WEST END

DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE 30, 2022

PROJECT TEAM

APPLICANT
FOULGER-PRATT DEVELOPMENT, LLC
12435 PARK POTOMAC AVE
SUITE 200
POTOMAC, MD 20854
TEL. 240-499-9684
CONTACT: JAY KELLY

ATTORNEY
WIRE GILL LLP
700 NORTH FAIRFAX STREET
SUITE 600
ALEXANDRIA, VA 22314
TE. 703-677-3129
CONTACT: KENNETH WIRE

CIVIL ENGINEER
URBAN, LTD.
4200D TECHNOLOGY COURT
CHANTILLY, VA 20151
TEL. 703-376-4221
CONTACT: CLAYTON TOCK, P.E.

ARCHITECT
TORTI GALLAS + PARTNERS
1923 VERMONT AVENUE NW
2ND FLOOR
WASHINGTON, DC 20001
TEL. 202-232-3132
CONTACT: SARAH ALEXANDER, AIA, LEED AP BD+C

TRAFFIC ENGINEER
GOROVE SLADE
225 REINEKERS LANE
SUITE 750
ALEXANDRIA, VA 22314
TEL. 202-540-1926
CONTACT: ROBERT SCHIESEL, P.E.

UTILITY ENGINEER
DAVIS UTILITY CONSULTING, LLC
3975 FAIR RIDGE DRIVE
SUITE 125-SOUTH
FAIRFAX, VA 22033
TEL. 703-945-9606
CONTACT: DAVID GRAHAM

AREA TABULATIONS:

BLOCK E LOT AREA = 2.49 AC. 108,575 AC.
BLOCK G LOT AREA = 1.42 AC. 62,083 AC.
TOTAL DEVELOPMENT AREA = 3.91 AC. 170,658 AC.

TOTAL DISTURBED AREA = 4.05 AC. 176,668 SF.
TOTAL EX. IMPERVIOUS AREA = 4.05 AC. 176,668 SF.
TOTAL PROP. IMPERVIOUS AREA = 4.05 AC. 176,668 SF.

ZONING TABULATIONS:

ON-SITE LOCATIONS / ADDRESSES: T.M. #047.02-03-11 / 5801 DUKE ST. ALEXANDRIA, VA 2231

TOTAL SITE/LOT AREAS: 170,658 SF OR 3.91 ACRES

EXISTING ZONE: CDD #29 (COORDINATED DEVELOPMENT DISTRICT #29)
PROPOSED ZONE: CDD #29 (COORDINATED DEVELOPMENT DISTRICT #29)

OPEN SPACE REQUIREMENTS: 42,664 SF (25% OF DEVELOPMENT AREA AT-OR ABOVE GRADE)

OPEN SPACE PROVIDED: 19,746 SF (AT-GRADE)
22,917 SF (ABOVE-GRADE)
TOTAL OPEN SPACE PROVIDED: 42,664 SF (25.00%)

EXISTING USE: SHOPPING CENTER
PROPOSED USE: MIXED-USE: - RESIDENTIAL, RETAIL, OFFICE

FLOOR AREA CALCULATION:

BUILDING E	GROSS AREA (SF)	FLOOR AREA (SF)
RETAIL	51,435	51,435
RESIDENTIAL	179,212	156,421
MEDICAL OFFICE	122,883	113,545
BUILDING E SUBTOTAL:	353,530	321,401
BUILDING G	GROSS AREA (SF)	FLOOR AREA (SF)
RETAIL	23,866	23,866
RESIDENTIAL	228,171	201,869
BUILDING G SUBTOTAL:	252,037	225,735
TOTAL AREAS:	605,387	547,136

DENSITY:
BLOCK E: 146 UNITS (MULTIFAMILY)
BLOCK G: 244 UNITS (MULTIFAMILY)

PROPOSED DENSITY: 390 D.U/3.91 AC. = 99.74

MIN/MAX BLDG.: BLOCK E: EAST: 70 FT. MIN, 85 FT. MAX.
HEIGHT PERMITTED: WEST: 70 FT. MIN, 180 FT MAX.
BLOCK G: 70 FT. MIN, 85 FT. MAX.

BUILDING HEIGHT PROPOSED: BLOCK E: MOB 85.8 FT; E.1:80 FT.
BLOCK G: 84.5 FT.

AVG. FINISHED GRADE: BLOCK E: 200.55 FT.
BLOCK G: 198.58 FT.

YARDS: REQUIRED: N/A PROPOSED: N/A

FRONTAGE: REQUIRED: N/A PROPOSED: N/A

BUILDING CODE ANALYSIS: SEE SHEET A001

PARKING TABULATIONS:

PARKING REQUIRED:

BLOCK E:
BLOCK E (RETAIL): RATIO: 3.0 SP/1,000 SF = 156 SPACES
BLOCK E (MULTIFAMILY): RATIO: 1.0 SP/BEDROOM(213) = 212 SPACES
BLOCK E (OFFICE, MEDICAL): RATIO: 1.5 SP/1,000 SF = 285 SPACES
BLOCK E PARKING REQUIRED: 653 SPACES

BLOCK G:
BLOCK G (RETAIL): RATIO: 3.0 SP/1,000 SF = 72 SPACES
BLOCK G (MULTIFAMILY): RATIO: 1.0 SP/BEDROOM(285) = 285 SPACES
BLOCK G PARKING REQUIRED: 357 SPACES

TOTAL PARKING REQUIRED: 1,010 SPACES

PARKING PROVIDED:

BLOCK E
BLOCK E (RETAIL): 199 SPACES
BLOCK E (MULTIFAMILY): 231 SPACES
BLOCK E (MEDICAL OFFICE): 393 SPACES
ON-STREET PARKING: 15 SPACES
BLOCK E PARKING PROVIDED: 838 SPACES

BLOCK G
BLOCK G (RETAIL): 91 SPACES
BLOCK G (MULTIFAMILY): 285 SPACES
ON-STREET PARKING: 15 SPACES
BLOCK G PARKING PROVIDED: 391 SPACES

TOTAL PARKING PROVIDED: 1,199 SPACES

LOADING SPACES REQUIRED: RATIO: 1/20,000 SF (RETAIL)=4 SPACES
LOADING SPACES PROVIDED: 5 SPACES

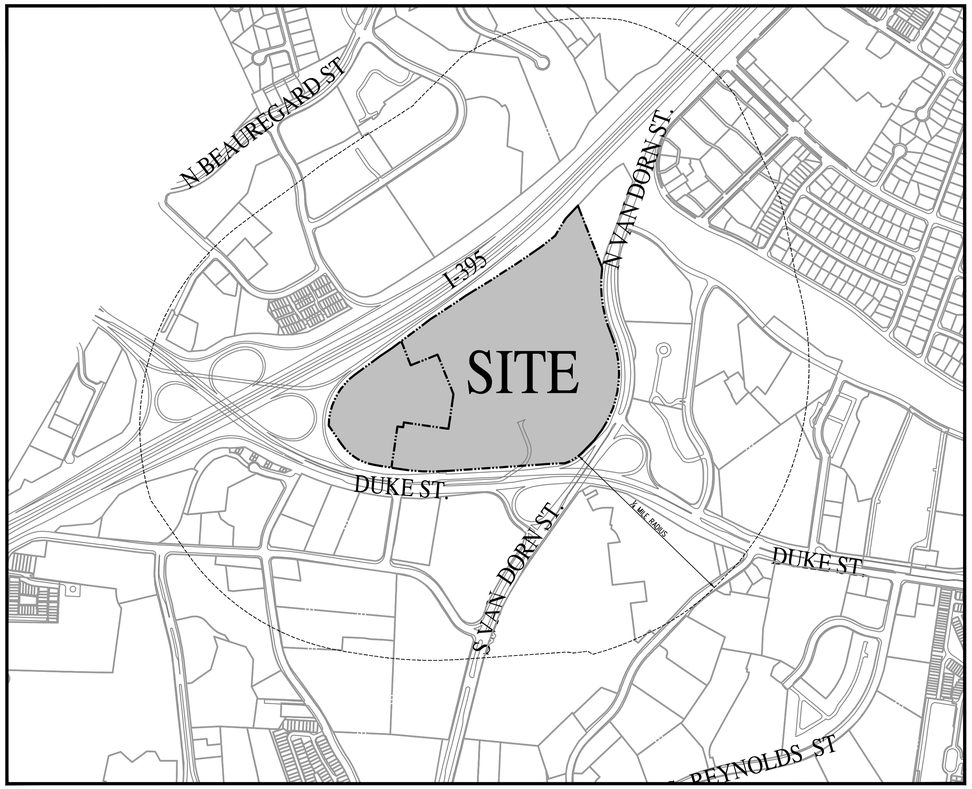
TRIP GENERATION:

BLOCK E

Land Use	ITE Code	Size	Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	Weekday PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Total External Residential Trips			6	18	24	16	10	26	318
Total External Retail Trips			14	6	20	41	45	86	1,902
Total External Medical Trips			154	42	196	87	227	314	3,400
OVERALL NON-AUTO MODE TRIPS			-43	-29	-72	-63	-85	-148	-2,199
OVERALL DEVELOPMENT TRIPS			174	66	240	144	282	427	5,621

BLOCK G

Land Use	ITE Code	Size	Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	Weekday PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Total External Residential Trips			10	29	39	27	16	43	533
Total External Retail Trips			6	3	9	17	18	35	1,037
OVERALL NON-AUTO MODE TRIPS			-14	-31	-45	-40	-30	-70	-1,231
OVERALL DEVELOPMENT TRIPS			16	32	48	43	35	78	1,570



VICINITY MAP
SCALE: 1"=500'

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(68 SHEETS TOTAL)

PROJECT NARRATIVE:

EXISTING SITE CONDITIONS:
THE EXISTING SITE CONTAINS FIVE MULTI-STORY BUILDINGS FOR COMMERCIAL/RETAIL/MIXED USE, AN ABOVE GROUND PARKING GARAGE, PARKING LOTS, AND INTERCONNECTING ROADWAYS. AN AREA TO THE EAST IS HEAVILY VEGETATED WITH STEEP SLOPES. THE MAJORITY OF THE SITE IS IMPERVIOUS AND GENERALLY SLOPES FROM WEST TO EAST. ABOVE GROUND AND BELOW GROUND UTILITIES, AND ASSOCIATED INFRASTRUCTURE ARE CONTAINED WITHIN THE SITE.

DESCRIPTION OF DEVELOPMENT:
THIS SITE ARE BORDERED TO THE NORTH BY THE EXISTING PARKING GARAGE, TO THE SOUTHWEST BY FUTURE BLOCK A, B AND Q, TO THE SOUTHEAST BY FUTURE BLOCKS F AND N, AND TO THE EAST BY FUTURE BLOCK I.

THE PURPOSE OF THE REDEVELOPMENT FOR BLOCKS E & G IS TO ALLOW FOR A RANGE OF USES ACROSS THE SITE. THESE USES WOULD INCLUDE RETAIL, OFFICE (INCLUDING MEDICAL OFFICE), AND MULTIFAMILY RESIDENTIAL. THESE USES MAY BE IMPLEMENTED ANYWHERE ON THE SITE, SUBJECT TO CAPACITY OF INFRASTRUCTURE. THIS PROJECT IS NOT A FEDERAL UNDERTAKING OR INVOLVES THE USE OF ANY FEDERAL FUNDING, IN COMPLIANCE WITH FEDERAL PRESERVATION LAWS, IN PARTICULAR SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT OF 1966.

LIST OF EXISTING APPROVALS:

- CDD #2020-00007
- DSP #2021-00012
- SUB #2021-00003
- SUB #2022-00005

LIST OF REQUESTED APPROVALS:

- DSUP#____-____

GREEN BUILDING NARRATIVE:

THE APPLICANT WILL COMPLY WITH THE CITY'S CURRENT GREEN BUILDING POLICY AT THE TIME OF DSUP SUBMISSION. PLEASE SEE LEED SCORECARD/GREEN BUILDING APPROACH ON SHEET A003.

SHEET 01 OF 31

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
06/30/22
PROFESSIONAL ENGINEER

urban
Planners•Engineers•Landscape Architects•Land Surveyors
Urban, Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL 703.642.2306
FAX 703.378.7888
www.urban-ltd.com

PLAN DATE
06-30-2021
-

APPROVED
SPECIAL USE PERMIT NO. _____
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.

BLOCK E&G SITE TABULATIONS

DEVELOPMENT SUMMARY

Use	Floor Area	Residential Units	Hotel Keys	Block E Floor Area	Block E Units	Block G Floor Area	Block G Units
Hospital	-			-	-	-	-
Office	-			-	-	-	-
Medical Office	113,545			113,545	-	-	-
Multifamily	358,290	374 units		156,421	140	201,869	234
Affordable Multifamily	-	16 units		-	6	-	10
Senior Housing (AL/IL)	-	0 units		-	-	-	-
2-over-2 Townhomes	-	0 units		-	-	-	-
Traditional Townhomes	-	0 units		-	-	-	-
Condo Flats	-	0 units		-	-	-	-
Hotel	-		0 keys	-	-	-	-
Retail	75,301			51,435	-	23,866	-
Grocer	-			-	-	-	-
Firestation	-			-	-	-	-
Garage / Loading / Service	-			-	-	-	-
Total	**547,136**	**390 units**	**0 keys**	**321,401**	**146**	**225,735**	**244**

PARKING TABULATIONS

Parking Requirement	Parking Ratio	Totals	Block E REQUIRED	Block E PROPOSED	Block G REQUIRED	Block G PROPOSED
PARKING RATES						
Hospital	1/ 2 BEDS		-	-	-	-
Office	2.25/1000 SF		-	-	-	-
Medical Office	2.25/1000 SF			393		
Multifamily	1/BEDROOM		-	231	-	285
Affordable Multifamily	0.8 / unit		-	-	-	-
Senior Housing (AL/IL)	0.7 / unit		-	-	-	-
2-over-2 Townhomes	2.0 / unit		-	-	-	-
Traditional Townhomes	2.0 / unit		-	-	-	-
Condo Flats	1.3 / unit		-	-	-	-
Hotel	0.7 / key		-	-	-	-
Retail	3.0 / 1,000 GSF		-	214	-	91
Grocer	50 spaces		-	-	-	-
Firestation			-	-	-	-
VEHICLE PARKING						
STANDARD PARKING SPACES			-	366	-	119
COMPACT PARKING SPACES			-	437	-	246
ON-STREET PARKING			-	15	-	15
HANDICAP PARKING SPACES (NON-VAN)			-	14	-	6
HANDICAP PARKING SPACES (VAN)			-	6	-	5
TOTAL PARKING PROVIDED:			-	838	-	391
PARKING PROVIDED IN EXISTING GARAGE			-	823	-	376
PARKING PROVIDED IN PROPOSED GARAGE			-		-	
LOADING SPACES			-	3	-	2
BICYCLE PARKING						
Residential			-	48	-	78
Visitor			-	3	-	5
Retail			-	14	-	6

ZONING TABULATIONS

Zoning Requirement	Block E REQUIRED	Block E PROPOSED	Block G REQUIRED	Block G PROPOSED
LOT AREA (SQ. FT.)	-	108,575	-	62,083
LOT WIDTH (FT.)	-	-	-	-
FRONT YARD (FT.)	-	-	-	-
SIDE YARD (FT.)	-	-	-	-
REAR YARD (FT.)	-	-	-	-
FLOOR AREA (SQ. FT.)	-	321,401	-	225,735
OPEN SPACE (SF / %)	-	25.00%	-	25.00%
AT-GRADE	-	5,702	-	11,133
ABOVE GROUND	-	21,441	-	19,004
TOTAL OPEN SPACE	-	27,143	-	15,520
AVERAGE FINISHED GRADE (FT.)	-	200.55	-	199.21
MAX. BUILDING HEIGHT (FT.)	-	85 / 80	-	85
CROWN COVERAGE (SQ. FT.)	-	-	-	-
MAX. RESI DENTISTY (UNITS/AC.)	-	-	-	-
Dwelling Unit Summary		146		244
STUDIO UNITS	-	1	-	37
JR ONE BEDROOM UNITS				17
ONE BEDROOM UNITS	-	64	-	143
ONE BEDROOM DEN UNITS	-	14	-	6
TWO BEDROOM UNITS	-	46	-	36
TWO BEDROOM DEN UNITS	-	6	-	5
THREE BEDROOM UNITS	-	15	-	-
LOADING SPACES	-	3	-	2
TRIP GENERATION (ADT)	-	5,621		1,570

LEGEND:

- EXISTING WATER LINE
- PROPOSED WATER LINE
- EX. FIRE HYDRANT
- PROP. FIRE HYDRANT
- EXISTING WATER METER
- PROPOSED WATER METER
- EXISTING WATER VALVE
- PROPOSED WATER VALVE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER DIRECTION OF FLOW
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING GAS VALVE
- PROPOSED GAS VALVE
- EXISTING OVERHEAD WIRE
- EXISTING LIGHTING
- PROPOSED LIGHTING
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING TREE LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED PHASE LINE
- PROPOSED LIMITS OF CLEARING & GRADING
- EXISTING WETLANDS
- PROP. RET. WALL
- EX. RET. WALL
- PROP. POST LIGHT
- PROP. BUILDING MAIN ENTRANCE
- PROP. BUILDING ENTRANCE
- PROP. UNDERGROUND GARAGE
- PROPERTY LINE
- LOADING SPACE
- INTERSECTION VISIBILITY TRIANGLE
- BRICK PAVE AREA (TO MATCH EXISTING PLAZA)
- PROP. CONCRETE SIDEWALK
- PARKING SPACE COUNT
- EXISTING TELEPHONE LINE
- PROP. TELEPHONE LINE
- EXISTING VDOT ELECTRIC LINE
- EXISTING ELECTRIC LINE
- PROP. ELECTRIC LINE
- PROP. VERIZON FIBER
- PROP. COMCAST FIBER
- PROPOSED PRIVATE FIBER
- PROPOSED ACF FIBER
- PROPOSED ELECTRIC MANHOLE
- PROPOSED FIBER HANDHOLE
- EXISTING CABLE TV LINE
- ROAD SIGN
- EX. POWER POLE
- EXISTING SPOT ELEVATION
- PROP. SPOT ELEVATION
- SPILL AND TRANSITION CURB AND GUTTER
- PROPOSED CURB
- EX. STREET LIGHTS
- PROP. STREET LIGHTS
- PROPOSED CG-12
- EXISTING TREE
- PROPOSED TREE
- WATER FITTING IDENTIFIER
- LOADING AREA
- BENCHMARK
- TEST PIT REQUIRED
- PROJECTED TRAFFIC COUNT
- OVERLAND RELIEF

PROP. PROPOSED
EX. EXISTING
SF SQUARE FEET
GSF GROSS SQUARE FEET
NSF NET SQUARE FEET
T.B.R. TO BE REMOVED
FF FINISHED FLOOR
V VISITOR PARKING SPACE
S, C, HC STANDARD, COMPACT, AND HANDICAP PARKING SPACE DESIGNATOR
(COA) CITY OF ALEXANDRIA
(AW) AMERICAN WATER
(CSW) CONC. SIDEWALK
(ASW) ASPHALT SIDEWALK

- PROP. PERVIOUS AREA
- PROP. PARKING SPACE

REVISIONS

No.	DATE	DESCRIPTION

PLAN DATE 06-30-2022

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COMMONWEALTH OF VIRGINIA — BENJAMIN CLAYTON — Lic. No. 038790 — 06/30/22 — PROFESSIONAL ENGINEER

GENERAL NOTES & DETAILS

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022
C.I.= N/A
SCALE: N/A

APPROVED
SPECIAL USE PERMIT NO. _____

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. _____

SHEET 02 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-04-GNOTES.dwg [GNOTES] June 30, 2022 - 2:54pm awalia

GENERAL NOTES

1. THE SUBJECT SITE IS LOCATED ON THE FOLLOWING CITY OF ALEXANDRIA ASSESSMENT MAP NO.s: LOT 602 LANDMARK MALL REDEVELOPMENT R/S: 047.02-03-11 (5801 DUKE ST), AND IS ZONED CDD.
2. OWNER: LANDMARK LAND HOLDINGS, LLC C/O FOULGER-PRATT DEVELOPMENT, LLC
3. ADDRESS: 12435 PARK POTOMAC AVE, SUITE 200, POTOMAC, MD, 20854
4. THE SITE IS LOCATED IN THE HOLMES RUN WATERSHED.
5. CONSTRUCTION PERMITS ARE REQUIRED FOR THIS PROJECT. THE APPROVED SITE PLAN MUST BE ATTACHED TO THE PERMIT APPLICATION THAT FULLY DETAILS THE CONSTRUCTION AS WELL AS LAYOUTS AND SCHEMATICS OF THE MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS.
6. ALL PUBLIC AND PRIVATE EASEMENTS OR ALL KNOWN PUBLIC AND PRIVATE EASEMENTS, INCLUDING ALL UTILITY, EGRESS, AND CONSERVATION RESTRICTIONS ARE SHOWN. THE APPLICANT SHALL NOT CONSTRUCT ANY PERMANENT STRUCTURES OVER ANY EXISTING OR PROPOSED PUBLIC EASEMENTS UNLESS OTHERWISE APPROVED BY THE PLANNING COMMISSION AND CITY OF ALEXANDRIA COUNCIL.
7. ALL NEW CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ALEXANDRIA AND TO THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (USBC).
8. PRIOR TO COMMENCING NEW WORK, THE CONTRACTOR SHALL PROTECT FROM DAMAGE ALL EXISTING ADJACENT AREAS. IF CITY'S EXISTING PUBLIC INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO, STREETS, ALLEYWAYS, DRIVEWAY APRONS, SANITARY AND STORM SEWERS, STREET LIGHTING, TRAFFIC AND PEDESTRIAN SIGNALS, SIDEWALKS, CURB AND GUTTER, AND STORM WATER DROP INLET STRUCTURES ARE DAMAGED BY THE CONTRACTOR OR BY ACTIVITIES RELATING TO THE SITE CONSTRUCTION THEN THE APPLICANT SHALL REPAIR THE SAME TO THE SATISFACTION OF DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES). A PRE-CONSTRUCTION WALK/SURVEY OF THE SITE SHALL OCCUR WITH CONSTRUCTION AND INSPECTION STAFF TO DOCUMENT EXISTING CONDITIONS PRIOR TO ANY LAND DISTURBING ACTIVITY.
9. ALL IMPROVEMENTS TO THE CITY'S RIGHT-OF-WAY SUCH AS CURB, GUTTER, SIDEWALK, AND DRIVEWAY APRONS, ETC., ARE DESIGNED PER THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS.
10. ALL STREET CUT AND PATCH WORK LOCATED IN PUBLIC RIGHT-OF-WAYS, REQUIRED FOR ANY UTILITY INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CITY OF ALEXANDRIA STANDARDS AND SPECIFICATIONS AND TO THE SATISFACTION OF THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES).
11. CONTRACTOR MUST ENSURE THAT THERE IS NO DISTURBANCE ON ADJACENT PROPERTIES WITHOUT RECORDED EASEMENT OR NOTARIZED LETTER OF PERMISSION FROM THE ADJACENT PROPERTY OWNERS.
12. ALL REQUIRED STATE AND FEDERAL PERMITS, WHICH COULD INCLUDE PERMITS FROM THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (VDCR), VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (VDEQ), VIRGINIA DEPARTMENT OF HISTORIC RESOURCES (VDHR), UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA), ARMY CORPS OF ENGINEERS AND VIRGINIA MARINE RESOURCES, MUST BE IN PLACE FOR ALL PROJECT CONSTRUCTION AND MITIGATION WORK PRIOR TO RELEASE OF THE FINAL SITE PLAN. THIS INCLUDES THE STATE REQUIREMENT FOR A VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) GENERAL PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES FOR LAND DISTURBING ACTIVITIES GREATER THAN 2,500. INFORMATION REGARDING THE VSMP GENERAL PERMIT CAN BE FOUND ONLINE AT: http://www.dcr.virginia.gov/soil_and_water/vsmp.shtml.
13. PERMITS FROM THE CITY OF ALEXANDRIA OFFICE OF ENVIRONMENTAL QUALITY (OEQ), TRANSPORTATION AND ENVIRONMENTAL SERVICES (T&ES), AND BUILDING AND FIRE CODE ADMINISTRATION SHALL BE OBTAINED BY THE APPLICANT, AS REQUIRED AND DOCUMENTED HEREIN. THE CONTRACTOR CAN CONTACT ALEXANDRIA FIRE AND CODE ADMINISTRATION DEPARTMENT AT (703) 838-4644 OR (703) 746-4200 FOR ANY QUESTIONS OR ADDITIONAL INFORMATION.
14. ANY WORK IN THE PUBLIC RIGHT OF WAY SHALL REQUIRE A SEPARATE PERMIT FROM THE DIRECTOR, TRANSPORTATION AND ENVIRONMENTAL SERVICES. THE CONTRACTOR CAN CONTACT THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES AT (703) 746-4035 FOR ANY QUESTIONS OR ADDITIONAL INFORMATION.
15. THE PROPERTY ADDRESS MUST BE CLEARLY MARKED IN THE FRONT AND BACK OF THE PROPOSED DEVELOPMENT SITE DURING CONSTRUCTION FOR EMERGENCY RESPONSE PURPOSES IN CONTRASTING COLORS FOR EASY IDENTIFICATION.
16. THE APPLICANT SHALL CONTACT THE CRIME PREVENTION UNIT OF THE ALEXANDRIA POLICE DEPARTMENT AT 703-746-1920 REGARDING SECURITY HARDWARE FOR NEW CONSTRUCTION. THIS SHALL BE COMPLETED PRIOR TO ISSUANCE OF BUILDING PERMIT.
17. THE CONTRACTOR MUST ENSURE THAT POSITIVE DRAINAGE OCCURS ON SITE TO PREVENT PONDING OR DRAINAGE PROBLEMS ON ADJACENT PROPERTIES.
18. A SEPARATE DESIGN IS REQUIRED FOR ALL WALLS 24" AND OVER IN HEIGHT FROM THE GRADE AND SUBJECT TO SEPARATE PERMITS TO BE OBTAINED BY THE OWNERS. GEOTECHNICAL AND STRUCTURAL DESIGN IS TO BE COMPLETED BY OTHERS. THIS FINAL SITE PLAN SHOWS LOCATION, PROPOSED GRADING, AND DESIGN OF ALL THE WALLS.
19. ALL SANITARY LATERALS AND/OR SEWERS NOT SHOWN IN THE EASEMENTS SHALL BE OWNED AND MAINTAINED PRIVATELY.
20. ALL STORM DRAINS NOT SHOWN WITHIN AN EASEMENT OR IN A PUBLIC RIGHT-OF-WAY SHALL BE OWNED AND MAINTAINED PRIVATELY.
21. ALL WATER FACILITY CONSTRUCTIONS SHALL CONFORM TO VIRGINIA AMERICAN WATER (VAW) STANDARDS AND SPECIFICATIONS. NO WORK CAN BE COMPLETED ON EXISTING AND PROPOSED WATER FACILITIES UNTIL ALL EASEMENTS AND AGREEMENTS WITH VAW ARE FINALIZED, EXECUTED AND RECORDED. DEVELOPER OR CONTRACTOR SHALL CONTACT VAW AT 703-706-3889 TO OBTAIN AN APPROVED PROPOSAL AND PAY ALL REQUIRED FEES, PRIOR TO THE START OF CONSTRUCTION, DEMOLITION AND INSPECTION OF WATER FACILITIES, INCLUDING, BUT NOT LIMITED TO, WATER MAINS, FIRE HYDRANTS, DOMESTIC AND FIRE SERVICE LINES. ALL THE PROPOSED WET TAPS ON AN EXISTING WATER MAIN SHALL BE CONSTRUCTED BY VAW
22. PRIOR TO THE RELEASE OF THE FINAL SITE PLAN, A TRAFFIC CONTROL PLAN FOR CONSTRUCTION DETAILING PROPOSED CONTROLS TO TRAFFIC MOVEMENT, LANE CLOSURES, CONSTRUCTION ENTRANCES, HAUL ROUTES, AND STORAGE AND STAGING SHALL BE PROVIDED FOR INFORMATION PURPOSES; HOWEVER, AN AMENDED TRAFFIC CONTROL PLAN, IF REQUIRED BY THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES SHALL BE SUBMITTED TO THE DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES ALONG WITH THE BUILDING PERMIT APPLICATION. THE FINAL SITE PLAN SHALL INCLUDE A STATEMENT "FOR INFORMATION ONLY" ON THE TRAFFIC CONTROL PLAN SHEETS.
23. THIS SITE IS NOT LOCATED WITHIN A COMBINED SEWER AREA.
24. THE SITE CONTAINS EXISTING STORM SEWER, SANITARY SEWER, WATERLINES, ELECTRIC, AND OVERHEAD UTILITY. THE SUBJECT PLAN PROPOSES THE ADDITION OF STORM SEWER, SANITARY SEWER, WATERLINES, ELECTRIC, AND TELECOMMUNICATION CONNECTIONS. SOME OF THE EXISTING UTILITIES WILL REMAIN BUT NEW ONES WILL BE ADDED.
25. THE APPLICANT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SPECIAL PAVING MATERIAL INSTALLED WITHIN THE PUBLIC RIGHT OF WAY PER DEVELOPMENT CONDITION 26.

ADDITIONAL NOTES

1. 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.

EXISTING CONDITIONS SURVEY NOTES

1. HORIZONTAL DATUM* NORTH AMERICAN DATUM OF 1983, NAD83
   VERTICAL DATUM* NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD88*
2. UTILITY INFORMATION, AS SHOWN ON THIS PLAN, IS TAKEN FROM THE RECORDS AND/OR FIELD SURVEY COMPLETED BY URBAN LTD., DATED 05/10/2012; AND CANNOT BE GUARANTEED. FOR EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES, NOTIFY "MISS UTILITY" AT 1-800-257-7777 AND 811 72 HOURS BEFORE THE START OF ANY EXCAVATION OR CONSTRUCTION. THE CONSTRUCTION WORKERS AND CONTRACTOR(S) ARE ENCOUNGED TO VISIT DOMINION VIRGINIA POWER WEB SITE AT WWW.DOM.COM (KEYWORD SAFETY) FOR ADDITIONAL SAFETY INSTRUCTIONS.
3. LOCATION AND DEPTH OF ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR/ENGINEER SHOULD DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS TO VERIFY EXACT LOCATION.
4. THE BOUNDARY INFORMATION FOR THE SUBJECT SITE IS BASED ON A CURRENT FIELD SURVEY PREPARED BY URBAN LTD., DATED 02/01/2012 IN ACCORDANCE WITH THE REQUIREMENTS OF VIRGINIA ASSOCIATION OF LAND SURVEYORS.

* PER MEMORANDUM TO INDUSTRY, JULY 20, 2005; THE PLAN SHALL BE PREPARED USING VIRGINIA STATE PLANE (NORTHZONE) COORDINATES BASED ON NAD83 AND NAVD88; HOWEVER, IF THE CURRENT DRAWINGS ARE PREPARED USING NORTH AMERICAN DATUM OF 1927 (NAD27) AND NORTHGEODETIC VERTICAL DATUM OF 1929 (NGVD29) THEN THE AS-BUILT DRAWINGS SHALL PROVIDE A CONVERSION TABLE OF SANITARY AND STORM SEWER DATA IN THE NAD83 AND NAVD88 DATUMS.

ENVIRONMENTAL SITE ASSESSMENT

1. 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 RELEASES TO THE ENVIRONMENT WILL BE HANDLED IN ACCORDANCE WITH FEDERAL, STATE, AND CITY REGULATIONS.
2. ALL WELLS TO BE DEMOLISHED IN 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.
3. UNLESS APPROVED BY THE DIRECTOR OF TRANSPORTATION & ENVIRONMENTAL SERVICES (T&ES) 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 7 AM TO 6 PM AND
   SATURDAYS FROM 9 AM TO 6 PM.
   NO CONSTRUCTION ACTIVITIES ARE PERMITTED ON SUNDAYS.
   PILE DRIVING IS FURTHER RESTRICTED TO THE FOLLOWING HOURS:
   MONDAY THROUGH FRIDAY FROM 9 AM TO 6 PM AND
   SATURDAYS FROM 10 AM TO 4 PM.

SANITARY FLOW COMPUTATIONS

TOTAL FLOW FROM BUILDING E&G=
300 GPD/UNIT * 390 UNITS + 200 GPD/1,000 S.F. * 188,846 S.F. = 154,800 GPD
PEAK FACTOR FLOW FROM BUILDING = 154,800 GPD * 4.0 = 619,200 OR 0.62 MGD

THE TOTAL ESTIMATED FLOW EXCEEDS 10,000 GPD AND IS THEREFORE SUBJECT MEMORANDUM TO INDUSTRY NO. 06-14, WHICH STATES THAT AT THE TIME OF THE FINAL SITE PLAN,

1. THE APPLICANT SHALL PROVIDE ADEQUATE SANITARY SEWER OUTFALL ANALYSIS, AS GENERALLY DESCRIBED BELOW, SUFFICIENT TO DETERMINE EXISTING AND FUTURE FLOWS IN THE CITY-OWNED SEWERS THAT ARE USED BY THE DEVELOPMENT/REDEVELOPMENT PROJECT. THE SANITARY SEWER ADEQUATE OUTFALL ANALYSIS SHALL BE COMPLETED UP TO THE TRUNK SEWER DOWNSTREAM WITH A MINIMUM DIAMETER OF 24" OR TO A POINT AS DIRECTED BY T&ES STAFF.
2. THE APPLICANT SHALL PROVIDE AN ESTIMATE OF THE AVERAGE DAY AND PEAK WASTEWATER FLOW DISCHARGED UPSTREAM AND DOWNSTREAM OF THE DEVELOPMENT SITE UNDER EXISTING CONDITIONS AND THE CONTRIBUTION OF SANITARY FLOW FROM THE PROPOSED DEVELOPMENT SITE TO THE TRUNK SEWER USING THE FACTORS DESCRIBED BELOW:

A. AVERAGE DESIGN FLOWS:
I. SINGLE FAMILY HOME/TOWNHOUSE 350 GPD/UNIT
II. MULTI-FAMILY (CONDO, APARTMENT) 300 GPD/UNIT
III. OFFICE/RETAIL 200 GPD/1000 S.F.
IV. HOTEL 130 GPD/ROOM

B. THE SANITARY SEWERS SHALL BE DESIGNED FOR PEAK FLOW USING A PEAKING FACTOR OF 4 APPLIED TO THE AVERAGE FLOW.

C. AT THE DISCRETION OF T&ES STAFF, EXISTING CONDITIONS PEAK FLOWS, BASED ON LONG-TERM MONITORING AND/OR SEWER MODELING, MAY BE AVAILABLE TO THE APPLICANT FOR USE IN DETERMINING SANITARY SEWER CAPACITY.

D. SHORT-TERM TEMPORARY FLOW MONITORING OR WATER METER DATA MAY NOT BE USED IN LIEU OF COMPUTING EXISTING FLOWS. LONG-TERM MONITORING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR OF T&ES.

3. IN LIEU OF THE ESTIMATION OF THE AVERAGE DAY AND PEAK HOUR WASTEWATER FLOW, THE DIRECTOR OF T&ES AT HIS DISCRETION MAY REQUEST THE APPLICANT TO MEASURE THE SANITARY FLOW UPSTREAM AND DOWNSTREAM OF THE PROPOSED DEVELOPMENT SITE TO DETERMINE THE CURRENT SANITARY FLOW DISCHARGED INTO THE TRUNK SEWER UPSTREAM OF THE DEVELOPMENT SITE AND THE CURRENT CONTRIBUTION OF THE SANITARY FLOW TO THE TRUNK SEWER FROM THE DEVELOPMENT SITE UNDER EXISTING CONDITIONS.
4. THE APPLICANT SHALL ESTIMATE ADDITIONAL AVERAGE DAY AND PEAK HOUR WASTEWATER FLOW TO BE DISCHARGED INTO THE TRUNK SEWER FROM THE PROPOSED DEVELOPMENT SITE UNDER PROPOSED CONDITIONS USING THE FACTORS DESCRIBED ABOVE.
5. THE SANITARY SEWER ADEQUATE OUTFALL ANALYSIS SHALL ACCOUNT FOR THE EXISTING AND FUTURE NEEDS.
6. THE CITY OF ALEXANDRIA, AT ITS DISCRETION, WILL PROVIDE THE APPLICANT WITH ANY READILY AVAILABLE DATA TO ASSIST IN COMPLETION OF THE ADEQUATE OUTFALL ANALYSIS. THE ADDITIONAL PARAMETERS REQUIRED TO COMPLETE THE ANALYSIS SHALL BE FIELD MEASURED (I.E., LENGTH, PIPE DIAMETER, MATERIAL OF CONSTRUCTION, AND SLOPE, ETC.) AND/OR ESTIMATED (I.E., MANNING'S ROUGHNESS COEFFICIENT) BY THE APPLICANT. THE APPLICANT SHALL USE THE CRITERIA ESTABLISHED BY THE ENGINEERS AND SURVEYORS (ESI) INSTITUTE, AS SHOWN ON THE ESI CHECK LIST, WHERE APPLICABLE.
7. THE APPLICANT SHALL PROVIDE ALL THE MEASURED AND/OR ESTIMATED DATA AND CALCULATIONS ON THE ADEQUATE SANITARY SEWER OUTFALL ANALYSIS ON THE PLANS FOR REVIEW BY THE CITY STAFF.
8. THE INCREASED PEAK FLOW WILL BE PLACED IN THE CITY OF ALEXANDRIA WASTEWATER FLOW CAPACITY REGISTRY TO DETERMINE THAT THE CITY HAS SUFFICIENT TREATMENT CAPACITY AVAILABLE IN THE ALEXANDRIA SANITATION AUTHORITY (ASA) ADVANCED WASTEWATER TREATMENT PLANT (A WWTP) AND IN VARIOUS INTERCEPTOR SEWERS IN THE CITY OF ALEXANDRIA.
9. SANITARY SEWER SYSTEMS THAT SERVE OVER 400 PEOPLE REQUIRE THE APPROVAL OF THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (VDEQ). THEREFORE, THE APPLICANT SHALL COMPLY WITH ALL THE REGULATORY REQUIREMENTS OF THE STATE OF VIRGINIA.
10. THE INSTALLATION OF PLUMBING FIXTURES THROUGHOUT THE CITY SHALL BE GOVERNED BY LOCATION. IN THE AREAS A AND B SHOWN IN THE ATTACHED MAP, THE SANITARY SEWER PLUMBING FIXTURES AND DRAINS LOCATED BELOW THE FIRST FLOOR (INCLUDING PARKING STRUCTURES) SHALL HAVE IN-STRUCTURE OR ON-SITE PLUNPED DISCHARGE TO THE CITY'S GRAVITY COLLECTION SYSTEM.
11. THE PUMPED FACILITIES SHALL BE PROVIDED WITH A STANDBY SOURCE OF POWER (I.E., BATTELY OR GENERATOR).
12. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PERPETUAL OWNERSHIP, CAPITAL, AND MAINTENANCE AND OPERATION OF THE PUMPS AND APPURTENANCES.
13. NO FOUNDATION DRAIN, BASEMENT DRAIN, OR STAIRWELL BASEMENT ACCESS DRAIN SHALL BE CONNECTED TO THE CITY OR ASA SANITARY SEWER.

DEMOLITION

1. A SEPARATE PERMIT IS REQUIRED FOR DEMOLITION; HOWEVER, NO DEMOLITION SHALL BEGIN UNTIL ALL EROSION AND SEDIMENT AND TREE PROTECTION CONTROLS ARE IN PLACE AND ARE APPROVED BY AN EROSION AND SEDIMENT CONTROL INSPECTOR OF THE DEPARTMENT OF TRANSPORTATION AND ENVIRONMENTAL SERVICES.
2. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH THE MOST CURRENT APPLICABLE FEDERAL, STATE , AND LOCAL LAWS AND REGULATIONS, INCLUDING BUT NOT LIMITED, TO ENVIRONMENTAL PROTECTION AGENCY (EPA), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), VIRGINIA OCCUPATIONAL AND SAFETY HEALTH COMPLIANCE PROGRAM (VOSH ENFORCEMENT), VIRGINIA OVERHEAD HIGH VOLTAGE LINE SAFETY ACT, NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK WITH REPRESENTATIVE UTILITY COMPANIES AND FOR THE IMPLEMENTATION OF REQUIRED UTILITY-RELATED WORK.
4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY HAZARDOUS MATERIALS DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DOCUMENT SAME TO THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
5. DISCONNECTION OF SERVICES AND SYSTEMS SUPPLYING UTILITIES TO BE ABANDONED OR DEMOLISHED SHALL BE COMPLETED PRIOR TO OTHER SITE DEMOLITION IN FULL COMPLIANCE WITH APPLICABLE CODES, REGULATIONS, AND THE REQUIREMENTS OF UTILITY PURVEYORS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY PURVEYORS, PAYMENT OF ASSOCIATED FEES AND PROCUREMENT OF ALL NECESSARY PERMITS.
6. PRIOR TO REMOVAL OF MATERIALS OVER EXISTING UTILITY SYSTEMS, THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS AND, IF AT VARIANCE WITH CONDITIONS AS REPRESENTED ON THE PLANS, NOTIFY THE OWNER'S REPRESENTATIVE AND OBTAIN DIRECTIONS AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
7. THE CONTRACTOR SHALL BACKFILL EXCAVATED AREAS WITH APPROVED MATERIALS/CLEAN FILL AS PER THE REQUIREMENTS OF VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT).
8. THE CONTRACTOR SHALL PROTECT AND PREVENT DAMAGE TO EXISTING ON-SITE UTILITY DISTRIBUTION FACILITIES THAT ARE TO REMAIN. ACTIVE UTILITY DISTRIBUTION FACILITIES ENCOUNTERED DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES SHALL BE SHUT OFF AT THE SERVICE MAIN WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
9. DURING DEMOLITION AND/OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY EXISTING UTILITIES AND/OR UTILITY SYSTEM STRUCTURES NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL DOCUMENT THE SAME AND FORWARD THE INFORMATION TO THE RESIDENT ENGINEER/OWNER'S REPRESENTATIVE, AND OBTAIN DIRECTION AS TO THE APPROPRIATE ACTION(S) TO BE TAKEN.
10. THE CONTRACTOR OR APPLICANT SHALL WORK WITH THE CITY STAFF TO REUSE THE EXISTING, LEFTOVER, UNUSED, AND/OR DISCARDED BUILDING MATERIALS AS PART OF THE DEMOLITION PROCESS OR THE CONSTRUCTION DEBRIS MUST BE REMOVED TO AN APPROVED LANDFILL WITH ADEQUATE FREQUENCY IN ACCORDANCE WITH THE VIRGINIA STATE LINER CONTROL ACT.

SIGN CONSTRUCTION

A SEPARATE PERMIT IS REQUIRED FOR SIGN CONSTRUCTION.

CEMETERY AND/OR BURIAL GROUNDS

THERE IS NO OBSERVABLE, HISTORICAL, OR ARCHAEOLOGICAL EVIDENCE OF CEMETERIES OR BURIAL GROUNDS ON THIS PROPERTY. FURTHERMORE, IT IS ILLEGAL TO DISTURB HUMAN REMAINS WITHOUT OBTAINING APPROPRIATE LEGAL AUTHORIZATION. IF BURIALS ARE FOUND DURING THE ARCHAELOGICAL INVESTIGATION AND NEED TO BE MOVED PRIOR TO DEVELOPMENT, THE APPLICANT SHALL BE RESPONSIBLE FOR THE ARCHAEOLOGICAL REMOVAL AND FOR OBTAINING THE NECESSARY LEGAL DOCUMENTS, INCLUDING A PERMIT FROM THE VIRGINIA DEPARTMENT OF HISTORIC RESOURCES FOR THE ARCHAELOGICAL REMOVAL OF BURIALS.

RODENT ABATEMENT NOTE

PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT, A RODENT ABATEMENT PLAN SHALL BE SUBMITTED TO THE CITY OF ALEXANDRIA DEPARTMENT OF CODE ADMINISTRATION THAT WILL OUTLINE WHAT STEPS HAVE AND WILL BE TAKEN TO PREVENT THE SPREAD OF RODENTS FROM THE CONSTRUCTION SITE TO THE SURROUNDING COMMUNITY AND SEWERS. THE CONTRACTOR CAN CONTACT THE ALEXANDRIA DEPARTMENT OF CODE ADMINISTRATION AT 703-746-4200 FOR ANY QUESTIONS OR ADDITIONAL INFORMATION. PLEASE BE ADVISED ONCE ANY DEMOLITION HAS BEEN COMPLETED ANY ABOVE GROUND BAIT BOXES MUST BE RELOCATED TO WITHIN 50 FEET OF A STRUCTURE IN KEEPING WITH EPA REGULATIONS. IF THIS IS NOT POSSIBLE, THEY SHALL BE REMOVED AND REGULAR INSPECTIONS OF THE SITE CONDUCTED BY A VIRGINIA LICENSED PEST EXTERMINATOR TO ENSURE THE SITE REMAINS RODENT FREE.

MARINE CLAY STATEMENT

NO MARINE CLAYS EXISTS ON SITE FOR BLOCK E & G.

SOLID WASTE MANAGEMENT

1. SINCE THE APPLICANT IS NOT REQUIRED, BY SECTION 5-1-31 OF THE CITY CHARTER AND CODE TITLE 5; TRANSPORTATION AND ENVIRONMENTAL SERVICES, TO USE THE CITY OF ALEXANDRIA'S COLLECTION AND DISPOSAL SERVICES; SOLID WASTE COLLECTION AND DISPOSAL SERVICES SHALL BE PROVIDED BY THE APPLICANT / PRIVATE COLLECTORS AND SHALL BE PASSED ON TO THE NEW OWNER IN CASE OF A SALE OF THE PROPERTY SUBSEQUENT TO THE DEVELOPMENT.

