PRELIMINARY DEVELOPMENT SPECIAL USE PERMIT EDGEWOOD TOWNS

(6336 STEVENSON AVENUE) CITY OF ALEXANDRIA, VIRGINIA

AREA TABULATION	S				
TOTAL SITE AREA (COMPUTED) =	0.3868	AC	16,850	SF	
TOTAL AREA OF TAX PARCEL (RECORDED)	= <u>0.3874</u>	_ AC	<u>16,877</u> SF	.	
TOTAL EXISTING IMPERVIOUS AREA =	0.0692	_ AC	3,016	SF	
TOTAL PROPOSED IMPERVIOUS AREA =	0.2240	AC	9,758	SF	
TOTAL DISTURBED AREA =0.5451	AC _	23,7	45	SF	
TOTAL STORMWATER DISTURBED AREA = _	0.4626	A(20	<u>0,150</u>	_ SF

ENVIRONMENTAL SITE ASSESSMENT

- THERE ARE NO TIDAL WETLANDS, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TIDAL WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES. STREAMS, OR WETLANDS LOCATED ON THE SITE, FURTHER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT, ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS ON THE SITE. THERE ARE NO KNOWN CONTAMINATED AREAS, CONTAMINATED SOILS OR ENVIRONMENTAL ISSUES ASSOCIATED
- NOTIFIED IF UNUSUAL OR UNANTICIPATED CONTAMINATION OR UNDERGROUND STORAGE TANKS, DRUMS AND CONTAINERS ARE ENCOUNTERED AT THE SITE. IF THERE IS ANY DOUBT ABOUT PUBLIC SAFETY OR A RELEASE TO THE ENVIRONMENT, THE ALEXANDRIA FIRE DEPARTMENT MUST BE CONTACTED IMMEDIATELY BY CALLING 911. THE TANK OR CONTAINER'S REMOVAL, ITS CONTENTS, ANY SOIL CONTAMINATION AND RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL. STATE. AND CITY REGULATIONS.
- ALL WELLS TO BE DEMOLISHED ON THIS PROJECT, INCLUDING MONITORING WELLS, MUST BE CLOSED IN ACCORDANCE WITH VIRGINIA STATE WATER CONTROL BOARD (VSWCB) REQUIREMENTS. CONTACT ENVIRONMENTAL HEALTH SPECIALIST AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-746-4996.
- THERE ARE NO KNOWN CONTAMINATED AREAS, CONTAMINATED SOILS OR ENVIRONMENTAL ISSUES ASSOCIATED WITH THIS SITE.
- ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE ALEXANDRIA NOISE CONTROL CODE TITLE 11. CHAPTER 5. WHICH PERMITS CONSTRUCTION ACTIVITIES TO OCCUR BETWEEN THE FOLLOWING HOURS: MONDAY THROUGH FRIDAY FROM 7am TO 6pm AND SATURDAYS FROM 9am TO 6pm; NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS AND HOLIDAYS.
- PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS: MONDAY THROUGH FRIDAY FROM 9am TO 6pm AND SATURDAYS FROM 10am TO 4pm; NO PILE DRIVING ACTIVITIES ARE PERMITTED ON SUNDAYS AND
- RIGHT OF WAY EXCAVATION IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
- MONDAY THROUGH SATURDAY 7am TO 5pm; NO RIGHT OF WAY EXCAVATION IS PERMITTED ON SUNDAYS.

ENVIRONMENTAL PERMITS NOTES

ILL REQUIRED PERMITS FROM VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, ENVIRONMENTAL PROTECTION AGENCY, ARMY CORPS OF ENGINEERS. VIRGINIA MARINE RESOURCES MUST BE IN PLACE FOR ALL PROJECT CONSTRUCTION AND MITIGATION WORK PRIOR TO RELEASE OF

ARCHAEOLOGY NOTES

THE APPLICANT/DEVELOPER SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS. WELLS, PRIVIES, CISTERNS, FTC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

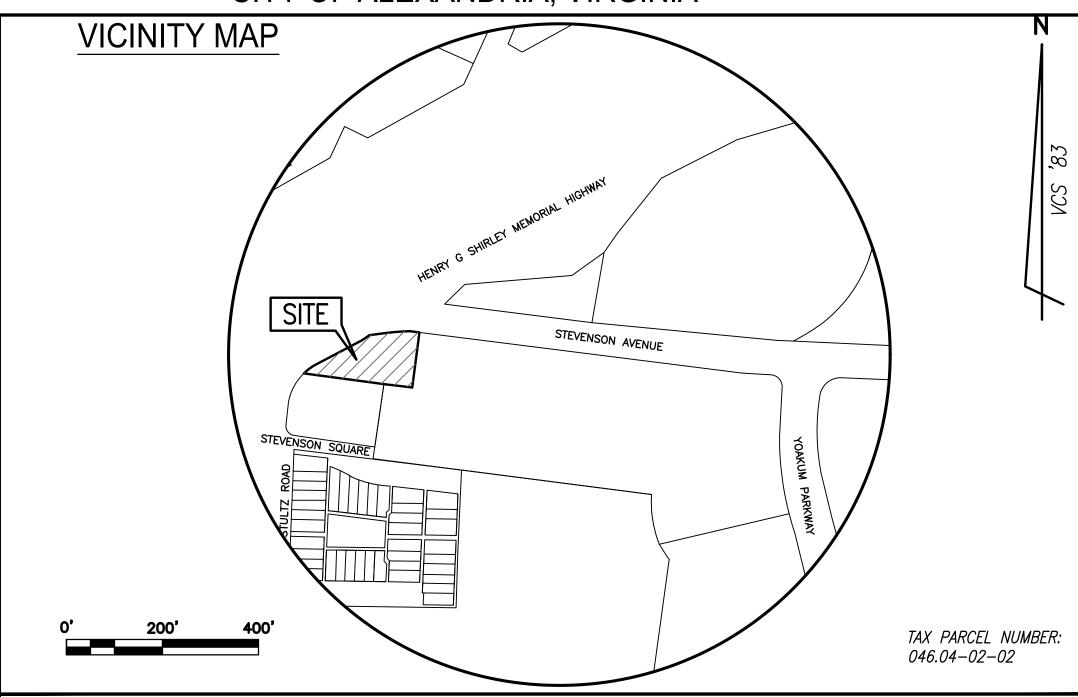
ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE ZONING ORDINANCE.

GENERAL NOTES

- DRAWINGS PREPARED BY A LICENSED ARCHITECT OR PROFESSIONAL ENGINEER SHALL ACCOMPANY THE PERMIT APPLICATION. THE PLANS SHALL SHOW PROPOSED CONDITIONS AND PROVIDE DATA BY THE DESIGN PROFESSIONAL WHICH DETAILS HOW THE PROPOSED USE WILL COMPLY WITH THE CURRENT EDITION OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE FOR THE NEW USE IN THE AREA OF STRUCTURAL STRENGTH, MEANS OF EGRESS, PASSIVE AND ACTIVE FIRE PROTECTION, HEATING AND VENTILATING SYSTEMS, HANDICAPPED ACCESSIBILITY AND PLUMBING FACILITIES.
- NEW CONSTRUCTION MUST COMPLY WITH THE CURRENT EDITION OF THE UNIFORM STATEWIDE BUILDING CODE (USBC).
- BEFORE A BUILDING PERMIT CAN BE ISSUED ON ANY PROPOSED FUTURE ALTERATIONS, A CERTIFICATION IS REQUIRED FROM THE OWNER OR OWNER'S AGENT THAT THE BUILDING HAS BEEN INSPECTED BY A LICENSED ASBESTOS INSPECTOR FOR THE PRESENCE OF ASBESTOS.
- 4. A CERTIFICATE OF OCCUPANCY SHALL BE OBTAINED PRIOR TO ANY OCCUPANCY OF THE BUILDING OR PORTION THEREOF.
- REQUIRED EXITS, PARKING, AND ACCESSIBILITY WITHIN THE BUILDING FOR PERSONS WITH DISABILITIES MUST COMPLY WITH USBC CHAPTER 11. HANDICAPPED ACCESSIBLE BATHROOMS SHALL ALSO BE PROVIDED.
- TOILET FACILITIES FOR PERSONS WITH DISABILITIES: LARGER, DETAILED, DIMENSIONED DRAWINGS ARE REQUIRED TO CLARIFY SPACE LAYOUT AND MOUNTING HEIGHTS OF AFFECTED ACCESSORIES. INFORMATION ON DOOR HARDWARE FOR THE TOILET STALL IS REQUIRED (USBC 1109.2.2).
- IF APPLICABLE, ENCLOSED PARKING GARAGES MUST BE VENTILATED IN ACCORDANCE WITH USBC 406.4.2. THE REQUIRED MECHANICAL VENTILATION RATE FOR AIR IS 0.75 CFM PER SQUARE FOOT OF THE FLOOR AREA (USBC 2801.1). IN AREAS WHERE MOTOR VEHICLES OPERATE FOR A PERIOD OF TIME EXCEEDING 10 SECONDS, THE VENTILATION RETURN AIR MUST BE EXHAUSTED. AN EXHAUST SYSTEM MUST BE PROVIDED TO CONNECT DIRECTLY TO THE MOTOR VEHICLE EXHAUST (USBC 2801.1).
- ELECTRICAL WIRING METHODS AND OTHER ELECTRICAL REQUIREMENTS MUST COMPLY WITH NFPA 70, 2008.
- IF APPLICABLE, THE PUBLIC PARKING GARAGE FLOOR MUST COMPLY WITH USBC 406.2.6 AND DRAIN THROUGH OIL SEPARATORS OR TRAPS TO AVOID ACCUMULATION OF EXPLOSIVE VAPORS IN BUILDING DRAINS OR SEWERS AS PROVIDED FOR IN THE PLUMBING CODE (USBC 2901) THIS PARKING GARAGE IS CLASSIFIED AS AN S-2, GROUP 2, PUBLIC GARAGE.
- 10. THIS PROJECT IS LOCATED IN THE BACKLICK RUN WATERSHED.
- THIS SITE DOES NOT CONTAIN AREAS PREVIOUSLY MAPPED AS MARINE CLAYS.
- 12. THIS SITE IS NOT LOCATED WITHIN 1.000 FEET OF A FORMER LANDFILL OR OTHER DUMP SITE.
- 3. THIS PROJECT IS NOT A FEDERAL UNDERTAKING AND DOES NOT INVOLVE FEDERAL FUNDS, REVIEWS. OR PERMITS.

SURVEYOR'S CERTIFICATION

IHIS BOUNDARY AND TOPOGRAPHIC SURVEY ON THE LAND OF 6336 STEVENSON, LLC WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE HARGE OF WIM DE SUTTER FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION ON JUNE 26, 2021 AND THAT THIS PLAT MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.



- AMENDMENT OF THE ZONING OF THE SUBJECT PARCEL FROM RB/TOWNHOUSE ZONE TO RC/HIGH DENSITY APARTMENT ZONE, PURSUANT TO SECTION 11-800.
- DEVELOPMENT SPECIAL USE PERMIT WITH SITE PLAN, PURSUANT TO SECTION 11-400.
- MODIFICATION TO SETBACKS, PURSUANT TO SECTION 11-416:
- REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED. 26.8' PROVIDED) SIDE YARD SETBACK (1:3 TO 45'H MAX/MIN 8' REQUIRED. 4.5' PROVIDED) REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 0.0' PROVIDED)
- LOT 503: • REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 26.8' PROVIDED) • REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 26.8' PROVIDED) LOT 505:
- REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 26.8' PROVIDED) REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 26.8' PROVIDED) LOT 507: SIDE YARD SETBACK (1:3 TO 45'H MAX/MIN 8' REQUIRED, 6.8' PROVIDED)

REDUCTION IN PARKING SPACE SIZES WITHIN THE GARAGES, PURSUANT TO SECTION 11-512(B)

SUITE 402

FIRE SUPPRESSION/DETECTION: | FULLY SPRINKLERED 13D (NO FDC REQUIRED)

• REAR YARD SETBACK (1:1 TO 45'H MAX/MIN 8' REQUIRED, 26.8' PROVIDED) REQUEST FOR PLANNING COMMISSION TO ACCEPT DRIVEWAY COVERAGE IN REAR YARDS, PURSUANT TO SECTION 7-1600(F).

PINNACLE DESIGN & CONSULTING, INC.

OWNER/DEVELOPER

6336 STEVENSON, LLC 3918 PROPERITY AVE, #100 FAIRFAX, VA 22031 INSTR #: 190005909 CONTACT: MATT GRAY EMAIL: MGRAY@MSG.PROPERTIES

ARBORIST: TNT ENVIRONMENTAL 13966 PARKEAST CIRCLE, SUITE 101 CHANTILLY, VIRGINIA 20151 (703) 466-5123 CONTACT: SOPHIE SWARTZENDRUBER

CONTACT: TOM ROWLAND DEVELOPER: OLD CREEK HOMES, LLC 225 NORTH WEST STREET ALEXANDRIA, VA 22314 (571) 405-7671 CONTACT: MATT GRAY EMAIL: MGRAY@OLDCREEKHOMES.COM

11150 FAIRFAX BLVD.

FAIRFAX, VA 22030

(703) 218-3400

LANDSCAPE ARCHITECT: STUDIO 39 LANDSCAPE ARCHITECTURE, PC 6416 GROVEDALE DRIVE, SUITE 100-A ALEXANDRIA, VIRGINIA 22310 (703) 719-6500 CONTACT: AMANDA CLERKIN ATTORNEY: LAND CARROLL & BLAIR PC

PEDESTRIAN SIGNALS

524 KING STREET ALEXANDRIA, VA 22314 (703) 836-1000 CONTACT: DUNCAN BLAIR

BUILDING CODE ANA	ALYSIS:	COMPLETE STREETS INFO	ORMATIO	N:
USE:	R5		NEW	UPGRADED
USE GROUP:	TOWNHOUSES	CROSSWALKS (NUMBER)	N/A	N/A
TYPE OF CONSTRUCTION:	V-B	STANDARD	N/A	N/A
NUMBER OF STORIES:	4 STORIES	HIGH VISIBILITY	N/A	N/A
FLOOR AREA (1ST FLOOR):	568 SF (LOT 501) 559 SF EACH (LOT 502-507)	CURB RAMPS	N/A	N/A
FLOOR AREA (2ND FLOOR):	533 SF (LOT 501) 528 SF EACH (LOT 502-507)	SIDEWALKS (LF)	N/A	270.0'
FLOOR AREA (3RD FLOOR):	457 SF (LOT 501) 452 SF EACH (LOT 502-507)	BICYCLE PARKING (NUMBER SPACES)	2	N/A
FLOOR AREA (4TH FLOOR):	273 SF (LOT 501) 255 SF EACH (LOT 502-507)	PUBLIC/VISITOR	2	N/A
BUILDING HEIGHT:	45.0'	PRIVATE/GARAGE	N/A	N/A
	FULLY SPRINKLERED 13D (NO FDC REQUIRED)	BICYCLE PATHS (LF)	N/A	N/A

PLAN PREPARED BY:

ALEXANDRIA, VA 22314

CONTACT: TAYLOR DOYLE

N/A |

N/A

(703) 549-6422

SUITE 220

R.C. FIELDS & ASSOCIATES, INC.

