

20010

TOWN OF VIENNA GENERAL NOTES

- 1. A PRE-CONSTRUCTION MEETING MUST BE HELD PRIOR TO THE START OF CONSTRUCTION. CALL 703-255-6384 TO SCHEDULE THE PRE-CONSTRUCTION MEETING.
2. ALL CONSTRUCTION GENERATED DEBRIS MUST BE HAULED AWAY BY THE CONTRACTOR OR OWNER.
3. PRIOR TO THE REMOVAL OF ANY TOWN TREES (TREES WITHIN THE RIGHT OF WAY), THE APPLICANT OR THEIR REPRESENTATIVE SHALL CONTACT THE TOWN OF VIENNA ARBORIST AT 703-255-6360 TO COORDINATE HAVING THE TOWN ARBORIST ONSITE DURING ALL TOWN TREE REMOVAL.

TOWN OF VIENNA WATER MAIN CONSTRUCTION NOTES

- 1. WATER MAIN CONSTRUCTION SHALL COMPLY WITH THE LATEST ISSUE OF THE TOWN OF VIENNA PUBLIC INFRASTRUCTURE MANUAL (PIM), VIRGINIA STATE WATERWORKS REGULATIONS, VDOT ROAD & BRIDGE SPECIFICATIONS & STANDARDS, AND FAIRFAX COUNTY PUBLIC FACILITY MANUAL (PFM).
2. THREE (3) DAYS PRIOR TO COMMENCING THE WATER MAIN CONSTRUCTION, THE DEVELOPER/OWNER SHALL NOTIFY THE TOWN OF VIENNA, DEPARTMENT OF PUBLIC WORKS, WATER & SEWER DIVISION, 703-255-6380.
3. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET UNLESS OTHERWISE APPROVED BY THE TOWN OF VIENNA.

SITE NOTES

- 1. THE PROPERTY SHOWN HEREON IS LOCATED ON FAIRFAX COUNTY TAX MAP 38-3(02)0017. THE EXISTING ADDRESS OF LOUISE ARCHER ELEMENTARY SCHOOL IS AS FOLLOWS: 324 NUTLEY ST. NW, VIENNA, VA 22180.
2. THE PARCEL IS CURRENTLY ZONED RESIDENTIAL (RS-12.5) UNDER THE ZONING ORDINANCE OF THE TOWN OF VIENNA.
3. THE DROP-OFF AREA WILL BE POSTED: "NO PARKING".
4. A LIMITED SOILS REPORT WILL BE REQUIRED DUE TO PROPOSED CONSTRUCTION ON ONSITE IVB SOILS. SEE SOILS MAP ON SHEET C7.0. THE LIMITED SOILS REPORT WILL BE INCLUDED IN THE FIRST SUBMISSION PLAN.

CONSTRUCTION NOTES

- 1. ALL SUBGRADE, SUBBASE, BASE AND SHOULDER MATERIAL SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT WITHIN THE TOLERANCE SPECIFIED IN THE CURRENT EDITION OF THE V.D.O.T. ROAD AND BRIDGE SPECIFICATIONS.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING THE RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL STREETS, ALLAY DUST AND TAKE WHATEVER MEASURES NECESSARY TO INSURE THE ROAD(S) ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.

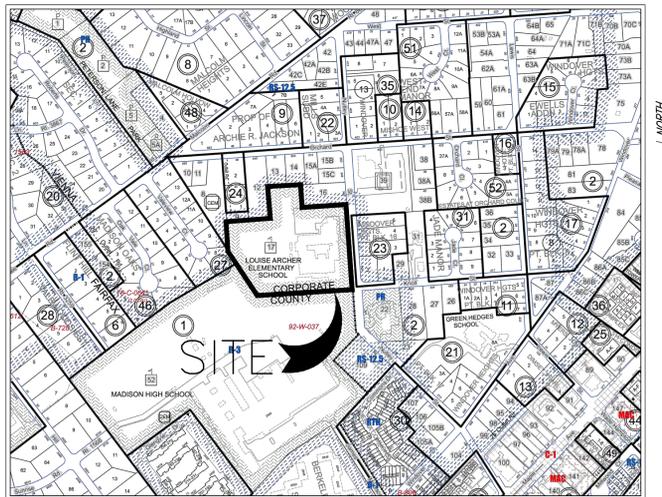
SITE PLAN
LOUISE ARCHER ELEMENTARY SCHOOL
RENOVATION & ADDITION
HUNTER MILL ELECTION DISTRICT
TOWN OF VIENNA, VIRGINIA

OWNER:
SCHOOL BOARD OF FAIRFAX COUNTY
8115 GATEHOUSE ROAD
SUITE 5400
FALLS CHURCH, VA 22042
PHONE: (571) 423-2285
EMAIL: jgoneill@fcps.edu
CONTACT: JONATHAN O'NEILL

ENGINEER:



RINKER DESIGN ASSOCIATES, P.C.
PROJECT MANAGER: JOHN CUMMINGS
ENGINEERING • SURVEYING • LAND PLANNING
TRANSPORTATION • ENVIRONMENTAL SERVICES
11100 ENDEAVOR COURT, SUITE 200 MANASSAS, VA 20109
PHONE : (703) 368-7373 FAX: (703) 257-5443



VICINITY MAP
SCALE: 1"=500'

SHEET INDEX

- C1.0 COVER SHEET
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C4.0 LAYOUT PLAN
C4.1 PAVING PLAN
C4.2 SIGNAGE & PAVEMENT MARKING PLAN
C5.0 ZONING COMPLIANCE
C5.1 EXISTING ZONING COMPLIANCE
C6.0 GRADING & DRAINAGE PLAN
C6.1 DETAILED GRADING EXHIBITS
C6.2 ADA DETAILS
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C7.11 SWM FACILITY 1 COMPUTATIONS
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C8.0 EROSION & SEDIMENT CONTROL PHASE 1
C8.1 EROSION & SEDIMENT CONTROL PHASE 2
C8.2 E&S NOTES & DETAILS
C8.3 E&S NOTES & NARRATIVE
C9.0 RIGHT-OF-WAY & ACCESS PLAN
C10.0 SIGHT DISTANCE PLAN & PROFILES
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C11.0 SITE UTILITY PLAN
C11.1 STORM SEWER COMPUTATIONS
C12.0 SITE UTILITY PROFILES
C12.1 SITE UTILITY PROFILES
C13.0 UTILITY DETAILS
C13.1 MISCELLANEOUS DETAILS
C14.0 DRY UTILITY PLAN
C15.0 TREE PRESERVATION & LANDSCAPE PLAN
C15.1 LANDSCAPE NOTES & COMPUTATIONS
C15.2 PRE-DEVELOPMENT CANOPY COVER
C15.3 POST-DEVELOPMENT CANOPY COVER
C15.4 TREE PRESERVATION PLAN
C15.5 TREE PRESERVATION PLAN
C16.0 LIGHTING PLAN

FIRE MARSHAL NOTES

AVAILABLE FIRE FLOW 2,036 GPM (GAL./MIN.)
SOURCE OF FIRE FLOW INFO. TOWN OF VIENNA
TYPE OF CONSTRUCTION - USBC IIB (AROUND 9,200 SF of the Existing Building is VB)
USE GROUP CLASSIFICATION - USBC E
BUILDING HEIGHT VARIES (14'-28') (FT.)
BUILDING TO BE FULLY SPRINKLERED YES [X] NO [ ]
IF YES, CHECK APPROPRIATE STANDARD: NFPA 13 [X]; NFPA 13D [ ]; NFPA 13R
SEE PFM CHAPTER 9, PART 2 FOR FULL INFORMATION REQUIRED. FIRE FLOW REQUIREMENTS TO BE DETERMINED BY THE FIRE PREVENTION DIVISION.
[SEE PUBLIC WATER AGENCY NOTES ON SHEET .....]

SANITARY SEWER INFORMATION

WASTEWATER TREATMENT PLANT BLUE PLAINS
THIS SITE IS SUBJECT TO N/A
SANITARY SEWER REIMBURSEMENT CHARGES.
THIS SITE IS SERVED BY ONSITE SEWAGE TREATMENT SYSTEM(S).

APPROVAL BLOCK



RINKER DESIGN ASSOCIATES, P.C.

CIVIL ENGINEERING & SURVEYING

11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACVIL.COM



COVER SHEET

LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION
HUNTER MILL ELECTION DISTRICT
TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

CHECKED BY: JDC

ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C1.0





DEMOLITION LEGEND

- 1 EX. MODULAR CLASSROOM FACILITIES TO BE REMOVED BY FCPS. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANYTHING LEFT BEHIND TO INCLUDE BUT NOT LIMITED TO: RAMPS, DECKS, STAIRS, SLABS, FOOTINGS, UTILITIES, RAILINGS, ETC.
- 2 REMOVE EX. DUMPSTERS & CONCRETE DUMPSTER PAD.
- 3 REMOVE EX. PLAYGROUND AREA EQUIPMENT & MULCH.
- 4 REMOVE EX. SOFTBALL FIELD, INCLUDING BENCHES, BACKSTOP, FENCING, AND ALL OTHER EQUIPMENT.
- 5 REMOVE EX. FIRE HYDRANT AND EX. VALVE.
- 6 REMOVE FDC (SEE PLUMB. PLANS FOR DETAILS.)
- 7 REMOVE EX. WATERLINE.
- 8 REMOVE EX. STORM PIPES.
- 9 REMOVE EX. STORM STRUCTURES.
- 10 REMOVE EX. LIGHT POLES. (SEE ELEC. PLANS FOR DETAILS.)
- 11 RELOCATE EX. UTILITY POLE. (SEE ELEC. PLANS FOR DETAILS.)
- 12 REMOVE EX. TRANSFORMER. (SEE ELEC. PLANS FOR DETAILS.)
- 13 REMOVE EX. UNDERGROUND STORAGE TANK AND ASSOCIATED MANHOLES. (ALL NECESSARY PERMITS AND INSPECTIONS SHALL BE OBTAINED PRIOR TO UNDERGROUND STORAGE TANK REMOVAL. SEE DIVISION 15 SPECIFICATION.)
- 14 REMOVE EX. SHED.
- 15 REMOVE EX. SIGNS.
- 16 REMOVE EX. BENCHES.
- 17 REMOVE EX. CHAIN LINK FENCE.
- 18 REMOVE EX. WOOD RETAINING WALL.
- 19 REMOVE EX. CONC. RETAINING WALL.
- 20 REMOVE EX. RAILING.
- 21 REMOVE ALL BOLLARDS.
- 22 REMOVE EX. WOOD STRUCTURE.
- 23 REMOVE EX. MULCHED LANDSCAPED AREA.
- 24 REMOVE MONUMENT PLAQUE AND PROVIDE TO FCPS REP.
- 25 REMOVE EX. SWM DETENTION FACILITY.
- 26 REMOVE EX. SPEED BUMPS.
- 27 REMOVE EX. STONE DUST TRAIL.
- 28 CUT AND CAP WATERMAIN. REMOVE VALVE IN NUTLEY STREET. CUT AND CAP AFTER IRRIGATION BOX ON JIMS. ABANDON LINE IN PLACE.
- 29 ERADICATE CROSSWALK STRIPING AND SPEED TABLE.
- 30 REMOVE EXISTING WATER METER SERVING MODULAR FACILITY. CRIMP EXISTING WATER SERVICE AND TURN OFF CORPORATION STOP AT THE MAIN. PROVIDE METER TO FCPS REP.
- 31 REMOVE EXISTING WATER METER SERVING MAIN BUILDING. CRIMP EXISTING WATER SERVICE AND TURN OFF CORPORATION STOP AT THE MAIN. PROVIDE METER TO FCPS REP.

LEGEND

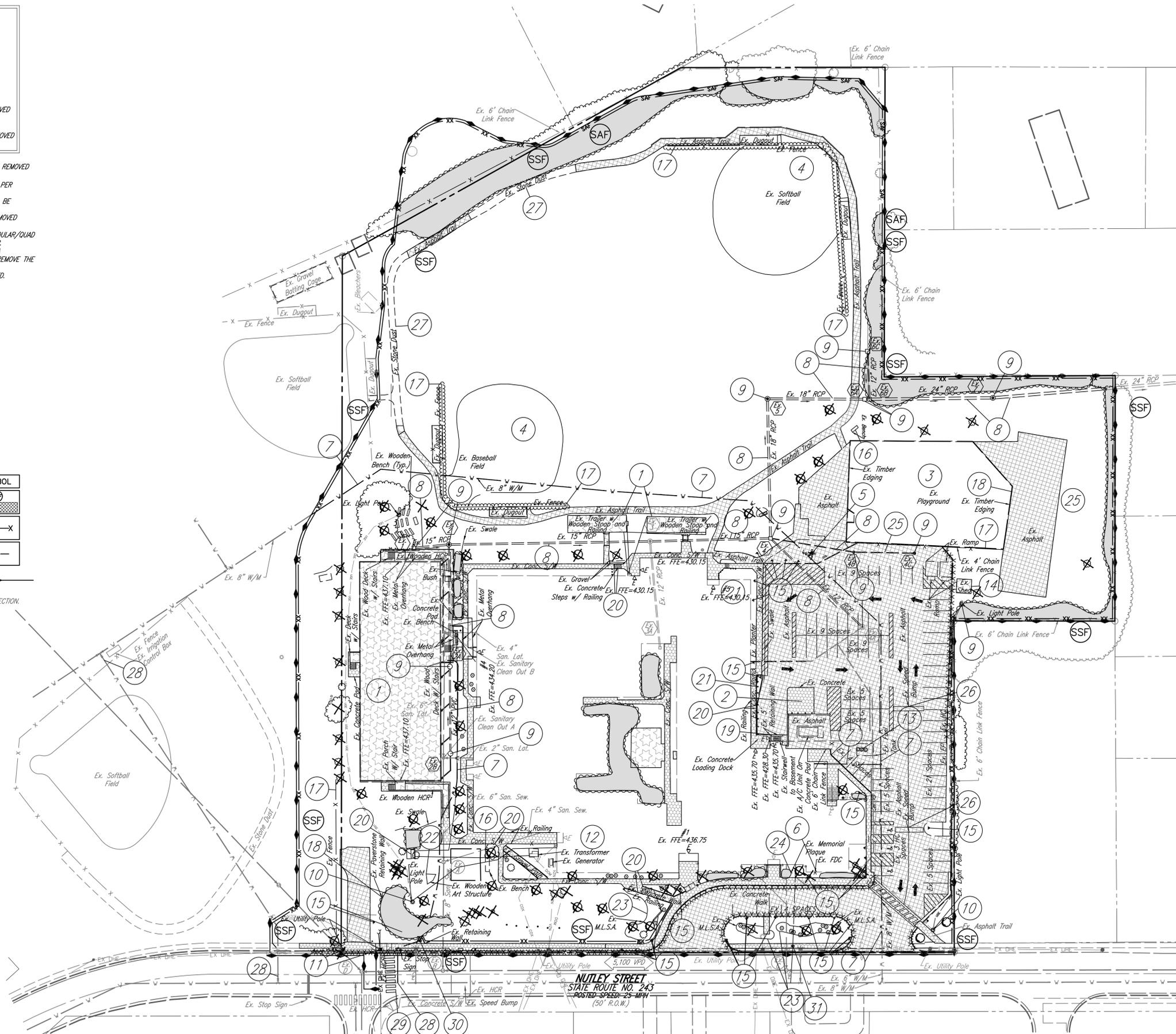
- X REMOVE EX. TREE
- · · · · CURB AND GUTTER TO BE REMOVED
- █ REMOVE EX. TREE CANOPIES/TREES
- ▨ BUILDING TO BE REMOVED
- ▩ ASPHALT (FULL DEPTH) TO BE REMOVED
- ▧ CONCRETE (FULL DEPTH) TO BE REMOVED

NOTE: ALL STUMPS MUST BE REMOVED FOR ALL TREES REMOVED WITHIN 100' OF BUILDING.  
 NOTE: MINIMUM 2" MILL AND 2" OVERLAY IS REQUIRED PER SPECIFICATIONS.  
 NOTE: ALL ITEMS REMOVED BY THE CONTRACTOR SHALL BE LEGALLY DISPOSED OF OFF-SITE.  
 NOTE: FULL DEPTH ASPHALT AND CONCRETE TO BE REMOVED INCLUDES STONE BASE.  
 NOTE: ANY OVERHEAD ELECTRICAL SERVICE TO THE MODULAR/QUAD CLASSROOMS SHALL BE REMOVED BY THE OWNER.  
 NOTE: IF CONTRACTOR REMOVES AN ITEM AND IT HAS A FOUNDATION OF ANY TYPE, CONTRACTOR SHALL REMOVE THE FOUNDATION ALSO.  
 NOTE: ALL EXISTING STRIPING ONSITE TO BE ERADICATED.

LEGEND

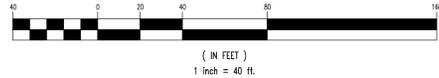
| NO.  | TITLE                 | KEY | SYMBOL |
|------|-----------------------|-----|--------|
| 3.01 | SAFETY FENCE          | SAF | ▨      |
| 3.05 | SILT FENCE            | SF  | X-X-X  |
|      | SUPER SILT FENCE      | SSF | -XX-   |
|      | LIMITS OF DISTURBANCE | LOD | —      |

NOTE: SUPER SILT FENCE ACTS AS TREE PROTECTION.



VCS NORTH 1983

GRAPHIC SCALE



NOTE: SITE ON VIRGINIA NORTH STATE PLANE COORDINATE SYSTEM, ZONE 551, FIPS ZONE 4301; NAD 83 DATUM



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DEMOLITION PLAN

**LOUISE ARCHER**  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

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ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C.3.1

| PROPOSED | EXISTING | DESCRIPTION                              |
|----------|----------|------------------------------------------|
| (S)      | (S)      | SANITARY MANHOLE                         |
| (Y)      | (Y)      | SANITARY STRUCTURE LABEL                 |
| (C)      | (C)      | SANITARY CLEANOUT                        |
| (C-P)    | (C-P)    | SANITARY CLEANOUT LABEL                  |
| (20)     | (20)     | STORM SEWER STRUCTURE LABEL              |
| (P)      | (P)      | ROOF DRAIN LABEL                         |
| (D)      | (D)      | CANOPY DRAIN LABEL                       |
| (T)      | (T)      | TELEPHONE PEDESTAL                       |
| (L)      | (L)      | LIGHT POLE                               |
| (E)      | (E)      | UNDERGROUND ELECTRIC LINE                |
| (U)      | (U)      | UNDERGROUND TELEPHONE LINE               |
| (C-TV)   | (C-TV)   | CABLE TV LINE                            |
| (G)      | (G)      | GAS LINE                                 |
| (G-V)    | (G-V)    | GAS VALVE                                |
| (W)      | (W)      | WATERLINE                                |
| (W-V)    | (W-V)    | WATER VALVE                              |
| (M)      | (M)      | WATER METER                              |
| (F)      | (F)      | FIRE HYDRANT                             |
| (F-C)    | (F-C)    | FIRE DEPARTMENT CONNECTION               |
| (S-W)    | (S-W)    | STORM SEWER PIPE                         |
| (C-G-6)  | (C-G-6)  | CURB AND GUTTER (CG-6)                   |
| (C-G-6R) | (C-G-6R) | CURB AND GUTTER CG-6R                    |
| (G-T)    | (G-T)    | GUTTER TRANSITION                        |
| (B-F)    | (B-F)    | BUILDING FOOTPRINT                       |
| (B-E)    | (B-E)    | BUILDING ENTRANCE                        |
| (A-R)    | (A-R)    | ACCESSIBLE RAMP                          |
| (H-S)    | (H-S)    | HANDICAP SPACE (VAN ACCESSIBLE HC SPACE) |
| (C-L)    | (C-L)    | CHAIN LINK FENCE                         |
| (S)      | (S)      | SIGN                                     |
| (B)      | (B)      | BOLLARD                                  |
| (E)      | (E)      | SPOT ELEVATION                           |
| (T-L)    | (T-L)    | TREE LINE                                |
| (F-A)    | (F-A)    | FLOW ARROWS                              |
| (O-R)    | (O-R)    | 100 YR OVERLAND RELIEF PATH              |
| (V-D)    | (V-D)    | VEHICLES PER DAY COUNT                   |

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FCPS, TOWN OF VIENNA, FAIRFAX COUNTY AND FAIRFAX WATER STANDARDS AND SPECIFICATIONS.

NOTE: SEE ARCHITECT PLANS FOR DETAILED BUILDING DIMENSIONS.

NOTE: TEST PITS SHALL BE REQUESTED A MINIMUM OF 48 HOURS IN ADVANCE FOR THOSE UTILITIES REQUIRING THEM.

NOTE: ANY UTILITY POLES & BOXES, GUY WIRES, OR OTHER ABOVE OR BELOW GROUND UTILITIES THAT CONFLICT WITH THE PROPOSED CONSTRUCTION MAY HAVE TO BE ADJUSTED OR RELOCATED. THE CONTRACTOR IS TO COORDINATE THESE REQUIRED CHANGES WITH THE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

NOTE: CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM BUILDING.

NOTE: SHOULD OFF-SITE GRADING BECOME NECESSARY DUE TO FIELD CONDITIONS IT SHALL BE DONE BY LETTER OF PERMISSION.

NOTE: CONTRACTOR TO CLEAN & SOD STAGING AREA AFTER CONSTRUCTION.

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANYTHING DAMAGED DURING THE CONSTRUCTION PROCESS.

NOTE: CONTRACTOR SHALL MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.

NOTE: PROPOSED BUILDING ADDITIONS ARE HATCHED.

NOTE: ALL RADII ARE 5.0' UNLESS OTHERWISE NOTED.

NOTE: FILL TO BE CONDITIONED AND COMPACTED AS SPECIFIED IN THE SOILS REPORT.

NOTE: ALL HANDICAP SPACES SHALL BE CONCRETE WITH A SLOPE NOT EXCEEDING 2% IN ANY DIRECTION.

NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: THE GRADING/EXCAVATION CONTRACTOR FOR THE SUBJECT SITE IS REQUIRED TO NOTIFY, IN WRITING, THE ASSIGNED SITE INSPECTOR REGARDING ANY EXCESS MATERIAL PROPOSED TO BE HAULLED OFF-SITE PRIOR TO HAULING. THE NOTIFICATION MUST INDICATE THE QUANTITY OF MATERIAL TO BE MOVED OFF-SITE, THE IDENTIFICATION OF THE RECEIVING SITE WHERE THE EXCESS WILL BE TAKEN AND ALL INFORMATION NECESSARY TO SHOW THAT SUCH RECEIVING SITE HAS BEEN PROPERLY PERMITTED AND HAS E&S CONTROLS INSTALLED.

NOTE: CONTRACTOR REQUIRED TO PROVIDE AS-BUILT SURVEY (PROVIDED BY LICENSED SURVEYOR) OF ROUGH GRADING BEFORE FINE GRADING TO ENSURE THAT OVERLAND RELIEF IS IN PLACE.

NOTE: ALL PROPOSED SANITARY SEWER AND LATERALS SHOWN ON PLAN SHALL BE MAINTAINED BY FCPS.

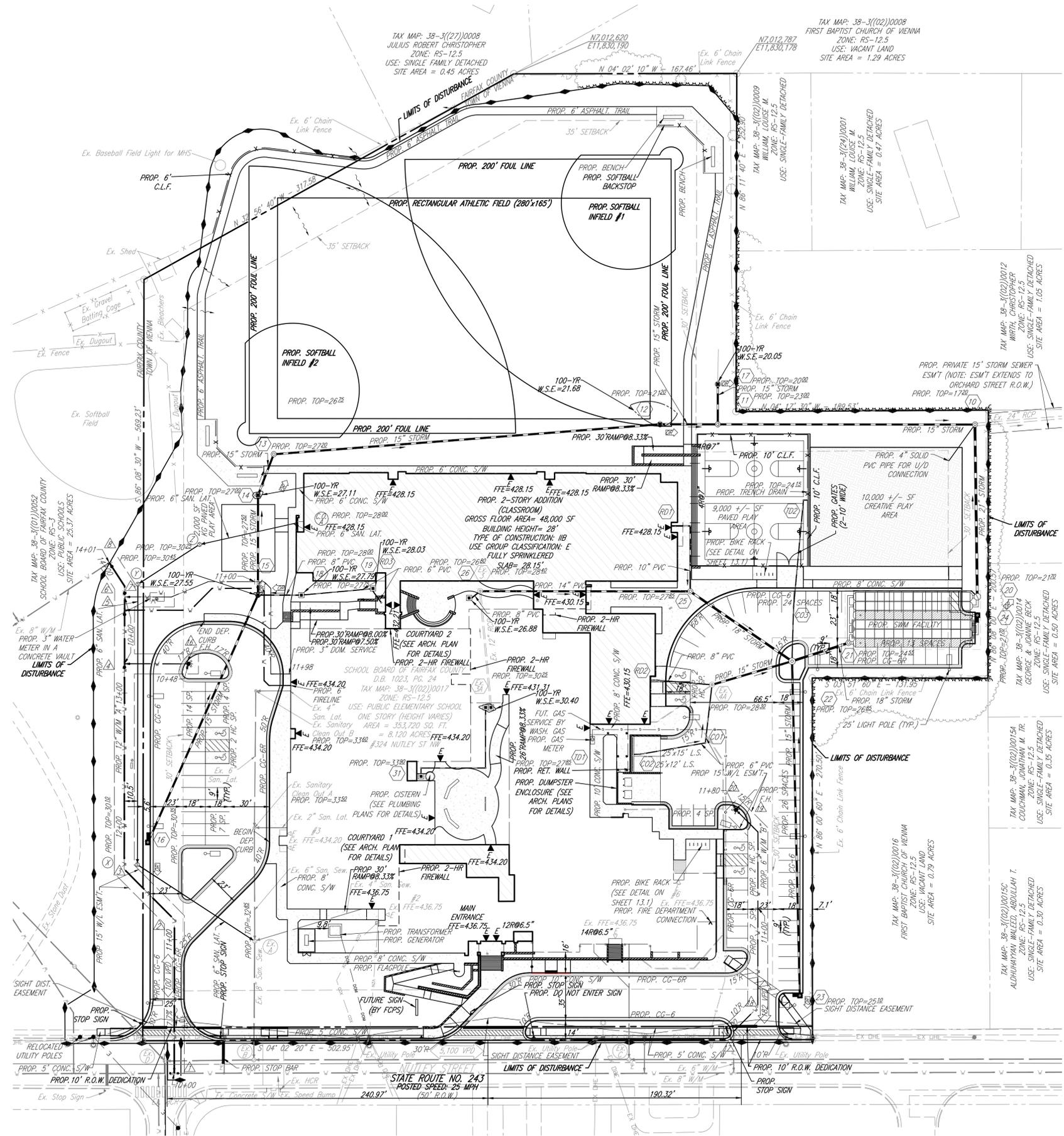
NOTE: WHERE BOLLARDS ARE PROPOSED IN SIDEWALK, CENTER OF ALL BOLLARDS SHALL BE PLACED 1' BEHIND BACK OF CURB.

NOTE: ALL RAMPS AND RISERS/STEPS SHALL HAVE HANDRAILS ON EITHER SIDE OF THE RAMP/RISER/STEP TO MEET ADA REQUIREMENTS.

NOTE: ALL PROPOSED SIDEWALK CONNECTIONS AT ALL BUILDING ENTRANCES SHALL HAVE A 5-FOOT LANDING SLOPED AT 2% ADJACENT TO THE DOOR.

NOTE: FINAL LOCATIONS OF ALL PLAY LINES ON ASPHALT PLAY AREA TO BE CONFIRMED BY FCPS PRIOR TO PLACEMENT.

NOTE: CONTRACTOR TO INSTALL CONDUIT AND NECESSARY WIRES TO SCHOOL SIGN. SEE ELECTRICAL PLAN FOR DETAILS.



| ABBREVIATIONS |                                  |
|---------------|----------------------------------|
| APPROX.       | - APPROXIMATE                    |
| A=            | - ARC LENGTH                     |
| B.O.V.        | - BLOW OFF VALVE                 |
| B.R.L.        | - BUILDING RESTRICTION LINE      |
| C.            | - CENTER LINE                    |
| C.O.          | - CLEAN OUT                      |
| CONC.         | - CONCRETE                       |
| C&G           | - CURB AND GUTTER                |
| D.B.          | - DEED BOOK                      |
| DRN.          | - DRAINAGE                       |
| D.I.P.        | - DUCTILE IRON PIPE              |
| ESMT.         | - EASEMENT                       |
| E.P.          | - EDGE OF PAVEMENT               |
| ENT.          | - ENTRANCE                       |
| EX.           | - EXISTING                       |
| ELEV.         | - ELEVATION                      |
| S/R           | - FACE OF CURB RADIUS            |
| F.H.          | - FIRE HYDRANT                   |
| H.C.          | - HANDICAPPED                    |
| H.H.          | - HAND HOLE                      |
| INSTR.#       | - INSTRUMENT NUMBER              |
| INV.          | - INVERT                         |
| LAT.          | - LATERAL                        |
| L.P.          | - LIGHT POLE                     |
| L.D.          | - LOADING DOCK                   |
| L.S.          | - LOADING SPACE                  |
| M.H.          | - MAN HOLE                       |
| MEP           | - MECHANICAL/ELECTRICAL/PLUMBING |
| M.L.S.A       | - MOUNTED LANDSCAPE AREA         |
| N.V.          | - NOW/FORMERLY                   |
| O.D.          | - OVERHEAD DOOR                  |
| P.C.          | - PAGE                           |
| P.W.M.        | - PAVEMENT                       |
| PVC           | - POLYVINYL CHLORIDE             |
| PROP.         | - PROPOSED                       |
| RCP           | - REINFORCED CONCRETE PIPE       |
| RET. WALL     | - RETAINING WALL                 |
| R/W           | - RIGHT OF WAY                   |
| SAN.          | - SANITARY                       |
| SEW.          | - SEWER                          |
| S/W           | - SIDEWALK                       |
| SF            | - SQUARE FEET                    |
| STM           | - STORM                          |
| T.M.          | - TAX MAP                        |
| TEMP.         | - TEMPORARY                      |
| T.B.A.        | - TO BE ABANDONED                |
| T.B.R.        | - TO BE REMOVED                  |
| TYP.          | - TYPICAL                        |
| V.A.          | - VAN ACCESSIBLE                 |
| W/L           | - WATERLINE                      |

**ADA ACCESS NARRATIVE**

THE PROJECT IS DESIGNED TO MEET 2010 ADA GUIDELINES. ADA ACCESS IS PROVIDED AT MULTIPLE LOCATIONS ON-SITE. IN ADDITION, THE MAIN ENTRANCE WILL PROVIDE ADA ACCESS TO THE BUILDING. THE PATH CAN BE SEEN ON SHEET C&D.

**VPD COMPUTATIONS:**  
(Trip Generation, 10th Edition - Institute of Transportation Engineers)  
Land Use: 520 Elementary School  
Average Trips vs. Students on a Weekday  
(50% entering, 50% exiting)

Average Rate = 1.89 (see graph on IITripGen Web-based app  
Website: Trip Generation, 10th Edition)

Number of Students = 830  
No. of Trips =  $T = 2.13(X) - 184.07$   
=  $2.13(830) - 184.07$   
=  $1,768 - 184.07$   
=  $1,584$  VPD

**AM PEAK HOUR COMPUTATIONS:**  
(Trip Generation, 10th Edition - Institute of Transportation Engineers)  
Land Use: 520 Elementary School  
Average Trips vs. Students on a Weekday, AM Peak Hour  
(54% entering, 46% exiting)

Number of Students = 830  
No. of Trips = 540 VPH

\* BASED ON THE GRAPH FROM IITRIPGEN.ORG

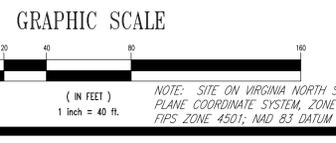
**PM PEAK HOUR COMPUTATIONS:**  
(Trip Generation, 10th Edition - Institute of Transportation Engineers)  
Land Use: 520 Elementary School  
Average Trips vs. Students on a Weekday, PM Peak Hour  
(45% entering, 55% exiting)

Number of Students = 830  
No. of Trips = 282 VPH

\* BASED ON THE GRAPH FROM IITRIPGEN.ORG

**BUILDING SUMMARY**  
USE: PUBLIC ELEMENTARY SCHOOL  
TOTAL EXISTING GROSS FLOOR AREA: 56,522 SQ. FT.  
EXISTING GROSS FLOOR AREA (BUILDING): 44,972 SQ. FT.  
EXISTING GFA OF TRAILERS: 11,550 SQ. FT.  
EXISTING GFA TO BE DEMOLISHED: 11,550 SQ. FT.  
EXISTING GFA TO REMAIN: 44,972 SQ. FT.  
PROP. ADDITIONS GFA: 48,000 SQ. FT.  
TOTAL GROSS FLOOR AREA: 44,972 + 48,000 = 92,972 SQ. FT.  
PROPOSED FAR: 0.26  
BUILDING HEIGHT VARIES (SEE THIS SHEET)  
NO. OF FLOORS: 2

**PARKING SUMMARY**  
REQUIRED: 1 PER EMPLOYEE + 4 VISITOR = 75 SPACES  
PROVIDED: 105 SPACES (6 ADA SPACES)  
LOADING PROVIDED: 2 SPACES  
BIKE RACKS PROVIDED: 10 (20 SPACES)



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**LOUISE ARCHER**  
ELEMENTARY SCHOOL  
RENOVATION & ADDITION  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

LAYOUT PLAN

REVISIONS:

DATE: FEBRUARY 8, 2022  
DESIGN: NJG/BMY  
CHECKED BY: JDC  
ARCH: ARCH. INC.  
RDA JOB NUMBER: 20010  
TOWN REFERENCE: 525873  
SHEET NUMBER: C4-0



PAVEMENT MARKING LEGEND

- (A) TYPE B, CLASS I, WHITE, 4" WIDTH
- (B) TYPE B, CLASS I, YELLOW, 4" WIDTH
- (C) TYPE B, CLASS I, WHITE, 4" WIDTH, DOUBLE LINE, 4" SPACE BETWEEN LINES
- (D) TYPE B, CLASS I, WHITE, 4" WIDTH, 2' LONG, 4' SPACE
- (E) TYPE B, CLASS I, WHITE, 4" WIDTH, 10' LONG, 30' SPACE
- (F) TYPE B, CLASS VI, WHITE, 6" WIDTH
- (G) TYPE B, CLASS VI, YELLOW, 6" WIDTH
- (H) TYPE B, CLASS VI, WHITE, 6" WIDTH, 10' LONG, 30' SPACE
- (J) TYPE B, CLASS I, WHITE, 8" WIDTH
- (K) TYPE B, CLASS I, WHITE, 8" WIDTH, 2' LONG, 4' SPACING
- (L) TYPE B, CLASS I, WHITE, 8" WIDTH, 10' LONG, 30' SPACING
- (M) TYPE B, CLASS I, WHITE, 24" WIDTH
- (N) TYPE B, CLASS I, WHITE, 24" YELLOW
- (P) PAVEMENT MESSAGE MARKING "ONLY"
- (R) PAVEMENT MESSAGE MARKING ELONGATED ARROW SINGLE
- (S) PAVEMENT MESSAGE MARKING "LANE REDUCTION ARROW"
- (T) TYPE B, CLASS VI, WHITE, 4" WIDTH, CONTRAST
- (U) TYPE B, CLASS VI, WHITE, 4" WIDTH, CONTRAST, 2' LONG, 4' SPACING
- (V) TYPE B, CLASS VI, WHITE, 4" WIDTH, CONTRAST, 10' LONG, 30' SPACING
- (W) PAVEMENT MESSAGE MARKING ELONGATED ARROW SINGLE, CONTRAST
- (X) TYPE B, CLASS VI, WHITE, 8" WIDTH, CONTRAST
- (Y) TYPE B, CLASS I, WHITE, 24" WIDTH, 24" SPACING
- (Z) TYPE B, CLASS I, WHITE, 12" WIDTH, 12" SPACING

SIGNING AND PAVEMENT MARKING NOTES

1. ALL PROPOSED SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING MANUALS AND ANY REVISION THERETO:
  - A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - B. THE VIRGINIA SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  - C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
  - D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS.
2. ALL PAVEMENT MARKINGS SHALL BE TYPE B, CLASS I, UNLESS OTHERWISE NOTED.
3. PROPOSED AND EXISTING SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO AVOID CONFLICT WITH UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS, AND TO COMPLY WITH STANDARDS REFERENCED IN NOTE 1.
4. ANY EXISTING PAVEMENT MARKINGS, WHICH WILL CONFLICT WITH PROPOSED PAVEMENT MARKINGS, SHALL BE COMPLETELY ERADICATED.
5. LIMITS SHOWN OF PROPOSED MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO INSURE THAT THE PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
6. REFER TO APPROVED TRAFFIC SIGNAL PLAN FOR PROPER LOCATIONS OF STOP LINES AND CROSSWALKS WHEN APPLICABLE.

GENERAL NOTES:

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL HAVE THE OPTION OF REFURBISHING FRAMING MEMBERS ON EXISTING SIGN PANELS, OR REFURBISHING NEW SIGN PANELS WITH CORRESPONDING SIGN MESSAGE FOR MOUNTING ON NEW BREAKAWAY POST.
2. UNLESS OTHERWISE APPROVED BY THE ENGINEER, EXISTING TRAFFIC SIGNS, WHICH ARE TO BE REMOVED, SHALL REMAIN IN PLACE UNTIL THE NEW SIGN STRUCTURE AND CRITICAL MESSAGE ARE IN PLACE.
3. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL BREAKAWAY SIGN STRUCTURES SHALL BE LOCATED WITHIN 5 FEET OF THE SIGN'S CURRENT FIELD LOCATION OR AS DIRECTED BY THE ENGINEER.

SIGN LEGEND

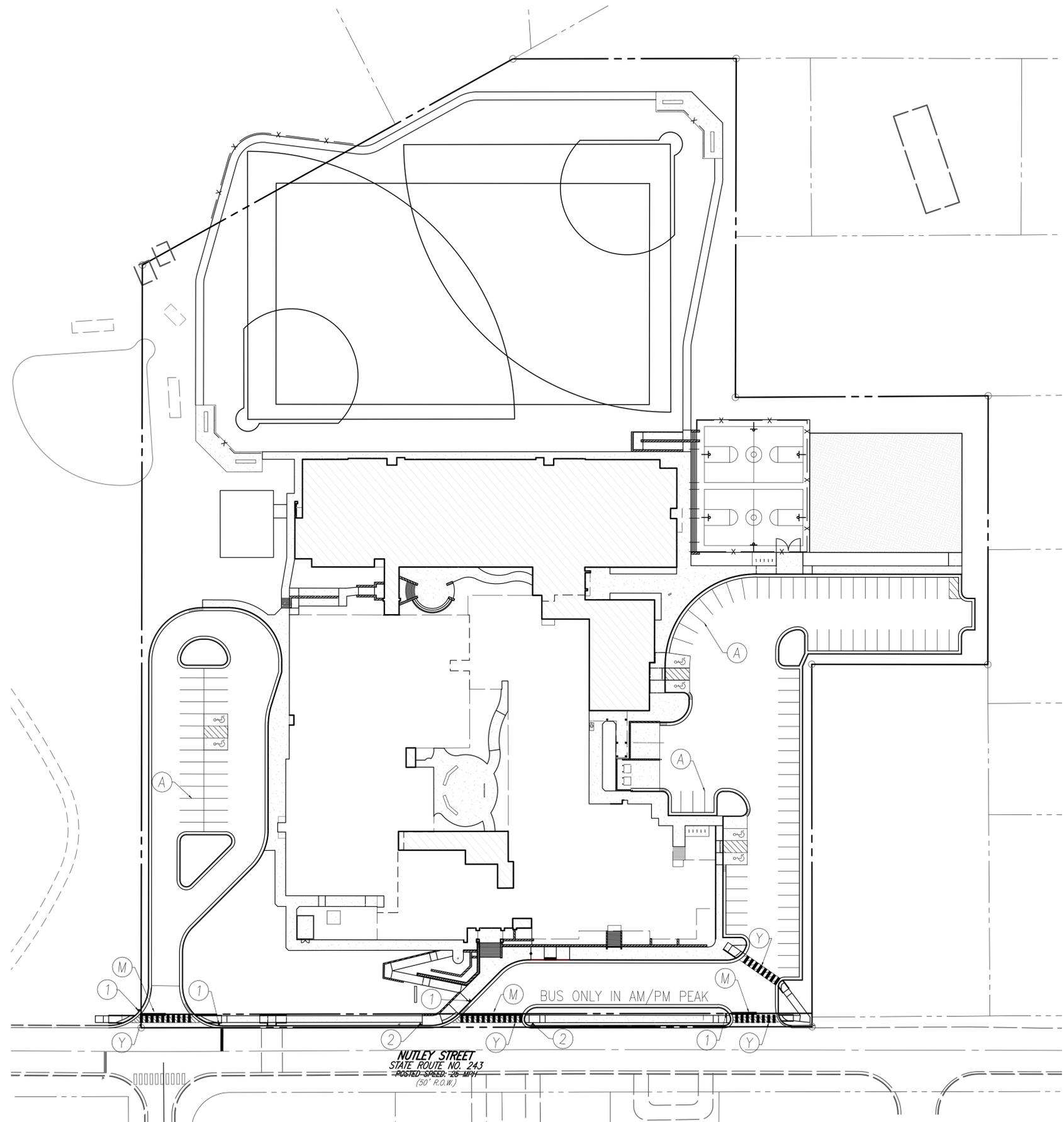
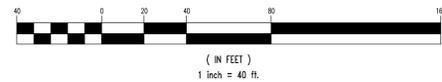
| SIGN NO. | 1         | 2         |
|----------|-----------|-----------|
| SIGN     |           |           |
| STD. NO. | R1-1      | R5-1      |
| SIZE     | 30" x 30" | 30" x 30" |

NOTE:

1. COLOR COMBINATIONS REFER TO TYPE OF SHEETING (REFLECTIVE/NON-REFLECTIVE) TO BE USED PER VDOT REQUIREMENTS IN VDOT'S TEDM.
2. REFER TO MUTCD FOR PROPER COLOR SCHEMES REQUIRED.

VCS NORTH 1983

GRAPHIC SCALE



RINKER DESIGN ASSOCIATES, P.C.

