WEST END

DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: SEPTEMBER 27, 2022

PROJECT TEAM

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AREA TABULATIONS:

BLOCK E LOT AREA =	2.49 AC.	108,575 AC.	TOTAL DISTURBED AREA =	4.05 AC.	176,668 SF.
BLOCK G LOT AREA =	1.42 AC.	62,083 AC.	TOTAL EX. IMPERVIOUS AREA =	4.05 AC.	176,668 SF.
TOTAL DEVELOPMENT AREA =	3.91 AC.	170,658 AC.	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 22304

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: 42,663 SF (25% OF DEVELOPMENT AREA AT-OR ABOVE GRADE)

OPEN SPACE PROVIDED: 26,227 SF (AT-GRADE)
16,346 SF (ABOVE-GRADE)
TOTAL OPEN SPACE PROVIDED: 42,663 SF (25.00%)*

*INCLUDES 14,456 SF OF TRANSFERRED AT-GRADE OPEN SPACE FROM BLOCK P.

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

FLOOR AREA CALCULATION:

BUILDING E	GROSS AREA (SF)	FLOOR AREA (SF)
RETAIL	56,568	56,568
RESIDENTIAL	177,456	155,141
MEDICAL OFFICE	119,506	109,920
BUILDING E SUBTOTAL:	353,530	321,629
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:	605,567	547,364

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 91.91 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 = 170 SPACES
BLOCK E (MULTIFAMILY): RATIO: 1.0 SP/BEDROOM(213) = 213 SPACES
BLOCK E (OFFICE, MEDICAL): RATIO: 1.5 SP/1,000 SF = 165 SPACES
BLOCK E PARKING REQUIRED: 548 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: 905 SPACES

PARKING PROVIDED:

BLOCK E
BLOCK E (RETAIL): 205 SPACES
BLOCK E (MULTIFAMILY): 229 SPACES
BLOCK E (MEDICAL OFFICE): 403 SPACES
ON-STREET PARKING: 15 SPACES
BLOCK E PARKING PROVIDED: 852 SPACES

BLOCK G
BLOCK G (RETAIL): 95 SPACES
BLOCK G (MULTIFAMILY): 285 SPACES
ON-STREET PARKING: 15 SPACES
BLOCK G PARKING PROVIDED: 395 SPACES

TOTAL PARKING PROVIDED: 1,247 SPACES

LOADING SPACES REQUIRED: RATIO: 1/20,000 SF (RETAIL)=4 SPACES
LOADING SPACES PROVIDED: 7 SPACES

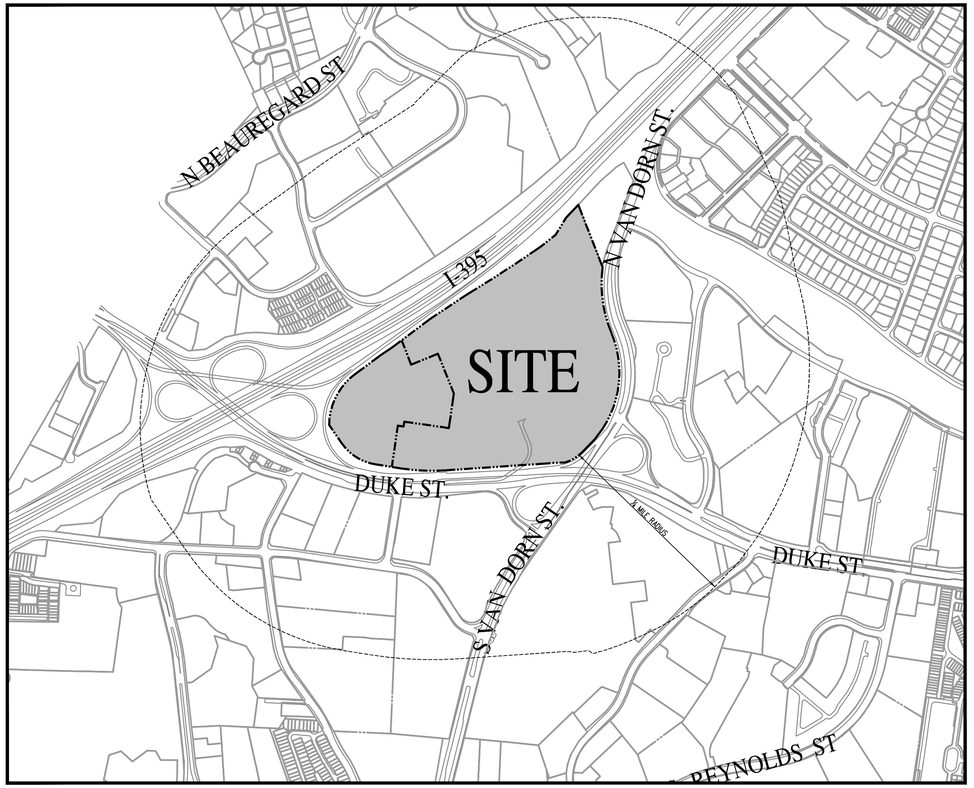
TRIP GENERATION:

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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(74 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#2022-10017
- SUP TO EXCEED THE MAXIMUM PARKING REQUIREMENT PER 8-100(A)8.
- TMP SUP FOR BLOCKS E&G, I AND K TO CONSTRUCT MORE THAN 349 DWELLING UNITS PER 11-704(A)2.
- SUP TO HAVE MORE THAN THREE PENTHOUSES ON THE MEDICAL OFFICE BUILDING PER 6-403(B)3A.
- SUP TO HAVE A PENTHOUSE EXCEED 15-FT. IN HEIGHT ON THE BLOCK G BUILDING PER 6-403(B)3B.

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.

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
09/27/22
PROFESSIONAL ENGINEER

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PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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	**109,920**			109,920	-	-	-
Multifamily	**344,760**	**374 units**		149,641	140	195,119	234
Affordable Multifamily	**12,250**	**16 units**		5,500	6	6,750	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	**80,434**			56,568	-	23,866	-
Grocer	-			-	-	-	-
Firestation	-			-	-	-	-
Garage / Loading / Service	-				-		-
Total	**547,364**	**390 units**	**0 keys**	**321,629**	**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	1.5/1000 SF		-	-	-	-
Medical Office	1.5/1000 SF		170	403		
Multifamily	1/BEDROOM		213	229	285	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		161	205	72	95
Grocer	50 spaces		-	-	-	-
Firestation			-	-	-	-
VEHICLE PARKING						
STANDARD PARKING SPACES			-	385	-	117
COMPACT PARKING SPACES			-	429	-	248
ON-STREET PARKING			-	15	-	15
HANDICAP PARKING SPACES (NON-VAN)			-	18	-	11
HANDICAP PARKING SPACES (VAN)			-	5	-	4
TOTAL PARKING PROVIDED:			-	852	-	395
PARKING PROVIDED IN EXISTING GARAGE			-	837	-	380
PARKING PROVIDED IN PROPOSED GARAGE			-		-	
LOADING SPACES			3	4	1	3
BICYCLE PARKING						
Residential			44	48	74	78
Visitor			9	9	5	5
Retail			12	12	3	6
Office			15	16	-	-

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.)	-	321,532	-	225,735
OPEN SPACE (SF / %)	-	25.00%	-	25.00%
AT-GRADE	-	12,183	-	14,044
ABOVE GROUND	-	14,960	-	1,476
TOTAL OPEN SPACE	-	27,143	-	15,520
AVERAGE FINISHED GRADE (FT.)	-	200.55	-	199.21
MAX. BUILDING HEIGHT (FT.)	-	91.91/80	-	85
CROWN COVERAGE (SQ. FT.)	-	14,750	-	13,500
MAX. RESI DENTISTY (UNITS/AC.)	-	-	-	-
Dwelling Unit Summary		146		244
STUDIO UNITS	-	1	-	37
JR ONE BEDROOM UNITS				17
ONE BEDROOM UNITS	-	65	-	143
ONE BEDROOM DEN UNITS	-	13	-	6
TWO BEDROOM UNITS	-	46	-	36
TWO BEDROOM DEN UNITS	-	6	-	5
THREE BEDROOM UNITS	-	15	-	-
LOADING SPACES	3	4	1	3

UNIT MIX TABLE

UNIT MIX - BLOCK E.1

UNIT TYPE	Market	%	Affordable	%	Total	%
Studio	1	0.7%			1	1%
1 Bedroom	62	44.3%	3	50.0%	65	45%
1 Bedroom + Den	13	9.3%		0.0%	13	9%
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%

SITEWIDE CANOPY COVERAGE TABULATION

DSUP	Block	Area SF	Area AC	Canopy Coverage (SF) Required	Canopy Coverage (SF) Provided
	Private Streets	146,984 SF	3.37 AC	-	106,250 SF
	Block D	60,360 SF	1.39 AC	-	-
DSUP 2022-10017	Block E	108,575 SF	2.49 AC	-	14,750 SF
	Block F	22,739 SF	0.52 AC	-	41,000 SF
DSUP 2022-10017	Block G	62,083 SF	1.43 AC	-	13,500 SF
	Block H	89,320 SF	2.05 AC	-	-
DSUP 2022-10015	Block I	107,845 SF	2.48 AC	-	14,975 SF
	Block J	80,597 SF	1.85 AC	-	-
DSUP 2022-10016	Block K	98,964 SF	2.27 AC	-	19,019 SF
	Block L	133,629 SF	3.07 AC	-	-
	Block M	120,815 SF	2.77 AC	-	-
	Block N	17,699 SF	0.41 AC	-	30,750 SF
	Block R	10,179 SF	0.23 AC	-	16,750 SF
	Total Site	**1,183,250 SF**	**27.16 AC**	**295,813 SF**	**256,994 SF**

NOTE:
1) SITEWIDE CANOPY COVERAGE CALCULATION EXCLUDES PUBLIC STREET TREES, THE HOSPITAL CAMPUS, EXISTING PARKING GARAGE (BLOCK S), TERRACE PARK (BLOCK P), AND PUBLIC RIGHTS-OF-WAY.

2) SITEWIDE CANOPY COVERAGE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. PLEASE REFER TO DSP#2021-00012 FOR FUTURE UPDATES TO SITEWIDE CANOPY COVERAGE CALCULATIONS .

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
- BLOCK E&G BOUNDARY
- 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
09 – 26 – 2022
09 – 27 – 2022

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PROFESSIONAL ENGINEER
09/27/22

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\3078-04-GNOTES.dwg [GNOTES1] September 27, 2022 – 1:51pm owolo

MASTER SITE TABULATIONS

DEVELOPMENT SUMMARY

Use	Floor Area	Residential Units	Hotel Keys		INOVA HOSPITAL CAMPUS																											
					Building A		Building B		Building C		Block D		Block E		Block G		Block H		Block I		Block F		Block N		Block J		Block K		Block L		Blocks M	
					Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units	Floor Area	Units
Hospital	464,467				464,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medical Office	280,489				-	-	94,212	-	76,357	-	-	-	109,920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multifamily	1,116,871	1,072 units			-	-	-	-	-	-	-	-	149,641	140	195,119	234	-	-	412,111	375	-	-	-	-	-	-	360,000	323	-	-	-	-
Affordable Multifamily	12,250	45 units			-	-	-	-	-	-	-	-	5,500	6	6,750	10	-	-	-	15	-	-	-	-	-	-	-	14	-	-	-	-
Senior Housing (AL/IL)	-	0 units			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-over-2 Townhomes	-	0 units			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traditional Townhomes	-	0 units			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Condo Flats	-	0 units			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hotel	-		0 keys		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail	202,575				-	-	-	-	-	-	-	-	56,568	-	23,866	-	-	-	90,141	-	3,120	-	2,244	-	-	-	32,000	-	-	-	-	-
Grocer	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Firestation	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Garage / Loading / Service					298,250 (TOTAL GARAGE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80,000	-	-	-	-	-
Total	**2,076,652**	**1,117 units**	**0 keys**		**762,717**	**-**	**94,212**	**-**	**76,357**	**-**	**-**	**-**	**321,629**	**146**	**225,735**	**244**	**-**	**-**	**502,252**	**390**	**3,120**	**-**	**2,244**	**-**	**-**	**-**	**472,000**	**337**	**-**	**-**	**-**	**-**
FAR over Gross Land Area	**0.9257**																															

PARKING TABULATIONS

Parking Requirement	Parking Ratio	Totals	INOVA HOSPITAL CAMPUS																													
			Building A		Building B		Building C		Block D		Block E		Block G		Block H		Block I		Block F		Block N		Block J		Block K		Block L		Blocks M	
			REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED
PARKING RATES																																
Hospital	1/ 2 BEDS		TBD	(SEE BELOW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office	1.5/ 1000 GSF		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medical Office	1.5/ 1000 GSF		-	-	408	(SEE BELOW)	335	(SEE BELOW)			170	403																				
Multifamily	1/ BEDROOM		-	-	-	-	-	-	-	-	213	229	285	285	-	-	-	483	-	-	-	-	-	-	312	302	-	-	-	-	-	-
Affordable Multifamily	0.8/ UNIT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-
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/ 1000 GSF		-	-	-	-	-	-	-	-	161	205	72	95	-	-	-	375	-	-	-	-	-	-	8	63 (SEE SHEET 03A)	-	-	-	-	-	-
Grocer	50 spaces		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
Firestation			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VEHICLE PARKING																																
STANDARD PARKING SPACES			-	TBD	-	TBD	-	TBD	-	-	-	385	-	117	-	-	-	154	-	-	-	-	-	-	-	123	-	-	-	-	-	-
COMPACT PARKING SPACES			-	TBD	-	TBD	-	TBD	-	-	-	429	-	248	-	-	-	683	-	-	-	-	-	-	-	181	-	-	-	-	-	-
ON-STREET PARKING SPACES												15		15												20						
HANDICAP PARKING SPACES (NON-VAN)			-	TBD	-	TBD	-	TBD	-	-	-	18	-	11	-	-	-	12	-	-	-	-	-	-	-	8	-	-	-	-	-	-
HANDICAP PARKING SPACES (VAN)			-	TBD	-	TBD	-	TBD	-	-	-	5	-	4	-	-	-	9	-	-	-	-	-	-	-	2	-	-	-	-	-	-
TOTAL PARKING PROVIDED:		**3,949**			1,510				-	-	-	852	-	395	-	-	-	858	-	-	-	-	-	-	320	334	-	-	-	-	-	-
PARKING PROVIDED IN EXISTING GARAGE			550 (EXISTING GARAGE)						-	-	-	837	-	380	-	-	-	858	-	-	-	-	-	-	-	63 (SEE SHEET 03A)	-	-	-	-	-	-
PARKING PROVIDED IN PROPOSED GARAGE			960 (ABOVE GRADE GARAGE + BELOW GRADE GARAGE)						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	314	-	-	-	-	-	-
LOADING SPACES											3	4	1	3			6	3								2						
BICYCLE PARKING																																
Residential									-	-	44	48	74	78	-	-	-	129	-	-	-	-	-	-	102	118	-	-	-	-	-	-
Visitor									-	-	9	9	5	5	-	-	-	8	-	-	-	-	-	-	7	7	-	-	-	-	-	-
Retail											12	12	3	6				18							9	11						
Office									-	-	15	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ZONING TABULATIONS

Zoning Requirement	INOVA HOSPITAL CAMPUS																															
	Building A	Building B	Building C	Block D		Block E		Block G		Block H		Block I		Block F		Block N		Block J		Block K		Block L		Blocks M							
	PROPOSED			REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED	REQUIRED	PROPOSED
LOT AREA (SQ. FT.)	452,343 (COMBINED INOVA HOSPITAL CAMPUS AREA)			-	-	-	108,575	-	62,083	-	-	-	-	-	107,845	-	112,495	-	112,495	-	-	-	-	-	98,964	-	-	-	-	-	-	-	-
LOT WIDTH (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRONT YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SIDE YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REAR YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FLOOR AREA (SQ. FT.)	933,285 (COMBINED FLOOR AREA FOR BUILDINGS A,B,C)			-	-	-	321,629	-	225,735	-	-	-	487,512	-	-	-	-	-	-	-	-	-	-	-	395,434	-	-	-	-	-	-	-	-
OPEN SPACE (SF / %)	15%			-	-	-	25.00%	-	25.00%	-	-	-	28.26%	-	-	-	-	-	-	-	-	-	-	-	25.66%	-	-	-	-	-	-	-
GROUND FLOOR	53,530			-	-	-	12,183	-	14,044	-	-	-	1,364	-	-	-	-	-	-	-	-	-	-	-	7,248	-	-	-	-	-	-	-
ABOVE GROUND	10,000			-	-	-	14,960	-	1,476	-	-	-	29,115	-	-	-	-	-	-	-	-	-	-	-	18,142	-	-	-	-	-	-	-
TOTAL OPEN SPACE	62,530			-	-	-	27,143	-	15,520	-	-	-	30,479	-	-	-	-	-	-	-	-	-	-	-	25,390	-	-	-	-	-	-	-
AVERAGE FINISHED GRADE (FT.)	216.34 (PROPOSED)	209.86 (PROPOSED)	212.07 (PROPOSED)	-	-	-	200.55	-	198.58	-	-	-	193.00	-	-	-	-	-	-	-	-	-	-	-	199.21	-	-	-	-	-	-	-
MAX. BUILDING HEIGHT (FT.)	159	52	60	-	-	-	91.90/80	-	85	-	-	-	85	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	-
CROWN COVERAGE (SQ. FT.)	-	-	-	-	-	-	14,750	-	13,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19,019	-	-	-	-	-	-	-
MAX. RESI DENTISTY (UNITS/AC.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
Dwelling Unit Summary (ADU)	-	-	-	-	-	-	146	-	244	-	-	-	390	-	-	-	-	-	-	-	-	-	-	-	337 (14)	-	-	-	-	-	-	-
STUDIO UNITS (ADU)	-	-	-	-	-	-	1	-	37	-	-	-	58	-	-	-	-	-	-	-	-	-	-	-	4 (1)	-	-	-	-	-	-	-
JR ONE BEDROOM UNITS (ADU)									17																125							
ONE BEDROOM UNITS (ADU)	-	-	-	-	-	-	64	-	143	-	-	-	189	-	-	-	-	-	-	-	-	-	-	-	119 (10)	-	-	-	-	-	-	-
ONE BEDROOM DEN UNITS (ADU)	-	-	-	-	-	-	14	-	6	-	-	-	50	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
TWO BEDROOM UNITS (ADU)	-	-	-	-	-	-	46	-	36	-	-	-	68	-	-	-	-	-	-	-	-	-	-	-	77 (2)	-	-	-	-	-	-	-
TWO BEDROOM DEN UNITS (ADU)	-	-	-	-	-	-	6	-	5	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THREE BEDROOM UNITS (ADU)	-	-	-	-	-	-	15	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	7 (1)	-	-	-	-	-	-	-
LOADING SPACES	1	1	1	-	-	3	4	1	3	-	-	6	3	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
TRIP GENERATION (ADT)	5,774	910	3,317	-	-	-	5,621	-	1,570	-	-	-	5,173	-	-	-	-	-	-	-	-	-	-	-	1,981	-	-	-	-	-	-	-

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
08 – 26 – 2022
09 – 27 – 2022

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urban ltd
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
09/27/22
REGISTERED PROFESSIONAL

GENERAL NOTES & DETAILS

WEST END
DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

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

SHEET 02A OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-04-GNOTES.dwg [GNOTES1 (2)] September 27, 2022 – 1:51pm 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 ENCOURAGED 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. * 190,354 S.F. = 155,070 GPD
PEAK FACTOR FLOW FROM BUILDING = 155,051 GPD * 4.0 = 620,280 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

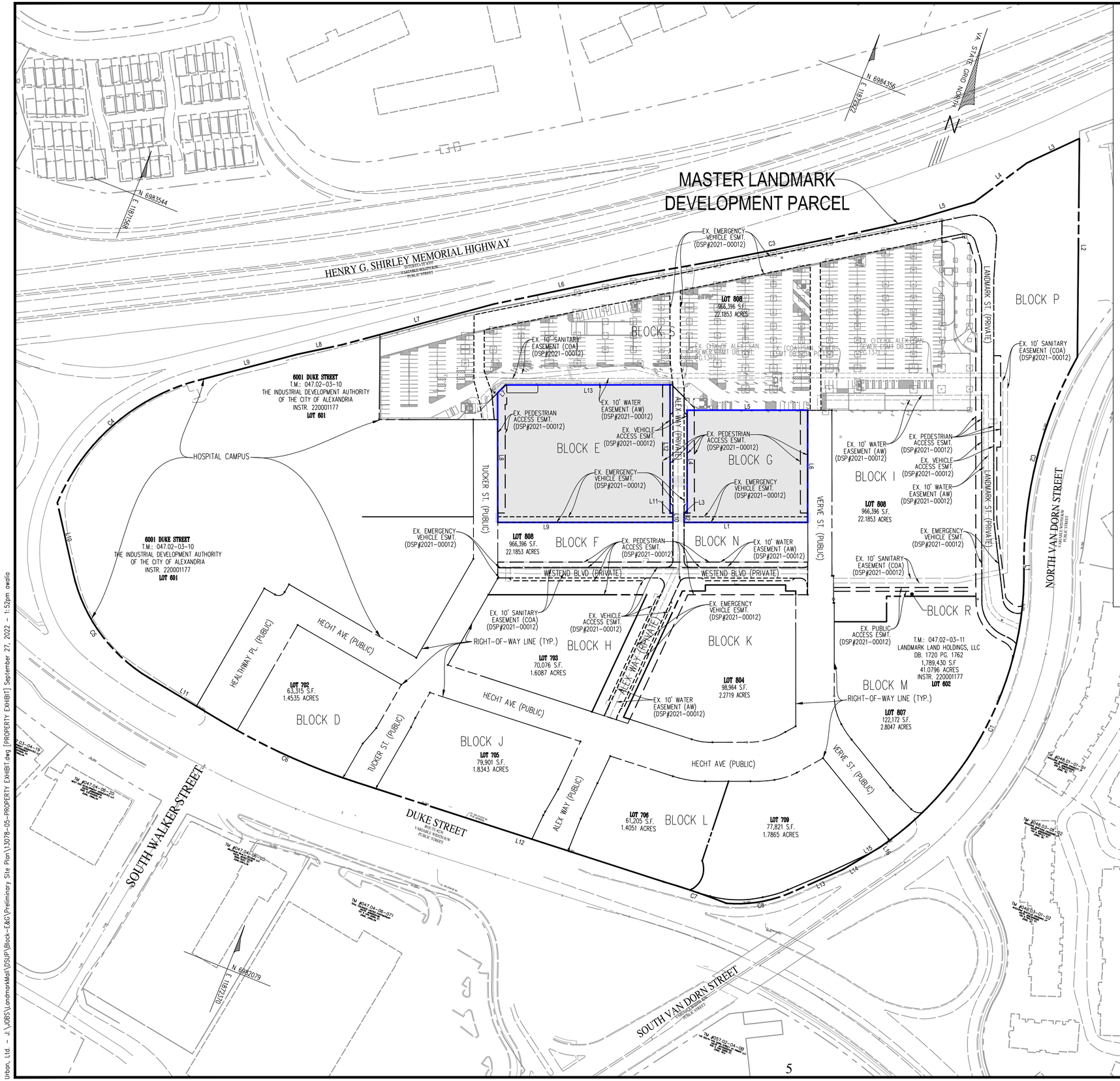
1. ALL BUILDINGS WITHIN THE BOUNDARY OF THIS SITE SHALL HAVE AT LEAST ONE "ACCESSIBLE ROUTE" THAT CONFORMS TO "ADA"-"ACCESSIBLE ROUTE" STANDARDS. THESE STANDARDS INCLUDE, BUT ARE NOT LIMITED TO: MAXIMUM WALK SLOPE=1:20 AND MAXIMUM RAMP SLOPE=1:12. ALL WALKS WILL BE BROOM-FINISHED CONCRETE UNLESS OTHERWISE 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 WIT



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 87°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	BEARING	DISTANCE
L1	S 68°08'39" W	264.50'
L2	N 21°51'22" W	20.00'
L3	N 68°08'38" E	6.50'
L4	N 21°51'22" W	220.10'
L5	N 68°07'27" E	258.00'
L6	S 21°51'22" E	240.19'
L7	S 23°07'25" W	24.04'
L8	S 21°51'22" E	277.25'
L9	N 68°08'39" E	375.00'
L10	N 21°51'22" W	20.00'
L11	S 68°07'58" W	6.00'
L12	N 21°51'24" W	274.38'
L13	S 68°07'27" W	351.43'

LOT AREAS

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

NOTES:

1. ALL ADJOINING PROPERTY LINES AND LOT NUMBERS SHOWN HEREON REFLECT A 3RD SUBDIVISION PLAT (SUBDIVISION OF LOT 708) ASSOCIATED WITH DSP#2021-00012 NOT YET RECORDED .

LEGEND

BLOCK E&G BOUNDARY

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
08-26-2022
09-22-2022

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Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

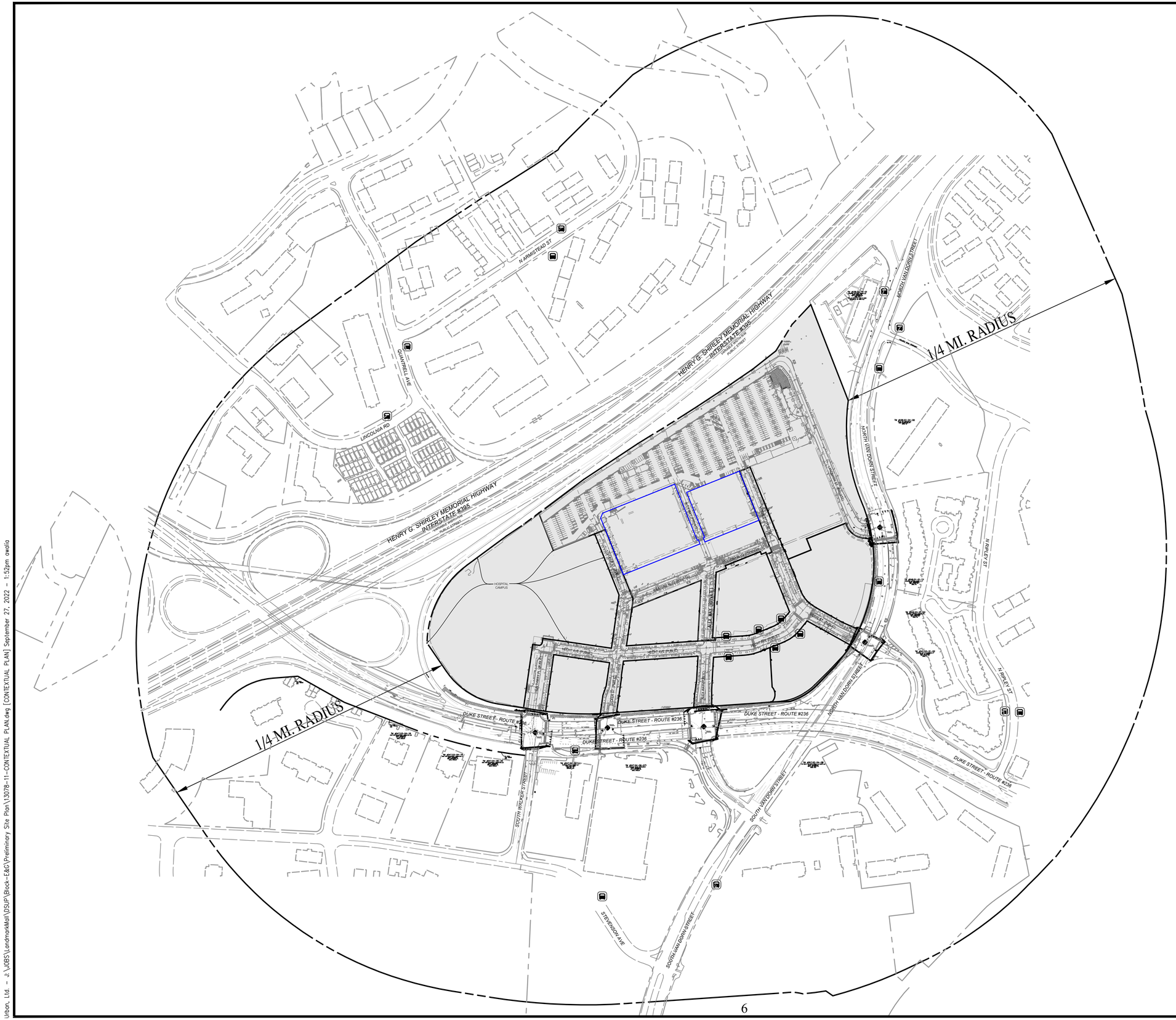
PROPERTY EXHIBIT
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA

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

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] September 27, 2022 - 1:52pm owolla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INTERSTATE #395
HENRY G. SHIRLEY MEMORIAL HIGHWAY
INTERSTATE #395
N ARMISTEAD ST
QUANTRELL AVE
LINCOLNIA RD
NORTH VAN DORN STREET
NORTH VAN DORN STREET
N BEAUREGARD ST
N BEAUREGARD ST
DUKE STREET - ROUTE #236
DUKE STREET - ROUTE #236
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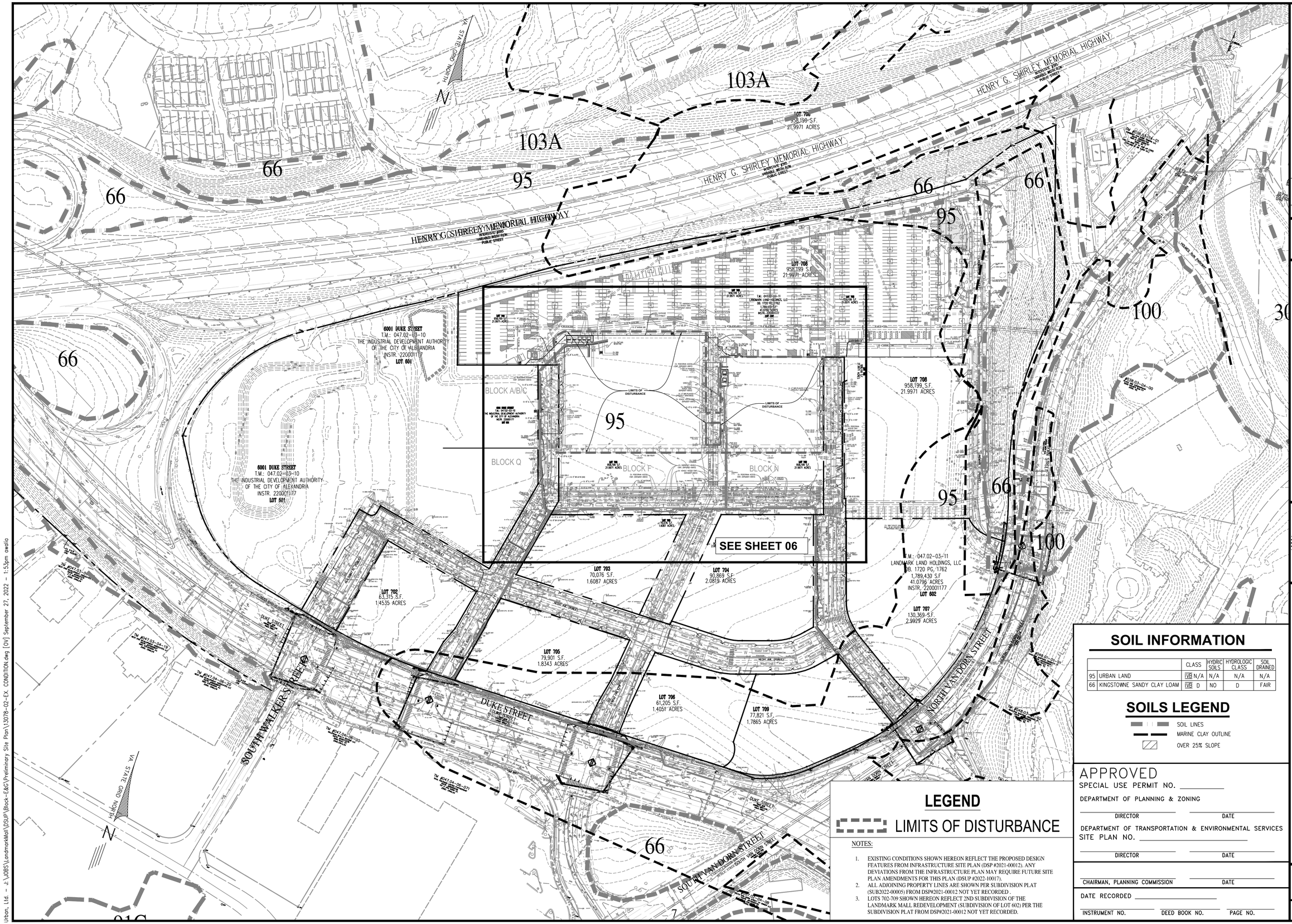
HOSPITAL CAMPUS
HIGH RISE BUILDING
HIGH RISE BUILDING
HIGH RISE BUILDING



SOIL INFORMATION

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

SOILS LEGEND

SOIL LINES
MARINE CLAY OUTLINE
OVER 25% SLOPE

LEGEND

LIMITS OF DISTURBANCE

NOTES:

1. EXISTING CONDITIONS SHOWN HEREON REFLECT THE PROPOSED DESIGN FEATURES FROM INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATIONS FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN (DSUP #2022-10017).
2. ALL ADJOINING PROPERTY LINES ARE SHOWN PER SUBDIVISION PLAT (SUB2022-00005) FROM DSP#2021-00012 NOT YET RECORDED.
3. LOTS 702-709 SHOWN HEREON REFLECT 2ND SUBDIVISION OF THE LANDMARK MALL REDEVELOPMENT (SUBDIVISION OF LOT 602) PER THE SUBDIVISION PLAT FROM DSP#2021-00012 NOT YET RECORDED.