SITE ACCESSIBILITY NOTES

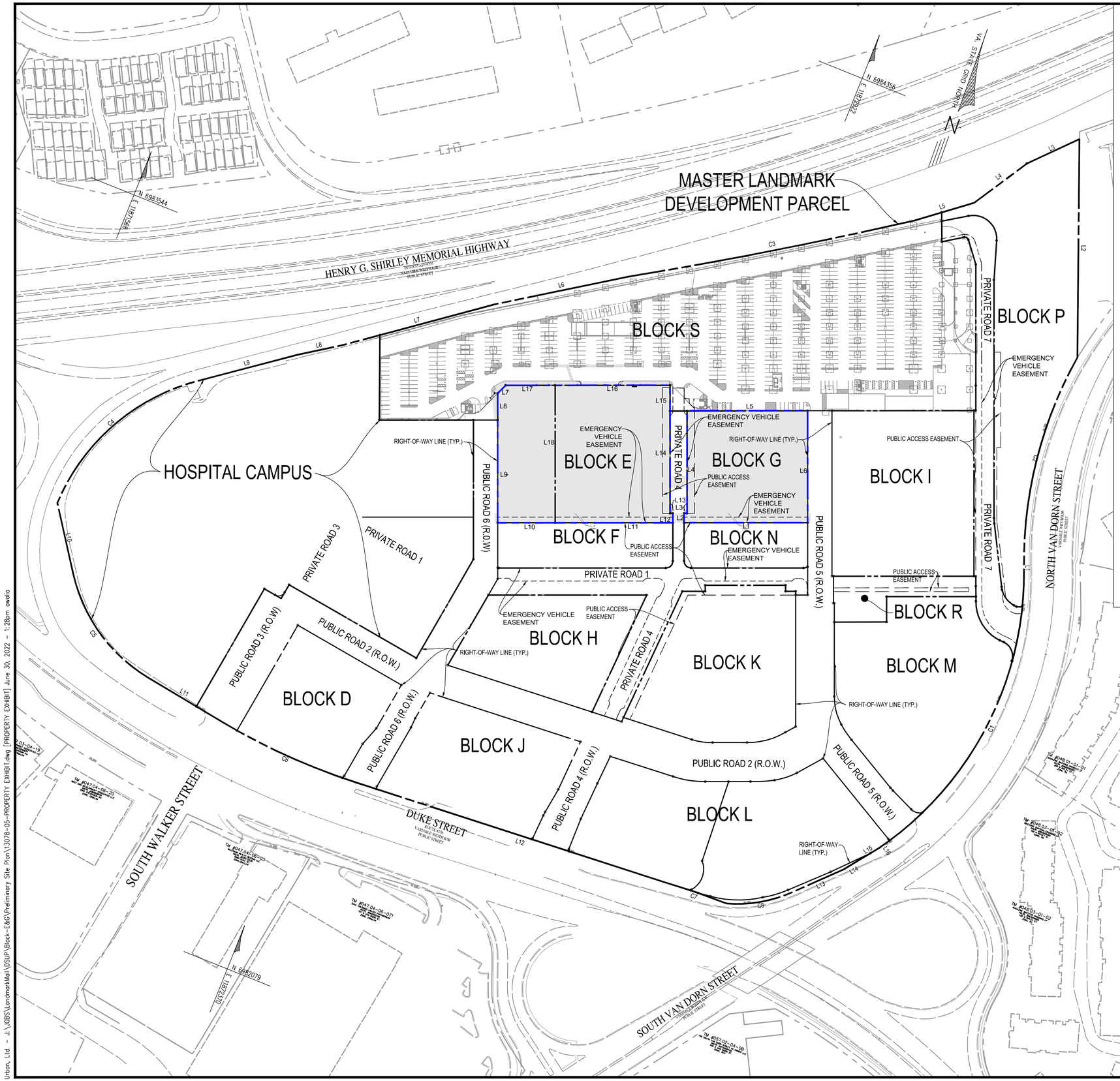
1. ALL BUILDINGS WITHIN THE BOUNDARY OF THIS SITE SHALL HAVE AT LEAST ONE "ACCESSIBLE ROUTE" THAT CONFORMS TO "ADA"-"ACCESSIBLE ROUTE" STANDARDS. THESE STANDARDS INCLUDE, BUT ARE NOT LIMITED TO: MAXIMUM WALK SLOPE=1:20 AND MAXIMUM RAMP SLOPE=1:12. ALL WALKS WILL BE BROOM-FINISHED CONCRETE UNLESS OTHERWISE SPECIFIED ON THESE DRAWINGS AND/OR THE ARCHITECTURAL PLANS.
2. ALL "ACCESSIBLE" PARKING SPACES SHALL BE DESIGNATED WITH APPROPRIATE SIGNAGE.
3. THE PAVEMENT SLOPE WITHIN ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% IN ANY DIRECTION.

ARCHAEOLOGY NOTES

1. ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED PRIOR TO GROUND-DISTURBING ACTIVITIES (SUCH AS 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/OR RECOVER SIGNIFICANT RESOURCES IN CONCERT WITH CONSTRUCTION ACTIVITIES. TO CONFIRM, CALL ALEXANDRIA ARCHAEOLOGY AT (703) 838-4399.
2. CALL ALEXANDRIA ARCHAEOLOGY (703-746-4399) TWO WEEKS BEFORE THE STARTING DATE OF ANY GROUND DISTURBANCE SO THAT AN INSPECTION OR MONITORING SCHEDULE FOR CITY ARCHAEOLOGISTS CAN BE ARRANGED.
3. THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ECT.) 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.
4. 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.
5. ALL REQUIRED ARCHAEOLOGICAL MEASURES SHALL BE COMPLETED IN COMPLIANCE WITH SECTION 11-411 OF THE ZONING ORDINANCE.

CONSTRUCTION NOTES

1. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREIN ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES WHICH MAY OCCUR BY HIS FAILURE TO LOCATE OR PRESERVE THESE UNDERGROUND UTILITIES. IF DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY ACTION AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUATION OF SERVICE.
2. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED FOLLOWING NOTIFICATION AND MARKING OF ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES TEST HOLES TO BE PERFORMED AT LEAST 30 DAYS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE OWNER AND ENGINEER. REDESIGN AND APPROVAL BY REVIEWING AGENCIES SHALL BE OBTAINED, IF REQUIRED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
4. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
5. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL TREES, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE LIMITS OF CONSTRUCTION UNLESS OTHERWISE SPECIFIED, AND SHALL BE RESPONSIBLE FOR ENSURING THAT EXISTING UTILITIES ARE DISCONNECTED.
6. THE DEVELOPER SHALL PROVIDE OVER-LOT GRADING TO PROVIDE POSITIVE DRAINAGE AND PRECLUDE PONDING OF WATER.
7. ALL AREAS, ON OR OFFSITE, WHICH ARE DISTURBED BY THIS CONSTRUCTION AND WHICH ARE NOT PAVED OR BUILT UPON, SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION. THE MINIMUM ACCEPTABLE STABILIZATION SHALL CONSIST OF PERMANENT GRASS, SEED MIXTURE TO BE AS RECOMMENDED BY THE CITY AGENT. ALL SLOPES 3:1 AND GREATER SHALL BE SODDED AND PEGGED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE CITY OF ALEXANDRIA.
8. EXISTING SEPTIC FIELDS, IF APPLICABLE, SHALL BE ABANDONED IN ACCORDANCE WITH VIRGINIA HEALTH DEPARTMENT STANDARDS AND



LINE AND CURVE TABLE FOR MASTER LANDMARK PARCEL

LINE	BEARING	DISTANCE
L1	N 22°31'14" W	4.34'
L2	N 21°18'19" W	467.89'
L3	S 43°10'11" W	124.06'
L4	S 31°28'43" W	140.72'
L5	S 51°36'25" W	133.19'
L6	S 56°26'03" W	294.13'
L7	S 53°09'18" W	338.60'
L8	S 56°03'08" W	95.82'
L9	S 53°28'53" W	221.61'
L10	S 34°28'32" E	154.97'
L11	S 80°55'52" E	180.07'
L12	N 86°05'08" E	694.45'
L13	N 44°09'27" E	119.69'
L14	N 37°04'34" E	27.45'
L15	N 37°04'34" E	62.71'
L16	S 54°49'53" E	0.01'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	TANGENT
C1	699.67'	714.22'	56°07'44"	N 05°32'41" E	672.03'	380.79'
C2	468.83'	898.89'	29°53'01"	N 07°34'42" W	463.54'	239.88'
C3	622.78'	10000.00'	3°34'06"	S 57°02'00" W	622.68'	311.49'
C4	413.23'	450.00'	52°36'49"	S 27°10'28" W	398.86'	222.47'
C5	283.79'	350.00'	46°27'26"	S 57°42'15" E	276.08'	150.22'
C6	317.24'	1400.00'	12°58'59"	S 87°25'22" E	316.56'	159.30'
C7	141.68'	1512.69'	5°21'59"	N 81°02'47" E	141.63'	70.89'
C8	144.40'	291.56'	28°22'37"	N 58°20'45" E	142.93'	73.71'

LINE TABLE FOR BLOCK E&G

Line #	DISTANCE	BEARING	Line #	DISTANCE	BEARING
L1	264.50	S68° 08' 38.14"W	L10	123.16	S68° 08' 38.62"W
L2	20.00	N21° 51' 21.78"W	L11	251.84	S68° 08' 38.62"W
L3	6.50	N68° 08' 38.22"E	L12	20.00	S21° 51' 21.78"E
L4	219.42	N21° 51' 21.78"W	L13	6.00	N68° 07' 58.17"E
L5	258.00	N68° 03' 03.34"E	L14	219.36	S21° 51' 24.30"E
L6	239.84	S21° 51' 21.78"E	L15	55.02	S21° 51' 24.30"E
L7	24.04	N23° 07' 25.66"E	L16	245.84	N68° 07' 27.20"E
L8	57.25	N21° 51' 21.78"W	L17	106.16	N68° 07' 24.97"E
L9	220.00	N21° 51' 21.78"W	L18	294.29	S21° 51' 21.78"E

LOT AREAS

BLOCK E: 2.49 AC. (108,575 SF)
BLOCK G: 1.42 AC. (62,083)

LEGEND

PROPOSED LOT LINES
DSUP APPLICATION AREA

APPROVED
SPECIAL USE PERMIT NO. _____
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. _____

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE 06-30-2022

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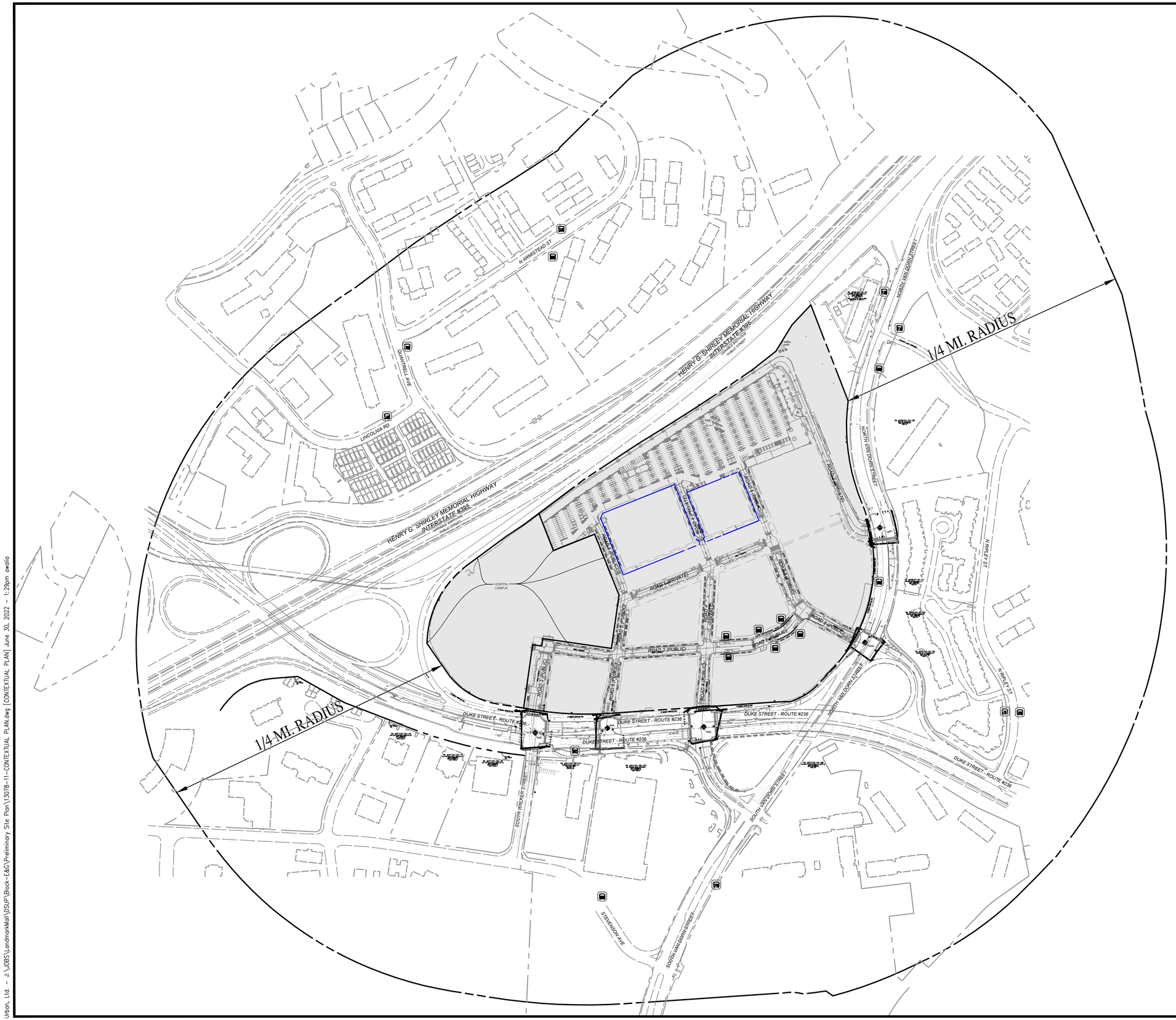
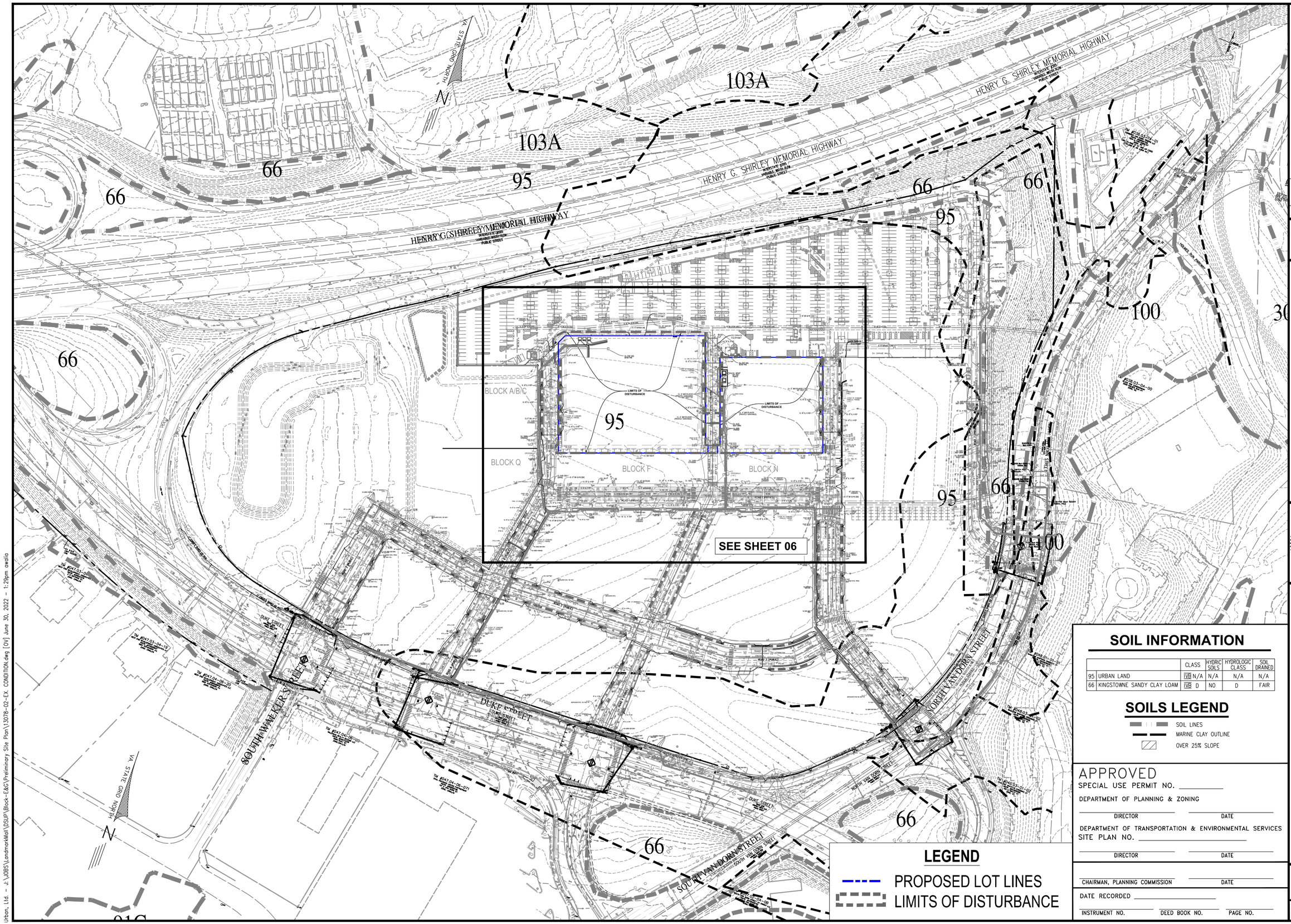
COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
06/30/22

PROPERTY EXHIBIT
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
SCALE: 1"=100' C.I.=N/A

SHEET 03 OF 31
FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-05-PROPERTY EXHIBIT.dwg [PROPERTY EXHIBIT] June 30, 2022 - 1:28pm awallia


HENRY G. SHIRLEY MEMORIAL HIGHWAY
INTERSTATE #395
SHIRLEY ESTATES
PUBLIC ENTRY
N ARMISTEAD ST
QUAINTRELL AVE
LINCOLNIA RD
HOSPITAL CAMPUS
ROAD 1 (PUBLIC)
ROAD 2 (PUBLIC)
ROAD 3 (PUBLIC)
ROAD 4 (PRIVATE)
ROAD 5 (PUBLIC)
ROAD 6 (PUBLIC)
ROAD 7 (PUBLIC)
ROAD 8 (PUBLIC)
ROAD 9 (PUBLIC)
ROAD 10 (PUBLIC)
ROAD 11 (PUBLIC)
ROAD 12 (PUBLIC)
ROAD 13 (PUBLIC)
ROAD 14 (PUBLIC)
ROAD 15 (PUBLIC)
ROAD 16 (PUBLIC)
ROAD 17 (PUBLIC)
ROAD



SOIL INFORMATION

		CLASS	HYDRIC SOILS	HYDROLOGIC CLASS	SOIL DRAINED
95	URBAN LAND	IVB	N/A	N/A	N/A
66	KINGSTOWNE SANDY CLAY LOAM	IVB	D	NO	D	FAIR

SOILS LEGEND

SOIL LINES
MARINE CLAY OUTLINE
OVER 25% SLOPE

LEGEND

PROPOSED LOT LINES
LIMITS OF DISTURBANCE

APPROVED
SPECIAL USE PERMIT NO. _____
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. _____

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE 06-30-2022

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COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCH
Lic. No. 036790
PROFESSIONAL ENGINEER
06/30/2022

OVERALL EXISTING CONDITIONS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
SCALE: 1"=100' C.I.= 2'

SHEET 05 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-02-EX. CONDITION.dwg [OV] June 30, 2022 – 1:29pm owolia

BLOCK A/B/C

BLOCK Q

BLOCK F

BLOCK N

FUTURE BLOCK I DSUP

ROAD 6 (PUBLIC)

ROAD 4 (PRIVATE)

ROAD 5 (PUBLIC)

ROAD 1 (PRIVATE)

PUBLIC ROAD

EX. GARAGE FOOTPRINT

LIMITS OF DISTURBANCE

EX. GARAGE WALL

EX. 10' SANITARY EASEMENT

EX. 10' WATERLINE EASEMENT

EX. 10" SDR-26 PVC (COA)

EX. 12" WATERLINE (AW)

EX. 6" SAN. LAT

EX. 2'X6' GAS METER PAD

EX. 10'X12' LIFT OUT PANELS

EX. 6' BMP/PLANTER (PRIVATELY MAINTAINED)

EX. 6' BMP/PLANTER (TYP.) SEE SHEET 114

EX. ELEC. DUCT BANK

EX. COMM. HANDHOLE

EX. 12' LANEWAY

EX. SWM FACILITY

EX. CURB EXTENSION

EX. CROSSWALK (TYP.)

EX. STREETLIGHT (TYP.)

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

EX. GARDEN PLANTING (TYP.)

EX. TREE PIT (TYP.)

EX. SIGN

EX. FLUSH CSCG-1 (COPING)

EX. 1W-4" SITLT

EX. BIKE LANE

EX. 42" CL. III RCP

EX. 36" CL. IV RCP

EX. 18" CL. IV RCP

EX. 18" CL. III RCP

EX. 15" CL. III RCP

EX. 12" CL. IV RCP

EX. FH#1

EX. FH#2

EX. FH#3

EX. FH#4

EX. FH#17

EX. FH#18

EX. 8"X16"X10" ELECT. BOX

EX. 10' TEMP. CROSSWALK (TYP.)

PROP. 10' CROSSWALK

EX. 8" SAN. LAT.

EX. CURB EXTENSION

EX. 10' SANITARY EASEMENT

EX. 10' WATERLINE EASEMENT

EX. 12" SDR-26 PVC (COA)

EX. 18" CL. III RCP EXTENT OF STANDARD PARALLEL PARKING (TYP.)

EX. 42" CL. III RCP

EX. 42" CL. IV RCP

EX. 36" CL. IV RCP

EX. 18" CL. IV RCP

EX. 15" CL. IV RCP

EX. 12" CL. IV RCP

EX. 10" SDR-26 PVC (COA)

EX. 8" SAN. LAT.

EX. 6" GAS LAT.

EX. 8" PVC SAN.

EX. 8" WATERLINE (AW)

EX. 16" WATERLINE (AW)

EX. 10" WATERLINE (AW)

EX. 6" WATERLINE (AW)

EX. 4" WATERLINE (AW)

EX. 6" GPE

EX. 18" CMP

EX. 36" RCP

EX. 36" SRP

EX. 10" CMP

EX. 18" RCP

EX. 15" RCP

EX. 24" RCP

EX. 30" RCP

EX. 48" RCP

EX. 54" RCP

EX. 60" RCP

EX. 66" RCP

EX. 72" RCP

EX. 78" RCP

EX. 84" RCP

EX. 96" RCP

EX. 108" RCP

EX. 120" RCP

EX. 132" RCP

EX. 144" RCP

EX. 156" RCP

EX. 168" RCP

EX. 180" RCP

EX. 192" RCP

EX. 204" RCP

EX. 216" RCP

EX. 228" RCP

EX.

HENRY G. SHIRLEY MEMORIAL HIGHWAY
INTERSTATE 495/
VARIABLE WIDTH R/W
PUBLIC STREET

HENRY G. SHIRLEY MEMORIAL HIGHWAY
INTERSTATE 495/
VARIABLE WIDTH R/W
PUBLIC STREET

HENRY G. SHIRLEY MEMORIAL HIGHWAY
INTERSTATE 495/
VARIABLE WIDTH R/W
PUBLIC STREET

VA STATE GRID NORTH

BLOCK A/B/C
T.M.: 047.02-03-10
LOT 601

BLOCK E7 RESIDENTIAL

BLOCK G
RESIDENTIAL COURTYARD

BLOCK Q

BLOCK F T.M #047.02-03-11
LOT 602

BLOCK N

T.M #047.02-03-11
LOT 602

SEE SHEET 08

TM #047.03-04-16
TM #047.03-04-17
TM #047.03-06-20
TM #047.04-06-30
TM #047.04-06-071
TM #057.02-04-09
TM #048.01-01-01
TM #048.03-01-02
TM #035.03-04-00

DUKE STREET
SOUTH WALKER STREET
NORTH VAN DORN STREET
SOUTH VAN DORN STREET
SR-401 NORTH VAN DORN STREET
ROAD 1 (PUBLIC)
ROAD 2 (PUBLIC)
ROAD 3 (PUBLIC)
ROAD 4 (PRIVATE)
ROAD 5 (PRIVATE)
ROAD 6 (PRIVATE)
ROAD 7 (PRIVATE)
ROAD 8 (PRIVATE)
ROAD 9 (PRIVATE)
ROAD 10 (PRIVATE)
ROAD 11 (PRIVATE)
ROAD 12 (PRIVATE)
ROAD 13 (PRIVATE)
ROAD 14 (PRIVATE)
ROAD 15 (PRIVATE)
ROAD 16 (PRIVATE)
ROAD

BLOCK A/B/C

T.M.: 047.02-03-10
LOT 601

BLOCK Q

BLOCK F T.M #047.02-03-11
LOT 602

BLOCK N

T.M #047.02-03-11
LOT 602

FUTURE BLOCK I DSUP

EX. GARAGE FOOTPRINT

EX. GARAGE WALL

APPROXIMATE LOCATION OF EX. RAMP TO LEVEL 2

VA STATE GRID NORTH

PROP. 6' S/W

ELEC. ROOM

PUMP ROOM

WATER

LOADING

BIKE STORAGE

TRASH

LOBBY

RESIDENTIAL BUILDING ABOVE

NORTH LOBBY

GAS

MEDICAL OFFICE

M.O.B TRASH

DAYCARE

BLOCK E / RESIDENTIAL

POOL ABOVE (EXACT SIZE & LOCATION T.B.D)

SOUTH LOBBY

BLOCK E / MOB

MAINT. ROOM

RETAIL

LOBBY

BUILDING CAFE ABOVE

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

BUILDING ABOVE

EX. STREETLIGHT (TYP.)

ROAD 6 (PUBLIC)

ROAD 4 (PRIVATE)

ROAD 5 (PUBLIC)

ROAD 1 (PRIVATE)

PUBLIC ROAD

RES. TRASH

BIKE STORAGE

LOADING

RESIDENTIAL AMENITY LOBBY

BLOCK G
RESIDENTIAL COURTYARD

RETAIL

EX. CURB EXTENSION

EX. CROSSWALK (TYP.)

EX. 12' LANEWAY

PROP. TREE PIT (TYP.)

POTENTIAL AERIAL BRIDGE CONNECTION (FINAL LOCATION/DESIGN T.B.D WITH DSUP)

BIKE SHARE STATION

EX. SIGN 213-224

EX. FLUSH CSCG-1 (COPING)

EX. 10' TEMP. CROSSWALK (TYP.)

PROP. 10' CROSSWALK (TYP.)

EX. BIKE LANE

PROPOSED PRIVATE ENTRANCE

LEGEND

PROPOSED LOT LINES

LIMITS OF DISTURBANCE

APPROVED
SPECIAL USE PERMIT NO. _____
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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COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/30/22

CONCEPT PLAN
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1"=30' C.I.=N/A DATE: JUNE, 2022

SHEET 08 OF 31

FILE No. RZ-1877

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BLOCK A/B/C

BLOCK Q

BLOCK F

BLOCK N

BLOCK E / RESIDENTIAL

BLOCK E / MOB

BLOCK G
RESIDENTIAL COURTYARD

ROAD 6 (PUBLIC)

ROAD 5 (PUBLIC)

ROAD 4 (PRIVATE)

ROAD 1 (PRIVATE)

PUBLIC ROAD

FUTURE BLOCK I DSUP

EX. GARAGE FOOTPRINT

EX. GARAGE WALL

TRANSFORMER LOCATION

ELEC. ROOM

PUMP ROOM

WATER

LOADING

BIKE STORAGE

TRASH

LOBBY

PROP. 6" SAN. SEWER CONNECTION

GREASE INTERCEPTOR BELOW

RESIDENTIAL BUILDING ABOVE

EX. 2'X6' GAS METER PAD

NORTH LOBBY

MEDICAL OFFICE

PROP. BLDG WATER CONNECTION

M.O.B TRASH

MAINT. ROOM

SOUTH LOBBY

DAYCARE

POOL ABOVE (EXACT SIZE & LOCATION T.B.D)

RETAIL

BUILDING ABOVE

EX. STREETLIGHT (TYP.)

EX. 6' BMP/PLANTER (PRIVATELY MAINTAINED) SEE SHEET 114

PROP. 15" RCP STM CONNECTION

PROP. 8" SAN. SEWER CONNECTION

CAFE ABOVE

EX. 10'X12' LIFT OUT PANELS

TRANSFORMER VAULT BELOW

RESIDENTIAL AMENITY LOBBY

RES. TRASH

EX. ELEC. DUCT BANK

EX. COMM. HANDHOLE

EX. 8'X16'X10' ELECT. BOX

EX. COMM. DUCT BANK

POTENTIAL AERIAL BRIDGE CONNECTION (FINAL LOCATION/DESIGN T.B.D WITH DSUP)

PROP. TREE PIT (TYP.)

EX. SWM FACILITY

EX. CURB EXTENSION

EX. CROSSWALK (TYP.)

EX. SIGN

EX. FLUSH CSCG-1 (COPING)

EX. 1W-4" STLT

EX. 10' WATERLINE EASEMENT

EX. 10' SANITARY EASEMENT

EX. 12" WATERLINE (AW)

EX. BIKE LANE

EX. 12" SDR-26 PVC (COA)

EX. 18" CL. III RCP

EX. 42" CL. III RCP

EX. 36" CL. IV RCP

EX. 18" CL. IV RCP

EX. 15" CL. III RCP

EX. 15" CL. IV RCP

EX. 12" CL. IV RCP

EX. 8" SAN. LAT.

EX. CURB EXTENSION

EX. COMM. HANDHOLE

EX. FH#1

EX. FH#2

EX. FH#3

EX. FH#4

EX. FH#17

EX. FH#18

EX. 8" WATER LINE (WM)

EX. 8" PVC SAN.

EX. 10" SDR-26 PVC (COA)

EX. 10" SANITARY EASEMENT

EX. 10" WATERLINE EASEMENT

EX. 6" SAN. LAT

PROP. 6" S/W

EX. 15" CL. III RCP

EX. 18" CL. IV RCP

EX. 2'X6' GAS METER PAD

EX. 6' BMP/PLANTER (PRIVATELY MAINTAINED)

EX. 18" CL. III RCP

EX. 10' TEMP. CROSSWALK (TYP.)

PROP. 10' CROSSWALK (TYP.)

EX. 10" SDR-26 PVC (COA)

EX. 8'X16'X10' ELECT. BOX

EX. COMM. DUCT BANK

EX. COMM. HANDHOLE

EX. SIGN 213-224

EX. CROSSWALK (TYP.)

EX. 10' SANITARY EASEMENT

EX. 10' WATERLINE EASEMENT

EX. 12" SDR-26 PVC (COA)

EX. 18" CL. III RCP

EX. 42" CL. III RCP

EX. 42" CL. IV RCP

EX. 36" CL. IV RCP

EX. 18" CL. IV RCP

EX. 15" CL. IV RCP

EX. 12" CL. IV RCP

EX. 8" SAN. LAT.

EX. CURB EXTENSION

EX. COMM. HANDHOLE

EX. 18" CL. IV RCP

EX. 10" SDR-26 PVC (COA)

EX. FH#3

EX. SIGN 213-224

EX. ELEC. DUCT BANK

EX. COMM. DUCT BANK

EX. COMM. HANDHOLE

EX. 18" CL. III RCP

EX. 10' WATERLINE EASEMENT

EX. SIGN

EX. 10' SANITARY EASEMENT

EX. 12" SDR-26 PVC (COA)

EX. 18" CL. III RCP

EX. 42" CL. III RCP

EX. 42" CL. IV RCP

EX. 36" CL. IV RCP

EX. FH#17

EX. FH#18

EX. STREETLIGHT (TYP.)

EX. 15" CL. IV RCP

EX. 18" CL. IV RCP

PROP. BLDG WATER CONNECTION

BUILDING ABOVE

RETAIL

LOBBY

CAFE ABOVE

PROP. 15" RCP STM CONNECTION

PROP. 6" SAN. SEWER CONNECTION

PROP. 8" SAN. SEWER CONNECTION

PROP. 15" RCP STM CONNECTION

PROP. 10" SDR-26 PVC (COA)

PROP. 8" SAN. LAT.

PROP. 12" CL. IV RCP

PROP. 18" CL. IV RCP

PROP. PRIVATE ENTRANCE

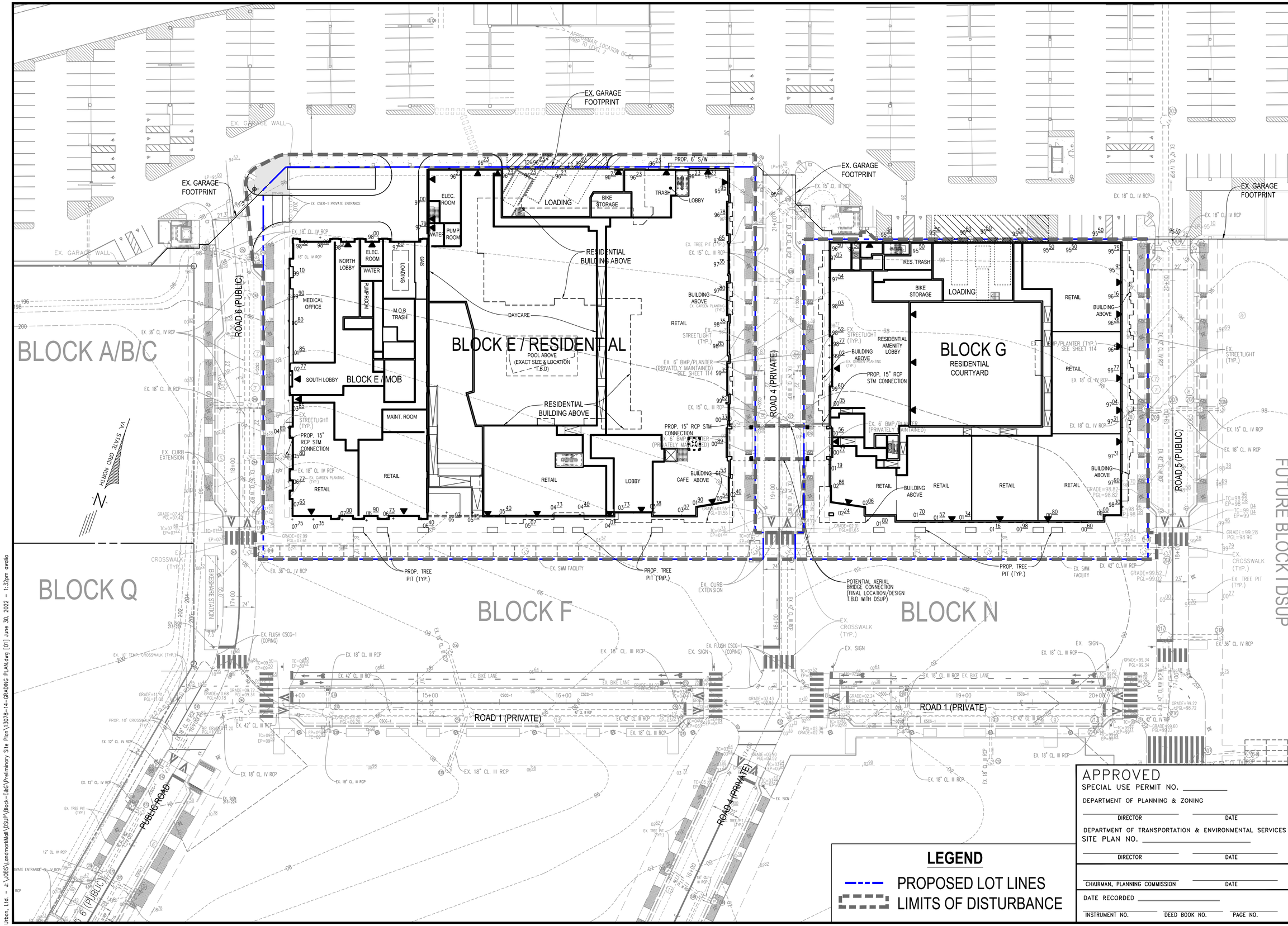
PROP. 6" CL. IV RCP

PROP. SIGN

PROP. 6" CL. IV RCP

PROP. 6" SAN. LAT.

PROP. 6" S/W



LEGEND

PROPOSED LOT LINES

LIMITS OF DISTURBANCE

APPROVED

SPECIAL USE PERMIT NO. _____

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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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
06/30/22
PROFESSIONAL ENGINEER

GRADING PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: JUNE, 2022

SHEET 10 OF 31

FILE No. RZ-1877

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BLOCK A/B/C

BLOCK Q

BLOCK F

BLOCK N

FUTURE BLOCK I DSUP

EX. GARAGE FOOTPRINT

EX. GARAGE WALL

PROP. 6' S/W

ROAD 6 (PUBLIC)

ROAD 4 (PRIVATE)

ROAD 5 (PUBLIC)

ROAD 1 (PRIVATE)

PUBLIC ROAD

BLOCK E / RESIDENTIAL

POOL ABOVE (EXACT SIZE & LOCATION T.B.D)

DAYCARE

RESIDENTIAL BUILDING ABOVE

BLOCK E / MOB

MEDICAL OFFICE

NORTH LOBBY

SOUTH LOBBY

ELEC. ROOM

WATER

PUMP ROOM

LOADING

GAS

M.O.B TRASH

MAINT. ROOM

RETAIL

LOBBY

CAFE

BUILDING ABOVE

TRASH

BIKE STORAGE

BLOCK G

RESIDENTIAL COURTYARD

RESIDENTIAL AMENITY LOBBY

RES. TRASH

EX. STREETLIGHT (TYP.)

EX. CROSSWALK (TYP.)

PROP. TREE PIT (TYP.)

EX. 12' LANEWAY

POTENTIAL AERIAL BRIDGE CONNECTION (FINAL LOCATION/DESIGN T.B.D WITH DSUP)

BIKESHARE STATION

EX. SIGN 213-224

EX. 10' TEMP. CROSSWALK (TYP.)

PROP. 10' CROSSWALK (TYP.)

EX. BIKE LANE

VA STATE GRID NORTH

NORTH

OPEN SPACE CALCULATION:

BLOCK E SITE AREA: 2.49 AC.
REQUIRED OPEN SPACE: .62 AC. OR 27,143 SF (25% OF SITE AREA)

PROVIDED:
AT-GRADE OPEN SPACE : 2,830 SF
ABOVE-GRADE OPEN SPACE : 21,441 SF
AT-GRADE OPEN SPACE TRANSFER FROM BLOCK P (TERRACE PARK): 2,872 SF
TOTAL OPEN SPACE PROVIDED: .62 AC. OR 27,143 SF (25.00%)

BLOCK G SITE AREA: 1.43 AC.
REQUIRED OPEN SPACE: .35 AC. OR 15,520 SF (25% OF SITE AREA)

PROVIDED:
AT-GRADE OPEN SPACE : 9,160 SF
ABOVE-GRADE OPEN SPACE : 1,476 SF
AT-GRADE OPEN SPACE TRANSFER FROM BLOCK P (TERRACE PARK): 4,884 SF
TOTAL OPEN SPACE PROVIDED: .63 AC. OR 15,520 SF (25.00%)

LEGEND

PROP. LOT LINES
LIMITS OF DISTURBANCE

APPROVED
SPECIAL USE PERMIT NO. _____
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.

REVISIONS

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PLAN DATE 06-30-2022 #

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Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
06/30/22
REGISTERED PROFESSIONAL ENGINEER

OPEN SPACE PLAN
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
C.I.= N/A
SCALE: 1"=30'

SHEET 11 OF 31

FILE No. RZ-1877

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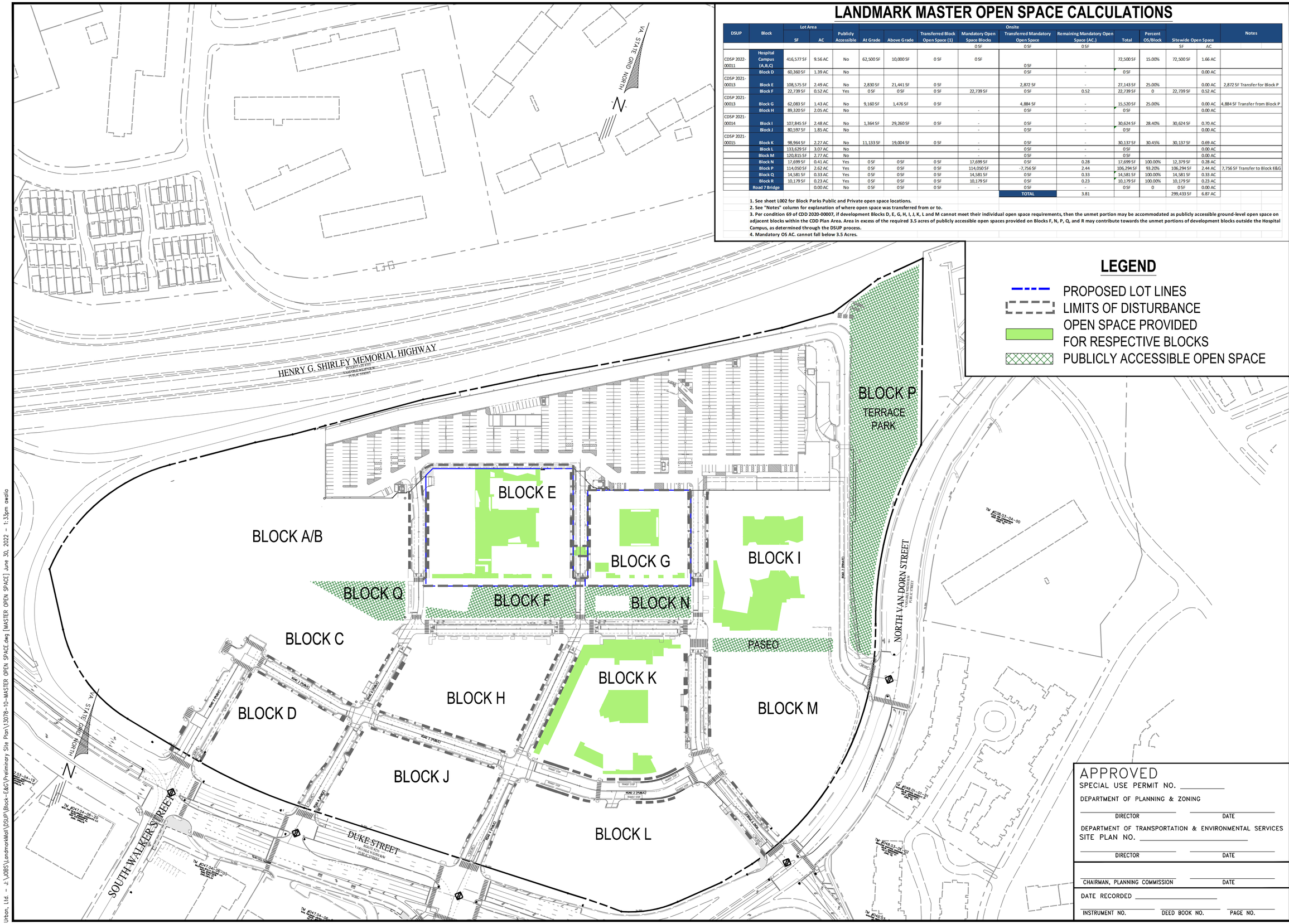
LANDMARK MASTER OPEN SPACE CALCULATIONS

DSUP	Block	Lot Area SF	Lot Area AC	Publicly Accessible	Onsite At Grade	Onsite Above Grade	Transferred Block Open Space (1)	Mandatory Open Space Blocks	Onsite Transferred Mandatory Open Space	Remaining Mandatory Open Space (AC.)	Total	Percent OS/Block	Sitewide Open Space SF	Sitewide Open Space AC	Notes
								0 SF	0 SF	0 SF					
CDSP 2022-00011	Hospital Campus (A,B,C)	416,577 SF	9.56 AC	No	62,500 SF	10,000 SF	0 SF	0 SF	0 SF	-	72,500 SF	15.00%	72,500 SF	1.66 AC	
	Block D	60,360 SF	1.39 AC	No					0 SF	-	0 SF			0.00 AC	
CDSP 2021-00013	Block E	108,575 SF	2.49 AC	No	2,830 SF	21,441 SF	0 SF		2,872 SF	-	27,143 SF	25.00%		0.00 AC	2,872 SF Transfer for Block P
	Block F	22,739 SF	0.52 AC	Yes	0 SF	0 SF	0 SF	22,739 SF	0 SF	0.52	22,739 SF	0	22,739 SF	0.52 AC	
CDSP 2021-00013	Block G	62,083 SF	1.43 AC	No	9,160 SF	1,476 SF	0 SF		4,884 SF	-	15,520 SF	25.00%		0.00 AC	4,884 SF Transfer from Block P
	Block H	89,320 SF	2.05 AC	No				-	0 SF	-	0 SF			0.00 AC	
CDSP 2021-00014	Block I	107,845 SF	2.48 AC	No	1,364 SF	29,260 SF	0 SF	-	0 SF	-	30,624 SF	28.40%	30,624 SF	0.70 AC	
	Block J	80,597 SF	1.85 AC	No				-	0 SF	-	0 SF			0.00 AC	
CDSP 2021-00015	Block K	98,964 SF	2.27 AC	No	11,133 SF	19,004 SF	0 SF	-	0 SF	-	30,137 SF	30.45%	30,137 SF	0.69 AC	
	Block L	133,629 SF	3.07 AC	No				-	0 SF	-	0 SF			0.00 AC	
	Block M	120,815 SF	2.77 AC	No					0 SF	-	0 SF			0.00 AC	
	Block N	17,699 SF	0.41 AC	Yes	0 SF	0 SF	0 SF	17,699 SF	0 SF	0.28	17,699 SF	100.00%	12,379 SF	0.28 AC	
	Block P	114,050 SF	2.62 AC	Yes	0 SF	0 SF	0 SF	114,050 SF	-7,756 SF	2.44	106,294 SF	93.20%	106,294 SF	2.44 AC	7,756 SF Transfer to Block E&G
	Block Q	14,581 SF	0.33 AC	Yes	0 SF	0 SF	0 SF	14,581 SF	0 SF	0.33	14,581 SF	100.00%	14,581 SF	0.33 AC	
	Block R	10,179 SF	0.23 AC	Yes	0 SF	0 SF	0 SF	10,179 SF	0 SF	0.23	10,179 SF	100.00%	10,179 SF	0.23 AC	
	Road 7 Bridge		0.00 AC	No	0 SF	0 SF	0 SF	-	0 SF	-	0 SF	0	0 SF	0.00 AC	
									TOTAL	3.81			299,433 SF	6.87 AC	

1. See sheet L002 for Block Parks Public and Private open space locations.
2. See "Notes" column for explanation of where open space was transferred from or to.
3. Per condition 69 of CDD 2020-00007, if development Blocks D, E, G, H, I, J, K, L and M cannot meet their individual open space requirements, then the unmet portion may be accommodated as publicly accessible ground-level open space on adjacent blocks within the CDD Plan Area. Area in excess of the required 3.5 acres of publicly accessible open spaces provided on Blocks F, N, P, Q, and R may contribute towards the unmet portions of development blocks outside the Hospital Campus, as determined through the DSUP process.
4. Mandatory OS AC. cannot fall below 3.5 Acres.



