#### OWNER/DEVELOPER/APPLICANT:

BOARD OF SUPERVISORS OF FAIRFAX COUNTY 12000 GOVERNMENT CENTER PARKWAY FAIRFAX, VA 22035 703-324-7329

#### BASE TOPOGRAPHY/SURVEYOR

CHRISTOPHER CONSULTANTS CONTOUR INTERVALS: 2FT. DATE: FEBRUARY, 29, 2022

#### **ENGINEER**

9301 INNOVATION DRIVE, SUITE 150 MANASSAS, VA. 20110 PHONE: 703-393-9887 ATTN: JOHN LEVTOV. P.E.

#### **ARCHITECT**

GREENMAN PEDERSON, INC. 2900 SOUTH QUINCY ST. 8001 BRADDOCK RD ARLINGTON, VA 22206 SPRINGFIELD, VA 22151 PHONE: 571-858-5203 ATTN: KEITH LEONARD

## SITE PLAN

# PATRICK HENRY LIBRARY

TOWN OF VIENNA, VIRGINIA

#### STATISTICAL DATA

TOTAL PROPERTY AREA: 62,236 SF OR 1.4308 ACRES TOTAL PROJECT AREA: 62,236 SF OR 1.4308 ACRES AREA OF DISTURBANCE: 1.61 ACRES ZONING DESIGNATION: C-2

#### FIRE MARSHAL INFORMATION

USE GROUP: A-3 AND S-2 (ONE BUILDING, MIXED USE, SEPARATED USES) TYPE OF CONSTRUCTION: NEW LIBRARY GFA: 19,986 SF (FULLY SPRINKLERED SYSTEM)

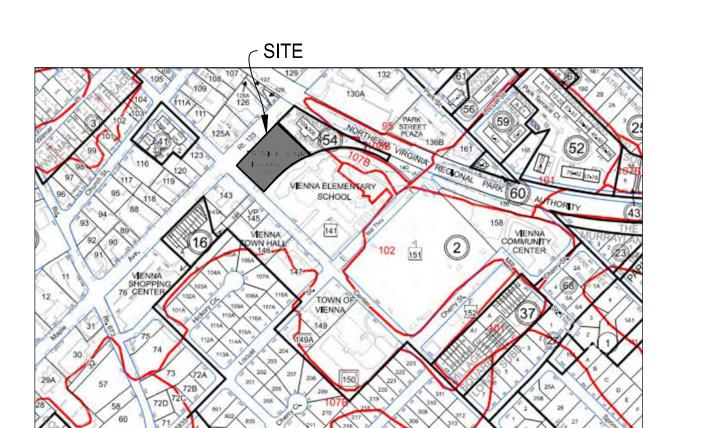
NEW GARAGE FOOTPRINT GFA 25,654 SF (AUTOMATRIC DRY PIPE SPRINKLERED SYSTEM)

TOTAL FOOTPRINT AREA BOTH BUILDINGS FULLY SPRINKLERED NFPA 13 SYSTEM

- THE SUBJECT PROPERTY PROJECT AREA IS A PORTION OF THE PARCEL IDENTIFIED ON 2020 FAIRFAX COUNTY TAX MAP# 38-4 ((02)) 0142.
- EXISTING PROPERTY OWNER: BOARD OF SUPERVISORS OF FAIRFAX COUNTY.
- PROPERTY LOCATION: 101 MAPLE AV E VIENNA VA 22180
- GROSS SITE AREA: 62,326 SF (1.4308 AC): THIS AREA IS BASED ON BOUNDARY SURVEY BY GRS GROUP, LLC DATED JANUARY 15, 2019

