEMENT
November 19, 2024

The following is a summary of the proposed special use permit for Royal Lane Apartments which proposes 36 total apartment units comprised of three 3-story buildings, as well as an office building, on the vacant parcel at the existing terminus of Royal Lane within the Town of Front Royal (the "Town"). The project site totals 3.4984 acres zoned C-1 (Community Business) and is identified by the Town as tax map parcel 20A171-14B (the "Property"). The development is proposed by Beeren & Barry Investments, LLC to provide for needed workforce housing in the area. The Town of Front Royal Zoning Ordinance permits apartment developments containing four or more units within the C-1 Zoning District subject to approval of a Special Use Permit.

Proposed Development

The proposed development plan for the Property is depicted on the attached Preliminary Site Plan for Royal Lane Apartments. As shown, the project would consist of three buildings, each containing 12 apartment units along with associated surface parking served by a southerly extension of Royal Lane, an office space, and a playground. The proposed 36 apartment units represent a density of 10 dwelling units per acre. The extension of Royal Lane would be constructed to Town standards to provide for the future dedication of the roadway and its associated right of way through the Property, allowing for an extension of the roadway south of the project site at a future date, if desired.

Site Location

A location map is attached as *Exhibit A*. As shown, the project is located at the existing terminus of Royal Lane approximately 1,100 feet south of the intersection of Royal Lane with John Marshall Highway (Route 55). Existing development along Royal Lane is predominantly residential in nature. Business type development on the roadway is limited to a professional office building located at Royal Lane's intersection with Route 55 as well as a day care facility located west and adjacent to the subject Property at the terminus of Royal Lane. The remaining development along Royal Lane includes apartments on the west side of the roadway and single-family dwellings on the east side. The proposed apartment use for the Property would be consistent with the residential nature of Royal Lane.

A zoning map is attached as *Exhibit B*. The subject Property as well as all parcels located west of Royal Lane are zoned C-1 (Community Business) while the parcels located east of Royal Lane are zoned R-1 (Residential). Despite the commercial zoning for half the parcels fronting Royal Lane, the predominant development pattern is residential in the area. The proposed apartment use of the subject property would ensure that the project is developed in a manner that is consistent with the existing development pattern.

Site Characteristics

Sheet 2 of the attached preliminary site plan depicts the existing site conditions. The Property is currently vacant, wooded and includes an existing power line bisecting the site in a north/south direction. The Property contains sloping topography with a high

elevation at its western boundary of 707 feet and a low elevation at the eastern property boundary of approximately 643 feet. The proposed development plan takes the sloping topography into account and would utilize a retaining wall with a maximum height of approximately 8 feet in proximity to the eastern property boundary, as well as a retaining wall to the south of the property around the playground area.

Soils on the site are identified as Unison-Chagrin-Dyke soils which are characterized as deep, well drained soils that have a loamy or clayey subsoil. The specific soil type for the subject includes Chester loam and Dekalb channery loam. The characteristics of this soil type and any implications for site development are manageable through the site engineering process.

Pursuant to FEMA flood map numbers 51187C0116C and 51187C0118C, both with effective date June 3, 2008, the entire site is located in areas of minimal flooding outside of the 100-year and 500-year flood plain.

Access and Transportation

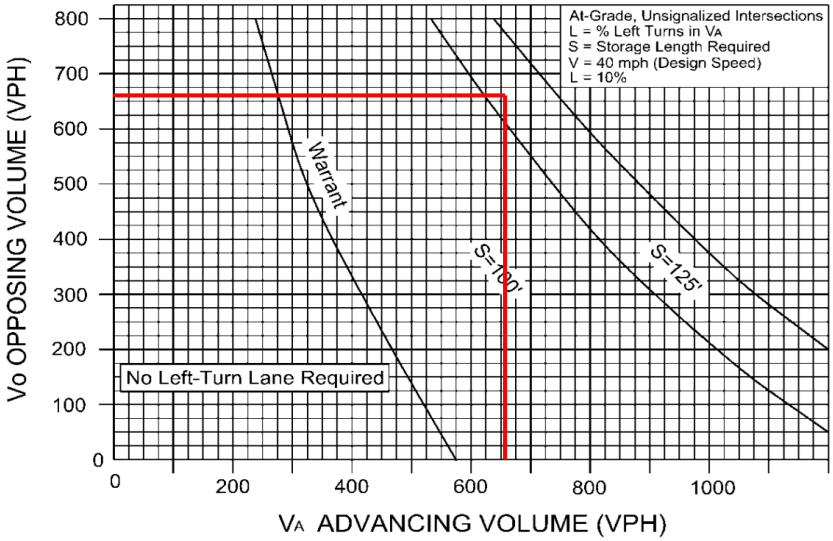
Access to the Property would be provided by an extension of Royal Lane into the Property. Currently, Royal Lane terminates at the northern property boundary. The proposed development plan would extend Royal through the Property to a cul-de-sac near the southern site boundary. A reserve area will be provided that would enable the dedication of the extension of Royal Lane through the site as a public street. The right of way reservation area extends to the southern property boundary, providing the opportunity for a future extension of Royal Lane if desired.

The proposed 36 apartment units would generate 252 average daily vehicle trips. Compared with the commercial uses that could be realized on the Property on a by-right basis, this special use permit application substantially reduces the trip generation potential for the site.

Other existing uses on Royal Lane include 9 single family dwellings, 90 apartment dwellings, a day care facility of approximately 7,000 SF, and a professional office building of approximately 10,000 SF. These existing uses would generate approximately 1,502 ADT (average daily trips). Combined with the 252 trips associated with the proposed 36 apartment units, the total traffic volume on Royal Lane would be approximately 1,754 ADT. Applying a peak hour factor of 0.11, the peak hour trips would be approximately 193 trips (97 trips in/96 trips out based on a 50/50 split of inbound and outbound movements).

