DOCKET ITEM # 3

Development Special Use Permit #2024-10006

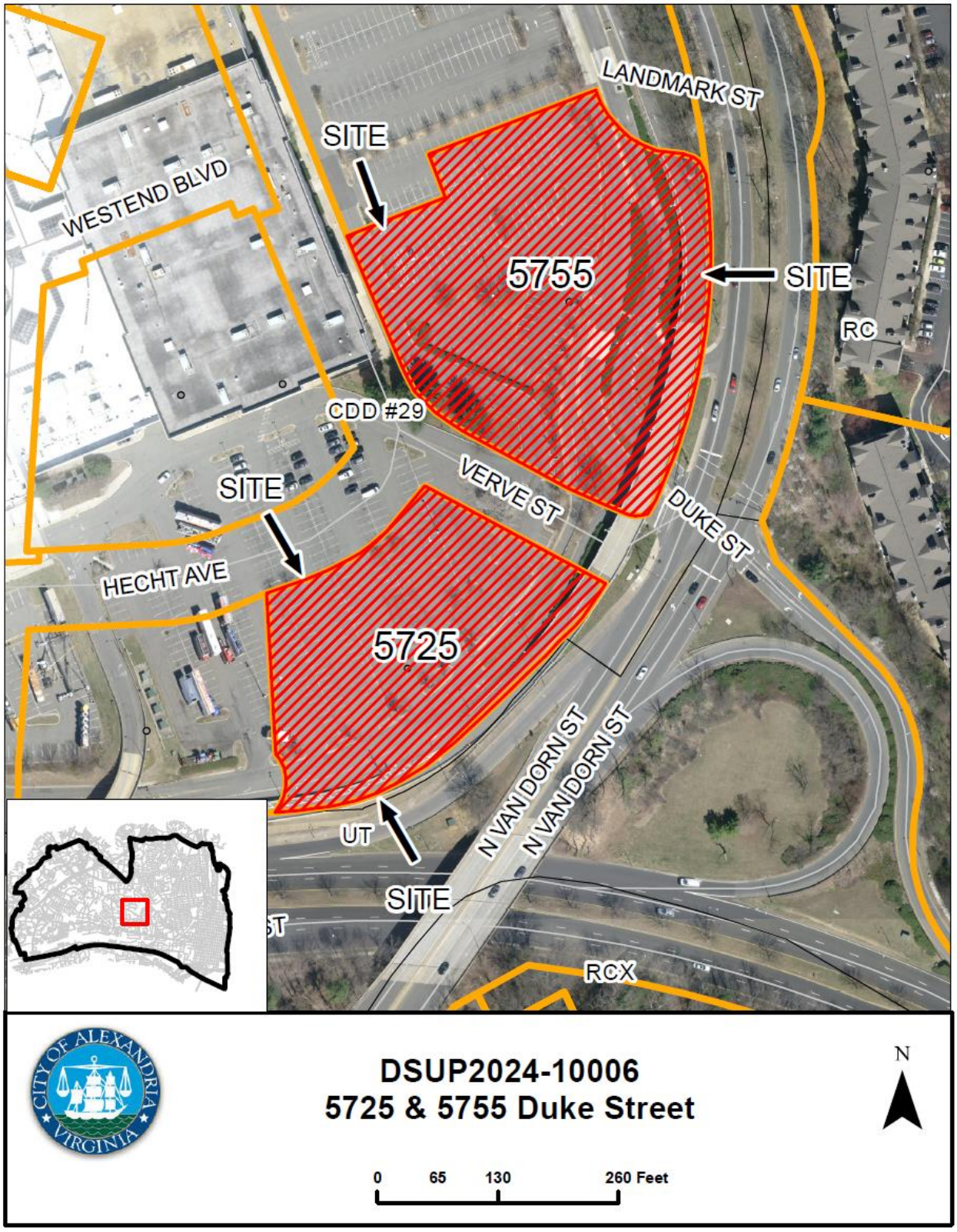
West End (Landmark) Blocks L2&M

Application	**General Data**	
Project Name: West End/Landmark Blocks L2 & M	PC Hearing:	October 1, 2024
	CC Hearing:	October 19, 2024
	If approved, DSUP Expiration:	October 19, 2027
	Plan Acreage:	4.86 acres (211,845 sq. ft.)
Location: 5725 & 5755 Duke Street	Zone:	CDD #29 / Coordinated Development District #29
	Proposed Use:	Townhouses
	Dwelling Units:	110
	Gross Floor Area:	300,458 sq. ft.
Applicant: Van Metre Homes at Westend, LLC represented by Kenneth Wire, Attorney	Small Area Plan:	Landmark Van Dorn Corridor Plan
	Historic District:	N/A
	Green Building:	Green Building Policy plus CDD #29 requirements

Purpose of Application
Consideration of a request for Development Special Use Permit with a site plan to construct 110 townhouses and a Special Use Permit for more than 8 units in a row of townhouses.
Special Use Permits and Modifications Requested:
1. Development Special Use Permit with site plan and subdivision, 2. Special Use Permit to allow for more than 8 units in a group of townhouses.

Staff Recommendation: APPROVAL WITH CONDITIONS
Staff Reviewers: Maggie Cooper, Urban Planner III, Margaret.Cooper@AlexandriaVA.gov Maya Contreras, Principal Planner, Maya.Contreras@AlexandriaVA.gov Robert Kerns, AICP, Division Chief, Robert.Kerns@AlexandriaVA.gov

PROJECT LOCATION MAP



I. SUMMARY

A. Recommendation

Staff recommends **approval of** Development Special Use Permit (DSUP) #2024-10006 to construct 110 townhouses and associated private streets and open space on Blocks L2 and M, subject to Staff recommendations. This project conforms to the City's adopted plans, codes, and policies; and the ongoing redevelopment of the former Landmark Mall site provides several benefits for the community at this location, including:

- Construction of 110 townhouse units and a new transit facility, per the approved CDD, and
- 50,023 sq. ft. of publicly accessible open space

B. General Project Description

The applicant, Van Metre Homes at WestEnd, LLC, proposes to construct 110 townhouses on Blocks L2 and M. Figure 1 shows these blocks on the former Landmark Mall site. Land use applications for this project include a Development Special Use Permit (DSUP) with a site plan and a Special Use Permit (SUP) to have more than eight units within a row of townhouses. Key issues to consider, as discussed in greater detail in this report, include:

- Compatibility with the approved CDD Concept Plan,
- Conformance with City Policies,
- Transportation improvements and connections,
- Site layout, including open space and parking, and
- SUP request

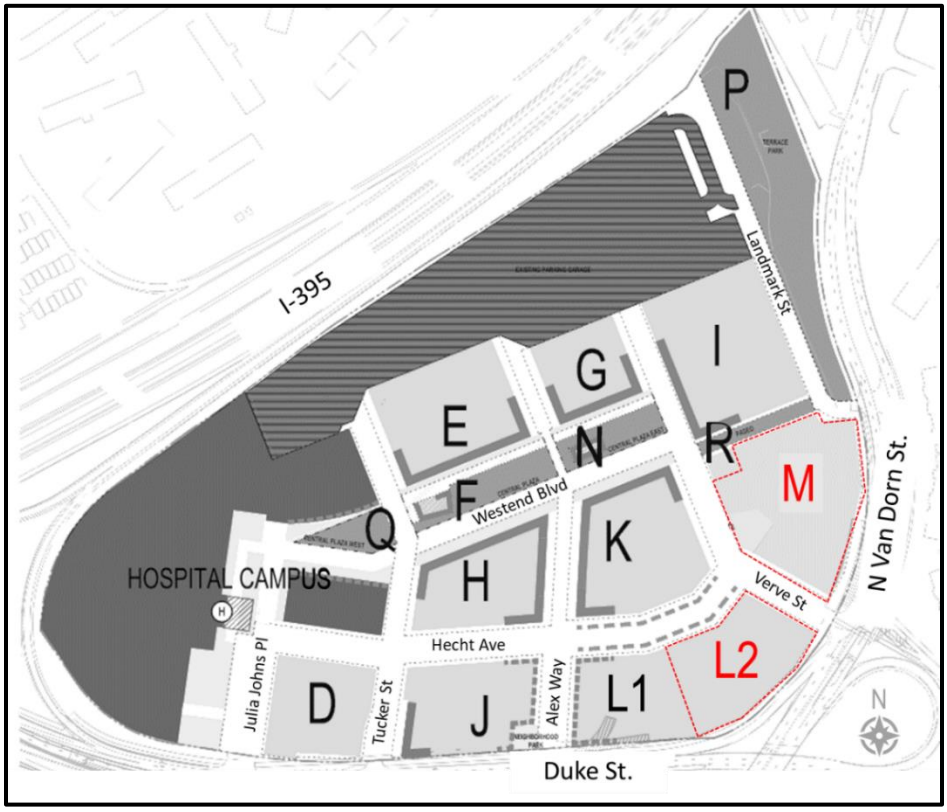
II. BACKGROUND

A. Site Context

General Information

The approximately 1.8-acre Block L2 and 2.8-acre Block M are in the southeast corner of the West End (formerly Landmark Mall) site. Block L2 is bounded by the future transit hub on Hecht Avenue/Road 2 to the north, Verve Street/Road 5 to the east, the Duke Street ramp from N Van Dorn Street to the south, and the other half of Block L, i.e., Block L1, to the west. Block M is bounded by the Paseo to the north, N Van Dorn Street to the east and south, and Verve Street/Road 5 to the south and west.

Figure 1: Blocks L2 & M Within the West End Site



B. Project Status

In 2020, Foulger-Pratt (Landmark Land Holders, LLC) became the master developer and partnered with the owners (The Howard Hughes Corporation and Seritage Growth Properties), Inova Alexandria Hospital, and the City to redevelop the Landmark site. Subsequently, the Planning Commission and City Council have approved a number of land use applications. The infrastructure work has been ongoing and is anticipated to be completed next year, along with groundbreaking for several of the approved multi-unit projects. Groundbreaking for the Inova Hospital Campus occurred in September 2024.

- **July 2021**, CDD Concept Plan #2020-00007 and associated applications for the 5.6 million sq. ft. redevelopment,
- **June 2022**, Infrastructure Plan DSP #2021-00012 to construct the roads, pipes, wires, and Subdivision #2021-00012 to create the individual blocks,
- **December 2022**, DSUPs #2022-10015, #2022-10016, and #2022-10017 for Blocks I, K, and E & G, respectively; and Street Naming Case #2022-0003,
- **March 2023**, DSUP #2022-10023 for the Inova Hospital Campus, and,
- **September 2023,** DSUP # 2023-10008 Blocks E&G Major Amendment, DSUP #2023-10004 Open Spaces, SUP #2023-00011 Comprehensive Sign Plan, and,
- **February 2024,** SUP #2023-00098 Comprehensive Sign Plan for the Inova Hospital.

III. ZONING TABLE

Table 1: Zoning Blocks L2 and M

	Block L2			Block M		
Property Address	5725 Duke Street			5755 Duke Street		
Total Site Area	77,919 sq. ft. (1.79 acres)			122,172 sq. ft. (2.80 acres)		
Zone	CDD #29 / Coordinated Development District #29					
Current Use	Vacant					
Proposed Use	Townhouses					
	Permitted/ Required		**Proposed**	**Permitted/ Required**		**Proposed**
FAR	2.3[1]		1.5[1]	1.9[2]		1.5[2]
Setbacks (ft.)	***North*** *(Hecht Ave)*	6.0 (min.)	6.0	***North*** *(Paseo)*	0.0 (min.)	8.5
	South *(N Van Dorn)* ***East*** *(Verve St)*	0.0 (min.) 9.0 (min.)	4.6 9.0	***East*** *(N Van Dorn)* ***Verve*** *(N of Hecht)*	0.0 (min.) 9.0 (min.)	8.0 9.5
	West *(Block L1)*	0.0 (min.)	5.0	***Verve*** *(S of Hecht)*	3.5 (min.)	9.4
Height (ft.)	35.0 (min.) 180.0 (max.)		50.0	35.0 (min.) 180.0 (max.)		50.0
Parking (spaces)	88		88	132		132
Loading spaces:	0		0	0		0
Open Space Total	25.0% (19,480 SF)		25.0% (19,480 SF[3])	25.0% (30,543 SF)		25.0% (30,543 SF[4])
Crown Coverage[5]	25.0% (19,480 SF)		25.0% (19,480 SF)	25.0% (30,543 SF)		25.0% (30,590 SF)

[1] FAR permitted/required provided for all of Block L. Proposed FAR based on net square footage for this application and the size of Block L2. Approved CDD floor area may be transferred between blocks per CDD #2020-00007 condition 11 provided that the total floor area does not exceed the overall square footage approved for the CDD Concept Plan area

[2] Approved CDD floor area may be transferred between blocks per CDD #2020-00007 condition 11 provided that the total floor area does not exceed the overall square footage approved for the CDD Concept Plan area

[3] On-site open space = 15,304 SF plus 4,176 SF transferred from Block R as allowed per CDD condition #69

[4] On-site open space = 28,680 SF plus 1,863 SF transferred from Block R per CDD condition # 69

[5] Condition #19 for the approved Infrastructure DSP (DSP#2021-00012) requires 25% sitewide canopy with pooling of canopy allowed among blocks to achieve this requirement

IV. STAFF ANALYSIS

A. Consistency with the Master Plan

The approved CDD Concept Plan set requirements for Blocks L2 & M regarding density, uses, building heights, parking, open space, and building design. Throughout the review process, Staff have ensured that the Blocks L2 & M proposal aligns with the CDD Concept Plan and Master Plan requirements.

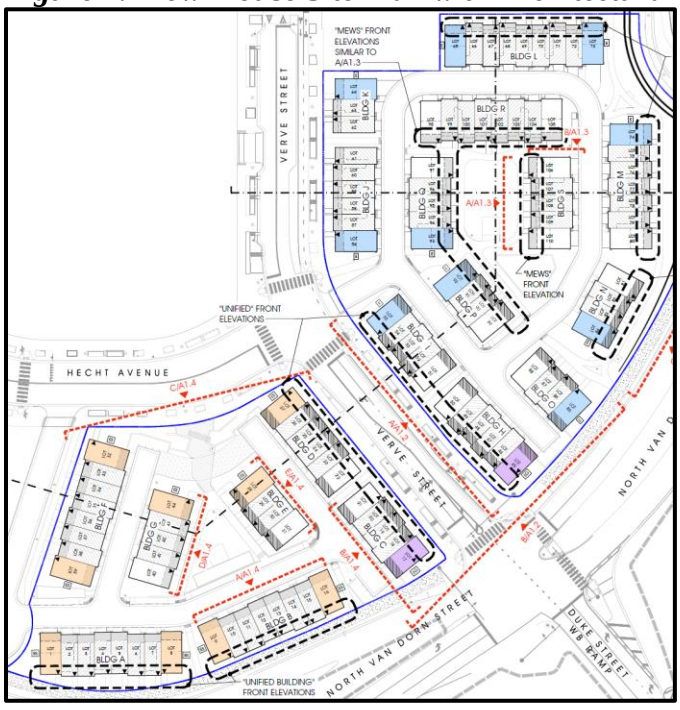
B. Site & Building Design

Site Design

The CDD anticipated curb cuts at the proposed locations within Hecht Ave/Road 2 and Verve Street/Road 5 to access each block, as well as approving the streets and sidewalks surrounding Blocks L2 and M. With these applications the applicant proposed curb cuts, interior private streets and alleys to create internal blocks for each townhouse row. As required by the CDD, the proposed townhouses are rear loading with vehicular access provided off internal private streets and alleys. and front doors facing primary streets.

The proposed layout provides well-defined building edges along the block lot lines and minimizes views of the garages from primary streets. Landscaping further masks the views created by irregular block shapes of Buildings B and N from the L2 and M open spaces, respectively, and Building R from the Paseo playground. Within the bounds of the blocks established by the CDD Concept Plan and refined by the Infrastructure DSP, this proposal for Blocks L2 & M adheres to the principles of high-quality site design.

Figure 2: Townhouse Site Plan with Architectural Notes



End Unit
Enhanced Elevation

End Unit
Signature Elevation

End Unit
Gateway Elevation

Building Architecture

The CDD Concept Plan set requirements for building massing, height, and design, which include use of high-quality materials (e.g., brick, glass, stone, wood, metal, precast, ceramic panels, or similar materials) with limited use of fiber cement and functional building entrances, stoops, and windows for facades facing streets.

The proposed contemporary townhouse designs fit the context of the previously approved Block I and K buildings that are opposite M and L2, respectively. For highly visible facades facing primary streets, the applicant has proposed designs that minimize the individuality of the townhouses to increase the perceived scale of the buildings. This scale corresponds to the context of the wider street and complements the massing of the larger buildings in the neighborhood. The resulting unified design (shown in Figure 3) achieves this effect with middle units using the same brick and metal panel materials and window and door alignment to suggest a larger, single building. The internal and less visible townhouse rows on the site express the individuality of the townhouses using a variety of materials: brick, lap siding, metal, and limited fiber cement, as shown in Figure 5.

For highly visible ends, the applicant proposes enhanced signature and gateway elevations, as shown in Figure 6. These end unit elevations have taller bay windows, more brick, to further distinguish them from the other townhouse ends. Doing so provides symmetry and helps to achieve the desired gateway effect called for in the CDD.

As briefly described above in the Site Design section, the townhouse rears are least visible from the public right-of-way because of placement and landscaping, so they have the highest proportion of fiber cement. However, to increase their individuality, the applicant provided additional colors, including varying the colors of the garage doors. Per Figure 7, each townhouse also provides a rear second floor balcony.

Figure 3: Unified Building Design

Figure 4: Elevations Facing Transit Hub

Figure 5: Individualized Front Elevations

Figure 6: Side Elevations at Verve Street Gateway

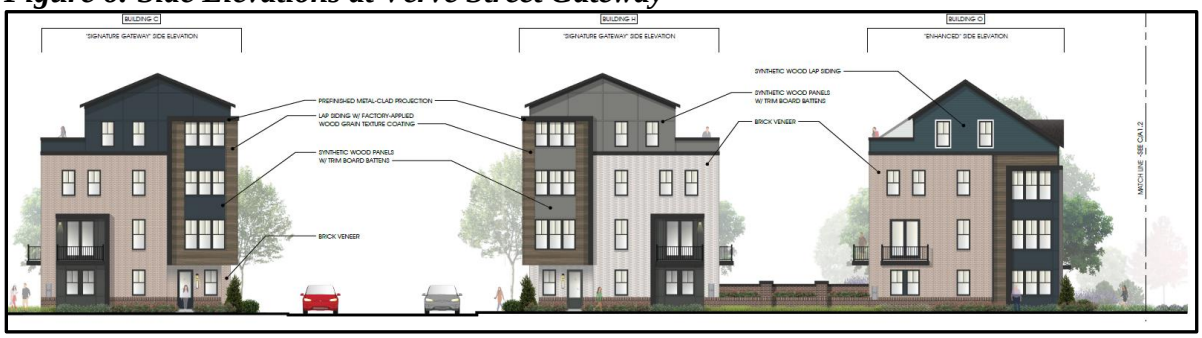


Figure 7: Townhouse Rears

C. Compliance with City Policies

Green Building Policy

As proposed, the project will meet or exceed the Green Building requirements of the City policy and CDD conditions. In addition to site location, access to transit and the mixed-use neighborhood, the project includes energy efficient designs, daylighting, sustainable appliances for water use, and high indoor air quality.

Public Art

Blocks L2 and M are responsible for contributing $0.30 per gross square foot up to a maximum of $75,000 per block towards the sitewide public art for a total of $90,138 (Block M= 180,526 gross SF x $0.30= $54,158; Block L2= 119,932 gross SF x$0.30= $35,979.60). Staff will continue to work with the applicant team to refine the consolidated public art plan and achieve the vision of the CDD consistent with the City's Public Art Policy.

Affordable Housing Policy

The affordable housing contribution associated with Blocks L2&M is being met by the requirements outlined in the Affordable Housing Plan (AHP) approved as part of CDD 2020-00007. In line with the approved AHP, the applicant is not proposing any additional committed affordable units (CAUs). However, pursuant to the development conditions, Landmark Land Holding, LLC shall provide fifteen affordable homeownership units in the first condominium building delivered in the CDD Plan area and an approximately 200-unit Low-Income Housing Tax Credit project co-located with the Block J fire station will affordable at 30-80% of AMI.

D. Special Use Permits

Townhouses in a Row

§7-1600(A) limits the number of units in a townhouse row to no more than eight without an SUP. The applicant proposes nine townhouses in Building L. Staff support this request as the design will define the northern edge of Block M along the Paseo (per DSUP #2023-10004), which faces the multiunit building on Block I, approved with DSUP #2022-10015. The Ordinance establishes four criteria for this SUP of which three are easily addressed. First, CDD zoning districts are not ineligible for this SUP. Second, Building L would be 152-ft. long, which is much shorter than the 212-ft. maximum set by the ordinance. Third, the design of the structure does not reduce the otherwise required side yard setbacks between end units. The final criterion requires significant variation in the architectural details of individual units to break the massing of the townhouses. Staff worked with the applicant on the design of Building L to ensure that it would not be out-of-character with the larger multiunit building opposite the Paseo. Given this context, Staff have determined that the variation in the fenestration, building materials, colors, and architectural treatments of the end and interior units in Building L is sufficient to satisfy the SUP requirements.

E. Stormwater and Wastewater

Stormwater management for the entire West End neighborhood is designed through a Stormwater Management Master Plan (SWMMP) (DSP#2021-00017) that meets the requirements of the Virginia Stormwater Management Program Regulations and the Chesapeake Bay Act in Accordance with Article XIII of the Zoning Ordinance for control of stormwater quality.

As part of the Infrastructure Development Site Plan (DSP#2021-00012), the applicant conducted a sanitary sewer adequate outfall analysis per the City's Memo to Industry 06-14 to identify any places where sewer capacity is exceeded and where they would need to complete infrastructure upgrades to accommodate the redevelopment of the site. As determined during the DSP review, the sanitary sewer design is sufficient for the office, residential, institutional, and commercial development planned for the site.

F. Open Space & Amenity Space

The CDD Concept Plan requires a minimum of 25 percent open space, at- or above-grade, for each development block within the site. To allow flexibility in the redevelopment of the site, CDD condition #69 allowed for transfers of open space among development blocks provided that the overall minimum open space is provided. Blocks L2 and M have transferred a total of 6,039 square feet from Block R, the Paseo, which is directly adjacent to Block M. As shown on Table 1 in the zoning section, the applicant meets this open space requirement for each development block.

Both blocks provide consolidated, central open spaces for most of the open space on each block and all open space is at ground-level. Staff also worked with the applicant on the design of Block L2 so that it features a plaza and entrance with seating facing the transit hub on Hecht Ave/Road 2. The open spaces on these blocks will be for passive recreation and the applicant has committed to providing a public access easement, which further increases the publicly accessible, privately

maintained open space provided beyond the minimum of 3.5 acres required by the CDD for the Central Plaza, Paseo, and Terrace Park.

Crown Coverage

The applicant proposes to meet the canopy coverage requirement for Blocks L2 and M, by providing 19,480 sq. ft. (25.0%) on Block L2 and 30,590 sq. ft. (25.0%) on Block M. Accordingly, the proposal does not use the Infrastructure Development Site Plan (DSP#2021-00012) condition that enables pooling the tree canopy provided by the development blocks, private streets, Central Plaza, and Paseo to meet a minimum of 25 percent crown coverage.[1]

G. Parking/Loading

All townhouses within the development have two garage parking spaces, accessed via rear private alleys. Twenty-foot-wide townhouses have two side-by-side garage spaces, and 16-foot-wide townhouses have two tandem garage spaces. Providing two spaces per unit satisfies the Zoning Ordinance requirement. Further, §11-512(B) of the Zoning Ordinance permits tandem and reduced-size parking spaces to satisfy the required off-street parking for one- and two-family dwelling units and townhouses, so the tandem spaces count.

H. Transportation and Streetscape

The CDD Concept Plan established the street network, transit hub location, bicycle routes, and street cross sections and dimensional requirements within the West End neighborhood. The Infrastructure Development Site Plan refined those cross sections, including specifying the location of streetlights, trees, crosswalks, curb radii, and the anticipated locations of curb cuts into Block L and M. Within each block, the applicant proposed private Roads A, B, C, and D, and private alleys A and B to access the rear garages of the townhouses. Private Road A will also provide access to the future development on Block L1.

The layout of Block L2 defined the central open space with townhouse fronts and created the pedestrian entrance and plaza facing the transit hub on Hecht Ave/Road 2. The plaza doubles as an emergency vehicle easement to enable fire engines and other emergency responders to access the ends of Alleys A and B and exit without needing to travel in reverse. On Block M, there is a clear pedestrian connection from Verve Street/Road 5 through the Block to N Van Dorn Street as required by CDD #2020-00007 condition 8.v. The ultimate design also provides a wraparound sidewalk that connects to the Paseo at the northern edge of the Block. Further, the fronts of the townhouses facing Duke Street and N Van Dorn Street provide direct access to the 12’ wide shared use path that rings the site. Finally, the Blocks are permeable for pedestrians with several sidewalks connecting to the surrounding streets between the townhouses. A new Capital Area Bike Share station will be located along Verve Street adjacent to Block M and a bike rack will be installed by the applicant on privately accessible public space on Block L2 near the transit hub.

Transit

[1] The condition excluded public street trees, the hospital campus, and Terrace Park (since it has ample existing trees) from the pooled crown coverage requirement.

Consistent with the Corridor Plan, the CDD Concept Plan provides a new transit hub in the southeast section of the site to replace the bus transfer station underneath the existing parking garage. The size and location of the hub will allow quick, convenient access for the existing DASH and WMATA buses that serve the site plus the increased service anticipated as part of the New DASH Network, the West End Transitway, and the Duke Street Transitway. The transit hub would be one block between Blocks K and L on Road 2 with bus bays and shelters on each side of the street.

Traffic

A detailed traffic study that was submitted with the approved CDD Concept Plan found no detrimental impact to the surrounding transportation network because of the redevelopment. Staff concurred with the finding based on the proposed infrastructure improvements, including the new street grid within the West End neighborhood that will help to disperse traffic. Staff also found that the approved plan balanced walking, biking, transit, and driving needs with appropriate facilities for each mode.

I. School Impacts

The student generation rate for new market rate townhouses are 0.11 students per unit, so Staff projects 13 students from this development. This project is in the James K Polk Elementary, Francis C. Hammond Middle School, and Alexandria City High School attendance areas. Per ACPS' 2023-2024 school enrollment data, James K. Polk and Francis Hammond are over capacity. While both Alexandria City High School campuses are over-capacity and exceed utilization ranges, the Minnie Howard Campus of the High School opened in Fall 2024, which has increased the capacity at the High School.

V. COMMUNITY

Staff has not received any questions or comments on this proposal at the time of staff report publication. 16 community meetings and public hearings were conducted throughout 2021 for the CDD, and the community has been kept apprised of the ongoing construction work in regular Eisenhower West/Landmark Van Dorn Implementation Group meetings and quarterly West End Pre-construction meetings, both of which are advertised on the City's website and Foulger Pratt, the master developer, maintains a website www.WestEndVA.com to provide ongoing updates on the redevelopment of the Landmark site. Additional information is available on the City's webpage: www.AlexandriaVA.gov/Landmark.

VI. CONCLUSION

Staff recommends approving the Development Special Use Permit and additional Special Use Permits to construct 110 townhouses subject to meeting all applicable codes, ordinances, and the recommended conditions included in this report.

STAFF: Robert Kerns, AICP, Division Chief, Department of Planning and Zoning
Maya Contreras, Principal Planner
Maggie Cooper, Urban Planner

VII. GRAPHICS

Exhibit A: Site Plan

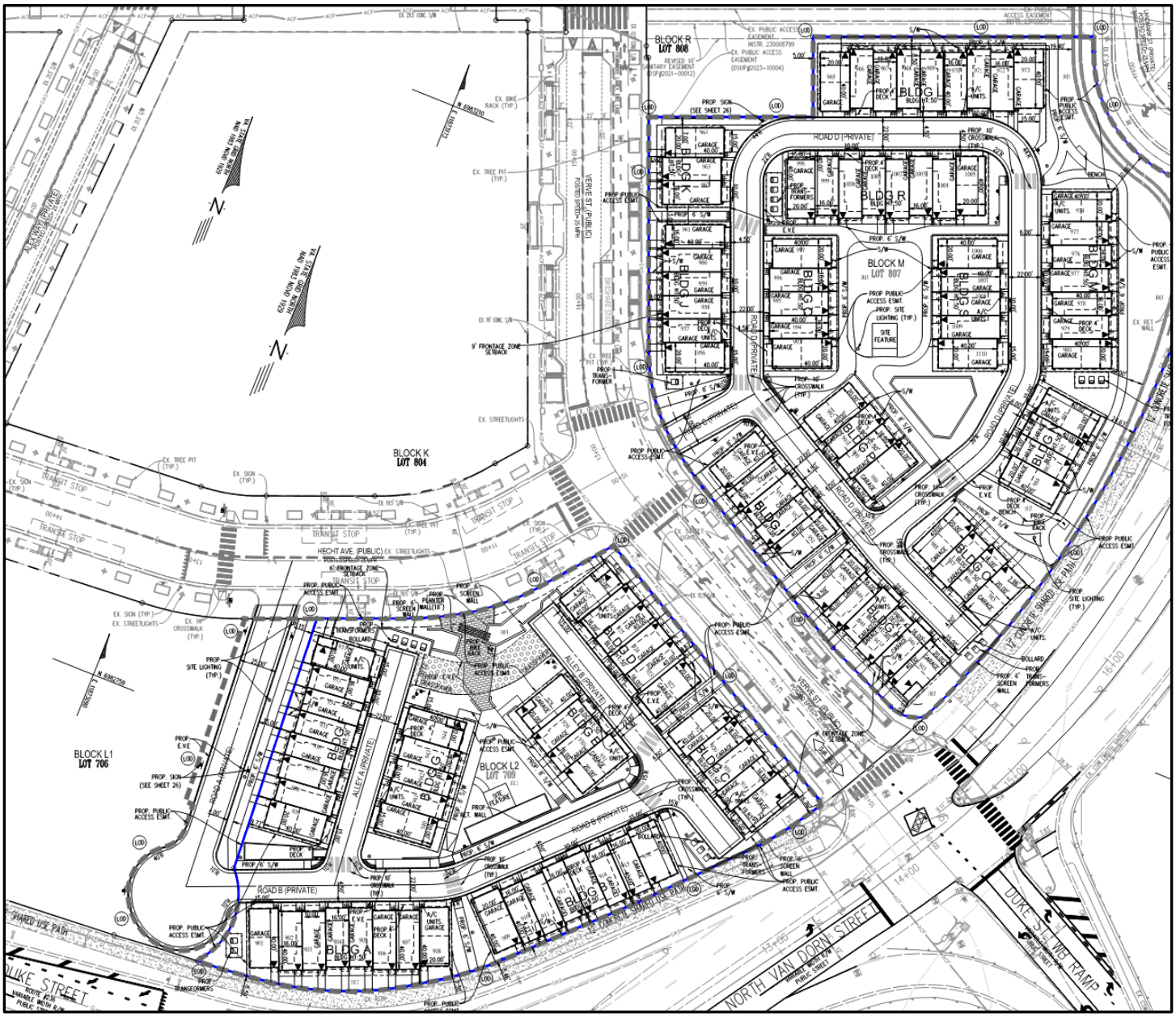
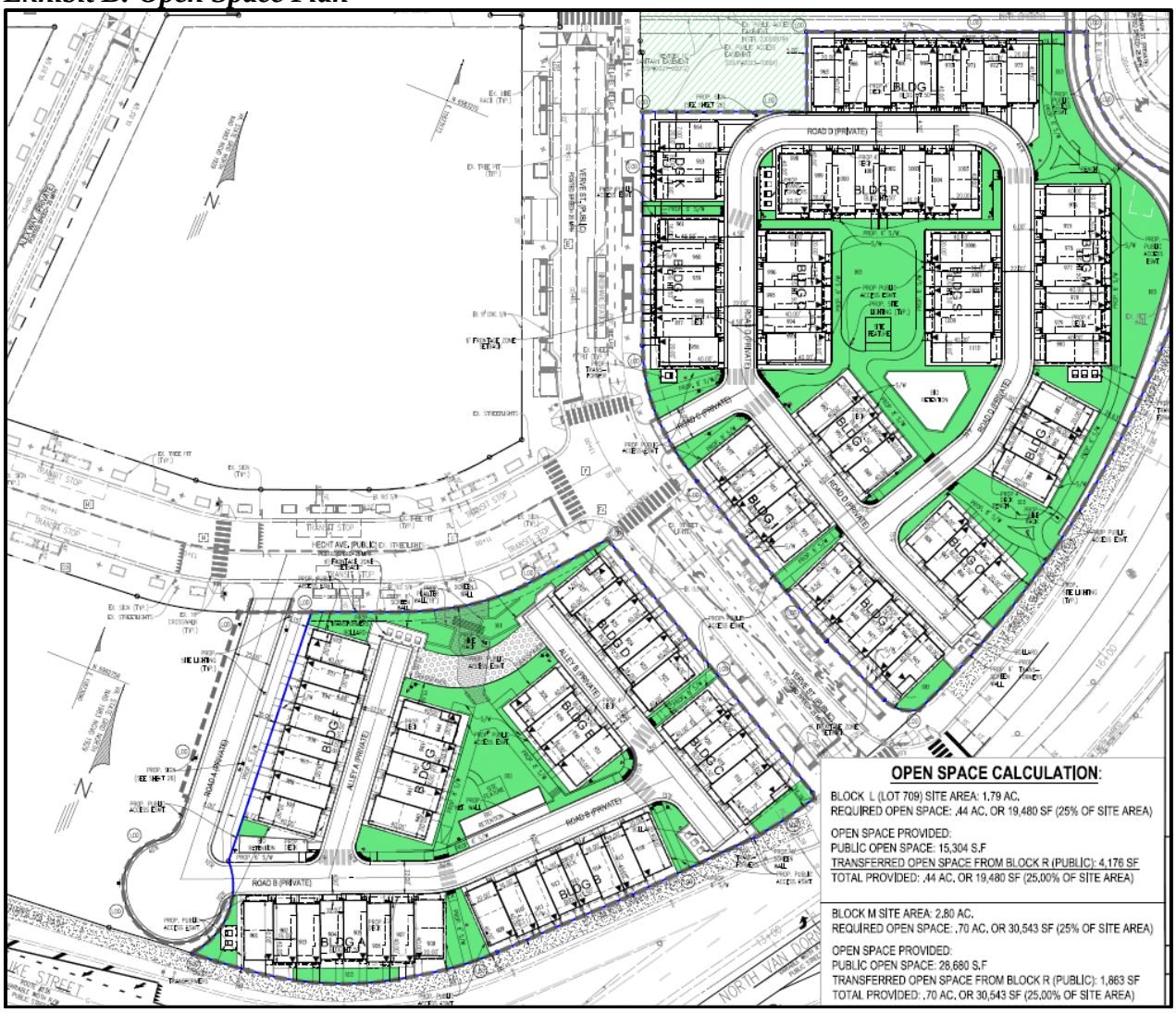


Exhibit B: Open Space Plan



STAFF RECOMMENDATIONS

1. The Final Site Plan shall conform substantially with the preliminary plan dated 6/7/2024 and comply with the following conditions of approval.