MEP

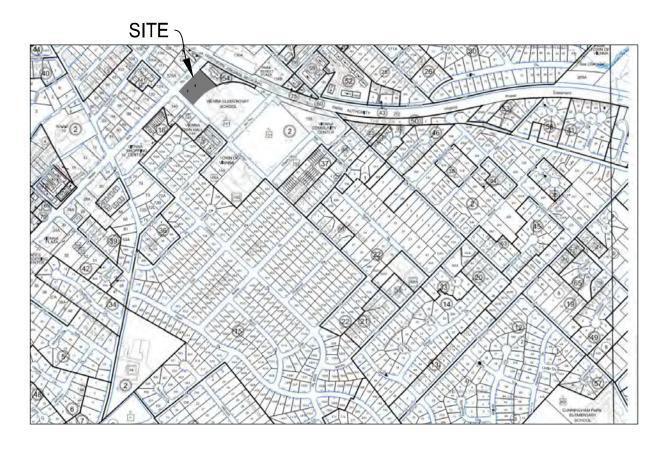
- NO ADVERSE EFFECTS TO NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS DEVELOPMENT.
- THERE ARE NO SCENIC ASSETS OR NATURAL FEATURES DESERVING OF PROTECTION AND PRESERVATION ON THE SUBJECT PROPERTY.
- CONSTRUCTION OF THE PROPOSED DEVELOPMENT WILL COMMENCE AS SOON AS NECESSARY APPROVALS ARE OBTAINED, SUBJECT TO MARKET CONDITIONS AND THE



SOILS MAP SCALE: 1" = 500'

SOIL ID NUMBERS		FOUNDATION SUPPORT		EROSION POTENTIAL	PROBLEM CLASS
95	URBAN LAND	N/A	N/A	N/A	/VB

FOR SITE SPECIFIC SOILS AND GEOTECHNICAL INFORMATION - SEE GEOTECHNICAL REPORT ON



**VICINITY MAP** SCALE: 1" = 1000'

ADDRESS: 101 MAPLE AVENUE EAST VIENNA, VA 22180

### PATRICK HENRY LIBRARY

*101 MAPLE AVE VIENNA, VA 22180* 

DATE OF 1ST SUBMISSION: 01/30/2023 DATE OF 2<sup>ND</sup> SUBMISSION: DATE OF 3RD SUBMISSION:

Sheet List Table						
Sheet Number	Sheet Title					
C000	COVER SHEET					
C100	PROPERTY MAP & GENERAL NOTES					
C101	LEGENDS AND ABBREVIATIONS					
C102	ZONING COMPLIANCE PLAN					
C200	SITE DETAILS					
C201	SITE DETAILS					
C202	SITE DETAILS					
C203	SITE DETAILS					
C300	EXISTING CONDITIONS					
C301	DEMOLITION PLAN					
C400	SITE PLAN					
C401	GRADING PLAN					
C402	FIRE LANE PLAN					
C403	SIGHT DISTANCE PLAN & PROFILE					
C404	TRASH TRUCK VEHICLE TURNING MOVEMENT PLAN					
C405	VEHICLE TURNING MOVEMENT PLAN					
C406	PAVEMENT PLAN					
C500	SWM NARRATIVES					
C501	SWM PRE VS POST					
C501A	STORM INLET DIVIDES PRE VS POST					
C502	SWM CALCULATIONS					
C503	SWM CALCULATIONS					
C504	SWM DETAILS-1					
C505	SWM DETAILS-2					
C506	SWM DETAILS-3					
C507	BMP MAP					
C508	VRRM					
C600	UTILITY PROFILES					
C600A	UTILITY PROFILES					
C601	UTILITY COMPUTATIONS					
C602	WATER METER SIZING CALCULATIONS					
C700	EROSION AND SEDIMENT CONTROL PH-I					
C700A	EROSION AND SEDIMENT CONTROL PH-IA					
C701 C702	EROSION AND SEDIMENT CONTROL PH-II EROSION AND SEDIMENT CONTROL DETAILS					
C702	EROSION AND SEDIMENT CONTROL DETAILS  EROSION AND SEDIMENT CONTROL NARRATIVES					
C704	POLLUTION PREVENTION PLAN  GEOTECHNICAL RECOMMENDATION					
C800						
C900	GARAGE AND HC PARKING					
C901	GARAGE UPPER LEVEL					
E100	ELECTRICAL SITE PLAN					
E100P	ELECTRICAL SITE PHOTOMETRICS PLAN					
PE701	GROUND TIER PHOTOMETRICS PLAN					
PE702	SECOND TIER PHOTOMETRICS PLAN					
EP703	THIRD TIER PHOTOMETRICS PLAN					
PE704	FOURTH TIER PHOTOMETRICS PLAN					
DU705	DRY UTILITY PLAN					