700 S. WASHINGTON STREET

SHEET INDEX:					
COVER SHEET	_1 TREE AND VE	GETATION SURVEY & PROTECTION PLA	NTP-1	END ELEVATIONS	2.0
CONTEXTUAL PLAN		GETATION SURVEY & PROTECTION PLA	NTP-2	FRONT ELEVATIONS (LOT #501,#504,ǹ)	2.0
EXISTING CONDITIONS		GETATION SURVEY & PROTECTION PLA		FRONT FLEVATIONS (LOT #502 #503 #506 ǻ)	2.0
PRELIMINARY PLAN				REAR ELEVATIONS	2.0 2.0
SITE DIMENSIONS PLAN		ES	L0.01	SIDE ELEVATIONS	2.0
STORMWATER MANAGEMENT PLAN		LAN	L1.01	FLOOR PLANS (LOTS #502-#507)	3.0
IMPERVIOUS AREA PLAN		LAN-SOIL VOLUME EXHIBIT	L1.02	FAR FLOOR PLANS (LOTS #502-#507)	3.0 3.0
STORMWATER QUALITY COMPUTATIONS_			L2.01	· " " —	3.0 3.0
BMP DETAILS		OTES & DETAILS	L2.02	FLOOR PLANS (LOT #501)	
STORM OUTFALL ANALYSIS		OTES & DETAILS	L2.03	FAR FLOOR PLANS (LOT #501)	3.0
	_11 LIGHTING PLAI		L3.01	BUILDING SECTION & STAIR	4.0
SANITARY CAPACITY CALCULATION		DUCT INFORMATION	L3.51		
TURNING MOVEMENTS	_13 COLOR SCHEN	MES	2.01		
SIGHT DISTANCE PLAN AND PROFILES_	_14 FRONT STRIP	ELEVATION LOTS #501-#507	2.02		
FIRE SAFETY PLAN	_ ¹⁵ rear strip e	LEVATION LOT #501-#507	2.03		

ZONING TABULATIONS

EXISTING ZONE OF SITE: RB/TOWNHOUSE ZONE PROPOSED ZONE OF SITE: RC/HIGH DENSITY APARTMENT ZONE USE: EXISTING: <u>SINGLE-FAMILY DWELLING</u> PROPOSED: <u>RESIDENTIAL TOWNHOUSES</u>

LOT AREA: REQUIRED: 1,600 SQ FT_ PROVIDED: LOT 501: 3,805 SQ FT_ LOT 502: 1,993 SQ FT_ LOT 503: <u>1,983 SQ FT</u> LOT 504: <u>1,984 SQ FT</u> LOT 505: <u>1,993 SQ FT</u> LOT 506: <u>2,069 SQ FT</u>

LOT 507: 3,023 SQ FT . OPEN SPACE: REQUIRED: 800 SQ FT

> PROVIDED: LOT 501: 800 SF (21.0%) (GROUND LEVEL) LOT 502: 800 SF (40.1%) (GROUND LEVEL) 800 SF (21.0%) (TOTAL) 800 SF (40.1%) (TOTAL) LOT 503: 800 SF (40.3%) (GROUND LEVEL) LOT 504: 800 SF (40.3%) (GROUND LEVEL) 800 SF (40.3%) (TOTAL) 800 SF (40.3%) (TOTAL)

LOT 505: 800 SF (40.1%) (GROUND LEVEL) LOT 506: 900 SF (43.5%) (GROUND LEVEL) 900 SF (43.5%) (TOTAL) 800 SF (40.1%) (TOTAL)

LOT 507: 1,150 SF (38.0%) (GROUND LEVEL) 1,150 SF (38.0%) (TOTAL)

ALL OPEN SPACE IS PRIVATE NO PRIVATE OPEN SPACE W/ PUBLIC ACCESS EASEMENT OR PUBLIC OPEN SPACE IS PROPOSED WITH THIS DEVELOPMENT.

5. NUMBER OF DWELLING UNITS: ALLOWED: <u>21</u> PROPOSED: <u>7</u>

3. UNITS PER ACRE: ALLOWED: <u>54.45</u> PROPOSED: <u>18.10</u> FLOOR AREA: ALLOWABLE: 21.062 SQ FT EXISTING: 2,440 SF 2,440 SF

PROPOSED:	LOT	GROSS FLOOR	NET FLOOR	PARKING FLOOR	FLOOR AREA	ALLOWABL
NOTE: PARKING FLOOR AREA	NUMBER	AREA/UNIT (SF)	AREA/UNIT (SF)	AREA/UNIT (SF)	RATIO	FAR
IS INCLUDED IN THE GROSS	501	2,500	1,837	333	0.48	1.25
AND NET FLOOR AREA	502	2,500	1,800	328	0.90	1.25
PROVIDED ON THIS SHEET	503	2,500	1,800	328	0.91	1.25
	504	2,500	1,800	328	0.91	1.25
	505	2,500	1,800	328	0.90	1.25
	506	2,500	1,800	328	0.87	1.25
	507	2,500	1,800	328	0.60	1.25
	TOTAL	17 500	12 637	328	0.75	1 25

FLOOR AREA RATIO: PERMITTED: <u>1.25</u> EXISTING: <u>0.15</u> PROPOSED: <u>0.75</u>

EX BELOW GRADE: 0.0 (0 SF) EX AT GRADE: 0.15 (2,440 SF) EX ABOVE GRADE: 0.0 (0 SF) PROP BELOW GRADE: 0.0 (0 SF) PROP AT GRADE: 0.23 (3,922 SF) PROP ABOVE GRADE: 0.52 (8,715 SF) 9. AVERAGE FINISHED GRADE: LOT 503: <u>253.58</u> LOT 504: 253.30

LOT 505: <u>253.05</u> LOT 506: <u>252.80</u> LOT 507: 252.34

10. BUILDING HEIGHT: PERMITTED: 150.0 FEET EXISTING: 20.0 FEET PROPOSED: LOT 501: 45.00 FEET LOT 502: 45.00 FEET LOT 503: 45.00 FEET LOT 504: 45.00 FEET LOT 506: 45.00 FEET

LOT 505: 45.00 FEET LOT 507: 45.00 FEET INTERIOR LOT REQUIRED (LOT 502-506):

* 11. SETBACKS: END LOT REQUIRED (LOTS 501 & 507):

SIDE 15.0', 1:3 SETBACK RATIO WITH MINIMUM 8'

REAR: 45.0'(LOT 501) 31.0'(LOT 507), 1:1 SETBACK RATIO WITH MINIMUM 8' PROVIDED: LOT LEDONT SIDE SIDE BEAR

ט:	LOT	FRONT	SIDE (NORTH)	SIDE (SOUTH)	REAR
	501	7.9'	4.5' *	26.8	0.0'*
	LOT	FRONT	SIDE (EAST)	SIDE (WEST)	REAR
	507	53.0'	6.8' *	N/A	26.8 '*

504 39.3' 0' 0' 26.8'* 505 | 45.3' | 0' | 0' | 26.8'* 506 | 49.5' | 0' | 0' | 26.8**'*** 12. FRONTAGE: REQUIRED: 18' (INTERIOR LOT) PROVIDED: LOT 501:88.94' (END LOT) LOT 502:53.00' (INTERIOR LOT 26' (END LOT) LOT 503:33.28' (INTERIOR LOT) LOT 504:22.27' (INTERIOR LOT

LOT 505:18.02' (INTERIOR LOT) LOT 506:18.00' (INTERIOR LOT)

LOT 507:26.16' (END LOT) 13. LOT WIDTH:REQUIRED: 18' (INTERIOR LOT) PROVIDED: LOT 501:51.00' (END LOT) LOT 502:<u>19.00' (INTERIOR LO</u> 26' (END LOT) LOT 503:19.00' (INTERIOR LOT) LOT 504:19.00' (INTERIOR LOT LOT 505:19.00' (INTERIOR LOT) LOT 506:19.00' (INTERIOR LOT) LOT 507:26.40' (END LOT)

1 SPACES

14 SPACES

0 SPACES

0 SPACES

0 SPACES

14 SPACES

FRONT: N/A

SIDE: N/A

2 SPACES/TOWNHOUSE DWELLING

REAR: 31.0', 1:1 SETBACK RATIO WITH MINIMUM 8

PROVIDED: LOT FRONT SIDE | SIDE | REAR

(EAST) (WEST)

502 | 15.6' | 0' | 0' | 26.8'*

14. PARKING: REQUIRED: NUMBER OF TOWNHOUSES: PARKING RATIO:

EXISTING:

2 SPACES X # OF TOWNHOUSES = 2 X 7: 14 SPACES TOTAL RESIDENTIAL PARKING REQUIRED: 14 SPACES

PROVIDED (AT GRADE): * PRIVATE COMPACT GARAGE PARKING SPACES: PUBLIC STANDARD PARKING SPACES: PUBLIC COMPACT PARKING SPACES: PUBLIC HANDICAP PARKING SPACES:

STANDARD PARKING SPACES:

TOTAL PARKING SPACES:

15. LOADING SPACES: REQUIRED: N/A PROPOSED: N/A 16. TRIP GENERATION: EXISTING: _____15 VPD ____ PROPOSED: ____90 VPD ___ (PER ITE STANDARDS) EX AM PEAK: <u>6 VPD</u> PR AM PEAK: <u>8 VPD</u>

* SEE REQUESTED APPLICATIONS AND MODIFICATIONS FOR DETAILED INFORMATION (SEE THIS SHEET)

EX PM PEAK: 2 VPD PR PM PEAK: 6 VPD

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VENUE) VIRGINI XANDRI (6336 CITY OF