LEGEND

- PROPOSED LOT LINES
- LIMITS OF DISTURBANCE
- OPEN SPACE PROVIDED FOR RESPECTIVE BLOCKS
- PUBLICLY ACCESSIBLE OPEN SPACE

APPROVED

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DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

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CLAYTON C. TOCK
Lic. No. 039790
PROFESSIONAL ENGINEER
06/30/22

MASTER OPEN SPACE PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

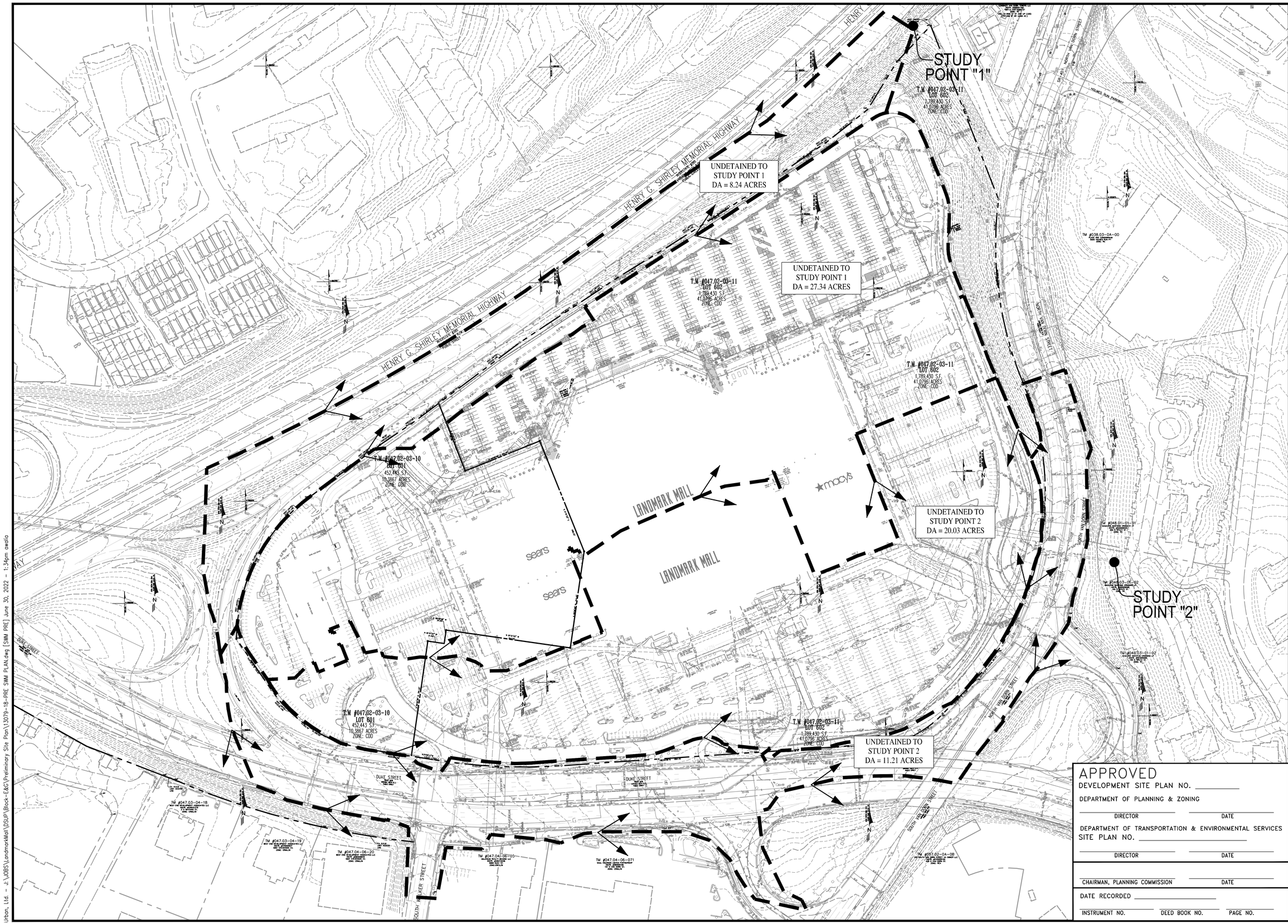
DATE: JUNE, 2022

SCALE: 1"=100' C.I.= N/A

SHEET 12 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-10-MASTER OPEN SPACE.dwg [MASTER OPEN SPACE] June 30, 2022 - 1:33pm owalia



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06/30/22

SWM PRE DEVELOPMENT PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=100' C.I.= 2' DATE: JUNE 2022

APPROVED

DEVELOPMENT SITE PLAN NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

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DATE RECORDED _____

_____ INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO.

SHEET 13 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13079-18-PRE SWM PLAN.dwg [SWM PRE] June 30, 2022 - 1:34pm awalla

STUDY POINT "1"

VAULT 4

STUDY POINT "1":
ONSITE DA TO VAULT 4
DA = 8.06 AC
CN= 98
TC = 10 MINS

STUDY POINT "1":
BLOK G DA TO VAULT 2
DA = 1.30 AC
CN= 95
TC = 10 MINS

STUDY POINT "1":
BLOCK I DA TO VAULT 2
DA = 2.57 AC
CN= 95
TC = 10 MINS

OFFSITE UNDETAINED
DRAINAGE AREA
TO STUDY POINT "1"
DA = 6.45AC
CN= 95
TC = 15 MINS

STUDY POINT "1":
BLOCK E DA TO VAULT 2
DA = 2.30 AC
CN= 95
TC = 10 MINS

VAULT 2

VAULT 3

STUDY POINT "1":
PORTION OF INOVA DA TO VAULT 2
DA = 3.51 AC
CN= 95
TC = 10 MINS

STUDY POINT "1":
PARKS, ROADS, S/W, ETC.
DA TO VAULT 2
DA = 3.65 AC
CN= 95
TC = 10 MINS

STUDY POINT "2"

STUDY POINT "1":
BLOCK H DA TO VAULT 2
DA = 1.61 AC
CN= 95
TC = 10 MINS

STUDY POINT "1":
BLOCK K DA TO VAULT 2
DA = 2.53 AC
CN= 95
TC = 10 MINS

STUDY POINT "2":
ONSITE DA TO VAULT 3
DA = 20.73 AC
CN= 95
TC = 10 MINS

OFFSITE UNDETAINED
DRAINAGE AREA
TO STUDY POINT "2"
DA = 11.21AC
CN= 95
TC = 10 MINS

T.M #047.02-03-10
LOT 601
452,443 S.F.
10.3867 ACRES
ZONE: CDD

T.M #047.02-03-11
LOT 602
1,789,430 S.F.
41.0796 ACRES
ZONE: CDD

HENRY G. SHIRLEY MEMORIAL HIGHWAY

DUKE STREET

SOUTH WALKER STREET

NORTH VAN DORN STREET

HOLMES RUN (PIPED)

NOTE:
*ALL STORMWATER BMP FACILITIES SHOWN ON THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY.
**DISCHARGE FROM GARAGE SUMP PUMPS MUST BYPASS BMPS AND DETENTION STRUCTURES.

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PROFESSIONAL ENGINEER
06/30/22

SWM POST DEVELOPMENT PLAN
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
SCALE: 1"=100' C.I.= 2'

SHEET
13A
OF
31

FILE No.
RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-09-POST SWM PLAN.dwg [POST SWM MASTER PLAN] June 30, 2022 - 1:34pm owolla

SWM PRE - Study Point "1"

SWM PRE OFFSITE Undetained Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
4.880	98	Paved parking, HSG D
3.360	80	>75% Grass cover, Good, HSG D
8.240	91	Weighted Average
3.360		40.78% Pervious Area
4.880		59.22% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

1 Year Flow Calculations

Runoff = 16.03 cfs@ 12.15 hrs, Volume= 50,067 cf, Depth>1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 20.03 cfs@ 12.15 hrs, Volume= 63,254 cf, Depth>2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 32.58 cfs@ 12.15 hrs, Volume= 117,174 cf, Depth>3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM PRE Onsite UNDETAINED Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
11.210	98	Paved parking, HSG D
16.130	80	>75% Grass cover, Good, HSG D
27.340	87	Weighted Average
16.130		59.00% Pervious Area
11.210		41.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 52.17 cfs@ 12.09 hrs, Volume= 136,159 cf, Depth>1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 67.33 cfs@ 12.09 hrs, Volume= 176,935 cf, Depth>1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 116.25 cfs@ 12.09 hrs, Volume= 348,346 cf, Depth>3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

STUDY POINT 1 SWM PRE FLOWS

1 Year Flow Calculations

Inflow Area = 1,549,865 sf, 45.22% Impervious, Inflow Depth >1.44" for 1-yr event
Inflow = 66.27 cfs @ 12.10 hrs, Volume= 186,226 cf
Primary = 66.27 cfs @ 12.10 hrs, Volume= 186,226 cf , Atten= 0%Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

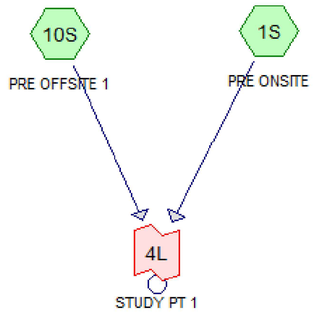
2 Year Flow Calculations

Inflow Area = 1,549,865 sf, 45.22% Impervious, Inflow Depth >1.86" for 2-yr event
Inflow = 84.95 cfs @ 12.10 hrs, Volume= 240,188 cf
Primary = 84.95 cfs @ 12.10 hrs, Volume= 240,188 cf , Atten= 0%Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

10 Year Flow Calculations

Inflow Area = 1,549,865 sf, 45.22% Impervious , Inflow Depth > 3.60" for 10-yr event
Inflow = 145.10 cfs @ 12.10 hrs , Volume= 465,520 cf
Primary = 145.10 cfs @ 12.10 hrs , Volume= 465,520 cf , Atten= 0% Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

PRE-DEVELOPMENT HYDROCAD MODEL - Study Point "1"



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11-19-2021
04-29-2022

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CLAYTON C. TOCK
Lic. No. 038790
REGISTERED PROFESSIONAL ENGINEER
04/29/2022

SWM COMPS & NARRATIVE
LANDMARK MALL REDEVELOPMENT
PHASE II CONCEPT - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: APRIL, 2022
C.I.= N/A
SCALE: N/A

SHEET 14 OF 30

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-10-SWM COMPS & NARRATIVE.dwg [PRE-DEV] June 30, 2022 - 1:35pm ovalla

SWM POST - Study Point "1"

SWM POST OFFSITE Undetained Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
6.449	95	Urban commercial, 85% imp, HSG D
0.967		15.00% Pervious Area
5.482		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

1 Year Flow Calculations

Runoff = 14.72 cfs@ 12.15 hrs, Volume= 47,538 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 17.82 cfs@ 12.15 hrs, Volume= 58,407 cf, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 27.18 cfs@ 12.15 hrs, Volume= 101,915 cf, Depth> 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Block I DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
2.570	95	Urban commercial, 85% imp, HSG D
0.386		15.00% Pervious Area
2.184		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 6.98 cfs@ 12.08 hrs, Volume= 18,970 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 8.43 cfs@ 12.08 hrs, Volume= 23,306 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 12.70 cfs@ 12.08 hrs, Volume= 40,668 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Block G DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
1.295	95	Urban commercial, 85% imp, HSG D
0.194		15.00% Pervious Area
1.101		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 3.52 cfs@ 12.08 hrs, Volume= 9,559 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 4.25 cfs@ 12.08 hrs, Volume= 11,744 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 6.40 cfs@ 12.08 hrs, Volume= 20,492 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Block E DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
2.300	95	Urban commercial, 85% imp, HSG D
0.345		15.00% Pervious Area
1.955		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

1 Year Flow Calculations

Runoff = 6.25 cfs@ 12.08 hrs, Volume= 16,977 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 7.54 cfs@ 12.08 hrs, Volume= 20,858 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 11.36 cfs@ 12.08 hrs, Volume= 36,395 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST PORTION OF INOVA DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
3.510	95	Urban commercial, 85% imp, HSG D
0.527		15.00% Pervious Area
2.983		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 9.53 cfs @ 12.08 hrs, Volume= 25,909 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 11.51 cfs @ 12.08 hrs, Volume= 31,831 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 17.34 cfs @ 12.08 hrs, Volume= 55,542 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Block H DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
1.610	95	Urban commercial, 85% imp, HSG D
0.242		15.00% Pervious Area
1.368		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 4.37 cfs@ 12.08 hrs, Volume= 11,884 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 5.28 cfs@ 12.08 hrs, Volume= 14,600 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 7.95 cfs@ 12.08 hrs, Volume= 25,477 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Block K DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
2.530	95	Urban commercial, 85% imp, HSG D
0.380		15.00% Pervious Area
2.151		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 6.87 cfs@ 12.08 hrs, Volume= 18,675 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 8.30 cfs@ 12.08 hrs, Volume= 22,943 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 12.50 cfs@ 12.08 hrs, Volume= 40,035 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

SWM POST Onsite DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
3.645	95	Urban commercial, 85% imp, HSG D
0.547		15.00% Pervious Area
3.098		85.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 9.90 cfs@ 12.08 hrs, Volume= 26,905 cf, Depth> 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 11.96 cfs@ 12.08 hrs, Volume= 33,055 cf, Depth> 2.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 18.01 cfs@ 12.08 hrs, Volume= 57,678 cf, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

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DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

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REVISIONS

No.	DATE	DESCRIPTION

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04-29-2022

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04/29/2022

SWM COMPS & NARRATIVE

LANDMARK MALL REDEVELOPMENT
PHASE II CONCEPT - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: APRIL, 2022
C.I.= N/A
SCALE: N/A

SHEET
15
OF
30

FILE No.
RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-10-SWM COMPS & NARRATIVE.dwg [POST-DEV] June 30, 2022 - 1:35pm awolla

SWM POST - Study Point "1"

POST-DEVELOPMENT HYDROCAD MODEL - Study Point "1"

SWM POST Onsite DETAINED (VAULT #4) Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
8.060	98	Paved parking, HSG D
8.060		100.00% Impervious Area

Time of Concentration Calculations

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

1 Year Flow Calculations

Runoff = 23.76 cfs @ 12.08 hrs, Volume= 68,545 cf, Depth> 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 1-yr Rainfall=2.70"

2 Year Flow Calculations

Runoff = 28.16 cfs @ 12.08 hrs, Volume= 82,450 cf, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 2-yr Rainfall=3.20"

10 Year Flow Calculations

Runoff = 40.96 cfs @ 12.08 hrs, Volume= 137,581 cf, Depth> 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Landmark Mall 24-hr S1 10-yr Rainfall=5.20"

STUDY POINT 1 SWM POST FLOWS

1 Year Flow Calculations

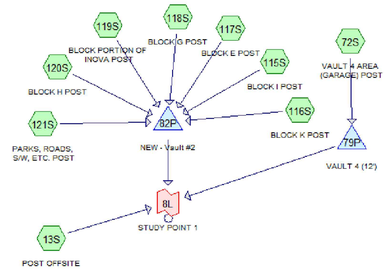
Inflow Area = 1,392,570 sf, 88.78%Impervious, Inflow Depth >2.09" for 1-yr event
Inflow = 39.40 cfs @ 12.18 hrs, Volume= 242,361 cf
Primary = 39.40 cfs @ 12.18 hrs, Volume= 242,361 cf, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

2 Year Flow Calculations

Inflow Area = 1,392,570 sf, 88.78%Impervious, Inflow Depth >2.55" for 2-yr event
Inflow = 52.77 cfs @ 12.21 hrs, Volume= 296,122 cf
Primary = 52.77 cfs @ 12.21 hrs, Volume= 296,122 cf, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

10 Year Flow Calculations

Inflow Area = 1,392,570 sf, 88.78%Impervious, Inflow Depth >4.39" for 10-yr event
Inflow = 118.46 cfs @ 12.15 hrs, Volume= 509,764 cf
Primary = 118.46 cfs @ 12.15 hrs, Volume= 509,764 cf Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs



ENERGY BALANCE METHOD TO STUDY POINT "1"

$Q_{(Developed)}$=	39.40	cfs
$Q_{(Pre\text{-}Developed)}$=	66.27	cfs
$RV_{(Pre\text{-}Developed)}$=	4.28	ac-ft
$RV_{(Developed)}$=	5.56	ac-ft
I.F. =	0.8	(0.8 for sites greater than one acre) (0.9 for sites less than or equal to one acre)

Q Developed		I.F x ($Q_{Pre\text{-}Developed}$ x $RV_{Pre\text{-}Developed}$)/$RV_{Developed}$
39.40	≤	40.81

VAULT #2

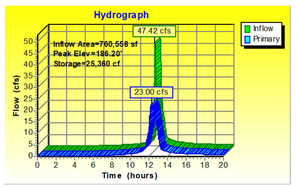
1 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf 85.00%Impervious, Inflow Depth >2.03" for 1-yr event
Inflow = 47.42 cfs@ 12.08 hrs, Volume= 128,878 cf
Outflow = 23.00 cfs@ 12.27 hrs, Volume= 127,952 cf, Atten= 52%, Lag= 11.1 min
Primary = 23.00 cfs@ 12.27 hrs, Volume= 127,952 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 186.20'@ 12.27 hrs Surf.Area= 4,200 sf Storage= 25,360 cf

Plug-Flow detention time=15.8 min calculated for 127,888 cf (99% of inflow)
Center-of-Mass det. time=12.7 min (769.2 - 756.5)

Primary OutFlow Max=23.00 cfs @ 12.27 hrs HW=186.20' (Free Discharge)
└1=Culvert (Passes 23.00 cfs of 222.28 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 23.00 cfs @ 11.50 fps)
├3=Orifice/Grate (Controls 0.00 cfs)
└4=Orifice/Grate (Controls 0.00 cfs)



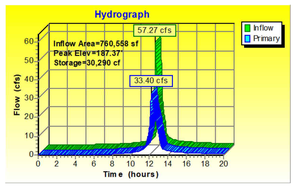
2 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf, 85.00%Impervious, Inflow Depth >2.50" for 2-yr event
Inflow = 57.27 cfs@ 12.08 hrs, Volume= 158,337 cf
Outflow = 33.40 cfs@ 12.23 hrs, Volume= 157,324 cf, Atten= 42%, Lag= 8.6 min
Primary = 33.40 cfs@ 12.23 hrs, Volume= 157,324 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 187.37' @ 12.23 hrs Surf.Area= 4,200 sf Storage= 30,290 cf

Plug-Flow detention time=15.5 min calculated for 157,324 cf (99% of inflow)
Center-of-Mass det. time=12.7 min (764.5 - 751.8)

Primary OutFlow Max=33.38 cfs @ 12.23 hrs HW=187.37' (Free Discharge)
└1=Culvert (Passes 33.38 cfs of 256.50 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 25.25 cfs @ 12.63 fps)
├3=Orifice/Grate (Orifice Controls 8.13 cfs @ 3.47 fps)
└4=Orifice/Grate (Orifice Controls 0.00 cfs @ 0.09 fps)



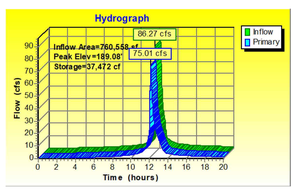
10 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf, 85.00%Impervious, Inflow Depth >4.36" for 10-yr event
Inflow = 86.27 cfs@ 12.08 hrs Volume= 276,287 cf
Outflow = 75.01 cfs@ 12.14 hrs Volume= 274,936 cf Atten= 13%, Lag= 3.5 min
Primary = 75.01 cfs@ 12.14 hrs Volume= 274,936 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 189.08' @ 12.14 hrs Surf.Area= 4,200 sf Storage= 37,472 cf

Plug-Flow detention time=12.9 min calculated for 274,798 cf (99% of inflow)
Center-of-Mass det. time=10.7 min (749.4 - 738.7)

Primary OutFlow Max=74.94 cfs @ 12.14 hrs HW=189.08' (Free Discharge)
└1=Culvert (Passes 74.94 cfs of 299.43 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 28.22 cfs @ 14.11 fps)
├3=Orifice/Grate (Orifice Controls 18.02 cfs @ 7.21 fps)
└4=Orifice/Grate (Orifice Controls 28.71 cfs @ 4.20 fps)



VAULT #4

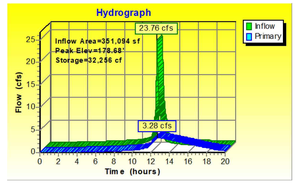
1 YEAR EVENT SUMMARY

Inflow Area = 351,094 sf ,100.00%Impervious, Inflow Depth >2.34" for 1-yr event
Inflow = 23.76 cfs @ 12.08 hrs, Volume= 68,545 cf
Outflow = 3.28 cfs @ 12.67 hrs, Volume= 66,871 cf, Atten= 86%, Lag= 35.2 min
Primary = 3.28 cfs @ 12.67 hrs, Volume= 66,871 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 178.68' @ 12.67 hrs Surf.Area= 4,200 sf Storage= 32,256 cf

Plug-Flow detention time=112.5 min calculated for 66,871 cf (98% of inflow)
Center-of-Mass det. time=101.9 min (834.7 - 732.9)

Primary OutFlow Max=3.28 cfs @ 12.67 hrs HW=178.68' (Free Discharge)
└1=Culvert (Passes 3.28 cfs of 99.40 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 3.28 cfs @ 13.12 fps)
├3=Orifice/Grate (Orifice Controls 0.00 cfs @ 0.03 fps)
└4=Orifice/Grate (Controls 0.00 cfs)



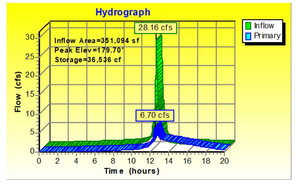
2 YEAR EVENT SUMMARY

Inflow Area = 351,094 sf ,100.00%Impervious, Inflow Depth >2.82" for 2-yr event
Inflow = 28.16 cfs @ 12.08 hrs, Volume= 82,450 cf
Outflow = 6.70 cfs @ 12.56 hrs, Volume= 80,392 cf, Atten= 76%, Lag= 28.4 min
Primary = 6.70 cfs @ 12.56 hrs, Volume= 80,392 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 179.70' @ 12.56 hrs Surf.Area= 4,200 sf Storage= 36,536 cf

Plug-Flow detention time=108.4 min calculated for 80,392 cf (98% of inflow)
Center-of-Mass det. time=97.5 min (827.0 - 729.5)

Primary OutFlow Max=6.70 cfs @ 12.56 hrs HW=179.70' (Free Discharge)
└1=Culvert (Passes 6.70 cfs of 109.02 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 3.50 cfs @ 14.00 fps)
├3=Orifice/Grate (Orifice Controls 3.20 cfs @ 3.49 fps)
└4=Orifice/Grate (Controls 0.00 cfs)



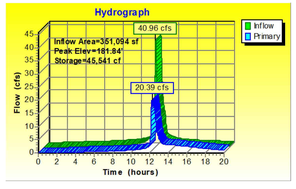
10 YEAR EVENT SUMMARY

Inflow Area = 351,094 sf ,100.00%Impervious, Inflow Depth >4.70" for 10-yr event
Inflow = 40.96 cfs @ 12.08 hrs, Volume= 137,581 cf
Outflow = 20.39 cfs @ 12.28 hrs, Volume= 132,914 cf, Atten= 50%, Lag= 11.6 min
Primary = 20.39 cfs @ 12.28 hrs, Volume= 132,914 cf

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 181.84' @ 12.28 hrs Surf.Area= 4,200 sf Storage= 45,541 cf

Plug-Flow detention time=88.5 min calculated for 132,914 cf (97% of inflow)
Center-of-Mass det. time=73.7 min (792.9 - 719.2)

Primary OutFlow Max=20.39 cfs @ 12.28 hrs HW=181.84' (Free Discharge)
└1=Culvert (Passes 20.39 cfs of 126.90 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 3.92 cfs @ 15.67 fps)
├3=Orifice/Grate (Orifice Controls 7.25 cfs @ 7.91 fps)
└4=Orifice/Grate (Orifice Controls 9.22 cfs @ 6.15 fps)



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SPECIAL USE PERMIT NO. _____
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.

REVISIONS | DESCRIPTION | DATE | No.

PLAN DATE 11-19-2021 04-29-2022

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COMMONWEALTH OF VIRGINIA CLAYTON C. POCK Lic. No. 038790 PROFESSIONAL ENGINEER 04/29/2022

SWM COMPS & NARRATIVE
LANDMARK MALL REDEVELOPMENT
PHASE II CONCEPT - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: APRIL, 2022
C.I.= N/A
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SHEET 16 OF 30

FILE No. RZ-1877

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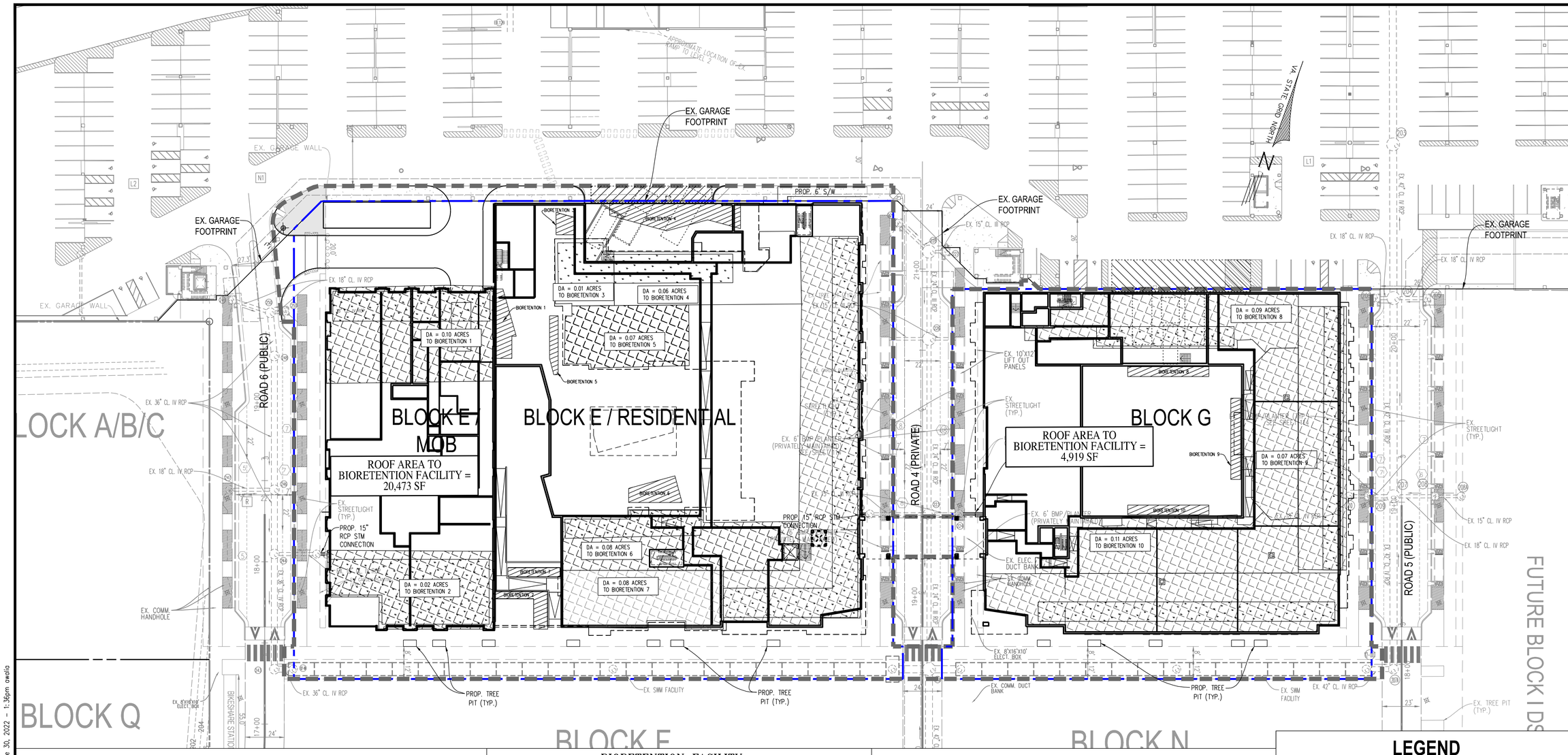
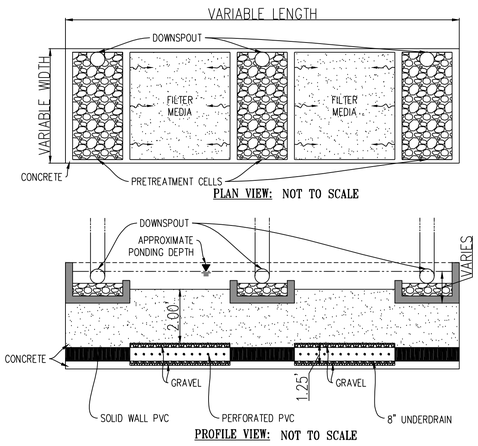


BIORETENTION FACILITY



COMPIELD BIORETENTION DESIGN CALCULATIONS

EQUATION 9.1. BIORETENTION LEVEL 1 DESIGN STORAGE DEPTH

FILTER MEDIA DEPTH	2	2	2	2	2	2	2	2	2	2	FT	n=	0.25
GRAVEL DEPTH	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	FT	n=	0.4
MAX PONDING DEPTH	0.5	0.5	0.5	0.5	0.5	0.5	0.58	0.5	0.5	0.5	FT	n=	1
DESIGN STORAGE DEPTH =	1.5	1.5	1.5	1.5	1.5	1.5	1.58	1.5	1.5	1.5	FT		

EQUATION 9.4 BIORETENTION LEVEL 1 DESIGN SURFACE AREA

DRAINAGE AREA=	4356	871	436	2614	2836	3668	3410	3902	3150	4876	SF	
Rv (COMPOSITE RUNOFF COEFFICIENT)=	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47		
T_c BMP REQUIRED=	345	69	34	207	241	276	278	310	241	379	CF	from VRRM (sht.27)
MIN SURFACE AREA =	230	46	115	217	92	1081	575	295	SF			
PROPOSED SURFACE AREA =	416	312	139	1021	180	394	182	300	300	300	SF	
INSIDE SOIL MEDIA =	416	312	139	1021	180	394	182	300	300	300	SF	
OUTSIDE SOIL MEDIA =	0	0	0	0	0	0	0	0	0	0	SF	0% OF TOTAL
TOTAL TREATMENT VOLUME PROVIDED	623	469	209	1532	270	591	287	450	450	450	CF	

PRETREATMENT CELL SIZING

MIN REQ'D PRETREATMENT CELL VOLUME	52	10	5	31	36	41	41	47	36	57	CF	15% OF PROVIDED
PRO'D PRETREATMENT CELL VOLUME	53	11	6	32	37	42	42	48	37	58	CF	

LEGEND

LOT LINES

LIMITS OF DISTURBANCE

LEGEND

DRAINAGE AREA

GREEN ROOF

BIORETENTION FACILITY

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DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

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COMMONWEALTH OF VIRGINIA CLAYTON C. YOCK Lic. No. 038790 PROFESSIONAL ENGINEER 06/30/22

BMP PLAN

WEST END

DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022

SCALE: 1"=30' C.I.= 2'

SHEET 17 OF 31

FILE No. RZ-1877

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Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 2.61

Maximum reduction required:	*20%*
The site's net increase in impervious cover (acres) is:	*0*
Post-Development TP Load Reduction for Site (lb/yr):	~~1.13~~ 1.78

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly? ✓
Total disturbed area entered? ✓

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				2.61	2.61
					2.61

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				2.61	2.61
Area Check	OK.	OK.	OK.	OK.	2.61

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

Runoff Coefficients (Rv)

	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 -- PRE-REDEVELOPMENT

Land Cover Summary-Pre		
Pre-ReDevelopment	**Listed**	**Adjusted[1]**
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.00	0.00
Weighted Rv(turf)	0.00	0.00
% Managed Turf	0%	0%
Impervious Cover (acres)	2.61	2.61
Rv(impervious)	0.95	0.95
% Impervious	100%	100%
Total Site Area (acres)	**2.61**	**2.61**
Site Rv	**0.95**	**0.95**

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	0.2066	0.2066
Pre-ReDevelopment Treatment Volume (cubic feet)	9,001	9,001
Pre-ReDevelopment TP Load (lb/yr)	**5.66**	**5.66**
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.17	2.17
Baseline TP Load (lb/yr) (**0.41 lbs/acre/yr** applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*1.07*

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary-Post (Final)	
Post ReDev. & New Impervious	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
Impervious Cover (acres)	2.61
Rv(impervious)	0.95
% Impervious	100%
Final Site Area (acres)	**2.61**
Final Post Dev Site Rv	**0.95**

Land Cover Summary-Post	
Post-ReDevelopment	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
ReDev. Impervious Cover (acres)	2.61
Rv(impervious)	0.95
% Impervious	100%
Total ReDev. Site Area (acres)	**2.61**
ReDev Site Rv	**0.95**

Land Cover Summary-Post	
Post-Development New Impervious	
New Impervious Cover (acres)	0.00
Rv(impervious)	--

Treatment Volume and Nutrient Load

Final Post-Development Treatment Volume (acre-ft)	0.2066	**Post-ReDevelopment Treatment Volume (acre-ft)**	0.2066	**Post-Development Treatment Volume (acre-ft)**	--
Final Post-Development Treatment Volume (cubic feet)	9,001	**Post-ReDevelopment Treatment Volume (cubic feet)**	9,001	**Post-Development Treatment Volume (cubic feet)**	--
Final Post-Development TP Load (lb/yr)	**5.66**	**Post-ReDevelopment Load (TP) (lb/yr)***	**5.66**	**Post-Development TP Load (lb/yr)**	**--**
Final Post-Development TP Load per acre (lb/acre/yr)	2.17	Post-ReDevelopment TP Load per acre (lb/acre/yr)	2.17		
		Max. Reduction Required (Below Pre-ReDevelopment Load)	**20%**		
		TP Load Reduction Required for Redeveloped Area (lb/yr)	**1.13**	**TP Load Reduction Required for New Impervious Area (lb/yr)**	**0**

[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 acreage of new impervious cover).

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

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr) ~~1.13~~ 1.78

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	40.46
Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	40.46

Drainage Area A

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)					0.00	0.00
Impervious Cover (acres)				2.61	2.61	0.95
				Total	2.61	

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 (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
1. Vegetated Roof (RR)													
1.b. Vegetated Roof #2 (Spec #5)	60		0.71		1,469	979	2,448	0		1.54	0.92	0.61	
6. Bioretention (RR)													
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80		0.42	0	1,159	290	1,448	50	0.00	0.91	0.82	0.09	

*0.47 AC BLOCK E GREEN ROOF ROUTED TO BIORETENTION
*0.37 LB/YR TP REMOVAL FROM GREEN ROOF ROUTED.

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)	2.61	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	1.13	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3) 9,001

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)	2,628	0	0	0	0	2,628
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	5.66	0.00	0.00	0.00	0.00	5.66
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.74	0.00	0.00	0.00	0.00	1.74
TP LOAD REMAINING (lb/yr)	3.92	0.00	0.00	0.00	0.00	3.92
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	12.58	0.00	0.00	0.00	0.00	12.58

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	5.66	
TP LOAD REDUCTION REQUIRED (lb/yr)	~~1.13~~	1.78 LB/YR
TP LOAD REDUCTION ACHIEVED (lb/yr)	~~1.74~~	+0.37 LB/YR= 2.11 LB/YR
TP LOAD REMAINING (lb/yr):	3.92	
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00	**

** TARGET TP REDUCTION EXCEEDED BY ~~0.61~~ LB/YEAR ** 0.33 LB/YEAR

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	40.46
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	12.58
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	27.88

BMP NARRATIVE

STORMWATER BEST MANAGEMENT PRACTICE FOR THE SUBJECT SITE IS BEING PROVIDED IN ACCORDANCE WITH VA DEQ AND CITY OF ALEXANDRIA STANDARDS BY USING THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) TO MEET THE WATER QUALITY CRITERIA

THE PHOSPHOROUS LOAD REDUCTION REQUIRED BY THE VRRM WILL BE SATISFIED WITH THE UTILIZATION OF TWO (2) STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITIES IN CONFORMANCE WITH THE STORMWATER BMP CLEARINGHOUSE WEBSITE. THE TWO (2) BMP FACILITIES PROPOSED ARE:

- VEGETATED ROOF (LEVEL 2)
- URBAN BIORETENTION - BIORETENTION FACILITY (LEVEL 2)

BASED ON THE SUBJECT SITE'S PROPOSED LAND COVER, AND THE OVERALL SITE ANALYSIS AS OUTLINED IN THE MASTER SWM PLAN (SWM#2021-00017) THE TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED TO BE REMOVED IS 1.78 LBS/YEAR. THE TOTAL PHOSPHOROUS LOAD REDUCTION ACHIEVED IS 2.11 LBS/YEAR, THEREFORE THE TOTAL PHOSPHOROUS LOAD REDUCTION IS EXCEEDED BY 0.33 LBS/YEAR.

BMP/SWM FACILITIES GEOGRAPHIC COORDINATES:

	DECIMAL DEGREE LATITUDE	DECIMAL DEGREES LONGITUDE
BIORETENTION #1	38.8168	-77.1323
BIORETENTION #2	38.8164	-77.1321
BIORETENTION #3	38.8170	-77.1323
BIORETENTION #4	38.8171	-77.1321
BIORETENTION #5	38.8168	-77.1322
BIORETENTION #6	38.8167	-77.1319
BIORETENTION #7	38.8165	-77.1321

NOTE:
ALL STORMWATER BMP FACILITIES AND COMPUTATIONS SHOWN ON THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY.

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DIRECTOR _____ DATE _____
CHAIRMAN, PLANNING COMMISSION _____ DATE _____
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REVISIONS | DESCRIPTION | DATE | No.

PLAN DATE 06-30-2022

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COMMONWEALTH OF VIRGINIA ENGINEER CLAYTON C. TOCK Lic. No. 038780 PROFESSIONAL 06/30/22

BMP COMPS & NARRATIVE
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
C.I.=N/A
SCALE: N/A

SHEET 18 OF 31
FILE No. RZ-1877

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Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 1.44

Maximum reduction required:	*20%*
The site's net increase in impervious cover (acres) is:	*0*
Post-Development TP Load Reduction for Site (lb/yr):	~~0.62~~ 0.88

Check:
BMP Design Specifications List: 2013 Draft Stds & Specs
Linear project? No
Land cover areas entered correctly? ✓
Total disturbed area entered? ✓

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed forest/open space					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				1.44	1.44
					1.44

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be					0.00
Impervious Cover (acres)				1.44	1.44
Area Check	**OK.**	**OK.**	**OK.**	**OK.**	1.44

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

Runoff Coefficients (Rv)

	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 – PRE-REDEVELOPMENT

Land Cover Summary-Pre		
Pre-ReDevelopment	**Listed**	**Adjusted[1]**
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	0.00	0.00
Weighted Rv(turf)	0.00	0.00
% Managed Turf	0%	0%
Impervious Cover (acres)	1.44	1.44
Rv(impervious)	0.95	0.95
% Impervious	100%	100%
Total Site Area (acres)	**1.44**	**1.44**
Site Rv	**0.95**	**0.95**

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	0.1140	0.1140
Pre-ReDevelopment Treatment Volume (cubic feet)	4,966	4,966
Pre-ReDevelopment TP Load (lb/yr)	**3.12**	**3.12**
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.17	2.17
Baseline TP Load (lb/yr) (**0.41 lbs/acre/yr** applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*0.59*

[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 acreage of new impervious cover).

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

LAND COVER SUMMARY – POST DEVELOPMENT

Land Cover Summary-Post (Final)	
Post ReDev. & New Impervious	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
Impervious Cover (acres)	1.44
Rv(impervious)	0.95
% Impervious	100%
Final Site Area (acres)	**1.44**
Final Post Dev Site Rv	**0.95**

Land Cover Summary-Post	
Post-ReDevelopment	
Forest/Open Space Cover (acres)	0.00
Weighted Rv(forest)	0.00
% Forest	0%
Managed Turf Cover (acres)	0.00
Weighted Rv (turf)	0.00
% Managed Turf	0%
ReDev. Impervious Cover (acres)	1.44
Rv(impervious)	0.95
% Impervious	100%
Total ReDev. Site Area (acres)	**1.44**
ReDev Site Rv	**0.95**

Land Cover Summary-Post	
Post-Development New Impervious	
New Impervious Cover (acres)	0.00
Rv(impervious)	--

Treatment Volume and Nutrient Load

Final Post-Development Treatment Volume (acre-ft)	0.1140	**Post-ReDevelopment Treatment Volume (acre-ft)** 0.1140	**Post-Development Treatment Volume (acre-ft)** --
Final Post-Development Treatment Volume (cubic feet)	4,966	**Post-ReDevelopment Treatment Volume (cubic feet)** 4,966	**Post-Development Treatment Volume (cubic feet)** --
Final Post-Development TP Load (lb/yr)	**3.12**	**Post-ReDevelopment Load (TP) (lb/yr)*** **3.12**	**Post-Development TP Load (lb/yr)** --
Final Post-Development TP Load per acre (lb/acre/yr)	2.17	Post-ReDevelopment TP Load per acre (lb/acre/yr) 2.17	
		Max. Reduction Required (Below Pre-ReDevelopment Load) **20%**	
		TP Load Reduction Required for Redeveloped Area (lb/yr) **0.62**	**TP Load Reduction Required for New Impervious Area (lb/yr)** **0**

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr) ~~0.62~~ 0.88

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	22.32	Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	22.32

Drainage Area A

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)					0.00	0.00
Impervious Cover (acres)				1.44	1.44	0.95
				Total	1.44	

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 (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed
1. Vegetated Roof (RR)													
1.b. Vegetated Roof #2 (Spec #5)	60		0.39		807	538	1,345	0		0.84	0.51	0.34	
6. Bioretention (RR)													
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80		0.27	0	745	186	931	50	0.00	0.58	0.53	0.06	

*0.11 AC BLOCK G GREEN ROOF ROUTED TO BIORETENTION
*0.09 LB/YR TP REMOVAL FROM GREEN ROOF ROUTED.

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)	1.44	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	0.66	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	0.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	0.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3) 4,966

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)	1,552	0	0	0	0	1,552
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	3.12	0.00	0.00	0.00	0.00	3.12
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.03	0.00	0.00	0.00	0.00	1.03
TP LOAD REMAINING (lb/yr)	2.09	0.00	0.00	0.00	0.00	2.09
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	7.47	0.00	0.00	0.00	0.00	7.47

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	3.12	
TP LOAD REDUCTION REQUIRED (lb/yr)	~~0.62~~	0.88 LB/YR
TP LOAD REDUCTION ACHIEVED (lb/yr)	~~1.03~~	+0.09 LB/YR= 1.12 LB/YR
TP LOAD REMAINING (lb/yr):	2.09	
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00	**

** TARGET TP REDUCTION EXCEEDED BY ~~0.41~~ LB/YEAR ** 0.24 LB/YEAR

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	22.32
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	7.47
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	14.85

BMP NARRATIVE

STORMWATER BEST MANAGEMENT PRACTICE FOR THE SUBJECT SITE IS BEING PROVIDED IN ACCORDANCE WITH VA DEQ AND CITY OF ALEXANDRIA STANDARDS BY USING THE VIRGINIA RUNOFF REDUCTION METHOD (VRRM) TO MEET THE WATER QUALITY CRITERIA

THE PHOSPHORUS LOAD REDUCTION REQUIRED BY THE VRRM WILL BE SATISFIED WITH THE UTILIZATION OF TWO (2) STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITIES IN CONFORMANCE WITH THE STORMWATER BMP CLEARINGHOUSE WEBSITE. THE TWO (2) BMP FACILITIES PROPOSED ARE:

- VEGETATED ROOF (LEVEL 2)
- URBAN BIORETENTION - BIORETENTION FACILITY (LEVEL 2)

BASED ON THE SUBJECT SITE'S PROPOSED LAND COVER, AND THE OVERALL SITE ANALYSIS AS OUTLINED IN THE MASTER SWM PLAN (SWM#2021-00017) THE TOTAL PHOSPHOROUS LOAD REDUCTION REQUIRED TO BE REMOVED IS 0.88 LBS/YEAR. THE TOTAL PHOSPHOROUS LOAD REDUCTION ACHIEVED IS 1.12 LBS/YEAR, THEREFORE THE TOTAL PHOSPHOROUS LOAD REDUCTION IS EXCEEDED BY 0.24 LBS/YEAR.