I. SITE PLAN

2. Per § 11-418 of the Zoning Ordinance, the *development special use permit* shall expire and become null and void, unless the applicant commences substantial construction of the project within 36 months after initial approval and the applicant thereafter pursues such construction with due diligence. The applicant shall provide a written status report to Staff 18 months after initial approval to update the City Council on the project status if they have not yet commenced substantial construction. The applicant may petition to extend the validity period after adequate notice and a public hearing. (P&Z)

3. Submit the plats and associated deeds for all applicable easements identified in the Preliminary Plan dated 6/7/2024, with the first Final Site Plan. The applicant must obtain approval of the plat(s) prior to or concurrent with Final Site Plan release. Provide proof of recordation prior to the release of the first building permit. (P&Z) (T&ES) (RP&CA) *, **

    a. The easements shall align with the applicable components of the approved plat of the Infrastructure Plan.

    b. Provide public and utility easements to the satisfaction of the Directors of P&Z and T&ES. Easements shall be consistent with the preliminary site plan.

    c. Emergency Vehicle Easement(s) (EVE) shall not be painted. When an EVE is shared with a pedestrian walkway or consists of grasscrete or a similar surface treatment, the EVE shall be defined in a manner that is compatible with the surrounding ground plane.

4. Make all fee simple conveyances to the City with General Warranty of title (unless not available) or provide current ALTA survey and Title Report that includes the areas to be dedicated to City. Include the City as an authorized user of the ALTA survey for any purposes that the City deems necessary, including obtaining title insurance. Submit the ALTA survey and Title Report for review prior to approval of subdivision plat and deed by City. (T&ES) *

5. Show site utilities compatibly with other conditions on the site plan to the satisfaction of the Directors of P&Z, T&ES prior to Final Site Plan release, specifically: (P&Z) (T&ES) *

    a. Locating above grade service openings and required clearances for items such as transformers, telephone, HVAC units, and cable boxes.

    b. Minimizing conflicts with plantings, pedestrian areas, and major view sheds.

c. Excluding above grade utilities from dedicated open space areas and tree wells.

d. Screening all utilities from the public right-of-way.

6. Provide a lighting plan with the Final Site Plan, unless otherwise identified below, to verify that lighting meets City standards. The plan shall be to the satisfaction of the Directors of P&Z, T&ES, Code, and the Climate Action Officer of OCA and shall include: (P&Z) (T&ES) (OCA) (Code) *

   a. The location of all existing and proposed streetlights and site lights, shading back less relevant information.

   b. A lighting schedule that identifies each type and number of all fixtures, mounting height, and strength of fixture in Lumens or Watts.

   c. A photometric plan with lighting calculations encompassing all existing and proposed streetlights and site light fixtures, including any existing streetlights located on the opposite side(s) of all adjacent streets. Photometric calculations must extend from proposed building face(s) to property line and from property line to the opposite side(s) of all adjacent streets and/or 20 feet beyond the property line on all adjacent properties and rights-of-way.

   d. Manufacturer's specifications and details for all proposed fixtures including site, landscape, pedestrian, sign(s), and security lighting.

   e. The numeric summary for various areas (i.e., roadway, walkway/sidewalk, alley, and parking lot, etc.) in the proposed development.

   f. Full cut-off lighting as applicable to prevent light spilling onto adjacent properties. Provide a plan distinguishing between the site with all streetlights and other pertinent off-site lighting and the site without streetlights and off-site lighting to demonstrate how the plan complies with § 13-1-3 light spill regulations.

   g. Additional lighting to achieve City standards if existing lighting within the City right-of-way adjacent to the site does not meet the minimum standards.

   h. Basic, approved Dominion LED light fixtures for all proposed light fixtures in the City right-of-way.

   i. All site lights designed to meet City of Alexandria photometric standards shall have photovoltaic switches.

   j. The location of conduit routing between site lighting fixtures to avoid conflicts with street trees.

k. Details indicating proposed light pole and footings relative to the adjacent grade and pavement. All light pole foundations shall be concealed from view or light poles shall be direct bury.

7. Provide a georeferenced CAD file in **AutoCAD 2018**.dwg or greater format that adheres to the National CAD Standards prior to Final Site Plan release. Tuhe file shall have the dimension plan including existing conditions, proposed conditions, and grading elements. (P&Z) (DPI) (GIS) *

8. Sheeting and shoring, support of excavation shall not extend beyond the property line, except when the applicant has obtained a written release or encroachment from adjacent property owners which has been reviewed prior to Final Site Plan release and recorded in the Land Records. (P&Z) (Code) *

9. The total number of residential units may be adjusted higher or lower so long as the new unit count does not increase the overall town home envelopes, parking is provided per the Zoning Ordinance, and the architecture is in substantial conformance with the preliminary plan to the satisfaction of the Director of P&Z. (P&Z) *

    a. The Sanitary Adequate Outfall Analysis must reflect the actual number of units.

    b. The unit count must be finalized prior to Final Site Plan release. (P&Z) *

A. BUILDING

10. Provide a building code analysis with these building code data prior to Final Site Plan release: (1) use group, (2) number of stories, (3) type of construction, (4) total floor area per floor, (5) height of structure, (6) non-separated or separated mixed use, (7) fire protection system requirements, and (8) accessible routes. (P&Z) (Code) *

11. The building design, including the appearance, color, and quality of materials; final detailing; three-dimensional expression; and depth of all plane changes, shall be consistent with the elevations dated 6/7/2024, and the following conditions. Provide this information regarding materials and design to the satisfaction of the Director of P&Z prior to Final Site Plan release: (P&Z) (Code) (OCA) *

    a. Samples of actual window glazing, frame, and sash components proposed for each area of the building in the color and material that will be provided (may reduce sample sizes for ease in handling).

        i. Window sizes and types.

        ii. Window mullion dimensions and projection in front of face of glass.

        iii. Window frame, sash, and mullion materials.

iv. Any windows visible from a public park or right-of-way shown as simulated divided light type shall include between the glass spacer bars aligned with exterior muntins; any such exterior muntins shall project not less than 7/32inch beyond the face of glass and be reflected in the window samples provided. Grills located between the glass will not be supported.

b. Where fiber cement façade panels are used as shown on the DSUP plan set, they shall not use a wrap-around trim for mounting to the substructure but may use either a batten system to conceal the joints or a rainscreen type installation Final trim/batten pattern of approximately 4ft x 8ft or 4ft x 10ft , or a subdivision thereof, to be integrated with the overall design and determined during the building permit process. If exposed fasteners are proposed, they may be either concealed or if exposed, shall be finished to match the adjacent panels and their location integrated into the overall design.

c. The underside of all balconies shall be finished and present a visually cohesive appearance.

d. Where plane changes in facades are proposed, they shall generally not be less than 18 inches.

e. Where dissimilar materials meet, they must typically meet at an interior corner; where that is not possible, such transitions shall occur at a significant plane change or reveal (as shown on existing plans dated 6/7/24).

12. Provide detailed drawings in realistic colors to permit evaluation of key building elements such as the building base, entrances, entry canopy, stoops, windows, balconies, railings, cornices, and other ornamental elements, and material details including the final detailing, finish, and color of these elements prior to Final Site Plan release. (P&Z) *

    a. The drawings shall be enlarged and coordinated plan-section-elevation studies, typically at ¼" =1'-0" scale, with shadows cast at 45 degrees from both left and above to show true depth of recesses and projections.

    b. Separate design drawings shall be submitted for each primary building typology, different wall, or bay type.

    c. When warranted by the three-dimensional complexity of the design, the applicant shall provide isometric vignettes of special conditions or building areas to the satisfaction of the Director of P&Z.

    d. All structures must remain within the property (e.g., balconies, railings, and canopies), unless permitted under the City of Alexandria Code or an encroachment has been obtained.

13. Provide the items listed below to allow Staff to review the materials, finishes, and architectural details. These materials shall conform substantially to the preliminary plan and the current *Guidelines for Preparation of Mock-Up Panels*, Memo to Industry effective at application submission. (P&Z) (Code)

    a. Prior to ordering final building materials, provide a materials board that includes all proposed materials and finishes at first Final Site Plan. The materials board shall remain with P&Z until the issuance of the final Certificate of Occupancy, when Staff will return all samples to the applicant. (P&Z) *, ***

    b. Staff may request more detailed/extensive materials relating to the proposed fenestration, such as samples of the glazing, frame, and sash components, and including whether the windows will be double-or-triple glazed and have simulated divided lights.

    c. Materials may be modified or substituted only if in substantial conformance and provided that products are readily available with the Preliminary Site Plan approval and to the satisfaction of the Director of P&Z. *

    d. Drawings of mock-up panel(s) that depict all proposed materials, finishes, and relationships as part of the first Final Site Plan. *

    e. An on-site mock-up panel using the approved materials, finishes, and relationships shall be constructed for Staff review and approval. Per VCC108.2 concrete or masonry mock-up panels exceeding 6-ft. require a building permit. The panel(s) shall be constructed and approved prior to vertical (above-grade) construction and before ordering building materials. Locate the panel so that it receives sunlight from the same predominant direction as will the finished structure. **

    f. The mock-up panel shall remain on-site, in the same location or approved relocation, and visible from the right-of-way without entering the site throughout construction until the issuance of the first Certificate of Occupancy. ***

B. OPEN SPACE/LANDSCAPING

14. Post one sign on Block M and one sign on Block L stating that open space public access easements are open to the public, noting any operating hours, other restrictions, and contact information to facilitate reporting of issues. Signs shall comply with SUP2023-00011. Show the sign locations and design on the Final Site Plan and install the signs prior to the issuance of the first Certificate of Occupancy. (P&Z) (RP&CA) *, ***

15. All publicly accessible open spaces shall be maintained and managed by the applicant/owner or its successors consistent with the Level 2 conditions of the APPA

Grounds Standards and other applicable City standards. Maintenance shall include the life cycle replacement of materials and components depicted in the landscape design. Pedestrian access to transit, parks, and sidewalks must remain open. (P&Z) (RP&CA) *

C. TREE PROTECTION AND PRESERVATION

16. Provide a Tree and Vegetation Protection Plan per the City of Alexandria's Landscape Guidelines for approval prior to Final Site Plan release and implement the plan for the duration of construction. (P&Z) (RP&CA) *

D. ARCHAEOLOGY

17. Call Alexandria Archaeology immediately at 703.746.4399 if you discover any buried structural remains (wall foundations, wells, privies, cisterns, etc.) or concentrations of artifacts during development. Cease work in the discovery area until a City archaeologist inspects the site and records the finds. Include the preceding text on all Final Site Plan sheets involving any ground disturbing activities. (Archaeology) *

18. The applicant shall not allow any metal detection and/or artifact collection to be conducted on the property, or allow independent parties to collect or excavate artifacts, unless authorized by Alexandria Archaeology. Failing to comply shall result in project delays. Include the preceding text on all Final Site Plan sheets involving any ground disturbing activities. (Archaeology) *

E. PEDESTRIAN/STREETSCAPE

19. Provide the pedestrian improvements listed below to the satisfaction of the Directors of P&Z and T&ES. Complete all pedestrian improvements prior to the issuance of the final Certificate of Occupancy. (P&Z) (T&ES) ***

    a. Install ADA accessible pedestrian improvements serving the site.
    b. Construct all concrete and hybrid concrete-brick sidewalks to City standards. The minimum unobstructed width of newly constructed sidewalks shall be six feet.
    c. Sidewalks must comply with the City's Green Streets and Sidewalks guidance.
    d. Sidewalks shall be flush across all driveway crossings.
    e. All newly constructed curb ramps shall be concrete with detectable warning and shall conform to current VDOT standards.
    f. Provide separate curb ramps for each direction of crossing (i.e., two ramps per corner). Curb ramps shall be perpendicular to the street.
    g. Provide thermoplastic pedestrian crosswalks at all crossings at the proposed development.
    h. All crosswalks shall be standard, 6 inches wide, white thermoplastic parallel lines with reflective material, with 10 feet in width between interior lines. High-visibility crosswalks may be required as directed by

staff at Final Site Plan. Alternative crosswalk treatments must be approved by the Director of T&ES.

i. All below grade utilities placed within a City sidewalk shall be integrated with the adjacent paving materials and to minimize any visible impacts.

j. Work with Staff during review of the Final Site Plan to refine the design of the intersection of Private Road's C and D on Block M to better accommodate pedestrians, to the Satisfaction of the Director of T&ES. (T&ES)*

k. Work with Staff during review of the Final Site Plan to refine the design of the bike/ped connections from Block M to the proposed Beauregard Multi-Use Trail, to the Satisfaction of the Director of T&ES. Specifically, relocate the light pole out of the middle of the island. Explore a more traditional/orthogonal trailhead alignment. (T&ES)*

20. Show the final location and approximate dimensions of the Capital Bikeshare station on Verve Street on the Final Site Plan. (T&ES) *

F. PARKING

21. Design and allocate parking to conform with these requirements, to the satisfaction of the Directors of P&Z, T&ES, and Code Administration: (P&Z) (T&ES) (Code)

    a. All parked vehicles shall not encroach on the proposed streets, drive aisles, pedestrian walkways, and emergency vehicle easements.
    b. Each townhouse unit shall provide a sufficient area within each unit, garage, or in an enclosed area for a standard City-issued trash and recycling container exclusive of the area required for parking, as shown on plans dated 6/7/2024.

22. Show all existing and proposed on-street parking controls and restrictions on the Final Site Plan. The Traffic and Parking Board must approve any on-street parking changes after Signature Set approval. (P&Z) (T&ES) *

23. Provide bicycle parking per current Bicycle Parking Standards, available at: www.alexandriava.gov/bicycleparking. (T&ES) *, ***

    a. Include details on the locations and types of bicycle parking prior to Final Site Plan release. Install bicycle parking prior to the issuance of the first Certificate of Occupancy.

    b. Per the Coordinated Sign Program SUP #2023-00011, provide signage, striping, or other means to direct people to bicycle parking areas within the private property. Show the proposed signage, etc. prior to release of the Final Site Plan and install the signage, etc. prior to issuance of the Final Certificate of Occupancy.

24. Provide signage, striping, or other means to prevent parking in emergency vehicle easement(s) prior to Final Site Plan release, to the satisfaction of the Director of T&ES. (T&ES) *

25. Provide two empty slots in the electrical panel for the future Level 2 charging and pull wire ready conduit from the electrical panel to the garaged parking spaces. Install and label the conduit outlet in each garage prior to receiving the Certificate of Occupancy. (OCA) ***

G. SUSTAINABILITY

26. The project shall comply with the requirements of the City of Alexandria Green Building Policy that is in effect at the time of DSUP approval. (OCA) *, **, ***, ****

27. The applicant may propose additional sustainability strategies to the satisfaction of the Directors of P&Z and the Climate Action Officer of OCA. (P&Z) (OCA) *, **, ***, ****

28. The applicant shall provide these items to comply with the Green Building Policy at first Final Site Plan: (OCA) *

    a. Evidence of the project's registration with LEED, Green Globes, EarthCraft, NGBS, or equivalent.

    b. A copy of the draft certification scorecard which indicates the project will meet the required performance points as outlined in the Green Building Policy for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

29. The applicant shall provide these items to comply with the Green Building Policy with the Building Permit: (OCA) **

    a. An updated copy of the draft certification scorecard/checklist prior to building permit release for above-grade construction for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

    b. Water efficiency and indoor environmental quality documentation for the priority performance points in the Green Building Policy prior to building permit release for above-grade construction for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

30. The applicant shall provide these items to comply with the Green Building Policy at First and Final Certificates of Occupancy: (OCA) ***

    a. Evidence that design phase credits (for the certifying party) have been submitted by Temporary Certificate of Occupancy for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

b. Evidence showing that the project meets the priority performance points for Energy Use Reduction, Water Efficiency, and Indoor Environmental Quality for Design Phase credits for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

c. If the project fails to achieve the required certification level and priority performance points, then demonstrate a good faith, reasonable, and documented effort to achieve the certification level to the satisfaction of the Climate Action Officer.

31. The applicant shall provide the following to comply with the Green Building Policy at Release of Performance Bond: (OCA) ****

    a. Documentation of applicable green building certification showing that the project meets the priority performance points for Energy Use Reduction, Water Efficiency, and Indoor Environmental Quality for LEED, Green Globes, EarthCraft, NGBS, or equivalent.

32. At the first Final Site Plan, demonstrate that the building will be fully electric including all mechanical systems. Limited accessory elements, if using gas, must be controlled with occupancy sensors, timers not to exceed two hours, or other technology to prevent the accessory element from using natural gas when not being used by an occupant of the building. (OCA) *

II. TRANSPORTATION

A. STREETS/TRAFFIC

33. Repair any of the City's existing public infrastructure that construction damages per the most recent version of the T&ES Design and Construction Standards Memo to Industry 23-01, or to the satisfaction of Director of T&ES, prior to Performance Bond release. (T&ES) ****

34. Conduct a pre-construction walk/survey of the site prior to any land disturbing activities with T&ES Construction & Inspection and Code Administration Staff to document existing conditions prior to Final Site Plan release. (T&ES) (Code) *

35. Mark all private street signs that intersect a public street with a fluorescent green strip to notify the plowing crews, both City and contractor, that they are not to plow those streets, prior to the issuance of the first Certificate of Occupancy. (T&ES) ***

36. Provide full curb to curb restoration for any asphalt patches larger than 20 percent of the total asphalt surface, measured along the length of the road adjacent to the property frontage and/or extending to the centerline of the street prior to Performance Bond release. (T&ES) ****

37. Finalize street names and addresses for mail delivery (addressed per the front door) and for emergency services (addressed per street access) prior to Final Site Plan release. (P&Z) (T&ES) (GIS) *

B. TRANSPORTATION MANAGEMENT PLAN

38. Contribute to the Citywide Transportation Management Plan (TMP) at the rate specified by the current TMP policy. Unless the upfront payment or partial upfront payment option is chosen as described below, payments are due once per year no later than September 30 for 30 years with rates adjusted annually for inflation based on the April-to-March Consumer Price Index change reported by the Bureau of Labor Statistics. (T&ES)

    a. Projects that obtain their first Certificate of Occupancy prior to July 1, will have their first year of assessment in the current calendar year. Projects that obtain their first Certificate of Occupancy on July 1 or later will have their first year of assessment in the next calendar year.

    b. A development may receive a 35% discount for paying the entire 30-year amount (unadjusted for inflation) prior to receipt of the first Certificate of Occupancy. Under this option, no further TMP payments are required. ***

    c. A development may receive a 25% discount for paying one quarter of the entire 30-year amount (unadjusted for inflation) before receipt of the final Certificate of Occupancy and five standard subsequent payments over the next five years. The five annual payments will be made no later than September 30 each year. After these payments are made, no further TMP payments are required. ***

39. The applicant/owner may request permission to manage its own TMP fund subject to the approval of the Director of T&ES. The property must have achieved specific single occupancy vehicle targets for at least three years in a row, as specified in the current TMP policy, and have provided the City with detailed information about how the applicant/owner will manage the TMP for the development. Development would retain the annual TMP contributions and must spend it exclusively on transportation related activities approved by the Director of T&ES or designee. (T&ES)

40. Designate an on-site TMP Coordinator prior to the issuance of the first Certificate of Occupancy. Provide the name, address, email, and telephone number of the coordinator to the City's Mobility Services Division, updating this information annually or as needed. This person will be the City's point of contact for the development and will be responsible for paying invoices, coordinating with staff on TMP-related activities as needed. (T&ES) ***

C. BUS STOPS AND BUS SHELTERS

41. Show all existing bus stops, bus shelters, and bus stop benches in the vicinity of the site on the Final Site Plan. (T&ES) *

42. Any trees located near the transit center should use the following guidelines to avoid conflicts with buses serving bus stops and other vehicles per the City's Landscape Guidelines, specifically: (P&Z) (T&ES) *

    a. Exclude trees for 70-ft. at and around the bus stop, including the 20-ft. approach, 40-ft. for the bus serving the stop, and 10-ft. for departure.
    b. Ensure vertical clearances of at least 15-ft. to the canopy and prune branches out of the vehicle lanes.

III. PUBLIC WORKS

A. WASTEWATER/SANITARY SEWERS

43. Pay the sewer connection fee prior to issuance of the first Certificate of Occupancy per the City Code. (T&ES) ***

B. UTILITIES

44. If the applicant does not have a franchise agreement with the City, locate all private utilities outside of the public right-of-way and public utility easements. (T&ES)

45. Do not locate transformers and switch gears in the public right-of-way. (T&ES)

46. The City shall own and maintain all new fire hydrants on public streets. The applicant or their representative shall own, inspect, test, and maintain all hydrants on private streets. Install hydrants prior to issuance of the first Certificate of Occupancy. (T&ES) ***

C. INFORMATION TECHNOLOGY

47. Show a fiber optic installation plan with the Final Site Plan and install prior to as-built. (ITS) * ***

48. A pull line and tracer cable shall be installed with each conduit. (ITS) * ***

49. Submit a digital as-built plan in CAD or GIS which includes information on the fiber conduit installation prior to the issuance of the first Certificate of Occupancy. (ITS) ****

D. SOLID WASTE

50. Store containers inside the units or within an enclosure that completely screens them from view. (T&ES)

51. Obtain approval from the Director of T&ES to opt-out of the City approved trash and recycling collection to allow for privately contracted collection. The point of collection shall not be in a public right-of-way and shall not hinder or interfere with parking, traffic, or pedestrians.

IV. ENVIRONMENTAL

A. STORMWATER MANAGEMENT

52. The City of Alexandria's stormwater management regulations for water quality are: (1) state phosphorus removal requirement and (2) Alexandria Water Quality Volume Default. Complying with the state phosphorus reduction requirement does not relieve the applicant from the Alexandria Water Quality Default requirement. Treat the Alexandria Water Quality Volume Default, as determined by the site's post-development impervious area, in a Best Management Practice (BMP) facility. (T&ES) *

53. The redevelopment phosphorus removal requirement is 40 percent from the predeveloped load (treatment of the first ½ inch of rainfall is required). New impervious must meet the required 0.41 lbs./ac phosphorus loading rate or the 40 percent reduction, whichever is more stringent. The site's entire water quality volume shall be treated. (T&ES) *

54. Provide a BMP narrative and complete pre- and post-development drainage maps that include areas outside that contribute surface runoff from beyond project boundaries to include adequate topographic information, locations of existing and proposed storm drainage systems affected by the development, all proposed BMPs and a completed Virginia Runoff Reduction Method (VRMM) worksheet showing project compliance prior to Final Site Plan release. The project must use hydrologic soil group "D" in the spreadsheet unless a soils report from a soil scientist or geotechnical engineer delineates onsite soils otherwise. (T&ES) *

55. Design all stormwater (BMPs to comply with the most recent standards and specifications published in the Virginia Stormwater BMP Clearinghouse. Provide complete design details for all BMPs, including site specific plan views, cross sections, planting plans, and complete design calculations for each BMP prior to Final Site Plan release. (T&ES) *

56. Provide a BMP table with a separate listing for each individual BMP that includes the name of the practice, total area treated (acres), pervious area treated (acres), impervious area treated (acres), phosphorous removal efficiency (percentage), phosphorous removal efficiency (percentage), phosphorous removed by the practice (lbs.), and latitude and longitude in decimal degrees, prior to Final Site Plan release. (T&ES) *

57. All BMP's must be accessible for regular maintenance and inspections. The final building design must include access points and maintenance accessibility for the green roof and any other BMPs.

58. Complete construction inspection checklists and associated photographic documentation for each stormwater BMP and detention facility. Submit all

documents required by the City of Alexandria As-Built Stormwater Requirements including as-built plans, CAD data, BMP certifications, and completed construction inspection checklists prior to Performance Bond release. (T&ES) ****

59. Construct and install the stormwater BMPs required for this project under the direct supervision of the design professional or their designated representative. Submit a written certification from the design professional to the Director of T&ES prior to Performance Bond release certifying that the BMPs are: (T&ES) ****

    a. Constructed and installed as designed and in accordance with the released Final Site Plan.
    b. Clean and free of debris, soil, and litter by either having been installed or brought into service after the site was stabilized.

60. Install descriptive signage for surface-installed stormwater BMPs (e.g., Bio-Retention Filters, Vegetated Swales) prior to the submission of As-Built Plans to the satisfaction of the Director of T&ES. (T&ES) ****

61. Submit the stormwater quality BMP and/or Stormwater Detention Facilities Maintenance Agreement to include the BMP Schedule and Guidelines Addendum with the Final Site Plan #2. Execute and record the agreement with the Land Records Division of Alexandria Circuit Court prior to Final Site Plan release. (T&ES) *

62. The Applicant shall be responsible for maintaining stormwater Best Management Practices (BMPs) until activation of the homeowner's association (HOA), and/or master association, if applicable, or until sale to a private owner. Prior to transferring maintenance responsibility for the BMPs to the HOA, master association, and/or owner, the applicant shall: (T&ES) ****

    a. Execute a maintenance service contract with a qualified private contractor for a minimum of three years, and transfer the contract to the HOA, master association, and/or owner.
    b. Include a copy of the contract in the BMP Operation and Maintenance Manual.
    c. Submit a copy of the maintenance contract to T&ES prior to Performance Bond release.

63. Provide the Homeowner's Association (HOA), and/or master association, with an Owner's Operation and Maintenance Manual for all on site BMPs. The manual shall include at a minimum: (T&ES)

    a. An explanation of the functions and operations of the BMP(s),
    b. Drawings and diagrams of the BMP(s) and any supporting utilities,
    c. Catalog cuts on maintenance requirements including any mechanical or electrical equipment,
    d. Manufacturer contact names and phone numbers,
    e. A copy of the executed maintenance service contract, and

f. A copy of the maintenance agreement with the City.

64. The applicant/owner shall install and maintain stormwater BMPs. The applicant/owner shall execute a maintenance service contract with a qualified private contractor for a minimum of three years and develop an Owner's Operation and Maintenance Manual for all BMPs on the project. The manual shall include at a minimum: (T&ES) ****

    a. An explanation of the functions and operations of the BMP(s),

    b. Drawings and diagrams of the BMP(s) and any supporting utilities,

    c. Catalog cuts on maintenance requirements including mechanical or electrical equipment; manufacturer contact names, and phone numbers,

    d. A copy of the executed maintenance service contract, and

65. Submit a copy of the Operation and Maintenance Manual to the T&ES Stormwater Management Division prior to Performance Bond release. (T&ES) ****

66. Submit a certification by a qualified professional that any existing stormwater management facilities adjacent to the project and associated conveyance systems were not affected adversely by construction operations prior to Performance Bond release to the satisfaction of the Director of T&ES. If maintenance of the facilities or systems were required to make this certification, describe the maintenance measures performed. (T&ES) ****

B. WATERSHED, WETLANDS, & RPAs

67. Use standard city markers to mark all on-site stormwater curb inlets and public curb inlets within 50 feet of the property line to the satisfaction of the Director of T&ES. (T&ES)

68. For sites that contain marine clays, account for marine clay or highly erodible soils in the construction methodology and erosion and sediment control measures. (T&ES)

69. Provide Environmental Site Assessment Notes that delineate, map, describe, and/or explain these environmental features (if located on site): (T&ES)

    a. Individual components of the RPA as well as the total geographic extent of the RPA, to include the appropriate buffer, intermittent streams, and associated buffers,

    b. Highly erodible and highly permeable soils,

    c. Steep slopes greater than 15 percent in grade,

    d. Known areas of contamination; springs, seeps, or related features, and

e. A listing of all wetlands permits required by law.

C. CONTAMINATED LAND

70. Indicate on the site plan whether any soil and groundwater contamination are present. Submit supporting reports for associated environmental investigations or assessments performed to substantiate this determination. (T&ES) *

71. If environmental site assessments or investigations discover the presence of contamination on site, the Final Site Plan shall not be released, and no construction activity shall occur until these items have been submitted and approved by the Director of T&ES: (T&ES) *

    a. A Site Characterization Report/Extent of Contamination Study detailing the location, applicable contaminants, and the estimated quantity of any contaminated soils and/or groundwater at or in the immediate vicinity of the site.

    b. A Risk Assessment indicating any risks associated with the contamination.

    c. A Remediation Plan detailing any contaminated soil and/or groundwater, including plans to remediate utility corridors. Utility corridors in contaminated soil shall be over excavated by two feet and backfilled with "clean" soil. Describe the environmentally sound methods of off-site transport and disposal of contaminated soils and debris (including, but not limited to types of vehicles appropriate for handling specific materials and ensuring vehicle loads are covered).

    d. A Health and Safety Plan with measures to take during remediation and/or construction activities to minimize the potential risks to workers, the neighborhood, and the environment. Initial Air Monitoring may be required during site activities to demonstrate acceptable levels of volatiles and/or airborne particles. Justify the air monitoring determination in the Health and Safety Plan submitted for review.

    e. Screen for PCBs as part of the site characterization if any of the past uses are within the identified high risk category sites for potential sources of residual PCBs, which includes these SICs: 26&27 (Paper and Allied Products), 30 (Rubber and Misc. Plastics), 33 (Primary Metal Industries), 34 (Fabricated Metal Products), 37 (Transportation Equipment), 49 (Electrical, Gas, and Sanitary Services), 5093 (Scrap Metal Recycling), and 1221 and 1222 (Bituminous Coal).