APPROVED 2022-00004 SPECIAL USE PERMIT NO. CHAIRMAN, PLANNING COMMISSION DATE RECORDED

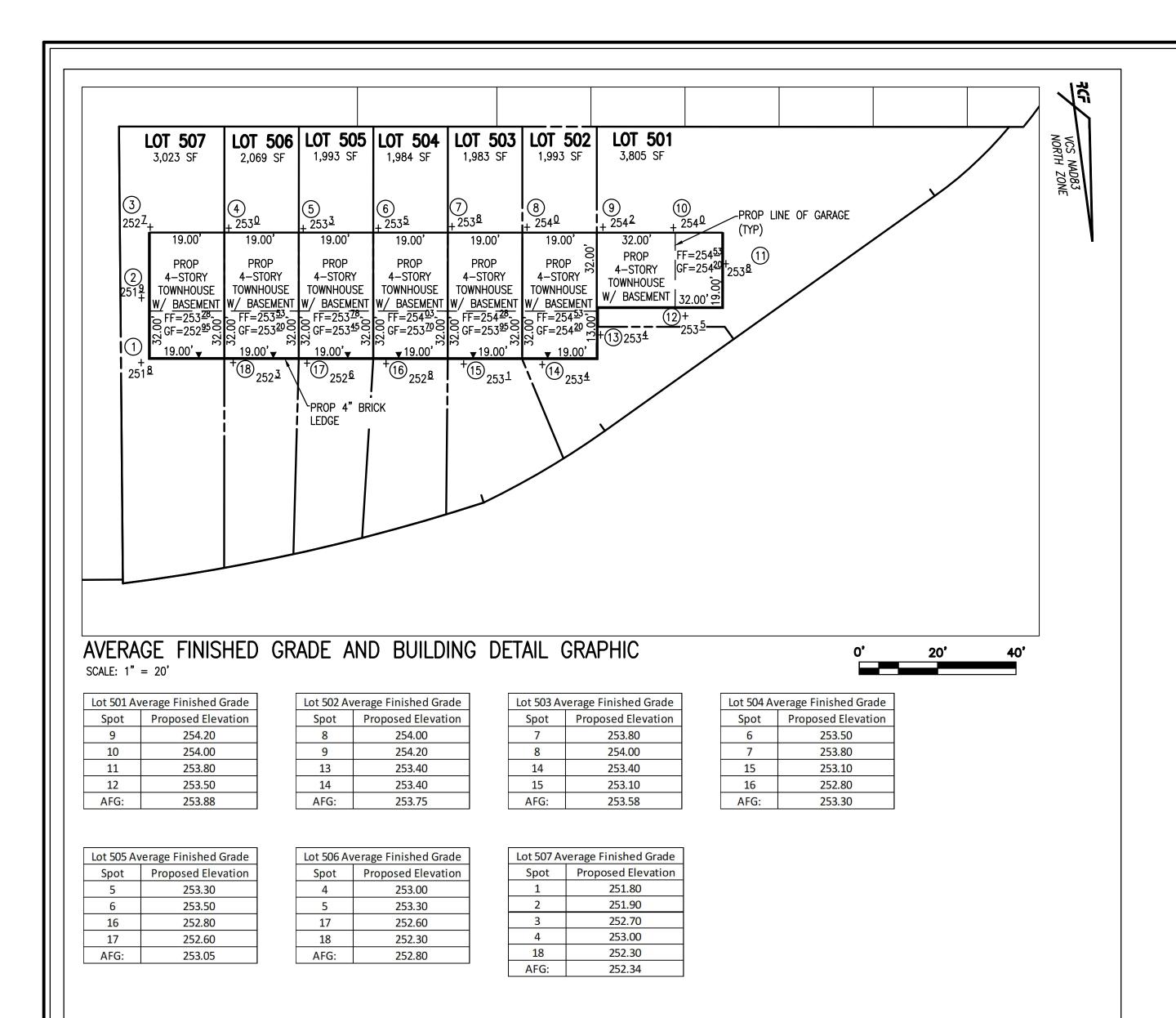
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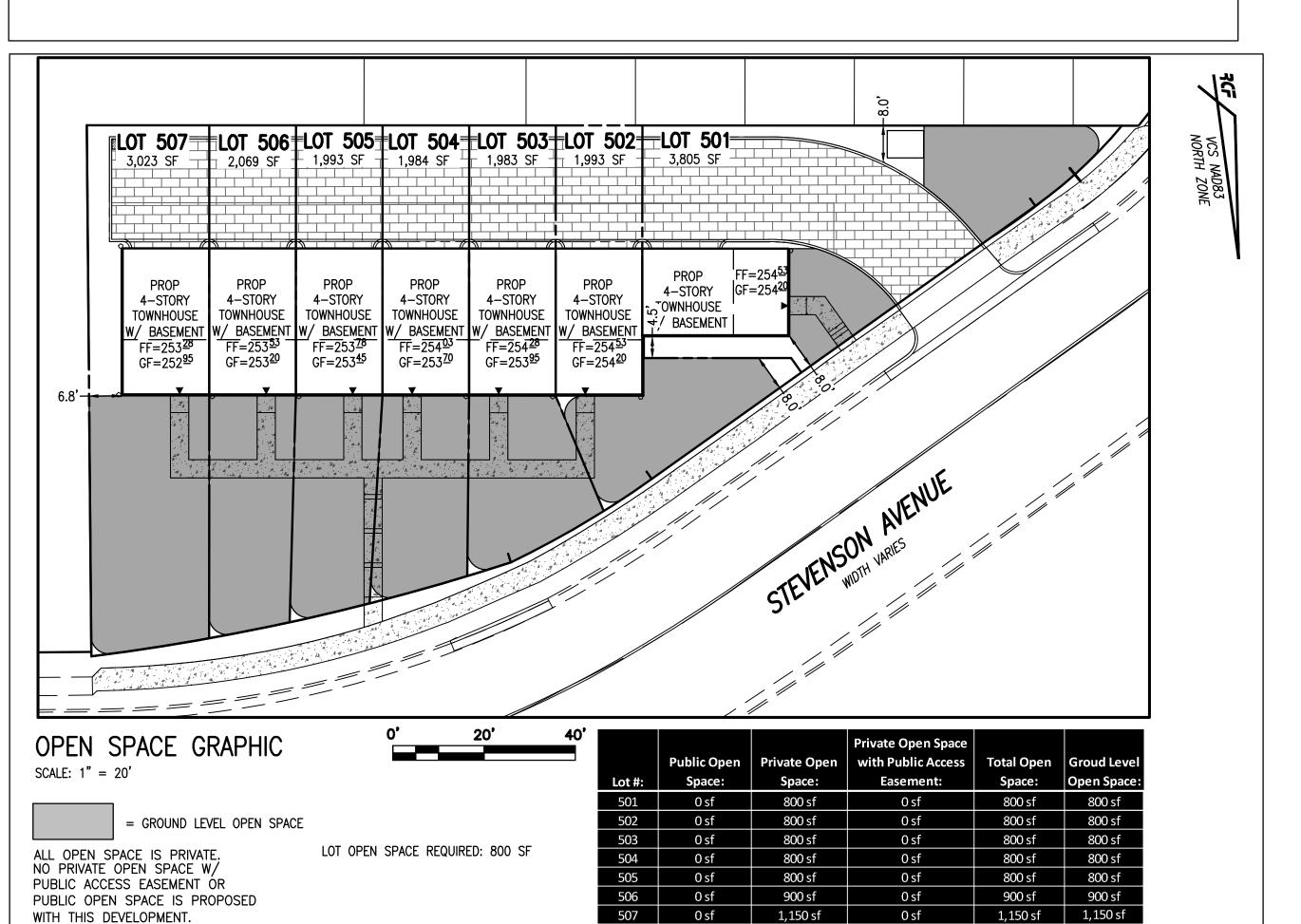
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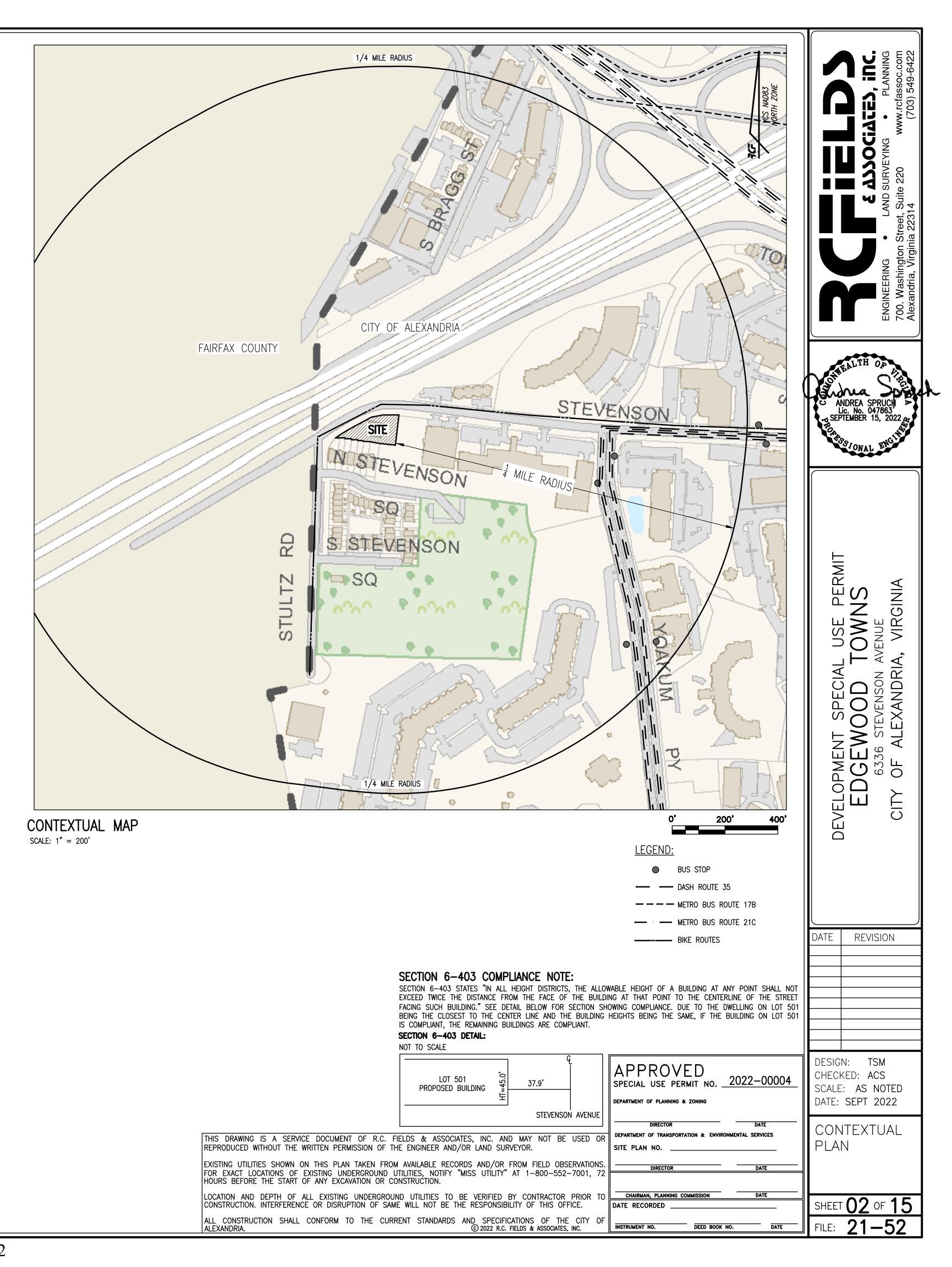
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SHEET: 01 OF 15

DATE

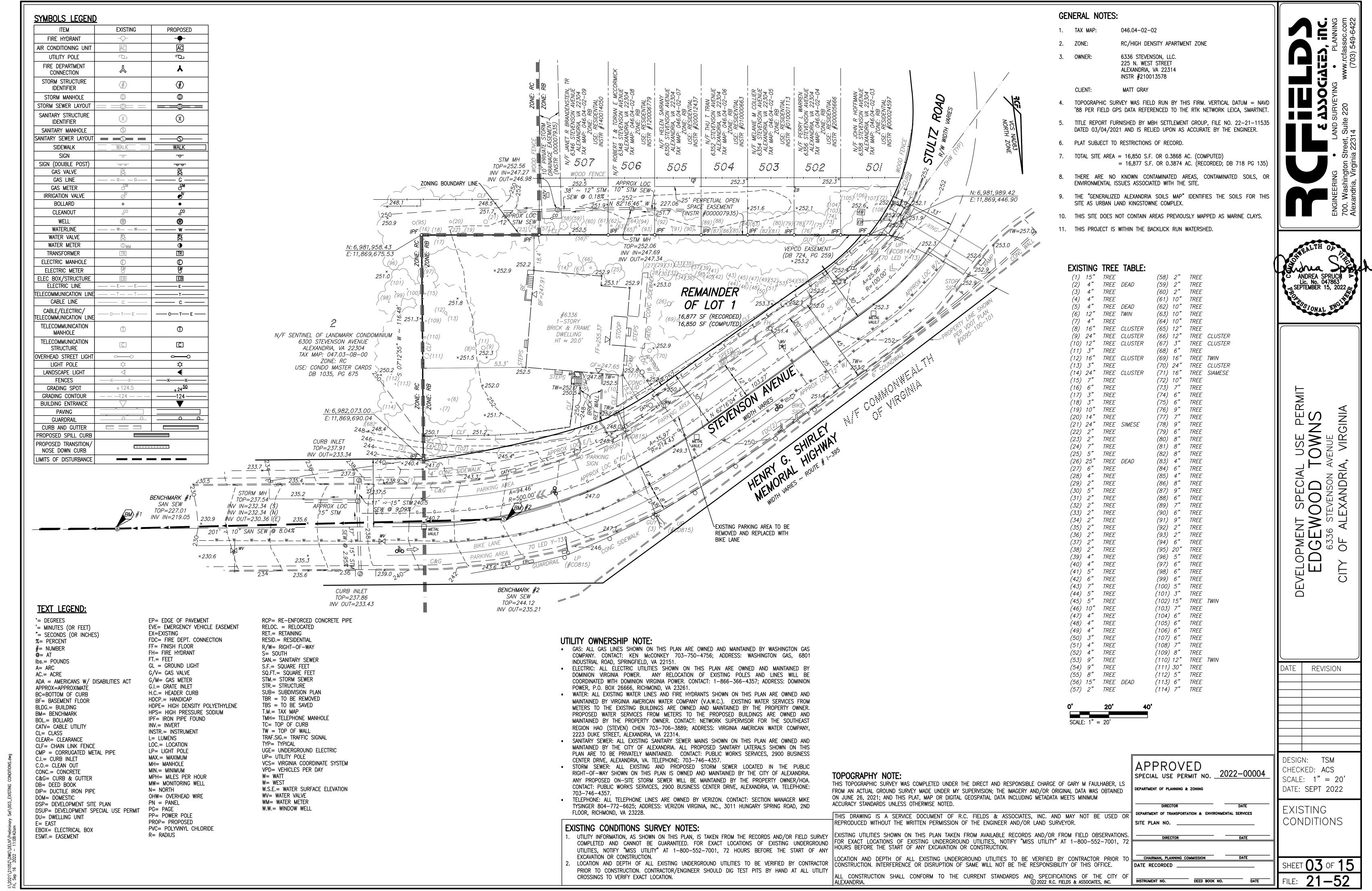


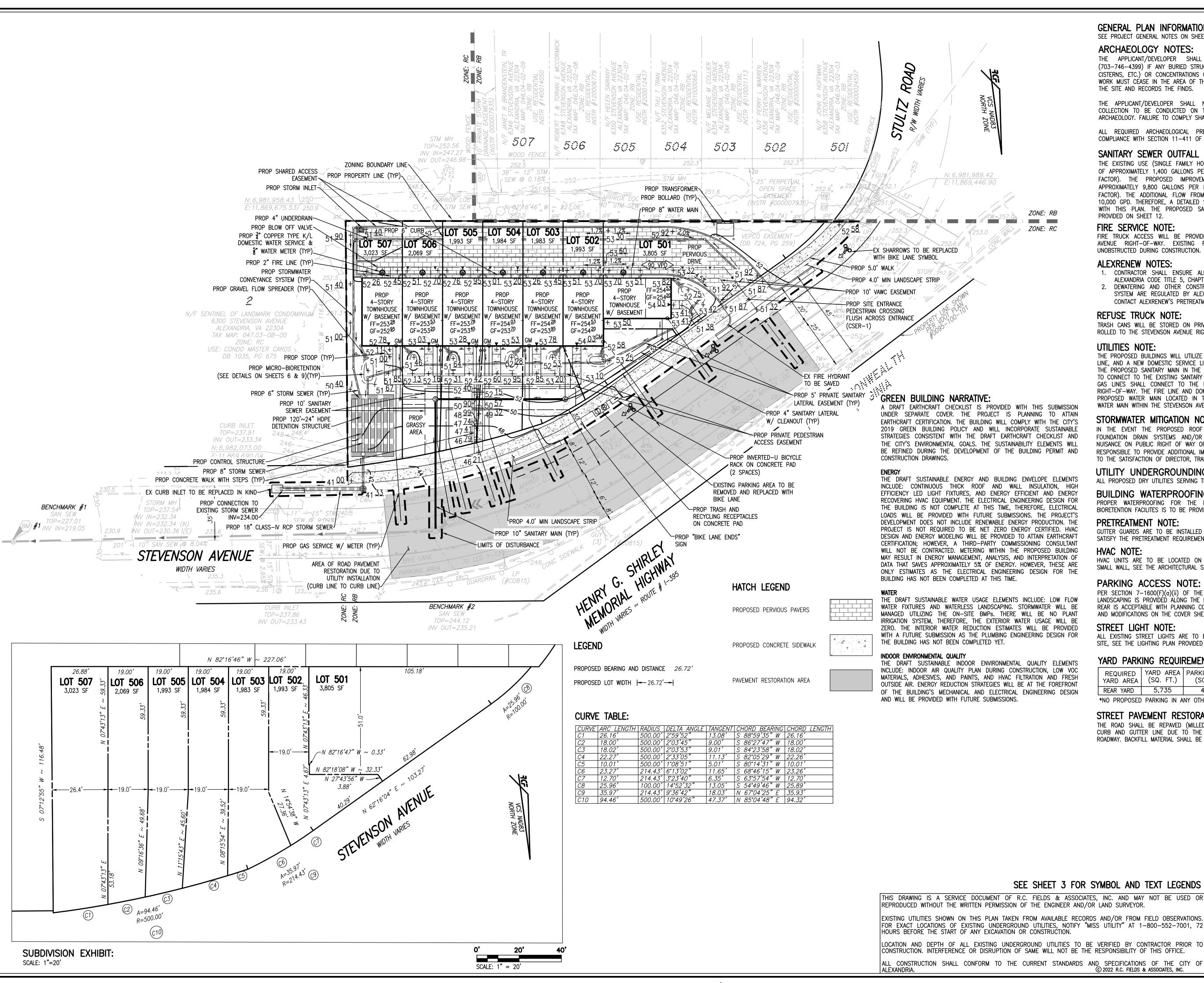




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GENERAL PLAN INFORMATION NOTE: SEE PROJECT GENERAL NOTES ON SHEET 3.

