DEVELOPMENT SPECIAL USE PERMIT - PRELIMINARY SITE PLAN

NORTHWEST CORNER OF SOUTH UNION STREET AND DUKE STREET

AREA TABULATIONS

±0.2347 AC OR ±10,223 SF TOTAL EXISTING IMPERVIOUS AREA = ±0.2287 AC OR ±9,960 SF TOTAL PROPOSED IMPERVIOUS AREA = ±0.2189 AC OR ±9,535 SF TOTAL DISTURBED AREA = ±0.3952 AC OR ±17,217 SF

TAX PARCEL IDENTIFICATION =

101 DUKE STREET, ALEXANDRIA VA 22314

PARKING TABULATION

2 SPACES PER UNIT X 6 UNITS = 12 SPACES

12 SPACES (STANDARD SPACES WITHIN INDIVIDUAL UNIT GARAGES)

LOADING REQUIRED

BUILDING CODE ANALYSIS

USE GROUP CONSTRUCTION TYPE ALLOWABLE NUMBER OF STORIES: ALLOWABLE AREA:

VICINITY MAP

SCALE: 1"=2000'

ARCHAEOLOGY NOTES

- . REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED PRIOR TO GROUND—DISTURBING ACTIVITIES (SUCH CORING, GRADING, FILLING, VEGETATION REMOVAL, UNDERGROUNDING UTILITIES, PILE DRIVING, LANDSCAPING, AND OTHER EXCAVATIONS AS DEFINED IN SECTION 2-151 OF THE ZONING ORDINANCE) OR A RESOURCE MANAGEMENT PLAN MUST BE IN PLACE TO PRESERVE AND/OF RECOVER SIGNIFICANT RESOURCES IN CONCERT WITH CONSTRUCTION ACTIVITIES. TO CONFIRM, CALL ALEXANDRIA ARCHAEOLOGY AT
- 2. THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) 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.
- 3. THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY THE ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAY.

PROJECT DESCRIPTION NARRATIVE

THREE PARKING LEVELS. ACCESS TO THE THIRD LEVEL IS FROM A PRIVATE ALLEY ON THE WEST SIDE OF THE GARAGE. CURRENT PROPERTY RESIDES WITHIN THE OLD TOWN SMALL AREA PLAN AND ACROSS THE STREET FROM THE 2012 WATERFRONT SMALL AREA PLAN. PER MAP 9 IN THE SMALL AREA PLAN. HEIGHT IS LIMITED TO 50 FEET.

THE REDEVELOPMENT PROPOSES TO DEMOLISH EXISTING PARKING GARAGE AND CONSTRUCT SIX (6) TOWNHOUSE UNITS. THE END UNITS WILL BE UP TO 22.5' WIDE AND THE INTERIOR UNITS WILL BE 22' WIDE. THE TOWNHOUSES WILL BE FEE SIMPLE WITH LOT SIZES GREATER THAN 1,540 SF. EACH UNIT WILL CONTAIN A TWO CAR, ATTACHED GARAGE ACCESSIBLE FROM THE EXISTING 18.75' WESTERN PRIVATE ALLEY. TOTAL FAR WILL BE AT OR BELOW 2.0, AFTER ALLOWABLE FAR DEDUCTIONS FOR STAIRS, ELEVATORS,

THE FIRST FLOOR WILL BE ELEVATED TOWARDS THE GRADE OF THE WESTERN ALLEY WITH STOOPS ALONG UNION STREET. THIS WILL ALSO KEEP THE BOTTOM FLOORS WELL ABOVE THE 100-YEAR FLOODLPAIN. OPEN SPACE WILL BE PROVIDED IN EACH INDIVIDUAL

THE SITE IS LOCATED IN THE CITY OF ALEXANDRIA OLD AND HISTORIC DISTRICT.

ENVIRONMENTAL SITE ASSESSMENT

- 1. THERE ARE NO TIDAL WETLANDS, RPA'S, TIDAL SHORES, TRIBUTARY STREAMS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS OR WETLANDS LOCATED ON THIS SITE. THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. THE SITE IS LOCATED PARTIALLY WITHIN A MAPPED 100-YEAR FLOODPLAIN.
- 2. THERE ARE NO KNOWN AREAS OF MARINE CLAY DEPOSITS ONSITE, ACCORDING TO THE CITY MARINE CLAYS MAP.
- 3. THERE ARE NO KNOWN RESOURCE PROTECTION AREAS (RPA) ONSITE, ACCORDING TO THE CITY RECORD MAPS.
- 4. THERE IS NO KNOWN SOIL CONTAMINATION ON THIS PROPERTY.
- 5. THIS SITE IS WITHIN A COMBINED SEWER AREA.

SPECIAL USE PERMITS/ZONING MODIFICATIONS/WAIVERS

- 1. SPECIAL USE PERMIT TO INCREASE FAR TO 2.0 (5-504.C).
- 2. MODIFICATION TO SIDE YARD REQUIREMENT FOR INTERIOR END TOWNHOUSE UNITS (LOTS 3,4,6) FROM 8.0' TO 4.3', 4.2', AND 2.8' RESPECTIVELY (5-506.B.1).
- 3. MODIFICATION TO LOT WIDTH REQUIREMENT FOR END UNITS FOR LOTS 1 AND 6 FROM 26.0' TO 22.48' AND 25.99' RESPECTIVELY (5-505.C.2).
- 4. MODIFICATION TO VISION CLEARANCE SETBACK (7-801).
- 5. MODIFICATION TO TREE CANOPY COVERAGE REQUIREMENT FROM 25% TO 0% FOR LOTS 1, 2, 5 AND TO 11% FOR LOT 6 (11-410.CC)

PLAN SHEET KEY

NOT APPLICABLE

DEVELOPMENT TEAM INFORMATION

CUMMINGS INVESTMENTS ASSOCIATES, INC. PO BOX 231

ATTN: GARRETT ERDLE

ALEXANDRIA ,VA 22313

2. DEVELOPER: 4. ARCHITECT: ELEVENTH STREET DEVELOPMENT 24 WEST CEDAR STREET 111 VIRGINA STREET, SUITE 401 ALEXANDRIA, VA 22301 RICHMOND, VA 23219

5. CIVIL ENGINEER: WALTER L. PHILLIPS, INC. 1750 TYSONS BOULEVARD, SUITE 1500 207 PARK AVENUE FALLS CHURCH, VA 22046

ATTN: TRAVIS P. BROWN, P.E.

COMPLETE STREETS TABULATION

COMPLETE STREETS POLICY TABLE	NEW	UPGRADED
CROSSWALKS (NUMBER)	_	_
STANDARD	_	_
HIGH VISIBILITY	_	_
CURB RAMPS	_	1
SIDEWALKS (LF)	_	236
BICYCLE PARKING (NUMBER OF SPACES)	_	_
PUBLIC/VISITOR	_	_
PRIVATE/GARAGE	_	_
BICYCLE PATHS (LF)	_	_
PEDESTRIAN SIGNALS	_	_
		_

ZONING TABULATIONS

ZONING:	EXISTING ZONE	: W-1; PROPOSED ZONE: W-1	
MASTER PLAN:	OLD TOWN, OL	D AND HISTORIC DISTRICT	
SITE AREA (SQ. FT) (A	CRES): ±0.2347 AC C	R ±10,223 SF	
USE:	EXISTING:	COMMERCIAL	
	PROPOSED:	TOWNHOUSE RESIDENTIAL (SIX (6) FEE SIMPLE UNITS)	

REQUIREMENT	REQUIRED	LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	TOTAL	
ZONE	W-1			W	'-1				
DENSITY (UNITS/ACRE)	30		25.56 (6 D	WELLING (JNITS/0.23	47 ACRES)			
FAR*	1.0 (2.0 W/ SUP)	1.83	1.90	1.56	1.56	1.90	1.64	1.72	
GROSS FLOOR AREA (SF)	N/A	3846	3846	3846	3846	3846	3846	23076	
FLOOR AREA (SF)	20,446 SF TOTAL W/ SUP	2930	2930	2930	2930	2930	2930	17580	
LOT AREA (SF)	1,452 SF PER LOT	1602	1540	1875	1875	1540	1791	10223	
SETBACKS (FT)									
FRONT - S. UNION ST.	0 FT	4.1	4.1	4.1	4.1	4.1	4.1		
FRONT - DUKE ST.	0 FT	0.0	N/A	N/A	N/A	N/A	N/A		
SIDE	8.0 FT	13.3	N/A	4.3**	4.2**	N/A	2.8**		
REAR	8.0 FT	N/A	13.3	13.3	13.3	13.3	13.3		
FRONTAGE/LOT WIDTH (FT)									
INTERIOR UNITS	18 FT		22.5			22.5			
END UNITS	26 FT	22.48**		26.78	26.78		25.99**		
OPEN SPACE (SF)	300 SF PER DU (1800 SF TOTAL)								
GROUND LEVEL	1								
ROOFTOP		334	333	333	333	333	334	2000	(19.5
AVERAGE FINISHED GRADE		13.69	13.92	14.22	14.36	13.97	14.02		
HEIGHT (FT)	50 FT (MAX)	50	50	50	50	50	50		
PARKING	2 SPACES PER UNIT (12 TOTAL)	2	2	2	2	2	2	12	
TRIP GENERATION***		5.86	5.86	5.86	5.86	5.86	5.86	36	
TREE CANOPY COVERAGE****	25%	0%	0%	590 SF, 31%	590 SF, 31%	0%	200 SF, 11%	1380 SF, 13.5%	

- * FAR SUP PROPOSED WITH THIS PLAN. SEE ARCHITECTURE SHEETS FOR FLOOR AREA TABULATIONS
- MODIFICATION TO SIDE YARD FOR LOTS 3, 4, AND 6 REQUESTED. MODIFICATION TO LOT 1 AND 6 FRONTAGE REQUESTED.
- *** SEE ITE TRIP GENERATION CALCULATION ON THIS SHEET.
- **** MODIFICATION TO TREE CANOPY COVERAGE REQUESTED.

EXISTING LOT AREA:	10,223 SF
PROPOSED LOTS	AVERAGE FINISHED GRADE

LOT 1 = 1,602 SF13.69 FT 1,540 SF 13.92 FT 1,875 SF 14.22 FT 1,875 SF 14.36 FT LOT 4 =1,540 SF 13.97 FT LOT 6 = 1,791 SF14.02 FT

TOTAL = 10,223 SFSEE ARCHITECTURE PLANS FOR FAR TABULATIONS.

LOT AREA TABULATIONS | TRIP GENERATION ANALYSIS

PROVIDED USING "INSTITUTE OF TRANSPORTATION ENGINEERS: TRIP GENERATION"

PARKING GARAGE WITH 72 SPACES SERVING SURROUNDING EXISTING USE: RETAIL AND RESIDENTIAL USES

PROPOSED USE: RESIDENTIAL TOWNHOUSES

TOWNHOUSE* = 6 UNITS X 5.86 TRIPS/UNIT/DAY = 36 TRIPS/DAY (WEEKDAYS)[;]

*ITE CONDOMINIUM/TOWNHOUSE RATE 5.86 TRIPS/DWELLING UNIT

SHEET INDEX CIVIL/LANDSCAPE

P-0101 COVER SHEET

- P-0201 GENERAL NOTES P-0301 CONTEXT PLAN
- P-0302 EXISTING CONDITIONS PLAN P-0401 PRELIMINARY SITE PLAN P-0402 PRELIMINARY GEOMETRIC PLAN
- P-0404 FLOODPLAIN NARRATIVE P-0405 PRELIMINARY SUBDIVISION PLAT P-0501 PRELIMINARY GRADING PLAN

P-0403 PRELIMINARY OPEN SPACE PLAN

- P-0701 PRELIMINARY SWM PLAN AND NARRATIVE P-0702 PRELMINARY VRRM SPREADSHEET P-0703 ADEQUATE OUTFALL ANALYSIS
- P-1101 PRELIMINARY VEHICULAR MOVEMENT PLAN P-1102 PRELIMINARY GARBAGE TRUCK MOVEMENT PLAN P-1103 PRELIMINARY SIGHT DISTANCE PLAN AND PROFILE
- P-1201 EXISTING TREE SURVEY AND INVENTORY P-1202 PRELIMINARY LANDSCAPE AND HARDSCAPE PLAN P-1203 PRELIMINARY HARDSCAPE AND LANDSCAPE NOTES AND DETAILS
- P-1301 PRELIMINARY FIRE SERVICE PLAN

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APPROVED

INSTRUMENT NO.

TREE

ARCHITECTURE

- ARCHITECTURAL SITE PLAN FLOOR PLANS BUILDING SECTIONS **BUILDING SECTIONS** ELEVATIONS
- PHOTO MONTAGE PHOTO MONTAGE PHOTO MONTAGE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. DATE CHAIRMAN, PLANNING COMMISSION DATE RECORDED

DEED BOOK NO.

SPECIAL USE PERMIT NO. DSUP 2021-10012

DEPARTMENT OF PLANNING & ZONING

ATTN: SHAWN GLERUM, AIA

3. LAND USE ATTORNEY:

WIRE GILL LLP

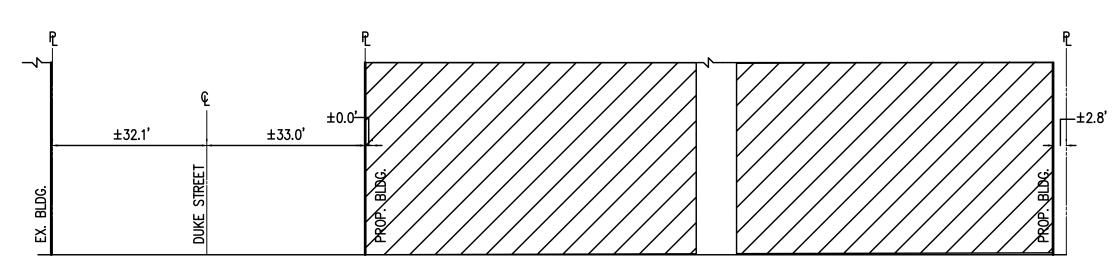
TYSONS, VA 22102

ATTN: KEN WIRE

PAGE NO.

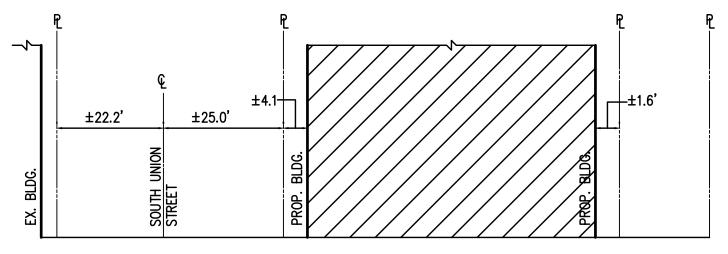
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SECTION A-A

SCALE: 1"



SECTION B-B NOT TO SCALE

STORMWATER MANAGEMENT AND **BEST MANAGEMENT PRACTICES** (ARTICLE XIII COMPLIANCE) NARRATIVE

THE ENTIRE SITE DRAINS INTO A MUNICIPAL STORM SEWER SYSTEM WHICH RUNS ALONG DUKE STREET. THERE WILL BE A DECREASE IN IMPERVIOUS AREA FROM THE PRE-DEVELOPMENT CONDITION TO POST-DEVELOPMENT CONDITION. APPROPRIATE STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES WILL BE PROVIDED IN ORDER FOR THE SITE TO COMPLY WITH STORMWATER QUALITY AND QUANTITY REQUIREMENTS SET FORTH IN ARTICLE XIII OF THE MUNICIPAL ZONING ORDINANCE. SEE SHEET P-0701 FOR PRELIMINARY STORMWATER MANAGEMENT AND BMP LOCATIONS.

SITE RUNOFF IN THE POST DEVELOPMENT CONDITION WILL BE LESS THAN THE PRE-DEVELOPMENT CONDITION. THE POST DEVELOPMENT FLOW WILL BE CAPTURED ONSITE AND ROUTED THROUGH RUNOFF REDUCTION BMPS.

THE REQUIREMENTS FOR CHANNEL PROTECTION AND FLOOD PROTECTION SET FORTH IN ARTICLE XIII OF THE MUNICIPAL ZONING ORDINANCE SHALL BE MET WITHIN THEIR RESPECTIVE LIMITS OF ANALYSIS. SEE SHEET P-0701 FOR PRELIMINARY OUTFALL ANALYSIS.

THE WATER QUALITY REQUIREMENTS SET FORTH IN ARTICLE XIII OF THE MUNICIPAL ZONING ORDINANCE SHALL BE MET THROUGH THE USE OF ONSITE BMP FACILITIES. ANY PORTION OF THE WATER QUALITY VOLUME (WQV) NOT TREATED ONSITE SHALL BE MITIGATED VIA PAYMENT INTO THE WATER QUALITY IMPROVEMENT FUND.

ALL PROPOSED ONSITE STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY MAINTAINED BY THE INDIVIDUAL LOT OWNERS.

THE SITE IS WITHIN THE POTOMAC RIVER WATERSHED.

SEE SHEETS P-0701 - P-0702 FOR ADDITIONAL STORMWATER MANAGEMENT INFORMATION.

ENVIRONMENTAL SITE ASSESSMENT

- 1. THERE ARE NO TIDAL WETLANDS, RPA'S, TIDAL SHORES, TRIBUTARY STREAMS, FLOODPLAINS, CONNECTED TIDAL WETLANDS, ISOLATED WETLANDS, HIGHLY ERODIBLE/PERMEABLE SOILS OR BUFFER AREAS ASSOCIATED WITH SHORES, STREAMS OR WETLANDS LOCATED ON THIS SITE. FURTHER, THERE ARE NO WETLAND PERMITS REQUIRED FOR THIS DEVELOPMENT PROJECT. ADDITIONALLY, THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS OR AREAS OF SOIL OR GROUNDWATER CONTAMINATION OF THE SITE.
- 2. THE CITY OF ALEXANDRIA DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES, OFFICE OF ENVIRONMENTAL QUALITY MUST BE 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 RELEASE TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.
- 3. 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 AND COORDINATE WITH THE ALEXANDRIA HEALTH DEPARTMENT AT 703-746-4400 EXT. 267/255.
- 4. 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.

PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:

 MONDAY THROUGH FRIDAY FROM 9AM TO 6PM AND SATURDAYS FROM 10AM TO 4PM

CONTAMINATION NOTE

THERE IS NO KNOWN OR EXPECTED CONTAMINATION AREAS ON THIS SITE.

GREEN BUILDING NARRATIVE

IT IS THE INTENT OF THE APPLICANT TO COMPLY WITH THE CITY OF ALEXANDRIA 2019 GREEN BUILDING POLICY, WHERE APPLICABLE.

GENERAL APPROACH IN ORDER TO MEET THE CITY OF ALEXANDRIA'S GREEN BUILDING POLICY REQUIREMENTS, THE TEAM'S INTENT IS TO MEET LEED FOR HOMES V4/V4.1 SILVER CERTIFICATION FOR THE PROPOSED TOWNHOMES. OUR OBJECTIVE IS TO REACH LEED SILVER CERTIFICATION AND OUR SCORECARD CURRENTLY ASSUMES WE WILL CAPTURE 52 POINTS.

ENERGY (PROPOSED POINTS: APPROXIMATELY 16) THE LEED FOR HOMES PROGRAM IS SPECIFICALLY ORIENTED TO RESIDENTIAL BUILDINGS, SUCH AS TOWNHOMES. AS PART OF THE PROGRAM REQUIREMENTS, LEED FOR HOMES REQUIRES THAT PROJECTS MEET THE STRICT GUIDELINES SET FORTH BY THE ENERGY STAR NEW HOMES (V3) PROGRAM FOR ENERGY-EFFICIENCY MEASURES. THE ENERGY STAR NEW HOMES PROGRAM PAYS PARTICULAR ATTENTION TO BEYOND-CODE AIR BARRIER AND INSULATION REQUIREMENTS AND PERFORMANCE TESTING. AS A RESULT. ENERGY STAR NEW HOMES ARE AT LEAST 15% MORE ENERGY-EFFICIENT THAN THE STANDARD ENERGY CODE-BUILT HOME AND ON TOP OF THAT, LEED FOR HOMES REQUIRES THAT THE PERFORMANCE

EACH OF THE PROPOSED SIX TOWNHOMES WILL FEATURE 2X6 WALL CONSTRUCTION (MINIMUM R19 INSULATION), HIGH-EFFICIENCY HEATING A COOLING APPLIANCES (SEER 14 AIR CONDITIONERS AND 90+ AFUE GAS FURNACES AT A MINIMUM). TANKLESS WATER HEATERS, AND MECHANICAL VENTILATION FOR FRESH AIR REQUIREMENTS. IN ADDITION, ENERGY STAR-RATED KITCHEN APPLIANCES AND FENESTRATION WILL BE INSTALLED ALONG WITH THE POSSIBILITY OF 100% INDOOR LED LIGHTING. FINALLY, THE REAR AND THE FRONT SIDES OF THE BUILDING WILL FEATURE AWNINGS AT THE 2ND//(REAR) AND 4TH/ FLOORS (FRONT) TO REDUCE THE AMOUNT OF POTENTIAL SOLAR HEAT GAIN DURING THE SUMMER

OF THE HOME BE 15% MORE ENERGY-EFFICIENT THAN AN ENERGY STAR NEW HOME.

THE ENERGY STAR NEW HOME AND LEED FOR HOMES PROGRAMS BOTH REQUIRE AN OFFICIAL HOME ENERGY RATING SCORE (HERS) BE COMPLETED TO PROVE THE ENERGY-EFFICIENCY OF THE HOME. THIS IS DONE BY COMPLETING AN ENERGY MODEL (HERS SCORE). THIS PROJECT WILL MEET THIS REQUIREMENT BY HAVING AN ENERGY MODEL COMPLETED PRIOR TO CONSTRUCTION BEGINNING (A "PROJECTED" SCORE) AND AN OFFICIAL SCORE AT FINAL WHEN ALL THE INSPECTIONS AND PERFORMANCE TESTS ARE COMPLETED. LEED REQUIRES THAT ALL HOMES HAVE A MAXIMUM HERS SCORE OF 70, WHICH IS 30% MORE ENERGY-EFFICIENT THAN A COMPARABLE CODE-BUILT HOME.

HOWEVER, A PROJECTED ENERGY MODEL CANNOT BE PRODUCED UNTIL OFFICIAL CONSTRUCTION PLANS HAVE BEEN APPROVED.

RENEWABLE ENERGY PRODUCTION OR ENHANCED COMMISSIONING THE DEVELOPER ENGAGED WITH ANDREW SKINNER OF PROSPECT SOLAR TO EVALUATE THE FEASIBILITY OF ROOFTOP SOLAR AT THIS LOCATION. PROSPECT SOLAR WILL REVIEW THE DSUP PACKAGE, CURRENT SCHEMATIC LEVEL DRAWINGS, FLOORPLANS AND LOAD LETTERS FOR UTILITY COMPANIES TO DETERMINE HOW EFFECTIVE SOLAR PANEL INSTALLATION MAY BE. THERE IS UNCERTAINTY SURROUNDING THE AMOUNT OF ENERGY WE MAY PRODUCE IN THIS OLD TOWN LOCATION, AND HOW RECEPTIVE BAR MAY BE TO ITS INSTALLATION AS EQUIPMENT MAY BE VISIBLE FROM THE PUBLIC RIGHT-OF WAY. PRIOR TO PLANNING COMMISSION HEARING, WE WILL KNOW SPECIFICS ON HOW WELL A ROOFTOP SOLAR SYSTEM MAY PERFORM IN THE EVENT ROOFTOP SOLAR IS NOT VIABLE IN THIS LOCATION, ENHANCED COMMISSIONING, AN OPTION FOR RESIDENTIAL PROJECTS, WILL BE PERFORMED IN LIEU OF ONSITE RENEWABLE ENERGY INSTALLATION. ENHANCED COMMISSIONING IS REQUIRED FOR PUBLIC PROJECTS SO THIS SUBSTITUTION SEEMS APPROPRIATE AS IT TOO WILL REDUCE ENERGY USE. DUCT LEAKAGE AND STATIC PRESSURE TESTING ON EVERY AIR HANDLER UNIT IN EACH HOME WILL BE PERFORMED, IN ADDITION TO AIR INFILTRATION/BLOWER DOOR TESTING, AND MECHANICAL AIR FLOW VERIFICATION TESTING (BATHROOM AND KITCHEN EXHAUSTS, AND MECHANICAL FRESH AIR). ANOTHER TEST THAT MAY BE INCLUDED IS TO VERIFY THAT EACH FORCED-AIR SYSTEM HAS BEEN BALANCED TO IMPROVE AIR CIRCULATION, INCREASE ENERGY-EFFICIENCY, AND TO ENHANCE THE OVERALL PERFORMANCE OF THE HEATING AND COOLING EQUIPMENT.