72. Should any unanticipated contamination, underground storage tanks, drums or containers be encountered at the site during construction, the applicant must notify T&ES, Office of Environmental Quality immediately. Should unanticipated conditions warrant, stop construction within the affected area until the appropriate

environmental reports identified in “a” through “e” above are submitted and approved at the discretion of the Director of T&ES. Include the preceding text as a note on the Final Site Plan. (T&ES) (Code) *

73. If warranted by a Site Characterization report, design and install a vapor barrier and ventilation system for buildings and parking areas to prevent the migration or accumulation of methane or other gases or conduct a study and provide a report signed by a professional engineer showing that such measures are not required to the satisfaction of Directors of T&ES and Code Administration. The vapor barrier and ventilation system must include a passive ventilation system that can be converted to an active ventilation system if warranted. If a vapor barrier and ventilation system is required, the schematic shall be signed by a professional engineer and included in the Final Site Plan. (T&ES) (Code) *

74. If a Soils Management Plan is required by the Site Characterization report, then the plan shall be included in the Final Site Plan. (T&ES) *

D. SOILS

75. Provide a geotechnical report, including recommendations from a geotechnical professional for proposed cut slopes and embankments prior to Final Site plan release. (T&ES) *

E. NOISE

76. Submit a noise study identifying the noise levels that residents will be exposed to initially and 10 years into the future per the Noise Guidance Book used by the Department of Housing and Urban Development prior to the Final Site Plan release. (T&ES) *

77. If the noise study identified noise impacted areas, conduct a building shell analysis identifying ways to minimize noise and vibration exposure to future residents. Submit the building shell analysis and the noise commitment letter for review and approval prior to Final Site Plan release. (P&Z) (T&ES) *

78. No trucks or other vehicles, including construction equipment, associated with this project shall be permitted to idle for more than 10 minutes when parked. Post at least two no idling for greater than 10 minutes signs in plain view prior to the issuance of the Certificate of Occupancy. (T&ES) ***

F. AIR POLLUTION

79. During construction, control odors and any other air pollution sources at the site and prevent them from leaving the property or becoming a nuisance to neighboring properties, as determined by the Director of T&ES. (T&ES)

V. CONSTRUCTION MANAGEMENT

80. Submit a construction phasing plan that includes aligned timing with the Landmark West End infrastructure phased plan to the satisfaction of the Director of T&ES, for review, approval, and partial release of Erosion and Sediment Control for the Final Site Plan. Complete all the requirements of Zoning Ordinance Article XIII (Environmental Management) for quality improvement, quantity control, and the development of Storm Water Pollution Prevention Plan prior to the partial Final Site Plan release. (T&ES) *

81. Submit a separate construction management plan to the Directors of P&Z, T&ES, and Code Administration prior to Final Site Plan release. The plan shall satisfy these requirements: (P&Z) (T&ES) (Code)

    a. Do not remove streetlights without authorization from the City of Alexandria,
    b. If streetlights are to be removed from the public right-of-way, then provide temporary lights until the installation and commissioning of new lights, *
    c. Include an analysis as to whether temporary street or site lighting is needed for safety during the construction on the site and how it is to be installed, *
    d. Provide a detailed sequence of demolition and construction of improvements in the public right of way along with an overall proposed schedule for demolition and construction, *
    e. Include an overall proposed schedule for construction, *
    f. Include a plan for temporary pedestrian circulation, *
    g. Include the location and size of proposed construction trailers, if any, *

82. Include a preliminary Maintenance of Traffic Plan as part of the construction management plan for informational purposes only, to include proposed controls for traffic movement, lane closures, construction entrances and storage of materials, and *

    a. Post copies of the plan in the construction trailer and give it to each subcontractor before they start work. ***

83. Provide off-street parking for all construction workers without charge and ensure that all workers use this parking. For workers who use Metro, DASH, or another form of mass transit, subsidize a minimum of 50 percent of the fees. Complying with this condition shall be a component of the construction management plan, which shall be submitted prior to Final Site Plan release and approved by the Departments of P&Z and T&ES prior to commencing any construction activities. This plan shall: (P&Z) (T&ES) *

    a. Establish and provide verifiable details and/or agreements on the location of the parking to be provided at various stages of construction, how many spaces will be provided, how many construction workers will be assigned

to the work site, and mechanisms which will be used to encourage the use of mass transit, *

b. Post information on transit schedules and routes, *
c. The community liaison must manage parking actively for all construction workers and ensure compliance with the off-street parking requirement, and
d. If the off-street construction worker parking plan is found to be violated during construction, a correction notice will be issued to the applicant. If the violation is not corrected within five days, a "stop work order" will be issued, with construction halted until the violation has been corrected.

84. Include a chapter on maintaining pedestrian access within the Construction Management Plan. Sidewalks adjacent to the site shall remain open during construction. If sidewalks must be closed, pedestrian access shall be maintained adjacent to the site per Memo to Industry 04-18 throughout the construction of the project. (T&ES) *

85. Include a chapter on maintaining bicycle access within the Construction Management Plan. Bicycle facilities adjacent to the site on Verve Street; and on South Van Dorn Street, shall remain open during construction. If a bicycle facility must be closed, bicycle access shall be maintained adjacent to the site per Memo to Industry 04-18 throughout the construction of the project. (T&ES) ** Include a chapter on the waste control program in the Construction Management Plan. This program shall control wastes such as discarded building materials, concrete truck washout, chemicals, litter or trash, trash generated by construction workers or mobile food vendor businesses serving them, and all sanitary waste at the construction site and prevent offsite migration that may cause adverse impacts to neighboring properties or to the environment to the satisfaction of Directors of T&ES and Code Administration. Dispose of all waste offsite per all applicable federal, state, and local laws. Provide documentation as required per the City’s Green Building Policy and conditions therein. (T&ES) (Code) *

86. Discuss construction staging activities with T&ES prior to the release of any permits for ground disturbing activities. No major construction staging shall be allowed within the public right-of-way. (T&ES) *

87. Per the existing agreement between Landmark Landholding, LLC and the City of Alexandria, transit stops adjacent to the site shall remain open, if feasible, for the duration of construction. If construction requires closing a stop on an adjacent street, then install a temporary ADA accessible transit stop. Coordinate with the T&ES Transportation Planning Division at 703.746.4088 as well as with the transit agency which provides service to the bus stop. Install signs noting the bus stop closure and location of the temporary bus stop prior to taking bus stops out of service. (T&ES)

88. Obtain additional City approvals for any structural elements that extend into the public right-of-way, including but not limited to footings, foundations, and tiebacks, from the Director of T&ES as a part of the Sheeting and Shoring permit. (T&ES) **

89. Identify a Certified Land Disturber (CLD) in a letter to the Division Chief of Permits & Inspections prior to any land disturbing activities and include the name on the Phase I Erosion and Sediment Control sheets prior to Final Site Plan release. If the CLD changes during the project, then note that change in a letter to the Division Chief. (T&ES) *

90. Conduct an in-person or virtual meeting to review the location of construction worker parking, plan for temporary pedestrian and vehicular circulation, and hours and overall schedule for construction prior to commencing demolition, clearing, and grading of the site. Notice all adjoining property owners, civic associations, and the Departments of P&Z and T&ES at least **14 calendar days before the meeting**. Hold the meeting before any permits are issued. (P&Z) (T&ES) **

91. Hold an in-person or virtual pre-installation/construction meeting to review the scope of landscaping installation procedures and processes with the P&Z project planner prior to starting work. (P&Z)

92. Identify a community liaison throughout the construction. Provide their name and telephone number, including an emergency contact number, to residents, property managers, and business owners whose property abuts the site, to the satisfaction of the Directors of P&Z and T&ES. Install a temporary informational sign prior to Final Site Plan release with the community liaison's name and contact information. Display the sign until construction finishes. (P&Z) (T&ES) *, ***

93. Temporary construction and/or on-site sales trailer(s) are permitted and subject to the approval of the Directors of P&Z and Code Administration. Remove the trailer(s) prior to the issuance of the final Certificate of Occupancy. (P&Z) (Code) ***

94. Submit a stamped electronic copy of a wall check survey completed by a licensed, certified public land surveyor or professional engineer when below-grade construction reaches the proposed finished grade. Ensure the wall check shows: (P&Z) **

    a. Key dimensions of the building as shown on the approved Final Site Plan,
    b. Key dimensions from future face of finished wall above to the property line and any adjacent structures on the property,

95. Extent of any below-grade structures,

    c. Foundation wall in place, and
    d. Future face of finished wall above.

96. Submit a stamped electronic copy of an as-built development site plan survey, per the *As-Built Development Site Plan Survey Checklist* prior to applying for a Certificate of Occupancy permit. A registered architect, engineer, or surveyor shall prepare the as-built plan. Include a note stating that the height was calculated based on all applicable provisions of the Zoning Ordinance. (P&Z) (T&ES) ***

97. If outstanding performance, completion, or other bonds for the benefit of the City are in effect for the property at such time as it may be conveyed or sold to a party other than the applicant, a substitute bond and associated documents must be provided by that party or, in the alternative, an assignment or other documentation from the bonding company indicating that the existing bond remains in effect despite the change in ownership may be provided. The bond(s) shall be maintained until such time that all requirements are met, and the bond(s) released by the City. (T&ES) ****

98. To the extent the City establishes a quarterly community meeting for the purpose of providing updates on the status of construction projects in the West End, the applicant shall participate in such meetings or provide written updates to City staff while the project is under substantial construction. Such updates may be provided in coordination with meetings hosted by the City. (P&Z)

VI. PUBLIC ART

99. Per the City's Public Art Policy, adopted December 13, 2014, and conditions 121, 122, and 123 in CDD# 2020-00007, work with City Staff to incorporate public art on-site, or provide an equivalent monetary contribution to be used toward public art within the CDD planning area, to the satisfaction of the Directors of RP&CA and P&Z. The in-lieu contribution shall be $.30 per gross square foot, with a maximum contribution of $75,000 per building with the exception of townhomes or townhome style multifamily on Blocks L & M which will be per block. In the event public art is provided on-site, the public art shall be of an equivalent value. (RP&CA) (P&Z)

VII. USES AND SIGNS

G. SIGNAGE

100. All signage will comply with The West End (Landmark) Comprehensive Sign Plan (SUP# 2023-00011).

VIII. DISCLOSURE REQUIREMENTS

101. Submit all condominium association covenants for review and approval by the Director of P&Z and the City Attorney prior to applying for the first Certificate of Occupancy. Include the conditions listed below in a dedicated section of the association covenants. The language shall establish and state that these conditions cannot be changed except by an amendment to this DSUP approved by the City Council. (P&Z) (T&ES) (City Attorney) ***

    a. All landscaping and open space areas within the development shall be maintained by the Condominium/Homeowner's Association.
    b. Obtain approval for any significant, structural exterior building improvements or changes from the City, as determined by the Director of

P&Z. Minor exterior changes (including updating windows, shutters, or similar) can be reviewed administratively.

c. The HOA covenants shall outline the responsibilities of the homeowners and the Homeowners Association (HOA), and/or master association, with respect to maintenance requirements of any stormwater facilities installed on the site. In the event there are any responsibilities of the homeowners with respect to facilities located on such homeowner's lot (for example, mowing or removal of debris), such responsibilities shall be disclosed to a prospective buyer in the contract for the initial sale of the home.

d. All private street with public access easement shall be maintained by the Condominium/Homeowner's Association including maintenance for the sanitary and storm sewers located within the site.

102. Signs must be posted stating that walkways have public access easements and will remain open to the public. (P&Z) (RP&CA) *, ***

103. Disclose to potential buyers the items listed below to the satisfaction of the Director of P&Z, T&ES, and the City Attorney: (P&Z) (T&ES) (City Attorney)

a. All private streets with public access easement shall be maintained by the Condominium/Homeowner's Association including maintenance for the sanitary and storm sewers located within the site.

b. Duke Street is a planned location for the future Transit Corridor B, which will travel in an approximate east/west orientation and allow a future connection to the North-South and Van Dorn/Beauregard corridors. A construction timeline for the Transitway is under review.

c. This property is along the planned route for the future West End Transitway, which will run along Beauregard Street and Van Dorn Street in an approximately east/west direction and is directly adjacent to the new Transit Center.

d. Implementing each Transitway corridor may require widening City right-of-way to accommodate related infrastructure.

e. Part of that infrastructure includes new transit stops and stations, one of which will directly abut the subject site on *future* Hecht Avenue. Therefore, it is not unreasonable to assume that such a facility is anticipated to generate associated noise, foot and vehicle traffic.

f. Planning and approvals required for development parcels will require (as applicable) compliance with Small Area Plans, including but not limited to dedication of right-of-way for roadway expansion to accommodate Transitway infrastructure, construct streetscape enhancements, and provide for any other frontage improvements.

g. That residents of the future development are ineligible for the City of Alexandria's Residential Parking Permits. (T&ES)

IX. SUBDIVISIONS

104. The final subdivision plat shall comply with Zoning Ordinance § 11-1709 requirements. (P&Z) *

105. Depict the location of all easements and reservations, including those required in this approval, on the Final Subdivision Plat. Do not construct any permanent building or retaining wall over any existing private and/or public utility easements. (T&ES) *

106. Provide a georeferenced CAD file in **AutoCAD 2018.dwg** or greater format that adheres to the National CAD Standards with the Signature Set submission. The file shall include the subdivision plat including existing and new parcels and neighboring parcels. Identify legal lot numbers for each lot and document the square footage. Show adjacent lots and their Tax Map numbers on the subdivision plat. (GIS) *

CITY DEPARTMENT CODE COMMENTS

Legend: C - Code Requirement R – Recommendation F - Finding

A. Planning and Zoning (P&Z)

F-1 Demonstrate continued compliance with open space, floor area ratio, and setback requirements if a property owner requests future approval to construct a deck on their property.

F-2 Develop a palette of site furnishings for review and approval by Staff prior to Final Site Plan release to coordinate with the transit center. *

a. Provide location, specifications, and details for site furnishings that depict the installation, scale, massing, and character of site furnishings to the satisfaction of the Directors of P&Z and T&ES.
b. Site furnishings may include benches, bicycle racks, trash bins, recycling receptacles, and other associated features. City standard materials are mandatory in all public right-of-way.

F-3 Provide material, finishes, and architectural details for all retaining, seat, decorative, and screen walls prior to Final Site Plan release. Indicate methods for grade transitions, handrails, directional changes, and above and below-grade conditions. Coordinate with adjacent site and building conditions. The design and construction of all walls shall be to the satisfaction of the Directors of P&Z, T&ES, and Code. *

C-1 Submit as-built documents for all landscape and irrigation installations with the as-built plan and request for Performance Bond release. Refer to City of Alexandria Landscape Guidelines. ****

C-2 Identify all trees to remove and protect/preserve in the tree conservation and protection plans prior to Final Site Plan release. Detail the construction methods to reduce disturbance within driplines. Schedule an on-site inspection of existing conditions with the City

Arborist and Natural Resources Division Staff prior to preparing the Tree Conservation and Protection Plan. *

c-3 The landscape elements of this development are subject to Performance and Maintenance bonds, based on criteria established by the City and available through T&ES. Performance and Maintenance Bond release are subject to inspections by City Staff per City Code requirements. A final inspection for landscaping must occur three years after completion. ****

B. Code Administration (Building Code)

F - 1. The review by Code Administration is a preliminary review only. Once the applicant has filed for a building permit, code requirements will be based upon the building permit plans. A preconstruction conference is recommended for large projects. Contact the Code Administration Office, Plan Review Supervisor: 703.746.4200 with any questions.

C - 1 New construction or alterations to existing structures must comply with the current Uniform Statewide Building Code in effect when applying for building permit(s).

C-2 Facilities shall be accessible for persons with disabilities per the current Virginia Uniform Statewide Building Code in effect when applying for building permit(s).

C-3 Submit a soils report with the building permit application for all new and existing building structures. **

C-4 Submit an abatement plan from a licensed Pest Control Company to prevent rodents from spreading from the construction site to the surrounding community and sewers to the Department of Code Administration prior to receiving a demolition or land disturbance permit. Code Administration Staff will conduct a pre-demolition site survey to verify that the abatement plan is consistent with the field installation. **

C-5 Submit a wall location plat prepared by a land surveyor to the Department of Code Administration prior to any building framing inspection. **

C. Federal Environmental Reviews:

F - 1. Any project that is defined as a federal undertaking, in accordance with the National Historic Preservation Act of 1966 requires a § 106 review and/or other National Environmental Policy Act (NEPA) review. Projects that require federal review, approval or permitting, or projects that include federal funding are generally considered a federal undertaking. Consult with the appropriate federal or state agency to determine the requirements and process relevant to the project and coordinate with the appropriate City Staff and, if necessary, the Virginia Department of Historic Resources.

a. Information on the § 106 process is at www.achp.gov or www.dhr.virginia.gov/environmental-review/
b. Information on the NEPA process is at www.epa.gov

c. Information on the U.S. Department of Housing and Urban Development environmental review process is at https://www.hudexchange.info/programs/environmental-review/

D. Archaeology

C - 1 All archaeological preservation measures shall comply with Zoning Ordinance § 11-411.

E. Transportation & Environmental Services (T&ES)

F-1 Prepare the Final Site Plan per Memo to Industry 02-09, Design Guidelines for Site Plan Preparation, which is available at: http://alexandriava.gov/uploadedFiles/tes/info/Memo%20to%20Industry%20No.%2002-09%20December%203,%202009.pdf *

F-2 Show and label the sanitary and storm sewer and water line in plan and profile in the first Final Site Plan, cross referencing sheets if plan and profile cannot be on the same sheet. Provide existing and proposed grade elevations plus the rim and invert elevations of all the existing and proposed sanitary and storm sewer at manholes, and water line piping at gate wells on the respective profiles. Use distinctive stationing for various sanitary and storm sewers (if applicable or required by the plan), and water line in plan and use the corresponding stationing in respective profiles. *

F-3 Provide a dimension plan with all proposed features, the final property lines, and associated property line annotation. When possible, show all annotations pertaining to the final property line configuration on the site layout sheet (also referred to as the site plan sheet). *

F-4 Construct all storm sewers to the City of Alexandria standards and specifications. The minimum diameter for storm sewers is 18-inches in the public right-of-way and the minimum size storm sewer catch basin lead is 15-inches Acceptable pipe materials are Reinforced Concrete Pipe (RCP) ASTM C-76 Class IV. Alternatively, the Director of T&ES may approve AWWA C-151 (ANSI A21.51) Class 52. For roof drainage system, Polyvinyl Chloride (PVC) ASTM D-3034-77 SDR 26 and ASTM 1785-76 Schedule 40 pipes are acceptable. The minimum and maximum velocities are 2.0 fps and 15 fps, respectively. The storm sewers immediately upstream of the first manhole in the public right-of-way shall be owned and maintained privately (i.e., all storm drains not shown within an easement or in a public right-of-way shall be owned and maintained privately). *, ****

F-5 Construct all sanitary sewers to the City of Alexandria standards and specifications. The minimum diameter of sanitary sewers is 10-inches in the public right-of-way and sanitary lateral 6-inches for all commercial and institutional developments; however, a 4-inch sanitary lateral is acceptable for single unit residences. Acceptable pipe materials are Polyvinyl Chloride (PVC) ASTM D-3034-77 SDR 26, ASTM 1785-76 Schedule 40, Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 or reinforced concrete pipe ASTM C-76 Class IV (For 12-inches or larger diameters); Class III may be acceptable on private properties. Minimum and maximum velocities are 2.5 fps and 10 fps, respectively. Laterals shall be connected to the sanitary sewer through a manufactured "Y"

or "T" or approved sewer saddle. Where the laterals are being connected to existing Terracotta pipes, replace the section of main and provide manufactured "Y" or "T," or else install a manhole. *, ****

F-6 Provide a horizontal separation of 10-feet (edge to edge) between a storm or sanitary sewer and a water line. However, if this horizontal separation cannot be achieved, then install the sewer and water main in separate trenches and set the bottom of the water main at least 18-inches above the top of the sewer. If both the horizontal and vertical separations cannot be achieved, then use Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 for the sewer pipe material and pressure test it in place without leakage prior to install. *, ****

F-7 Provide at least 18-inches of vertical separation for sanitary sewers and 12-inches for storm sewers when a water main over crosses or under crosses a sanitary/storm sewer. However, if this cannot be achieved, then construct both the water main and the sanitary/storm sewer using Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 with joints that are equivalent to water main standards for 10-feet on each side of the point of crossing. Center a section of water main pipe at the point of crossing and pressure test the pipes in place without leakage prior to installation. Provide adequate structural support for sewers crossing over the water main (i.e., concrete pier support and/or concrete encasement) to prevent damage to the water main. Encase in concrete sanitary sewers under creeks and storm sewer pipe crossings with less than 6-inch clearance. *, ****

F-8 No water main pipe shall pass through or touch any part of sanitary/storm sewer manhole. Place manholes at least 10-feet horizontally from the water main whenever possible. When local conditions prohibit this horizontal separation, ensure that the manhole is watertight and tested in place. *, ****

F-9 Maintain at least 12-inches of separation or clearance from water main, sanitary, or storm sewers when crossing underground telephone, cable TV, gas, and electrical duct banks. If this separation cannot be achieved, then use Ductile Iron Pipe (DIP) AWWA C-151 (ANSI A21.51) Class 52 material for the sewer pipe for 10-feet on each side of the point of crossing and pressure test it in place without leakage prior to installation. Provide adequate structural support for sanitary/storm sewers and water main crossing over the utilities (i.e., pier support and/or concrete encasement) to prevent damage to the utilities. *, ****

F-10 Design any rip rap per the requirements of Virginia Erosion and Sediment Control Handbook, Latest Edition. *, ****

F-11 Provide the dimensions of parking spaces, aisle widths, etc. within the parking garage on the Final Site Plan. Exclude column widths from the dimensions. *, ****

F-12 Show the drainage divide areas on the grading plan or on a sheet that includes topography and structures where each sub-area drains. *

F-13 Provide proposed elevations (contours and spot shots) in sufficient details on grading plan to clearly show the drainage patterns. *

F-14 Show all existing and proposed public and private utilities and easements on the Final Site Plan with a narrative. *

F-15 Provide a Maintenance of Traffic Plan with the Construction Management Plan prior to Final Site Plan release that replicates the existing vehicular, pedestrian, and bicycle routes as closely as practical. Maintain pedestrian and bike access adjacent to the site per Memo to Industry 04-18. *

F-16 Include these notes on all Maintenance of Traffic Plan Sheets (MOT): *

a. FOR INFORMATION ONLY.
b. No sidewalks can remain closed for the duration of the project. Temporary sidewalk closures are subject to separate approval from T&ES at the time of permit application.
c. The contractor shall apply for all necessary permits for use of the City right-of-way and shall submit MOT Plans with the T&ES Application for final approval at that time.

F-17 Add complete streets tabulation to the cover sheet with the Final Site Plan submission. *

F-18 Parking for the residential and commercial uses shall match the Zoning Ordinance requirements in effect at approval by the City Council and/or Planning Commission. *

F-19 Hold a meeting with Staff prior to the release of the Final Site Plan to discuss timing of construction for the transit center and coordination for site access. (P&Z) (T&ES) *

C - 1 Complete a drainage study and adequate outfall analysis for the total drainage area to the receiving sewer that serves the site, per Article XI of the Zoning Ordinance. If the existing storm system is inadequate, design and build on-site or off-site improvements to discharge to an adequate outfall, even if post development stormwater flow from the site is less than pre-development flow. Demonstrate that a non-erosive stormwater outfall is present to the satisfaction of the Director of T&ES. *

C - 2 Comply with the stormwater quality requirements and provide channel and flood protection per Article XIII of the Zoning Ordinance. Meet the peak flow requirements of the Zoning Ordinance if the development proposes combined uncontrolled and controlled stormwater outfall. If the project site is within the Braddock West watershed or a known flooding area, provide an additional 10 percent storage of the pre-development flows in the watershed to meet detention requirements. *

C - 3 Design stormwater facilities that require analysis of pressure hydraulic systems, including but not limited to the design of flow control structures and stormwater flow conveyance systems according to Article XIII of the Zoning Ordinance, § 13-114(F), as signed and sealed by a professional engineer registered in Virginia. Include the adequate outfall, inlet, and hydraulic grade line analyses to the satisfaction of the Director of T&ES. Provide the references and/or sources used to complete these analyses. * The proposed development shall conform to all requirements and restrictions set forth in § 6-300 (Flood plain District) of Article VI (Special and Overlay Zones) of the Zoning Ordinance. *

C - 4 Provide additional improvements to adjust lighting levels if the site does not comply with § 13-1-3 of the City Code, to the satisfaction of the Director of T&ES to comply with the Code. *

C - 5 The location of customer utility services and installing transmission, distribution, and main lines in the public rights-of-way by any public service company shall be governed by franchise agreement with the City per Title 5, Ch. 3, § 5-3-2 and § 5-3-3, respectively. The transformers, switch gears, and boxes shall be outside of the public right-of-way.

a. All new customer utility services, extensions of existing customer utility services, and existing overhead customer utility services supplied by any existing overhead facilities must be installed underground below the surface of the ground unless exempted by City Code § 5-3-2, to the satisfaction of the Director of T&ES. *, ****

b. Install all new installation or relocation of poles, towers, wires, lines, cables, conduits, pipes, mains, and appurtenances used or intended to transmit or distribute any service (electric current, telephone, telegraph, cable television, traffic control, fire alarm, police communication, gas, water, steam, or petroleum) whether or not on streets, alleys, or other public places of the City must be installed underground or below the surface of bridges and elevated highways unless exempted by City Code § 5-3-3, to the satisfaction of the Director of T&ES. *, ****

C - 6 In case connections from downspouts to the storm sewer are ever introduced in the future, discharge flow from downspouts, foundation drains, and sump pumps to the storm sewer per the requirements of Memorandum to Industry 05-14. Pipe discharges from downspouts and sump pump to the storm sewer outfall, where applicable after treating for water quality per Article XIII of the Zoning Ordinance. *, ****

C - 7 Place refuse/recycling receptables in the City right-of-way for condominium townhomes for solid waste collection services provided by the City per Title 5: T&ES, § 5-1-41 of the City Charter and Code. *

C - 8 Provide storage space for both trash and recycling materials containers as outlined in the City's "Solid Waste and Recyclable Materials Storage Space Guidelines" to the satisfaction of the Director of Transportation & Environmental Services. Show the turning movements of the collection trucks, minimizing the need to reverse to perform trash or recycling collection. The City's storage space guidelines are at: https://www.alexandriava.gov/ResourceRecovery or by contacting the City's Resource Recovery Division at 703.746.4410 or commercialrecycling@alexandriava.gov. *

C - 9 Include a note on the Final Site Plan that mandates delivering all solid waste, as defined by the City Charter and Code of the City of Alexandria, to the Covanta Energy Waste Facility located at 5301 Eisenhower Avenue. Stipulate in any future lease or property sales agreement that all tenants and/or property owners shall also comply with this requirement. *

C - 10 Submit a Recycling Implementation Plan to the Solid Waste Division, as outlined in Article H of Title 5 prior to Final Site Plan release. The form is available at: https://www.alex

andriava.gov/resourcerecovery or contact the Resource Recovery Division at 703.746.4410 or commercialrecycling@alexandriava.gov. *

C - 11 Satisfy the City's Minimum Standards for Private Streets and Alleys prior to Final Site Plan Release. *

C - 12 Post the bond for the public improvements before Final Site Plan release. *

C - 13 Provide plans and profiles of utilities and roads in public easements and/or public right-of-way for review and approval prior to Final Site Plan release. *

C - 14 Provide a phased erosion and sediment control plan consistent with the grading and construction plan prior to Final Site Plan release. *

C - 15 Provide as-built sewer data with the final as-built process per the Memorandum to Industry, dated July 20, 2005, prior to release of the Performance Bond. Prepare initial site survey work and plans using Virginia State Plane (North Zone) coordinates based on NAD 83 and NAVD 88. Reference the control points/benchmarks used to establish these coordinates. ****

C - 16 Design the thickness of sub-base, base, and wearing course using "California Method" as set forth on page 3-76 of the second edition of a book entitled, "Data Book for Civil Engineers, Volume One, Design" written by Elwyn E. Seelye. Determine the values of California Bearing Ratios used in the design by field and/or laboratory tests. Using an alternate pavement section for Emergency Vehicle Easements to support H-20 loading designed using California Bearing Ratio determined through geotechnical investigation and using VDOT method (Vaswani Method) and standard material specifications is acceptable to the satisfaction of the Director of T&ES. *, ****

C - 17 Provide all pedestrian, traffic, and wayfinding signage per the Manual of Uniform Traffic Control Devices, latest edition to the satisfaction of the Director of T&ES. *

C - 18 No overhangs (decks, bays, columns, post, or other obstructions) shall protrude into public rights-of-ways, public easements, and the pedestrian or vehicular travel ways unless otherwise permitted by the City Code or additional City approvals are obtained. *

C - 19 Design all driveway entrances, curbing, etc. in or abutting public right-of-way per City standards. *

C - 20 All sanitary laterals and/or sewers not shown in the easements shall be owned and maintained privately.

C - 21 Comply with the City's Noise Control Code, Title 11, Ch. 5, which sets the maximum permissible noise level as measured at the property line.

C - 22 Comply with the City's Noise Control Code Title 11, Ch. 5, § 11-5-4(b)(15), which permits construction activities to occur during these hours:

i. Monday Through Friday from 7 AM to 6 PM
ii. Saturdays from 9 AM to 6 PM
iii. No construction activities allowed on Sundays and holidays

a. § 11-5-4(b)(19) further restricts pile driving to these hours:
iv. Monday through Friday from 9 AM to 6 PM
v. Saturdays from 10 AM to 4 PM
vi. No pile driving is allowed Sundays and holidays

b. § 11-5-109 restricts excavating work in the right-of-way to:
vii. Monday through Saturday 7 AM to 5 PM
viii. No excavation in the right-of-way allowed on Sundays, New Year's Day, Independence Day, Thanksgiving, and Christmas.

C - 23 Comply with the stormwater pollutant load reduction, treatment of the Alexandria Water Quality Volume Default, and stormwater quantity management per Zoning Ordinance Article XIII. *

C - 24 Comply with the City's Erosion and Sediment Control Code, Title 5, Ch. 4. *

C - 25 Obtain all necessary permits from Virginia Department of Environmental Quality, Environmental Protection Agency, Army Corps of Engineers, and/or Virginia Marine Resources for all project construction and mitigation work prior to Final Site Plan release. This condition includes the state requirement for a state General VPDES Permit for Discharges of Stormwater from Construction Activities (general permit) and associated Stormwater Pollution Prevention Plan for land disturbing activities equal to or greater than one acre. Refer to the Memo to Industry 08-14: http://alexandriava.gov/tes/info/default.aspx?id=3522. *

C - 26 Provide a Stormwater Pollution Prevention Plan (SWPPP) Book with the Final Site Plan. The project's stormwater management (SWM) plan and the erosion and sediment control (E&SC) plan must be approved prior to the SWPPP being deemed approved and processed to receive coverage under the VPDES Construction General Permit. Upon approval, provide an electronic copy of the SWPPP Book with the Signature Set submission and a copy of the coverage letter must be added to the plan sheet containing the stormwater management calculations. Include an electronic copy of the SWPPP Binder Book in the released site plans and include a hardcopy of the SWPPP Binder Book with the on-site construction drawings. Separate parcel owners must seek separate VPDES Construction General Permit Coverage unless a blanket entity incorporated in Virginia has control of the entire project. *

F. Information Technology

F - 1. Provide the locations of all common Fire Closets and Utility Closets in the Final Site Plan. These closets will be assigned individual addresses to comply with Fire Department requirements. *

G. Fire Department

C - 1 Show the location of Fire Department Connections prior to Final Site Plan release. *

H. Police Department

R-1 Use addresses numbers with contrasting colors to the background, at least three inches high, reflective, and visible from the street, and placed on the front and back of each home. Avoid using brass or gold numbers. This design aids emergency responders.