ARCHAEOLOGY NOTES:

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THE APPLICANT/DEVELOPER SHALL NOT ALLOW ANY METAL DETECTION OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE CITY OF ALEXANDRIA ZONING ORDINANCE.

SANITARY SEWER OUTFALL NARRATIVE:

THE EXISTING USE (SINGLE FAMILY HOME/TOWNHOUSE) PRODUCES AN AVERAGE DAILY FLOW OF APPROXIMATELY 1,400 GALLONS PER DAY (350 GPD/UNIT X 1 UNIT X 4.0 PEAK FLOW FACTOR). THE PROPOSED IMPROVEMENTS PRODUCE AN AVERAGE DAILY FLOW OF APPROXIMATELY 9,800 GALLONS PER DAY (350 GPD/UNIT X 7 UNITS X 4.0 PEAK FLOW FACTOR). THE ADDITIONAL FLOW FROM THE PROPOSED IMPROVEMENTS DOES NOT EXCEED 10,000 GPD. THEREFORE, A DETAILED SANITARY SEWER OUTFALL ANALYSIS IS NOT REQUIRED WITH THIS PLAN. THE PROPOSED SANITARY SEWER CAPACITY COMPUTATIONS HAVE BEEN PROVIDED ON SHEET 12.

FIRE SERVICE NOTE:

E: 11,869,446.90

ZONE: RC

FIRE TRUCK ACCESS WILL BE PROVIDED VIA THE SITE FRONTAGE ALONG THE STEVENSON AVENUE RIGHT-OF-WAY. EXISTING FIRE HYDRANTS SHALL REMAIN IN-SERVICE AND UNOBSTRUCTED DURING CONSTRUCTION.

ALEXRENEW NOTES:

- CONTRACTOR SHALL ENSURE ALL DISCHARGES ARE IN ACCORDANCE WITH CITY OF ALEXANDRIA CODE TITLE 5, CHAPTER 6, ARTICLE B.
- DEWATERING AND OTHER CONSTRUCTION RELATED DISCHARGE LIMITS TO THE SEWER SYSTEM ARE REGULATED BY ALEXRENEW PRETREATMENT. CONTRACTOR IS REQUIRED TO CONTACT ALEXRENEW'S PRETREATMENT COORDINATOR AT 703-721-3500 X2020.

REFUSE TRUCK NOTE:

TRASH CANS WILL BE STORED ON PRIVATE PROPERTY (WITHIN THE PROPOSED GARAGES) AND ROLLED TO THE STEVENSON AVENUE RIGHT-OF-WAY FOR TRASH PICK UP ON A WEEKLY BASIS.

THE PROPOSED BUILDINGS WILL UTILIZE A NEW SANITARY LATERAL, NEW GAS LINE, A NEW FIRE LINE, AND A NEW DOMESTIC SERVICE LINE. THE NEW SANITARY LATERALS ARE TO CONNECT TO THE PROPOSED SANITARY MAIN IN THE FRONT OF THE SITE. THE PROPOSED SANITARY MAIN IS O CONNECT TO THE EXISTING SANTARY SEWER WITHIN THE STEVENSON AVENUE RIGHT-OF-WAY. GAS LINES SHALL CONNECT TO THE EXISTING MAINS LOCATED IN THE STEVENSON AVENUE RIGHT-OF-WAY. THE FIRE LINE AND DOMESTIC WATER SERVICE LINES ARE TO CONNECT TO THE PROPOSED WATER MAIN LOCATED IN THE DRIVE AISLE, WHICH CONNECTS TO THE EXISTING WATER MAIN WITHIN THE STEVENSON AVENUE RIGHT-OF-WAY.

STORMWATER MITIGATION NOTE:

IN THE EVENT THE PROPOSED ROOF DRAINAGE AND/ OR SUMP PUMP DISCHARGE, AND FOUNDATION DRAIN SYSTEMS AND/OR GRADING ADVERSELY IMPACTS AND/OR CREATES A NUISANCE ON PUBLIC RIGHT OF WAY OR PRIVATE PROPERTIES THEN THE APPLICANT SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL IMPROVEMENTS TO THE ROOF DRAINAGE AND/OR GRADING TO THE SATISFACTION OF DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES.

UTILITY UNDERGROUNDING NOTE:

ALL PROPOSED DRY UTILITIES SERVING THE SUBJECT PARCEL SHALL BE PLACED UNDERGROUND.

BUILDING WATERPROOFING NOTE:

PROPER WATERPROOFING FOR THE FACE OF THE PROPOSED DWELLINGS FACING THE BIORETENTION FACILITES IS TO BE PROVIDED AT FINAL SITE PLAN.

PRETREATMENT NOTE:

GUTTER GUARDS ARE TO BE INSTALLED ON DOWNSPOUTS DIRECTED TO THE BIORETENTIONS TO SATISFY THE PRETREATMENT REQUIREMENT.

HVAC NOTE:

HVAC UNITS ARE TO BE LOCATED ON THE UPPER ROOF AND ARE TO BE SCREENED BY A SMALL WALL, SEE THE ARCHITECTURAL SHEETS FOR MORE INFORMATION.

PARKING ACCESS NOTE:

PER SECTION 7-1600(F)(a)(ii) OF THE ZONING ORDINANCE, SINCE PERMEABLE PAVEMENT AND LANDSCAPING IS PROVIDED ALONG THE PROPOSED DRIVE AISLE, THE PARKING COVERAGE IN THE REAR IS ACCEPTABLE WITH PLANNING COMMISSION APPROVAL, SEE THE REQUESTED APPLICATIONS AND MODIFICATIONS ON THE COVER SHEET.

STREET LIGHT NOTE:

ALL EXISTING STREET LIGHTS ARE TO BE CONVERTED TO LED ALONG THE FRONTAGE OF THE SITE, SEE THE LIGHTING PLAN PROVIDED ON SHEET L3.01 FOR MORE INFORMATION.

YARD PARKING REQUIREMENTS

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REQUIRED YARD AREA	YARD AREA (SQ. FT.)	PARKING AREA (SQ. FT.)	ALLOWABLE RATIO	PARKING RATION PROPOSED					
REAR YARD	5,735	4,309	50%	75%					
THE PROPERTY BUILDING BY ANY OTHER PROPERTY AND PRO-									

*NO PROPOSED PARKING IN ANY OTHER REQUIRED YARDS

STREET PAVEMENT RESTORATION NOTE:

THE ROAD SHALL BE REPAVED (MILLED AND OVERLAYED) FROM CURB AND GUTTER LINE TO CURB AND GUTTER LINE DUE TO THE AMOUNT OF PROPOSED UTILITY CUTS IN THE IN THE ROADWAY. BACKFILL MATERIAL SHALL BE COMPACTED TO NO LESS THAN 95% COMPACTION.

20'	40'		
			
20'			

APPROVED SPECIAL USE PERMIT NO.	2022-00004
DEPARTMENT OF BLANKING & ZONING	

DATE RECORDED

INSTRUMENT NO.

SEE SHEET 3 FOR SYMBOL AND TEXT LEGENDS SITE PLAN NO.

DEED BOOK NO.

CHAIRMAN, PLANNING COMMISSION

SHEET $\mathbf{04}$ of $\mathbf{15}$

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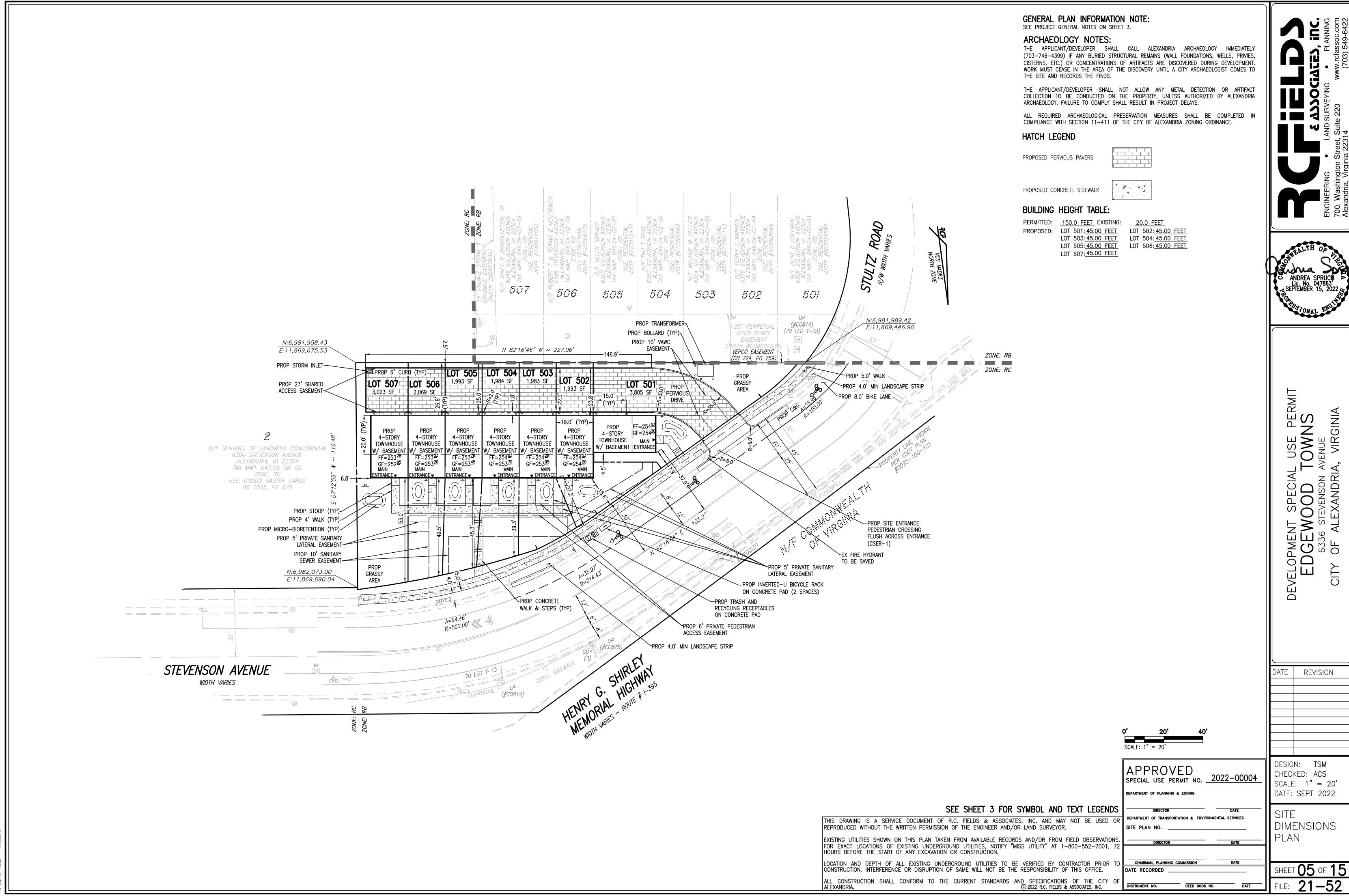
ANDREA SPRUCH Lic. No. 047863

SEPTEMBER 15, 2022

REVISION

DESIGN: TSM CHECKED: ACS SCALE: 1" = 20'DATE: SEPT 2022

PRELIMINARY



A A S O CIATES, INC.

Washington Street, Suite 220

Washington Str

ANDREA SPRUCH Lic. No. 047863
SEPTEMBER 15, 2022

EVELOPMENT SPECIAL USE PERM EDGEWOOD TOWNS
6336 STEVENSON AVENUE
CITY OF ALEXANDRIA, VIRGINIA

DATE REVISION

DESIGN: TSM

DESIGN: TSM
CHECKED: ACS
SCALE: 1" = 20'
DATE: SEPT 2022

STORMWATER MANAGEMENT PLAN

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

CHAIRMAN, PLANNING COMMISSION DATE

DEED BOOK NO.

SITE PLAN NO. _____

DATE RECORDED

INSTRUMENT NO.

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EXISTING UTILITIES SHOWN ON THIS PLAN TAKEN FROM AVAILABLE RECORDS AND/OR FROM FIELD OBSERVATIONS. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 72

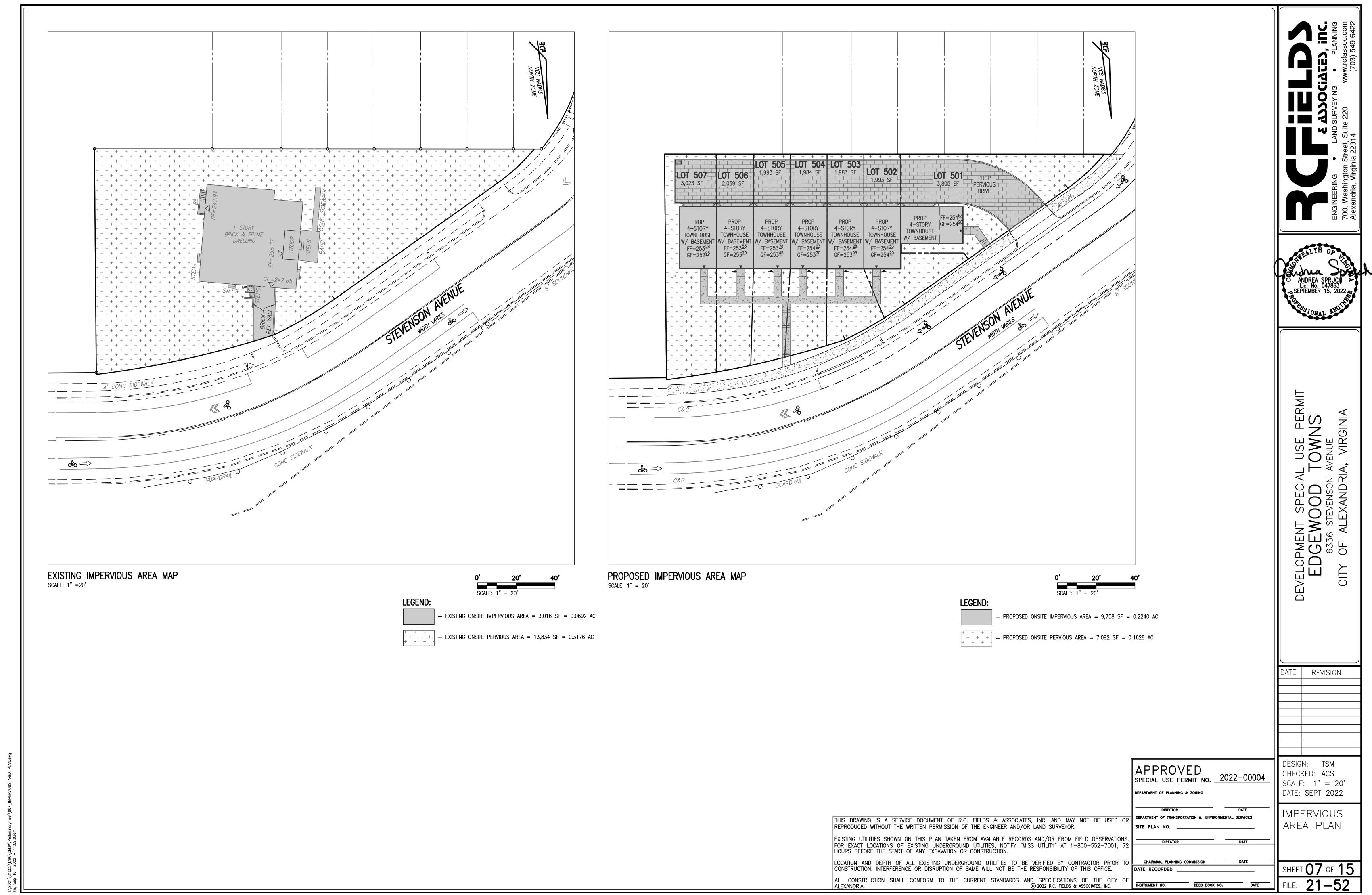
LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF

REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER AND/OR LAND SURVEYOR.

HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.

SHEET 06 OF 15
FILE: 21-52



-

Drainage Area A

(Spec #9)

Drainage Area A Land Cover (acres) A Soils **B** Soils C Soils D Soils **Totals** Land Cover Rv 0.00 0.00 Forest/Open Space (acres) Managed Turf (acres) 0.20 0.25 0.20 0.26 0.95 Impervious Cover (acres) 0.26

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr) Post Development Treatment Volume in D.A. A (ft³)

1,078

Stormwater Rest Management Practices (RR = Runoff Reduction)

Stormwater Best Ivianagem	Select from dropdown list.									Select from dropdown lists-			
Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft ³)	Runoff Reduction (ft ³)	Remaining Runoff Volume (ft ³)	Total BMP Treatment Volume (ft ³)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (Ib)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
3. Permeable Pavement (RR)	B. Permeable Pavement (RR)												
3.a. Permeable Pavement #1 (Spec #7)	45		0.15	0	233	285	517	25	0.00	0.32	0.19	0.13	None
6. Bioretention (RR)	5. Bioretention (RR)												
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40	0.01	0.03	0	45	68	113	25	0.00	0.07	0.04	0.03	None
6.b. Bioretention #2 or Micro-Bioretention #2	80	0.01	0.02	0	62	16	78	50	0.00	0.05	0.04	0.00	None

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)	0.26	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.20	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.20	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.02	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Total

0.46

Site Treatment Volume (ft³) 1,078

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 ³)	340	0	0	0	0	340
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	0.68	0.00	0.00	0.00	0.00	0.68
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.27	0.00	0.00	0.00	0.00	0.27
TP LOAD REMAINING (lb/yr)	0.40	0.00	0.00	0.00	0.00	0.40
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	2.01	0.00	0.00	0.00	0.00	2.01

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	
TP LOAD REDUCTION REQUIRED (lb/yr)	0.31
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.27
TP LOAD REMAINING (lb/yr):	0.40
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.04

Total Nitrogen (For Information Purposes)

NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 2.01	POST-DEVELOPMENT LOAD (lb/yr)	4.85
		2.01
EMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr) 2.84	MAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	2.84

STORMWATER QUALITY NARRATIVE (CITY CODE SECTION 13-109E COMPLIANCE):

THE PROPOSED REDEVELOPMENT (0.46 ACRES OF ONSITE DISTURBANCE (STORMWATER ANALYSIS LIMITS)) GENERATES A NET INCREASE IN IMPERVIOUS AREA FROM PRE-DEVELOPMENT CONDITIONS. PER CITY CODE SECTION 13-109E-(5)(c), DEVELOPMENT OF PRIOR DEVELOPED LANDS RESULTING IN A NET INCREASE IN IMPERVIOUS AREA AND DISTURBING LESS THAN 1 ACRE, MUST RESULT IN A 10% DECREASE IN PHOSPHORUS LOADING FROM THE PRE-DEVELOPMENT TOTAL PHOSPHORUS LOAD.

THE VIRGINIA RUNOFF REDUCTION METHOD WAS UTILIZED TO DETERMINE THE STORMWATER QUALITY MANAGEMENT PERFORMANCE REQUIREMENTS FOR THIS PROJECT. MULTIPLE LEVEL 1 AND LEVEL 2 BIORETENTION FACILITIES ARE PROPOSED AS BMPS TO PROVIDE WATER QUALITY TREATMENT, ALONG WITH PERMEABLE PAVEMENT. THIS WILL RESULT IN A REDUCTION OF 0.27 LB/YEAR PHOSPHORUS LOAD (8.7%), WHICH IS 87% OF THE REQUIRED TOTAL PHOSPHORUS REDUCTION OF 0.31 LB/YEAR. TO MEET THE REMAINING PHOSPHORUS LOAD REQUIREMENT, THE PURCHASE OF OFFSITE CREDITS, AS ALLOWED PER CITY CODE SECTION 13-109E-(8), IS PROPOSED. THUS, THROUGH THE COMBINATION OF PROPOSED BMPS AND THE PURCHASE OF OFFSITE NUTRIENT CREDITS, THE WATER QUALITY MANAGEMENT PERFORMANCE REQUIREMENTS FOR THE PROPOSED DEVELOPMENT PER CITY CODE SECTION 13-109E-(5)(a) HAVE BEEN MET.

IN ADDITION, APPROXIMATELY 87.1% OF ON-SITE IMPERVIOUS AREA IS PROPOSED TO BE TREATED WITH THIS DEVELOPMENT, WHICH MEETS THE MAJORITY OF THE WATER QUALITY DEFAULT VOLUME TREATMENT STANDARDS IN SECTION 13-110 OF THE ZONING ORDINANCE. A CONTRIBUTION TO THE ALEXANDRIA WATER QUALITY IMPROVEMENT FUND WILL BE MADE FOR THAT PORTION OF THE WATER QUALITY VOLUME NOT TREATED IN COMPLIANCE WITH CITY CODE SECTION 13-109E-(5) AND SECTION 13-110.

SE P

ANDREA SPRUCH

SEPTEMBER 15, 2022

VIRGINIA EVENSON XANDRI

REVISION

DESIGN: TSM CHECKED: ACS SCALE: NO SCALE DATE: SEPT 2022

STORMWATER COMPUTATIONS

NUTRIENT CREDIT AVAILABILITY LETTER:



March 4, 2022

Terry Morris

RC Fields

Eco-Cap, LLC - Harris Nutrient Bank - Availability Letter

Project Reference: 6336 Stevenson Avenue, Alexandria, VA 22304

This letter is to confirm the availability of Nutrient Credits sufficient to meet your project requirements at the Harris Nutrient Bank located in the Westmoreland County, Virginia Hydrologic Unit Code 02070011. The Harris Nutrient Bank received approval and release from the Virginia Department of Environmental Quality on June 14th, 2019 with a release of 28.24 lbs. The nutrient reductions resulting from this activity will generate 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).

The Harris facility has 2.40 Credits available and will be able to meet your removal requirement of approximately **0.04** Credits.

Feel free to contact me if you require further assistance.

Casey J. Jensen

Casey J. Jensen President Eco-Cap, LLC

Manager Harris Nutrient Bank

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CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

SITE PLAN NO. LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF

DEED BOOK NO.

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APPROVED DEPARTMENT OF PLANNING & ZONING

QUALITY

PROPOSED BIORETENTION #5:

 $T_V = (1.00)(RV)(A)/12$

TOTAL AREA TO BMP = 395 SQ.FT.

WATER QUALITY VOLUME REQUIRED:

A = AREA TO FACILITY (395 SF)

R_v = COMPOSITE RUNOFF COEFFICIENT

 $R_V = [(0.25*91)+(0.95*304)] = 0.79$

 $T_V = (1.00)(0.79)(395)/12 = 26.0 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED:

SA = SURFACE AREA (20 SQ. FT.)

 $D_{fm} = DEPTH OF FILTER MEDIA (24")$

= DEPTH OF GRAVEL BED (12")

 N_{fm} = VOID RATIO OF FILTER MEDIA (0.25)

= VOID RATIO OF GRAVEL BED (0.40)

 $V = 20[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 28.0 \text{ FT}^3$

IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95)

PERVIOUS AREA TO BMP = 91 SQ.FT. (" R_V " = 0.25)

 $D_n = PONDING DEPTH (6")$

 $V = SA[D_p+(D_{fm})(N_{fm})+(D_g)(N_g)]$

V = VOLUME

REQUIRED: 26.0 CU.FT.

PROVIDED: 28.0 CU.FT.

 $T_V = (1.00)(RV)(A)/12$

PROPOSED BIORETENTION #6:

WATER QUALITY VOLUME REQUIRED:

A = AREA TO FACILITY (395 SF)

R_V = COMPOSITE RUNOFF COEFFICIENT

 $R_V = [(0.25*91)+(0.95*304)] = 0.79$

 $T_V = (1.00)(0.79)(395)/12 = 26.0 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED:

SA = SURFACE AREA (20 SQ. FT.)

 $D_{fm} = DEPTH OF FILTER MEDIA (24")$

, = DEPTH OF GRAVEL BED (12")

 N_{fm} = VOID RATIO OF FILTER MEDIA (0.25)

= VOID RATIO OF GRAVEL BED (0.40)

 $V = 20[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 28.0 \text{ FT}^3$

 $V = SA[D_p + (D_{fm})(N_{fm}) + (D_g)(N_g)]$

 $D_{D} = PONDING DEPTH (6")$

IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95)

PERVIOUS AREA TO BMP = 91 SQ.FT. (" R_V " = 0.25)

PRETREATMENT NOTE:

GUTTER GUARDS ARE TO BE INSTALLED ON DOWNSPOUTS DIRECTED TO THE BIORETENTIONS TO SATISFY THE PRETREATMENT REQUIREMENT.

WATER QUALITY VOLUME CALCULATIONS: PROPOSED BIORETENTION #3:

TOTAL AREA TO BMP = 395 SQ.FT.IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95) PERVIOUS AREA TO BMP = 91 SQ.FT. (" R_V " = 0.25)

WATER QUALITY VOLUME REQUIRED: $T_V = (1.00)(RV)(A)/12$

- A = AREA TO FACILITY (395 SF) $R_V = COMPOSITE RUNOFF COEFFICIENT$ $R_V = [(0.25*91)+(0.95*304)] = 0.79$
- $T_V = (1.00)(0.79)(395)/12 = 26.0 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED: $V = SA[D_p + (D_{fm})(N_{fm}) + (D_q)(N_q)]$

- WHERE: V = VOLUMESA = SURFACE AREA (20 SQ. FT.) $D_n = PONDING DEPTH (6")$ $D_{fm} = DEPTH OF FILTER MEDIA (24")$
- N_{fm} = VOID RATIO OF FILTER MEDIA (0.25) D_{α} = DEPTH OF GRAVEL BED (12") = VOID RATIO OF GRAVEL BED (0.40)
- $V = 20[0.5' + (2.0')(0.25) + (1.0')(0.40)] = 28.0 \text{ FT}^3$

REQUIRED: 26.0 CU.FT. PROVIDED: 28.0 CU.FT.

PROPOSED BIORETENTION #4: TOTAL AREA TO BMP = 395 SQ.FT.

IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95) PERVIOUS AREA TO BMP = 91 SQ.FT. (" R_V " = 0.25)

WATER QUALITY VOLUME REQUIRED:

- $T_V = (1.00)(RV)(A)/12$ A = AREA TO FACILITY (395 SF)
- R_V = COMPOSITE RUNOFF COEFFICIENT $R_V = [(0.25*91)+(0.95*304)] = 0.79$
- $T_V = (1.00)(0.79)(395)/12 = 26.0 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED: $V = SA[D_p + (D_{fm})(N_{fm}) + (D_g)(N_g)]$

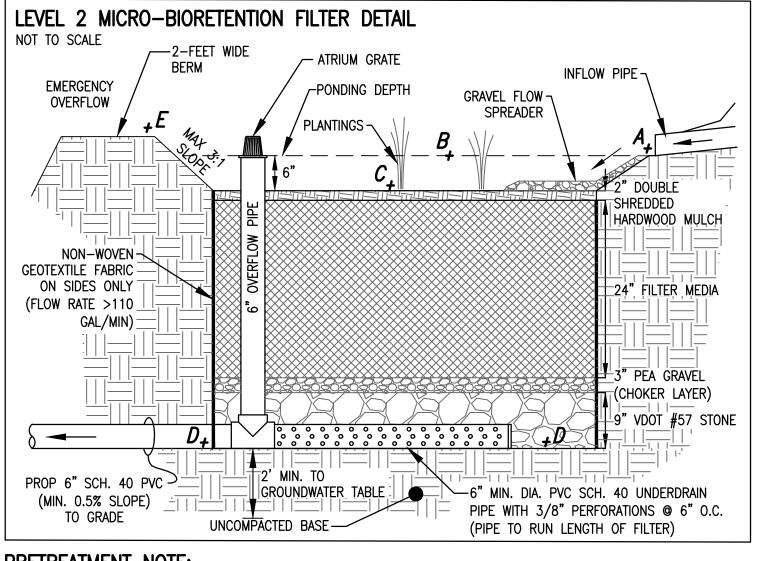
- V = VOLUMESA = SURFACE AREA (20 SQ. FT.) $D_{p} = PONDING DEPTH (6")$
- \dot{D}_{fm} = DEPTH OF FILTER MEDIA (24") N_{fm} = VOID RATIO OF FILTER MEDIA (0.25) $D_0 = DEPTH OF GRAVEL BED (12")$ $N_0 = VOID RATIO OF GRAVEL BED (0.40)$
- $V = 20[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 28.0 \text{ FT}^3$

REQUIRED: 26.0 CU.FT. PROVIDED: 28.0 CU.FT.

REQUIRED: 26.0 CU.FT. PROVIDED: 28.0 CU.FT.

V = VOLUME

							20:0 00:11:		
BIORETENTION	SQ.FT. OF SURFACE AREA		EL	EVATIOI	NS	LATITUDE	LONOITUDE		
BIONETENTION		Α	В	С	D	Ε	LATITUDE	LONGITUDE	
3	20.0	53.03	53.03	52.53	49.36	53.20	38.8130942	-77.1430498	
4	20.0	52.78	52.78	52.28	49.08	52.95	38.8131028	-77.1428803	
5	20.0	54.14	52.14	51.64	48.47	52.31	38.8131012	-77.1427416	
6	20.0	51.96	51.96	51.46	48.29	52.13	38.8130856	-77.1425945	



PROPOSED BIORETENTION #7:

 $V_V = (1.25)(RV)(A)/12$

TOTAL AREA TO BMP = 504 SQ.FT.