WATER REDUCTION (PROPOSED POINTS: INDOOR 5-7; OUTDOOR 1

AS FOR MEETING WATER REDUCTION GOALS, IT IS THE PROJECTS' INTENT TO INSTALL WATERSENSE-CERTIFIED LAVATORY FAUCETS (1.2 GPM), TOILETS (1.28 GPF), AND SHOWERHEADS (1.75 GPM). AN ENERGYSTAR-CERTIFIED CLOTHES WASHER MAY ALSO BE INSTALLED. TO MEET THE OUTDOOR WATER REQUIREMENTS, NO TURF WILL BE INSTALLED ANYWHERE ON THE PROPERTY AND AT LEAST 50% OF THE PLANTS INSTALLED ARE NATIVE TO THE REGION AND/OR NON-INVASIVE, DROUGHT TOLERANT.

INDOOR AIR QUALITY (PROPOSED POINTS: LOW-VOCS 4, CONSTRUCTION INDOOR AIR 1, AND THERMAL

TO MEET INDOOR AIR QUALITY GOALS, THIS PROJECT INTENDS TO PURSUE ADVANCED FILTRATION, REMOTE ACCESS THERMOSTATS, MULTIPLE HVAC ZONES, MECHANICAL FRESH AIR VENTILATION, CONTAMINATE CONTROL, USE OF LOW-VOC PRODUCTS (E.G. PAINT, INSULATION, PARTICLEBOARD, ETC.), AND MORE. ALL INSTALLED DUCTWORK, INCLUDING BATH AND KITCHEN EXHAUSTS, WILL BE SEALED UPON INSTALL. THE DUCTS WILL BE CLEANED AND A 48-HOUR PREOCCUPANCY FLUSH SCHEDULED ONCE CONSTRUCTION IS

SAMPLE PRELIMINARY LEED FOR HOMES CHECKLIST A SAMPLE PRELIMINARY LEED FOR HOMES CHECKLIST (SILVER) IS PROVIDED TO DEMONSTRATE THE CREDITS THAT MAY BE PURSUED TO OBTAIN THE SILVER CERTIFICATION OF THE TOWNHOMES. THIS CHECKLIST IS A DRAFT AS FINAL DECISIONS ABOUT WHAT CREDITS WILL BE ULTIMATELY PURSUED HAVE NOT YET BEEN DETERMINED.

PREPARED BY KELLY GILLESPIE OF KELLY GREEN ENERGY RATERS, LLC KELLY GREEN ENERGY RATERS, LLC

618 OAKLEY PLACE ALEXANDRIA, VA 22302 703.862.3847

WWW.KELLYGREENRATERS.COM

CERTIFIED HERS RATER, LEED FOR HOMES GREEN RATER, AND NGBS GREEN VERIFIER

COMBINED SEWER NARRATIVE

STORMWATER RUNOFF FROM THE SITE CURRENTLY FLOWS TOWARD DUKE STREET AND SOUTH UNION STREET WHERE IT ENTERS A SEPARATED STORM SEWER SYSTEM AND ULTIMATELY DISCHARGING INTO THE POTOMAC RIVER.

SANITARY SEWER DISCHARGE FROM THE SITE ENTERS AN EXISTING COMBINED SEWER MAIN RUNNING SOUTH IN UNION STREET. THIS DEVELOPMENT IS SUBJECT TO THE COMBINED SEWER SYSTEM MANAGEMENT POLICY PER MEMO TO INDUSTRY 07-14.

COMPLIANCE WITH THE MEMO TO INDUSTRY 07-14 WILL BE ACCOMPLISHED THROUGH A MONETARY CONTRIBUTION. SINCE THE STORM AND SANITARY SEWERS ARE SEPARATED AT THIS LOCATION, ONLY THE SANITARY CONTRIBUTION APPLIES.

THE SANITARY CONTRIBUTION PER MEMO TO INDUSTRY 07-14 IS:

\$1.50 X 8,400 GPD PEAK FLOW = \$12,600

SANITARY SEWER OUTFALL NARRATIVE

THE SUBJECT SITE IS CURRENTLY SERVED BY A SEPARATE SANITARY SEWER SYSTEM ACCORDING TO THE CITY OF ALEXANDRIA GIS SEWER VIEWER. THE SANITARY FLOW FROM THIS DEVELOPMENT SHALL CONNECT TO THE EXISTING SEWER NETWORK IN DUKE STREET.

IT IS ANTICIPATED THAT THE SANITARY FLOW RESULTING FROM THIS DEVELOPMENT WILL BE APPROXIMATELY:

TOWNHOUSE RESIDENTIAL: $350 \text{ GPD } \times 6 \text{ UNITS} = 2,100 \text{ GPD}$

2,100 GPD x 4 (PEAK FACTOR) = 8,400 GPD

THE EXISTING SANITARY FLOW FROM THIS BUILDING IS NEGLIGIBLE.

BECAUSE THE PROPOSED DEVELOPMENT WILL RESULT IN AN INCREASE IN EXPECTED SANITARY SEWER FLOW LESS THAN 10,000 GPD, SANITARY SEWER OUTFALL ANALYSIS IS NOT REQUIRED IN ACCORDANCE WITH MEMO TO INDUSTRY NO. 06-14.

ALEXRENEW NOTES

- CONTRACTOR SHALL ENSURE ALL DISCHARGES ARE IN ACCORDANCE WITH CITY OF ALEXANDRIA CODE TITLE 5, CHAPTER 6, ARTICLE B.
- 2. 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.

RESOURCE PROTECTION AREA NOTE

THE SUBJECT PROPERTY DOES NOT LIE WITHIN THE CITY OF ALEXANDRIA RESOURCE PROTECTION AREA (RPA) AND THERE ARE NO MAPPED RPA'S ON THIS PROPERTY.

FLOOD PLAIN NOTE

THE SITE IS LOCATED WITHIN 100-YEAR FLOOD PLAIN WATER SURFACE ELEVATION (WSE) PER THE DEMARCATION OF THE CURRENT FLOOD INSURANCE RATE MAP (FIRM) PUBLISHED BY FEDERAL EMERGENCY MANAGEMENT AGENCY

CEMETERY AND/OR BURIAL GROUNDS

THERE IS NO OBSERVABLE, HISTORICAL OR ARCHAEOLOGICAL EVIDENCE OF CEMETERIES OR BURIAL GROUNDS ON THIS PROPERTY.

UTILITY CONTACTS

VIRGINIA DOMINION POWER VERIZON C/O KEN HOLMES C/O VAL FISHER 2980 FAIRVIEW PARK N., 6TH FLOOR 907 WEST GLEBE ROAD ALEXANDRIA, VA 22305 FALLS CHURCH, VA 22042 (703) 838-2437 (703) 204-5068 NATURAL GAS: CATV/HS INTERNET WASHINGTON GAS C/O RAY BAKER C/O BRIAN SHADE 6801 INDUSTRIAL ROAD 3900 WHEELER AVENUE SPRINGFIELD, VA 22151 ALEXANDRIA, VA 22304 (703) 750-5953 (703) 567-4449

VIRGINIA AMERICAN WATER COMPANY C/O HAO (STEVE) CHEN 2223 DUKE STREET ALEXANDRIA, VA 22314 (703) 706-3889

FEDERAL FUNDING NOTE

THIS PROJECT IS NOT A FEDERAL UNDERTAKING. ANY REQUIRED FEDERAL PERMITS WILL BE OBTAINED BY THE APPLICANT PRIOR TO CONSTRUCTION.

GEOTECHNICAL REPORT NOTE

A SITE SPECIFIC GEOTECHNICAL REPORT WILL BE PREPARED FOR THIS PROPERTY AND WILL BE PROVIDED UNDER SEPARATE COVER.

STORMWATER BEST MANAGEMENT PRACTICES (BMP) NOTES

THE STORMWATER BEST MANAGEMENT PRACTICES (BMP) REQUIRED FOR THIS PROJECT SHALL BE CONSTRUCTED AND INSTALLED UNDER THE DIRECT SUPERVISION OF THE DESIGN ENGINEER OR HIS DESIGNATED REPRESENTATIVE. THE DESIGN ENGINEER SHALL MAKE A WRITTEN CERTIFICATION TO THE CITY THAT THE BMPS ARE CONSTRUCTED AND INSTALLED AS DESIGNED AND IN ACCORDANCE WITH THE APPROVED SITE PLAN. IN ADDITION, AGGREGATE LAYERS AND COLLECTOR PIPES MAY NOT BE INSTALLED UNLESS THE DESIGN ENGINEER OR HIS

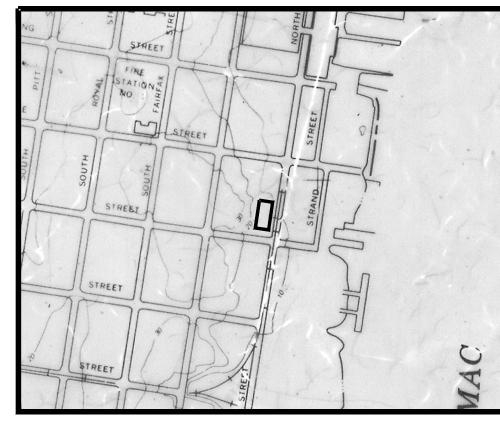
THE CONTRACTOR SHALL FURNISH THE CITY WITH AN OPERATION AND MAINTENANCE MANUAL FOR ALL BMPS ON THE PROJECT. THE MANUAL SHALL INCLUDE AN EXPLANATION OF THE FUNCTIONS AND OPERATIONS OF EACH BMP AND ANY SUPPORTING UTILITIES, CATALOG CUTS ON ANY MECHANICAL OR ELECTRICAL EQUIPMENT AND A SCHEDULE OF ROUTINE MAINTENANCE FOR THE BMPS AND SUPPORTING

ARCHAEOLOGY NOTES

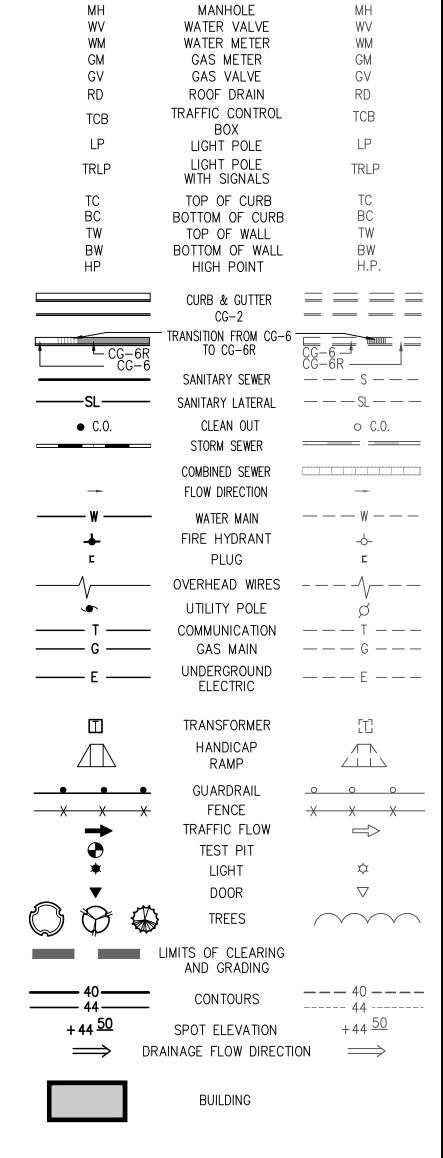
REPRESENTATIVE IS PRESENT.

- 1. THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) 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.
- 2. 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 DELAY.

MARINE CLAY SOILS MAP



* THERE ARE NO KNOWN AREA OF MARINE CLAY DEPOSITS ONSITE, ACCORDING TO THE CITY'S MARINE CLAY MAP



MASTER LEGEND

DESCRIPTION

EDGE OF PAVEMENT

EXISTING

PROPOSED

SCALE: 1"=500'

LIMITS OF SITE

UNDER 10% SLOPE

OVER 25 % SLOPE

KEY TO SYMBOLS

10% - 25% SLOPE

OUTLINE OF MARINE CLAY AREAS

100 Ш U, 0 2 Ш ORN A Ω C STRE NORTHWE Ω.

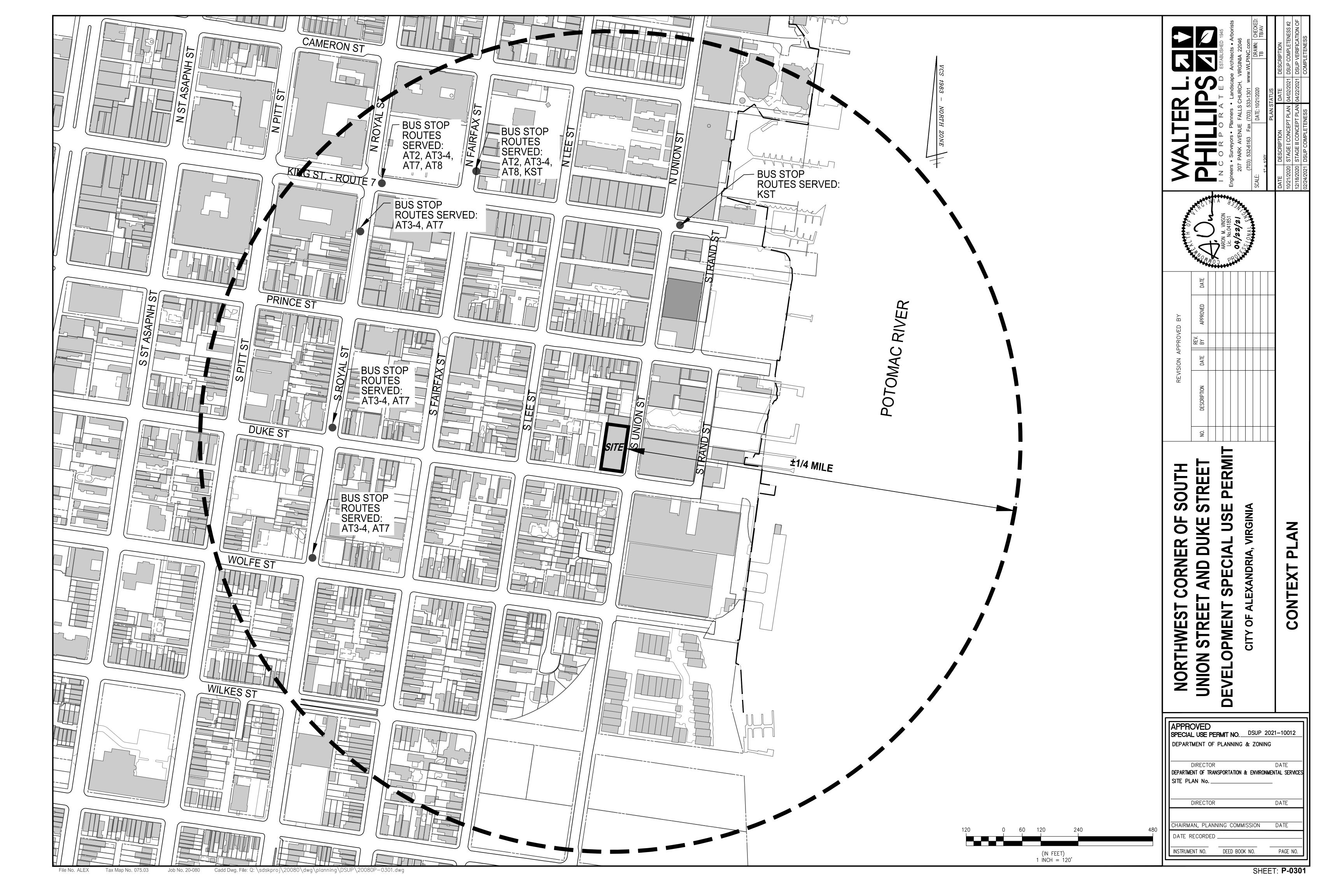


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STORM SEWER AS-BUILTS

SD 744]
CURB INLET TOP	=	11.78	
12"RCP IN	(NORTH)=	9.58	1
12"RCP IN	(WEST)=	9.68	
12"RCP IN	(S.EAST)=	9.58	
15"RCP OUT	(SD 746)=	8.90	
SD 746			
CURB INLET TOP	=	12.21	•
15"RCP IN	(WEST)=	9.41	(ABANDONE
15"RCP IN	(WEST)=	5.89	1
15"RCP IN	(SD 744)=	6.88	•
18"RCP OUT	(SD 740)=	8.51	(ABANDONE
18"RCP OUT	(SD 740)=	5.53	1
SD 723			-
MANHOLE TOP		10.86	1
15"RCP IN	(S.WEST)=	5.78	
15"RCP OUT	(SD 741)=	5.62	
SD 741			-
GRATE INLET TOP	=	10.58	-
15"RCP IN	(SD 723)=	5.58	
15"RCP OUT	(SD 740) =	5.55	_
CD 740			1
SD 740		11.07	1
MANHOLE TOP =	(CD 741)	5.54	-
15"RCP IN	(SD 741)=		
18"RCP IN	(SD 746)=	5.04	
15"RCP OUT	(SD 727)=	4.96	_
SD 727			1
MANHOLE TOP =		10.37	
15"RCP IN	(SD 740)=	4.91	
15"RCP OUT	(SD 728)=	4.89	1

PIPE SIZES ARE PER RECORD INFORMATION

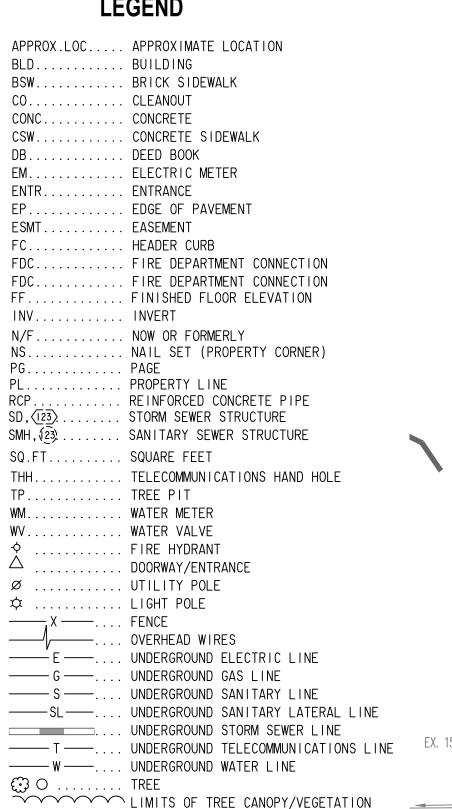
SANITARY SEWER AS-BUILTS

SMH 761		
MANHOLE TOP =		6.82
10"INV IN	(WEST)=	0.07
42"INV IN	(NORTH)=	-4.43
42"INV OUT	(SMH 743)=	-4.48
SMH 735		
MANHOLE TOP =		10.13
MANHOLE TOP =		
LAT INV IN	(EAST) =	0.23
8"INV OUT	(SMH 743)=	0.18
SMH 743		
MANHOLE TOP =		10.78
8"INV IN	(SMH 735)=	-0.08
8"INV IN	(WEST)=	-1.82
42"INV IN	(SMH 761)=	-4.62
42"INV OUT	(SOUTH)=	-4.72

PIPE SIZES ARE PER RECORD INFORMATION

LEGEND

SMH 761		
MANHOLE TOP =		6.82
10"INV IN	(WEST)=	0.07
42"INV IN	(NORTH)=	-4.43
42"INV OUT	(SMH 743)=	-4.48
SMH 735		
MANHOLE TOP =		10.13
LAT INV IN	(EAST)=	0.23
8"INV OUT	(SMH 743)=	0.18
SMH 743		
MANHOLE TOP =		10.78
8"INV IN	(SMH 735)=	-0.08
8"INV IN	(WEST)=	-1.82
42"INV IN	(SMH 761)=	-4.62



NOTES:

1. THE SUBJECT PROPERTY DOES NOT LIE WITHIN THE CITY OF ALEXANDRIA RESOURCE PROTECTION AREA (RPA) AND THERE ARE NO

■.... CURB AND GUTTER

SIGN

.... ELECTRIC TRANSFORMER

. SPOT ELEVATION

WATER MANHOLE

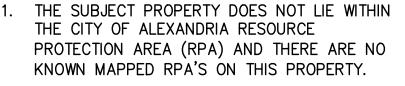
ELECTRIC MANHOLE

TELECOMMUNICATIONS MANHOLE

.... BOLLARD

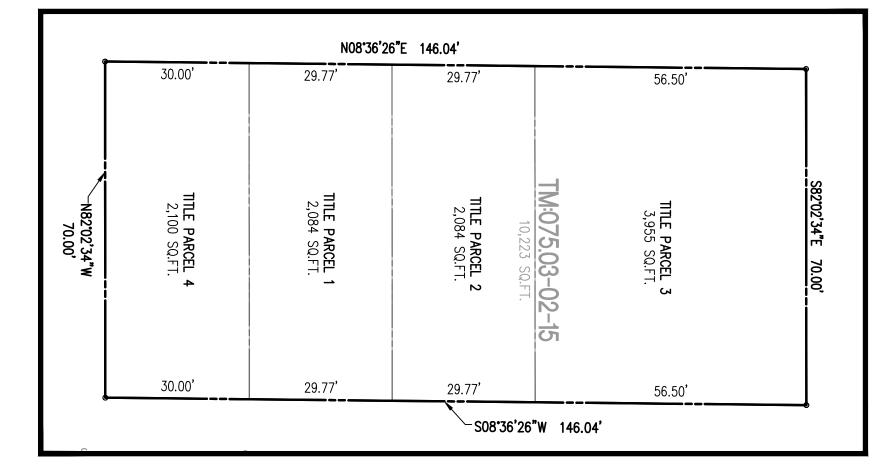
2. THERE ARE NO STRUCTURES ON THE CITY LIST OF 100 YEAR OLD STRUCTURES ON OR

72 (WITHIN PARKING GARAG)



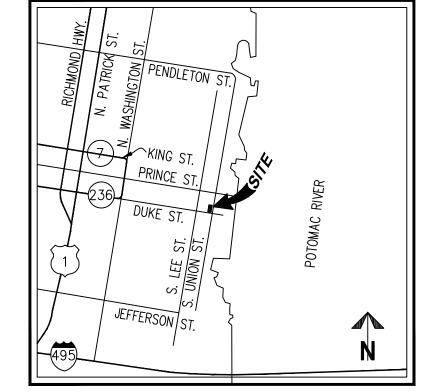
ADJACENT TO THE SITE.