BMP/SWM FACILITIES GEOGRAPHIC COORDINATES:

	DECIMAL DEGREE LATITUDE	DECIMAL DEGREES LONGITUDE
BIORETENTION #8	38.8172	-77.1309
BIORETENTION #9	38.8171	-77.1307
BIORETENTION #10	38.8170	-77.1308

NOTE:
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COMMONWEALTH OF VIRGINIA CLAYTON C. TOCK Lic. No. 036790 ENGINEER PROFESSIONAL 06/30/22

BMP COMPS & NARRATIVE
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
C.I.= N/A
SCALE: N/A

SHEET 19 OF 31
FILE No. RZ-1877

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PROPOSED BMP COMPUTATIONS FOR BLOCK E

Project Description

Development or Redevelopment

Drainage Area	Impervious	Pervious	Total
Site Area	2.61 ACRES	0 ACRES	2.61 ACRES
On-Site Treated	1.13 ACRES	0.00 ACRES	1.13 ACRES
Off-Site Treated	0 ACRES	0 ACRES	0 ACRES
Total Treated	1.13 ACRES		
Any On-Site Disconnected by a Vegetated Buffer (25 ft)	0 ACRES		
Total On-Site Treated or Disconnected			1.13 ACRES

Water Treatment on site

BMP Type	*Area treated by BMP (acres)*	*Impervious area treated by BMP (acres)*	*BMP efficiency (%)*
BIORETENTION	0.42 ACRES	0.42 ACRES	50 %
GREEN ROOF	0.71 ACRES	0.71 ACRES	60 %

Miscellaneous

Total WQV treated: **yes** **no**
Detention on site: **yes** **no**

Project is within which watershed? HOLMES RUN WATERSHED

Project discharges to which body of water? HOLMES RUN

PROPOSED WQV TREATMENT:

TOTAL SITE IMPERVIOUS AREA = 2.61 AC OR 113,691.6 SF

SITE WQV REQUIRED = 1.78 TP REMOVAL PER YEAR REQUIRED (PER MASTER SWM PLAN #2021-00017) = 3,155 CF (BIORETENTION LEVEL 2)

SITE WQV PROPOSED = 2,448 CF + 1,448 CF + 648 CF = 4,544 CF (SEE SHEET 18 FOR TOTAL BMP TREATMENT VOLUME VALUES)

NOTE:
ALL STORMWATER BMP FACILITIES AND COMPUTATIONS SHOWN ON THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY.

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Lic. No. 038790
ENGINEER
PROFESSIONAL
06/30/22

WQVD BMP DATA BLOCKS

WEST END
DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022
C.I.= N/A
SCALE: N/A

SHEET 20 OF 31

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PROPOSED BMP COMPUTATIONS FOR BLOCK G

Project Description

Development or Redevelopment

Drainage Area	Impervious	Pervious	Total
Site Area	1.44 ACRES	0 ACRES	1.44 ACRES
On-Site Treated	0.66 ACRES	0.00 ACRES	0.66 ACRES
Off-Site Treated	0 ACRES	0 ACRES	0 ACRES
Total Treated	0.66 ACRES		
Any On-Site Disconnected by a Vegetated Buffer (25 ft)	0 ACRES		
Total On-Site Treated or Disconnected			0.66 ACRES

Water Treatment on site

BMP Type	*Area treated by BMP (acres)*	*Impervious area treated by BMP (acres)*	*BMP efficiency (%)*
BIORETENTION	0.27 ACRES	0.27 ACRES	50 %
GREEN ROOF	0.39 ACRES	0.39 ACRES	60 %

Miscellaneous

Total WQV treated: yes no
Detention on site: yes no

Project is within which watershed? HOLMES RUN WATERSHED

Project discharges to which body of water? HOLMES RUN

PROPOSED WQV TREATMENT:

TOTAL SITE IMPERVIOUS AREA = 1.44 AC OR 62,726 SF

SITE WQV REQUIRED = 0.88 TP REMOVAL PER YEAR REQUIRED (PER MASTER SWM PLAN #2021-00017) = 1,552 CF (BIORETENTION LEVEL 2)

SITE WQV PROPOSED = 1,345 CF + 931 CF + 152 CF = 2,428 CF (SEE SHEET 19 FOR TOTAL BMP TREATMENT VOLUME VALUES)

NOTE:
ALL STORMWATER BMP FACILITIES AND COMPUTATIONS SHOWN ON THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY.

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CLAYTON C. TOCK
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PROFESSIONAL ENGINEER
06/30/2022

WQVD BMP DATA BLOCKS

WEST END
DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022
C.I.= N/A
SCALE: N/A

SHEET 21 OF 31

FILE No.
RZ-1877

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OFFSITE UNDETAINED DRAINAGE AREA TO OUTFALL POINT "1" DA = 0.86 AC CN= 86 TC = 15 MINS

OUTFALL POINT #1

STUDY POINT "1"

TIME OF CONCENTRATION TRAVEL PATH

HENRY G. SHIRLEY MEMORIAL HIGHWAY

STUDY POINT "1": ONSITE DA TO VAULT 4 DA = 8.06 AC CN= 98 TC = 10 MINS

OFFSITE UNDETAINED DRAINAGE AREA TO STUDY POINT "1" DA = 6.45AC CN= 95 TC = 15 MINS

STUDY POINT "1": ONSITE DA TO VAULT 2 DA = 17.46 AC CN= 95 TC = 10 MINS

OUTFALL POINT #2

FEMA ZONE FLOODPLAIN BOUNDARY

OFFSITE UNDETAINED DRAINAGE AREA TO OUTFALL POINT "2" DA = 5.36 AC CN= 92 TC = 10 MINS

TIME OF CONCENTRATION TRAVEL PATH

STUDY POINT "2"

STUDY POINT "2": ONSITE DA TO VAULT 3 DA = 20.73 AC CN= 95 TC = 10 MINS

OFFSITE UNDETAINED DRAINAGE AREA TO STUDY POINT "2" DA = 11.21AC CN= 95 TC = 10 MINS

DUKE STREET

SOUTH WALKER STREET

SCALE: 1"=125'
0 62.5' 125' 250'

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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.

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
06-30-2022

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4200 DEVICE TECHNOLOGY CT.
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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/30/22

OUTFALL ANALYSIS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"= 125' C.I.= 2' DATE: JUNE, 2022

SHEET 22 OF 31

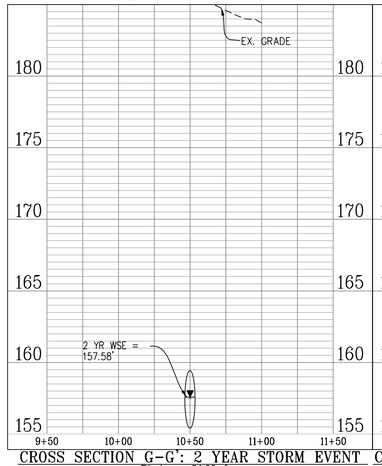
FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13079-23-OUTFALL ANALYSIS.dwg, [ANALYSIS] June 30, 2022 - 1:37pm owolio

CROSS SECTION A-A': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 7.0 ft²
Wetted Perimeter: 6.6 ft
Hydraulic Radius: 12.6 in
Top Width: 3.98 ft
Normal Depth: 26.1 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 6.41 ft/s
Velocity Head: 0.64 ft
Specific Energy: 2.82 ft
Froude Number: 0.853
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.003 ft/ft
Flow Type: Subcritical

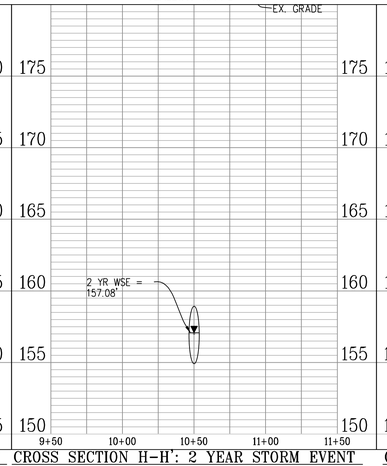
V2ALLOW=15 FPS



CROSS SECTION B-B': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 7.0 ft²
Wetted Perimeter: 6.6 ft
Hydraulic Radius: 12.6 in
Top Width: 3.98 ft
Normal Depth: 26.1 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 6.41 ft/s
Velocity Head: 0.64 ft
Specific Energy: 2.82 ft
Froude Number: 0.853
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.003 ft/ft
Flow Type: Subcritical

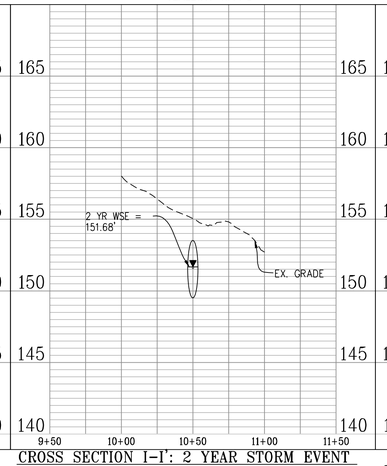
V2ALLOW=15 FPS



CROSS SECTION C-C': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 7.0 ft²
Wetted Perimeter: 6.6 ft
Hydraulic Radius: 12.6 in
Top Width: 3.98 ft
Normal Depth: 26.1 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 6.41 ft/s
Velocity Head: 0.64 ft
Specific Energy: 2.82 ft
Froude Number: 0.853
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.003 ft/ft
Flow Type: Subcritical

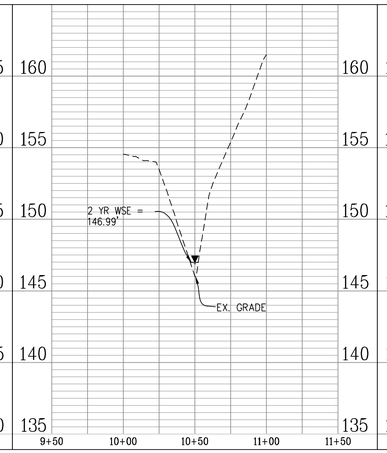
V2ALLOW=15 FPS



CROSS SECTION D-D': 2 YEAR STORM EVENT

Discharge: 52.77 cfs
Flow Area: 2.5 ft²
Wetted Perimeter: 5.5 ft
Hydraulic Radius: 5.5 in
Top Width: 5.07 ft
Normal Depth: 11.8 in
Critical Depth: 23.0 in
Critical Slope: 0.003 ft/ft
Velocity: 21.26 ft/s*
Velocity Head: 7.02 ft
Specific Energy: 8.00 ft
Froude Number: 5.355
Flow Type: Supercritical

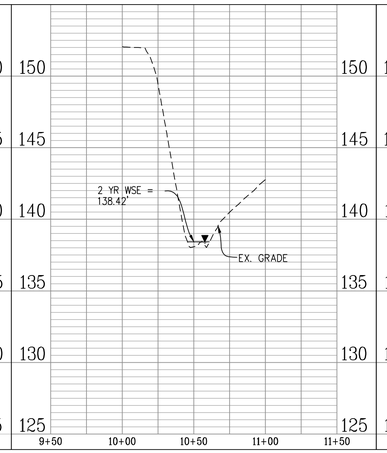
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



CROSS SECTION E-E': 2 YEAR STORM EVENT

Discharge: 52.77 cfs
Flow Area: 3.3 ft²
Wetted Perimeter: 14.5 ft
Hydraulic Radius: 2.7 in
Top Width: 14.30 ft
Normal Depth: 4.8 in
Critical Depth: 10.9 in
Critical Slope: 0.003 ft/ft
Velocity: 16.10 ft/s*
Velocity Head: 4.03 ft
Specific Energy: 4.42 ft
Froude Number: 5.927
Flow Type: Supercritical

*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



CROSS SECTION F-F': 2 YEAR STORM EVENT

Discharge: 52.77 cfs
Flow Area: 3.1 ft²
Wetted Perimeter: 7.9 ft
Hydraulic Radius: 4.8 in
Top Width: 7.71 ft
Normal Depth: 9.7 in
Critical Depth: 18.0 in
Critical Slope: 0.003 ft/ft
Velocity: 16.86 ft/s*
Velocity Head: 4.42 ft
Specific Energy: 5.23 ft
Froude Number: 4.665
Flow Type: Supercritical

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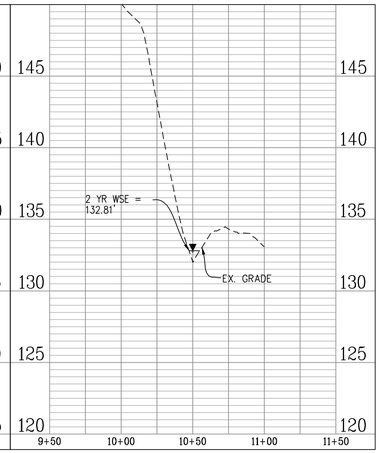
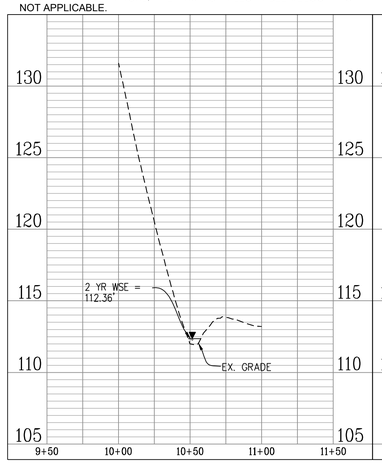


CROSS SECTION G-G': 2 YEAR STORM EVENT

Discharge: 54.39 cfs
Flow Area: 2.7 ft²
Wetted Perimeter: 8.8 ft
Hydraulic Radius: 3.7 in
Top Width: 8.69 ft
Normal Depth: 5.1 in
Critical Depth: 13.8 in
Critical Slope: 0.003 ft/ft
Velocity: 20.25 ft/s*
Velocity Head: 6.37 ft
Specific Energy: 6.80 ft
Froude Number: 6.421
Flow Type: Supercritical

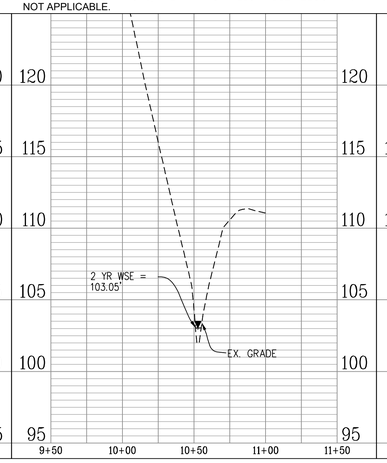
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



CROSS SECTION H-H': 2 YEAR STORM EVENT

Discharge: 54.39 cfs
Flow Area: 1.7 ft²
Wetted Perimeter: 3.9 ft
Hydraulic Radius: 5.3 in
Top Width: 3.16 ft
Normal Depth: 12.9 in
Critical Depth: 29.2 in
Critical Slope: 0.003 ft/ft
Velocity: 31.88 ft/s*
Velocity Head: 15.80 ft
Specific Energy: 16.88 ft
Froude Number: 7.653
Flow Type: Supercritical

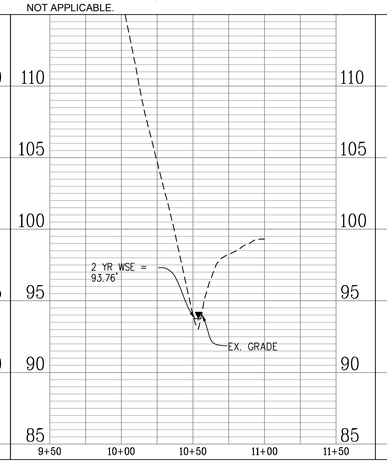
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



CROSS SECTION I-I': 2 YEAR STORM EVENT

Discharge: 54.39 cfs
Flow Area: 1.9 ft²
Wetted Perimeter: 5.0 ft
Hydraulic Radius: 4.7 in
Top Width: 4.69 ft
Normal Depth: 8.6 in
Critical Depth: 21.6 in
Critical Slope: 0.003 ft/ft
Velocity: 28.15 ft/s*
Velocity Head: 12.32 ft
Specific Energy: 13.03 ft
Froude Number: 7.737
Flow Type: Supercritical

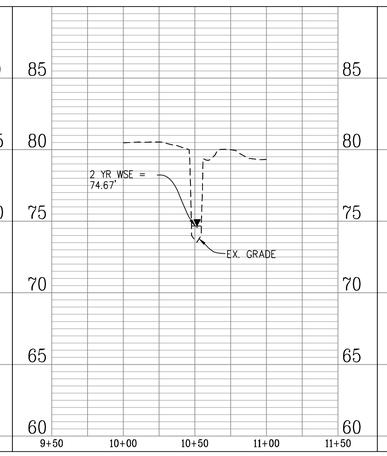
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



CROSS SECTION J-J': 2 YEAR STORM EVENT

Discharge: 60.84 cfs
Flow Area: 6.1 ft²
Wetted Perimeter: 8.1 ft
Hydraulic Radius: 9.0 in
Top Width: 7.00 ft
Normal Depth: 13.6 in
Critical Depth: 19.1 in
Critical Slope: 0.036 ft/ft
Velocity: 9.96 ft/s
Velocity Head: 1.54 ft
Specific Energy: 2.67 ft
Froude Number: 1.880
Flow Type: Supercritical

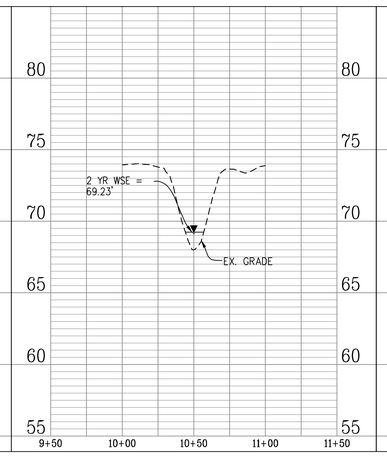
V2ALLOW= 13 FPS



CROSS SECTION K-K': 2 YEAR STORM EVENT

Discharge: 60.84 cfs
Flow Area: 6.8 ft²
Wetted Perimeter: 11.0 ft
Hydraulic Radius: 7.4 in
Top Width: 10.69 ft
Normal Depth: 14.7 in
Critical Depth: 19.5 in
Critical Slope: 0.032 ft/ft
Velocity: 9.01 ft/s
Velocity Head: 1.26 ft
Specific Energy: 2.49 ft
Froude Number: 1.999
Flow Type: Supercritical

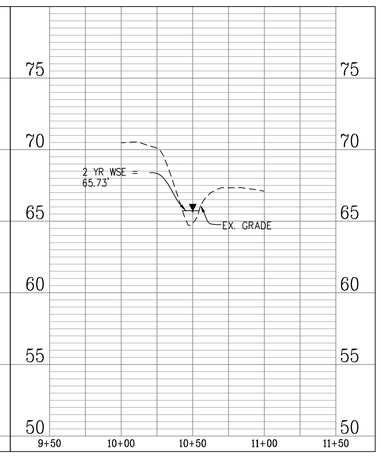
V2ALLOW= 13 FPS



CROSS SECTION L-L': 2 YEAR STORM EVENT

Discharge: 60.84 cfs
Flow Area: 7.5 ft²
Wetted Perimeter: 12.8 ft
Hydraulic Radius: 7.1 in
Top Width: 12.57 ft
Normal Depth: 12.2 in
Critical Depth: 16.2 in
Critical Slope: 0.033 ft/ft
Velocity: 8.06 ft/s
Velocity Head: 1.01 ft
Specific Energy: 2.03 ft
Froude Number: 1.835
Flow Type: Supercritical

V2ALLOW= 13 FPS



APPROVED
SPECIAL USE PERMIT NO. _____
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. _____

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE 06-30-2022

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CLAYTON C. TOCK
Lic. No. 036780
PROFESSIONAL ENGINEER
06/30/22

OUTFALL ANALYSIS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
SCALE: H:1"=40'; V:1"=5' C.I.=N.A.

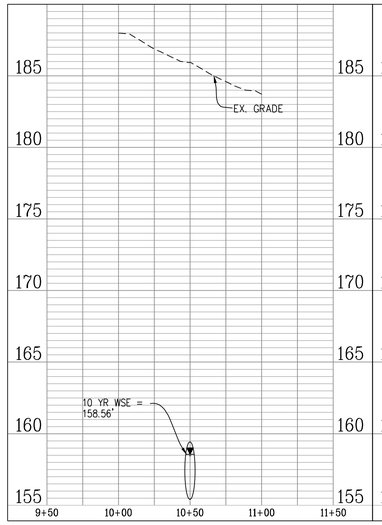
SHEET 23 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\3079-23-OUTFALL ANALYSIS.dwg [2 years] June 30, 2022 - 1:37pm awalo

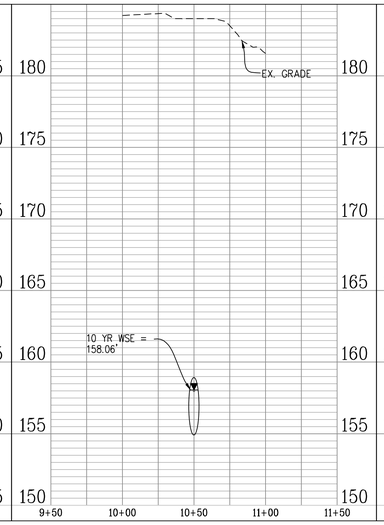
CROSS SECTION A-A': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 10.6 ft²
Wetted Perimeter: 8.7 ft
Hydraulic Radius: 14.6 in
Top Width: 3.26 ft
Normal Depth: 37.9 in
Critical Depth: 31.5 in
Critical Slope: 0.016 ft/ft
Velocity: 7.05 ft/s
Velocity Head: 0.77 ft
Specific Energy: 3.93 ft
Froude Number: 0.689
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.009 ft/ft
Flow Type: Subcritical



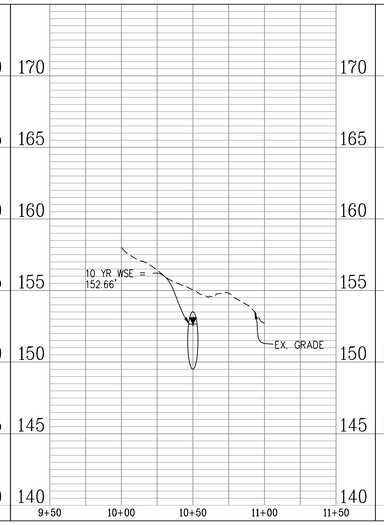
CROSS SECTION B-B': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 10.6 ft²
Wetted Perimeter: 8.7 ft
Hydraulic Radius: 14.6 in
Top Width: 3.26 ft
Normal Depth: 37.9 in
Critical Depth: 31.5 in
Critical Slope: 0.016 ft/ft
Velocity: 7.05 ft/s
Velocity Head: 0.77 ft
Specific Energy: 3.93 ft
Froude Number: 0.689
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.009 ft/ft
Flow Type: Subcritical



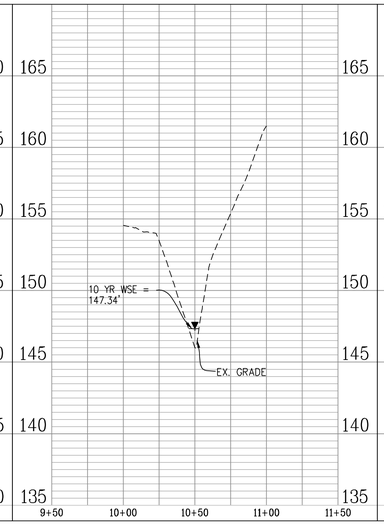
CROSS SECTION C-C': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 10.6 ft²
Wetted Perimeter: 8.7 ft
Hydraulic Radius: 14.6 in
Top Width: 3.26 ft
Normal Depth: 37.9 in
Critical Depth: 31.5 in
Critical Slope: 0.016 ft/ft
Velocity: 7.05 ft/s
Velocity Head: 0.77 ft
Specific Energy: 3.93 ft
Froude Number: 0.689
Maximum Discharge: 83.69 cfs
Discharge Full: 77.80 cfs
Slope Full: 0.009 ft/ft
Flow Type: Subcritical



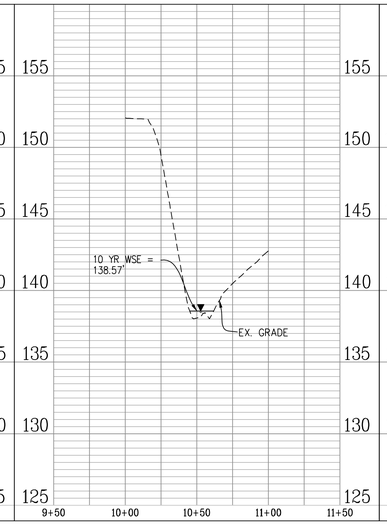
CROSS SECTION D-D': 10 YEAR STORM EVENT

Discharge: 118.46 cfs
Flow Area: 4.6 ft²
Wetted Perimeter: 7.4 ft
Hydraulic Radius: 7.4 in
Top Width: 6.86 ft
Normal Depth: 15.9 in
Critical Depth: 31.8 in
Critical Slope: 0.002 ft/ft
Velocity: 26.03 ft/s
Velocity Head: 10.53 ft
Specific Energy: 11.85 ft
Froude Number: 5.635
Flow Type: Supercritical



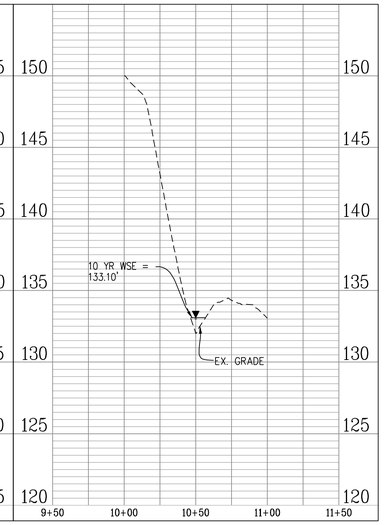
CROSS SECTION E-E': 10 YEAR STORM EVENT

Discharge: 118.46 cfs
Flow Area: 5.5 ft²
Wetted Perimeter: 15.6 ft
Hydraulic Radius: 4.2 in
Top Width: 15.42 ft
Normal Depth: 6.5 in
Critical Depth: 16.7 in
Critical Slope: 0.003 ft/ft
Velocity: 21.56 ft/s
Velocity Head: 7.22 ft
Specific Energy: 7.77 ft
Froude Number: 6.366
Flow Type: Supercritical



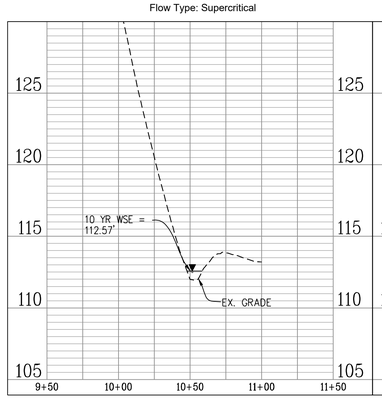
CROSS SECTION F-F': 10 YEAR STORM EVENT

Discharge: 118.46 cfs
Flow Area: 5.7 ft²
Wetted Perimeter: 10.7 ft
Hydraulic Radius: 6.4 in
Top Width: 10.44 ft
Normal Depth: 13.2 in
Critical Depth: 26.0 in
Critical Slope: 0.003 ft/ft
Velocity: 20.64 ft/s
Velocity Head: 6.62 ft
Specific Energy: 7.72 ft
Froude Number: 4.908
Flow Type: Supercritical



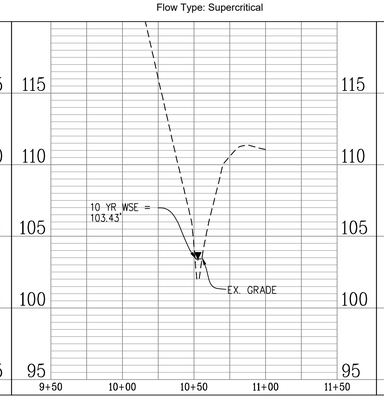
CROSS SECTION G-G': 10 YEAR STORM EVENT

Discharge: 121.50 cfs
Flow Area: 4.7 ft²
Wetted Perimeter: 10.5 ft
Hydraulic Radius: 5.3 in
Top Width: 10.39 ft
Normal Depth: 7.6 in
Critical Depth: 20.3 in
Critical Slope: 0.003 ft/ft
Velocity: 25.97 ft/s
Velocity Head: 10.48 ft
Specific Energy: 11.11 ft
Froude Number: 6.821
Flow Type: Supercritical



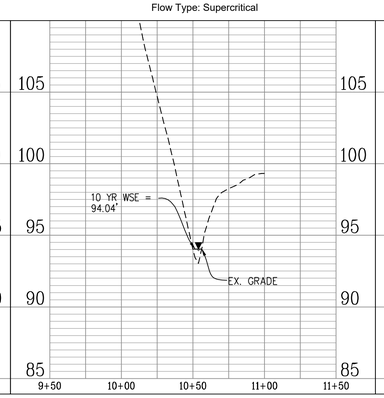
CROSS SECTION H-H': 10 YEAR STORM EVENT

Discharge: 121.50 cfs
Flow Area: 3.1 ft²
Wetted Perimeter: 5.2 ft
Hydraulic Radius: 7.2 in
Top Width: 4.27 ft
Normal Depth: 17.5 in
Critical Depth: 40.4 in
Critical Slope: 0.003 ft/ft
Velocity: 38.98 ft/s
Velocity Head: 23.61 ft
Specific Energy: 25.07 ft
Froude Number: 8.047
Flow Type: Supercritical



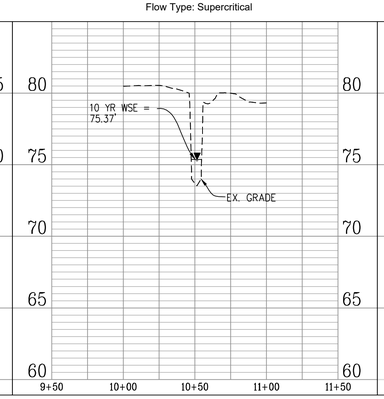
CROSS SECTION I-I': 10 YEAR STORM EVENT

Discharge: 121.50 cfs
Flow Area: 3.5 ft²
Wetted Perimeter: 6.3 ft
Hydraulic Radius: 6.5 in
Top Width: 5.96 ft
Normal Depth: 12.0 in
Critical Depth: 30.6 in
Critical Slope: 0.002 ft/ft
Velocity: 35.18 ft/s
Velocity Head: 19.23 ft
Specific Energy: 20.23 ft
Froude Number: 8.145
Flow Type: Supercritical



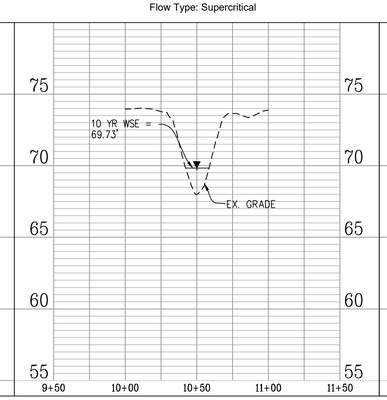
CROSS SECTION J-J': 10 YEAR STORM EVENT

Discharge: 148.84 cfs
Flow Area: 11.2 ft²
Wetted Perimeter: 9.6 ft
Hydraulic Radius: 14.0 in
Top Width: 7.37 ft
Normal Depth: 22.0 in
Critical Depth: 32.1 in
Critical Slope: 0.037 ft/ft
Velocity: 13.33 ft/s
Velocity Head: 2.76 ft
Specific Energy: 4.60 ft
Froude Number: 1.910
Flow Type: Supercritical



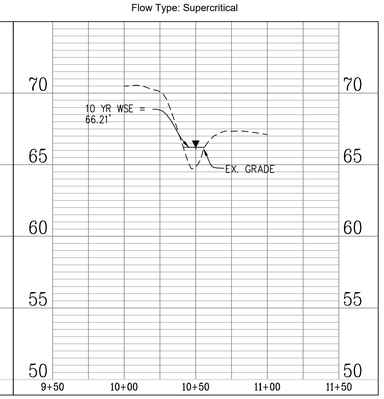
CROSS SECTION K-K': 10 YEAR STORM EVENT

Discharge: 148.84 cfs
Flow Area: 13.0 ft²
Wetted Perimeter: 14.8 ft
Hydraulic Radius: 10.6 in
Top Width: 14.37 ft
Normal Depth: 20.7 in
Critical Depth: 28.3 in
Critical Slope: 0.029 ft/ft
Velocity: 11.44 ft/s
Velocity Head: 2.03 ft
Specific Energy: 3.76 ft
Froude Number: 2.120
Flow Type: Supercritical



CROSS SECTION L-L': 10 YEAR STORM EVENT

Discharge: 148.84 cfs
Flow Area: 14.5 ft²
Wetted Perimeter: 17.0 ft
Hydraulic Radius: 10.2 in
Top Width: 16.67 ft
Normal Depth: 17.9 in
Critical Depth: 24.2 in
Critical Slope: 0.029 ft/ft
Velocity: 10.29 ft/s
Velocity Head: 1.64 ft
Specific Energy: 3.14 ft
Froude Number: 1.947
Flow Type: Supercritical



APPROVED
SPECIAL USE PERMIT NO. _____

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. _____

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
06-30-2022

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Planners•Engineers•Landscape Architects•Land Surveyors

COMMONWEALTH OF VIRGINIA
REGISTERED
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL
06/30/22

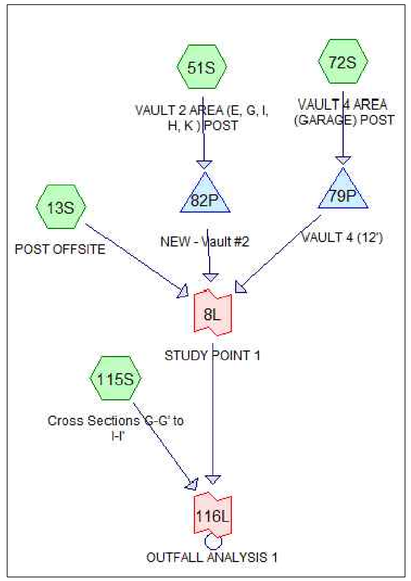
OUTFALL ANALYSIS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE 2022
SCALE: H:1"=40'; V:1"=5' C.I.= N.A.

SHEET 24 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13079-23-OUTFALL ANALYSIS.dwg [10 years] June 30, 2022 - 1:38pm owolo

POST-DEVELOPMENT NODE SUMMARIES FOR OUTFALL POINT #1



POST-DEVELOPMENT 2-YEAR OUTFALL POINT #1

Inflow Area = 1,429,944 sf , 41.25% Impervious , Inflow Depth > 2.53" for 2-yr event
Inflow = 54.39 cfs @ 12.20 hrs , Volume= 301,425 cf
Primary = 54.39 cfs @ 12.20 hrs , Volume= 301,425 cf , Atten= 0%, Lag= 0.0 min

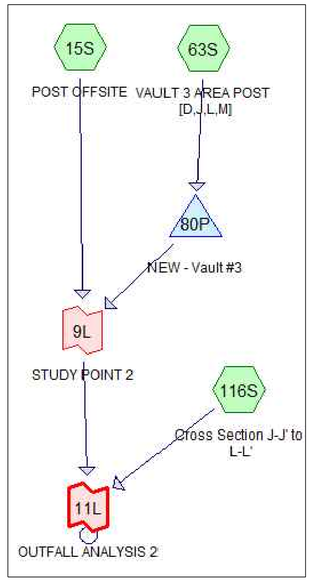
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

POST-DEVELOPMENT 10-YEAR OUTFALL POINT #1

Inflow Area = 1,429,944 sf , 41.25% Impervious , Inflow Depth > 4.37" for 10-yr event
Inflow = 121.50 cfs @ 12.15 hrs , Volume= 520,368 cf
Primary = 121.50 cfs @ 12.15 hrs , Volume= 520,368 cf , Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

POST-DEVELOPMENT NODE SUMMARIES FOR OUTFALL POINT #2



POST-DEVELOPMENT 2-YEAR OUTFALL POINT #2

Inflow Area = 1,624,676 sf , 34.88% Impervious , Inflow Depth > 2.46" for 2-yr event
Inflow = 60.84 cfs @ 12.09 hrs , Volume= 332,597 cf
Primary = 60.84 cfs @ 12.09 hrs , Volume= 332,597 cf , Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

POST-DEVELOPMENT 10-YEAR OUTFALL POINT #2

Inflow Area = 1,624,676 sf , 34.88% Impervious , Inflow Depth > 4.30" for 10-yr event
Inflow = 148.84 cfs @ 12.13 hrs , Volume= 582,638 cf
Primary = 148.84 cfs @ 12.13 hrs , Volume= 582,638 cf , Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

OUTFALL ANALYSIS COMPUTATION SUMMARY

CROSS SECTIONS	SWALE TYPE DESCRIPTION:	AVG. CHANNEL SLOPE (%):	DRAINAGE AREA (AC):	CN FACTOR:	Tc (MIN):	ROUGHNESS COEFFICIENT:	2 YEAR FLOW (CFS):	2 YEAR VELOCITY (FPS):	2 YEAR NORMAL DEPTH (FT):	10 YEAR FLOW (CFS):	10 YEAR VELOCITY (FPS):	10 YEAR NORMAL DEPTH (FT):	CHANNEL LINING:
D-D'	EXISTING MANMADE CHANNEL-OFFSITE	0.10%	31.97	96	10*	0.013	52.77	21.26	0.98	118.46	26.03	1.33	EX. CONCRETE LINING
E-E'	EXISTING MANMADE CHANNEL-OFFSITE	0.14%	31.97	96	10*	0.013	52.77	16.10	0.40	118.46	21.56	0.54	EX. CONCRETE LINING
F-F'	EXISTING MANMADE CHANNEL-OFFSITE	0.08%	31.97	96	10*	0.013	52.77	16.86	0.81	118.46	20.64	1.10	EX. CONCRETE LINING
G-G'	EXISTING MANMADE CHANNEL-OFFSITE	0.15%	32.83	86	15*	0.013	54.39	20.25	0.43	121.50	25.97	0.63	EX. CONCRETE LINING
H-H'	EXISTING MANMADE CHANNEL-OFFSITE	0.23%	32.83	86	15*	0.013	54.39	31.88	1.08	121.50	38.98	1.46	EX. CONCRETE LINING
I-I'	EXISTING MANMADE CHANNEL-OFFSITE	0.21%	32.83	86	15*	0.013	54.39	28.15	0.72	121.50	35.18	1.00	EX. CONCRETE LINING
J-J'	EXISTING MANMADE CHANNEL-OFFSITE	0.13%	37.30	92	10*	0.045	60.84	9.96	1.13	148.84	13.33	1.83	EX. RIP RAP LINING
K-K'	EXISTING MANMADE CHANNEL-OFFSITE	0.14%	37.30	92	10*	0.045	60.84	9.01	1.23	148.84	11.44	1.73	EX. RIP RAP LINING
L-L'	EXISTING MANMADE CHANNEL-OFFSITE	0.12%	37.30	92	10*	0.045	60.84	8.06	1.02	148.84	10.29	1.49	EX. RIP RAP LINING

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PROFESSIONAL ENGINEER
06/30/22

OUTFALL ANALYSIS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
SCALE: N.A. C.I.= N.A. DATE: JUNE, 2022

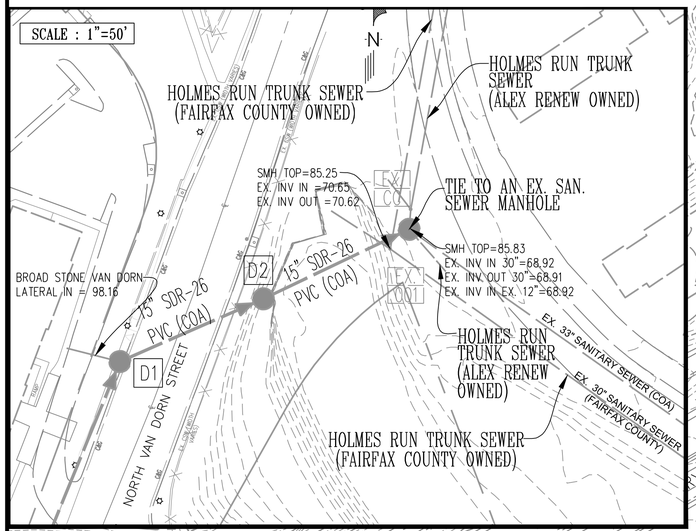
SHEET 25 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\OBS\landmarkmall\DSUP\block-e&g\preliminary site plan\13079-23-OUTFALL ANALYSIS.dwg [NARR] June 30, 2022 - 2:14pm yelosri

NOTES

1. RESIDENTIAL AREA SANITARY FLOW IS COMPUTED AT THE RATE OF 300 GPD PER UNIT
2. EACH RESIDENTIAL UNIT IS BASED ON A 1,000 G.S.F. FLOOR PLATE
3. RETAIL AND OFFICE AREA SANITARY FLOW IS COMPUTED AT THE RATE OF 200 GPD PER 1,000 S.F. OF NET FLOOR AREA
4. ALL PIPE DATA HAS BEEN OBTAINED BY FIELD SURVEY PERFORMED BY URBAN, LTD.
5. CONTRACTOR SHALL ENSURE ALL DISCHARGES ARE IN ACCORDANCE WITH CITY OF ALEXANDRIA CODE TITLE 5, CHAPTER 6, ARTICLE B.
6. 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.
7. THE APPLICANT SHALL PROVIDE A PRE- AND POST-CCTV INSPECTION OF MANHOLE CONNECTION BY A NASSCO MACP CERTIFIED TECHNICIAN.
8. INSUFFICIENT PIPE CAPACITIES OF EXISTING SANITARY SEWER ARE SHOWN ON SHEET 13. THOSE PIPES ARE SHOWN TO BE REMOVED AND REPLACED WITH APPROPRIATELY SIZED PIPES ON SHEET 13.
9. HGL ANALYSIS WILL BE PROVIDED WITH THE FINAL INFRASTRUCTURE SITE PLAN.
10. THE PROJECT SITE IS LOCATED WITHIN THE HOLMES RUN TRUNK SEWER SHED. THE PROJECT SITE IS NOT LOCATED IN THE COMBINED SEWER SYSTEM AREA.