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

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PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
09/27/22
PROFESSIONAL ENGINEER

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

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] September 27, 2022 - 1:53pm awalia

LOT 708
958,199 S.F.
21.9971 ACRES

T.M.: 047.02-03-11
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
1,789,430 S.F.
41.0796 ACRES
INSTR. 220001177
LOT 602

LOT 708
958,199 S.F.
21.9971 ACRES

LOT 708
958,199 S.F.
21.9971 ACRES

LOT 708
958,199 S.F.
21.9971 ACRES

BLOCK A/B/C

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

BLOCK Q

BLOCK F

BLOCK N

FUTURE BLOCK I DSUP

LOT 703
70,076 S.F.
1.6087 ACRES

LOT 704
90,689 S.F.
2.0819 ACRES

TUCKER ST (PUBLIC)

ALEX WAY (PRIVATE)

WEST END BLVD.(PRIVATE)

WEST END BLVD.(PRIVATE)

TUCKER ST (PUBLIC)

RESERVE ST. (PUBLIC)

LIMITS OF DISTURBANCE

LIMITS OF DISTURBANCE

EX. GARAGE FOOTPRINT

EX. GARAGE FOOTPRINT

EX. GARAGE FOOTPRINT

EX. EMERGENCY VEHICLE ESMT. (DSP#2021-00012)

EX. 10' SANITARY EASEMENT

EX. 10' WATERLINE EASEMENT

EX. 10" SDR-26 PVC (COA)

EX. 12" WATERLINE (AW)

EX. 6" SAN. LAT

EX. 4"X6" GAS METER PAD

EX. 2"X6" GAS METER PAD

EX. DOM.
EX. FIRE

EX. 18" CL. IV RCP

EX. 15" CL. III RCP

EX. 36" CL. IV RCP

EX. 42" CL. IV RCP

EX. 18" CL. III RCP

EX. 12" CL. IV RCP

EX. 8" SAN. LAT.

EX. 6" DOM.

EX. 8" PVC SAN.

EX. 10" SANITARY EASEMENT

EX. 10" WATERLINE EASEMENT

EX. 12" LANEWAY

EX. SWM FACILITY

EX. CROSSWALK (TYP.)

EX. TREE PIT (TYP.)

EX. STREETLIGHT (TYP.)

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

EX. GARDEN PLANTING (TYP.)

EX. 6' BMP/PLANTER (PRIVATELY MAINTAINED)

EX. PEDESTRIAN ACCESS ESMT. (DSP#2021-00012)

EX. VEHICLE ACCESS ESMT (DSP#2021-00012)

EX. 10'X12' LIFT OUT PANELS

EX. ELEC. DUCT BANK

EX. COMM. HANDHOLE

EX. COMM. DUCT BANK

EX. 8'X16'X10' ELECT. BOX

EX. PEDESTRIAN ACCESS ESMT (DSP#2021-00012)

EX. 10" SDR-26 PVC (COA) CSCG-1

EX. 12" SDR-26 PVC (COA) CSCG-1

EX. 12" SDR-26 PVC (COA)

EX. 1W-4" SILT

EX. FLUSH CSCG-1 (COPING)

EX. SIGN

EX. BIKE LANE

EX. FH#1

EX. FH#2

EX. FH#3

EX. FH#4

EX. FH#17

EX. CSR-1 PRIVATE ENTRANCE GAS

EX. CURB EXTENSION

EX. 11.25'x4.83' TRANSFORMER PAD

EX. CROSSWALK

PROP. 10' CROSSWALK (TYP.)

EX. SIGN 213-224

EX. 8'X16'X10' ELECT. BOX

EX. TREE PIT (TYP.)

8" SAN. LAT.

12" CL. IV RCP

PRIVATE ENTRANCE G-IV RCP

VA STATE GRID NORTH

N

LEGEND

LIMITS OF DISTURBANCE

NOTES:

1. EXISTING CONDITIONS SHOWN HEREON REFLECT THE PROPOSED DESIGN FEATURES FROM INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATIONS FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN (DSUP #2022-10017).
2. ALL ADJOINING PROPERTY LINES ARE SHOWN PER SUBDIVISION PLAT (SUB2022-0005) FROM DSP#2021-00012 NOT YET RECORDED .
3. LOTS 702-709 SHOWN HEREON REFLECT 2ND SUBDIVISION OF THE LANDMARK MALL REDEVELOPMENT (SUBDIVISION OF LOT 602) PER THE SUBDIVISION PLAT FROM DSP#2021-00012 NOT YET RECORDED.

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
08-26-2022
09-12-2022

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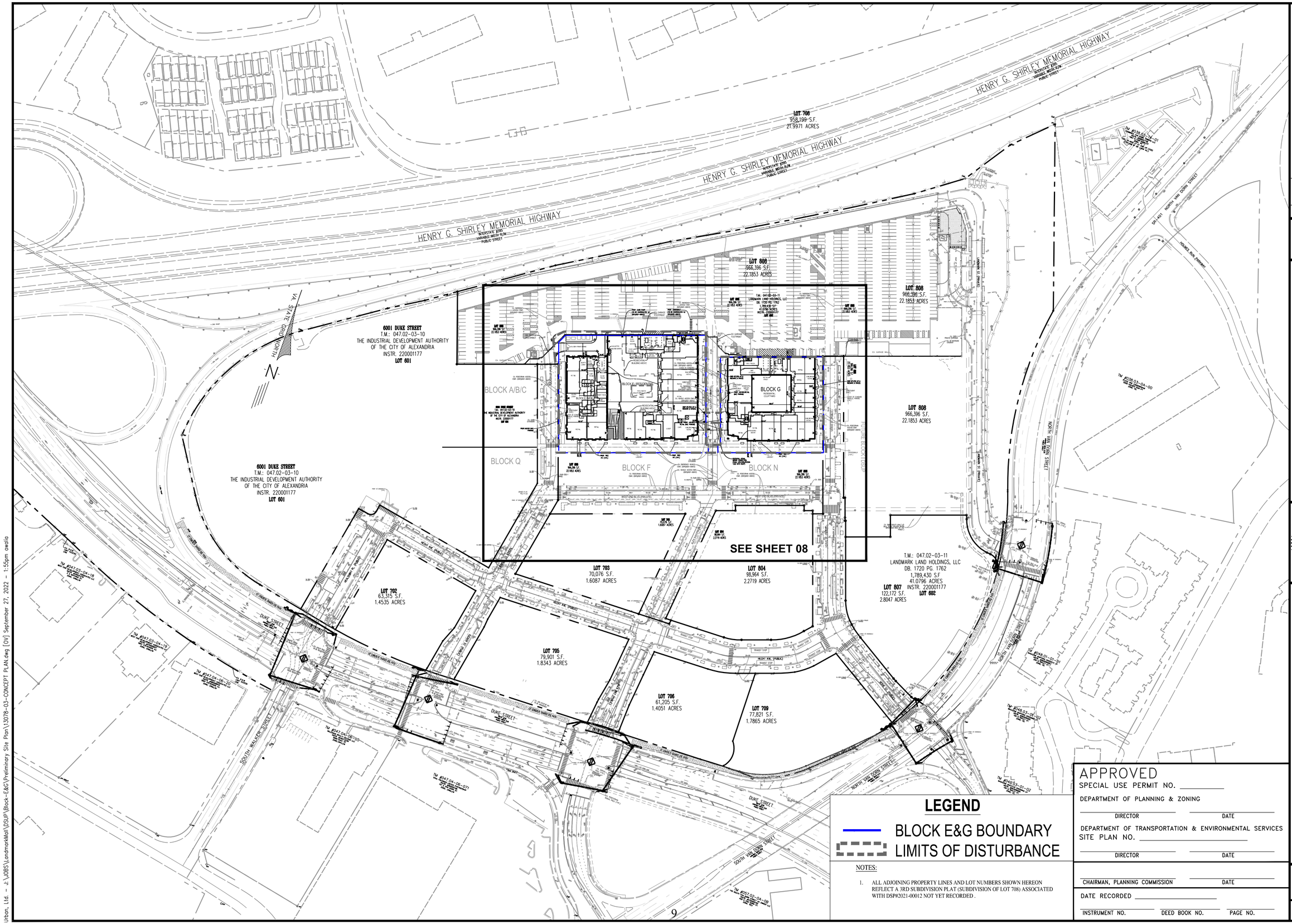
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

EXISTING CONDITIONS
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1"=30' C.I.= 2' DATE: JUNE, 2022

SHEET 06 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-02-EX. CONDITION.dwg [01] September 27, 2022 - 1:54pm owalia



LEGEND

BLOCK E&G BOUNDARY

LIMITS OF DISTURBANCE

NOTES:

1. ALL ADJOINING PROPERTY LINES AND LOT NUMBERS SHOWN HEREON REFLECT A 3RD SUBDIVISION PLAT (SUBDIVISION OF LOT 708) ASSOCIATED WITH DSP#2021-00012 NOT YET RECORDED .

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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09-27-2022

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CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

OVERVIEW PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022

SCALE: 1"=100'

C1.=N/A

SHEET 07 OF 31

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-03-CONCEPT PLAN.dwg [OV] September 27, 2022 – 1:55pm owolla

BLOCK A/B/C

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

LOT 808
966,396 S.F.
22.1853 ACRES

T.M.: 047.02-03-11
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
1,789,430 S.F.
41.0796 ACRES
INSTR. 220001177
LOT 602

LOT 808
966,396 S.F.
22.1853 ACRES

LOT 808
966,396 S.F.
22.1853 ACRES

LOT 808
966,396 S.F.
22.1853 ACRES

LOT 808
966,396 S.F.
22.1853 ACRES

LOT 703
70,076 S.F.
1.6087 ACRES

LOT 804
98,964 S.F.
2.2719 ACRES

BLOCK Q

BLOCK F

BLOCK N

BLOCK E / RESIDENTIAL

BLOCK E / MOB

BLOCK G
RESIDENTIAL
COURTYARD

TUCKER ST.(PUBLIC)

ALEX WAY (PRIVATE)

VERVE ST.(PUBLIC)

WEST END BLVD.(PRIVATE)

FUTURE BLOCK I DSUP

EX. GARAGE FOOTPRINT

EX. GARAGE WALL

EX. EMERGENCY VEHICLE ESMT. (DSP#2021-00012)

EX. CROSSWALK

PROP. CURB RAMP (TO BE COORDINATED W/ DSP#2021-00012)

PROP. CROSSWALK (TO BE COORDINATED W/ DSP#2021-00012)

PROP. 6' S/W

EX. CSER-1 PRIVATE ENTRANCE

GAS METER

WATER METER

ELEC. ROOM

WASH STATION

LOADING

RESI TRASH

BIKE STORAGE

LOBBY

PUMP ROOM

WATER

RETAIL RECYCLE

RESIDENTIAL BUILDING ABOVE

NORTH LOBBY

EM ROOM

LOUNGE

CONF. ROOM

M.O.B TRASH

WATER PUMP ROOM

FIRE PUMP ROOM

MAINT. ROOM

SOUTH LOBBY

BIKE STORAGE

LAB

RETAIL

EX. PEDESTRIAN ACCESS ESMT. (DSP#2021-00012)

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

EX. STREETLIGHT (TYP.)

EX. VEHICLE ACCESS ESMT. (DSP#2021-00012)

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

BUILDING ABOVE

DROP-OFF/PICK-UP & RIDESHARE (4 SPACES)

PROP. VISITOR/ RETAIL BIKE PARKING

CAFE

RES. TRASH

RESIDENTIAL AMENITY LOBBY

PROP. VISITOR/RETAIL BIKE PARKING

PACKAGE ROOM

EX. CURB EXTENSION

PROP. VISITOR BIKE PARKING

PROP. TREE PIT (TYP.)

EX. 12' LANEWAY

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

EX. CROSSWALK (TYP.)

EX. BIKE LANE

EX. FLUSH CSCG-1 (COPING)

EX. SIGN

EX. SIGN 213-224

BIKESHARE STATION

PROP. 10' CROSSWALK (TYP.)

EX. 30" WATERLINE

EX. 12" WATERLINE

EX. 8" WATERLINE

EX. 6" WATERLINE

EX. 8" SANITARY SEWER

EX. 12" SANITARY SEWER

EX. 8" STORM SEWER

EX. 12" STORM SEWER

EX. 24" STORM SEWER

EX. 30" STORM SEWER

EX. 36" STORM SEWER

EX. 42" STORM SEWER

EX. 48" STORM SEWER

EX. 54" STORM SEWER

EX. 60" STORM SEWER

EX. 66" STORM SEWER

EX. 72" STORM SEWER

EX. 78" STORM SEWER

EX.

BLOCK A/B/C

BLOCK Q

BLOCK F

BLOCK N

BLOCK G
RESIDENTIAL COURTYARD

BLOCK E / RESIDENTIAL

BLOCK E / MOB

RESIDENTIAL BUILDING ABOVE

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

WEST END BLVD.(PRIVATE)

TUCKER ST (PUBLIC)

ALEX WAY (PRIVATE)

VERVE ST. (PUBLIC)

FUTURE BLOCK I DSUP

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

LOT 808
966,396 S.F.
22.1853 ACRES

T.M.: ~~047.02-03-11~~
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
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INSTR. 220001177
LOT 602

LOT 703
70,076 S.F.
1.6087 ACRES

LOT 804
98,964 S.F.
2.2719 ACRES

LEGEND

BLOCK E&G BOUNDARY

LIMITS OF DISTURBANCE

NOTES:

1. ALL ADJOINING PROPERTY LINES AND LOT NUMBERS SHOWN HEREON REFLECT A 3RD SUBDIVISION PLAT (SUBDIVISION OF LOT 708) ASSOCIATED WITH DSP#2021-00012 NOT YET RECORDED .

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
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PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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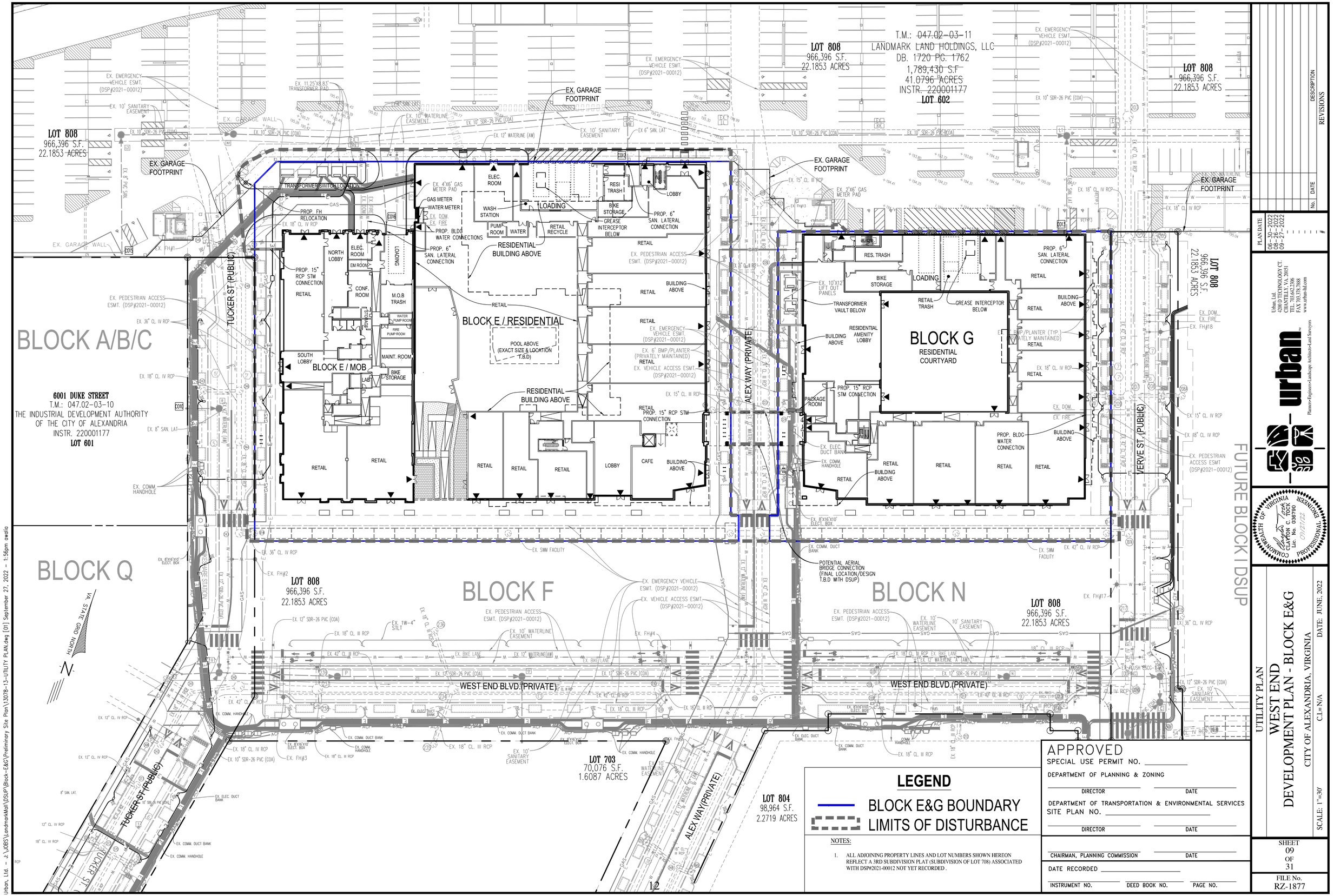
COMMONWEALTH OF VIRGINIA
ENGINEER
CLAYTON C. TOCK
Lic. No. 039700
PROFESSIONAL
09/27/22

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

SHEET
08A
OF
31

FILE No.
RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13079-24-SITE PLAN.dwg [SITE PLAN] September 27, 2022 - 1:56pm owalia



LEGEND

BLOCK E&G BOUNDARY

LIMITS OF DISTURBANCE

NOTES:

1. ALL ADJOINING PROPERTY LINES AND LOT NUMBERS SHOWN HEREON REFLECT A 3RD SUBDIVISION PLAT (SUBDIVISION OF LOT 708) ASSOCIATED WITH DSP#2021-00012 NOT YET RECORDED .

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 _____

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
09/21/22
PROFESSIONAL ENGINEER

UTILITY PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.=N/A DATE: JUNE, 2022

SHEET 09 OF 31

FILE No. RZ-1877

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Urban, Ltd. – X:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-14-GRADING PLAN.dwg [01] September 27, 2022 – 1:57pm owolo

LOT 808
966,396 S.F.
22.1853 ACRES

T.M.: 047.02-03-11
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
1,789,430 S.F
41.0796 ACRES
INSTR. 220001177
LOT 602

BLOCK A/B/C

BLOCK E / RESIDENTIAL

BLOCK E / MOB

BLOCK F

BLOCK G
RESIDENTIAL COURTYARD

BLOCK N

BLOCK Q

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

LOT 703
70,076 S.F.
1.6087 ACRES

LOT 804
98,964 S.F.
2.2719 ACRES

TUCKER ST (PUBLIC)

ALEX WAY (PRIVATE)

VERVE ST. (PUBLIC)

WEST END BLVD. (PRIVATE)

FUTURE BLOCK I DSUP

EX. GARAGE FOOTPRINT

PROP. CURB RAMP (TO BE COORDINATED W/ DSP#2021-00012)

PROP. CROSSWALK (TO BE COORDINATED W/ DSP#2021-00012)

PROP. 6' S/W

EX. 11.25'X8.83' TRANSFORMER PAD

EX. EMERGENCY VEHICLE ESMT. (DSP#2021-00012)

EX. GARAGE WALL

EX. 30" WATERLINE

EX. 18" CL. IV RCP

EX. 15" CL. III RCP

EX. 36" CL. IV RCP

EX. 42" CL. IV RCP

EX. 12" CL. IV RCP

EX. 18" CL. III RCP

EX. PEDESTRIAN ACCESS ESMT. (DSP#2021-00012)

EX. VEHICLE ACCESS ESMT. (DSP#2021-00012)

EX. 6' BMP/PLANTER (PRIVATELY MAINTAINED)

EX. BIKE LANE

EX. CROSSWALK (TYP.)

EX. SWM FACILITY

EX. HUSH SSCC-HD (OPENING)

PROP. TREE PIT (TYP.)

PROP. 15" RCP STM CONNECTION

PROP. VISITOR RETAIL BIKE PARKING

PROP. VISITOR BIKE PARKING

PROP. 10' CROSSWALK (TYP.)

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

RESIDENTIAL BUILDING ABOVE

BUILDING ABOVE

RETAIL

LOBBY

CAFE

LOADING

BIKE STORAGE

RESI TRASH

RETAIL TRASH

RES. TRASH

RESIDENTIAL AMENITY LOBBY

PROP. VISITOR/RETAIL BIKE PARKING

PACKAGE ROOM

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

ELEC. ROOM

GAS METER

WATER METER

WASH STATION

PUMP ROOM

WATER

RETAIL RECYCLE

NORTH LOBBY

EM ROOM

CONF. ROOM

M.O.B TRASH

WATER PUMP ROOM

FIRE PUMP ROOM

MAINT. ROOM

SOUTH LOBBY

LAB

BIKE STORAGE

BIKESHARE STATION

GRADE=99.28
PGL=98.90

GRADE=98.82
PGL=98.82

GRADE=99.52
PGL=99.02

GRADE=99.60
PGL=98.72

GRADE=99.3
PGL=99.3

GRADE=99.22
PGL=98.72

GRADE=97.42
PGL=97.42

GRADE=97.99
PGL=97.61

GRADE=97.68
PGL=97.68

GRADE=98.18
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GRADE=97.72
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PGL=97.63

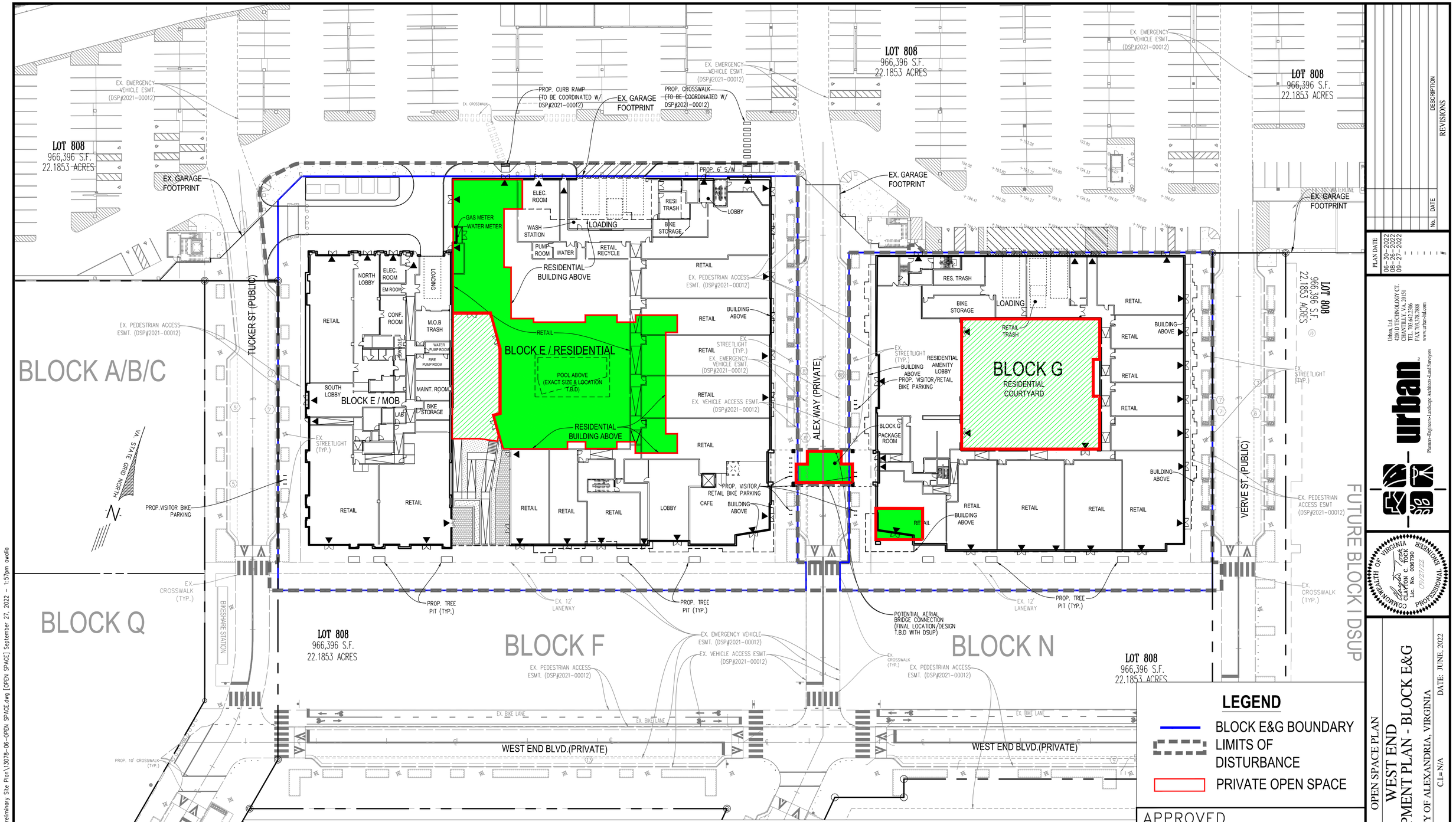
GRADE=97.68
PGL=97.68

GRADE=98.09
PGL=98.09

GRADE=97.68
PGL=97.68

GRADE=97.68
PGL=97.68

GRADE=97.68
PGL=97.68



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: 2,823 SF
- ABOVE-GRADE OPEN SPACE : 14,960 SF

AT-GRADE OPEN SPACE TRANSFER FROM BLOCK P (TERRACE PARK): 9,360 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 : 8,948 SF
- ABOVE-GRADE OPEN SPACE : 1,476 SF

AT-GRADE OPEN SPACE TRANSFER FROM BLOCK P (TERRACE PARK): 5,096 SF
TOTAL OPEN SPACE PROVIDED: .63 AC. OR 15,520 SF (25.00%)

LEGEND

- BLOCK E&G BOUNDARY
- LIMITS OF DISTURBANCE
- PRIVATE OPEN SPACE

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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08-26-2022
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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

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

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-06-OPEN SPACE.dwg [OPEN SPACE] September 27, 2022 – 1:57pm awalia

LANDMARK MASTER OPEN SPACE CALCULATIONS

DSUP	Block	Lot Area SF	Lot Area AC	Publicly Accessible	At Grade	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					
	Hospital Campus (A,B,C)	416,577 SF	9.56 AC	No	62,500 SF	10,000 SF	0 SF	0 SF			72,500 SF	15.00%	72,500 SF	1.66 AC	
CDSP 2022-00011	Block D	60,360 SF	1.39 AC	No					0 SF	-	0 SF			0.00 AC	
DSUP 2022-10017	Block E	108,575 SF	2.49 AC	No	2,823 SF	14,960 SF	0 SF		9,360 SF	-	27,143 SF	25.00%		0.00 AC	9,360 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	
DSUP 2022-10017	Block G	62,083 SF	1.43 AC	No	8,948 SF	1,476 SF	0 SF		5,096 SF	-	15,520 SF	25.00%		0.00 AC	5,876 SF Transfer from Block P
	Block H	89,320 SF	2.05 AC	No				-	0 SF	-	0 SF			0.00 AC	
DSUP 2022-10015	Block I	107,845 SF	2.48 AC	No	1,364 SF	29,115 SF	0 SF	-	0 SF	-	30,479 SF	28.26%	30,479 SF	0.70 AC	
	Block J	80,597 SF	1.85 AC	No				-	0 SF	-	0 SF			0.00 AC	
DSUP 2022-10016	Block K	98,964 SF	2.27 AC	No	7,248 SF	18,142 SF	0 SF	-	0 SF	-	25,390 SF	25.66%	25,390 SF	0.58 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	-14,456 SF	2.29	99,594 SF	87.32%	99,594 SF	2.29 AC	14,456 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	3.66			287,841 SF	6.61 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

- BLOCK E&G BOUNDARY
- LIMITS OF DISTURBANCE
- OPEN SPACE PROVIDED FOR RESPECTIVE BLOCKS
- PUBLICLY ACCESSIBLE OPEN SPACE

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

VA STATE GRID NORTH

LOT 708
958,199 S.F.
21.9971 ACRES

LOT 808
966,396 S.F.
22.1853 ACRES

BLOCK S

BLOCK P
TERRACE PARK

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

INOVA HOSPITAL CAMPUS

BLOCK E

BLOCK G

BLOCK I
LOT 806
966,396 S.F.
22.1853 ACRES

BLOCK Q

BLOCK F

BLOCK N

PASEO

BLOCK H
LOT 703
70,076 S.F.
1.6087 ACRES

BLOCK K
LOT 804
98,964 S.F.
2.2719 ACRES

BLOCK M
T.M.: 047.02-03-11
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
1,788,430 S.F.
41.0796 ACRES
LOT 807 INSTR. 220001177
122,172 S.F. LOT 602
2.8047 ACRES

NORTH VAN DORN STREET
VARIABLE WIDTH R/W
PUBLIC STREET

BLOCK D
LOT 702
63,315 S.F.
1.4535 ACRES

BLOCK J
LOT 705
79,901 S.F.
1.8343 ACRES

LOT 706
61,205 S.F.
1.4051 ACRES

BLOCK L
LOT 709
77,821 S.F.
1.7865 ACRES

SOUTH WALKER STREET
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE STREET
VARIABLE WIDTH R/W
PUBLIC STREET

VA STATE GRID NORTH

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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.

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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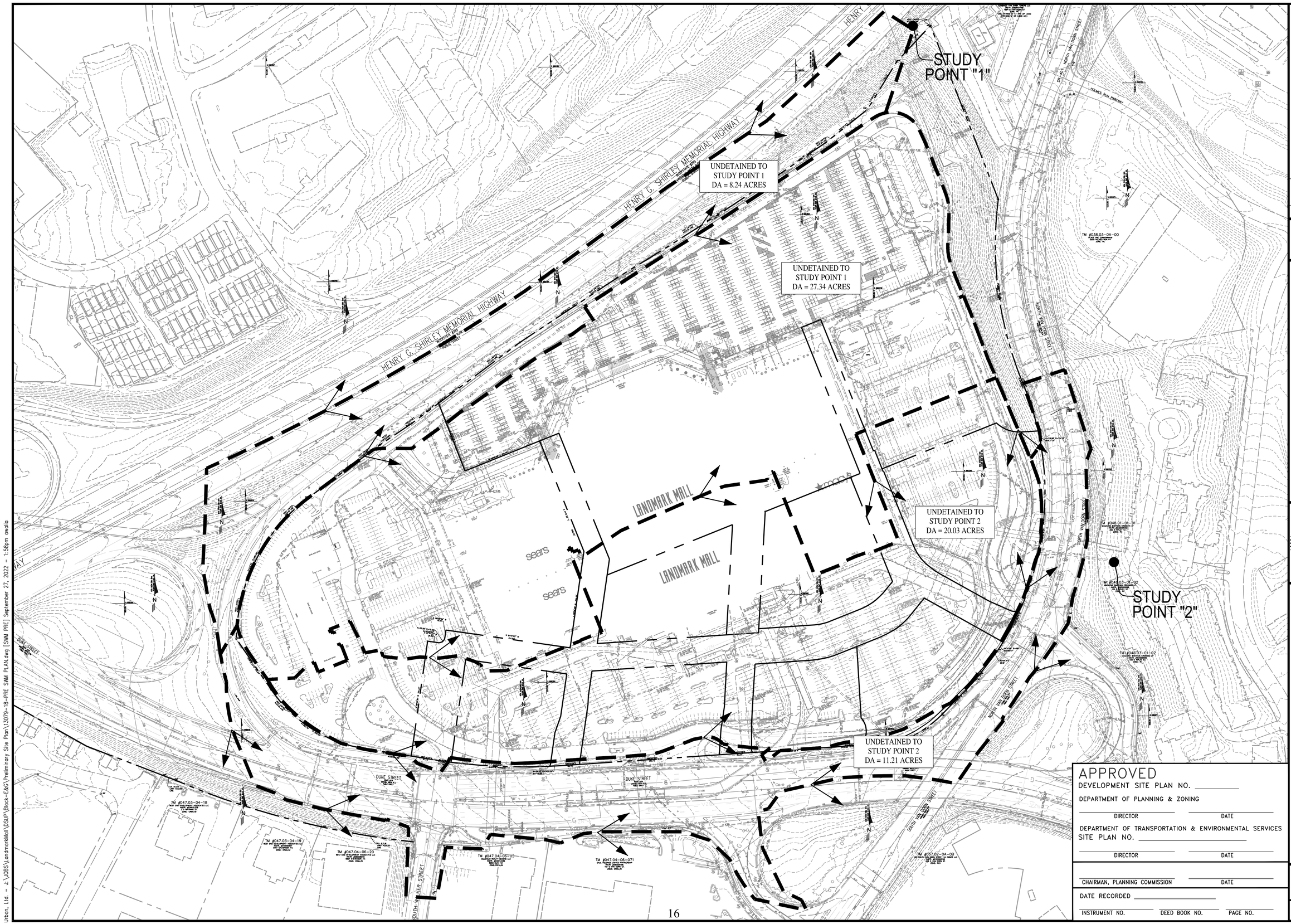
CLAYTON C. ROCK
Lic. No. 038790
PROFESSIONAL ENGINEER
09/27/22

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

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] September 27, 2022 - 2:49pm cwolfe



REVISIONS

No.	DATE	DESCRIPTION

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08-26-2022
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Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

SWM PRE DEVELOPMENT PLAN

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE 2022

SCALE: 1"=100' C.I.= 2'

APPROVED
DEVELOPMENT SITE PLAN 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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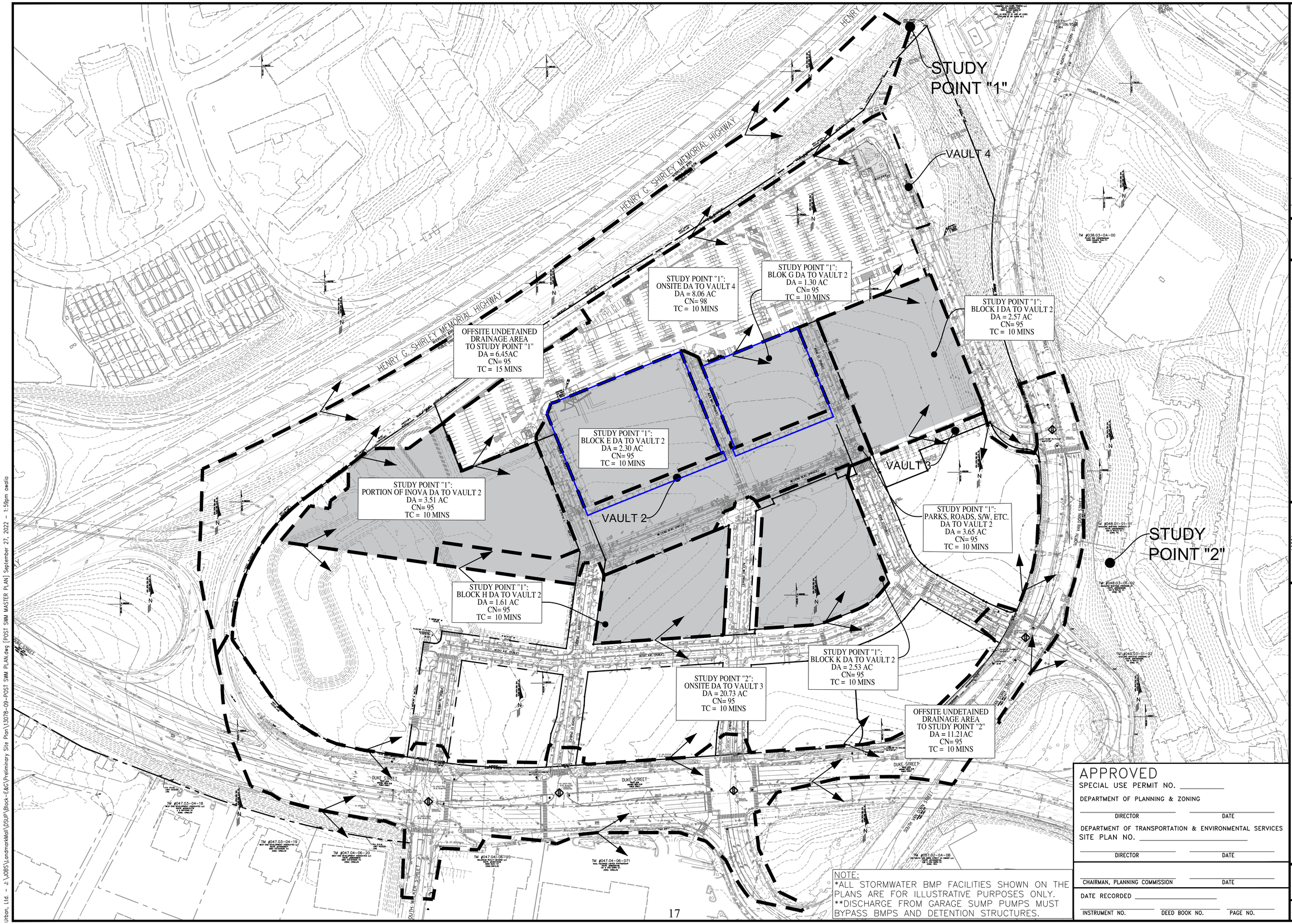
_____ INSTRUMENT NO. _____ DEED BOOK NO. _____ PAGE NO.