EXISTING PARKING TABULATION



PROPERTY DETAIL

I" = 20'



SEWER @ 4.5%

STORM SEWER

@ 0.15% (m) (m) (m)

SEWER @ 2.0%

EX. 15" STORM —

SEWER @ 0.05%

VICINITY MAP SCALE: 1"=2000'

NOTES:

EX. 8" SANITARY

- I. THE PROPERTY SHOWN HEREON IS DESIGNATED BY THE CITY OF ALEXANDRIA, VIRGINIA, AS TAX ASSESSMENT NUMBER 075.03-02-15 AND IS ZONED W-I PER THE CITY OF ALEXANDRIA ZONING MAP. A ZONING REPORT WAS NOT PROVIDED TO THE SURVEYOR.
- 2. THE PROPERTY IS NOW IN THE NAME OF CUMMINGS INVESTMENT ASSOCIATES, INC., AS RECORDED IN DEED BOOK 501 AT PAGE 187, AMONG THE LAND RECORDS OF THE CITY OF ALEXANDRIA, VIRGINIA.

EX. 42" COMBINED SANITARY SEWER @ 0.06%

NOTE: SEE SHEET P-1201 FOR TREE INVENTORY

1 INCH = 20'

- 3. THIS PLAT AND THE SURVEY UPON WHICH IT IS BASED SHOWS ONLY THOSE IMPROVEMENTS THAT ARE OBSERVABLE AND CAN BE LOCATED USING NORMAL SURVEY METHODS. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, MISS UTILITY MARKINGS AND EXISTING RECORDS. THERE ARE NO GUARANTEES, EITHER EXPRESS OR IMPLIED, THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE UNDERGROUND UTILITIES HAVE NOT BEEN PHYSICALLY LOCATED. WATER AND GAS LINE SIZES ARE FROM RECORD INFORMATION.
- 4. TOTAL AREA OF THE PROPERTY IS 10,223 SQUARE FEET OR 0.2347 ACRES.
- 5. THIS PLAT IS BASED ON A FIELD SURVEY BY THIS FIRM, DATED 10/19/2020.

ALLEY

(18.75' WIDTH)

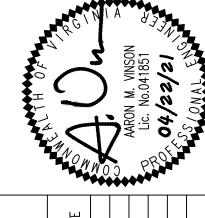
-S08°36'26"W 146.04'

SOUTH UNION STREET

(50' PUBLIC RIGHT-OF-WAY WIDTH)

(PRIVATE) N08'36'26"E 146.04'

- 6. THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR THE CITY OF ALEXANDRIA, VIRGINIA, MAP NUMBER 5155190041E, EFFECTIVE DATE JUNE 16, 2011, DESIGNATES THE PROPERTY AS BEING IN THE FOLLOWING ZONES: • ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
- ZONE X (SHADED), AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN I FOOT OR WITH DRAINAGE AREAS LESS THAN I SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD
- ZONE AE, SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOW WITH BASE FLOOD ELEVATIONS DETERMINED. (NOTE: THE LINE SHOWN HEREON IS BASED UPON THE 10'
- 7. EASEMENTS, CONDITIONS, COVENANTS AND RESTRICTIONS, SHOWN AND/OR NOTED, ARE PER THE TITLE REPORT ISSUED BY WALKER TITLE, LLC, CASE NUMBER A2001356 EFFECTIVE DATE OCTOBER 15, 2020.
- 8. THE SITE SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS COMPUTED FROM A FIELD RUN VERTICAL CONTROL SURVEY AND IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983, [NAD 83(2011) (EPOCH:2010.0000)] AS COMPUTED FROM A FIELD RUN BOUNDARY AND HORIZONTAL CONTROL SURVEY THAT TIES THIS BOUNDARY AND THE BENCHMARK(S) SHOWN TO THE TOPCON GNSS RTK REFERENCE NETWORK. THE COMBINED FACTOR APPLIED TO THE FIELD DISTANCES TO DERIVE THE REFERENCED COORDINATES IS 0.99994766. THE FOOT DEFINITION USED FOR CONVERSION OF THE MONUMENT COORDINATES AND IN THE PERFORMANCE OF THIS SURVEY IS THE U.S. SURVEY FOOT. CONTOUR INTERVAL IS ONE FOOT.
- 9. THIS SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, DAVID N. ISHERWOOD, L.S., FROM AN ACTUAL [X] GROUND OR [] AIRBORNE SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON OCTOBER 19, 2020; AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.



SOUTH

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DITION

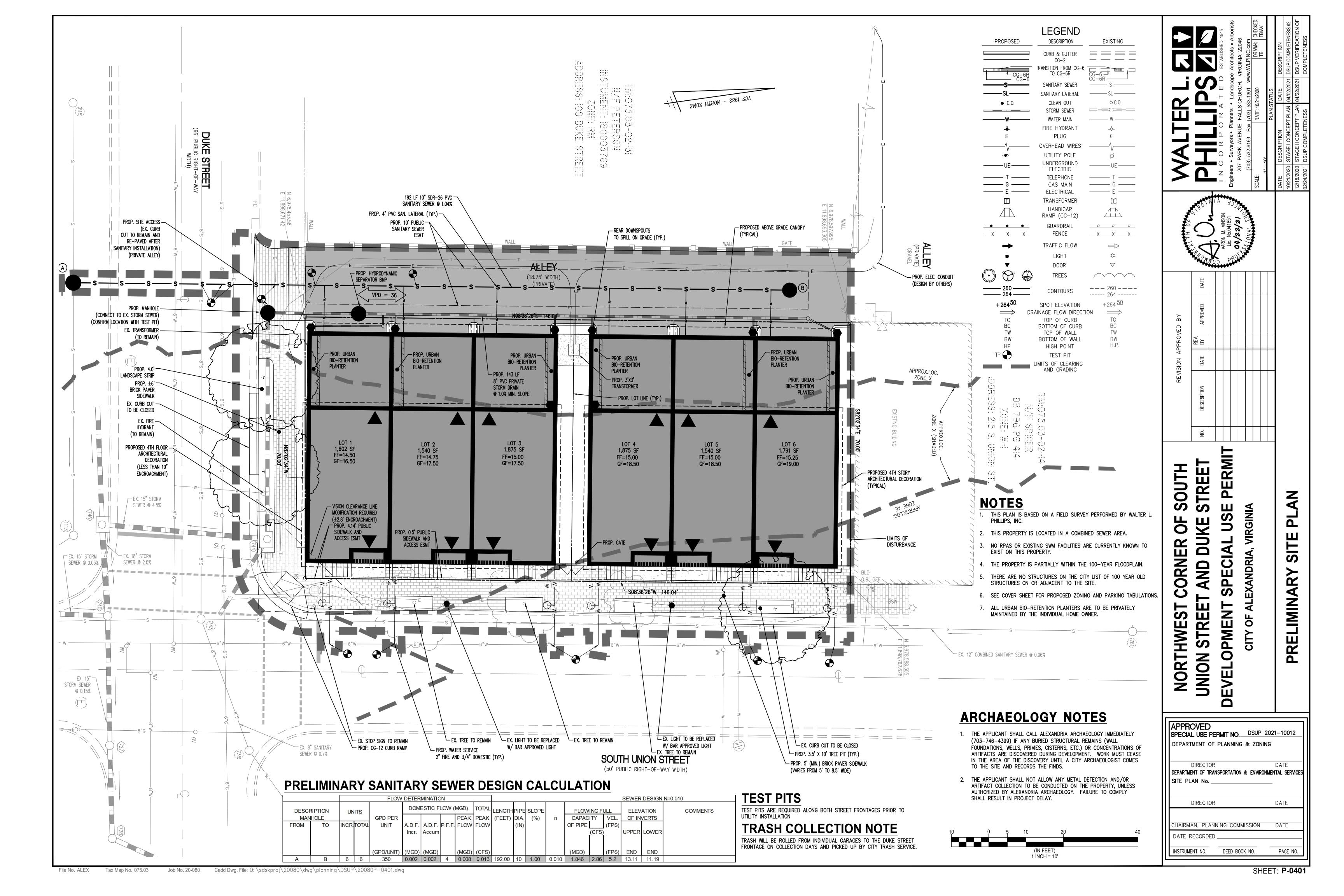
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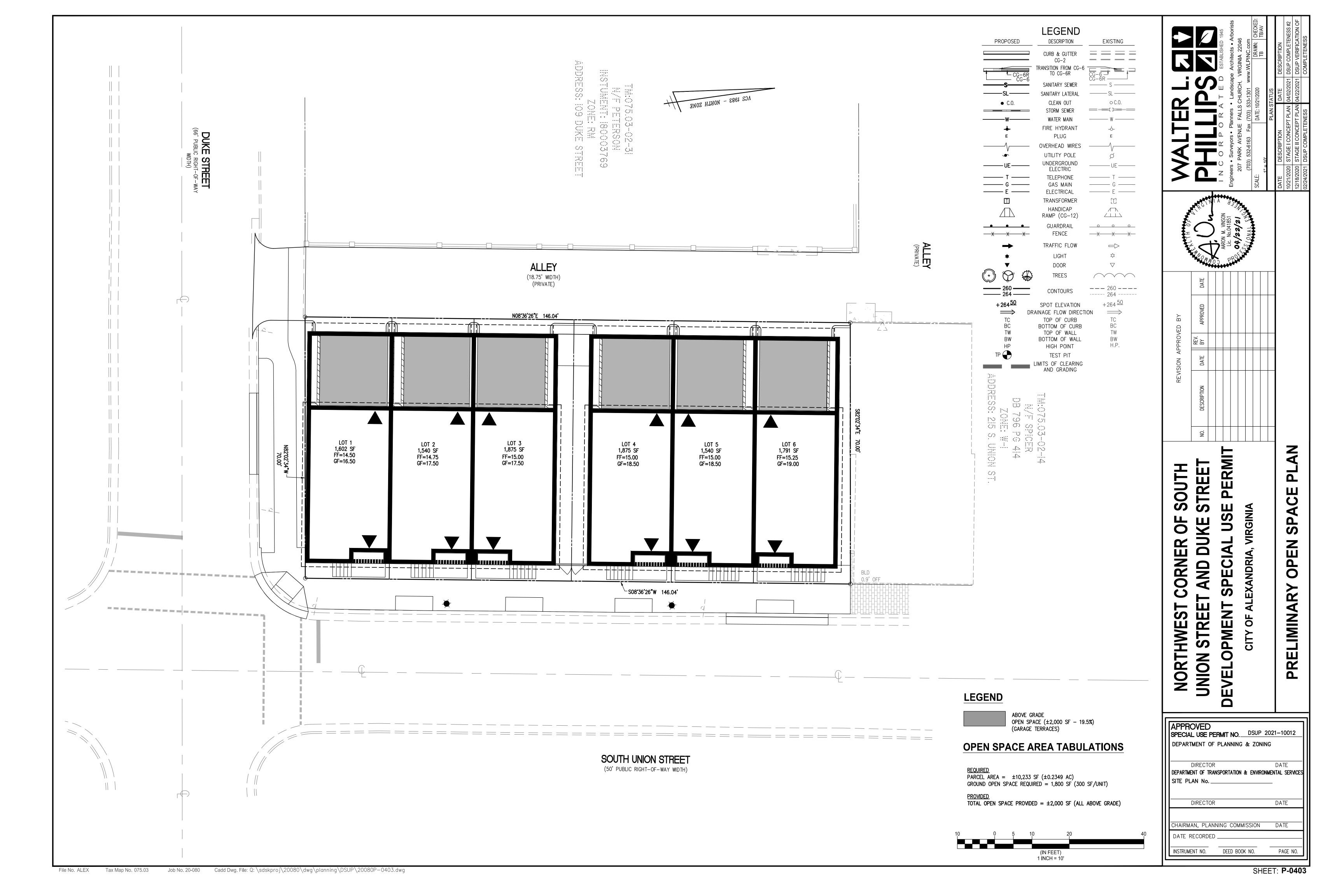
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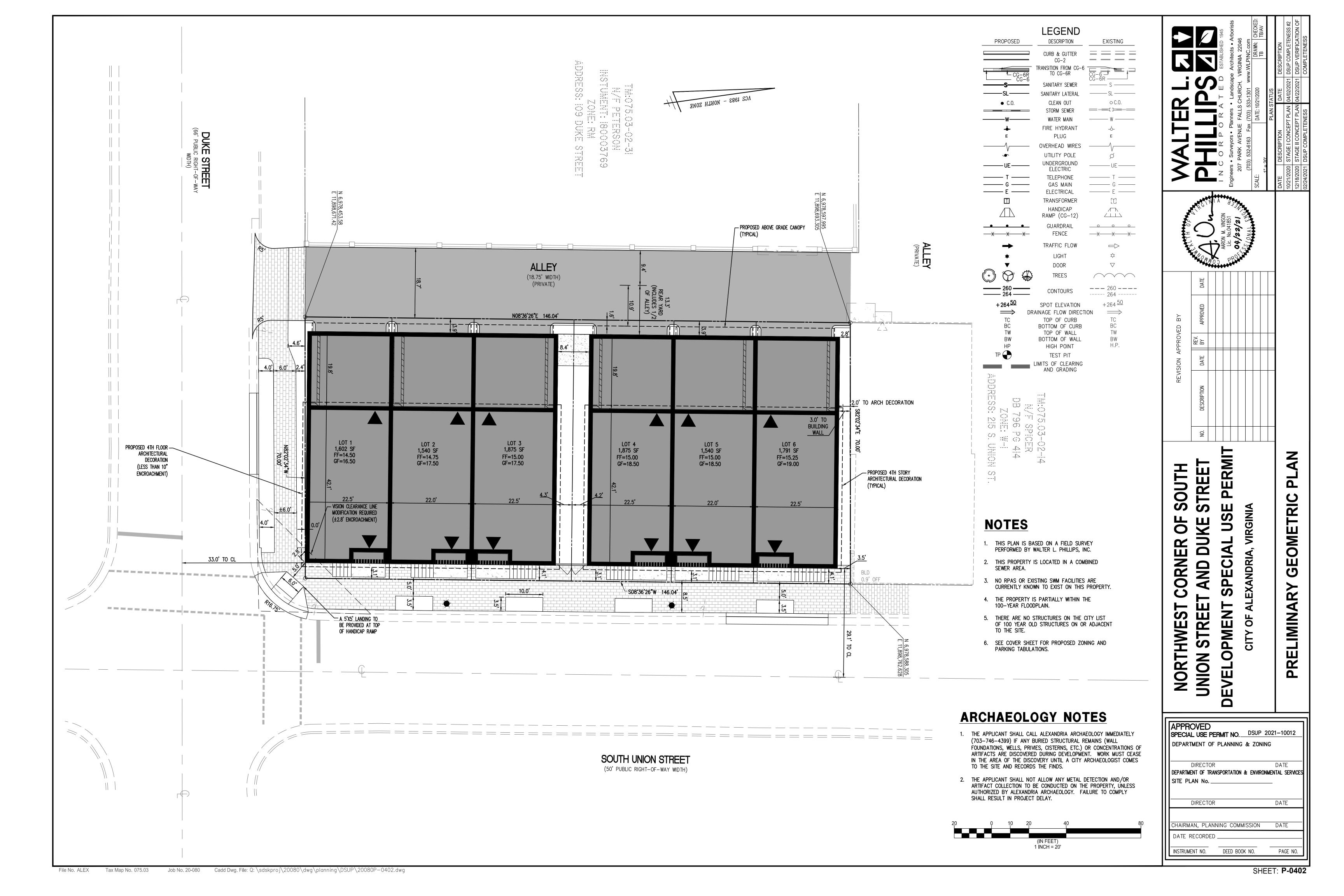
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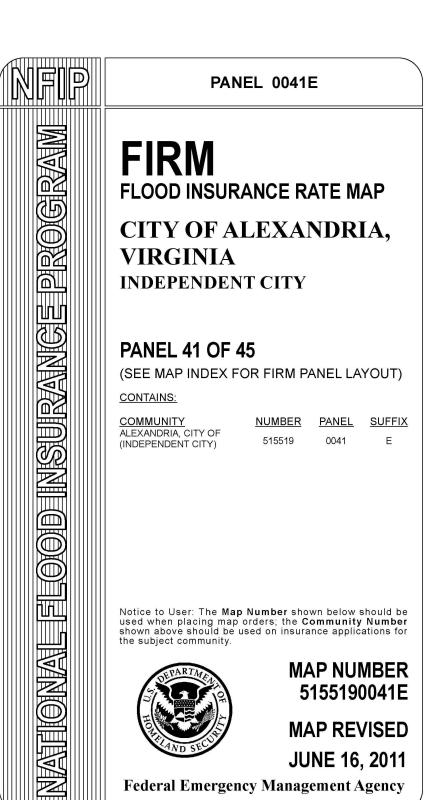
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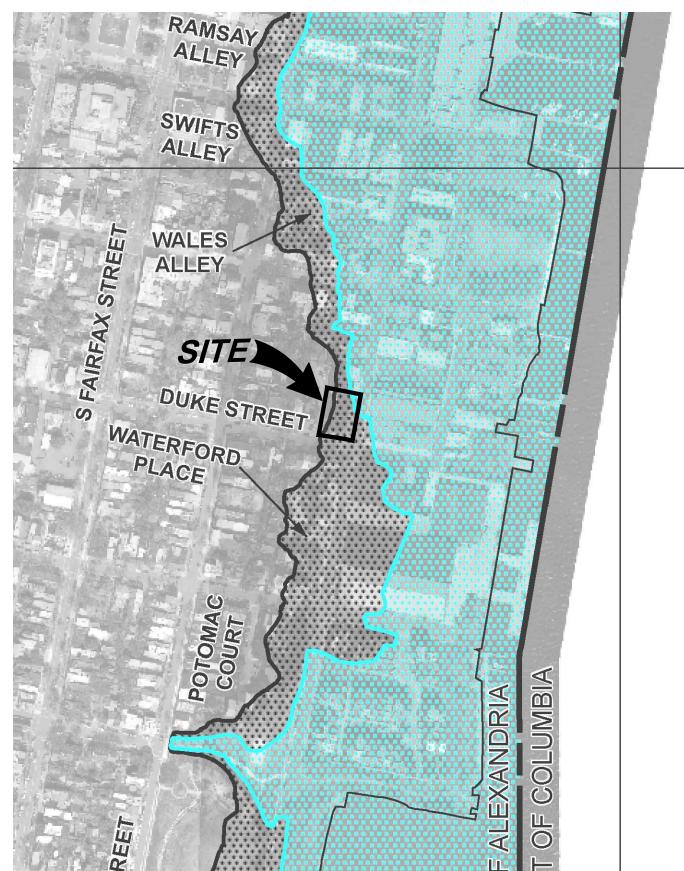
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DIRECTOR	DATE
CHAIRMAN, PLANNING COMMISSION	DATE
DATE RECORDED	
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NOT TO SCALE

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NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP

CITY OF ALEXANDRIA, VIRGINIA PANEL 41 of 45

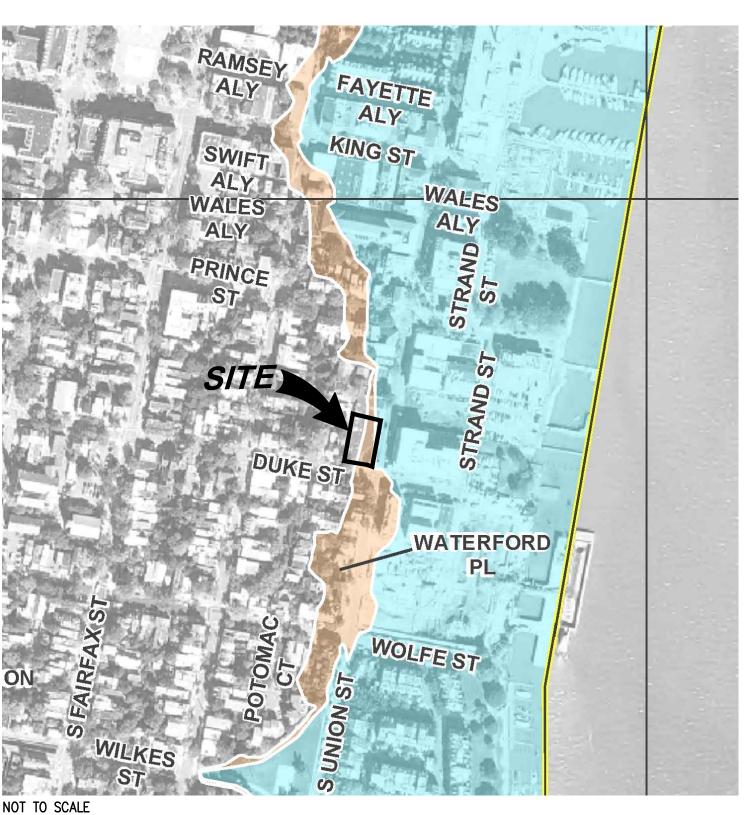


Panel Contains: COMMUNITY

ALEXANDRIA, CITY OF

PRELIMINARY 9/30/2020

> **VERSION NUMBER** 2.6.4.6 5155190041F MAP REVISED



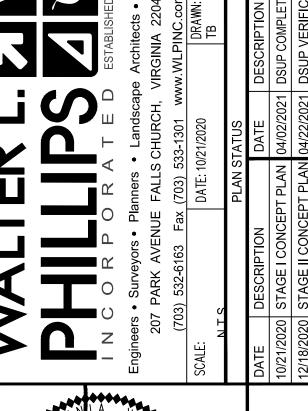
FLOODPLAIN NARRATIVE

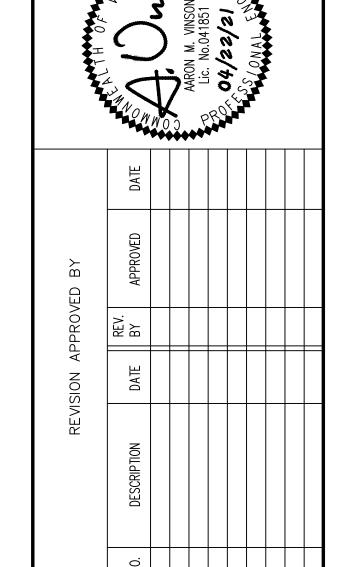
THE FOLLOWING INFORMATION IS PROVIDED BY VHB, DATED 10/20/2020. ADDITIONAL, MORE DETAILED INFORMATION REGARDING COMPLIANCE WITH FLOODPLAIN REGULATIONS WILL BE PROVIDED WITH FUTURE PLAN SUBMISSIONS.

THE 101 DUKE STREET PROPERTY, CURRENTLY A THREE-LEVEL PARKING GARAGE, IS PARTIALLY LOCATED WITHIN THE FEMA-MAPPED 100-YEAR AND 500-YEAR FLOODPLAIN FRINGE AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP (FIRM) PANEL 5155190041E, DATED JUNE 16, 2011 AND THE PRELIMINARY MAP DATED SEPTEMBER 30, 2020. THE 100-YEAR FLOOD ELEVATION IS MAPPED AT ELEVATION 10.0' AND THE 500-YEAR FLOOD ELEVATION AT 14.0' (NAVD88) BASED ON INTERPRETATION OF THE FLOOD INSURANCE STUDY FLOOD PROFILE (13P) FOR THE POTOMAC RIVER. NOTE THAT NO CHANGE IN THE FLOOD ELEVATIONS ARE PROPOSED IN THE SEPTEMBER 30, 2020 PRELIMINARY MAP; HOWEVER, THE MAPPED BOUNDARY IS SLIGHTLY DIFFERENT THAN THE 2011 MAP, MOST LIKELY DUE TO UPDATED GROUND SURFACE MAPPING USED BY FEMA.