CIVIL ENGINEERING & SURVEYING

11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACLIVIL.COM



LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION

HUNTER MILL ELECTION DISTRICT TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

CHECKED BY: JDC

ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C4.2





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11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM



EXISTING ZONING COMPLIANCE

**LOUISE ARCHER  
ELEMENTARY SCHOOL  
RENOVATION & ADDITION**  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

CHECKED BY: JDC

ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C5.1

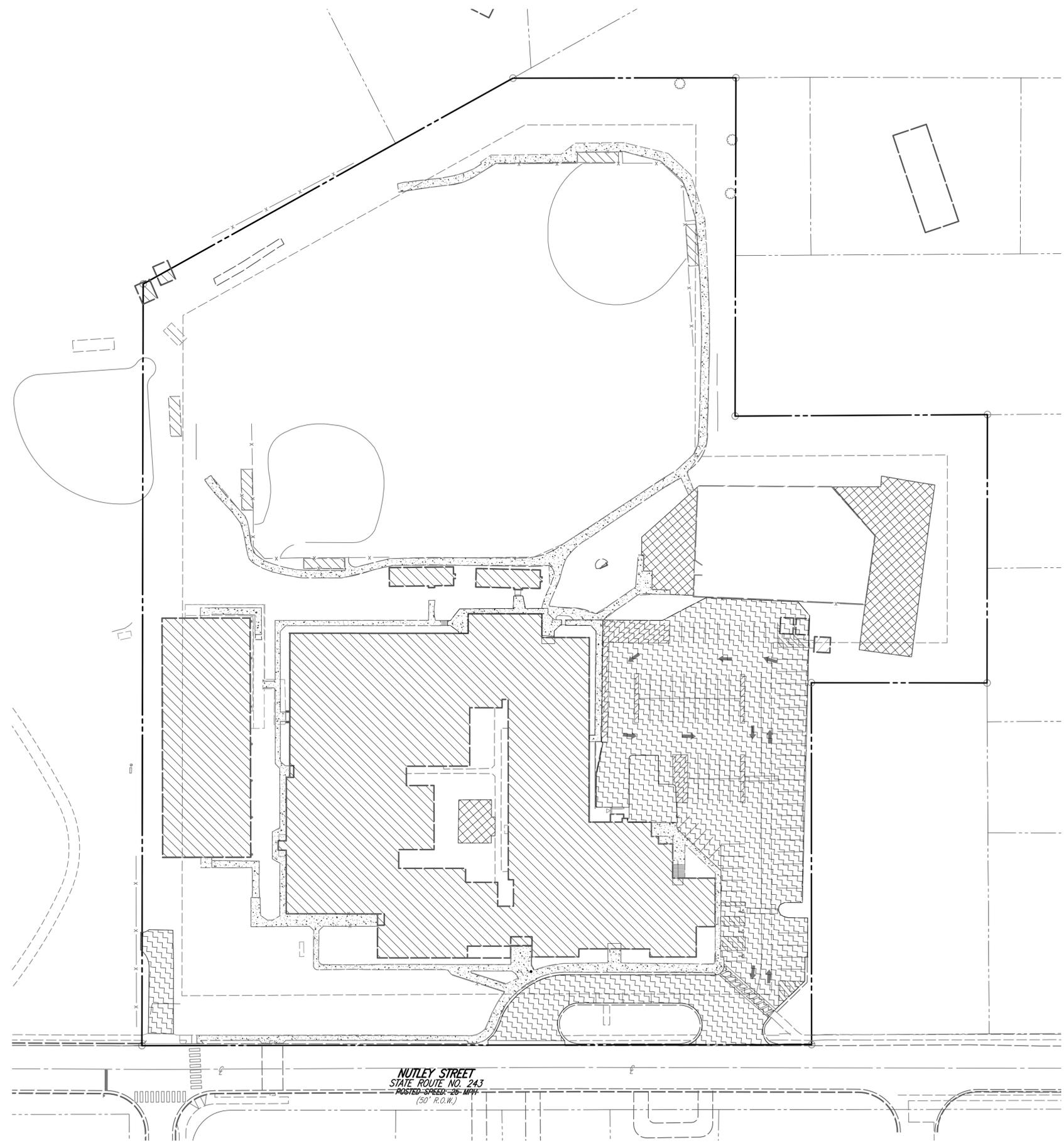
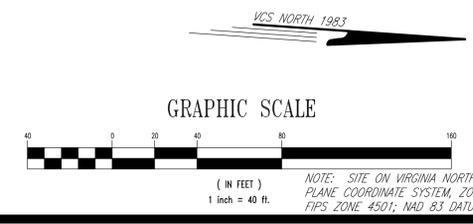
**LEGEND**

|  |                    |
|--|--------------------|
|  | PARKING LOT        |
|  | EXISTING BUILDING  |
|  | EXISTING HARDSCAPE |
|  | EXISTING SIDEWALK  |

NOTE: SIDEWALK NOT INCLUDED IN LOT COVERAGE. SIDEWALK SHOWN FOR INFORMATION PURPOSES ONLY TO DIFFERENTIATE BETWEEN SIDEWALK AND GREENSPACE.

**LOT COVERAGE**

|                    |                          |
|--------------------|--------------------------|
| BUILDING AREA      | 68,244 SF                |
| PARKING LOT        | 40,916 SF                |
| PAVED RECREATIONAL | 0 SF                     |
| PROPOSED HARDSCAPE | 8888 SF                  |
| TOTAL              | 118,048 SF               |
| SITE AREA          | 353,720 SF               |
| LOT COVERAGE       | 118,048/353,720 = 33.37% |





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PHONE : (703) 368-7373 FAX : (703) 257-5443  
WWW.RDAGCIVIL.COM



GRADING & DRAINAGE PLAN

LOUISE ARCHER  
ELEMENTARY SCHOOL  
RENOVATION & ADDITION  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

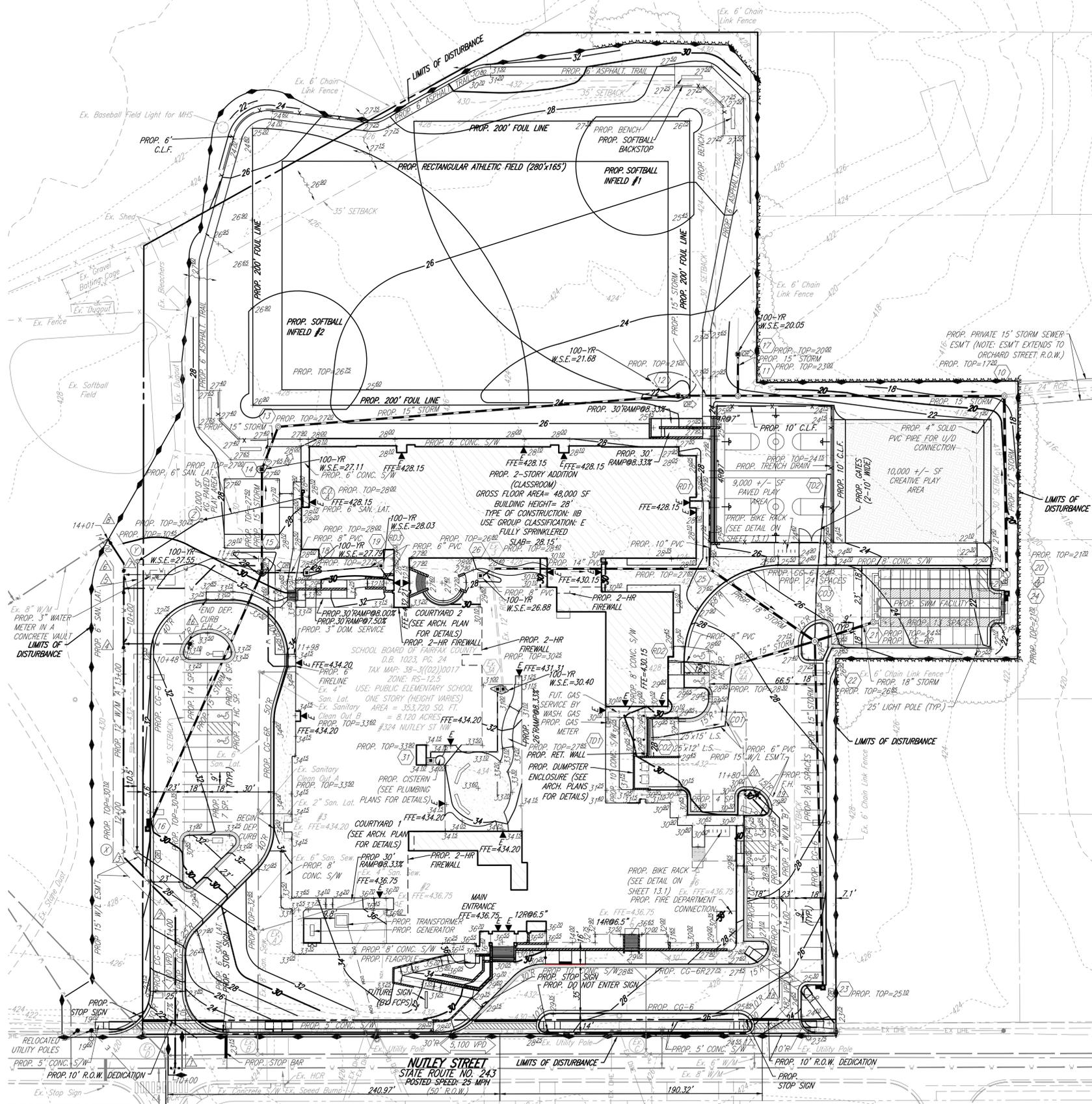
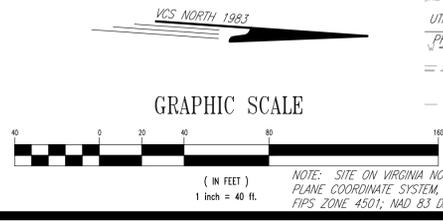
CHECKED BY: JDC

ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C6.0



NOTE: SITE ON VIRGINIA NORTH STATE PLANE COORDINATE SYSTEM, ZONE 551, FIPS ZONE 4501; NAD 83 DATUM







Site Information

Post-Development Project (Treatment Volume and Loads)

HUC0010

Enter Total Disturbed Area (acres) → 1.23

|                                                         |      |
|---------------------------------------------------------|------|
| Maximum reduction required:                             | 20%  |
| The site's net increase in impervious cover (acres) is: | 0.2  |
| Post-Development TP Load Reduction for Site (lb/yr):    | 0.56 |

Pre-ReDevelopment Land Cover (acres)

|                                                                                     | A Soils | B Soils | C Soils | D Soils | Totals |
|-------------------------------------------------------------------------------------|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested |         |         | 0.00    | 0.00    | 0.00   |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be             |         |         | 0.00    | 0.96    | 0.96   |
| Impervious Cover (acres)                                                            |         |         | 0.00    | 0.27    | 0.27   |
|                                                                                     |         |         |         |         | 1.23   |

Post-Development Land Cover (acres)

|                                                                                     | A Soils | B Soils | C Soils | D Soils | Totals |
|-------------------------------------------------------------------------------------|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested |         |         | 0.00    | 0.00    | 0.00   |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be             |         | 0.00    | 0.00    | 0.76    | 0.76   |
| Impervious Cover (acres)                                                            |         |         | 0.00    | 0.47    | 0.47   |
| Area Check                                                                          | OK.     | OK.     | OK.     | OK.     | 1.23   |

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

| Land Cover Summary-Pre          |             |                       |
|---------------------------------|-------------|-----------------------|
| Pre-ReDevelopment               | Listed      | Adjusted <sup>1</sup> |
| Forest/Open Space Cover (acres) | 0.00        | 0.00                  |
| Weighted Rv(forest)             | 0.00        | 0.00                  |
| % Forest                        | 0%          | 0%                    |
| Managed Turf Cover (acres)      | 0.96        | 0.76                  |
| Weighted Rv(turf)               | 0.25        | 0.25                  |
| % Managed Turf                  | 78%         | 74%                   |
| Impervious Cover (acres)        | 0.27        | 0.27                  |
| Rv(impervious)                  | 0.95        | 0.95                  |
| % Impervious                    | 22%         | 26%                   |
| <b>Total Site Area (acres)</b>  | <b>1.23</b> | <b>1.03</b>           |
| <b>Site Rv</b>                  | <b>0.40</b> | <b>0.43</b>           |

LAND COVER SUMMARY -- POST DEVELOPMENT

| Land Cover Summary-Post (Final) |             | Land Cover Summary-Post               |             | Land Cover Summary-Post         |      |
|---------------------------------|-------------|---------------------------------------|-------------|---------------------------------|------|
| Post ReDev. & New Impervious    |             | Post-ReDevelopment                    |             | Post-Development New Impervious |      |
| Forest/Open Space Cover (acres) | 0.00        | Forest/Open Space Cover (acres)       | 0.00        |                                 |      |
| Weighted Rv(forest)             | 0.00        | Weighted Rv(forest)                   | 0.00        |                                 |      |
| % Forest                        | 0%          | % Forest                              | 0%          |                                 |      |
| Managed Turf Cover (acres)      | 0.76        | Managed Turf Cover (acres)            | 0.76        |                                 |      |
| Weighted Rv (turf)              | 0.25        | Weighted Rv (turf)                    | 0.25        |                                 |      |
| % Managed Turf                  | 62%         | % Managed Turf                        | 74%         |                                 |      |
| Impervious Cover (acres)        | 0.47        | Re.Dev. Impervious Cover (acres)      | 0.27        | New Impervious Cover (acres)    | 0.20 |
| Rv(impervious)                  | 0.95        | Rv(impervious)                        | 0.95        | Rv(impervious)                  | 0.95 |
| % Impervious                    | 38%         | % Impervious                          | 26%         |                                 |      |
| <b>Final Site Area (acres)</b>  | <b>1.23</b> | <b>Total ReDev. Site Area (acres)</b> | <b>1.03</b> |                                 |      |
| <b>Final Post Dev Site Rv</b>   | <b>0.52</b> | <b>ReDev Site Rv</b>                  | <b>0.43</b> |                                 |      |

Treatment Volume and Nutrient Load

|                                                                                                                                            |        |        |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| Pre-ReDevelopment Treatment Volume (acre-ft)                                                                                               | 0.0414 | 0.0372 |
| Pre-ReDevelopment Treatment Volume (cubic feet)                                                                                            | 1,802  | 1,621  |
| Pre-ReDevelopment TP Load (lb/yr)                                                                                                          | 1.13   | 1.02   |
| Pre-ReDevelopment TP Load per acre (lb/acre/yr)                                                                                            | 0.92   | 0.99   |
| Baseline TP Load (lb/yr)<br>(0.41 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover) |        | 0.42   |

Treatment Volume and Nutrient Load

|                                                      |        |                                                         |        |                                                            |        |
|------------------------------------------------------|--------|---------------------------------------------------------|--------|------------------------------------------------------------|--------|
| Final Post-Development Treatment Volume (acre-ft)    | 0.0530 | Post-ReDevelopment Treatment Volume (acre-ft)           | 0.0372 | Post-Development Treatment Volume (acre-ft)                | 0.0158 |
| Final Post-Development Treatment Volume (cubic feet) | 2,310  | Post-ReDevelopment Treatment Volume (cubic feet)        | 1,621  | Post-Development Treatment Volume (cubic feet)             | 690    |
| Final Post-Development TP Load (lb/yr)               | 1.45   | Post-ReDevelopment TP Load (lb/yr)*                     | 1.02   | Post-Development TP Load (lb/yr)                           | 0.43   |
| Final Post-Development TP Load per acre (lb/acre/yr) | 1.18   | Post-ReDevelopment TP Load per acre (lb/acre/yr)        | 0.99   |                                                            |        |
|                                                      |        | Max. Reduction Required (Below Pre-ReDevelopment Load)  | 20%    |                                                            |        |
|                                                      |        | TP Load Reduction Required for Redeveloped Area (lb/yr) | 0.20   | TP Load Reduction Required for New Impervious Area (lb/yr) | 0.35   |

<sup>1</sup> Adjusted Land Cover Summary:  
Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).

Column 1 shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

Post-Development Requirement for Site Area

|                                    |      |
|------------------------------------|------|
| TP Load Reduction Required (lb/yr) | 0.56 |
|------------------------------------|------|

Nitrogen Loads (Informational Purposes Only)

|                                   |      |                                                                              |       |
|-----------------------------------|------|------------------------------------------------------------------------------|-------|
| Pre-ReDevelopment TN Load (lb/yr) | 8.10 | Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr) | 10.39 |
|-----------------------------------|------|------------------------------------------------------------------------------|-------|

LEGEND

- TOTAL PARCEL AREA = 8.12 ACRES  
TOTAL DISTURBED AREA = 8.43 - 1.23 = 7.20 ACRES
- HUC0010 DISTURBED AREA = 1.23 ACRES
- IMPERVIOUS COVER WITHIN DISTURBED AREA = 0.27 ACRES
- MANAGED TURF WITHIN DISTURBED AREA = 0.96 ACRES

NOTE: EXISTING BUILDING TO NOT BE DISTURBED, THEREFORE DISTURBED AREA IS PROJECT AREA LESS EXISTING UNDISTURBED BUILDING AREA.

HUC0010 PRE-DEVELOPMENT BMP LAND COVER MAP

SCALE 1"=80'

\*\*\*NOTE: PRE-DEVELOPMENT AND POST-DEVELOPMENT TOTAL HUC0010 DISTURBED AREA NEED TO MATCH. TO ENSURE MOST CONSERVATIVE ANALYSIS, THE LARGER OF THE TWO DISTURBED AREAS, THE PRE-DEVELOPMENT TOTAL AREA TO HUC0010, IS USED IN BMP COMPUTATIONS AND THE ADDITIONAL AREA CONSIDERED IN POST-DEVELOPMENT CONDITIONS IS CONSIDERED ALL IMPERVIOUS.

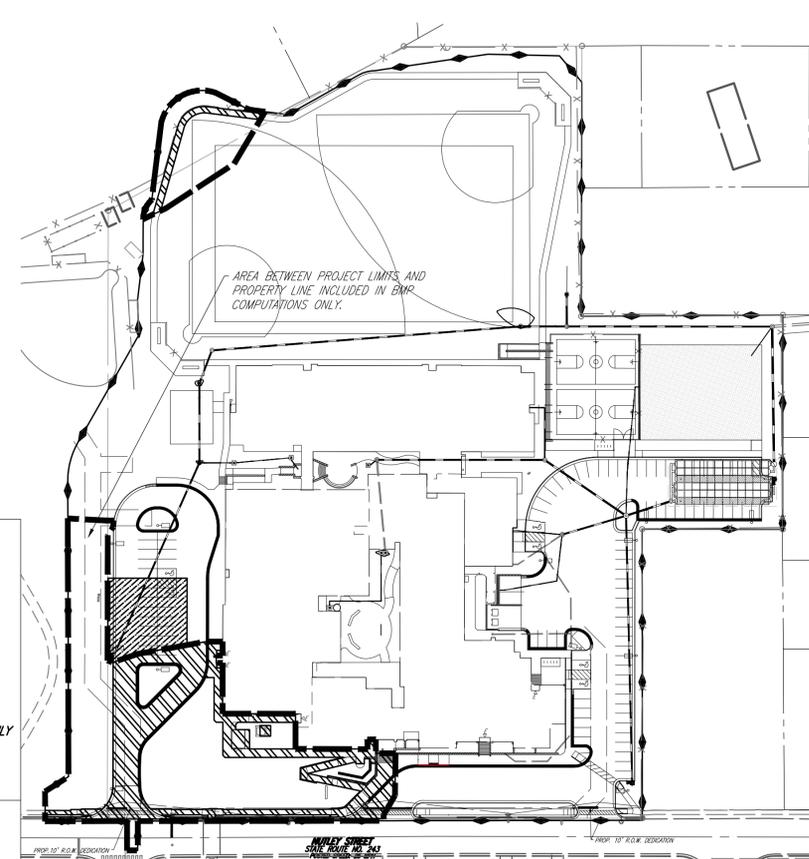
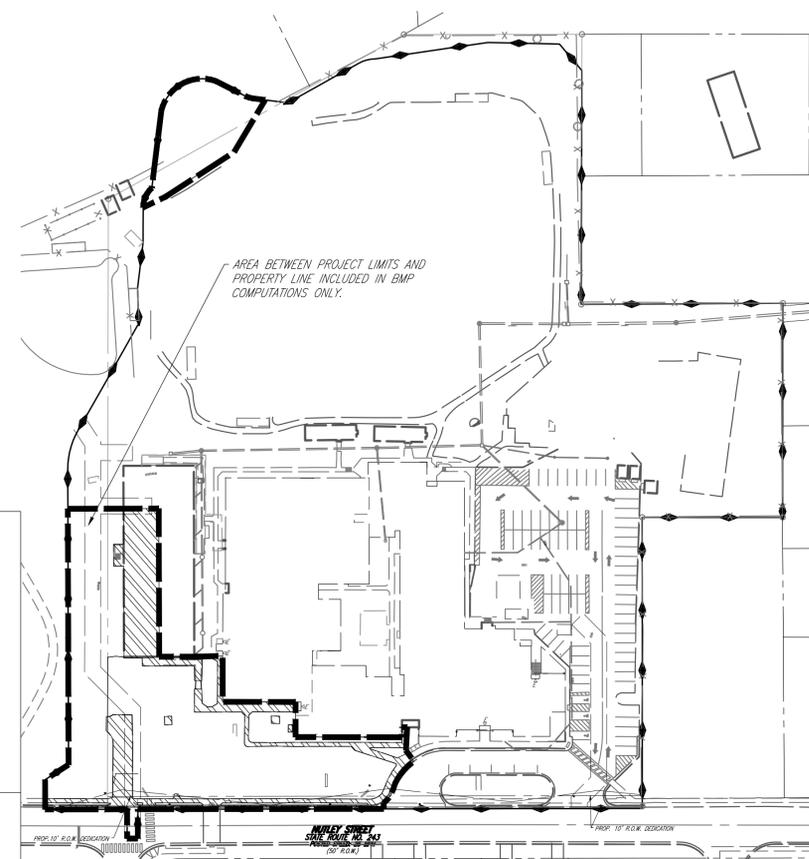
LEGEND

- TOTAL PARCEL AREA = 8.12 ACRES  
TOTAL DISTURBED AREA = 8.43 - 1.23 = 7.20 ACRES
- HUC0010 DISTURBED AREA = 1.12 ACRES (\*\*1.23 ACRES)
- IMPERVIOUS COVER WITHIN DISTURBED AREA = 0.36 ACRES  
0.36 + (1.23 - 1.12) = (\*\*0.47 ACRES)
- MANAGED TURF WITHIN DISTURBED AREA = 0.76 ACRES
- ADDITIONAL IMPERVIOUS AREA INCLUDED FOR BMP ANALYSIS ONLY = 1.23 - 1.12 = (\*\*0.11 ACRES)

NOTE: EXISTING BUILDING TO NOT BE DISTURBED, THEREFORE DISTURBED AREA IS PROJECT AREA LESS EXISTING UNDISTURBED BUILDING AREA.

HUC0010 POST-DEVELOPMENT BMP LAND COVER MAP

SCALE 1"=80'



**RINKER DESIGN ASSOCIATES, P.C.**  
CIVIL ENGINEERING & SURVEYING  
11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
PHONE : (703) 368-7373 FAX : (703) 257-5443  
WWW.RDAGCIVIL.COM



BMP LAND COVER - HUC0010  
**LOUISE ARCHER**  
ELEMENTARY SCHOOL  
RENOVATION & ADDITION  
HUNTER HILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

|                 |                  |
|-----------------|------------------|
| STATE PROJ#:    |                  |
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C7.1             |

Site Information

Post-Development Project (Treatment Volume and Loads)

HUC0008

Enter Total Disturbed Area (acres) → 6.08

|                                                         |      |
|---------------------------------------------------------|------|
| Maximum reduction required:                             | 20%  |
| The site's net increase in impervious cover (acres) is: | 1.74 |
| Post-Development TP Load Reduction for Site (lb/yr):    | 3.88 |

Pre-ReDevelopment Land Cover (acres)

|                                                                                     | A Soils | B Soils | C Soils | D Soils | Totals |
|-------------------------------------------------------------------------------------|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested |         |         | 0.00    | 0.71    | 0.71   |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be             |         |         | 0.00    | 4.33    | 4.33   |
| Impervious Cover (acres)                                                            |         |         | 0.00    | 1.04    | 1.04   |
|                                                                                     |         |         |         |         | 6.08   |

Post-Development Land Cover (acres)

|                                                                                     | A Soils | B Soils | C Soils | D Soils | Totals |
|-------------------------------------------------------------------------------------|---------|---------|---------|---------|--------|
| Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested |         |         | 0.00    | 0.00    | 0.00   |
| Managed Turf (acres) -- disturbed, graded for yards or other turf to be             |         | 0.00    | 0.00    | 3.30    | 3.30   |
| Impervious Cover (acres)                                                            |         |         | 0.00    | 2.78    | 2.78   |
| Area Check                                                                          | OK.     | OK.     | OK.     | OK.     | 6.08   |

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

| Land Cover Summary-Pre          |             |                       |
|---------------------------------|-------------|-----------------------|
| Pre-ReDevelopment               | Listed      | Adjusted <sup>1</sup> |
| Forest/Open Space Cover (acres) | 0.71        | 0.00                  |
| Weighted Rv(forest)             | 0.05        | 0.00                  |
| % Forest                        | 12%         | 0%                    |
| Managed Turf Cover (acres)      | 4.33        | 3.30                  |
| Weighted Rv(turf)               | 0.25        | 0.25                  |
| % Managed Turf                  | 71%         | 76%                   |
| Impervious Cover (acres)        | 1.04        | 1.04                  |
| Rv(impervious)                  | 0.95        | 0.95                  |
| % Impervious                    | 17%         | 24%                   |
| <b>Total Site Area (acres)</b>  | <b>6.08</b> | <b>4.34</b>           |
| <b>Site Rv</b>                  | <b>0.35</b> | <b>0.42</b>           |

LAND COVER SUMMARY -- POST DEVELOPMENT

| Land Cover Summary-Post (Final) |             | Land Cover Summary-Post               |             | Land Cover Summary-Post         |      |
|---------------------------------|-------------|---------------------------------------|-------------|---------------------------------|------|
| Post ReDev. & New Impervious    |             | Post-ReDevelopment                    |             | Post-Development New Impervious |      |
| Forest/Open Space Cover (acres) | 0.00        | Forest/Open Space Cover (acres)       | 0.00        |                                 |      |
| Weighted Rv(forest)             | 0.00        | Weighted Rv(forest)                   | 0.00        |                                 |      |
| % Forest                        | 0%          | % Forest                              | 0%          |                                 |      |
| Managed Turf Cover (acres)      | 3.30        | Managed Turf Cover (acres)            | 3.30        |                                 |      |
| Weighted Rv (turf)              | 0.25        | Weighted Rv (turf)                    | 0.25        |                                 |      |
| % Managed Turf                  | 54%         | % Managed Turf                        | 76%         |                                 |      |
| Impervious Cover (acres)        | 2.78        | ReDev. Impervious Cover (acres)       | 1.04        | New Impervious Cover (acres)    | 1.74 |
| Rv(impervious)                  | 0.95        | Rv(impervious)                        | 0.95        | Rv(impervious)                  | 0.95 |
| % Impervious                    | 46%         | % Impervious                          | 24%         |                                 |      |
| <b>Final Site Area (acres)</b>  | <b>6.08</b> | <b>Total ReDev. Site Area (acres)</b> | <b>4.34</b> |                                 |      |
| <b>Final Post Dev Site Rv</b>   | <b>0.57</b> | <b>ReDev Site Rv</b>                  | <b>0.42</b> |                                 |      |

Treatment Volume and Nutrient Load

|                                                                                                                                            | Pre-ReDevelopment | Post-Development |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|
| Pre-ReDevelopment Treatment Volume (acre-ft)                                                                                               | 0.1755            | 0.1511           |
| Pre-ReDevelopment Treatment Volume (cubic feet)                                                                                            | 7,645             | 6,581            |
| Pre-ReDevelopment TP Load (lb/yr)                                                                                                          | 4.80              | 4.13             |
| Pre-ReDevelopment TP Load per acre (lb/acre/yr)                                                                                            | 0.79              | 0.95             |
| Baseline TP Load (lb/yr)<br>(0.41 lbs/acre/yr applied to pre-redevelopment area excluding pervious land proposed for new impervious cover) |                   | 1.78             |

Treatment Volume and Nutrient Load

|                                                      | Final Post-Development | Post-ReDevelopment                                         | Post-Development |
|------------------------------------------------------|------------------------|------------------------------------------------------------|------------------|
| Final Post-Development Treatment Volume (acre-ft)    | 0.2888                 | Post-ReDevelopment Treatment Volume (acre-ft)              | 0.1511           |
| Final Post-Development Treatment Volume (cubic feet) | 12,582                 | Post-ReDevelopment Treatment Volume (cubic feet)           | 6,581            |
| Final Post-Development TP Load (lb/yr)               | 7.90                   | Post-ReDevelopment TP Load (lb/yr)*                        | 4.13             |
| Final Post-Development TP Load per acre (lb/acre/yr) | 1.30                   | Post-ReDevelopment TP Load per acre (lb/acre/yr)           | 0.95             |
|                                                      |                        | Max. Reduction Required (Below Pre-ReDevelopment Load)     | 20%              |
|                                                      |                        | TP Load Reduction Required for Redeveloped Area (lb/yr)    | 0.83             |
|                                                      |                        | TP Load Reduction Required for New Impervious Area (lb/yr) | 3.06             |

Post-Development Requirement for Site Area

|                                    |      |
|------------------------------------|------|
| TP Load Reduction Required (lb/yr) | 3.88 |
|------------------------------------|------|

Nitrogen Loads (Informational Purposes Only)

|                                   |       |                                                                              |       |
|-----------------------------------|-------|------------------------------------------------------------------------------|-------|
| Pre-ReDevelopment TN Load (lb/yr) | 34.36 | Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr) | 56.55 |
|-----------------------------------|-------|------------------------------------------------------------------------------|-------|

<sup>1</sup> Adjusted Land Cover Summary:  
Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.  
Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).  
Column 1 shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

LEGEND

- TOTAL PARCEL AREA = 8.12 ACRES  
TOTAL DISTURBED AREA = 8.43 - 1.23 = 7.20 ACRES
- HUC0008 DISTURBED AREA = 5.97 ACRES (\*\*6.08 ACRES)
- IMPERVIOUS COVER WITHIN DISTURBED AREA = \*\*1.70 ACRES  
1.70 - 0.52 - 0.14 = (\*\*1.04 ACRES)
- MANAGED TURF WITHIN DISTURBED AREA = \*\*4.22 ACRES  
4.22 + (6.08 - 5.97) = (\*\*4.33 ACRES)
- IMPERVIOUS AREA DRAINING TO EX. INFILTRATION TRENCH = \*\*0.52 ACRES
- IMPERVIOUS AREA DRAINING TO EX. SAND FILTER = \*\*0.14 ACRES
- AREA OF EXISTING BMP FACILITIES = 0.05 ACRES
- EXISTING BUILDING TO REMAIN UNDISTURBED = 1.23 ACRES

NOTE: EXISTING BUILDING TO NOT BE DISTURBED, THEREFORE DISTURBED AREA IS PROJECT AREA LESS EXISTING UNDISTURBED BUILDING AREA.

HUC0008 PRE-DEVELOPMENT BMP LAND COVER MAP

SCALE 1"=80'

\*\*\*NOTE: TO ACCOUNT FOR EXISTING BMP FACILITIES (INFILTRATION TRENCH AND SAND FILTER), IMPERVIOUS AREA DRAINING TO EXISTING FACILITIES CONSIDERED MANAGED TURF IN PRE-DEVELOPMENT CONDITION. ADDITIONALLY, AREA OF EXISTING BMP FACILITIES CONSIDERED FOREST/OPEN SPACE IN PRE-DEVELOPMENT CONDITION. EXISTING INFILTRATION TRENCH PROPOSED WITH 2005 SITE PLAN TITLED: "LOUISE ARCHER ELEMENTARY SCHOOL TO CLASSROOM MODULAR BUILDING ADDITION". EXISTING SAND FILTER PROPOSED WITH 2003 GRADING PLAN TITLED: "LOUISE ARCHER ELEMENTARY SCHOOL."

\*\*\*NOTE: PRE-DEVELOPMENT AND POST-DEVELOPMENT TOTAL HUC0008 DISTURBED AREA NEED TO MATCH. TO ENSURE MOST CONSERVATIVE ANALYSIS, THE LARGER OF THE TWO DISTURBED AREAS, THE POST-DEVELOPMENT TOTAL AREA TO HUC0008 IS USED IN BMP COMPUTATIONS AND THE ADDITIONAL AREA CONSIDERED IN PRE-DEVELOPMENT CONDITIONS IS CONSIDERED ALL MANAGED TURF.

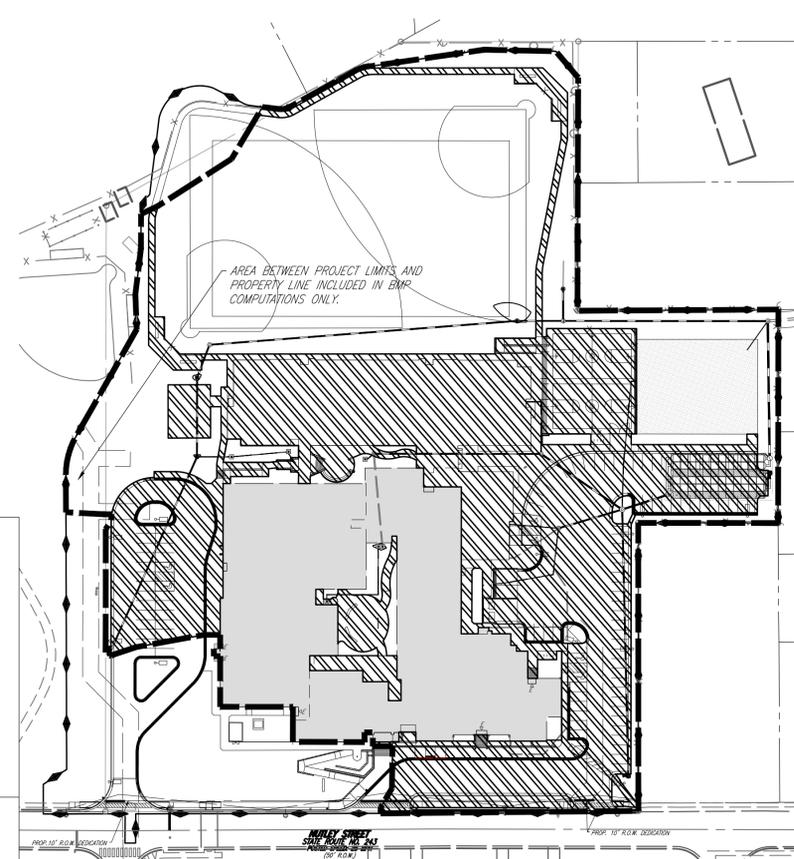
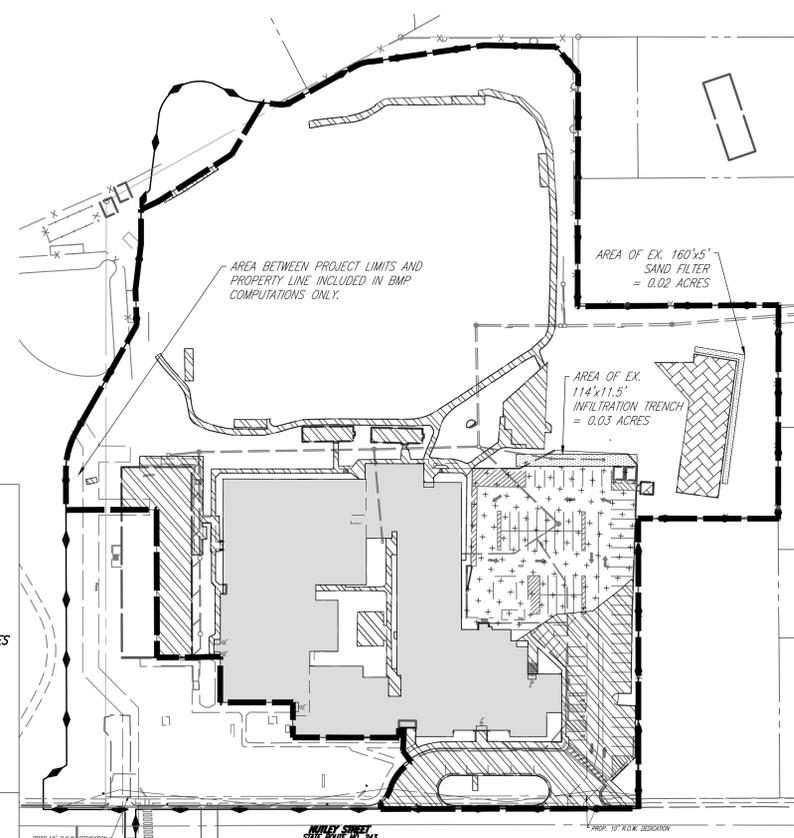
LEGEND

- TOTAL PARCEL AREA = 8.12 ACRES  
TOTAL DISTURBED AREA = 8.43 - 1.23 = 7.20 ACRES
- HUC0008 DISTURBED AREA = 6.08 ACRES
- IMPERVIOUS COVER WITHIN DISTURBED AREA = 2.78 ACRES
- MANAGED TURF WITHIN DISTURBED AREA = 3.30 ACRES
- EXISTING BUILDING TO REMAIN UNDISTURBED = 1.23 ACRES

NOTE: EXISTING BUILDING TO NOT BE DISTURBED, THEREFORE DISTURBED AREA IS PROJECT AREA LESS EXISTING UNDISTURBED BUILDING AREA.

HUC0008 POST-DEVELOPMENT BMP LAND COVER MAP

SCALE 1"=80'



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGVIL.COM

COMMONWEALTH OF VIRGINIA  
 JOHN D. COMBES  
 Lic. No. 039407  
 2/18/22  
 PROFESSIONAL ENGINEER

BMP LAND COVER - HUC0008  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C7.2

**Potomac Mitigation Bank, LLC**  
 37163 Mountville Rd  
 Middleburg, VA 20117  
 540-687-6999

August 11, 2021

Mr. Nick J. Gigliotti, EIT  
 Project Engineer  
 Rinker Design Associates, P.C.  
 Suite 100  
 Glen Allen, VA 23060

**Re: Credit Availability – Louise Archer Elementary School  
 Renovation & Addition  
 2.4 & 0.5 Phosphorus Reduction Offset Credits  
 Brookdale Nutrient Bank  
 Loudoun County, Virginia  
 Located in HUC 02070008**

Dear Mr. Gigliotti,

This letter is to confirm the availability of authorized phosphorus reduction credits at the Brookdale Nutrient Bank located in Loudoun County, VA, Hydrologic Unit Code 02070008, which per state regulation allows us to service Virginia 8 Digit Hydrologic Unit Codes (HUC) 02070008 and 0207010. The nutrient reductions resulting from this activity generated nonpoint source Nutrient "Credits" which are transferable to those entities requiring nutrient reductions in accordance with the Chesapeake Bay Watershed Nutrient Credit Exchange Program (VA Code § 62.1-44.19:14) and the Virginia Stormwater Credit Program (VA Code § 62.1-44.15:35).

On June 17, 2020, Brookdale Nutrient Bank was authorized to transfer 20.78 pounds of phosphorus Credits and on June 30, 2021 was authorized to transfer an additional 38.11 pounds of phosphorus credits. We will have availability to supply **2.40** lbs. of phosphorus Credits from the Brookdale Bank to meet your removal requirement in HUC 02070008 and **0.50** lbs to meet your requirement in HUC 0207010.

These credits will be available in accordance with the **Nonpoint Nutrient Offset Generation Certifications** dated June 17, 2020. These credits are transferrable under the Nutrient Reduction Implementation Plans for the Brookdale Nutrient Bank, which was dated February 28, 2020.

If I can be of further assistance please do not hesitate to contact me.

Sincerely,

Digitally signed by:  
  
 EABE00C44E4E40

Wm. Paul Lawrence, II  
 Member/Manager

**SWM NARRATIVE**

THERE ARE TWO OUTFALLS ASSOCIATED WITH THIS PROJECT, EACH DRAINING TO A DIFFERENT WATERSHED.  
 OUTFALL 1 DRAINS TO VA HUC 02070010. OUTFALL 1'S SWM REQUIREMENTS HAVE BEEN SATISFIED BY DIVERTING A SMALL AMOUNT OF DRAINAGE AREA TO OUTFALL 2 AND THUS REDUCING THE OVERALL DRAINAGE AREA TO OUTFALL 1. SEE SHEETS C7.5-C7.6 FOR ADEQUATE OUTFALL ANALYSIS.  
 OUTFALL 2 DRAINS TO VA HUC 02070008. OUTFALL 2'S SWM REQUIREMENTS HAVE BEEN SATISFIED BY A PROPOSED STORMTECH UNDERGROUND CHAMBERS DETENTION SYSTEM (SWM FACILITY #1). SEE SHEETS C7.9-C7.13 FOR PROPOSED SWM FACILITY #1 DETAILS AND COMPUTATIONS AND SHEETS C7.7-C7.8 FOR ADEQUATE OUTFALL ANALYSIS.

ALL STORMWATER MANAGEMENT DETENTION FACILITIES SHALL BE MAINTAINED BY FAIRFAX COUNTY PUBLIC SCHOOLS.

**BMP NARRATIVE**

THE TOTAL DISTURBED AREA PROPOSED WITH THE PROJECT IS 7.20 ACRES. THE TOTAL NET INCREASE IN IMPERVIOUS AREA IS 1.94 ACRES. SEE SHEET C7.1 FOR LAND COVER MAPS AND VRRM SPREADSHEET FOR HUC 02070010, AND SEE SHEET C7.2 FOR LAND COVER MAPS AND VRRM SPREADSHEET FOR HUC 02070008.