HENRY G. SHIRLEY MEMORIAL HIGHWAY
BLOCK E RESIDENTIAL
BLOCK G
BLOCK L
BLOCK K
BLOCK J
BLOCK H
BLOCK D
BLOCK C
BLOCK B
BLOCK A
6" SAN. LAT FROM BLOCK A
6" SAN. LAT FROM BLOCK B
6" SAN. LAT FROM BLOCK C
6" SAN. LAT FROM BLOCK C (GARAGE)
6" SAN. LAT FROM BLOCK D
6" SAN. LAT FROM BLOCK H
6" SAN. LAT FROM BLOCK J
6" SAN. LAT FROM BLOCK K
6" SAN. LAT FROM BLOCK L
6" SAN. LAT FROM BLOCK M
8" SAN. LAT FROM BLOCK C
8" SAN. LAT FROM BLOCK C
8" SAN. LAT FROM BLOCK H
8" SAN. LAT FROM BLOCK J
8" SAN. LAT FROM BLOCK L
6" SAN LAT FROM BLOCK M
6" SAN LAT FROM BLOCK K
6" SAN LAT FROM BLOCK H
6" SAN LAT FROM BLOCK G
6" SAN LAT FROM BLOCK D
6" SAN LAT FROM BLOCK C
6" SAN LAT FROM BLOCK B
6" SAN LAT FROM BLOCK A
10" SDR-26 PVC (COA)
12" SDR-26 PVC (COA)
15" SDR-26 PVC (COA)
8" SDR-26 PVC (COA)
8" SDR-26 PVC (COA)
8

PROPOSED SANITARY SEWER FLOW COMPUTATIONS

Project: Landmark Mall

	From Point	To Point	RESIDENTIAL 300 GPD/UNIT	OFFICE/RETAIL 200 GDP/ 1000 SF	SFA/SFD DWELLINGS 350 GPD/UNIT	HOTEL 130 GPD/UNIT	PEAK FACTOR	INCR q MGD	FLOW q MGD	FLOW q C.F.S.	Invert Elevation Upper End	Invert Elevation Lower End	Length FT.	Slope %	Dia. IN.	Capacity Q MGD	VEL. F.P.S.	Capacity q/Q %	Pipe Coefficient	Pipe Material	BLOCKS TO STR	Remarks
	W1	W		188489			4.0	0.15	0.15	0.23	195.87	195.04	66.50	1.25%	12	3.36	3.33	4.49	0.010	PVC		33.33% Flow from Block A
	W	V					4.0	0.00	0.15	0.23	194.94	193.28	132.42	1.25%	12	3.36	3.33	4.49	0.010	PVC		
	V	U		-			4.0	0.15	0.30	0.47	193.18	192.28	72.26	1.25%	12	3.36	4.08	8.99	0.010	PVC		
	U	L					4.0	0.00	0.30	0.47	192.18	191.00	94.64	1.25%	12	3.36	4.08	8.99	0.010	PVC		
	L	K		-			4.0	0.02	0.32	0.50	190.90	189.43	117.14	1.25%	12	3.36	4.22	9.68	0.010	PVC		Flow from Block C
	K	J		-			4.0	0.02	0.35	0.54	189.33	188.68	52.56	1.25%	12	3.36	4.23	10.36	0.010	PVC		Flow from Block C
	J	I1					4.0	0.00	0.35	0.54	188.58	187.98	47.70	1.25%	12	3.36	4.23	10.36	0.010	PVC		
	I1	I					4.0	0.40	0.75	1.16	187.88	184.77	248.57	1.25%	12	3.36	5.32	22.34	0.010	PVC		Flow from Block D
	I	H1					4.0	0.55	1.30	2.01	184.67	181.21	276.69	1.25%	12	3.36	6.20	38.74	0.010	PVC		Flow from Block J 50% Flow from Block H
	H1	H					4.0	0.32	1.62	2.51	181.11	180.05	85.17	1.25%	12	3.36	6.55	48.30	0.010	PVC		Flow from Block L
	H	G					4.0	0.00	1.62	2.51	179.95	178.24	170.85	1.00%	12	3.00	6.03	54.00	0.010	PVC		
	G	F					4.0	0.00	1.62	2.51	178.14	177.12	102.02	1.00%	12	3.00	6.03	54.00	0.010	PVC		
	F	E					4.0	0.00	1.62	2.51	177.02	175.39	163.39	1.00%	12	3.00	6.03	54.00	0.010	PVC		
	E	D					4.0	0.67	2.29	3.55	175.29	173.78	151.17	1.00%	12	3.00	3.82	76.34	0.010	PVC		Flow from Block M Flow from Block K
	D	C					4.0	0.00	2.29	3.55	173.68	173.33	34.58	1.00%	12	3.00	3.82	76.34	0.010	PVC		
	C	C1					4.0	0.38	2.67	4.13	173.23	170.40	283.19	1.00%	15	5.44	6.84	49.09	0.010	PVC		Flows from SSMH M & D
	C1	B					4.0	0.00	2.67	4.13	165.90	164.86	103.81	1.00%	15	5.44	6.84	49.09	0.010	PVC		
	B	A					4.0	0.00	2.67	4.13	164.76	162.73	203.40	1.00%	15	5.44	6.84	49.09	0.010	PVC		
	A	EX.HH					4.0	0.00	2.67	4.13	162.63	160.47	215.56	1.00%	15	5.44	6.84	49.09	0.010	PVC		
	V1	V		188489			4.0	0.15	0.15	0.23	194.05	193.38	66.50	1.00%	12	3.00	3.09	5.02	0.010	PVC		33.33% Flow from Block A
	CO5	L		28936			4.0	0.02	0.02	0.04	192.56	191.10	45.00	3.25%	8	1.84	2.83	1.26	0.010	PVC		32.85% Flow from Block C
	CO4	K		28936			4.0	0.02	0.02	0.04	191.00	189.53	45.00	3.25%	8	1.84	2.83	1.26	0.010	PVC		32.85% Flow from Block C
	CO11	I2	335				4.0	0.40	0.40	0.62	190.03	189.40	25.00	2.50%	6	0.75	5.98	53.78	0.010	PVC		
	I2	I1					4.0	0.00	0.40	0.62	189.30	188.08	48.93	2.50%	12	4.75	5.71	8.47	0.010	PVC		
	CO7	I	235	52000			4.0	0.32	0.32	0.50	186.12	184.87	50.00	2.50%	6	0.75	5.66	43.29	0.010	PVC		
	CO3	O	175	21000			4.0	0.23	0.23	0.35	186.12	184.87	50.00	2.50%	6	0.75	5.22	30.34	0.010	PVC		50% Flow from Block H
	CO8	H1	260	11000			4.0	0.32	0.32	0.50	182.56	181.31	50.00	2.50%	6	0.75	5.61	42.91	0.010	PVC		
	CO9	E	200				4.0	0.24	0.24	0.37	176.74	175.49	50.00	2.50%	6	0.75	5.23	32.11	0.010	PVC		
	CO6	D	339	30000			4.0	0.43	0.43	0.67	175.22	174.40	39.66	2.08%	6	0.68	5.67	63.18	0.010	PVC		
BLOCK E (MOB)	CO16	R	0	122883			4.0	0.10	0.10	0.15	195.64	195.11	25.44	2.08%	8	1.47	3.80	6.69	0.010	PVC		100% Flow from Block E1 (MOB)
	CO10	R		38703			4.0	0.03	0.03	0.05	196.03	195.11	44.57	2.08%	8	1.47	2.58	2.11	0.010	PVC		36.09% Flow from Block B
	R	Q					4.0	0.13	0.13	0.20	195.01	190.91	204.83	2.00%	12	4.25	3.70	3.04	0.010	PVC		Flow from Block B 50% Flow from Block E
	Q	P					4.0	0.02	0.15	0.24	190.81	188.98	91.68	2.00%	12	4.25	3.92	3.61	0.010	PVC		Flow from Block C
	P	O					4.0	0.00	0.15	0.24	188.88	186.01	143.07	2.00%	12	4.25	3.92	3.61	0.010	PVC		
	O	N					4.0	0.23	0.38	0.59	185.91	178.40	375.50	2.00%	12	4.25	5.14	8.96	0.010	PVC		50% Flow from Block H
	N	M					4.0	0.00	0.38	0.59	178.30	175.93	118.87	2.00%	12	4.25	5.14	8.96	0.010	PVC		
	M	C					4.0	0.00	0.38	0.59	175.83	175.43	19.86	2.00%	12	4.25	5.14	8.96	0.010	PVC		
	CO2	T		28936			4.0	0.02	0.02	0.04	197.61	195.70	58.78	3.25%	8	1.84	2.83	1.26	0.010	PVC		32.85% gpd from Block C
	T	S					4.0	0.00	0.02	0.04	195.60	192.34	100.23	3.25%	10	3.33	2.52	0.70	0.010	PVC		
	S	Q		1277			4.0	0.00	0.02	0.04	192.24	191.01	37.87	3.25%	10	3.33	2.63	0.73	0.010	PVC		1.45% gpd from Block C Garage
	CO1	I	175	21000			4.0	0.23	0.23	0.35	187.36	186.11	50.00	2.50%	6	0.75	5.22	30.34	0.010	PVC		50% Flow from Block H
	CO14	EX.II	390	95433			4.0	0.54	0.54	0.84	177.28	176.03	50.00	2.50%	10	2.92	6.32	18.65	0.010	PVC		
BLOCK E (RES.)	CO12	EX.MM	146	51435			4.0	0.22	0.22	0.33	95.42	94.45	38.79	2.50%	6	2.00	5.12	10.82	0.010	PVC		100% Flow from Block E (Res.)
BLOCK G	CO13	L1	240	23866			4.0	0.31	0.31	0.48	71.85	69.97	75.43	2.50%	6	2.00	5.56	15.35	0.010	PVC		100% Flow from Block G
	CO15	L2		257082			4.0	0.21	0.21	0.32	111.70	110.78	91.84	1.00%	10	2.00	3.43	10.28	0.010	PVC		63.91% gpd from Block B 33.33% gpd from Block A
	L2	N1					4.0	0.00	0.21	0.32	110.68	109.81	87.06	1.00%	10	2.00	3.43	10.28	0.010	PVC		
	N1	EX.NN					4.0	0.00	0.21	0.32	118.32	117.49	82.58	1.00%	10	2.00	3.43	10.28	0.010	PVC		
	EX.NN	EX.MM					4.0	0.00	0.21	0.32	117.39	115.15	223.82	1.00%	10	1.85	3.43	11.14	0.010	PVC		
	EX.MM	EX.LL					4.0	0.22	0.42	0.65	115.12	114.19	74.55	1.25%	10	2.06	4.60	20.45	0.010	PVC		100% Flow from Block E (Res.)
	EX.LL	EX.KK					4.0	0.00	0.42	0.65	113.96	112.43	122.64	1.25%	10	2.06	4.60	20.45	0.010	PVC		
	EX.KK	L1					4.0	0.00	0.42	0.65	112.39	110.57	145.48	1.25%	10	2.06	4.60	20.45	0.010	PVC		
	L1	EX.JJ					4.0	0.31	0.73	1.13	110.49	110.01	31.95	1.50%	10	2.26	5.71	32.25	0.010	PVC		100% Flow from Block G
	EX.JJ	EX.II					4.0	0.00	0.73	1.13	109.71	104.39	259.55	2.05%	10	2.00	6.40	36.46	0.010	PVC		
	EX.II	EX.HH					4.0	0.54	1.27	1.97	104.29	94.35	165.68	6.00%	15	13.33	10.59	9.55	0.010	PVC		
	EX.HH	G1					4.0	2.67	3.95	6.10	94.32	83.19	111.27	10.00%	15	17.21	17.62	22.92	0.010	PVC		100% Flow from Landmark Mall
	G1	F1					4.0	0.00	3.95	6.10	82.96	80.85	21.12	10.00%	15	17.21	17.62	22.92	0.010	PVC		
	F1	E1					4.0	0.00	3.95	6.10	133.32	111.12	222.04	10.00%	15	17.21	17.62	22.92	0.010	PVC		
	E1	D1					4.0	0.00	3.95	6.10	111.04	81.11	299.31	10.00%	15	17.21	17.62	22.92	0.010	PVC		
	D1	D2	184				4.0	0.22	4.17	6.45	80.81	69.87	109.44	10.00%	15	17.21	17.86	24.21	0.010	PVC		100% Flow from Broadstone Appt
	D2	EX.CC					4.0	0.00	4.17	6.45	69.77	68.92	112.78	0.75%	15	4.71	3.84	88.39	0.010	PVC		

ADEQUATE OUTFALL ANALYSIS

Blocks		Office Sanitary Flow	Office G.S.F	Retail Sanitary Flow	Retail G.S.F	MFH Sanitary Flow	MFH Units	Total Proposed Sanitary Flow (GPD)
HOSPITAL CAMPUS	A	200GPD/1,000 S.F.	565,525	200GPD/1,000 S.F.		300GPD/UNIT	-	113,105
	B	200GPD/1,000 S.F.	107,239	200GPD/1,000 S.F.	-	300GPD/UNIT	-	21,448
	C	200GPD/1,000 S.F.	88,085	200GPD/1,000 S.F.	-	300GPD/UNIT	-	17,617
Total			760,849		-		-	152,170
				TOTAL FLOW FROM HOSPITAL CAMPUS (MGD)				0.61
LANDMARK	D	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	300GPD/UNIT	335	100,500
	E	200GPD/1,000 S.F.	122,883	200GPD/1,000 S.F.	51,435	300GPD/UNIT	146	78,664
	G	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	23,866	300GPD/UNIT	240	76,773
	H	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	42,000	300GPD/UNIT	350	113,400
	I	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	95,433	300GPD/UNIT	390	136,087
	J	200GPD/1,000 S.F.	52000			300GPD/UNIT	235	80,900
	K	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	30,000	300GPD/UNIT	339	107,700
	L	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	11,000	300GPD/UNIT	260	80,200
	M	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	300GPD/UNIT	200	60,000
Total			174,883		253,734		2,495	834,223
				TOTAL FLOW FROM LANDMARK MALL BLOCKS (MGD)				3.34
EX. BUILDING	MULTI-FAMILY USE	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	300GPD/UNIT	184	55,200.00
				TOTAL FLOW FROM BROADSTONE APPT				0.22
				TOTAL FLOW GOING TO EX. CC (MGD)				4.17

Landmark Mall Breakdown by Manhole

	Block	Lateral #	Lateral Tie In Location	% of Block Flow	MH Flow Enters in Sanitary Computations
HOSPITAL CAMPUS	A	1	SMH W1	33.33%	W
		2	SMH V1	33.33%	V
		3	CO15	33.34%	L2
	B	1	CO10	36.09%	R
		2	CO15	63.91%	L2
	C	1	CO5	32.85%	L
		2	CO4	32.85%	K
		3	CO2	32.85%	T
	(Garage)	1	SMH S	1.45%	S
LANDMARK MALL	D	1	CO11	100%	I2
	E	1	CO16	100%	R
		2	CO12	100%	EX. MM
	G	1	CO13	100%	EX. JJ
	H	1	CO1	50%	I
		2	CO3	50%	O
	I	1	CO14	100%	EX. II
	J	1	CO7	100%	I
	K	1	CO6	100%	D
	L	1	CO8	100%	H1
	M	1	CO9	100%	E

SANITARY SEWER ADEQUATE OUTFALL NARRATIVE:

THE PROPOSED BUILDINGS E&G 6" LATERALS CONNECT TO EXISTING MANHOLES R, MM, AND L1 RESPECTIVELY. THE OVERALL DEVELOPMENT CONNECTS TO AN EXISTING M.H. "HH" THEN TIES TO AN EXISTING M.H. CC AT HOLMES RUN TRUNK. APPROXIMATELY 1760 AND 800 FEET FROM THE PROPOSED CONNECTION OF BUILDING E&G MARK THE END OF THE ANALYSIS IN ACCORDANCE WITH SECTION MEMORADUM TO INDUSTRY NO. 06-14 AS THE LINE THEN CONNECTS WITH AN EXISTING 33" LINE. THE PROPOSED SITE, BLOCK E&G, WILL UTILIZE EXISTING SMHS R, MM, AND L1 AS A CONNECTION POINT TO THE SANITARY SYSTEM AS SHOWN ON SHEET 26. A TOTAL OF 386 UNITS, 122,883 GSF OFFICE, AND 75,301 GSF RETAIL HAVE BEEN INCLUDED.

NOTE: WHERE VELOCITIES IN SANITARY SEWER PIPES EXCEED THE MAXIMUM ALLOWABLE VELOCITY OF 10 FT/S, SPECIAL PROVISIONS SHALL BE MADE TO RESTRAIN THE PIPE TO PROTECT AGAINST DISPLACEMENT BY EROSION.

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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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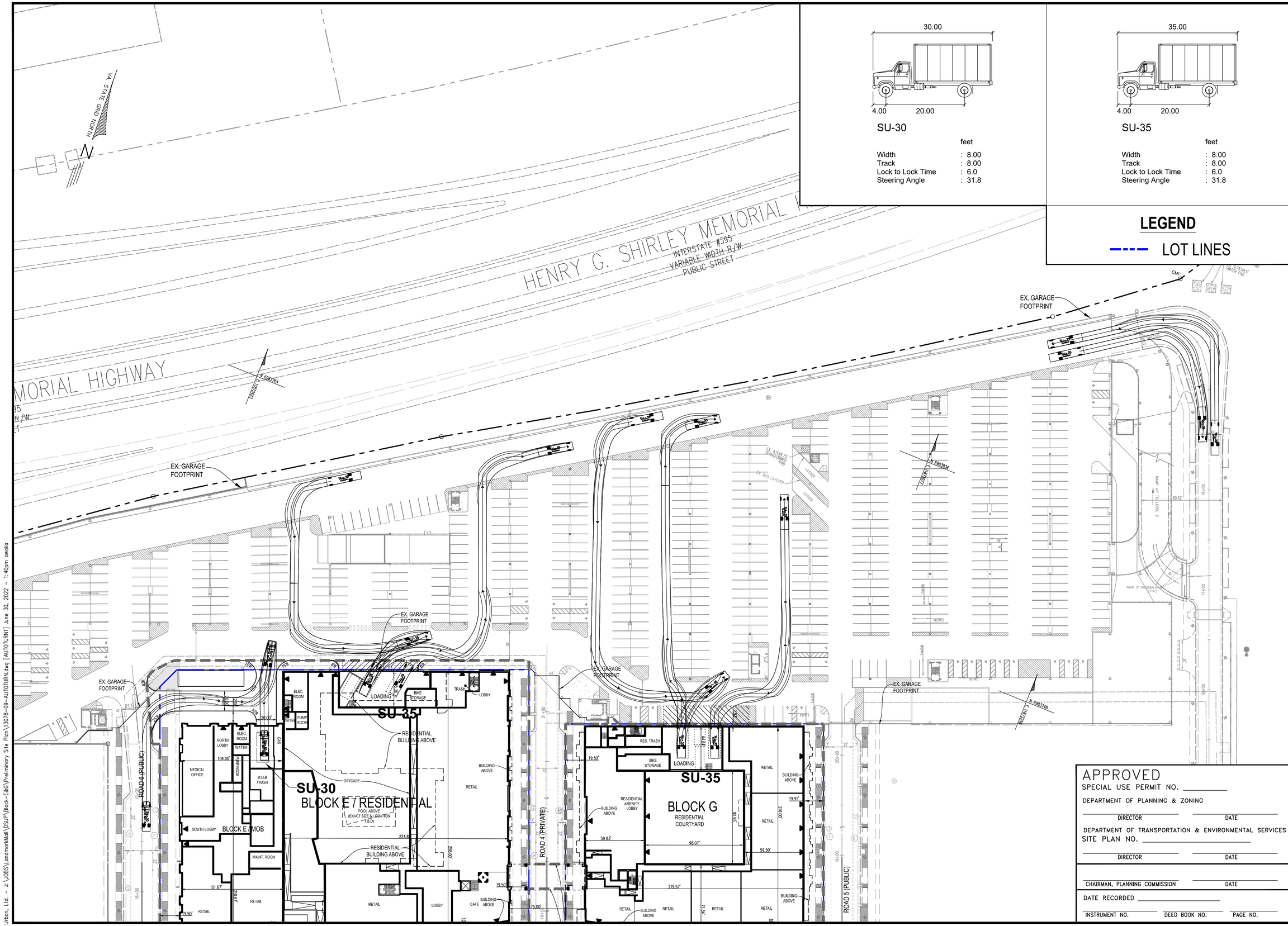
COMMONWEALTH OF VIRGINIA CLAYTON C. YOCK LIC. No. 036790 ENGINEER PROFESSIONAL 06/30/2022

SANITARY SEWER COMPUTATIONS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
C.I.= N/A
SCALE: N/A

SHEET 27 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-07-SAN PLAN & CMPS.dwg [Comps] June 30, 2022 - 1:39pm cwolla



SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

SU-35

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

LEGEND

LOT LINES

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DIRECTOR _____ DATE _____

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

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CHAIRMAN, PLANNING COMMISSION _____ DATE _____

DATE RECORDED _____

INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO. _____

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
06/30/22
PROFESSIONAL ENGINEER

AUTOTURN EXHIBIT

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=40'

C.I.= N/A

DATE: JUNE, 2022

SHEET 28 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-09-AUTOTURN.dwg [AUTOTURN1] June 30, 2022 - 1:40pm awalia

EX. GARAGE FOOTPRINT
APPROXIMATE LOCATION OF EX. RAMP TO LEVEL 2
EX. GARAGE WALL
PROP. 6' S/W
EX. GARAGE FOOTPRINT
EX. GARAGE FOOTPRINT
EX. GARAGE FOOTPRINT
EX. GARAGE WALL
VEHICLE ROUTE
BLOCK E / MOB
BLOCK E / RESIDENTIAL
VEHICLE ROUTE
ROAD 4 (PRIVATE)
BLOCK G
VEHICLE ROUTE
PEDESTRIAN ROUTE
ROAD 5 (PUBLIC)
ROAD 6 (PUBLIC)
VA STATE GRID NORTH
EX. CROSSWALK (TYP.)
BIKESHARE STATION
PROP. TREE PIT (TYP.)
EX. 12' LANEWAY
PROP. TREE PIT (TYP.)
EX. CROSSWALK (TYP.)
PROP. TREE PIT (TYP.)
EX. 12' LANEWAY
PROP. TREE PIT (TYP.)
EX. CROSSWALK (TYP.)
BIKE ROUTE
EX. 10' TEMP. CROSSWALK (TYP.)
EX. BIKE LANE
EX. BIKE LANE
BIKE ROUTE
PEDESTRIAN ROUTE
PROP. 10' CROSSWALK (TYP.)
ROAD 1 (PRIVATE)
ROAD 1 (PRIVATE)
VEHICLE ROUTE
ROAD 6 (PUBLIC)
ROAD 6 (PUBLIC)

LEGEND

- LOT LINES
- LIMITS OF DISTURBANCE
- PEDESTRIAN ROUTE
- VEHICLE ROUTE
- BIKE ROUTE

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DIRECTOR _____ DATE _____
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DIRECTOR _____ DATE _____
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06/30/22

PEDESTRIAN EXHIBIT
WEST END DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
DATE: JUNE, 2022
SCALE: 1"=50' C.I.=N/A

SHEET 29 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-16-PEDESTRIAN EXHIBIT.dwg [PEDESTRIAN EXHIBIT] June 30, 2022 – 1:40pm owolio

BLOCK A/B/C

BLOCK Q

BLOCK F

BLOCK N

BLOCK E / RESIDENTIAL

BLOCK E / MOB

BLOCK G
RESIDENTIAL COURTYARD

ROAD 6 (PUBLIC)

213' BUILDING COVERAGE LINE

ROAD 4 (PRIVATE)

268' BUILDING COVERAGE LINE

210' BUILDING COVERAGE LINE

ROAD 5 (PUBLIC)

PUBLIC ROAD

ROAD 1 (PRIVATE)

101' BUILDING COVERAGE LINE

227' BUILDING COVERAGE LINE

219' BUILDING COVERAGE LINE

EX. GARAGE FOOTPRINT

EX. GARAGE WALL

EX. 12" WATERLINE (AW)

APPROXIMATE LOCATION OF EX. RAMP TO LEVEL 2

EX. CSER-1 PRIVATE EASEMENT

PROP. FH RELOCATION

ELEC. ROOM

PUMP ROOM

WATER

LOADING

BIKE STORAGE

TRASH

LOBBY

NORTH LOBBY

GAS

MEDICAL OFFICE

PROP. BLDG WATER CONNECTION

M.O.B TRASH

SOUTH LOBBY

MAINT. ROOM

RESIDENTIAL BUILDING ABOVE

DAYCARE

POOL ABOVE (EXACT SIZE & LOCATION T.B.D)

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

BUILDING ABOVE

RETAIL

EX. STREETLIGHT (TYP.)

RESIDENTIAL AMENITY LOBBY

RES. TRASH

BUILDING CAFE ABOVE

EX. CURB EXTENSION

EX. CROSSWALK (TYP.)

EX. 12' LANEWAY

POTENTIAL AERIAL BRIDGE CONNECTION (FINAL LOCATION/DESIGN T.B.D WITH DSUP)

BIKESHARE STATION

EX. SIGN 213-224

EX. FLUSH CSCG-1 (COPING)

EX. 10' TEMP. CROSSWALK (TYP.)

PROP. 10' CROSSWALK (TYP.)

EX. BIKE LANE

EX. 12" WATERLINE(AW)

EX. 12" WATERLINE "A" (AW)

EX. FH#1

EX. FH#2

EX. FH#3

EX. FH#4

EX. FH#5

EX. FH#17

EX. FH#18

10' SANITARY EASEMENT

EX. CURB EXTENSION

PRIVATE ENTRANCE

EX. SIGN 213-224

VA STATE GRID NORTH

FUTURE BLOCK I DSUP

TOTAL BUILDING E MOB PERIMETER = 624 FT.

BUILDING PERIMETER COVERED
FROM PUBLIC ROAD 6 = 213 FT. (34.13%)
BUILDING PERIMETER COVERED FROM SOUTH SIDE OF MOB BUILDING = 101 FT. (16.18%)

TOTAL BUILDING E MOB COVERAGE = 314 FT. (50.32%)

GROUP CLASSIFICATION: CDD-2

TOTAL BUILDING E RESIDENTIAL PERIMETER = 980 FT.

BUILDING PERIMETER COVERED
FROM PRIVATE ROAD 4 = 268 FT. (27.34%)
BUILDING PERIMETER COVERAGE FROM SOUTH SIDE OF BUILDING E = 227 FT. (23.16%)

TOTAL BUILDING E RESI. COVERAGE = 495 FT. (50.51%)

GROUP CLASSIFICATION: CDD-2

TOTAL BUILDING G PERIMETER = 859 FT.

BUILDING PERIMETER COVERED FROM PUBLIC ROAD 5 = 210 FT. (24.44%)
BUILDING PERIMETER COVERED FROM PRIVATE ROAD 4 = 210 FT. (24.44%)
BUILDING PERIMETER COVERED FROM SOUTH SIDE OF BUILDING G = 219 FT (25.49%)

TOTAL BUILDING G COVERAGE = 639 FT. (74.38%)

GROUP CLASSIFICATION: CDD-2

LEGEND

FIRE SERVICE ACCESS

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06/30/22

FIRE SERVICE PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022

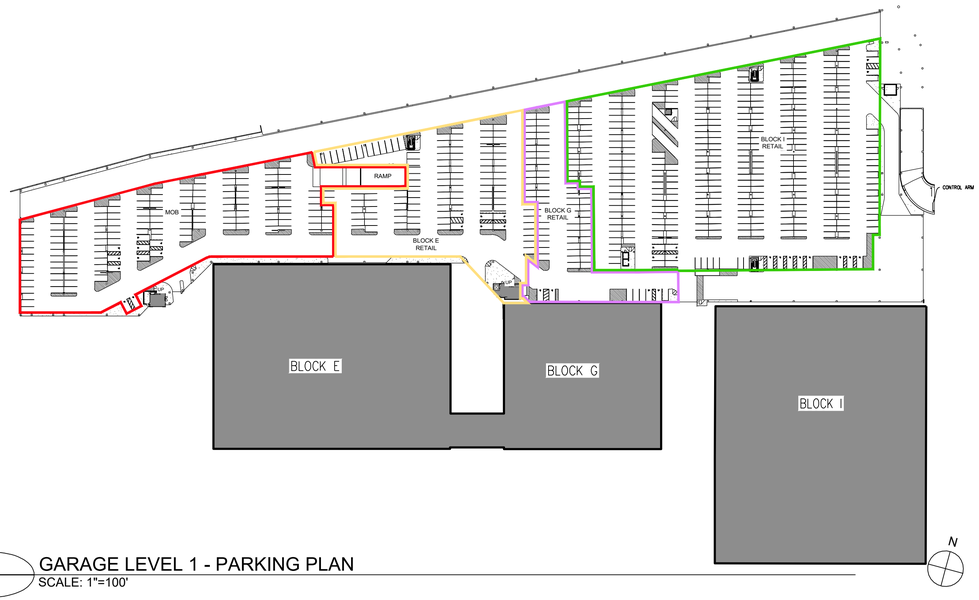
C.I.= N/A

SCALE: 1"=30'

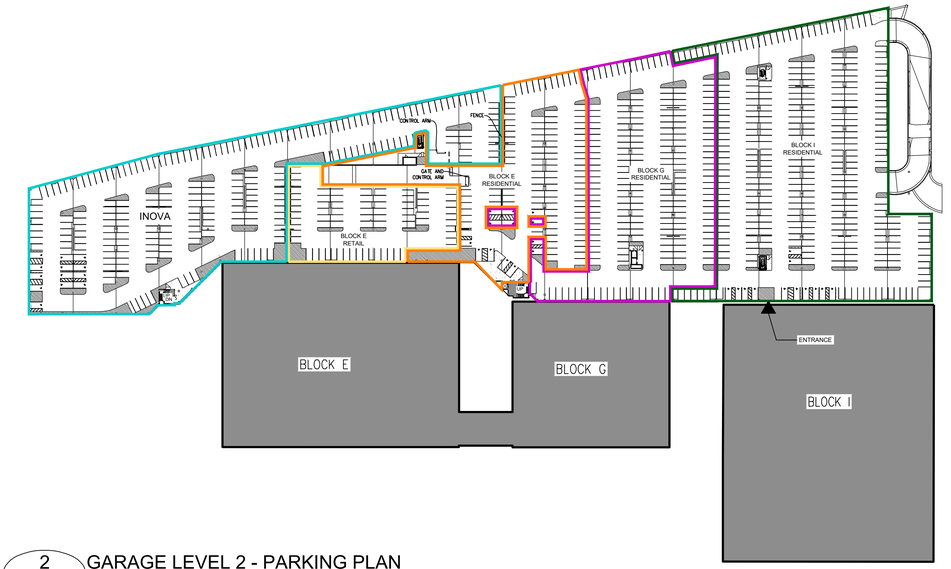
SHEET 30 OF 31

FILE No. RZ-1877

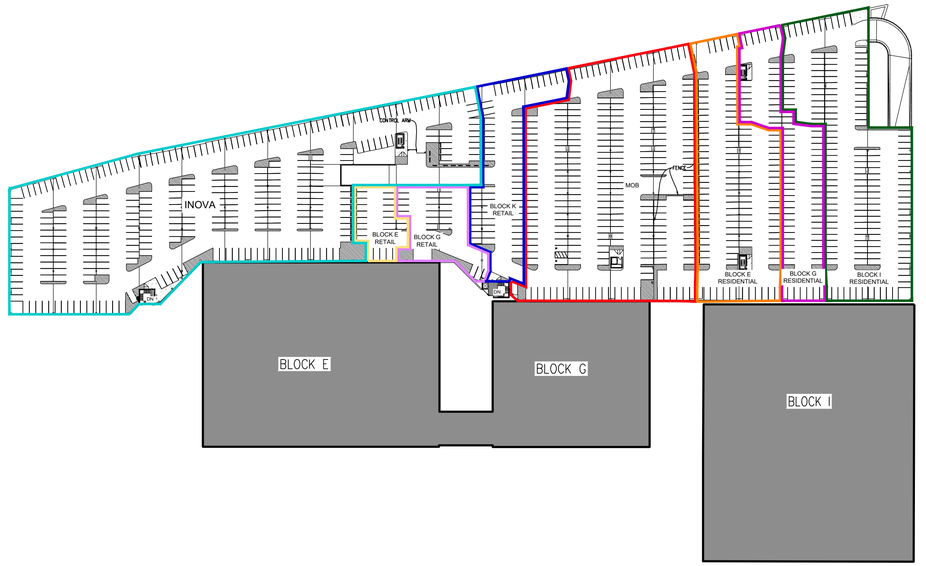
Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-15-FIRE SERVICE PLAN.dwg [FIRE SERVICE] June 30, 2022 – 1:41pm awalia



1 GARAGE LEVEL 1 - PARKING PLAN
SCALE: 1"=100'



2 GARAGE LEVEL 2 - PARKING PLAN
SCALE: 1"=100'



3 GARAGE LEVEL 3 - PARKING PLAN
SCALE: 1"=100'

GARAGE PARKING MATRIX

	BLOCK E			BLOCK G	
	M.O.B	RETAIL	RESIDENTIAL	RETAIL	RESIDENTIAL
LEVEL 1	136	105		67	
LEVEL 2		72	107		206
LEVEL 3	257	22	124	24	79
TOTAL	393	199	231	91	285

PARKING SPOT LOCATIONS, TOTALS AND ALLOCATIONS HAVE NOT BEEN FINALIZED AND WILL BE ADJUSTED WITHIN THE EXISTING GARAGE FOOTPRINT AS NEEDED TO ADDRESS THE CONCERNS.

LEGEND:

- MOB PARKING LIMITS
- INOVA PARKING LIMITS
- BLOCK E RETAIL PARKING LIMITS
- BLOCK E RESIDENTIAL PARKING LIMITS
- BLOCK G RETAIL PARKING LIMITS
- BLOCK G RESIDENTIAL PARKING LIMITS
- BLOCK I RETAIL PARKING LIMITS
- BLOCK I RESIDENTIAL PARKING LIMITS
- BLOCK K RETAIL PARKING LIMITS

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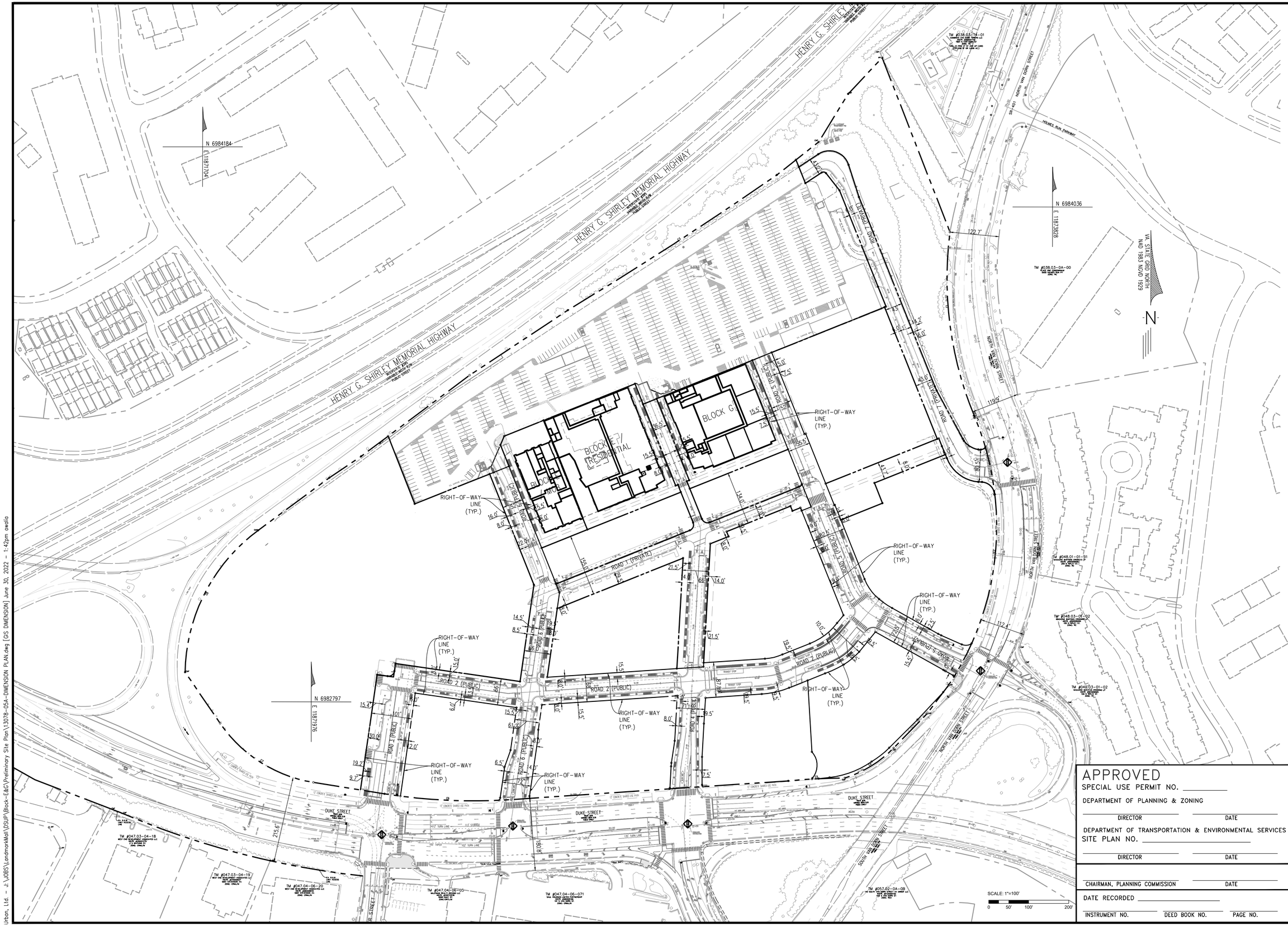
06/30/22

PARKING MATRIX
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
SCALE: AS NOTED DATE: JUNE, 2022
C.I.= N/A

SHEET 31 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-24-GARAGE PARKING.dwg [PARKING] June 30, 2022 – 1:41pm awalia



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06/30/22
PROFESSIONAL ENGINEER

GIS DIMENSION PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

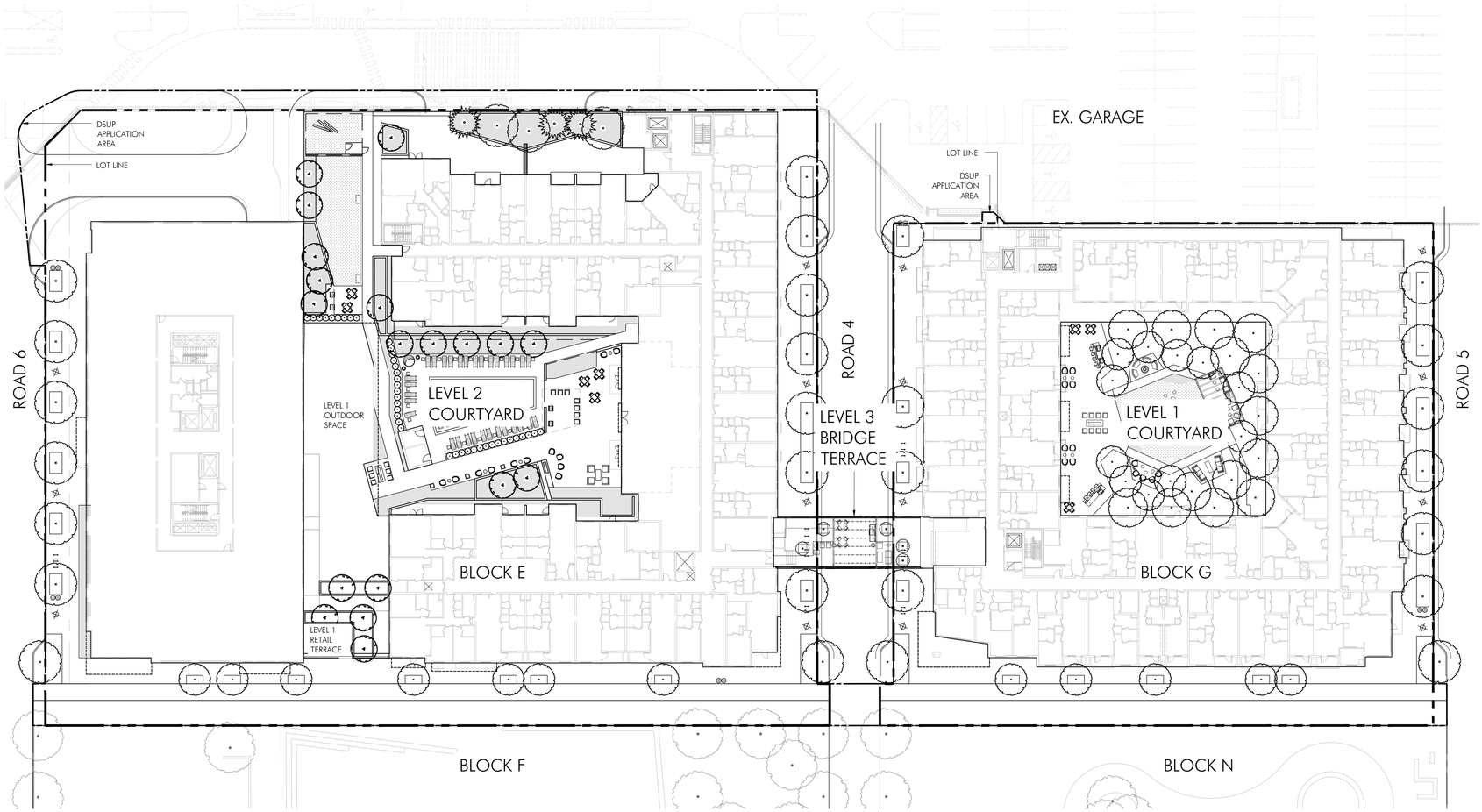
CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=100' C.I.=N/A DATE: JUNE, 2022

SHEET 30A OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-05A-DIMENSION PLAN.dwg [GIS DIMENSION] June 30, 2022 - 1:42pm awalia



01 OVERALL LANDSCAPE PLAN

1"=30'-0"

FEET 0 15 30 60

DRAWING INDEX

L1.01	OVERALL LANDSCAPE PLAN
L1.10	LANDSCAPE PLAN - BLOCK E LEVEL 1
L1.11	LANDSCAPE PLAN - BLOCK E LEVEL 2 & BRIDGE TERRACE
L1.12	LANDSCAPE PLAN - BLOCK G LEVEL 1
L3.01	PLANTING PLAN - BLOCK E
L3.02	PLANTING PLAN - BLOCK G
L3.10	LANDSCAPE NOTES & SCHEDULE - BLOCK E
L3.11	LANDSCAPE NOTES & SCHEDULE - BLOCK G
L3.12	SOIL VOLUME PLAN
L3.13	LANDSCAPE WATER MANAGEMENT PLAN
L5.01	HARDSCAPE DETAILS ON GRADE - PAVING
L5.02	HARDSCAPE DETAILS ON GRADE - FIXTURE
L6.01	HARDSCAPE DETAILS ON STRUCTURE - PAVING
L7.01	PLANTING DETAILS - ON GRADE
L7.02	PLANTING DETAILS - ON STRUCTURE

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

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_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

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LANDMARK BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

OVERALL LANDSCAPE PLAN

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

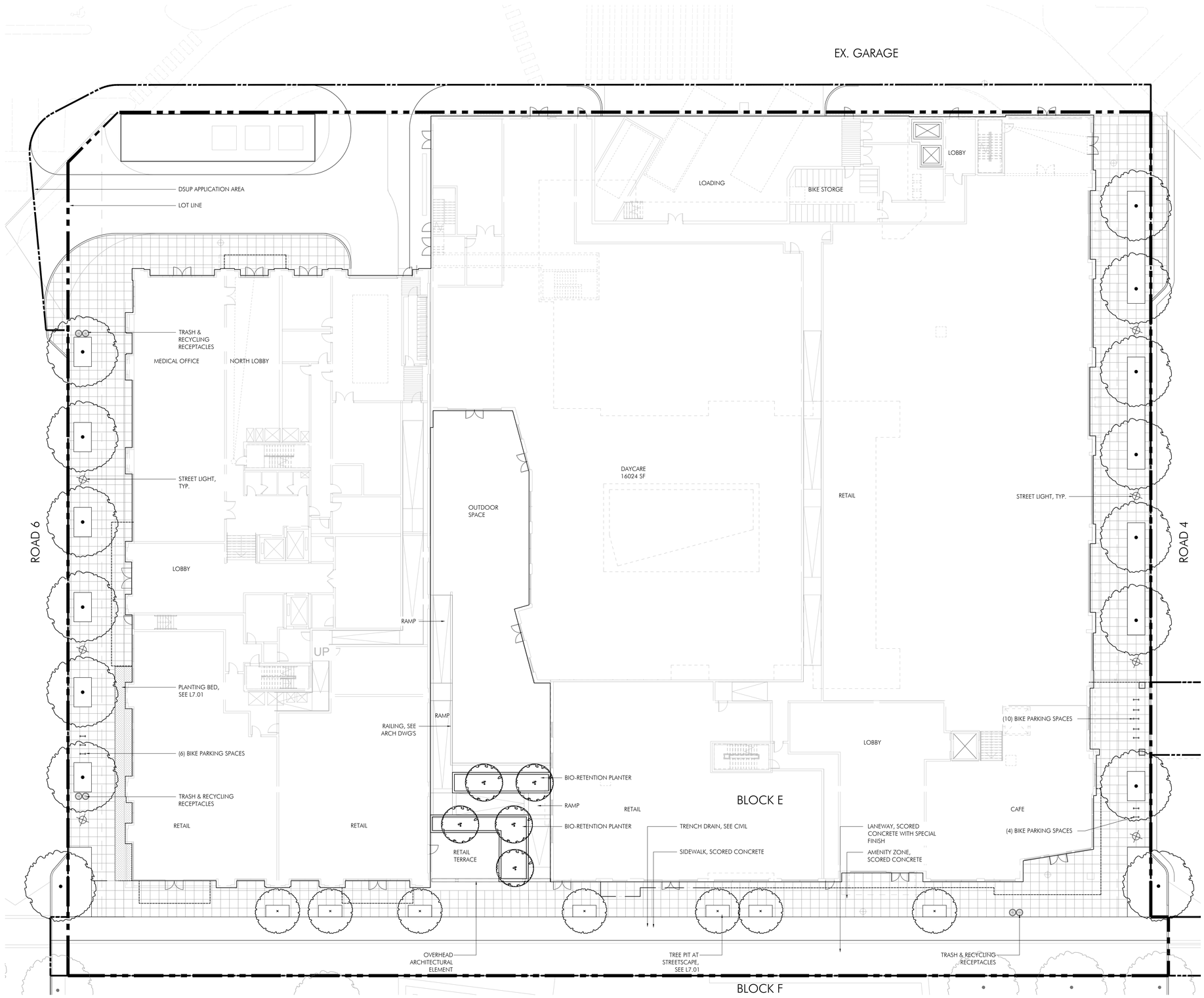
DRAWN BY

CHECKED BY

NORTH

SCALE
1"=30'-0"
0 15 30 60
FEET

L1.01



01 LANDSCAPE PLAN - BLOCK E LEVEL 1

1/16"=1'-0"

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

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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. _____ DATE _____