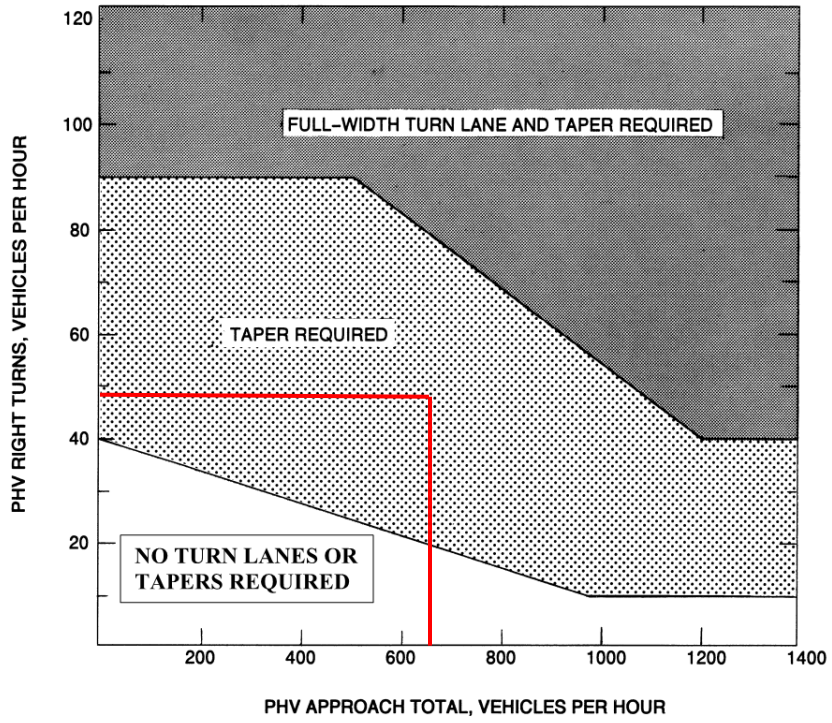
2014 VDOT traffic data identifies 12,000 total trips on John Marshall Highway at Royal Lane. Assuming a 50/50 split between eastbound and westbound trips results in 6,000 eastbound and 6,000 westbound trips resulting in 660 peak hour trips in each direction. Utilizing the VDOT Road Design Manual and 2014 VDOT Traffic Counts on John Marshall Highway (assuming a 50/50 split on eastbound and westbound trips), left and right turn lane warrants for the subject intersection are as follows:

Warrant for Left Turn Lane



Note: 125 Foot Left Turn Lane Required (Westbound Route 55).

Warrant for Right Turn Lane



Note: Right Turn Taper Required (Eastbound Route 55).

Photograph 1 and *Photograph 2*, provided below, depict the existing road improvements for John Marshall Highway at its intersection with Royal Lane. As shown, John Marshall Highway currently includes an eastbound right turn lane as well as a shared center turn lane which would accommodate westbound left turn movements onto Royal Lane. These existing improvements would satisfy the requirements for the right and left turn lane warrant analysis above.



Photograph 1. John Marshall Highway at Royal Lane (View facing east)



Photograph 2. John Marshall Highway at Royal Lane (View facing west)

Royal Lane is currently unstriped, but has sufficient pavement width to provide for separate turn lanes at its intersection with John Marshall Highway. *Photograph 3* depicts the existing improvements for Royal Lane at the subject intersection.



Photograph 3. Royal Lane at John Marshall Highway (View facing north).

Existing improvements are in place to accommodate the traffic generated by the proposed 36 apartment units. Moreover, the proposed special use permit would substantially diminish the traffic impact potential under the existing C-1 zoning for the Property. Accordingly, the minor trip generation associated with the proposal is manageable under existing road improvements.

Stormwater Management

Under existing conditions, the site drains from east to west. The proposed development program for the project would generally maintain the existing drainage pattern and direct stormwater flows to a stormwater management facility, likely a bio-retention filter to accommodate both stormwater quantity and quality requirements, at the southwestern limits of the project.

Sewage Conveyance and Water Supply

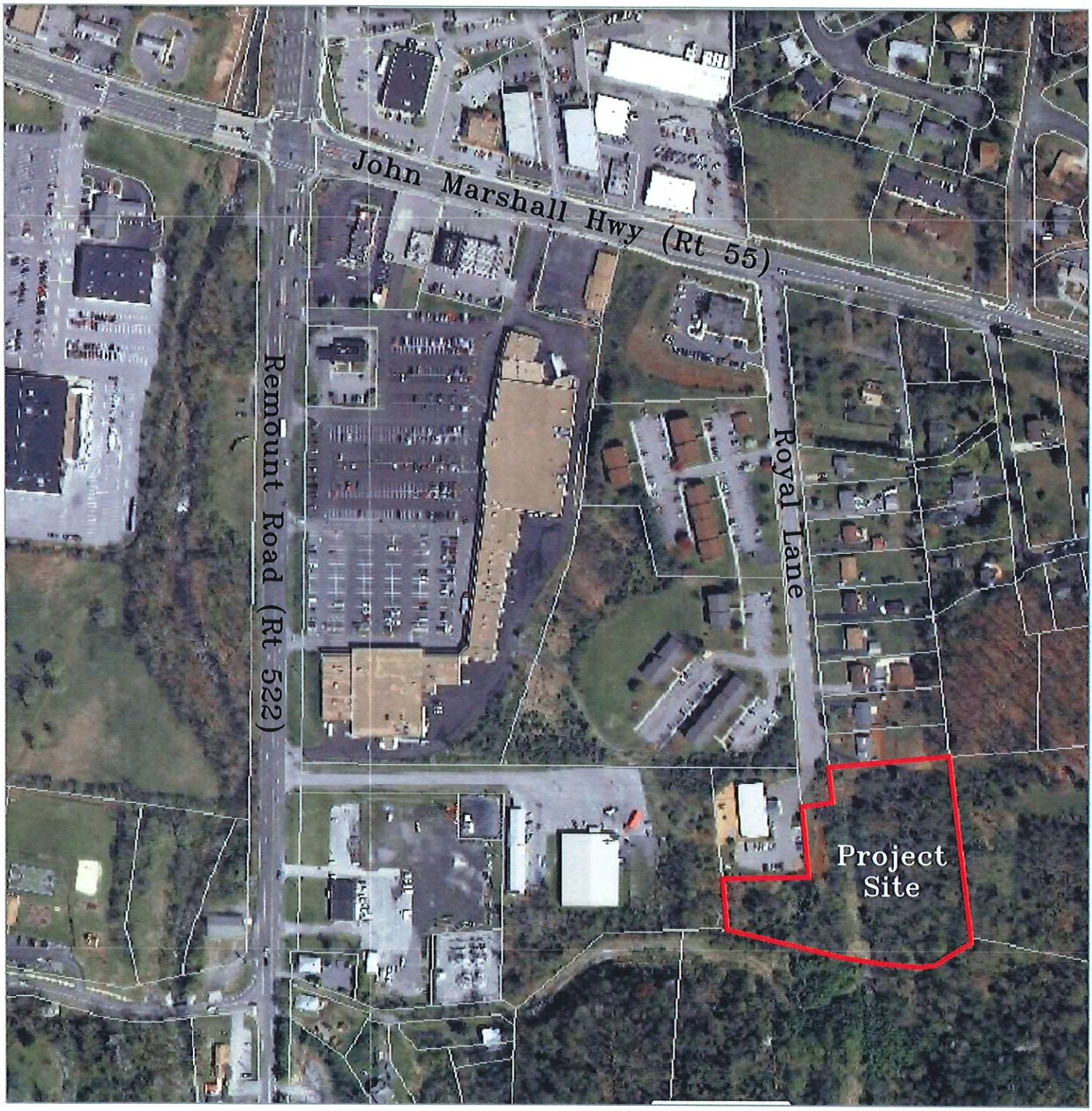
Using a standard rate of 200 gallons per day/dwelling unit it is projected that the proposed development would produce up to 7,200 gallons per day of sewer flow. Water usage would be approximately equivalent to the sewer flows. The site would be served by an extension of the existing water and sanitary facilities within Royal Lane. The water