**HUC 02070010**

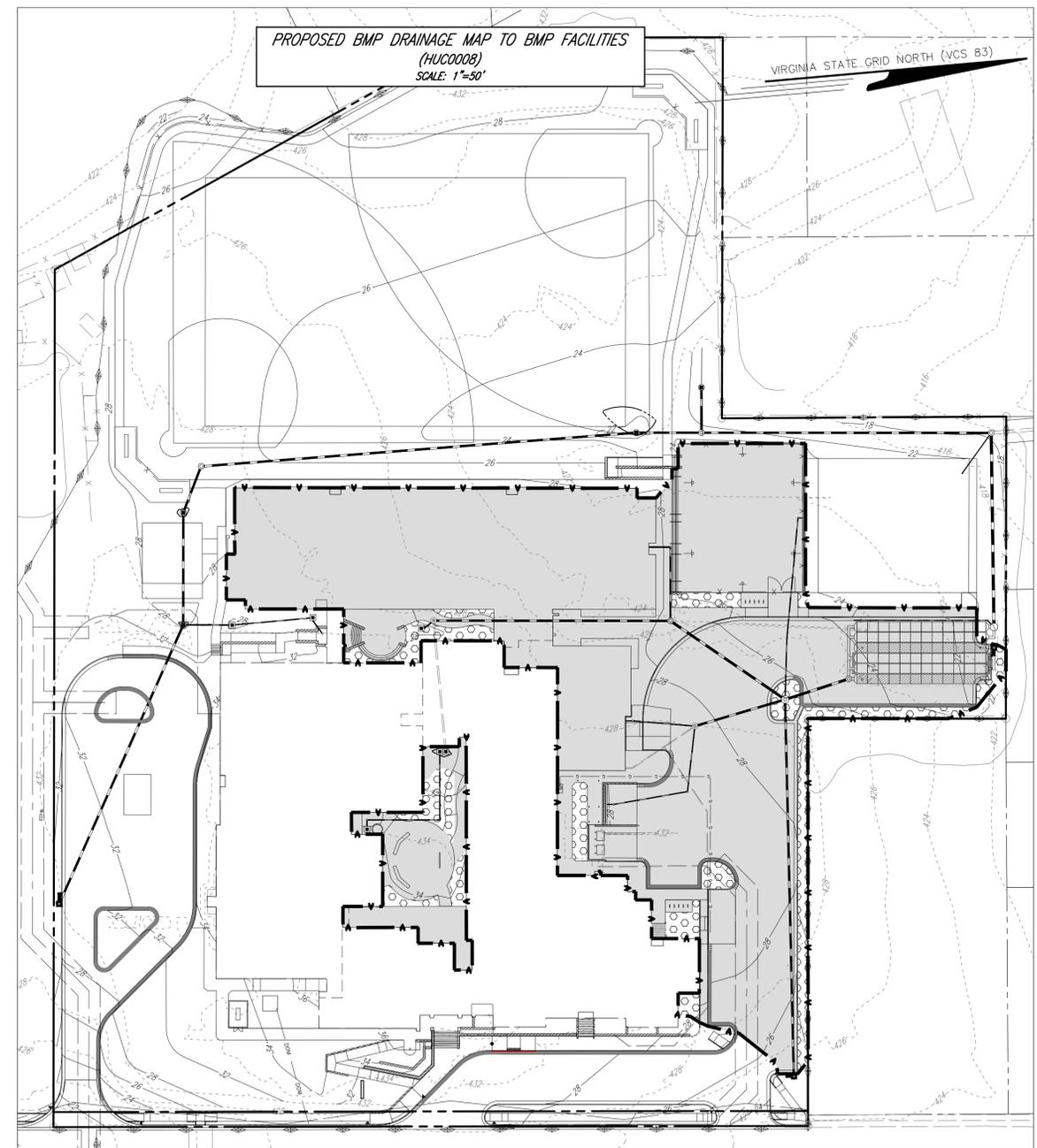
THE DISTURBED AREA PROPOSED WITH THE PROJECT IN HUC 02070010 IS 1.11 ACRES (1.23 ACRES FOR BMP COMPUTATIONS. SEE SHEET C7.1 FOR DETAILS). THE NET INCREASE IN IMPERVIOUS AREA IS 0.20 ACRES.

THE TOTAL TP REDUCTION REQUIRED IN THIS WATERSHED IS 0.56 LB/YR. THIS TP LOAD REDUCTION WILL BE ACHIEVED THROUGH THE PURCHASE OF NUTRIENT CREDITS.

**HUC 02070008**

THE DISTURBED AREA PROPOSED WITH THE PROJECT IN HUC 02070008 IS 6.08 ACRES. THE NET INCREASE IN IMPERVIOUS AREA IS 1.74 ACRES.

THE TOTAL TP REDUCTION REQUIRED IN THIS WATERSHED IS 3.88 LB/YR. STORMTECH MC-3500 CHAMBERS WITH ISOLATOR ROWS (SWM FACILITY #1) ARE PROPOSED TO ACHIEVE THE BMP REQUIREMENTS. STORMTECH ISOLATOR ROWS ARE DEQ APPROVED AND HAVE BEEN AWARDED 40% TP REMOVAL EFFICIENCY. STORMTECH MC-3500 CHAMBER SYSTEMS WILL CAPTURE DRAINAGE AREA A AS SHOWN ON THE PROPOSED BMP DRAINAGE MAP (SEE THIS SHEET). VRRM SPREADSHEET RESULTS SHOWN ON THIS SHEET SHOW A TP REDUCTION ACHIEVED BY DRAINAGE AREA A TO BE 1.72 LB/YR. THE REMAINING TP LOAD REDUCTION OF 2.16 LB/YR WILL BE ACHIEVED THROUGH THE PURCHASE OF NUTRIENT CREDITS.



**HUC0008**

**Site Results (Water Quality Compliance)**

| Area Checks                    | D.A. A | D.A. B | D.A. C | D.A. D | D.A. E | AREA CHECK |
|--------------------------------|--------|--------|--------|--------|--------|------------|
| FOREST/OPEN SPACE (ac)         | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | OK.        |
| IMPERVIOUS COVER (ac)          | 0.00   | 1.93   | 0.00   | 0.00   | 0.00   | OK.        |
| IMPERVIOUS COVER TREATED (ac)  | 0.00   | 1.93   | 0.00   | 0.00   | 0.00   | OK.        |
| MANAGED TURF AREA (ac)         | 0.00   | 0.20   | 0.00   | 0.00   | 0.00   | OK.        |
| MANAGED TURF AREA TREATED (ac) | 0.00   | 0.20   | 0.00   | 0.00   | 0.00   | OK.        |
| AREA CHECK                     | OK.    | OK.    | OK.    | OK.    | OK.    |            |

Site Treatment Volume (ft<sup>3</sup>) **12,582**

**Runoff Reduction Volume and TP By Drainage Area**

|                                                     | D.A. A | D.A. B | D.A. C | D.A. D | D.A. E | TOTAL |
|-----------------------------------------------------|--------|--------|--------|--------|--------|-------|
| RUNOFF REDUCTION VOLUME ACHIEVED (ft <sup>3</sup> ) | 0      | 0      | 0      | 0      | 0      | 0     |
| TP LOAD AVAILABLE FOR REMOVAL (lb/yr)               | 0.00   | 4.30   | 0.00   | 0.00   | 0.00   | 4.30  |
| TP LOAD REDUCTION ACHIEVED (lb/yr)                  | 0.00   | 1.72   | 0.00   | 0.00   | 0.00   | 1.72  |
| TP LOAD REMAINING (lb/yr)                           | 0.00   | 2.58   | 0.00   | 0.00   | 0.00   | 2.58  |
| NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)            | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00  |

**Total Phosphorus**

|                                               |      |
|-----------------------------------------------|------|
| FINAL POST-DEVELOPMENT TP LOAD (lb/yr)        | 7.90 |
| TP LOAD REDUCTION REQUIRED (lb/yr)            | 3.88 |
| TP LOAD REDUCTION ACHIEVED (lb/yr)            | 1.72 |
| TP LOAD REMAINING (lb/yr):                    | 6.19 |
| REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): | 2.17 |

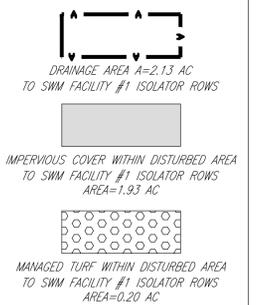
**Total Nitrogen (For Information Purposes)**

|                                                  |       |
|--------------------------------------------------|-------|
| POST-DEVELOPMENT LOAD (lb/yr)                    | 56.55 |
| NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)         | 0.00  |
| REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr) | 56.55 |

NOTE: ACTUAL REMAINING TP LOAD REDUCTION (LB/YR) REQUIRED IS 3.88 - 1.72 = 2.16 LB/YR

**HUC0008**

**DRAINAGE AREA A SUMMARY**



**HUC0008**

| Practice                                      | Runoff Reduction Credit (%) | Managed Turf Credit Area (acres) | Impervious Cover Credit Area (acres) | Volume from Upstream Practice (ft <sup>3</sup> ) | Runoff Reduction (ft <sup>3</sup> ) | Remaining Runoff Volume (ft <sup>3</sup> ) | Total BMP Treatment Volume (ft <sup>3</sup> ) | Phosphorus Removal Efficiency (%) | Phosphorus Load from Upstream Practices (lb) | Untreated Phosphorus Load to Practice (lb) | Phosphorus Removed By Practice (lb) | Remaining Phosphorus Load (lb) | Downstream Practice to be Employed |
|-----------------------------------------------|-----------------------------|----------------------------------|--------------------------------------|--------------------------------------------------|-------------------------------------|--------------------------------------------|-----------------------------------------------|-----------------------------------|----------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------|------------------------------------|
| 14.b. Manufactured Treatment Device-Filtering | 0                           | 0.20                             | 1.93                                 | 0                                                | 0                                   | 6,837                                      | 6,837                                         | 40                                | 0.00                                         | 4.29                                       | 1.72                                | 2.57                           |                                    |



**RINKER DESIGN ASSOCIATES, P.C.**

CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM



**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:  
 STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C7.3

# ADEQUATE OUTFALL NARRATIVE

## PROJECT OVERVIEW:

THIS PROJECT PROPOSES A PERMANENT BUILDING ADDITION TO THE EXISTING LOUISE ARCHER ELEMENTARY SCHOOL WHICH IS LOCATED AT #324 NUTLEY STREET NW IN THE TOWN OF VIENNA. OTHER IMPROVEMENTS TO THE SITE INCLUDE ADDITIONAL PARKING AREAS, UTILITY IMPROVEMENTS, AND OTHER NECESSARY INFRASTRUCTURE TO SUPPORT THE ELEMENTARY SCHOOL. THE SITE IS LOCATED WITHIN THE DIFFICULT RUN AND ACCOTINK CREEK WATERSHED. THE TOTAL DISTURBED AREA ASSOCIATED WITH THIS PLAN IS 7.20 ACRES. THE SITE CONSISTS OF AN EXISTING ELEMENTARY SCHOOL (56,522 SQUARE FEET OF EXISTING GROSS FLOOR AREA) OWNED AND OPERATED BY FAIRFAX COUNTY PUBLIC SCHOOLS. EXISTING INFRASTRUCTURE INCLUDES PARKING AREAS, TRAVEL WAYS, UTILITIES, SOFTBALL FIELDS, PLAYGROUNDS, MULTIPLE MODULAR FACILITIES AND OTHER MISCELLANEOUS FACILITIES USED TO SUPPORT THE EXISTING SCHOOL. THE PROJECT PROPOSES ALL NECESSARY TEMPORARY AND PERMANENT EROSION CONTROL MEASURES TO MEET STATE AND LOCAL REGULATIONS. DRAINAGE IMPROVEMENTS ARE PROPOSED FOR ALL OUTFALLS IN ORDER TO MEET OUTFALL REQUIREMENTS OF THE TOWN CODE.

## ADEQUATE OUTFALL SUMMARY

THERE IS AN EXISTING WATERSHED DIVIDE ONSITE BETWEEN VA HUC 02070010 AND VA HUC 02070008. THE MAJORITY OF THE SITE DRAINS TO HUC0008 (PW2) WHILE A SMALL PORTION OF THE SOUTHEAST CORNER OF THE SITE DRAINS TO HUC0010 (PW1). A SMALL AREA LOCATED ON MADISON HIGH SCHOOL WAS DISTURBED, BUT THE EXISTING DRAINAGE DIVIDES WERE HONORED AND THIS AREA WILL CONTINUE TO DRAIN VIA SHEET FLOW AS ORIGINALLY DESIGNED.

## PROPOSED OUTFALL 1 (0-1):

APPROXIMATELY 0.68 ACRES OF THE SOUTHEAST CORNER OF THE SITE DRAINS TO NUTLEY STREET. THERE IS NO DEFINED OUTFALL POINT (0-1) FOR THIS PROPOSED WATERSHED (PW-1). A SMALL AMOUNT OF AREA (0.11 ACRES) WAS DIVERTED TO OUTFALL 2 TO SATISFY THE ENERGY BALANCE EQUATION, WHICH WAS APPLIED TO THE BALANCE OF PW-1 TO MEET CHANNEL PROTECTION CRITERIA. ADDITIONALLY, THE 10-YR 24-HR POST-DEVELOPMENT FLOW RATE IS LESS THAN THE 10-YR 24-HR PREDEVELOPMENT FLOW RATE. THEREFORE, IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT 0-1 IS AN ADEQUATE OUTFALL. SEE SHEETS C7.5-C7.6 FOR MAPS, COMPUTATIONS, AND DETAILS.

## PROPOSED OUTFALL 2 (0-2):

APPROXIMATELY 7.01 ACRES OF THE SITE FLOWS TO AN EXISTING MANMADE STORM SEWER SYSTEM TO THE NORTH OF THE SCHOOL IN ORCHARD ST. A MAJORITY OF THE 7.01 ACRES IS PICKED UP VIA EXISTING AND PROPOSED STORM SEWER INLETS WHICH FLOW TO EXISTING STORM STRUCTURE 8 WHICH IS THE OUTFALL POINT (0-2) FOR THIS PROPOSED WATERSHED (PW-2). THE REMAINING AREA IN THE NORTHEAST CORNER OF THE PROPERTY DRAINS OUT TO NUTLEY STREET AND EVENTUALLY IS PICKED UP BY EXISTING STORM STRUCTURE 8 ALONG WITH EXISTING SHEET FLOW ALONG THE NORTHERN PROPERTY LINE. THE ENERGY BALANCE EQUATION WAS APPLIED AT EXISTING STORM STRUCTURE 8 TO MEET THE CHANNEL PROTECTION CRITERIA. AT EXISTING STRUCTURE 8, STORMWATER RUNOFF IS JOINED BY A LARGE CONTRIBUTING DOWNSTREAM AREA, MAKING THIS THE POINT OF CONFLUENCE. THE SYSTEM WAS ANALYZED UP TO AN ADDITIONAL 150 FEET PAST THE POINT OF CONFLUENCE, THE LIMITS OF ANALYSIS FOR BOTH CHANNEL PROTECTION AND FLOOD PROTECTION. BOTH CRITERIA WERE MET, AND THEREFORE IT IS THE PROFESSIONAL OPINION OF THIS FIRM IS THAT 0-2 IS AN ADEQUATE OUTFALL. SEE SHEETS C7.7-C7.8 FOR MAPS, COMPUTATIONS, AND DETAILS.

## SHEET FLOW:

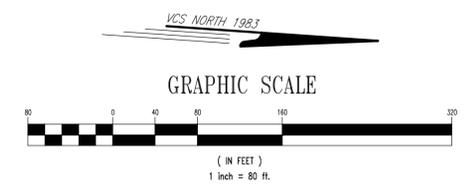
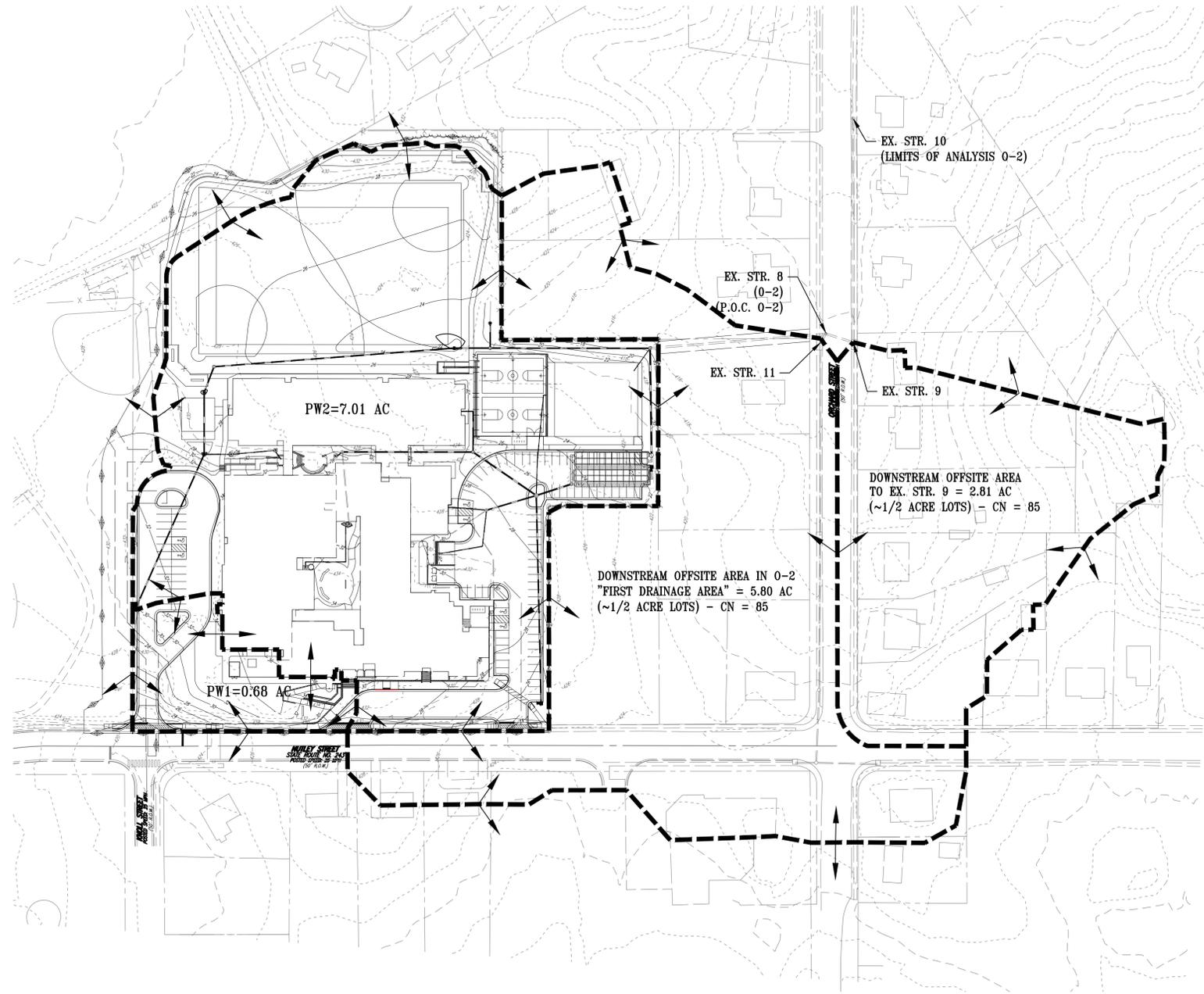
IN THE POST-DEVELOPMENT CONDITION, THE VOLUME OF SHEET FLOW IS DECREASED FROM THE PRE-DEVELOPMENT CONDITION DUE TO THE REMOVAL OF LARGE IMPERVIOUS AREAS AND DRAINAGE IMPROVEMENTS.

## OVERLAND RELIEF:

OVERLAND RELIEF IS PROVIDED ON-SITE THROUGH THE EXISTING AND PROPOSED GRADING OF THE PARKING AREAS AND TRAVELWAYS AS WELL AS AREAS TO THE EAST, NORTH, AND SOUTH OF THE BUILDING IN THE EVENT THE STORM SYSTEM BECOMES CLOGGED. IT IS OUR PROFESSIONAL OPINION THAT, IN THE EVENT THAT THE PROPOSED STORM SEWER BECOMES COMPROMISED, RUNOFF WILL EXIT THIS SITE BEFORE FLOODING THE BUILDING.

## SUMMARY:

THIS PLAN WILL CONTINUE TO HONOR ALL EXISTING MAJOR DRAINAGE DIVIDES. NO DIVERSION OF WATER FROM ONE MAJOR WATERSHED TO ANOTHER IS PROPOSED WITH THIS PLAN. NO DETRIMENTAL EFFECTS TO THE DOWNSTREAM DRAINAGE SYSTEM WILL OCCUR FOLLOWING CONSTRUCTION OF THE IMPROVEMENTS PROPOSED UNDER THIS SITE PLAN. IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT WITH THE PROVIDED ONSITE DETENTION AND PROPOSED DRAINAGE IMPROVEMENTS, ALL OUTFALLS FOR THE PROJECT ARE ADEQUATE AND THERE WILL BE NO ADVERSE IMPACTS TO THE DOWNSTREAM DRAINAGE SYSTEMS AS A RESULT OF THE PROPOSED IMPROVEMENTS. IN THE EVENT OF THE 100-YEAR STORM EVENT THERE WILL BE NO FLOODING OF EXISTING DOWNSTREAM DWELLINGS OR BUILDINGS. SEE SHEET C7.14 FOR OVERLAND RELIEF MAPS AND COMPUTATIONS.



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM



STATE PROJECT #:  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

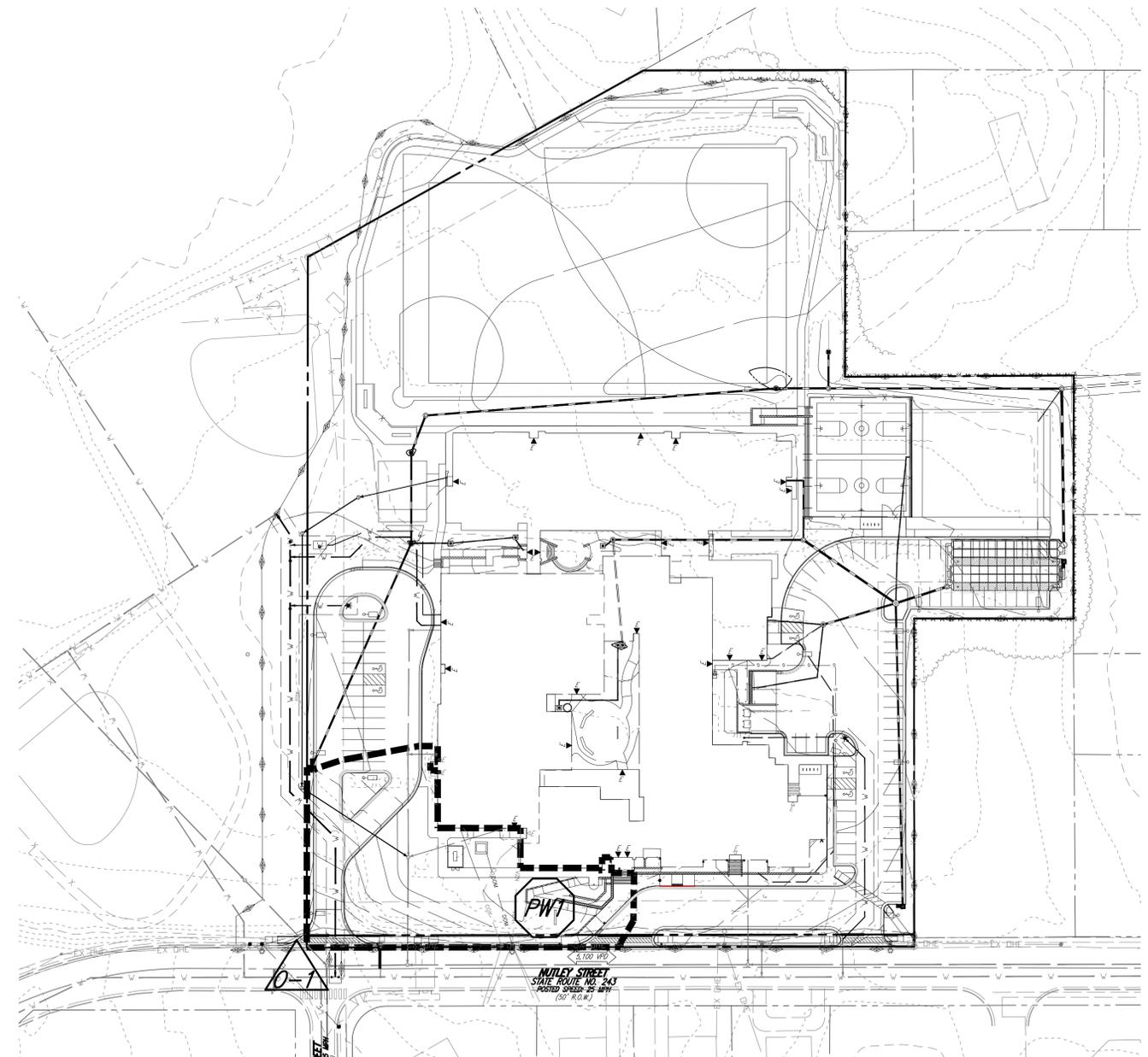
REVISIONS:

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| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C7.4             |

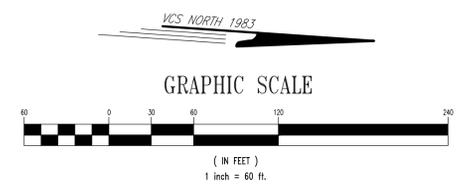
**PW1**

PROPOSED WATERSHED 1  
 OPEN SPACE (GOOD)=0.38 AC.  
 IMPERVIOUS=0.30 AC.  
 RESIDENTIAL LOTS=0.00 AC.  
 TOTAL DRAINAGE AREA=0.68 AC.  
 WEIGHTED CN=88



**ADEQUATE OUTFALL SUMMARY**

PROPOSED WATERSHED 1 TOTAL DRAINAGE AREA (0.68 ACRES) IS DECREASED FROM THE EXISTING CONDITION. THE DIVIDE BETWEEN PROPOSED WATERSHED 1 AND PROPOSED WATERSHED 2 IS THE DIVIDE BETWEEN TWO MAJOR WATERSHEDS: VA HUC 02070010 AND VA HUC 02070008. THEREFORE, THIS PROJECT WAS DESIGNED TO HONOR THE NATURAL DIVIDE BETWEEN THE TWO MAJOR WATERSHEDS TO THE GREATEST EXTENT POSSIBLE. EXISTING WATERSHED 1 HAS NO DEFINED OUTFALL POINT AS IT DRAINS VIA SHEET FLOW TO THE ADJACENT HIGH SCHOOL PROPERTY TO THE SOUTH AND TO NUTLEY STREET TO THE EAST. PROPOSED WATERSHED 1 ALSO HAS NO DEFINED OUTFALL POINT AS THE PROPOSED PARKING LOT DRAINS TO NUTLEY STREET WHILE REDUCING THE SHEET FLOW TO THE ADJACENT HIGH SCHOOL PROPERTY. A SMALL AREA (0.11 ACRES) WAS DIVERTED FROM PW1 TO PROPOSED WATERSHED 2 (PW2) TO SATISFY THE ENERGY BALANCE EQUATION FOR THE BALANCE OF PW1, THE MINIMUM AREA NECESSARY TO SATISFY THE ENERGY BALANCE EQUATION. ADDITIONALLY, THE FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PRE-DEVELOPMENT FLOW RATE FOR THE SAME STORM EVENT. SINCE THERE IS NO DEFINED OUTFALL POINT, AND THIS PROJECT HONORS THE NATURAL DIVIDE BETWEEN TWO MAJOR WATERSHEDS, AND THE SHEET FLOW TO THE ADJACENT HIGH SCHOOL PROPERTY HAS BEEN REDUCED, IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT PROPOSED WATERSHED 1 HAS AN ADEQUATE OUTFALL AND WILL CONTINUE TO ADEQUATELY DRAIN TO NUTLEY STREET.



| EW1                 |    |           | PW1                     |    |           |
|---------------------|----|-----------|-------------------------|----|-----------|
| Rv Pre              |    |           | Rv Dev                  |    |           |
| Landcover           | CN | Area (ac) | Landcover               | CN | Area (ac) |
| 1 IMPERVIOUS        | 98 | 0.28      | 1 IMPERVIOUS            | 98 | 0.30      |
| 2 OPEN SPACE (GOOD) | 80 | 0.51      | 2 OPEN SPACE (GOOD)     | 80 | 0.38      |
| 3                   |    |           | 3                       |    |           |
| 4                   |    |           | 4                       |    |           |
| 5                   |    |           | 5                       |    |           |
| Total Area =        |    | 0.79      | Total Area =            |    | 0.68      |
| RCN =               |    | 86        | RCN =                   |    | 88        |
| S =                 |    | 1.63      | S =                     |    | 1.36      |
| Q =                 |    | 1.34      | Q =                     |    | 1.48      |
| Rv pre =            |    | 3,849     | Rv dev =                |    | 3,638     |
| q1-yr-pre =         |    | 1.66      | q1-yr-dev =             |    | 1.57      |
|                     |    |           | q1-yr-dev (allowable) ≤ |    | 1.58      |

ENERGY BALANCE EQUATION:  
 $01(POST) \leq 01(PRE) * [RV(PRE) / RV(POST)] * IF, \text{ WHERE } IF = 0.90$   
 $01(POST) \leq 1.66 * [3,849 / 3,638] * 0.90$   
 $01(POST) \leq 1.58 \text{ CFS}$   
 $1.57 \text{ CFS} < 1.58 \text{ CFS}$

|                       | PRE-DEV  | POST-DEV |
|-----------------------|----------|----------|
| 1-YEAR 24-HOUR STORM  | 1.66 CFS | 1.57 CFS |
| 2-YEAR 24-HOUR STORM  | 2.23 CFS | 2.08 CFS |
| 10-YEAR 24-HOUR STORM | 4.13 CFS | 3.74 CFS |



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 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

OUTFALL 1 ADEQUATE OUTFALL ANALYSIS

REVISIONS:

| NO. | DATE             | DESCRIPTION |
|-----|------------------|-------------|
| 1   | FEBRUARY 8, 2022 |             |
| 2   |                  |             |
| 3   |                  |             |
| 4   |                  |             |
| 5   |                  |             |

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C7.5

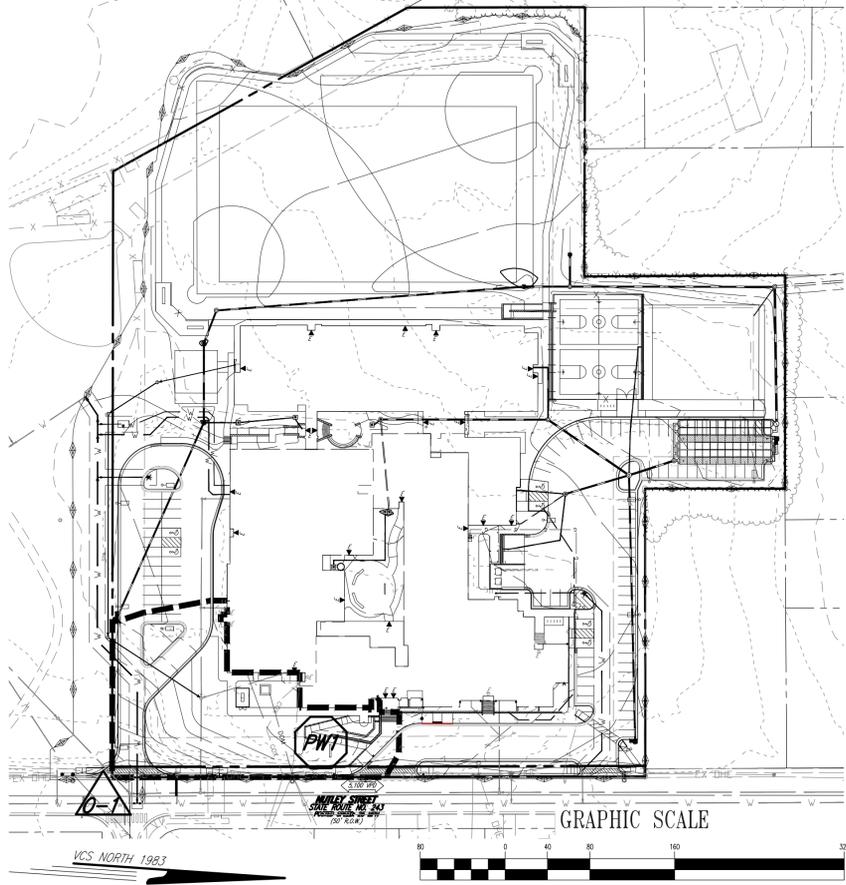
PROPOSED DRAINAGE MAP



PROPOSED WATERSHED 1  
OPEN SPACE-GOOD (CN=80)=0.38 AC.  
IMPERVIOUS (CN=98)=0.30 AC.  
TOTAL DRAINAGE AREA=0.68 AC.  
WEIGHTED CN=88

DENOTES WATERSHED AREA

DENOTES SITE OUTFALL



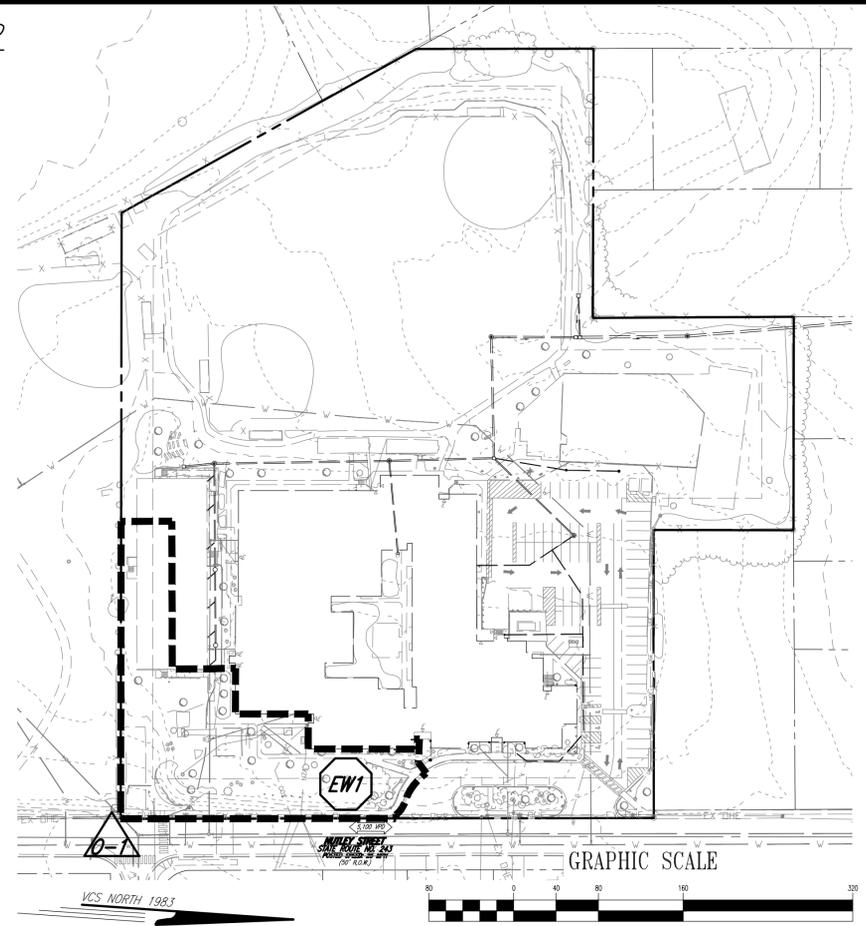
EXISTING DRAINAGE MAP



EXISTING WATERSHED 1  
OPEN SPACE-GOOD (CN=80)=0.51 AC.  
IMPERVIOUS (CN=98)=0.28 AC.  
TOTAL DRAINAGE AREA=0.79 AC.  
WEIGHTED CN=86

DENOTES WATERSHED AREA

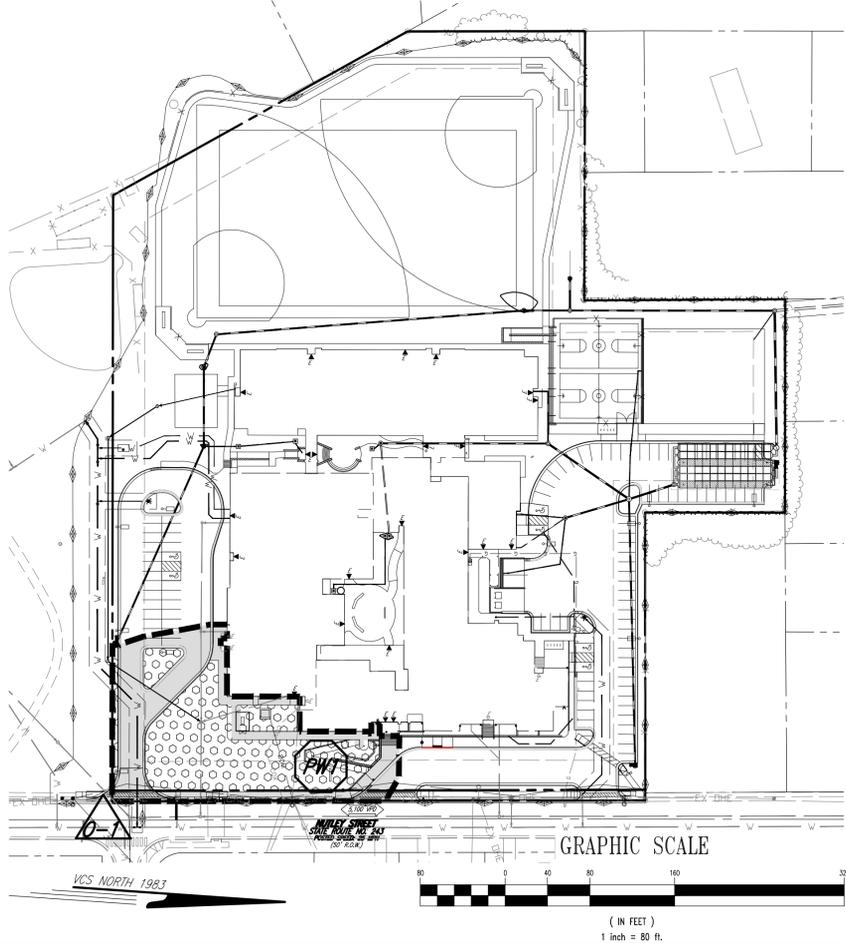
DENOTES SITE OUTFALL



PROPOSED LAND COVER MAP

COVER DESCRIPTION  
OPEN SPACE (GOOD)  
CN=80  
COVER DESCRIPTION  
IMPERVIOUS  
CN=98

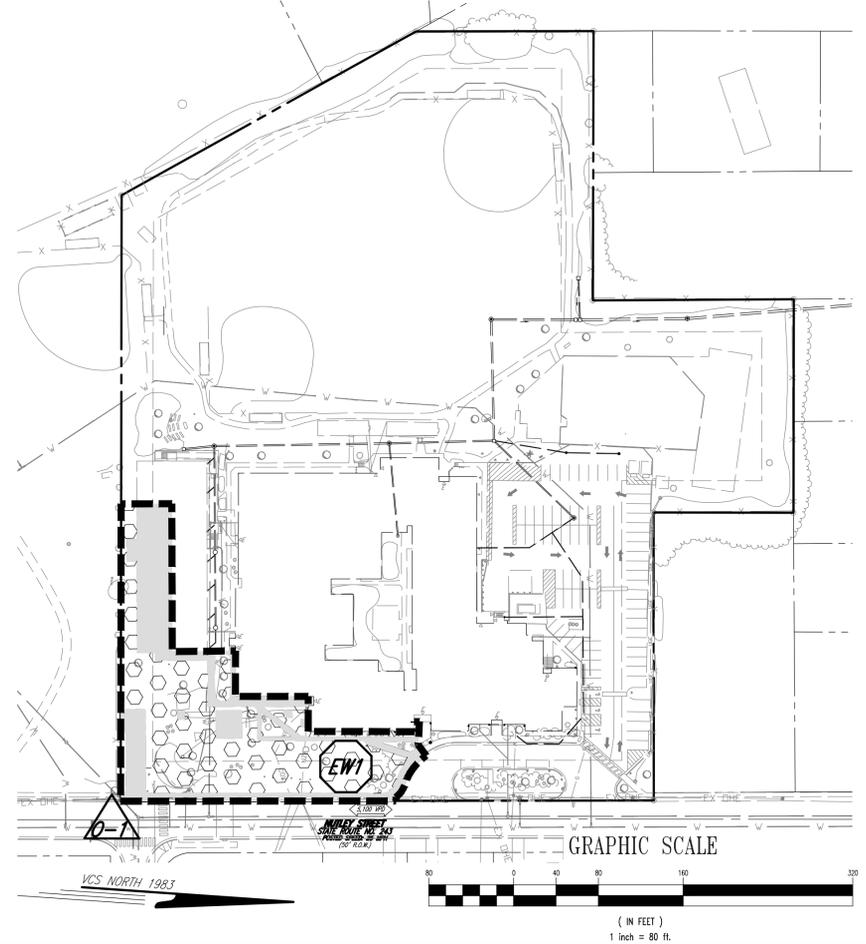
NOTE: SITE IS HYDROLOGIC SOIL GROUP D.



EXISTING LAND COVER MAP

COVER DESCRIPTION  
OPEN SPACE (GOOD)  
CN=80  
COVER DESCRIPTION  
IMPERVIOUS  
CN=98

NOTE: SITE IS HYDROLOGIC SOIL GROUP D.



RINKER DESIGN ASSOCIATES, P.C.

CIVIL ENGINEERING & SURVEYING

11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109

PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM



OUTFALL 1 DRAINAGE MAPS

LOUISE ARCHER  
ELEMENTARY SCHOOL  
RENOVATION & ADDITION  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

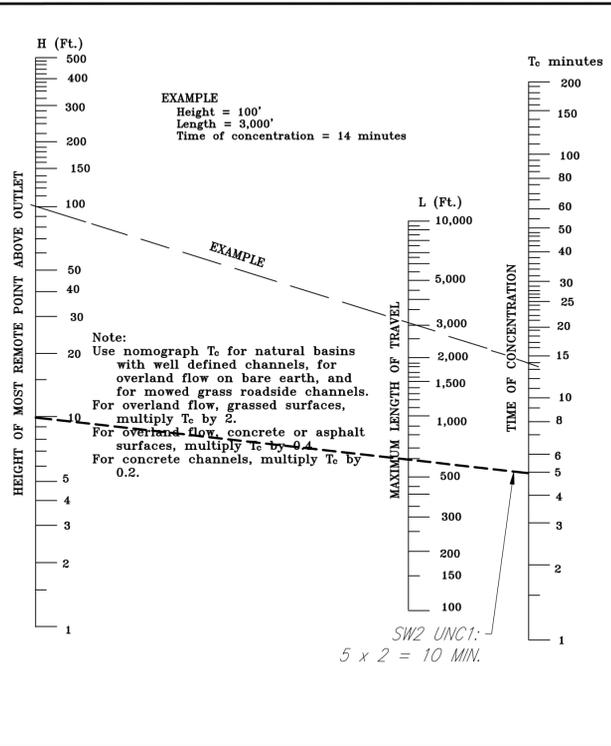
REVISIONS:

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STATE PROJ#:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C7.6             |

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



|                                       |                                                |           |          |
|---------------------------------------|------------------------------------------------|-----------|----------|
| Ref. Sec. 6-0803.4C(1), Table 6.11    | TIME OF CONCENTRATION OF SMALL DRAINAGE BASINS | PLATE NO. | STD. NO. |
| Rev. 1-00, 2011 Reprint, 2019 Reprint |                                                | 3-6       |          |

**PW2**  
 PROPOSED WATERSHED 2  
 OPEN SPACE (GOOD)=2.64 AC.  
 OPEN SPACE (POOR)=0.23 AC.  
 IMPERVIOUS=4.14 AC.  
 TOTAL DRAINAGE AREA=7.01 AC.  
 WEIGHTED CN=91

**ADEQUATE OUTFALL SUMMARY**  
 PROPOSED WATERSHED 1 TOTAL DRAINAGE AREA HAS BEEN INCREASED FROM 6.90 ACRES PRE-DEVELOPMENT TO 7.01 ACRES POST-DEVELOPMENT. 3.37 ACRES IS CONTROLLED BY THE PROPOSED UNDERGROUND CHAMBER DETENTION SYSTEM, WHICH ARE DESIGNED TO REDUCE PEAK FLOWS FROM 1-YEAR 24-HOUR, 2-YEAR 24-HOUR, AND 10-YEAR 24-HOUR STORM EVENTS TO MEET CHANNEL PROTECTION AND FLOOD PROTECTION CRITERIA PER 124-4-4 OF THE COUNTY CODE. SINCE THIS CRITERIA HAS BEEN MET, IT IS THE PROFESSIONAL OPINION OF THIS FIRM THAT OUTFALL 2 IS AN ADEQUATE OUTFALL.