WATER QUALITY VOLUME REQUIRED:

A = AREA TO FACILITY (504 SF)

R_v = COMPOSITE RUNOFF COEFFICIENT

 $R_V = [(0.25*200)+(0.95*304)] = 0.67$

 $T_V = (1.25)(0.67)(504)/12 = 35.2 \text{ FT}^3$

SA = SURFACE AREA (35 SQ. FT.)

 D_{fm} = DEPTH OF FILTER MEDIA (24")

 D_{α} = DEPTH OF GRAVEL BED (12")

 N_{fm} = VOID RATIO OF FILTER MEDIA (0.25)

 $N_a = VOID RATIO OF GRAVEL BED (0.40)$

 $V = 35[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 49.0 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED:

 $V = SA[D_p+(D_{fm})(N_{fm})+(D_g)(N_g)]$

 $D_{p} = PONDING DEPTH (6")$

V = VOLUME

REQUIRED: 35.2 CU.FT.

PROVIDED: 49.0 CU.FT.

IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95)

PERVIOUS AREA TO BMP = 200 SQ.FT. (" R_V " = 0.25)

PRETREATMENT NOTE:

GUTTER GUARDS ARE TO BE INSTALLED ON DOWNSPOUTS DIRECTED TO THE BIORETENTIONS TO SATISFY THE PRETREATMENT REQUIREMENT.

WATER QUALITY VOLUME CALCULATIONS: PROPOSED BIORETENTION #1:

TOTAL AREA TO BMP = 442 SQ.FT. IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95) PERVIOUS AREA TO BMP = 138 SQ.FT. (" R_v " = 0.25)

WATER QUALITY VOLUME REQUIRED:

- $T_V = (1.25)(RV)(A)/12$ A = AREA TO FACILITY (442 SF) $R_V = COMPOSITE RUNOFF COEFFICIENT$ $R_V = [(0.25*138)+(0.95*304)] = 0.73$
- $T_V = (1.25)(0.73)(442)/12 = 33.7 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED: $V = SA[D_p + (D_{fm})(N_{fm}) + (D_q)(N_q)]$

- WHERE: V = VOLUMESA = SURFACE AREA (25 SQ. FT.)
- = PONDING DEPTH (6") D_{fm} = DEPTH OF FILTER MEDIA (24") N_{fm} = VOID RATIO OF FILTER MEDIA (0.25) = DEPTH OF GRAVEL BED (12")
- = VOID RATIO OF GRAVEL BED (0.40) $V = 25[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 35.0 \text{ FT}^3$

REQUIRED: 33.7 CU.FT. PROVIDED: 35.0 CU.FT.

PROPOSED BIORETENTION #2: TOTAL AREA TO BMP = 414 SQ.FT. TOTAL AREA TO BMP = 395 SQ.FT.

IMPERVIOUS AREA TO BMP = 304 SQ.FT. ("R_V" = 0.95) PERVIOUS AREA TO BMP = 110 SQ.FT. (" R_V " = 0.25)

WATER QUALITY VOLUME REQUIRED: $T_V = (1.25)(RV)(A)/12$

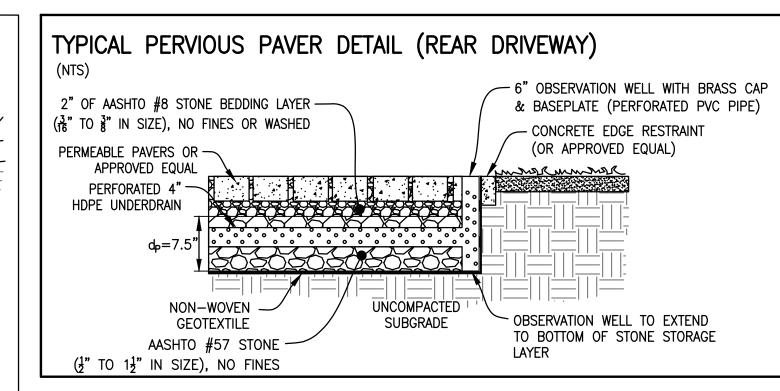
- A = AREA TO FACILITY (414 SF)
- R_V = COMPOSITE RUNOFF COEFFICIENT $R_V = [(0.25*114)+(0.95*304)] = 0.77$ 414
- $T_V = (1.25)(0.77)(414)/12 = 33.2 \text{ FT}^3$

WATER QUALITY VOLUME PROVIDED: $V = SA[D_p+(D_{fm})(N_{fm})+(D_g)(N_g)]$

- V = VOLUME
- SA = SURFACE AREA (25 SQ. FT.) $_{\rm b}$ = PONDING DEPTH (6")
- D_{fm} = DEPTH OF FILTER MEDIA (24") N_{fm} = VOID RATIO OF FILTER MEDIA (0.25)
- $D_a = DEPTH OF GRAVEL BED (12")$ $N_0 = VOID RATIO OF GRAVEL BED (0.40)$
 - $V = 25[0.5'+(2.0')(0.25)+(1.0')(0.40)] = 35.0 \text{ FT}^3$

REQUIRED: 33.2 CU.FT. PROVIDED: 35.0 CU.FT.

BIORETENTION	SQ.FT. OF		EL	EVATIOI	VS	LATITUDE	LONGITUDE		
	SURFACE AREA	Α	В	С	D	Ε	LATITUDE	LONGITUDE	
1	25.0	53.25	53.25	52.75	49.58	53.42	38.8130984	-77.1432323	
2	25.0	53.08	53.08	52.58	49.41	53.25	38.8130735	-77.1424923	
7	35.0	51.50	51.50	51.00	47.83	51.67	38.8130735	-77.1424923	



AREA TO PAVERS CALCULATION (REAR DRIVEWAY)

MAXIMUM RATIO OF TOTAL AREA TO PAVERS TO AREA OF PAVERS: 2.5 A(C) = AREA TO PAVERS

- A(P) = AREA OF PAVERS
- A(C) = 6,350 SFA(P) = 2,847 SF

A(C)/A(P) = 2.2

ACCORDING TO VA DEQ STORMWATER DESIGN SPECIFICATION #7, SECTION 5, SINCE THE AREA BEING DIRECTED TO THE PROPOSED PERVIOUS PAVERS LESS THAN 2.5 TIMES THE SQUARE FOOTAGE OF PAVERS, THE PAVERS ARE ADEQUATE FOR TREATMENT.

A_c (SF)

A_p (SF)

 T_v (FT3)

 d_c (FT)

P (FT)

i (FT/DAY)

 $t_f(DAY)$

 t_d (DAY)

 d_p (FT)

d_{p-max} (FT)

d_p Provided (FT) 0.63

0.95

6350.0

2847.0

502.7

0.079

2.23

0.083

0.5

0.083

1.0

0.4

0.60

0.63

WATER QUALITY VOLUME CALCULATIONS:

WATER QUALITY VOLUME REQUIRED: $T_V = (R_V)(A)/12$

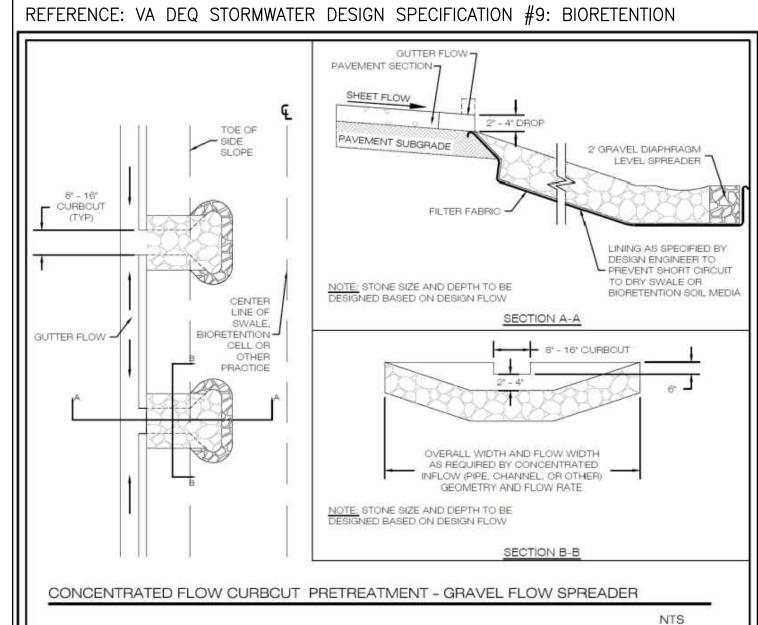
WHERE: $T_V = TREATMENT VOLUME (FT^3)$ $R_V = COMPOSITE RUNOFF COEFFICIENT$ A = AREA TO FACILITY (SF)

DEPTH OF RESERVOIR LAYER:

- $d_{D} = \frac{(d_{C}*R) + P (i/2*t_{f})}{2}$

- $d_p = DEPTH OF RESERVOIR LAYER (FT)$ dc = DEPTH OF RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA FOR THE TREATMENT VOLUME (Tv/An)
- R = RATIO OF CONTRIBUTING DRAINAGE AREA (A_C) TO PERMEABLE PAVEMENT SURFACE AREA (A_C) [A_C/A_P]P = RAINFALL DEPTH (0.083 FT)
- i = INFILTRATION RATE (ASSUME 0.5 FT/DAY)
- t_f = TIME TO FILL THE RESERVOIR LAYER (0.083 DAY) t_{d} = TIME TO DRAIN THE RESERVOIR LAYER (1 DAY)
- $V_r = VOID RATIO OF THE RESERVOIR LAYER (0.4)$

GRAVEL FLOW SPREADER DETAIL



DEPARTMENT OF PLANNING & ZONING SITE PLAN NO. ___ CHAIRMAN, PLANNING COMMISSION DATE RECORDED

INSTRUMENT NO.

DEED BOOK NO.

APPROVED

SHEET **09** OF **15**

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HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION. LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF © 2022 R.C. FIELDS & ASSOCIATES, INC.

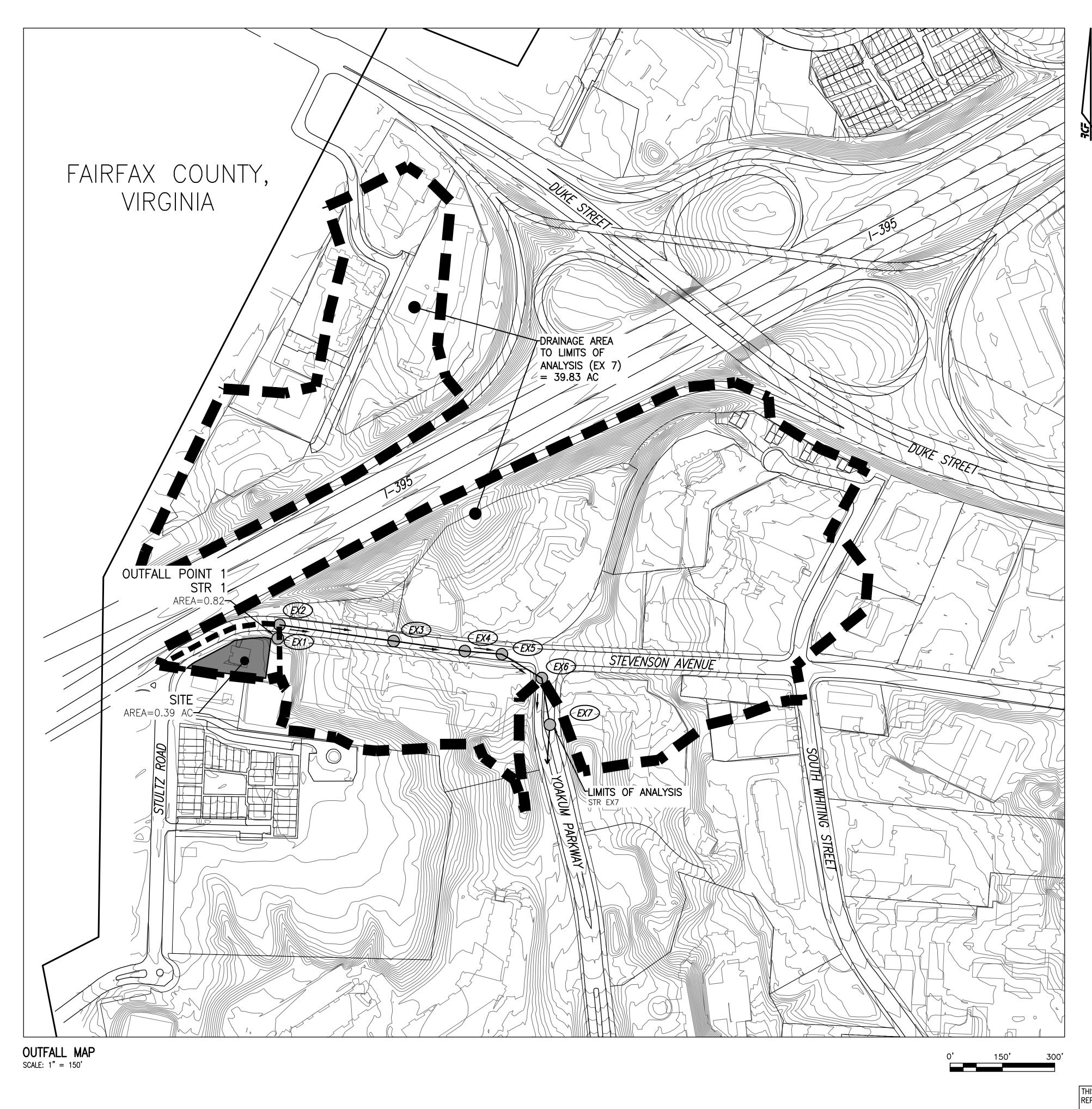
Bidua Dough ANDREA SPRUCH Lic. No. 047863 SEPTEMBER 15, 2022

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REVISION

DESIGN: TSM CHECKED: ACS SCALE: NO SCALE

DATE: SEPT 2022 BMP DETAILS



STORMWATER OUTFALL NARRATIVE (CITY CODE SECTION 13-109F):

THE 0.39 ACRE SITE IS LOCATED IN THE BACKLICK RUN WATERSHED. IN EXISTING CONDITIONS, THE SITE CONSISTS OF AN EXISTING DWELLING, DRIVEWAY, MULTIPLE RETAINING WALLS, AND VEGETATED AREAS. THIS PROJECT HAS ONE OUTFALL POINT.