R-2 Equip all ground floor windows with a device or hardware that enables securing them in a partially open position. This design prevents breaking and entering when the windows are open for air.

Asterisks denote:

* Condition must be fulfilled prior to release of the Final Site Plan
** Condition must be fulfilled prior to release of the building permit
*** Condition must be fulfilled prior to issuance of the Certificate of Occupancy
**** Condition must be fulfilled prior to release of the bond

APPLICATION

DEVELOPMENT SPECIAL USE PERMIT with SITE PLAN

DSUP # _____ Project Name: Block L & M

PROPERTY LOCATION: 5755 and 5725 Duke Street

TAX MAP REFERENCE: 047.02-03-19 and -21 ZONE: CDD #29

APPLICANT:

Name: Van Metre Homes at Westend, L.L.C.

Address: 9900 Main Street, Suite 500 Fairfax, VA , 22031

PROPERTY OWNER:

Name: Landmark Land Holdings LLC

Address: 12435 Park Potomac Ave. Suite 200 Potomac, MD 20854

SUMMARY OF PROPOSAL Residential development of 110 townhouses consistent with CDD #29

MODIFICATIONS REQUESTED _____

SUP's REQUESTED Allow more than 8 units in a row of townhouses

☑ THE UNDERSIGNED hereby applies for Development Site Plan with Special Use Permit approval in accordance with the provisions of Section 11-400 of the Zoning Ordinance of the City of Alexandria, Virginia.

☑ THE UNDERSIGNED, having obtained permission from the property owner, hereby grants permission to the City of Alexandria to post placard notice on the property for which this application is requested, pursuant to Article XI, Section 11-301 (B) of the 1992 Zoning Ordinance of the City of Alexandria, Virginia.

☑ THE UNDERSIGNED also attests that all of the information herein provided and specifically including all surveys, drawings, etc., required of the applicant are true, correct and accurate to t[illegible] and belief.

Kenneth W. Wire, Wire Gill LLP
Print Name of Applicant or Agent

Signature

700 N. Fairfax Street, Suite 600
Mailing/Street Address

202-431-3624
Telephone # Fax #

Alexandria, VA 22314
City and State Zip Code

kwire@wiregill.com
Email address

March 21, 2024
Date

DO NOT WRITE IN THIS SPACE - OFFICE USE ONLY

Application Received: _____ Received Plans for Completeness: _____

Fee Paid and Date: _____ Received Plans for Preliminary: _____

ACTION - PLANNING COMMISSION: _____

ACTION - CITY COUNCIL: _____

Development SUP # _____

ALL APPLICANTS MUST COMPLETE THIS FORM.

Supplemental forms are required for child care facilities, restaurants, automobile oriented uses and freestanding signs requiring special use permit approval.

1. The applicant is: (check one)

○ The Owner ◉ Contract Purchaser ○ Lessee or ○ Other: _____ of the subject property.

State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership in which case identify each owner of more than three percent.

Applicant: Van Metre Homes at Westend, L.L.C.
Address: 9900 Main Street, Suite 500, Fairfax, VA 22031

See Disclosure Attachment.

If property owner or applicant is being represented by an authorized agent, such as an attorney, realtor, or other person for which there is some form of compensation, does this agent or the business in which the agent is employed have a business license to operate in the City of Alexandria, Virginia?

X ○ Yes. Provide proof of current City business license.

○ No. The agent shall obtain a business license prior to filing application, if required by the City Code.

OWNERSHIP AND DISCLOSURE STATEMENT

Use additional sheets if necessary

1. Applicant. State the name, address and percent of ownership of any person or entity owning an interest in the applicant, unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1. See Attached.		100%
2.		
3.		

2. Property. State the name, address and percent of ownership of any person or entity owning an interest in the property located at 5755 & 5725 Duke St. (address), unless the entity is a corporation or partnership, in which case identify each owner of more than three percent. The term ownership interest shall include any legal or equitable interest held at the time of the application in the real property which is the subject of the application.

Name	Address	Percent of Ownership
1. See Attached.		100%
2.		
3.		

3. BusinessorFinancialRelationships. Each person or entity listed above (1 and 2), with an ownership interest in the applicant or in the subject property is required to disclose any business or financial relationship, as defined by Section 11-350 of the Zoning Ordinance, existing at the time of this application, or within the12-month period prior to the submission of this application with any member of the Alexandria City Council, Planning Commission, Board of Zoning Appeals or either Boards of Architectural Review.

Name of person or entity	Relationship as defined by Section 11-350 of the Zoning Ordinance	Member of the Approving Body (i.e. City Council, Planning Commission, etc.)
1. See Attached.	None	None
2.		
3.		

NOTE: Business or financial relationships of the type described in Sec. 11-350 that arise after the filing of this application and before each public hearing must be disclosed prior to the public hearings.

As the applicant or the applicant's authorized agent, I hereby attest to the best of my ability that the information provided above is true and correct

March 21, 2024 Kenneth W. Wire, Wire Gill LLP

Date Printed Name Signature

West End Blocks L & M
Development Special Use Permit
Disclosure Attachment

Owner:

Landmark Land Holdings LLC
12435 Park Potomac Ave.
Suite 200
Potomac, MD 20854

The following individuals own more than a 3% interest in the Owner entity:

Bryan F. Foulger
Clayton F. Foulger
Brent K. Pratt

Entities with Ownership interest in Owner:

1) FP Landmark Land, LLC
   12435 Park Potomac Ave.
   Suite 200
   Potomac, MD 20854

2) Landmark Mall LLC
   Landmark Mall LLC is an affiliate of and controlled and managed by Howard Hughes Corporation, a publicly traded corporation listed on the New York Stock Exchange.

3) Seritage SRC Finance LLC
   Seritage SRC Finance LLC is an affiliate of and controlled and managed by Seritage Growth Properties, L. P. which is a publicly traded real estate investment trust company traded on the New York Stock Exchange.

Applicant:

Van Metre Homes At Westend, L.L.C.
9900 Main Street, Suite 500, Fairfax, VA 22031

Class A Members Owning Greater than 3 %:

Beau Van Metre Family Trust 2012
Trustee: Allan Weiner
For the benefit of members of the family of Albert G. Van Metre, Jr.

AVMP 2017 Family Trust
Trustees: Samuel Cushing Paley and
Albert Gleaves Van Metre Paley
For the benefit of members of the family of Alison Van Metre Paley

Susan Williams Rabil 2012 Irrevocable Trust
Trustee: Thomas A. MacDonnell, Jr.
For the benefit of members of the family of Susan Williams Rabil

2. Narrative description. The applicant shall describe below the nature of the request in detail so that the Planning Commission and City Council can understand the nature of the operation and the use, including such items as the nature of the activity, the number and type of patrons, the number of employees, the hours, how parking is to be provided for employees and patrons, and whether the use will generate any noise. If not appropriate to the request, delete pages 6-9. (Attach additional sheets if necessary.)

The Applicant proposes 110 townhouses on Blocks L & M as shown on CDD #29 Concept Plan. Townhouse use on Blocks L & M is permitted pursuant to the CDD (CDD #2020-00007). The proposed development is consistent with the frontage, height, parking and open space requirements of the CDD, among other requirements. Due to site constraints, the Applicant requests an SUP to allow for greater than 8 townhouses in a row in one location. The proposed development includes sidewalks, open space, etc. that connect to other Blocks in the CDD for a seamless overall development. The proposed development meets the City's Green Building policy and other City policy goals detailed in conditions of CDD #29. The proposed development will provide for-sale housing adjacent to a future BRT station in line with City-wide and housing development goals.

3. How many patrons, clients, pupils and other such users do you expect? Specify time period (i.e., day, hour, or shift).
Number of residents typical of an 110 town house development.

4. How many employees, staff and other personnel do you expect? Specify time period (i.e. day, hour, or shift).
No employees with for-sale town houses.

5. Describe the proposed hours and days of operation of the proposed use:

Day	Hours	Day	Hours
7	24		

6. Describe any potential noise emanating from the proposed use:

A. Describe the noise levels anticipated from all mechanical equipment and patrons.
Noise typical of an 110 town house development.

B. How will the noise from patrons be controlled?
The City noise ordinance and future BID.

7. Describe any potential odors emanating from the proposed use and plans to control them:
None

8. Provide information regarding trash and litter generated by the use:

A. What type of trash and garbage will be generated by the use?
Residential trash

B. How much trash and garbage will be generated by the use?
Typical of an 110 town house development.

C. How often will trash be collected?
1-2 times per week

D. How will you prevent littering on the property, streets and nearby properties?
Development-wide trash facilities in public ROWs, future BID and potential/future HOA.

9. Will any hazardous materials, as defined by the state or federal government, be handled, stored, or generated on the property?

☐ Yes. ☑ No.

If yes, provide the name, monthly quantity, and specific disposal method below:

10. Will any organic compounds (for example: paint, ink, lacquer thinner, or cleaning or degreasing solvent) be handled, stored, or generated on the property?

☑ Yes. ☐ No.

If yes, provide the name, monthly quantity, and specific disposal method below:
Properly stored cleaning and building maintenance products for individual resident use in their respective townhomes

11. What methods are proposed to ensure the safety of residents, employees and patrons?

Building and site lighting, secured resident and garage access

ALCOHOL SALES

12. Will the proposed use include the sale of beer, wine or mixed drinks?

☐ Yes. ☑ No.

If yes, describe alcohol sales below, including if the ABC license will include on-premises and/or off-premises sales. Existing uses must describe their existing alcohol sales and/or service and identify any proposed changes in that aspect of the operation.

PARKING AND ACCESS REQUIREMENTS

13. Provide information regarding the availability of off-street parking:

A. How many parking spaces are required for the proposed use pursuant to section 8-200 (A) of the zoning ordinance?

See DSUP Plan Set: 218 total spaces, 2 spaces per unit. L: 86 spaces and M: 132 spaces

B. How many parking spaces of each type are provided for the proposed use:

L: 58; M: 88 Standard spaces

L: 30; M: 44 Compact spaces

_____ Handicapped accessible spaces

_____ Other

C. Where is required parking located? (check one) [✔] on-site [ ] off-site

If the required parking will be located off-site, where will it be located?

_____

Pursuant to section 8-200 (C) of the zoning ordinance, commercial and industrial uses may provide off-site parking within 500 feet of the proposed use, provided that the off-site parking is located on land zoned for commercial or industrial uses. All other uses must provide parking on-site, except that off-street parking may be provided within 300 feet of the use with a special use permit.

D. If a reduction in the required parking is requested, pursuant to section 8-100 (A) (4) or (5) of the zoning ordinance, complete the Parking Reduction Supplemental Application.

14. Provide information regarding loading and unloading facilities for the use:

A. How many loading spaces are required for the use, per section 8-200 (B) of the zoning ordinance? 0

B. How many loading spaces are available for the use? 0

C. Where are off-street loading facilities located? N/A

D. During what hours of the day do you expect loading/unloading operations to occur?
N/A

E. How frequently are loading/unloading operations expected to occur, per day or per week, as appropriate?
N/A

15. Is street access to the subject property adequate or are any street improvements, such as a new turning lane, necessary to minimize impacts on traffic flow?
Street access to the property is adequate and new consistent with the recently adopted CDD #29.

WEST END

BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: JUNE 07, 2024

PROJECT TEAM

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

APPLICANT
VAN METRE HOMES AT WESTEND, L.L.C.
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031
TEL. 703-348-5800
CONTACT: MATTHEW DAVIS

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

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

ARCHITECT
RUST ORLING ARCHITECTURE
1215 CAMERON STREET
ALEXANDRIA, VA 22314
TEL. 703-836-3205
CONTACT: SCOTT FLEMING,
AIA, LEED AP BD+C

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

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

AREA TABULATIONS:

BLOCK L (LOT 709) LOT AREA = 1.79 AC. 77,919 SF.
BLOCK M LOT AREA = 2.80 AC. 122,172 SF.
TOTAL DEVELOPMENT AREA = 4.59 AC. 200,091 SF.
TOTAL DISTURBED AREA = 4.86 AC. 211,845 SF.

ZONING TABULATIONS:

ON-SITE LOCATIONS / ADDRESSES: T.M. #047.02-03-11 / 5801 DUKE ST. ALEXANDRIA, VA 22304

TOTAL SITE/LOT AREAS:	211,845 SF OR 4.86 ACRES
EXISTING ZONE:	CDD #29 (COORDINATED DEVELOPMENT DISTRICT #29)
PROPOSED ZONE:	CDD #29 (COORDINATED DEVELOPMENT DISTRICT #29)
OPEN SPACE REQUIREMENTS:	50,023 SF (25% OF DEVELOPMENT AREA AT OR ABOVE-GRADE)
OPEN SPACE PROVIDED:	PUBLIC AT-GRADE OPEN SPACE: 50,023 S.F.* (25.00% OF DEVELOPMENT AREA) *INCLUDES 6,039 S.F OPEN SPACE TRANSFER FROM BLOCK R
EXISTING USE:	VACANT/DEMOLISHED
PROPOSED USE:	RESIDENTIAL TOWNHOMES
DENSITY:	
BLOCK L (LOT 709):	16'X40' TH: 30 UNITS 20'X40' TH: 14 UNITS
BLOCK L SUBTOTAL:	44 UNITS
BLOCK M:	16X40' TH: 44 UNITS 20'X40' TH: 22 UNITS
BLOCK M SUBTOTAL:	66 UNITS
TOTAL UNITS PROVIDED:	110 UNITS
AVERAGE LOT AREA:	927 SF*

*SEE SHEET 02 FOR LOT AREA TABULATION

PROPOSED DENSITY:	110 UNITS/ 4.59 AC = 23.97 D.U/AC.
GROSS FLOOR AREA:	
BLOCK L (LOT 709) SUBTOTAL:	119,932 GSF
BLOCK M SUBTOTAL:	180,526 GSF
TOTAL GSF PROVIDED:	300,458 GSF
NET FLOOR AREA:	
BLOCK L (LOT 709) SUBTOTAL:	119,932 SF
BLOCK M SUBTOTAL:	180,526 SF
TOTAL FLOOR ARE PROVIDED:	300,458 SF
F.A.R PERMITTED:	
BLOCK L:	3.33
BLOCK M:	1.64
F.A.R PROVIDED:	
BLOCK L:	1.54
BLOCK M:	1.48
AVERAGE FINISHED GRADE:	195.80
BUILDING HEIGHT PROPOSED:	50 FT.
FRONTAGE REQUIRED:	9 FT. FRONTAGE ZONE (VERVE ST) 6 FT. FRONTAGE ZONE (HECHT AVE.)
FRONTAGE PROVIDED:	9 FT. FRONTAGE ZONE (VERVE ST) 6 FT. FRONTAGE ZONE (HECHT AVE.)

PARKING TABULATIONS:

PARKING REQUIRED:

BLOCK L: 2.0 SP/UNIT(43) = 86 SPACES
BLOCK M: 2.0 SP/UNIT (66) = 132 SPACES
TOTAL PARKING REQUIRED: 218 SPACES

PARKING PROVIDED:

BLOCK L: 86 SPACES (GARAGE: 58 STANDARD, 30 COMPACT)
BLOCK M: 132 SPACES (GARAGE: 88 STANDARD, 44 COMPACT)
TOTAL PARKING PROVIDED: 218 SPACES*

*PARKING PROVIDED INCLUDED TANDEM SPACES

BICYCLE PARKING TABULATIONS

BICYCLE PARKING REQUIRED:

BLOCK L: 1 SP/50 UNITS(44) = 1 VISITOR SPACE
BLOCK M: 1 SP/50 UNITS(66) = 2 VISITOR SPACES

BICYCLE PARKING PROVIDED:

BLOCK L: 2 SPACES
BLOCK M: 2 SPACES

BUILDING CODE ANALYSIS (ALL UNITS)

CONSTRUCTION CODE:	2018 IRC WITH VAUSBC AMENDMENT
USE GROUP:	R-5
TYPE OF CONSTRUCTION:	VB
STORIES:	3 STORIES PLUS HABITABLE ATTIC
FLOOR AREA PER FLOOR:	SEE A-SHEETS
FIRE PROTECTION PLAN:	NFPA: NON-SPRINKLERED.

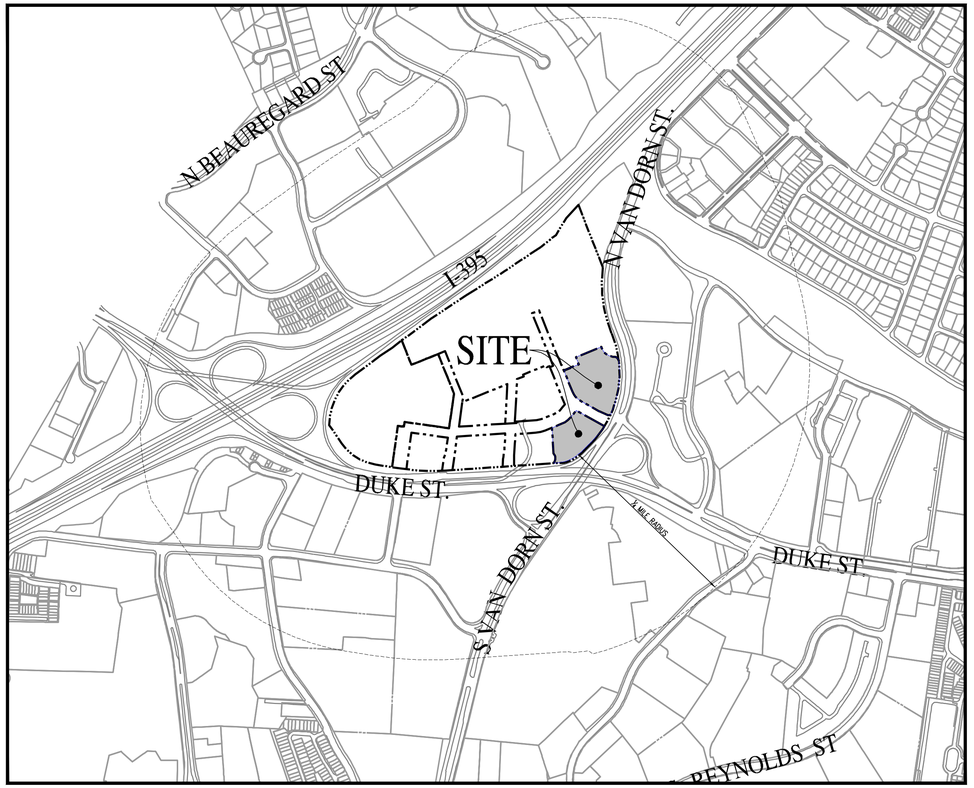
TRIP GENERATION:

BLOCK L EAST

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development Program										
Residential										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors)	221	43	DU	4	11	15	12	8	20	233
Total Residential w/o Reductions				4	11	15	12	8	20	233

BLOCK M

Land Use	ITE Code	Size		Weekday AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily Total
Proposed Development Program										
Residential										
Multifamily Housing (Mid-Rise) (Apartments, Townhomes, Condo; max 10 floors)	221	83	DU	8	21	29	23	14	37	451
Total Residential w/o Reductions				8	21	29	23	14	37	451



VICINITY MAP
SCALE: 1"=500'

PROJECT NARRATIVE:

EXISTING SITE CONDITIONS:
THE EXISTING INFRASTRUCTURE ON SITE HAS BEEN DEMOLISHED AS PART OF THE PROPOSED IMPROVEMENT ASSOCIATED WITH DSP 2021-00012. THE ULTIMATE CONDITION OF THE EXISTING SITE IS A VACANT LOT.

DESCRIPTION OF DEVELOPMENT:
BLOCK L IS BORDERED TO THE NORTH BY HECHT AVE. (PUBLIC), TO THE EAST BY VERVE ST. (PUBLIC), TO THE SOUTH BY N. VAN DORN ST (PUBLIC) & DUKE ST. (PUBLIC), AND TO THE WEST BY THE REMAINING PORTION OF BLOCK L THAT IS NOT A PART OF THIS APPLICATION. BLOCK M IS BORDERED TO THE NORTH BY BLOCK R (PARKS), TO THE EAST BY LANDMARK STREET (PRIVATE), TO THE SOUTH BY DUKE STREET (PUBLIC) AND TO THE WEST BY VERVE ST. (PUBLIC)..

THE PURPOSE OF THE REDEVELOPMENT FOR BLOCKS L & M IS TO ALLOW FOR A RESIDENTIAL DEVELOPMENT CONSISTING OF 110 TOTAL TOWNHOUSE UNITS WITH ASSOCIATED 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
- CPD #2022-00012
- SUB #2023-0003

LIST OF REQUESTED APPROVALS:

- SUP TO ALLOW FOR MORE THAN 8 UNITS IN A GROUP OF TOWNHOUSES

GREEN BUILDING NARRATIVE:

THE APPLICANT WILL COMPLY WITH THE CITY'S CURRENT GREEN BUILDING POLICY AS MODIFIED BY THE CDD#2020-00007 REQUIREMENTS. SEE GREEN BUILDING NARRATIVE PROVIDED ON SHEET A0.1.

Sheet List Table

Sheet Number	Sheet Title
01	COVER SHEET
02	GENERAL NOTES & DETAILS
02A	GENERAL NOTES & DETAILS
02B	GENERAL NOTES & DETAILS
03	CONTEXTUAL PLAN
04	OVERALL EXISTING CONDITIONS
04A	EXISTING CONDITIONS
05	SITE PLAN
06	UTILITY PLAN
06A	UTILITY PLAN NOTES & DETAILS
06B	UTILITY PLAN NOTES & DETAILS
06C	UTILITY PLAN NOTES & DETAILS
06D	UTILITY PLAN NOTES & DETAILS
07	GRADING PLAN
08	OPEN SPACE PLAN
08A	MASTER OPEN SPACE PLAN
09	AUTOTURN EXHIBIT
09A	AUTOTURN EXHIBIT
09B	AUTOTURN EXHIBIT
09C	AUTOTURN EXHIBIT
10	SANITARY OUTFALL ANALYSIS
11	SANITARY SEWER COMPUTATIONS
11A	SANITARY SEWER COMPUTATIONS
12	SWM PRE DEVELOPMENT PLAN
13	SWM PRE DEVELOPMENT COMPUTATIONS
14	SWM POST DEVELOPMENT PLAN
15	SWM POST DEVELOPMENT COMPUTATIONS
16	SWM POST DEVELOPMENT COMPUTATIONS
16A	SWM POST DEVELOPMENT COMPUTATIONS
17	BMP PLAN
18	BMP COMPS & NARRATIVE
19	WQVD DATA BLOCKS
20	OUTFALL ANALYSIS
21	OUTFALL ANALYSIS
22	OUTFALL ANALYSIS
23	OUTFALL ANALYSIS
24	OUTFALL ANALYSIS
25	SIGHT DISTANCE PROFILES
26	FIRE SERVICE PLAN
27	GIS DIMENSION PLAN
28	LIGHTING PLAN
28A	LIGHTING PLAN DETAILS

LANDSCAPE

Sheet Number	Sheet Title
L1.00	OVERALL LANDSCAPE PLAN
L2.00	LANDSCAPE WATER MANAGEMENT PLAN
L3.00	LANDSCAPE SCHEDULE & COMPUTATIONS
L3.01	LANDSCAPE DETAILS

ARCHITECTURE

Sheet Number	Sheet Title
A0.1	GREEN BUILDING NARRATIVE & ENERGY SAVINGS ESTIMATES
A0.2	NGBS SILVER SCORECARD
A1.0	ARCHITECTURAL SITE PLAN
A1.1	FLOOR PLANS & FAR CALCULATIONS
A1.2	BLOCK M EXTERIOR ELEVATIONS
A1.3	BLOCK M EXTERIOR ELEVATIONS
A1.4	BLOCK L EXTERIOR ELEVATIONS
A1.5	SECTIONS

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 036790
06/07/2024
PROFESSIONAL ENGINEER

PLAN DATE	REVISION
03-21-2024	DSUP SUBMISSION
05-02-2024	DSUP SUBMISSION #2
06-07-2024	DSUP VERIFICATION SUBMISSION

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

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.

GENERAL NOTES

1. THE SUBJECT SITE IS LOCATED ON THE FOLLOWING CITY OF ALEXANDRIA ASSESSMENT MAP NO.s: LOT 707 2ND LANDMARK MALL REDEVELOPMENT R/S: 047.02-03-17 (5755 DUKE ST), LOT 709 2ND LANDMARK MALL REDEVELOPMENT R/S: 047.02-03-19 (5725 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 BLOCK L&M=
350 GPD/UNIT * 110 UNITS = 38,500 GPD
PEAK FACTOR FLOW FROM BUILDING = 38,500 GPD * 4.0 = 154,000 OR 0.15 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.

SEE SHEET 10 & 11 FOR ADEQUATE OUTFALL ANALYSIS.

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 L & M

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 ALEX

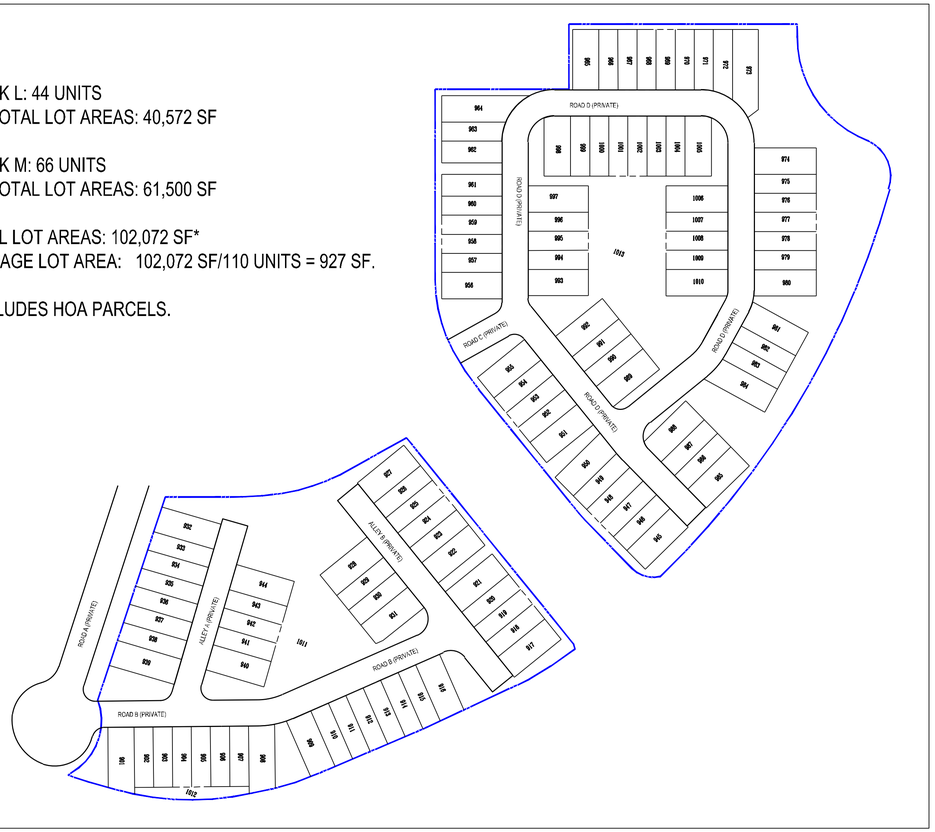
LOT AREA TABULATION (SCALE: 1"=60')

BLOCK L: 44 UNITS
SUBTOTAL LOT AREAS: 40,572 SF

BLOCK M: 66 UNITS
SUBTOTAL LOT AREAS: 61,500 SF

TOTAL LOT AREAS: 102,072 SF*
AVERAGE LOT AREA: 102,072 SF/110 UNITS = 927 SF.

*EXCLUDES HOA PARCELS.