**LIMITS OF ANALYSIS**  
 FOR BOTH CHANNEL PROTECTION AND FLOOD PROTECTION, THE EXISTING DOWNSTREAM MANMADE STORMWATER CONVEYANCE SYSTEM WAS ANALYZED UP TO 150 FEET DOWNSTREAM OF EXISTING STRUCTURE 8 (LIMITS OF ANALYSIS). FAIRFAX COUNTY CODE SECTIONS 124-4-4.B.6.C (CHANNEL PROTECTION) AND 124-4-4-C.6.D (FLOOD PROTECTION) DEFINE THE LIMIT OF ANALYSIS TO BE A POINT THAT IS AT LEAST 150 FEET DOWNSTREAM OF A POINT WHERE THE RECEIVING CHANNEL IS JOINED BY ANOTHER THAT HAS A DRAINAGE AREA THAT IS AT LEAST 90 PERCENT OF THE SIZE OF THE FIRST DRAINAGE AREA AT THE POINT OF CONFLUENCE. THE FIRST DRAINAGE AREA, THE TOTAL CONTRIBUTING DRAINAGE AREA TO STRUCTURE 10, IS 6.45 ACRES. EXISTING STRUCTURE 11 PICKS UP 5.80 ACRES OF CONTRIBUTING OFFSITE DRAINAGE AREA (AS SHOWN ON SHEET C7.4) WHICH THEN FLOWS TO EXISTING STRUCTURE 8, THE POINT OF CONFLUENCE. THE SYSTEM WAS ANALYZED UP TO 150 FEET DOWNSTREAM OF EXISTING STRUCTURE 8.

**CHANNEL PROTECTION**  
 THE EXISTING DOWNSTREAM STORM SEWER PIPE SYSTEM (EXISTING STRUCTURE 8 TO EXISTING STRUCTURE 10) WAS ANALYZED IN ACCORDANCE WITH FAIRFAX COUNTY CODE SECTION 124-4-4.B.3.C FOR CHANNEL PROTECTION. THE ENERGY BALANCE EQUATION WAS APPLIED TO THE ENTIRE PROPOSED WATERSHED 2 (PW2). AS SEEN IN THE TABLES AND COMPUTATIONS ON THIS SHEET, THE POST-DEVELOPMENT PEAK FLOW FROM THE 1-YEAR 24-HOUR STORM EVENT (8.24 CFS) IS LESS THAN THE CALCULATED ALLOWABLE POST-DEVELOPMENT PEAK FLOW FROM THE 1-YEAR 24-HOUR STORM EVENT AFTER THE ENERGY BALANCE EQUATION HAS BEEN APPLIED (8.26 CFS). THIS PEAK FLOW REDUCTION IS ACHIEVED BY THE PROPOSED UNDERGROUND CHAMBER DETENTION SYSTEM (SEE SHEETS C7.9-C7.13 FOR DETAILS AND COMPUTATIONS). THE EXISTING PIPE SYSTEM DOWNSTREAM FROM OUTFALL 2 WAS ANALYZED TO THE LIMITS OF ANALYSIS AND PEAK FLOWS FROM THE 2-YEAR 24-HOUR STORM EVENT SHOW VELOCITIES THAT WILL NOT CAUSE EROSION TO THE EXISTING PIPE SYSTEM UP TO THE LIMITS OF ANALYSIS (SEE THE STORM SEWER COMPUTATIONS 2-YEAR 24-HOUR STORM EVENT TABLE ON THIS SHEET. ADDITIONALLY, THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 2-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PRE-DEVELOPMENT PEAK FLOW RATE FROM THE SAME STORM EVENT (124-4-4.D). THEREFORE, THE CHANNEL PROTECTION CRITERIA HAVE BEEN MET.

**FLOOD PROTECTION**  
 THE EXISTING DOWNSTREAM STORM SEWER PIPE SYSTEM (EXISTING STRUCTURE 8 TO EXISTING STRUCTURE 10) EXPERIENCES NO LOCALIZED FLOODING (124-4-4.C.1) AND THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PRE-DEVELOPMENT PEAK FLOW RATE FROM THE SAME STORM EVENT (124-4-4.D). THEREFORE, THE EXISTING PIPE SYSTEM WAS ANALYZED IN ACCORDANCE WITH FAIRFAX COUNTY CODE SECTION 124-4-4.C.6 FOR FLOOD PROTECTION TO THE LIMITS OF ANALYSIS. THE EXISTING PIPE SYSTEM WAS FOUND TO CONTAIN THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT UP TO THE LIMITS OF ANALYSIS WITH THE HIGHER THAN 1 FOOT BELOW TOPS OF ALL DOWNSTREAM STRUCTURES (PFM 6-0904.4) (SEE THE STORM SEWER COMPUTATIONS 10-YR 24-HOUR STORM EVENT TABLE ON THIS SHEET). THEREFORE, FLOOD PROTECTION CRITERIA HAVE BEEN MET.

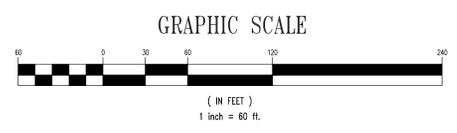
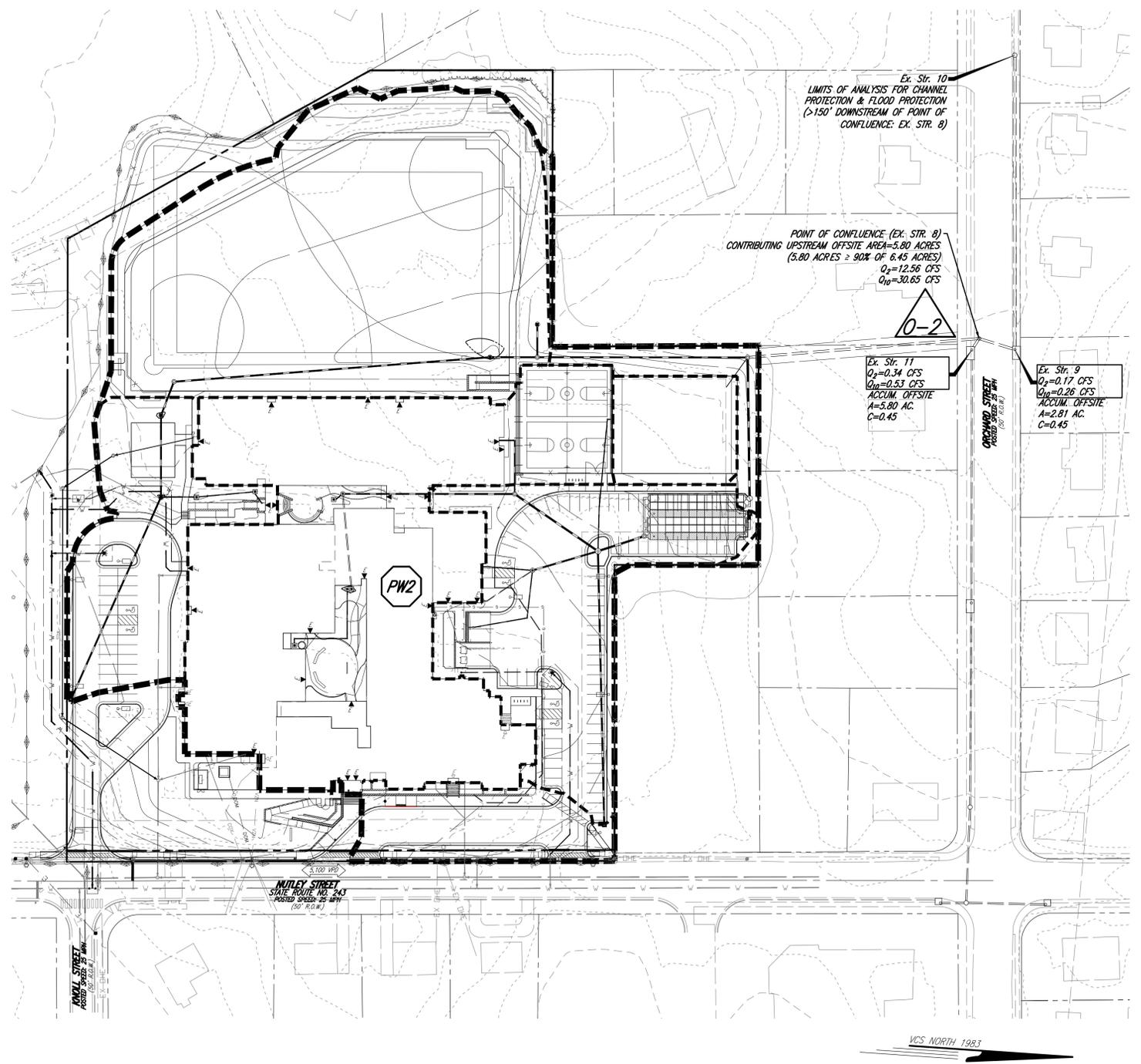
**EW2**

**PW2**

| Rv Pre              |    |           |  | Rv Dev                       |    |           |  |
|---------------------|----|-----------|--|------------------------------|----|-----------|--|
| Landcover           | CN | Area (ac) |  | Landcover                    | CN | Area (ac) |  |
| 1 IMPERVIOUS        | 98 | 2.25      |  | 1 IMPERVIOUS                 | 98 | 4.14      |  |
| 2 OPEN SPACE (GOOD) | 80 | 4.40      |  | 2 OPEN SPACE (GOOD)          | 80 | 2.64      |  |
| 3 OPEN SPACE (POOR) | 89 | 0.25      |  | 3 OPEN SPACE (POOR)          | 89 | 0.23      |  |
| 4                   |    |           |  | 4                            |    |           |  |
| 5                   |    |           |  | 5                            |    |           |  |
| Total Area = 6.90   |    |           |  | Total Area = 7.01            |    |           |  |
| RCN = 86            |    |           |  | RCN = 91                     |    |           |  |
| S = 1.63            |    |           |  | S = 0.99                     |    |           |  |
| Q = 1.34            |    |           |  | Q = 1.72                     |    |           |  |
| Rv pre = 33,616     |    |           |  | Rv dev = 43,766              |    |           |  |
| q1-yr-pre = 13.44   |    |           |  | Rv dev = 43,766              |    |           |  |
|                     |    |           |  | q1-yr-dev = 8.24             |    |           |  |
|                     |    |           |  | q1-yr-dev (allowable) ≤ 8.26 |    |           |  |

**ENERGY BALANCE EQUATION:**  
 $Q1(POST) \leq Q1(PRE) * [RV(PRE) / RV(POST)] * IF$ , WHERE IF = 0.80  
 $Q1(POST) \leq 13.44 * [33,616 / 43,766] * 0.80$   
 $Q1(POST) \leq 8.26$  CFS  
 $8.24$  CFS <  $8.26$  CFS

PRE-DEV      POST-DEV  
 1-YEAR 24-HOUR STORM    13.44 CFS      8.24 CFS  
 2-YEAR 24-HOUR STORM    17.83 CFS      10.67 CFS  
 10-YEAR 24-HOUR STORM    32.05 CFS      31.98 CFS



**STORM SEWER COMPUTATIONS 2-YEAR 24-HOUR STORM EVENT**

| Pipe Label     | Upstream Node | Downstream Node | Total System Flow (cfs) | Up Invert (ft) | Down Invert (ft) | Length (ft) | Slope (ft/ft) | Section Size | Capacity (cfs) | Average Velocity (ft/s) | System Flow Time (min) | Hydraulic Grade In (ft) | Hydraulic Grade Out (ft) | Up Ground Elevation (ft) | Notes |
|----------------|---------------|-----------------|-------------------------|----------------|------------------|-------------|---------------|--------------|----------------|-------------------------|------------------------|-------------------------|--------------------------|--------------------------|-------|
| Ex. 8 - Ex. 9  | Ex. 8         | Ex. 9           | 11.01                   | 405.47         | 404.28           | 34.44       | 0.0346        | 24           | 42.05          | 11.27                   | 0.000                  | 406.66                  | 405.05                   | 410.02                   |       |
| Ex. 9 - Ex. 10 | Ex. 9         | Ex. 10          | 11.18                   | 403.98         | 401.95           | 272.00      | 0.0075        | 30           | 35.43          | 6.40                    | 0.051                  | 405.10                  | 402.91                   | 410.28                   |       |

**STORM SEWER COMPUTATIONS 10-YEAR 24-HOUR STORM EVENT**

| Pipe Label     | Upstream Node | Downstream Node | Total System Flow (cfs) | Up Invert (ft) | Down Invert (ft) | Length (ft) | Slope (ft/ft) | Section Size | Capacity (cfs) | Average Velocity (ft/s) | System Flow Time (min) | Hydraulic Grade In (ft) | Hydraulic Grade Out (ft) | Up Ground Elevation (ft) | Notes |
|----------------|---------------|-----------------|-------------------------|----------------|------------------|-------------|---------------|--------------|----------------|-------------------------|------------------------|-------------------------|--------------------------|--------------------------|-------|
| Ex. 8 - Ex. 9  | Ex. 8         | Ex. 9           | 32.51                   | 405.47         | 404.28           | 34.44       | 0.0346        | 24           | 42.05          | 14.77                   | 0.000                  | 407.37                  | 405.78                   | 410.02                   |       |
| Ex. 9 - Ex. 10 | Ex. 9         | Ex. 10          | 32.77                   | 403.98         | 401.95           | 272.00      | 0.0075        | 30           | 35.43          | 8.19                    | 0.039                  | 405.93                  | 403.85                   | 410.28                   |       |



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**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
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OUTFALL 2 ADEQUATE OUTFALL ANALYSIS  
 REVISIONS:  
 STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C7.7

PROPOSED DRAINAGE MAP

--- DENOTES WATERSHED AREA  
 0-2 DENOTES SITE OUTFALL  
 SW DENOTES SUB-WATERSHED

**PW2**

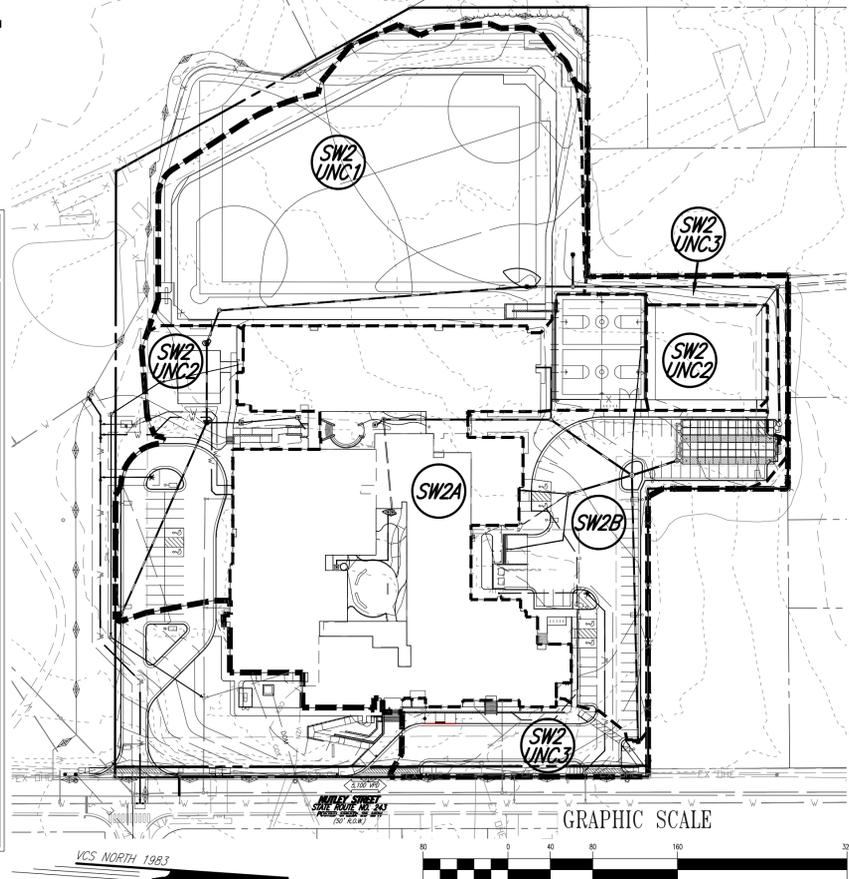
**SW2A**  
 PROPOSED SUB-WATERSHED 2 (TO STR. 21)  
 (CONTROLLED BY SWM FACILITY #1)  
 OPEN SPACE-GOOD (CN=80)=0.14 AC.  
 IMPERVIOUS (CN=98)=2.49 AC.  
 TOTAL DRAINAGE AREA=2.63 AC.  
 WEIGHTED CN=97

**SW2B**  
 PROPOSED SUB-WATERSHED 2 (TO STR. 24)  
 (CONTROLLED BY SWM FACILITY #1)  
 OPEN SPACE-GOOD (CN=80)=0.08 AC.  
 IMPERVIOUS (CN=98)=0.68 AC.  
 TOTAL DRAINAGE AREA=0.74 AC.  
 WEIGHTED CN=97

**SW2 UNC1**  
 PROPOSED SUB-WATERSHED 2 (Tc=10 MIN.)  
 (UNCONTROLLED TO STR. 18 & STR. 12)  
 OPEN SPACE-GOOD (CN=80)=1.98 AC.  
 IMPERVIOUS (CN=98)=0.18 AC.  
 TOTAL DRAINAGE AREA=2.16 AC.  
 WEIGHTED CN=82

**SW2 UNC2**  
 PROPOSED SUB-WATERSHED 2 (UNCONTROLLED)  
 OPEN SPACE-GOOD (CN=80)=0.24 AC.  
 OPEN SPACE-POOR (CN=89)=0.23 AC.  
 IMPERVIOUS (CN=98)=0.45 AC.  
 TOTAL DRAINAGE AREA=0.92 AC.  
 WEIGHTED CN=91

**SW2 UNC3**  
 PROPOSED SUB-WATERSHED 2 (UNCONTROLLED SHEET FLOW)  
 OPEN SPACE-GOOD (CN=80)=0.22 AC.  
 IMPERVIOUS (CN=98)=0.34 AC.  
 TOTAL DRAINAGE AREA=0.56 AC.  
 WEIGHTED CN=91



NOTE: TIME OF CONCENTRATION (Tc) IS 5 MIN. UNLESS OTHERWISE NOTED.

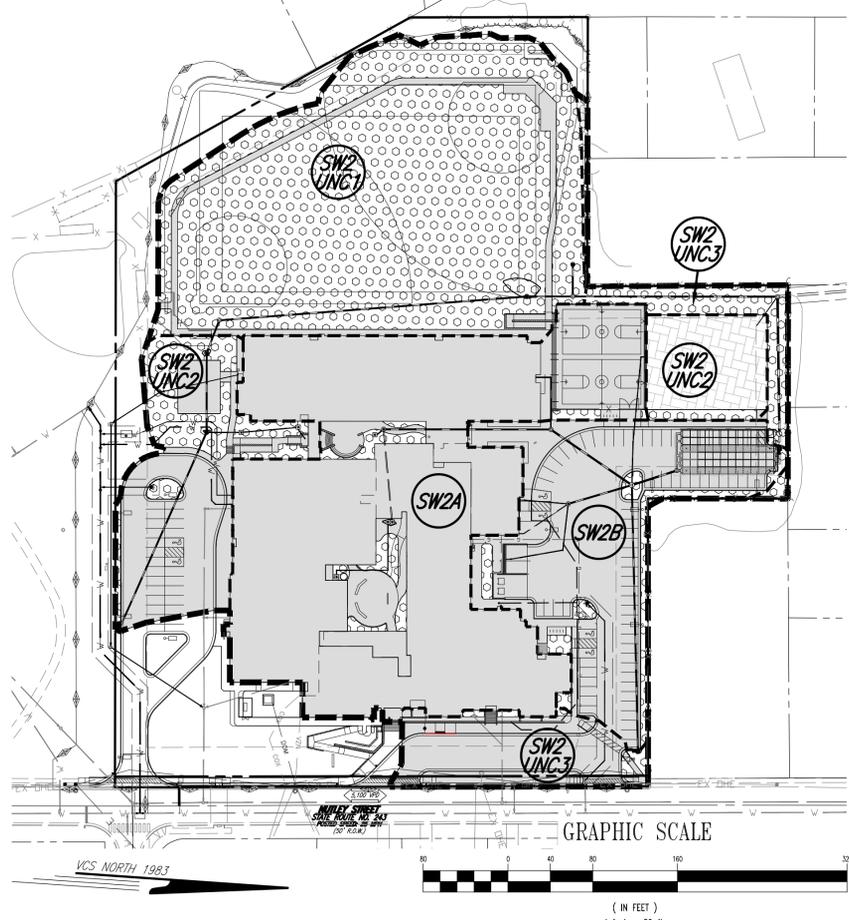
PROPOSED LAND COVER MAP

COVER DESCRIPTION  
 OPEN SPACE (GOOD)  
 CN=80

COVER DESCRIPTION  
 OPEN SPACE (POOR)  
 CN=89

COVER DESCRIPTION  
 IMPERVIOUS  
 CN=98

NOTE: SITE IS HYDROLOGIC SOIL GROUP D.



( IN FEET )  
 1 inch = 80 ft.

EXISTING DRAINAGE MAP

--- DENOTES WATERSHED AREA  
 0-2 DENOTES SITE OUTFALL  
 SW DENOTES SUB-WATERSHED

**EW2**

**SW2A**  
 PROPOSED SUB-WATERSHED 2 (TO EX. INFILTRATION TRENCH-EX. 4B & 4C)  
 OPEN SPACE-GOOD (CN=80)=0.56 AC.\*\*\*  
 IMPERVIOUS (CN=98)=0.00 AC.\*\*\*  
 TOTAL DRAINAGE AREA=0.56 AC.  
 WEIGHTED CN=80

**SW2 UNC1**  
 EXISTING SUB-WATERSHED 2 (Tc=10 MIN.)  
 (UNCONTROLLED TO EX. 6A, 6B & 6C)  
 OPEN SPACE-GOOD (CN=80)=2.87 AC.  
 IMPERVIOUS (CN=98)=0.31 AC.  
 TOTAL DRAINAGE AREA=3.18 AC.  
 WEIGHTED CN=82

**SW2 UNC2**  
 EXISTING SUB-WATERSHED 2 (UNCONTROLLED)  
 OPEN SPACE-GOOD (CN=80)=0.20 AC.  
 IMPERVIOUS (CN=98)=1.46 AC.  
 TOTAL DRAINAGE AREA=1.66 AC.  
 WEIGHTED CN=96

**SW2 UNC3**  
 EXISTING SUB-WATERSHED 2 (UNCONTROLLED SHEET FLOW)  
 OPEN SPACE-GOOD (CN=80)=0.77 AC.\*\*\*  
 OPEN SPACE-POOR (CN=89)=0.25 AC.  
 IMPERVIOUS (CN=98)=0.48 AC.\*\*\*  
 TOTAL DRAINAGE AREA=1.50 AC.  
 WEIGHTED CN=87

\*\*\*NOTE: TO ACCOUNT FOR THE EXISTING SWM/BMP FACILITIES ONSITE (EXISTING INFILTRATION TRENCH AND EXISTING SAND FILTER), ANY IMPERVIOUS AREA DRAINING TO THE EXISTING FACILITIES WAS CONSIDERED TO BE OPEN SPACE (GOOD) IN THE EXISTING CONDITION.

NOTE: TIME OF CONCENTRATION (Tc) IS 5 MIN. UNLESS OTHERWISE NOTED.

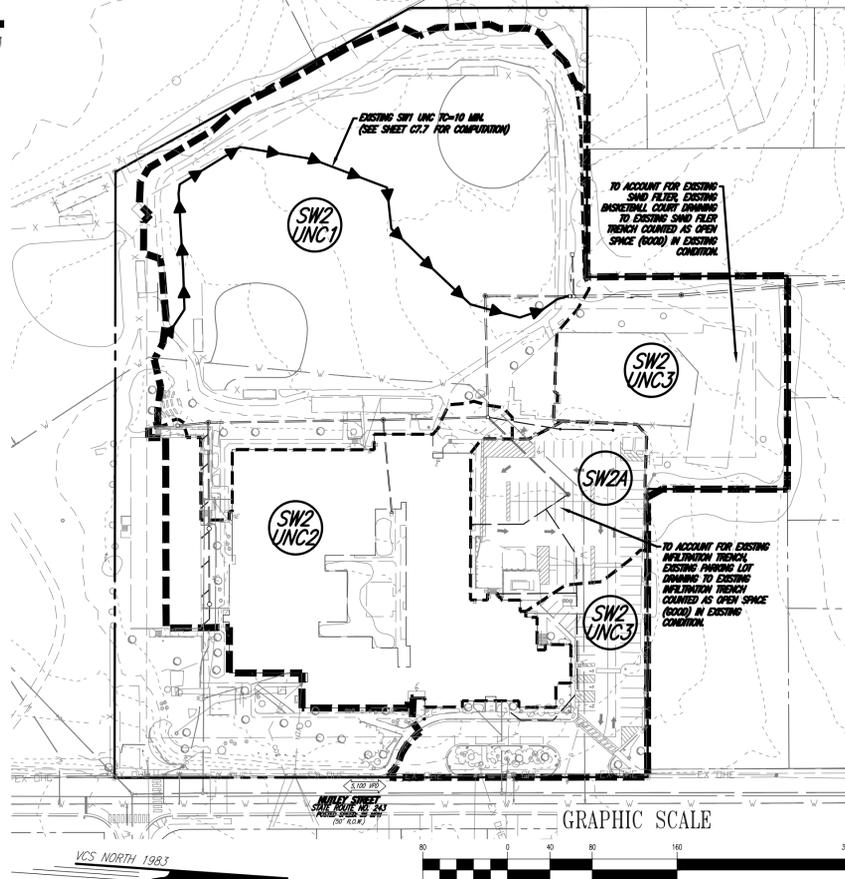
EXISTING LAND COVER MAP

COVER DESCRIPTION  
 OPEN SPACE (GOOD)  
 CN=80

COVER DESCRIPTION  
 OPEN SPACE (POOR)  
 CN=89

COVER DESCRIPTION  
 IMPERVIOUS  
 CN=98

NOTE: SITE IS HYDROLOGIC SOIL GROUP D.



( IN FEET )  
 1 inch = 80 ft.



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OUTFALL 2 DRAINAGE MAPS  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

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Project: Louise Archer ES (20010)

|                                    |                                                |
|------------------------------------|------------------------------------------------|
| Chamber Model -                    | MC-3500                                        |
| Units -                            | Imperial <a href="#">Click Here for Metric</a> |
| Number of Chambers -               | 72                                             |
| Number of End Caps -               | 12                                             |
| Voids in the stone (porosity) -    | 40 %                                           |
| Base of Stone Elevation -          | 413.00 ft                                      |
| Amount of Stone Above Chambers -   | 12 in                                          |
| Amount of Stone Below Chambers -   | 24 in                                          |
| Amount of Stone Between Chambers - | 6 in                                           |
| Area of system -                   | 4497 sf Min. Area - 3764 sf min. area          |



**StormTech MC-3500 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                             | 149.90                         | 149.90                                    | 149.90                         | 419.75           |
| 80                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1648.40                        | 419.67           |
| 79                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1669.50                        | 419.58           |
| 78                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1654.60                        | 419.50           |
| 77                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1639.70                        | 419.42           |
| 76                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1624.80                        | 419.33           |
| 75                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1609.90                        | 419.25           |
| 74                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1595.00                        | 419.17           |
| 73                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1580.10                        | 419.08           |
| 72                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1565.20                        | 419.00           |
| 71                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1550.30                        | 418.92           |
| 70                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1535.40                        | 418.83           |
| 69                        | 0.06                                    | 0.00                                    | 4.18                              | 0.00                             | 148.23                         | 152.41                                    | 1520.50                        | 418.75           |
| 68                        | 0.19                                    | 0.02                                    | 13.98                             | 0.29                             | 144.20                         | 158.46                                    | 1504.09                        | 418.67           |
| 67                        | 0.29                                    | 0.04                                    | 21.17                             | 0.45                             | 141.25                         | 162.87                                    | 1489.64                        | 418.58           |
| 66                        | 0.40                                    | 0.05                                    | 29.06                             | 0.62                             | 138.03                         | 167.71                                    | 1476.77                        | 418.50           |
| 65                        | 0.69                                    | 0.07                                    | 49.48                             | 0.81                             | 129.78                         | 180.07                                    | 1459.06                        | 418.42           |
| 64                        | 1.03                                    | 0.09                                    | 74.04                             | 1.06                             | 119.86                         | 194.96                                    | 1437.98                        | 418.33           |
| 63                        | 1.25                                    | 0.11                                    | 89.97                             | 1.29                             | 113.40                         | 204.65                                    | 1418.03                        | 418.25           |
| 62                        | 1.42                                    | 0.13                                    | 102.40                            | 1.52                             | 108.33                         | 212.25                                    | 1397.98                        | 418.17           |
| 61                        | 1.57                                    | 0.14                                    | 113.27                            | 1.73                             | 103.90                         | 218.90                                    | 1376.73                        | 418.08           |
| 60                        | 1.71                                    | 0.16                                    | 122.91                            | 1.95                             | 99.95                          | 224.82                                    | 1354.23                        | 418.00           |
| 59                        | 1.83                                    | 0.18                                    | 131.65                            | 2.18                             | 96.37                          | 230.20                                    | 1332.40                        | 417.92           |
| 58                        | 1.94                                    | 0.20                                    | 139.52                            | 2.41                             | 93.13                          | 235.06                                    | 1309.21                        | 417.83           |
| 57                        | 2.04                                    | 0.22                                    | 146.94                            | 2.62                             | 90.08                          | 239.51                                    | 1285.85                        | 417.75           |
| 56                        | 2.13                                    | 0.23                                    | 153.70                            | 2.82                             | 87.28                          | 243.81                                    | 1261.85                        | 417.67           |
| 55                        | 2.22                                    | 0.25                                    | 160.14                            | 3.01                             | 84.64                          | 247.79                                    | 12374.70                       | 417.58           |
| 54                        | 2.31                                    | 0.27                                    | 166.09                            | 3.19                             | 82.19                          | 251.47                                    | 12126.91                       | 417.50           |
| 53                        | 2.38                                    | 0.28                                    | 171.70                            | 3.36                             | 79.87                          | 254.94                                    | 11875.45                       | 417.42           |
| 52                        | 2.46                                    | 0.29                                    | 177.05                            | 3.53                             | 77.67                          | 258.25                                    | 11620.51                       | 417.33           |
| 51                        | 2.53                                    | 0.31                                    | 182.03                            | 3.69                             | 75.61                          | 261.33                                    | 11362.26                       | 417.25           |
| 50                        | 2.59                                    | 0.32                                    | 186.75                            | 3.85                             | 73.66                          | 264.26                                    | 11100.93                       | 417.17           |
| 49                        | 2.66                                    | 0.33                                    | 191.24                            | 4.01                             | 71.80                          | 267.05                                    | 10836.67                       | 417.08           |
| 48                        | 2.72                                    | 0.35                                    | 195.49                            | 4.16                             | 70.04                          | 269.69                                    | 10569.62                       | 417.00           |
| 47                        | 2.77                                    | 0.36                                    | 199.53                            | 4.32                             | 68.36                          | 272.21                                    | 10299.93                       | 416.92           |
| 46                        | 2.82                                    | 0.37                                    | 203.37                            | 4.47                             | 66.76                          | 274.61                                    | 10027.71                       | 416.83           |
| 45                        | 2.88                                    | 0.38                                    | 207.03                            | 4.61                             | 65.24                          | 276.89                                    | 9753.11                        | 416.75           |
| 44                        | 2.92                                    | 0.40                                    | 210.54                            | 4.75                             | 63.78                          | 279.07                                    | 9476.22                        | 416.67           |
| 43                        | 2.97                                    | 0.41                                    | 213.83                            | 4.89                             | 62.41                          | 281.13                                    | 9197.15                        | 416.58           |
| 42                        | 3.01                                    | 0.42                                    | 216.90                            | 5.02                             | 61.13                          | 283.05                                    | 8916.01                        | 416.50           |
| 41                        | 3.05                                    | 0.43                                    | 219.83                            | 5.16                             | 59.90                          | 284.89                                    | 8632.96                        | 416.42           |
| 40                        | 3.09                                    | 0.44                                    | 222.79                            | 5.28                             | 58.67                          | 286.74                                    | 8348.07                        | 416.33           |
| 39                        | 3.13                                    | 0.45                                    | 225.40                            | 5.41                             | 57.58                          | 288.39                                    | 8061.32                        | 416.25           |
| 38                        | 3.17                                    | 0.46                                    | 227.93                            | 5.53                             | 56.52                          | 289.97                                    | 7772.94                        | 416.17           |
| 37                        | 3.20                                    | 0.47                                    | 230.36                            | 5.65                             | 55.50                          | 291.50                                    | 7482.96                        | 416.08           |
| 36                        | 3.23                                    | 0.48                                    | 232.64                            | 5.76                             | 54.54                          | 292.94                                    | 7191.46                        | 416.00           |
| 35                        | 3.26                                    | 0.49                                    | 234.82                            | 5.87                             | 53.62                          | 294.32                                    | 6898.52                        | 415.92           |
| 34                        | 3.29                                    | 0.50                                    | 236.90                            | 5.98                             | 52.75                          | 295.62                                    | 6604.20                        | 415.83           |
| 33                        | 3.32                                    | 0.51                                    | 238.89                            | 6.08                             | 51.91                          | 296.88                                    | 6308.58                        | 415.75           |
| 32                        | 3.34                                    | 0.51                                    | 240.78                            | 6.17                             | 51.12                          | 298.07                                    | 6011.69                        | 415.67           |
| 31                        | 3.37                                    | 0.52                                    | 242.54                            | 6.27                             | 50.38                          | 299.18                                    | 5713.62                        | 415.58           |
| 30                        | 3.39                                    | 0.53                                    | 244.26                            | 6.35                             | 49.65                          | 300.27                                    | 5414.44                        | 415.50           |
| 29                        | 3.41                                    | 0.54                                    | 245.85                            | 6.44                             | 48.99                          | 301.27                                    | 5114.17                        | 415.42           |
| 28                        | 3.44                                    | 0.54                                    | 247.47                            | 6.52                             | 48.31                          | 302.29                                    | 4812.90                        | 415.33           |
| 27                        | 3.46                                    | 0.55                                    | 248.96                            | 6.59                             | 47.68                          | 303.23                                    | 4510.61                        | 415.25           |
| 26                        | 3.48                                    | 0.56                                    | 250.47                            | 6.66                             | 47.05                          | 304.18                                    | 4207.38                        | 415.17           |
| 25                        | 3.51                                    | 0.59                                    | 252.37                            | 7.14                             | 46.10                          | 305.60                                    | 3903.20                        | 415.08           |
| 24                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 3597.60                        | 415.00           |
| 23                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 3447.70                        | 414.92           |
| 22                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 3297.80                        | 414.83           |
| 21                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 3147.90                        | 414.75           |
| 20                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2998.00                        | 414.67           |
| 19                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2848.10                        | 414.58           |
| 18                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2698.20                        | 414.50           |
| 17                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2548.30                        | 414.42           |
| 16                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2398.40                        | 414.33           |
| 15                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2248.50                        | 414.25           |
| 14                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 2098.60                        | 414.17           |
| 13                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1948.70                        | 414.08           |
| 12                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1798.80                        | 414.00           |
| 11                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1648.90                        | 413.92           |
| 10                        | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1499.00                        | 413.83           |
| 9                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1349.10                        | 413.75           |
| 8                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1199.20                        | 413.67           |
| 7                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 1049.30                        | 413.58           |
| 6                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 899.40                         | 413.50           |
| 5                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 749.50                         | 413.42           |
| 4                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 599.60                         | 413.33           |
| 3                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 449.70                         | 413.25           |
| 2                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 299.80                         | 413.17           |
| 1                         | 0.00                                    | 0.00                                    | 0.00                              | 0.00                             | 149.90                         | 149.90                                    | 149.90                         | 413.08           |

**NOTES**

- 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.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

**INSPECTION & MAINTENANCE**

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS
- REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
  - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
  - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - 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 USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - 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.



**MC-3500 CHAMBER SPECIFICATION**

**STORAGE VOLUME PER CHAMBER FT³ (M³)**

| Chamber Model   | Bare Chamber Storage ft³ (m³) | Chamber and Stone Foundation Depth in. (mm) |              |              |              |
|-----------------|-------------------------------|---------------------------------------------|--------------|--------------|--------------|
|                 |                               | 9" (230 mm)                                 | 12" (300 mm) | 15" (375 mm) | 18" (450 mm) |
| MC-3500 Chamber | 109.9 (3.11)                  | 175.0 (4.96)                                | 179.9 (5.09) | 184.9 (5.24) | 189.9 (5.38) |
| MC-3500 End Cap | 14.9 (4.2)                    | 45.1 (1.28)                                 | 46.6 (1.32)  | 48.3 (1.37)  | 49.9 (1.41)  |

Note: Assumes 6" (150 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume.

**AMOUNT OF STONE PER CHAMBER**

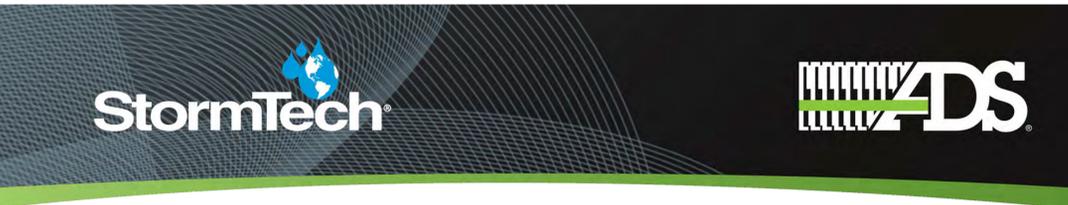
| ENGLISH TONS (yds³) | Stone Foundation Depth |           |           |            |
|---------------------|------------------------|-----------|-----------|------------|
|                     | 9"                     | 12"       | 15"       | 18"        |
| MC-3500 Chamber     | 8.5 (6.0)              | 9.1 (6.5) | 9.7 (6.9) | 10.4 (7.4) |
| MC-3500 End Cap     | 3.9 (2.8)              | 4.1 (2.9) | 4.3 (3.1) | 4.5 (3.2)  |

Note: Assumes 12" (300 mm) of stone above and 6" (150 mm) row spacing and 6" (150 mm) of perimeter stone in front of end caps.

**VOLUME EXCAVATION PER CHAMBER YD³ (M³)**

| Chamber Model   | Stone Foundation Depth |              |              |              |
|-----------------|------------------------|--------------|--------------|--------------|
|                 | 9" (230 mm)            | 12" (300 mm) | 15" (375 mm) | 18" (450 mm) |
| MC-3500 Chamber | 11.9 (9.1)             | 12.4 (9.5)   | 12.8 (9.8)   | 13.3 (10.2)  |
| MC-3500 End Cap | 4.0 (3.1)              | 4.1 (3.2)    | 4.3 (3.3)    | 4.4 (3.4)    |

Note: Assumes 6" (150 mm) of separation between chamber rows and 24" (600 mm) of cover. The volume of excavation will vary as depth of cover increases.



**STORMTECH MC-3500 CHAMBER**

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



**STORMTECH MC-3500 CHAMBER (not to scale)**

**Nominal Chamber Specifications**

**Size (L x W x H)**  
90" x 77" x 45"  
2,286 mm x 1,956 mm x 1,143 mm

**Chamber Storage**  
109.9 ft³ (3.11 m³)

**Min. Installed Storage\***  
175.0 ft³ (4.96 m³)

**Weight**  
134 lbs (60.8 kg)

**Shipping**  
15 chambers/pallet  
7 end caps/pallet  
7 pallets/truck

\*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 6" (150 mm) of stone between chambers/end caps and 40% stone porosity.

**STORMTECH MC-3500 END CAP (not to scale)**

**Nominal End Cap Specifications**

**Size (L x W x H)**  
26.5" x 71" x 45.1"  
673 mm x 1,803 mm x 1,145 mm

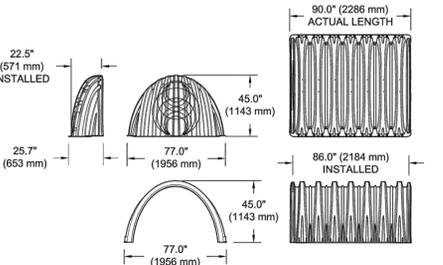
**End Cap Storage**  
14.9 ft³ (0.42 m³)

**Min. Installed Storage\***  
45.1 ft³ (1.28 m³)

**Weight**  
49 lbs (22.2 kg)

**Shipping**  
15 chambers/pallet  
7 end caps/pallet  
7 pallets/truck

\*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 6" (150 mm) of stone between chambers/end caps and 40% stone porosity.



**ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 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  | 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.<br><br>OR<br>AASHTO M43 <sup>1</sup><br>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                                                                                                                                                      |                                                                                                                                                                                                                                                       |

OUTLET INPUT DATA

Type... Outlet Input Data
Name... SWM1 Composite Outlet Structure
Page 404

File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 413.00 ft
Increment = .50 ft
Max. Elev.= 419.75 ft

\*\*\*\*\* OUTLET CONNECTIVITY \*\*\*\*\*

--- Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<--- Forward and Reverse Both Allowed

Table with columns: Structure, No., Outfall, E1, ft, E2, ft. Rows include Orifice-Circular, Irregular Weir, Culvert-Circular, and Tailwater Settings.

OUTLET STRUCTURE INPUT DATA

Structure ID = Orifice - 1
Structure Type = Orifice-Circular
# of Openings = 1
Invert Elev. = 413.00 ft
Diameter = .5000 ft
Orifice Coeff. = .600

Structure ID = Weir - 1
Structure Type = Irregular Weir
# of Openings = 1
WEIR X-Y GROUND POINTS
X, ft Elev, ft

Lowest Elev. = 417.75 ft

Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

OUTLET STRUCTURE INPUT DATA

Structure ID = Culvert - 1
Structure Type = Culvert-Circular
No. Barrels = 1
Barrel Diameter = 1.7500 ft
Upstream Invert = 412.90 ft
Dnstream Invert = 411.50 ft
Horiz. Length = 128.82 ft
Barrel Length = 128.83 ft
Barrel Slope = .01087 ft/ft

OUTLET CONTROL DATA...
Mannings n = .0130
Ke = .2000 (forward entrance loss)
Kb = .014830 (per ft of full flow)
Kr = .2000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...
Equation form = 1
Inlet Control K = .0045
Inlet Control M = 2.0000
Inlet Control c = .03170
Inlet Control Y = .6900
T1 ratio (HW/D) = 1.090
T2 ratio (HW/D) = 1.192
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 414.81 ft ---> Flow = 11.14 cfs
At T2 Elev = 414.99 ft ---> Flow = 12.73 cfs

INDIVIDUAL OUTLET CURVES

Type... Individual Outlet Curves
Name... SWM1 Composite Outlet Structure
Page 408

File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Orifice - 1 (Orifice-Circular)
Upstream ID = (Pond Water Surface)
Dnstream ID = Culvert - 1 (Culvert-Circular)

Rating table with columns: Pond WS. Elev., Device, (into) HW HGL, Converge DS HGL, Next DS HGL, DS HGL Error +/-ft, Q SUM Error +/-cfs, DS Chan. TW Error +/-ft. Rows show flow data for various elevations from 413.00 to 419.75.