LANDMARK BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

LANDSCAPE PLAN - BLOCK E LEVEL 1

ORIGINAL ISSUE DATE 07.30.2021

DESIGNED BY

DRAWN BY

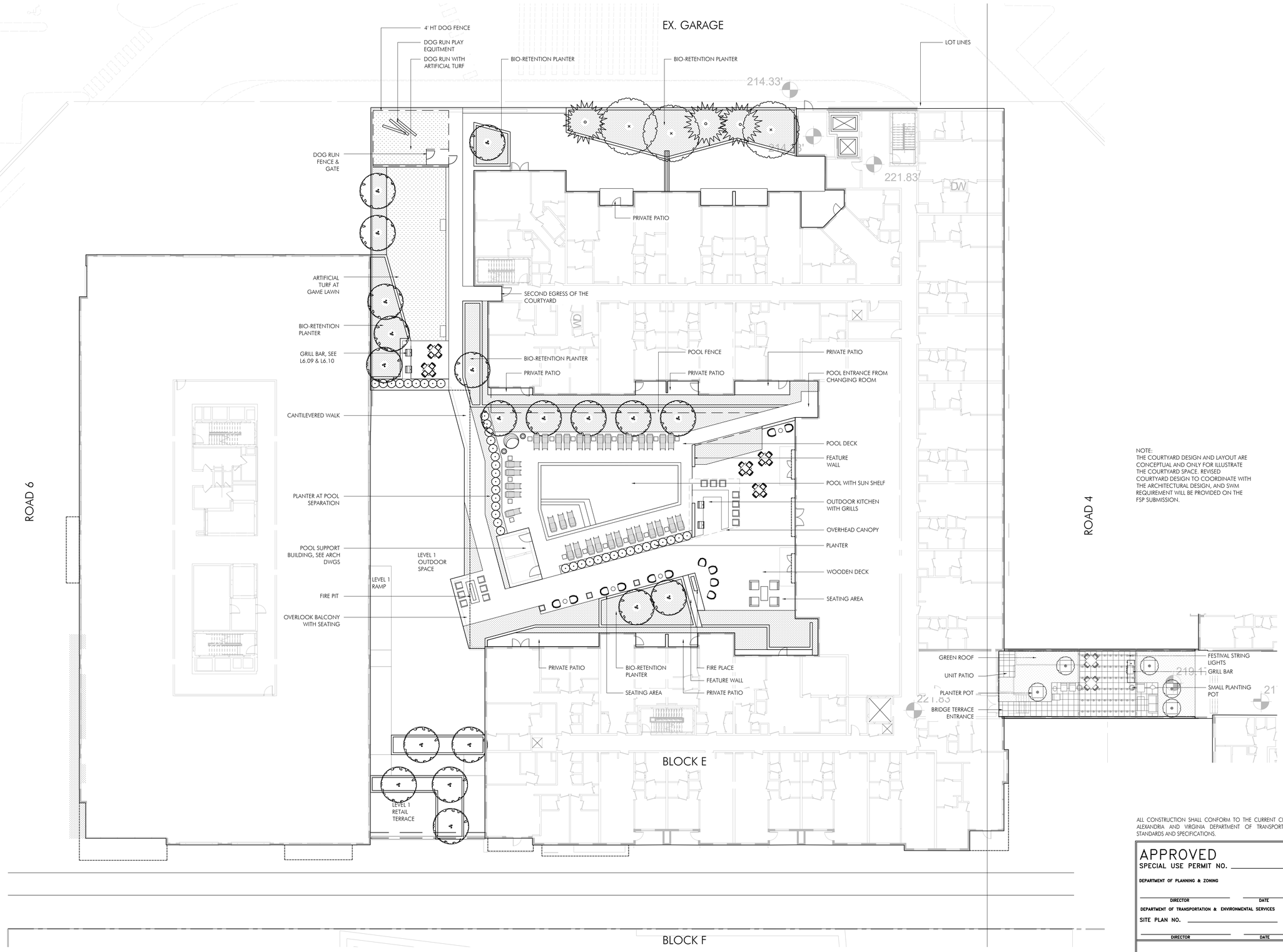
CHECKED BY

NORTH

SCALE 1/16"=1'-0"

0 8 16 32 FEET

L1.10



NOTE:
THE COURTYARD DESIGN AND LAYOUT ARE CONCEPTUAL AND ONLY FOR ILLUSTRATE THE COURTYARD SPACE. REVISED COURTYARD DESIGN TO COORDINATE WITH THE ARCHITECTURAL DESIGN, AND SWM REQUIREMENT WILL BE PROVIDED ON THE FSP SUBMISSION.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

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DIRECTOR _____ DATE _____

CHAIRMAN, PLANNING COMMISSION _____ DATE _____

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INSTRUMENT NO. _____ DEED BOOK NO. _____ DATE _____

01 LANDSCAPE PLAN - BLOCK E LEVEL 2 & BRIDGE TERRACE
1/16"=1'-0"

LANDMARK BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

LANDSCAPE PLAN - BLOCK E LEVEL 2 & BRIDGE TERRACE

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

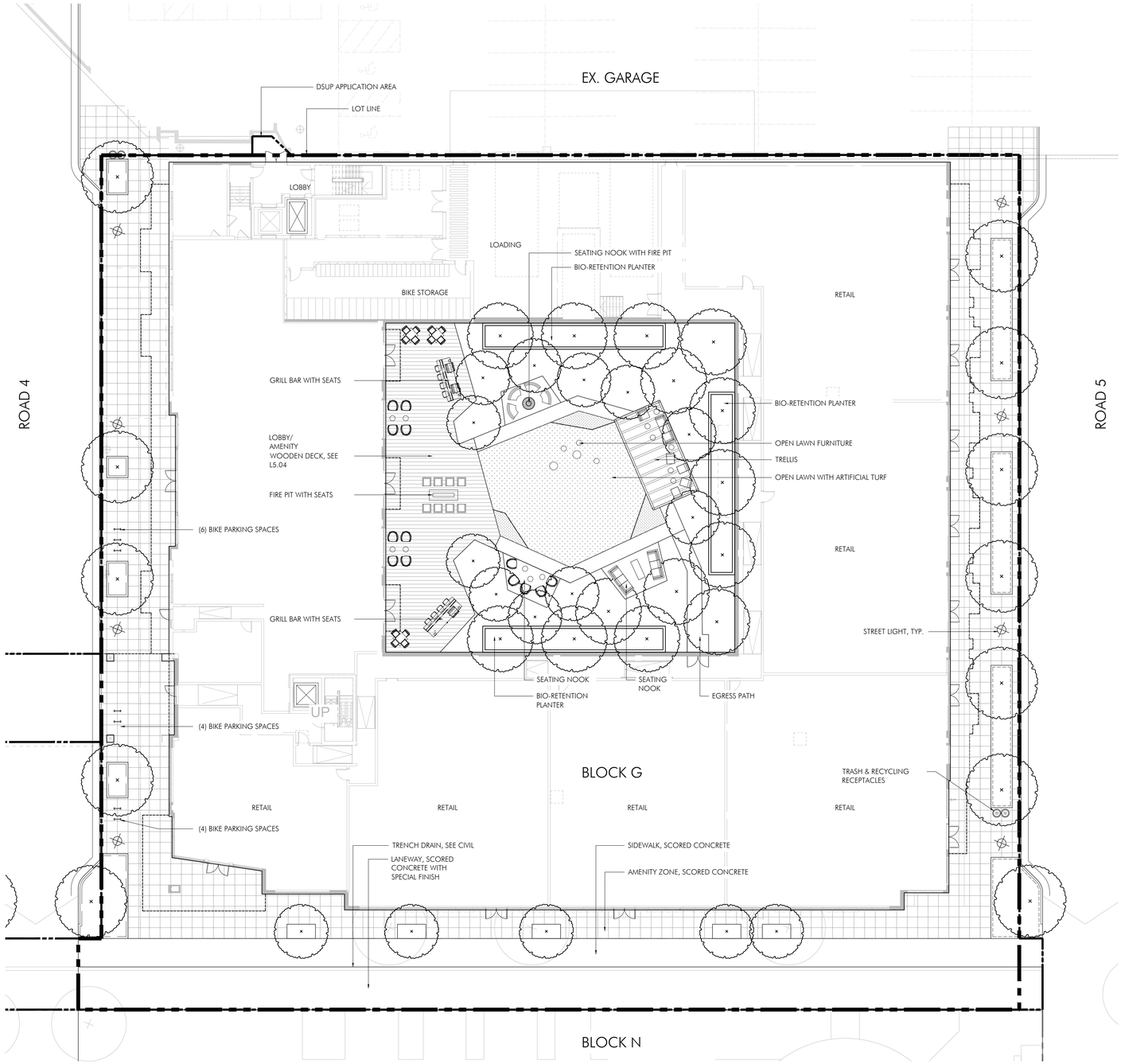
DRAWN BY

CHECKED BY

NORTH

SCALE
1/16"=1'-0"
0 8 16 32
FEET

L1.11



01 LANDSCAPE PLAN - BLOCK G LEVEL 1

1/16"=1'-0"

FEET 0 8 16 32

NOTE:
THE COURTYARD DESIGN AND LAYOUT ARE CONCEPTUAL AND ONLY FOR ILLUSTRATE THE COURTYARD SPACE. REVISED COURTYARD DESIGN TO COORDINATE WITH THE ARCHITECTURAL DESIGN, AND SWM REQUIREMENT WILL BE PROVIDED ON THE FSP SUBMISSION.

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

APPROVED
SPECIAL USE PERMIT NO. _____

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. _____ DATE _____

LANDMARK
BLOCK E & G

City of Alexandria
Alexandria, Virginia

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LANDSCAPE PLAN - BLOCK G LEVEL 1

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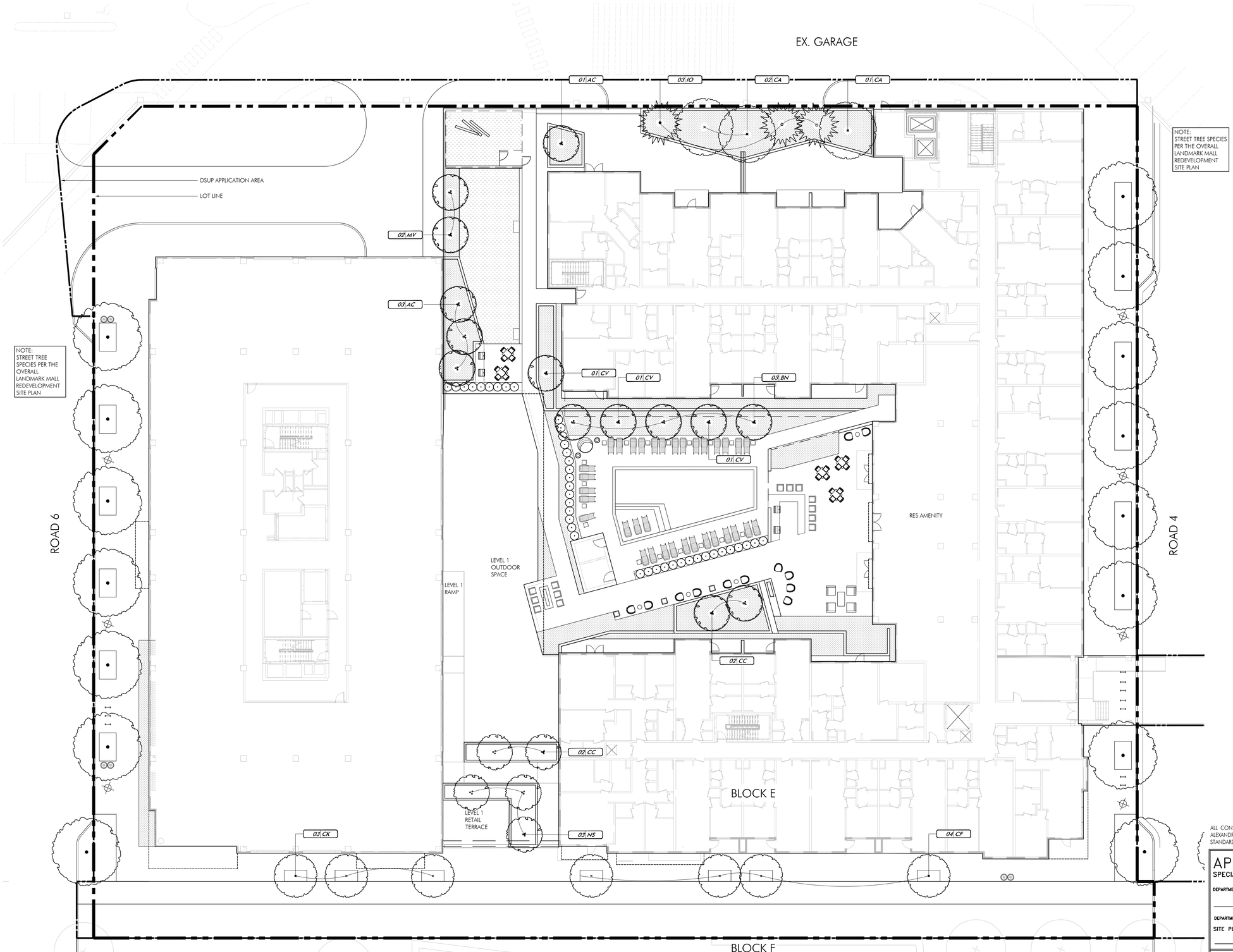

01 PLANTING PLAN - BLOCK E
1/16"=1'-0"

FEET
0 8 16 32

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LANDMARK BLOCK E & G

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PLANTING PLAN - BLOCK E

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07.30.2021

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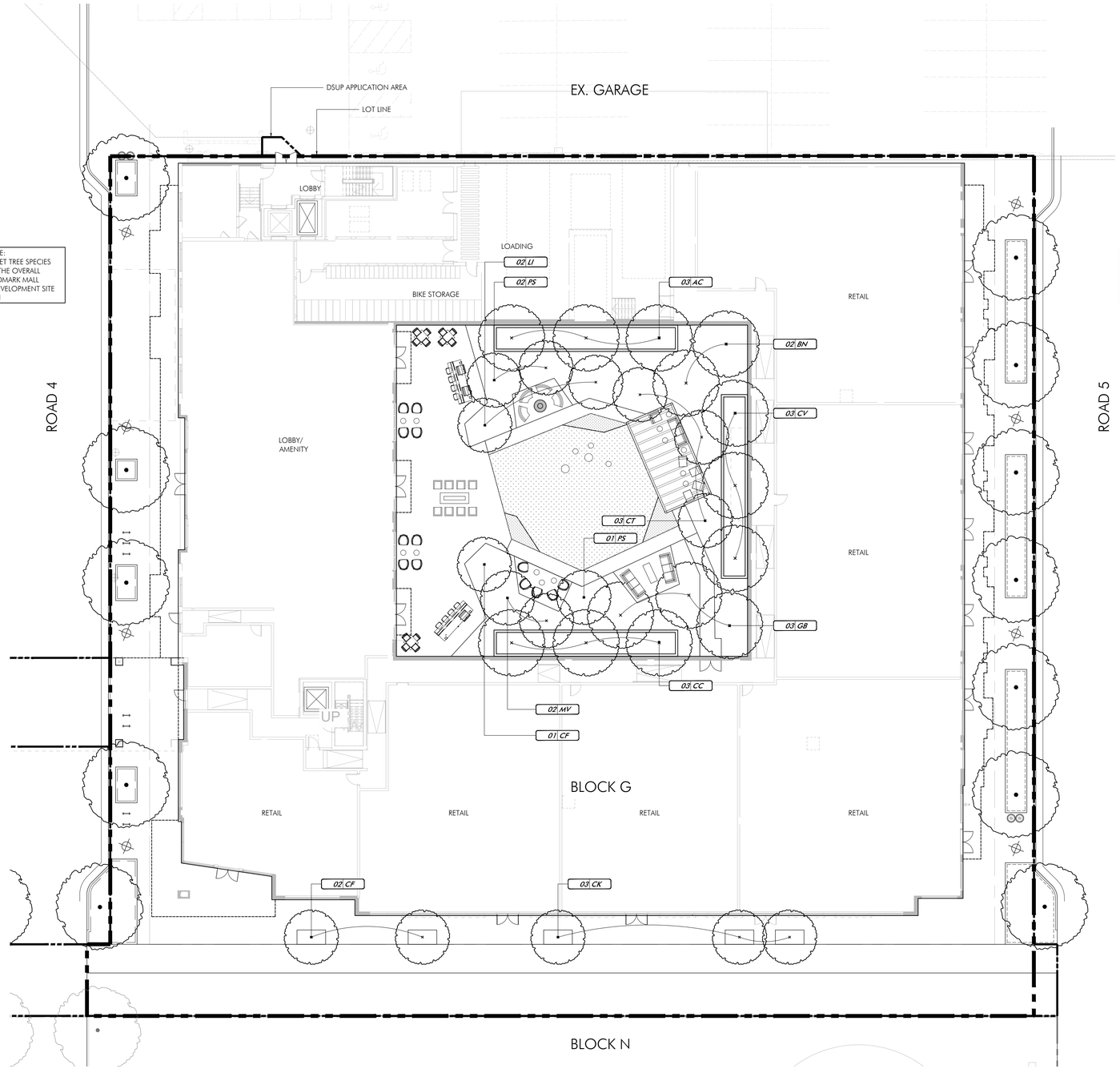
SCALE
1/16"=1'-0"
0 8 16 32 FEET

L3.01



NOTE:
STREET TREE SPECIES
PER THE OVERALL
LANDMARK MALL
REDEVELOPMENT SITE
PLAN

NOTE:
STREET TREE SPECIES
PER THE OVERALL
LANDMARK MALL
REDEVELOPMENT SITE
PLAN

01 PLANTING PLAN - BLOCK G
1/16"=1'-0"

FEET
0 8 16 32

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PLANTING PLAN - BLOCK G

ORIGINAL ISSUE DATE
07.30.2021

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CHECKED BY

NORTH

SCALE
1/16"=1'-0"
0 8 16 32
FEET

L3.02

BLOCK E

PLANT SCHEDULE

PLANT TYPE	PLAN INFORMATION		BOTANIC/COMMON NAME				SIZE	NOTES	CROWN COVER ALLOWANCE (CCA)		NATIVE PLANTS PROVIDED			ONSITE / OFF-SITE
	PLAN KEY	QUANTITY	GENUS	SPECIES	VAR./CULTIVAR/ HYBRID	COMMON NAME	CALIPER/HEIGHT		CCA PER TREE (SF)	TOTAL CROWN COVER (SF)	LOCAL/ REGIONAL (#)	EASTERN U.S. (#)	TOTAL	
STANDARD TREES	AC	3	Amelanchier	canadensis	Autumn Brilliance	Autumn Brilliance Serviceberry	10-12' ht.	B&B, multistem - 3 stems min; full branching	500	1,500	3		3	Onsite (within property line)
	BN	3	Betula	nigra	Dura Heat	Dura Heat River Birch	3" cal.	B&B, single leader; full branching	750	2,250	3		3	Onsite (within property line)
	CA	3	Carpinus	caroliniana		American Hornbeam	3" cal.	B&B, single leader; full branching	500	1,500	3		3	Onsite (within property line)
	CC	3	Cercis	canadensis	Forest Pansy	Forest Pansy Redbud	10-12' ht.	B&B, multistem - 3 stems min; full branching	500	1,500	3		3	Onsite (within property line)
	CF	3	Cornus	florida		Flowering Dogwood	3" cal.	B&B, single leader; full branching	250	750	3		3	Onsite (within property line)
	CK	3	Cornus	kousa		Kousa Dogwood	3" cal.	B&B, single leader; full branching	250	750			0	Onsite (within property line)
	CV	3	Chionanthus	virginicus		Fringe Tree	3" cal.	B&B, single leader; full branching	500	1,500	3		3	Onsite (within property line)
	IO	3	Ilex	opaca		American Holly	8-10' ht.	B&B, heavy; matched; symmetrical	250	750	3		3	Onsite (within property line)
	MV	2	Magnolia	virginiana		Sweetbay Magnolia	3" cal.	B&B, single leader; full branching	250	500	2		2	Onsite (within property line)
	NS	3	Nyssa	sylvatica		Black Gum	3" cal.	B&B, single leader; full branching	750	2,250	3		3	Onsite (within property line)
	PS	3	Prunus	sargentii		Sargent Cherry	3" cal.	B&B, single leader; full branching	500	1,500	3		0	Onsite (within property line)
	TOTALS	32							STANDARD TREE CCA:	14,750	29	0	26	
											90.6%	0.0%	81.3%	

BIODIVERSITY TABULATIONS

TREES (URBAN AND STANDARD)
TOTAL NUMBER OF TREES PROPOSED: 32

GENUS	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED	SPECIES	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED
Amelanchier	3	9.4%	33%	canadensis	3	9.4%	10%
Betula	3	9.4%	33%	nigra	3	9.4%	10%
Carpinus	3	9.4%	33%	caroliniana	3	9.4%	10%
Cercis	3	9.4%	33%	canadensis	3	9.4%	10%
Chionanthus	3	9.4%	33%	virginicus	3	9.4%	10%
Cornus	6	18.8%	33%	florida	3	9.4%	10%
				kousa	3	9.4%	10%
Ilex	3	9.4%	33%	opaca	3	9.4%	10%
Magnolia	2	6.3%	33%	virginiana	2	6.3%	10%
Nyssa	3	9.4%	33%	sylvatica	2	6.3%	10%
Prunus	3	9.4%	33%	sargentii	3	9.4%	10%

CROWN COVER TABULATIONS BUILDING E	
TOTAL SITE AREA (SF)	108,575
25% CROWN COVER REQUIRED (SF)	27,144
EXISTING CROWN COVER (SF)	0
REMOVED CROWN COVER (SF)	0
PRESERVED CROWN COVER (SF)	
Crown Cover from Preserved Trees	0
Crown Cover from Preserved Shrubs	0
PROPOSED CROWN COVER (SF)	
Crown Cover from Proposed Trees	14,750
Crown Cover from Proposed Shrubs	0
TOTAL CROWN COVER PROVIDED (%)	13.6%
TOTAL CROWN COVER PROVIDED (SF)	14,750

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_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

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LANDMARK
BLOCK E & G

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Alexandria, Virginia

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COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

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50% DD	06.17.22
DSUP DRAFT	06.30.22

LANDSCAPE NOTES & SCHEDULE - BLOCK E

ORIGINAL ISSUE DATE
07.30.2021

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L3.10

BLOCK G

PLANT SCHEDULE

PLANT TYPE	PLAN INFORMATION		BOTANIC/COMMON NAME				SIZE	NOTES	CROWN COVER ALLOWANCE (CCA)		NATIVE PLANTS PROVIDED			ONSITE / OFF-SITE
	PLAN KEY	QUANTITY	GENUS	SPECIES	VAR./CULTIVAR/ HYBRID	COMMON NAME	CALIPER/HEIGHT		CCA PER TREE (SF)	TOTAL CROWN COVER (SF)	LOCAL/ REGIONAL (#)	EASTERN U.S. (#)	TOTAL	
STANDARD TREES	AC	3	Amelanchier	canadensis	Autumn Brilliance	Autumn Brilliance Serviceberry	10-12' ht.	B&B, multistem - 3 stems min; full branching	500	1,500	3		3	Onsite (within property line)
	BN	3	Betula	nigra		River Birch	10-12' ht.	B&B, multistem - 3 stems min; full branching	750	2,250	3		3	Onsite (within property line)
	CC	3	Cercis	canadensis	Forest Pansy	Forest Pansy Redbud	10-12' ht.	B&B, multistem - 3 stems min; full branching	500	1,500	3		3	Onsite (within property line)
	CF	3	Cornus	florida		Flowering Dogwood	3" cal.	B&B, single leader; full branching	250	750	3		3	Onsite (within property line)
	CK	2	Cornus	kousa		Kousa Dogwood	3" cal.	B&B, single leader; full branching	250	500			0	Onsite (within property line)
	CT	3	Chamaecyparis	thyoides		Atlantic White Cedar	10-12' ht.	B&B, single leader; full branching	250	750	3		3	Onsite (within property line)
	CV	3	Chionanthus	virginicus		Fringe Tree	3" cal.	B&B, single leader; full branching	500	1,500	3		3	Onsite (within property line)
	GB	3	Ginkgo	serotina		Maidenhair Tree	3" cal.	B&B, single leader; full branching	750	2,250	3		3	Onsite (within property line)
	LI	2	Lagerstroemia	indica		Crepe Myrtle	3" cal.	B&B, single leader; full branching	250	500			0	Onsite (within property line)
	MV	2	Magnolia	virginiana		Sweetbay Magnolia	10-12' ht.	B&B, multistem - 3 stems min; full branching	250	500	2		2	Onsite (within property line)
	PS	3	Prunus	sargentii		Sargent Cherry	3" cal.	B&B, single leader; full branching	500	1,500	3		3	Onsite (within property line)
	TOTALS	30							STANDARD TREE CCA:	13,500	26	0	26	
											86.7%	0.0%	86.7%	

BIODIVERSITY TABULATIONS

TREES (URBAN AND STANDARD)

TOTAL NUMBER OF TREES PROPOSED: 30

GENUS	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED	SPECIES	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED
Amelanchier	3	10.0%	33%	canadensis	3	10.0%	10%
Betula	3	10.0%	33%	nigra	3	10.0%	10%
Cercis	3	10.0%	33%	canadensis	3	10.0%	10%
Chamaecyparis	3	10.0%	33%	thyoides	3	10.0%	10%
Chionanthus	3	10.0%	33%	virginicus	3	10.0%	10%
Cornus	5	16.7%	33%	florida	3	10.0%	10%
				kousa	2	6.7%	10%
Ginkgo	3	10.0%	33%	serotina	3	10.0%	10%
Lagerstroemia	2	6.7%	33%	indica	2	6.7%	10%
Magnolia	2	6.7%	33%	virginiana	2	6.7%	10%
Prunus	3	10.0%	33%	sargentii	3	10.0%	10%

CROWN COVER TABULATIONS BLOCK G	
TOTAL SITE AREA (SF)	62,083
25% CROWN COVER REQUIRED (SF)	15,521
EXISTING CROWN COVER (SF)	0
REMOVED CROWN COVER (SF)	0
PRESERVED CROWN COVER (SF)	
Crown Cover from Preserved Trees	0
Crown Cover from Preserved Shrubs	0
PROPOSED CROWN COVER (SF)	
Crown Cover from Proposed Trees	13,500
Crown Cover from Proposed Shrubs	0
TOTAL CROWN COVER PROVIDED (%)	21.7%
TOTAL CROWN COVER PROVIDED (SF)	13,500

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LANDSCAPE NOTES & SCHEDULE - BLOCK G

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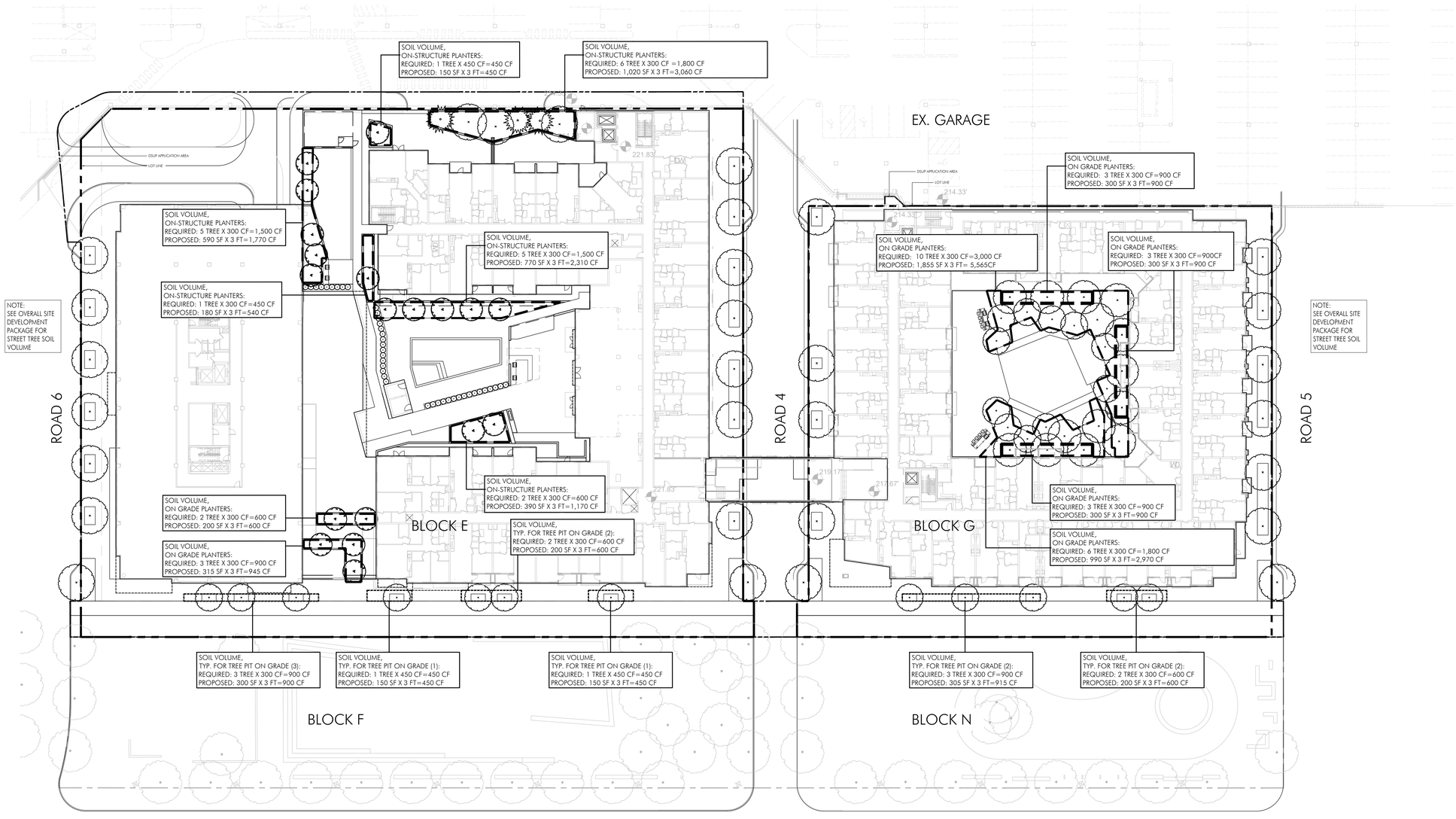

01 SOIL VOLUME PLAN

1"=30'-0"

FEET
0 15 30 60

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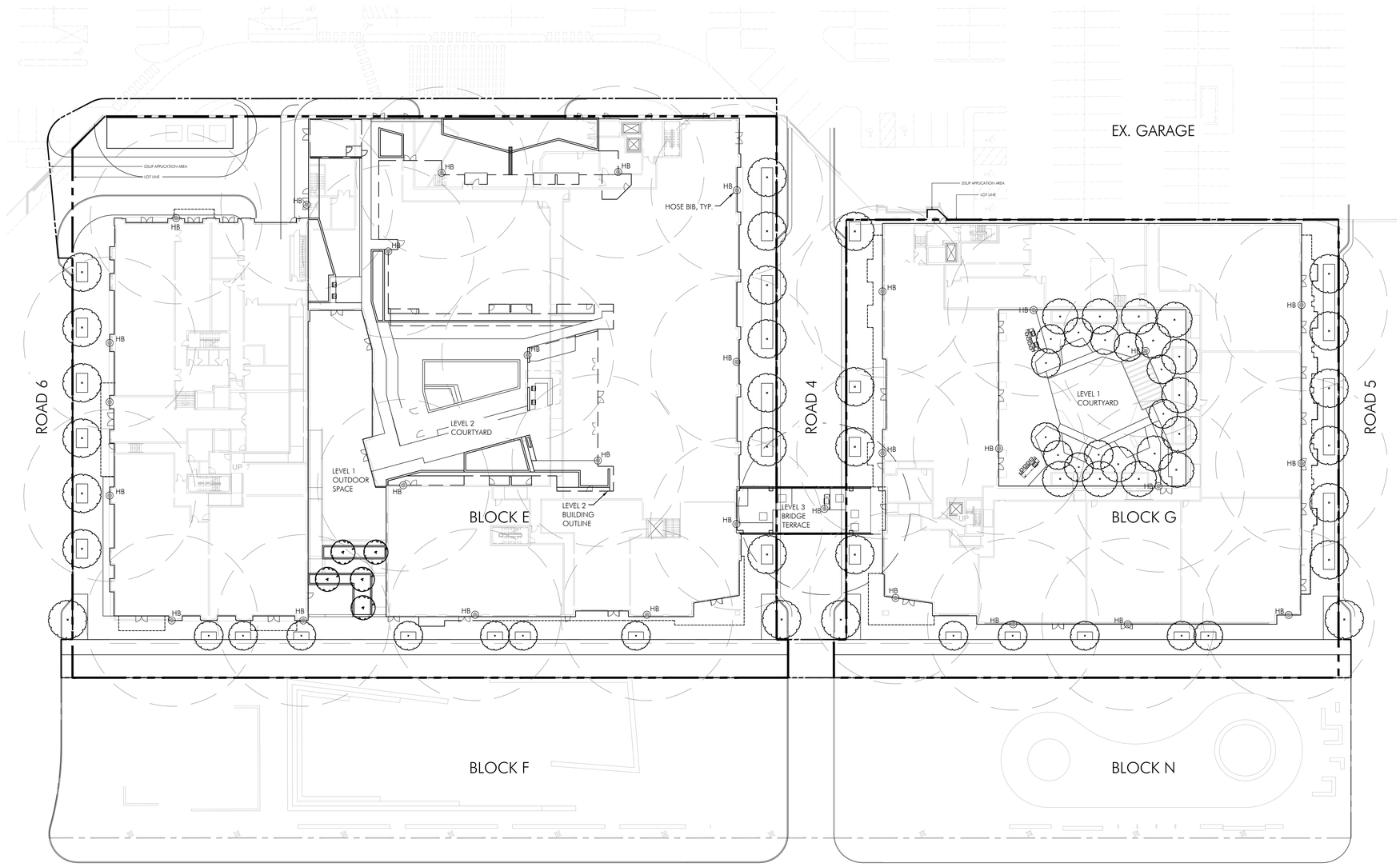

01 LANDSCAPE WATER MANAGEMENT PLAN

1"=30'-0"

FEET
0 15 30 60

LEGEND

HB — HOSE BIB AT CENTER OF 90' DIAMETER CIRCLE

IRRIGATION METHOD NOTES:

1. IRRIGATION TO BE HAND (MANUAL) WATERING WITH HOSE. PROVIDE HOSE BIBS ALONG THE BUILDING PERIMETERS WITH 90' (MAX.) ON-CENTER SPACING.
2. IF THE OWNER DECIDE TO USE AUTOMATED IRRIGATION SYSTEM, CONTRACTOR TO PROVIDE DESIGN-BUILT SHOP DRAWINGS AND SPECIFICATIONS PREPARED AND SEALED BY CERTIFIED IRRIGATION DESIGNER FOR THE OWNER AND PROJECT LANDSCAPE ARCHITECT TO REVIEW AND APPROVAL. IRRIGATION SYSTEM WITHIN THE PUBLIC RIGHT OF WAY SHALL REQUIRE A MAINTENANCE AGREEMENT WITH THE CITY.

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LANDSCAPE WATER MANAGEMENT PLAN

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0 15 30 60
FEET

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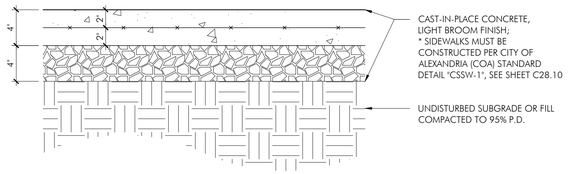
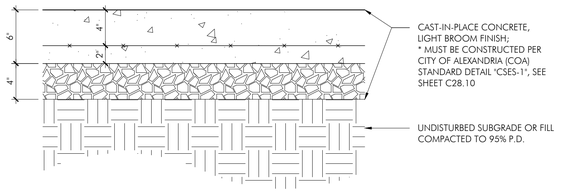


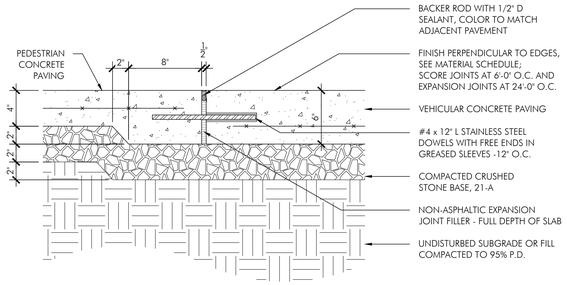
01 CONCRETE PAVING ON GRADE - PEDESTRIAN (PED.)

1 1/2" = 1'-0"



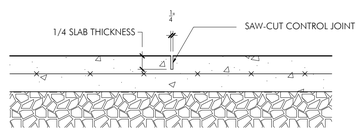
02 CONCRETE PAVING ON GRADE - VEHICULAR (VEH.)

1 1/2" = 1'-0"



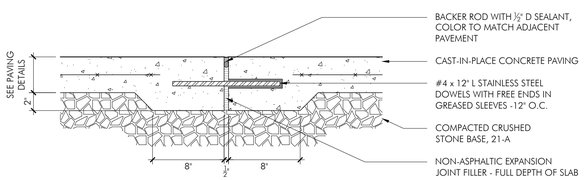
03 CONCRETE PAVING ON GRADE - PED. TO VEH.

1 1/2" = 1'-0"



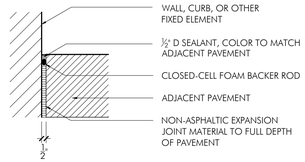
04 CONCRETE PAVING CONTROL JOINT

1 1/2" = 1'-0"



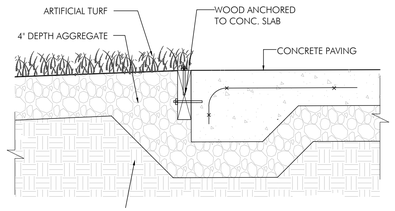
05 CONCRETE PAVING EXPANSION JOINT

1 1/2" = 1'-0"



06 PAVING ISOLATION JOINT

1 1/2" = 1'-0"



07 ARTIFICIAL TURF

1 1/2" = 1'-0"

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SPECIAL USE PERMIT NO. _____

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. _____ DATE _____

LANDMARK
BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

REVISIONS

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

HARDSCAPE
DETAILS
ON GRADE
- PAVING

ORIGINAL ISSUE DATE
07.30.2021

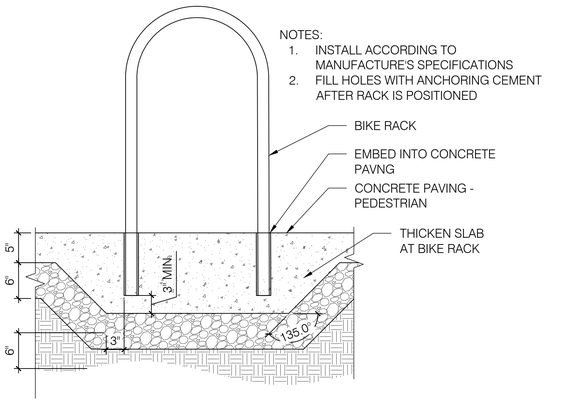
DESIGNED BY

DRAWN BY

CHECKED BY

SCALE
AS NOTED

L5.01



01 BIKE RACK

SCALE: 1" = 1' - 0"



TRASH RECEPTACLE NOTES:
1. MODEL TO BE CITY STANDARD, SD-42 36 GALLON
2. COLOR TO BE POWDER COATED BLACK
3. DOME TOP STYLE LID REQUIRED
4. TO HAVE SIDE DOOR OPTION

Manufacturer: VICTOR STANLEY
Model: SD-42
Color: BLACK
Website: http://www.victorstanley.com

02 TRASH RECEPTACLE - ALEXANDRIA CITY STANDARD

SCALE: NTS

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

APPROVED
SPECIAL USE PERMIT NO. _____
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. _____ DATE

LANDMARK
BLOCK E & G

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Alexandria, Virginia

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TRINI M. RODRIGUEZ
Cert. No. 1296
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CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

HARDSCAPE
DETAILS
ON GRADE
-FIXTURE

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

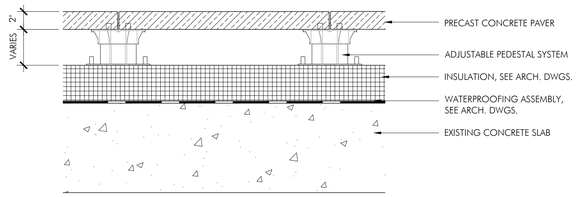
DRAWN BY

CHECKED BY

SCALE
AS NOTED

0 FEET

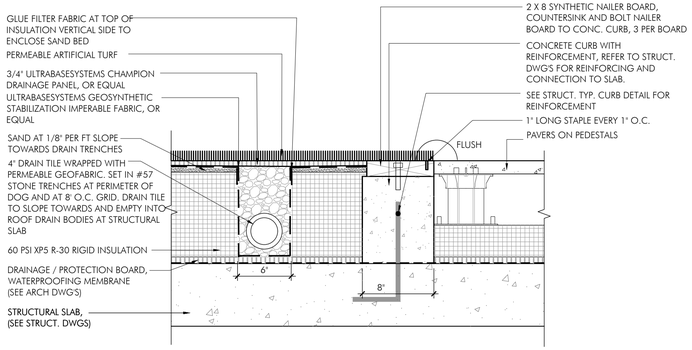
L5.02



SECTION

01 PAVERS ON PEDESTALS

SCALE: 1-1/2" = 1' - 0"



02 ARTIFICIAL TURF

SCALE: 1-1/2" = 1' - 0"

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

APPROVED
SPECIAL USE PERMIT NO. _____

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. DATE

LANDMARK BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
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TRINI M. RODRIGUEZ
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LANDSCAPE ARCHITECT

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

HARDSCAPE DETAILS ON STRUCTURE -PAVING

ORIGINAL ISSUE DATE
07.30.2021

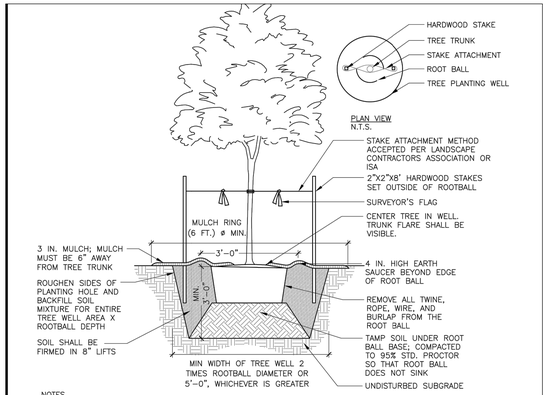
DESIGNED BY

DRAWN BY

CHECKED BY

SCALE
AS NOTED
0 FEET

L6.01



NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARDS A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.
2. CONTRACTOR SHALL MAXIMIZE EXCAVATED AREA FOR TREE WELL WITHOUT ADVERSELY IMPACTING ADJACENT SITE FEATURES
4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR CITY STAFF, SOIL MIXTURE SHALL BE CLEANED OF DEBRIS, AND MEET SOIL COMPOSITION REQUIREMENTS OF CITY OF ALEXANDRIA LANDSCAPE GUIDELINES.
5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.
6. ALL PLANTS MUST BE WATERED AT INSTALLATION AND AGAIN WITHIN 48–HOURS OF INSTALLATION, ESTABLISHMENT WATERING SHALL BE PER THE SPECIFICATIONS ON ALL DETAILS.
7. STAKES WILL BE INSTALLED USING ARBORICULTURE PRACTICES, TREES SHALL STAND PLUM AFTER STAKING.
8. INSTALLATION WILL INCLUDE THE REMOVAL OF ALL STAKING MATERIAL ONE YEAR AFTER INSTALLATION. ANY HOLES LEFT BY REMOVING STAKING SHALL BE FILLED WITH APPROVED TOPSOIL / BACKFILL MIXTURE.
9. CONTRACTOR SHALL USE GALVANIZED EYESCREW & TURNBUCKLE INSTEAD OF ARBOR TIE ONLY FOR TREES OF SIGNIFICANT SIZE AS DIRECTED BY CITY STAFF.

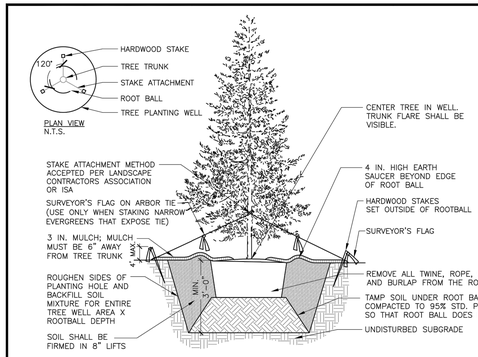
A DECIDUOUS TREE PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

NOTE: THE INFORMATION SHOWN HEREIN THIS DOCUMENT IS FOR GENERAL GUIDANCE ONLY AND IS NOT INTENTED FOR CONSTRUCTION PURPOSES. ITS USE SHALL NOT RELIEVE THE DESIGN PROFESSIONAL OR CONTRACTOR OF ANY LEGAL RESPONSIBILITY.

Source: CITY OF ALEXANDRIA	DECIDUOUS TREE PLANTING	
Approved by: COA	Date drawn: 01/01/19	LD 001
1 OF 1		



NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARDS A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.
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4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR CITY STAFF, SOIL MIXTURE SHALL BE CLEANED OF DEBRIS, AND MEET SOIL COMPOSITION REQUIREMENTS OF CITY OF ALEXANDRIA LANDSCAPE GUIDELINES.
5. TREES PLANTED WITHOUT THE TRUNK FLARE VISIBLE WILL BE REJECTED.
6. ALL PLANTS MUST BE WATERED AT INSTALLATION AND AGAIN WITHIN 48–HOURS OF INSTALLATION, ESTABLISHMENT WATERING SHALL BE PER THE SPECIFICATIONS ON ALL DETAILS.
7. STAKES WILL BE INSTALLED USING ARBORICULTURE PRACTICES, TREES SHALL STAND PLUM AFTER STAKING.
8. INSTALLATION WILL INCLUDE THE REMOVAL OF ALL STAKING MATERIAL ONE YEAR AFTER INSTALLATION. ANY HOLES LEFT BY REMOVING STAKING SHALL BE FILLED WITH APPROVED TOPSOIL / BACKFILL MIXTURE.
9. CONTRACTOR SHALL USE GALVANIZED EYESCREW & TURNBUCKLE INSTEAD OF ARBOR TIE ONLY FOR TREES OF SIGNIFICANT SIZE AS DIRECTED BY CITY STAFF.