INDIVIDUAL LOT AREAS

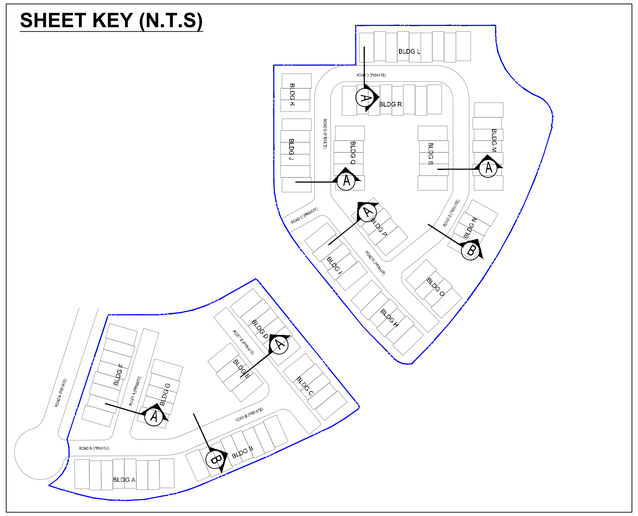
901	1174 S.F. 0.0269 ACRES	957	808 S.F. 0.0185 ACRES
902	808 S.F. 0.0186 ACRES	958	808 S.F. 0.0185 ACRES
903	808 S.F. 0.0186 ACRES	959	808 S.F. 0.0185 ACRES
904	808 S.F. 0.0186 ACRES	960	808 S.F. 0.0185 ACRES
905	808 S.F. 0.0186 ACRES	961	922 S.F. 0.0212 ACRES
906	808 S.F. 0.0186 ACRES	962	917 S.F. 0.0211 ACRES
907	808 S.F. 0.0186 ACRES	963	827 S.F. 0.019 ACRES
908	1205 S.F. 0.0277 ACRES	964	1356 S.F. 0.0311 ACRES
909	1116 S.F. 0.0256 ACRES	965	1111 S.F. 0.0255 ACRES
910	815 S.F. 0.0187 ACRES	966	808 S.F. 0.0185 ACRES
911	818 S.F. 0.0188 ACRES	967	808 S.F. 0.0185 ACRES
912	821 S.F. 0.0189 ACRES	968	808 S.F. 0.0185 ACRES
913	824 S.F. 0.0189 ACRES	969	808 S.F. 0.0185 ACRES
914	827 S.F. 0.019 ACRES	970	808 S.F. 0.0185 ACRES
915	827 S.F. 0.019 ACRES	971	812 S.F. 0.0186 ACRES
916	1125 S.F. 0.0258 ACRES	972	875 S.F. 0.0201 ACRES
917	1111 S.F. 0.0255 ACRES	973	1466 S.F. 0.0337 ACRES
918	808 S.F. 0.0185 ACRES	974	1152 S.F. 0.0265 ACRES
919	808 S.F. 0.0185 ACRES	975	832 S.F. 0.0191 ACRES
920	808 S.F. 0.0185 ACRES	976	832 S.F. 0.0191 ACRES
921	1111 S.F. 0.0255 ACRES	977	832 S.F. 0.0191 ACRES
922	1112 S.F. 0.0255 ACRES	978	832 S.F. 0.0191 ACRES
923	808 S.F. 0.0185 ACRES	979	832 S.F. 0.0191 ACRES
924	808 S.F. 0.0185 ACRES	980	1153 S.F. 0.0265 ACRES
925	808 S.F. 0.0185 ACRES	981	1155 S.F. 0.0265 ACRES
926	808 S.F. 0.0185 ACRES	982	832 S.F. 0.0191 ACRES
927	1111 S.F. 0.0255 ACRES	983	832 S.F. 0.0191 ACRES
928	1111 S.F. 0.0255 ACRES	984	1197 S.F. 0.0275 ACRES
929	808 S.F. 0.0185 ACRES	985	1111 S.F. 0.0255 ACRES
930	808 S.F. 0.0185 ACRES	986	808 S.F. 0.0185 ACRES
931	1106 S.F. 0.0254 ACRES	987	808 S.F. 0.0185 ACRES
932	1144 S.F. 0.0263 ACRES	988	1115 S.F. 0.0256 ACRES
933	843 S.F. 0.0194 ACRES	989	1119 S.F. 0.0257 ACRES
934	853 S.F. 0.0196 ACRES	990	808 S.F. 0.0185 ACRES
935	863 S.F. 0.0198 ACRES	991	808 S.F. 0.0185 ACRES
936	872 S.F. 0.02 ACRES	992	1111 S.F. 0.0255 ACRES
937	882 S.F. 0.0202 ACRES	993	1111 S.F. 0.0255 ACRES
938	891 S.F. 0.0205 ACRES	994	808 S.F. 0.0185 ACRES
939	1242 S.F. 0.0285 ACRES	995	808 S.F. 0.0185 ACRES
940	1111 S.F. 0.0255 ACRES	996	808 S.F. 0.0185 ACRES
941	808 S.F. 0.0185 ACRES	997	1119 S.F. 0.0257 ACRES
942	808 S.F. 0.0185 ACRES	998	1114 S.F. 0.0256 ACRES
943	808 S.F. 0.0185 ACRES	999	808 S.F. 0.0185 ACRES
944	1111 S.F. 0.0255 ACRES	1000	808 S.F. 0.0185 ACRES
945	1111 S.F. 0.0255 ACRES	1001	808 S.F. 0.0185 ACRES
946	808 S.F. 0.0185 ACRES	1002	808 S.F. 0.0185 ACRES
947	808 S.F. 0.0185 ACRES	1003	808 S.F. 0.0185 ACRES
948	808 S.F. 0.0185 ACRES	1004	808 S.F. 0.0185 ACRES
949	809 S.F. 0.0186 ACRES	1005	1114 S.F. 0.0256 ACRES
950	1141 S.F. 0.0262 ACRES	1006	1152 S.F. 0.0265 ACRES
951	1111 S.F. 0.0255 ACRES	1007	832 S.F. 0.0191 ACRES
952	808 S.F. 0.0185 ACRES	1008	832 S.F. 0.0191 ACRES
953	808 S.F. 0.0185 ACRES	1009	832 S.F. 0.0191 ACRES
954	808 S.F. 0.0185 ACRES	1010	1151 S.F. 0.0264 ACRES
955	1111 S.F. 0.0255 ACRES	1011	36465 S.F. 0.8374 ACRES
956	1111 S.F. 0.0255 ACRES	1012	884 S.F. 0.0203 ACRES
		1013	60674 S.F. 1.394 ACRES
		TOTAL	200091 S.F. 4.5935 ACRES

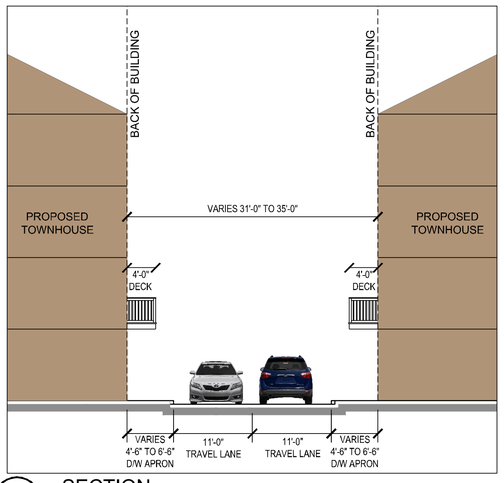
LEGEND:

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

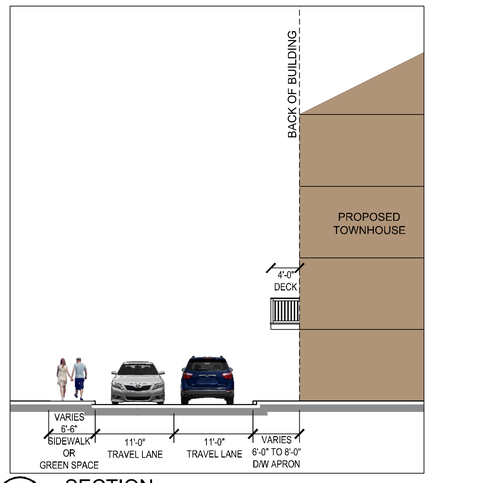
STREET SECTIONS

SHEET KEY (N.T.S)





A SECTION
SCALE: 1"=10'



B SECTION
SCALE: 1"=10'

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
10-20-2023
03-21-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. POCH
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

GENERAL NOTES & DETAILS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: AS NOTED C.I.= N/A DATE: MAY, 2024

SHEET 02A OF 28
FILE No. SP-13141

Urban, Ltd. - J:_OBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-02-GNOTES.dwg [GNOTES 1] June 07, 2024 - 11:17am awalia

DEVELOPMENT SUMMARY

INOVA HOSPITAL CAMPUS

Use	Floor Area	Residential Units	Hotel Keys	Building A Floor Area	Building A Units	Building B Floor Area	Building B Units	Building C Floor Area	Building C Units	Block D Floor Area	Block D Units	Block E Floor Area	Block E Units	Block G Floor Area	Block G Units	Block H Floor Area	Block H Units	Block I Floor Area	Block I Units	Block F Floor Area	Block F Units	Block N Floor Area	Block N Units	Block J Floor Area	Block J Units	Block K Floor Area	Block K Units	Block L Floor Area	Block L Units	Blocks M Floor Area	Blocks M Units
Hospital	464,467			464,467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Office	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medical Office	280,805			-	-	94,212	-	76,357	-	-	-	110,236	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Multifamily	1,118,397	1,072 units		-	-	-	-	-	-	-	-	150,697	140	193,847	234	-	-	413,853	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	300,458	110 units		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119,932	44	180,526	66
Condo Flats	-	0 units		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hotel	-		0 keys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail	236,146			-	-	-	-	-	-	-	-	89,971	-	23,888	-	-	-	90,287	-	7,279	-	4,064	-	-	-	32,000	-	-	-	-	-
Grocer	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Firestation	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Garage / Loading / Service				298,250 (TOTAL GARAGE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80,000	-	-	-	-	-
Total	**2,412,523**	**1,227 units**	**0 keys**	**762,717**	-	**94,212**	-	**76,357**	-	-	-	**356,404**	**146**	**224,485**	**244**	-	-	**504,140**	**390**	**7,279**	-	**4,064**	-	-	-	**472,000**	**337**	**119,932**	**44**	**180,526**	**66**
FAR over Gross Land Area	**1.0754**																														

PARKING TABULATIONS

INOVA HOSPITAL CAMPUS

Parking Requirement	Parking Ratio	Totals	Building A REQUIRED	Building A PROPOSED	Building B REQUIRED	Building B PROPOSED	Building C REQUIRED	Building C PROPOSED	Block D REQUIRED	Block D PROPOSED	Block E REQUIRED	Block E PROPOSED	Block G REQUIRED	Block G PROPOSED	Block H REQUIRED	Block H PROPOSED	Block I REQUIRED	Block I PROPOSED	BLOCK F REQUIRED	BLOCK F PROPOSED	BLOCK N REQUIRED	BLOCK N PROPOSED	Block J REQUIRED	Block J PROPOSED	Block K REQUIRED	Block K PROPOSED	Block L REQUIRED	Block L PROPOSED	Blocks M REQUIRED	Blocks M 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)			180	403																		
Multifamily	1/ BEDROOM		-	-	-	-	-	-	-	-	213	229	285	285	-	-	-	483	-	-	-	-	-	-	312	298	-	-	-	-
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		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88	-	132
Condo Flats	1.3/ UNIT		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hotel	0.7/ KEY		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retail	3.0/ 1000 GSF		-	-	-	-	-	-	-	-	270	202	72	95	-	-	-	375	2**	0	2**	0	-	-	8	63 (SEE SHEET 03A)	-	-	-	-
Grocer	50 spaces		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-		-	-	-		-	-	-	-
Firestation			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VEHICLE PARKING																														
STANDARD PARKING SPACES			-	TBD	-	TBD	-	TBD	-	-	-	382	-	117	-	-	-	154	-	-	-	-	-	-	-	114	-	88	-	132
COMPACT PARKING SPACES			-	TBD	-	TBD	-	TBD	-	-	-	429	-	248	-	-	-	683	-	-	-	-	-	-	-	186	-	-	-	-
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:		**4,162**		1,510					-	-	663	849	357	395	-	-	-	858	-	-	-	-	-	-	320	330	-	88	-	132
PARKING PROVIDED IN EXISTING GARAGE			550 (EXISTING GARAGE)						-	-	-	834	-	380	-	-	-	858	-	0	-	0	-	-	-	63 (SEE SHEET 03A)	-	-	-	-
PARKING PROVIDED IN PROPOSED GARAGE			960 (ABOVE GRADE GARAGE + BELOW GRADE GARAGE)						-	-	-	-	-	-	-	-	-	-	-		-		-	-	-	310	-	-	-	-
LOADING SPACES											5	4	1	3			6	3								2				
BICYCLE PARKING																														
Residential									-	-	44	45	74	75	-	-	-	129	-	-	-	-	-	-	102	116				
Visitor									-	-	9	9	5	5	-	-	-	8	-	15	-	6	-	-	7	7	1	2	2	2
Retail											18	18	6	6				28		3		2			9	11				
Office									-	-	16	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ZONING TABULATIONS

INOVA HOSPITAL CAMPUS

Zoning Requirement	Building A PROPOSED	Building B PROPOSED	Building C PROPOSED	Block D REQUIRED	Block D PROPOSED	Block E REQUIRED	Block E PROPOSED	Block G REQUIRED	Block G PROPOSED	Block H REQUIRED	Block H PROPOSED	Block I REQUIRED	Block I PROPOSED	Block F REQUIRED	Block F PROPOSED	Block N REQUIRED	Block N PROPOSED	Block J REQUIRED	Block J PROPOSED	Block K REQUIRED	Block K PROPOSED	Block L REQUIRED	Block L PROPOSED	Blocks M REQUIRED	Blocks M PROPOSED
LOT AREA (SQ. FT.)	452,343 (COMBINED INOVA HOSPITAL CAMPUS AREA)			-	-	-	108,575	-	62,083	-	-	-	107,845	-	31,872	-	22,509	-	-	-	98,964	-	77,919	-	122,172
LOT WIDTH (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FRONT YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SIDE YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
REAR YARD (FT.)	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FLOOR AREA (SQ. FT.)	933,286 (COMBINED FLOOR AREA FOR BUILDINGS A,B,C)			-	-	-	356,404	-	224,485	-	-	-	485,460		7,279	-	4,064	-	-	-	392,578	-	119,932	-	180,526
OPEN SPACE (SF / %)	15%			-	-	25.00%	25.00%	25.00%	25.00%	-	-	-	28.26%	25%	80.75%	25%	87.73%	-	-	25%	25.66%	25%	25%	25%	32.33%
GROUND FLOOR	53,530			-	-	-	10,303	-	14,056	-	-	-	1,364	7,968	25,738	5,627	19,748	-	-	24,741	7,248	19,480	19,480	30,543	30,543
ABOVE GROUND	10,000			-	-	-	16,840	-	1,464	-	-	-	29,115	-	-	-	-	-	-	-	18,142	-	-	-	-
TOTAL OPEN SPACE	62,530			-	-	27,143	27,143	15,520	15,520	-	-	-	30,479	7,968	25,738	5,627	19,748	-	-	24,741	25,390	-	19,480	-	30,543
AVERAGE FINISHED GRADE (FT.)	216.34 (PROPOSED)	209.86 (PROPOSED)	212.07 (PROPOSED)	-	-	-	200.11	-	198.35	-	-	-	193.00		208.90	-	201.625	-	-	-	199.21	-	195.8	-	195.8
MAX. BUILDING HEIGHT (FT.)	159	52	60	-	-	-	91.90/80	-	85	-	-	-	85	-	38'-0"	-	33'-0"	-	-	-	85	-	50	-	50
CROWN COVERAGE (SQ. FT.)	-	-	-	-	-	-	14750 (13.6%)	-	13500 (21.7%)	-	-	-	-	7,968	38250 (120%)	5,627	28500 (126%)	-	-	24,741	19019 (19.22%)	-	19,800 (25.4%)	-	31,690 (25.9%)
MAX. RESI DENTISTY (UNITS/AC.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.58 D.U/AC	-	23.57 DU.AC
Dwelling Unit Summary (ADU)	-	-	-	-	-	-	146	-	244	-	-	-	390	-	-	-	-	-	-	-	337 (14)	-	44	-	66
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	-	-	5	4	1	3	-	-	6	3	-	-	-	-	-	-	-	2	-	-	-	-
TRIP GENERATION (ADT)	5,774	910	3,317	-	-	-	6,587	-	1,605	-	-	-	5,173	-	-	-	-	-	-	-	1,981	-	93	-	180

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
10 – 20 – 2023
03 – 01 – 2024
05 – 20 – 2024
06 – 07 – 2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban ltd
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038780
PROFESSIONAL ENGINEER
06/07/2024

GENERAL NOTES & DETAILS

WEST END

BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024

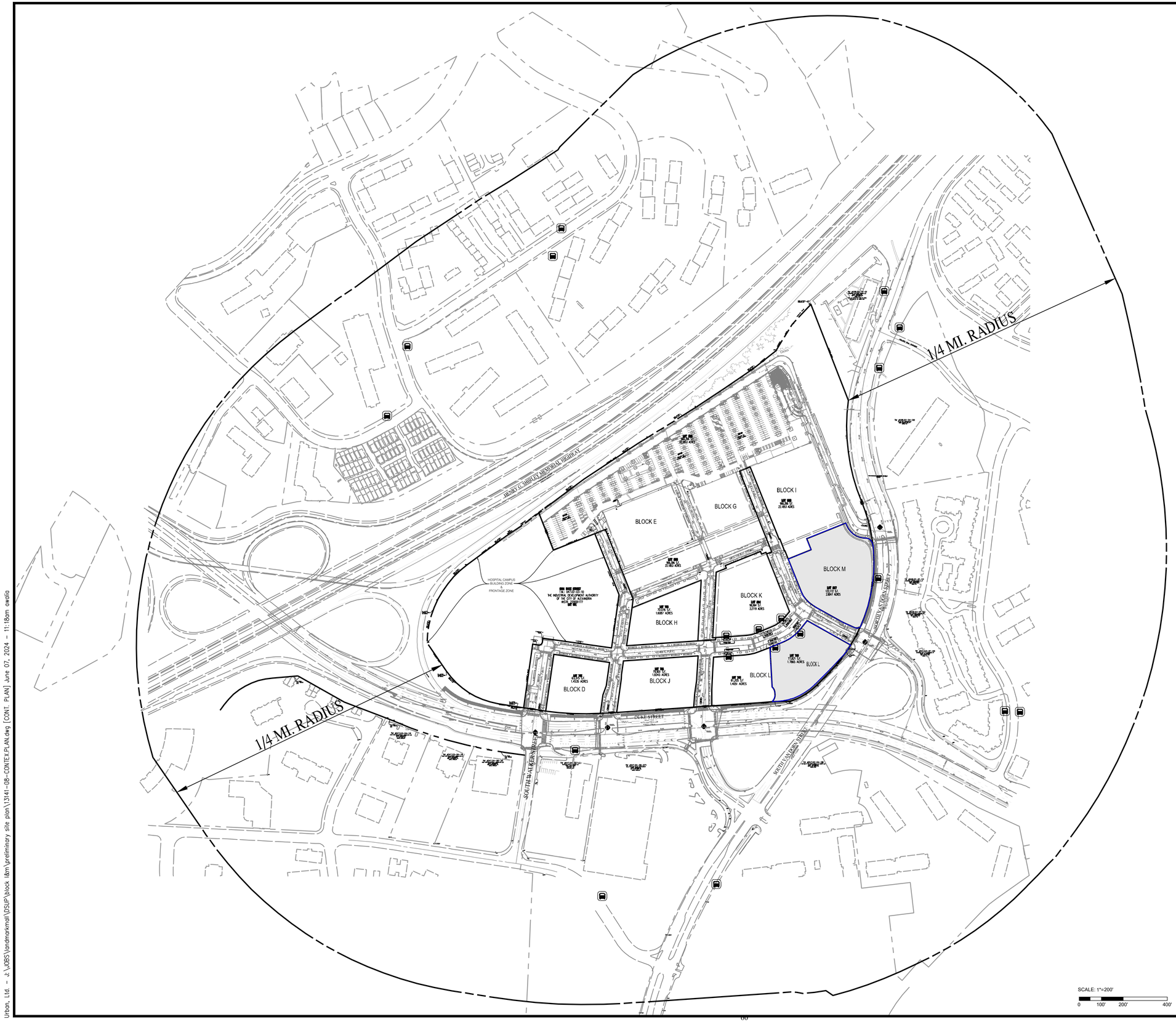
C.I.= N/A

SCALE: N/A

SHEET 02B OF 28

FILE No. SP-13141

Urban, Ltd. – J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-02-GNOTES.dwg [GNOTES2] June 07, 2024 – 11:17am awalia



LEGEND

TRANSIT STOP

PROPOSED PROJECT SITE

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

DATE RECORDED _____

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

No.	DATE	REVISIONS
		DESCRIPTION

PLAN DATE 10-20-2023

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban

Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038780
PROFESSIONAL ENGINEER
10/20/2023

CONTEXTUAL PLAN

WEST END
BLOCK L&M - CONCEPT II

CITY OF ALEXANDRIA, VIRGINIA

DATE: OCT, 2023

SCALE: 1"=200'

C.I.= N/A

SHEET 03 OF 10

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-08-CONTEXT PLAN.dwg [CONT. PLAN] June 07, 2024 - 11:18am awalo

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

BLOCK A,B,C
LOT 601
6001 WAR STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY
OF THE CITY OF ALEXANDRIA
INSTR. 220001177

VA STATE GRID NORTH
NAD 1983 (NSRS 1928)

LOT 808
966,537 S.F.
22.1885 ACRES

BLOCK S
BLOCK P
BLOCK E
BLOCK F
BLOCK N
BLOCK I
BLOCK R
BLOCK H
LOT 703
70,076 S.F.
1.6087 ACRES
BLOCK K
LOT 804
98,964 S.F.
2.2719 ACRES
BLOCK M
LOT 807
122,172 S.F.
2.8047 ACRES
BLOCK D
LOT 702
63,319 S.F.
1.4535 ACRES
BLOCK J
LOT 705
79,901 S.F.
1.8343 ACRES
BLOCK L1
LOT 706
61,205 S.F.
1.4051 ACRES
BLOCK L2
LOT 709
77,919 S.F.
1.7888 ACRES

SEE SHEET 04A

DUKE STREET
NORTH HENRY STREET
NORTH HAMPTON DRIVE

LEGEND

- PROPERTY LINES
- BLOCK L & M PROPERTY LINES
- SOIL LINES
- MARINE CLAY OUTLINE
- OVER 25% SLOPE

SOIL INFORMATION

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

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. ALL ADJOINING PROPERTY LINES AND LOT NUMBERS SHOWN HEREON REFLECT SUBDIVISION PLAT SUB #2023-00003, INSTR #230009477.
3. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO KNOWN CONTAMINATED SOIL AND/OR GROUNDWATER CONTAMINATION FOR BLOCK L AND M.

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
10-20-2023
03-01-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

OVERALL EXISTING CONDITIONS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1"=100' C.I.= 2' DATE: MAY, 2024

SHEET 04 OF 28

FILE No. SP-13141

Urban, Ltd. – J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-03-EX. CONDITION.dwg [OV] June 07, 2024 – 11:19am owolia

LINE & CURVE TABLE FOR BLOCKS L(LOT 709) & M

LINE	BEARING	DISTANCE
L1	N 60°51'20" W	222.57'
L2	S 39°08'39" W	64.02'
L3	S 68°08'38" W	47.02'
L4	S 03°26'26" E	179.16'
L5	N 83°41'28" E	23.22'
L6	N 45°07'17" E	99.59'
L7	N 43°02'34" E	94.36'
L8	N 37°04'34" E	22.46'
L9	S 66°06'21" E	56.15'
L10	S 85°08'59" W	1.07'
L11	N 86°36'04" W	9.48'
L12	N 72°38'53" W	110.12'
L13	S 68°07'48" W	191.22'
L14	S 21°52'19" E	54.50'
L15	S 68°07'48" W	112.16'
L16	S 21°51'22" E	159.48'
L17	S 60°51'25" E	132.18'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	TANGENT
C1	50.30'	173.54'	16°36'26"	S 50°07'20" W	50.12'	25.33'
C2	51.73'	319.08'	9°17'23"	S 64°44'32" W	51.68'	25.92'
C3	71.48'	50.00'	81°53'02"	S 01°26'05" E	65.55'	43.39'
C4	2.50'	5.00'	28°36'07"	S 25°12'19" W	2.47'	1.27'
C5	16.72'	1512.69'	0°38'00"	N 86°56'15" E	16.72'	8.36'
C6	117.47'	233.82'	28°47'04"	N 69°47'47" E	116.24'	60.00'
C7	56.29'	240.49'	13°24'58"	N 51°46'31" E	56.16'	28.27'
C8	24.86'	683.11'	2°05'07"	N 37°38'08" E	24.86'	12.43'
C9	4.10'	13.86'	16°56'50"	N 38°25'41" W	4.08'	2.06'
C10	8.16'	79.27'	5°53'51"	S 63°14'40" E	8.16'	4.08'
C11	26.11'	25.00'	59°50'51"	N 83°58'13" E	24.94'	14.39'
C12	381.46'	714.22'	30°36'04"	N 08°46'25" E	376.94'	195.40'
C13	47.96'	32.50'	84°33'26"	N 44°41'23" W	43.73'	29.55'
C14	103.39'	91.84'	64°29'43"	N 53°07'13" W	98.01'	57.94'
C15	62.65'	126.00'	28°29'16"	S 36°04'46" E	62.01'	31.99'
C16	39.53'	215.00'	10°32'03"	S 55°35'26" E	39.47'	19.82'

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

BLOCK L1
LOT 706
61,205 S.F.
1.4051 ACRES

BLOCK L2
LOT 709
77,919 S.F.
1.7888 ACRES

BLOCK M
LOT 807
122,172 S.F.
2.8047 ACRES

NOTE: BLOCK TO DRAIN USING EXISTING SEDIMENT TRAP/RISER AND STORM CONNECTION

ALLEY WAY (PRIVATE)
POSTED SPEED 25 MPH

VERVE ST. (PUBLIC)
POSTED SPEED= 25 MPH

HECHT AVE. (PUBLIC)
POSTED SPEED= 25 MPH

NORTH VAN DORN STREET
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE STREET
ROUTE #236
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE ST. WB RAMP
VARIABLE WIDTH R/W
PUBLIC STREET

LANDMARK ST. (PRIVATE)
POSTED SPEED= 25 MPH

9' FRONTAGE ZONE SETBACK

6' FRONTAGE ZONE SETBACK

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

EX. BIKE RACK (TYP.)

BMP/PLANTER (TYP.)

EX. TREE PIT (TYP.)

EX. CURBCUT METAL TRENCH DRAIN

EX. 6' BMP/PLANTER (TYP.)

EX. 8'X16'X6' ELECT. BOX

EX. 19' CONC S/W

EX. ELEC. DUCT BANK

EX. STREETLIGHTS

HYDRODYNAMIC SEPARATOR W/ CSDI-1-TOP

EX. 10' CROSSWALK (TYP.)

EX. CSER-1 PRIVATE ENTRANCE

EX. SIGN (TYP.)

EX. DEV 2'X3' STLT SB

TRANSIT STOP

EX. 12" WATERLINE (AW)

EX. 8" WATERLINE (AW)

EX. 6" WATERLINE (AW)

EX. 4" WATERLINE (AW)

EX. 10" SSR-26 PVC (CDA)

EX. 12" SSR-26 PVC (CDA)

EX. 8" PVC (CDA)

EX. 6" PVC LAT (PVT)

EX. 12" SSR-26 PVC (COA)

EX. 54" RCP (PVT.)

EX. 24" RCP (PVT.)

EX. 8" CDP (TYP.)

EX. 54" RCP (PUBLIC)

EX. 24" RCP (PUBLIC)

EX. 21" RCP (PUBLIC)

EX. 36" RCP (PUBLIC)

EX. 48" RCP

EX. 66" RCP

EX. 18" RCP (PUBLIC)

EX. 6" RCP (PUBLIC)

EX. 6" CDP (PUBLIC)

EX. 8" CDP (PUBLIC)

EX. 12" CONCRETE SHARED USE PATH

EX. 10' CONCRETE SHARED USE PATH

EX. 8' CONCRETE SHARED USE PATH

EX. 6' CONCRETE SHARED USE PATH

EX. 5' CONCRETE SHARED USE PATH

EX. 4' CONCRETE SHARED USE PATH

EX. 3' CONCRETE SHARED USE PATH

EX. 2' CONCRETE SHARED USE PATH

EX. 1' CONCRETE SHARED USE PATH

EX. RET. WALL

EX. 15' TURN LANE

EX. 11' TAPER

EX. 12' WATERLINE EASEMENT (DSP#2021-00012)

EX. 10' SANITARY EASEMENT (DSP#2021-00012)

EX. COMM. MANHOLE

EX. COMM. HANDHOLE

EX. COMM. MANHOLE

EX. COMM. QUICK DUCT

EX. COMM. DUCT BANK

EX. CATV MANHOLE

EX. CATV PEDESTAL

EX. CATV VAULT

EX. CATV BOX

EX. CATV RISER

LEGEND

BLOCK L & M PROPERTY LINES

LIMITS OF DISTURBANCE

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. LIMITS OF DISTURBANCE SHOWN HEREON IS PRELIMINARY AND SUBJECT TO FINAL ENGINEERING.
3. SEE SHEET 28 & 28A FOR PRELIMINARY LIGHTING PLAN DETAILS.
4. PROPOSED GRASSCRETE SHOWN ON BLOCK L2 SHALL SUPPORT A MINIMUM OF 80,000 LBS. TO MEET EMERGENCY VEHICLE REQUIREMENTS.

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
10-20-2023
03-01-2024
05-01-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCH
Lic. No. 036790
PROFESSIONAL ENGINEER
06/07/2024

SITE PLAN

WEST END

BLOCK L&M - PRELIMINARY SITE PLAN

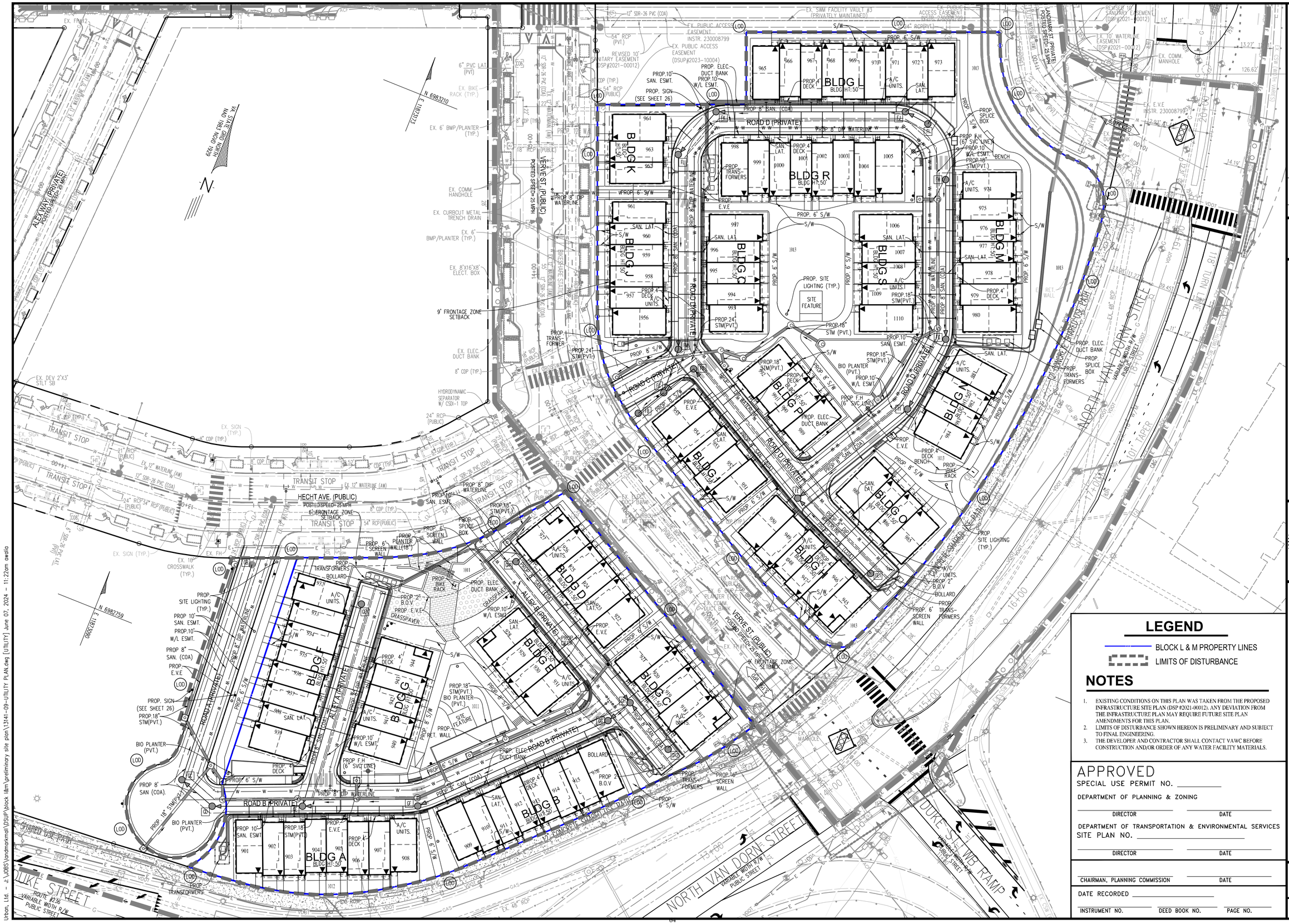
CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.= N/A DATE: MAY, 2024

SHEET 05 OF 28

FILE No. SP-13141

Urban, Ltd. - z:\OBS\1ordmarkmall\DSUP\block l&m\preliminary site plan\13141-04-CONCEPT PLAN.dwg [CONCEPT PLAN] June 07, 2024 - 11:21am awolla