ATTACHMENT 07

PROJECT No.:22003.001.00 DRAWING No.:112368 DATE:07/08/2022 SCALE:AS NOTED DESIGN:BG DRAWN:BG

CHECKED:EB SHEET TITLE:

> COVER SHEET

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT TOWN OF VIENNA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

- OWNER: FAIRFAX COUNTY BOARD OF SUPERVISORS ZONED: C-2

  3. THE TOPOGRAPHY IS SHOWN AT 2' INTERVALS AND IS REFERENCED TO THE NGVD 1929 DATUM AND WAS OBTAINED FROM FIELD
- SURVEY.

  4. BOUNDARY SURVEY OF THE SUBJECT PROPERTY WAS PREPARED BY GRS GROUP, LLC DATED JANUARY 15, 2019.
  TOPOGRAPHIC INFORMATION IS FROM A FIELD RUN TOPOGRAPHIC SURVEY COMPLETED BY Christopher Consultants, ltd.,
  DATED FEBRUARY 9, 2022. THE CONTOUR INTERVAL IS TWO (2) FEET. HORIZONTAL DATUM: VCS 1983; VERTICAL DATUM:

#### **GENERAL NOTES:**

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF VIENNA AND THE STANDARDS OF THE VIRGINIA DEPARTMENT OF
- 2. IF THE CONTRACTOR OR OTHERS BECOME AWARE OF ANY DISCREPANCIES, ANY UNANTICIPATED SITE CONDITIONS, ANY REASONS FOR NONCONFORMANCE WITH THE DESIGN DOCUMENTS, OR ANY PROPOSED FIELD REVISIONS PROMPT WRITTEN NOTICE THEREOF SHALL BE GIVEN TO CHRISTOPHER CONSULTANTS, LTD.
- 3. EXISTING UNDERGROUND UTILITIES ARE BASED ON AVAILABLE INFORMATION AND THIS PLAN DOES NOT PURPORT TO SHOW ALL EXISTING UNDERGROUND UTILITIES. THOSE SHOWN ARE NECESSARILY APPROXIMATE. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ACCURATELY LOCATE AND PROTECT ALL EXISTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO ENSURE THAT THE PLANS CAN BE EXECUTED. IN THE EVENT OF A CONFLICT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE WHICH MIGHT OCCUR BY FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND LITTLES.
- 4. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES. TEST PITS ARE TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND CHRISTOPHER CONSULTANTS, LTD. REDESIGN AND APPROVAL BY REVIEWING AGENCIES SHALL BE OBTAINED, IF REQUIRED.
- 5. THE CONTRACTOR SHALL CONTACT MISS UTILITY AS REQUIRED BEFORE DIGGING.
- 6. THE APPROVAL OF THESE PLANS SHALL IN NO WAY RELIEVE THE OWNER OF COMPLYING WITH OTHER APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS
- 7. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS AND UTILITIES WHICH OCCUR AS A RESULT OF
- PROJECT CONSTRUCTION WITHIN OR CONTIGUOUS TO EXISTING RIGHT-OF-WAY.

  8. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING SITE FEATURES WHICH ARE TO REMAIN. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OR ANY SUBCONTRACTOR'S ACTIONS SHALL BE REPAIRED IMMEDIATELY AT THE
- 9. ALL UTILITIES, INCLUDING ALL POLES, WHICH ARE TO BE RELOCATED, SHALL BE AT THE DEVELOPER'S EXPENSE PRIOR TO CONSTRUCTION. CONTRACTOR/DEVELOPER TO CONTACT APPLICABLE UTILITIES AT LEAST 60 DAYS PRIOR TO NEEDING FACILITY RELOCATED.
- 10. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
- 11. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR ARRANGING ALL NECESSARY INSPECTIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A SAFE CONSTRUCTION SITE AND COMPLYING WITH ALL OSHA, STATE AND LOCAL REGULATIONS.
   CHRISTOPHER CONSULTANTS, LTD. SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION, MEANS, METHODS, TECHNIQUES, OR
- PROCEDURES UTILIZED BY THE CONTRACTOR, NOR SAFETY OF PUBLIC OR CONTRACTOR'S EMPLOYEES OR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND STANDARD CONSTRUCTION PRACTICES.
- 14. ALL REQUIRED SHOP DRAWINGS ARE TO BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL 30 DAYS PRIOR TO INSTALLATION AND SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED AND EXPERIENCED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
- 15. ALL FILL, BASE AND SUBBASE MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99 METHOD A WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE FOR THE FULL WIDTH OF ANY
- DEDICATED RIGHT-OF-WAY OR AS SPECIFIED BY THE GEOTECHNICAL REPORT.