A EVERGREEN TREE PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

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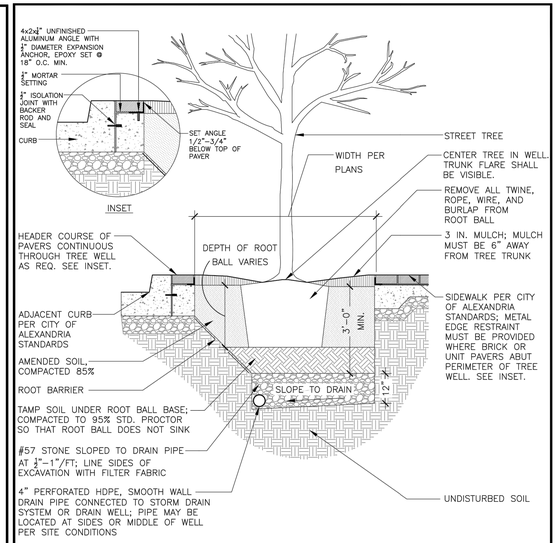
Source: CITY OF ALEXANDRIA	EVERGREEN TREE PLANTING	
Approved by: COA	Date drawn: 01/01/19	LD 002
1 OF 1		



NOTES

1. THIS CROSS–SECTION APPLIES TO BOTH TREE PLANTING STRIPS AND TREE PLANTING WELLS.
2. REFER TO LANDSCAPE GUIDELINES FOR GENERAL STREET TREE PLANTING NOTES.

A STREET TREE PLANTING WELL
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

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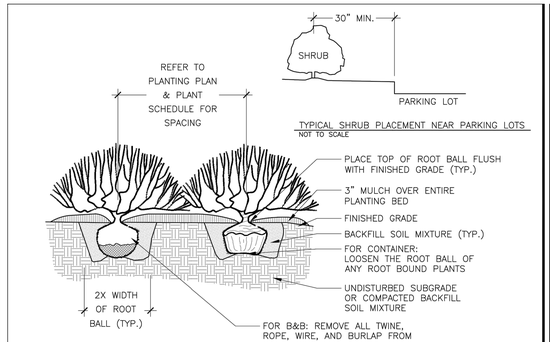
Source: CITY OF ALEXANDRIA	STREET TREE PLANTING WELL	
Approved by: COA	Date drawn: 01/01/19	LD 005
1 OF 1		



NOTES

1. AT PLANTING, PRUNE ONLY BROKEN OR DEAD BRANCHES PER ANSI 300 STANDARD.
2. PLANTING WELL / TRENCH SHALL BE DUG TO ALLOW TOP OF ROOT BALL TO SET FLUSH WITH EXISTING GRADE.
3. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS. ORIENT BEST FACE OF PLANT TO BE MOST VISIBLE.
4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR CITY STAFF, SOIL MIXTURE SHALL BE CLEANED OF DEBRIS, AND MEET SOIL COMPOSITION REQUIREMENTS OF CITY OF ALEXANDRIA LANDSCAPE GUIDELINES.
5. DO NOT PLACE MULCH IN CONTACT WITH STEM OF PLANTS.
6. ALL PLANTS MUST BE WATERED AT INSTALLATION AND AGAIN WITHIN 48–HOURS OF INSTALLATION, ESTABLISHMENT WATERING SHALL BE PER THE SPECIFICATIONS ON ALL DETAILS.

A SHRUB PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

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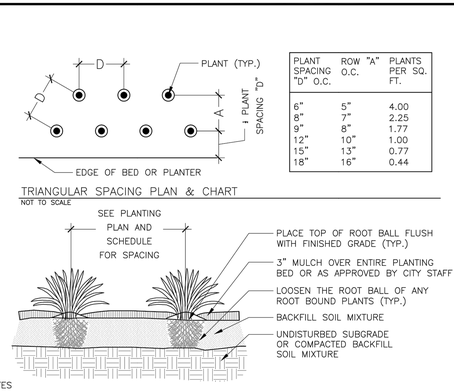
Source: CITY OF ALEXANDRIA	SHRUB PLANTING	
Approved by: COA	Date drawn: 01/01/19	LD 009
1 OF 1		



PLANT SPACING "D" O.C.	ROW "A" O.C.	PLANTS PER SQ. FT.
6"	5"	4.00
8"	7"	2.25
9"	8"	1.77
12"	10"	1.00
15"	13"	0.77
18"	16"	0.44

TRIANGULAR SPACING PLAN & CHART
NOT TO SCALE

NOTES

1. PLANTING WELL / TRENCH SHALL BE DUG TO ALLOW TOP OF ROOT BALL TO SET FLUSH WITH EXISTING GRADE.
2. SET PLANTS IN ERECT, STABLE, AND UNIFORM POSITIONS. ORIENT BEST FACE OF PLANT TO BE MOST VISIBLE.
3. GROUND COVERS AND PERENNIALS SHALL BE INSTALLED WITH TRIANGULAR SPACING. REFER TO CHART.
4. UNLESS OTHERWISE DIRECTED BY PROJECT SPECIFICATIONS OR CITY STAFF, SOIL MIXTURE SHALL BE CLEANED OF DEBRIS, AND MEET SOIL COMPOSITION REQUIREMENTS OF CITY OF ALEXANDRIA LANDSCAPE GUIDELINES.
5. DO NOT PLACE MULCH IN CONTACT WITH STEM OR CROWN OF PLANTS.
6. ALL PLANTS MUST BE WATERED AT INSTALLATION AND AGAIN WITHIN 48–HOURS OF INSTALLATION, PER THE SPECIFICATIONS.

A GROUNDCOVER & PERENNIAL PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

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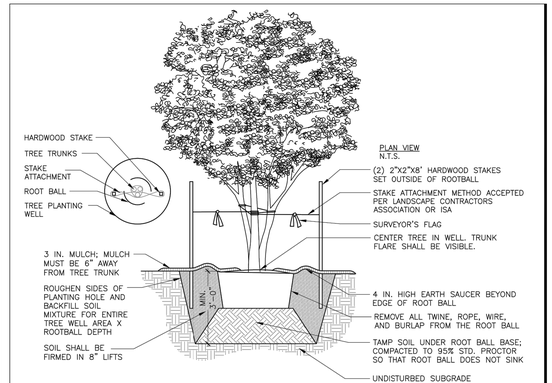
Source: CITY OF ALEXANDRIA	GROUNDCOVER & PERENNIAL PLANTING	
Approved by: COA	Date drawn: 01/01/19	LD 011
1 OF 1		



NOTES

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9. CONTRACTOR SHALL USE GALVANIZED EYESCREW & TURNBUCKLE INSTEAD OF ARBOR TIE ONLY FOR TREES OF SIGNIFICANT SIZE AS DIRECTED BY CITY STAFF.

A MULTI–STEM TREE PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

CITY OF ALEXANDRIA, VIRGINIA
STANDARD LANDSCAPE DETAILS
CITY OF ALEXANDRIA, VIRGINIA

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Source: CITY OF ALEXANDRIA	MULTI-STEM TREE PLANTING	
Approved by: COA	Date drawn: 01/01/19	LD 003
1 OF 1		

ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT CITY OF ALEXANDRIA AND VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

APPROVED
SPECIAL USE PERMIT NO. _____

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. _____ DATE _____

01 ALEXANDRIA CITY STANDARD PLANTING DETAILS ON GRADE

SCALE: NTS

LANDMARK
BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

PLANTING DETAILS - ON GRADE

ORIGINAL ISSUE DATE 07.30.2021

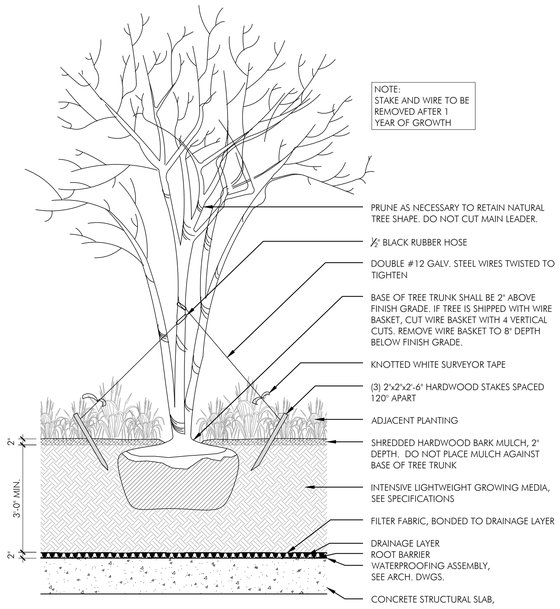
DESIGNED BY

DRAWN BY

CHECKED BY

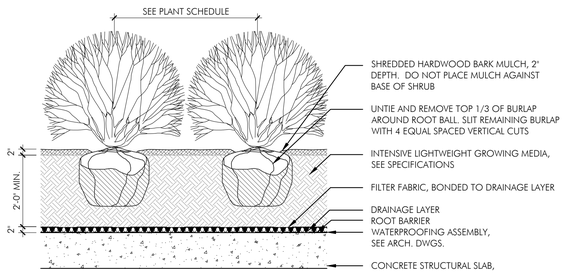
SCALE NTS
0 FEET

L7.01



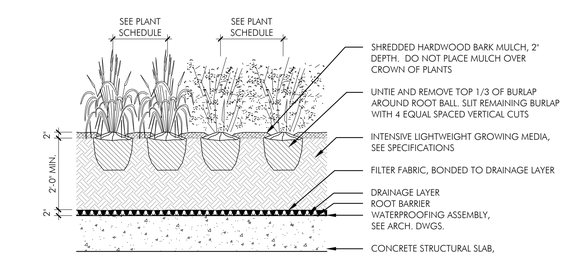
01 TREE PLANTING ON STRUCTURE

1/2" = 1'-0"



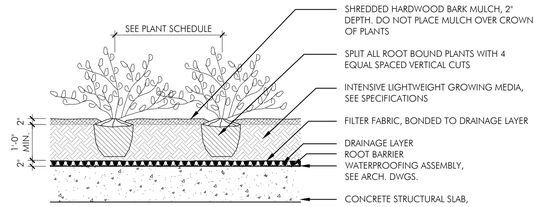
02 SHRUB PLANTING ON STRUCTURE

SCALE : 1/2" = 1'-0"



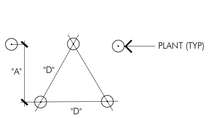
03 PERENNIAL AND ORNAMENTAL GRASS PLANTING ON STRUCTURE

SCALE : 1/2" = 1'-0"



04 GROUNDCOVER PLANTING ON STRUCTURE

SCALE : 1/2" = 1'-0"



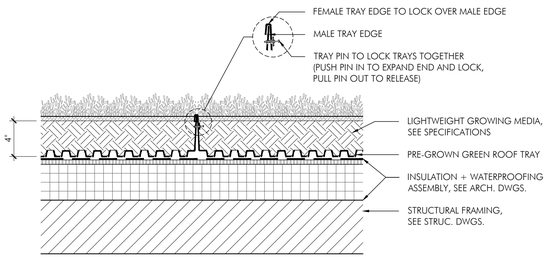
NOTE:

GROUND COVERS AND PERENNIALS TO BE INSTALLED WITH TRIANGULAR SPACING.

PLANT SPACING "D"	ROW "A"
6" O.C.	5" O.C.
8" O.C.	7" O.C.
10" O.C.	9" O.C.
12" O.C.	10" O.C.
14" O.C.	12" O.C.
15" O.C.	13" O.C.
16" O.C.	14" O.C.
18" O.C.	16" O.C.
24" O.C.	21" O.C.
30" O.C.	26" O.C.
36" O.C.	30" O.C.

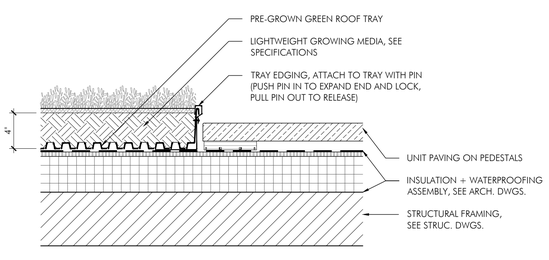
05 PLANT SPACING DIAGRAM

1/2" = 1'-0"



06 GREEN ROOF TRAY SYSTEM

1 1/2" = 1'-0"



07 GREEN ROOF TRAY SYSTEM AT UNIT PAVING

1 1/2" = 1'-0"

GREEN ROOF NOTES:

1. PRE-GROWN GREEN ROOF TRAY SYSTEM BY COLUMBIA GREEN TECHNOLOGIES (WWW.COLUMBIA-GREEN.COM).
   - GREEN ROOF TRAY SYSTEM, RELATED COMPONENTS, AND DETAILS VARY BY WATERPROOFING MANUFACTURER AND COMPRISE A SYSTEM TO BE USED TOGETHER.
2. INSTALL GREEN ROOF TRAY SYSTEM PER MANUFACTURER'S DETAILS AND SPECIFICATIONS.
3. TRAY EDGING TO BE BY COLUMBIA GREEN. USE PRE-FORMED CORNERS - DO NOT BUTT CORNERS.
   - TRAY EDGER TO BE ALUMINUM.
   - LENGTHS OF EDGING SHALL BE SECURED TOGETHER PER MANUFACTURER'S SPECIFICATION.
   - TOP OF EDGING TO REMAIN LEVEL, SHIM BASE AS REQUIRED WITH H.D.P.S.

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APPROVED
SPECIAL USE PERMIT NO. _____

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. _____ DATE _____

LANDMARK
BLOCK E & G

City of Alexandria
Alexandria, Virginia

PARKER RODRIGUEZ, INC
PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
101 North Union St. #320
Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
LANDSCAPE ARCHITECT

REVISIONS

CONCEPT II	04.22.22
50% DD	06.17.22
DSUP DRAFT	06.30.22

PLANTING DETAILS - ON STRUCTURE

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

DRAWN BY

CHECKED BY

SCALE
AS SHOWN

L7.02

LANDMARK BLOCKS E.1, G, & MOB

5801 DUKE ST,
ALEXANDRIA, VA 22304



INDEX OF DRAWINGS - DSUP	
SHEET NUMBER	**DRAWING TITLE**
Architectural	
A000	Cover Sheet
A001	Code Analysis
A002	Building Areas / Unit Mix
A003	LEED Score Card
A004	First Floor Plan
A005	Second Floor Plan
A006	Third Floor Plan
A007	Typical Floor Plan
A008	Roof Plan
A009	Building Sections
A010	Building Sections
A011	Facades Diagram
A012	Building Elevations
A013	Building Elevations
A014	Facade Material Calculations
A015	Perspective Views
A016	Perspective Views
A017	Perspective Views
A018	Perspective Views
A019	Perspective Views

DEVELOPMENT SPECIAL USE PERMIT
JUNE 30, 2022

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_____ DIRECTOR _____ DATE
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5801 DUKE STREET
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301.987.9234

MEP ENGINEER
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410.332.4444

SUSTAINABILITY CONSULTANT
SUSTAINABLE BUILDING PARTNERS
703.970.2890

Key Plan

Issue
NO. DATE

Revisions
NO. DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Cover Sheet

PRINCIPAL IN CHARGE
X.Y.
PROJECT ARCHITECT
X.Y.
DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

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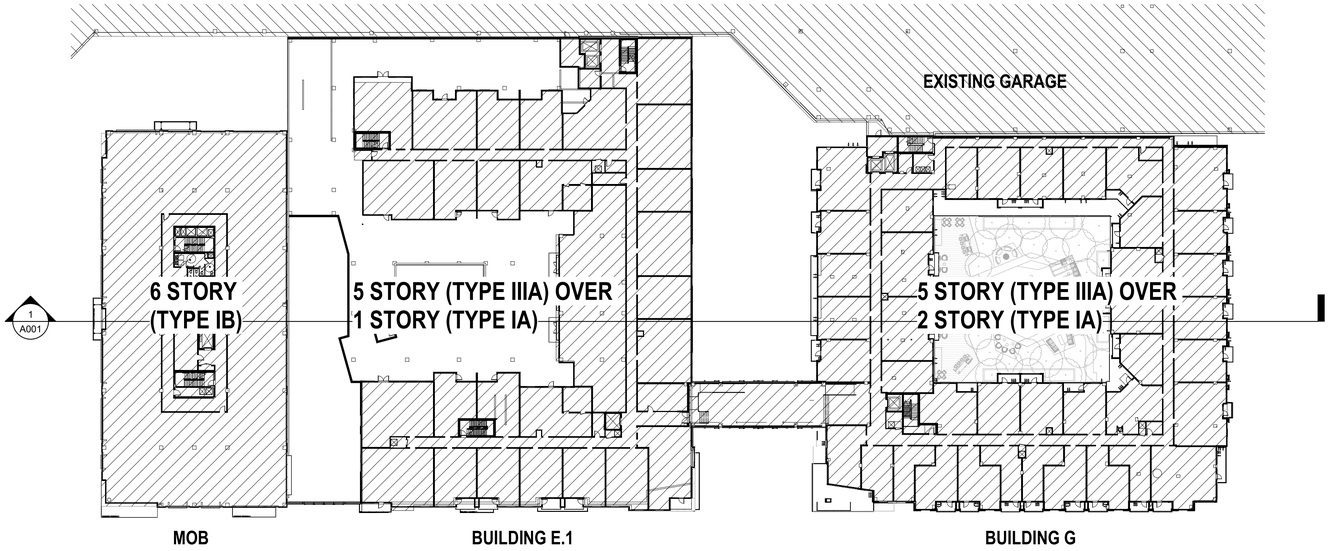
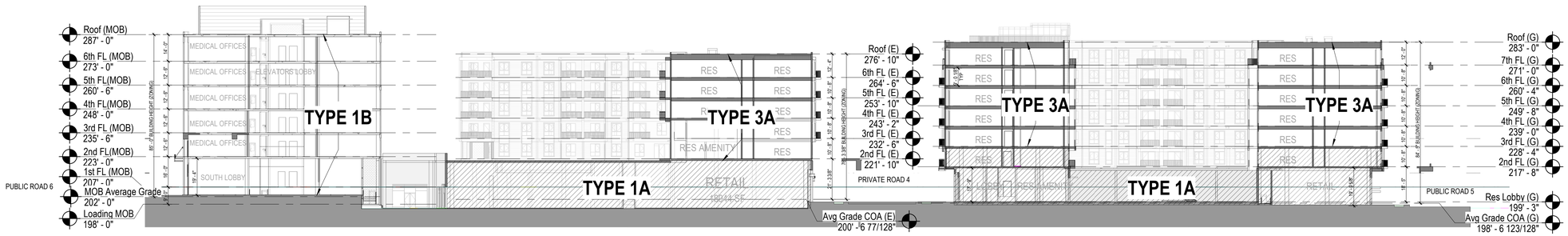


2 MOB, E.1 & G - CODE DIAGRAM

1" = 40'-0"



1 MOB, E.1 & G - Section

1" = 30'-0"

BUILDINGS E & G - CODE ANALYSIS

APPLICABLE CODES:

2018 Virginia Construction Code,
2018 International Building Code,
2018 Virginia Statewide Fire Prevention Code,
2018 Virginia Plumbing Code,
2018 Virginia Mechanical Code,
2018 Virginia Fuel Gas Code,
2018 Virginia Energy Conservation Code,
2018 Virginia Maintenance Code, International Swimming Pool and Spa Code 2018 (ISPSC 2018),
2017 National Electrical Code,
2018 Guidelines for Design and Construction of Outpatient Facilities.
ANSI/ASHRAE/IES STANDARD 90.1-2013 "Energy Standard For Buildings Except Low-Rise Residential Buildings".

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

MERCANTILE:	GROUP M	RETAIL
RESIDENTIAL:	GROUP R-2	MAIN USE GROUP AND RES LOBBY
STORAGE:	GROUP S-2	STORAGE
ASSEMBLY:	GROUP A-3	AMENITY AREAS AND COURTYARDS

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

503.1 - ALLOWABLE BUILDING HEIGHTS AND AREAS, INCLUDING MODIFICATIONS PER SECTIONS 504 AND 506 WHEN APPLIED

BUILDING ID	USE GROUPS	# OF STORIES PROVIDED	AREA PROVIDED	CONST TYPE	SPRINKLER SYSTEM	HEIGHT ALLOWED	HEIGHT PROVIDED	# OF STORIES ALLOWED	AREA ALLOWED
BLDG E.1 AT PODIUM 1ST FLOOR	M, A-2 (RETAIL). R-2(RES)	1	52604 SF	I A	NFPA 13	UNLIMITED	25'-10"	UNLIMITED	UNLIMITED
BLDG E.1 ABOVE PODIUM 2RD-ROOF	R-2 (RES), A-3 (AMENITY)	5	136170 SF	III A		85'-00"	55'-00"	5	216,000 SF
BLDG G AT PODIUM 1ST & 2ND FLOOR	M, A-2 (RETAIL), R-2 (RES),A-3 (AMENITY)	2	43604 SF	I A		UNLIMITED	29'-6"	UNLIMITED	UNLIMITED
BLDG G ABOVE PODIUM 3RD-ROOF	R-2 (RES)	5	178572 SF	III A		85'-00"	55'-00"	5	216,000 SF

MEDICAL OFFICE BUILDING - CODE ANALYSIS

APPLICABLE CODES:

2018 Virginia Construction Code,
2018 Virginia Statewide Fire Prevention Code,
2018 Virginia Plumbing Code,
2018 Virginia Mechanical Code,
2018 Virginia Fuel Gas Code,
2018 Virginia Energy Conservation Code,
2018 Virginia Maintenance Code, International Swimming Pool and Spa Code 2018 (ISPSC 2018),
2017 National Electrical Code,
2018 Guidelines for Design and Construction of Outpatient Facilities.
ANSI/ASHRAE/IES STANDARD 90.1-2013 "Energy Standard For Buildings Except Low-Rise Residential Buildings".

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

NON SEPARATED OCCUPANCIES

MERCANTILE:	GROUP M	RETAIL
BUSINESS:	GROUP B	MEDICAL OFFICES
STORAGE:	GROUP S-2	STORAGE

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

503.1 - ALLOWABLE BUILDING HEIGHTS AND AREAS, INCLUDING MODIFICATIONS PER SECTIONS 504 AND 506 WHEN APPLIED

BUILDING ID	USE GROUPS	# OF STORIES PROVIDED	AREA PROVIDED	CONST TYPE	SPRINKLER SYSTEM	HEIGHT ALLOWED	HEIGHT PROVIDED	# OF STORIES ALLOWED	AREA ALLOWED
BLDG MOB 1ST	M, (RETAIL), S-2(STORAGE)	1	20000 SF	I B	NFPA 13	180'	85'-00"	UNLIMITED	UNLIMITED
BLDG MOB 2ND-6TH	B (BUSINESS), S-2 (STORAGE)	5	20000 SF	I B					

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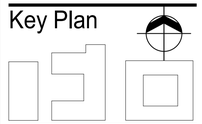
Key Plan



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Revisions
NO. DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Code Analysis

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PROJECT ARCHITECT	
X.Y.	
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A.B., C.D., E.F., G.H., I.J., K.L., M.N.	
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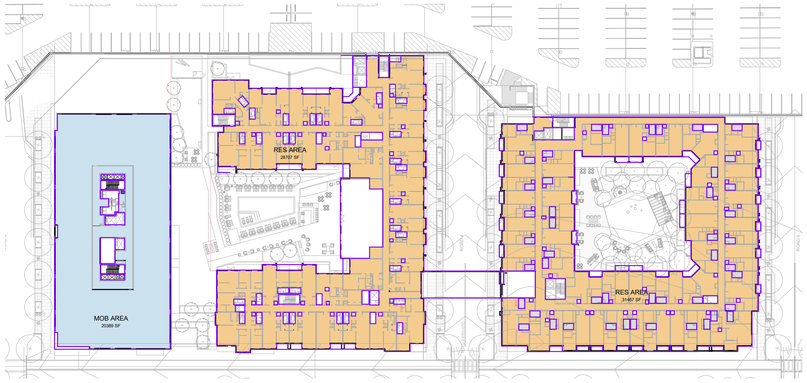
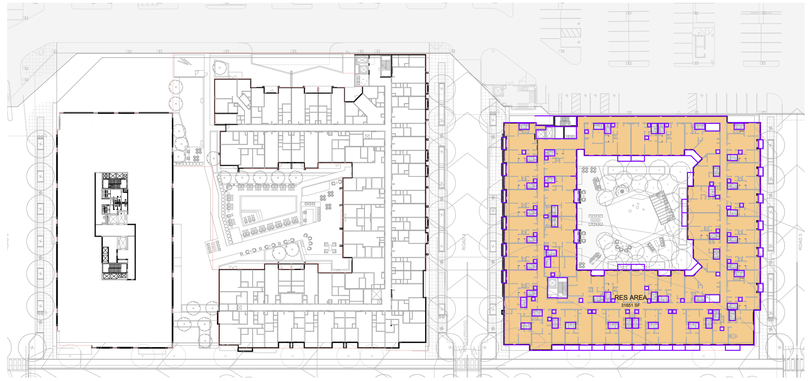


3RD FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	**21,799**	**31,928**	**35,289**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	1,110	1,276	1,478
Area Exclusions (Lavatories)	300	1,945	2,344
Net Floor Area - After Exclusions	**20,389**	**28,707**	**31,467**

3 3rd Floor - Areas

1/64" = 1'-0"



7TH FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	-	-	**35,548**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	-	-	1,503
Area Exclusions (Lavatories)	-	-	2,394
Net Floor Area - After Exclusions	-	-	**31,651**

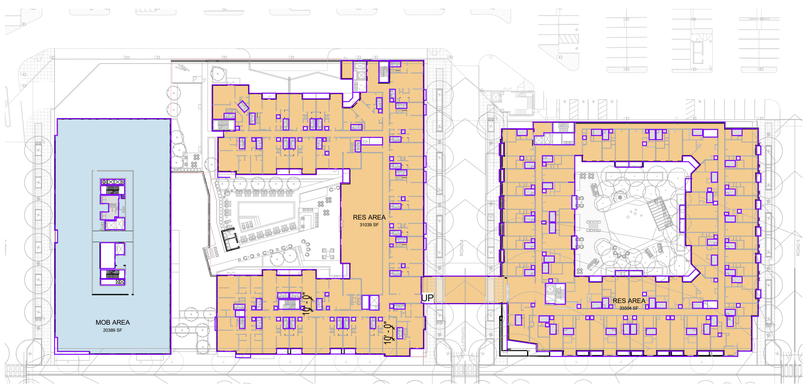
6 7th Floor - Areas

1/64" = 1'-0"

TOTAL AREAS

	MOB	BLOCK E.1	BLOCK G
Res Gross Area		179,212	228,171
Retail Gross Area	7,350	44,085	23,866
MOB Gross Area	122,883		
Total Gross Area	**130,233**	**223,297**	**252,037**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	7,738	12,419	12,088
Area Exclusions (Lavatories)	1,600	10,372	14,214
Res Net Floor Area - After Exlusions		156,421	201,869
Retail Net Floor Area - After Exlusions	7,350	44,085	23,866
MOB Net Floor Area - After Exclusions	113,545		
Net Floor Area - After Exclusions	**120,895**	**200,506**	**225,735**

Total Gross Area (By Block)	**353,530**	**252,037**
Net Floor Area - After Exclusions (By Block)	**321,401**	**225,735**

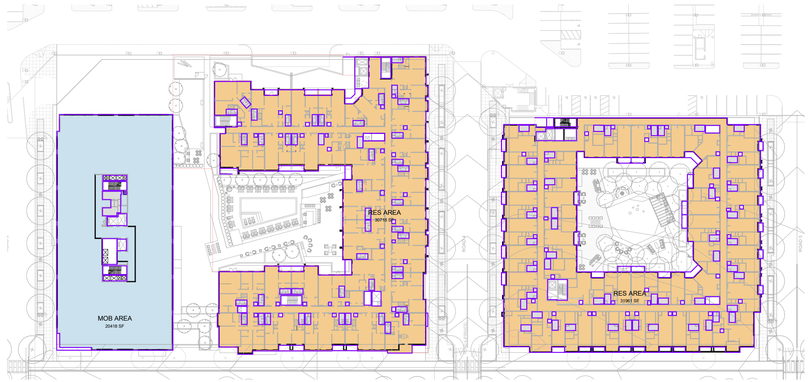


2ND FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	**21,771**	**34,665**	**37,313**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	1,082	1,781	1,515
Area Exclusions (Lavatories)	300	1,845	2,294
Net Floor Area - After Exclusions	**20,389**	**31,039**	**33,504**

2 2nd Floor - Areas

1/64" = 1'-0"



6TH FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	**21,799**	**34,552**	**35,858**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	1,081	1,640	1,503
Area Exclusions (Lavatories)	300	2,194	2,394
Net Floor Area - After Exclusions	**20,418**	**30,718**	**31,961**

5 6th Floor - Areas

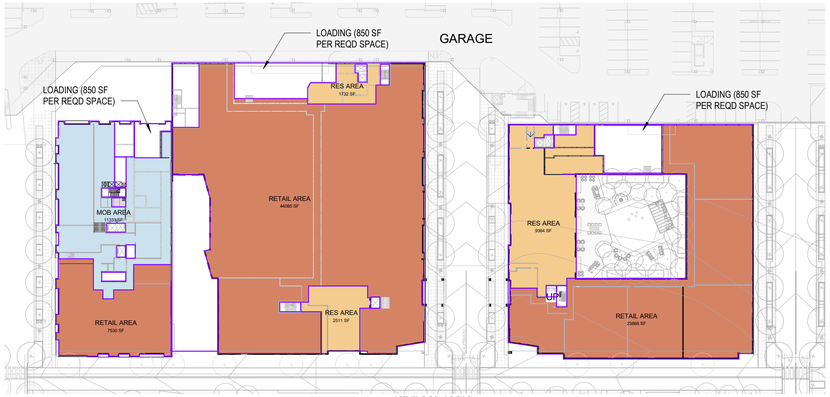
1/64" = 1'-0"

UNIT MIX - BLOCK E.1

UNIT TYPE	Market	%	Affordable	%	Total	%
Studio	1	0.7%			1	1%
1 Bedroom	62	44.3%	2	33.3%	64	44%
1 Bedroom + Den	13	9.3%	1	16.7%	14	10%
2 Bedroom	44	31.4%	2	33.3%	46	32%
2 Bedroom + Den	6	4.3%			6	4%
3 Bedroom	14	10.0%	1	16.7%	15	10%
Total Units	140	100%	6	100%	146	100%

UNIT MIX - BLOCK G

UNIT TYPE	Market	%	Affordable	%	Total	%
Studio	35	15.0%	2	20.0%	37	15%
JR 1 Bedroom	17	7.3%			17	7%
1 Bedroom	137	58.5%	6	60.0%	143	59%
1 Bedroom + Den	6	2.6%			6	2%
2 Bedroom	34	14.5%	2	20.0%	36	15%
2 Bedroom + Den	5	2.1%			5	2%
Total Units	234	100%	10	100%	244	100%

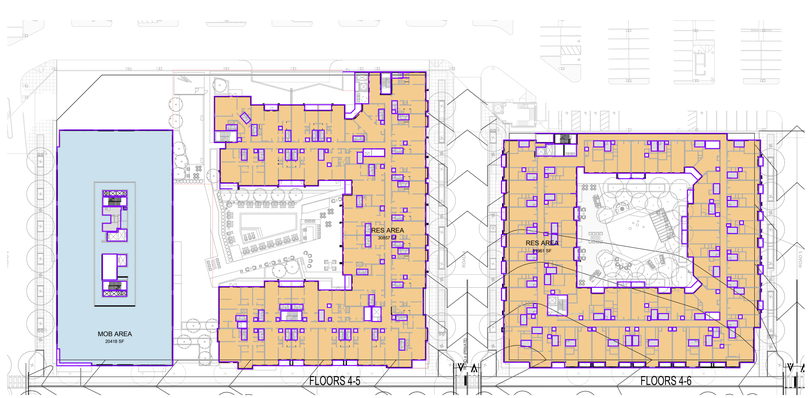


1ST FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	**21,266**	**52,808**	**36,313**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	2,303	4,480	3,083
Area Exclusions (Lavatories)	100		
Net Floor Area - After Exclusions	**18,863**	**48,328**	**33,230**
Retail Gross Area / Net Floor Area	*7,350*	*44,085*	*23,866*

1 1st Floor - Areas

1/64" = 1'-0"



TYPICAL FLOOR AREAS

	MOB	BLOCK E.1	BLOCK G
Total Gross Area	**21,799**	**34,672**	**35,858**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	1,081	1,621	1,503
Area Exclusions (Lavatories)	300	2,194	2,394
Net Floor Area - After Exclusions	**20,418**	**30,857**	**31,961**

4 Typical Floors - Areas

1/64" = 1'-0"

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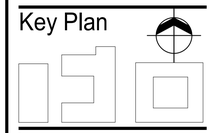
Key Plan



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04/27/2022	

Revisions

NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Building Areas / Unit Mix

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

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LEED for Homes v4: Multifamily Mid-Rise

LMR - Block E&G

June 23, 2022

SUSTAINABLE BUILDING PARTNERS

2	**0**	**0**	**Integrative Process**		**Possible Points**	**2**
Y	?	N				
2			Credit	Integrative Process		

15	**0**	**0**	**Location and Transportation**		**Possible Points**	**15**
Y	?	N				
Y			Prereq	Floodplain Avoidance		Required
15			Credit	*Neighborhood Development*		15
		8	Credit	Site Selection		8
		3	Credit	Compact Development		3
		2	Credit	Community Resources		2
		2	Credit	Access to Transit		2

1.5	**5**	**0.5**	**Sustainable Sites**		**Possible Points:**	**7**
Y	?	N				
Y			Prereq	Construction Activity Pollution Prevention		Required
Y			Prereq	No Invasive Plants		Required
	2		Credit	Heat Island Reduction *ND Alignment*		2
	3		Credit	Rainwater Management (v4.1) *ND Alignment*		3
1.5		0.5	Credit	Non-Toxic Pest Control		2

6	**2**	**4**	**Water Efficiency**		**Possible Points:**	**12**
Y	?	N				
Y			Prereq	Water Metering		Required
6	2	4	Credit	Total Water Use *ND Alignment*		12

19	**2**	**16**	**Energy and Atmosphere**		**Possible Points:**	**37**
Y	?	N				
Y			Prereq	Minimum Energy Performance *ND Alignment*		Required
Y			Prereq	Energy Metering		Required
Y			Prereq	Education of the Homeowner, Tenant or Building Manager		Required
19	2	9	Credit	Annual Energy Use *ND Alignment*		30
		5	Credit	Efficient Hot Water Distribution		5
		2	Credit	Advanced Utility Tracking		2

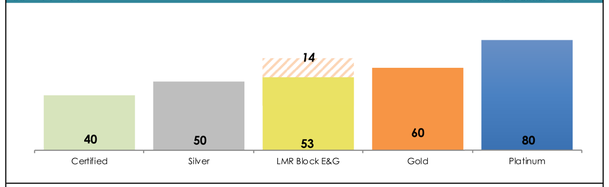
2.5	**0**	**6.5**	**Materials and Resources**		**Possible Points:**	**9**
Y	?	N				
Y			Prereq	Certified Tropical Wood		Required
Y			Prereq	Durability Management		Required
		1	Credit	Durability Management Verification		1
0.5		4.5	Credit	Environmentally Preferable Products		5
2		1	Credit	Construction Waste Management (NC v4)		3

1.5	**4**	**13**	**Indoor Environmental Quality**		**Possible Points:**	**18**
Y	?	N				
Y			Prereq	Ventilation		Required
Y			Prereq	Combustion Venting		Required
Y			Prereq	Garage Pollutant Protection		Required
Y			Prereq	Radon-Resistant Construction		Required
Y			Prereq	Air Filtering		Required
Y			Prereq	Environmental Tobacco Smoke		Required
Y			Prereq	Compartmentalization		Required
		3	Credit	Enhanced Ventilation		3
0.5		1.5	Credit	Contaminant Control		2
	1	2	Credit	Balancing of Heating and Cooling Distribution Systems		3
		3	Credit	Enhanced Compartmentalization		3
	2		Credit	Enhanced Combustion Venting		2
		1	Credit	Enhanced Garage Pollutant Protection		1
	1	2	Credit	Low Emitting Products		3
1			Credit	No Environmental Tobacco Smoke		1

5	**1**	**0**	**Innovation**		**Possible Points:**	**6**
Y	?	N				
4	1		Credit	Innovation		5
1			Credit	LEED AP Homes		1

0	**0**	**4**	**Regional Priority Credits**		**Possible Points:**	**4**
Y	?	N				
		1	Credit	Site Selection (thres. 8)		1
		1	Credit	Access to Transit (thres. 2)		1
		1	Credit	Community Resources (thres. 2)		1
		1	Credit	Rainwater Management (thres. 3)		1

53	**14**	**44**	**Possible Points: 110**



Note:
- min 8 points total in LT and EA required
- min 3 points in WE required
- min 3 points in EQ required

Sustainable Building Partners
2701 Prosperity Avenue, Suite 100
Fairfax, VA 22031

Date: April 21st, 2022

Project: LMR Block E&G

Purpose: Concept 2 Submission - Green Building Approach

General Approach

The Landmark Mall Redevelopment (LMR) project is pursuing LEED Neighborhood Development v4 Plan certification. The LMR Block E&G project is pursuing LEED BD+C Multifamily Mid-rise v4 certification at a Silver level. The project will comply with the Green Building Policy in effect at the time of the DSUP.

Energy

Sustainable Building Partners is hired to perform whole building energy modeling for the project. The effort will analyze the impacts of the envelope, mechanical, plumbing, and electrical systems on the overall energy performance of the building. The effort is iterative, occurring at key design development milestones. Energy efficiency opportunities will be explored and considered to optimize the overall performance and reduce the environmental impacts of the building. Strategies include but are not limited to:

- Window-to-wall ratio
- Window performance
- Envelope thermal transmittance
- Thermal bridging
- Heating and cooling efficiencies
- Ventilation optimization and controls
- Lighting power density

The project will meet the required 14% energy cost savings, equivalent to 5 LEED NC energy points, and explore higher levels of performance as part of this effort. The project will not be part of a district-wide energy system.

The building will be made solar-ready for potential future installation of PV panels.

Water

The project will use native and adaptive plantings throughout the project. The project will include a high-performing irrigation system using drip irrigation, moisture meters, and controllers where necessary to ensure plantings survive and thrive. The use of non-potable water for irrigation will be evaluated.

Low flow plumbing fixtures and ENERGY STAR appliances will be used to reduce potable water use reduction. A 40% water use reduction, at minimum, will be achieved for plumbing fixtures as required by the Green Building Policy. Potential fixture flow rates include: 0.8/1.28 gpf dual flush water closet, 1.0 gpm lavatory faucet, 1.75 gpm

showerhead, and 1.5 gpm kitchen faucet. All tank water closets, lavatory faucets, and showerheads will be WaterSense labeled ensuring high-quality fixtures.

Indoor Environmental Quality

Overall occupant comfort and indoor air quality will be achieved by ensuring high quality compartmentalization of the units, which will be tested and measured via unit air leakage testing. This ensures contaminant and odor transfer between units is minimized. Additionally, outdoor air will be provided directly from the outdoors into the units and all outdoor air systems will be equipped with a minimum MERV 8 filter.

Indoor air quality concerns will also be mitigated by using low-emitting flooring, paints and coating, insulation, and ceiling systems within the building. This will be managed and confirmed by reviewing product information and ensuring it carries a GreenGuard Gold label (or equivalent), which is a third-party label that confirms volatile organic compounds levels are below prescribed thresholds.

Lastly, the project team will evaluate daylight penetration into units, amenity, and retail spaces. Window and daylit area will be maximized to the greatest extent possible, while still balancing thermal and energy performance.

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DIRECTOR DATE

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SUSTAINABLE BUILDING PARTNERS
703.970.2890

Key Plan

Issue
NO. DATE

Revisions
NO. DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

LEED Score Card

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

DATE	APPROVED
6/27/2022	X.Y.
SCALE:	JOB NO. 21379.WEI

DRAWING NO.
A003

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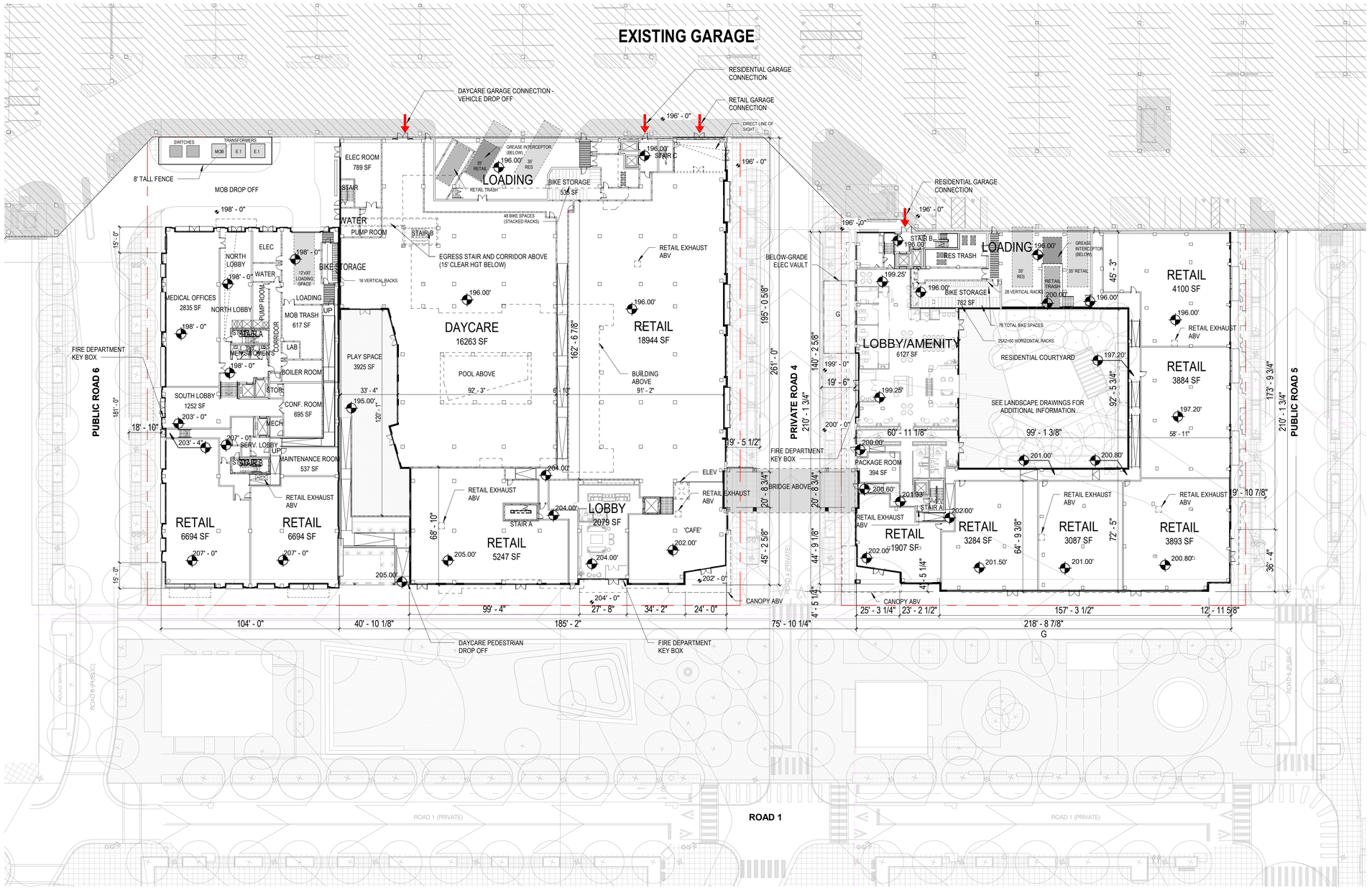

NOTE: RETAIL STOREFRONTS, DEMISING, ENTRANCE LOCATIONS, ENTRANCE QUANTITIES, SIGNAGE AND ASSOCIATED FEATURES AT GROUND FLOOR RETAIL FRONTAGES ARE SUBJECT TO CHANGE BASED ON LEASE CONFIGURATION AND INDIVIDUAL RETAILER MODIFICATIONS. APPLICANT REQUESTS FLEXIBILITY TO MAKE CHANGES TO THE GROUND FLOOR RETAIL FRONTAGES AS NEEDED FOR A SUCCESSFUL RETAIL ENVIRONMENT, SUBJECT TO COMPLIANCE WITH APPLICABLE REGULATIONS.