ROAD D (PRIVATE)
ROAD A (PRIVATE)
ROAD B (PRIVATE)
ALLEY A (PRIVATE)
ALLEY B (PRIVATE)
ALLEY (PRIVATE)
POSTED SPEED 25 MPH
VERVE ST. (PUBLIC)
HECHT AVE. (PUBLIC)
DUKE STREET
NORTH VAN DORN STREET
DUKE ST. WB RAMP
BLDG L
BLDG K
BLDG J
BLDG R
BLDG M
BLDG S
BLDG C
BLDG D
BLDG E
BLDG F
BLDG G
BLDG A
BLDG B
BLDG O
BLDG P
BLDG H
BLDG I
BLDG H1:50'
PROP. 8" SAN. (COA)
PROP. 8" DIP WATERLINE
PROP. 6" S/W
PROP. SITE LIGHTING (TYP.)
SITE FEATURE
PROP. TRANS-FORMERS
PROP. SPLICE BOX
PROP. ELEC. DUCT BANK
PROP. 24" STM (PVT.)
PROP. 18" STM (PVT.)
PROP. 10" SAN. ESMT.
PROP. 10" W/L ESMT.
PROP. 4' DECK
A/C UNITS.
SAN. LAT.
BENCH
PROP. BIKE RACK
PROP. 6' SCREEN WALL
PROP. 6' RETAINING WALL
PROP. 2' B.O.V
BOLLARD
GRASSPAVER
BIO PLANTER (PVT.)
PROP. F.H (6" SVC LINE)
PROP. 8' SAN (COA)
PROP. 8" DIP WATERLINE
PROP. E.V.E
PROP. SIGN (SEE SHEET 26)
PROP. 18" STM(PVT.)
9' FRONTAGE ZONE SETBACK
EX. 6' BMP/PLANTER (TYP.)
EX. CURBCUT METAL TRENCH DRAIN
EX. 8"X16"X8" ELECT. BOX
EX. COMM. HANDHOLE
EX. ELEC. DUCT BANK
EX. BIKE RACK (TYP.)
EX. 6' BMP/PLANTER (TYP.)
EX. FH#12
EX. DEV 2'X3' STLT SB
EX. SIGN (TYP.)
EX. FH
EX. 18" CROSSWALK (TYP.)
EX. 12" WATERLINE (AW)
EX. 12" SDR-26 PVC (COA)
EX. 54" RCP (PUBLIC)
EX. 48" RCP
EX. 36" RCP (PUBLIC)
EX. 24" RCP (PUBLIC)
EX. 21" RCP (PUBLIC)
EX. 8" CDP (TYP.)
EX. 6" PVC LAT (PVT.)
EX. 10" WATERLINE EASEMENT (DSP#2021-00012)
EX. COMM. MANHOLE
EX. E.V.E INSTR. 230008799
EX. SWM FACILITY VAULT #3 (PRIVATELY MAINTAINED)
EX. PUBLIC ACCESS EASEMENT INSTR. 230008799
EX. PUBLIC ACCESS EASEMENT (DSUP#2023-10004)
REVISED 10' SANITARY EASEMENT (DSP#2021-00012)
LANDMARK ST. (PRIVATE) POSTED SPEED 25 MPH
EX. RET. WALL
EX. CURB INLET
EX. COMM. MANHOLE
PROP. 6' BMP/PLANTER (TYP.)
PROP. 8" WATERLINE
PROP. 8" SAN. (COA)
PROP. 6' S/W
PROP. 6' SCREEN WALL
PROP. 6' RETAINING WALL
PROP. 2' B.O.V
PROP. E.V.E
PROP. F.H (6" SVC LINE)
PROP. 10" SAN. ESMT.
PROP. 10" W/L ESMT.
PROP. 18" STM(PVT.)
PROP. 24" STM(PVT.)
PROP. 8' SAN (COA).
PROP. 8" DIP WATERLINE
PROP. 6' SCREEN WALL
PROP. PLANTER WALL(18")
PROP. SPLICE BOX
PROP. BIKE RACK
PROP. ELEC. DUCT BANK
PROP. SITE LIGHTING (TYP.)
PROP. TRANSFORMERS BOLLARD
PROP. 6' SCREEN WALL
PROP. 2' B.O.V
PROP. 6' RETAINING WALL
PROP. 4' DECK
A/C UNITS.
SAN. LAT.
BIO PLANTER (PVT.)
PROP. F.H (6" SVC LINE)
PROP. 8' SAN (COA).
PROP. 18" STM(PVT.)
PROP. 10" SAN. ESMT.
PROP. 18" STM(PVT.)
PROP. E.V.E
PROP. 4' DECK
A/C UNITS.
PROP. TRANSFORMERS
PROP. 6' SCREEN WALL
PROP. 2' B.O.V
BOLLARD
PROP. 6' RETAINING WALL
PROP. 6' SCREEN WALL
PROP. 6' S/W
PROP. 8' SAN (COA)
PROP. 8" DIP WATERLINE
PROP. 6' RETAINING WALL
PROP. 6' SCREEN WALL
PROP. 2' B.O.V
PROP. E.V.E
PROP. 4' DECK
A/C UNITS.
SAN. LAT.
PROP. 10" SAN. ESMT.
PROP. 18" STM(PVT.)
PROP. 10" W/L ESMT.
PROP. F.H (6" SVC LINE)
PROP. 8" SAN. (COA)

VIRGINIA- AMERICAN WATER COMPANY MATERIAL SPECIFICATIONS	Date: February 22, 2023
Item	Authorized Manufacturer
DUCTILE IRON PIPE (AWWA C151/A21.51) •Double coated cement lining with paint seal coat •Tar coated on outside •Press-on joint (NO MJ PIPE) •Thickness Class 52 for 4"- 16" under normal laying conditions •All buried ductile iron pipe & fittings shall be polywrap encased. PolyWrap encasement (AWWA-C105), blue color, seamless 12mil thick high density cross laminated	•United States Pipe and Foundry •Griffin Pipe Products, Inc. •American (ACI PCO) •McWane, Inc.
DUCTILE IRON FITTINGS •Compact Ductile Iron Fittings AWWA C153/A21.53 •Double thickness cement lining with paint seal coat •Tar coated on outside •350 PSI working pressure •Mechanical joint (ALL MJ)	•United States Pipe and Foundry •American (ACIPCO) •McWane, Inc.
GATE VALVES 2"- 12" AWWA C509 •Resilient-seated •Iron body suitable for buried service, Epoxy coated AWWA C550 •2" square operating nut •Open left (Alex & PrinceWilliam District). *contact local engineer for other districts. •Non-rising stem with double O-Ring stem seal •200 PSI working pressure and 400 PSI test pressure •4"-12" valves: Mechanical joint •2" valve: Screw Joint	•Mueller Co. MJ Gate Valve: Muller #A2360 MJ Tapping Sleeve: Muller #H615 MJ Tapping Valve: Muller #T2360-16-LN •American Flow Control MJ Tapping Sleeve: Series 2800-C
BUTTERFLY VALVES 16"- 24" AWWA C504 •Rubber seated •Iron body suitable for buried service •Manual operator with 2" square operating nut •Class 150 •Mechanical joint	•Henry Pratt Co. •Dezurik
FTRE HYDRANTS AWWA C502 •Mueller Super Centurion 250 •5 ¼" valve with 6" mechanical joint inlet •4 ½ feet bury •Two 2 ½" nozzles with 7 ½ threads per inch •Prince William County: One 4 ½" pumper nozzle with National Standard threads •Alexandria City: One 4" pumper nozzle with National Standard threads •1 ½" pentagon operating nut, open left	•Mueller Co. Dale City: Mueller #A423-500-087 Alexandria City: Mueller #A423-500-100 Other district: contact local engineer
VALVE BOXES •Cast iron, slide type adjustment, with "WATER" on the lid •5 ½" x 60" two piece with flared base	Bingham & Taylor; Mueller Handley Ind; A.Y.McDo nald Quality Water Products; Clay & Bailey
WATER FACILITY MISCELLANEOUS MATERIALS •Pennatex: food grade adhesive, either FORM-A-GASKET No.2 Sealant or Clear RTV Silicone Adhesive •Pipe Soap: Nontoxic vegetable soap, such as Tyton Joint Lubricant or Super Bell-Tite Lubricant •Chlorine tablets: Olin Pulsar CCH Tablets, 5G size, available chlorine - 65% (Calcium Hypochlorite) •Pipe Joint Compound: Nontoxic for water, Harvey's TFE Paste w/ Teflon or Rectorseal T Plus 2 •Asphalt Coating: Koppers #50 Coal Tar or Orion HS-2 by Triple G Coatings Inc. •Concrete: 3000 PSI @ 28 days ASTM C-94, Slump 3"- 5" •All copper tube shall be Type K. All copper and brass fittings shall be lead fee.	

VIRGINIA AMERICAN WATER
DEVELOPER INSTALL WATER MAIN AND SERVICE LINE
SPECIFICATIONS AND DETAILS

TABLE OF CONTENTS

GENERAL NOTES
Appendix – Disposal of Chlorinated Waters
Appendix – Backflow and Cross Connection Program

TECHNICAL SPECIFICATIONS

Division 1 – General Requirements
Section 01300 – Submittals
Attachment – Water Main As-Built and Field Sketch Requirements
Section 01600 – Products
Section 01700 – Project Closeout

Division 2 – Site Work
Section 02020 – Dewatering
Section 02025 – Existing Utilities and Structures
Section 02105 – Clearing and Grubbing
Section 02210 – Trenching Backfilling and Compacting
Section 02220 – Casing Installation
Section 02230 – Stream Crossing
Section 02235 – Bridge Crossing
Section 02276 – Gabions
Section 02457 – Small Main Directional Drilling
Section 02458 – Large Main Directional Drilling
Section 02540 – Erosion and Sedimentation Control
Section 02558 – Identification Location Guide
Section 02610 – Paving and Surfacing
Section 02614 – Concrete Curbs, Drives, and Sidewalks
Section 02820 – Lawn Restoration
Section 02958 – Pipe Bursting

Division 3 – Concrete
Section 03300 – Cast-In-Place Concrete
Section 03450 – Precast Concrete Manhole

VIRGINIA AMERICAN WATER
DEVELOPER INSTALL WATER MAIN AND SERVICE LINE
SPECIFICATIONS AND DETAILS

Division 15 – Mechanical
Section 15000 – Piping – General Provisions
Section 15020 – Disinfecting Pipelines
Section 15025 – Cleaning Pipelines
Section 15030 – Pressure and Leakage Tests
Section 15106 – Ductile Iron Pipe and Fittings (Contractor Furnished)
Section 15110 – Steel Pipe and Fittings (Contractor Furnished)
Section 15115 – Concrete Pipe and Fittings (Contractor Furnished)
Section 15121 – Polyvinyl Chloride (PVC) Pipe (Contractor Furnished)
Section 15125 – High Density Polyethylene (HDPE) Pipe (Contractor Furnished)
Section 15131 – Piping Specialties (Contractor Furnished)
Section 15151– Gate Valves, Pressure Reducing Valves, Cross Connection and Backflow Prevention, and Check Valves (Contractor Furnished)
Section 15155 – Butterfly Valves (Contractor Furnished)
Section 15171 – Tapping Sleeves, Saddles and Valves (Contractor Furnished)
Section 15181 – Fire Hydrants (Contractor Furnished)
Section 15190 – Air Release and Blow-Off Outlets (Contractor Furnished)
Section 15200 – Service Lines (Contractor Furnished)
Section 15205 – Service Lines (Owner Furnished)

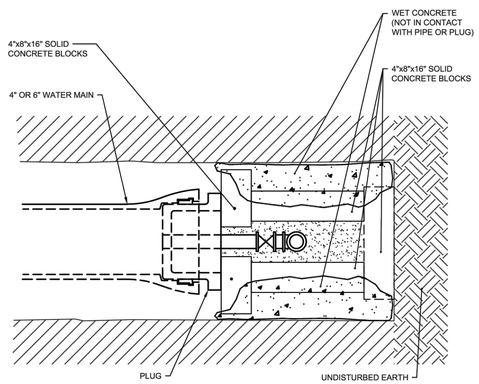
VIRGINIA AMERICAN WATER
DEVELOPER INSTALL WATER MAIN AND SERVICE LINE
SPECIFICATIONS AND DETAILS

GENERAL NOTES

1. "Owner" used in these specification and details means "American Water".
2. "Engineer" used in these specification and details means "American Water Engineering Department".
3. "Contractor" used in these specification and details means "Developer and its contractor".
4. Developer is not permitted to make any connection to existing Water Company Facilities. The Water Company or its designated Contractor shall make all such connections to provide water service to the main extension. The Water Company or its designated contractor shall perform all main installation within the existing public right-of-way.
5. Developer shall provide cut sheets sealed by a state VA licensed professional Surveyor/Engineer for all water (and Dale City Sanitary Sewer) facility installations. The professional Surveyor/Engineer who seals and signs the cut sheets shall also provide the following statement on all sets: "The professional seal and signature appearing on this document certifies that information shown conforms to the approved Project Plan and/or actual field conditions."
6. Before construction, developer's state licensed surveyor shall place line and grade stakes identifying dedicated easements, main, service connections, and other appurtenances to ensure the water and sanitary sewer system is constructed in accordance with the approved project plans.
7. Developer shall contact VAW to obtain all construction specifications and details, before construction start and/or order materials.
8. Developer needs to submit water main extension and/or replacement construction schedule, call out each water main section construction sequence, including pressure test length, disinfection method, water main flushing and bacteria sample collection timeline.

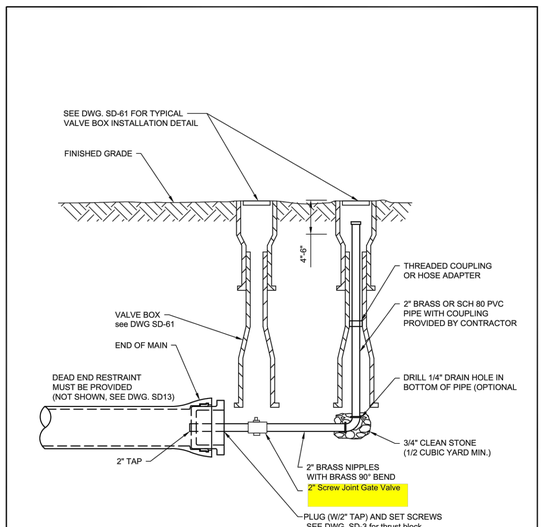
NOTES:

1. RESTRAINT OF WATER MAIN PIPE LENGTHS NOT SHOWN.
2. SEE DRAWING SD13 FOR LARGER MAIN SIZES.
3. ALTERNATIVE PLAN USING 2" CORPORATION WITH TAPPING SADDLE PERMITTED WHERE APPROVED BY ENGINEER.



PLAN

AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102 AMERICAN WATER	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM BLOCKING AT END OF MAIN WITH BLOW-OFF DETAIL	
DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: NTS
STANDARD DETAILS	APPROVED	SD- 3



AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102 AMERICAN WATER	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM 2" BLOWOFF AT END OF MAIN DETAIL	
DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: NTS
PIPELINE DETAILS	APPROVED	SD- 4

No.	DATE	REVISIONS
		DESCRIPTION

PLAN DATE
10 – 20 – 2023
03 – 01 – 2024
05 – 21 – 2024
06 – 07 – 2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

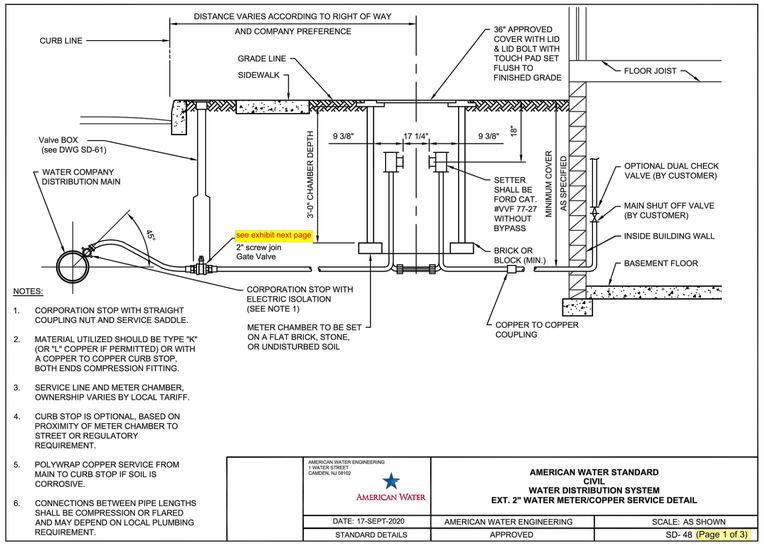
UTILITY PLAN NOTES & DETAILS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
C.I.= N/A
SCALE: N/A

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
06A
OF
28

FILE No.
SP-13141

Urban, Ltd. – J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-09-UTILITY PLAN.dwg [DETAIL] June 07, 2024 – 11:22am awallio



NOTES:

1. CORPORATION STOP WITH STRAIGHT COUPLING NUT AND SERVICE SADDLE.
2. MATERIAL UTILIZED SHOULD BE TYPE "K" (OR "L" COPPER IF PERMITTED) OR WITH A COPPER TO COPPER CURB STOP, BOTH ENDS COMPRESSION FITTING.
3. SERVICE LINE AND METER CHAMBER, OWNERSHIP VARIES BY LOCAL TARIFF.
4. CURB STOP IS OPTIONAL, BASED ON PROXIMITY OF METER CHAMBER TO STREET OR REGULATORY REQUIREMENT.
5. POLYWRAP COPPER SERVICE FROM MAIN TO CURB STOP IF SOIL IS CORROSIVE.
6. CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE COMPRESSION OR FLARED AND MAY DEPEND ON LOCAL PLUMBING REQUIREMENT.

AMERICAN WATER ENGINEERING
1 WATER STREET
CAMDEN, NJ 08102

AMERICAN WATER

AMERICAN WATER STANDARD
CIVIL
WATER DISTRIBUTION SYSTEM
EXT. 2" WATER METER/COPPER SERVICE DETAIL

DATE: 17-SEPT-2020	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 48 (Page 1 of 3)

Typical 2" Copper Domestic and Fire Service Line Installation Exhibit

1. Developer's contractor could only use Method #1.
2. Method #2 must be installed by American Water.

Typical Fitting sequence (Method #1)
(with new water main installation)
- 2" tap TEE (see next page)
- 2"x6" Brass Nipple
- **2" Threaded Gate Valve (screw join)**
- 2" copper x iron male adapter (e.g. Mueller H-15425N)
- And then, 2" copper service line starts

Typical Fitting sequence (Method #2)
(tap on existing water main)
- 2" corporation stop with service saddle
- 2" copper tube
- 2" copper x iron male adapter
- **2" Threaded Gate Valve (screw join)**
- 2" copper x iron male adapter
- And then, 2" copper service line starts

Straight coupling
Copper flare nut x M.I.P.

H-15425N

1/2"‡	1/2" x 3/4"	5/8" x 3/4"	3/4"	5/8" x 1/2"	3/4" x 1/2"	
3/4" x 1"	1"	1" x 3/4"	1" x 1-1/4"‡	1-1/4"	1-1/2"	2"

SD-48 (Page 2 of 3)

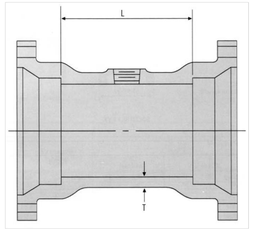
866.DIP.PIPE MECHANICAL JOINT FITTINGS

NSF

2005 EDITION | P 21

Tee, 4" X 2" Tap MJ X FIP; US PIPE #8000002742
Tee, 6" X 2" Tap MJ X FIP; US PIPE #8000000756
Tee, 8" X 2" Tap MJ X FIP; US PIPE #8000000822
Tee, 12" X 2" Tap MJ X FIP; US PIPE #8000001943

Tapped Tees



SIZE Inches	PRESSURE RATING psi	DIMENSIONS Inches T	L	MAXIMUM TAP IN BOSS	WEIGHT Pounds
3	350	.49	8	2-1/2	35
4	350	.52	8	2-1/2	45
6	350	.55	8	2-1/2	70
8	350	.60	8	2-1/2	95
10	350	.68	8	2-1/2	130
12	350	.75	8	2-1/2	165

Two bosses can be used to make a tapped cross.
For dimensions of Mechanical Joints see page 4.

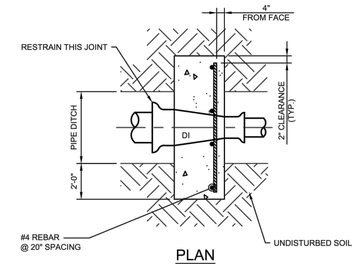
For Reference Only

SD-48 (Page 3 of 3)

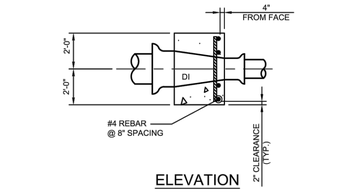
U.S. PIPE AND FOUNDRY CO. **MECHANICAL JOINT FITTINGS BRO-007** Revised 12.05

NOTES:

1. ONLY BELL TO BELL REDUCERS ARE ACCEPTABLE.
2. THE JOINT BETWEEN THE LARGE END OF THE REDUCER AND FOLLOWING PIPE SHOULD BE RESTRAINED AS WELL.
3. AVOID USE OF MEGALUGS ON DIP FITTINGS IN CONCRETE.
4. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN. 3000 PSI CONCRETE.



PLAN



ELEVATION

AMERICAN WATER ENGINEERING
1 WATER STREET
CAMDEN, NJ 08102

AMERICAN WATER

AMERICAN WATER STANDARD
CIVIL
WATER DISTRIBUTION SYSTEM
REDUCER THRUST BLOCK DETAIL

DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: NTS
STANDARD DETAILS	APPROVED	SD- 15

FIRE HYDRANT DETAIL-STANDARD

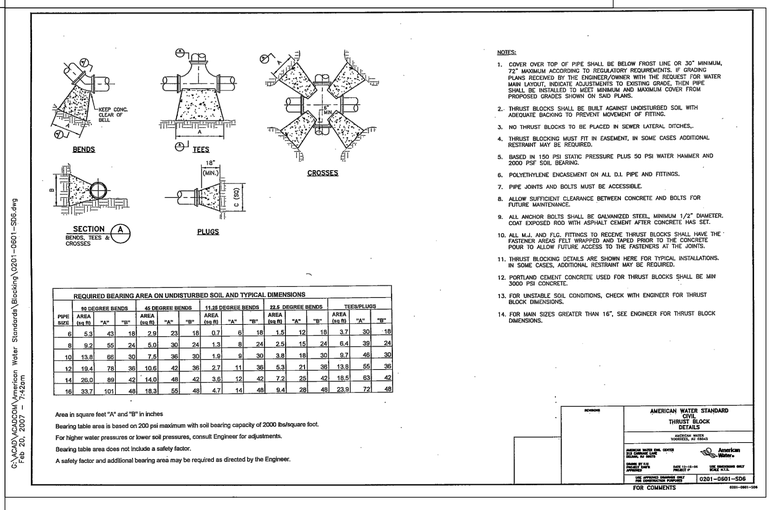
NOTES:
1. CONTRACTOR TO SUBMIT RESTRAINED DESIGN. ADDITIONAL RESTRAINT (BESIDES BLOCKING) ONLY AS REQUIRED BY ENGINEER.
2. PAINT HYDRANT TO BURY LINE (AND CAN BE DONE PRIOR TO INSTALLATION).
3. APPLY TOUCH UP PAINT AS REQUIRED AFTER INSTALLATION.
4. ALL HYDRANTS SHALL STAND PLUMB AND SHALL HAVE THE PUMPER NOZZLE FACING THE CURB.
5. PORTLAND CEMENT CONCRETE USED FOR THE THRUST BLOCKS SHALL BE MIN. 3000 PSI CONCRETE.

AMERICAN WATER ENGINEERING
1 WATER STREET
CAMDEN, NJ 08102

AMERICAN WATER

AMERICAN WATER STANDARD
CIVIL
WATER DISTRIBUTION SYSTEM
DRY BARREL FIRE HYDRANT WITH BLOCKING DETAIL

DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 30



PIPE SIZE	90 DEGREE BENDS AREA (sq ft)	"A"	"B"	45 DEGREE BENDS AREA (sq ft)	"A"	"B"	11.25 DEGREE BENDS AREA (sq ft)	"A"	"B"	22.5 DEGREE BENDS AREA (sq ft)	"A"	"B"	TEES/PLUGS AREA (sq ft)	"A"	"B"
6	5.3	43	18	2.9	23	18	0.7	6	18	1.5	12	18	3.7	30	18
8	9.2	55	24	5.0	30	24	1.3	8	24	2.5	15	24	6.4	39	24
10	13.8	68	30	7.5	36	30	1.9	9	30	3.8	18	30	9.7	46	30
12	19.4	78	36	10.6	42	36	2.7	11	36	5.3	21	36	13.5	55	36
14	26.0	89	42	14.0	48	42	3.6	12	42	7.2	25	42	18.5	63	42
16	33.7	101	48	18.3	55	48	4.7	14	48	9.4	28	48	23.9	72	48

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-07-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban™
Planners•Engineers•Landscape Architects•Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCZ
Lic. No. 038790
REGISTERED PROFESSIONAL ENGINEER
06/07/2024

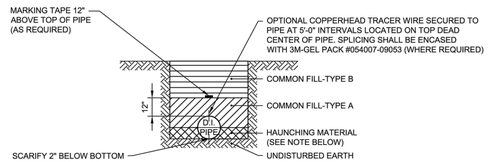
UTILITY PLAN NOTES & DETAILS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: N/A | C.I.=N/A | DATE: MAY, 2024

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 06B OF 28
FILE No. SP-13141

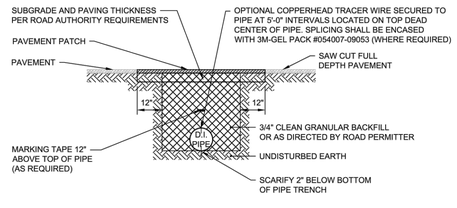
Urban, Ltd. - J:_OBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-09-UTILITY PLAN.dwg [DETAIL2] June 07, 2024 - 11:22am owallio
C:\ACAD\ACADCNW\Hamilton Water Standards\Blocking\D201-0601-SD6.dwg Feb 20, 2007 - 7:42pm

NON-TRAFFIC AREA



DETAIL "A"

D.I. - SOIL
(FOR AREAS NOT TO BE PAVED)



DETAIL "B"

D.I. - SOIL
(FOR PAVED AREAS OR AREAS TO BE PAVED OR WITHIN 18" OF PAVING)

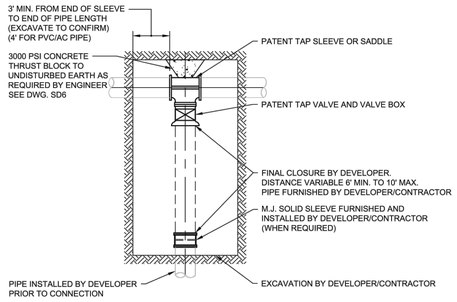
NOTES:

1. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.
2. POLYETHYLENE ENCASING ON ALL D.I. PIPE, FITTINGS, VALVES & APPURTENANCES.
3. SEE SPECIFICATION SECTION ~~312333~~ #02210 FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.

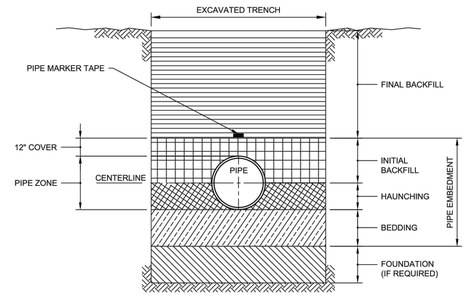
AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM TRENCH - D.I. PIPE IN SOIL DETAIL	
DATE: 23-OCT-2020	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 55

NOTES:

1. TAP CONNECTIONS TO AC (TRANSITE PIPE) 4" AND LARGER REQUIRE AN EXCAVATION 5 FT. IN WIDTH. (MAIN SIZE IS VARIABLE).
2. ALL EXCAVATIONS SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS FOR PROTECTION OF WORKERS.
3. IF PIPE BELL IS EXPOSED IN TAP HOLE OR OTHER OBSTACLES ENCOUNTERED, CONTACT LOCAL WATER COMPANY DISTRICT PERSONNEL FOR FIELD REVIEW BEFORE COMPLETING EXCAVATION.
4. TAP HOLE SHALL BE FREE OF WATER AND MUD TO ALLOW SAFE HANDLING OF HEAVY SLEEVES AND TAPPING MACHINE.
5. CONCRETE BLOCKING BEHIND TAP TO BE PER REQUIREMENTS ON DRAWING SD6.
6. BOTTOM OF EXCAVATION TO BE 12" BELOW BOTTOM OF PIPE AND REASONABLY LEVEL.



AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM PATENT TAP CONNECTION DETAIL	
DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 52



TRENCH TERMINOLOGY:

FOUNDATION: A FOUNDATION IS NECESSARY ONLY WHEN NATIVE SOILS ARE UNSTABLE. FOR SUCH CONDITIONS, THE TRENCH IS OVER-EXCAVATED AND A LAYER OF SUPPORTIVE MATERIAL IS PLACED AND COMPACTED TO PROVIDE A FIRM FOUNDATION FOR THE SUBSEQUENT PIPE EMBEDMENT MATERIALS.

EMBEDMENT: THIS ZONE IS THE MOST IMPORTANT IN TERMS OF PIPE PERFORMANCE. IT IS DIVIDED INTO THE FOLLOWING SUB ZONES:

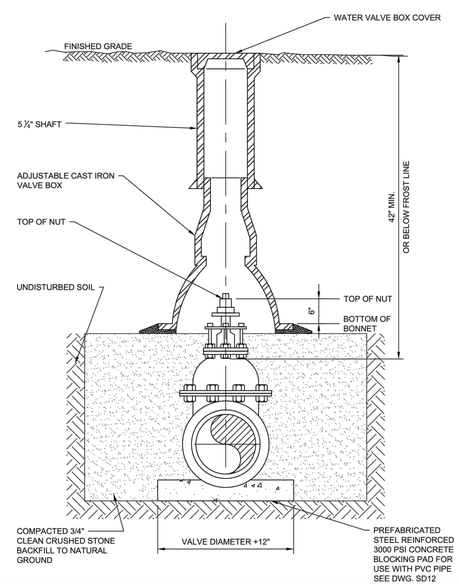
- BEDDING: TYPICALLY SIX INCHES OF SUPPORTIVE, COMPACTED MATERIAL. THIS ZONE PROVIDES EVEN SUPPORT FOR THE PIPE AND BRINGS IT TO GRADE.
- HAUNCHING: EXTENDS FROM THE BOTTOM OF THE PIPE TO THE CENTERLINE OF THE PIPE. IT PROVIDES THE MOST RESISTANCE TO PIPE DEFLECTION. SPECIFYING PROPER MATERIALS AND COMPACTION ARE MOST IMPORTANT FOR THIS ZONE.
- INITIAL BACKFILL: EXTENDS FROM THE SPRINGLINE TO A POINT ABOVE THE TOP OF THE PIPE. THIS ZONE PROVIDES SOME PIPE SUPPORT AND HELPS TO PREVENT DAMAGE TO THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. THE COVER EXTENDS FROM THE TOP OF THE PIPE TO THE TOP OF THE INITIAL BACKFILL. THE DEPTH OF COVER SHOULD BE AS MUCH AS NECESSARY TO PROTECT THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. TWELVE INCHES IS A COMMON DEPTH OF COVER.

FINAL BACKFILL: THIS ZONE EXTENDS FROM THE TOP OF THE INITIAL BACKFILL TO THE TOP OF THE TRENCH. THIS ZONE HAS LITTLE INFLUENCE ON PIPE PERFORMANCE, BUT CAN BE IMPORTANT TO THE INTEGRITY OF ROADS AND STRUCTURES.

AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM PIPE TRENCH TERMINOLOGY DETAIL	
DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 53

NOTE:

1. 6"x6" WOOD BLOCK MAY BE USED AS VALVE PAD WHERE APPROVED BY ENGINEER.



AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM VALVE BOX INSTALLATION FROST AREAS DETAIL	
DATE: 23-OCT-2020	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 59

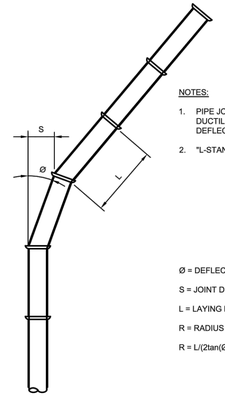
MAXIMUM JOINT DEFLECTION

MAXIMUM JOINT DEFLECTION DUCTILE IRON PUSH ON PIPE

NOMINAL PIPE SIZE INCHES	DEFLECTION ANGLE DEGREES	MAX OFFSET -S INCHES		APPROX RADIUS OF CURVE - R PRODUCED BY SUCCESSION OF JOINTS INCHES		CURRENT AW DEFLECTION ANGLE DEGREES
		L=18 FT	L=20 FT	L=18 FT	L=20 FT	
3	4	15	17	256	285	
4	4	15	17	256	285	
6	4	15	17	256	285	4
8	4	15	17	256	285	4
10	4	15	17	256	285	
12	4	15	17	256	285	4
14	4	9	10	256	285	
16	2.5	9	10	429	476	2.5
18	2.5	9	10	429	476	
20	2.5	9	10	429	476	2
24	2.5	9	10	429	476	1.5

MAXIMUM JOINT DEFLECTION DUCTILE IRON MJ PIPE

NOMINAL PIPE SIZE INCHES	DEFLECTION ANGLE DEGREES	MAX OFFSET -S INCHES		APPROX RADIUS OF CURVE - R PRODUCED BY SUCCESSION OF JOINTS INCHES		CURRENT AW DEFLECTION ANGLE DEGREES
		L=18 FT	L=20 FT	L=18 FT	L=20 FT	table deleted
3	6.5	25	28	158	176	
4	6.5	25	28	158	176	
6	5.5	22	24	182	202	
8	4	16	18	256	285	
10	4	16	18	256	285	
12	4	16	18	256	285	
14	3	11	12	367	408	
16	3	11	12	367	408	
18	2.5	11	10	429	476	
20	2.5	9	10	429	476	
24	1.5	9	8	644	715	



NOTES:

1. PIPE JOINT DEFLECTION ALLOWED ON DUCTILE IRON PIPE ONLY. PIPE JOINT DEFLECTION NOT ALLOWED ON PVC PIPE.
2. "L-STANDARD LENGTH OF PIPE SECTION.