EXISTING GRADES AT THE PROPERTY RANGE FROM APPROXIMATELY 8.6' AT THE NORTHEAST CORNER TO ABOVE 19.7' ALONG THE REAR ALLEY OF THE PROPERTY. THE PROPOSED PROJECT INCLUDES THE REMOVAL OF THE THREE-LEVEL PARKING GARAGE AND THE CONSTRUCTION OF SIX (6) ATTACHED TOWNHOUSES FRONTING SOUTH UNION STREET. THE LOWEST FLOOR ELEVATION OF THE PROPOSED TOWNHOUSES IS ELEVATION 14.5', WHICH WILL EXCEED THE 1-FOOT FREEBOARD REQUIREMENT PER SECTION 6-306(A) OF THE ZONING ORDINANCE. ENTRANCE TO THE UNITS FROM UNION STREET WILL BE VIA INDIVIDUAL STAIRS FROM THE EXISTING CURB. ENTRANCE FROM THE REAR WILL BE VIA INDIVIDUAL GARAGES FOR EACH UNIT ALSO AT ELEVATIONS RANGING BETWEEN 16.0' -19.0. NO ACCESSIBLE SPACE OR ENCLOSURE IS PROPOSED BELOW THE LOWEST FLOOR ELEVATION. NO WATER HEATERS, FURNACES, ELECTRICAL DISTRIBUTION PANELS OR OTHER CRITICAL MECHANICAL OR ELECTRICAL INSTALLATIONS ARE PROPOSED TO BE INSTALLED BELOW THE 100-YEAR BASE FLOOD ELEVATION. TO ACHIEVE THE LOWEST FLOOR ELEVATION OF 14.5', COMPACTED FILL AND/OR STONE WILL BE PLACED WITHIN THE FOUNDATION OF THE PROPOSED TOWNHOUSES AND WITHIN THE MAPPED 100-YEAR

AS PER SECTION 6-306(E) AND 6-307(A), WE DO NOT ANTICIPATE THAT THE PROPOSED PROJECT WILL INCREASE THE WATER-SURFACE ELEVATION OF THE 100-YEAR FLOOD BY MORE THAN 0.5 FOOT, HOWEVER NO HYDRAULIC ANALYSIS HAS BEEN PREPARED TO-DATE. DUE TO THE SITE'S LOCATION AND THE SCALE OF FILL PROPOSED IN COMPARISON TO THE SCALE OF THE POTOMAC RIVER AND ITS 100-YEAR FLOODPLAIN VOLUME, WE ANTICIPATE THAT THE PROPOSED PROJECT WILL HAVE NO EFFECT ON THE 100-YEAR WATER SURFACE





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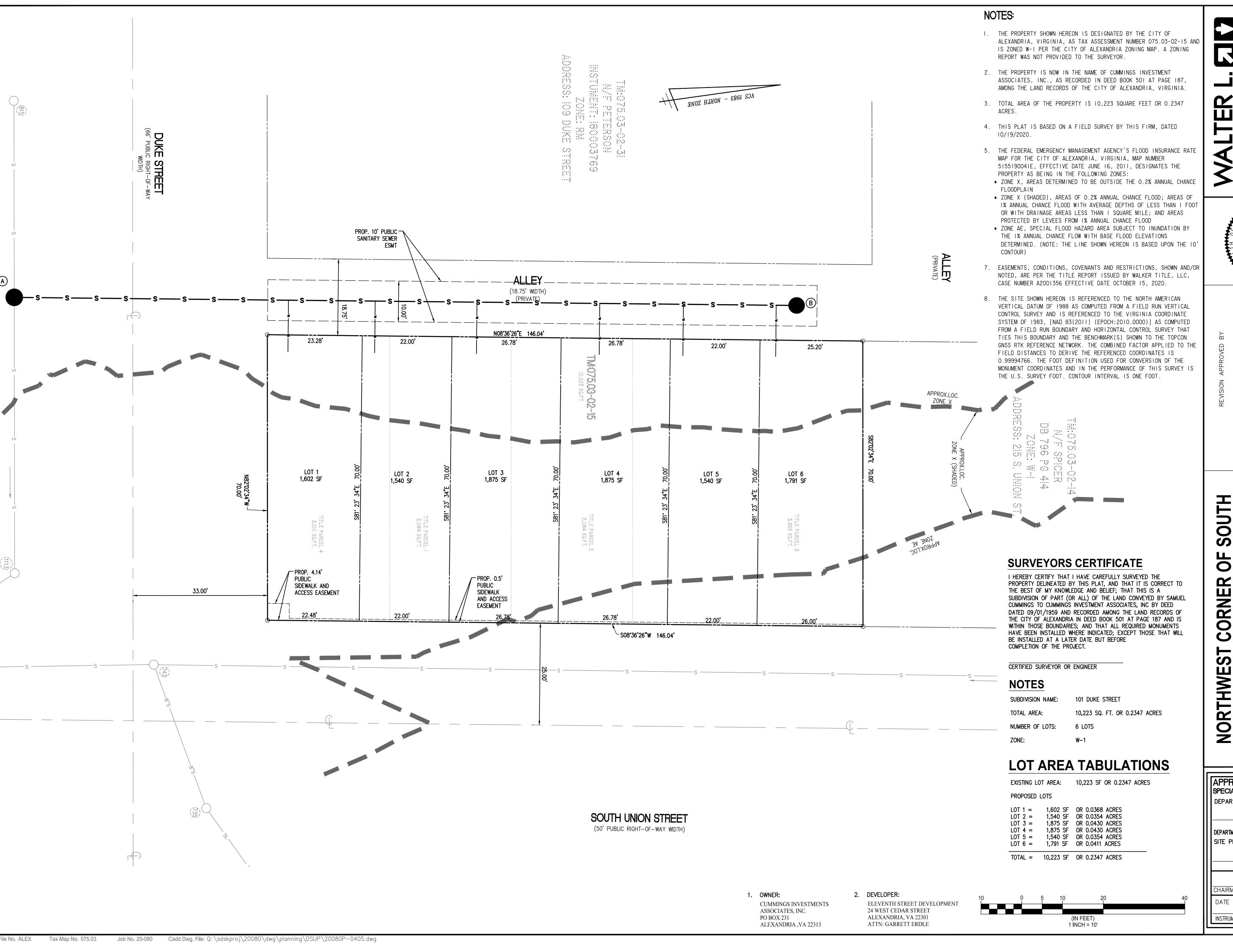
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CHAIRMAN, PLANNING COMMISSION	DATE			
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207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046

(703) 532-6163 Fax (703) 533-1301 www.WLPINC.com

SCALE:

1" = 10"

DATE: DESCRIPTION

DATE

DA

DESCRIPTION APPROVED BY

REV. APPROVED DATE

BY

APPROVED BY

REV. APPROVED

OUT OF THE STATE OF

UNION STREET AND DUKE STREET EVELOPMENT SPECIAL USE PERM CITY OF ALEXANDRIA, VIRGINIA

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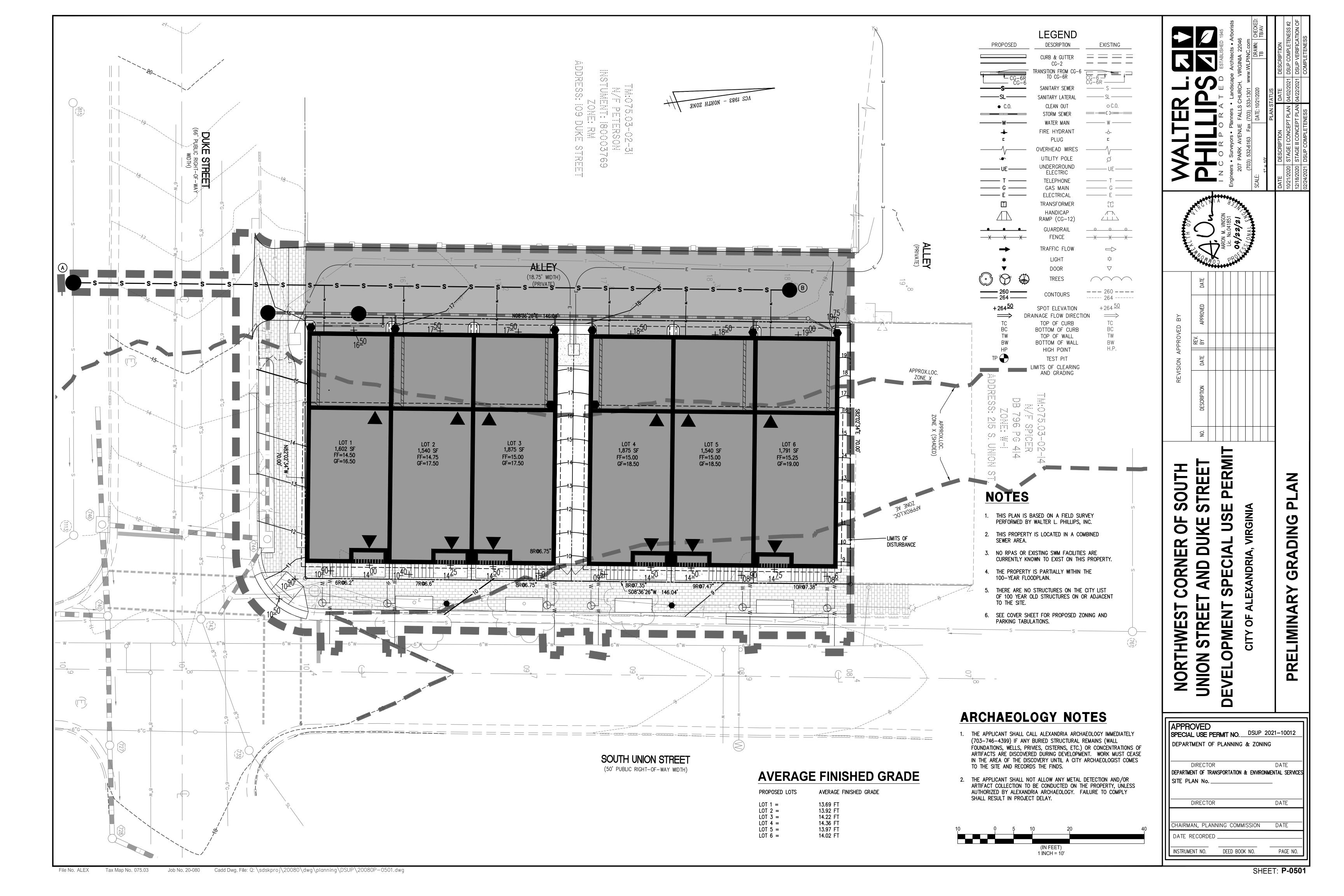
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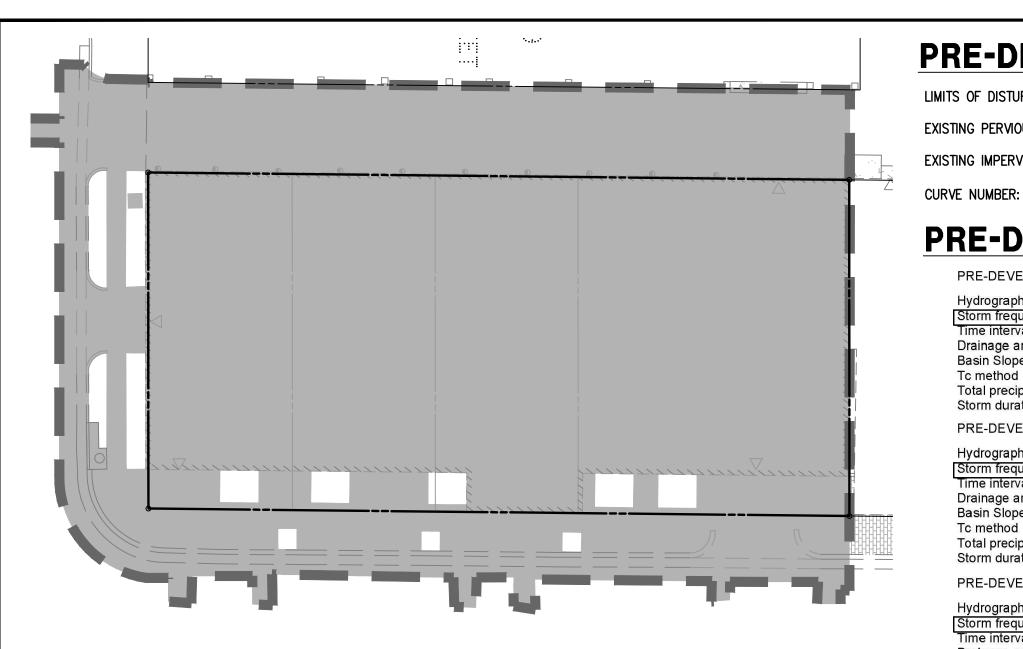
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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED ______
INSTRUMENT NO. DEED BOOK NO. PAGE NO.





PRE-DEVELOPMENT CURVE NUMBER

17,217 SQ. FT. OR 0.3952 ACRES **EXISTING PERVIOUS AREA:** 656 SQ. FT. OR 0.0151 ACRES

EXISTING IMPERVIOUS AREA: 16,561 SQ. FT. OR 0.3802 ACRES

 $[(16,561 \times 98) + (656 \times 80)] / 17,217 = 97$

Peak discharge

Curve number

Curve number

Distribution

Shape factor

Distribution Shape factor

Time of conc. (Tc)

= 3,176 cuft = 97

= 5.00 min

= Type II

= 3,842 cuft

= 0 ft

= 484

= Type II

= 2.778 cfs = 716 min

= 6,518 cuft = 97

= 0 ft

= 5.00 min

= Type II

Time of conc. (Tc) = 5.00 min

= 484

PRE-DEVELOPMENT

PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff
Storm frequency	= 1 yrs
Time interval	= 2 min
Drainage area	= 0.395 ac
Basin Slope	= 0.0 %
Tc method	= User
Total precip.	= 2.70 in
Storm duration	= 24 hrs
PRE-DEVELOPMENT	
Hydrograph type	= SCS Runoff

Hydrograph type	= SCS Runof
Storm frequency	= 2 yrs
Time interval	= 2 min
Drainage area	= 0.395 ac
Basin Slope	= 0.0 %
Tc method	= User
Total precip.	= 3.20 in
Storm duration	= 24 hrs

PRE-DEVELOPMENT		
Hydrograph type	= SCS Runoff	Peak discharg
Storm frequency	= 10 yrs	Time to peak
Time interval	= 2 min	Hyd. volume
Drainage area	= 0.395 ac	Curve number
Basin Slope	= 0.0 %	Hydraulic leng
Tc method	= User	Time of conc.
Total precip.	= 5.20 in	Distribution
Storm duration	= 24 hrs	Shape factor

PRE-DEVELOPMENT IMPERVIOUS AREA MAP

SCALE: 1" = 20'



POST-DEVELOPMENT CURVE NUMBER

17,217 SQ. FT. OR 0.3952 ACRES LIMITS OF DISTURBANCE (SWM AREA): PROPOSED PERVIOUS AREA: 1.180 SQ. FT. OR 0.0271 ACRES PROPOSED IMPERVIOUS AREA: 16,037 SQ. FT. OR 0.3674 ACRES 97 (SEE VRRM SPREADSHEET - P-0702) ADJ. CURVE NUMBER:

POST-DEVELOPMENT

POST-DEVELOPMENT

IMPERVIOUS AREA

LIMITS OF CLEARING

(SWM AREA)

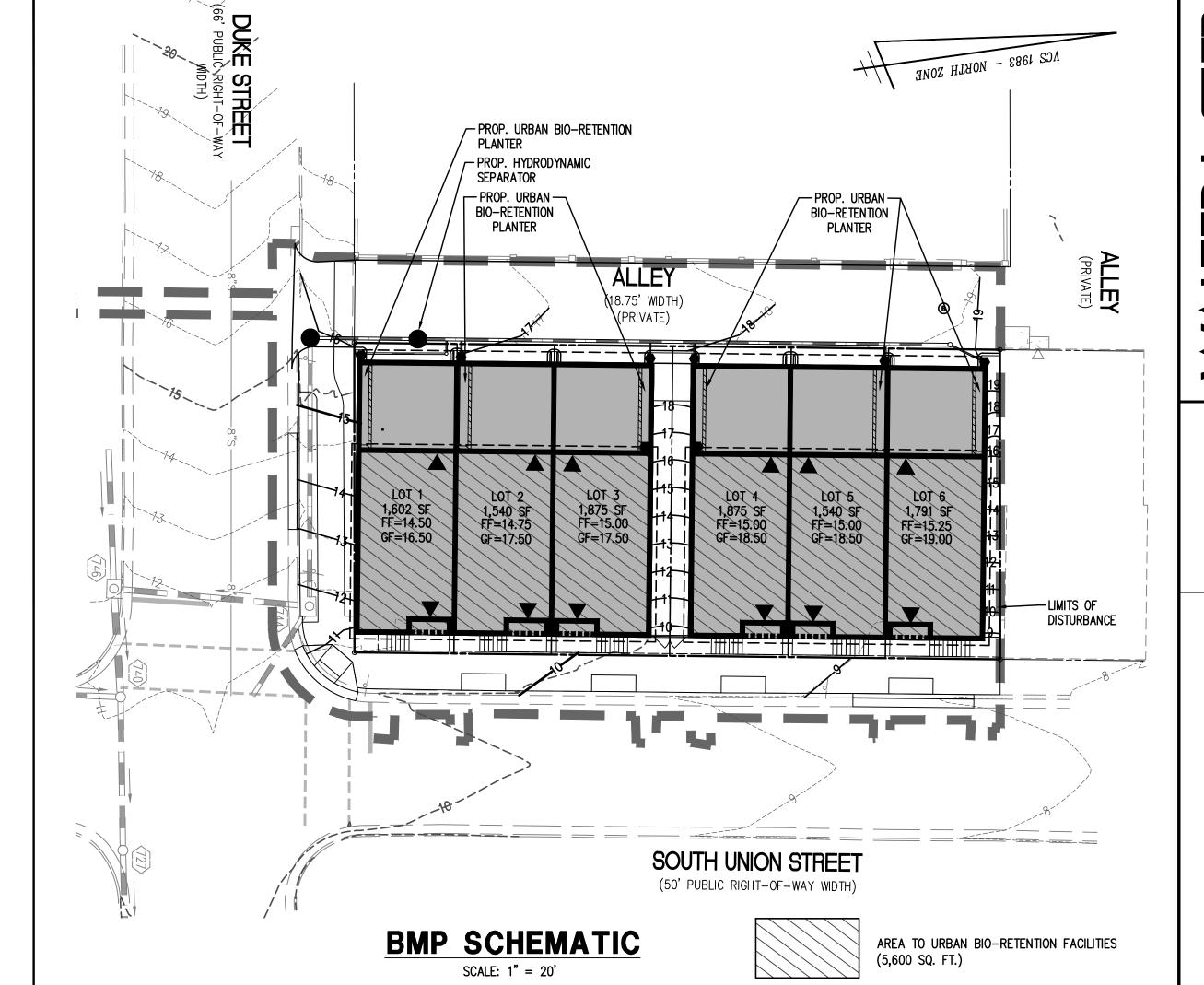
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[5	Storm frequency	1=	1 yrs
ד	ime interval		2 min
E	Orainage area	=	0.395 ac
Е	Basin Slope	=	0.0 %
T	c method	=	User
Т	otal precip.	=	2.70 in
	Storm duration	=	24 hrs
F	POST-DEVELOPMENT		
	lydrograph type	=	SCS Runoff
	Storm frequency	=	2 yrs
٦	ime interval	=	2 min
	Orainage area	=	0.395 ac
В	Basin Slope	=	0.0 %
T	c method	=	User
T	otal precip.	=	3.20 in
S	Storm duration	=	24 hrs
F	POST-DEVELOPMENT		
H	lydrograph type	=	SCS Runoff
S	Storm frequency	=	10 yrs
٦	ime interval	=	2 min
F	rainage area	2	0.305.30

Tillie Iliterval	- Z IIIII
Drainage area	= 0.395 ac
Basin Slope	= 0.0 %
Tc method	= User
Total precip.	= 2.70 in
Storm duration	= 24 hrs
POST-DEVELOPMEN	NT
Hydrograph type	= SCS Runoff
Storm frequency	= 2 yrs
Time interval	= 2 min
Drainage area	= 0.395 ac
Basin Slope	= 0.0 %
Tc method	= User
Total precip.	= 3.20 in
Storm duration	= 24 hrs
POST-DEVELOPMEN	NT
Hydrograph type	= SCS Runoff
Storm frequency	= 10 yrs
Time interval	= 2 min
Drainage area	= 0.395 ac
Basin Slope	= 0.0 %
Tc method	= User
Total precip.	= 5.20 in
Storm duration	= 24 hrs

Peak discharge	= 1.408 cfs
Time to peak	= 716 min
Hyd. volume	= 3,176 cuft
Curve number	= 97
Hydraulic length	= 0 ft
Time of conc. (Tc)	= 5.00 min
Distribution	= Type II
Shape factor	= 484

Peak discharge	= 1.683 cfs
Time to peak	= 716 min
Hyd. volume	= 3,842 cuft
Curve number	= 97
Hydraulic length	= 0 ft
Time of conc. (Tc)	= 5.00 min
Distribution	= Type II
Shape factor	= 484

Peak discharge	= 2.778 cfs
Time to peak	= 716 min
Hyd. volume	= 6,518 cuft
Curve number	= 97
Hydraulic length	= 0 ft
Time of conc. (Tc)	= 5.00 min
Distribution	= Type II
Shape factor	= 484



STORMWATER MANAGEMENT & BEST MANAGEMENT PRACTICES NARRATIVE

THE SITE CURRENTLY CONSISTS OF AN EXISTING PARKING GARAGE, UTILITY CONNECTIONS, AND STREET TREES. THE 10,223 SF (0.2347 AC.) SITE DRAINS FROM A HIGH POINT IN THE EXISTING ALLEY, THEN SOUTH TO DUKE STREET AND ULTIMATELY EAST TOWARD THE POTOMAC RIVER VIA THE MUNICIPAL STORM SEWER SYSTEM IN DUKE STREET. CURRENTLY NO STORMWATER CONTROLS EXIST ON-SITE. THE EXISTING DRAINAGE DIVIDES FOR THE SITE WILL GENERALLY BE MAINTAINED IN THE PROPOSED DEVELOPMENT. FOR THE PURPOSES OF STORMWATER MANAGEMENT, THE SITE AREA WILL BE THE LIMITS OF DISTURBANCE 17,217 SF OR 0.3952 ACRES. FOR THE PURPOSES OF MINIMUM WATER QUALITY TREATMENT VOLUME, THE SITE AREA WILL BE THE PARCEL AREA, 10,223 SF (0.2347 ACRES).

PROPOSED CONDITIONS:

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT SIX (6) FEE-SIMPLE TOWNHOUSES AND STREETSCAPE IMPROVEMENTS. THE PROPOSED IMPROVEMENTS INCLUDE CONSTRUCTION OF THE BUILDINGS, URBAN BIO-RETENTION, STREETSCAPE, AND OTHER SUPPORT UTILITY INFRASTRUCTURE. THE EXISTING REAR ALLEY WILL BE USED FOR SITE ACCESS.

STORMWATER QUALITY (SEE BMP SCHEMATIC - THIS SHEET): IN ORDER TO COMPLY WITH ARTICLE 13 OF THE CITY OF ALEXANDRIA ZONING ORDINANCE AND THE VIRGINIA STATE WATER QUALITY REQUIREMENTS (9VAC25-870-63), THE SITE WILL INCLUDE ONE HYDRODYNAMIC SEPARATOR. THE PROPOSED BMP WILL REDUCE PHOSPHORUS LEVELS AND COMPLY WITH ALL STATE AND CITY REQUIREMENTS. A WAIVER HAS BEEN FILED TO ALLOW 100% OF THE STATE PHOSPHOROUS REMOVAL REQUIREMENT TO BE MET THROUGH THE USE OF AN MTD (HYDRODYNAMIC SEPARATOR). HOWEVER, SIX (6) LEVEL 1 BIO-RETENTION PLANTERS WILL BE PROVIDED ON THE GARAGE ROOF DECKS TO HELP REDUCE RUNOFF, BUT CREDIT WILL NOT BE TAKEN FOR THESE FACILITIES SINCE INSPECTIONS WOULD REQUIRE ACCESS TO PRIVATE RESIDENCES. APPROXIMATELY 1,223 SF OF PARCEL'S IMPERVIOUS AREA CANNOT BE CAPTURED AND TREATED DUE TO SITE AND GRADING CONSTRAINTS AND SPACE LIMITATIONS. THE WQV TREATMENT VOLUME FOR THIS IMPERVIOUS AREA WILL BE MITIGATED THROUGH PAYMENT INTO THE CITY OF ALEXANDRIA WATER QUALITY IMPACT FUND.