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] September 27, 2022 - 1:58pm owolo



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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DEPARTMENT OF PLANNING & ZONING
DIRECTOR _____ DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
DIRECTOR _____ DATE _____
CHAIRMAN, PLANNING COMMISSION _____ DATE _____
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09-22-2022

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CLAYTON C. TOCK
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PROFESSIONAL ENGINEER
09/22/22

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] September 27, 2022 – 1:59pm 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

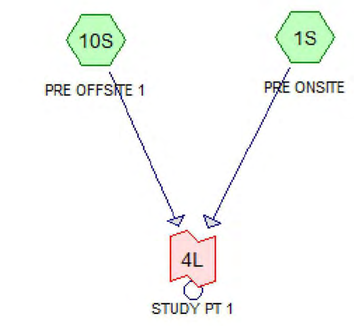
2 Year Flow Calculations

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
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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] September 27, 2022 - 1:59pm owolia

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"

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

No.	DATE	DESCRIPTION

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

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www.urban-ltd.com

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Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCI
Lic. No. 036790
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
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] September 27, 2022 – 1:59pm cwallo

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

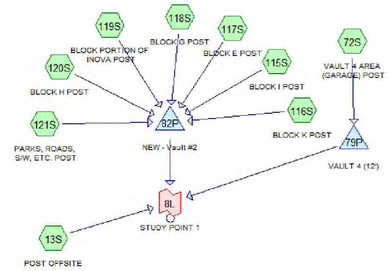
Inflow Area = 1,392,570 sf, 88.78%Impervious, Inflow Depth >2.09" for 1-yr event
Inflow = 39.40 cfs @ 12.18 hrs, Volume= 242,361 cf
Primary = 39.40 cfs @ 12.18 hrs, Volume= 242,361 cf, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

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

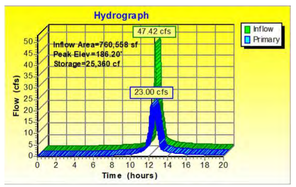
1 YEAR EVENT SUMMARY

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)



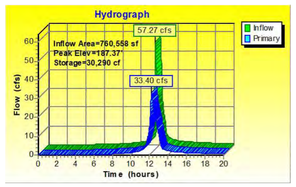
2 YEAR EVENT SUMMARY

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)



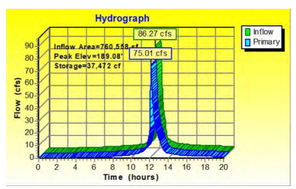
10 YEAR EVENT SUMMARY

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

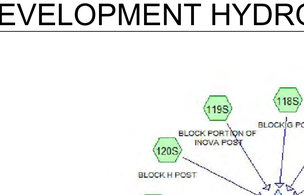
1 YEAR EVENT SUMMARY

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)



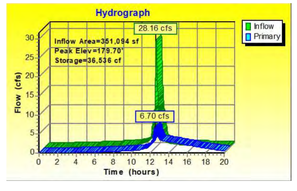
2 YEAR EVENT SUMMARY

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)



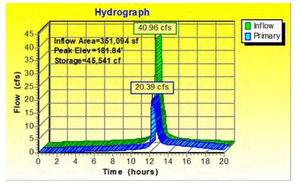
10 YEAR EVENT SUMMARY

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)



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 | DESCRIPTION | DATE | No.

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

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CLAYTON C. POCH
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ENGINEER
PROFESSIONAL
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 16 OF 30

FILE No. RZ-1877

Urban, Ltd. - J:\ABS\Landmark Mall\DSUP\Block-E&G\Preliminary Site Plan\13078-10-SWM COMPS & NARRATIVE.dwg [POST-DEV (2)] September 27, 2022 - 1:59pm awolla

LOT 808
966,396 S.F.
22.1853 ACRES

EX. GARAGE FOOTPRINT

LOT 808
966,396 S.F.
22.1853 ACRES

T.M.: 047.02-03-11
LANDMARK LAND HOLDINGS, LLC
DB. 1720 PG. 1762
1,789,430 S.F
41.0796 ACRES
INSTR. 220001177
LOT 602

EX. GARAGE FOOTPRINT

LOT 808
966,396 S.F.
22.1853 ACRES

EX. GARAGE FOOTPRINT

LOT 808
966,396 S.F.
22.1853 ACRES

14 STATE GRID NORTH

TUCKER ST (PUBLIC)

BLOCK E / MOB

ROOF AREA TO BIORETENTION FACILITY = 20,473 SF

BLOCK E / RESIDENTIAL

BIORETENTION 1
BIORETENTION 3
BIORETENTION 4
BIORETENTION 5
BIORETENTION 6

DA = 0.10 ACRES TO BIORETENTION 1
DA = 0.01 ACRES TO BIORETENTION 3
DA = 0.06 ACRES TO BIORETENTION 4
DA = 0.07 ACRES TO BIORETENTION 5
DA = 0.08 ACRES TO BIORETENTION 6
DA = 0.08 ACRES TO BIORETENTION 7
DA = 0.02 ACRES TO BIORETENTION 2

PROP. 15" RCP STM CONNECTION

EX. 6" GAS PLANTER (PRIVATE) (MIN.)

ALEX WAY (PRIVATE)

BLOCK G

ROOF AREA TO BIORETENTION FACILITY = 4,919 SF

BIORETENTION 8
BIORETENTION 9
BIORETENTION 10

DA = 0.09 ACRES TO BIORETENTION 8
DA = 0.07 ACRES TO BIORETENTION 9
DA = 0.11 ACRES TO BIORETENTION 10

PROP. 15" RCP STM CONNECTION

LOT 808
966,396 S.F.
22.1853 ACRES

VERVE ST. (PUBLIC)

FUTURE BLOCK I DS

EX. 18" CL. IV RCP
EX. 15" CL. III RCP
EX. 15" CL. IV RCP
EX. 36" CL. IV RCP
EX. 42" CL. IV RCP
EX. SWM FACILITY

LOCK A/B/C

6001 DUKE STREET
T.M.: 047.02-03-10
INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177
LOT 601

BLOCK Q

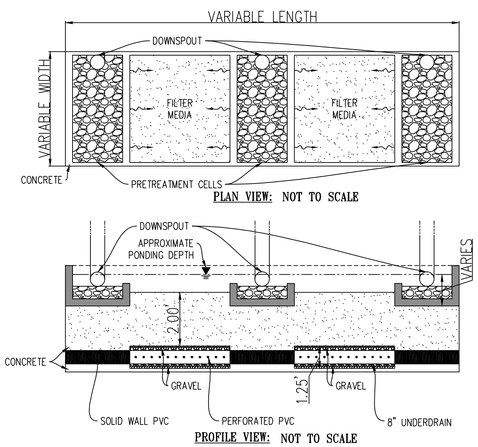
BIKESHARE STATION

LOT 808
966,396 S.F.

BLOCK F

BLOCK N

BIORETENTION FACILITY



COMPILED 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	3998	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_V 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
PROV'D PRETREATMENT CELL VOLUME	53	11	6	32	37	42	42	48	37	58	CF		

LEGEND

BLOCK E&G BOUNDARY
LIMITS OF DISTURBANCE

LEGEND

DRAINAGE AREA
GREEN ROOF
BIORETENTION FACILITY

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 _____

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No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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COMMONWEALTH OF VIRGINIA
CLAYTON C. POCK
Lic. No. 038790
09/27/22
PROFESSIONAL ENGINEER

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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REVISIONS | DESCRIPTION | DATE | No.

PLAN DATE
06-30-2022
08-26-2022
09-27-2022

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

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SITE PLAN NO. _____
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CHAIRMAN, PLANNING COMMISSION _____ DATE _____
DATE RECORDED _____
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REVISIONS | DESCRIPTION | DATE | No.

PLAN DATE
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08-26-2022
09-27-2022

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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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09-27-2022

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
09/27/22

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

FILE No. RZ-1877

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-12-BMP COMPS & NARRATIVE.dwg [WQVD E] September 27, 2022 – 2:00pm awolla

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.

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

No.	DATE	DESCRIPTION

PLAN DATE
06-30-2022
08-26-2022
09-27-2022

Urban, Ltd.
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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

Urban, Ltd. – J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13078-12-BMP COMPS & NARRATIVE.dwg [WQVD G] September 27, 2022 – 2:00pm awalia

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'

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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09/27/22

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

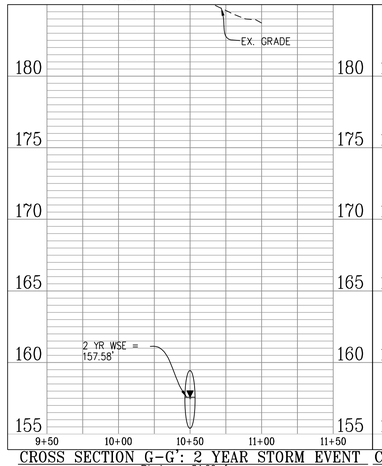
FILE No. RZ-1877

Urban, Ltd. – J:\OBS\Landmark Mall\DSUP\Block-E&G\Preliminary Site Plan\13079-23-OUTFALL ANALYSIS.dwg [ANALYSIS] September 27, 2022 – 2:01pm awolla

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

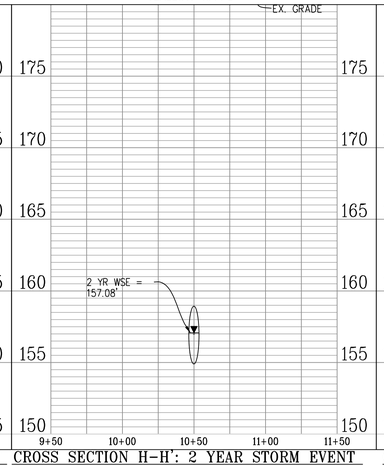
V2ALLOW=15 FPS



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

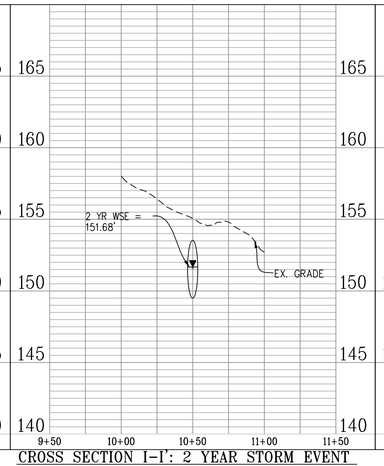
V2ALLOW=15 FPS



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

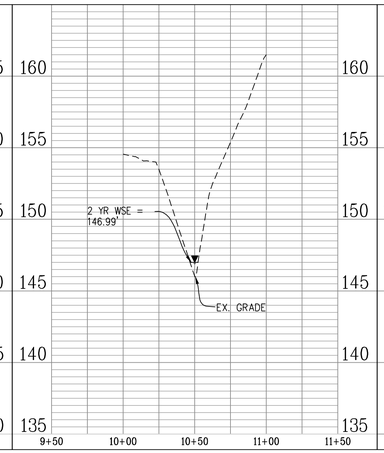
V2ALLOW=15 FPS



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

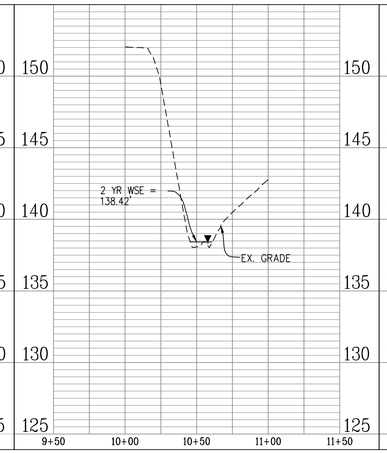
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

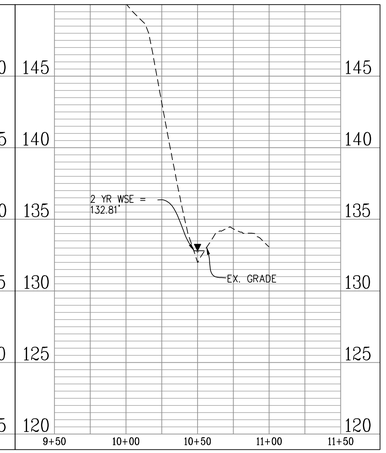
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

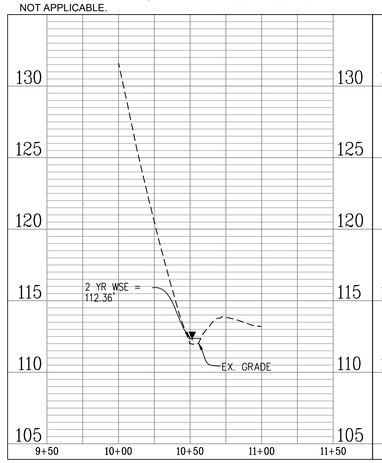
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

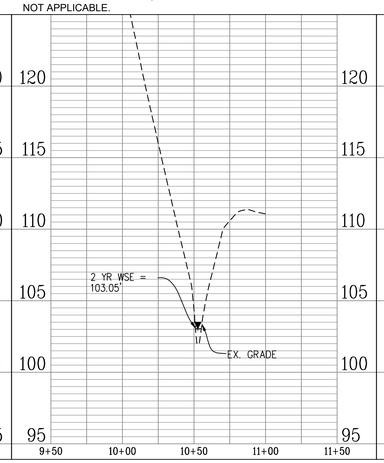
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

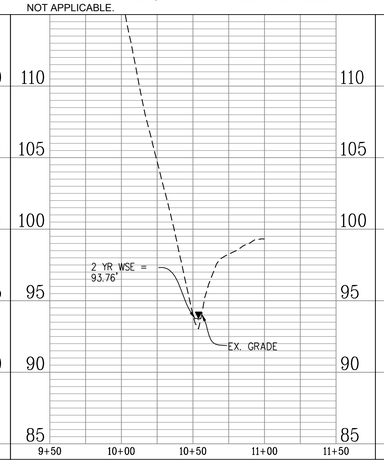
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

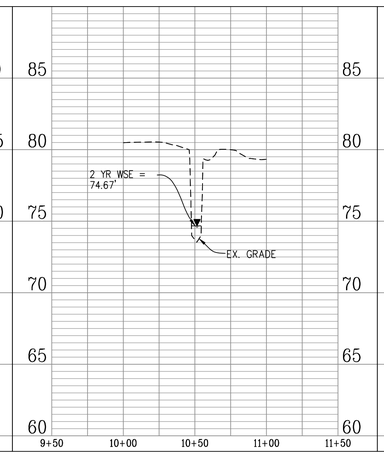
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

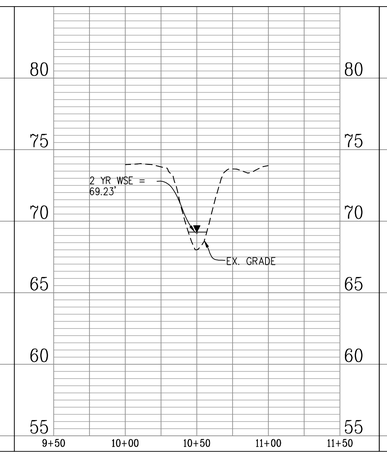
V2ALLOW= 13 FPS



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

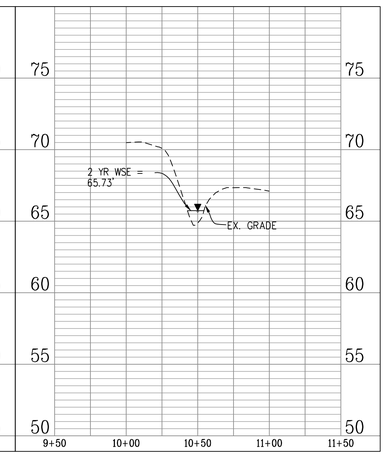
V2ALLOW= 13 FPS



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



No.	DATE	DESCRIPTION
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PLAN DATE
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09-27-2022

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COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
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PROFESSIONAL ENGINEER
09/27/22

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

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. _____

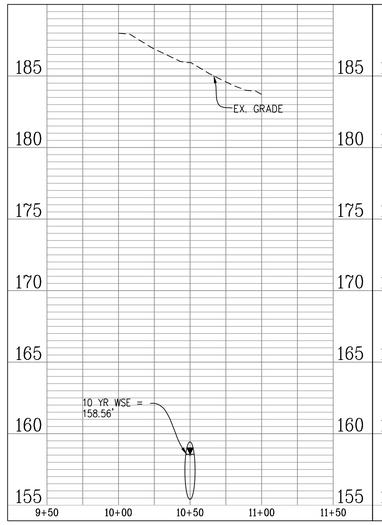
SHEET 23 OF 31

FILE No. RZ-1877

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\Block-E&G\Preliminary Site Plan\13079-23-OUTFALL ANALYSIS.dwg [2 years] September 27, 2022 - 2:01pm owolla

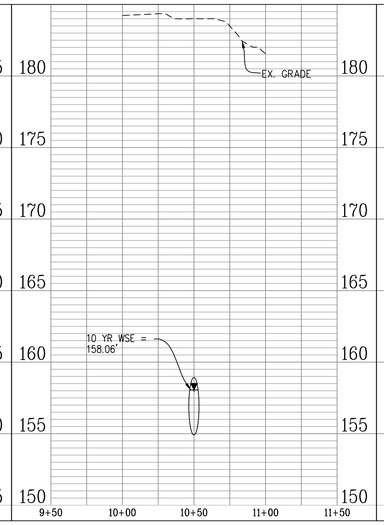
CROSS SECTION A-A': 10 YEAR STORM EVENT

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



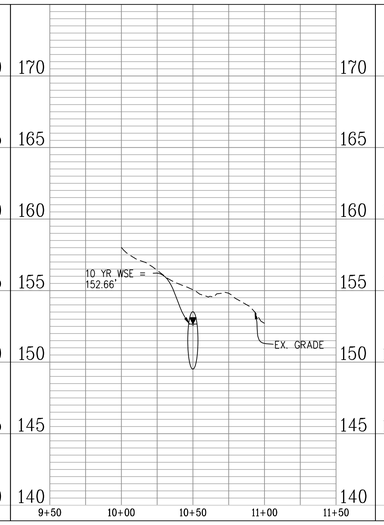
CROSS SECTION B-B': 10 YEAR STORM EVENT

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



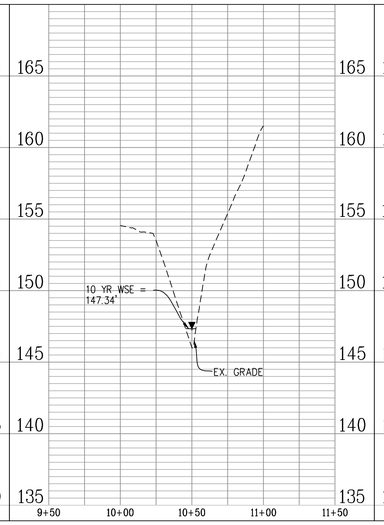
CROSS SECTION C-C': 10 YEAR STORM EVENT

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



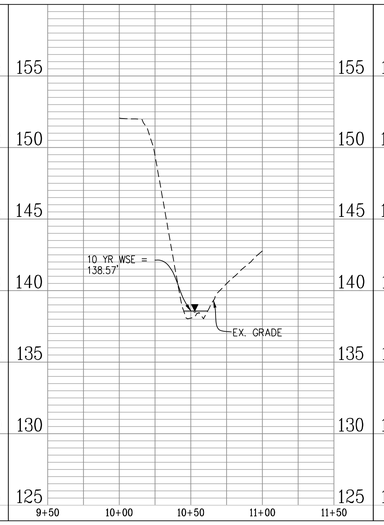
CROSS SECTION D-D': 10 YEAR STORM EVENT

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



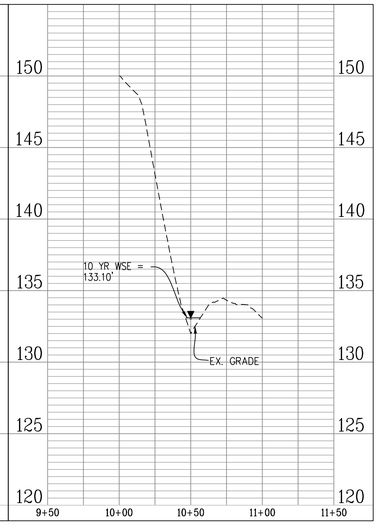
CROSS SECTION E-E': 10 YEAR STORM EVENT

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



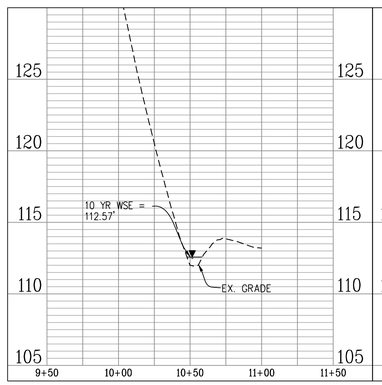
CROSS SECTION F-F': 10 YEAR STORM EVENT

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



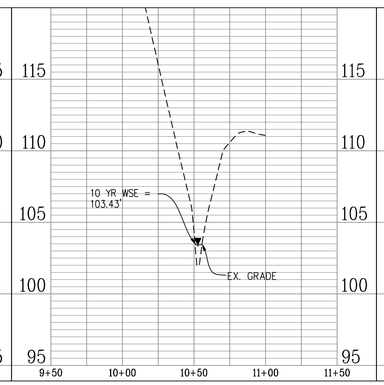
CROSS SECTION G-G': 10 YEAR STORM EVENT

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



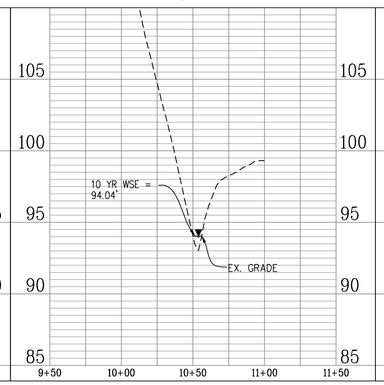
CROSS SECTION H-H': 10 YEAR STORM EVENT

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



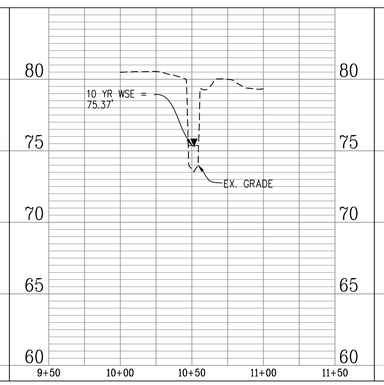
CROSS SECTION I-I': 10 YEAR STORM EVENT

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



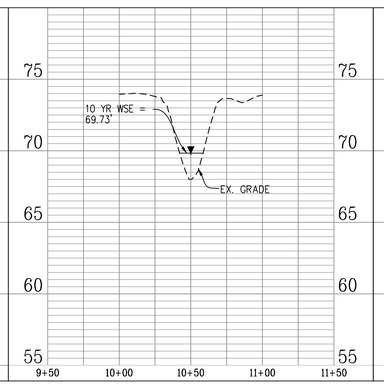
CROSS SECTION J-J': 10 YEAR STORM EVENT

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



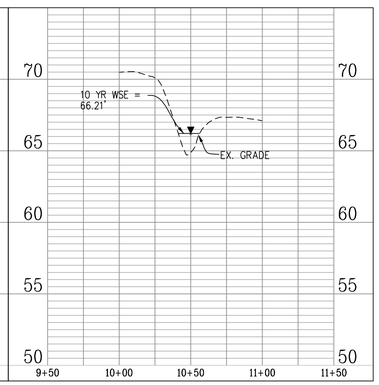
CROSS SECTION K-K': 10 YEAR STORM EVENT

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



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09/27/22

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\OSUP\Block-E&G\Preliminary Site Plan\13079-23-OUTFALL ANALYSIS.dwg [10 years] September 27, 2022 – 2:02pm awalo

SWM ADEQUATE OUTFALL NARRATIVE:

THE EXISTING TOPOGRAPHY OF THE PARCEL HAS TWO DISTINCT OUTFALLS, RESULTING IN TWO STUDY POINTS. STUDY POINT #1 OUTFALLS TO THE NORTHEAST CORNER OF THE PROPERTY. STUDY POINT #2 OUTFALLS TO THE EAST OF THE SITE, IMMEDIATELY NORTH OF THE DUKE STREET RAMP CONNECTION TO VAN DORN STREET. A TOTAL PRE-DEVELOPMENT DRAINAGE AREA OF 35.58 ACRES DRAINS TO STUDY POINT 1, WHILE A TOTAL PRE-DEVELOPMENT DRAINAGE AREA OF 31.24 ACRES DRAINS TO STUDY POINT 2.

STORMWATER MANAGEMENT IS TO BE PROVIDED IN THREE SEPARATE STORMWATER MANAGEMENT VAULTS; VAULT 2, 3, AND 4. VAULT 2 IS LOCATED IMMEDIATELY SOUTH OF BLOCKS E&G AND HAS A DRAINAGE AREA OF 17.46 ACRES. VAULT 3 IS LOCATED SOUTH OF BLOCK I AND HAS A DRAINAGE AREA OF 20.73 ACRES. VAULT 4 IS LOCATED EACH OF THE EXISTING PARKING STRUCTURE AND HAS A DRAINAGE AREA OF 8.06 ACRES. IN ACCORDANCE WITH THE ARTICLE XIII SECTION 13-109 OF THE ALEXANDRIA ZONING ORDINANCE, AND UTILIZING THE VIRGINIA RUNOFF REDUCTION METHODOLOGY, THE TREATMENT VOLUME IS REDUCED VIA THE UNDERGROUND SWM FACILITIES.

THE ALLOWABLE RELEASE RATE FOR EACH STUDY POINT HAS BEEN CALCULATED IN ACOORDANCE WITH ARTICLE XIII SECTION 13-109(F) OF THE ALEXANDRIA ZONING ORDINANCE. FOR THE CHANNEL PROTECTION AND FLOOD PROTECTION WHEN STORMWATER FROM A DEVELOPMENT IS DISCHARGED TO A NATURAL STORMWATER CONVEYANCE SYSTEM, THE MAXIMUM PEAK FLOW RATE FROM THE 1-YEAR 24-HOUR STORM FOLLOWING THE LAND-DISTURBING ACTIVITY SHALL BE CALCULATED WHERE:

$Qdev \leq I.F. * (Qpre * RVpre)/RVdev$

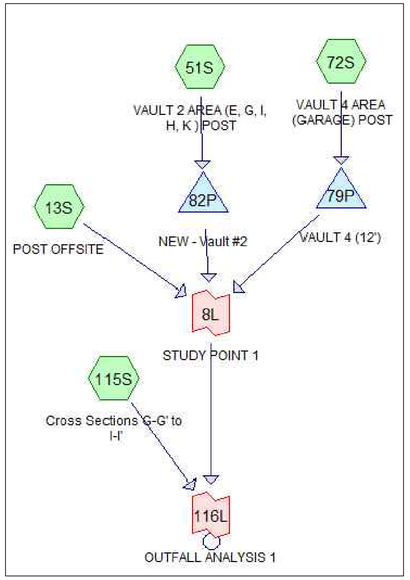
AND THE PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PRE-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT. AS SHOWN IN THE FLOW SUMMARY TABLE ON INFRASTRUCTURE SITE PLAN (DSP#2021-00012) SHEET 123. THE PROPOSED FLOW TO THE STUDY POINTS ARE LESS THAN THE ALLOWABLE RUNOFF.

IT IS THEREFORE THE OPINION OF URBAN, LTD. THAT THE PROPOSED SWM DESIGN MEETS THE REQUIRED SWM REQUIREMENTS OF THE ALEXANDRIA ORDINANCE.

Clayton Tock

URBAN LTD.
CLAYTON C. TOCK, P.E., PRINCIPLE

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

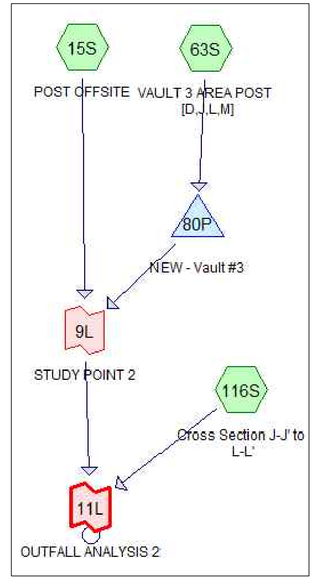
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

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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CLAYTON C. TOCK
Lic. No. 036790
ENGINEER
PROFESSIONAL
09/27/22

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

SHEET 25 OF 31
FILE No. RZ-1877

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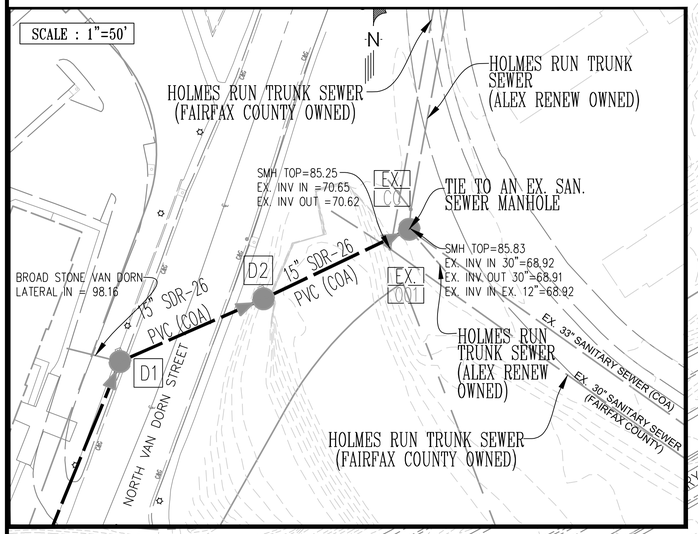
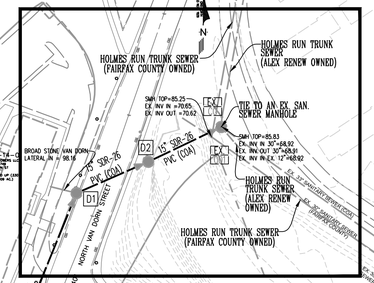
NOTES

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.