Ø = DEFLECTION ANGLE

S = JOINT DEFLECTION OFFSET

L = LAYING LENGTH

R = RADIUS OF CURVE

R = L/(2tan(Ø/2))

AMERICAN WATER ENGINEERING 1 WATER STREET CAMDEN, NJ 08102	AMERICAN WATER STANDARD CIVIL WATER DISTRIBUTION SYSTEM PIPE CURVE GEOMETRY DETAIL	
DATE: 09-OCT-2019	AMERICAN WATER ENGINEERING	SCALE: AS SHOWN
STANDARD DETAILS	APPROVED	SD- 32

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
10-20-2023
03-21-2024
05-16-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. POOL
Lic. No. 038790
PROFESSIONAL ENGINEER
06-07-2024

UTILITY PLAN NOTES & DETAILS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
C1.=N/A
SCALE: N/A

SHEET 06C OF 28

FILE No. SP-13141

Urban, Ltd. - J:_JOBS\landmark\all\DSUP\block l&m\preliminary site plan\13141-09-UTILITY PLAN.dwg [DETAILS] June 07, 2024 - 11:22am awolla

West End Towns Fixture Count - Block L

Unit Type	Fixture Type	Quantity per Unit	Total Units	Total for Unit Type
16x40 Unit	Kitchen sink	1	30	30
	Dishwasher	1	30	30
	Powder Sink	1	30	30
	PR Toilet	1	30	30
	Primary Bath Sinks	2	30	60
	Shower	1	30	30
	Toilet	1	30	30
	Bath #2 Sink	1	30	30
	Shower/Tub	1	30	30
	Toilet	1	30	30
	Bath #3 Sink	1	30	30
	Shower/tub	1	30	30
	Toilet	1	30	30
	Hose Bib	2	30	60
	Washing Machine	1	30	30
			Unit Total	510

Unit Type	Fixture Type	Quantity per Unit	Total Units	Total for Unit Type
20x40 Unit	Kitchen sink	1	14	14
	Dishwasher	1	14	14
	Powder Sink	1	14	14
	PR Toilet	1	14	14
	Primary Bath Sinks	2	14	28
	Shower	1	14	14
	Toilet	1	14	14
	Bath #2 Sink	1	14	14
	Shower/Tub	1	14	14
	Toilet	1	14	14
	Bath #3 Sink	1	14	14
	Shower/tub	1	14	14
	Toilet	1	14	14
	Hose Bib	2	14	28
	Washing Machine	1	14	14
			Unit Total	238
			Total fixtures Block L:	748

West End Towns Fixture Count - Block M

Unit Type	Fixture Type	Quantity per Unit	Total Units	Total for Unit Type
16x40 Unit	Kitchen sink	1	44	44
	Dishwasher	1	44	44
	Powder Sink	1	44	44
	PR Toilet	1	44	44
	Primary Bath Sinks	2	44	88
	Shower	1	44	44
	Toilet	1	44	44
	Bath #2 Sink	1	44	44
	Shower/Tub	1	44	44
	Toilet	1	44	44
	Bath #3 Sink	1	44	44
	Shower/tub	1	44	44
	Toilet	1	44	44
	Hose Bib	2	44	88
	Washing Machine	1	44	44
			Unit Total	748

Unit Type	Fixture Type	Quantity per Unit	Total Units	Total for Unit Type
20x40 Unit	Kitchen sink	1	22	22
	Dishwasher	1	22	22
	Powder Sink	1	22	22
	PR Toilet	1	22	22
	Primary Bath Sinks	2	22	44
	Shower	1	22	22
	Toilet	1	22	22
	Bath #2 Sink	1	22	22
	Shower/Tub	1	22	22
	Toilet	1	22	22
	Bath #3 Sink	1	22	22
	Shower/tub	1	22	22
	Toilet	1	22	22
	Hose Bib	2	22	44
	Washing Machine	1	22	22
			Unit Total	374
			Total Fixtures Block M:	1,122

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-17-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners•Engineers•Landscape Architects•Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

UTILITY PLAN NOTES & DETAILS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: N/A | C.I.=N/A | DATE: MAY, 2024

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 06D OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-09-UTILITY PLAN.dwg [detail4] June 07, 2024 - 11:22am awalo

LOT 804
98,964 S.F.
2.2719 ACRES

LOT 706
61,205 S.F.
1.4051 ACRES

NOTE: BLOCK TO DRAIN USING EXISTING SEDIMENT BASIN RISER AND STORM CONNECTION

BLDG A, BLDG B, BLDG C, BLDG D, BLDG E, BLDG F, BLDG G, BLDG H, BLDG J, BLDG K, BLDG L, BLDG M, BLDG N, BLDG P, BLDG Q, BLDG R, BLDG S

ROAD A (PRIVATE)
ROAD B (PRIVATE)
ROAD C (PRIVATE)
ROAD D (PRIVATE)
ALLEY A (PRIVATE)
ALLEY B (PRIVATE)

ALEX WAY (PRIVATE)
POSTED SPEED= 25 MPH

VERVE ST. (PUBLIC)
POSTED SPEED= 25 MPH

HECHT AVE. (PUBLIC)
POSTED SPEED= 25 MPH

LANDMARK ST. (PRIVATE)
POSTED SPEED= 25 MPH

NORTH VAN DORN STREET
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE ST. WB RAMP
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE STREET
ROUTE #236
VARIABLE WIDTH R/W
PUBLIC STREET

12' CONCRETE SHARED USE PATH

TRANSIT STOP

EX. PUBLIC ACCESS EASEMENT INSTR. 230008799

EX. PUBLIC ACCESS EASEMENT (DSP#2023-10004)

EX. PUBLIC ACCESS EASEMENT INSTR. 230008799

EX. BIKE RACK (TYP.)

EXTENT OF STANDARD PARALLEL PARKING (TYP.)

PROP. BIKE LANE

BIKESHARE STATION

PROP. SITE LIGHTING (TYP.)

PROP. TRANS-FORMERS

BOLLARD

BIO PLANTER (PVT.)

PROP. 8" SAN. (CDA)

PROP. 18" STM(PVT.)

PROP. 24" STM(PVT.)

PROP. 4' DECK

EX. RETAINING WALL

N 6983210 E 1182313

N 6982759 E 1182313

VA. STATE GRID NORTH

1929 DATUM

LEGEND

BLOCK L & M PROPERTY LINES

LIMITS OF DISTURBANCE

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. LIMITS OF DISTURBANCE SHOWN HEREON IS PRELIMINARY AND SUBJECT TO FINAL ENGINEERING.

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

GRADING PLAN
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
SCALE: 1"=30' C.I.= 2'

SHEET 07 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\Vandmarkmall\DSUP\block l&m\preliminary site plan\13141-07-GRADING PLAN.dwg [01] June 07, 2024 - 11:23am owallio

OPEN SPACE CALCULATION:

BLOCK L (LOT 709) SITE AREA: 1.79 AC.
REQUIRED OPEN SPACE: .44 AC. OR 19,480 SF (25% OF SITE AREA)

OPEN SPACE PROVIDED:
PUBLIC OPEN SPACE: 15,304 S.F
TRANSFERRED OPEN SPACE FROM BLOCK R (PUBLIC): 4,176 SF
TOTAL PROVIDED: .44 AC. OR 19,480 SF (25.00% OF SITE AREA)

BLOCK M SITE AREA: 2.80 AC.
REQUIRED OPEN SPACE: .70 AC. OR 30,543 SF (25% OF SITE AREA)

OPEN SPACE PROVIDED:
PUBLIC OPEN SPACE: 28,680 S.F
TRANSFERRED OPEN SPACE FROM BLOCK R (PUBLIC): 1,863 SF
TOTAL PROVIDED: .70 AC. OR 30,543 SF (25.00% OF SITE AREA)

LEGEND

- BLOCK L & M PROPERTY LINES
- LIMITS OF DISTURBANCE
- PUBLIC OPEN SPACE
- TRANSFERRED OPEN SPACE

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. LIMITS OF DISTURBANCE SHOWN HEREON IS PRELIMINARY AND SUBJECT TO FINAL ENGINEERING.

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCH
Lic. No. 036790
ENGINEER
PROFESSIONAL
06/07/2024

OPEN SPACE PLAN
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1"=30' C.I.=N/A DATE: MAY, 2024

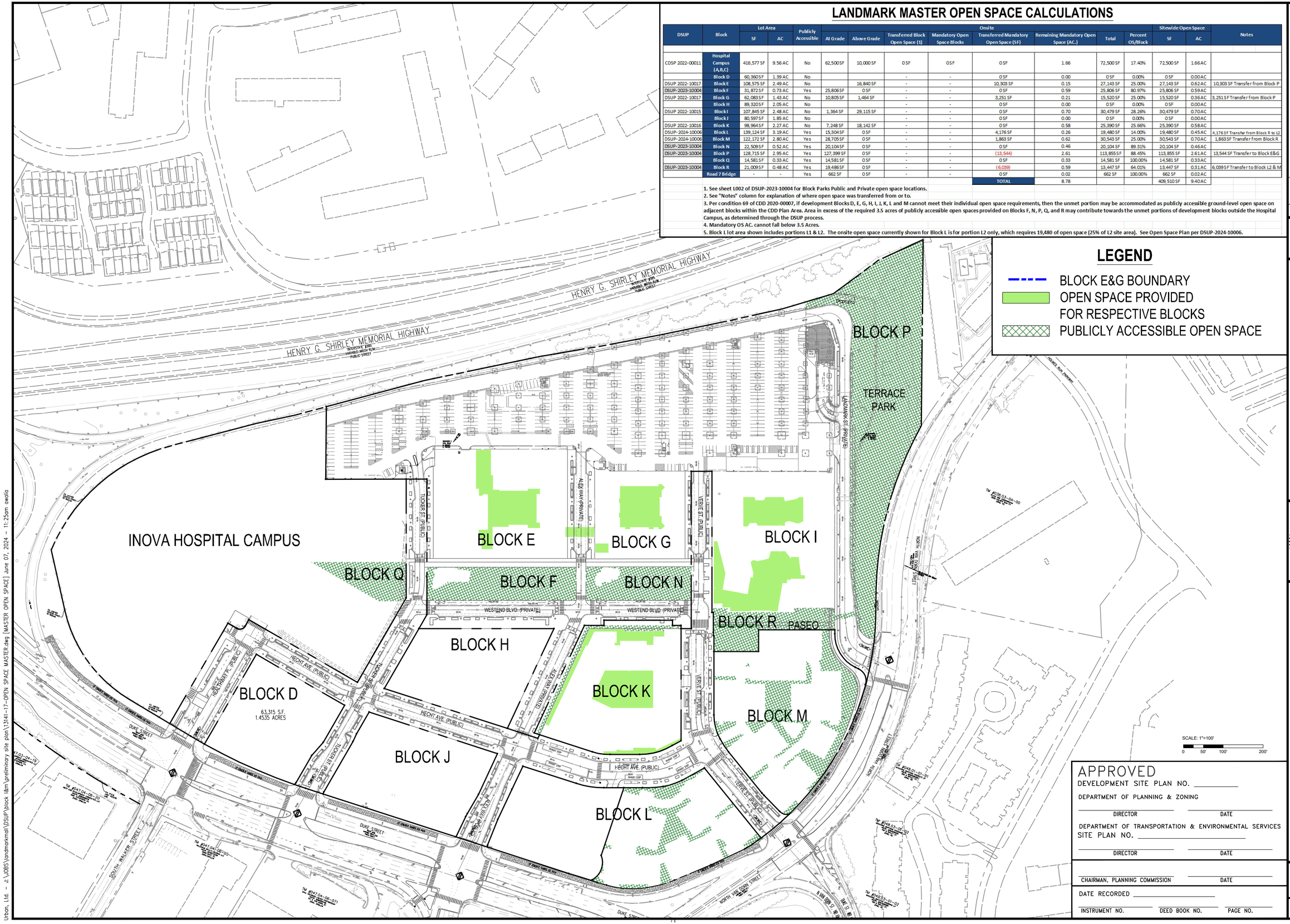
SHEET 08 OF 28
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\1ordmarkmall\DSUP\block l&m\preliminary site plan\13141-05-OPEN SPACE PLAN.dwg [OPEN SPACE] June 07, 2024 - 11:24am owolo

LANDMARK MASTER OPEN SPACE CALCULATIONS

DSUP	Block	Lot Area SF	Lot Area AC	Publicly Accessible	Onsite At Grade	Onsite Above Grade	Onsite Transferred Block Open Space (1)	Onsite Mandatory Open Space Blocks	Onsite Transferred Mandatory Open Space (SF)	Remaining Mandatory Open Space (AC.)	Total	Percent OS/Block	Sitewide Open Space SF	Sitewide Open Space AC	Notes
CDSP 2022-00011	Hospital Campus (A,B,C)	416,577 SF	9.56 AC	No	62,500 SF	10,000 SF	0 SF	0 SF	0 SF	1.66	72,500 SF	17.40%	72,500 SF	1.66 AC	
	Block D	60,360 SF	1.39 AC	No			-	-	0 SF	0.00	0 SF	0.00%	0 SF	0.00 AC	
DSUP 2022- 10017	Block E	108,575 SF	2.49 AC	No		16,840 SF	-	-	10,303 SF	0.15	27,143 SF	25.00%	27,143 SF	0.62 AC	10,303 SF Transfer from Block P
DSUP- 2023-10004	Block F	31,872 SF	0.73 AC	Yes	25,806 SF	0 SF	-	-	0 SF	0.59	25,806 SF	80.97%	25,806 SF	0.59 AC	
DSUP 2022- 10017	Block G	62,083 SF	1.43 AC	No	10,805 SF	1,464 SF	-	-	3,251 SF	0.21	15,520 SF	25.00%	15,520 SF	0.36 AC	3,251 SF Transfer from Block P
	Block H	89,320 SF	2.05 AC	No			-	-	0 SF	0.00	0 SF	0.00%	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	0.70	30,479 SF	28.26%	30,479 SF	0.70 AC	
	Block J	80,597 SF	1.85 AC	No			-	-	0 SF	0.00	0 SF	0.00%	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	0.58	25,390 SF	25.66%	25,390 SF	0.58 AC	
DSUP- 2024-10006	Block L	139,124 SF	3.19 AC	Yes	15,304 SF	0 SF	-	-	4,176 SF	0.26	19,480 SF	14.00%	19,480 SF	0.45 AC	4,176 SF Transfer from Block R to L2
DSUP- 2024-10006	Block M	122,172 SF	2.80 AC	Yes	28,705 SF	0 SF	-	-	1,863 SF	0.62	30,543 SF	25.00%	30,543 SF	0.70 AC	1,863 SF Transfer from Block R
DSUP- 2023-10004	Block N	22,509 SF	0.52 AC	Yes	20,104 SF	0 SF	-	-	0 SF	0.46	20,104 SF	89.31%	20,104 SF	0.46 AC	
DSUP- 2023-10004	Block P	128,715 SF	2.95 AC	Yes	127,399 SF	0 SF	-	-	(13,544)	2.61	113,855 SF	88.45%	113,855 SF	2.61 AC	13,544 SF Transfer to Block E&G
	Block Q	14,581 SF	0.33 AC	Yes	14,581 SF	0 SF	-	-	0 SF	0.33	14,581 SF	100.00%	14,581 SF	0.33 AC	
DSUP- 2023-10004	Block R	21,009 SF	0.48 AC	Yes	19,486 SF	0 SF	-	-	(6,039)	0.59	13,447 SF	64.01%	13,447 SF	0.31 AC	6,039 SF Transfer to Block L2 & M
	Road 7 Bridge	-	-	Yes	662 SF	0 SF	-	-	0 SF	0.02	662 SF	100.00%	662 SF	0.02 AC	
									TOTAL	8.78			409,510 SF	9.40 AC	

1. See sheet L002 of DSUP-2023-10004 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.
5. Block L lot area shown includes portions L1 & L2. The onsite open space currently shown for Block L is for portion L2 only, which requires 19,480 of open space (25% of L2 site area). See Open Space Plan per DSUP-2024-10006.



LEGEND

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

SCALE: 1"=100'
0 50' 100' 200'

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

No.	DATE	REVISIONS DESCRIPTION

PLAN DATE
10 – 20 – 2023
03 – 01 – 2024
05 – 07 – 2024
06 – 07 – 2024

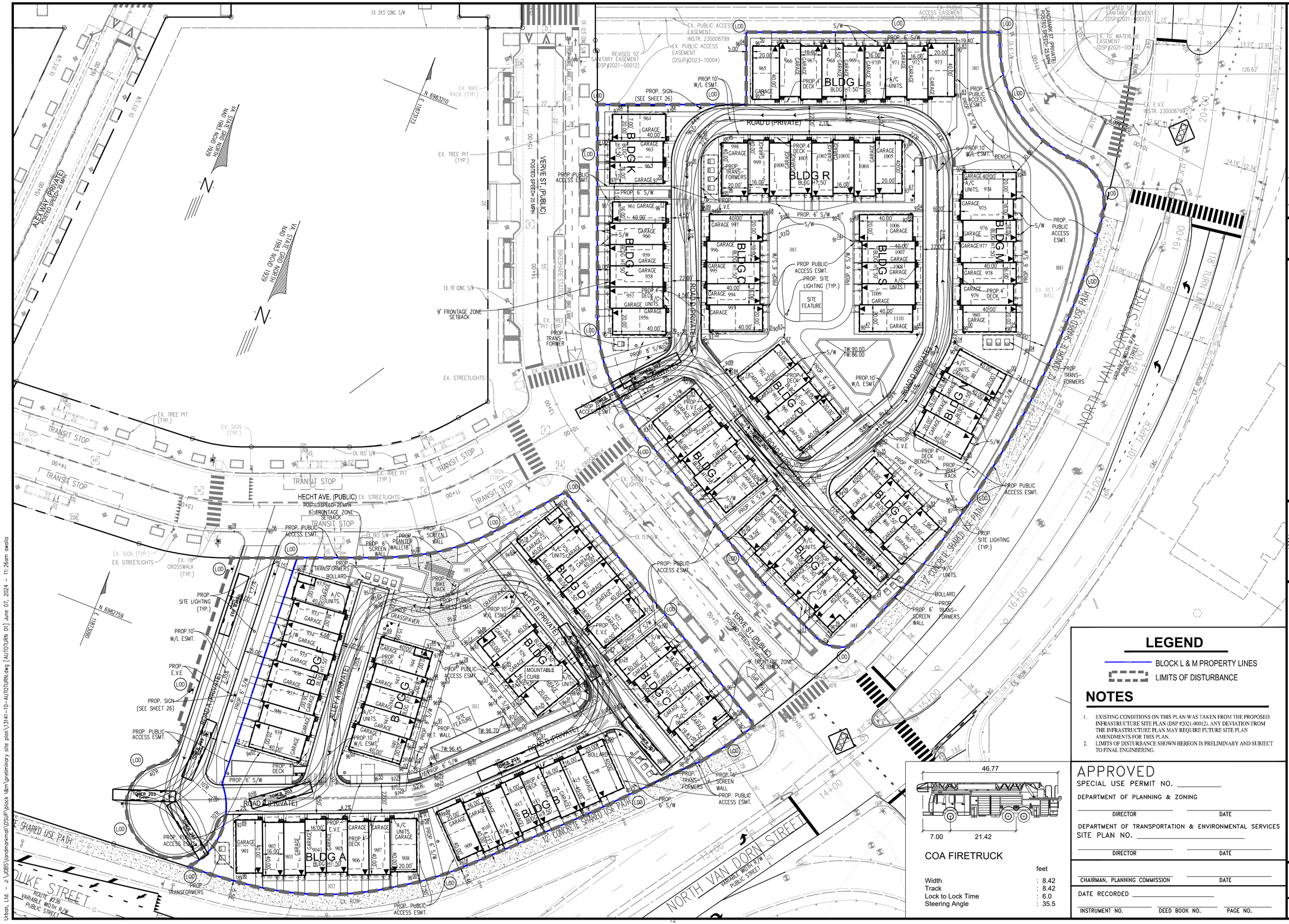
Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX 703.378.7888
www.urban-ltd.com
urban
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. ROCK
Lic. No. 038780
PROFESSIONAL ENGINEER
06/07/2024

MASTER OPEN SPACE PLAN
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
SCALE: 1"=100' C.I.= N/A

SHEET 08A OF 28
FILE No. SP-13141

Urban, Ltd. – J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-17-OPEN SPACE MASTER.dwg [MASTER OPEN SPACE] June 07, 2024 – 11:25am owolio



LEGEND

- BLOCK L & M PROPERTY LINES
- LIMITS OF DISTURBANCE

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. LIMITS OF DISTURBANCE SHOWN HEREON IS PRELIMINARY AND SUBJECT TO FINAL ENGINEERING.

COA FIRETRUCK

	feet
Width	: 8.42
Track	: 8.42
Lock to Lock Time	: 6.0
Steering Angle	: 35.5

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCH
Lic. No. 036790
PROFESSIONAL ENGINEER
06-07-2024

AUTOTURN EXHIBIT

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

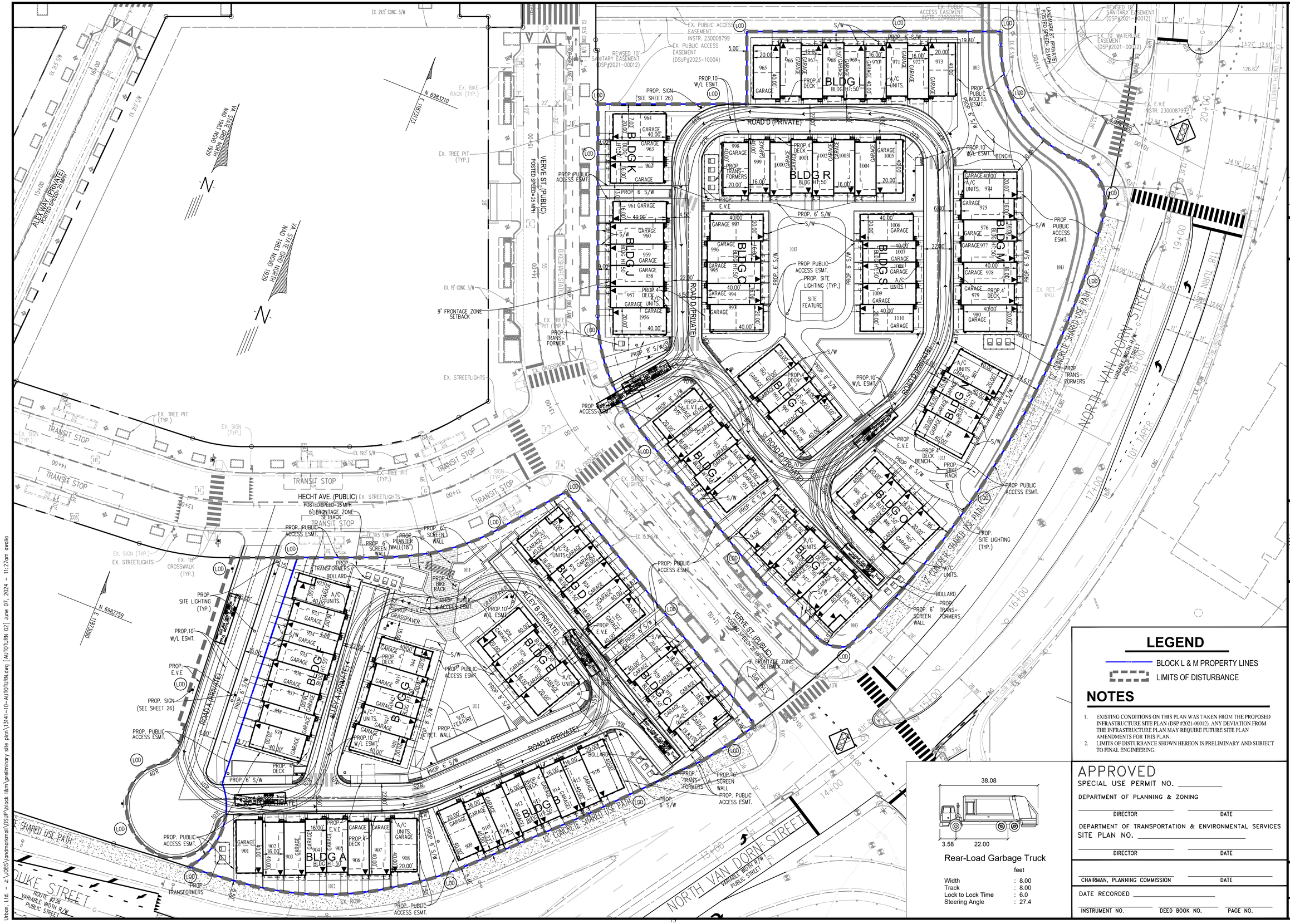
CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.= N/A DATE: MAY, 2024

SHEET 09 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\OBS\1ordmarkmall\DSUP\block l&m\preliminary site plan\13141-10-AUTOTURN.dwg [AUTOTURN 01] June 07, 2024 - 11:26am awilio



LEGEND

BLOCK L & M PROPERTY LINES

LIMITS OF DISTURBANCE

NOTES

1. EXISTING CONDITIONS ON THIS PLAN WAS TAKEN FROM THE PROPOSED INFRASTRUCTURE SITE PLAN (DSP #2021-00012). ANY DEVIATION FROM THE INFRASTRUCTURE PLAN MAY REQUIRE FUTURE SITE PLAN AMENDMENTS FOR THIS PLAN.
2. LIMITS OF DISTURBANCE SHOWN HEREON IS PRELIMINARY AND SUBJECT TO FINAL ENGINEERING.

Rear-Load Garbage Truck

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 27.4

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCH
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

AUTOTURN EXHIBIT

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

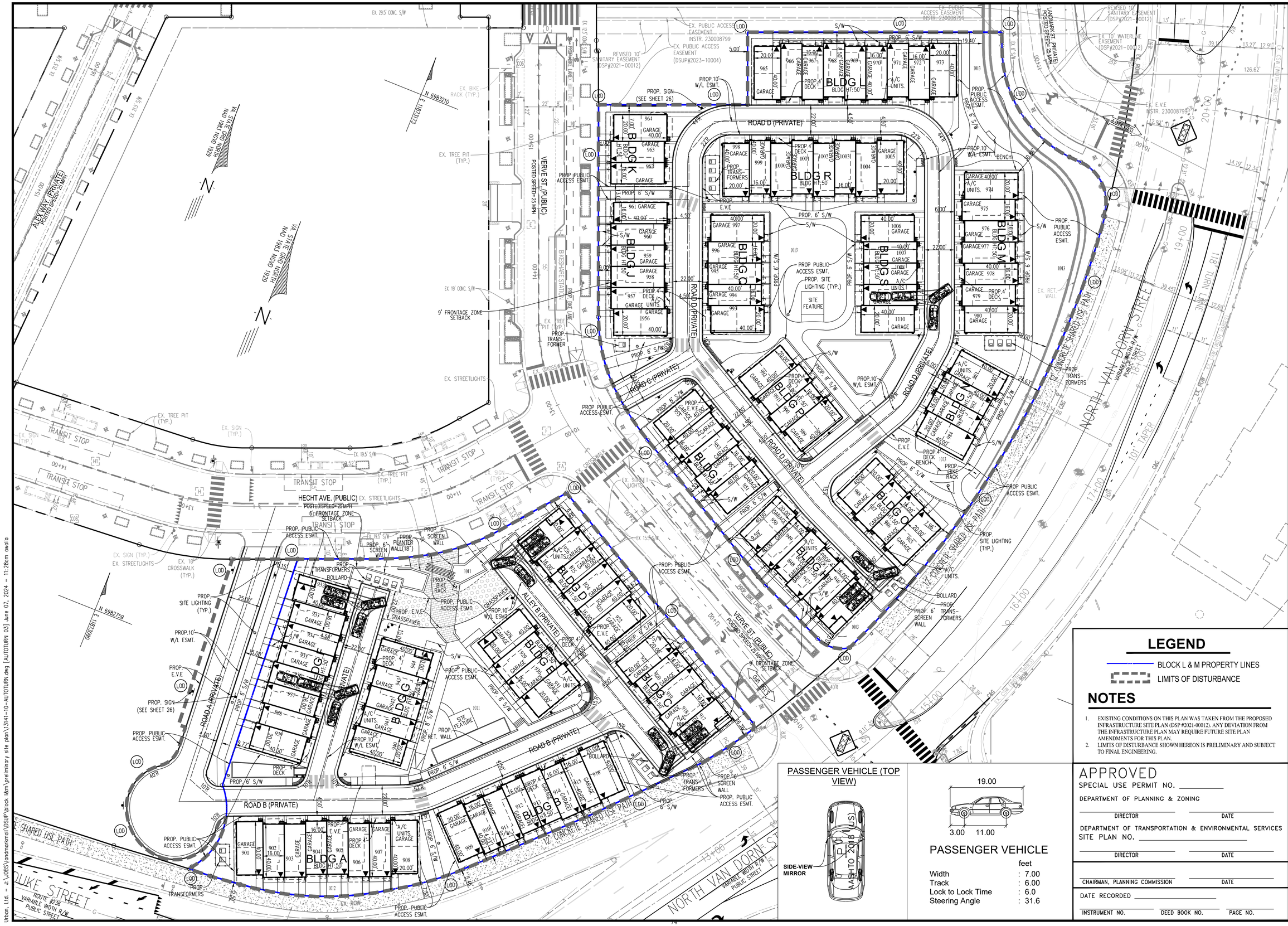
CITY OF ALEXANDRIA, VIRGINIA

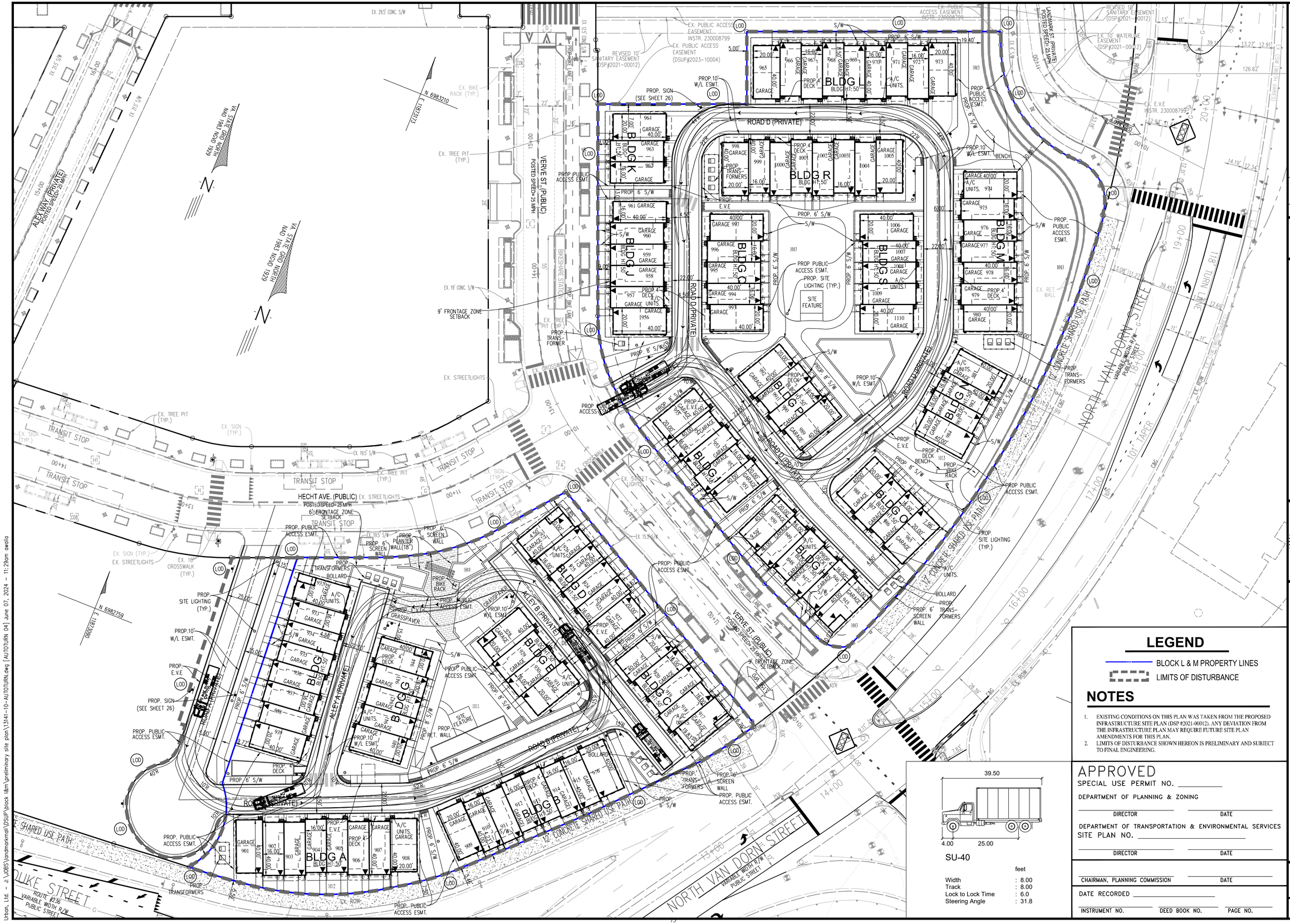
SCALE: 1"=30' | C.I.=N/A | DATE: MAY, 2024