STORMWATER QUANTITY:

THE SITE OUTFALLS TO THE MUNICIPAL STORM SEWER SYSTEM LOCATED IN DUKE STREET AND SOUTH UNION STREET. BASED ON REVIEW OF CITY STORM SEWER MAPS (GIS), THE DISCHARGE OF THE 2-YEAR 24-HOUR STORM FROM THE SITE CAN BE CONVEYED UP TO THE LIMITS OF ANALYSIS (100 TIMES THE SITE AREA) WITHOUT CAUSING EROSION, SINCE ALL OF THE PIPES OR CULVERTS WITHIN THE LIMITS OF ANALYSIS ARE CONCRETE. THEREFORE, THE SITE MEETS CHANNEL PROTECTION REQUIREMENTS SPECIFIED IN THE CITY OF ALEXANDRIA STORMWATER CODE (ARTICLE XIII) AND NO ADDITIONAL STORMWATER DETENTION IS NECESSARY FOR THE PURPOSES OF CHANNEL PROTECTION.

THE SITE OUTFALLS TO THE MUNICIPAL STORM SEWER SYSTEM LOCATED IN DUKE STREET AND SOUTH UNION STREET. THE CITY OF ALEXANDRIA STORMWATER REQUIREMENTS SPECIFY THAT THE 10-YEAR, 24 HOUR STORM POST-DEVELOPMENT FLOW MUST BE CONVEYED WITHIN THE SYSTEM UP TO THE LIMITS OF ANALYSIS AND THAT THE POST-DEVELOPMENT FLOW FOR THE 10-YEAR, 24-HOUR STORM MUST NOT EXCEED PRE-DEVELOPMENT LEVELS. REVIEW OF THE STORMWATER OUTFALL WITHIN THE LIMITS OF ANALYSIS INDICATES THAT DOWNSTREAM STORMWATER PIPES APPEAR TO BE ADEQUATE TO CONVEY THE 10-YEAR, 24-HOUR STORM WITHIN THE SYSTEM AND SITE DISCHARGE RATES WILL BE REDUCED TO PRE-DEVELOPMENT LEVELS DUE TO REDUCTION IN IMPERVIOUS AREA.

THEREFORE, THE SITE MEETS FLOOD CONTROL REQUIREMENTS SPECIFIED IN THE CITY OF ALEXANDRIA STORMWATER CODE (ARTICLE XIII) AND NO ADDITIONAL STORMWATER DETENTION IS NECESSARY FOR THE PURPOSES OF FLOOD CONTROL. IT IS ALSO NOTED, THAT THIS SITE IS LOCATED AT THE BOTTOM OF THE LOCAL WATERSHED AND PARTIALLY IN THE 100-YEAR FLOODPLAIN AND DETENTION IS NOT TYPICALLY PROVIDED IN THIS AREA.

AREA TO HYDRODYNAMIC SEPARATOR

(8,312 SQ. FT.)

ADJACENT PROPERTIES:

ALL UNCONTROLLED SHEET FLOW WILL BE DIRECTED TO EXISTING STORM STRUCTURES WITHIN THE DUKE STREET AND SOUTH UNION STREET RIGHT-OF-WAYS AND INTO THE MUNICIPAL STORM SEWER SYSTEM. THERE WILL NOT BE ANY ADVERSE IMPACT TO ADJACENT PROPERTIES AS A RESULT OF THIS PROJECT AND THE PROPOSED IMPROVEMENTS.

THIS SITE IS LOCATED PARTIALLY WITHIN THE 100-YEAR FLOODPLAIN BOUNDARY. SEE P-0402 FOR ADDITIONAL INFORMATION.

RESOURCE PROTECTION AREAS:

THERE ARE NO RESOURCE PROTECTION AREAS KNOWN TO EXIST ON THE SITE.

- 1. THE SITE RESIDES IN THE POTOMAC RIVER WATERSHED
- 2. THE BMP FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.
- 3. THE APPLICANT RESERVES THE RIGHT TO MODIFY THE BMP TYPE, SIZE, AND CONFIGURATION AT THE TIME OF FINAL SITE PLAN AS LONG AS THE PROPOSED SYSTEMS MEET THE REQUIREMENTS OUTLINED ON THIS PLAN.

E11898706.56

BMF) C (OORE	INA	TES	
HYDROI	OYNAMIO	C SEPARA	TOR:	N697846 E118986	
LOT 1	URBAN	BIO-RETE	INTION:	N697845 E118986	
LOT 2	URBAN	BIO-RETE	ENTION:	N697847 E118986	
LOT 3	URBAN	BIO-RETE	ENTION:	N697851 E118986	
LOT 4	URBAN	BIO-RETE	ENTION:	N697852 E118986	
LOT 5	URBAN	BIO-RETE	ENTION:	N697856 E118987	
LOT 6	URBAN	BIO-RETE	ENTION:	N697859	1.34

SOUTH TREE **OF** 2 ER ORN AND **1** C STRE NORTHWE <u>Δ</u> NOINO NOINO Ш

APPROVED SPECIAL USE PERMIT NO. DSUP 2021-10012 DEPARTMENT OF PLANNING & ZONING DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. _ DIRECTOR DATE CHAIRMAN, PLANNING COMMISSION DATE DATE RECORDED DEED BOOK NO. PAGE NO. INSTRUMENT NO.

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1 INCH = 20'

POST-DEVELOPMENT IMPERVIOUS AREA MAP

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NO DUMPING DETAIL

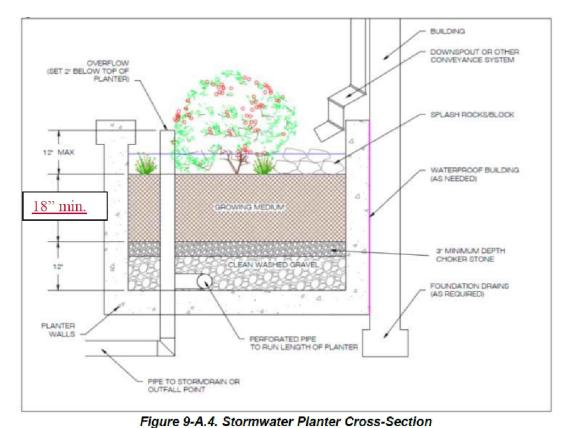


NOTES

FINAL ENGINEERING

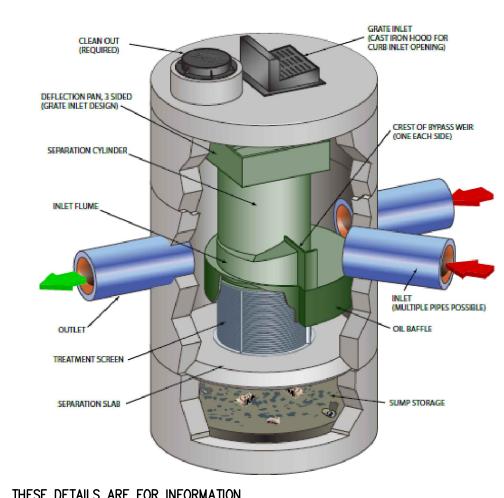
1. PROJECT SITE IS LOCATED WITHIN THE POTOMAC RIVER WATERSHED. ALL ONSITE INLETS AND PUBLIC INLETS WITHIN 50' OF SITE SHALL BE MARKED USING STANDARD CITY

TYPICAL BMP DETAILS **URBAN BIO-RETENTION**



THESE DETAILS ARE FOR INFORMATION *** NO CREDIT TAKEN FOR URBAN BIO-RETENTION PURPOSES ONLY AND SUBJECT TO ADJUSTMENT AND SUBSTITUTION AT

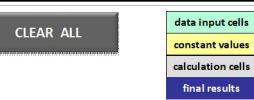
HYDRODYNAMIC SEPARATOR



THESE DETAILS ARE FOR INFORMATION PURPOSES ONLY AND SUBJECT TO ADJUSTMENT AND SUBSTITUTION AT FINAL ENGINEERING

Project Name: NORTHWEST CORNER OF SOUTH UNION ST AND DUKE ST

2/24/2021 Linear Development Project? No



Post-Development Project (Treatment Volume and Loads)

Site Information

Pre-ReDevelopment Land Cover (acres)

Forest/Open Space (acres) -- undisturbed

Managed Turf (acres) -- disturbed, graded for

yards or other turf to be mowed/managed

forest/open space

Impervious Cover (acres)

0.40	Enter Total Disturbed Area (acres) \rightarrow
10%	Maximum reduction required:
0	The site's net increase in impervious cover (acres) is:
0.06	Post-Development TP Load Reduction for Site (lb/yr):

C Soils

D Soils

nsturbeu Area (ucres) 🔫	0.40	CHECK.	
		BMP Design Specifications List:	2013 Draft Stds & Specs
Maximum reduction required:	10%	Linear project?	No
in impervious cover (acres) is:	0	Land cover areas entered correctly?	✓
oad Reduction for Site (lb/yr):	0.06	Total disturbed area entered?	✓

					0.40
Post-Development Land Cover (acres)	ì				
ost bevelopment Land cover (acres)	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) undisturbed,					0.00
protected forest/open space or reforested land					0.00
Managed Turf (acres) disturbed, graded for					0.00
yards or other turf to be mowed/managed				0.03	0.03
Impervious Cover (acres)				0.37	0.37
Area Check	OK.	OK.	OK.	OK.	0.40

B Soils

Constants	
Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Land Cover Summary-Post (Final)

Post ReDev. & New Impervious

0%

0.03

0.25

Forest/Open Space

Cover (acres)

Weighted Rv(forest % Forest

Managed Turf Cove

(acres)

Weighted Rv (turf)

% Managed Turf

Totals

0.00

0.02

0.38

Land Cover Sum	mary-Pre	
Pre-ReDevelopment	Listed	Adjusted
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.02	0.02
Weighted Rv(turf)	0.25	0.25
% Managed Turf	4%	4%
Impervious Cover (acres)	0.38	0.38
Rv(impervious)	0.95	0.95
% Impervious	96%	96%
Total Site Area (acres)	0.40	0.40
Site Rv	0.92	0.92

Treatment Volume and Nutrient Load					
Pre-ReDevelopment Treatment Volume (acre-ft)					
Pre-ReDevelopment Treatment Volume (cubic feet)	1,325	1,325			
Pre-ReDevelopment TP Load (lb/yr)	0.83	0.83			
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.11				
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopmen pervious land proposed for new impervio	0.16				

¹ 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 acre of new impervious cover).

Column I shows load reduction requriement for new impervious cover (based on new

70 IVIAITABEA TAIT	7 70	70 IVIAIIABEA TAIT	770		
Impervious Cover (acres)	0.37	Re Dev. Impervious Cover (acres)	0.37	New Impervious Cover (acres)	0.00
Rv(impervious)	0.95	Rv(impervious)	0.95	Rv(impervious)	
% Impervious	93%	% Impervious	93%		
Final Site Area (acres)	0.40	Total ReDev. Site Area (acres)	0.40		
Final Post Dev Site Rv	0.90	ReDev Site Rv	0.90		
		Treatment Volume and	Nutrient Loa	ad	
Final Post-Development Treatment Volume (acre-ft)	0.0297	Post-ReDevelopment Treatment Volume (acre-ft)	0.0297	Post-Development Treatment Volume (acre-ft)	-
Final Post-Development Treatment Volume (cubic feet)	1,294	Post-ReDevelopment Treatment Volume (cubic feet)	1,294	Post-Development Treatment Volume (cubic feet)	-
Final Post- Development TP Load (lb/yr)	0.81	Post-ReDevelopment Load (TP) (lb/yr)*	0.81	Post-Development TP Load (lb/yr)	-
Final Post-Development TP Load per acre (lb/acre/yr)	2.06	Post-ReDevelopment TP Load per acre (lb/acre/yr)	2.06		

LAND COVER SUMMARY -- POST DEVELOPMENT

orest/Open Space

Cover (acres)

Weighted Rv(forest)

% Forest

Managed Turf Cover

(acres)

Weighted Rv (turf)

% Managed Turf

Post-ReDevelopment

0.25

Land Cover Summary-Post

Post-Development New Impervious

Max. Reduction Required (Below Pre- ReDevelopment Load)	10%	
TP Load Reduction Required for Redeveloped Area (lb/γr)	0.06	TP Load Redu Required for Impervious Area

	Post-De	velopment Requirement for S	ite Area	
	TP Loa	d Reduction Required (lb/yr)	0.06	
	Ni	trogen Loads (Informational Purp	oses Only)	
Pre-ReDevel	opment TN Load (lb/yr) 5.95		Final Post-Development TN (Post-ReDevelopment & New II (lb/yr)	

Drainage Area A

Practice

14.a. Manufactured Treatment Device-

14. Manufactured Treatment Devices (no RR)

development load limit, 0.41 lbs/acre/year).

ainage Area A Land Cover (acres)						
A Soils	B Soils	C Soils	D Soils	Totals	Land Cover R	
				0.00	0.00	
			0.03	0.03	0.25	
			0.37	0.37	0.95	
			Total	0.40		
	A Soils	A Soils B Soils	A Soils B Soils C Soils	0.03 0.37	0.00 0.03 0.37	

Area (acres) Practice (ft³)

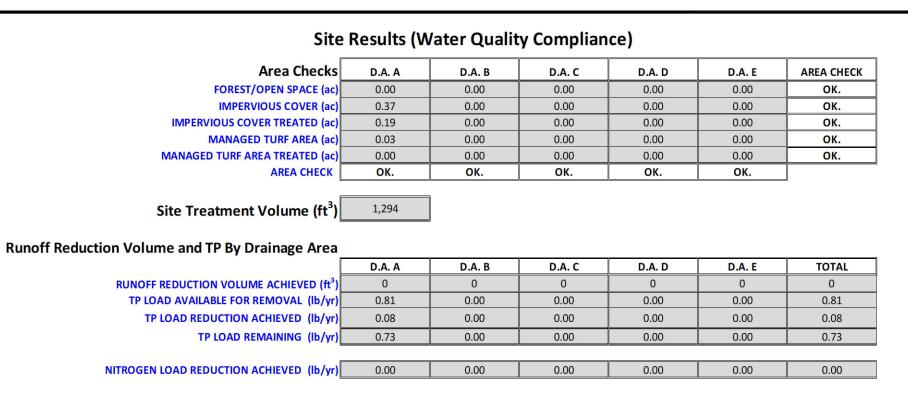
Stormwater Best Management Practices (RR = Runoff Reduction)

CLEAR BMP AREAS

Total Phosphorus Available for Removal in D.A. A (lb/yr)

	Post Developm	ent Treatment Vol	ume in D.A. A (ft³)	1,294	
					Select from dropdown li
osphorus Removal ciency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (Ib)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to Employed

Nitrogen Removal Efficiency (%)	Nitrogen Load Untreated From Upstream Nitrogen Load to Practices (lbs) Practice (lbs)		Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
Efficiency (%)	14. Manufacture	Practice (ibs)	(ibs)	
0	0.00	2.95	0.00	2.95



*** NO CREDIT TAKEN FOR URBAN BIO-RETENTION

Total Phosphorus		_
FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	0.81	
TP LOAD REDUCTION REQUIRED (lb/yr)	0.06	
TP LOAD REDUCTION ACHIEVED (lb/yr)	0.08	
TP LOAD REMAINING (lb/yr):	0.73	
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00	**

** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR **

Total Nitrogen (For Information Purposes)					
POST-DEVELOPMENT LOAD (lb/yr)					
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)					
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	5.82				

Drainage Area A		A Soils	B Soils	C Soils	D Soils	Total Area (acres):
Forest/Open Space undisturbed, protected	Area (acres)	0.00	0.00	0.00	0.00	Runoff Reduction
forest/open space or reforested land	CN	30	55	70	77	Volume (ft³):
Managed Turf disturbed, graded for yards or other	Area (acres)	0.00	0.00	0.00	0.03	
turf to be mowed/managed	CN	39	61	74	80	
Impervious Cover	Area (acres)	0.00	0.00	0.00	0.37	
impervious cover	CN	98	98	98	98	

	1-year storm	2-year storm	10-year storm
RV _{Developed} (watershed-inch) with no Runoff Reduction*	2.36	2.86	4.85
RV _{Developed} (watershed-inch) with Runoff Reduction*	2.36	2.86	4.85
Adjusted CN*	97	97	97

1-year storm 2-year storm 10-year storm 2.70 3.20 5.20 Use NOAA Atlas 14 (http://hdsc.nws.noaa.gov/hdsc/pfds/)

PROJECT DESCRIPTION

REDEVELOPMENT DEVELOPMENT

	•		
DRAINAGE AREA	IMPERVIOUS AREA	PERVIOUS AREA	TOTAL
SITE AREA	0.22	0.02	0.23
ON-SITE TREATED	0.19	0.00	0.19
OFF-SITE TREATED	0.00	0.00	0.00
TOTAL TREATED/DETAINED	0.19	0.00	0.19
TOTAL UNDETAINED	0.03	0.02	0.04

WATER TREATMENT ON/OFF-SITE

BMP TYPE	AREA TREATED BY BMP	IMPERVIOUS AREA TREATED BY BMP (AC)	BMP TREATED EFFICIENCY (%)
	(AC)	IREATED BY BIVIF (AC)	EFFICIENCY (%)
HYDRODYNAMIC			
SEPARATOR	0.19	0.19	20%
TOTAL	0.19	0.19	

MISCELLANEOUS

TOTAL WQV TREATED	YES	NO
DETENTION ON SITE	YES	NO

PROJECT IS WITHIN WHICH WATERSHED? POTOMAC RIVER PROJECT DISCHARGES TO WHICH BODY OF WATER? POTOMAC RIVER

WQV TREATMENT = 1,816 CF/AC OF IMPERVIOUS AREA

= 1,816 CF/AC X 0.2189 AC = 398 CF

APPROVED SPECIAL USE PERMIT NO. DSUP 2021-10012 DEPARTMENT OF PLANNING & ZONING DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. _ DATE CHAIRMAN, PLANNING COMMISSION DATE DATE RECORDED_ INSTRUMENT NO. DEED BOOK NO. PAGE NO.

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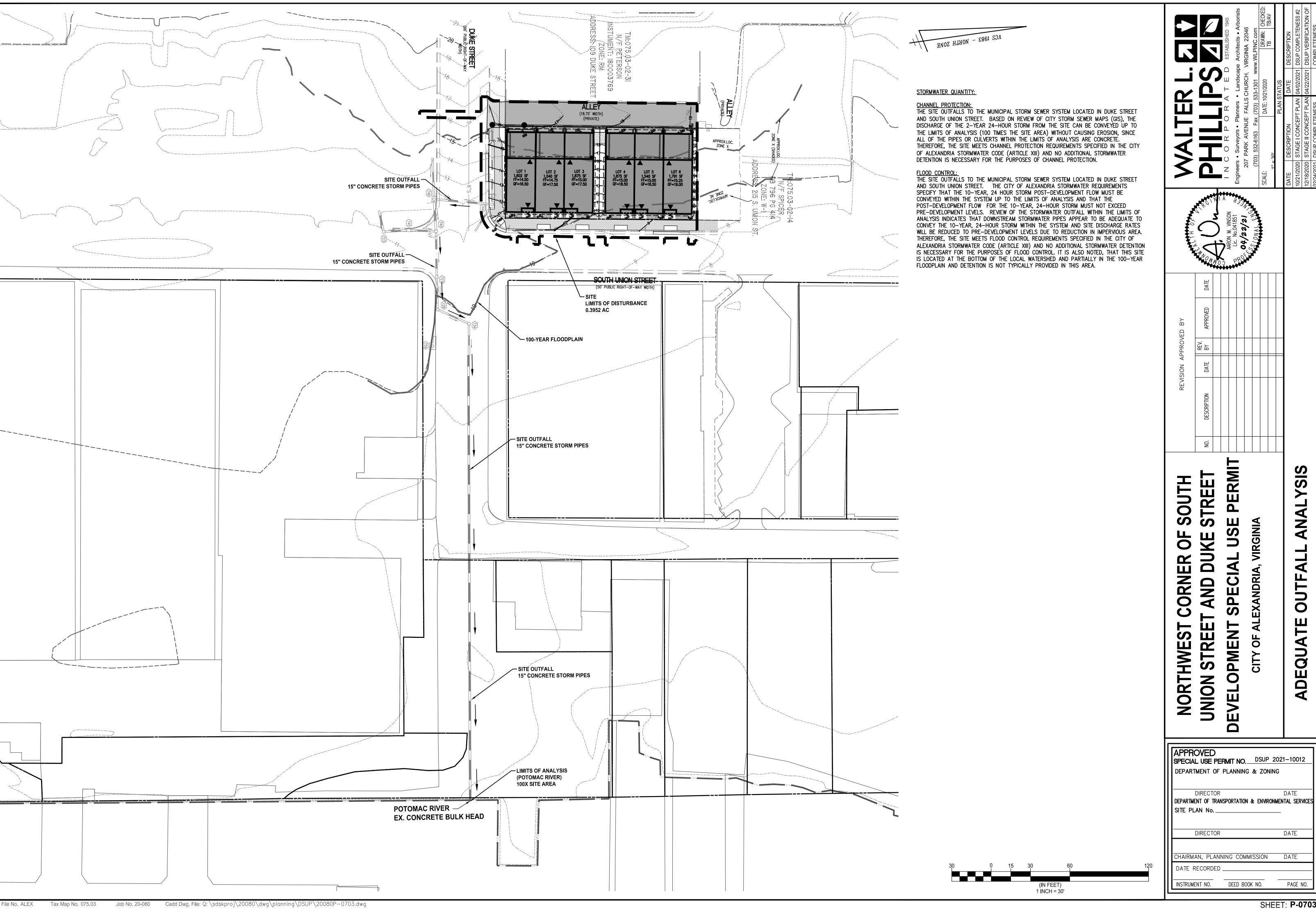
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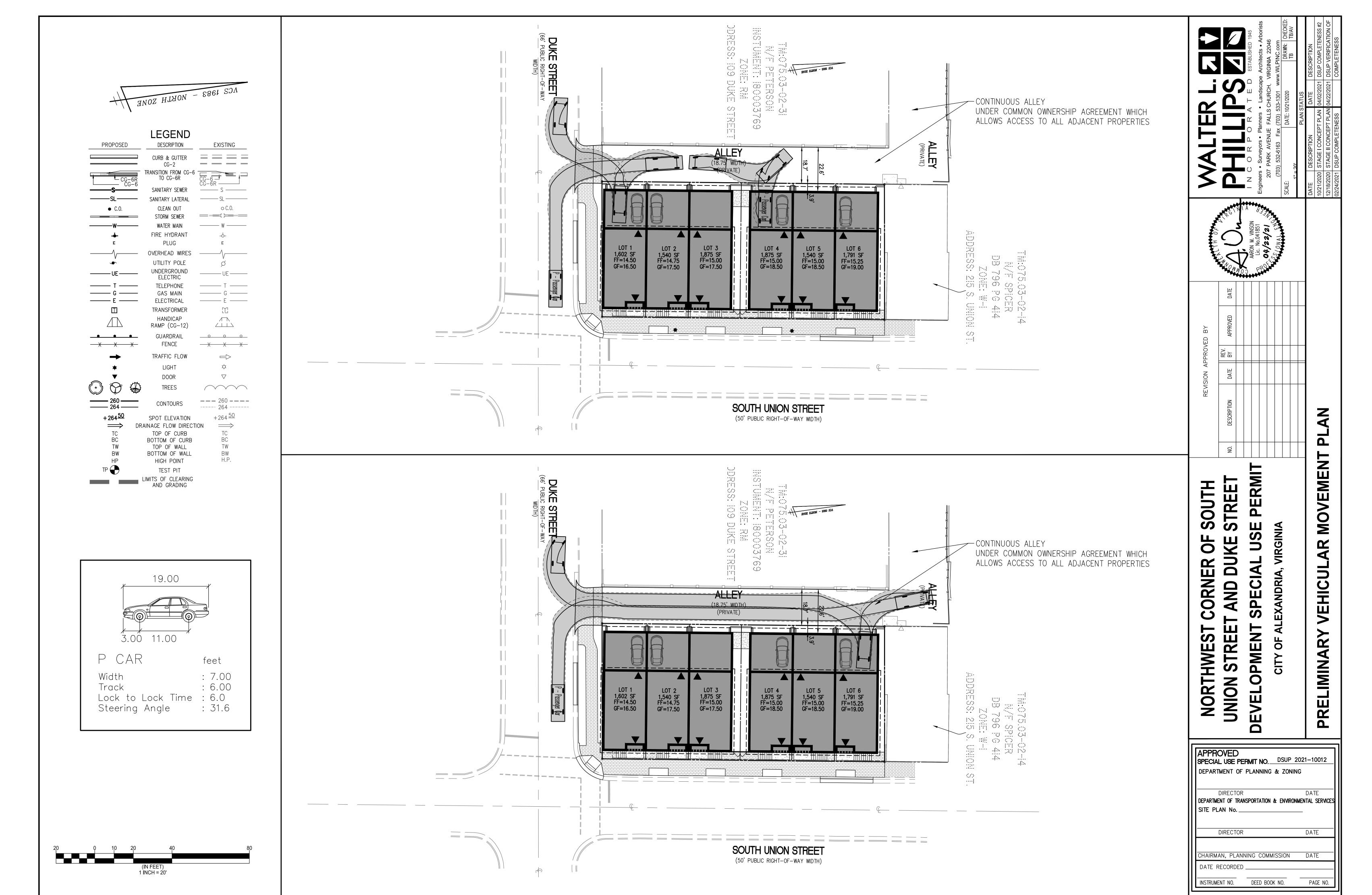