system will be designed to provide adequate pressure for potable water service and fire-fighting services.

Summary

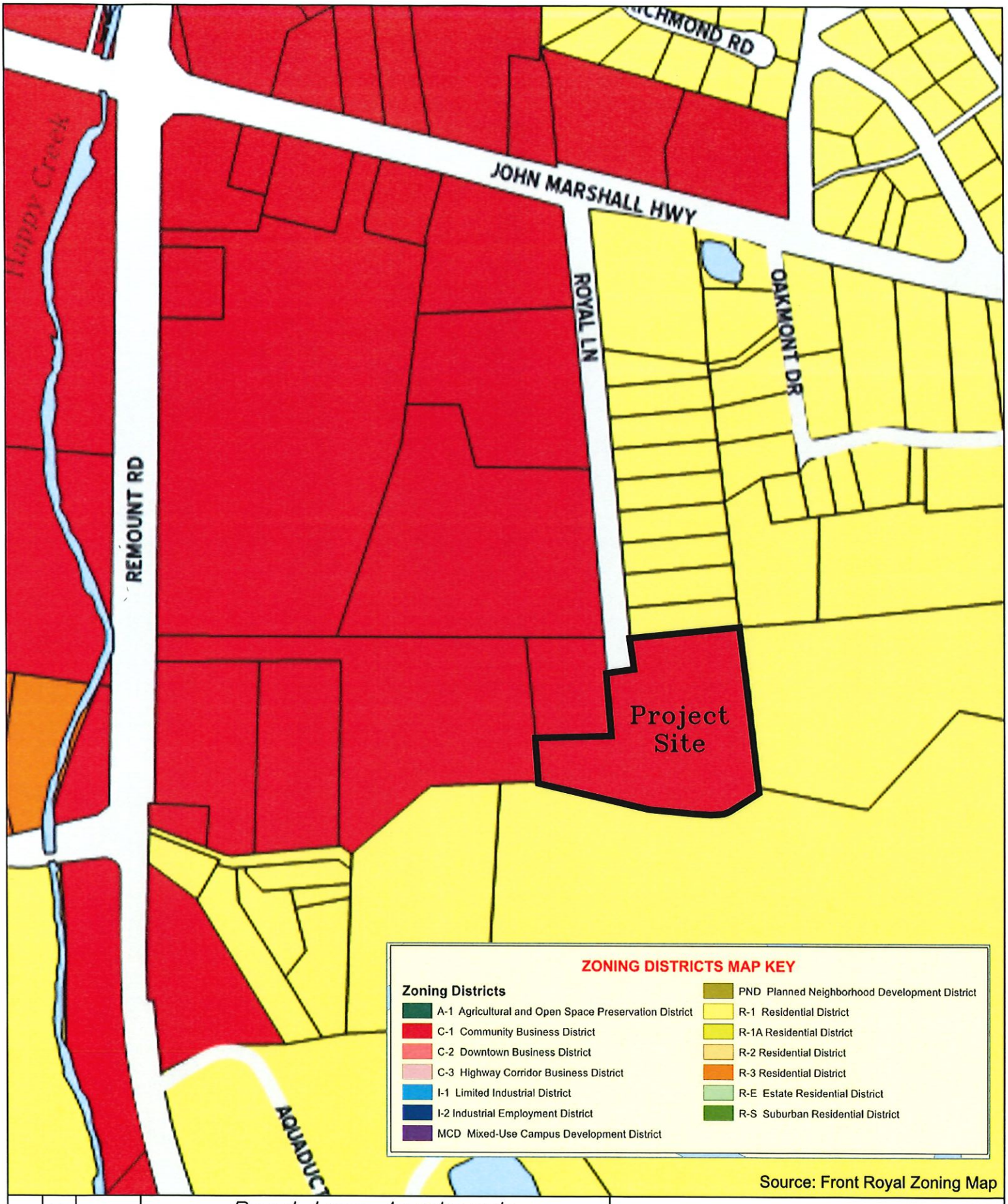
The proposed Royal Lane Apartments project would provide for the development of 36 apartment units to aid in satisfying workforce housing needs. Properties along Royal Lane are developed predominantly for residential uses despite all parcels located on the west side of the roadway being zoned for commercial uses. The proposed apartment use would continue the existing residential development pattern for the area while diminishing the traffic generation potential for the site under the existing C-1 zoning thereby minimizing impacts to the intersection of Royal Lane and John Marshall Highway.