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SANITARY SEWER PLAN
WEST END DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA

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

SHEET 26 OF 31

FILE No. RZ-1877

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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
	CO15	L2		241342			4.0	0.19	0.19	0.30	187.90	185.61	91.84	2.50%	10	2.00	4.63	9.65	0.010	PVC		63.91% gpd from Block B 33.33% gpd from Block A
	L2	N1					4.0	0.00	0.19	0.30	185.51	184.64	87.06	1.00%	10	2.00	3.38	9.65	0.010	PVC		
	N1	EX.NN					4.0	0.00	0.19	0.30	184.54	183.71	82.58	1.00%	10	2.00	3.38	9.65	0.010	PVC		
	EX.NN	EX.MM					4.0	0.00	0.19	0.30	183.61	181.37	223.82	1.00%	10	1.85	3.38	10.46	0.010	PVC		
	EX.MM	EX.LL					4.0	0.31	0.50	0.78	181.27	180.49	74.55	1.05%	10	1.89	4.53	26.51	0.010	PVC		100% Flow from Block E (Res.)
	EX.LL	EX.KK					4.0	0.00	0.50	0.78	180.39	178.86	122.64	1.25%	10	2.06	4.82	24.30	0.010	PVC		
	EX.KK	L1					4.0	0.00	0.50	0.78	178.76	176.94	145.48	1.25%	10	2.06	4.82	24.30	0.010	PVC		
	L1	EX.JJ					4.0	0.31	0.81	1.26	176.84	176.36	31.95	1.50%	10	2.26	5.90	35.97	0.010	PVC		100% Flow from Block G
	EX.JJ	EX.II					4.0	0.00	0.81	1.26	176.26	170.94	259.55	2.05%	10	2.00	6.60	40.67	0.010	PVC		
	EX.II	EX.HH					4.0	0.54	1.35	2.09	170.52	162.65	165.68	4.75%	15	11.86	9.94	11.41	0.010	PVC		
	EX.HH	G1					4.0	2.59	3.94	6.10	141.73	139.50	111.27	2.00%	15	7.70	9.76	51.24	0.010	PVC		100% Flow from Landmark Mall
	G1	F1					4.0	0.00	3.94	6.10	133.81	133.25	28.12	2.00%	15	7.70	9.76	51.24	0.010	PVC		
	F1	E1					4.0	0.00	3.94	6.10	106.53	102.09	222.04	2.00%	15	7.70	9.76	51.24	0.010	PVC		
	E1	D1					4.0	0.00	3.94	6.10	101.99	96.00	299.31	2.00%	15	7.70	9.76	51.24	0.010	PVC		
	D1	D2	184				4.0	0.22	4.16	6.44	77.18	75.00	109.44	2.00%	15	7.70	9.90	54.11	0.010	PVC		100% Flow from Broadstone Appt
	D2	EX.CC					4.0	0.00	4.16	6.44	69.77	68.92	112.78	0.75%	15	4.71	3.84	88.36	0.010	PVC		
	W1	W		188500			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	0.03	0.33	0.51	190.90	189.43	117.14	1.25%	12	3.36	4.24	9.85	0.010	PVC		Flow from Block C
	K	J		-			4.0	0.03	0.36	0.56	189.33	188.68	52.56	1.25%	12	3.36	4.27	10.72	0.010	PVC		Flow from Block C
	J	I1					4.0	0.00	0.36	0.56	188.58	187.98	47.70	1.25%	12	3.36	4.27	10.72	0.010	PVC		
	I1	I					4.0	0.40	0.76	1.18	187.88	184.77	248.57	1.25%	12	3.36	5.35	22.74	0.010	PVC		Flow from Block D
	I	H1					4.0	0.55	1.31	2.03	184.67	181.21	276.69	1.25%	12	3.36	6.21	39.13	0.010	PVC		Flow from Block J 50% Flow from Block H
	H1	H					4.0	0.32	1.63	2.53	181.11	180.05	85.17	1.25%	12	3.36	6.57	48.69	0.010	PVC		Flow from Block L
	H	G					4.0	0.00	1.63	2.53	179.95	178.24	170.85	1.00%	12	3.00	6.03	54.44	0.010	PVC		
	G	F					4.0	0.00	1.63	2.53	178.14	177.12	102.02	1.00%	12	3.00	6.03	54.44	0.010	PVC		
	F	E					4.0	0.00	1.63	2.53	177.02	175.39	163.39	1.00%	12	3.00	6.03	54.44	0.010	PVC		
	E	D					4.0	0.67	2.30	3.56	175.29	173.78	151.17	1.00%	12	3.00	3.82	76.71	0.010	PVC		Flow from Block M Flow from Block K
	D	C					4.0	0.00	2.30	3.56	173.68	173.33	34.58	1.00%	12	3.00	3.82	76.71	0.010	PVC		
	C	C1					4.0	0.29	2.59	4.01	173.23	170.40	283.19	1.00%	15	5.44	6.78	47.60	0.010	PVC		Flows from SSMH M & D
	C1	B					4.0	0.00	2.59	4.01	165.90	164.86	103.81	1.00%	15	5.44	6.78	47.60	0.010	PVC		
	B	A					4.0	0.00	2.59	4.01	164.76	162.73	203.40	1.00%	15	5.44	6.78	47.60	0.010	PVC		
	A	EX.HH					4.0	0.00	2.59	4.01	162.63	160.47	215.56	1.00%	15	5.44	6.78	47.60	0.010	PVC		
	R	Q					4.0	0.03	0.03	0.05	196.03	190.91	204.83	2.50%	12	4.75	2.58	0.65	0.010	PVC		Flow from Block B
	Q	P					4.0	0.03	0.06	0.09	190.81	188.98	91.68	2.00%	12	4.25	3.09	1.44	0.010	PVC		Flow from Block C
	P	O					4.0	0.00	0.06	0.09	188.88	186.01	143.07	2.00%	12	4.25	3.09	1.44	0.010	PVC		
	O	N					4.0	0.23	0.29	0.45	185.91	178.40	375.50	2.00%	12	4.25	4.72	6.78	0.010	PVC		50% Flow from Block H
	N	M					4.0	0.00	0.29	0.45	178.30	175.93	118.87	2.00%	12	4.25	4.72	6.78	0.010	PVC		
	M	C					4.0	0.00	0.29	0.45	175.83	175.43	19.86	2.00%	12	4.25	4.72	6.78	0.010	PVC		
	CO1	I	175	21000			4.0	0.23	0.23	0.35	185.75	184.92	33.00	2.50%	6	0.75	5.22	30.34	0.010	PVC		50% Flow from Block H
	CO2	Q		37539			4.0	0.03	0.03	0.05	191.77	190.91	28.85	3.00%	8	1.76	2.81	1.70	0.010	PVC		34% gpd from Block C
	CO3	O	175	21000			4.0	0.23	0.23	0.35	187.39	186.11	51.00	2.50%	6	0.75	5.22	30.34	0.010	PVC		50% Flow from Block H
	CO4	K		36435			4.0	0.03	0.03	0.05	195.00	194.00	33.00	3.03%	6	0.82	2.68	3.54	0.010	PVC		33% Flow from Block C
	CO5	L		36435			4.0	0.03	0.03	0.05	195.00	194.00	33.00	3.03%	6	0.82	2.68	3.54	0.010	PVC		33% Flow from Block C
	CO6	D	337	30180			4.0	0.43	0.43	0.66	175.39	174.40	39.66	2.50%	6	0.75	6.14	57.33	0.010	PVC		100% Flow from Block K
	CO7	I	235	52000			4.0	0.32	0.32	0.50	185.79	184.87	36.86	2.50%	6	0.75	5.66	43.29	0.010	PVC		100% Flow from Block J
	CO8	H1	260	11000			4.0	0.32	0.32	0.50	182.48	181.31	46.81	2.50%	6	0.75	5.61	42.91	0.010	PVC		100% Flow from Block L
	CO9	E	200				4.0	0.24	0.24	0.37	185.22	184.10	44.91	2.50%	6	0.75	5.23	32.11	0.010	PVC		100% Flow from Block M
	CO10	R		38703			4.0	0.03	0.03	0.05	196.77	196.13	25.44	2.50%	8	1.61	2.90	1.92	0.010	PVC		36.09% Flow from Block B
	CO11	I2	336				4.0	0.40	0.40	0.62	189.27	188.67	24.00	2.50%	8	1.61	5.96	25.04	0.010	PVC		100% Flow from Block D
	I2	I1					4.0	0.00	0.40	0.62	188.57	188.08	48.93	1.00%	8	1.02	4.25	39.57	0.010	PVC		
BLOCK E (RES.)	CO12	EX.MM	146	56568			4.0	0.22	0.22	0.34	182.49	181.52	38.79	2.50%	6	2.00	5.14	11.02	0.010	PVC		100% Flow from Block E (Res.)
BLOCK G	CO13	L1	244	23866			4.0	0.31	0.31	0.48	179.06	177.17	75.43	2.50%	6	2.00	5.64	15.59	0.010	PVC		100% Flow from Block G
	CO14	EX.II	390	90141			4.0	0.54	0.54	0.84	173.17	171.27	76.18	2.50%	6	0.75	3.81	72.25	0.010	PVC		100% Flow from Block I
BLOCK E (MOB)	CO16	EX.MM		109920			4.0	0.09	0.09	0.14	185.50	183.79	68.32	2.50%	6	0.75	3.88	11.76	0.010	PVC		100% Flow from Block E1 (MOB)
	V1	V		188500			4.0	0.15	0.15	0.23	194.05	193.38	66.50	1.00%	12	3.00	3.09	5.03	0.010	PVC		33.33% Flow from Block A

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.	565,556	200GPD/1,000 S.F.		300GPD/UNIT	-	113,111
	B	200GPD/1,000 S.F.	110,409	200GPD/1,000 S.F.	-	300GPD/UNIT	-	22,082
	C	200GPD/1,000 S.F.	82,593	200GPD/1,000 S.F.	-	300GPD/UNIT	-	16,519
Total			758,558		-		-	151,712
				TOTAL FLOW FROM HOSPITAL CAMPUS (MGD)				0.61
LANDMARK	D	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	300GPD/UNIT	336	100,800
	E	200GPD/1,000 S.F.	109,920	200GPD/1,000 S.F.	56,568	300GPD/UNIT	146	77,098
	G	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	23,866	300GPD/UNIT	244	77,973
	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.	90,141	300GPD/UNIT	390	135,028
	J	200GPD/1,000 S.F.	52000			300GPD/UNIT	235	80,900
	K	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	30,180	300GPD/UNIT	337	107,136
	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			161,920		253,755		2,498	832,535
				TOTAL FLOW FROM LANDMARK MALL BLOCKS (MGD)				3.33
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)				4.16

Landmark Mall Breakdown by Manhole

	Block	Lateral #	Lateral Tie In Location	% of Block Flow	MH Flow Enters in
HOSPITAL	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	33.00%	L
		2	CO4	33.00%	K
	(Garage)	3	CO2	34.00%	Q
LANDMARK	D	1	CO11	100%	I2
	E	1	CO16	100%	EX. MM
		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 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 MM AND L1 AS A CONNECTION POINT TO THE SANITARY SYSTEM AS SHOWN ON SHEET 26. A TOTAL OF 390 UNITS, 109,920 GSF OFFICE, AND 80,434 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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CHAIRMAN, PLANNING COMMISSION ____ DATE ____
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CLAYTON C. TOCK
Lic. No. 036790
09/27/22
PROFESSIONAL ENGINEER

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

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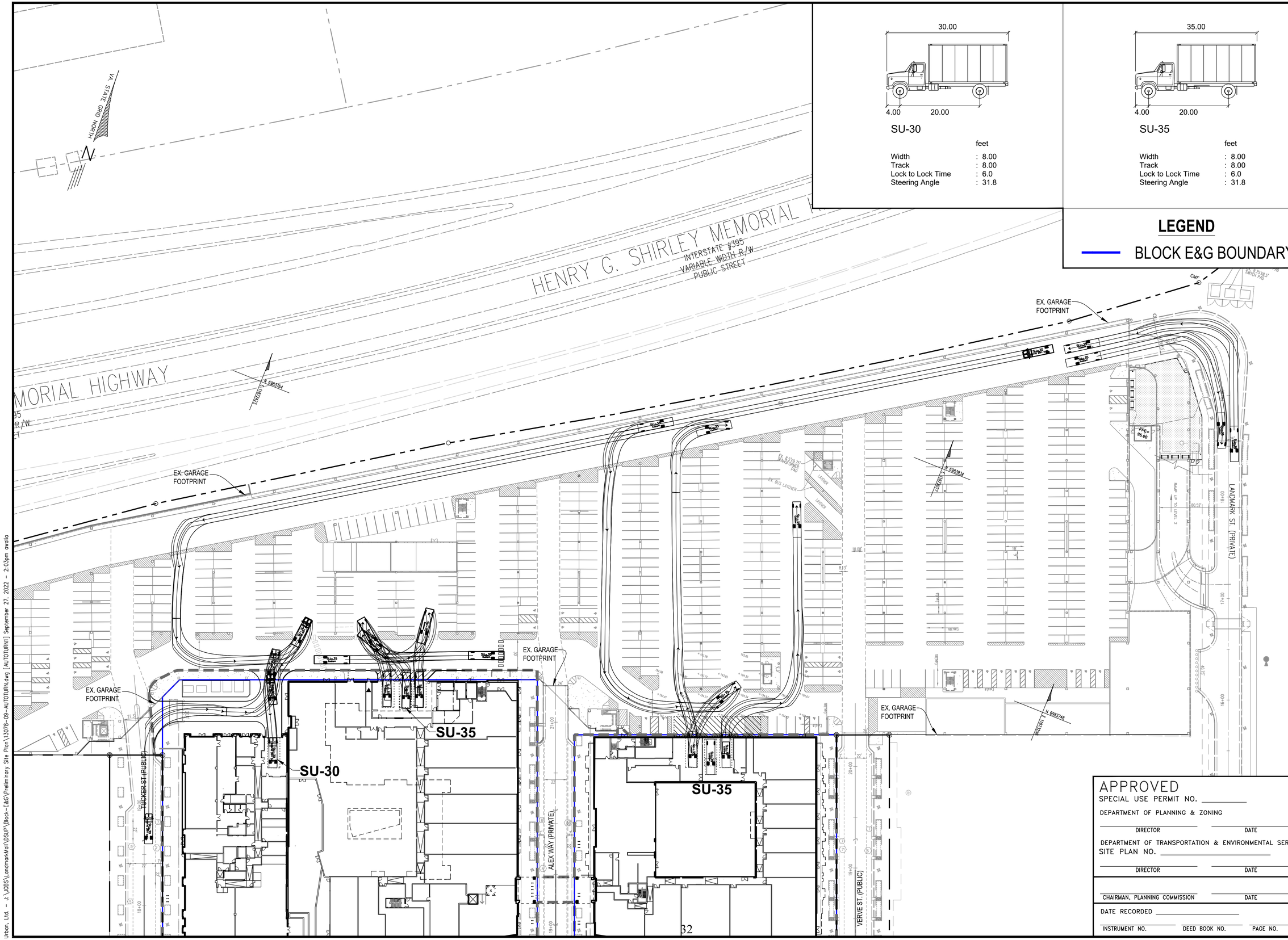

30.00

4.00 20.00

SU-30

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

35.00

4.00 20.00

SU-35

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

LEGEND

BLOCK E&G BOUNDARY

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CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

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09/27/22

AUTOTURN EXHIBIT

WEST END DEVELOPMENT PLAN - BLOCK E&G

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE, 2022

SCALE: 1"=40' C.I.=N/A

SHEET 28 OF 31

FILE No. RZ-1877

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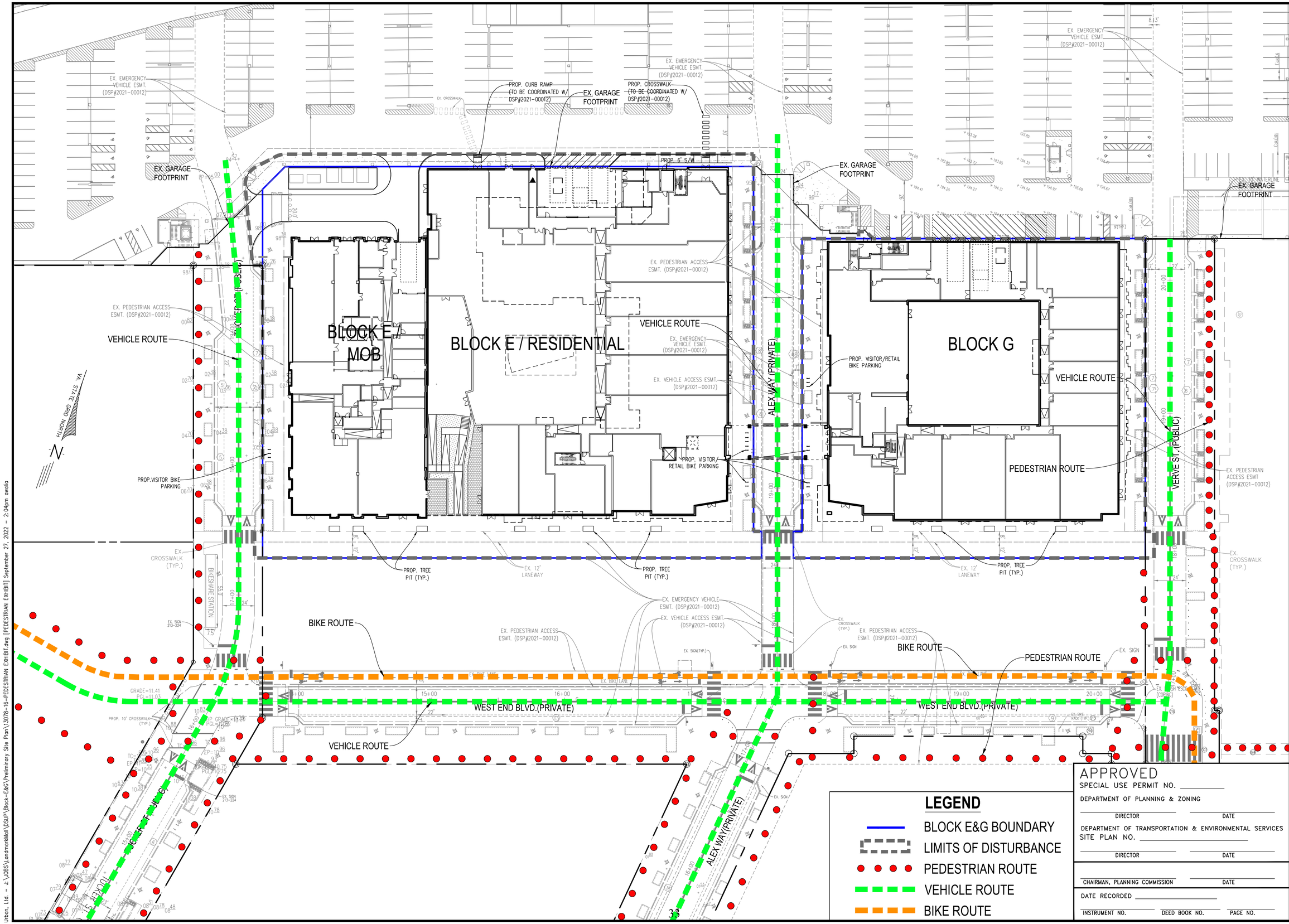
EX. EMERGENCY VEHICLE ESMT. (DSP#2021-00012)
PROP. CURB RAMP (TO BE COORDINATED W/ DSP#2021-00012)
EX. GARAGE FOOTPRINT
PROP. CROSSWALK (TO BE COORDINATED W/ DSP#2021-00012)
EX. CROSSWALK
PROP. 6' S/W
EX. GARAGE FOOTPRINT
EX. 30' WATERLINE
EX. PEDESTRIAN ACCESS ESMT. (DSP#2021-00012)
VEHICLE ROUTE
BLOCK E / MOB
BLOCK E / RESIDENTIAL
EX. VEHICLE ACCESS ESMT (DSP#2021-00012)
ALEX WAY (PRIVATE)
BLOCK G
PROP. VISITOR/RETAIL BIKE PARKING
PEDESTRIAN ROUTE
VERVE ST. (PUBLIC)
EX. PEDESTRIAN ACCESS ESMT (DSP#2021-00012)
PROP. VISITOR BIKE PARKING
PROP. VISITOR/ RETAIL BIKE PARKING
VA STATE GRID NORTH
EX. CROSSWALK (TYP.)
BIKESHARE STATION
PROP. TREE PIT (TYP.)
EX. 12' LANEWAY
EX. EMERGENCY VEHICLE ESMT. (DSP#2021-00012)
EX. VEHICLE ACCESS ESMT. (DSP#2021-00012)
BIKE ROUTE
EX. SIGN
EX. SIGN(TYP.)
WEST END BLVD.(PRIVATE)
JOCKEY'S HOUSE
EX. SIGN 213-224
EX. BIKE RACK (TYP.)
EX. SIGN (COPING)
EX. CROSSWALK (TYP.)
PROP. 10' CROSSWALK (TYP.)
GRADE=11.41 PCL=11.01
EP GRADE=10.75 PCL=10.75
TC=10.96 EP=10.75
TC=10.96 EP=10.96
TC=10.83 EP=10.96
TC=10.46 EP=10.96
TC=10.38 EP=10.96
TC=10.58 EP=10.96
TC=10.78 EP=10.96
TC=10.88 EP=10.96
TC=10.98 EP=10.96
TC=11.08 EP=10.96
TC=11.18 EP=10.96
TC=11.28 EP=10.96
TC=11.38 EP=10.96
TC=11.48 EP=10.96
TC=11.58 EP=10.96
TC=11.68 EP=10.96
TC=11.78 EP=10.96
TC=11.88 EP=10.96
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TC=12.08 EP=10.96
TC=12.18 EP=10.96
TC=12.28 EP=10.96
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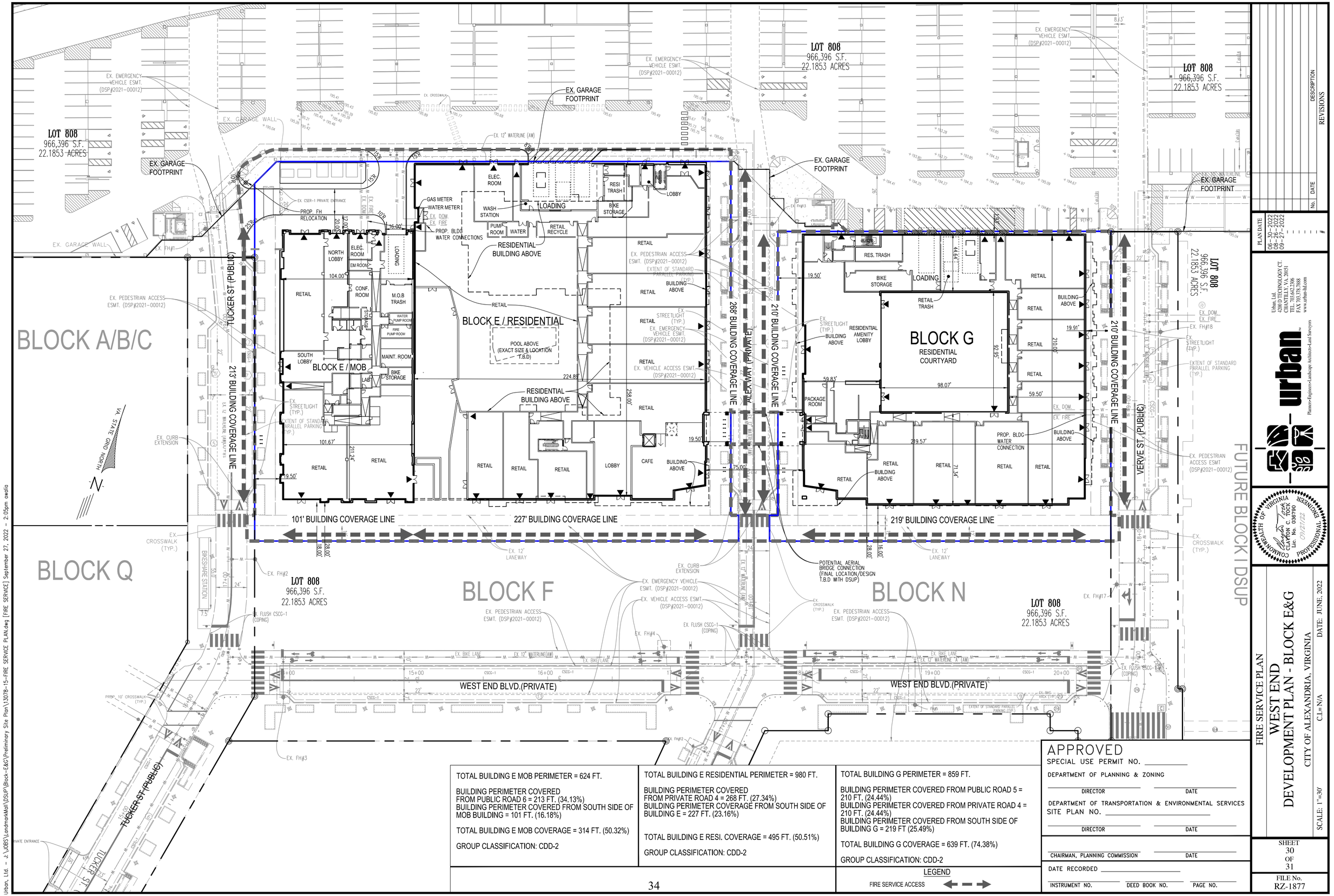
TC=12.48 EP=10.96
TC=12.58 EP=10.96
TC=12.68 EP=10.96



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

SHEET 30 OF 31

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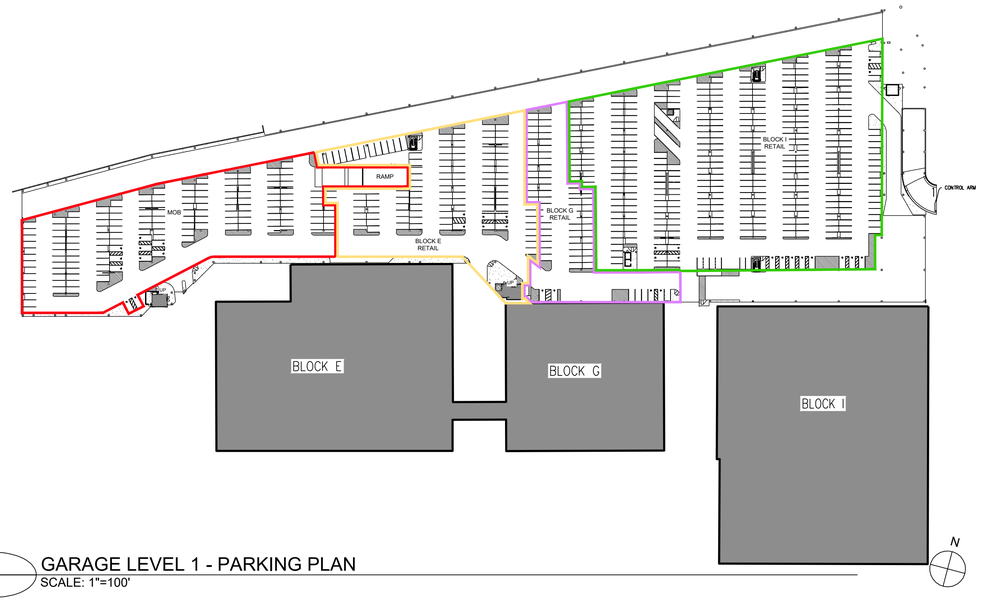
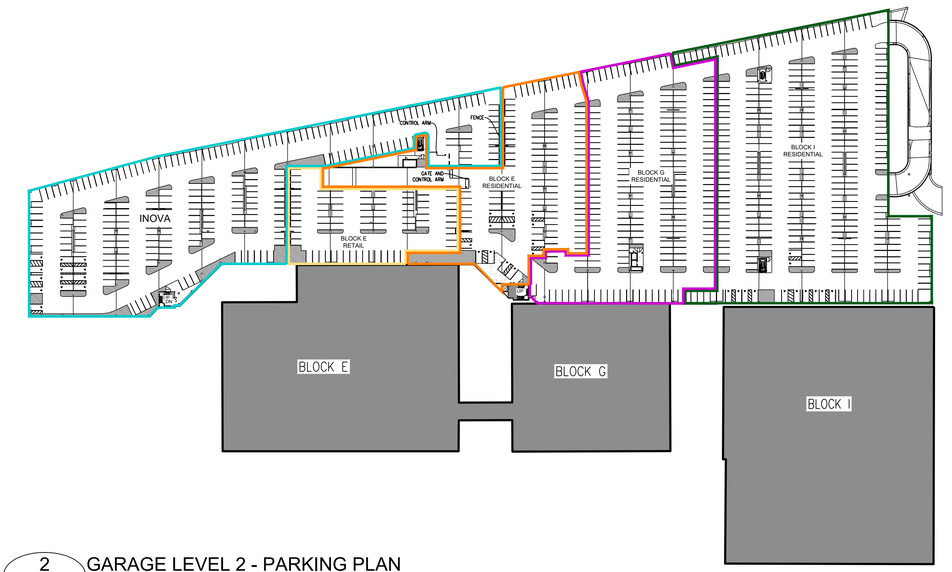
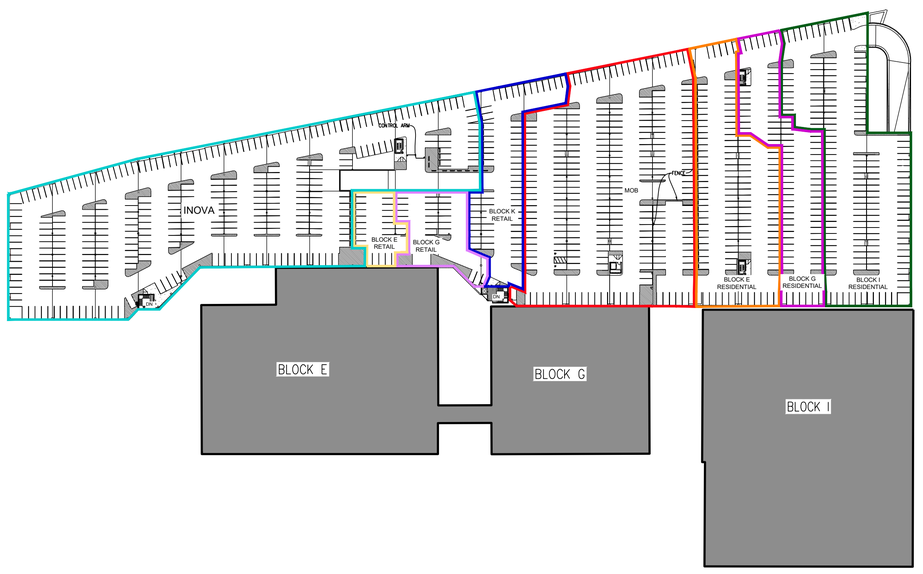


1 GARAGE LEVEL 1 - PARKING PLAN
SCALE: 1"=100'



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	146	111	-	71	-
LEVEL 2	-	72	108	-	203
LEVEL 3	257	22	121	24	82
TOTAL	403	205	229	95	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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PARKING MATRIX
WEST END
DEVELOPMENT PLAN - BLOCK E&G
CITY OF ALEXANDRIA, VIRGINIA
SCALE: AS NOTED C.I.= N/A DATE: JUNE, 2022

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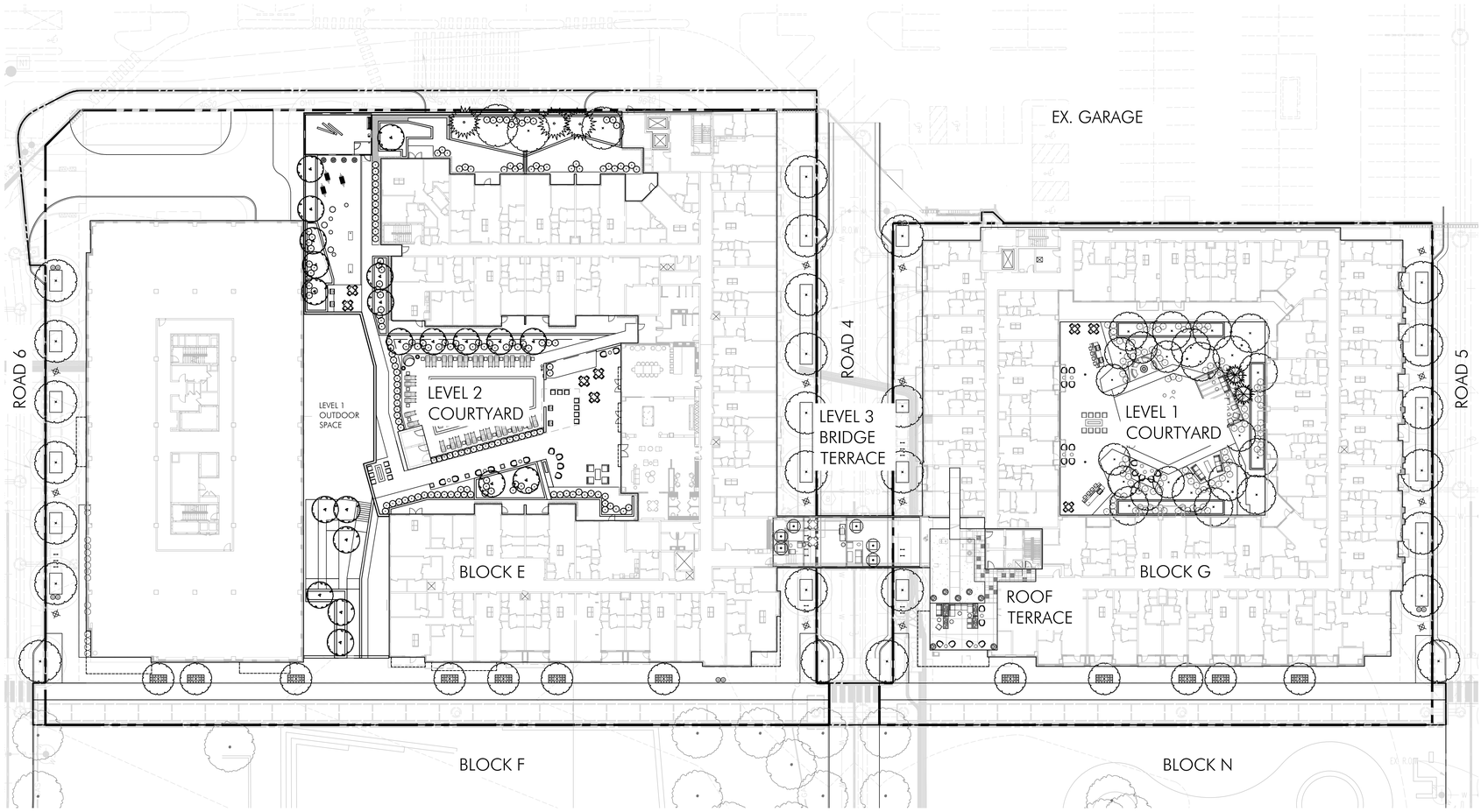