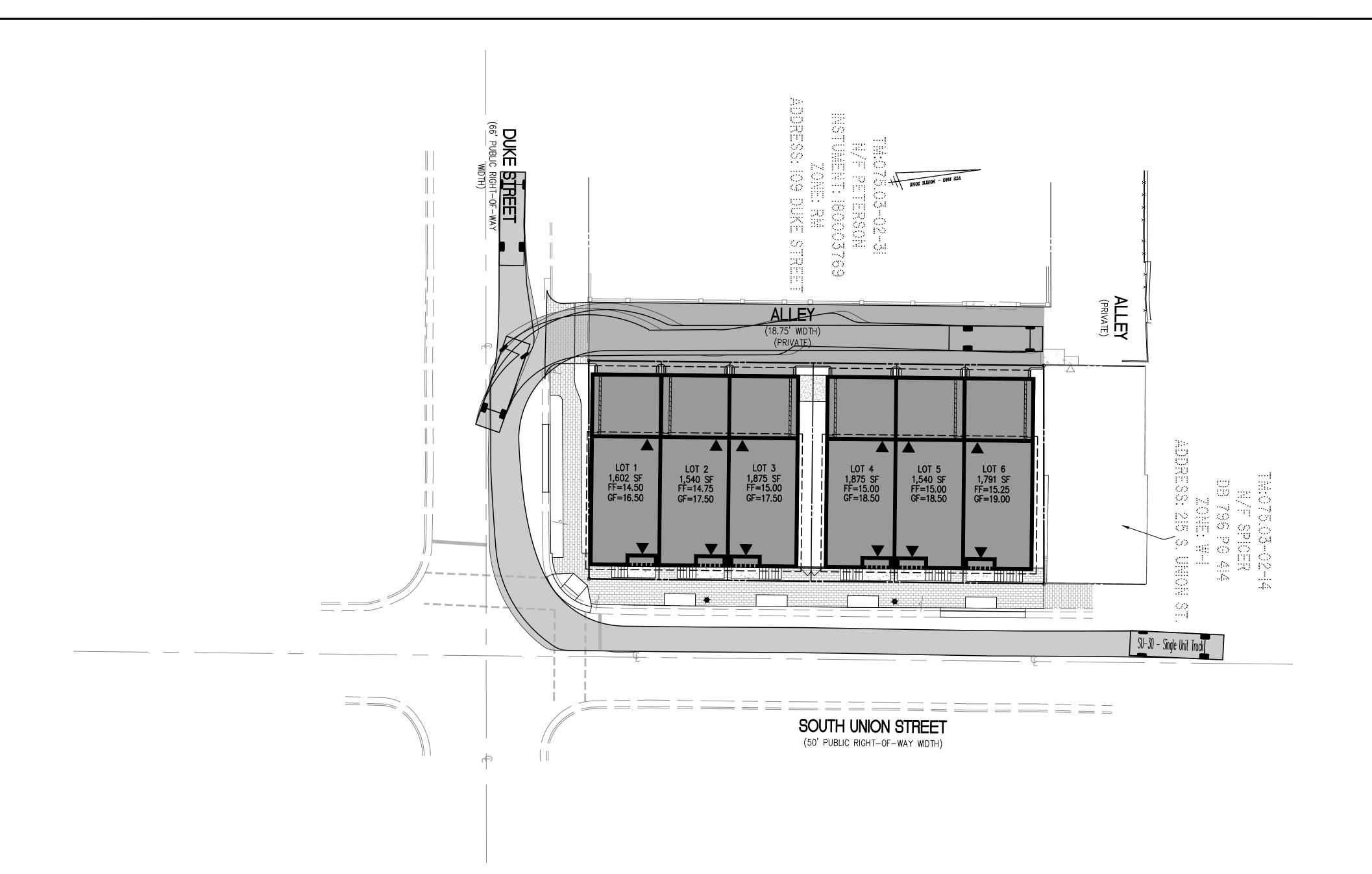
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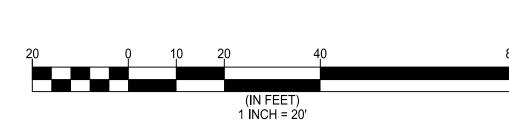
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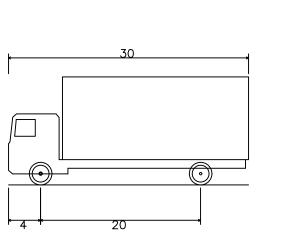






LEGEND

PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION	EXISTING
	CURB & GUTTER CG-2			HANDICAP RAMP (CG-12)	
CG-6R CG-6	TRANSITION FROM CG-6 TO CG-6R	CG-6-CG-6R		GUARDRAIL FENCE	
s	SANITARY SEWER	S	_	TRAFFIC FLOW	\Rightarrow
——SL——	SANITARY LATERAL	SL			-
• C.O.	CLEAN OUT	o C.O.	*	LIGHT	\$
	STORM SEWER		▼	DOOR	∇
w	WATER MAIN	——— W ———		TREES	
+ r	FIRE HYDRANT PLUG	-6- E	260 —— 264 ——	CONTOURS	 260
	OVERHEAD WIRES		+ 264 50	SPOT ELEVATION	+264 ⁵⁰
•	UTILITY POLE	ď		AINAGE FLOW DIRECTI	
———UE———	UNDERGROUND ELECTRIC	———UE———	TC BC	TOP OF CURB	TC BC TW
T	TELEPHONE	T	TW BW	TOP OF WALL BOTTOM OF WALL	BW
—— G ——	GAS MAIN	G	HP	HIGH POINT	H.P.
— Е —	ELECTRICAL	— Е —	TP 🕕	TEST PIT	
	TRANSFORMER			LIMITS OF CLEARING AND GRADING	



SU-30 — Single Unit Truck Overall Length Overall Width Overall Body Height Min Body Ground Clearance Track Width Lock—to—lock time Max Steering Angle (Virtual)

TRASH COLLECTION NOTE

TRASH WILL BE ROLLED FROM INDIVIDUAL GARAGES TO THE DUKE STREET FRONTAGE ON COLLECTION DAYS AND PICKED UP BY CITY TRASH SERVICE.

NORTHWEST CORNER OF SOUTH	REVISION	SIOI
UNION STREET AND DUKE STREET	DESCRIPTION	DA
EVELOPMENT SPECIAL USE PERMIT		
CITY OF ALEXANDRIA, VIRGINIA		

APPROVED
SPECIAL USE PERMIT NO. DSUP 2021-10012

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

CHAIRMAN, PLANNING COMMISSION DATE

DEED BOOK NO.

DEPARTMENT OF PLANNING & ZONING

SITE PLAN No.

DIRECTOR

DATE RECORDED_

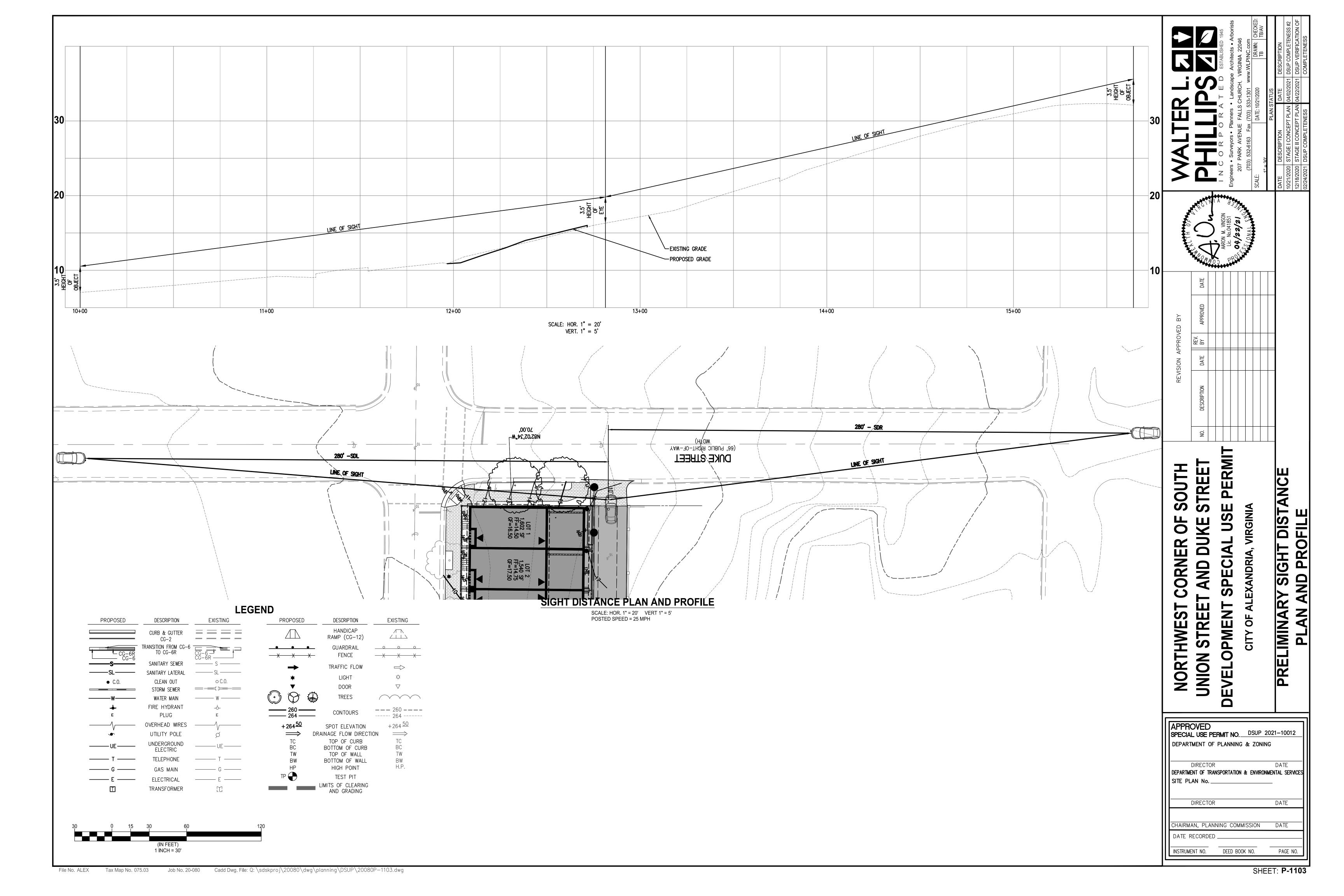
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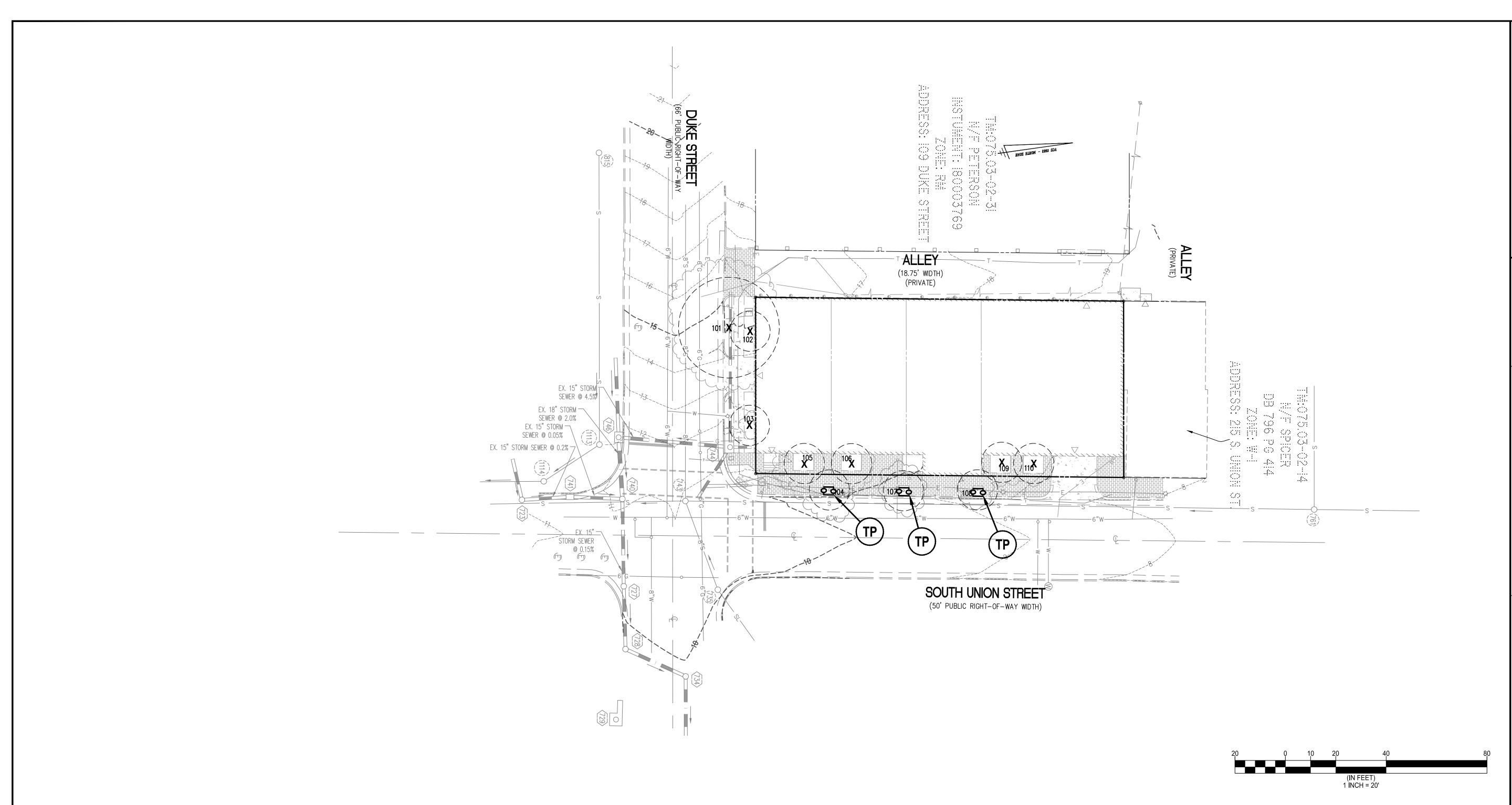
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TRUCK MOVEMENT PL

PRELIMINARY





TREE LEGEND

KEY	TITLE	SYMBOL
TP	TREE PROTECTION FENCE	- o - -o
	TREE TO BE REMOVED	X
	EXISTING TREELINE	
	CRITICAL ROOT ZONE (CRZ)	

NOTES

- THERE IS NO RPA, INTERMITTENT STREAM, WETLANDS, ASSOCIATED BUFFER, OR EXISTING STORMWATER FACILITIES LOCATED ONSITE. THE SITE IS LOCATED WITHIN A FLOODPLAIN.
- 2. NO KNOWN MARINE CLAY ONSITE, SEE SHEET P-0201. NO KNOWN CONTAMINATION KNOWN ONSITE. NO PLANTINGS PROPOSED AT THIS TIME.
- 3. THERE ARE NO EXISTING OR PROPOSED TREES ONSITE.
- 4. THERE ARE NO EASEMENTS LOCATED ONSITE
- 5. THERE ARE NO EXISTING CULTURAL RESOURCES.

lexandr	ria	Tree Inventory			1							
									Activiti	es		
Tree #	Botanical Name	Common Name	Size DBH (in)	Critical Root Zone (CRZ) Radius (ft)	Species Rating (%)	Condition (%)	Removal	Tree Protection Fence	Root Prune	Root Padding	Hand Removal/ Selective Removal	Notes
101	Fraxinus pennsylvanica	Green ash	20"	20'	53%	59%	Х					
102	Lagerstroemia indica	Crape Myrtle	2"	8'	78%	66%	Х					
103	Lagerstroemia indica	Crape Myrtle	2"	8'	78%	66%	Х					
104	Quercus phellos	Willow oak	8"	8'	75%	63%		х				
105	Prunus spp.	Ornamental Cherry	5"	8'	55%	63%	Х					
106	Prunus spp.	Ornamental Cherry	5"	8'	55%	63%	Х					
107	Quercus phellos	Willow oak	7"	8'	75%	63%		х				
108	Quercus phellos	Willow oak	4"	8'	75%	59%		х				
109	Prunus spp.	Ornamental Cherry	6"	8'	55%	66%	×					
110	Prunus spp.	Ornamental Cherry	6"	8'	55%	66%	X					

DBH = Diameter at Breast Height (measured 4.5 feet above ground)	
	1

CRZ = Critical Root Zone = 1 foot radius per inch of tree diameter, trees over 30" DBH= 1.5 foot radius per inch of tree diameter

CRZ values for trees with multiple stems were calculated based on methods outlined in the 9th edition of the Guide for Plant Appraisal, published by the LS.A.

Condition Ratings provided as percentages based on methods outlined in the 9th edition of the Guide for Plant Appraisal, published by the LS.A.

NORTHWEST CORNER OF SOUTH UNION STREET AND DUKE STREET DEVELOPMENT SPECIAL USE PERN

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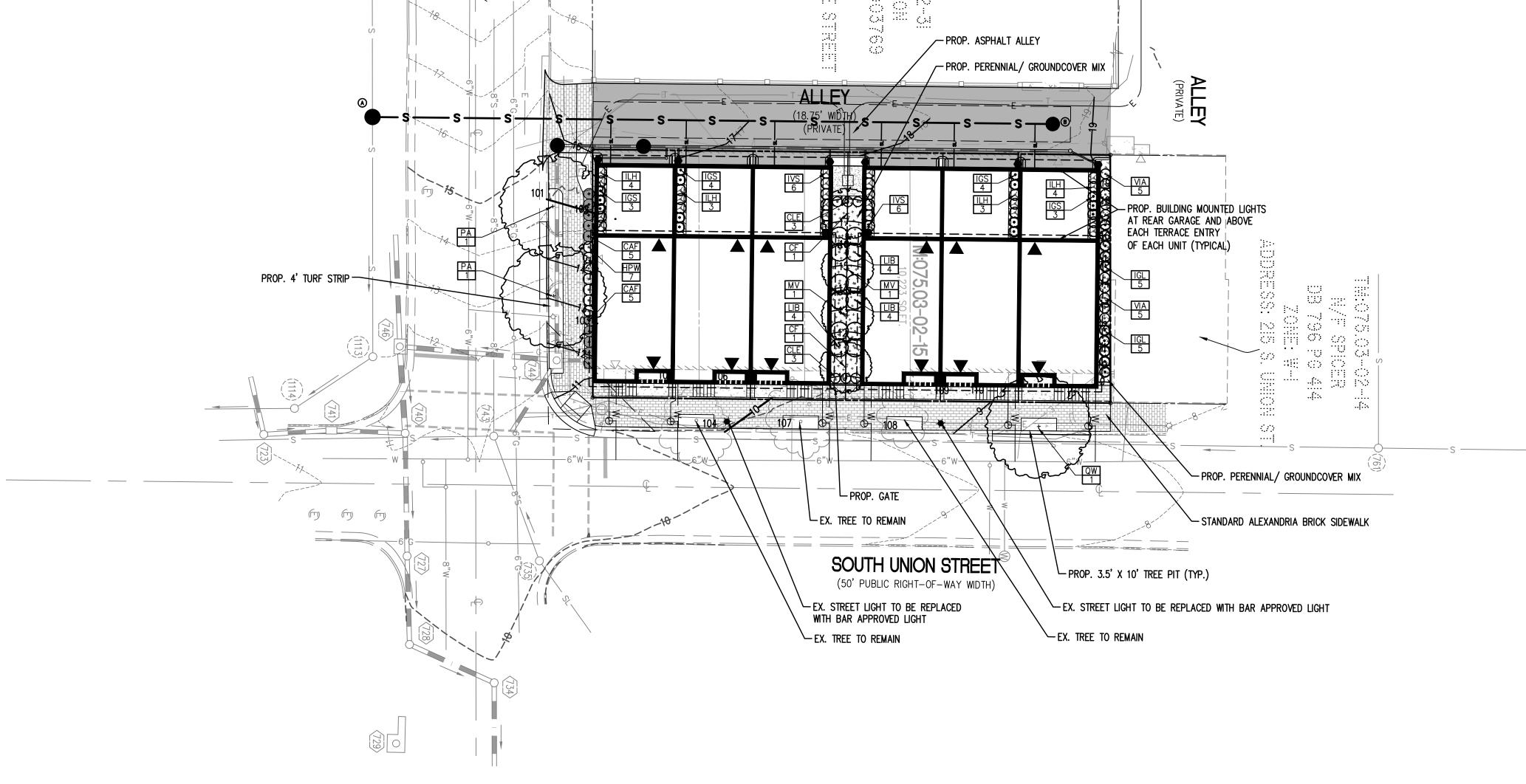
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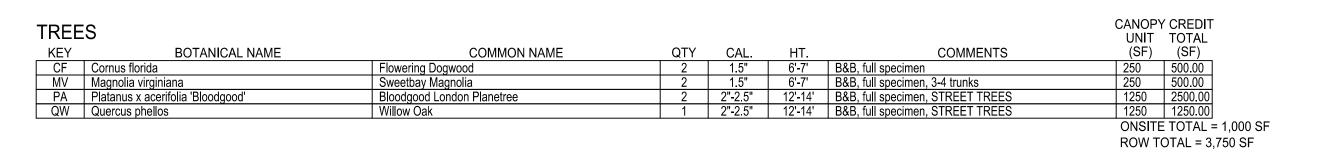
APPROVED SPECIAL USE PERMIT NO. DSUP 2021-10012

TREE COVER CALCULATIONS

	0110	
GROSS SITE AREA	10223	SF
EXCEPTIONS, DEDUCTIONS	0	SF
ZONE		W-1
PERCENT REQUIRED	25	%
TOTAL TREE COVER REQUIRED	2556	SF
TREE COVER PROVIDED BY PRESERVING TREES	0	SF
TREE COVER REQUIRED BY PLANTING	2555.8	SF
TREE COVER PROPOSED BY PLANTING	1380	SF
TOTAL TREE COVER PROVIDED	1380	SF