1 1st Floor

1" = 30'-0"

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ _____
DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ _____
DIRECTOR DATE

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NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

First Floor Plan

PRINCIPAL IN CHARGE	X.Y.
PROJECT ARCHITECT	X.Y.
DRAWN	A.B., C.D., E.F., G.H., I.J., K.L., M.N.
DATE	6/27/2022
APPROVED	X.Y.
SCALE:	1" = 30'-0"
JOB NO.	21379.WEI

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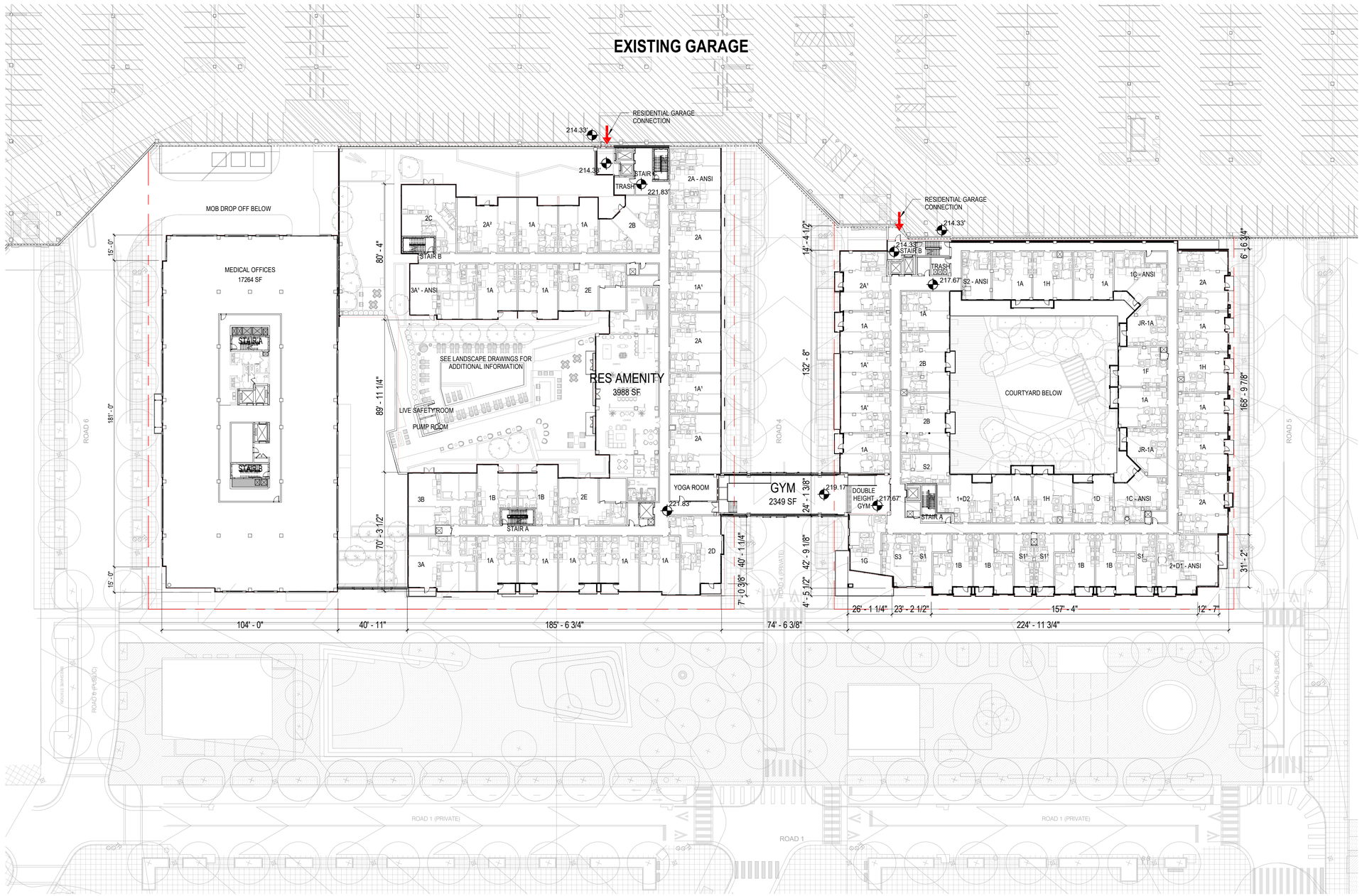

1 2nd Floor

1" = 30'-0"

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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

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SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Second Floor Plan

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

DATE	APPROVED
6/27/2022	X.Y.
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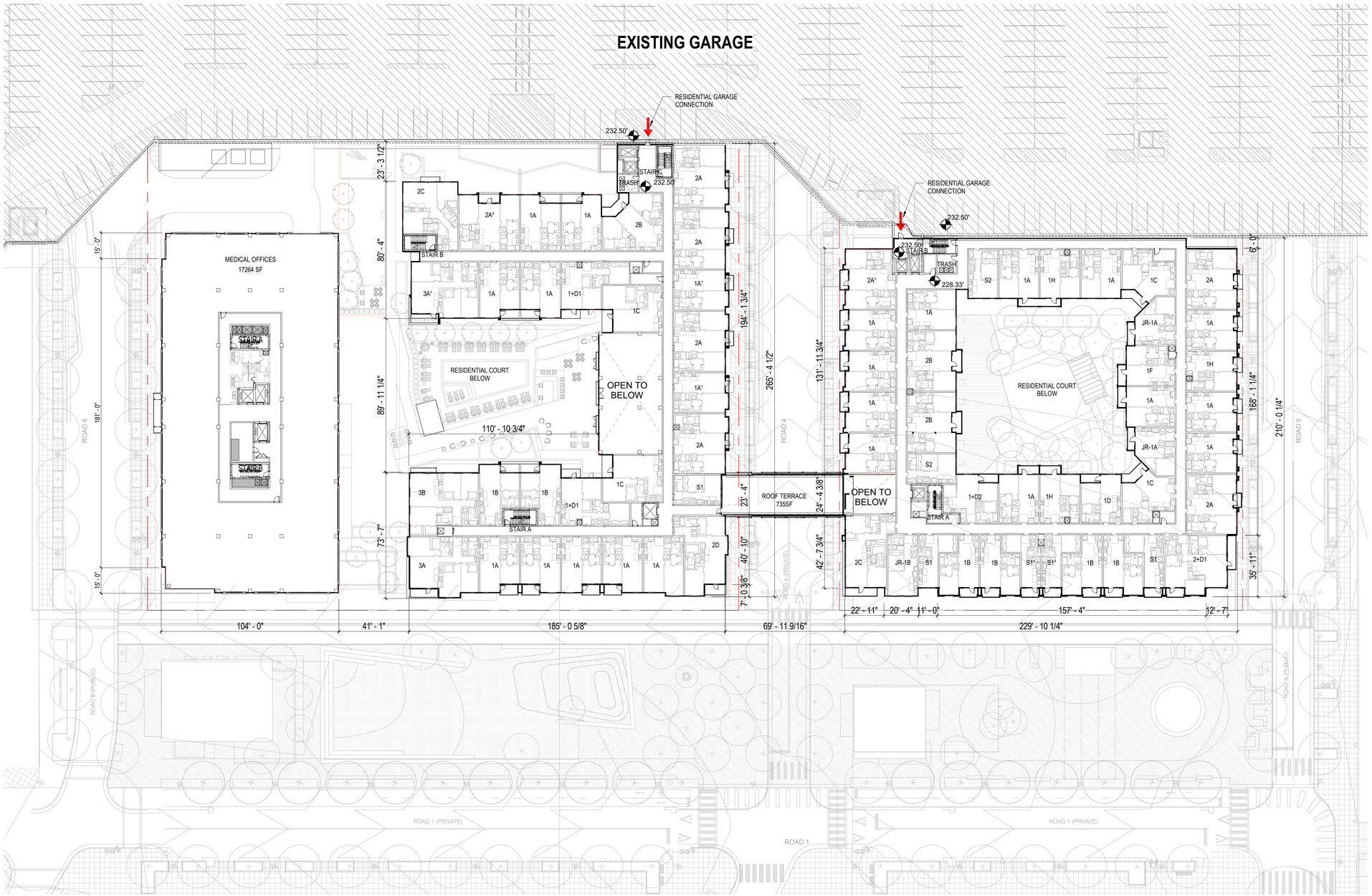
DRAWING NO.

A005



1 3rd Floor

1" = 30'-0"

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SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

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NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
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Third Floor Plan

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

DATE	APPROVED
6/27/2022	X.Y.
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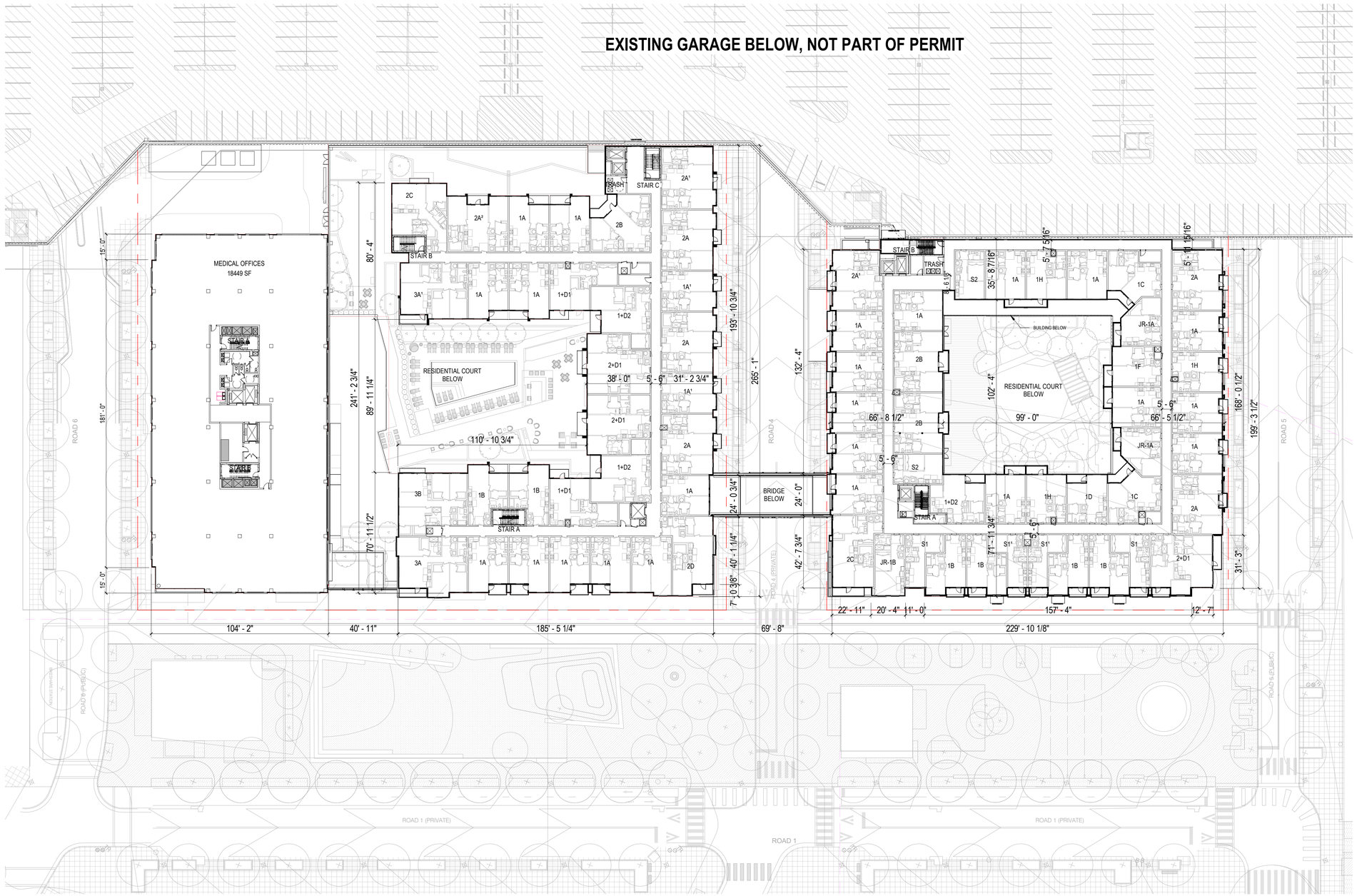

1 Typical Floor

1" = 30'-0"

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DEPARTMENT OF PLANNING & ZONING

_____ _____

DIRECTOR DATE

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SITE PLAN NO. _____

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DIRECTOR DATE

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CHAIRMAN, PLANNING COMMISSION DATE

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04/27/2022	

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NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Typical Floor Plan

PRINCIPAL IN CHARGE X.Y.	
PROJECT ARCHITECT X.Y.	
DRAWN A.B., C.D., E.F., G.H., I.J., K.L., M.N.	
DATE 6/27/2022	APPROVED X.Y.
SCALE: 1" = 30'-0"	JOB NO. 21379.WEI

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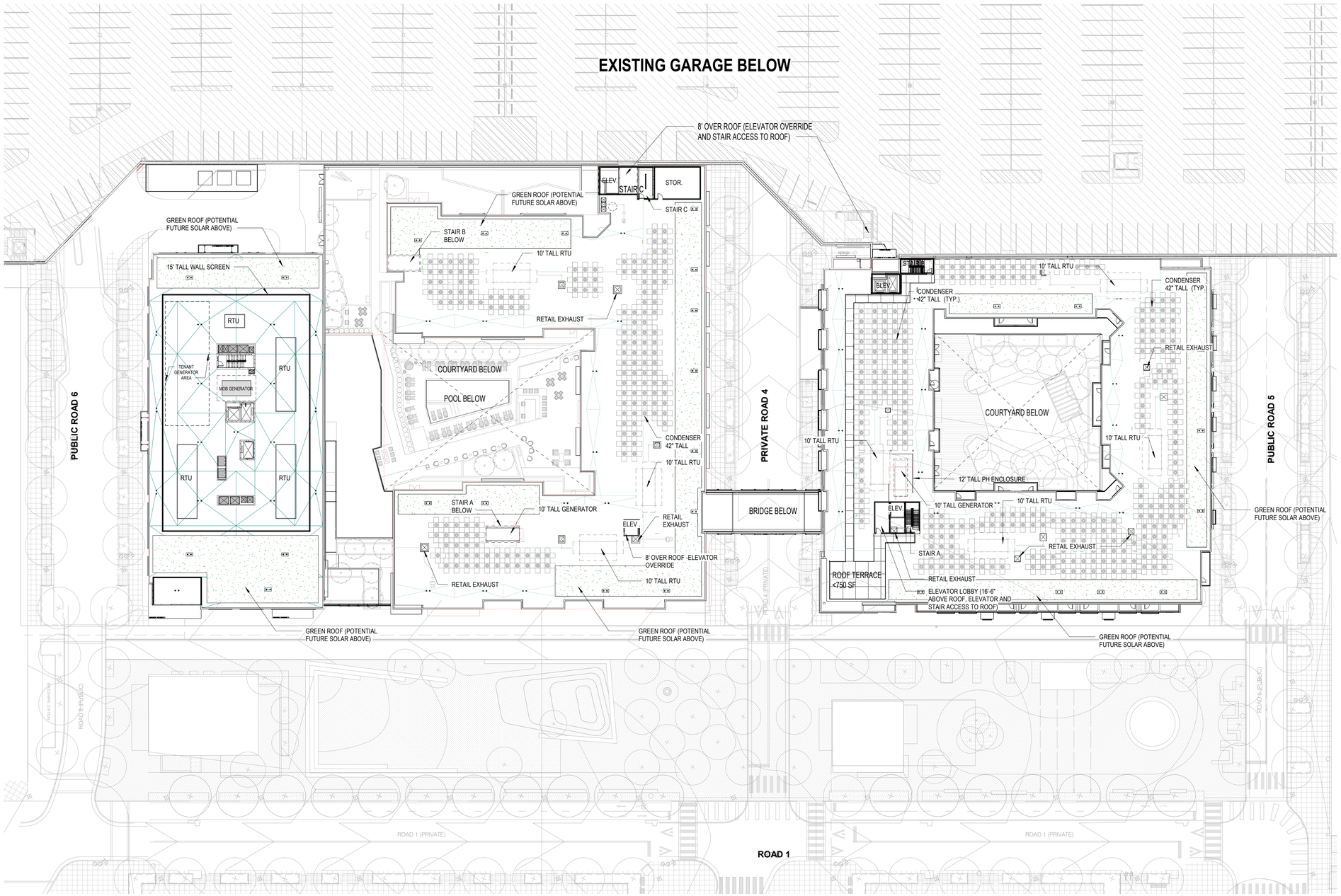
A007



1 Roof Plan

1" = 30'-0"

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ _____

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ _____

DIRECTOR DATE

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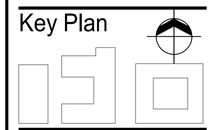

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Roof Plan

PRINCIPAL IN CHARGE X.Y.	
PROJECT ARCHITECT X.Y.	
DRAWN A.B., C.D., E.F., G.H., I.J., K.L., M.N.	
DATE 6/27/2022	APPROVED X.Y.
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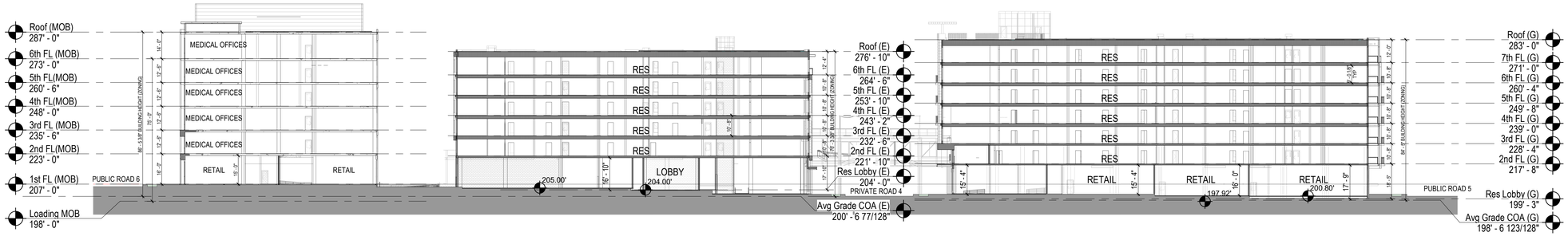
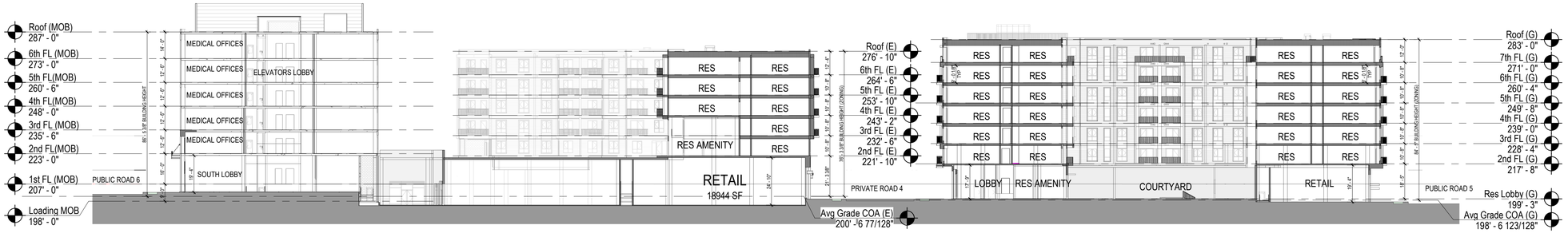
DRAWING NO.

A008



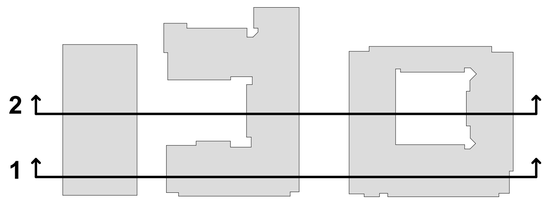
1 Section - MOB, E.1, G

1" = 30'-0"



2 Section - MOB, E.1, G

1" = 30'-0"



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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

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NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Building Sections

PRINCIPAL IN CHARGE	X.Y.
PROJECT ARCHITECT	X.Y.
DRAWN	A.B., C.D., E.F., G.H., I.J., K.L., M.N.
DATE	6/27/2022
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JOB NO.	21379.WEI

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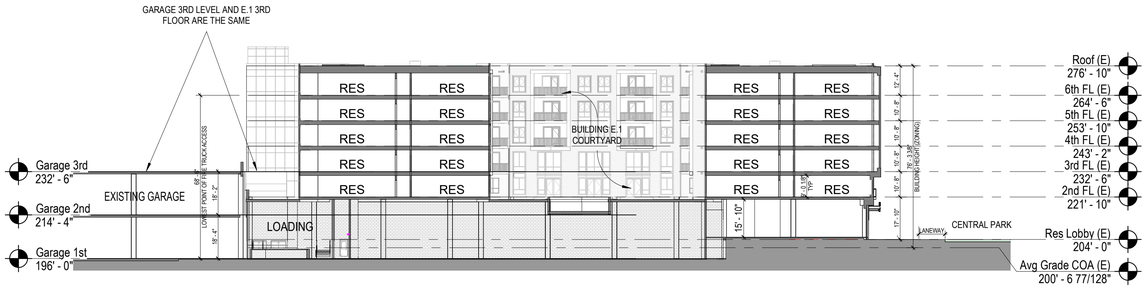
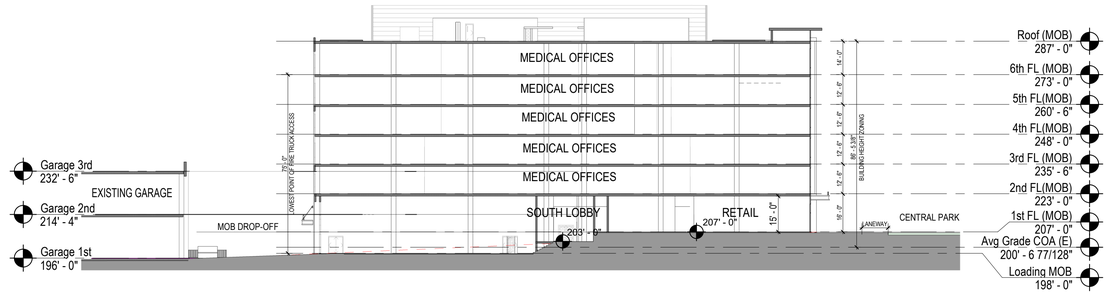


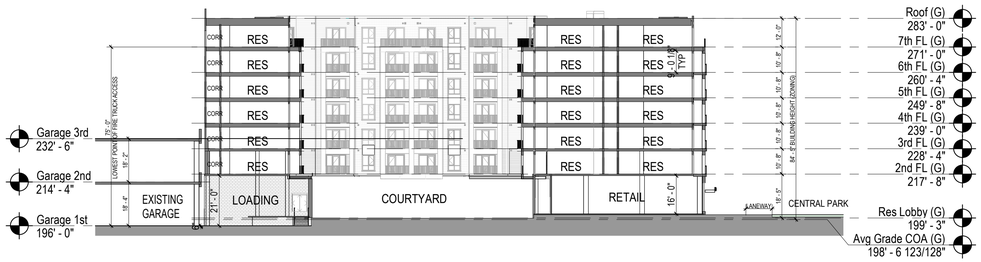
1 Section - Building E.1

1" = 30'-0"



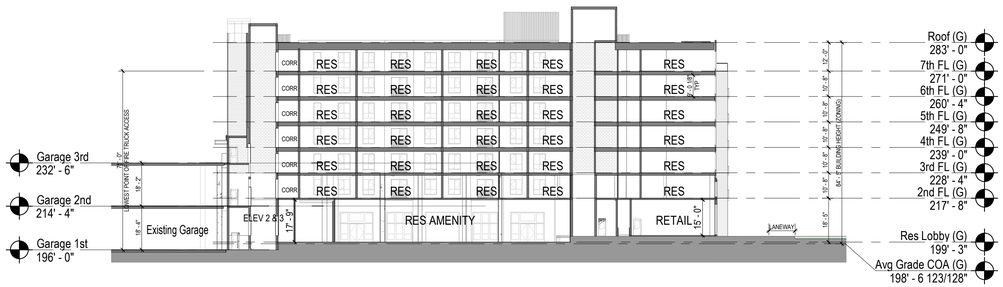
2 Section - MOB

1" = 30'-0"



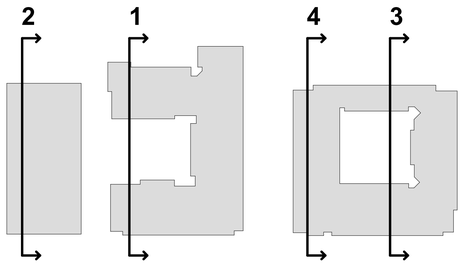
3 Section - Building G

1" = 30'-0"



4 Section - Building G

1" = 30'-0"



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SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

DIRECTOR _____ DATE _____

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SITE PLAN NO. _____

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CHAIRMAN, PLANNING COMMISSION _____ DATE _____

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COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Building Sections

PRINCIPAL IN CHARGE	X.Y.
PROJECT ARCHITECT	X.Y.
DRAWN	A.B., C.D., E.F., G.H., I.J., K.L., M.N.
DATE 6/27/2022	APPROVED X.Y.
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1. MOB, E.1, & G - SOUTH VIEW





2. BLOCK I - WEST ELEVATION



3. BLOCK K - NORTH ELEVATION

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_____ DIRECTOR _____ DATE
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NO. DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Facades Diagram

PRINCIPAL IN CHARGE
X.Y.
PROJECT ARCHITECT
X.Y.
DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.
DATE 6/27/2022 | APPROVED X.Y.
SCALE: | JOB NO. 21379.WEI
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A011

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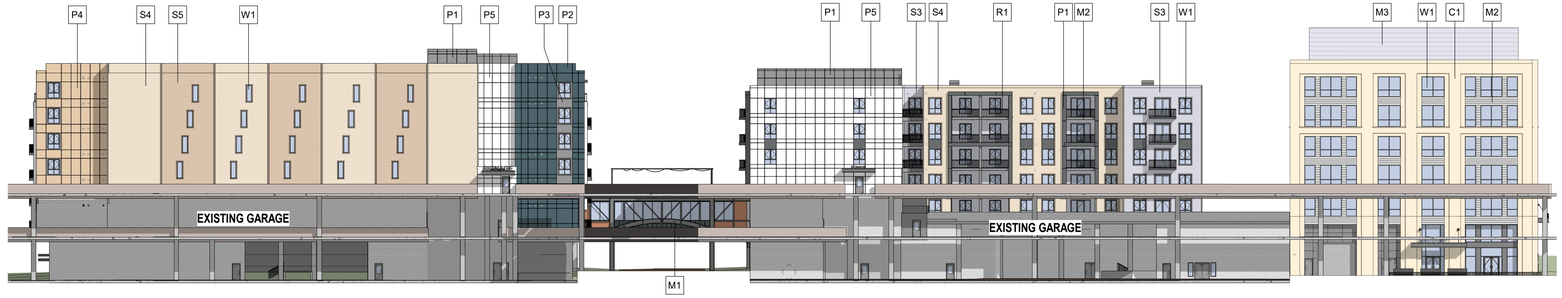
1 MOB, E.1 and G - South Elevation

1" = 30'-0"



2 MOB, E.1 and G - North Elevation

1" = 30'-0"



3 Building G - West Elevation

1" = 30'-0"



4 Building G - East Elevation

1" = 30'-0"



5 Building E.1 - East Elevation

1" = 30'-0"



6 MOB - West Elevation

1" = 30'-0"

MATERIAL LEGEND	
NUMBER	MATERIAL
B1	BRICK - CREAM
B2	BRICK - LIGHT GRAY
B3	BRICK - DARK GRAY
C1	PRECAST PANEL
C2	CAST STONE
M1	METAL PANEL - DARK GRAY
M2	METAL PANEL - LIGHT GRAY
M3	MECHANICAL SCREEN WALL
P1	FIBER CEMENT PANEL - DARK GRAY
P2	FIBER CEMENT PANEL - DARK BLUE
P3	FIBER CEMENT PANEL - LIGHT GRAY
P4	FIBER CEMENT PANEL - DARK CREAM
P5	FIBER CEMENT PANEL - WHITE
R1	ALUMINUM RAILING
R2	GLASS RAILNIG
S1	ACCENT FAUX WOOD
S2	FIBER CEMENT SIDING - LIGHT GRAY
S3	FIBER CEMENT SIDING - LIGHT BLUE
S4	FIBER CEMENT SIDING - LIGHT CREAM
S5	FIBER CEMENT SIDING - DARK CREAM
W1	ALUMINUM WINDOW
W2	STOREFRONT WALL
W3	CURTAIN WALL

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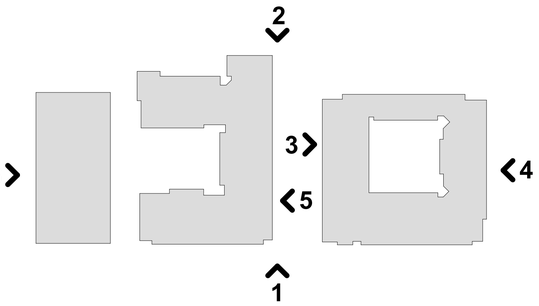

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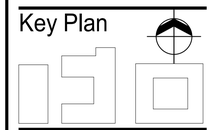
Key Plan



Issue

NO.	DATE
04/27/2022	

Revisions

NO.	DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Building Elevations

PRINCIPAL IN CHARGE X.Y.	
PROJECT ARCHITECT X.Y.	
DRAWN A.B., C.D., E.F., G.H., I.J., K.L., M.N.	
DATE 6/27/2022	APPROVED X.Y.
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1 Building G - West Court Elevation
1" = 30'-0"



2 Building G - East Court Elevation
1" = 30'-0"



3 Building G - South Court Elevation
1" = 30'-0"



4 Building G - North Court Elevation
1" = 30'-0"

MATERIAL LEGEND	
NUMBER	MATERIAL
B1	BRICK - CREAM
B2	BRICK - LIGHT GRAY
B3	BRICK - DARK GRAY
C1	PRECAST PANEL
C2	CAST STONE
M1	METAL PANEL - DARK GRAY
M2	METAL PANEL - LIGHT GRAY
M3	MECHANICAL SCREEN WALL
P1	FIBER CEMENT PANEL - DARK GRAY
P2	FIBER CEMENT PANEL - DARK BLUE
P3	FIBER CEMENT PANEL - LIGHT GRAY
P4	FIBER CEMENT PANEL - DARK CREAM
P5	FIBER CEMENT PANEL - WHITE
R1	ALUMINUM RAILING
R2	GLASS RAILNIG
S1	ACCENT FAUX WOOD
S2	FIBER CEMENT SIDING - LIGHT GRAY
S3	FIBER CEMENT SIDING - LIGHT BLUE
S4	FIBER CEMENT SIDING - LIGHT CREAM
S5	FIBER CEMENT SIDING - DARK CREAM
W1	ALUMINUM WINDOW
W2	STOREFRONT WALL
W3	CURTAIN WALL

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5 Building E.1 - West Elevation
1" = 30'-0"



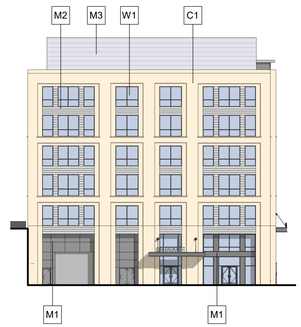
6 Building E.1 - South Court Elevation
1" = 30'-0"



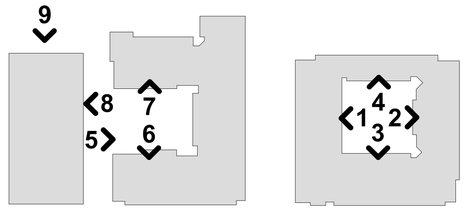
7 Building E.1 - North Court Elevation
1" = 30'-0"



8 MOB - East Elevation
1" = 30'-0"



9 MOB - North Elevation
1" = 30'-0"



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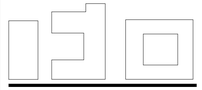

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SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Building Elevations

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

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SOUTH ELEVATIONS

	MOB		E.1		G		E.1 & G		Total	
	Area	%	Area	%	Area	%	Area	%	Area	%
Brick		0%	1,686	11%	5,587	28%	7,273	21%	7,273	17%
Accent Faux Wood		0%	1,090	7%	1,221	6%	2,311	7%	2,311	5%
Metal Panel	1,166	14%	1,554	10%	1,766	9%	3,320	9%	4,486	10%
Fiber Cement Panel		0%	5,648	38%	3,286	16%	8,934	25%	8,934	20%
Fiber Cement Siding		0%		0%		0%		0%	0	0%
Precast Panels	3,488	41%		0%		0%		0%	3,488	8%
Windows	3,927	46%	4,878	33%	8,358	41%	13,236	38%	17,163	39%
Total	8,581	100%	14,856	100%	20,218	100%	35,074	100%	43,655	100%

1 MOB, E.1, and G - South Elevation

1" = 30'-0"



G - WEST ELEVATION

	Area	Percentage
Brick	1,618	9%
Accent Faux Wood	1,399	8%
Metal Panel	796	5%
Fiber Cement Panel	6,742	39%
Fiber Cement Siding	389	2%
Precast Panels		0%
Windows	6,169	36%
Total	17,113	100%

2 Building G - West Elevation

1" = 30'-0"



E.1 - EAST ELEVATION

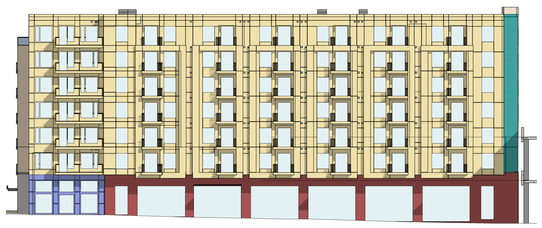
	Area	Percentage
Brick	2,763	14%
Accent Faux Wood	1,355	7%
Metal Panel	679	3%
Fiber Cement Panel	8,166	42%
Fiber Cement Siding		0%
Precast Panels		0%
Windows	6,696	34%
Total	19,659	100%

3 Building E.1 - East Elevation

1" = 30'-0"

MATERIAL LEGEND

- BRICK
- ACCENT FAUX WOOD
- METAL PANEL
- FIBER CEMENT PANEL
- FIBER CEMENT SIDING
- PRE-CAST PANEL
- WINDOWS



G - EAST ELEVATION

	Area	Percentage
Brick	1,544	9%
Accent Faux Wood		0%
Metal Panel	283	2%
Fiber Cement Panel	9,721	54%
Fiber Cement Siding	395	2%
Precast Panels		0%
Windows	5,998	33%
Total	17,941	100%

4 Building G - East Elevation

1" = 30'-0"

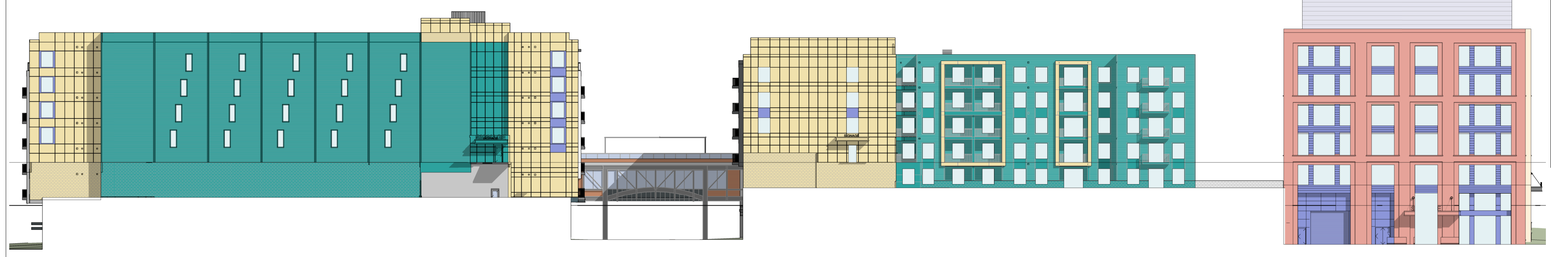


MOB - WEST ELEVATION

	Area	Percentage
Brick		0%
Accent Faux Wood		0%
Metal Panel	2,348	13%
Fiber Cement Panel		0%
Fiber Cement Siding		0%
Precast Panels	9,174	49%
Windows	7,057	38%
Total	18,579	100%

5 MOB - West Elevation

1" = 30'-0"



NORTH ELEVATIONS

	MOB		E.1		G		E.1 & G		Total	
	Area	%	Area	%	Area	%	Area	%	Area	%
Brick		0%		0%		0%	0	0%	0	0%
Accent Faux Wood		0%		0%		0%	0	0%	0	0%
Metal Panel	1,809	20%	42	0%	216	1%	258	1%	2,067	6%
Fiber Cement Panel		0%	4,133	37%	3,959	25%	8,092	30%	8,092	22%
Fiber Cement Siding		0%	4,648	42%	10,962	70%	15,610	58%	15,610	43%
Precast Panels	4,466	48%		0%		0%		0%	4,466	12%
Windows	2,942	32%	2,230	20%	584	4%	2,814	11%	5,756	16%
Total	9,217	100%	11,053	100%	15,721	100%	26,774	100%	35,991	100%

6 MOB, E.1, and G - North Elevation

1" = 30'-0"

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COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Facade Material Calculations

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

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1. VIEW FROM SE



2. VIEW FROM SW

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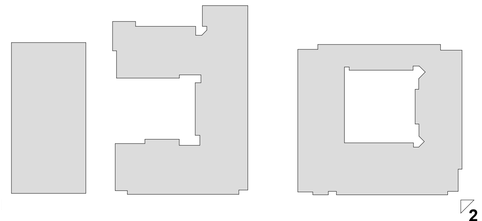

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NO. 008421
06/30/2022
ARCHITECT

Perspective Views

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

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1. VIEW FROM ROAD 4



2. VIEW FROM CENTRAL PARK



3. VIEW FROM ROAD 4 LOOKING NORTH



4. VIEW FROM ROAD 4 LOOKING SOUTH

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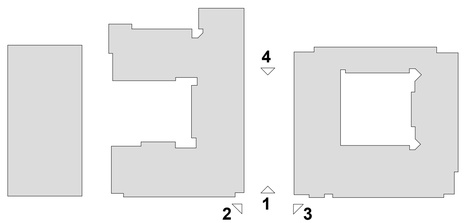

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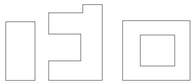

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1. VIEW OF MOB SW



2. VIEW OF BLOCK G SE



3. VIEW FROM GARAGE NW



4. VIEW FROM GARAGE NE

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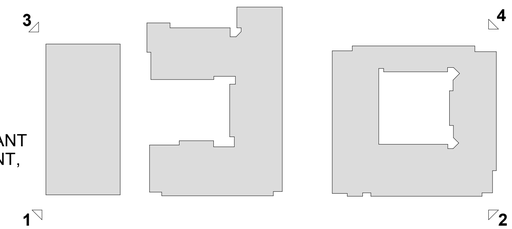

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1. VIEW OF BUILDING G WEST FACADE



2. VIEW OF BUILDING E EAST FACADE



3. VIEW OF BUILDING G EAST FACADE



4. VIEW OF DAYCARE COURT & BUILDING E

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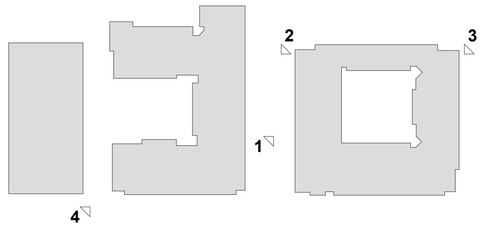

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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
_____ _____
DIRECTOR DATE

_____ _____
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
_____ _____ _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

DSUP SUBMISSION 6/30/2022

6/30/2022 1:40:08 PM

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1923 VERMONT AVE NW, 2nd Floor
WASHINGTON, DC 20001
t: 301.588.4800 f: 301.650.2255
www.tortigallas.com

WEST END - BLOCKS E & G

5801 DUKE STREET
ALEXANDRIA, VA 22304

OWNER / DEVELOPER
FOULGER-PRATT DEVELOPMENT
240.499.9600

STRUCTURAL ENGINEER
STRUCTURA INC.
301.987.9234

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703.548.5010

INTERIOR DESIGNER
MSA INTERIORS INC.
410.332.4444

SUSTAINABILITY CONSULTANT
SUSTAINABLE BUILDING PARTNERS
703.970.2890

Key Plan

Issue
NO. DATE
04/27/2022

Revisions
NO. DATE

COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

Perspective Views

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
A.B., C.D., E.F., G.H., I.J., K.L., M.N.

DATE	APPROVED
6/27/2022	X.Y.
SCALE: 1" = 100'-0"	JOB NO. 21379.WEI

DRAWING NO.
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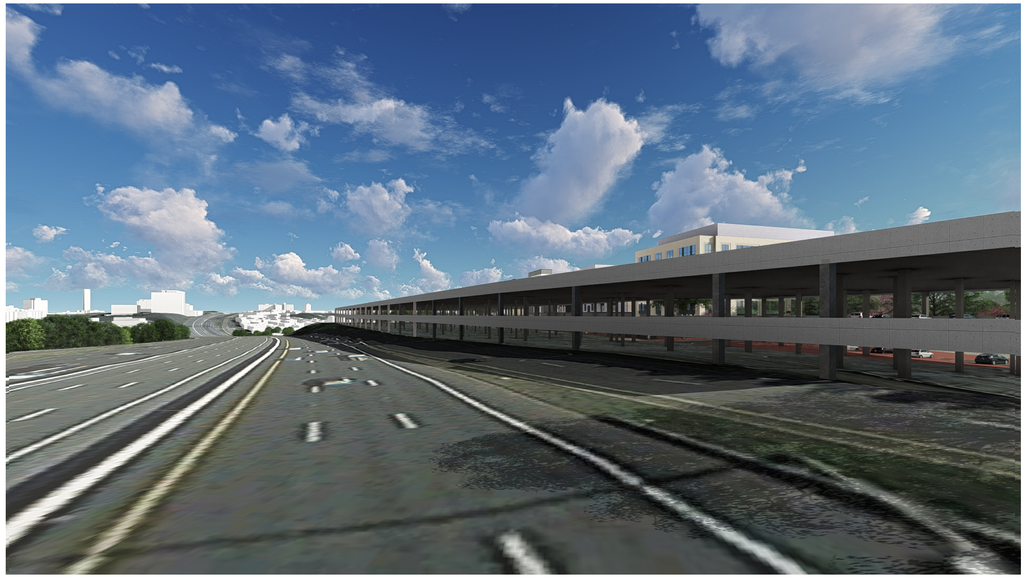
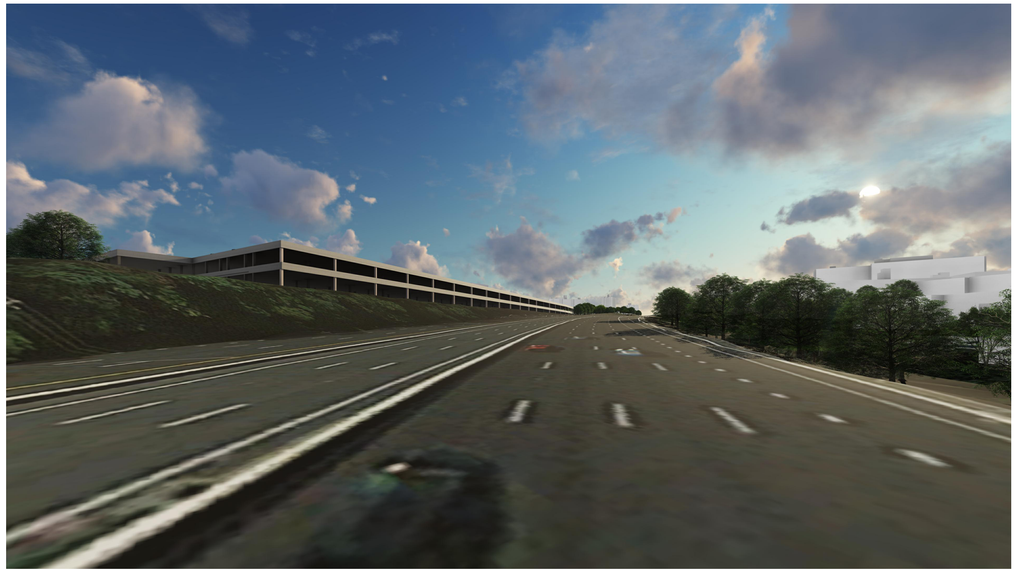
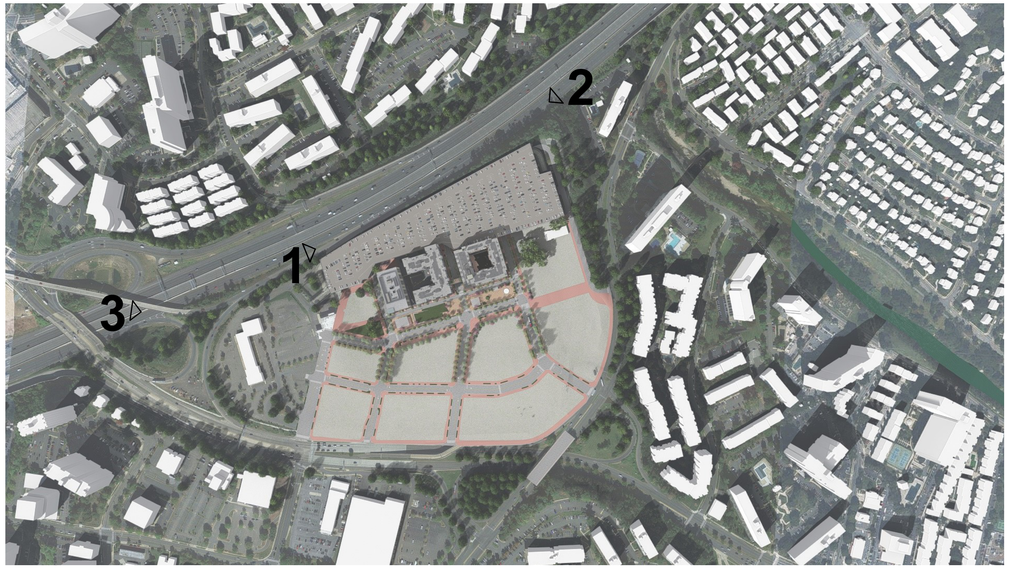


1. VIEW OF I-395 NW



2. VIEW OF I-395 NE

3. VIEW FROM BRIDGE OFF RAMP NW



4. AERIAL VIEW OF SITE

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
_____ DIRECTOR _____ DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
_____ DIRECTOR _____ DATE
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE
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DATE	APPROVED
6/27/2022	X.Y.
SCALE:	JOB NO. 21379.WEI

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