01 OVERALL LANDSCAPE PLAN

1"=30'-0"

FEET 0 15 30 60

LANDSCAPE DRAWING INDEX

L1.01	OVERALL LANDSCAPE PLAN	(PREVIOUSLY SHEET 25 ON CONCEPT II SET)
L1.10	LANDSCAPE PLAN - BLOCK E LEVEL 1	(PREVIOUSLY SHEET 26 ON CONCEPT II SET)
L1.11	LANDSCAPE PLAN - BLOCK E LEVEL 2 & BRIDGE TERRACE	(PREVIOUSLY SHEET 27 ON CONCEPT II SET)
L1.12	LANDSCAPE PLAN - BLOCK G LEVEL 1 & ROOF TERRACE	(PREVIOUSLY SHEET 28 ON CONCEPT II SET)
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L3.02	PLANTING PLAN - BLOCK G	(PREVIOUSLY SHEET 30 ON CONCEPT II SET)
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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
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	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

OVERALL LANDSCAPE PLAN

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

DRAWN BY

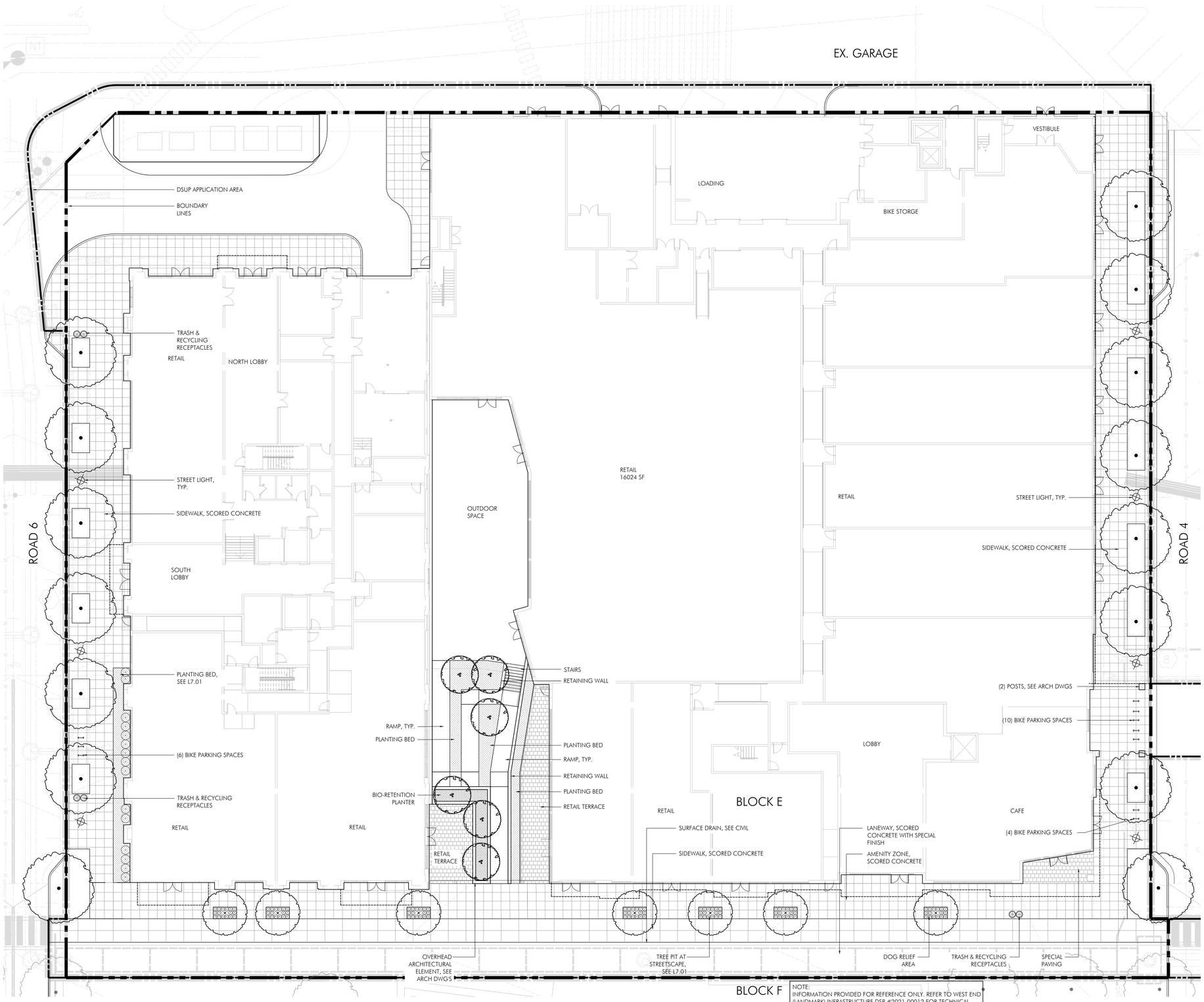
CHECKED BY

NORTH

SCALE
1"=30'-0"

0 15 30 60
FEET

L1.01



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

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LANDSCAPE PLAN - BLOCK E LEVEL 1

ORIGINAL ISSUE DATE
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DESIGNED BY

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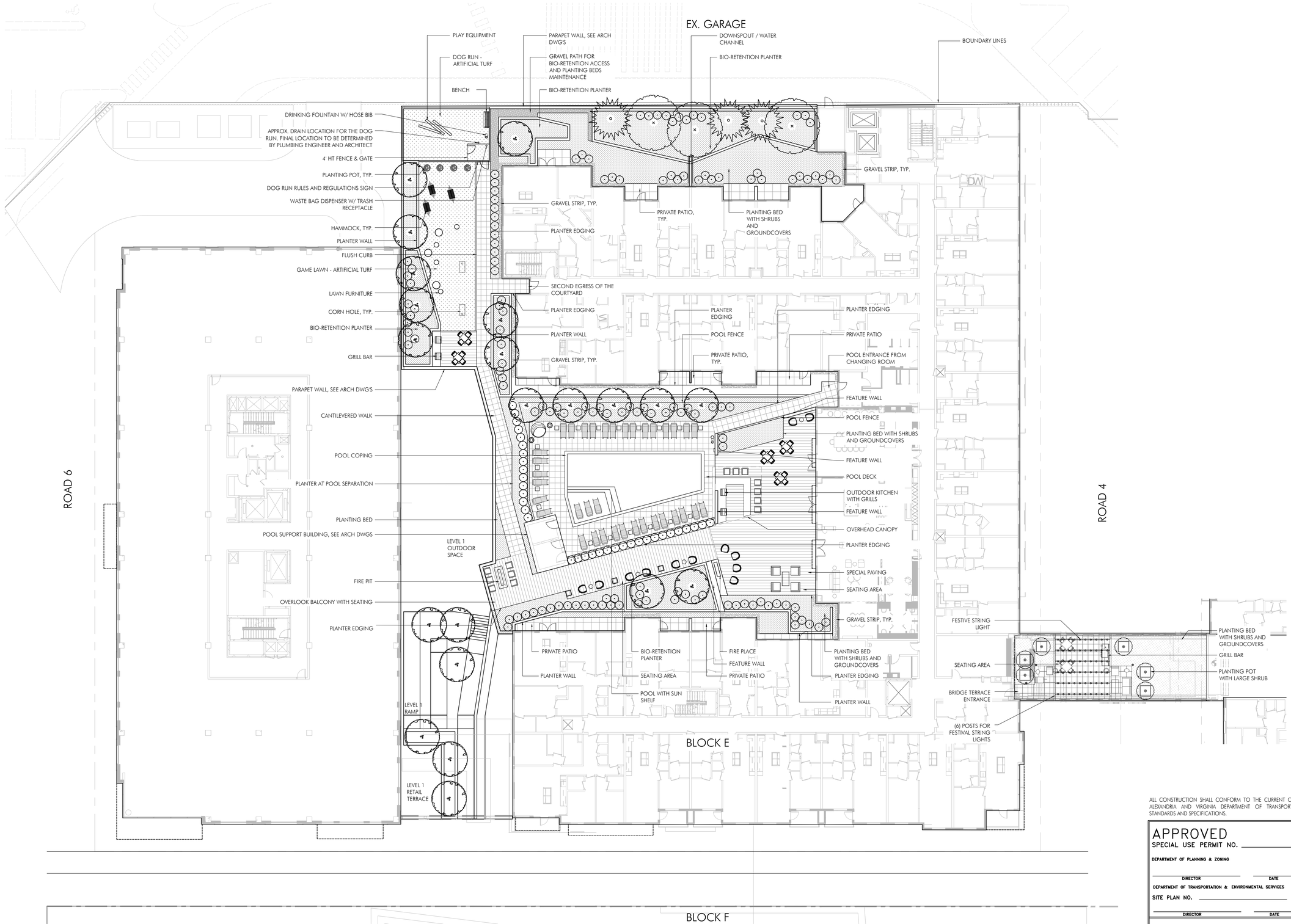
NORTH

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

L1.10



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

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LANDSCAPE PLAN - BLOCK E LEVEL 2 & BRIDGE TERRACE

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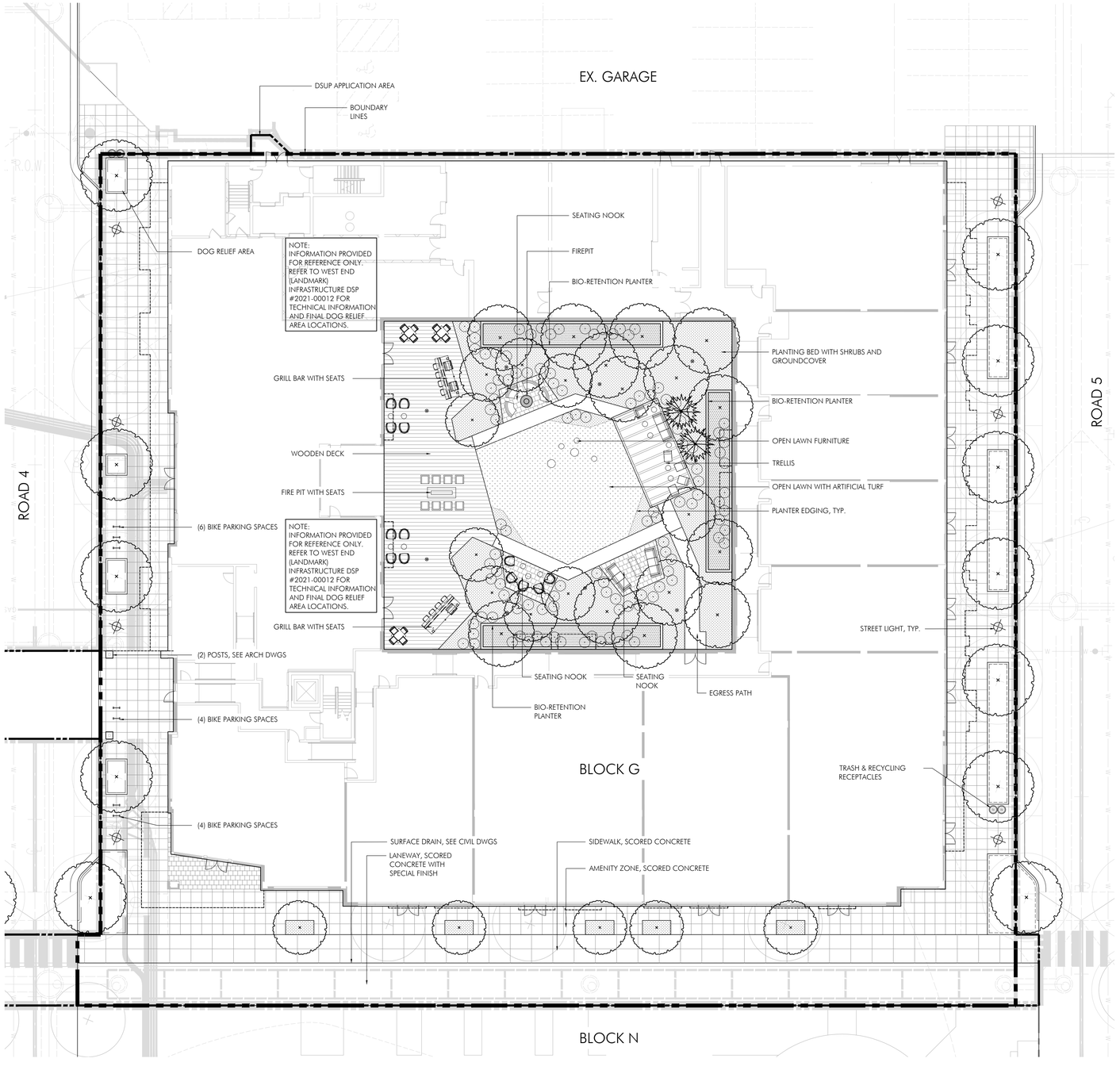
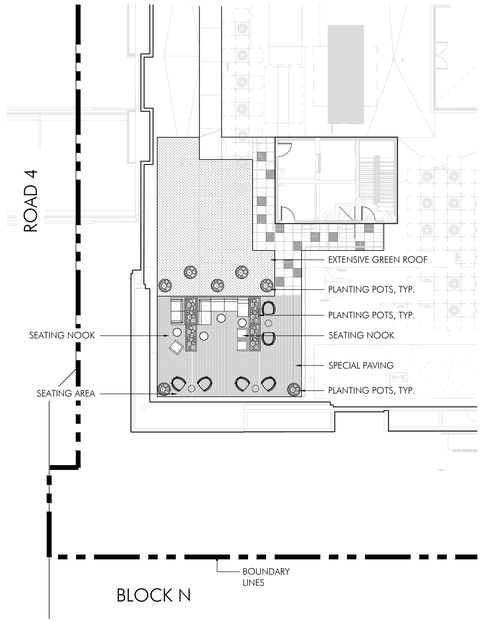
SCALE
1/16"=1'-0"
0 8 16 32 FEET

L1.11



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

FEET 0 8 16 32



02 LANDSCAPE PLAN - BLOCK G ROOF TERRACE
1/16"=1'-0"

FEET 0 8 16 32

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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.

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DSUP RESUBMISSION	09.27.22

LANDSCAPE PLAN - BLOCK G LEVEL 1 & ROOF TERRACE

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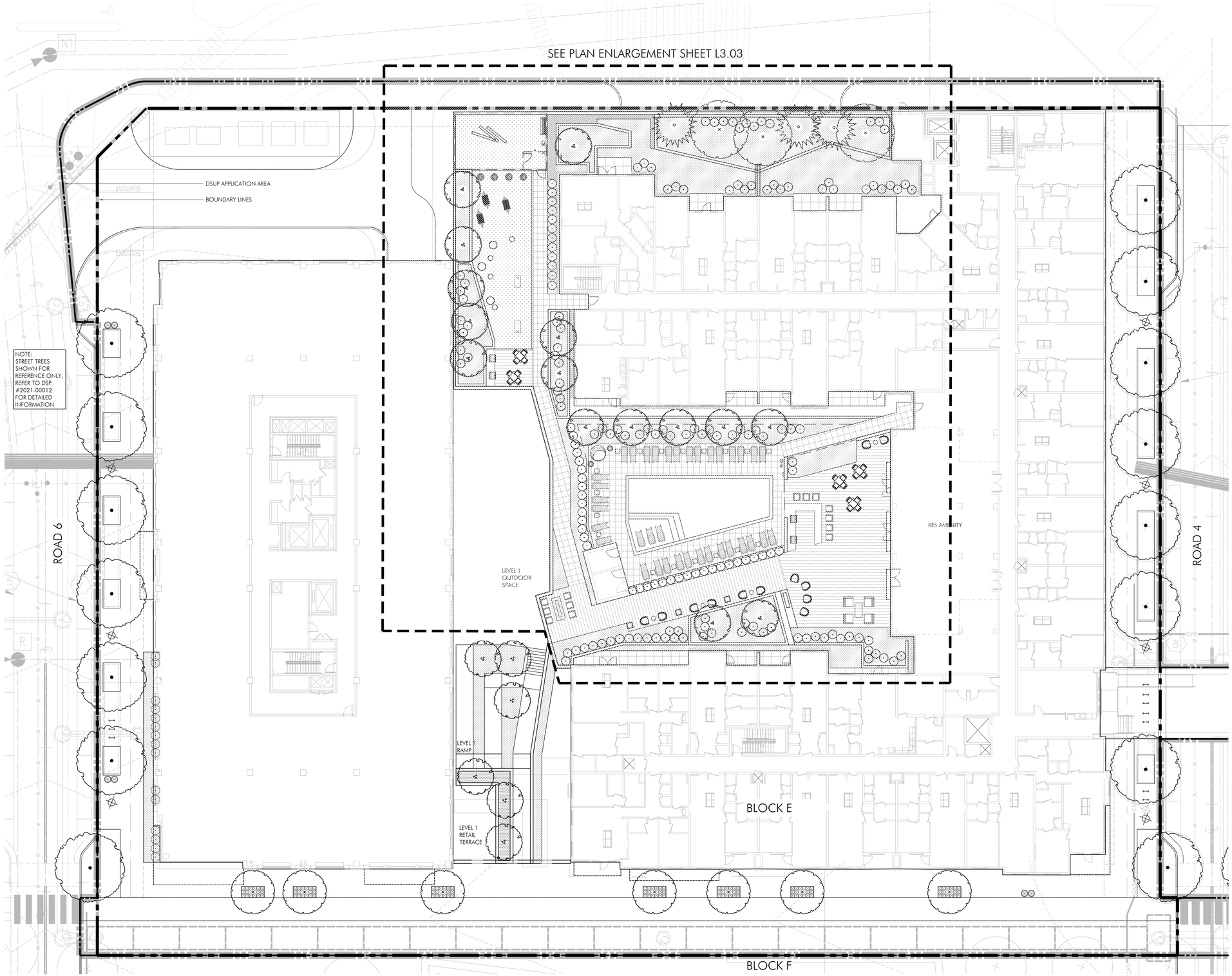
1/16"=1'-0"
0 8 16 32 FEET

L1.12



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

FEET
0 8 16 32

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PLANTING PLAN - BLOCK E

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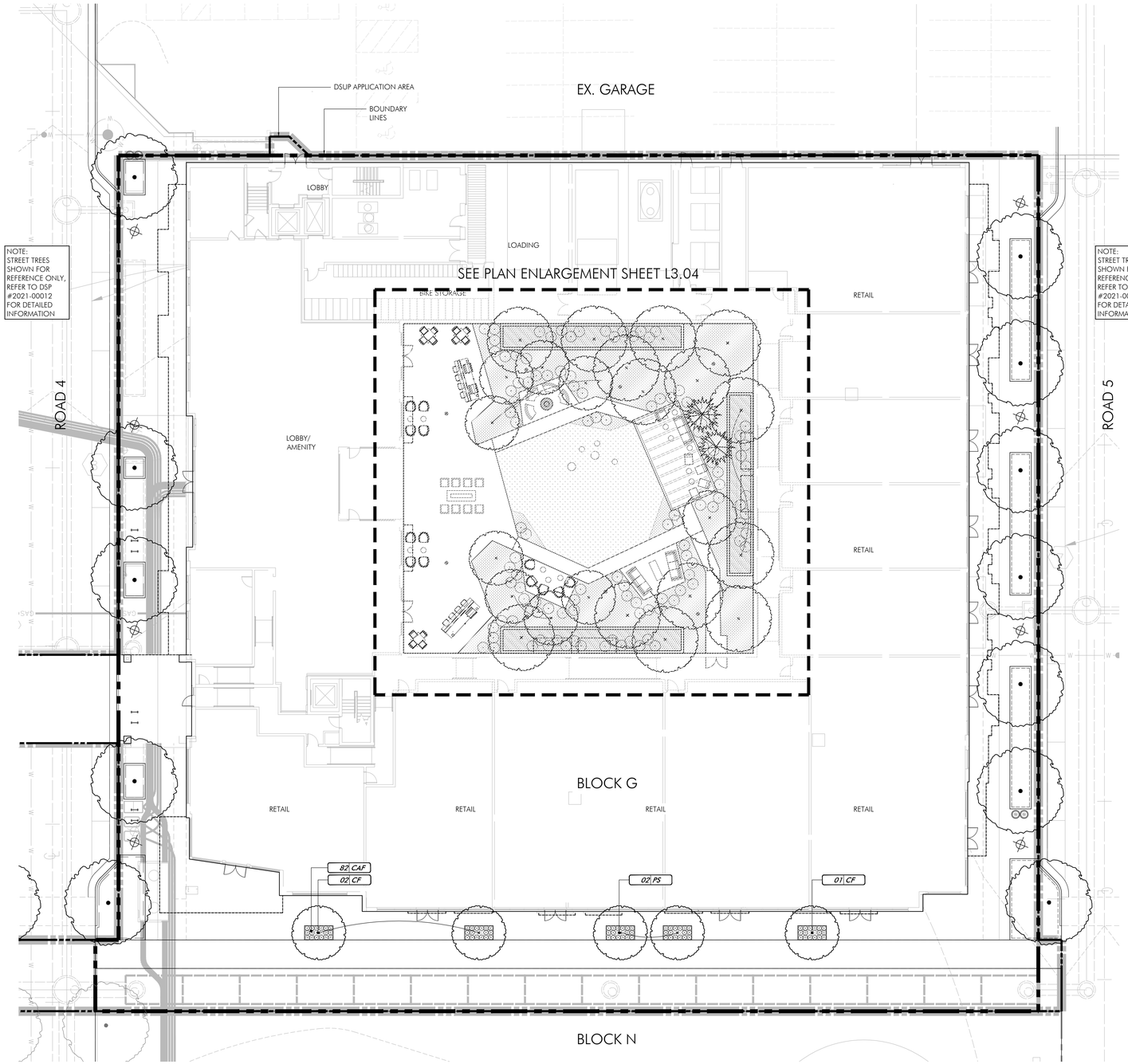
NORTH
SCALE
1/16"=1'-0"
0 8 16 32 FEET

L3.01



01 PLANTING PLAN - BLOCK G

1/16"=1'-0"

FEET 0 8 16 32

LEGEND

- ARTIFICIAL TURF
- SHRUBS & GROUNDCOVERS
- BIO-RETENTION PLANTING

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PLANTING PLAN - BLOCK G

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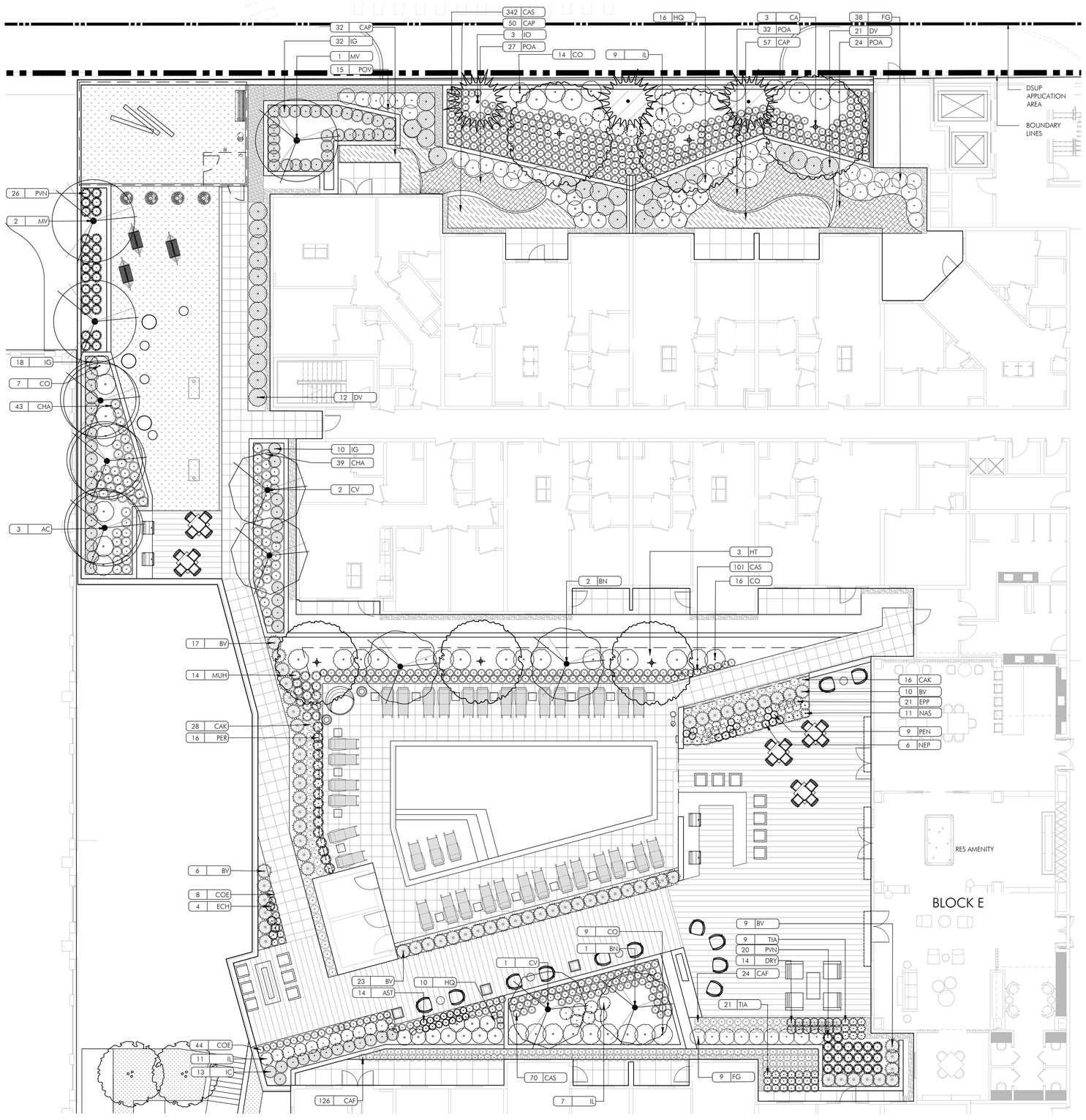
0 8 16 32
FEET

L3.02



01 PLANTING PLAN - BLOCK E
1"=10'-0"

FEET
0 5 10 20

LEGEND

- ARTIFICIAL TURF
- SHRUBS & GROUNDCOVERS
- BIO-RETENTION PLANTING

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PLANTING PLAN - BLOCK E COURTYARD

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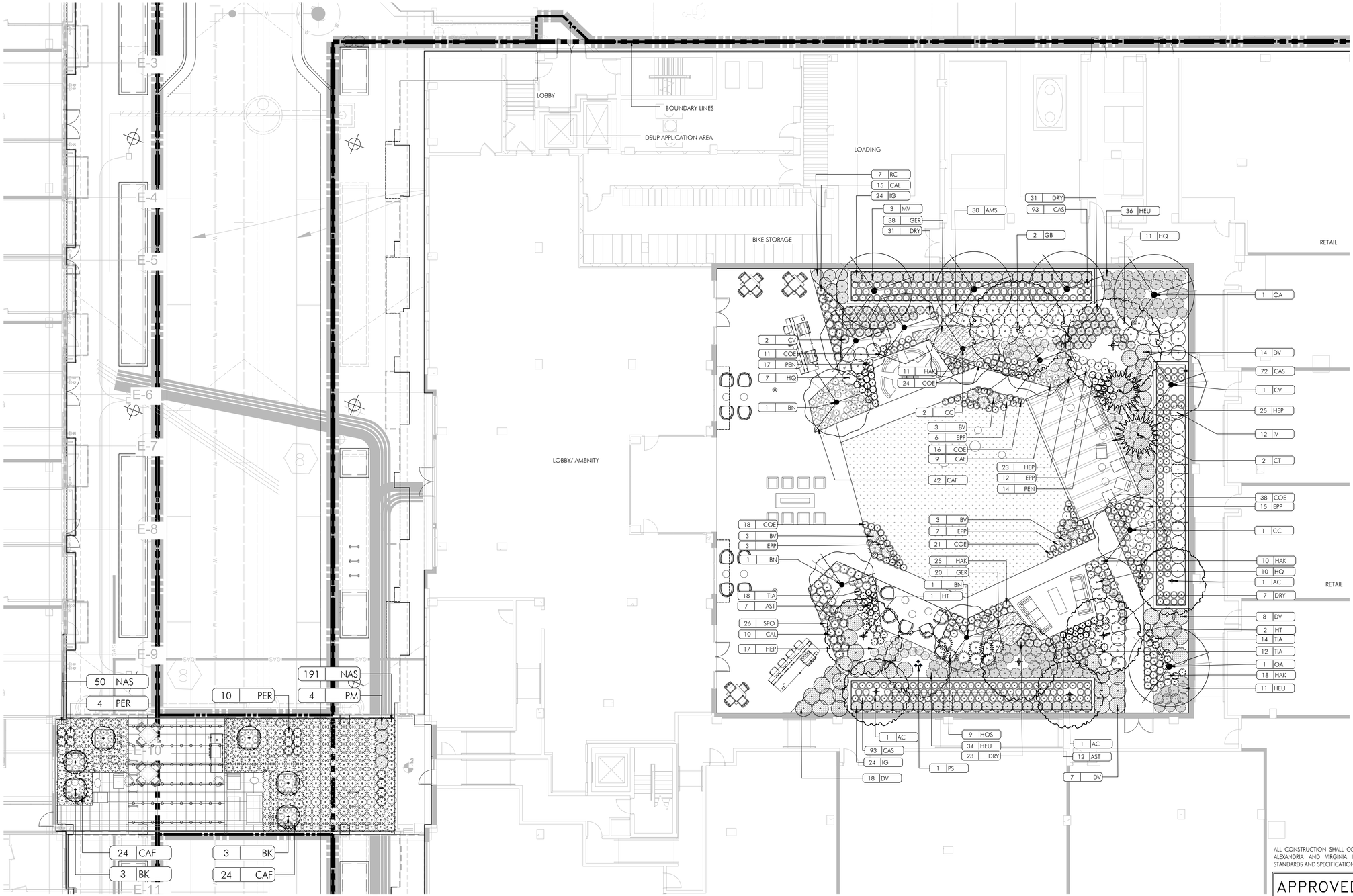
SCALE
1/16"=1'-0"
0 8 16 32
FEET

L3.03



01 PLANTING PLAN - BLOCK G

1"=10'-0"

FEET 0 5 10 20

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PLANTING PLAN - BLOCK G COURTYARD & BRIDGE TERRACE

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CHECKED BY

NORTH

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

L3.04

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, multistem - 3 stems min; 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 Eastern Redbud	8-10' ht.	B&B, multistem - 3 stems min; full branching	500	1,500	2		2	Onsite (within property line)
	CF	3	Cornus	florida	Appalachian Spring	Appalachian Spring 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		White Fringe Tree	3" cal.	B&B, single leader; full branching	500	1,500	3		3	Onsite (within property line)
	HT	3	Halesia	tetraptera		Carolina Silverbell	3" cal.	B&B, single leader; full branching	250	750		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	3	Magnolia	virginiana		Sweetbay Magnolia	3" cal.	B&B, single leader; full branching	250	750	3		3	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	1	Prunus	sargentii		Sargent Cherry	3" cal.	B&B, single leader; full branching	500	500			0	Onsite (within property line)
	TOTALS	34							STANDARD TREE CCA:	14,750	26	3	26	
											76.5%	8.8%	76.5%	

BIODIVERSITY TABULATIONS

TREES (URBAN AND STANDARD)
TOTAL NUMBER OF TREES PROPOSED: 34

GENUS	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED	SPECIES	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED
Amelanchier	3	8.8%	33%	canadensis	3	8.8%	10%
Betula	3	8.8%	33%	nigra	3	8.8%	10%
Carpinus	3	8.8%	33%	caroliniana	3	8.8%	10%
Cercis	3	8.8%	33%	canadensis	3	8.8%	10%
Chionanthus	3	8.8%	33%	virginicus	3	8.8%	10%
Cornus	6	17.6%	33%	florida	3	8.8%	10%
				kousa	3	8.8%	10%
Halesia	3	8.8%	33%	tetraptera	2	5.9%	10%
Ilex	3	8.8%	33%	opaca	3	8.8%	10%
Magnolia	3	8.8%	33%	virginiana	3	8.8%	10%
Nyssa	3	8.8%	33%	sylvatica	3	8.8%	10%
Prunus	1	2.9%	33%	sargentii	3	8.8%	10%

CROWN COVER TABULATIONS BLOCK 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

PLANT SCHEDULE BLOCK E COURTYARD

TREES - EVERGREEN	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
IO	3	ILEX OPACA	AMERICAN HOLLY	8 - 10` HEIGHT	B&B	
TREES- DECIDUOUS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
BN	3	BETULA NIGRA 'DURA HEAT'	FOX VALLEY DWARF RIVER BIRCH	3" CAL.		
CA	3	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL.	B&B	
HT	3	HALESIA TETRAPTERA	CAROLINA SILVERBELL	3" CAL.	B&B	
TREES- ORNAMENTAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
AC	3	AMELANCHIER CANADENSIS 'AUTUMN BRILLIANCE	AUTUMN BRILLIANCE SERVICEBERRY	10 - 12` HEIGHT	B&B	
CV	3	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	8 - 10` HEIGHT		
MV	3	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	8 - 10` HEIGHT		
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
BV	65	BUXUS X `GREEN VELVET`	BOXWOOD	18" TALL	CONT.	
DV	33	DISTYLIUM X 'VINTAGE JADE'	VINTAGE JADE DISTYLIUM	2` HEIGHT	CONT,	
FG	47	FOTHERGILLA GARDENII 'BLUE MIST'	BLUE MIST DWARF FOTHERGILLA	2` HEIGHT	CONT.	
HQ	26	HYDRANGEA QUERCIFOLIA 'MUNCHKIN'	OAKLEAF HYDRANGEA	2.5` HEIGHT	CONT,	
IC	13	ILEX CRENATA 'STEEDS'	STEEDS JAPANESE HOLLY	3` HEIGHT	CONT,	
IG	60	ILEX GLABRA `DENSA`	STRONGBOX INKBERRY HOLLY	5 GAL.	CONT.	
IL	27	ITEA VIRGINICA `LITTLE HENRY` TM	VIRGINIA SWEETSPIRE	24" HT	CONT.	
ANNUALS/PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
AST	14	ASTILBE CHINENSIS 'VISIONS'	VISIONS CHINESE ASTILBE	1 GAL.	CONT.	
DRY	14	DRYOPTERIS ERYTHROSORA 'BRILLIANCE'	BRILLIANCE AUTUMN FERN	1 GAL.	CONT,	
ECH	4	ECHINACEA PURPUREA 'WHITE SWAN'	WHITE SWAN CONEFLOWER	1 GAL.	CONT,	
EPP	21	ECHINACEA PURPUREA `PRAIRIE SPLENDOR`	PRAIRIE SPLENDOR CONEFLOWER	1 QT.	CONT,	
NAS	11	NASSELLA TENUISSIMA	MEXICAN FEATHER GRASS	1 GAL.	CONT.	
NEP	6	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	1 GAL.	CONT.	
PER	16	PEROVSKIA ATRIPLICIFOLIA 'BLUE SPIRES'	BLUE SPIRES RUSSIAN SAGE	1 GAL.	CONT,	
TIA	30	TIARELLA CORDIFOLIA	FOAMFLOWER	1 GAL.	CONT,	
SHRUBS - DECIDUOUS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
CO	46	CEPHALANTHUS OCCIDENTALIS 'SMCOSS' TM	SUGAR SHACK BUTTONBUSH	2` HEIGHT	CONT,	
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
CAK	44	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	1 GAL.	CONT,	
CAF	150	CAREX FLACCA 'BLUE ZINGER'	BLUE ZINGER SEDGE	1 GAL.		
COE	53	CAREX OSHIMENSIS 'EVERLIME' TM	EVERCOLOR EVERLIME JAPANESE SEDGE	1 GAL.	CONT,	
CAS	513	CAREX STRICTA	TUSSOCK SEDGE	1 GAL.	CONT.	
CHA	82	CHASMANTHIUM LATIFOLIUM	WOOD OATS	1 GAL.	CONT.	
MUH	14	MUHLENBERGIA X 'PINK FLAMINGO'	PINK FLAMINGO MUHLY	1 GAL.	CONT.	
PVN	46	PANICUM VIRGATUM `NORTHWIND`	SWITCH GRASS	2 GAL.	CONT.	
PEN	9	PENNISETUM ORIENTALE `KARLEY ROSE`	KARLEY ROSE FOUNTAIN GRASS	2 GAL.	CONT.	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
CAP	139	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	1 GAL.	CONT.	18" o.c.
POV	15	POLYGONATUM ODORATUM 'VARIEGATUM'	VARIEGATED SOLOMON'S SEAL	1 GAL.	CONT.	20" o.c.
POA	83	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	1 GAL.	CONT.	24" o.c.