COMPOSITE RATING CURVE

Type... Composite Rating Curve
Name... SWM1 Composite Outlet Structure
Page 407

File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk

\*\*\*\*\* COMPOSITE OUTFLOW SUMMARY \*\*\*\*\*

CUMULATIVE HGL CONVERGENCE ERROR .002 (+/- ft)
FLOW PATH: Elev= 415; Branch: Orifice - 1-Culvert - 1-TW

\* Max. convergence errors shown may also occur for flow paths other than the ones listed above.

Table with columns: WS Elev, Total Q, Elev, Q, Converge, Error, Notes. Rows show flow data for various elevations from 413.00 to 419.75.

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)
Upstream ID = (Pond Water Surface)
Dnstream ID = Culvert - 1 (Culvert-Circular)

Rating table with columns: Pond WS. Elev., Device, (into) HW HGL, Converge DS HGL, Next DS HGL, DS HGL Error +/-ft, Q SUM Error +/-cfs, DS Chan. TW Error +/-ft. Rows show flow data for various elevations from 413.00 to 419.75.

ELEVATION VS. VOLUME

Type... Elevation vs. Volume Curve
Name... SWM1
Page 401

File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk

USER DEFINED VOLUME RATING TABLE

Table with columns: Elevation (ft), Volume (ac-ft), Elevation (ft), Volume (ac-ft). Rows show the relationship between elevation and volume for various flow rates.

Type... Individual Outlet Curves
Name... SWM1 Composite Outlet Structure
Page 410

File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Culvert - 1 (Culvert-Circular)
Mannings open channel maximum capacity: 17.77 cfs
UPstream ID= Orifice - 1, Weir - 1
DNstream ID = Tw (Pond Outfall)

Rating table with columns: Pond WS. Elev., Device, (into) HW HGL, Converge DS HGL, Next DS HGL, DS HGL Error +/-ft, Q SUM Error +/-cfs, DS Chan. TW Error +/-ft. Rows show flow data for various elevations from 413.00 to 419.75.



RINKER DESIGN ASSOCIATES, P.C.
CIVIL ENGINEERING & SURVEYING
11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM



SWM FACILITY 1 COMPUTATIONS
LOUISE ARCHER
ELEMENTARY SCHOOL
RENOVATION & ADDITION
HUNTER MILL ELECTION DISTRICT
TOWN OF VIENNA

REVISIONS:

STATE PROJ#:
DATE: FEBRUARY 8, 2022
DESIGN: NJG/BMY
CHECKED BY: JDC
ARCH: ARCH. INC.
RDA JOB NUMBER: 20010
TOWN REFERENCE: 525873
SHEET NUMBER: C7.11

20010



2-YR STORM COMPUTATIONS

POND INFLOW SUMMARY

Type... Pond Inflow Summary Page 412  
 Name... SWM1 IN  
 Event: 2 yr  
 File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk  
 Storm... 2-Year Storm Tag: 2

TOTAL NODE INFLOW...  
 HYG file =  
 HYG ID = SWM1 IN  
 HYG Tag = 2  
 Peak Discharge = 13.57 cfs  
 Time to Peak = 11.9200 hrs  
 HYG Volume = .793 ac-ft

POND ROUTED HYDROGRAPH

Type... Pond Routed Hydrograph (total out) Page 482  
 Name... SWM1 OUT  
 Tag: 2  
 Event: 2 yr  
 File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk  
 Storm... 2-Year Storm Tag: 2

POND ROUTED TOTAL OUTFLOW HYG...  
 HYG file =  
 HYG ID = SWM1 OUT  
 HYG Tag = 2  
 Peak Discharge = 3.25 cfs  
 Time to Peak = 12.1000 hrs  
 HYG Volume = .788 ac-ft

| TIME HRS | HYDROGRAPH ORDINATES (CFS)                                |       |       |       |       |
|----------|-----------------------------------------------------------|-------|-------|-------|-------|
|          | OUTPUT TIME INCREMENT = .0100 HRS                         |       |       |       |       |
|          | TIME ON LEFT REPRESENTS TIME FOR FIRST VALUE IN EACH ROW. |       |       |       |       |
| 10.0000  | .36                                                       | .36   | .36   | .36   | .37   |
| 10.0500  | .37                                                       | .37   | .37   | .38   | .38   |
| 10.1000  | .38                                                       | .38   | .38   | .39   | .39   |
| 10.1500  | .39                                                       | .39   | .40   | .40   | .40   |
| 10.2000  | .40                                                       | .40   | .41   | .41   | .41   |
| 10.2500  | .41                                                       | .42   | .42   | .43   | .43   |
| 10.3000  | .43                                                       | .43   | .43   | .44   | .44   |
| 10.3500  | .44                                                       | .44   | .45   | .45   | .45   |
| 10.4000  | .45                                                       | .45   | .45   | .46   | .46   |
| 10.4500  | .46                                                       | .47   | .47   | .47   | .47   |
| 10.5000  | .48                                                       | .48   | .48   | .49   | .49   |
| 10.5500  | .49                                                       | .50   | .50   | .51   | .51   |
| 10.6000  | .51                                                       | .51   | .51   | .52   | .52   |
| 10.6500  | .53                                                       | .53   | .54   | .54   | .55   |
| 10.7000  | .55                                                       | .55   | .55   | .56   | .56   |
| 10.7500  | .57                                                       | .57   | .58   | .58   | .59   |
| 10.8000  | .59                                                       | .59   | .59   | .60   | .60   |
| 10.8500  | .61                                                       | .61   | .62   | .62   | .63   |
| 10.9000  | .63                                                       | .63   | .64   | .64   | .65   |
| 10.9500  | .65                                                       | .66   | .66   | .67   | .67   |
| 11.0000  | .67                                                       | .67   | .68   | .69   | .69   |
| 11.0500  | .70                                                       | .71   | .72   | .73   | .73   |
| 11.1000  | .74                                                       | .74   | .75   | .76   | .77   |
| 11.1500  | .78                                                       | .80   | .81   | .82   | .83   |
| 11.2000  | .83                                                       | .84   | .84   | .85   | .87   |
| 11.2500  | .88                                                       | .89   | .91   | .92   | .92   |
| 11.3000  | .93                                                       | .94   | .94   | .95   | .97   |
| 11.3500  | .98                                                       | .99   | 1.01  | 1.02  | 1.02  |
| 11.4000  | 1.03                                                      | 1.04  | 1.04  | 1.05  | 1.07  |
| 11.4500  | 1.08                                                      | 1.09  | 1.11  | 1.12  | 1.12  |
| 11.5000  | 1.13                                                      | 1.15  | 1.20  | 1.30  | 1.44  |
| 11.5500  | 1.61                                                      | 1.77  | 1.92  | 2.04  | 2.13  |
| 11.6000  | 2.20                                                      | 2.28  | 2.41  | 2.63  | 2.92  |
| 11.6500  | 3.25                                                      | 3.58  | 3.88  | 4.12  | 4.31  |
| 11.7000  | 4.44                                                      | 4.58  | 4.78  | 5.07  | 5.45  |
| 11.7500  | 5.87                                                      | 6.29  | 6.67  | 6.98  | 7.22  |
| 11.8000  | 7.39                                                      | 7.60  | 7.95  | 8.52  | 9.30  |
| 11.8500  | 10.17                                                     | 11.04 | 11.82 | 12.48 | 12.97 |
| 11.9000  | 13.33                                                     | 13.53 | 13.57 | 13.38 | 13.00 |
| 11.9500  | 12.51                                                     | 12.01 | 11.54 | 11.14 | 10.85 |
| 12.0000  | 10.65                                                     | 10.39 | 9.97  | 9.25  | 8.28  |
| 12.0500  | 7.18                                                      | 6.09  | 5.11  | 4.29  | 3.69  |
| 12.1000  | 3.25                                                      | 2.94  | 2.69  | 2.49  | 2.33  |
| 12.1500  | 2.20                                                      | 2.09  | 2.01  | 1.94  | 1.89  |
| 12.2000  | 1.86                                                      | 1.83  | 1.80  | 1.77  | 1.73  |
| 12.2500  | 1.69                                                      | 1.65  | 1.62  | 1.60  | 1.58  |
| 12.3000  | 1.56                                                      | 1.55  | 1.53  | 1.51  | 1.48  |
| 12.3500  | 1.44                                                      | 1.41  | 1.38  | 1.36  | 1.34  |
| 12.4000  | 1.32                                                      | 1.31  | 1.29  | 1.27  | 1.24  |
| 12.4500  | 1.20                                                      | 1.17  | 1.14  | 1.11  | 1.10  |
| 12.5000  | 1.08                                                      | 1.07  | 1.06  | 1.04  | 1.02  |
| 12.5500  | 1.00                                                      | .98   | .96   | .94   | .93   |
| 12.6000  | .92                                                       | .91   | .91   | .90   | .89   |
| 12.6500  | .88                                                       | .87   | .86   | .86   | .85   |
| 12.7000  | .85                                                       | .85   | .84   | .84   | .83   |
| 12.7500  | .82                                                       | .81   | .81   | .80   | .80   |
| 12.8000  | .79                                                       | .79   | .79   | .78   | .77   |
| 12.8500  | .77                                                       | .76   | .75   | .74   | .74   |
| 12.9000  | .74                                                       | .74   | .73   | .73   | .72   |
| 12.9500  | .71                                                       | .70   | .70   | .69   | .69   |
| 13.0000  | .68                                                       | .68   | .68   | .67   | .67   |
| 13.0500  | .66                                                       | .66   | .65   | .65   | .64   |
| 13.1000  | .64                                                       | .64   | .64   | .63   | .63   |
| 13.1500  | .62                                                       | .62   | .62   | .61   | .61   |
| 13.2000  | .61                                                       | .61   | .60   | .60   | .60   |
| 13.2500  | .59                                                       | .59   | .58   | .58   | .58   |
| 13.3000  | .58                                                       | .58   | .57   | .57   | .57   |
| 13.3500  | .56                                                       | .56   | .56   | .55   | .55   |
| 13.4000  | .55                                                       | .55   | .55   | .54   | .54   |
| 13.4500  | .53                                                       | .53   | .53   | .52   | .52   |
| 13.5000  | .52                                                       | .52   | .52   | .51   | .51   |
| 13.5500  | .51                                                       | .50   | .50   | .50   | .49   |
| 13.6000  | .49                                                       | .49   | .49   | .49   | .49   |
| 13.6500  | .48                                                       | .48   | .48   | .47   | .47   |
| 13.7000  | .47                                                       | .47   | .47   | .46   | .46   |
| 13.7500  | .46                                                       | .46   | .46   | .45   | .45   |
| 13.8000  | .45                                                       | .45   | .45   | .44   | .44   |
| 13.8500  | .44                                                       | .44   | .43   | .43   | .43   |
| 13.9000  | .43                                                       | .43   | .43   | .42   | .42   |
| 13.9500  | .42                                                       | .42   | .41   | .41   | .41   |
| 14.0000  | .41                                                       | .41   | .41   | .40   | .40   |

| TIME HRS | HYDROGRAPH ORDINATES (CFS)                                |      |      |      |      |
|----------|-----------------------------------------------------------|------|------|------|------|
|          | OUTPUT TIME INCREMENT = .0100 HRS                         |      |      |      |      |
|          | TIME ON LEFT REPRESENTS TIME FOR FIRST VALUE IN EACH ROW. |      |      |      |      |
| 10.0000  | .30                                                       | .30  | .31  | .31  | .31  |
| 10.0500  | .31                                                       | .31  | .31  | .31  | .31  |
| 10.1000  | .32                                                       | .32  | .32  | .32  | .32  |
| 10.1500  | .32                                                       | .32  | .32  | .33  | .33  |
| 10.2000  | .33                                                       | .33  | .33  | .33  | .34  |
| 10.2500  | .34                                                       | .34  | .34  | .34  | .34  |
| 10.3000  | .35                                                       | .35  | .35  | .35  | .35  |
| 10.3500  | .35                                                       | .36  | .36  | .36  | .36  |
| 10.4000  | .36                                                       | .36  | .37  | .37  | .37  |
| 10.4500  | .37                                                       | .37  | .38  | .38  | .38  |
| 10.5000  | .38                                                       | .38  | .39  | .39  | .39  |
| 10.5500  | .39                                                       | .39  | .40  | .40  | .40  |
| 10.6000  | .40                                                       | .40  | .41  | .41  | .41  |
| 10.6500  | .41                                                       | .42  | .42  | .42  | .42  |
| 10.7000  | .43                                                       | .43  | .43  | .43  | .44  |
| 10.7500  | .44                                                       | .44  | .44  | .45  | .45  |
| 10.8000  | .45                                                       | .45  | .46  | .46  | .46  |
| 10.8500  | .47                                                       | .47  | .47  | .47  | .48  |
| 10.9000  | .48                                                       | .48  | .48  | .48  | .49  |
| 10.9500  | .49                                                       | .49  | .49  | .49  | .50  |
| 11.0000  | .50                                                       | .50  | .50  | .51  | .51  |
| 11.0500  | .51                                                       | .51  | .52  | .52  | .52  |
| 11.1000  | .52                                                       | .53  | .53  | .53  | .53  |
| 11.1500  | .54                                                       | .54  | .54  | .55  | .55  |
| 11.2000  | .55                                                       | .56  | .56  | .57  | .57  |
| 11.2500  | .57                                                       | .58  | .58  | .59  | .59  |
| 11.3000  | .59                                                       | .60  | .60  | .61  | .61  |
| 11.3500  | .62                                                       | .62  | .63  | .63  | .64  |
| 11.4000  | .64                                                       | .65  | .65  | .66  | .66  |
| 11.4500  | .67                                                       | .67  | .68  | .68  | .69  |
| 11.5000  | .69                                                       | .70  | .71  | .71  | .72  |
| 11.5500  | .73                                                       | .74  | .76  | .77  | .78  |
| 11.6000  | .80                                                       | .81  | .82  | .84  | .86  |
| 11.6500  | .88                                                       | .90  | .93  | .95  | .98  |
| 11.7000  | 1.01                                                      | 1.04 | 1.07 | 1.10 | 1.13 |
| 11.7500  | 1.17                                                      | 1.19 | 1.21 | 1.23 | 1.25 |
| 11.8000  | 1.27                                                      | 1.29 | 1.31 | 1.33 | 1.36 |
| 11.8500  | 1.38                                                      | 1.41 | 1.44 | 1.48 | 1.51 |
| 11.9000  | 1.54                                                      | 1.58 | 1.62 | 1.65 | 1.68 |
| 11.9500  | 1.71                                                      | 1.74 | 1.77 | 1.80 | 1.82 |
| 12.0000  | 1.85                                                      | 1.87 | 1.90 | 1.92 | 1.95 |
| 12.0500  | 2.53                                                      | 2.74 | 2.91 | 3.12 | 3.22 |
| 12.1000  | 3.25                                                      | 3.23 | 3.12 | 3.12 | 3.03 |
| 12.1500  | 2.94                                                      | 2.86 | 2.82 | 2.78 | 2.73 |
| 12.2000  | 2.69                                                      | 2.65 | 2.60 | 2.56 | 2.52 |
| 12.2500  | 2.48                                                      | 2.44 | 2.40 | 2.36 | 2.32 |
| 12.3000  | 2.28                                                      | 2.24 | 2.21 | 2.17 | 2.14 |
| 12.3500  | 2.10                                                      | 2.07 | 2.03 | 2.00 | 1.97 |
| 12.4000  | 1.93                                                      | 1.92 | 1.92 | 1.92 | 1.91 |
| 12.4500  | 1.91                                                      | 1.91 | 1.91 | 1.91 | 1.90 |
| 12.5000  | 1.90                                                      | 1.90 | 1.90 | 1.89 | 1.89 |
| 12.5500  | 1.89                                                      | 1.89 | 1.88 | 1.88 | 1.88 |
| 12.6000  | 1.88                                                      | 1.87 | 1.87 | 1.87 | 1.87 |
| 12.6500  | 1.86                                                      | 1.86 | 1.86 | 1.85 | 1.85 |
| 12.7000  | 1.85                                                      | 1.85 | 1.84 | 1.84 | 1.84 |
| 12.7500  | 1.83                                                      | 1.83 | 1.83 | 1.83 | 1.82 |
| 12.8000  | 1.82                                                      | 1.82 | 1.81 | 1.81 | 1.81 |
| 12.8500  | 1.80                                                      | 1.80 | 1.80 | 1.80 | 1.79 |
| 12.9000  | 1.79                                                      | 1.79 | 1.78 | 1.78 | 1.78 |
| 12.9500  | 1.77                                                      | 1.77 | 1.77 | 1.76 | 1.76 |
| 13.0000  | 1.76                                                      | 1.76 | 1.75 | 1.75 | 1.75 |
| 13.0500  | 1.74                                                      | 1.74 | 1.74 | 1.74 | 1.73 |
| 13.1000  | 1.73                                                      | 1.73 | 1.72 | 1.72 | 1.72 |
| 13.1500  | 1.71                                                      | 1.71 | 1.71 | 1.70 | 1.70 |
| 13.2000  | 1.70                                                      | 1.70 | 1.69 | 1.69 | 1.69 |
| 13.2500  | 1.68                                                      | 1.68 | 1.68 | 1.67 | 1.67 |
| 13.3000  | 1.67                                                      | 1.66 | 1.66 | 1.66 | 1.66 |
| 13.3500  | 1.65                                                      | 1.65 | 1.65 | 1.64 | 1.64 |
| 13.4000  | 1.64                                                      | 1.63 | 1.63 | 1.63 | 1.62 |
| 13.4500  | 1.62                                                      | 1.62 | 1.61 | 1.61 | 1.61 |
| 13.5000  | 1.61                                                      | 1.60 | 1.60 | 1.60 | 1.59 |
| 13.5500  | 1.59                                                      | 1.59 | 1.58 | 1.58 | 1.58 |
| 13.6000  | 1.57                                                      | 1.57 | 1.57 | 1.56 | 1.56 |
| 13.6500  | 1.56                                                      | 1.55 | 1.55 | 1.55 | 1.54 |
| 13.7000  | 1.54                                                      | 1.54 | 1.54 | 1.53 | 1.53 |
| 13.7500  | 1.53                                                      | 1.52 | 1.52 | 1.52 | 1.51 |
| 13.8000  | 1.51                                                      | 1.51 | 1.50 | 1.50 | 1.50 |
| 13.8500  | 1.49                                                      | 1.49 | 1.49 | 1.48 | 1.48 |
| 13.9000  | 1.48                                                      | 1.47 | 1.47 | 1.47 | 1.47 |
| 13.9500  | 1.46                                                      | 1.46 | 1.46 | 1.45 | 1.45 |
| 14.0000  | 1.45                                                      | 1.44 | 1.44 | 1.44 | 1.43 |

10-YR STORM COMPUTATIONS

POND INFLOW SUMMARY

Type... Pond Inflow Summary Page 412  
 Name... SWM1 IN  
 Event: 10 yr  
 File... C:\Users\drainage1\AppData\Local\Temp\Bentley\PondPack\tmp.ppk  
 Storm... 10-Year Storm Tag: 10

TOTAL NODE INFLOW...  
 HYG file =  
 HYG ID = SWM1 IN  
 HYG Tag = 10  
 Peak Discharge = 21.18 cfs  
 Time to Peak = 11.9200 hrs  
 HYG Volume = 1.268 ac-ft

| TIME HRS | HYDROGRAPH ORDINATES (CFS)                                |      |        |      |      |
|----------|-----------------------------------------------------------|------|--------|------|------|
|          | OUTPUT TIME INCREMENT = .0100 HRS                         |      |        |      |      |
|          | TIME ON LEFT REPRESENTS TIME FOR FIRST VALUE IN EACH ROW. |      |        |      |      |
| 10.0000  | .60                                                       | .60  | .60    | .60  | .61  |
| 10.0500  | .61                                                       | .61  | .62    | .62  | .62  |
| 10.1000  | .63                                                       | .63  | .63    | .63  | .64  |
| 10.1500  | .64                                                       | .65  | .65    | .66  | .66  |
| 10.2000  | .66                                                       | .67  | .67    | .67  | .68  |
| 10.2500  | .68                                                       | .69  | .69    | .70  | .70  |
| 10.3000  | .70                                                       | .71  | .71    | .71  | .72  |
| 10.3500  | .72                                                       | .73  | .73    | .74  | .74  |
| 10.4000  | .74                                                       | .74  | .75    | .75  | .76  |
| 10.4500  | .76                                                       | .77  | .77    | .78  | .78  |
| 10.5000  | .78                                                       | .78  | .79    | .79  | .80  |
| 10.5500  | .81                                                       | .81  | .82    | .82  | .83  |
| 10.6000  | .83                                                       | .83  | .84    | .84  | .85  |
| 10.6500  | .86                                                       | .87  | .88    | .89  | .89  |
| 10.7000  | .89                                                       | .90  | .90    | .91  | .92  |
| 10.7500  | .93                                                       | .93  | .94    | .95  | .95  |
| 10.8000  | .96                                                       | .96  | .97    | .97  | .98  |
| 10.8500  | .99                                                       | 1.00 | 1.01   | 1.01 | 1.02 |
| 10.9000  | 1.02                                                      | 1.03 | 1.03   | 1.04 | 1.05 |
| 10.9500  | 1.06                                                      | 1.07 | 1.07   | 1.08 | 1.09 |
| 11.0000  | 1.09                                                      | 1.09 | 1.10   | 1.11 | 1.12 |
| 11.0500  | 1.14                                                      | 1.15 | 1.17   | 1.18 | 1.19 |
| 11.1000  | 1.19                                                      | 1.20 | 1.21   | 1.22 | 1.24 |
| 11.1500  | 1.26                                                      | 1.29 | 1.30   | 1.32 | 1.33 |
| 11.2000  | 1.34                                                      | 1.35 | 1.36   | 1.38 | 1.40 |
| 11.2500  | 1.42                                                      | 1.44 | 1.46   | 1.48 | 1.49 |
| 11.3000  | 1.50                                                      | 1.50 | 1.52   | 1.53 | 1.55 |
| 11.3500  | 1.57                                                      | 1.60 | 1.62   | 1.63 | 1.64 |
| 11.4000  | 1.65                                                      | 1.66 | 1.67   | 1.69 | 1.71 |
| 11.4500  | 1.73                                                      | 1.75 | 1.77   | 1.79 | 1.80 |
| 11.5000  | 1.81                                                      | 1.84 | 1.92   | 2.08 | 2.31 |
| 11.5500  | 2.57                                                      | 2.83 | 3.06   | 3.26 | 3.41 |
| 11.6000  | 3.51                                                      | 3.64 | 3.84</ |      |      |







**RINKER DESIGN ASSOCIATES, P.C.**

CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGVIL.COM



EROSION & SEDIMENT CONTROL  
 PHASE 2  
**LOUISE ARCHER  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

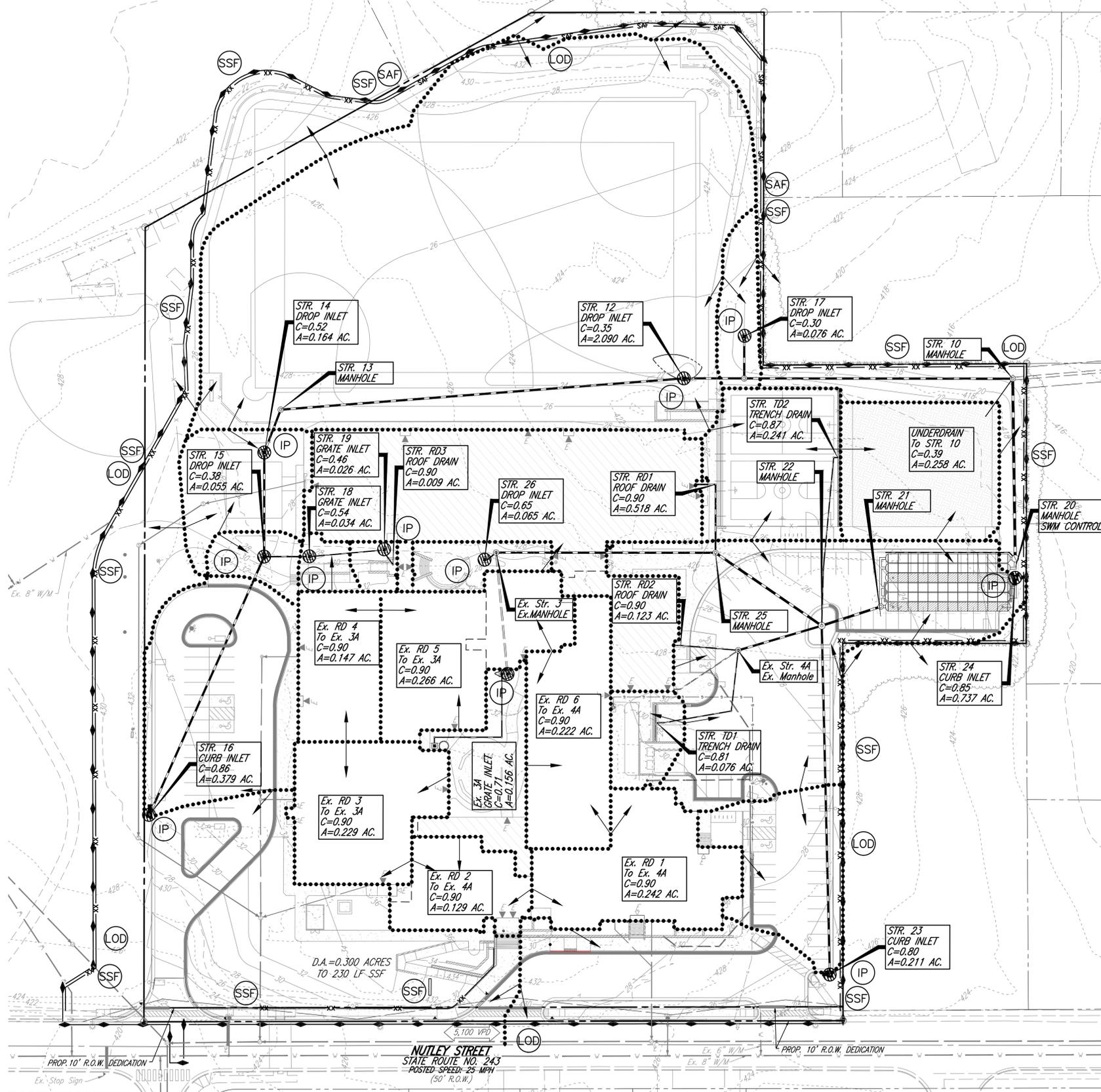
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ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

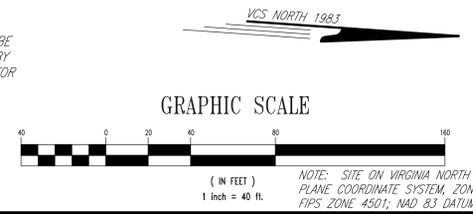
TOWN REFERENCE: 525873

SHEET NUMBER: C8.1



**LEGEND**

| NO.  | TITLE                        | KEY | SYMBOL |
|------|------------------------------|-----|--------|
| 3.01 | SAFETY FENCE                 | SAF |        |
| 3.07 | STORM DRAIN INLET PROTECTION | IP  |        |
|      | SUPER SILT FENCE             | SSF |        |
|      | LIMITS OF DISTURBANCE        | LOD |        |
|      | DRAINAGE DIVIDES             |     |        |



- NOTE: CONTRACTOR MUST ENSURE THAT ALL VEHICLES ARE CLEANED PRIOR TO ENTERING THE VDOT ROW. THE WATER SOURCE FOR THE WHEEL WASH SHALL BE A WATER TRUCK.
- NOTE: SITE INSPECTOR TO DETERMINE FINAL LOCATION OF CONSTRUCTION ENTRANCE.
- NOTE: THE GRADING/EXCAVATION CONTRACTOR FOR THE SUBJECT SITE IS REQUIRED TO NOTIFY, IN WRITING, THE ASSIGNED SITE INSPECTOR REGARDING ANY EXCESS MATERIAL PROPOSED TO BE HAULED OFFSITE, IDENTIFICATION OF THE RECEIVING SITE WHERE THE EXCESS WILL BE TAKEN, AND ALL INFORMATION NECESSARY TO SHOW THAT SUCH RECEIVING SITE HAS BEEN PROPERLY PERMITTED AND HAS E&S CONTROLS INSTALLED.
- NOTE: SF, SSF AND IP SHOWN OFFSET FROM THE PROJECT LIMITS IS FOR PICTORIAL PURPOSES ONLY. ALL PERIMETER CONTROLS SHOULD BE LOCATED IN THE FIELD AT THE LIMITS OF CLEARING AND GRADING.
- NOTE: IF SCHOOL IS IN SESSION, PLAY AREAS SHALL BE PROTECTED FROM ALL CONSTRUCTION ACTIVITY BY CHAIN LINK FENCE. SEE ARCHITECTURE PLANS FOR DETAILS.
- NOTE: ALL DRAINAGE AREA > 1 AC. SHALL HAVE DOUBLE INLET PROTECTION.
- NOTE: SUPER SILT FENCE ACTS AS TREE PROTECTION.

( IN FEET )  
 1 inch = 40 ft.

**TEMPORARY SEEDING**

1. **LIMING:** AN EVALUATION SHOULD BE CONDUCTED TO DETERMINE IF LIME IS NECESSARY FOR TEMPORARY SEEDING. IN MOST SOILS, IT TAKES UP TO 6 MONTHS FOR A PH ADJUSTMENT TO OCCUR FOLLOWING THE APPLICATION OF LIME. THEREFORE, IT MAY BE DIFFICULT TO JUSTIFY THE COST OF LIMING A TEMPORARY SITE, ESPECIALLY WHEN THE SOIL WILL LATER BE MOVED AND REGRADED. TABLE 3.31A (THIS SHEET) MAY BE USED TO DETERMINE THAT ACTUAL NEED ALONG WITH SUGGESTED APPLICATION RATES.

2. **FERTILIZER:** SHALL BE APPLIED AS 600 LBS./AC. OF 10-20-10 OR EQUIVALENT NUTRIENTS. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF THE SOIL IF POSSIBLE.

3. **SEEDING:** SEEDING SHALL BE APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1 1/2" DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" SOIL COVER. FOR SEED SELECTION AND RATES SEE TABLE 3.31-B (THIS SHEET).

4. **MULCHING:** SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO MULCHING, STD. & SPEC. 3.35 (TABLE 3.35-A PROVIDED THIS SHEET), EXCEPT THAT HYDROMULCHES (FIBER MULCH) WILL NOT BE CONSIDERED ADEQUATE. STRAW MULCH SHOULD BE USED DURING THESE PERIODS. TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

**SODDING**

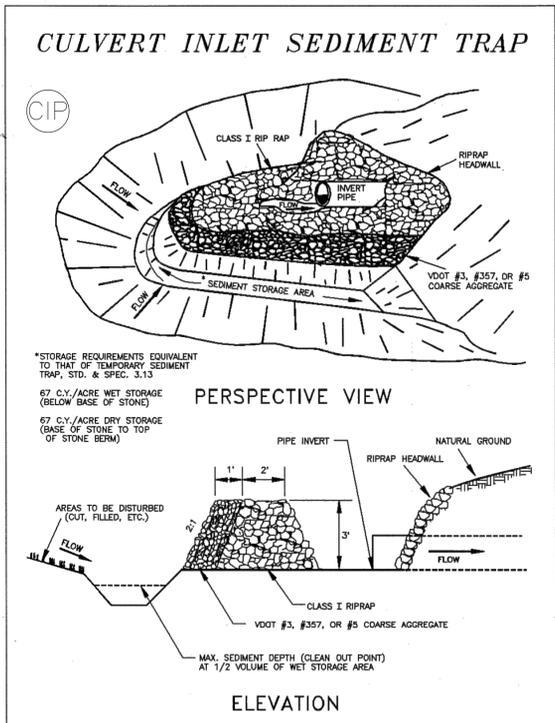
STATE CERTIFIED, NURSERY GROWN IN NEARBY AREA, WELL ROOTED, FREE FROM DISEASE, DEFECTS, INSECT INFESTATIONS, OR ANY UNHEALTHY OR ABNORMAL CONDITION AND FREE OF WEEDS.

**SOD COMPOSITION:**

- TALL FESCUE (DROUGHT TOLERANT, FULL SUN MIXTURE)
- CERTIFIED TALL FESCUE CULTIVARS, A MIXTURE OF AT LEAST TWO DIFFERENT TYPES-95%
- CERTIFIED KENTUCKY BLUEGRASS-5%

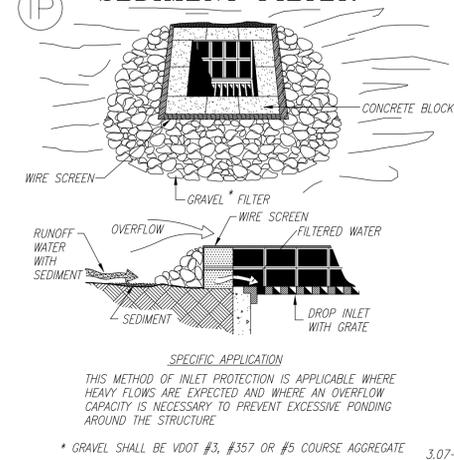
SODDED AREA SHALL BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLANS. PRIOR TO LAYING SOD, SOIL SURFACE SHALL BE CLEAR OF TRASH, DEBRIS AND LARGE OBJECTS.

1992 3.08

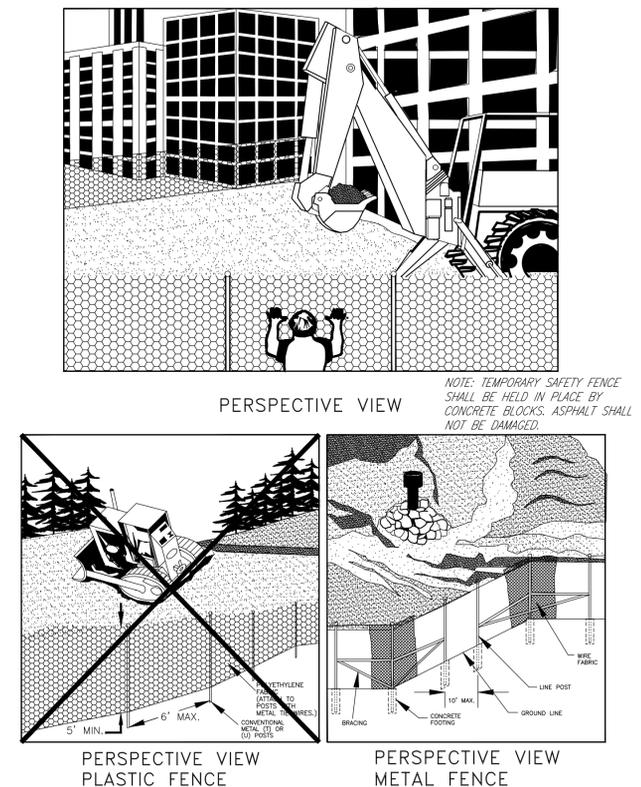


Source: North Carolina Sediment Control Commission Plate 3.08-2

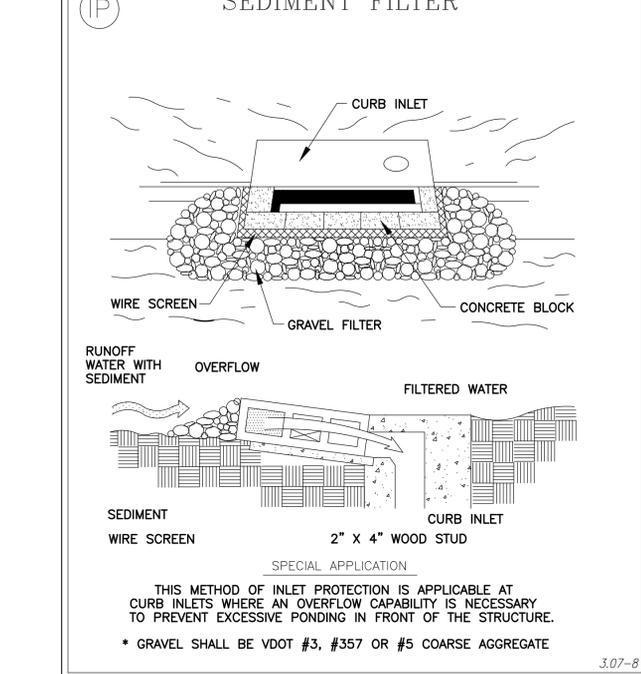
### BLOCK & GRAVEL DROP INLET SEDIMENT FILTER



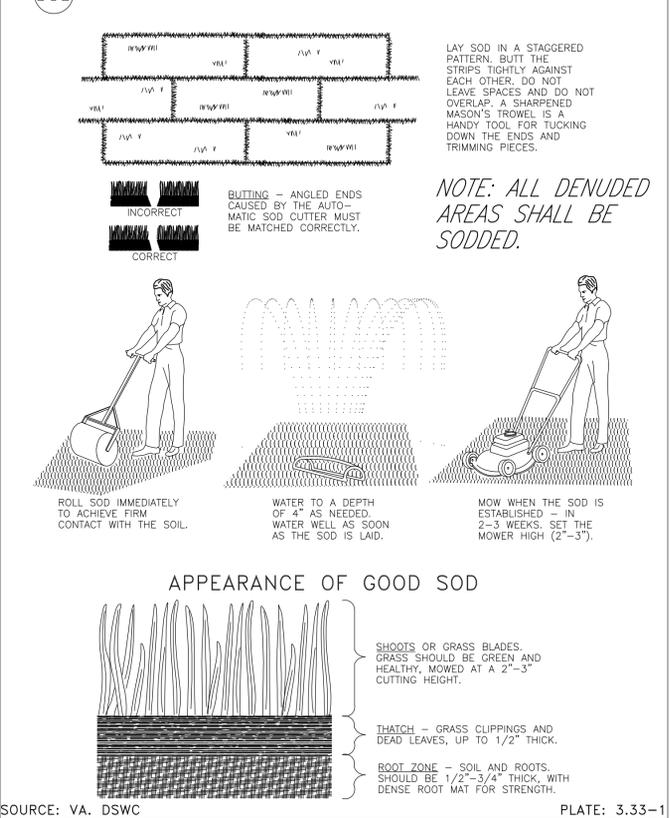
### SAFETY FENCE OR APPROVED EQUAL



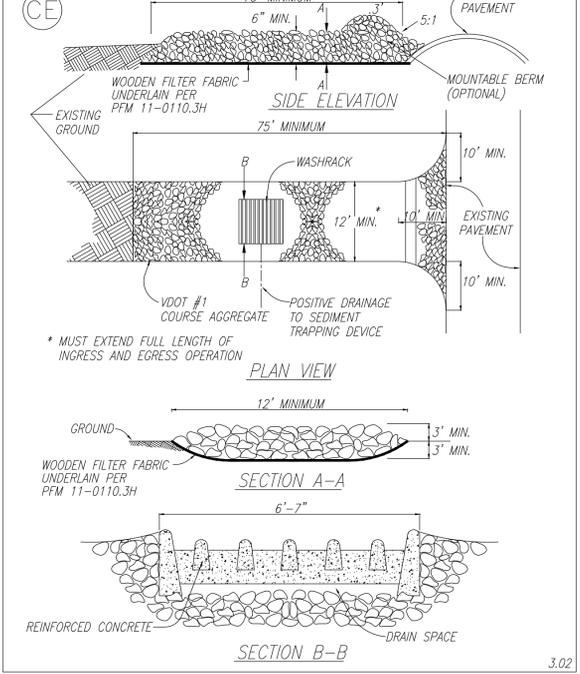
### BLOCK & GRAVEL CURB INLET SEDIMENT FILTER



### SODDING



### CONSTRUCTION ENTRANCE



**GENERAL LAND CONSERVATION NOTES**

- No disturbed area which is not actively being worked shall remain denuded for more than 14 calendar days unless otherwise authorized by the Director.
- All E&S control measures approved with the Phase 1 E&S control plan shall be placed as the first step in grading.
- All storm and sanitary sewer lines not in streets shall be seeded and mulched within 14 days after backfill. No more than 500 ft. shall be open at any one time.
- Electric power, telephone and gas supply trenches shall be compacted, seeded and mulched within 14 days after backfill.
- All temporary earth berms, diversions and sediment control dams shall be seeded and mulched for temporary vegetative cover immediately (as soon as possible but no later than 48 hours) after completion of grading. Straw or hay mulch is required. All soil stockpiles shall be seeded and mulched within 14 days after grading.
- During construction, all storm sewer inlets shall be protected by sediment traps, maintained and modified during construction progress as required.
- Any disturbed area not covered by Section 11-0406.1 of the Fairfax County Public Facilities Manual and not paved, sodded or built upon by November 1, or disturbed after that date, shall be mulched immediately with hay or straw mulch at the rate of 50 lbs/acre and over-seeded by April 15.
- At the completion of any project construction and prior to bond release, all temporary sediment controls shall be removed and all denuded areas shall be stabilized.

**RINKER DESIGN ASSOCIATES, P.C.**

CIVIL ENGINEERING & SURVEYING

11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109

PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACIVIL.COM

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STATE OF VIRGINIA  
JERRY D. CUNNINGHAM  
Lic. No. 039407  
2/8/22  
PROFESSIONAL ENGINEER

---

**E&S NOTES & DETAILS**

**LOUISE ARCHER**

**ELEMENTARY SCHOOL**

**RENOVATION & ADDITION**

HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

---

REVISIONS:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | 08.2             |



FAIRFAX COUNTY PUBLIC FACILITIES MANUAL

FIRE LANE DESIGNATIONS

Under Section 503 of the Fairfax County Fire Prevention Code, the Office of the Fire Marshal is authorized to designate fire lanes on public streets and on private property where necessary. This is to prevent parking in front of, or adjacent to, fire hydrants and to provide access for fire fighting equipment. Markings and signs are to be provided by the owner or agent of the property involved. Parking or otherwise obstructing such areas is prohibited.