In the case of this proposed application, the special use permit proposal would be more in keeping with surrounding properties than most of the by-right commercial uses that could occur on the Property. Therefore, the proposed special permit application for the apartments use merits favorable consideration.



Source: Warren Co. GIS

1"=300'	10/24/2024	Revised –	*Royal Lane Apartments* *Exhibit A – Location Map* *TOWN OF FRONT ROYAL, VIRGINIA*	PENNONI ASSOCIATES INC. 117 E. Picadilly St. Winchester, Virginia 22601 VOICE: (540) 667-2139 FAX: (540) 665-0493



Source: Front Royal Zoning Map

1"=300'	10/24/2024	Revised –	*Royal Lane Apartments* *Exhibit B – Zoning Map* *TOWN OF FRONT ROYAL, VIRGINIA*

PENNONI ASSOCIATES INC.
117 E. Picadilly St. Winchester, Virginia 22601
VOICE: (540) 667-2139 FAX: (540) 665-0493

ROYAL APARTMENTS

PRELIMINARY SITE PLAN

SITE PLAN #___-___

TOWN OF FRONT ROYAL, VIRGINIA -

ORIG SUBMISSION DATE: TBD

REVISED SUBMISSION DATE: TBD

Sheet List Table	
Sheet Number	Sheet Title
CS0000	COVER SHEET
CS1000	EXISTING CONDITIONS
CS4000	GEOMETRIC PLAN
CS6000	GRADING PLAN

PREPARED FOR:
OWNER/DEVELOPER

BEEREN & BARRY INVESTMENTS, LLC

11654 PLAZA AMERICA DR. #653
RESTON, VA 20190



LOCATION MAP
Scale: 1" = 2000'

PREPARED BY:

PENNONI ASSOCIATES INC.

117 East Piccadilly Street
Winchester, VA 22601
T 540.667.2139
F 540.665.0493

CALL BEFORE YOU DIG

ALWAYS CALL 811 BEFORE YOU DIG IN VIRGINIA
CALL 1-800-552-7001
SECTION 56-265.17 REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL OR BLAST VIRGINIA UTILITY PROTECTION SERVICE, INC.
TICKET NUMBER(S):

NOT FOR BID OR CONSTRUCTION

PENNONI ASSOCIATES INC.
117 East Piccadilly Street
Winchester, VA 22601
T 540.667.2139 F 540.665.0493

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

COMMONWEALTH OF VIRGINIA
MICHAEL M. ARTZ
No. 1513
DRAFT
LAND SURVEYOR

ROYAL APARTMENTS
PRELIMINARY SITE PLAN
ROYAL AVENUE
TOWN OF FRONT ROYAL, VIRGINIA
COVER SHEET
BEEREN & BARRY INVESTMENTS, LLC.
11654 PLAZA AMERICA DR. #653 | RESTON, VA 20190

NO.	DATE	REVISIONS	BY

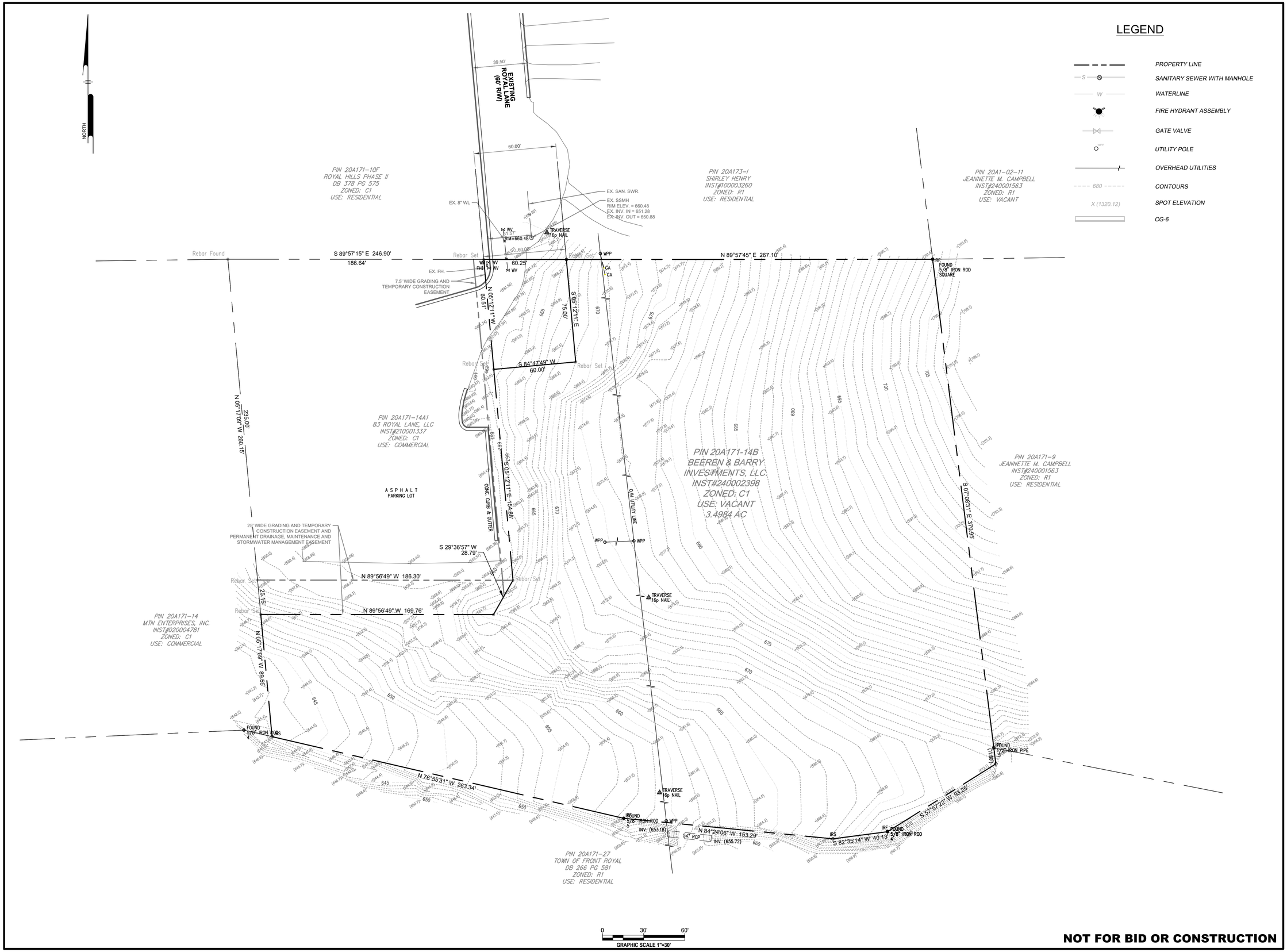
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PROJECT	BBINV24001
DATE	11-12-2024
DRAWING SCALE	AS NOTED
DRAWN BY	BEF
APPROVED BY	MMA