OUTFALL #1: A MAJORITY OF THE PROJECT SITE DRAINS VIA NON-CONCENTRATED SHEET FLOW TOWARDS THE STEVENSON AVENUE RIGHT-OF-WAY (OUTFALL #1) BEFORE FLOWING OFF SITE IN A NORTHERLY DIRECTION. THE STORMWATER RUNOFF IS THEN COLLECTED BY THE EXISTING CURB AND GUTTER, DIRÉCTING RUNOFF TO THE EXISTING CURB INLET WITHIN THE STEVENSON AVENUE RIGHT-OF-WAY AND PIPED IN A GENERALLY EASTERLY DIRECTION VIA THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM BEFORE IT OUTFALLS TO BACKLICK RUN.

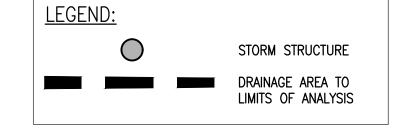
THE REMAINDER OF THE PROJECT SITE IS DIRECTED TO THE ADJACENT PROPERTY TO THE EAST. AFTER ENTERING THE NEIGHBORING PROPERTY, THE RUNOFF IS DIRECTED IN A NORTHERLY DIRECTION, TOWARDS THE STEVENSON AVENUE RIGHT-OF-WAY. RUNOFF IS QUICKLY COLLECTED BY THE EXISTING CURB AND GUTTER WITHIN THE RIGHT-OF-WAY, EVENTUALLY BEING COLLECTED BY THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM, JOINING THE OTHER FLOW REGIME, AND OUTFALLING TO BACKLICK RUN.

THE REDEVELOPMENT OF THE PROJECT SITE PROPOSES CONSTRUCTION OF SEVEN TOWNHOUSE DWELLINGS WITH A COMMON DRIVE AISLE, AND ASSOCIATED IMPROVEMENTS. OVERALL IMPERVIOUS AREA WILL INCREASE WITH THE PROPOSED CONSTRUCTION; HOWEVER, A PROPOSED DETENTION STRUCTURE AND ONSITE BMPS ARE TO BE USED TO OFFSET THE INCREASE IN RUNOFF AND REMAINING RUNOFF WILL BE DIRECTED TO THE CITY OF ALEXANDRIA STORM SEWER SYSTEM. EXISTING OVERALL DRAINAGE DIVIDES ARE MAINTAINED FROM PRE-DEVELOPMENT CONDITIONS. THE PROJECT SITE HAS ONE PROPOSED CONDITION OUTFALL POINT.

OUTFALL #1: IN POST-DEVELOPMENT CONDITIONS, THE MAJORITY OF ONSITE STORMWATER RUNOFF IS COLLECTED WITHIN AN ONSITE PRIVATE STORM PIPE SYSTEM. THE RUNOFF THEN OUTFALLS VIA PIPE FLOW TO THE EXISTING STORM SEWER SYSTEM LOCATED WITHIN THE STEVENSON AVENUE RIGHT-OF-WAY, WHERE IT CONVERGES WITH THE REMAINDER OF THE RUNOFF THAT EXITS THE SITE VIA SHEET FLOW TO THE SAME CURB INLET (OUTFALL #1). THE STORMWATER THEN FLOWS IN AN EASTERLY DIRECTION VIA THE CITY OF ALEXANDRIA MAINTAINED STORM SEWER SYSTEM BEFORE IT ENTERS "EXISTING" MANHOLE (EX 6) WITHIN THE INTERSECTION OF STEVENSON AVE AND YOAKUM PKWY. AT THIS POINT, THE FLOW REACHES THE LIMITS OF ANALYSIS WHERE THE SUBJECT SITE CONTRIBUTING DRAINAGE AREA (0.39 AC) IS LESS THAN 1% OF THE TOTAL WATERSHED AREA (39.83 AC) (PER SECTION 13-109F-2(d)(i) OF THE ZONING ORDINANCE).

COMPUTATIONS SHOWN ON THIS SHEET DEMONSTRATE THAT THE EXISTING MANMADE STORMWATER CONVEYANCE SYSTEM IS MINORLY SURCHARGED IN EXISTING CONDITIONS WITHIN THE PIPE THAT FLOWS FROM STRUCTURE EX4-EX5 & EX5-EX6. HOWEVER, THE PEAK FLOW RATE FOR THE 2 AND 10-YEAR, 24-HOUR STORMS WILL BE REDUCED WITH THE PROPOSED DEVELOPMENT THROUGH THE INSTALLATION OF THE PROPOSED DETENTION SYSTEM AND ONSITE BMPS. THE WATER QUANTITY REQUIREMENTS FOR THIS SITE IS THEREFORE IN COMPLIANCE WITH SECTIONS 13-109F(1)(a)(i) AND 13-109F(2)(b)(ii). SINCE THE SITE DRAINAGE OUTFALLS TO AN EXISTING UNDERSIZED MANMADE STORM SEWER SYSTEM, NO OFFSITE IMPROVEMENTS TO THE SYSTEM ARE REQUIRED DUE TO THE REDUCTION IN THE POST-DEVELOPMENT RUNOFF RATE FOR THE 2- YEAR AND 10-YEAR, 24-HOUR STORM. THE PROJECT'S POST-DEVELOPMENT RUNOFF WILL NOT EXACERBATE ANY EXISTING DOWNSTREAM CAPACITY CONDITIONS.

	10-YR, 24-HR STORM SEWER COMPUTATIONS																
STRU	CTURE	GE	EA	ER	тн	(:	AL	ED	ER			١".	S)	RUN	₹T	אד	
FROM	5	INC. DRAINAC AREA (AC)	ACCUM. DRAINAGE ARE. (AC)	CURVE NUMBE	RAINFALL DEP (IN)	T _c (MINUTES)	INCREMENTA "Q" (CFS)	ACCUMULATE "Q" (CFS)	PIPE DIAMETE (IN)	SLOPE (%)	"u"	MAXIMUM "Q (CFS)	MAXIMUM VELOCITY (FF	LENGTH OF R (FT)	UPPER INVERT	LOWER INVERT	FALL (FT)
EX1	EX2	0.82	0.82	92	5.20	5	3.90	3.90	15	9.26%	0.015	17.78	13.92	10.80	233.34	232.34	1.00
EX2	EX3	0.33	1.15	92	5.20	5	1.57	5.47	18	8.74%	0.015	28.09	15.27	288.93	230.36	205.11	25.25
EX3	EX4	2.44	3.59	92	5.20	5	11.59	17.06	18	4.64%	0.015	20.46	11.12	218.04	205.11	195.00	10.11
EX4	EX5	1.23	4.82	92	5.20	5	5.84	22.90	18	4.29%	0.015	19.68	10.70	103.70	195.00	190.55	4.45
EX5	EX6	1.67	6.49	92	5.20	5	7.93	30.83	24	1.73%	0.015	26.94	8.24	147.08	190.55	188.00	2.55
EX6	EX7	33.34	39.83	92	5.20	15	140.99	171.82	96	2.94%	0.013	1632.88	31.21	151.21	188.00	183.55	4.45



APPROVED DEPARTMENT OF PLANNING & ZONING SITE PLAN NO.

DEED BOOK NO.

OUTFALL ANALYSIS

DATE | REVISION

DESIGN: TSM

CHECKED: ACS

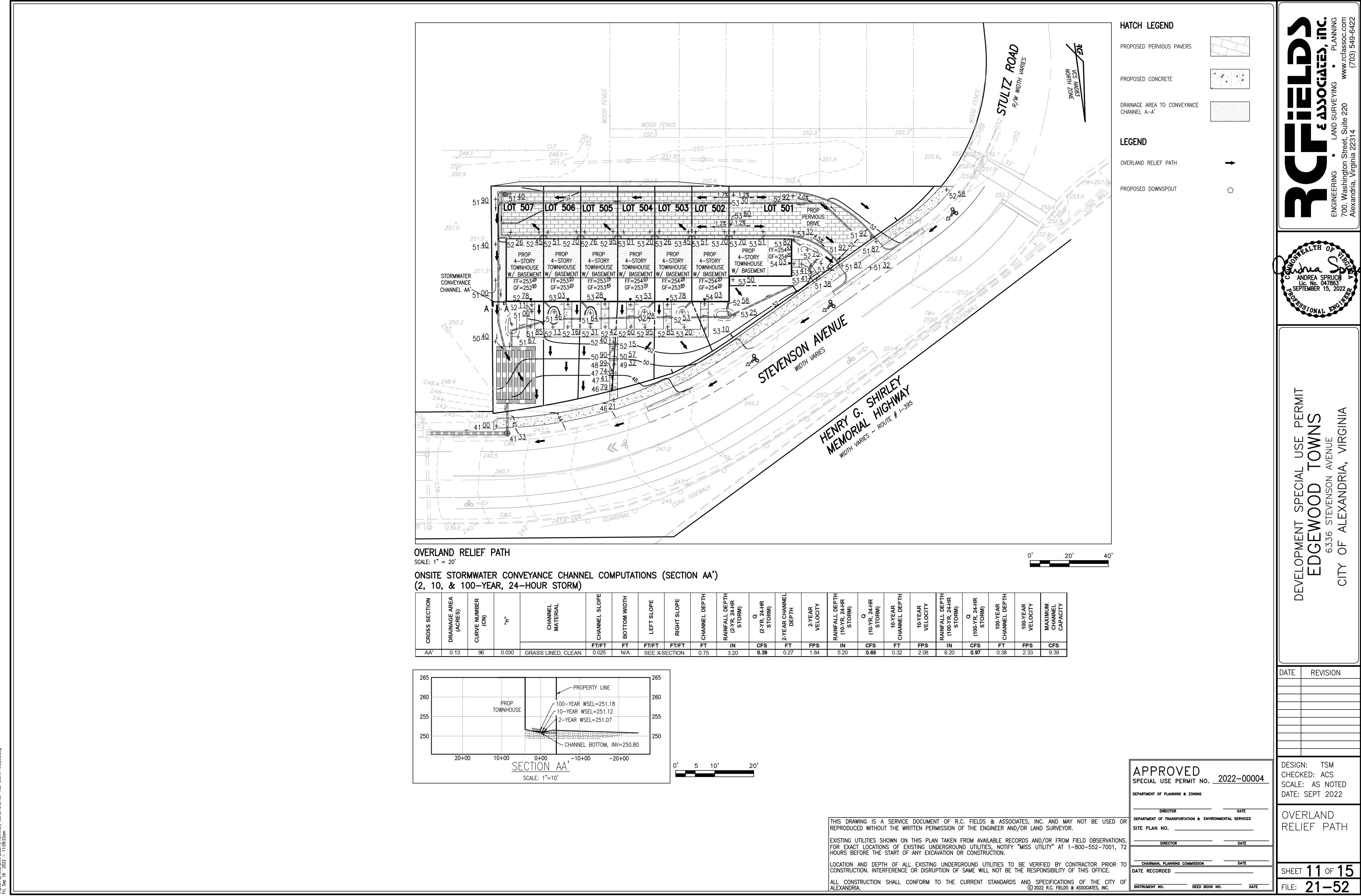
SCALE: 1" = 150'