PLANT SCHEDULE - BLOCK E STREET LEVEL ALONG LANEWAY

TREE- DECIDUOUS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
NS	3	NYSSA SYLVATICA	BLACK GUM	3" CAL.	B&B
TREES- ORNAMENTAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CF	3	CORNUS FLORIDA	FLOWERING DOGWOOD	3" CAL.	B&B
CK	3	CORNUS KOUSA	KOUSA DOGWOOD	3" CAL.	B&B
CC	3	CERCIS CANADENSIS	REDBUD	8 - 10` HEIGHT	B&B
PS	1	PRUNUS SARGENTII	SARGENT CHERRY	3" CAL.	B&B
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CAF	98	CAREX FLACCA 'BLUE ZINGER'	BLUE ZINGER SEDGE	1 GAL.	CONT.
PAV	90	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	2 GAL.	CONT.

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DEPARTMENT OF PLANNING & ZONING
DIRECTOR _____ DATE _____
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
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CHAIRMAN, PLANNING COMMISSION _____ DATE _____
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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	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

LANDSCAPE NOTES & SCHEDULE - BLOCK E

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

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NTS

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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	Dura Heat	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	Appalachian Spring	Flowering Dogwood	3" cal.	B&B, single leader; full branching	250	750	3		3	Onsite (within property line)
	CT	2	Chamaecyparis	thyoides		Atlantic White Cedar	10-12' ht.	B&B, single leader; full branching	250	500	2		2	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	2	Ginkgo	biloba		Maidenhair Tree	3" cal.	B&B, single leader; full branching	750	1,500			0	Onsite (within property line)
	HT	3	Halesia	tetraptera		Carolina Silverbell	3" cal.	B&B, single leader; full branching	250	750	3		3	Onsite (within property line)
	MV	3	Magnolia	virginiana		Sweetbay Magnolia	10-12' ht.	B&B, multistem - 3 stems min; full branching	250	750	3		3	Onsite (within property line)
	OA	2	Oxydendron	arborea		Sourwood	3" cal.	B&B, single leader; full branching	500	1,000	2		2	Onsite (within property line)
	PS	3	Prunus	sargentii		Sargent Cherry	3" cal.	B&B, single leader; full branching	500	1,500			0	Onsite (within property line)
	TOTALS	30							STANDARD TREE CCA:	13,500	25	0	25	
											83.3%	0.0%	83.3%	

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	2	6.7%	33%	thyoides	2	6.7%	10%
Chionanthus	3	10.0%	33%	virginicus	3	10.0%	10%
Cornus	3	10.0%	33%	florida	3	10.0%	10%
Ginkgo	2	6.7%	33%	biloba	2	6.7%	10%
Halesia	3	10.0%	33%	tetraptera	3	10.0%	10%
Magnolia	3	10.0%	33%	virginiana	3	10.0%	10%
Oxydendron	2	6.7%	33%	arborea	1	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

PLANT SCHEDULE BLOCK G COURTYARD

TREES - EVERGREEN	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
CT	2	CHAMAECYPARIS THYOIDES	ATLANTIC WHITE CYPRESS	10 - 12` HEIGHT	B&B	
TREES- DECIDUOUS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
BN	3	BETULA NIGRA 'DURA HEAT'	FOX VALLEY DWARF RIVER BIRCH	10 - 12` HEIGHT		
GB	2	GINKGO BILOBA	MAIDENHAIR TREE	3" CAL.	B&B	
HT	3	HALESIA TETRAPTERA	CAROLINA SILVERBELL	3" CAL.	B&B	
OA	2	OXYDENDRUM ARBOREUM	SOURWOOD TREE	3" CAL.	B&B	
TREES- ORNAMENTAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
AC	3	AMELANCHIER CANADENSIS 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	10 - 12` HEIGHT	B&B	
CC	3	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY EASTERN REDBUD	10 - 12` HEIGHT		
CV	3	CHIONANTHUS VIRGINICUS	WHITE FRINGETREE	3" CAL.		
MV	3	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	10 - 12` HEIGHT		
PS	1	PRUNUS SARGENTII	SARGENT CHERRY	3" CAL.	B&B	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
BV	9	BUXUS X `GREEN VELVET`	BOXWOOD	18" TALL	CONT.	
DV	47	DISTYLIUM X 'VINTAGE JADE'	VINTAGE JADE DISTYLIUM	2` HEIGHT	CONT,	
HQ	28	HYDRANGEA QUERCIFOLIA 'MUNCHKIN'	OAKLEAF HYDRANGEA	2.5` HEIGHT	CONT,	
IG	48	ILEX GLABRA `DENSA`	STRONGBOX INKBERRY HOLLY	5 GAL.	CONT.	
IV	12	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	2` HEIGHT	CONT,	
RC	7	RHODODENDRON X `CONLEE`	AUTUMN AMETHIST	24" HT	CONT.	
ANNUALS/PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
AMS	30	AMSONIA HUBRICHTII	ARKANSAS BLUE-STAR	2 GAL.	CONT.	
AST	19	ASTILBE CHINENSIS 'VISIONS'	VISIONS CHINESE ASTILBE	1 GAL.	CONT.	
DRY	92	DRYOPTERIS ERYTHROSORA 'BRILLIANCE'	BRILLIANCE AUTUMN FERN	1 GAL.	CONT,	
EPP	43	ECHINACEA PURPUREA `PRAIRIE SPLENDOR`	PRAIRIE SPLENDOR CONEFLOWER	1 QT.	CONT.	
HEU	81	HEUCHERA VILLOSA `AUTUMN BRIDE`	AUTUMN BRIDE HEUCHERA	1 GAL.	CONT.	
HEP	65	HEUCHERA X 'PINK PANTHER'	PINK PANTHER CORAL BELLS	1 GAL.	CONT.	
HOS	9	HOSTA X 'ARCTIC BLAST'	ANTIOCH HOSTA	1 GAL.	CONT,	
TIA	44	TIARELLA CORDIFOLIA	FOAMFLOWER	1 GAL.	CONT,	
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
CAL	25	CALAMAGROSTIS ARUNDINACEA BRACHYTRICHA	KOREAN FEATHER REED GRASS	3 GAL.	CONT.	
CAF	51	CAREX FLACCA 'BLUE ZINGER'	BLUE ZINGER SEDGE	1 GAL.		
COE	128	CAREX OSHIMENSIS 'EVERLIME' TM	EVERCOLOR EVERLIME JAPANESE SEDGE	1 GAL.	CONT,	
CAS	261	CAREX STRICTA	TUSSOCK SEDGE	1 GAL.	CONT.	
HAK	64	HAKONECHLOA MACRA `ALL GOLD`	JAPANESE FOREST GRASS	1 GAL.	CONT.	
PEN	31	PENNISETUM ORIENTALE `KARLEY ROSE`	KARLEY ROSE FOUNTAIN GRASS	2 GAL.	CONT.	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING
GER	58	GERANIUM MACRORRHIZUM 'BEVAN'S VARIETY'	BEVAN'S VARIETY BIGROOT GERANIUM	1 GAL.	CONT.	18" o.c.

PLANT SCHEDULE - BLOCK G STREET LEVEL ALONG LANEWAY

TREES- ORNAMENTAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CF	3	CORNUS FLORIDA	FLOWERING DOGWOOD	3" CAL.	B&B
PS	2	PRUNUS SARGENTII	SARGENT CHERRY	3" CAL.	B&B
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CAF	82	CAREX FLACCA 'BLUE ZINGER'	BLUE ZINGER SEDGE	1 GAL.	CONT.

PLANT SCHEDULE BRIDGE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
BK	6	BETULA NIGRA 'LITTLE KING' TM	FOX VALLEY DWARF RIVER BIRCH	6` HEIGHT	B&B	
PM	4	PINUS MUGO	MUGO PINE	24-30" HEIGHT	CONT.	
ANNUALS/PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
NAS	241	NASSELLA TENUISSIMA	MEXICAN FEATHER GRASS	1 GAL.	CONT.	
PER	14	PEROVSKIA ATRIPLICIFOLIA 'BLUE SPIRES'	BLUE SPIRES RUSSIAN SAGE	1 GAL.	CONT.	
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	
CAF	48	CAREX FLACCA 'BLUE ZINGER'	BLUE ZINGER SEDGE	1 GAL.		

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LANDMARK
BLOCK E & G

City of Alexandria
Alexandria, Virginia

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PLANNING URBAN DESIGN LANDSCAPE ARCHITECTURE
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Alexandria, VA 22314
703.548.5010

COMMONWEALTH OF VIRGINIA
TRINI M. RODRIGUEZ
Cert. No. 1296
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50% DD	06.17.22
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LANDSCAPE NOTES & SCHEDULE - BLOCK G

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07.30.2021

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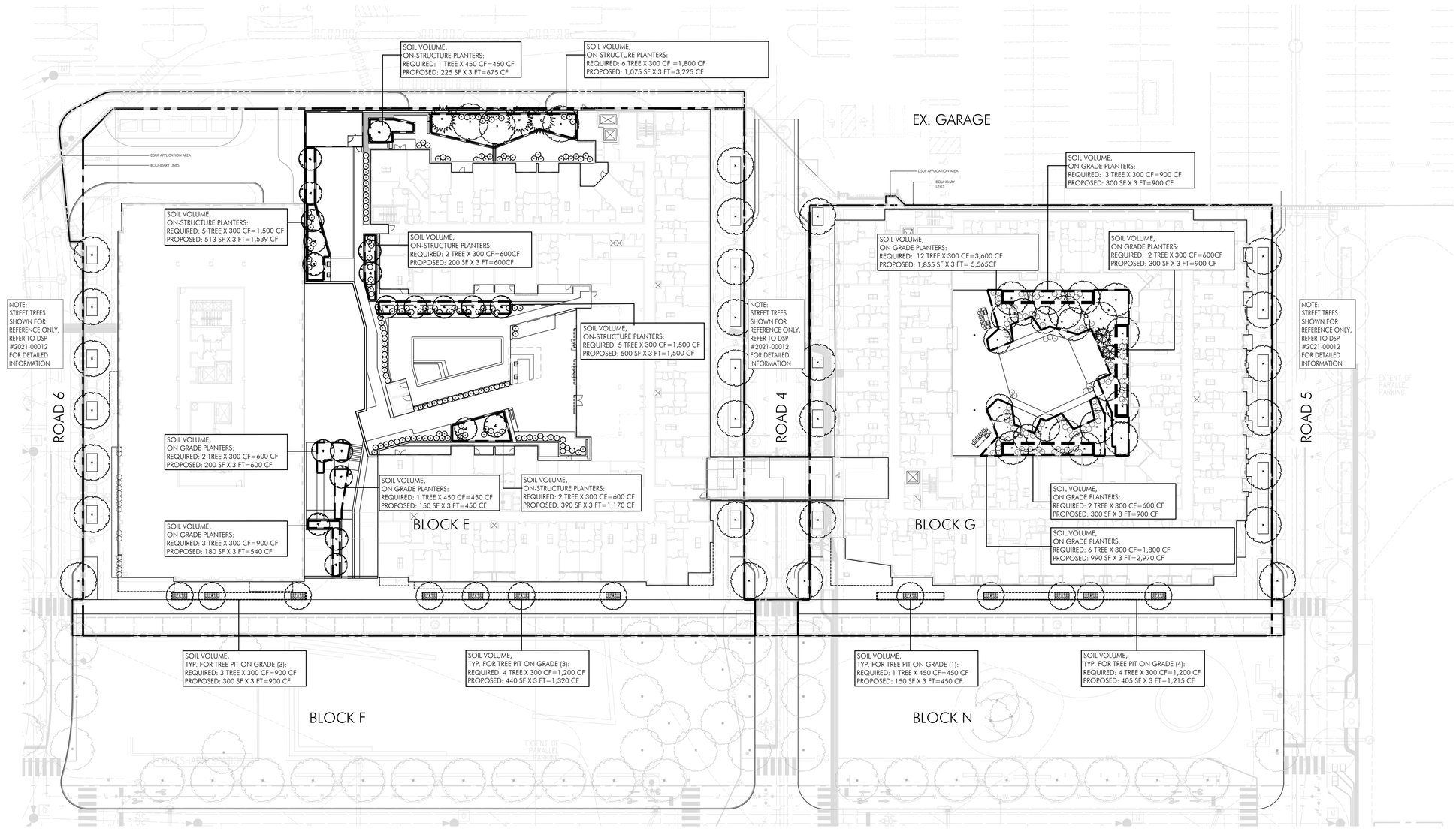

01 SOIL VOLUME PLAN
1"=30'-0"

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SOIL VOLUME PLAN

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

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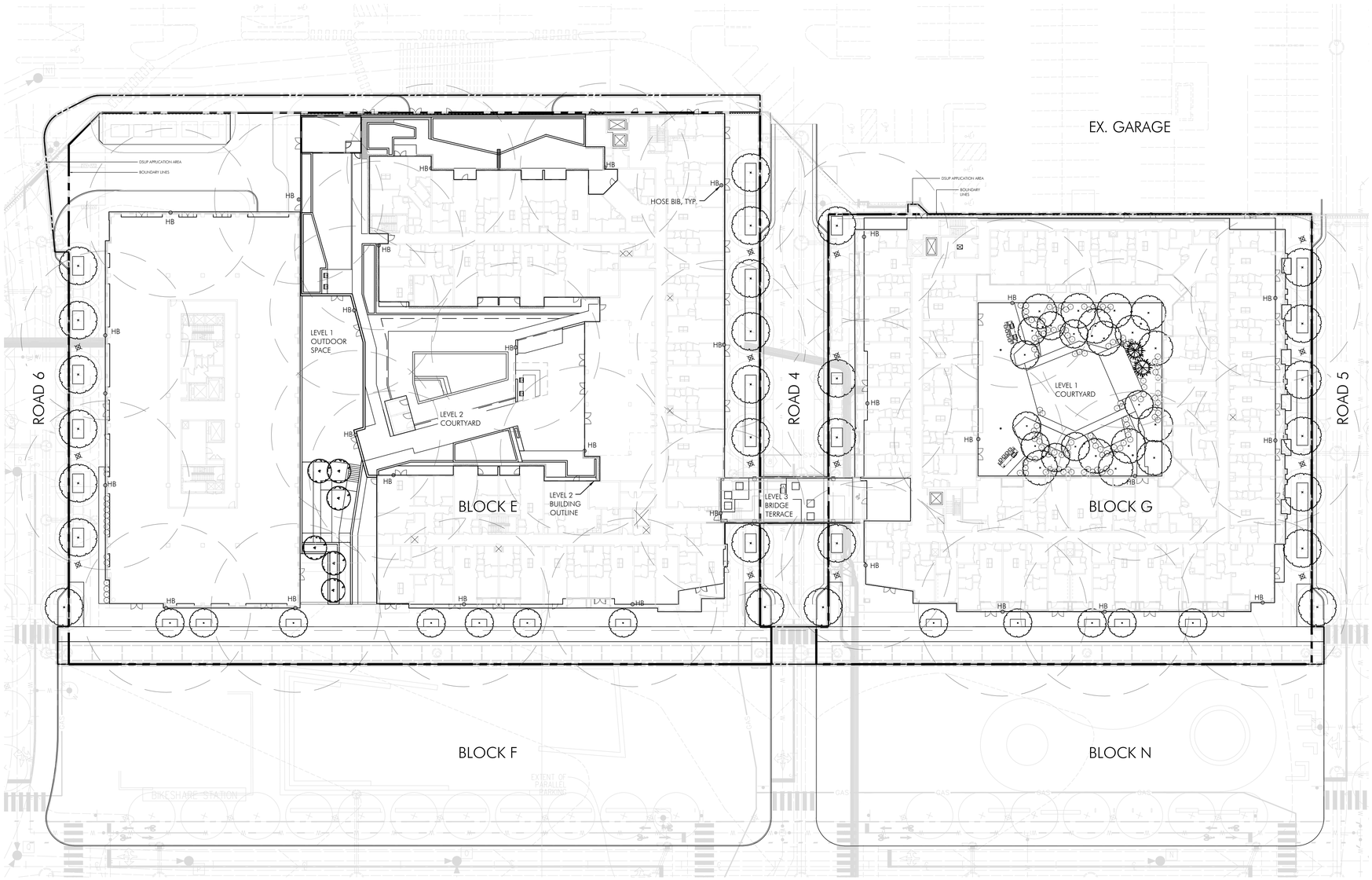

01 LANDSCAPE WATER MANAGEMENT PLAN

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

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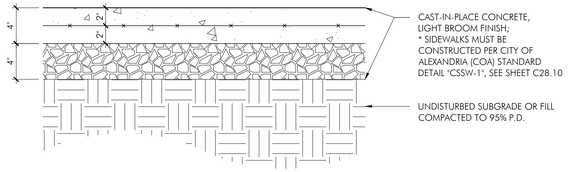
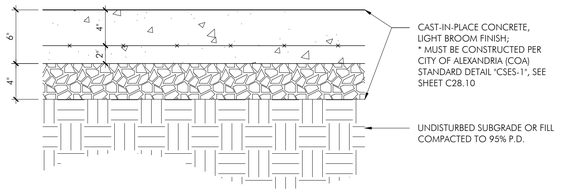


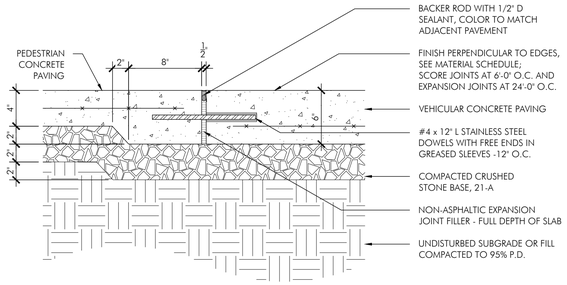
01 CONCRETE PAVING ON GRADE - PEDESTRIAN (PED.)

1 1/2" = 1'-0"



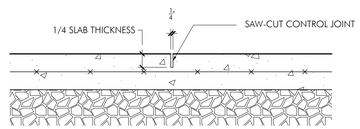
02 CONCRETE PAVING ON GRADE - VEHICULAR (VEH.)

1 1/2" = 1'-0"



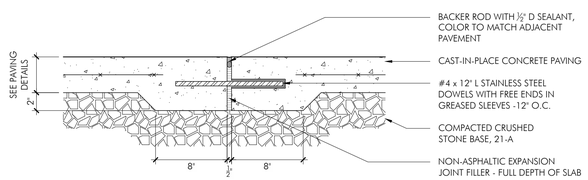
03 CONCRETE PAVING ON GRADE - PED. TO VEH.

1 1/2" = 1'-0"



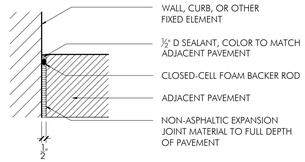
04 CONCRETE PAVING CONTROL JOINT

1 1/2" = 1'-0"



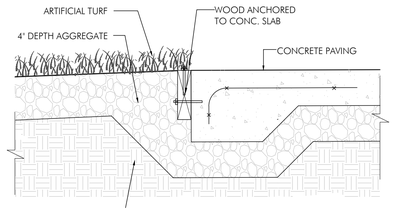
05 CONCRETE PAVING EXPANSION JOINT

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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DSUP RESUBMISSION	09.27.22

HARDSCAPE
DETAILS
ON GRADE
- PAVING

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SCALE
AS NOTED

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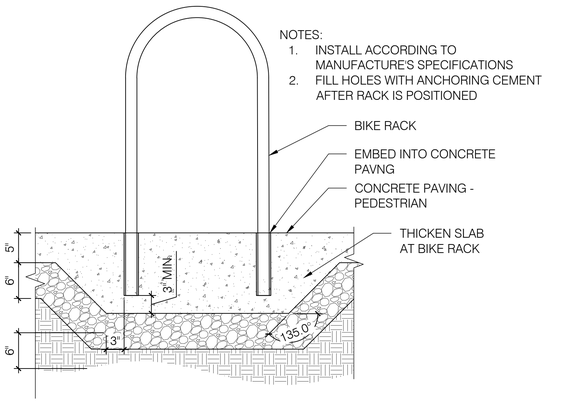

01 BIKE RACK

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

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DSUP	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

HARDSCAPE
DETAILS
ON GRADE
-FIXTURE

ORIGINAL ISSUE DATE
07.30.2021

DESIGNED BY

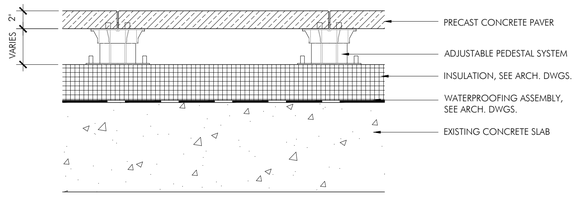
DRAWN BY

CHECKED BY

SCALE
AS NOTED

0 FEET

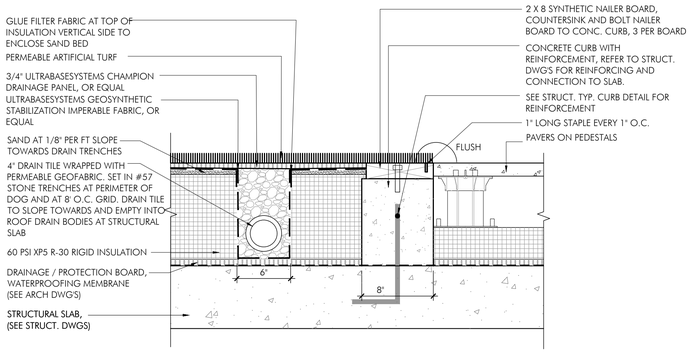
L5.02



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
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	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

HARDSCAPE DETAILS ON STRUCTURE -PAVING

ORIGINAL ISSUE DATE
07.30.2021

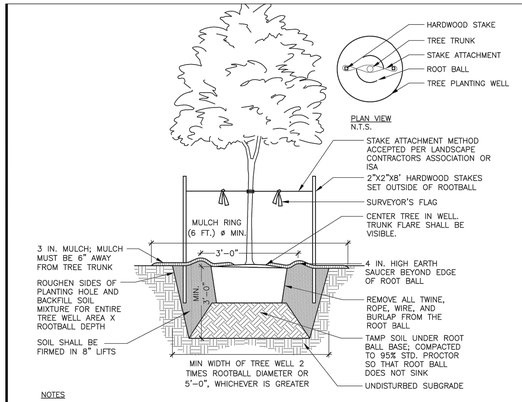
DESIGNED BY

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.

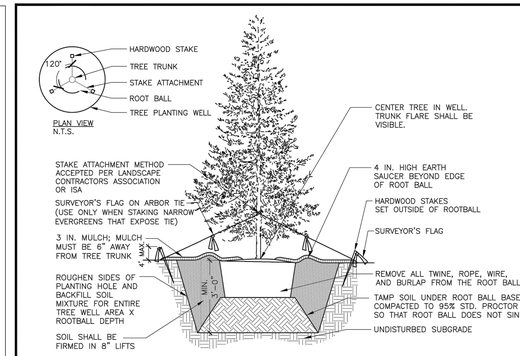
A DECIDUOUS TREE PLANTING
NOT TO SCALE

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
1 OF 1	LD 001



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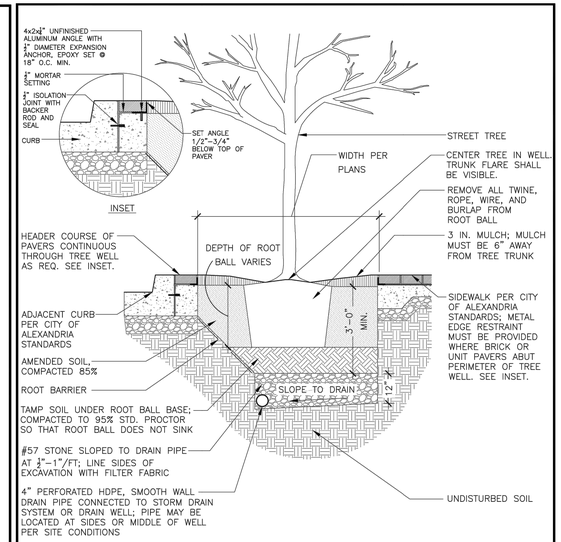
Source: CITY OF ALEXANDRIA	EVERGREEN TREE PLANTING
Approved by: COA	Date drawn: 01/01/19
1 OF 1	LD 002



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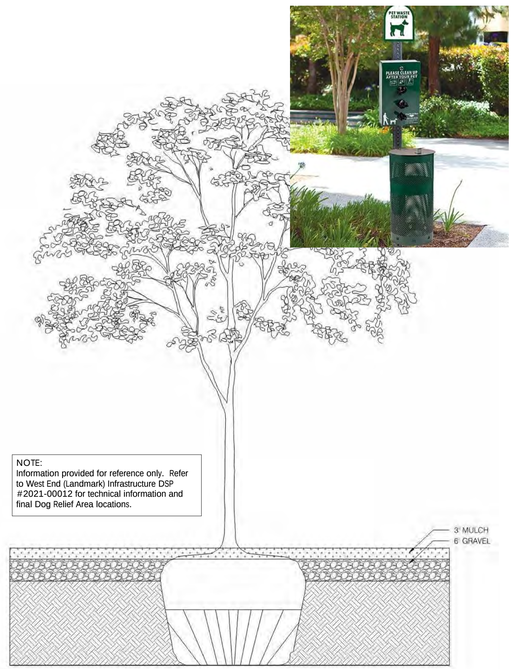
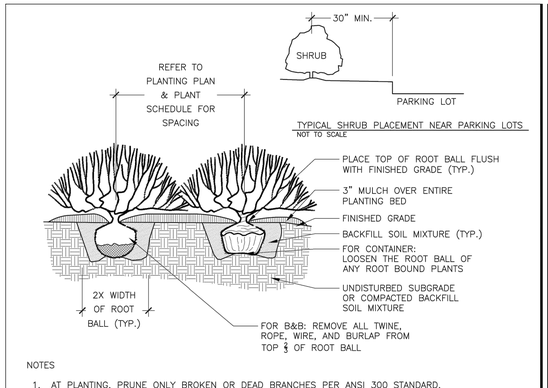
Source: CITY OF ALEXANDRIA	STREET TREE PLANTING WELL
Approved by: COA	Date drawn: 01/01/19
1 OF 1	LD 005



02 DOG RELIEF AREA DETAIL
SCALE: NTS



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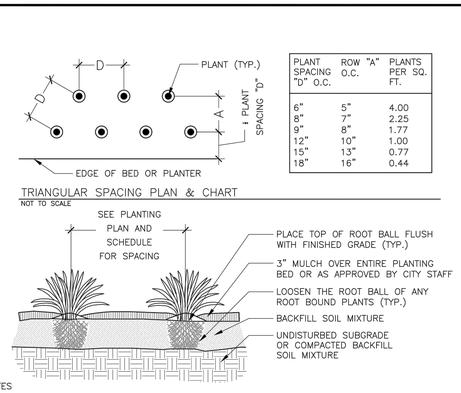
Source: CITY OF ALEXANDRIA	SHRUB PLANTING
Approved by: COA	Date drawn: 01/01/19
1 OF 1	LD 009



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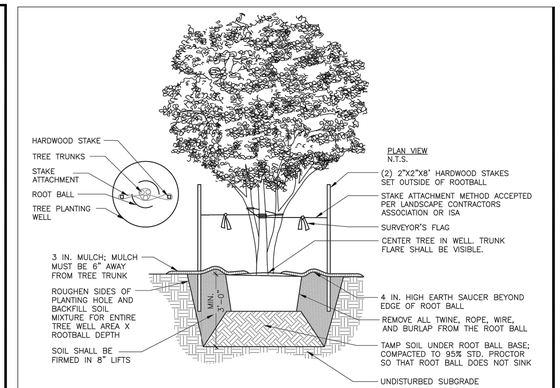
Source: CITY OF ALEXANDRIA	GROUNDCOVER & PERENNIAL PLANTING
Approved by: COA	Date drawn: 01/01/19
1 OF 1	LD 011



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
1 OF 1	LD 003

01 ALEXANDRIA CITY STANDARD PLANTING DETAILS ON GRADE
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

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

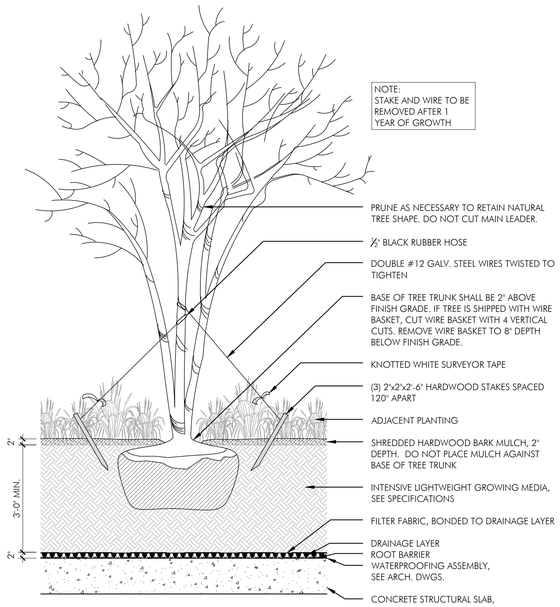
CONCEPT II	04.22.22
50% DD	06.17.22
DSUP	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

PLANTING DETAILS - ON GRADE

ORIGINAL ISSUE DATE 07.30.2021
DESIGNED BY
DRAWN BY
CHECKED BY

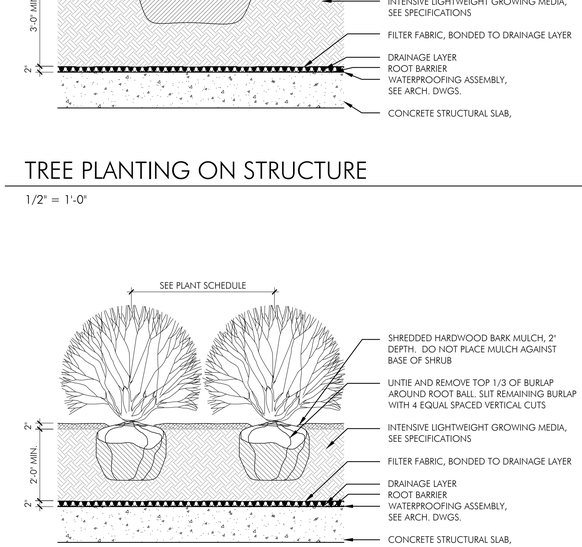
SCALE NTS
0 FEET

L7.01



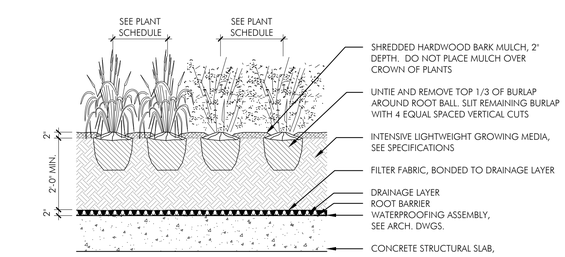
01 TREE PLANTING ON STRUCTURE

1/2" = 1'-0"



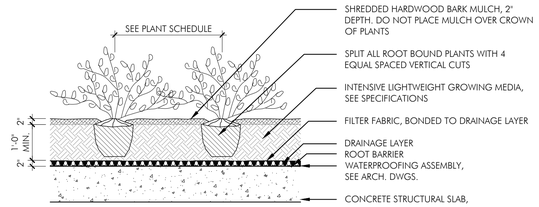
02 SHRUB PLANTING ON STRUCTURE

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



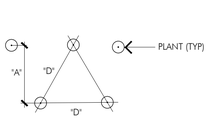
03 PERENNIAL AND ORNAMENTAL GRASS PLANTING ON STRUCTURE

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



04 GROUNDCOVER PLANTING ON STRUCTURE

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



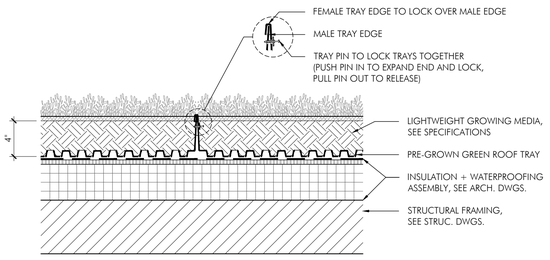
NOTE:

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.