CS0000

TOTAL SHEETS 4

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LEGEND

- PROPERTY LINE
- SANITARY SEWER WITH MANHOLE
- WATERLINE
- FIRE HYDRANT ASSEMBLY
- GATE VALVE
- UTILITY POLE
- OVERHEAD UTILITIES
- 680 CONTOURS
- X (1320.12) SPOT ELEVATION
- CG-6

NOT FOR BID OR CONSTRUCTION

Pennoni

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117 East Piccadilly Street
Winchester, VA 22601
T 540.667.2139 F 540.665.0493

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COMMONWEALTH OF VIRGINIA
MICHAEL M. ARTZ
No. 151324
DRAFT
LAND SURVEYOR
DRAFT

ROYAL APARTMENTS
PRELIMINARY SITE PLAN
ROYAL AVENUE
TOWN OF FRONT ROYAL, VIRGINIA

EXISTING CONDITIONS

BEEREN & BARRY INVESTMENTS, LLC.
11654 PLAZA AMERICA DR. #653 | RESTON, VA 20190

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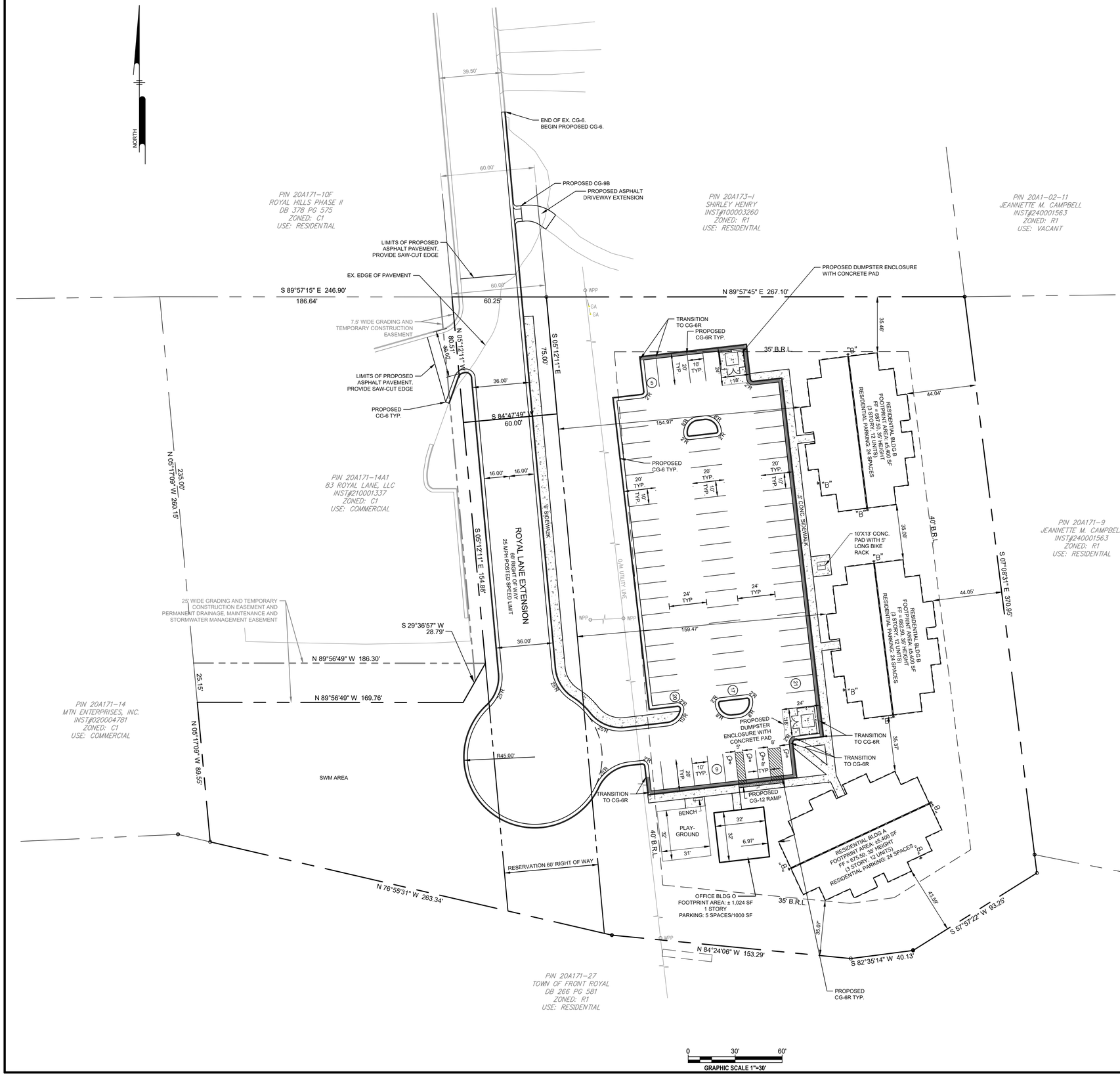
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PROJECT	BBINV24001
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DRAWING SCALE	AS NOTED
DRAWN BY	BEF
APPROVED BY	MMA