WAIVER REQUESTED FOR REMAINDER OF CANOPY COVERAGE REQUIREMENT





HRU	IBS						UNIT	Y CREDI TOTAL
KEY	BOTANICAL NAME	COMMON NAME	QTY	HEIGHT	SPREAD	COMMENTS	(SF)	(SF)
CLE	Clethra alnifolia 'Hummingbird'	Hummingbird Summersweet Clethra	6	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	10	60
CAF	Cornus 'Farrow' Arctic Fire	Arctic Fire Dogwood	0	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	*	
HPW	Hydrangea quercifolia 'Pee Wee'	Pee Wee Oakleaf Hydrangea	0	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	*	
IGL	llex glabra	Inkberry	10	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	10	100
IGS	llex glabra 'Shamrock'	Shamrock Inkberry	0	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	*	
IVS	llex verticillata 'Red Sprite'	Red Sprite Winterberry	0	15"-18"	15"-18"	#3 cont, full vigorous, well-rooted & established	*	
ILH	Itea virginica 'Little Henry'	Little Henry Sweetspire	0	15"-18"	15"-18"	#3 cont, full vigorous, well-rooted & established	*	
LIB	Lindera benzoin	Spicebush	12	24"-30"	24"-30"	#3 cont, full vigorous, well-rooted & established	10	120
VBA	Viburnum acerfolium	Mapleleaf Viburnum	10	18"-24"	18"-24"	#3 cont, full vigorous, well-rooted & established	10	100

PERE	ENNIALS/ GROUNDCOVER MIX				
KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
CXP	Carex pensylvanica	Sedge	400	#1 cont.	10" O.C., full specimen, healthy, well-rooted
HEU	Heuchera americna	American alumroot	75	#1 cont.	12" O.C., full specimen, healthy, well-rooted
POL	Polystichum acrostichoides	Christmas fern	25	#1 cont.	24" O.C., full specimen, healthy, well-rooted
TIA	Tiarella cordifolia	Foam Flower	25	#1 cont.	24" O.C., full specimen, healthy, well-rooted
PHL	Phlox divaricata	Wild Blue Phlox	75	#1 cont.	12" O.C., full specimen, healthy, well-rooted

PLANT PERENNIALS/ GROUNDCOVERS IN A RANDOM PATTERN

LEGEND SYMBOL EXISTING TREELINE LIMITS OF DISTURBANCE PROPOSED TREE PROPOSED SHRUB PROPOSED PERENNIAL/

GROUNDCOVER MIX

LANDSCAPE PLAN NOTES

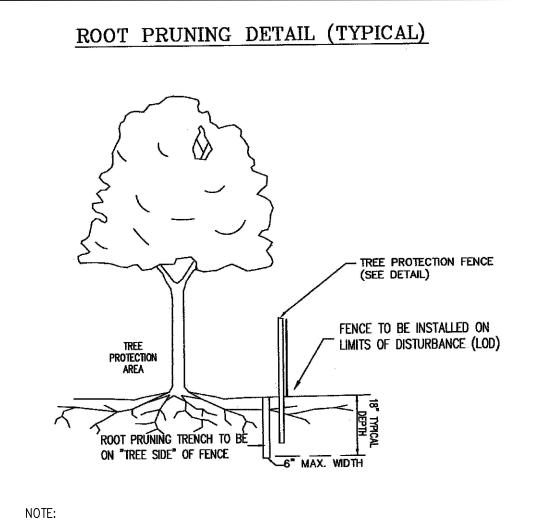
1. THERE IS NO RPA, INTERMITTENT STREAM, WETLANDS, ASSOCIATED BUFFER, OR EXISTING STORMWATER FACILITIES LOCATED ONSITE. THE SITE IS LOCATED WITHIN A FLOODPLAIN.

1 INCH = 20'

- 2. NO KNOWN MARINE CLAY ONSITE, SEE SHEET P-0201. NO KNOWN CONTAMINATION KNOWN ONSITE. NO PLANTINGS PROPOSED AT THIS TIME.
- 3. THERE ARE NO EXISTING OR PROPOSED TREES ONSITE.
- 4. THERE ARE NO EASEMENTS LOCATED ONSITE
- 5. THERE ARE NO EXISTING CULTURAL RESOURCES.

SHEET: **P-1202**

* NO CREDIT CLAIMED

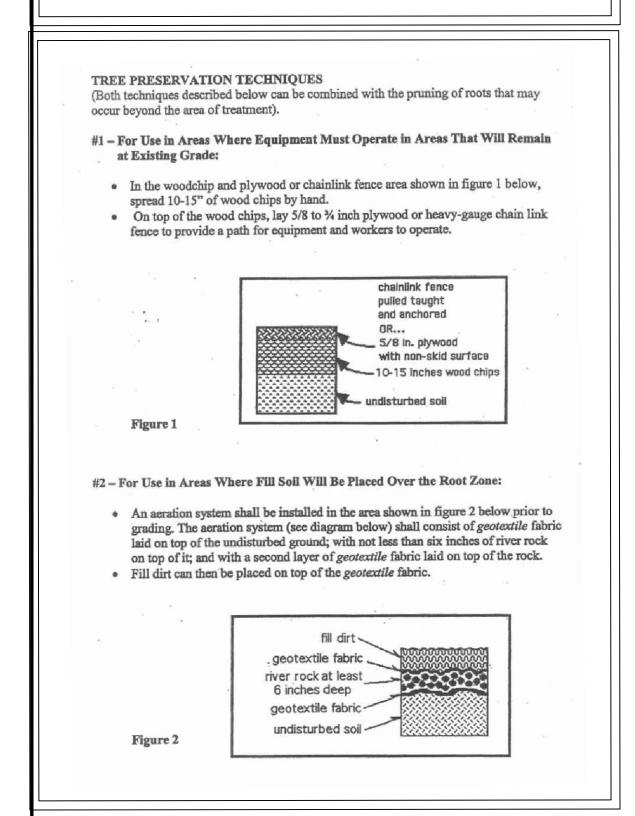


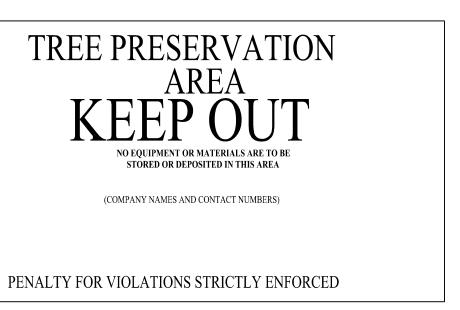
TREE PROTECTION AREA WILL BE DETERMINED AS PART OF THE PLAN REVIEW PROCESS. EXACT LOCATION, DEPTH AND METHODS OF ROOT PRUNING TO BE DETERMINED IN THE FILED BY PROJECT FORESTER.

EXACT LOCATION OF TREE PROTECTION AREAS SHALL BE STAKED OR FLAGGED PRIOR TO TRENCHING.

TRENCH SHOULD BE BACKFILLED IMMEDIATELY.

ROOTS SHALL BE SEVERED BY TRENCHER, VIBRATORY PLOW OR APPROVED EQUIVALENT.
ROOTS OVER 1.0" DIAMETER SHALL BE CLEANLY CUT BY HAND. ROOT PRUNING
ADJACENT TO SPECIMEN TREES MAY REQUIRE SOIL REMOVAL BY SUPERSONIC AIR TOOL TO
MINIMIZE TREE AND ROOT IMPACTS.





_ __ _ _ _ _ _ _ _ _ _ _ _ _

SPECIFICATIONS

- MINIMUM DIMENSION: 11 X 8 INCHES (W X H)

- BACKGROUND COLOR: RED OR YELLOW

- SIGNS MADE OF WEATHERPROOF MATERIAL

TREE PRESERVATION SIGN DETAIL

Landscape Plan Preparation
Recommended Planting Installation Seasons

A. Recommended seasons are a general guide based on historical climatic data and typical performance of plantings, and which vary dependent on project-specific environmental conditions. Due to construction schedules, recommended planting seasons may/may not coincide with request(s) for certificate of occupancy for projects. Coordination of planting installation and seasons shall be reviewed on an individual project basis.

. Trees

a. Do not install/plant the following trees between September 15 and March 15.

1. Oaks (Quercus Sp., Such as Q. rubra, Q. alba, Q. phellos, Q. coccinnea).

Dogwood (Cornus Sp.)
 Sweetgum (Liquidambar Sp.)

All Conifers and Evergreens except White Pine (Pinus strobus Sp.).

2. Deciduous and Evergreen Plants

a. Install/plant between March 15 and June 15 and/or September 15 and November 15.

Perennials

a. Install/plant between March 15 and June 15 and/or September 15 and November 15.

4. Spring Flowering Bulbs

a. Install/plant between September 15 and December 15.

5. Seasonal Annuals

a. Install/plant in season per approved schedule.

6. Turf Grass

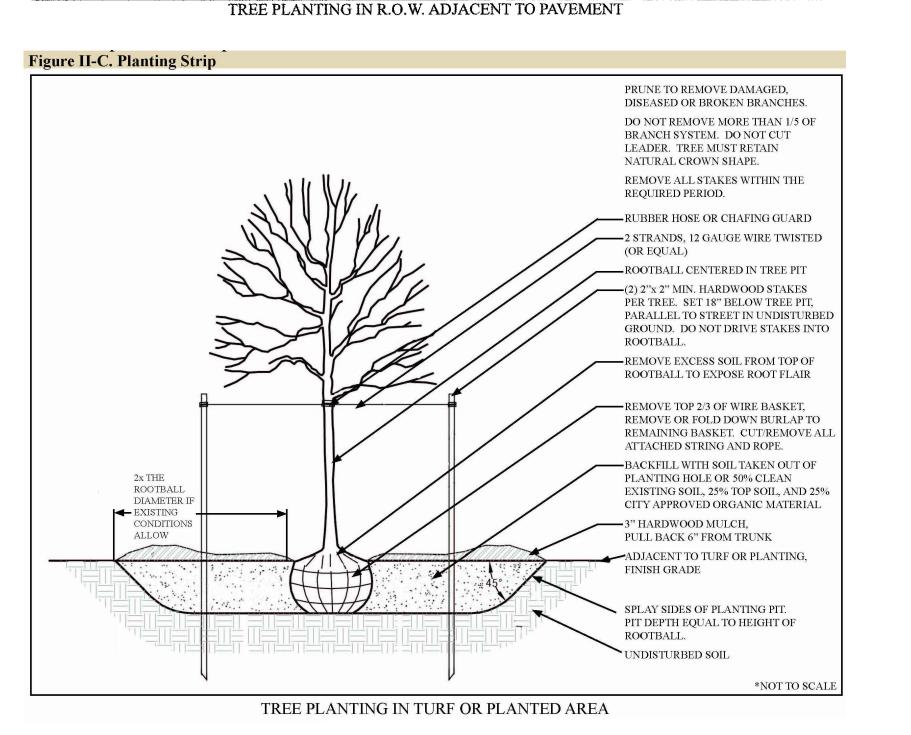
a. Install/plant between March 15 and May 15 and/or September 15 and October 15.

b. Do not install/plant seed or sod turf grass areas when ambient air temperature is below forty (40) degrees Fahrenheit, or is forecast for a twelve (12) hour period after completion of work.

7. No Plant Installation

a. Do not install plantings or turf grass between June 15 and September 15, without prior written approval by the City Arborist.

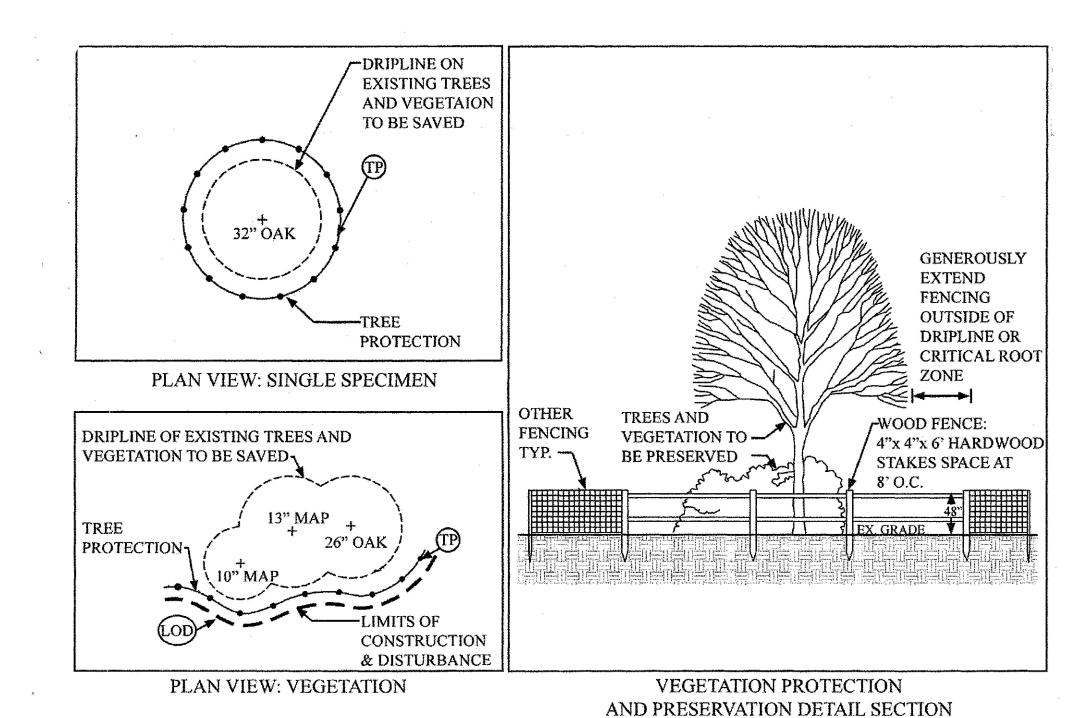
Figure II-B. Tree Well PRUNE TO REMOVE DAMAGED, DISEASED OR BROKEN BRANCHES. DO NOT REMOVE MORE THAN 1/5 OF BRANCH SYSTEM. DO NOT CUT LEADER. TREE MUST RETAIN NATURAL CROWN SHAPE. REMOVE ALL STAKES WITHIN THE REQUIRED PERIOD. -RUBBER HOSE OR CHAFING GUARD -2 STRANDS, 12 GAUGE WIRE TWISTED (OR EQUAL) -ROOTBALL CENTERED IN TREE PIT —(2) 2"x 2" MIN. HARDWOOD STAKES PER TREE. SET 18" BELOW TREE PIT, PARALLEL TO STREET IN UNDISTURBED GROUND. DO NOT DRIVE STAKES INTO -REMOVE EXCESS SOIL FROM TOP OF ROOTBALL TO EXPOSE ROOT FLAIR - REMOVE TOP 2/3 OF WIRE BASKET, REMOVE OR FOLD DOWN BURLAP TO REMAINING BASKET. CUT/REMOVE ALI ATTACHED STRING AND ROPE. -BACKFILL WITH SOIL TAKEN OUT OF PLANTING HOLE OR 50% CLEAN 2x THE ROOTBALL EXISTING SOIL, 25% TOP SOIL, AND 25% CITY APPROVED ORGANIC MATERIAL DIAMETER IF -3" HARDWOOD MULCH, CONDITION: PULL BACK 6" FROM TRUNK SPLAY SIDES OF PLANTING PIT. PIT DEPTH EQUAL TO HEIGHT OF ROOTBALL JNDISTURBED SOIL *NOT TO SCALE



Standards and Requirements Figure I-A. Required Notes on Drawing Submissions

- 1. All protection and preservation measures for existing vegetation, including maintenance shall be approved by the City Arborist in-field prior to commencement of any site disturbing activity.
- 2. Specification for all plantings shall be in accordance with the current and most up to date edition of ANSI-Z60.1, The American Standard for Nursery Stock as produced by the American Association of Nurserymen; Washington, DC.
- 3. The applicant has made suitable arrangements for pre-selection tagging, pre-contract growing, or is undertaking specialized planting stock development with a nursery or grower that is conveniently located to the project site, other procedures that will ensure availability of specified materials. In the event that shortages and/or inability to obtain specified plantings occurs, remedial efforts including species changes, additional plantings and modification to the landscape plan shall be undertaken by the applicant. All remedial efforts shall, with prior approval by the city, be performed to the satisfaction of the Directors of Planning & Zoning, Recreation, Parks & Cultural Activities and Transportation & Environmental Services.
- 4. In lieu of more strenuous specifications, all landscape related work shall be installed and maintained in accordance with the current and most up-to-date edition (at time of construction) of <u>Landscape Specification Guidelines</u> as produced by the Landscape Contractors Association of Maryland, District of Columbia and Virginia; Gaithersburg, Maryland.
- Prior to commencement of landscape installation/planting operations, a pre-installation/construction meeting will be scheduled with the City's Arborist and Landscape Architects to review the scope of installation procedures and processes.
- 6. Maintenance for this project shall be performed in perpetuity, in compliance with City of Alexandria Landscape Guidelines and/or as conditioned by project approval.
- 7. A certification letter for tree wells, tree trenches and plantings above structure shall be provided by the project's Landscape Architect. The letter shall certify that all below grade construction is in compliance with approved drawings and specifications. The letter shall be submitted to the City Arborist and approved prior to approval of the last and final Certificate of Occupancy for the project. The letter shall be submitted by the owner/applicant/successor and sealed and dated as approved by the project's Landscape Architect.
- 8. As-built drawings for this landscape and/or irrigation/water management system will be provided in compliance with City of Alexandria Landscape Guidelines. As-built drawings shall include clear identification of all variation(s) and changes from approved drawings including location, quantity and specification of all project elements.

1: Standards and Requirement Figure I-B. Tree Protection



HWEST CORNER OF SOUTH STREET AND DUKE STREET NO. DESCRIPTION APPROVE BY PMENT SPECIAL USE PERMIT

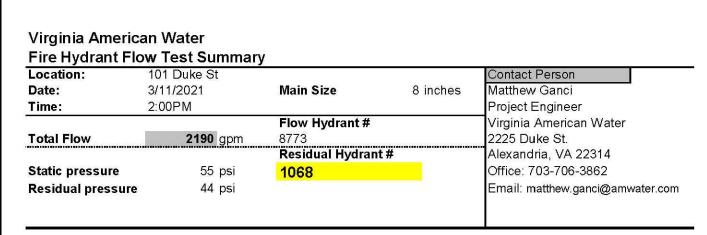
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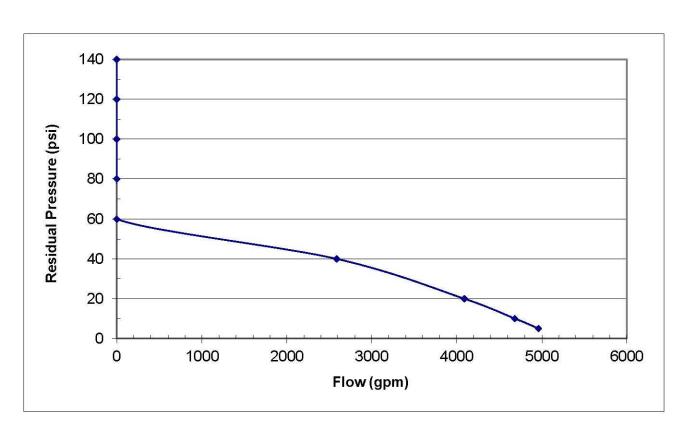
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DIRECTOR DEPARTMENT OF TRAN SITE PLAN No	ISPORTATION & ENVIRON	DATE IMENTAL SERVICES ——
DIRECTOR		DATE
CHAIRMAN, PLANN	NING COMMISSION	DATE
DATE RECORDED		
INSTRUMENT NO.	DEED BOOK NO.	PAGE NO.



Calculated Flow	Residual
gpm	psi
4961	5
4687	10
4092	20
2590	40
#NUM!	60
#NUM!	80
#NUM!	100
#NUM!	120
#NUM!	140

1. Table calculation is for reference only. Virginia American Water will not guarantee the calculated flow.

- 2. 3500 gpm is the limit of available fire flow.
- 3. Individual (Non-public water supply) fire suppression systems shall be designed by the property owner to meet needed fire flow in excess of 3,500 gpm.
- 4. VAW does not provide hydrant elevations.



REQUEST FOR FIRE FLOW TEST INFORMATION

Requested by	Travis Brown	
Phone	(703) 532-6153	Fax
Email	tbrown@wlpinc.com	
Project Name	101 Duke St	
Request Reason	Need flow information for h	ydraulic calculations
District	<u>A</u>	P
Project address	101 Duke St	
Map sheet #		
Flow Hydrant#	8773	use 4" nozzle w/dirfusen
Residual Hydrant #	1068	

Note: Before running this flow test, check all surroundings to avoid any potential damage to nearby residents landscaping, grounds, etc.