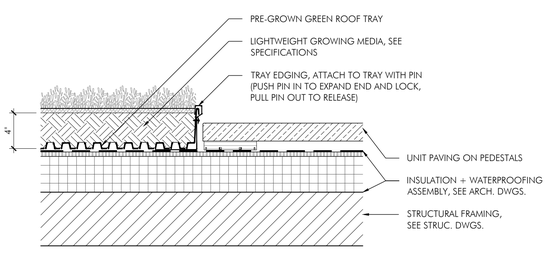
05 PLANT SPACING DIAGRAM

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.

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
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	06.30.22
DSUP RESUBMISSION	08.26.22
DSUP RESUBMISSION	09.27.22

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
A020	Green Roof Calculation
A021	Retail Precedent Images / Fiber Cement Panel Details

DEVELOPMENT SPECIAL USE PERMIT
SEPTEMBER 27, 2022

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.

DSUP SUBMISSION 9/27/2022

TORTI GALLAS + PARTNERS
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

MEP ENGINEER
WSP
202.362.2800

CIVIL ENGINEER
URBAN, LTD.
703.642.2306

LANDSCAPE ENGINEER
PARKER RODRIGUEZ
703.548.5010

INTERIOR DESIGNER
MSA INTERIORS INC.
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.

DATE	APPROVED
6/27/2022	X.Y.
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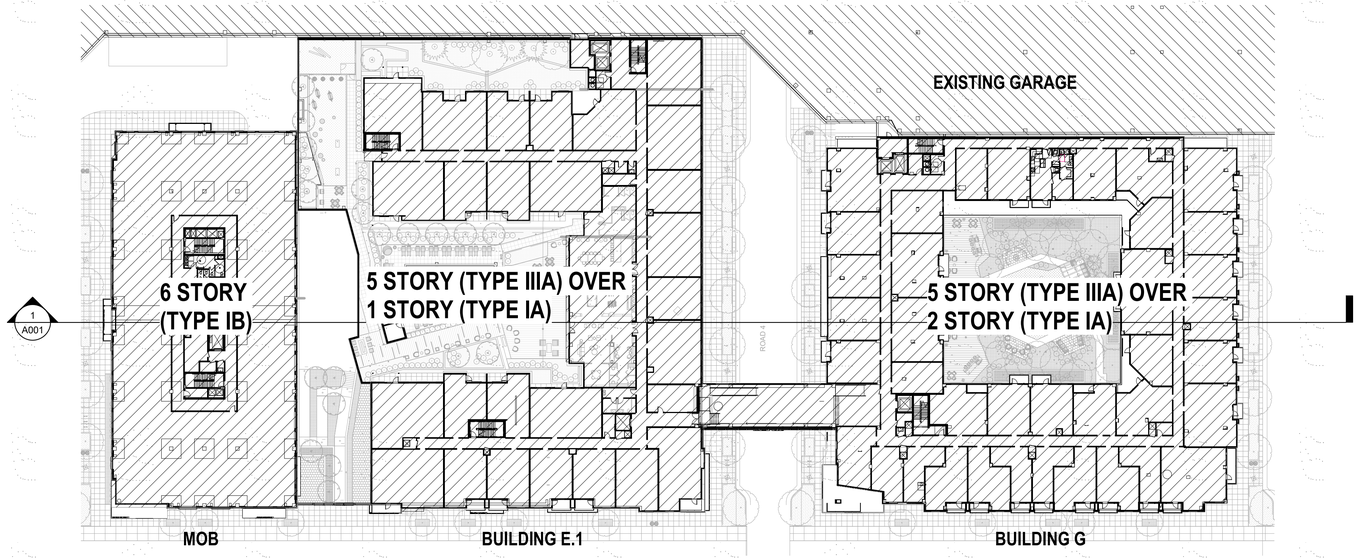
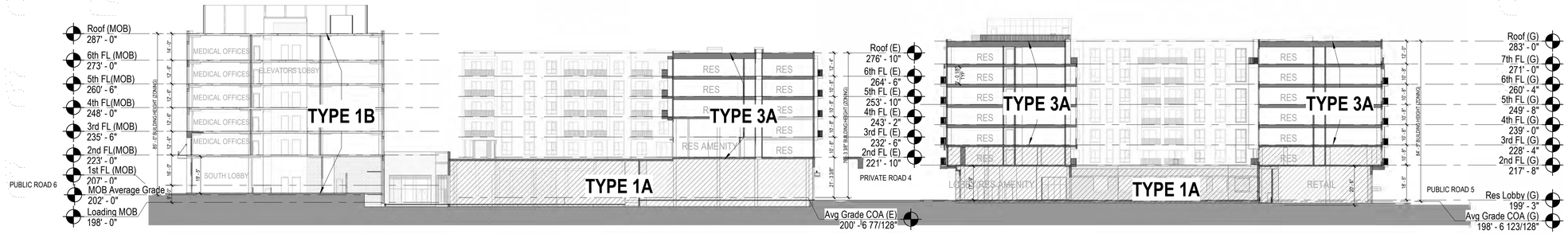


2 MOB, E.1 & G - CODE DIAGRAM

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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DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
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INTERIOR DESIGNER
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410.332.4444

SUSTAINABILITY CONSULTANT
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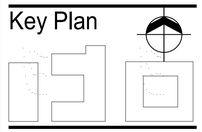
Key Plan



Issue
NO. DATE

Revisions
NO. DATE



Code Analysis

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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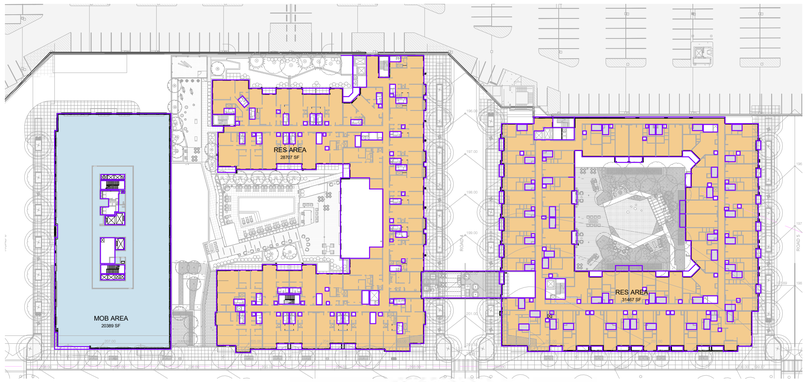
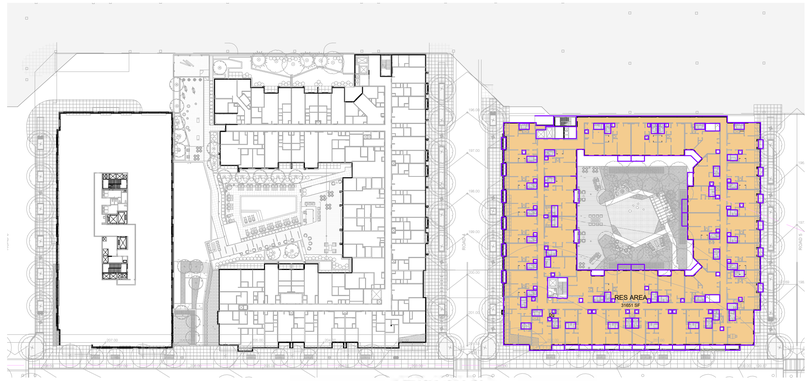


3RD FLOOR AREAS

	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

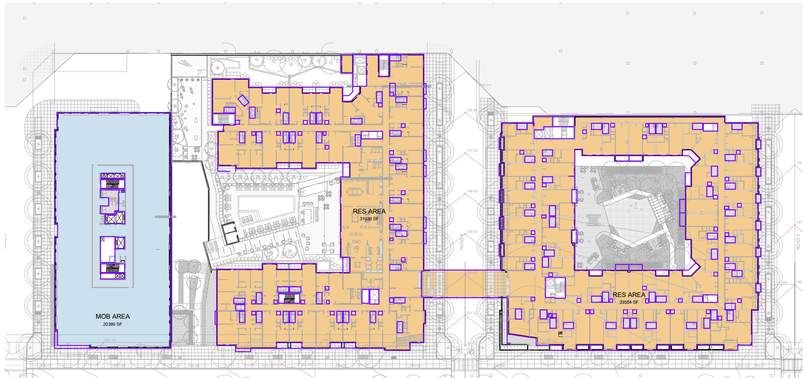
	MOB	BLOCK E.1	BLOCK G
Total Gross Area	-	-	**35,548**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	-	-	1,503
Area Exclusions (Lavatories)	-	-	2,394
Net Floor Area - After Exclusions	-	-	**31,651**

6 7th Floor - Areas
1/64" = 1'-0"

TOTAL AREAS

	MOB	BLOCK E.1	BLOCK G
Res Gross Area		177,456	228,171
Retail Gross Area	10,727	45,841	23,866
MOB Gross Area	119,506		
Total Gross Area	**130,233**	**223,297**	**252,037**
Area Exclusions (Vertical Circulation, Shafts, Utilities, Basements, Loading)	7,986	11,943	12,088
Area Exclusions (Lavatories)	1,600	10,372	14,214
Res Net Floor Area - After Exlusions		155,141	201,869
Retail Net Floor Area - After Exlusions	10,727	45,841	23,866
MOB Net Floor Area - After Exclusions	109,920		
Net Floor Area - After Exclusions	**120,647**	**200,982**	**225,735**

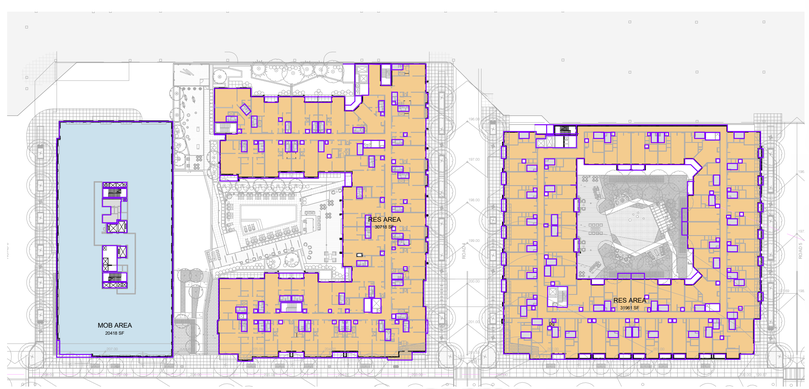
Total Gross Area (By Block)	**353,530**	**252,037**
Net Floor Area - After Exclusions (By Block)	**321,629**	**225,735**



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**

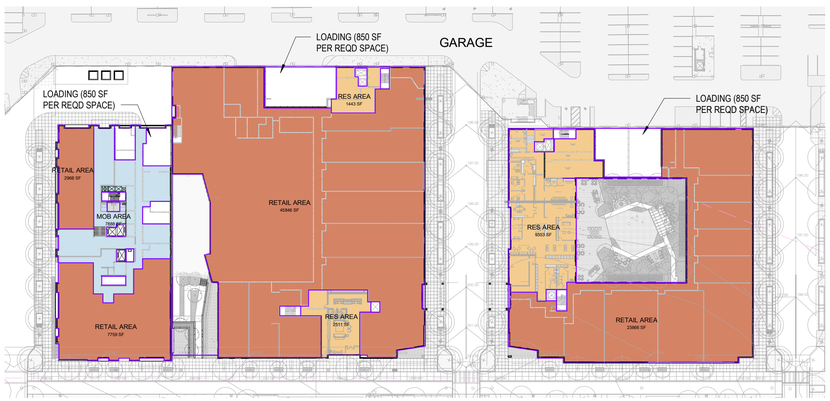
5 6th Floor - Areas
1/64" = 1'-0"

UNIT MIX - BLOCK E.1

UNIT TYPE	Market	%	Affordable	%	Total	%
Studio	1	0.7%			1	1%
1 Bedroom	62	44.3%	3	50.0%	65	45%
1 Bedroom + Den	13	9.3%		0.0%	13	9%
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

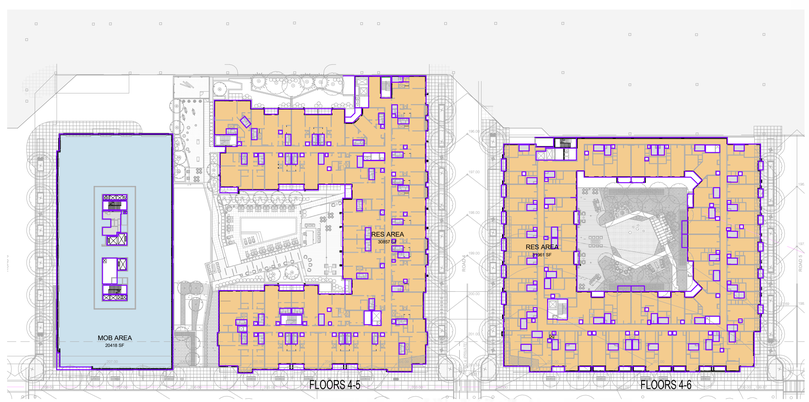
UNIT TYPE	Market	%	Affordable	%	Total	%
Studio	35	15.0%	2	20.0%	37	15%
JR 1 Bedroom	17	7.3%			17	7%
1 Bedroom	137	58.5%	6	60.0%	143	59%
1 Bedroom + Den	6	2.6%			6	2%
2 Bedroom	34	14.5%	2	20.0%	36	15%
2 Bedroom + Den	5	2.1%			5	2%
Total Units	234	100%	10	100%	244	100%



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)	2,551	4,004	3,083
Area Exclusions (Lavatories)	100		
Net Floor Area - After Exclusions	**18,615**	**48,804**	**33,230**
Retail Gross Area / Net Floor Area	*10,727*	*45,841*	*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 5Areas
1/64" = 1'-0"

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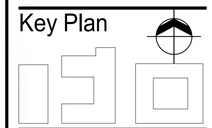
Key Plan



Issue
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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

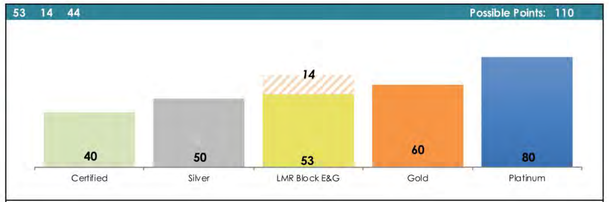
2.5	**0**	**6.5**	**Materials and Resources**		**Possible Points:**	**9**
Y	?	N				
Y			Prereq	Certified Tropical Wood		Required
Y			Prereq	Durability Management		Required
		1	Credit	Durability Management Verification		1
0.5		4.5	Credit	Environmentally Preferable Products		5
2		1	Credit	Construction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

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

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X.Y.

PROJECT ARCHITECT
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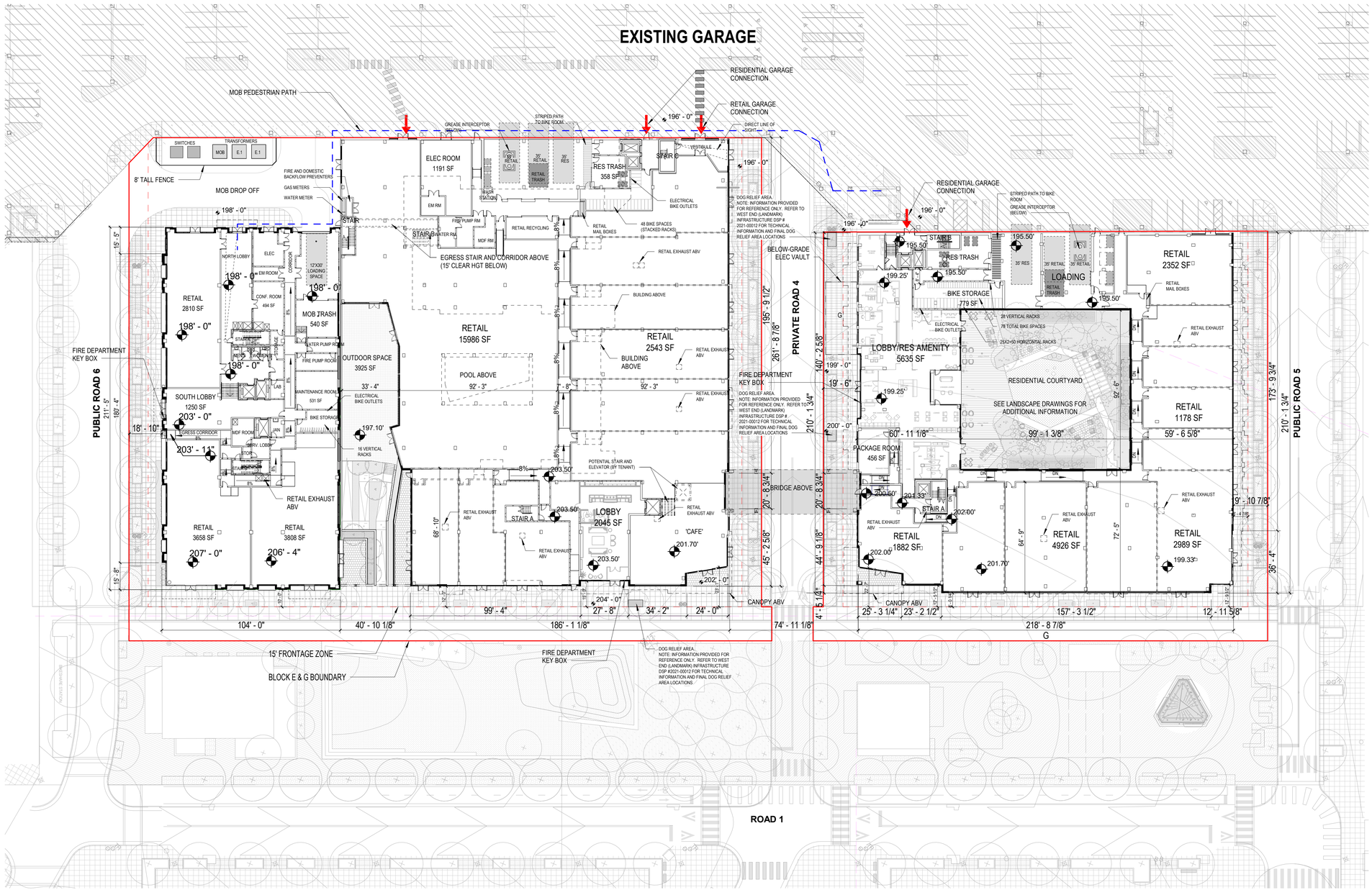

NOTE: RETAIL STOREFRONTS, DEMISING, ENTRANCE LOCATIONS, ENTRANCE QUANTITIES, SIGNAGE AND ASSOCIATED FEATURES AT GROUND FLOOR RETAIL FRONTAGES ARE SUBJECT TO CHANGE BASED ON LEASE CONFIGURATION AND INDIVIDUAL RETAILER MODIFICATIONS. APPLICANT REQUESTS FLEXIBILITY TO MAKE CHANGES TO THE GROUND FLOOR RETAIL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

NOTE: THE LANEWAY LIGHTING LOCATIONS ARE APPROXIMATE AND WILL BE FINALIZED AS THE PARK DESIGN IS FINALIZED.

1 1st Floor

1" = 30'-0"

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_____ DIRECTOR _____ DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
_____ DIRECTOR _____ DATE
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE
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Key Plan

Issue
NO. DATE

Revisions
NO. DATE

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

First Floor Plan

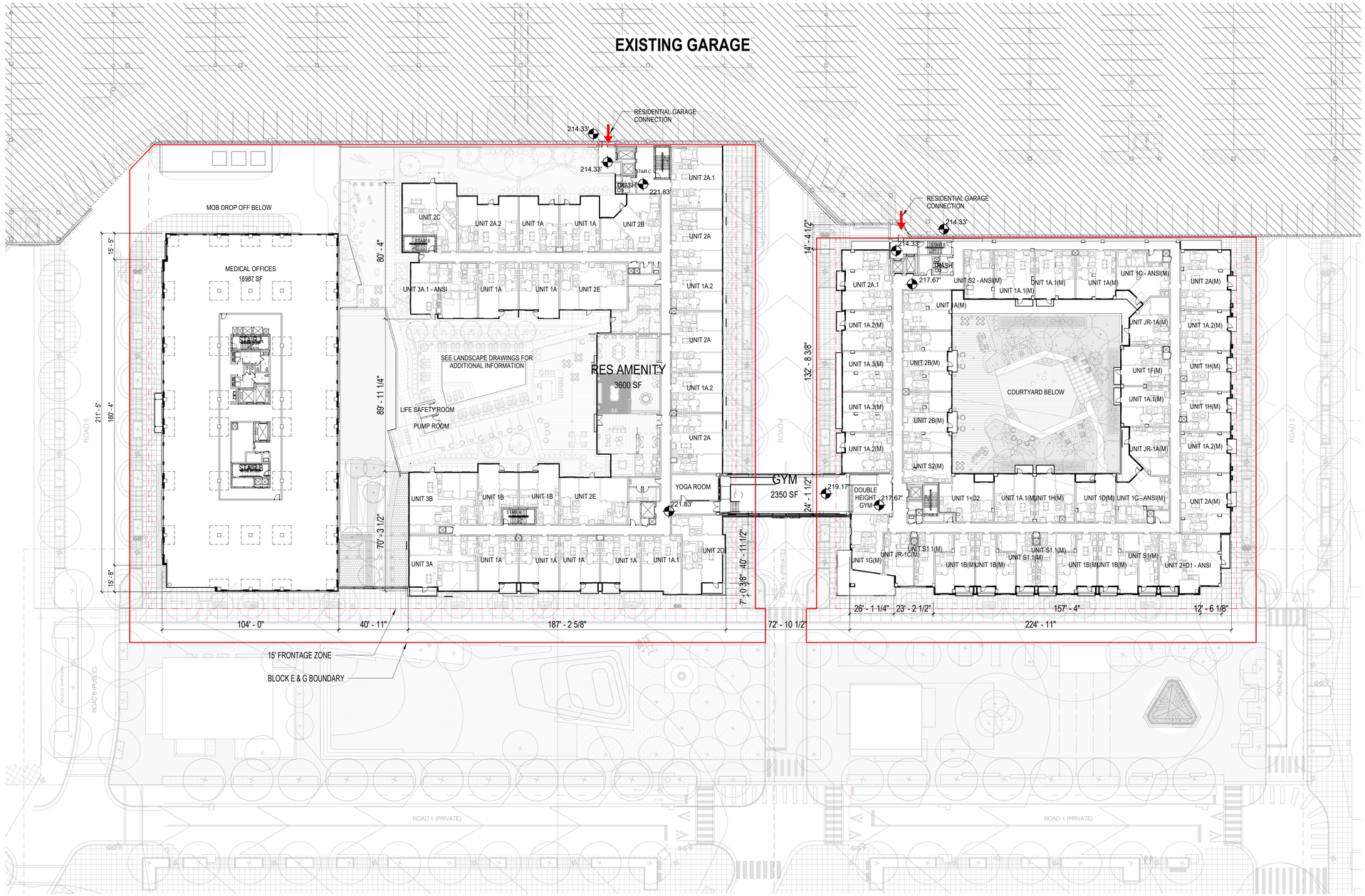
PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

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

DATE	APPROVED
6/27/2022	X.Y.
SCALE: 1" = 30'-0"	JOB NO. 21379.WEI

DRAWING NO.
A004



1 2nd Floor
1" = 30'-0"

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Key Plan

Issue
NO. DATE

Revisions
NO. DATE

COMMONWEALTH OF VIRGINIA
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.
SCALE: 1" = 30'-0"	JOB NO. 21379.WEI

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A005

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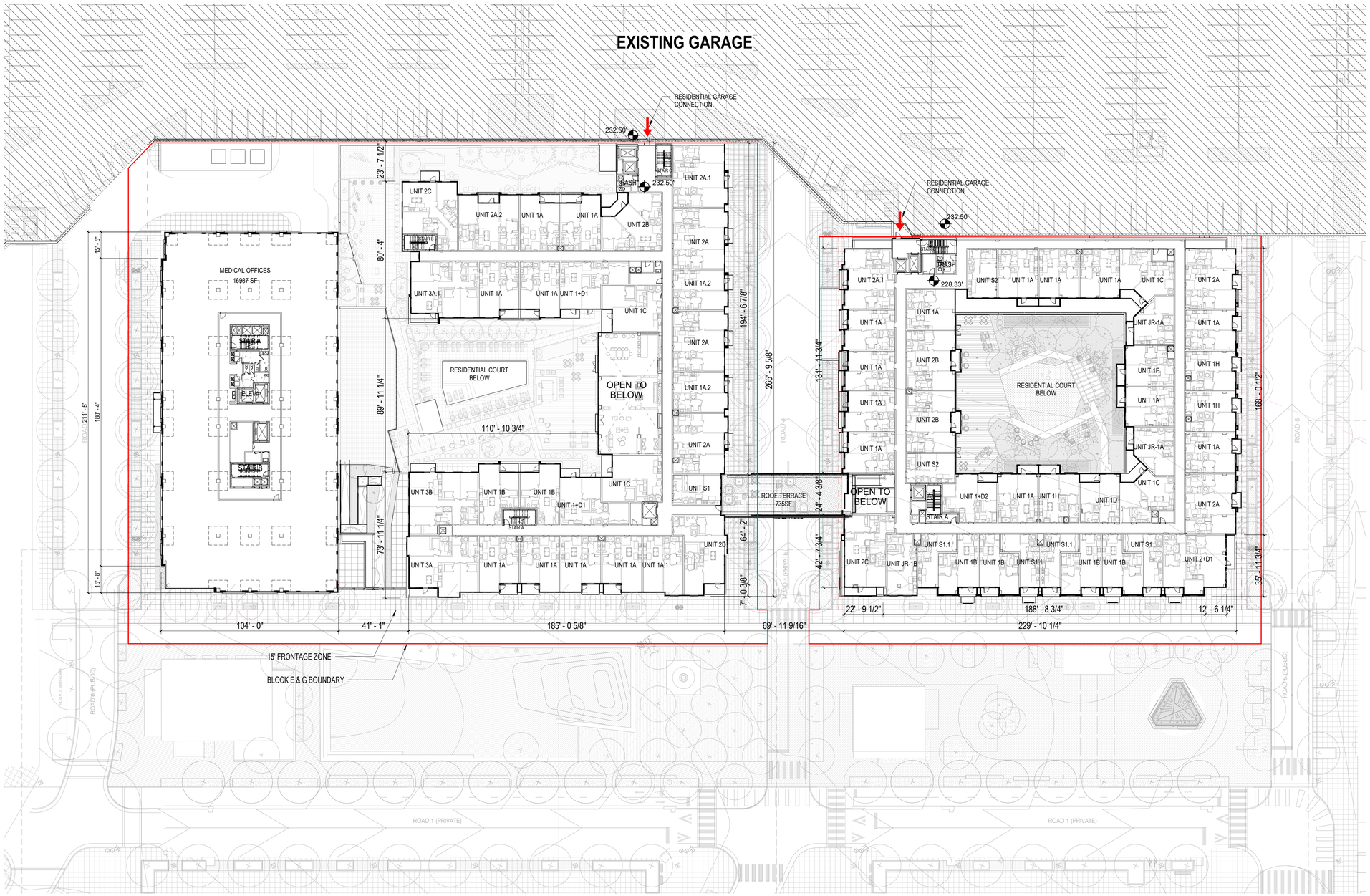

1 3rd Floor
1" = 30'-0"

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DIRECTOR DATE
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NO. DATE

Revisions
NO. DATE

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

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 6/27/2022 | APPROVED X.Y.
SCALE: 1" = 30'-0" | JOB NO. 21379.WEI
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A006

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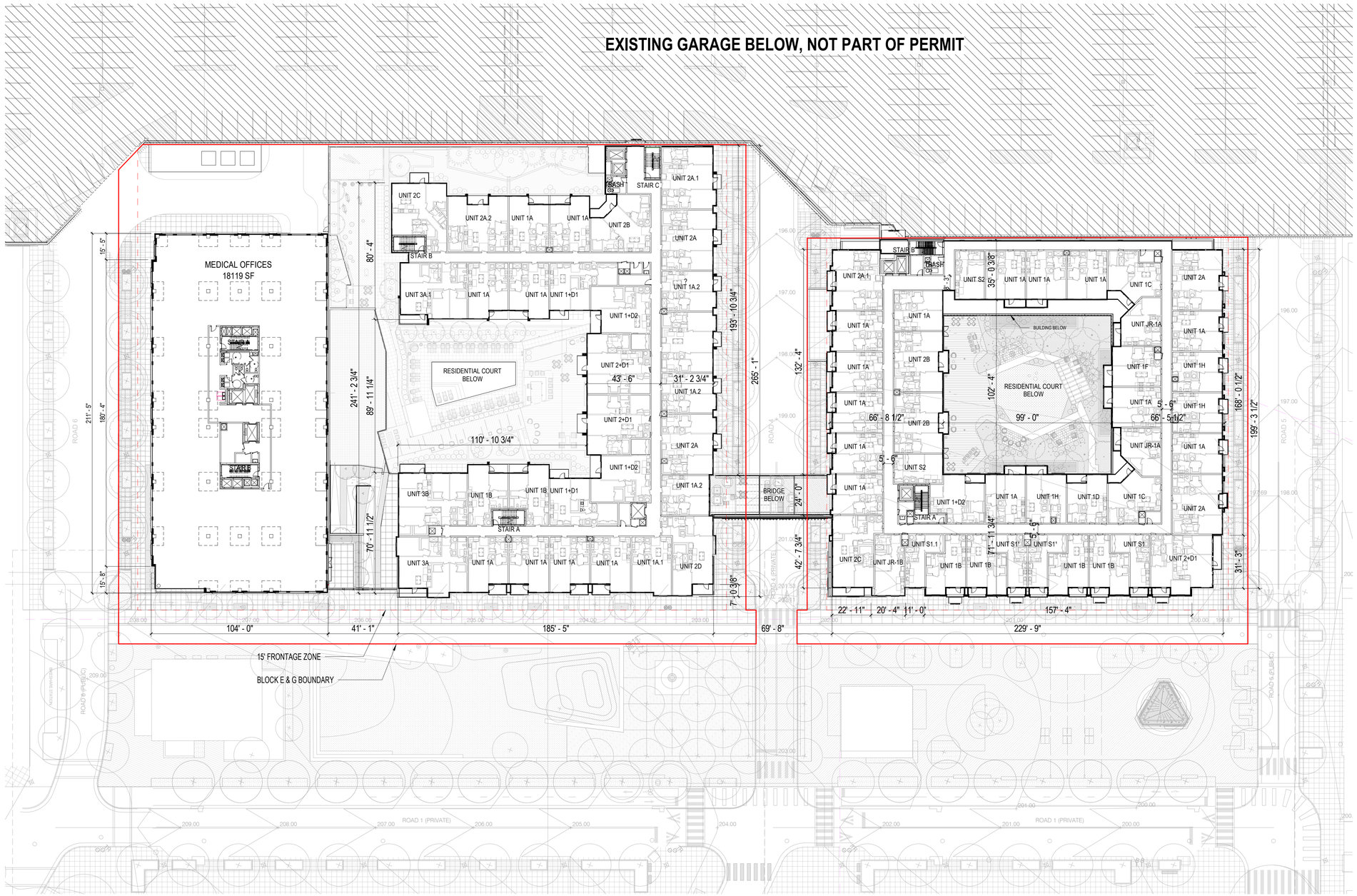