CS1000

TOTAL SHEETS 4

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LEGEND

EXISTING	NEW	DESCRIPTION
		PROPERTY LINE
		LIMITS OF CLEARING AND GRADING
S	S	SANITARY SEWER WITH MANHOLE
W	W	WATERLINE
		FIRE HYDRANT ASSEMBLY
		GATE VALVE
		UTILITY POLE
		OVERHEAD UTILITIES
	E	UNDERGROUND ELECTRIC SERVICE
		CONCRETE SIDEWALK
		CG-6
		CG-6R
680	680	CONTOURS
X (1320.12)	+675.00	SPOT ELEVATION
		SIGN POST

SITE DEVELOPMENT SUMMARY

TAX IDENTIFICATION NUMBER	20A171 14B
EXISTING ZONING	C1 - COMMUNITY BUSINESS DISTRICT
OVERALL SITE AREA	3.4984 ACRES
SITE ADDRESS	ROYAL LANE
CURRENT USE	VACANT
PROPOSED USE	RESIDENTIAL APARTMENTS
PROPOSED UNITS	36 APARTMENTS & 1 OFFICE
DISTURBED AREA	3.48 ACRES

YARDS/SETBACKS	REQUIRED	PROVIDED
FRONT	40'	154'+
SIDE	35'	35'+
REAR	40'	44'+

BUILDING COVERAGE PERMITTED	50% MAX.
BUILDING COVERAGE PROVIDED	11%

* PROPOSED BLDG FLOOR AREA	16,200 S.F. - BLDG. A
	16,200 S.F. - BLDG. B
	16,200 S.F. - BLDG. C
	1,024 S.F. - BLDG. O
	49,624 S.F. TOTAL

PARKING SCHEDULE

PARKING REQUIRED:

RESIDENTIAL: 2 SPACES/UNIT = 72 SPACES

OFFICE: 5 SPACES/1000 SF = 5 SPACES

TOTAL = 79 SPACES

PARKING PROVIDED: 72 SPACES

HANDICAPPED PARKING REQUIRED: 2 SPACES
HANDICAPPED SPACES PROVIDED: 4 SPACES

VAN ACCESSIBLE PARKING REQUIRED: 1 SPACE
VAN ACCESSIBLE SPACES PROVIDED: 1 SPACE

NOT FOR BID OR CONSTRUCTION

PENNONI ASSOCIATES INC.
117 East Piccadilly Street
Winchester, VA 22601
T 540.667.2139 F 540.665.0493

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COMMONWEALTH OF VIRGINIA
MICHAEL M. ARTZ
No. 1513
DRAFT
LAND SURVEYOR

ROYAL APARTMENTS
PRELIMINARY SITE PLAN
ROYAL AVENUE
TOWN OF FRONT ROYAL, VIRGINIA
GEOMETRIC PLAN

BEEREN & BARRY INVESTMENTS, LLC.
11654 PLAZA AMERICA DR. #653 | RESTON, VA 20190

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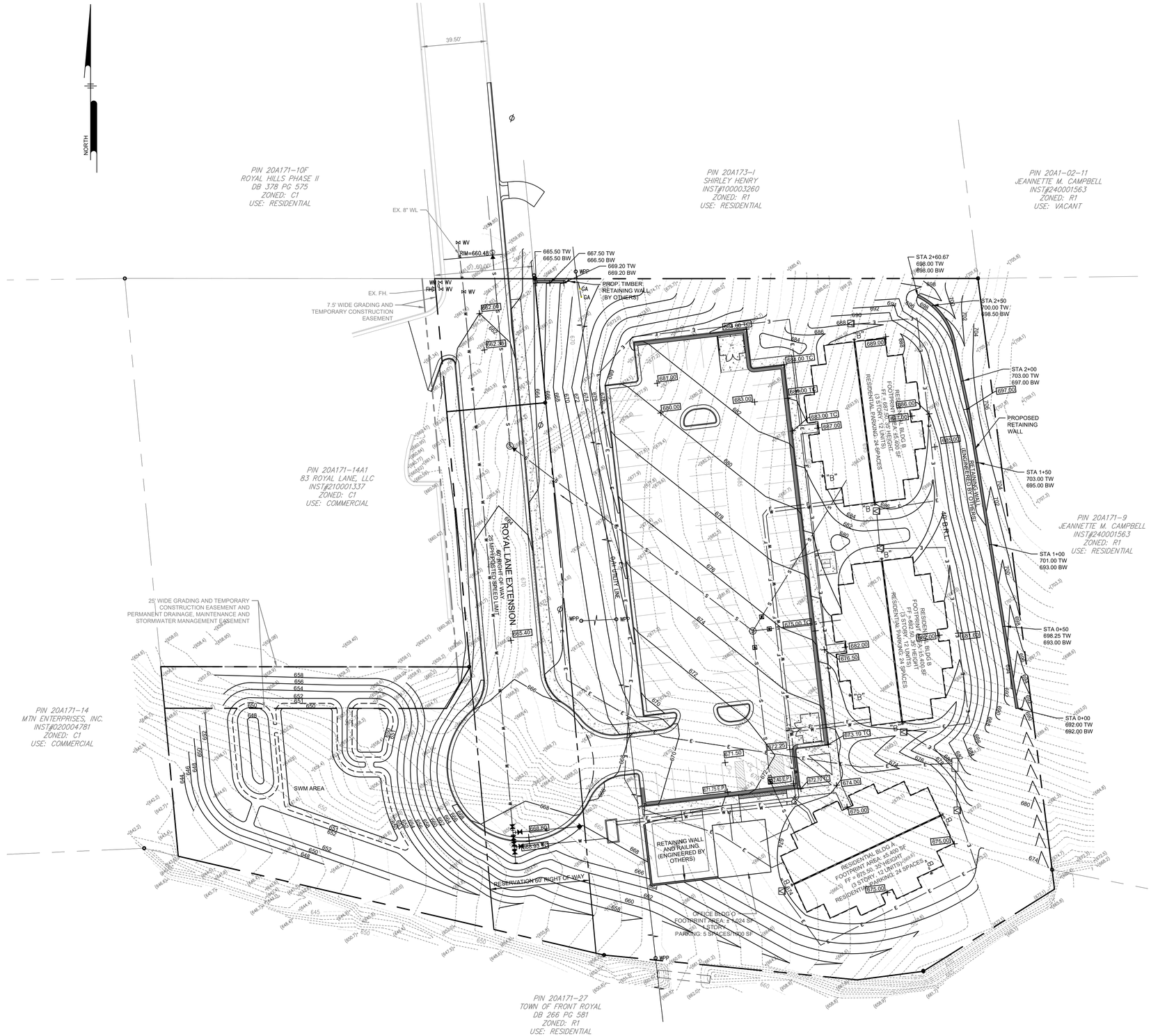
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PROJECT	BBINV24001
DATE	11-12-2024
DRAWING SCALE	AS NOTED
DRAWN BY	BEF
APPROVED BY	MMA