I. HYDRANTS

- A. Parking is prohibited within 15' of a fire hydrant located along the curb line or edge of any public or private roadway. No special curb marking is required for enforcement.
- B. Fire hydrants installed in parking lots are to be located within a fire lane. Curb and/or roadway marking is required in accordance with Sections III and IV below.



Standard wording with an arrow at bottom pointing to the right. One sign mounted parallel to the line of curbing or pavement edge at end of painted area.

II. FIRE LANES

- A. Fire lanes must be installed where required by the office of the Fire Marshal. Fire lanes must be marked with both sign and curb delineation per Section III and IV below. Parking and fire lane markings are required as follows.

| Street Width Curb to Curb or Paved Surface | Parking                                                                      | Fire Lane Markings                                                                                                                                         |
|--------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Up to 28 feet                              | No parking allowed on either side                                            | Both sides marked as fire lanes                                                                                                                            |
| 28 feet up to 36 feet                      | Parallel parking allowed on one side as determined by the fire code official | One side marked as a fire lane                                                                                                                             |
| 36 feet and over                           | Parallel parking allowed on both sides                                       | No fire lane markings required. Exception: Required access to pools, fire department apparatus access roads and similar areas must be marked as fire lanes |



Standard wording with an arrow at bottom pointing to the left. One sign mounted parallel to the line of curbing or pavement edge at end of painted area.



Standard wording with no arrow. Two signs, back to back, mounted perpendicular to line or curbing or pavement edge.

III. SIGN SPECIFICATIONS

- A. Metal construction, 12" X 18".
- B. Red letters on reflective white background with 3/8" red trim strip around entire outer edge of sign.
- C. Lettering on sign to be: "NO PARKING OR STANDING FIRE LANE".
- D. Lettering size to be as follows: "NO PARKING" and "STANDING" is 2", "OR" is 1", "FIRE LANE" is 2 1/2" and the arrow with the solid shaft is 1" x 6" with the solid head 1 1/2" wide and 2" deep.
- E. Signs are to be mounted 7' from the ground to the bottom of the sign unless otherwise directed by the Office of the Fire Marshal.
- F. Post for signs, when required, must be metal and securely mounted, unless written permission for alternative is obtained prior to installation from the Office of the Fire Marshal. Signs should be spaced as shown on approved plans. In long stretches, the maximum distance between signs is 100'.
- G. Other special signs may be approved by the Office of the Fire Marshal.

IV. CURB DESIGNATION

- A. All curbs or paved spaces designated as fire lanes must be indicated by yellow paint as approved by the Office of the Fire Marshal. In areas without curbing, a 6" wide yellow stripe must be applied to the edge of the pavement. Paint must be highway traffic grade.

Note: Fire lane markings, types of signs, locations, etc. are subject to approval by the Fire Marshal.

|                                             |                   |           |          |
|---------------------------------------------|-------------------|-----------|----------|
| Ref. Sec. 9-0202.2(6)                       | <b>FIRE LANES</b> | PLATE NO. | STD. NO. |
| Rev. 1-00, 2-07, 2011 Reprint, 2016 Reprint |                   | 6-9       | FH-7     |

NOTE: NEW FDC AND FIRELINE TO SERVE ENTIRE BUILDING.

FIRE MARSHAL INFO

BUILDING INFO

- USE GROUP: E
- TYPE OF CONSTRUCTION: IIB (AROUND 9,200 SF of Ex. Bldg is VB)
- BUILDING TO BE FULLY SPRINKLERED - NFPA 13
- BUILDING HEIGHT: VARIES
- BUILDING IS 1-STORY
- GROSS FLOOR AREA: 92,972 SQ. FT.
- BUILDING FOOTPRINT AREA: 84,166 SQ. FT.

HYDRANT # 038-3-109

LOCATED: AT LOUISE ARCHER ELEMENTARY SCHOOL  
 TEST DATE: 9/8/2021  
 STATIC: 41 P.S.I.  
 RESIDUAL: 38 P.S.I.  
 FLOW: 712 G.P.M.  
 Q20: 2,036 G.P.M.

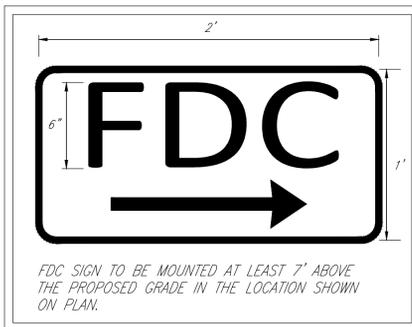
NOTE: ALL EX. FIRE LANES THAT ARE TO STAY SHALL BE REPAINTED

— DENOTES PROPOSED FIRE LANE

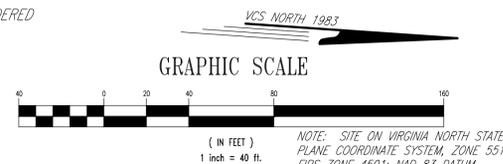
FIRE FLOW CALCULATION

$F = 18CA^{1/2} \times (\text{SPRINKLER}) \times (\text{OCCUPANCY}) \times (\text{EXPOSURE})$   
 $C = \text{TYPE OF CONSTRUCTION} = 1.5$  (WOOD CONSTRUCTION; TYPE VB)  
 $A = \text{THE TOTAL AREA OF ALL FLOOR LEVELS IN THE STRUCTURE BEING CONSIDERED}$   
 SPRINKLER=BUILDING WILL BE SPRINKLERED (0.50)  
 OCCUPANCY=SCHOOLS GET A 15% REDUCTION (0.85)  
 EXPOSURE=NO BUILDINGS WITHIN 150' OF SCHOOL (1.00)  
 $F = 2,036$  GPM  
 $2,036 = 18(1.5)(A)^{1/2} \times (0.50) \times (0.85) \times (1.00)$   
 $A = 31,481$  SF

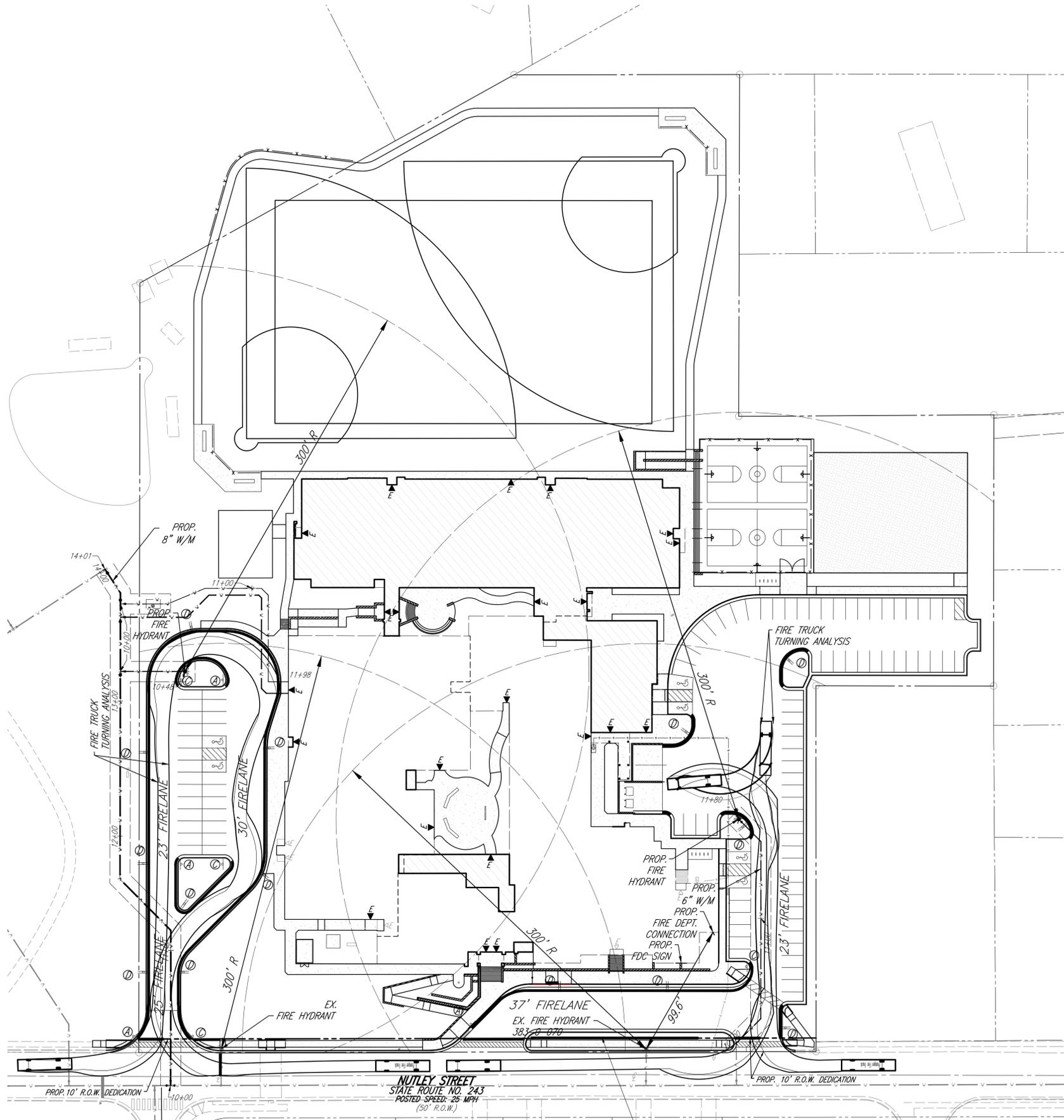
$F = 18CA^{1/2} \times (\text{SPRINKLER}) \times (\text{OCCUPANCY}) \times (\text{EXPOSURE})$   
 $C = \text{TYPE OF CONSTRUCTION} = 0.8$  (NONCOMBUSTIBLE; TYPE IIB)  
 $A = \text{THE TOTAL AREA OF ALL FLOOR LEVELS IN THE STRUCTURE BEING CONSIDERED}$   
 SPRINKLER=BUILDING WILL BE SPRINKLERED (0.50)  
 OCCUPANCY=SCHOOLS GET A 15% REDUCTION (0.85)  
 EXPOSURE=NO BUILDINGS WITHIN 150' OF SCHOOL (1.00)  
 $F = 2,036$  GPM  
 $2,036 = 18(0.8)(A)^{1/2} \times (0.50) \times (0.85) \times (1.00)$   
 $A = 110,675$  SF



FDC SIGN TO BE MOUNTED AT LEAST 7' ABOVE THE PROPOSED GRADE IN THE LOCATION SHOWN ON PLAN.



NOTE: SITE ON VIRGINIA NORTH STATE PLANE COORDINATE SYSTEM, ZONE 551, FIPS ZONE 4501; NAD 83 DATUM



**THIS SHEET FOR FIRE LANE INFORMATION ONLY!!!**

NOTE: ISLAND CURB TO BE STRIPED TO DETER PARKING EVEN THOUGH THIS CURB IS NOT REQUIRED TO BE STRIPED FOR A FIRELANE SINCE THE TRAVELWAY IS 37' WIDE.



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
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 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACLIVIL.COM

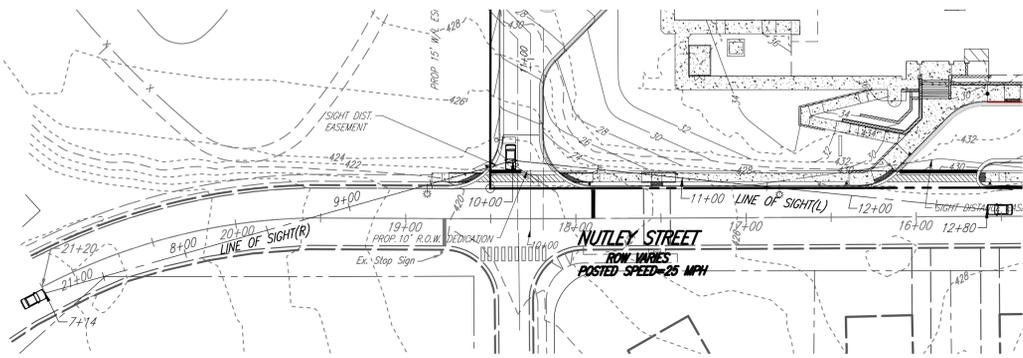


RIGHT-OF-WAY & ACCESS PLAN  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER HILL ELECTION DISTRICT  
 TOWN OF VIENNA

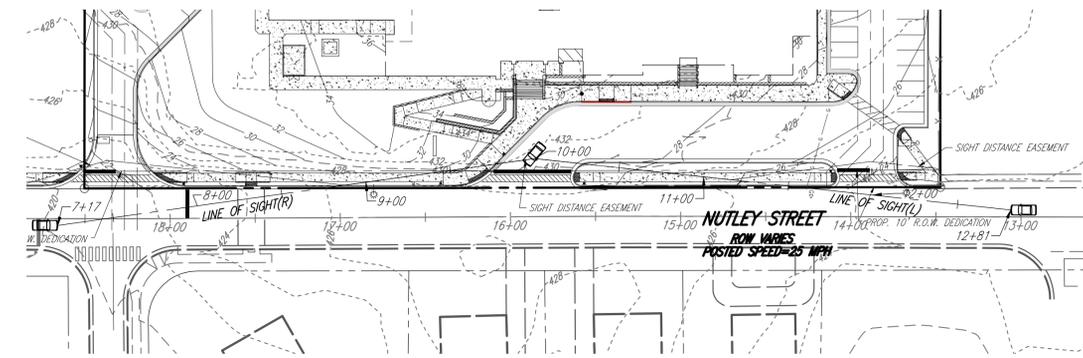
REVISIONS:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NUG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C9.0             |

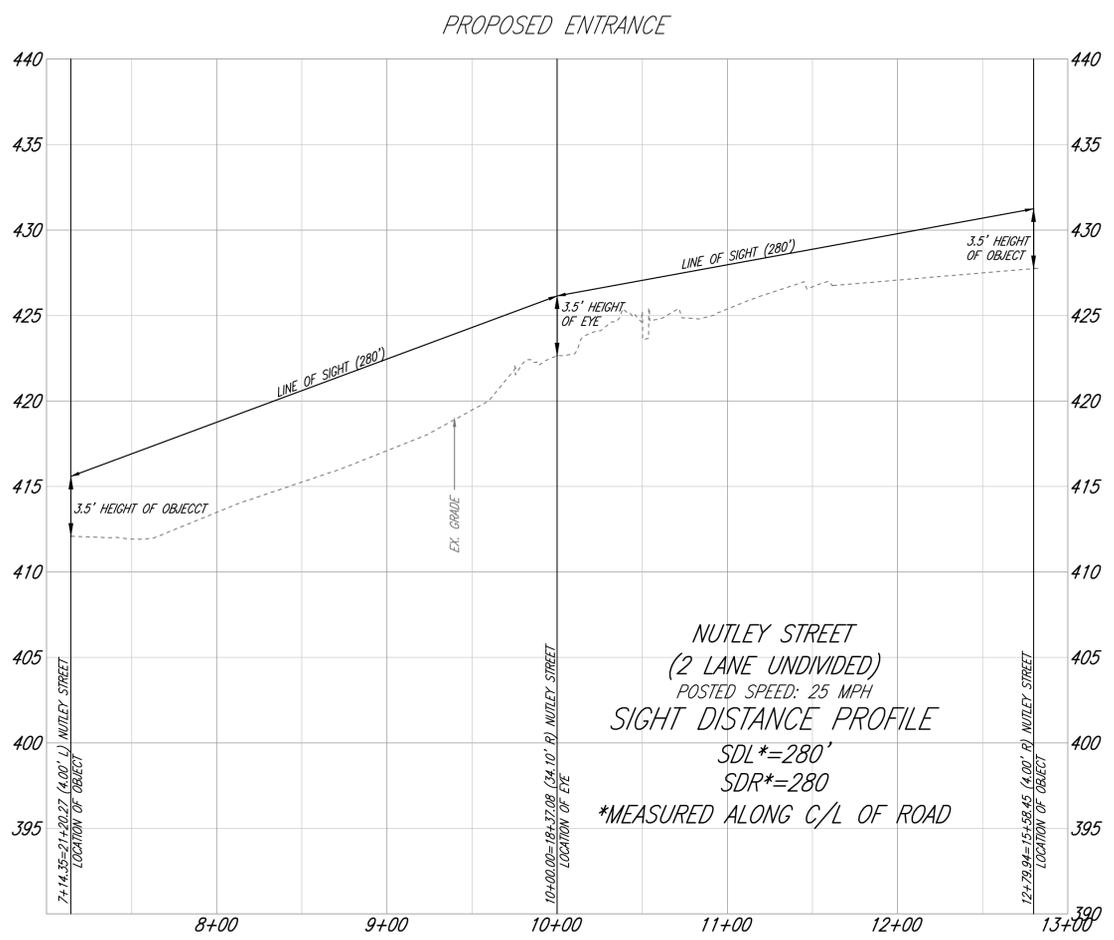
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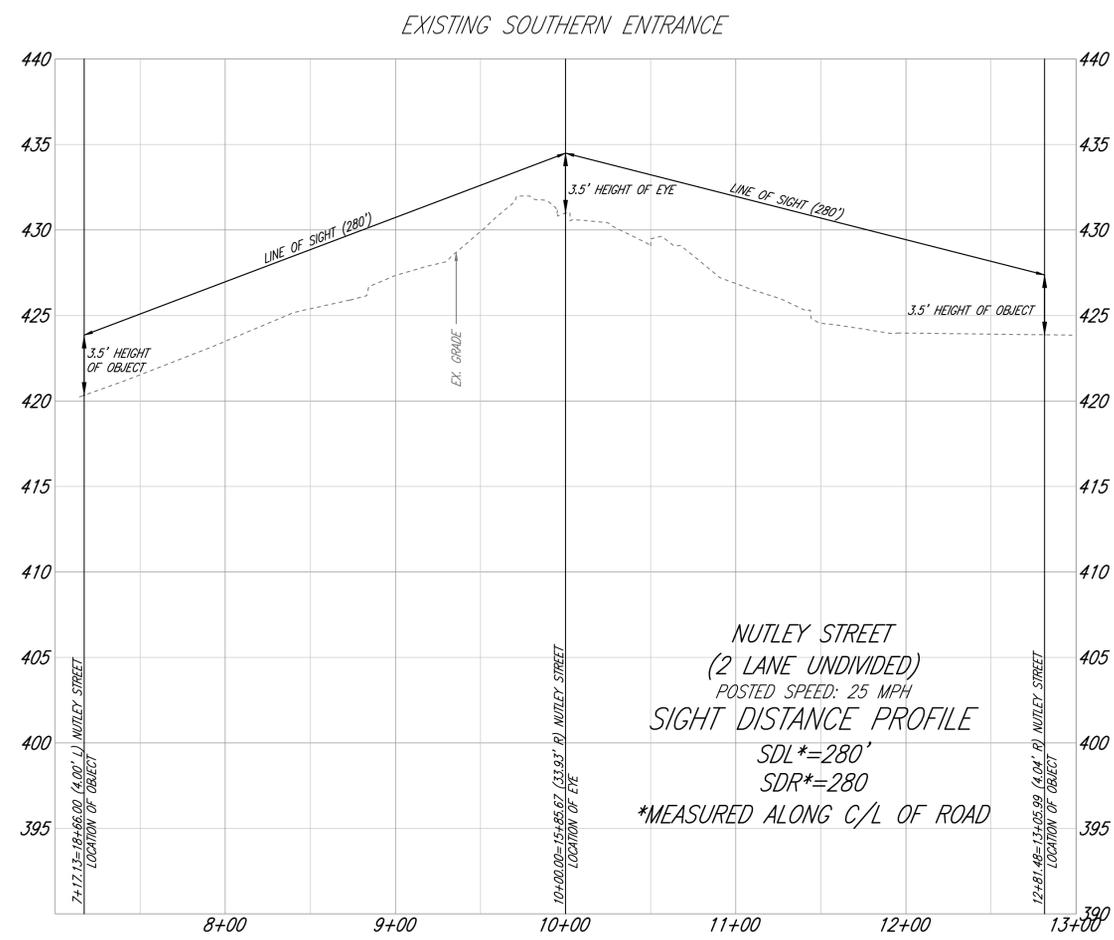
PLAN



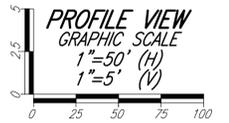
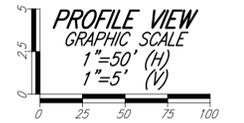
PLAN



PROFILE



PROFILE



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDCAVIL.COM



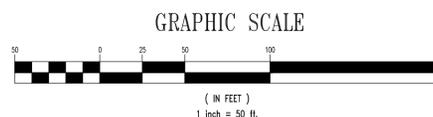
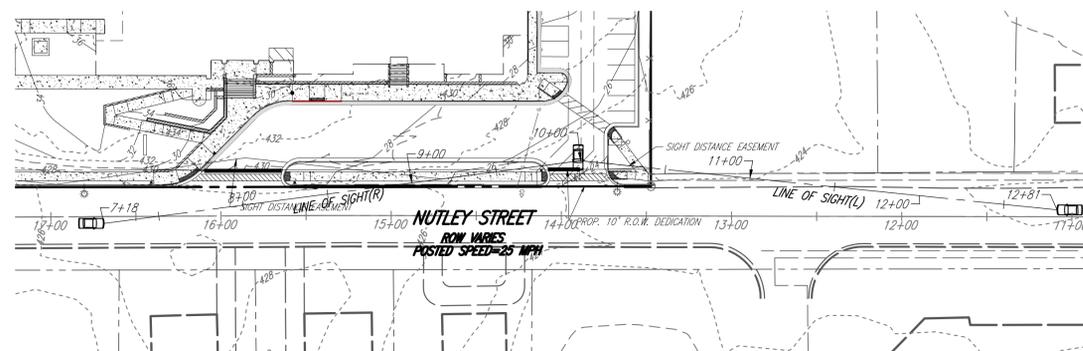
SIGHT DISTANCE PLAN & PROFILES  
**LOUISE ARCHER**  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION  
 HUNTER HILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

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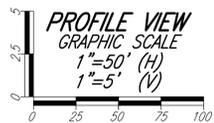
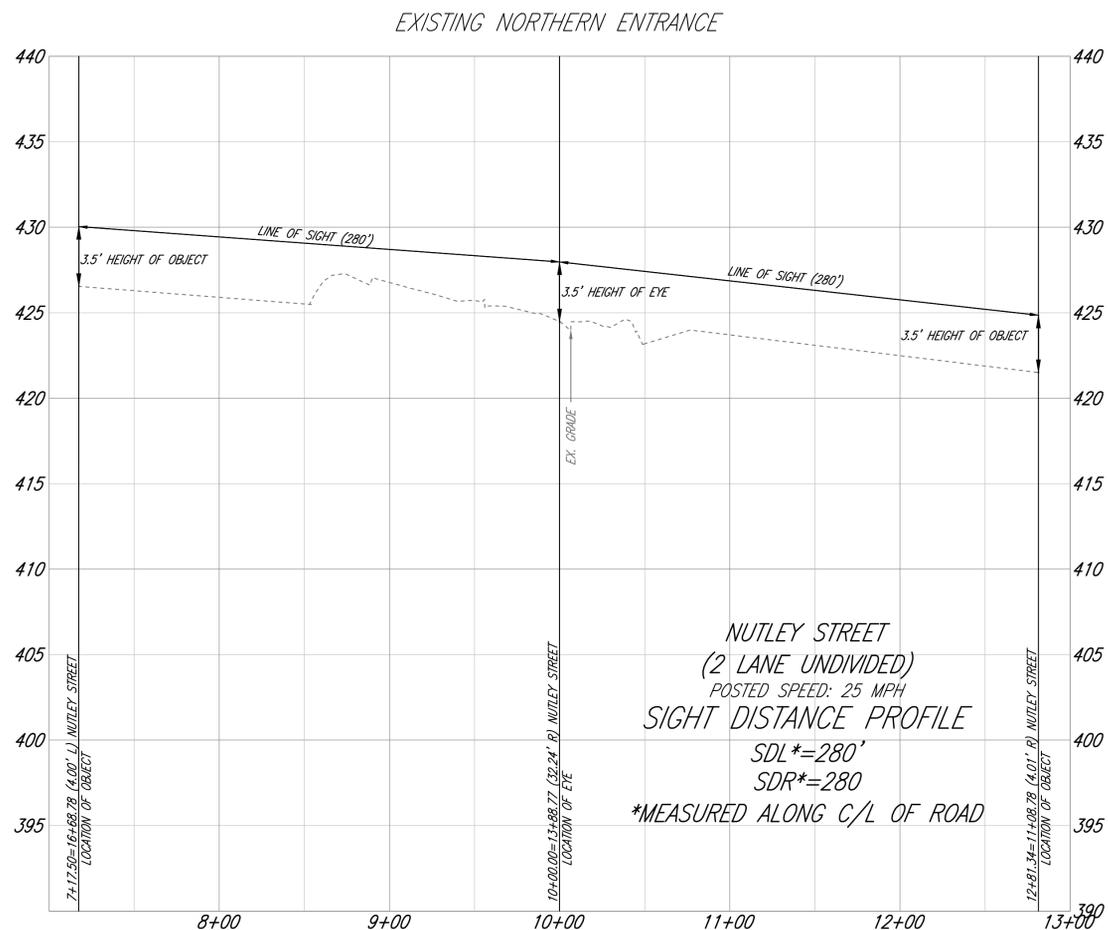
STATE PROJ#:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C10.0            |



PLAN

PROFILE



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACCIVIL.COM



SIGHT DISTANCE PLAN & PROFILES  
**LOUISE ARCHER**  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION  
 HUNTER HILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

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STATE PROJ#:

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|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C10.1            |

Ex. Storm Sewer Tabulation

- Ex. Storm Grate  
Ex. Top=431.16  
Ex. Inv. Out=425.85 (15" RCP to Ex. 2)
- Ex. Manhole  
Ex. Top=432.80  
Ex. Inv. In=424.90 (15" RCP from 1)  
Ex. Inv. In=428.30 (12" PVC from 2A)  
Ex. Inv. Out=424.85 (15" RCP to 3)
- Ex. Storm Grate  
Ex. Top=432.60  
Ex. Inv. In=428.67 (12" PVC from 2B)  
Ex. Inv. Out=429.38 (12" PVC to 2)
- Ex. Storm Grate  
Ex. Top=432.83  
Ex. Inv. In=430.71 (6" PVC from Roof Drain)  
Ex. Inv. Out=429.98 (12" PVC to 2A)
- Ex. Manhole  
Ex. Top=428.88  
Ex. Inv. In=423.18 (15" RCP from 2)  
Ex. Inv. Out=421.63 (15" RCP to 4)
- Ex. Storm Grate  
Ex. Top=422.84  
Ex. Inv. In=419.67 (15" RCP from 3)  
Ex. Inv. In=419.83 (12" RCP from 4A)  
Ex. Inv. In=421.39 (6" CPP from 4B)  
Ex. Inv. Out=419.37 (18" RCP to 5)
- Ex. Manhole  
Ex. Top=427.88  
Ex. Inv. In=421.62 (6" from Roof Drain)  
Ex. Inv. Out=421.57 (12" RCP to 4)
- Ex. Manhole  
Ex. Top=425.56  
Ex. Inv. In=  
Ex. Inv. Out=  
Unable to as-built. Underground SWM Facility
- Ex. Manhole  
Ex. Top=425.54  
Ex. Inv. In=  
Ex. Inv. Out=  
Unable to as-built. Underground SWM Facility
- Ex. Manhole  
Ex. Top=422.11  
Ex. Inv. In=  
Ex. Inv. Out=  
Unable to as-built.
- Ex. Storm Grate  
Ex. Top=420.13  
Ex. Inv. In=416.54 (15" RCP from 5)  
Ex. Inv. In=416.69 (12" RCP from 6C)  
Ex. Inv. Out=415.98 (24" RCP to 7)
- Ex. Manhole  
Ex. Top=419.24  
Ex. Inv. In=414.91 (24" RCP from 6A/B)  
Ex. Inv. Out=411.45 (24" RCP to 8)
- Ex. Manhole  
Ex. Top=410.02  
Ex. Inv. In=406.15 (24" RCP from 7)  
Ex. Inv. In=405.82 (24" RCP from East)  
Ex. Inv. Out=405.47 (24" RCP to North)

Sanitary Sewer Tabulation

- Ex. Manhole  
Ex. Top=433.84  
Ex. Inv. In=419.21 (Lateral From North)  
Ex. Inv. In=419.21 (Lateral From West)  
Ex. Inv. Out=418.76 (To B)
- Ex. Manhole  
Ex. Top=424.18  
Ex. Inv. In=416.89 (From A)  
Ex. Inv. In=416.78 (From North)  
Ex. Inv. Out=416.70 (To South)

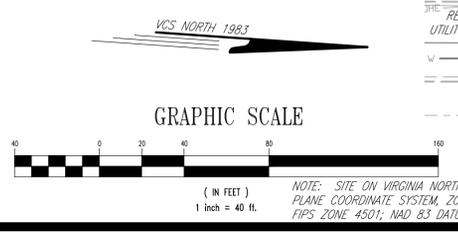
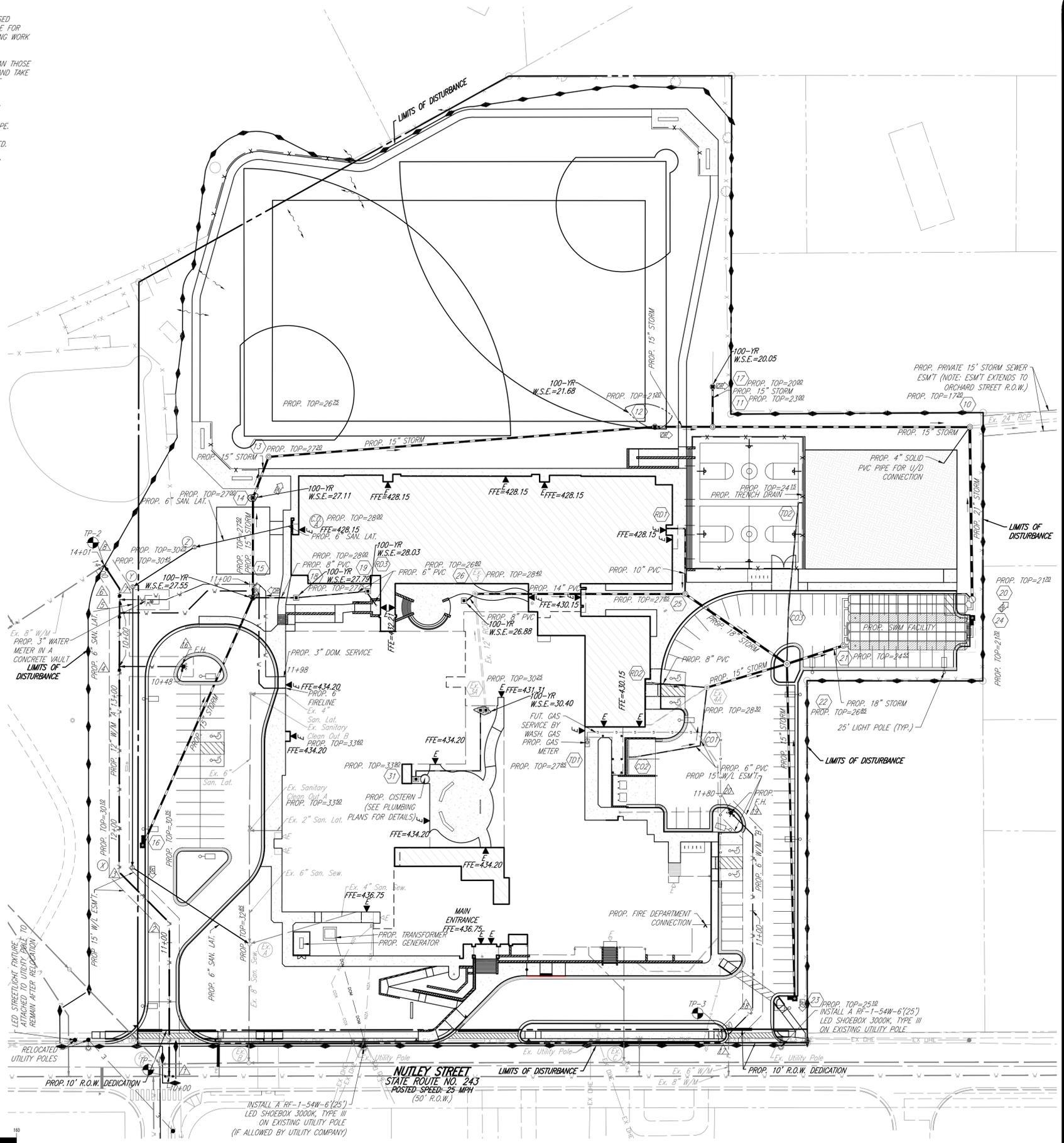
NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL EXISTING WATERLINE SHOWN HEREON IS DUCTILE IRON PIPE.

NOTE: ALL PROPOSED WATERLINE SHALL BE CLASS 52 DUCTILE IRON PIPE.

NOTE: ALL SANITARY SEWER SHALL BE PRIVATELY OWNED AND MAINTAINED.

NOTE: GC TO REVIEW LOCATIONS FOR STORM WATER PIPE WITH URBAN ARBORIST PRIOR TO BEGINNING WORK.



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 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGCIVIL.COM



**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C11.0



CATCH BASINS

24" Catch Basin Series

Table with 7 columns: Part No., Description, Color, Pkg. Qty., Wt. Ea. (lbs.), Product Class, Specifications. Includes diagrams of catch basins and grates.

STORM SEWER DESIGN COMPUTATIONS

Large table with columns: Pipe Label, Upstream Node, Downstream Node, Area (Acres), Inlet C, Inlet CA (Acres), Accumulative CA (Acres), System Intensity (in/hr), Total System Flow (cfs), Up Invert (ft), Down Invert (ft), Length (ft), Constructed Slope (ft/ft), Section Size, Capacity (cfs), Average Velocity (ft/s), System Flow Time (min), Hydraulic Grade In (ft), Hydraulic Grade Out (ft), Up Ground Elevation (ft), Notes.

- NOTES: 1. COMPUTATION SHOWN HEREON ARE THE RESULTS OF HAESTAD'S STORMCAD COMPUTER PROGRAM. 2. STORMCAD COMPUTES RUNOFF "Q" AS Q=CIAR WHERE R=1.008 AC-IN./HR. PER CFS. 3. INLET TIME FOR ALL STRUCTURES IS 5 MINUTES UNLESS OTHERWISE NOTED. 4. VELOCITIES SHOWN IN TABLE ARE BASED PARTIAL FLOW. ALL PIPES HAVE BEEN CHECKED AND HAVE A VELOCITY GREATER THAN 2.5 FEET PER SECOND WHEN FLOWING FULL, AS REQUIRED. 5. ANY C.O. TOP IN PAVED AREAS SHALL BE THE FLUSH BRASS CAP TO PREVENT TRIPPING HAZARDS.

STORM SEWER INLET COMPUTATIONS

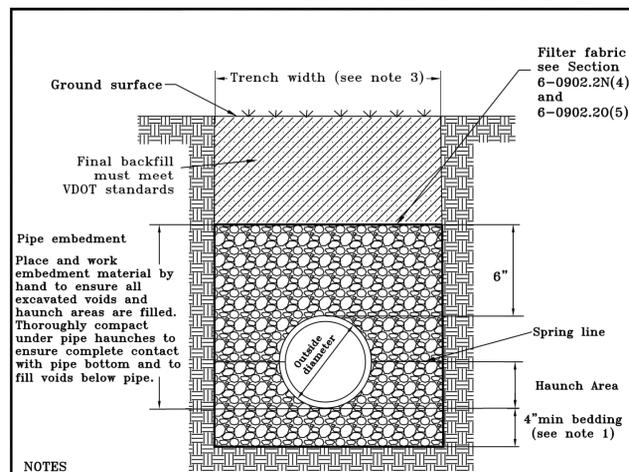
Table with columns: Inlet No., Inlet Type, Length (ft), Drainage Area (Ac), C, CA, Weighted CA, I (in/hr), Q Carry-over (cfs), Q Inlet (cfs), S Gutter Slope (ft/ft), Sx Cross Slope (ft/ft), T (spread), W (ft), W/T, Sw (ft/ft), Sw/Sx, Eo (#10), a, Swr, S (ft/ft), L (ft), L/L OR (ft), E (ft), Q Inter-cept (cfs), Q Carry-over cfs OR T spread @ sag (ft), Remarks, Inlet No.

- NOTE: COMPUTATIONS SHOWN HEREON ARE THE RESULTS OF QHEC12 COMPUTER PROGRAM. NOTE: RAINFALL INTENSITIES ARE IN (IN/HR). NOTE: STANDARD METHODS OF SHAPING MANHOLES & INVERTS (15'-1) SHALL BE PERFORMED AT ALL INLETS.

STORM SEWER HGL COMPUTATIONS

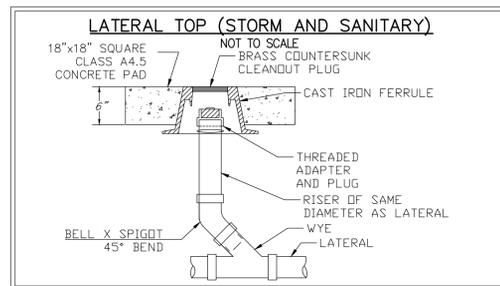
Table with columns: Inlet #, Outlet Water surface elev, = 0.8D YES or NO, Do, Qo, Lo, Slo, Hf, Vo, Ho, Qi, Vi, QVi, Vi^2/2g, Hi, Angle, Hd, Ht, 1.3Ht, 0.5Ht, Final H, Inlet water surface elev, Rim elev.

FAIRFAX COUNTY PUBLIC FACILITIES MANUAL



NOTES

- 1. Bedding must be in accordance with VDOT Road and Bridge Specifications, Section 302.023(a). 2. Embedment material must be placed alongside the pipe in uniform layers in lifts not to exceed 6" in depth. Embedment material must be VDOT aggregate No. 25 or 26, aggregate base material size 21A or 21B, flowable fill, or crushed glass conforming to the size requirements for crusher run aggregate size 25 or 26. Compaction must meet VDOT standards and be in accordance with PFM Section 4-0503 for minimum required site density testing. 3. Trench width must be specified by the Engineer and meet VDOT standards. Refer to ASTM D2321 for procedures for trench excavations that are especially important in flexible thermoplastic pipe installations such as support of trench walls and trench boxes. Moveable supports (e.g. trench boxes) should not be used below the top of the pipe zone (i.e. top of pipe to bottom of pipe) unless approved methods are used to maintain the integrity of the embedment material in accordance with ASTM D2321.



24"x24" PLASTIC CATCH BASIN CONCRETE COLLAR DETAIL (NO SCALE)

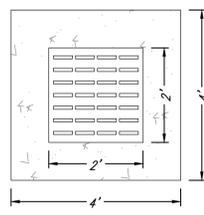


Table with 2 columns: PLATE NO., STD. NO. Row 1: 61-6

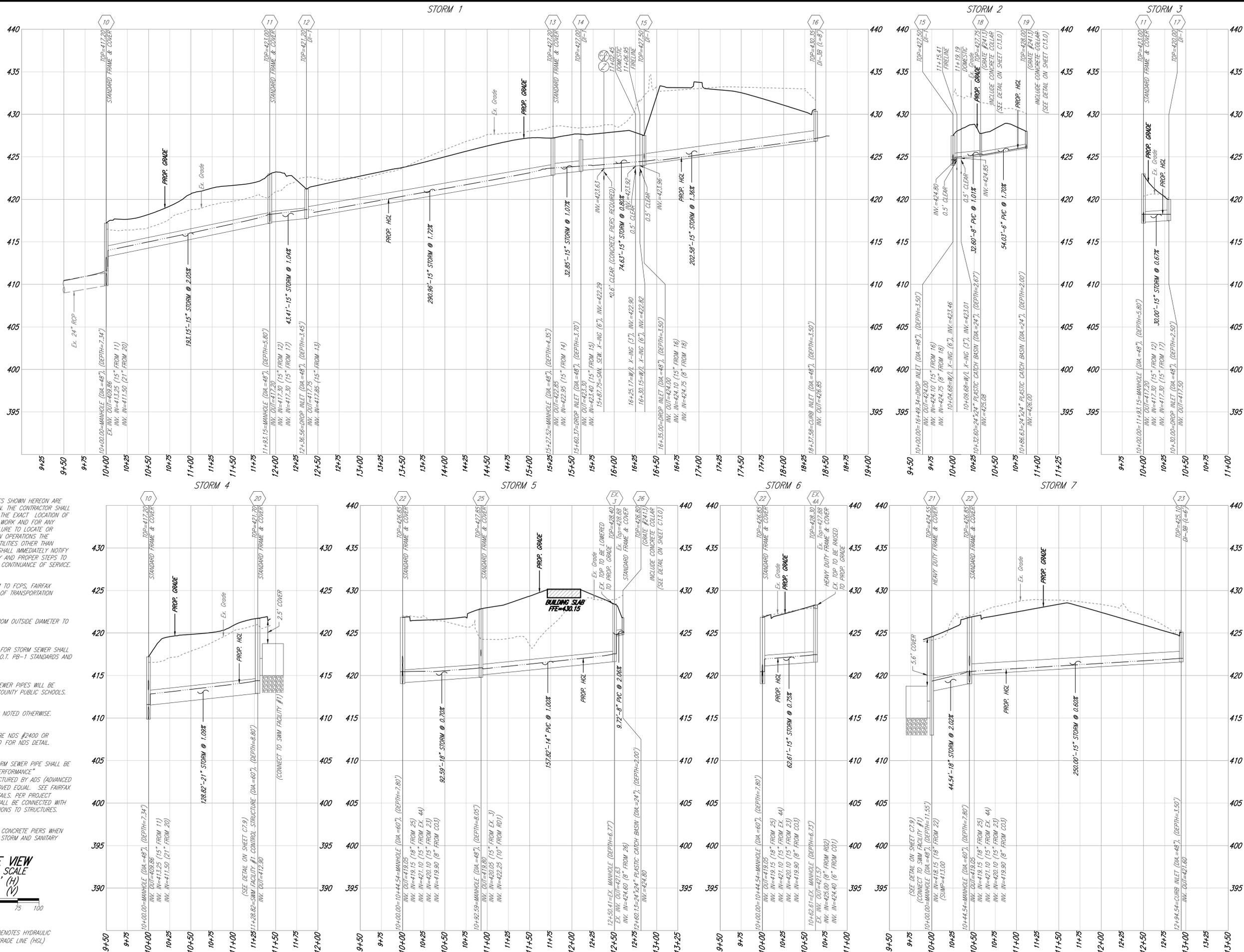


RINKER DESIGN ASSOCIATES, P.C. CIVIL ENGINEERING & SURVEYING 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACLIVIL.COM



STORM SEWER COMPUTATIONS LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION HUNTER MILL ELECTION DISTRICT TOWN OF VIENNA

Table with columns: REVISIONS, STATE PROJ#, DATE: FEBRUARY 8, 2022, DESIGN: NJG/BMY, CHECKED BY: JDC, ARCH: ARCH. INC., RDA JOB NUMBER: 20010, TOWN REFERENCE: 525873, SHEET NUMBER: C11.1



NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FCPS, FAIRFAX COUNTY, AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: ALL CLEARANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

NOTE: TRENCHING, BEDDING AND BACKFILL FOR STORM SEWER SHALL BE DONE IN ACCORDANCE WITH V.D.O.T. PB-1 STANDARDS AND SPECIFICATIONS.