  16. TOPS OF EXISTING STRUCTURES WHICH REMAIN IN USE ARE TO BE ADJUSTED IN ACCORDANCE WITH THE GRADING PLAN. ALL
- PROPOSED STRUCTURE TOP ELEVATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE SITE GRADING PLANS.

  17. ANY GRAVITY SEWER LINE THAT IS DESIGNED AT A SLOPE OF 1% OR LESS SHALL BE SURVEYED FOR PROPER SLOPE AND INVERTS AFTER INSTALLATION BUT PRIOR TO BACKFILLING.
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING A SMOOTH TRANSITION TO EXISTING CURB AND SIDEWALKS, IF APPLICABLE TO
- INSURE POSITIVE DRAINAGE.

  19. A SMOOTH GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE CURB AND GUTTER, TO PRECLUDE
- THE FORMING OF FALSE GUTTERS AND/OR THE PONDING OF ANY WATER ON THE ROADWAY.

  20. THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE OCCURS ON SITE TO PREVENT PONDING OR DRAINAGE PROBLEMS ON
- ADJACENT PROPERTIES.
  21. DURING ROUGH GRADING OF THE SITE, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE GEOTECHNICAL ENGINEER IF GROUND
- WATER SEEPAGE/SPRINGS ARE IDENTIFIED.

  22. ALL OFF-SITE EASEMENTS. LETTERS OF PERMISSION. ETC. SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION OR PLAN
- APPROVAL AS REQUIRED BY THE APPROVING AUTHORITY.

  23. LANDSCAPE NOTES AND SPECIFICATION ITEMS MAY APPEAR IN MULTIPLE PARTS OF THE DRAWING SET BASED ON WHAT IS BEING CONSTRUCTED. BESIDES THE LANDSCAPE PLAN AND DETAILS, NOTES OR SPECIFICATIONS MAY ALSO BE LOCATED ON THE EROSION AND SEDIMENT CONTROL SHEETS OR TREE PRESERVATION SHEETS. SUBSTITUTIONS AND RELOCATION OF MATERIALS IS NOT ALLOWED
- WITHOUT EXPRESS WRITTEN CONSENT OF THE PROJECT LANDSCAPE ARCHITECT THROUGH THE FORMAL SUBMITTAL/RFI PROCESS.

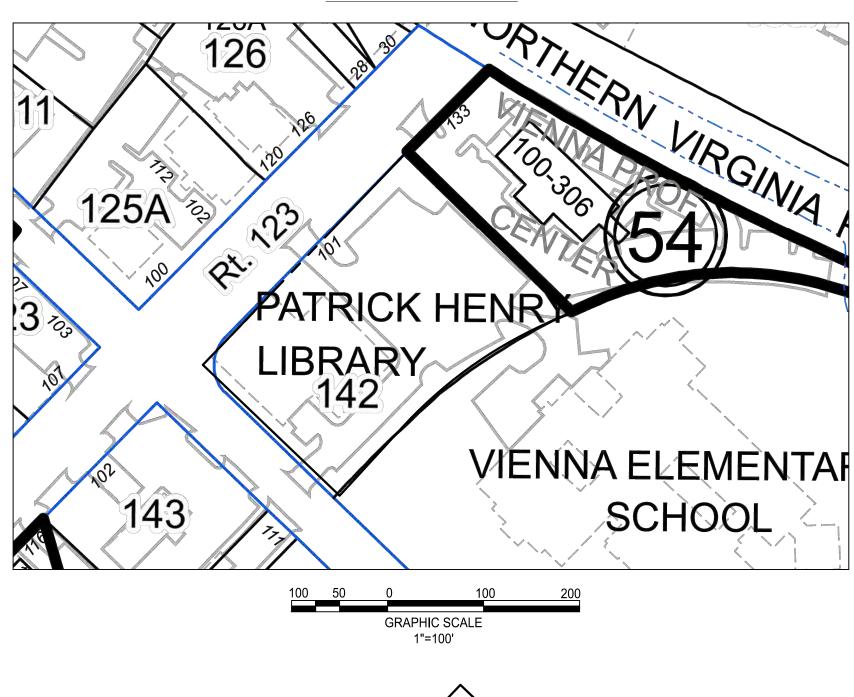
  24. TREE PRESERVATION METHODS AND TREE REMOVAL PLAN PROVIDED IN THIS PLAN SET MUST BE STRICTLY ADHERED TO. TREE REMOVAL WITHOUT JURISDICTIONAL APPROVAL OR DAMAGE FROM CONSTRUCTION OF TREES TO BE PRESERVED MAY RESULT IN CIVIL FINES OR ADDITIONAL LANDSCAPE WORK, THE COST OF WHICH WILL BE BORNE BY THE CONTRACTOR RESPONSIBLE FOR THE REMOVAL
- OR DAMAGE.