1 Typical Floor
1" = 30'-0"

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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
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SCALE:	1" = 30'-0"
JOB NO.	21379.WEI

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A007

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DIRECTOR DATE
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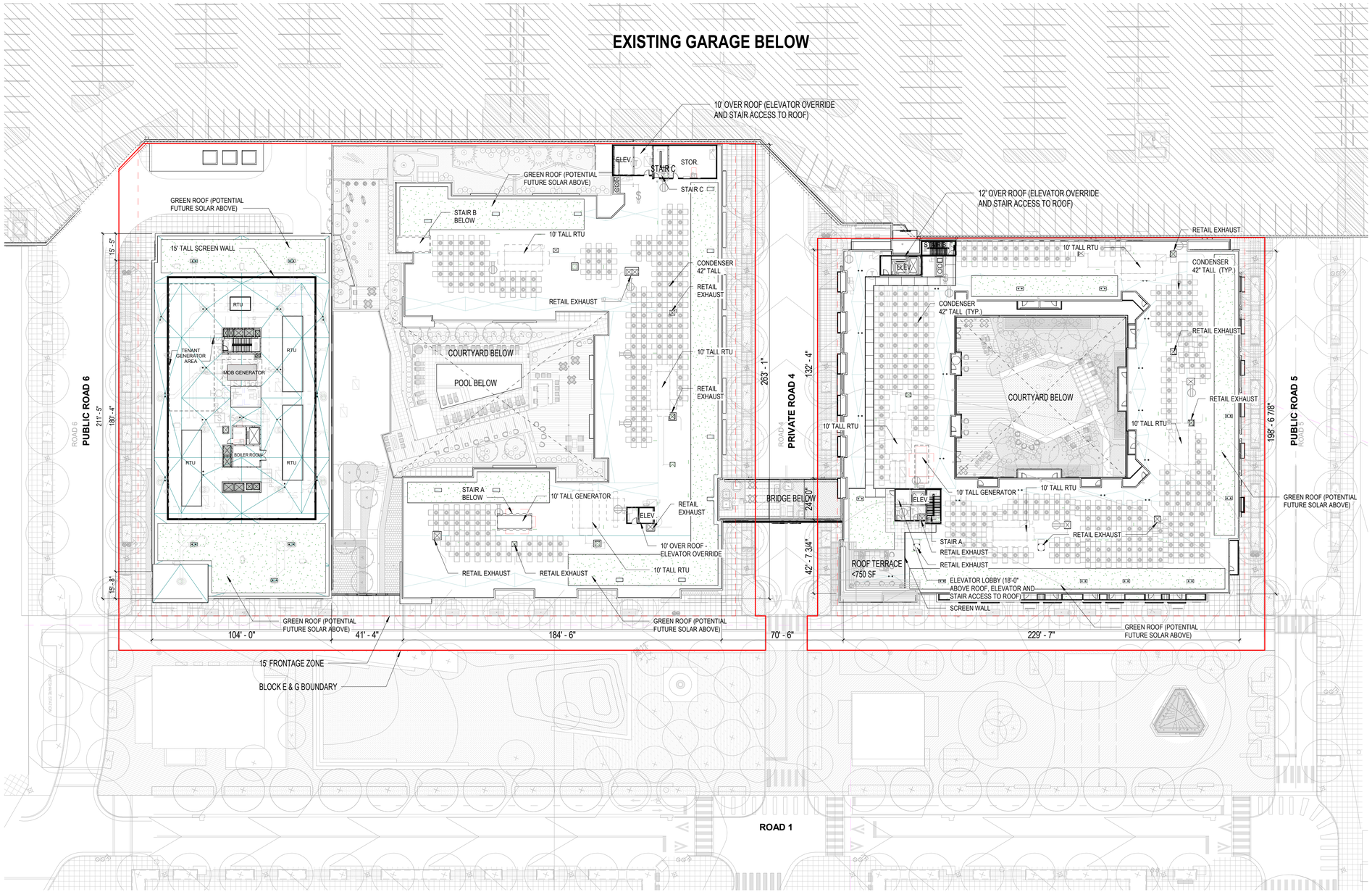

1 Roof Plan

1" = 30'-0"

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NO. DATE

Revisions
NO. DATE

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

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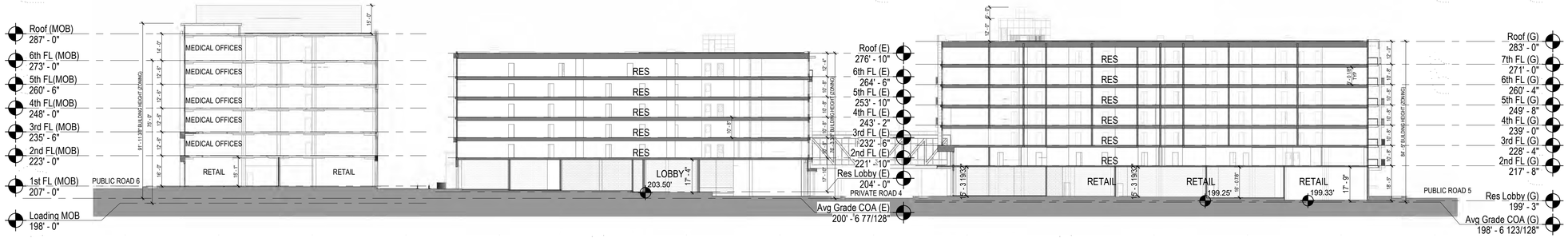
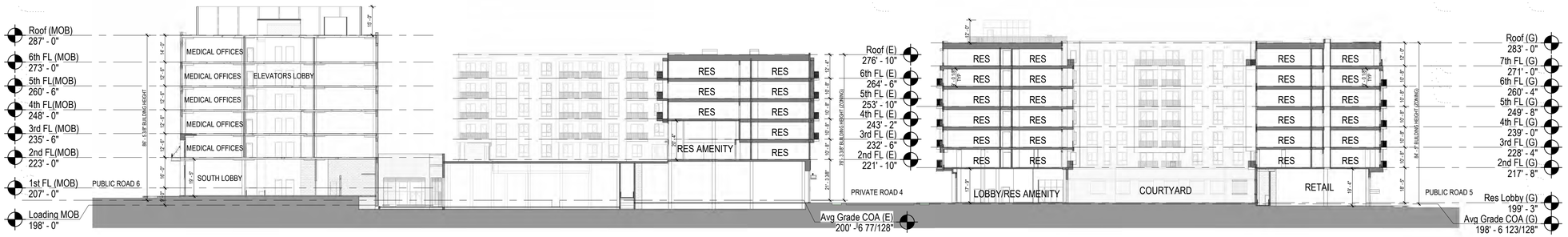


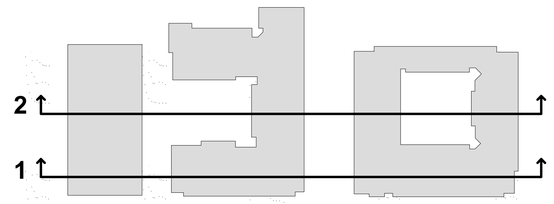
1 Section - MOB, E.1, G

1" = 30'-0"



2 Section - MOB, E.1, G

1" = 30'-0"



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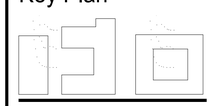

Issue

NO.	DATE

Revisions

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.

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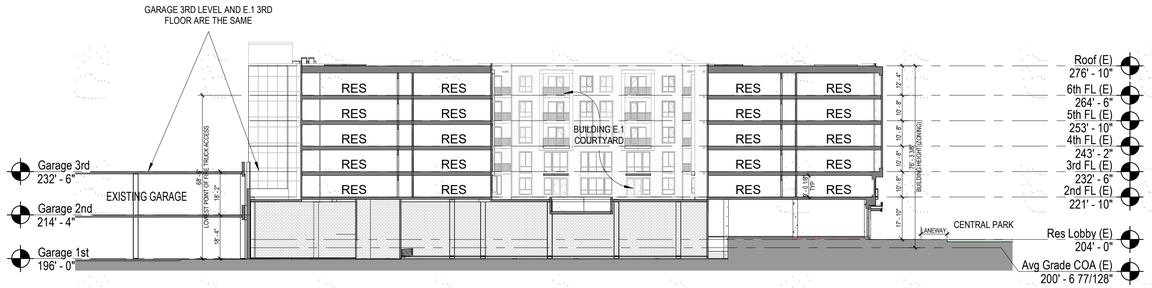
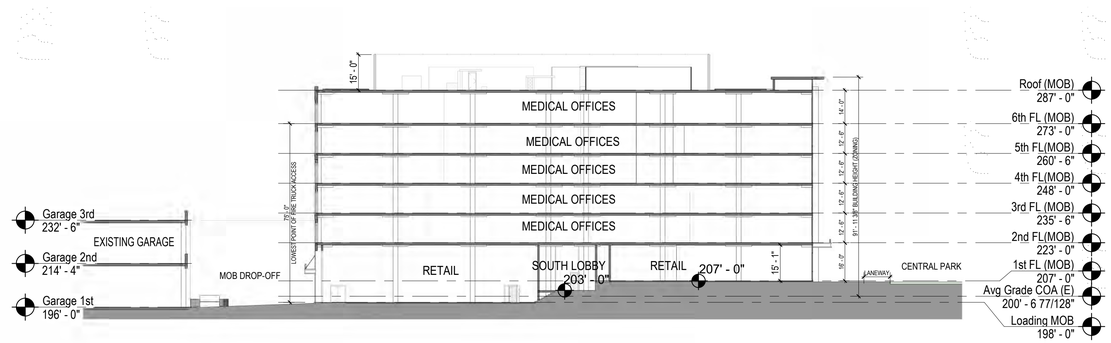


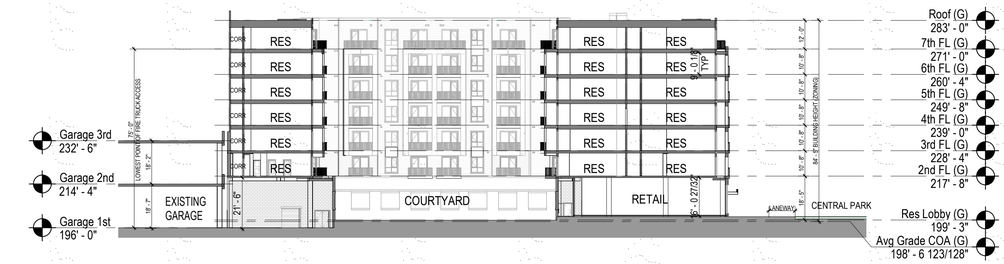
1 Section - Building E.1

1" = 30'-0"



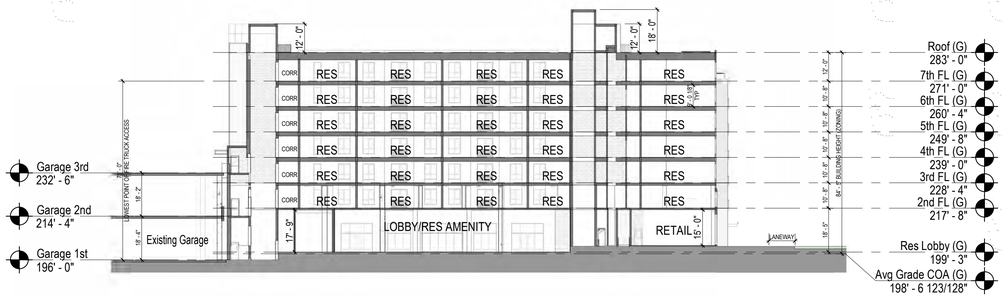
2 Section - MOB

1" = 30'-0"



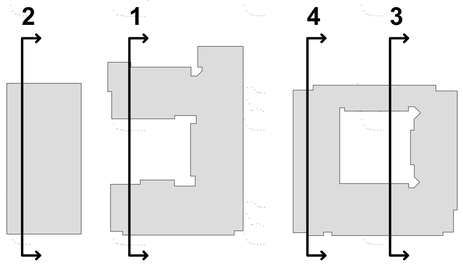
3 Section - Building G

1" = 30'-0"



4 Section - Building G

1" = 30'-0"



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Key Plan



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NO.	DATE

Revisions

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.

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1. MOB & E.1 - SOUTH VIEW



2. LOOKING EAST FROM CENTRAL PARK



3. LOOKING SOUTH FROM ROAD 5



4. LOOKING WEST FROM CENTRAL PARK



5. LOOKING WEST FROM CENTRAL PARK



6. LOOKING SOUTH FROM PRIVATE ROAD 4



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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.

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A011

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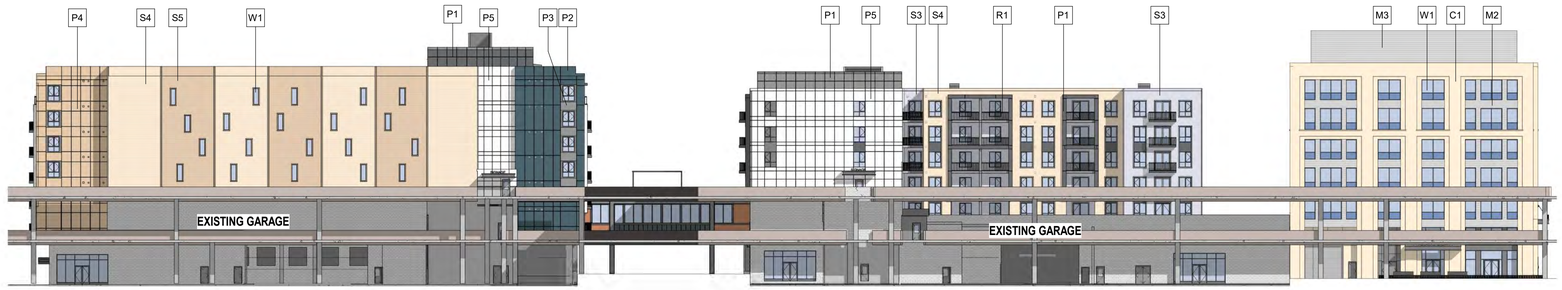
1 MOB, E.1 and G - South Elevation

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"

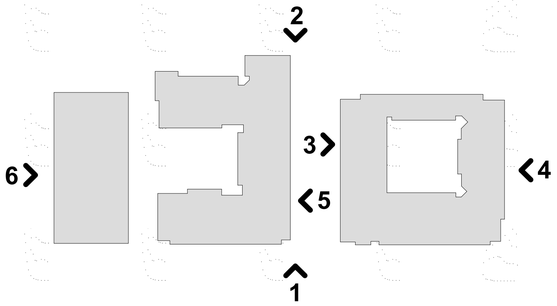


6 MOB - West Elevation

1" = 30'-0"

MATERIAL LEGEND	
NUMBER	MATERIAL
A1	ALUMINUM CANOPY
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 RAILING
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

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.



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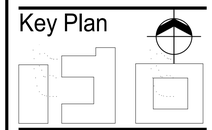
Key Plan



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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.
SCALE: As indicated	JOB NO. 21379.WEI

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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
A1	ALUMINUM CANOPY
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 RAILING
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

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.



5 Building E.1 - West Elevation

1" = 30'-0"



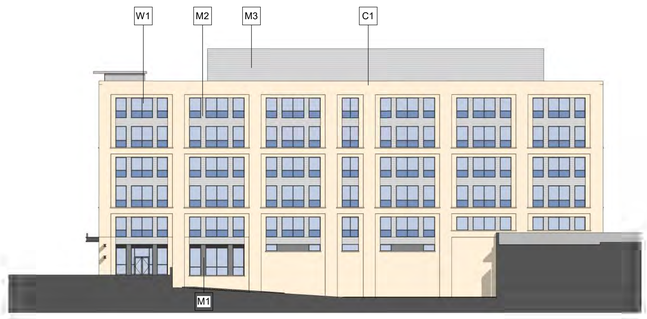
6 Building E.1 - South Court Elevation

1" = 30'-0"



7 Building E.1 - North Court Elevation

1" = 30'-0"



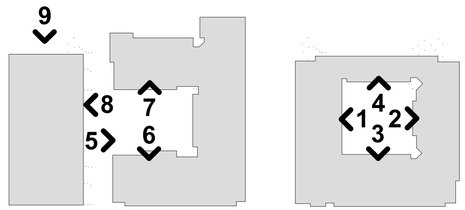
8 MOB - East Elevation

1" = 30'-0"



9 MOB - North Elevation

1" = 30'-0"



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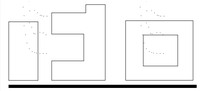

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COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
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06/30/2022
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Building Elevations

PRINCIPAL IN CHARGE X.Y.	
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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%	928	7%	5,402	27%	6,330	18%	6,330	15%
Accent Faux Wood		0%	1,090	8%	1,221	6%	2,311	7%	2,311	5%
Metal Panel	1,172	14%	1,610	11%	1,763	9%	3,373	10%	4,545	11%
Fiber Cement Panel		0%	5,605	40%	3,206	16%	8,811	26%	8,811	20%
Fiber Cement Siding		0%		0%		0%		0%	0	0%
Precast Panels	3,488	41%		0%		0%		0%	3,488	8%
Windows	3,930	46%	4,925	35%	8,641	43%	13,566	39%	17,496	41%
Total	8,590	100%	14,158	100%	20,233	100%	34,391	100%	42,981	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"



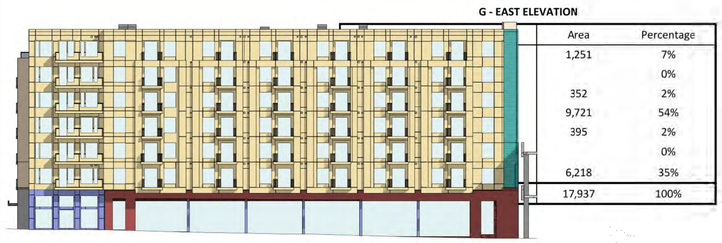
E.1 - EAST ELEVATION

	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
	1,251	7%
		0%
	352	2%
	9,721	54%
	395	2%
		0%
	6,218	35%
	17,937	100%

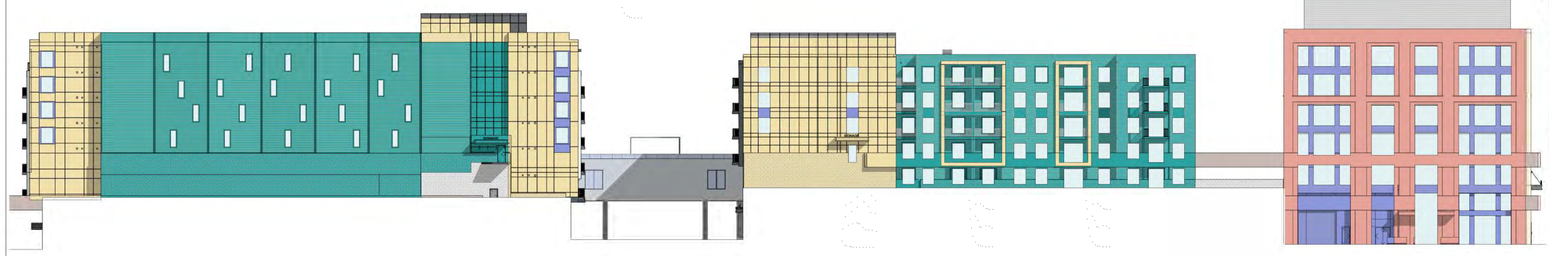
4 Building G - East Elevation
1" = 30'-0"



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%

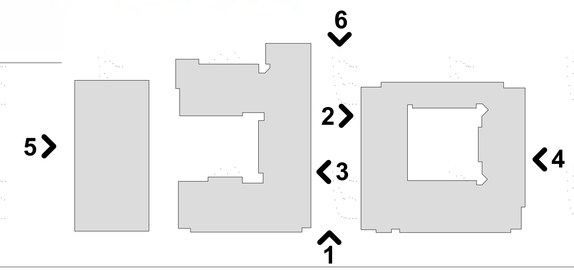
5 MOB - West Elevation
1" = 30'-0"



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
SHEREF 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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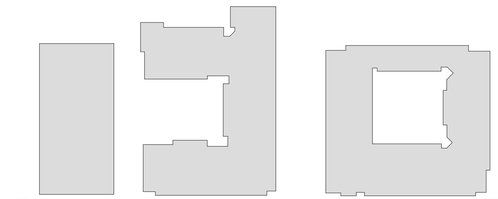
1. VIEW FROM SE



2. VIEW FROM SW

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.



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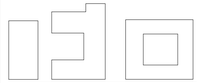

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COMMONWEALTH OF VIRGINIA
SHERIEF MOHAMED ELFAR
NO. 008421
06/30/2022
ARCHITECT

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.

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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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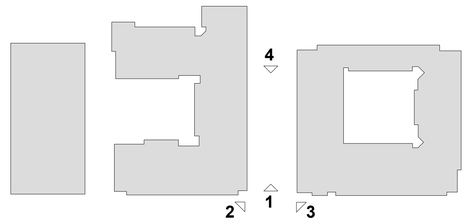

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1. VIEW OF MOB SW



2. VIEW OF BLOCK G SE



3. VIEW FROM GARAGE NW



4. VIEW FROM GARAGE NE

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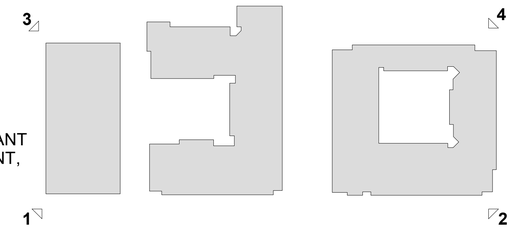

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1. VIEW OF BUILDING G WEST FACADE



2. VIEW OF BUILDING E EAST FACADE



3. VIEW OF BUILDING G EAST FACADE



4. VIEW OF RETAIL COURT & BUILDING E

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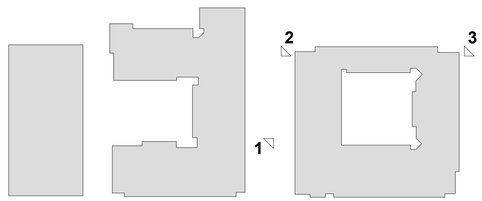

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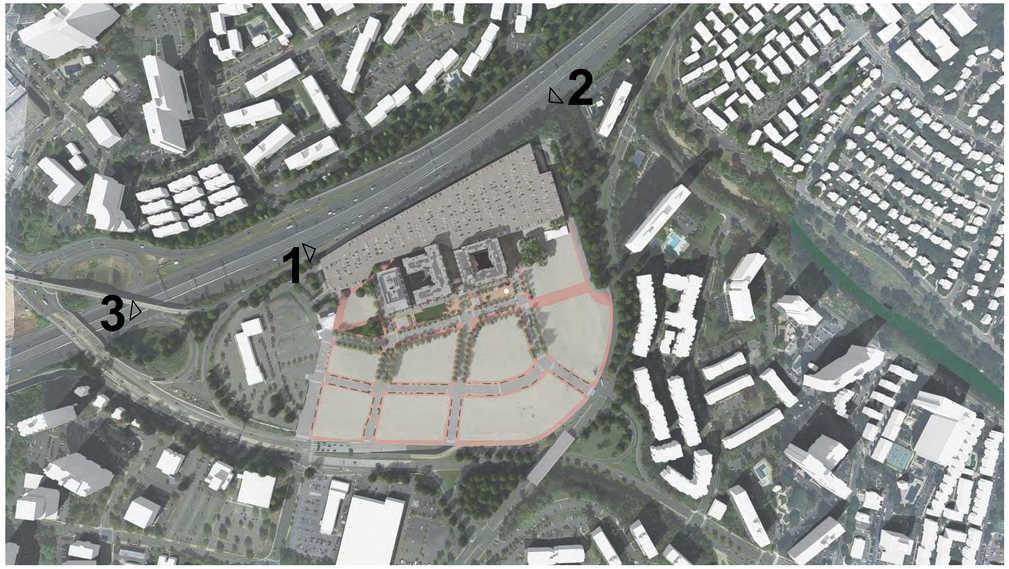
1. VIEW OF I-395 NW



2. VIEW OF I-395 NE



3. VIEW FROM BRIDGE OFF RAMP NW



4. AERIAL VIEW OF SITE

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SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
_____ DIRECTOR _____ DATE
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_____ CHAIRMAN, PLANNING COMMISSION _____ DATE
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Key Plan

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NO. DATE

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.

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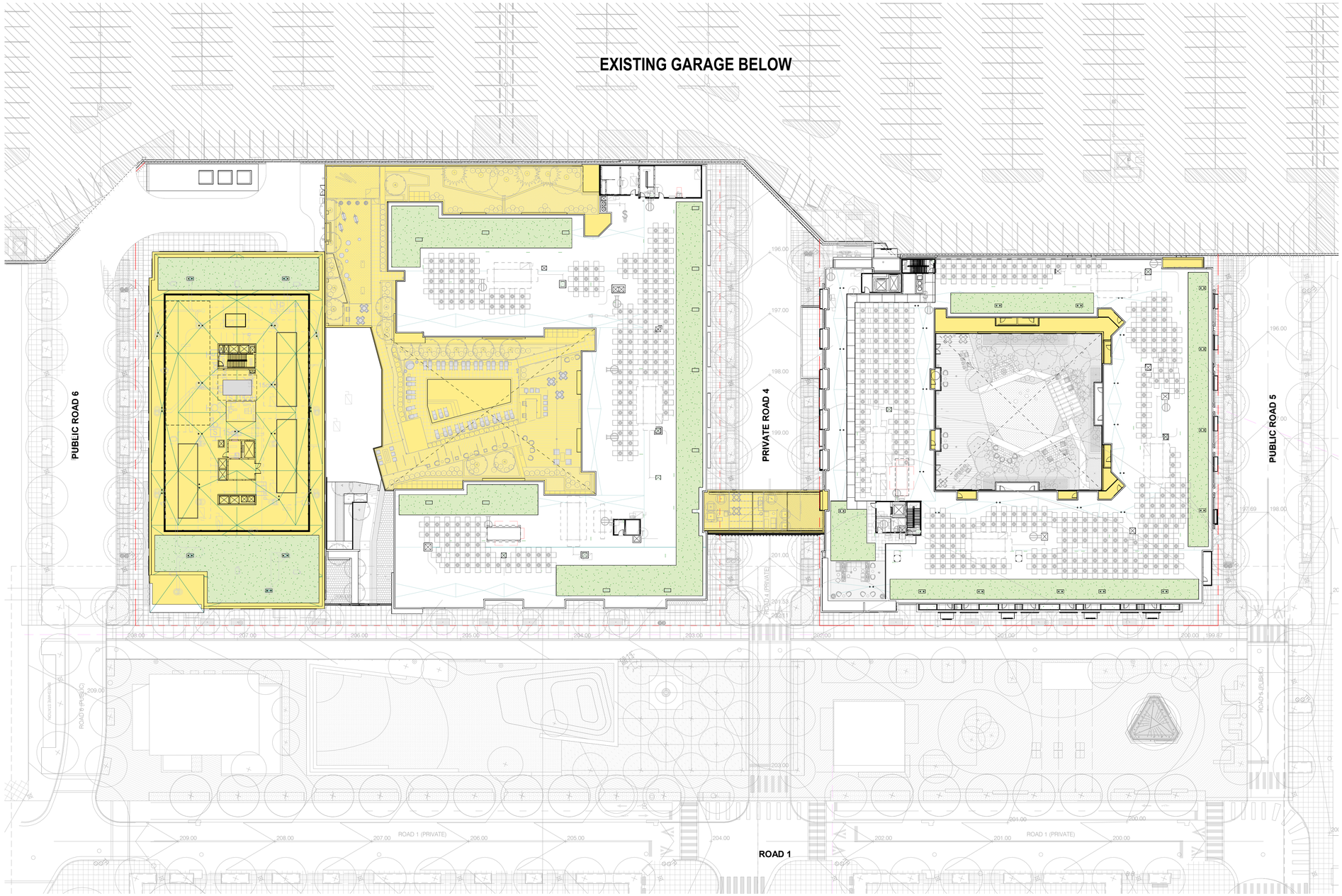

1 Green Roof Area

1" = 30'-0"

	Medical Office Building	
	Area (sf)	Percentage
Roof of the Podium	21,854	100%
Green Roof	5,174	24%

	Building E	
	Area (sf)	Percentage
Roof of the Podium	18,458	100%
Green Roof	8,401	46%

	Building G	
	Area (sf)	Percentage
Roof of the Podium	3,638	100%
Green Roof	5,840	161%

	Building E & G	
	Area (sf)	Percentage
Roof of the Podium	22,096	100%
Green Roof	14,241	64%

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ARCHITECT

Green Roof Calculation

PRINCIPAL IN CHARGE
X.Y.

PROJECT ARCHITECT
X.Y.

DRAWN
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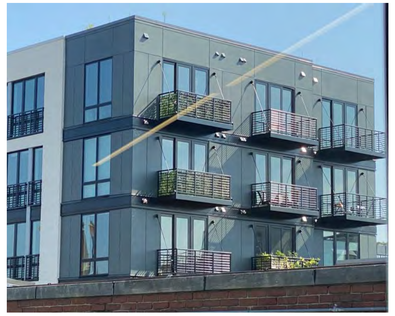
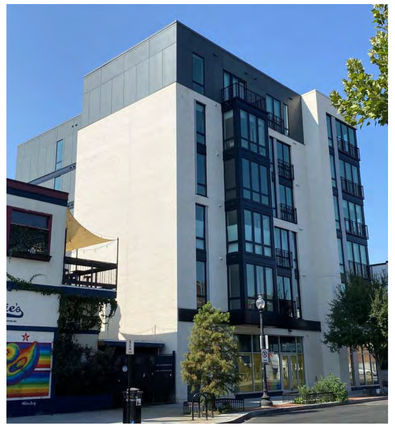
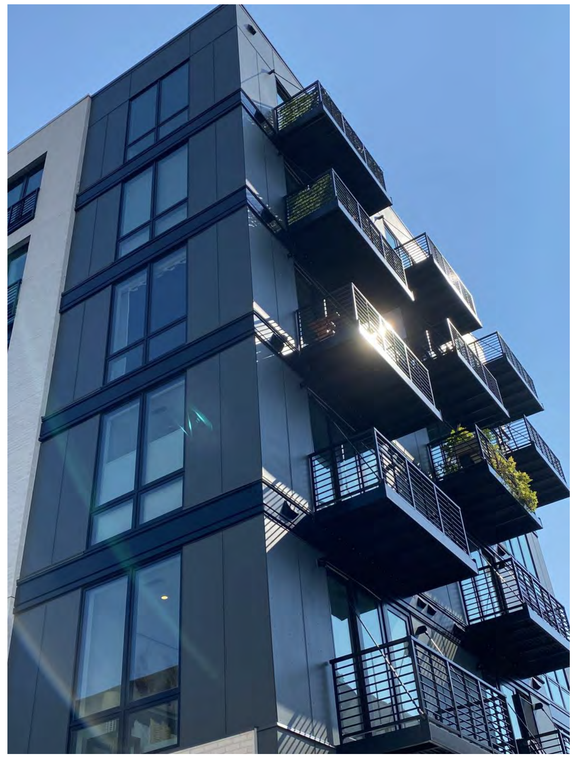
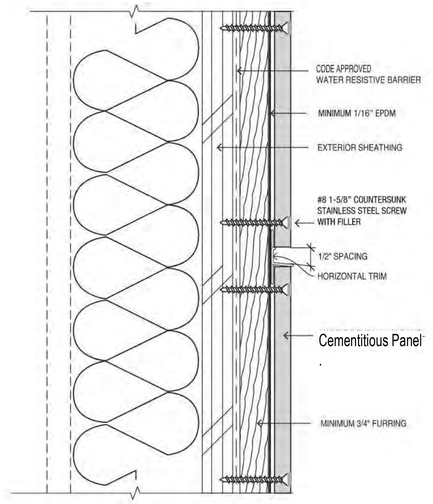
FIBER CEMENT PANEL DETAILS

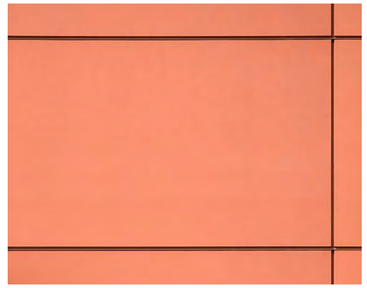






Torti Gallas + Partners project: The Fold, 1999 9 1/2 St NW, Washington, D.C., DC 20001
Cementitious Panel with Reveal System





DETAIL VIEW OF CEMENTITIOS PANEL WITH REVEAL SYSTEM - PAINTED TO MATCH

RETAIL PRECEDENTS









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Retail Precedent Images / Fiber Cement Panel Details

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