CS4000

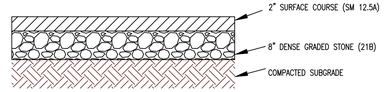
TOTAL SHEETS 4

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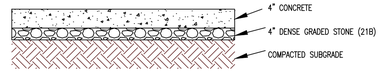


LEGEND

EXISTING	NEW	DESCRIPTION
		PROPERTY LINE
		LIMITS OF CLEARING AND GRADING
S	S	SANITARY SEWER WITH MANHOLE
W	W	WATERLINE
		FIRE HYDRANT ASSEMBLY
		GATE VALVE
		UTILITY POLE
		OVERHEAD UTILITIES
	E	UNDERGROUND ELECTRIC SERVICE
		CONCRETE SIDEWALK
		CG-6
		CG-6R
680	680	CONTOURS
X (1320.12)	+675.00	SPOT ELEVATION
		SIGN POST



SECTION FOR STD. DUTY ASPHALT PAVEMENT
N.T.S.



CONCRETE SIDEWALK SECTION
N.T.S.

NOTE:
LANDSCAPED SCREEN CONSISTING OF EVERGREEN TREES PLANTED A MAXIMUM OF 10 FT. ON CENTER SHALL BE INSTALLED ALONG THE NORTHERN AND EASTERN PROPERTY BOUNDARIES.

NOT FOR BID OR CONSTRUCTION

Pennoni

PENNONI ASSOCIATES INC.
117 East Piccadilly Street
Winchester, VA 22601
T 540.667.2139 F 540.665.0493

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COMMONWEALTH OF VIRGINIA
MICHAEL M. ARTZ
No. 1513
DRAFT
LAND SURVEYOR

ROYAL APARTMENTS
PRELIMINARY SITE PLAN
ROYAL AVENUE
TOWN OF FRONT ROYAL, VIRGINIA
GRADING PLAN

BEEREN & BARRY INVESTMENTS, LLC.
11654 PLAZA AMERICA DR. #653 | RESTON, VA 20190

NO.	DATE	REVISIONS	BY

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PROJECT	BBINV24001
DATE	11-12-2024
DRAWING SCALE	AS NOTED
DRAWN BY	BEF
APPROVED BY	MMA

CS6000

TOTAL SHEETS 4

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2400687 – A REZONING APPLICATION SUBMITTED BY SKYLINE REALTY INVESTMENTS,LLC REQUESTING AN AMENDMENT TO THE ZONING MAP TO RECLASSIFY ADDRESSES 10, 30, 44, 52, 60 AND A VACANT LOT ON W. STRASBURG ROAD IDENTIFIED BY TAX MAP 20A12, SECTION 3, PARCELS 22, 26, 27A, 31C, 31 AND 23 FROM C-1, COMMUNITY BUSINESS DISTRICT TO R-3, RESIDENTIAL DISTRICT.

TOWN OF FRONT ROYAL ~102 East Main Street, Front Royal, Va. 22630 ~ 540-635-4236
Department of Planning & Zoning

FRREZON 2400687

REZONING APPLICATION

APPLICANT

Name Skyline Investment Realty LLC Phone 540- 771-7653

Address: 8043 Main St, Middletown VA 22645
E-mail: info@skylineRealtyInvestments.com

PROPERTY OWNER OF RECORD

Name same as above Phone _____

Address _____

PROPERTY DESCRIPTION

Location/Street Address 52, 44, 56, 30, 10, W Strasburg Road

Number of lots: 6 Total Acreage _____

Tax Map Identification for each parcel (Map, Section, Block, & Lot):
20A123 22, 20A123 23, 20A123 26, 20A123 27A, 20A123 31, 20A123 31C

Subdivision Name (if applicable) _____

REQUEST

Existing Zoning C-1 Proposed Zoning R-3

Existing Use Vacant and Residential Proposed Use Multifamily residential

RECEIVED
DEC 10 2024
TOWN OF FRONT ROYAL
PLANNING & ZONING DEPARTMENT

PLEASE COMPLETE REVERSE SIDE

ATTACHMENTS

The following should be submitted with a completed copy of this application. Additional information may be determined necessary depending on the nature of the request.

1. Application Fee *(Checks should be made out to the Town of Front Royal. Fees are as follows: 1 acre or less = $500, over 1 acre = $500 + $100 per acre after 1st acre, Downzoning = $400)*
2. Survey/Plat of the property with metes and bounds descriptions for all existing and proposed property lines and zoning district boundaries *(8 copies and a digital copy)*.
3. Environmental Site Assessment Phase I and Phase II *(unless waived by Director)*.
4. Traffic Impact Analysis *(if required)*
5. Written proffers. Proffers are voluntary but should be submitted in a written format approved by the Director.
6. Statement of Justification. As a separate document, provide a statement or statements that explain why you believe the property should be rezoned.

CERTIFICATION

I certify that the information provided with this application is correct to the best of my knowledge. The proffering system has been explained to me and I have read Sections 175-149 and 175-150 of the Town of Front Royal Zoning Ordinance pertaining to conditional zoning and proffering.