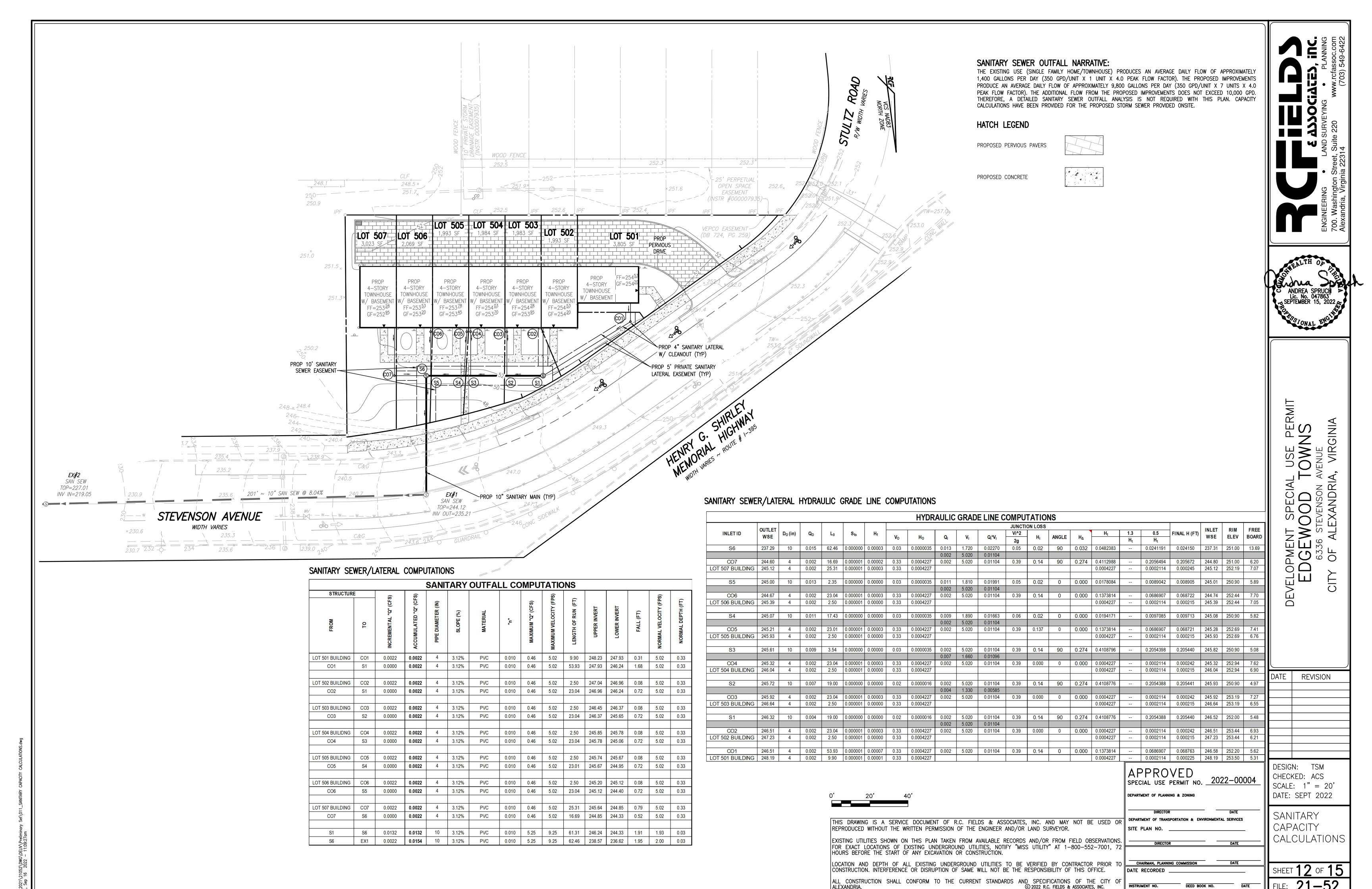
DATE: SEPT 2022

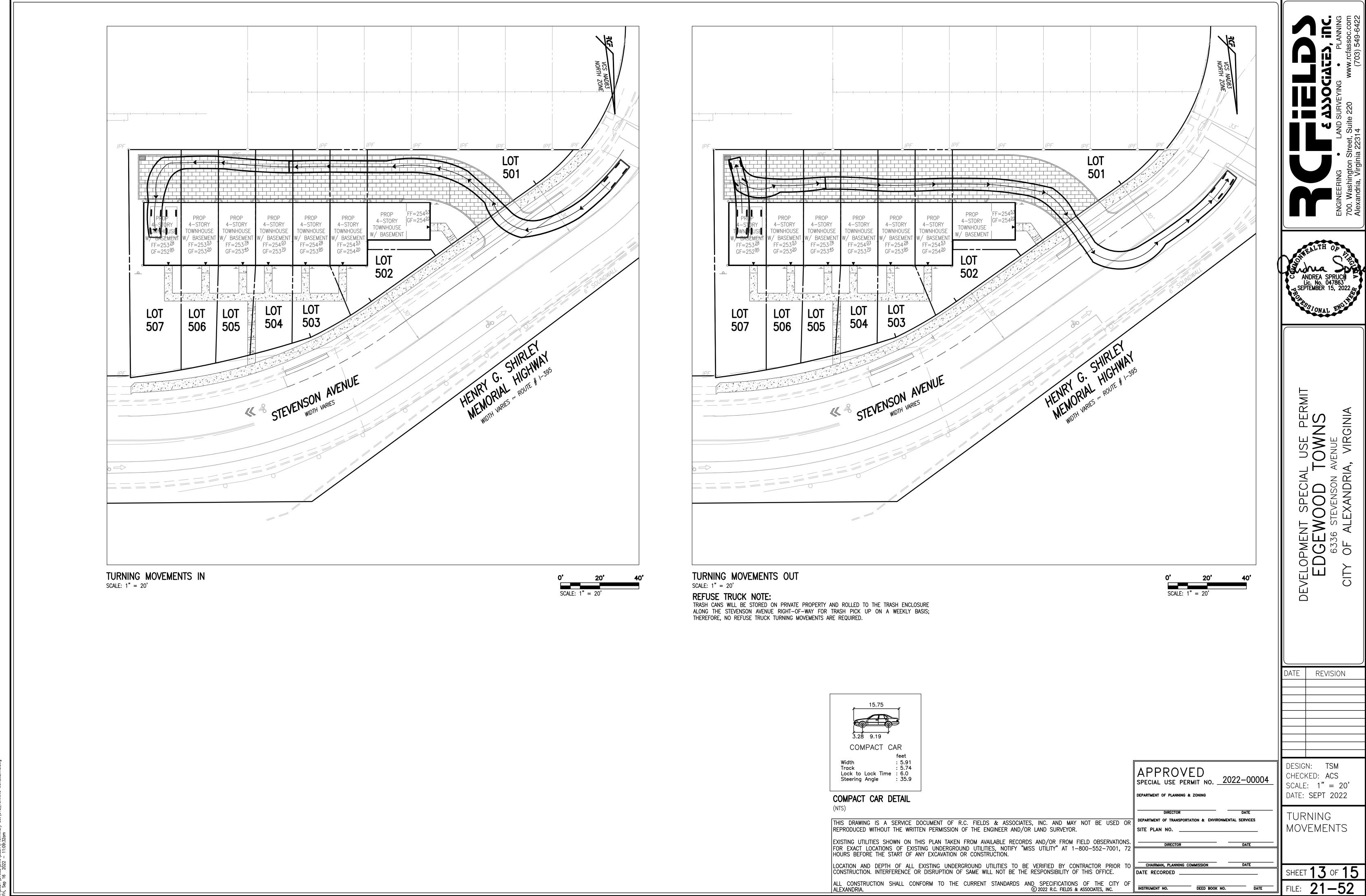
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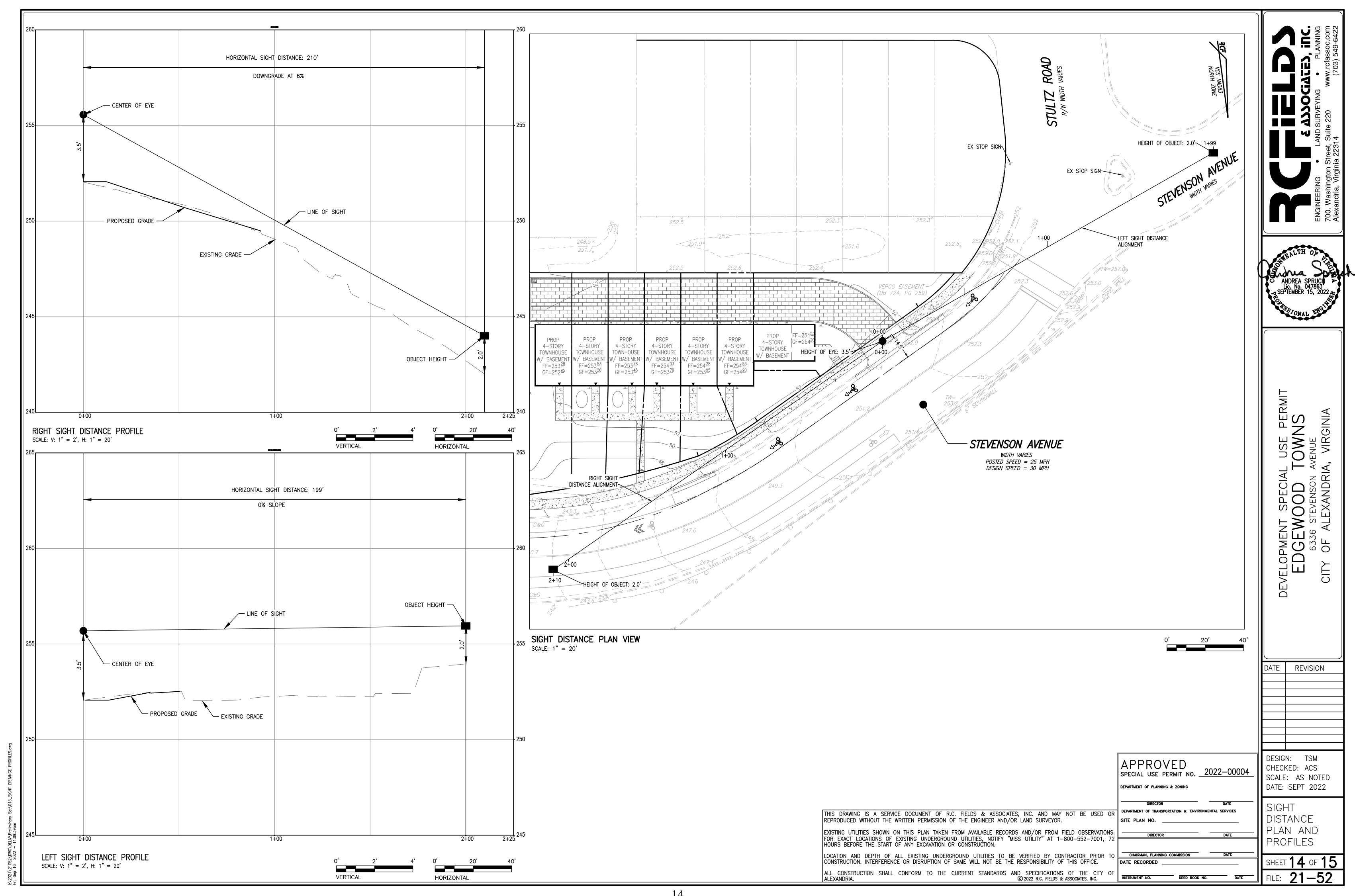
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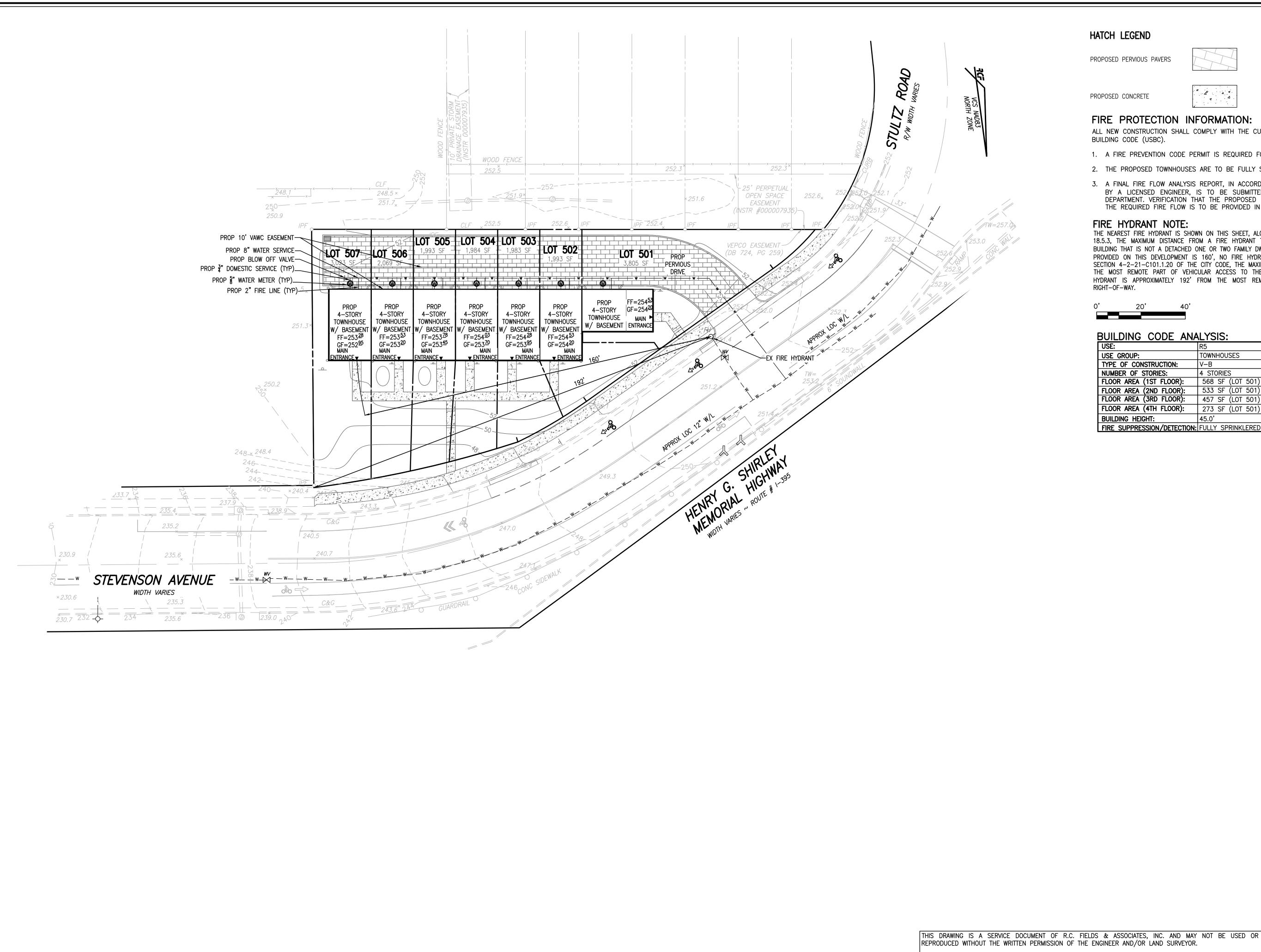
CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF © 2022 R.C. FIELDS & ASSOCIATES, INC.









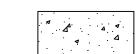


HATCH LEGEND

PROPOSED PERVIOUS PAVERS



PROPOSED CONCRETE

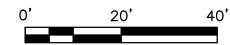


FIRE PROTECTION INFORMATION:

ALL NEW CONSTRUCTION SHALL COMPLY WITH THE CURRENT EDITION OF THE UNIFORM STATEWIDE BUILDING CODE (USBC).

- 1. A FIRE PREVENTION CODE PERMIT IS REQUIRED FOR THE PROPOSED OPERATION.
- 2. THE PROPOSED TOWNHOUSES ARE TO BE FULLY SPRINKLERED.
- 3. A FINAL FIRE FLOW ANALYSIS REPORT, IN ACCORDANCE WITH CITY STANDARDS AND PREPARED BY A LICENSED ENGINEER, IS TO BE SUBMITTED TO THE CITY OF ALEXANDRIA FIRE/EMS DEPARTMENT. VERIFICATION THAT THE PROPOSED INFRASTRUCTURE IS CAPABLE OF PROVIDING THE REQUIRED FIRE FLOW IS TO BE PROVIDED IN THE REPORT.

SECTION 4-2-21-C101.1.20 OF THE CITY CODE, THE MAXIMUM DISTANCE MEASURED FROM THE HYDRANT TO THE MOST REMOTE PART OF VEHICULAR ACCESS TO THE SITE IS 300 FEET. AS SHOWN, THE EXISTING HYDRANT IS APPROXIMATELY 192' FROM THE MOST REMOTE PART OF VEHICULAR ACCESS ALONG THE



LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. INTERFERENCE OR DISRUPTION OF SAME WILL NOT BE THE RESPONSIBILITY OF THIS OFFICE.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF

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BUILDING CODE ANALYSIS:

USE:	R5
USE GROUP:	TOWNHOUSES
TYPE OF CONSTRUCTION:	V-B
NUMBER OF STORIES:	4 STORIES
FLOOR AREA (1ST FLOOR):	568 SF (LOT 501) 559 SF EACH (LOT 502-507)
FLOOR AREA (2ND FLOOR):	533 SF (LOT 501) 528 SF EACH (LOT 502-507)
FLOOR AREA (3RD FLOOR):	457 SF (LOT 501) 452 SF EACH (LOT 502-507)
FLOOR AREA (4TH FLOOR):	273 SF (LOT 501) 255 SF EACH (LOT 502-507)
BUILDING HEIGHT:	45.0'
FIRE SUPPRESSION/DETECTION:	FULLY SPRINKLERED 13D (NO FDC REQUIRED)

APPROVED DEPARTMENT OF PLANNING & ZONING

SITE PLAN NO. _____ EXISTING UTILITIES SHOWN ON THIS PLAN TAKEN FROM AVAILABLE RECORDS AND/OR FROM FIELD OBSERVATIONS. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-552-7001, 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION.

PLAN

EVEL(

DATE | REVISION

DESIGN: TSM CHECKED: ACS SCALE: 1" = 20'DATE: SEPT 2022 FIRE SAFETY