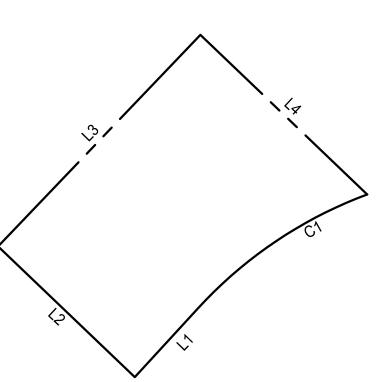
  25. ALL COMMUNICATION BETWEEN CONTRACTOR AND CHRISTOPHER CONSULTANTS, SHALL BE THROUGH FORMAL CHANNELS. ANY QUESTIONS OR SUBMITTALS ARE TO BE PRESENTED AS A WRITTEN REQUEST FOR INFORMATION, SHOP DRAWING, OR SUBMITTAL
- 26. THE CONTENT OF THESE PLANS IS CONSIDERED PROPRIETARY AND SHALL NOT BE USED OR MODIFIED WITHOUT THE EXPRESS WRITTEN CONSENT OF CHRISTOPHER CONSULTANTS, LTD.

#### TOWN OF VIENNA GENERAL NOTES

- 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.
- 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.
- TREE PROTECTION FOR ANY TOWN TREE, AS SHOWN ON PLAN, MUST BE INSTALLED PRIOR TO ANY SITE WORK.
- IT IS UNLAWFUL TO PERFORM ANY CONSTRUCTION ABOVE FOUNDATION CORNERS PRIOR TO APPROVAL OF SETBACKS. WORK COMPLETED IN VIOLATION OF THIS REQUIREMENT IS SUBJECT TO DEMOLITION.
- 6. ALL DUMPSTERS/PODS ARE TO BE PLACED ON PRIVATE PROPERTY.
- 7. FRONT ELEVATION CHECKS ARE REQUIRED.
- 8. WALL CHECK SURVEYS ARE REQUIRED AND MUST BE SUBMITTED PRIOR TO CONSTRUCTION ABOVE FOUNDATION CORNERS.
- A CERTIFICATE OF OCCUPANCY IS REQUIRED PRIOR TO OCCUPANCY. ALL REQUIRED
  DOCUMENTATION AND INSPECTIONS MUST BE SUBMITTED/COMPLETED BEFORE THE TOWN OF
  VIENNA WILL ISSUE A CERTIFICATE OF OCCUPANCY.
- 10. EXISTING SANITARY SEWER LATERALS ARE TYPICALLY CAPPED AT OR NEAR THE PROPERTY LINE. THE REUSE OF THE PORTION OF THE EXISTING SANITARY SEWER LATERAL BETWEEN THE TOWN OWNED SEWER MAIN AND THE CAPPED END MAY BE ALLOWED PROVIDING THAT A LICENSED PLUMBER CERTIFIES THAT THE EXISTING PIECE OF PIPE IS GRADED PROPERLY AND IN LIKE NEW CONDITION. THE REUSE OF A PORTION OF THE EXISTING LATERAL DOES NOT IMPLY THAT THE TOWN IS WARRANTING THE CONDITION IN ANY WAY.