CONNIE L POTTER
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 7076929
Com. Exp. Aug. 31, 2027

Signature of Property Owner

Signature of Applicant (if different)

City/County of WARREN, Commonwealth of Virginia
The foregoing instrument was acknowledged before me this 10th day of December, 2024 by Chris William Holloway.
(Name of person seeking acknowledgement)

Connie L. Potter
Notary Public
Notary registration number: 7076929 My commission expires: 8/31/2027

NOTICES

→ Staff will notify adjacent property owners of the rezoning request and the scheduled public hearing dates with the Planning Commission and Town Council.
→ Town Staff will place an advertisement in the local newspaper as required under Virginia Code §15.2-2204.
→ Town Staff will place a public hearing sign(s) at the location of the proposed rezoning.
→ Submission of this application does not establish a vested right as outlined under Virginia Code §15.2-2307.
→ By submitting this application, the applicant grants permission to the Town officials and employees to enter upon the property, which is the subject of this application, during reasonable hours and for purposes related to the application process.
→ When the applicant is different than the fee simple property owner, the signature by the fee simple property owner on this application shall be considered as authorization for the applicant to act as an agent for matters concerning this application.

OFFICE USE ONLY

Receipt # 1677 iworQ Date Paid 12/10/2024
Planning Commission Hearing Date: 1/15/2025 Recommendation: _____
Town Council Hearing Date: _____ Date Sent to Clerk: _____

Statement of Justification

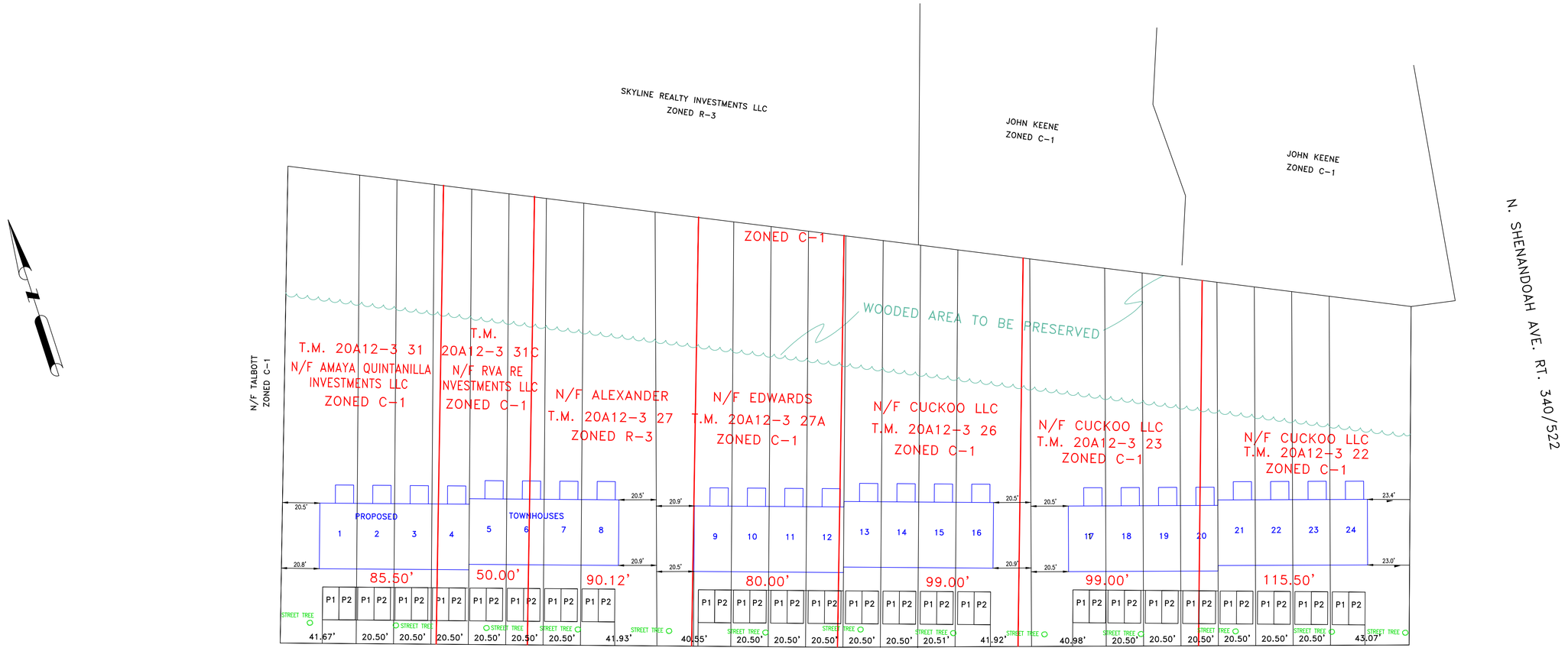
Rezoning Request for: 10 W Strasburg Road, 30 W Strasburg Road, 44 W Strasburg Road, 52 W Strasburg Road, & 56 W Strasburg Road

I am requesting a rezoning of six (6) parcels from C-1 Community Business District to R-3 Residential District. Due to right-of-way improvements completed by VDOT, the parcels are accessed off of a hammerhead, dead end drive which severely limits commercial viability. The parcels included in this application are either vacant or currently used for single family residential uses. Other parcels in this vicinity have been previously rezoned to R-3, this rezoning would continue this trend.

See the attached proposed plan which shows the potential for residential townhome development.
Requested Parcels:
20A123 22
20A123 23
20A123 26
20A123 27A
20A123 31
20A123 31C

Skyline Realty Investments, LLC

Chris Holloway



W. STRASBURG RD.

30 0 15 30 60 120

SCALE 1" = 30'

CONCEPTUAL LAYOUT FOR PROPOSED TOWNHOUSES AND DUPLEX
ON TAX MAP 20A12– PARCELS 22, 23, 26, 27, 27A, 31 AND 31C

NORTH RIVER MAGISTERIAL DISTRICT

TOWN OF FRONT ROYAL
WARREN COUNTY, VA.

PREPARED BY
BROGAN LAND SURVEYING PLC
P.O. BOX 1578, FRONT ROYAL, VA. 22630
TEL. & FAX 540-635-5657
NOVEMBER 7, 2024

DATA CENTER AND SOLAR DISCUSSION