Flow duration 3-5 minutes

Tester KINKAMY Date 3/11/2021 Time 2:00 ρ

Residual Hyd#	1068
Residual FH MUST Get at least a 10 lb. drop	
Flow Hydrants	

Hydrant#

Hydrant make

Nozzle Diameter (inch)

Flow reading (PSI)

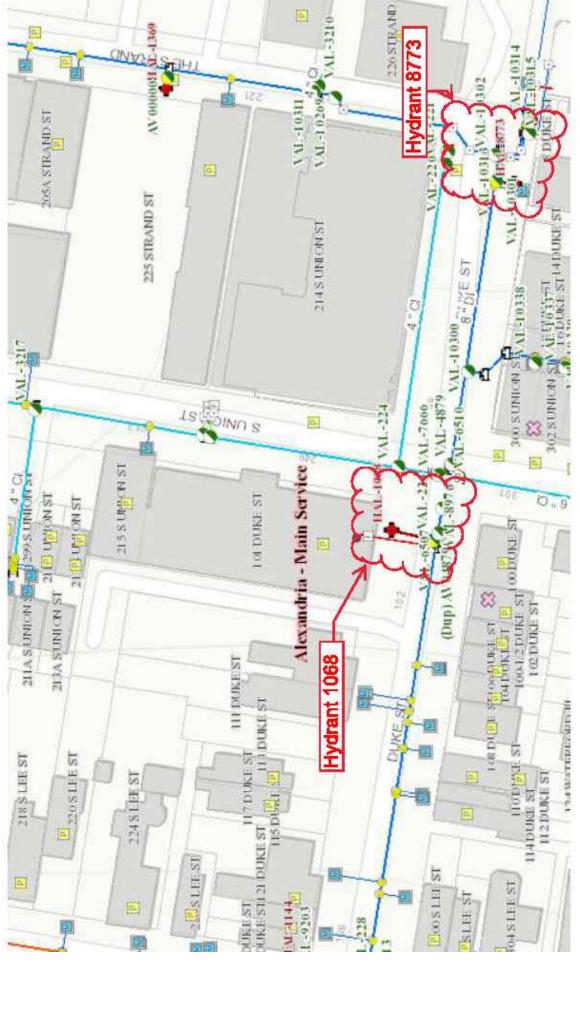
Static Reading (PSI)

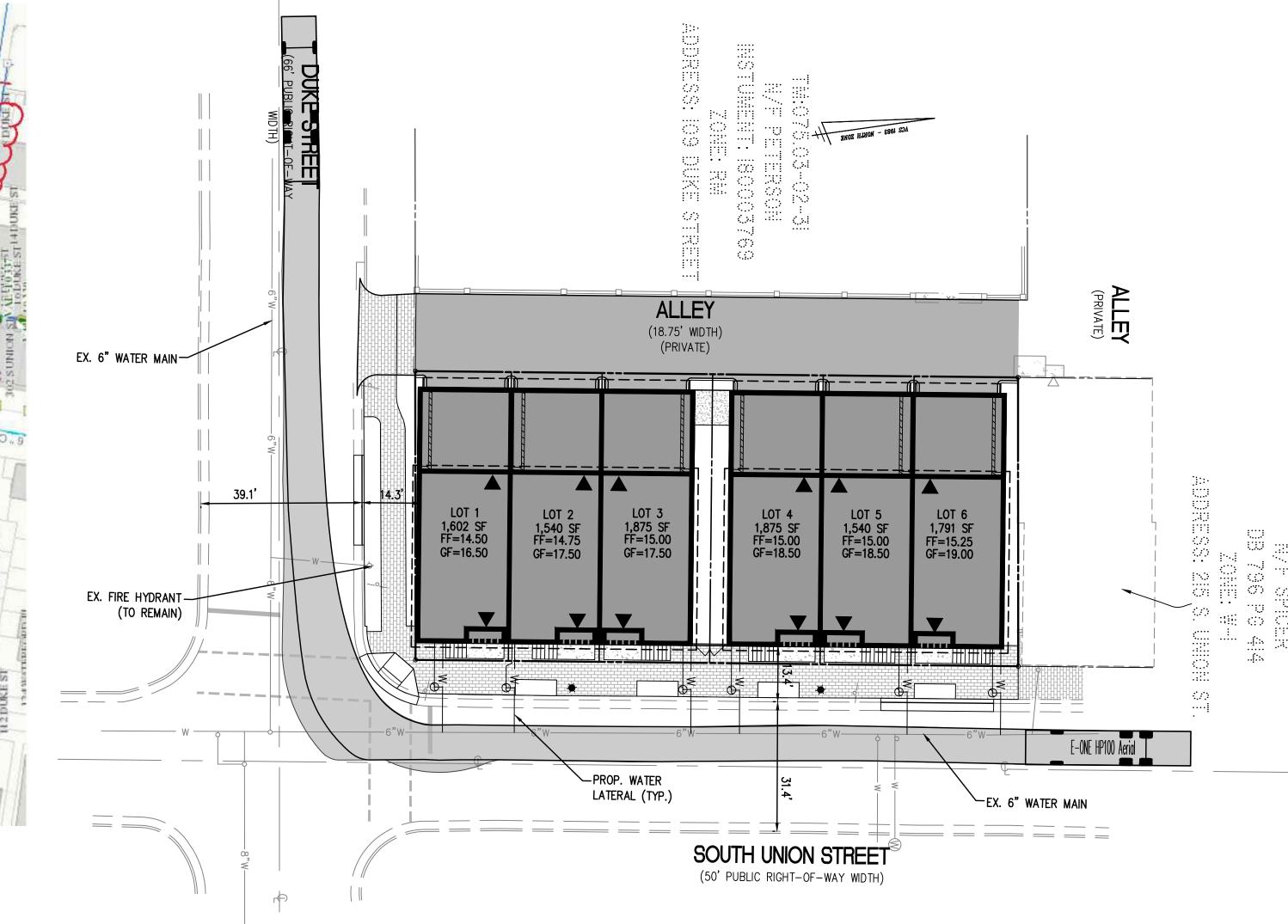
	Residual Pressure (PSI) <u>५</u> ५०			
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26 56				
56				

Make <u>mueller</u>

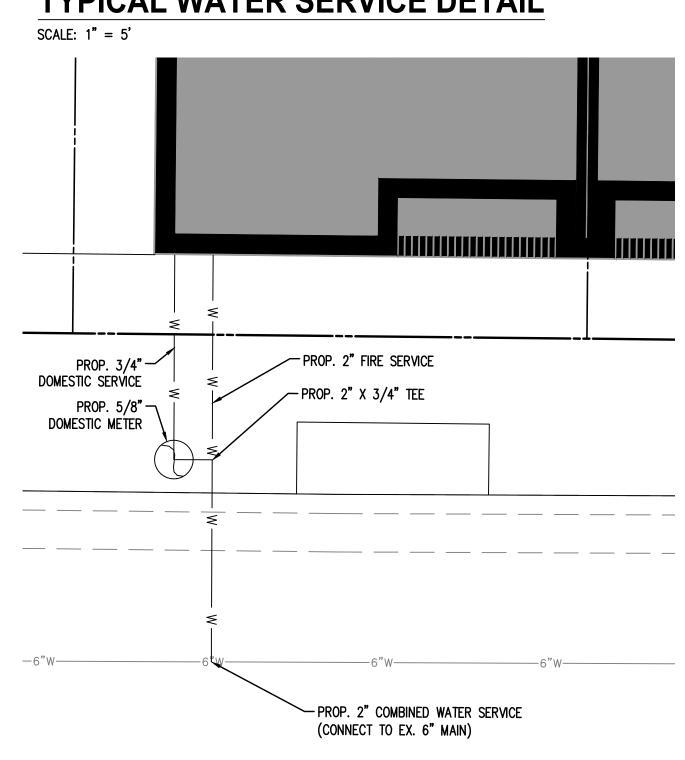
Static Pressure (PSI) 55

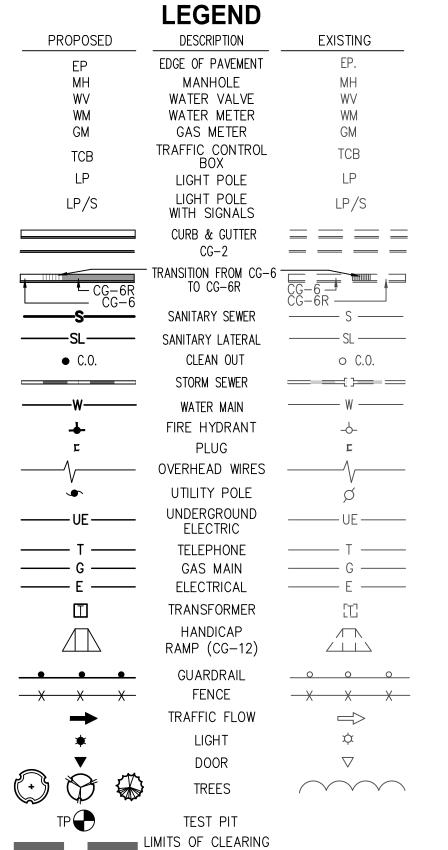
Engineering Department Requested by Date 3/10/2021 Matthew Ganci





TYPICAL WATER SERVICE DETAIL



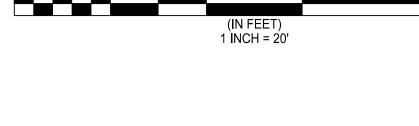


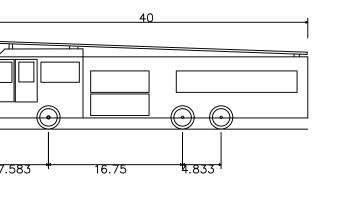
AND GRADING

BUILDING CODE ANALYSIS

CODE :	2015 VIRGINIA CONSTRUCTION CODE
USE GROUP:	R-3
CONSTRUCTION TYPE:	VA
ALLOWABLE HEIGHT:	50'
ALLOWABLE NUMBER OF STORIES:	4
ALLOWABLE AREA :	UNLIMITED
NFPA:	13R

H01/TH02/TH03/TH	04 / TH05 / TH06		
ROUND FLOOR	901	440	Garage
ECOND FLOOR	901	440	Terrace
HIRD FLOOR	901		
OURTH FLOOR	703	162	Rooftop
OTAL INTERIOR	3406		





E-ONE HP100 Aerial Overall Length Overall Width Overall Body Height Min Body Ground Clearance Track Width Lock—to—lock time Max Wheel Angle

SOUTH TREE PERI **PF** 2 ORNER AND C STREE **PMENT NORTHWEST** NOINO NOINO

APPROVED SPECIAL USE PERMIT NO. DSUP 2021-10012 DEPARTMENT OF PLANNING & ZONING DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. _ DATE CHAIRMAN, PLANNING COMMISSION DATE RECORDED INSTRUMENT NO. DEED BOOK NO. PAGE NO.

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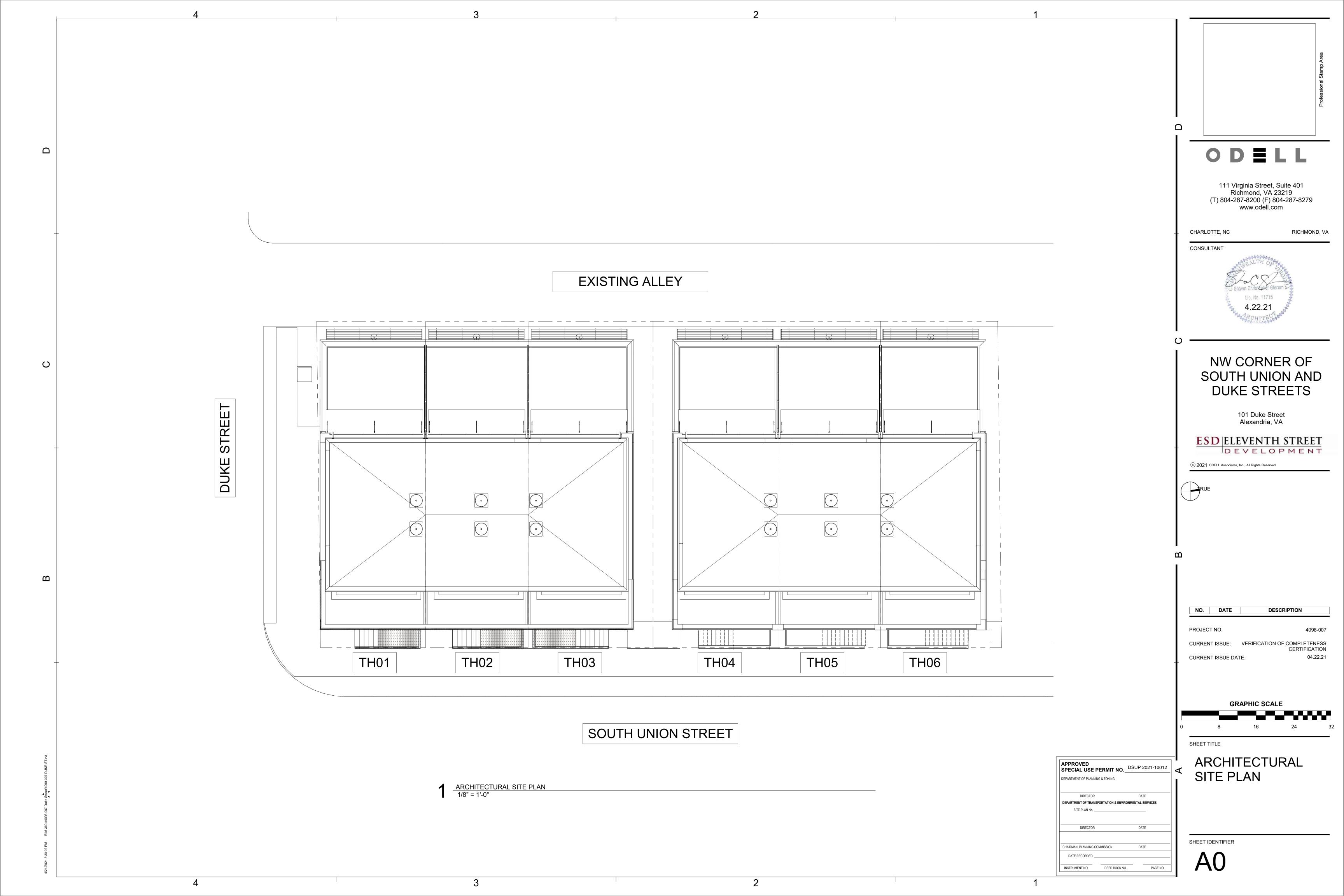
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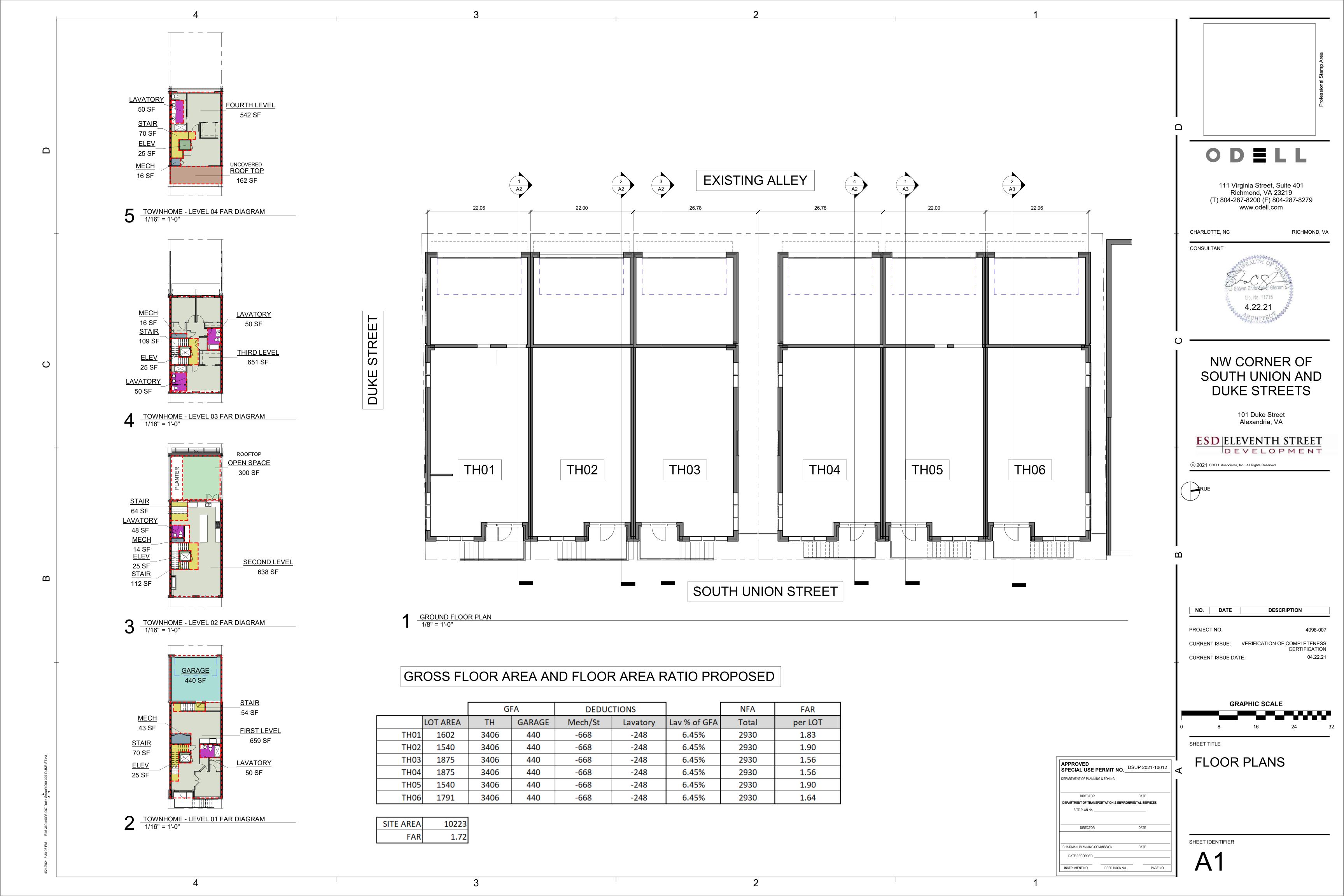
FIRE

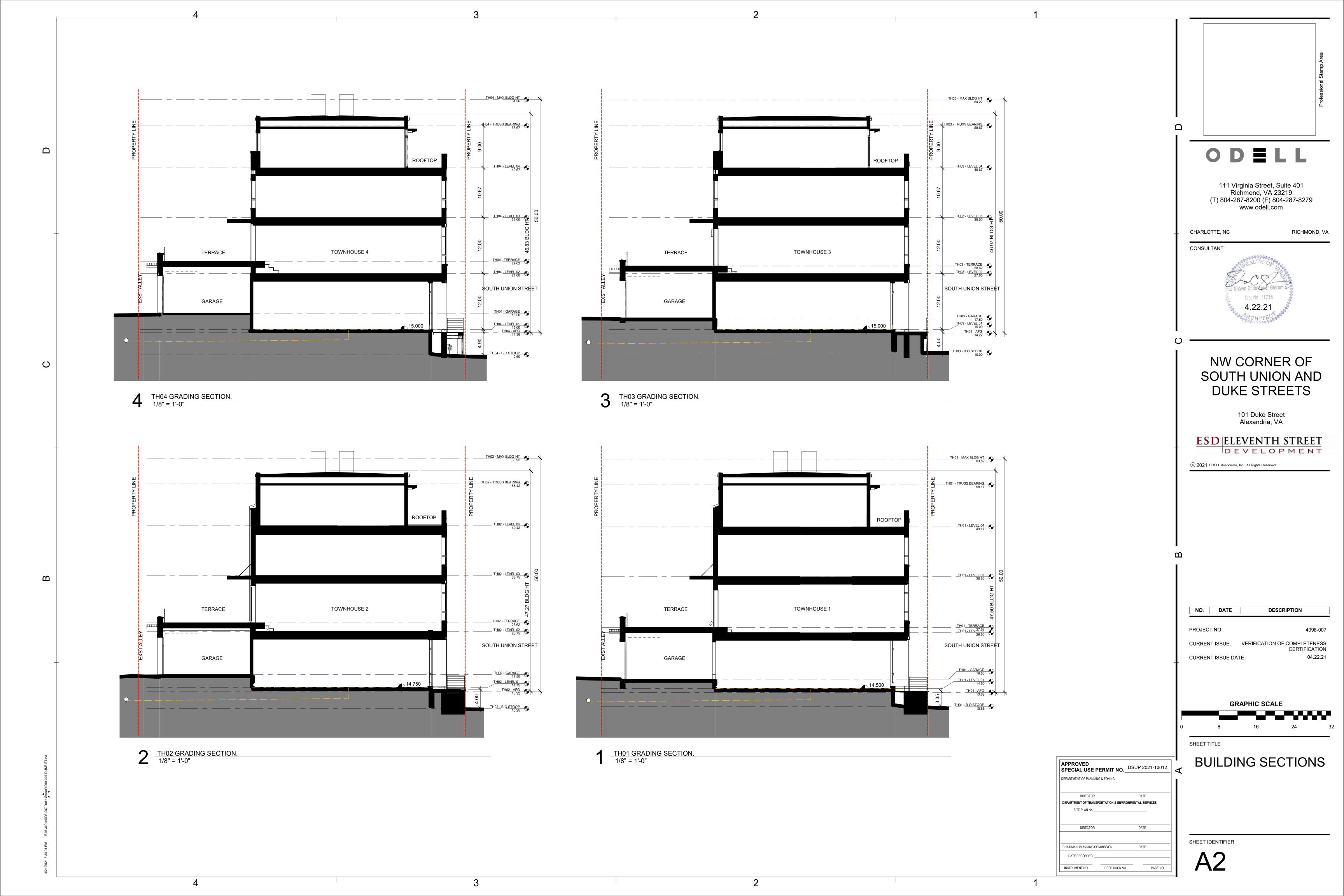
PRELIMINAR

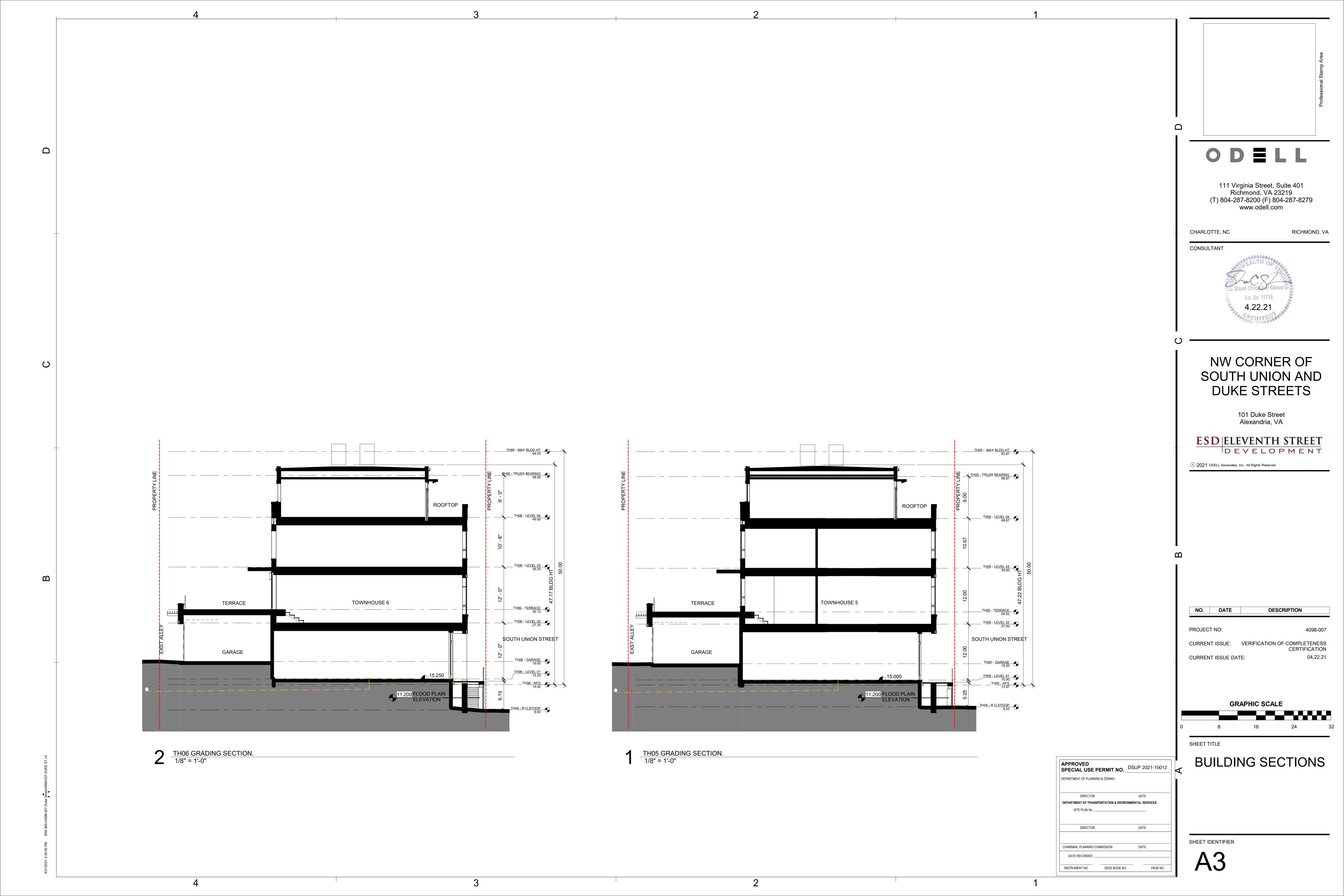
VIRGINIA

OF











SOUTH UNION STREET LOOKING NORTH

ODELL

111 Virginia Street, Suite 401 Richmond, VA 23219 (T) 804-287-8200 (F) 804-287-8279 www.odell.com

CHARLOTTE, NC

RICHMOND, VA

CONSULTANT



NW CORNER OF SOUTH UNION AND DUKE STREETS

101 Duke Street Alexandria, VA



DESCRIPTION

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SOUTH UNION STREET LOOKING SOUTH

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CONSULTANT



RICHMOND, VA

NW CORNER OF SOUTH UNION AND DUKE STREETS

101 Duke Street Alexandria, VA

ESD ELEVENTH STREET
DEVELOPMENT

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DUKE STREET LOOKING EAST

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CHARLOTTE, NC

RICHMOND, VA

CONSULTANT



NW CORNER OF SOUTH UNION AND DUKE STREETS

101 Duke Street Alexandria, VA

ESD ELEVENTH STREET
DEVELOPMENT

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DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN No. _____

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED ______

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

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