NOTE: ALL STORM SEWER AND SANITARY SEWER PIPES WILL BE PRIVATELY MAINTAINED BY FAIRFAX COUNTY PUBLIC SCHOOLS.

NOTE: ALL PVC IS TO BE SDR 18 UNLESS NOTED OTHERWISE.

NOTE: ALL PLASTIC CATCH BASINS SHALL BE NDS #2400 OR APPROVED EQUAL. SEE SHEET C13.0 FOR NDS DETAIL.

NOTE: UNLESS OTHERWISE NOTED, ALL STORM SEWER PIPE SHALL BE HP STORM. HP STORM = "HIGH PERFORMANCE" POLYPROPYLENE PIPE (PP) MANUFACTURED BY ADS (ADVANCED DRAINAGE SYSTEMS, INC.) OR APPROVED EQUAL. SEE FAIRFAX CO. PFM 6-0902.2.0 FOR (PP) DETAILS. PER PROJECT SPECIFICATIONS, POLYPROPYLENE SHALL BE CONNECTED WITH WATER TIGHT RUBBER BOOT CONNECTIONS TO STRUCTURES.

\*NOTE: PFM SECTION 10-1010.2.5 REQUIRES CONCRETE PIERS WHEN THE VERTICAL SEPARATION BETWEEN STORM AND SANITARY SEWER LINES IS LESS THAN 2.0'.

**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
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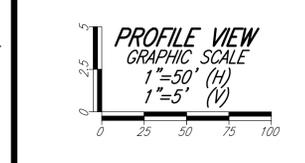
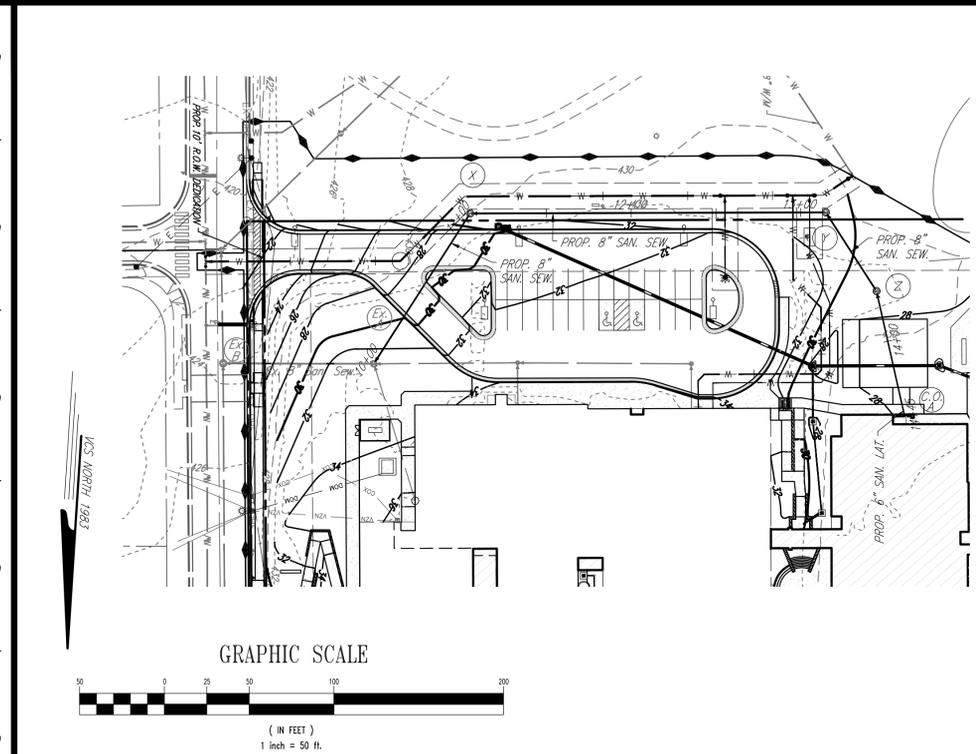
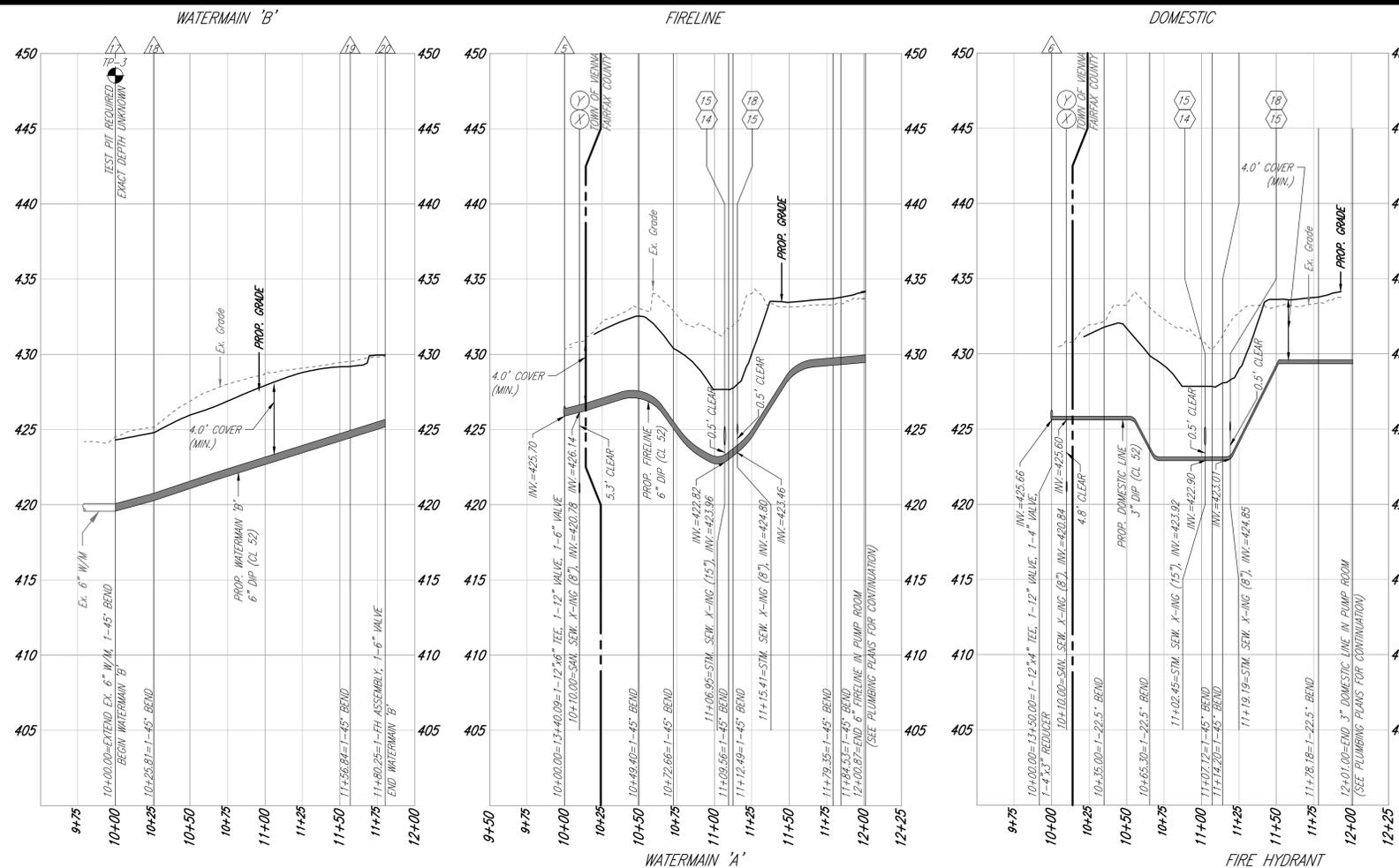
STATE OF VIRGINIA  
 PROFESSIONAL ENGINEER  
 2/8/22  
 Lic. No. 039407

**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C12.0



NOTE: THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE.

NOTE: ALL PRIVATE SANITARY SEWER, STORM SEWER AND WATERLINE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO LATERALS, ROOF DRAINS AND SERVICE LINES TO BE INSTALLED UNDER PLUMBING PERMIT, TESTED AND INSPECTED WITH ALL PERTINENT SECTIONS OF THE IPC AND AHL.

NOTE: ALL CONSTRUCTION SHALL CONFORM TO FAIRFAX COUNTY AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

NOTE: ALL CLEARANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

NOTE: TRENCHING, BEDDING AND BACKFILL FOR SANITARY SEWER SHALL BE DONE IN ACCORDANCE WITH V.D.O.T. FB-1 STANDARDS AND SPECIFICATIONS.

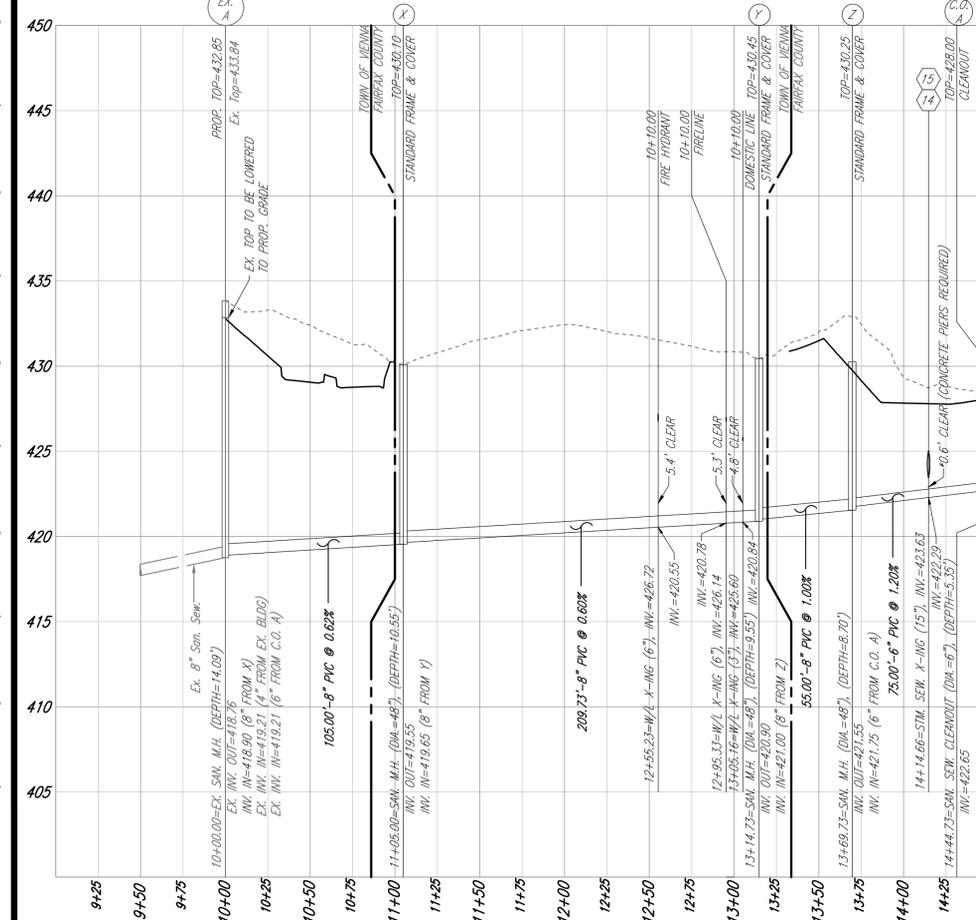
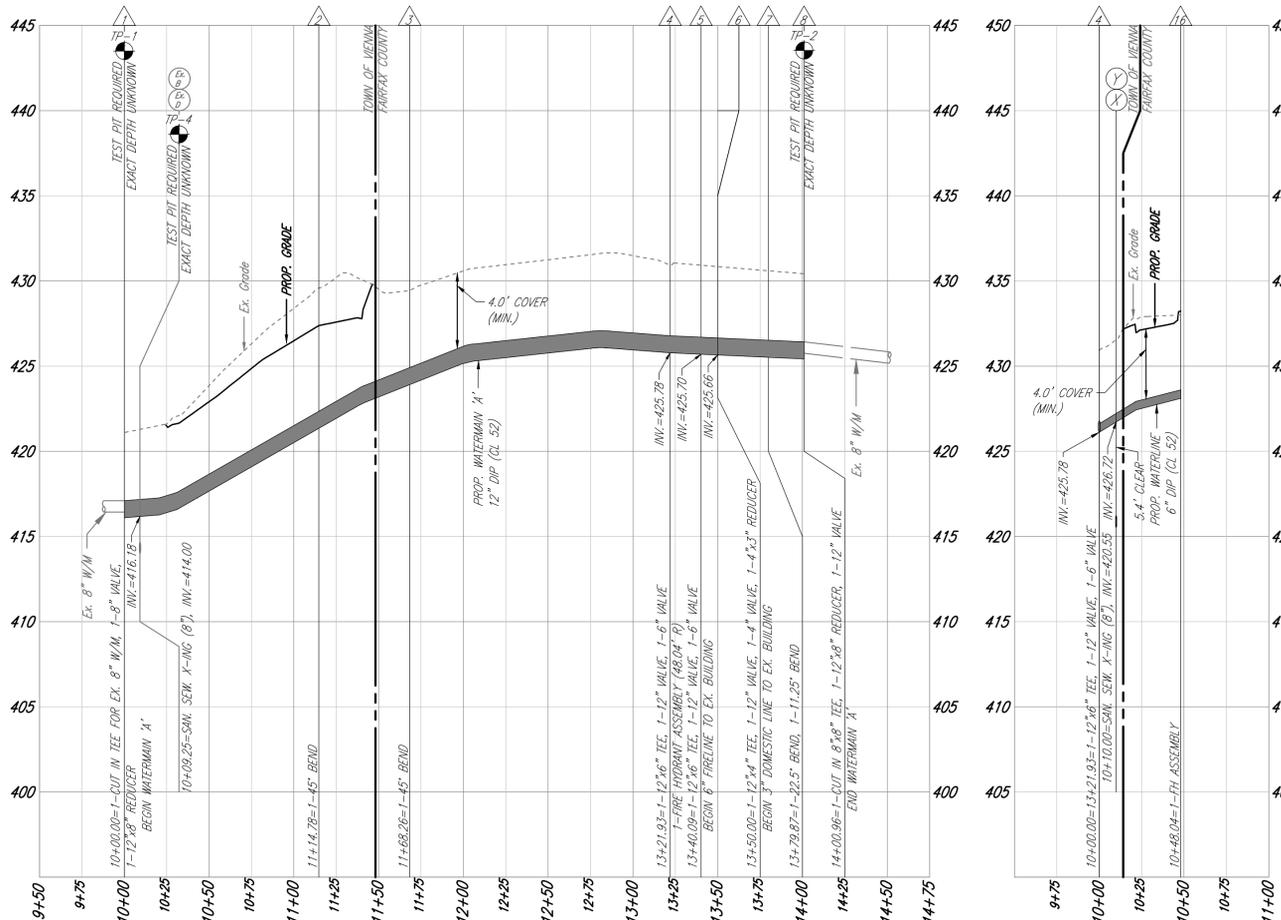
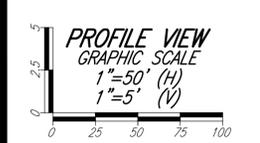
NOTE: ALL STORM SEWER AND SANITARY SEWER PIPES WILL BE PRIVATELY MAINTAINED BY FAIRFAX COUNTY PUBLIC SCHOOLS.

NOTE: ALL PVC SHALL BE SDR-35 UNLESS OTHERWISE STATED.

NOTE: ALL SANITARY SEWER CLEAN-OUTS LOCATED IN A PAVED AREA MUST BE TRAFFIC RATED (BRASS).

NOTE: SEE SHEET C13.0 FOR FAIRFAX WATER DETAILS.

\*NOTE: PFM SECTION 10-0102.5 REQUIRES CONCRETE PIERS WHEN THE VERTICAL SEPARATION BETWEEN STORM AND SANITARY SEWER LINES IS LESS THAN 2.0'.



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 CIVIL ENGINEERING & SURVEYING  
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 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACLIV.COM

STATE OF VIRGINIA  
 PROFESSIONAL ENGINEER  
 License No. 039407  
 2/8/22

**LOUISE ARCHER**  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C12.1

Project: Louise Archer Elementary School  
 STRAP #(s): \_\_\_\_\_  
 Address: 324 Nutley Street, NW  
 City: Vienna State: VA Zip Code: 22180  
 Type of Occupancy: Public Elementary School

| Fixture                           | Fixture Value<br>60 psi | No. of<br>Fixtures | Fixture<br>Value |
|-----------------------------------|-------------------------|--------------------|------------------|
| Bathtub                           | 8                       | x                  | =                |
| Bedpan Washers                    | 10                      | x                  | =                |
| Bidet                             | 2                       | x                  | =                |
| Dental Unit                       | 2                       | x                  | =                |
| Drinking Fountain - Public        | 2                       | x                  | =                |
| Kitchen Sink                      | 2.2                     | x                  | =                |
| Lavatory                          | 1.5                     | x                  | =                |
| Showerhead (Shower Only)          | 2.5                     | x                  | =                |
| Service Sink                      | 4                       | x                  | =                |
| Toilet - Flush Valve              | 35                      | x                  | =                |
| - Tank Type                       | 4                       | x                  | =                |
| Urinal - Pedestal Flush Valve     | 35                      | x                  | =                |
| - Wall Flush Valve                | 16                      | x                  | =                |
| Wash Sink (Each Set of Faucets)   | 4                       | x                  | =                |
| Dishwasher                        | 2                       | x                  | =                |
| Washing Machine                   | 6                       | x                  | =                |
| Hose (50 ft. Wash Down) - 1/2 in. | 5                       | x                  | =                |
| - 3/4 in.                         | 9                       | x                  | =                |
| - 1 in.                           | 12                      | x                  | =                |

Combined Fixture Total = 2455.5

Water-flow Demand per Fixture Value from Figure 4-2 or 4-3 x Pressure Adjustment Factor = 155 gpm  
 \*For Residual Pressures at Fixture Outlet from 60-80 psi, Pressure Adjustment Factor is 1.00 per Table 4-3

Add Irrigation - \_\_\_\_\_ Sections \* x 1.16 or 0.40† = \_\_\_\_\_ gpm  
 - \_\_\_\_\_ Hose Bibs x Fixture Value x \_\_\_\_\_ Press. Adj. Factor = \_\_\_\_\_ gpm  
 Added Fixed Load = \_\_\_\_\_ gpm  
 TOTAL FIXED DEMAND = 155 gpm

\*100 ft² area = 1 section  
 †Spray systems - Use 1.16; Rotary systems - Use 0.40

Water size chosen per Table 6-1 = 3 in.

ESTIMATING DEMANDS USING FIXTURE VALUES 33

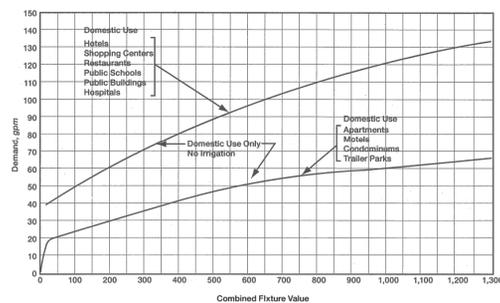


Figure 4-2 Water-flow demand per fixture value—enlarged scale from Figure 4-1

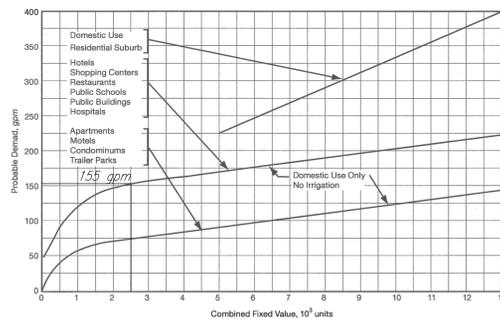


Figure 4-3 Water-flow demand per fixture value

70 SIZING WATER SERVICE LINES AND METERS

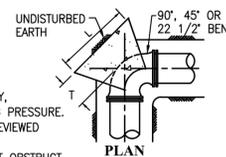
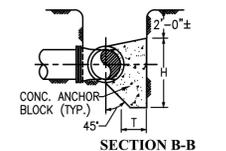
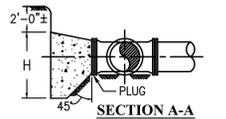
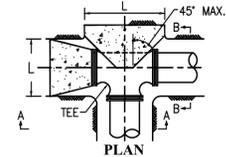
Table 6-1 AWWA meter standards

| Meter                                 | Minimum Flow Rate, gpm | Low-Normal Flow Rate, gpm | Change-over Range (Compound Meters) | High-Normal Flow Rate, gpm | Maximum Flow Rate, gpm | Head Loss at Maximum Flow, psi |
|---------------------------------------|------------------------|---------------------------|-------------------------------------|----------------------------|------------------------|--------------------------------|
| <b>Positive displacement</b>          |                        |                           |                                     |                            |                        |                                |
| 1/2 in.                               | 0.25                   | 1                         | N/A                                 | 7.5                        | 15                     | 15                             |
| 3/4 in.                               | 0.25                   | 1                         | N/A                                 | 10                         | 20                     | 15                             |
| 1 in.                                 | 0.50                   | 2                         | N/A                                 | 15                         | 30                     | 15                             |
| 1 1/4 in.                             | 0.75                   | 3                         | N/A                                 | 25                         | 50                     | 15                             |
| 1 1/2 in.                             | 1.50                   | 5                         | N/A                                 | 50                         | 100                    | 15                             |
| 2 in.                                 | 2.00                   | 8                         | N/A                                 | 80                         | 160                    | 15                             |
| <b>Multijet</b>                       |                        |                           |                                     |                            |                        |                                |
| 1/2 in.                               | 0.25                   | 1                         | N/A                                 | 10                         | 20                     | 15                             |
| 3/4 in.                               | 0.50                   | 2                         | N/A                                 | 15                         | 30                     | 15                             |
| 1 in.                                 | 0.75                   | 3                         | N/A                                 | 25                         | 50                     | 15                             |
| 1 1/2 in.                             | 1.50                   | 5                         | N/A                                 | 50                         | 100                    | 15                             |
| 2 in.                                 | 2.00                   | 8                         | N/A                                 | 80                         | 160                    | 15                             |
| <b>Turbine class II</b>               |                        |                           |                                     |                            |                        |                                |
| 1 1/2 in.                             | N/A                    | 4                         | N/A                                 | 90                         | 120                    | 7                              |
| 2 in.                                 | N/A                    | 4                         | N/A                                 | 160                        | 190                    | 7                              |
| 3 in.                                 | N/A                    | 8                         | N/A                                 | 350                        | 435                    | 7                              |
| 4 in.                                 | N/A                    | 15                        | N/A                                 | 650                        | 750                    | 7                              |
| 6 in.                                 | N/A                    | 30                        | N/A                                 | 1,400                      | 1,600                  | 7                              |
| 8 in.                                 | N/A                    | 50                        | N/A                                 | 2,400                      | 2,800                  | 7                              |
| 10 in.                                | N/A                    | 75                        | N/A                                 | 3,500                      | 4,200                  | 7                              |
| 12 in.                                | N/A                    | 120                       | N/A                                 | 4,400                      | 5,300                  | 7                              |
| 16 in.                                | N/A                    | 200                       | N/A                                 | 6,500                      | 7,800                  | 7                              |
| 20 in.                                | N/A                    | 300                       | N/A                                 | 10,000                     | 12,000                 | 7                              |
| <b>Compound class II</b>              |                        |                           |                                     |                            |                        |                                |
| 2 in.                                 | 0.25                   | 1                         | 13                                  | 80                         | 160                    | 15                             |
| 3 in.                                 | 0.50                   | 2                         | 15                                  | 175                        | 350                    | 15                             |
| 4 in.                                 | 0.75                   | 3                         | 18                                  | 300                        | 600                    | 15                             |
| 6 in.                                 | 1.50                   | 5                         | 20                                  | 675                        | 1,350                  | 15                             |
| 8 in.                                 | 2.00                   | 16                        | 35                                  | 900                        | 1,600                  | 15                             |
| <b>Fire service, type II—compound</b> |                        |                           |                                     |                            |                        |                                |
| 3 in.                                 | * see note             | 2                         | 30                                  | 250                        | 350                    | 12                             |
| 4 in.                                 | * see note             | 4                         | 40                                  | 400                        | 700                    | 12                             |
| 6 in.                                 | * see note             | 5                         | 90                                  | 900                        | 1,600                  | 12                             |
| 8 in.                                 | * see note             | 8                         | 150                                 | 1,600                      | 2,800                  | 12                             |
| 10 in.                                | * see note             | 8                         | 200                                 | 2,200                      | 4,400                  | 12                             |

Source: Data are drawn from AWWA Standards C700, C701, C702, C703, C704, C708, C710, C712, C713, and C714, latest revision. N/A = not applicable. \*Minimum flow rate is per the applicable AWWA standard for the bypass meter employed.

(Table continued on next page.)

| PIPE SIZE INCHES | DEGREE OF BEND (°) | (1) WORKING PRESSURE 175 PSI |     |      |
|------------------|--------------------|------------------------------|-----|------|
|                  |                    | L                            | H   | T    |
| 6                | 90                 | 3.0                          | 2.0 | 1.25 |
|                  | 45                 | 2.0                          | 1.5 | 1.0  |
|                  | 22.5               | 1.5                          | 1.0 | 1.0  |
| 8                | 90                 | 4.0                          | 2.5 | 1.75 |
|                  | 45                 | 2.5                          | 2.0 | 1.0  |
|                  | 22.5               | 2.0                          | 1.5 | 1.0  |
| 12               | 90                 | 5.5                          | 4.0 | 2.25 |
|                  | 45                 | 4.0                          | 3.0 | 1.5  |
|                  | 22.5               | 3.0                          | 2.0 | 1.0  |
| 16               | 90                 | 7.5                          | 5.0 | 3.25 |
|                  | 45                 | 5.0                          | 4.5 | 2.0  |
|                  | 11.25/22.5         | 4.0                          | 3.0 | 1.5  |
| 20               | 90                 | 9.5                          | 6.0 | 4.0  |
|                  | 45                 | 7.0                          | 4.5 | 2.75 |
|                  | 11.25/22.5         | 5.5                          | 3.0 | 2.0  |
| 24               | 90                 | 13.0                         | 6.5 | 5.5  |
|                  | 45                 | 9.0                          | 5.0 | 3.5  |
|                  | 11.25/22.5         | 6.0                          | 4.0 | 2.0  |



- NOTES:
- MINIMUM CONCRETE ANCHOR BLOCK DIMENSIONS IN FEET.
  - PROVIDE FORM WORK FOR ALL CONCRETE.
  - CONCRETE SHALL BE CLASS D 2000 PSI.
  - THE ABOVE TABLE IS BASED ON 2000 PSF SOIL BEARING CAPACITY, R=2PA SIN (θ/2) AND FOR A TEST PRESSURE = 1.5 x WORKING PRESSURE.
  - ANCHOR BLOCK DESIGN FOR PIPE LARGER THAN 24" SHALL BE REVIEWED ON AN INDIVIDUAL BASIS BY FAIRFAX WATER.
  - WRAP FITTINGS WITH POLYETHYLENE SHEETINGS. CONCRETE MUST NOT OBSTRUCT ACCESS TO MECHANICAL JOINT ASSEMBLY.
  - CONCRETE ANCHOR BLOCK DIMENSIONS FOR TEES TO BE SAME AS FOR 90° BENDS.
  - HEIGHT OF CONCRETE ANCHOR BLOCK ABOVE PIPE CENTERLINE IS 1/3 THE H DIMENSION.
  - BLOCKING SHALL BACK TO UNDISTURBED EARTH.



FAIRFAX WATER  
STANDARD DETAILS

SCALE:  
NOT TO SCALE

CONCRETE THRUST ANCHORS

DRAWING NO.:  
23

DATE: 7/17



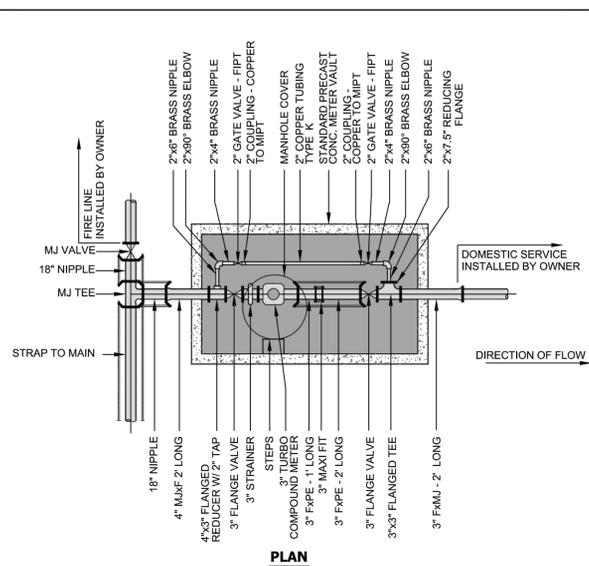
FAIRFAX WATER  
STANDARD DETAILS

SCALE:  
NOT TO SCALE

TRENCH - DUCTILE IRON PIPE

DRAWING NO.:  
12

DATE: 7/17

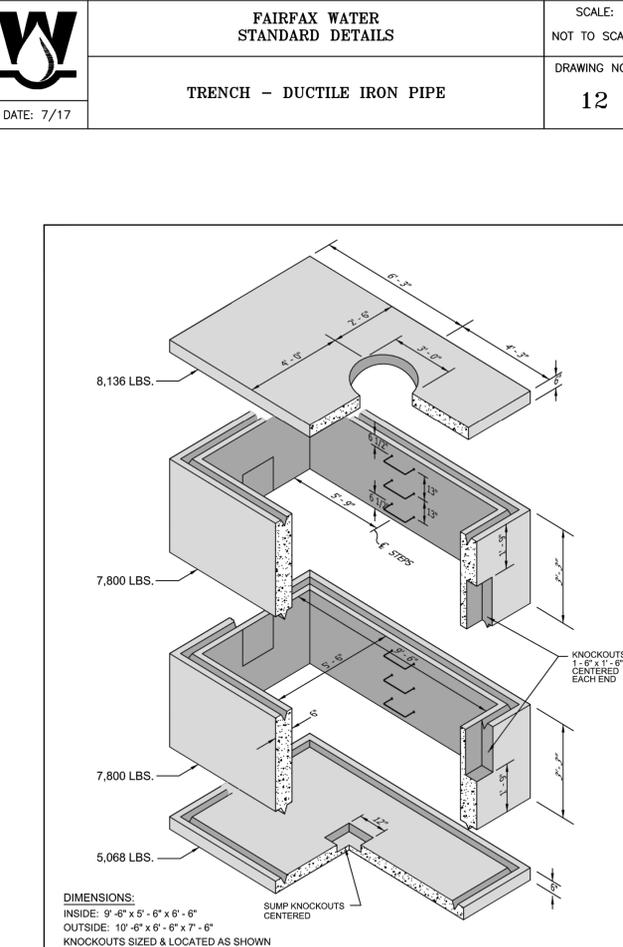


- NOTES:
- F = FLANGE JOINT, MJ = MECHANICAL JOINT, PE = PLAIN END FIPT = FEMALE IRON PIPE THREAD, MIPT = MALE IRON PIPE THREAD.
  - FOR OTHER WATER SERVICE DETAILS SEE DRAWING NO. W-8.1, W-8.3
  - PIPE FROM MAIN TO METER INSTALLATION TEE SHALL BE 4" IF NO FIRE LINE IS REQUIRED, OTHERWISE PIPE SHALL BE SAME SIZE AS FIRE LINE.
  - PIPE AND FITTING 3" AND LARGER SHALL BE DUCTILE IRON. JOINTS SHALL BE STRAPPED AS SHOWN.
  - WHEN LOOKING IN THE DIRECTION OF FLOW, STEPS SHALL BE LOCATED ON THE RIGHT HAND SIDE OF VAULT.

**WATER METER INSTALLATION  
3 INCH SERVICE**

ARLINGTON COUNTY, VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL SERVICES

Config 7/11/2013  
REVISION & DATE  
DRAWING NO. **W-9.3**



**UTILITY VAULT  
PRECAST REINFORCED CONCRETE**

ARLINGTON COUNTY, VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL SERVICES

REVISION & DATE  
DRAWING NO. **W-8.3**

**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443  
 WWW.RDAGCIVIL.COM

COMMONWEALTH OF VIRGINIA  
 JOHN D. CHAMBERS  
 Lic. No. 039407  
 2/8/22  
 PROFESSIONAL ENGINEER  
 TOWN OF VIENNA

UTILITY DETAILS  
**LOUISE ARCHER  
 ELEMENTARY SCHOOL  
 RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022  
 DESIGN: NJG/BMY  
 CHECKED BY: JDC  
 ARCH: ARCH. INC.  
 RDA JOB NUMBER: 20010  
 TOWN REFERENCE: 525873  
 SHEET NUMBER: C13.0



Dominion Energy Virginia  
11133 Fairfax Blvd, Fairfax, VA 22030  
Dominionenergy.com



February 3, 2022

Fairfax County Public Schools  
ATTN: Thanh Pham  
8115 Gatehouse Rd #3633  
Falls Church, VA 22042

Re: 324 Nutley St NW, Vienna, VA

Dear Thanh Pham:

This letter is to inform you that Dominion Energy Virginia will provide service in accordance with the terms and conditions for supplying electricity as filed with the State Corporation Commission.

Electrical service can be furnished providing all necessary easements and permits are obtained.

The cost to the customer to provide such service will be determined later, following approvals of necessary Dominion Energy Virginia construction estimates.

If you have any further questions or if I can be of any further assistance, please call me at (703) 934-6715.

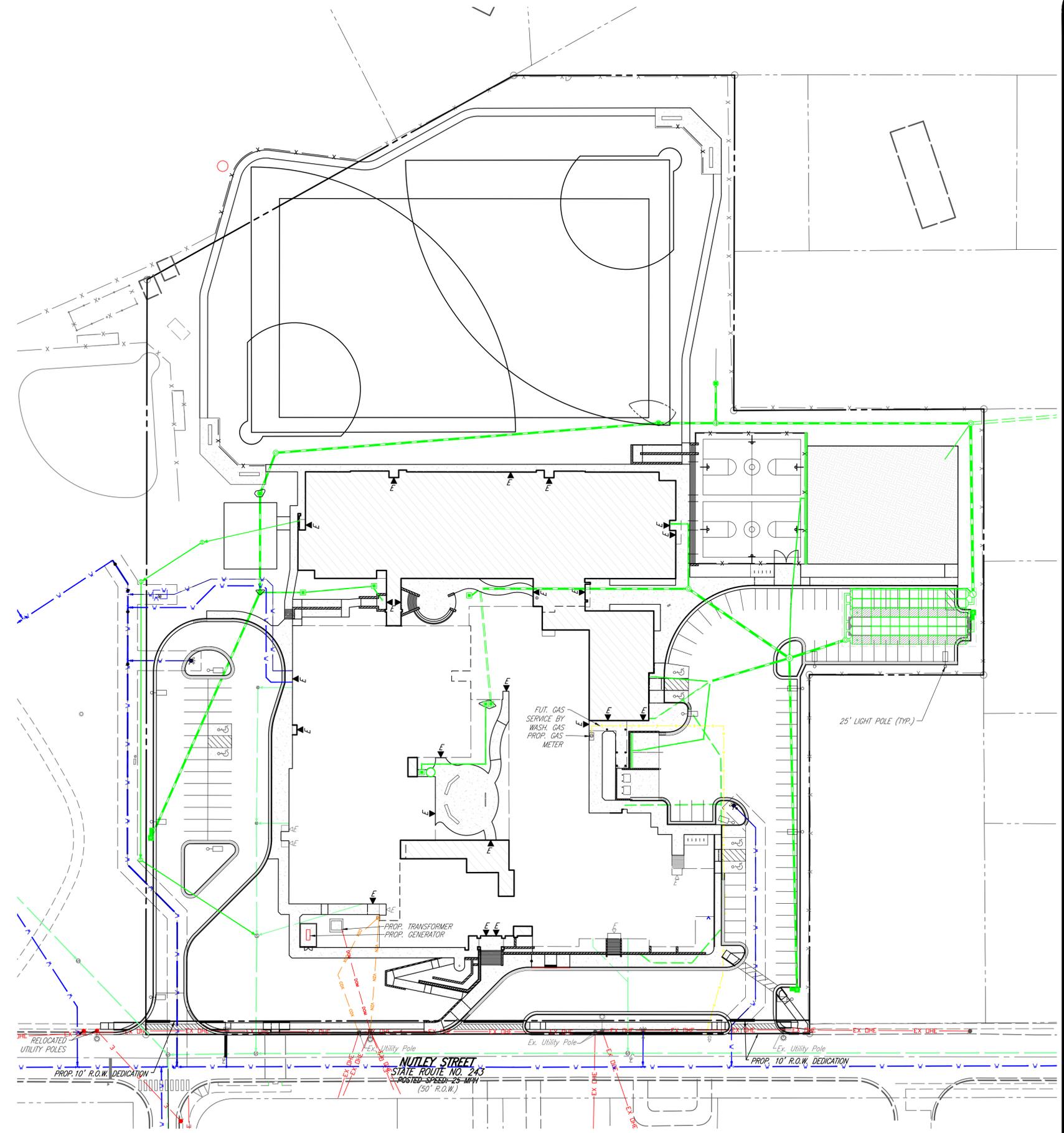
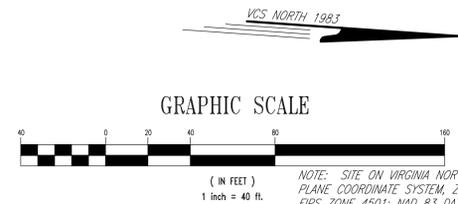
Sincerely,

*Jordan Hotaling*

Jordan Hotaling  
Customer Projects Designer II

MISS UTILITY COLOR LEGEND

|  |                         |
|--|-------------------------|
|  | ELECTRIC LINES          |
|  | TELECOMMUNICATION LINES |
|  | GAS/OIL LINES           |
|  | SEWAGE LINES            |
|  | POTABLE WATER LINES     |
|  | RECLAIMED WATER LINES   |
|  | EXCAVATION LIMITS       |



**RINKER DESIGN ASSOCIATES, P.C.**

CIVIL ENGINEERING & SURVEYING  
11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGCIVIL.COM



DRY UTILITY PLAN  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

STATE PROJ#:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C14.0            |







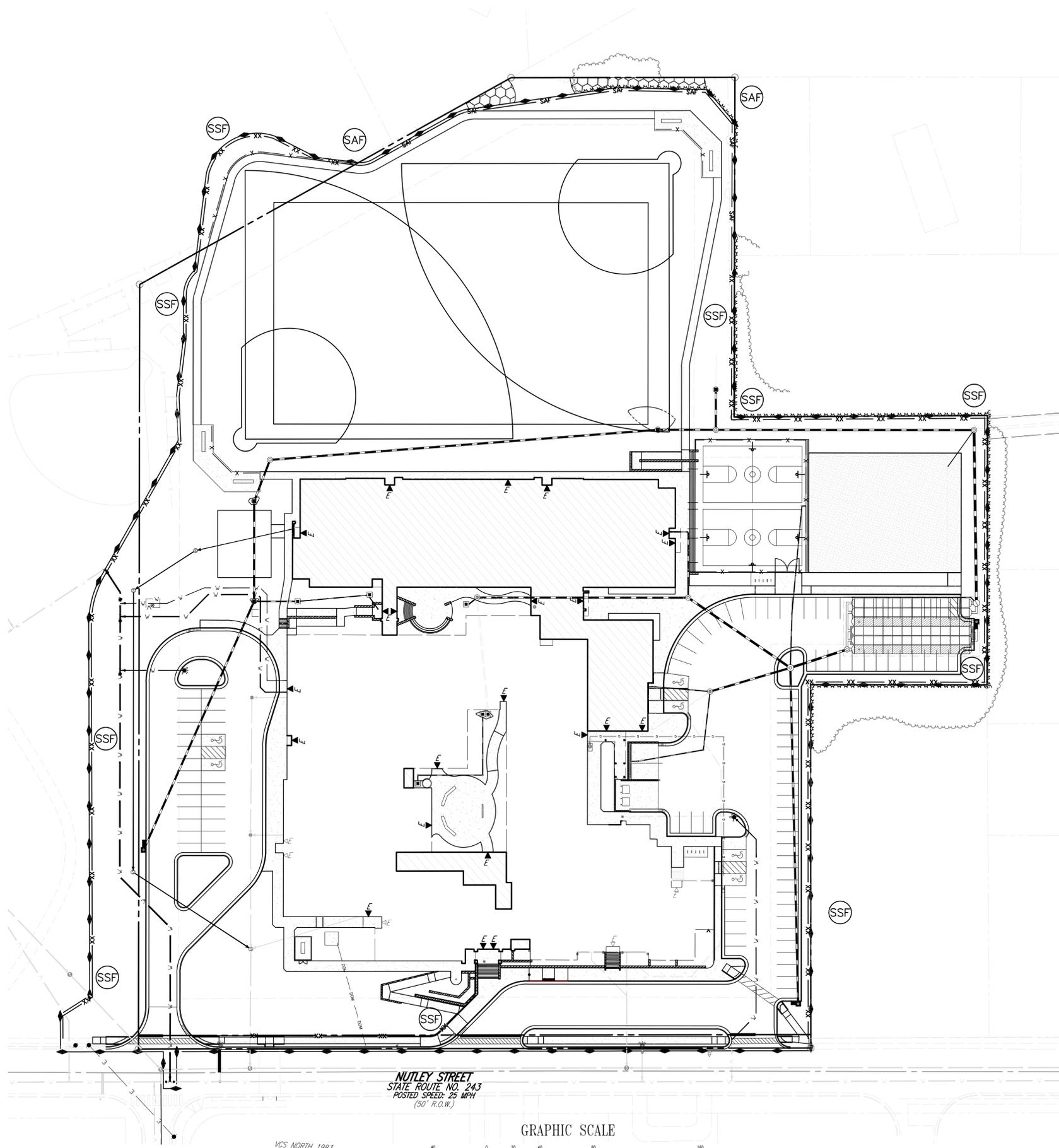
| NO.  | TITLE            | KEY | SYMBOL |
|------|------------------|-----|--------|
| 3.01 | SAFETY FENCE     | SAF |        |
| 3.05 | SILT FENCE       | SF  | X—X—X  |
|      | SUPER SILT FENCE | SSF | —XX—   |

NOTE: SUPER SILT FENCE ACTS AS TREE PROTECTION.