#### PROPERTY MAP





LINE TABLE							
LINE#	LENGTH	DISTANCE					
1	S 42°37'40" W	97'.71'					
2	N 46°12'20" W	197'.01'					
3	N 43°47'40" E	304.81'					
4	S 46°12'20" E	240.40'					

CURVE TABLE										
CURVE#	RADIUS	LENGTH	DELTA	CHORD LENGHT	CHORD BEARING					
C1	453.30'	214.02'	109.05'	212.04'	S 56°05'26" W					

#### SANITARY SEWER NOTES

Applicant will line the existing sanitary sewer line if deemed necessary by Town during inspection.

Per section 715.1 Sewage Backflow, where plumbing fixtures are installed on a floor with a finished floor elevation below the elevation of the next upstream manhole in the public sewer, such fixtures shall be protected by a backwater valve installed in the building drain, or horizontal branch serving such fixtures. Plumbing fixtures installed on a floor with a finished floor elevation above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not discharge through a backwater valve.

Per section 715.2 Material, all bearing parts of backwater valves shall be of corrosion resistant material. Backwater valves shall comply with ASME A112.41.1, CSA B181.1 or CSA B181.2.

Per Section 715.3 Seal, backwater valves shall be so constructed as to provide a mechanical seal against backflow.

Per Section 715.4 Diameter, backwater valves, when fully open, shall have a capacity of not less than the pipes in which they are installed. Per section 715.5 Location, backwater valves shall not be installed so that access is provided to the working parts for service and repair.

#### WATER SERVICE NOTE

WATER SERVICE TO SERVICE THE LIBRARY WILL BE EXTENDED FROM THE EXISTING 1 1/2" METER IN CENTER STREET.

Town of Vienna Water Main Construction Notes

- 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).
- 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.
- Backflow preventer is absolutely required for temporary construction, irrigation systems or vehicle wash areas, where as required by the State waterworks regulations.
- 5. The developer agrees to accept full responsibility and all costs for the installation of water mains and appurtenances, including any adjustments in alignment and grade or relocation to existing water facilities due to the development of this property, any repair and maintenance required prior to finish grading and surfacing of the streets and/or easements. Final acceptance will not be considered or granted until after the streets have been surfaced or the easements finally granted.
- All T's, bends and valves need to be connected with megalugs retainer glands and blocked.
- 7. Before the start of construction, the developer must provide the following information and/or evidence of compliance with all applicable regulations and laws:
- if any easements are needed, two (2) copies of the recorded easement must be provided, including the place, date and reference of the recorded easement.
- written notice of the tentative starting date of construction, which must be a
  minimum of one (1) week following the date of notice, is needed. In addition,
  the developer must provide the names and phone numbers of two (2)
  emergency contacts.
- 8. Water valves shall only be operated by the Town of Vienna personnel. The contractor is required to provide two (2) working days notice of any shutdown required. Water disruptions to existing customers shall be kept to a minimum which may require the contractor to install inserting valves.
- 9. Town working hours for Water & Sewer are Monday through Friday, 7:00am –
  3:30pm, with the exception of holidays. Any inspection or shut downs outside
- of working hours shall require additional fees.
- 10. All valve covers shall be stamped, WATER.11. All fire hydrants shall be Mueller.
- 11. All fire hydrants shall be Mueller.12. Developer is responsible for all adjustments due to field conditions.

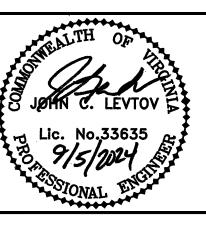
ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT TOWN OF VIENNA AND VIRGINIA

DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

**₩** 

1 Innovation Dr. Suite 1 as, VA 20110 P 703.39

9301 Inno Manassas, VA



K HENRY LIBRAR

WN OF VIENNA SUBMISSION
WN OF VIENNA COMMENTS
COMMENTS

PROJECT No.:22003.001.00 DRAWING No.:112368 DATE:07/08/2022 SCALE:AS NOTED DESIGN:BG DRAWN:BG

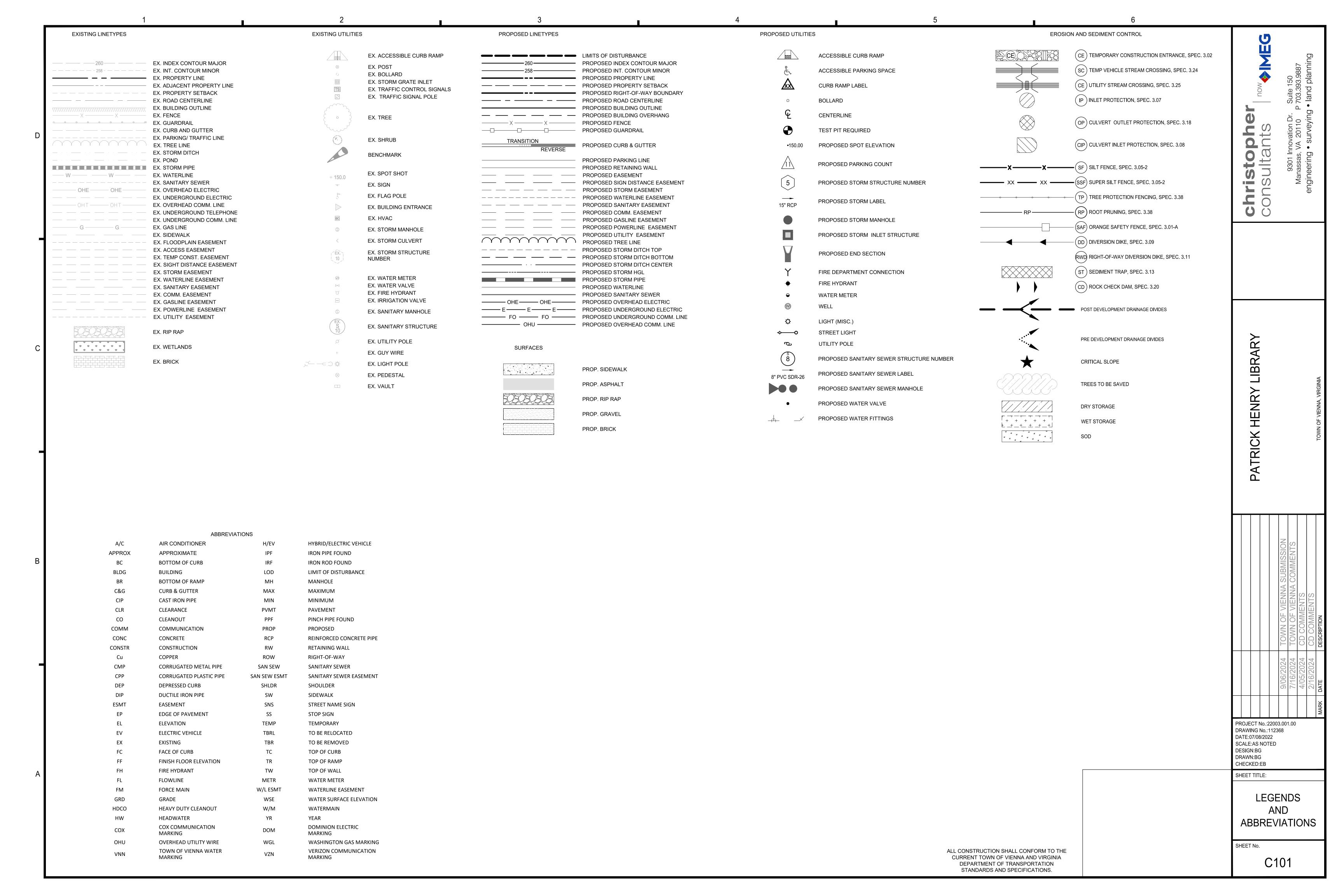
SHEET TITLE:

CHECKED:EB

PROPERTY MAP & GENERAL NOTES

SHEET No.

C100



ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT TOWN OF VIENNA AND VIRGINIA

DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

C102

100\112368 Site Plan\C102 ZONING COMPLIANCE PLAN.dwg, 10/4/2024 2:26:17 PM, John.C.Levtov, 1:1