Legend

|  |                                                              |
|--|--------------------------------------------------------------|
|  | -CANOPY COVER PRESERVED (1,313 SQ. FT.)                      |
|  | -DENOTES SUPER SILT FENCE TO BE UTILIZED FOR TREE PROTECTION |
|  | -DENOTES LIMITS OF CLEARING AND GRADING                      |

NOTE: THE STATUS OF TREES AND REQUIRED TREE PRESERVATION ACTIVITIES MAY CHANGE BASED ON TREE CONDITION AT THE PRE-CONSTRUCTION MEETING WITH THE DEVELOPER, CONTRACTOR, PROJECT ARBORIST, AND THE TOWN OF VIENNA'S ARBORIST. FINAL DECISIONS REGARDING TREES TO REMAIN AND BE REMOVED AND REQUIRED TREE PRESERVATION ACTIVITIES SHALL BE DETERMINED AT THAT TIME BY THE TOWN ARBORIST.



**RINKER DESIGN ASSOCIATES, P.C.**  
 CIVIL ENGINEERING & SURVEYING  
 11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
 PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGVIL.COM



POST-DEVELOPMENT CANOPY COVER  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
 HUNTER MILL ELECTION DISTRICT  
 TOWN OF VIENNA

|                 |                  |
|-----------------|------------------|
| REVISIONS:      |                  |
| STATE PROJ#:    |                  |
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C15.3            |

NOTE: SITE ON VIRGINIA NORTH STATE PLANE COORDINATE SYSTEM, ZONE 551, FIPS ZONE 4501; NAD 83 DATUM

Appendix  
Development Tree Inventory  
**Louise Archer Elementary School**  
Fairfax County, Virginia  
April 26, 2021

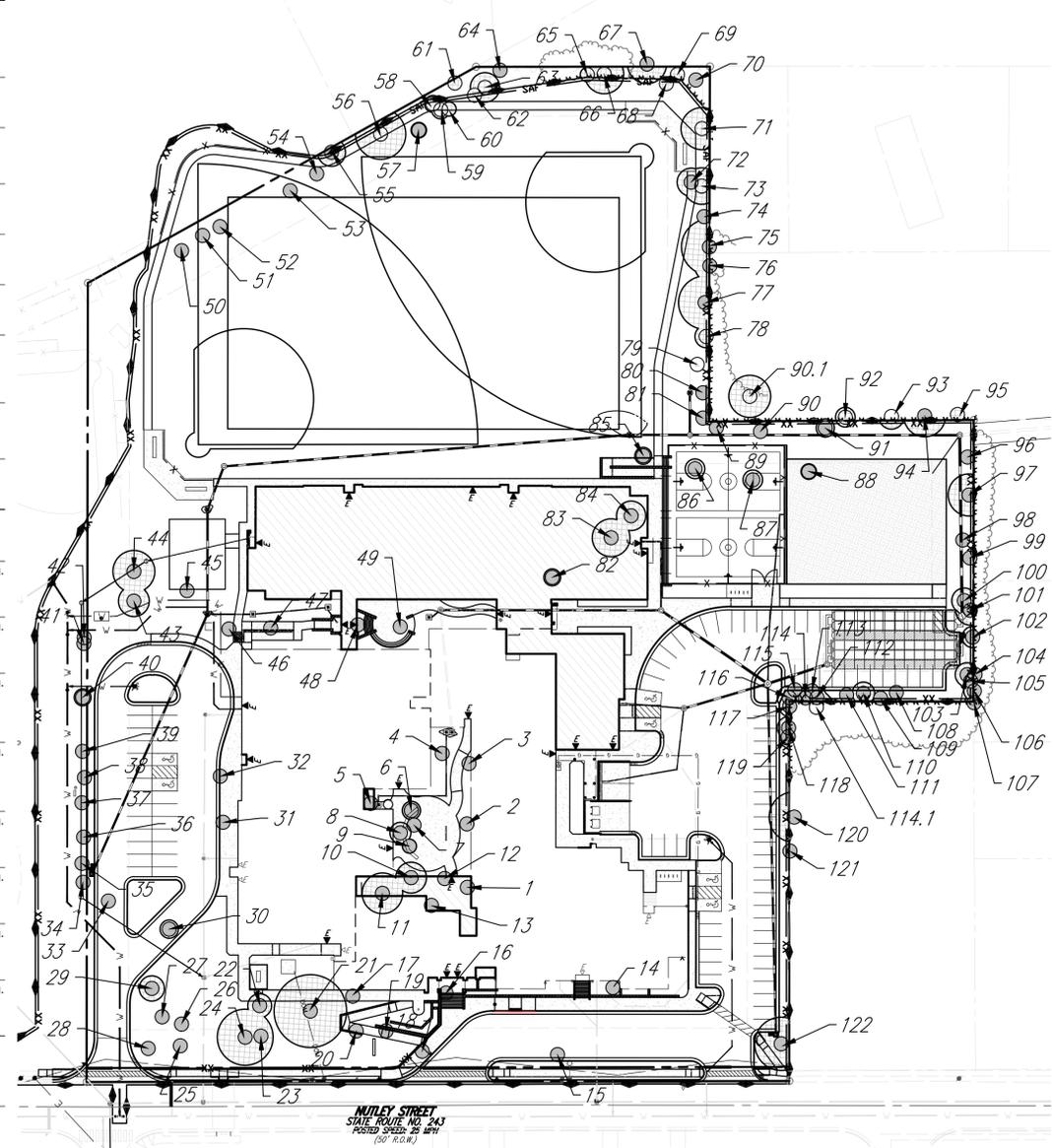
Prepared by  
**Edward P. Milhous**  
TreesPlease®

ASCA RCA #350 ISA #MA-0004A MD TE #458

| Tree # | Name                                                                         | Size      | Condition | Comment                                                                                                                                                                                                                                                                                                                                | Recommendation                                            |
|--------|------------------------------------------------------------------------------|-----------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| 1      | Japanese maple<br><i>Acer palmatum</i><br>Species Rating: 90%                | 4         | .56       | Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                                                                      | Do not save this tree... remove it when clearing.         |
| 2      | crapemyrtle<br><i>Lagerstroemia indica</i><br>Species Rating: 80%            | 5/4/4     | .6        | Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: this tree was recently topped.                                                                                                                                                                                           | Do not save this tree... remove it when clearing.         |
| 3      | Japanese maple<br><i>Acer palmatum</i><br>Species Rating: 90%                | 4         | .5        | Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                                                                      | Do not save this tree... remove it when clearing.         |
| 4      | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 6         | .5        | Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left.                                                                                                                                          | Do not save this tree... remove it when clearing.         |
| 5      | Foster's holly<br><i>Ilex x attenuata</i> 'Fosteri'<br>Species Rating: 85%   | 10/7      | .72       | Suitability for preservation: good. This tree has no chance of surviving construction.                                                                                                                                                                                                                                                 | Do not save this tree... remove it when clearing.         |
| 6      | Canadian hemlock<br><i>Tsuga canadensis</i><br>Species Rating: 55%           | 13/2      | .56       | Suitability for preservation: good. This tree has no chance of surviving construction. Hemlock woolly adelgids are present. Scale insects are present.                                                                                                                                                                                 | Do not save this tree... remove it when clearing.         |
| 7      | crapemyrtle<br><i>Lagerstroemia indica</i><br>Species Rating: 80%            | 5/5/5/4/4 | .4        | Suitability for preservation: good. This tree has no chance of surviving construction.                                                                                                                                                                                                                                                 | Do not save this tree... remove it when clearing.         |
| 8      | Canadian hemlock<br><i>Tsuga canadensis</i><br>Species Rating: 55%           | 14/15     | .56       | Suitability for preservation: good. This tree has no chance of surviving construction. Scale insects are present. Hemlock woolly adelgids are present.                                                                                                                                                                                 | Do not save this tree... remove it when clearing.         |
| 9      | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 6/8       | .72       | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                                                                                                     | Do not save this tree... remove it when clearing.         |
| 10     | eastern white pine<br><i>Pinus strobus</i><br>Species Rating: 50%            | 22        | .4        | Suitability for preservation: moderate. This tree has no chance of surviving construction. There is sparse, stunted growth of foliage in this tree. Foliage is chlorotic... that is, light green. Improperly pruned: pruning stubs were left. There is too little space for this tree.                                                 | Do not save this tree... remove it when clearing.         |
| 11     | eastern white pine<br><i>Pinus strobus</i><br>Species Rating: 50%            | 29        | .6        | Suitability for preservation: moderate. This tree has no chance of surviving construction. Storm damage is evident. This is a serious problem for this tree. Improperly pruned: pruning stubs were left. There is too little space for this tree.                                                                                      | Do not save this tree... remove it when clearing.         |
| 13     | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 4         | .4        | Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left.                                                                                                                                          | Do not save this tree... remove it when clearing.         |
| 13     | Atlantic whitecedar<br><i>Chamaecyparis thuyoides</i><br>Species Rating: 80% | 9         | .8        | Suitability for preservation: good. This tree has no chance of surviving construction.                                                                                                                                                                                                                                                 | Do not save this tree... remove it when clearing.         |
| 14     | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 6         | .2        | Suitability for preservation: poor. This tree has no chance of surviving construction. <i>Hypoxylon</i> spp. fungus evident: that stem is dead or dying.                                                                                                                                                                               | Do not save this tree... remove it when clearing.         |
| 15     | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 5/5/4     | .5        | Suitability for preservation: good. Its chance of surviving planned construction is good. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left.                                                                                                                                           | This tree is to be saved.<br>(THIS TREE IS TO BE REMOVED) |
| 16     | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 6         | .5        | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left. Dying back... usually from disease or root system decline. This tree's growth is mostly on one side.                                         | Do not save this tree... remove it when clearing.         |
| 17     | flowering dogwood<br><i>Cornus florida</i><br>Species Rating: 65%            | 8         | .5        | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left. This tree's growth is mostly on one side.                                                                                                    | Do not save this tree... remove it when clearing.         |
| 18     | kousa dogwood<br><i>Cornus kousa</i><br>Species Rating: 90%                  | 4/4/4/4/4 | .56       | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                                                                          | Do not save this tree... remove it when clearing.         |
| 19     | crabapple<br><i>Malus</i> spp.<br>Species Rating: 75%                        | 4/2/2/2/2 | .64       | Suitability for preservation: good. Stem and buttress roots are buried in soil and/or mulch. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                                                                    | Do not save this tree... remove it when clearing.         |
| 20     | flowering cherry<br><i>Prunus serrulata</i><br>Species Rating: 60%           | 6/6/5/4   | .24       | Suitability for preservation: poor. Dying back... usually from disease or root system decline. Canker diseases are evident. Stem and buttress roots are buried in soil and/or mulch.                                                                                                                                                   | Do not save this tree... remove it when clearing.         |
| 21     | red maple<br><i>Acer rubrum</i><br>Species Rating: 80%                       | 52        | .48       | Suitability for preservation: good. This tree has no chance of surviving construction. <b>DANGER!</b> Large pieces of wood could fall at any time. This tree is, or has been a feeding station for sap suckers. Improperly pruned: overpruned... it was "skinned out." Stem and buttress roots are buried in soil and/or mulch.        | Do not save this tree... remove it when clearing.         |
| 22     | red maple<br><i>Acer rubrum</i><br>Species Rating: 80%                       | 17        | .48       | Suitability for preservation: moderate. This tree has no chance of surviving construction. <i>Kretzschmaria</i> fungus fruiting bodies... indicates decay. <b>DANGER!</b> Large pieces of wood could fall at any time. Improperly pruned: overpruned... it was "skinned out." Stem and buttress roots are buried in soil and/or mulch. | Do not save this tree... remove it when clearing.         |
| 23     | black cherry<br><i>Prunus serotina</i><br>Species Rating: 60%                | 17        | .64       | Suitability for preservation: good. This tree has no chance of surviving construction. Stem and buttress roots are buried in soil and/or mulch. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                 | Do not save this tree... remove it when clearing.         |

\* -FCPS WILL CONTACT OWNER, SEE TREE PRESERVATION NOTES 14 & 15 ON SHEET C.15.1.

|    |                                                                                      |             |      |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                            |
|----|--------------------------------------------------------------------------------------|-------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24 | red maple<br><i>Acer rubrum</i><br>Species Rating: 80%                               | 40          | .56  | Suitability for preservation: moderate. This tree has no chance of surviving construction. Included bark is evident. This is a serious problem for this tree. Stem and buttress roots are buried in soil and/or mulch. Improperly pruned: overpruned... it was "skinned out."         | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 25 | shadbush<br><i>Amelanchier arborea</i><br>Species Rating: 90%                        | 4/2/2       | .8   | Suitability for preservation: good. This tree has no chance of surviving construction. Stem and buttress roots are buried in soil and/or mulch.                                                                                                                                       | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 26 | southern magnolia<br><i>Magnolia grandiflora</i><br>Species Rating: 80%              | 4           | .76  | Suitability for preservation: good. This tree has no chance of surviving construction. Has died back in the past... but seems to be recovering. Stem and buttress roots are buried in soil and/or mulch.                                                                              | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 27 | shadbush<br><i>Amelanchier arborea</i><br>Species Rating: 90%                        | 3/3/2/2/2   | .8   | Suitability for preservation: good. This tree has no chance of surviving construction. Stem and buttress roots are buried in soil and/or mulch.                                                                                                                                       | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 28 | Oriental arborvitae<br><i>Thuja orientalis</i><br>(16 plants)<br>Species Rating: 60% | 4           | .8   | These trees would be desirable in the new setting. These trees have no chance of surviving construction.                                                                                                                                                                              | Do not save these trees... remove them when clearing.                                                                                                                                                                      |
| 29 | white mulberry<br><i>Morus alba</i><br>Species Rating: 30%                           | 16/16/15/18 | .64  | Suitability for preservation: poor. This tree has no chance of surviving construction. One of the worst invasive exotics, it is an undesirable tree.                                                                                                                                  | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 30 | red maple<br><i>Acer rubrum</i><br>Species Rating: 80%                               | 13          | .64  | Suitability for preservation: good. This tree has no chance of surviving construction. Basal sprouts are present. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left.                                                                  | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 31 | Japanese maple<br><i>Acer palmatum</i><br>Species Rating: 90%                        | 3/3         | .4   | Suitability for preservation: moderate. Leave plants alone if you don't have permission to cut. Improperly pruned: overpruned... it was "skinned out." Mowers are damaging this tree's trunk and/or roots.                                                                            | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 32 | Japanese maple<br><i>Acer palmatum</i><br>Species Rating: 90%                        | 6           | .56  | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                         | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 33 | eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%                 | 7           | .64  | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                                                    | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 34 | * Oriental arborvitae<br><i>Thuja orientalis</i><br>Species Rating: 60%              | 4           | 2.74 | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 35 | * eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%               | 6/4         | .72  | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 36 | * sassafras<br><i>Sassafras albidum</i><br>Species Rating: 60%                       | 3/3/3/3/3   | .8   | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. It may have grown from stump sprouts of a previous tree. Improperly pruned: pruning stubs were left.                                                       | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 37 | * eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%               | 6           | .72  | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. There is sparse growth of foliage in this tree. Assorted vines are attached to this tree's trunk.                                                          | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 38 | * black cherry<br><i>Prunus serotina</i><br>Species Rating: 60%                      | 2/2/2/2/2   | .72  | It is not clear whose tree this is. Suitability for preservation: moderate. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                 | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 39 | * eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%               | 8/8         | .76  | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 40 | * eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%               | 12/5        | .8   | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 41 | * eastern redbud<br><i>Juniperus virginiana</i><br>Species Rating: 90%               | 10          | .8   | It is not clear whose tree this is. Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left.                                                                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 42 | * black cherry<br><i>Prunus serotina</i><br>Species Rating: 60%                      | 6           | .6   | It is not clear whose tree this is. Suitability for preservation: moderate. This tree has no chance of surviving construction. Dead branches in this tree's crown are a minor problem. This tree crowds a better tree.                                                                | Determine whose tree this is before removing or pruning. Leave plants alone if you don't have permission to cut. Discuss the project plan and this tree with its owners. Do not save this tree... remove it when clearing. |
| 43 | Virginia pine<br><i>Pinus virginiana</i><br>Species Rating: 50%                      | 22          | .68  | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: pruning stubs were left. Mowers are damaging this tree's trunk and/or roots.                                                                                                | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 44 | black gum<br><i>Nyssa sylvatica</i><br>Species Rating: 90%                           | 30          | .76  | Suitability for preservation: good. This tree has no chance of surviving construction. Dead branches in this tree's crown are a minor problem.                                                                                                                                        | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 45 | flowering plum<br><i>Prunus cerasifera</i><br>Species Rating: 50%                    | 5/5/4/4/4   | 0    | Suitability for preservation: poor. This tree has no chance of surviving construction. This tree is dead.                                                                                                                                                                             | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 46 | redbud<br><i>Cercis canadensis</i><br>Species Rating: 80%                            | 4           | .48  | Suitability for preservation: poor. This tree has no chance of surviving construction. <i>Hypoxylon</i> spp. fungus evident: that stem is dead or dying. Improperly pruned: overpruned... it was "skinned out." Improperly pruned: pruning stubs were left.                           | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 47 | redbud<br><i>Cercis canadensis</i><br>Species Rating: 80%                            | 5           | .6   | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Mowers are damaging this tree's trunk and/or roots. This is a severe problem for this tree! Improperly pruned: pruning stubs were left. | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 48 | redbud<br><i>Cercis canadensis</i><br>Species Rating: 80%                            | 8           | .56  | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out." Mowers are damaging this tree's trunk and/or roots. This is a severe problem for this tree! Improperly pruned: pruning stubs were left. | Do not save this tree... remove it when clearing.                                                                                                                                                                          |
| 49 | crapemyrtle<br><i>Lagerstroemia indica</i><br>Species Rating: 80%                    | 4/4         | .72  | Suitability for preservation: good. This tree has no chance of surviving construction. Improperly pruned: overpruned... it was "skinned out."                                                                                                                                         | Do not save this tree... remove it when clearing.                                                                                                                                                                          |



LOUISE ARCHER ELEMENTARY SCHOOL  
TREE PRESERVATION NARRATIVE/ACTIVITIES

- A PRE-CONSTRUCTION MEETING SHALL BE HELD ON-SITE TO EXPLAIN PROTECTION MEASURES TO OPERATORS, CONSTRUCTION SUPERVISORS, OR CONTRACTOR'S REPRESENTATIVES WITH THE TOWN ARBORIST OR THEIR REPRESENTATIVE.
- CONTRACTOR ON THE SITE SHALL STAKE CLEARING LIMITS IN ORDER TO FACILITATE LOCATION FOR TRENCING AND FENCING INSTALLATION FOR TREE PROTECTION.
- NO CLEARING OR GRADING SHALL BEGIN IN AREAS WHERE TREE PRESERVATION MEASURES HAVE NOT BEEN COMPLETED.
- THE SEQUENCE OF TREE PRESERVATION MEASURES, IF REQUIRED, SHALL BE AS FOLLOWS:  
A. ROOT PRUNING TRENCING; C. TREE PRUNING AND CHEMICAL TREATMENT;  
B. TREE PROTECTION FENCING; D. AERATION SYSTEMS INSTALLED; E. THE PRECEDING MEASURES SHALL BE DIRECTED IN THE FIELD BY THE CONSTRUCTION SUPERVISOR.
- TREE PROTECTION FENCING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION. NO ALTERATION SHALL OCCUR WITHOUT PRIOR APPROVAL BY A TOWN REPRESENTATIVE.
- ACCESS TO FENCED PRESERVATION AREAS BY CONSTRUCTION EQUIPMENT AND MATERIALS WILL NOT BE ALLOWED. ONLY LIMITED ACCESS, IF NECESSARY, SHALL BE PERMITTED WITH THE PRIOR APPROVAL OF THE TOWN INSPECTOR.
- ALL DESIGNATED AERATION ZONES SHALL BE PROTECTED WITH TEMPORARY FENCING UNTIL FINAL GRADING.
- REMOVAL OF TREES, SHRUBS, OR UNDERGROWTH FROM PROTECTED AREAS SHALL BE PERFORMED ONLY WHEN NECESSARY AND WITH HAND TOOLS ONLY.
- ATTACHMENT OF ANY CONSTRUCTION SIGNS, FENCING, ETC. TO ANY TREE TO BE SAVED IS STRICTLY PROHIBITED.
- UPON CONSTRUCTION COMPLETION, ALL TEMPORARY BARRIERS, FENCING, DEBRIS, ETC. SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
- ALL REQUIRED PROTECTIVE FENCING SHALL BE INSTALLED ALONG THE CLEARING DISTURBANCE LIMITS OF THE SITE.
- PROTECTIVE FENCING SHALL BE INSTALLED ALONG THE EDGE OF ALL CRITICAL ROOT ZONES OF SAVED AND IMPACTED TREES WITHIN THE DISTURBED AREAS.

| NO.  | TITLE            | KEY | SYMBOL                                                |
|------|------------------|-----|-------------------------------------------------------|
| 3.01 | SAFETY FENCE     | SAF | (Symbol: Solid line with inward-pointing triangles)   |
| 3.05 | SILT FENCE       | SF  | (Symbol: Dashed line with inward-pointing triangles)  |
|      | SUPER SILT FENCE | SSF | (Symbol: Dashed line with outward-pointing triangles) |

NOTE: SUPER SILT FENCE ACTS AS TREE PROTECTION.

**Legend**

- (Symbol: Solid circle) - DENOTES TREES TO BE REMOVED
- (Symbol: Dotted circle) - DENOTES CRITICAL ROOT ZONE
- (Symbol: Dashed line with outward-pointing triangles) - DENOTES SUPER SILT FENCE TO BE UTILIZED FOR TREE PROTECTION
- (Symbol: Solid line with inward-pointing triangles) - DENOTES LIMITS OF CLEARING AND GRADING

THIS TREE PRESERVATION PLAN WAS PREPARED BASED OFF OF INFORMATION PROVIDED BY EDWARD P. MILHOUS. MR. MILHOUS IS A REGISTERED CONSULTING ARBORIST THROUGH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS (#350). MR. MILHOUS IS ALSO A CERTIFIED ARBORIST REGISTERED WITH THE INTERNATIONAL SOCIETY OF ARBORICULTURE (#MA-0004A).



NOTE: SITE ON VIRGINIA NORTH STATE PLANE COORDINATE SYSTEM, ZONE 551, FIPS ZONE 4501; NAD 83 DATUM

**RINKER DESIGN ASSOCIATES, P.C.**  
CIVIL ENGINEERING & SURVEYING  
11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109  
PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDACVILL.COM



TREE PRESERVATION PLAN  
**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
HUNTER HILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

|                 |                  |
|-----------------|------------------|
| DATE:           | FEBRUARY 8, 2022 |
| DESIGN:         | NJG/BMY          |
| CHECKED BY:     | JDC              |
| ARCH:           | ARCH. INC.       |
| RDA JOB NUMBER: | 20010            |
| TOWN REFERENCE: | 525873           |
| SHEET NUMBER:   | C.15.4           |

Appendix Development Tree Inventory Louise Archer Elementary School, Fairfax County, Virginia April 26, 2021

Table with columns: Tree #, Name, Size, Condition, Comment, Recommendation. Lists various tree species like Ailanthus altissima, Morus alba, and Robinia pseudoacacia with their respective ratings and preservation notes.

\* -FCPS WILL CONTACT OWNER, SEE TREE PRESERVATION NOTES 14 & 15 ON SHEET C.15.1 -

Appendix Development Tree Inventory Louise Archer Elementary School, Fairfax County, Virginia April 26, 2021

Table with columns: Tree #, Name, Size, Condition, Comment, Recommendation. Lists various tree species like Morus alba, Robinia pseudoacacia, and Quercus phellos with their respective ratings and preservation notes.

Appendix Development Tree Inventory Louise Archer Elementary School, Fairfax County, Virginia April 26, 2021

Table with columns: Tree #, Name, Size, Condition, Comment, Recommendation. Lists various tree species like Juglans nigra, Prunus serotina, and Quercus falcata with their respective ratings and preservation notes.



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TREE PRESERVATION PLAN
LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION
HUNTER HILL ELECTION DISTRICT TOWN OF VIENNA

REVISIONS:

STATE PROJ#:

DATE: FEBRUARY 8, 2022
DESIGN: NJG/BMY
CHECKED BY: JDC
ARCH: ARCH. INC.
RDA JOB NUMBER: 20010
TOWN REFERENCE: 525873
SHEET NUMBER: C15.9

THIS TREE PRESERVATION PLAN WAS PREPARED BASED OFF OF INFORMATION PROVIDED BY EDWARD P. MILHOUS, MR. MILHOUS IS A REGISTERED CONSULTING ARBORIST THROUGH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS (#350). MR. MILHOUS IS ALSO A CERTIFIED ARBORIST REGISTERED WITH THE INTERNATIONAL SOCIETY OF ARBORICULTURE (#MA-0004A).



**D-Series Size 1 LED Area Luminaire**

**Specifications**

Height: 1.01 ft (308mm)

Length: 33" (838mm)

Width: 13" (330mm)

Height H1: 7.1/2" (181mm)

Height H2: 3.1/2" (89mm)

Weight (max): 27 lbs (12.7kg)

**Ordering Information**

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRRH DBDDB

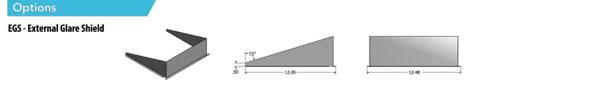
| Series   | LED                                | Color temperature | Distribution       | Voltage | Mounting                         |
|----------|------------------------------------|-------------------|--------------------|---------|----------------------------------|
| DSX1 LED | Forward optics                     | 30K 2000K         | T15 Type I short   | 120V    | WVOLT <sup>1</sup>               |
|          | P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 | 40K 3000K         | T25 Type II short  | 277V    | XVOLT (277V-480V) <sup>1,2</sup> |
|          | Reverse optics                     | 30K 2000K         | T35 Type III short | 120V    | WBA Wall bracket <sup>3</sup>    |

| Control options                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Other options                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish options                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Shipped installed</b><br>NZMRZ 4-8 ft. 48 generation 2 enabled <sup>11</sup><br>PIRNH Network, high/low motion/ambient sensor <sup>12</sup><br>PER Network, high/low motion/ambient sensor <sup>12</sup><br>PEES Two pin receptacle only (ambros ordered separately) <sup>14</sup><br>PE7 Seven pin receptacle only (ambros ordered separately) <sup>14</sup><br>DMG 0-10V dimming wire pulled outside fixture (use with an external control, ordered separately) <sup>15</sup><br>DS Dual switching <sup>16,17</sup> | FR High/low, motion/ambient sensor 0-15' mounting height, ambient sensor enabled at 5L <sup>12</sup><br>PIRH High/low, motion/ambient sensor 15-30' mounting height, ambient sensor enabled at 5L <sup>12</sup><br>PIRHCV High/low, motion/ambient sensor 0-15' mounting height, ambient sensor enabled at 5L <sup>12</sup><br>PIRHCV Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5L <sup>12</sup><br>FAO Field adjustable output <sup>18</sup> | DBDDB Dark bronze<br>DBDDB Black<br>DNADD Natural aluminum<br>DWDD White<br>DEBDD Textured dark bronze<br>DEBDD Textured black<br>DNADD Textured natural aluminum<br>DWDD Textured white<br>ES 603 spikes <sup>19</sup><br>EG External glare shield |

**Accessories**

NOTES:

1. Not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
2. P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11 are not available together.
3. Any Type 3 distributor with protrusion, is not available with WBA.
4. Not available with DBDDB.
5. WBA is not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
6. WBA is only available for use with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
7. WBA is not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
8. WBA is not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
9. WBA is not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
10. WBA is not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
11. Not available with P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11.
12. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
13. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
14. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
15. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
16. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
17. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
18. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).
19. Motion sensor must be ordered as a separate accessory, see Accessories Information. For use with 2.3" diameter metal arm (not included).



**Drilling**

**HANDHOLE ORIENTATION**

**Tenon Mounting Slipfitter**

| Slipfitter Size | Mounting | Single Hole | 2-1/8" | 2-1/4" | 2-1/2" | 2-3/4" | 3-1/8" | 3-1/4" | 3-1/2" | 3-3/4" | 4-1/8" | 4-1/4" | 4-1/2" | 4-3/4" | 5-1/8" | 5-1/4" | 5-1/2" | 5-3/4" | 6-1/8" | 6-1/4" | 6-1/2" | 6-3/4" | 7-1/8" | 7-1/4" | 7-1/2" | 7-3/4" | 8-1/8" | 8-1/4" | 8-1/2" | 8-3/4" | 9-1/8" | 9-1/4" | 9-1/2" | 9-3/4" | 10-1/8" | 10-1/4" | 10-1/2" | 10-3/4" | 11-1/8" | 11-1/4" | 11-1/2" | 11-3/4" | 12-1/8" | 12-1/4" | 12-1/2" | 12-3/4" | 13-1/8" | 13-1/4" | 13-1/2" | 13-3/4" | 14-1/8" | 14-1/4" | 14-1/2" | 14-3/4" | 15-1/8" | 15-1/4" | 15-1/2" | 15-3/4" | 16-1/8" | 16-1/4" | 16-1/2" | 16-3/4" | 17-1/8" | 17-1/4" | 17-1/2" | 17-3/4" | 18-1/8" | 18-1/4" | 18-1/2" | 18-3/4" | 19-1/8" | 19-1/4" | 19-1/2" | 19-3/4" | 20-1/8" | 20-1/4" | 20-1/2" | 20-3/4" | 21-1/8" | 21-1/4" | 21-1/2" | 21-3/4" | 22-1/8" | 22-1/4" | 22-1/2" | 22-3/4" | 23-1/8" | 23-1/4" | 23-1/2" | 23-3/4" | 24-1/8" | 24-1/4" | 24-1/2" | 24-3/4" | 25-1/8" | 25-1/4" | 25-1/2" | 25-3/4" | 26-1/8" | 26-1/4" | 26-1/2" | 26-3/4" | 27-1/8" | 27-1/4" | 27-1/2" | 27-3/4" | 28-1/8" | 28-1/4" | 28-1/2" | 28-3/4" | 29-1/8" | 29-1/4" | 29-1/2" | 29-3/4" | 30-1/8" | 30-1/4" | 30-1/2" | 30-3/4" | 31-1/8" | 31-1/4" | 31-1/2" | 31-3/4" | 32-1/8" | 32-1/4" | 32-1/2" | 32-3/4" | 33-1/8" | 33-1/4" | 33-1/2" | 33-3/4" | 34-1/8" | 34-1/4" | 34-1/2" | 34-3/4" | 35-1/8" | 35-1/4" | 35-1/2" | 35-3/4" | 36-1/8" | 36-1/4" | 36-1/2" | 36-3/4" | 37-1/8" | 37-1/4" | 37-1/2" | 37-3/4" | 38-1/8" | 38-1/4" | 38-1/2" | 38-3/4" | 39-1/8" | 39-1/4" | 39-1/2" | 39-3/4" | 40-1/8" | 40-1/4" | 40-1/2" | 40-3/4" | 41-1/8" | 41-1/4" | 41-1/2" | 41-3/4" | 42-1/8" | 42-1/4" | 42-1/2" | 42-3/4" | 43-1/8" | 43-1/4" | 43-1/2" | 43-3/4" | 44-1/8" | 44-1/4" | 44-1/2" | 44-3/4" | 45-1/8" | 45-1/4" | 45-1/2" | 45-3/4" | 46-1/8" | 46-1/4" | 46-1/2" | 46-3/4" | 47-1/8" | 47-1/4" | 47-1/2" | 47-3/4" | 48-1/8" | 48-1/4" | 48-1/2" | 48-3/4" | 49-1/8" | 49-1/4" | 49-1/2" | 49-3/4" | 50-1/8" | 50-1/4" | 50-1/2" | 50-3/4" |
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**DSX1 Area Luminaire - EPA**

| Mounting Type | Drilling Template | Single | 2-1/8" | 2-1/4" | 2-1/2" | 2-3/4" | 3-1/8" | 3-1/4" | 3-1/2" | 3-3/4" | 4-1/8" | 4-1/4" | 4-1/2" | 4-3/4" | 5-1/8" | 5-1/4" | 5-1/2" | 5-3/4" | 6-1/8" | 6-1/4" | 6-1/2" | 6-3/4" | 7-1/8" | 7-1/4" | 7-1/2" | 7-3/4" | 8-1/8" | 8-1/4" | 8-1/2" | 8-3/4" | 9-1/8" | 9-1/4" | 9-1/2" | 9-3/4" | 10-1/8" | 10-1/4" | 10-1/2" | 10-3/4" | 11-1/8" | 11-1/4" | 11-1/2" | 11-3/4" | 12-1/8" | 12-1/4" | 12-1/2" | 12-3/4" | 13-1/8" | 13-1/4" | 13-1/2" | 13-3/4" | 14-1/8" | 14-1/4" | 14-1/2" | 14-3/4" | 15-1/8" | 15-1/4" | 15-1/2" | 15-3/4" | 16-1/8" | 16-1/4" | 16-1/2" | 16-3/4" | 17-1/8" | 17-1/4" | 17-1/2" | 17-3/4" | 18-1/8" | 18-1/4" | 18-1/2" | 18-3/4" | 19-1/8" | 19-1/4" | 19-1/2" | 19-3/4" | 20-1/8" | 20-1/4" | 20-1/2" | 20-3/4" | 21-1/8" | 21-1/4" | 21-1/2" | 21-3/4" | 22-1/8" | 22-1/4" | 22-1/2" | 22-3/4" | 23-1/8" | 23-1/4" | 23-1/2" | 23-3/4" | 24-1/8" | 24-1/4" | 24-1/2" | 24-3/4" | 25-1/8" | 25-1/4" | 25-1/2" | 25-3/4" | 26-1/8" | 26-1/4" | 26-1/2" | 26-3/4" | 27-1/8" | 27-1/4" | 27-1/2" | 27-3/4" | 28-1/8" | 28-1/4" | 28-1/2" | 28-3/4" | 29-1/8" | 29-1/4" | 29-1/2" | 29-3/4" | 30-1/8" | 30-1/4" | 30-1/2" | 30-3/4" | 31-1/8" | 31-1/4" | 31-1/2" | 31-3/4" | 32-1/8" | 32-1/4" | 32-1/2" | 32-3/4" | 33-1/8" | 33-1/4" | 33-1/2" | 33-3/4" | 34-1/8" | 34-1/4" | 34-1/2" | 34-3/4" | 35-1/8" | 35-1/4" | 35-1/2" | 35-3/4" | 36-1/8" | 36-1/4" | 36-1/2" | 36-3/4" | 37-1/8" | 37-1/4" | 37-1/2" | 37-3/4" | 38-1/8" | 38-1/4" | 38-1/2" | 38-3/4" | 39-1/8" | 39-1/4" | 39-1/2" | 39-3/4" | 40-1/8" | 40-1/4" | 40-1/2" | 40-3/4" | 41-1/8" | 41-1/4" | 41-1/2" | 41-3/4" | 42-1/8" | 42-1/4" | 42-1/2" | 42-3/4" | 43-1/8" | 43-1/4" | 43-1/2" | 43-3/4" | 44-1/8" | 44-1/4" | 44-1/2" | 44-3/4" | 45-1/8" | 45-1/4" | 45-1/2" | 45-3/4" | 46-1/8" | 46-1/4" | 46-1/2" | 46-3/4" | 47-1/8" | 47-1/4" | 47-1/2" | 47-3/4" | 48-1/8" | 48-1/4" | 48-1/2" | 48-3/4" | 49-1/8" | 49-1/4" | 49-1/2" | 49-3/4" | 50-1/8" | 50-1/4" | 50-1/2" | 50-3/4" |
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**WST LED Architectural Wall Sconce**

**Specifications**

Luminaire Height: 8-1/2" (216mm)

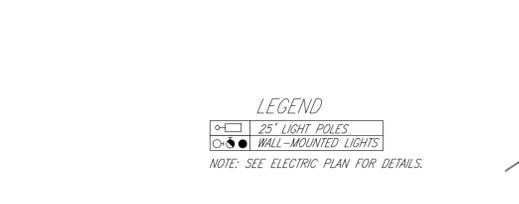
Width: 17" (430mm)

Depth: 10-3/4" (273mm)

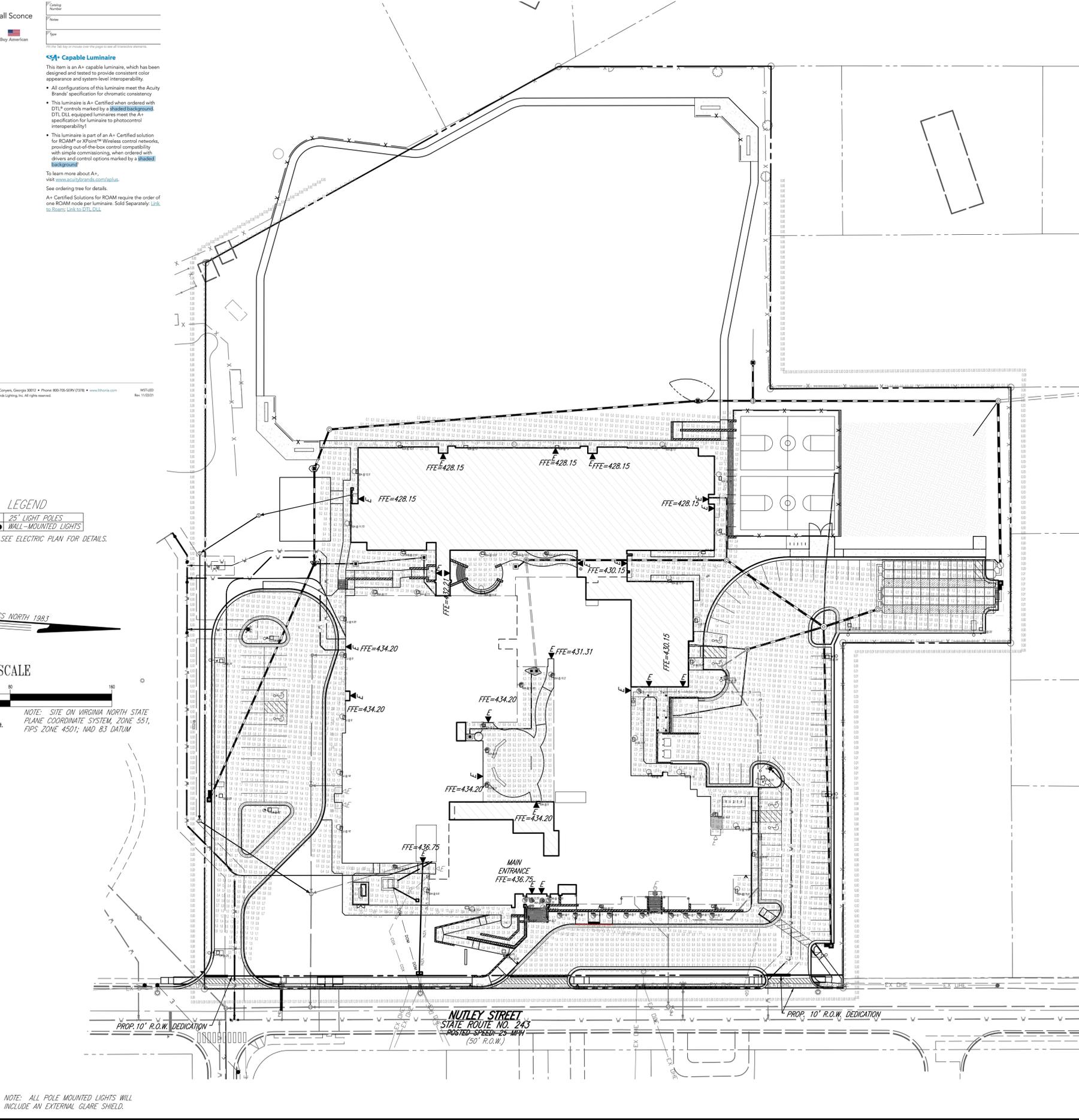
Weight: 20 lbs (9.1kg)



LITHONIA LIGHTING COMMERCIAL OUTDOOR One Lithonia Way • Conyers, Georgia 30012 • Phone: 800-755-5579 • www.lithonia.com WSTLED Rev. 11/2021



| TYPE | MANUFACTURER  | CATALOG NO.                                                                                | NO. | LAMPS | WATTS    | VOLTS | MOUNTING | REMARKS |                                                                                                     |
|------|---------------|--------------------------------------------------------------------------------------------|-----|-------|----------|-------|----------|---------|-----------------------------------------------------------------------------------------------------|
| C3   | CREE          | TM1-ES4-LED-D-U-T3-B2-7030 complete with UNITED LIGHTING STANDARDS, INC. 'SSA' series pole |     | LED   | 107-135W | 102   | 277      | POLE    | IES TYPE II W/ NOMINAL 3000K COLOR TEMP. 25 POLES W/ VIBRATION DAMPERS LUMINAIRES SPECIFIED FOR 27V |
|      | COOPER        | GL18-DM-3-105LA-WV-UNV-BRP complete with UNITED LIGHTING STANDARDS, INC. 'SSA' series pole |     | LED   | 107-135W | 102   | 277      | POLE    | IES TYPE II W/ NOMINAL 3000K COLOR TEMP. 25 POLES W/ VIBRATION DAMPERS LUMINAIRES SPECIFIED FOR 27V |
|      | GARDCO        | GL18-DM-3-105LA-WV-UNV-BRP complete with UNITED LIGHTING STANDARDS, INC. 'SSA' series pole |     | LED   | 107-135W | 102   | 277      | POLE    | IES TYPE II W/ NOMINAL 3000K COLOR TEMP. 25 POLES W/ VIBRATION DAMPERS LUMINAIRES SPECIFIED FOR 27V |
|      | GENERAL ELEC. | EAL5030F3AN730NAD10K82 complete with VALMONT '2500' series pole                            |     | LED   | 107-135W | 102   | 277      | POLE    | IES TYPE II W/ NOMINAL 3000K COLOR TEMP. 25 POLES W/ VIBRATION DAMPERS LUMINAIRES SPECIFIED FOR 27V |



**RINKER DESIGN ASSOCIATES, P.C.**

CIVIL ENGINEERING & SURVEYING

11100 ENDEAVOR COURT, SUITE 200, MANASSAS, VIRGINIA 20109

PHONE : (703) 368-7373 FAX : (703) 257-5443 WWW.RDAGVIL.COM

**COMMUNITY OF VIRGINIA**  
JUDITH D. RINKER  
Lic. No. 033407  
2/8/22  
PROFESSIONAL ENGINEER

**LOUISE ARCHER ELEMENTARY SCHOOL RENOVATION & ADDITION**  
HUNTER MILL ELECTION DISTRICT  
TOWN OF VIENNA

REVISIONS:

DATE: FEBRUARY 8, 2022

DESIGN: NJG/BMY

CHECKED BY: JDC

ARCH: ARCH. INC.

RDA JOB NUMBER: 20010

TOWN REFERENCE: 525873

SHEET NUMBER: C16.0