SHEET
09A
OF
28

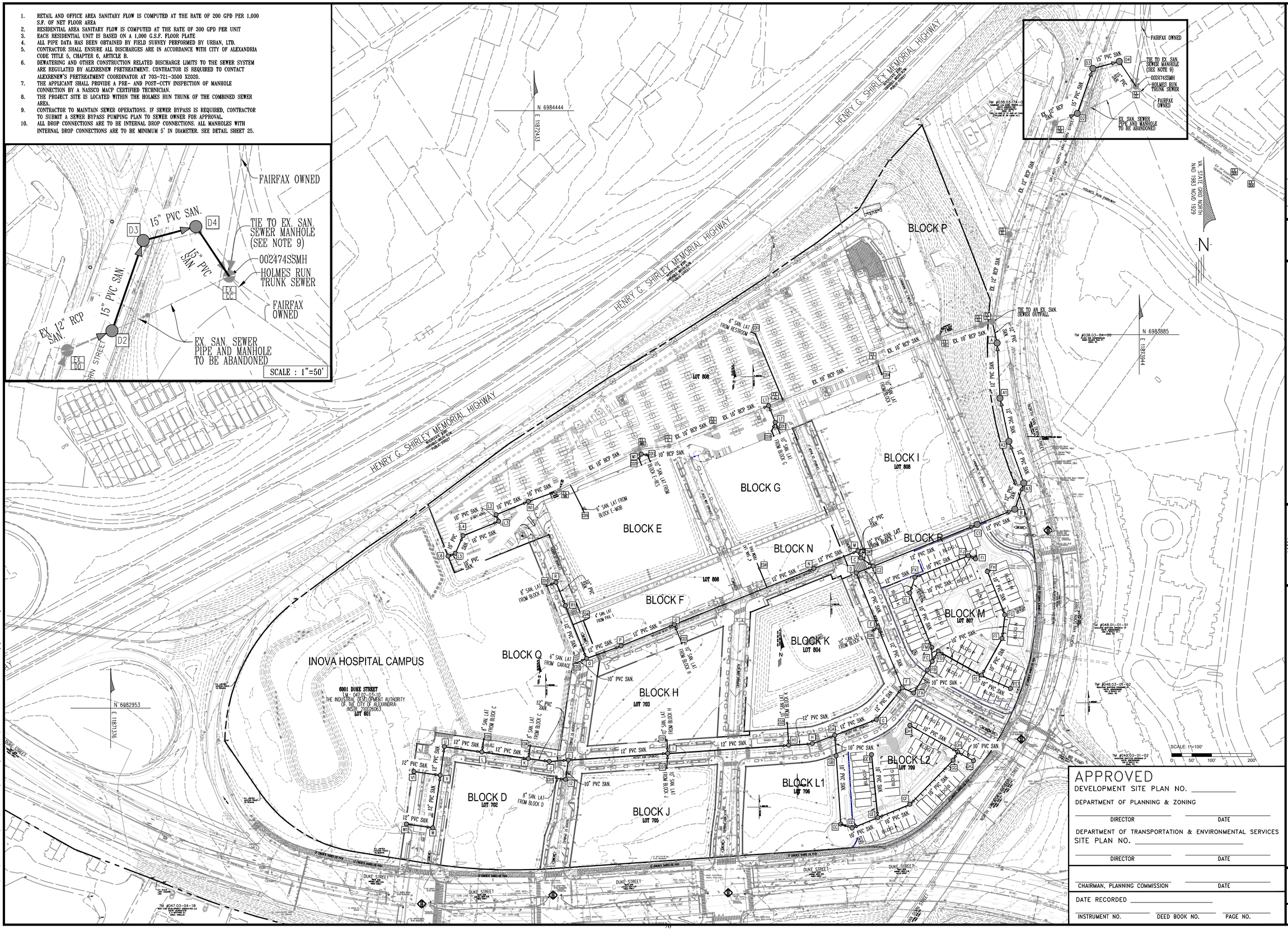
FILE No.
SP-13141

Urban, Ltd. - J:\OBS\landmark\dsup\block l&m\preliminary site plan\13141-10-AUTOTURN.dwg [AUTOTURN 02] June 07, 2024 - 11:27am awolio


ALLEY A (PRIVATE)
POSTED SPEED 25 MPH
VERVE ST. (PUBLIC)
POSTED SPEED=25 MPH
HECHT AVE. (PUBLIC)
POSTED SPEED= 25 MPH
LANDMARK ST. (PRIVATE)
POSTED SPEED=25 MPH
ROAD A (PRIVATE)
ROAD B (PRIVATE)
ROAD C (PRIVATE)
ROAD D (PRIVATE)
ALLEY B (PRIVATE)
BLDG A
BLDG E
BLDG F
BLDG G
BLDG H
BLDG J
BLDG K
BLDG L
BLDG M
BLDG N
BLDG P
BLDG Q
BLDG R
BLDG S
PROP. TRANS-FORMERS
PROP. PUBLIC ACCESS ESMT.
PROP. SITE LIGHTING (TYP.)
PROP. BIKE RACK
PROP. BENCH
PROP. 6' SCREEN WALL
PROP. 6' PLANTER WALL(18")
PROP. SIGN (SEE SHEET 26)
EX. BIKE RACK (TYP.)
EX. TREE PIT (TYP.)
EX. SIGN (TYP.)
EX. STREETLIGHTS
EX. 10' CROSSWALK (TYP.)
EX. 29.5' CONC. S/W
EX. 19' CONC. S/W
EX. 19.5' S/W
9' FRONTAGE ZONE SETBACK
60' FRONTAGE ZONE SETBACK
TRANSIT STOP
BIKESHARE STATION
PROP. BIKE LANE
EX. CROSSWALK
EX. RET. WALL
EX. E.V.E INSTR. 230008799
REVISED 10' SANITARY EASEMENT (DSP#2021-00012)
EX. 10' WATERLINE EASEMENT (DSP#2021-00012)
EX. PUBLIC ACCESS EASEMENT INSTR. 230008799
EX. PUBLIC ACCESS EASEMENT (DSUP#2023-10004)
PROP. 10' W/L ESMT.
PROP. E.V.E
PROP. 4' DECK
PROP. 8' S/W
PROP. 6' S/W
PROP. GRASSPAVER
PROP. PUBLIC ACCESS ESMT.
PROP. PUBLIC SCREEN WALL
PROP. BOLLARD
PROP. SITE FEATURE
PROP. PUBLIC ACCESS ESMT.
PROP. SITE LIGHTING (TYP.)
PROP. 10' W/L ESMT.
PROP. 6' SCREEN WALL
PROP. TRANS-FORMERS
PROP. PUBLIC ACCESS ESMT.
PROP. BENCH
PROP. BIKE RACK
PROP. PUBLIC ACCESS ESMT.
PROP. SITE LIGHTING (TYP.)
PROP. 6' SCREEN WALL
PROP. TRANS-FORMERS
PROP. BOLLARD
PROP. 6' SCREEN WALL
PROP. PUBLIC ACCESS ESMT.
PROP. TRANS-FORMERS


ROAD D (PRIVATE)
ROAD C (PRIVATE)
ALLEY A (PRIVATE)
ALLEY B (PRIVATE)
VERVE ST. (PUBLIC)
POSTED SPEED= 25 MPH
HECHT AVE. (PUBLIC)
POSTED SPEED= 25 MPH
ALLEY (PRIVATE)
POSTED SPEED= 25 MPH
LANDMARK ST. (PRIVATE)
POSTED SPEED= 25 MPH
NORTH VAN DORN STREET
VARIABLE WIDTH R/W
PUBLIC STREET
DUKE STREET
ROUTE #236
VARIABLE WIDTH R/W
PUBLIC STREET
BLDG A
BLDG C
BLDG D
BLDG E
BLDG F
BLDG G
BLDG H
BLDG J
BLDG K
BLDG L
BLDG M
BLDG P
BLDG R
BLDG S
PROP. 12' CONCRETE SHARED USE PATH
PROP. 10' W/L ESMT.
PROP. PUBLIC ACCESS ESMT.
PROP. SITE LIGHTING (TYP.)
PROP. TRANS-FORMERS
PROP. BIKE RACK
PROP. BENCH
PROP. 6' SCREEN WALL
PROP. 6' PLANTER WALL(18")
PROP. 6' S/W
PROP. 8' S/W
PROP. E.V.E
PROP. SIGN (SEE SHEET 26)
EX. TREE PIT (TYP.)
EX. BIKE RACK (TYP.)
EX. STREETLIGHTS
EX. CROSSWALK (TYP.)
EX. SIGN (TYP.)
TRANSIT STOP
9' FRONTAGE ZONE SETBACK
BIKESHARE STATION
GRASSPAVER
BOLLARD
SITE FEATURE
PROP. PUBLIC ACCESS ESMT.
EX. PUBLIC ACCESS EASEMENT INSTR. 230008799
EX. PUBLIC ACCESS EASEMENT (DSUP#2023-10004)
REVISED 10' SANITARY EASEMENT (DSP#2021-00012)
EX. 10' WATERLINE EASEMENT (DSP#2021-00012)
EX. E.V.E INSTR. 230008799
EX. RET. WALL
PROP. PUBLIC ACCESS ESMT.
PROP. 6' SCREEN WALL
PROP. 10' W/L ESMT. BENCH
PROP. 4' DECK
PROP. TRANS-FORMERS
PROP. SITE LIGHTING (TYP.)
PROP. BIKE RACK
PROP. PUBLIC ACCESS ESMT.
PROP. 10' W/L ESMT.
PROP. 6' SCREEN WALL
PROP. 6' TRANS-FORMERS
PROP. 6' S/W
PROP. 8' S/W
PROP. E.V.E
PROP. SIGN (SEE SHEET 26)
PROP. PUBLIC ACCESS ESMT.
PROP. 10' W/L ESMT.
PROP. 6' S/W
PROP. 4' DECK
PROP. BIKE RACK
PROP. BENCH
PROP. PUBLIC ACCESS ESMT.
PROP. SITE LIGHTING (TYP.)
PROP. 6' TRANS-FORMERS
PROP. 6' SCREEN WALL
PROP. PUBLIC ACCESS ESMT.
PROP. 6' S/W
PROP. 8' S/W
PROP. E.V.E

1. RETAIL AND OFFICE AREA SANITARY FLOW IS COMPUTED AT THE RATE OF 200 GPD PER 1,000 S.F. OF NET FLOOR AREA
2. RESIDENTIAL AREA SANITARY FLOW IS COMPUTED AT THE RATE OF 300 GPD PER UNIT
3. EACH RESIDENTIAL UNIT IS BASED ON A 1,000 G.S.F. FLOOR PLATE
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. THE PROJECT SITE IS LOCATED WITHIN THE HOLMES RUN TRUNK OF THE COMBINED SEWER AREA.
9. CONTRACTOR TO MAINTAIN SEWER OPERATIONS. IF SEWER BYPASS IS REQUIRED, CONTRACTOR TO SUBMIT A SEWER BYPASS PUMPING PLAN TO SEWER OWNER FOR APPROVAL.
10. ALL DROP CONNECTIONS ARE TO BE INTERNAL DROP CONNECTIONS. ALL MANHOLES WITH INTERNAL DROP CONNECTIONS ARE TO BE MINIMUM 5' IN DIAMETER. SEE DETAIL SHEET 25.



No.	DATE	REVISIONS
		DESCRIPTION

PLAN DATE
10-20-2023
03-01-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLARION C. TOCK
Lic. No. 039790
PROFESSIONAL ENGINEER
06/07/2024

SANITARY OUTFALL ANALYSIS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=100' C.I.= 2' DATE: MAY, 2024

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

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

SHEET 10 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block 6&m\preliminary site plan\13141-15-SANITARY OUTFALL.dwg [SS OUTFALL] June 07, 2024 - 11:31am awallo

PROPOSED SANITARY SEWER FLOW COMPUTATIONS

Project: West End

From Point	To Point	RESIDENTIAL 300 GPD/UNIT	OFFICE/RETAIL 200 GPD/ 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
L6	L5		190396			4.0	0.15	0.15	0.24	190.24	190.18	13.00	0.50%	10	1.30	2.47	11.72	0.010	PVC		33.34% Flow from Block A
L5	L4					4.0	0.00	0.15	0.24	190.08	189.84	47.79	0.50%	10	1.31	2.47	11.67	0.010	PVC		
L4	L3					4.0	0.00	0.15	0.24	189.74	189.26	96.24	0.50%	10	1.31	2.47	11.67	0.010	PVC		
L3	L2					4.0	0.00	0.15	0.24	189.16	189.07	17.58	0.50%	10	1.31	2.47	11.67	0.010	PVC		
L2	N1					4.0	0.00	0.15	0.24	188.97	188.53	87.06	0.50%	10	1.31	2.47	11.67	0.010	PVC		
N1	EX.NN					4.0	0.00	0.15	0.24	188.43	188.02	82.58	0.50%	10	1.31	2.47	11.67	0.010	PVC		
EX.NN	EX.MM					4.0	0.10	0.25	0.38	187.92	186.84	223.82	0.46%	10	0.83	2.63	29.71	0.015	RCP		100% Flow from Block E 1 (MOB)
EX.MM	EX.LL					4.0	0.25	0.50	0.77	186.81	185.94	74.55	1.17%	10	1.33	3.48	37.20	0.015	RCP		100% Flow from Block E (Res.)
EX.LL	EX.KK					4.0	0.00	0.50	0.77	185.71	185.14	122.64	0.46%	10	0.83	2.63	59.32	0.015	RCP		
EX.KK	L1					4.0	0.00	0.50	0.77	185.10	184.27	145.48	0.57%	10	0.93	2.68	53.29	0.015	RCP		
L1	EX.JJ					4.0	0.31	0.81	1.25	184.27	184.09	31.95	0.57%	10	0.93	2.68	86.88	0.015	RCP		100% Flow from Block G
EX.JJ	EX. II					4.0	0.00	0.81	1.25	184.01	181.16	259.55	1.10%	10	1.29	3.85	62.53	0.015	RCP		
EX.II	EX.HH					4.0	0.30	1.11	1.71	180.86	160.37	165.68	12.37%	10	4.33	12.34	25.60	0.015	RCP		Flow from Block I and Ex. Garage Restroom
EX.HH	EX. GG					4.0	0.00	1.11	1.71	160.03	134.41	111.27	23.02%	10	5.91	16.84	18.76	0.015	RCP		
EX. GG	EX. FF					4.0	0.00	1.11	1.71	134.24	132.08	28.12	7.68%	12	5.55	8.54	19.98	0.015	RCP		
EX. FF	EX. EE					4.0	2.80	3.91	6.05	129.77	119.03	222.04	4.84%	12	4.40	5.61	88.77	0.015	RCP		100% Flow from Landmark Mall
EX. EE	EX.DD					4.0	0.00	3.91	6.05	118.81	97.75	299.39	7.03%	12	5.31	6.76	73.66	0.015	RCP		
EX.DD	D2	184				4.0	0.22	4.13	6.39	97.45	88.15	63.22	14.71%	12	7.68	9.80	53.80	0.015	RCP		100% Flow from Broadstone Appt
D2	D3					4.0	0.00	4.13	6.39	88.15	87.44	112.52	0.63%	15	4.32	3.52	95.58	0.010	PVC		
D3	D4					4.0	0.00	4.13	6.39	87.44	87.01	68.52	0.63%	15	4.32	3.52	95.58	0.010	PVC		
D4	EX.CC					4.0	0.00	4.13	6.39	76.29	74.96	66.40	2.00%	15	7.70	9.87	53.64	0.010	PVC		
W1	W		190339			4.0	0.15	0.15	0.24	195.87	195.04	66.50	1.25%	12	3.36	3.30	4.54	0.010	PVC		33.33% Flow from Block A
W	V					4.0	0.00	0.15	0.24	194.94	193.28	132.42	1.25%	12	3.36	3.30	4.53	0.010	PVC		
V	U		-			4.0	0.15	0.30	0.47	186.77	186.41	72.26	0.50%	12	2.12	2.97	14.35	0.010	PVC		
U	L					4.0	0.00	0.30	0.47	186.31	185.84	94.64	0.50%	12	2.12	2.97	14.35	0.010	PVC		
L	K		-			4.0	0.02	0.33	0.50	185.74	185.15	117.14	0.50%	12	2.12	3.05	15.38	0.010	PVC		Flow from Block C
K	J		-			4.0	0.02	0.35	0.54	185.05	184.79	52.56	0.50%	12	2.12	3.09	16.41	0.010	PVC		Flow from Block C
J	I1					4.0	0.00	0.35	0.54	184.69	184.45	47.70	0.50%	12	2.12	3.09	16.41	0.010	PVC		
I1	I					4.0	0.40	0.75	1.16	184.35	183.11	248.57	0.50%	12	2.12	3.83	35.40	0.010	PVC		Flow from Block D
I	H1					4.0	0.55	1.30	2.01	183.01	181.17	302.66	0.61%	12	2.34	4.73	55.71	0.010	PVC		Flow from Block J 50% Flow from Block H
H1	H					4.0	0.22	1.52	2.35	181.07	180.34	59.20	1.25%	12	3.35	6.43	45.30	0.010	PVC		Flow from Block K
H	GA					4.0	0.00	1.52	2.35	180.24	179.73	59.82	0.85%	12	2.77	5.58	54.83	0.010	PVC		
GA	G					4.0	0.33	1.85	2.86	179.63	178.68	111.03	0.85%	12	2.77	3.52	66.74	0.010	PVC		Flow from Block L
G	F					4.0	0.00	1.85	2.86	178.58	177.72	102.02	0.85%	12	2.77	3.52	66.74	0.010	PVC		
F	E					4.0	0.09	1.94	3.00	177.62	176.23	163.39	0.85%	12	2.77	3.52	70.08	0.010	PVC		Flow from Block M
E	D					4.0	0.21	2.15	3.33	176.13	173.94	145.68	1.50%	12	3.68	7.53	58.58	0.010	PVC		Flow from Block K
D	C2					4.0	0.00	2.15	3.33	171.13	170.44	45.86	1.50%	12	3.68	7.53	58.58	0.010	PVC		
C2	C1					4.0	0.65	2.80	4.33	169.79	164.21	279.42	2.00%	12	4.24	5.40	66.00	0.010	PVC		Flows from SSMH C & D
C1	B					4.0	0.00	2.80	4.33	163.69	161.16	101.26	2.50%	12	4.75	9.74	59.00	0.010	PVC		
B	A3					4.0	0.00	2.80	4.33	157.93	156.19	69.56	2.50%	12	4.75	9.74	59.00	0.010	PVC		
A3	A2					4.0	0.00	2.80	4.33	151.41	148.65	110.30	2.50%	12	4.75	9.74	59.00	0.010	PVC		
A2	A1					4.0	0.00	2.80	4.33	144.65	141.91	109.92	2.50%	12	4.75	9.74	59.00	0.010	PVC		
A1	A					4.0	0.00	2.80	4.33	138.91	135.45	138.24	2.50%	12	4.75	9.74	59.00	0.010	PVC		
A	EX. FF					4.0	0.00	2.80	4.33	133.45	132.08	54.80	2.50%	12	4.75	9.74	59.00	0.010	PVC		
R	R1					4.0	0.09	0.09	0.14	189.17	188.15	40.91	2.50%	10	2.92	3.60	2.99	0.010	PVC		Flow from Block B
R1	Q					4.0	0.01	0.09	0.14	187.99	186.73	142.21	0.88%	12	2.82	2.66	3.31	0.010	PVC		Flow from Pav. 1
Q	P					4.0	0.02	0.12	0.18	186.63	185.95	91.68	0.75%	12	2.60	2.56	4.45	0.010	PVC		Flow from Block C
P	O					4.0	0.00	0.12	0.18	185.85	184.77	143.07	0.75%	12	2.60	2.56	4.45	0.010	PVC		
O	N					4.0	0.23	0.35	0.53	184.67	178.40	375.50	1.67%	12	3.88	4.74	8.91	0.010	PVC		50% Flow from Block H Flow from Pav.2
N	M					4.0	0.00	0.35	0.53	178.30	175.93	118.87	2.00%	12	4.25	5.09	8.14	0.010	PVC		
M	C					4.0	0.30	0.65	1.00	175.83	175.43	19.86	2.00%	12	4.25	6.04	15.23	0.010	PVC		Flow from Block I
C	C2					5.0	0.00	0.65	1.00	170.62	169.89	36.41	2.00%	12	4.25	6.04	15.23	0.010	PVC		Flow to C2
CO1	I	175	21000			4.0	0.23	0.23	0.35	186.00	185.17	33.00	2.50%	6	0.75	5.22	30.34	0.010	PVC		50% Flow from Block H
CO2	Q		28164			4.0	0.02	0.02	0.03	200.86	191.24	25.09	2.50%	6	0.75	2.99	3.01	0.010	PVC		34% Flow from Block C
CO3	O	175	21000			4.0	0.23	0.23	0.35	187.68	186.41	51.00	2.50%	10	2.92	4.96	7.77	0.010	PVC		50% Flow from Block H
CO4	K		27336			4.0	0.02	0.02	0.03	185.98	185.15	33.00	2.50%	8	1.61	2.68	1.36	0.010	PVC		33% Flow from Block C
CO5	L		27336			4.0	0.02	0.02	0.03	187.00	186.17	33.00	2.50%	8	1.61	2.68	1.36	0.010	PVC		33% Flow from Block C
BLDG K	CO6	168	16000			4.0	0.21	0.21	0.33	177.48	176.90	23.00	2.50%	10	2.92	4.83	7.35	0.010	PVC		50% Flow from Block K
CO6	E					4.0	0.00	0.21	0.33	176.80	176.40	16.24	2.50%	10	2.92	4.83	7.35	0.010	PVC		
CO7	I	235	52000			4.0	0.32	0.32	0.50	186.09	185.17	36.86	2.50%	10	2.92	5.46	11.09	0.010	PVC		100% Flow from Block J
BLDG K	CO35	169	16000			4.0	0.22	0.22	0.33	183.08	182.83	10.00	2.50%	10	2.92	4.86	7.39	0.010	PVC		50% Flow from Block K
CO35	H1					4.0	0.00	0.22	0.33	182.73	181.34	55.56	2.50%	10	2.92	4.86	7.39	0.010	PVC		
GB	GA	216	11000	44		4.0	0.33	0.33	0.51	180.16	179.90	51.65	0.50%	10	1.31	3.07	25.25	0.010	PVC		100% Flow from Block L1 & L2
FB	FA			66		4.0	0.09	0.09	0.14	178.41	178.08	66.33	0.50%	10	1.31	2.15	7.08	0.010	PVC		100% Flow from Block M
FA	F					4.0	0.00	0.09	0.14	177.98	177.82	31.68	0.50%	10	1.31	2.15	7.08	0.010	PVC		100% Flow from Block M
CO10	R		109206			4.0	0.09	0.09	0.14	189.91	189.27	25.44	2.50%	8	1.61	3.74	5.42	0.010	PVC		100% Flow from Block B
CO11	I2	336				4.0	0.40	0.40	0.62	190.07	189.47	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	189.30	188.08	48.93	2.50%	10	2.92	5.85	13.81	0.010	PVC		
BLDG E (RES)	CO12	73	44986			4.0	0.12	0.12	0.19	188.31	187.83	18.96	2.50%	10	2.00	4.09	6.18	0.010	PVC		50% Flow from Block E (Res.)
CO12	M1					4.0	0.00	0.12	0.19	187.73	187.34	15.71	2.50%	10	2.00	4.09	6.18	0.010	PVC		
M1	EX.MM					4.0	0.00	0.25	0.38	187.24	186.94	12.00	2.50%	10	2.00	5.09	12.36	0.010	PVC		100% Flow from Block E (Res.)
BLDG E (RES)	CO21	73	44986			4.0	0.12	0.12	0.19	188.23	187.75	19.01	2.50%	10	2.00	4.09	6.18	0.010	PVC		50% Flow from Block E (Res.)
CO21	M1					4.0	0.00	0.12	0.19	187.65	187.34	12.40	2.50%	10	2.00	4.09	6.18	0.010	PVC		
BLDG G	CO13	122	11944			4.0	0.16	0.16	0.24	186.48	186.10	15.00	2.50%	10	2.00	4.43	7.80	0.010	PVC		50% Flow from Block G
CO13	L3					4.0	0.00	0.16	0.24	186.00	185.58	16.76	2.50%	10	2.00	4.43	7.80	0.010	PVC		
L3	L1					4.0	0.00	0.31	0.48	185.48	184.37	44.50	2.50%	10	2.00	5.40	15.60	0.010	PVC		100% Flow from Block G
BLDG G	CO31A	122	11944			4.0	0.16	0.16	0.24	186.53	186.28	10.00	2.50%	10	2.00	4.43	7.80	0.010	PVC		50% Flow from Block G
CO31A	CO31					4.0	0.00	0.16	0.24	0.37	0.10	10.70	2.50%	10	2.00	4.43	7.80	0.010	PVC		
CO31	L7					4.0	0.00	0.16	0.24	186.18	185.58	23.71	2.50%	10	2.00	4.43	7.80	0.010	PVC		
BLDG I	CO45	195	83517			4.0	0.30	0.30	0.47	176.64	176.52	5.00	2.50%	10	2.92	5.27	10.31	0.010	PVC		50% Flow from Block I
CO45	M					4.0	0.00	0.30	0.47	176.42	176.10	12.78	2.50%	10	2.92	5.27	10.30	0.010	PVC		
BLDG I	CO14	195	83517			4.0	0.30	0.30	0.47	183.25	182.18	42.81	2.50%	10	2.92	5.27	10.31	0.010	PVC		50% Flow from Block I
CO14	EX.II					4.0	0.00	0.30	0.47	182.08	181.26	32.65	2.50%	10	2.92	5.27	10.31	0.010	PVC		
BLDG E1 (MOB)	CO16		119630			4.0	0.10	0.10	0.15	190.66	190.41	10.00	2.50%	6	0.75	4.03	12.80	0.010	PVC		100% Flow from Block E1 (MOB)
CO16	EX.NN					4.0	0.00	0.10	0.15	190.31	188.80	68.32	2.50%	6	0.75	4.03	12.80	0.010	PVC		
EX. GAR. Restroom	CO17		100			4.0	0.00	0.00	0.00	189.54	189.27	10.64	2.50%	6	0.75	0.07	0.01	0.010	PVC		100% Flow from Ex. Garage Restroom
CO17	EX.II					4.0	0.00	0.00	0.00	189.27	184.78	179.47	2.50%	6	0.75	0.07	0.01	0.010	PVC		
V1	V		190339			4.0	0.15	0.15	0.24	187.54	186.87	66.50	1.00%	12	3.00	3.06	5.08	0.010	PVC		33.33% Flow from Block A
PAV.1	CO40		7279			4.0	0.01	0.006	0.01	189.74	189.53	8.47	2.50%	4	0.25	1.40	2.30	0.010	PVC		100% Flow from Pavilion 1 Block F
CO40	R1		0			4.0	0.00	0.006	0.01	189.36	186.54	32.71	2.50%	6	0.75	1.77	0.78	0.010	PVC		100% Flow from Pavilion 1 Block F
PAV.2	CO41		4064			4.0	0.00	0.003	0.01	183.28	182.96	12.92	2.50%	4	0.25	0.88	1.28	0.010	PVC		100% Flow from Pavilion 2 Block N
CO41	O		0			4.0	0.00	0.003	0.01	182.79	181.51	51.15	2.50%	6	0.75	0.93	0.43	0.010	PVC		100% Flow from Pavilion 2 Block N

BLOCK L1

BLOCK L2 (RES)

BLOCK M (RES)

ADEQUATE OUTFALL ANALYSIS

Blocks		Office Sanitary Flow	Office G.S.F	Retail Sanitary Flow	Retail G.S.F	MFH Sanitary Flow	MFH Units	SFA Units	Total Proposed Sanitary Flow (GPD)
HOSPITAL CAMPUS	A	200GPD/1,000 S.F.	571,074	200GPD/1,000 S.F.		300GPD/UNIT	-	-	114,215
	B	200GPD/1,000 S.F.	109,206	200GPD/1,000 S.F.	-	300GPD/UNIT	-	-	21,841
	C	200GPD/1,000 S.F.	82,835	200GPD/1,000 S.F.	-	300GPD/UNIT	-	-	16,567
Total			763,115		-		-	-	152,623
				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 (MOB & RES.)	200GPD/1,000 S.F.	119,630	200GPD/1,000 S.F.	89,971	300GPD/UNIT	146		85,720
	G	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	23,888	300GPD/UNIT	244		77,978
	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.	167,033	300GPD/UNIT	390		150,407
	J	200GPD/1,000 S.F.	52000			300GPD/UNIT	235		80,900
	K	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	32,000	300GPD/UNIT	337		107,500
	L	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	11,000	300GPD/UNIT	216	44	82,400
	M	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	350GPD/UNIT	0	66	23,100
	F	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	7,279	300GPD/UNIT	0		1,456
	N	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	4,064	300GPD/UNIT	0		813
	Ex. Garage Restroom	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	100	300GPD/UNIT	0		20
Total			171,630		377,335		2,254		824,493
				TOTAL FLOW FROM LANDMARK MALL BLOCKS (MGD)					3.30
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)					4.13

BLOCK L1

BLOCK L2 (RES)

Landmark Mall Breakdown by Manhole

	Block	Lateral #	Lateral Tie In Location	% of Block Flow	MH Flow Enters in
HOSPITAL CAMPUS	A	1	SMH W1	33.33%	W
		2	SMH V1	33.33%	V
		3	L6	33.34%	L5
	B	1	CO10	100.00%	R
	C	1	CO5	33.00%	L
		2	CO4	33.00%	K
	(Garage)	3	CO2	34.00%	Q
LANDMARK MALL	D	1	CO11	100%	I2
	E1 (MOB)	1	CO16	100%	EX. NN
	E (RES.)	1	CO12	50%	M1
		2	CO21	50%	M1
	G	1	CO13	50%	L7
		2	CO31A	50%	L7
	H	1	CO1	50%	I
		2	CO3	50%	O
	I	1	CO45	50%	M
		2	CO14	50%	EX. II
	J	1	CO7	100%	I
	K	1	CO35	50%	H1
		2	CO6	50%	E
	L	1	GB	100%	GA
	M	1	FB	100%	FA
	F	1	CO40	100%	Q
	N	1	CO41	100%	N
	Ex. Garage Restroom	1	CO17	100%	EX.II

NOTE:

- SEE WESTEND INFRASTRUCTURE (DSP #2021-00012) SHEETS 144A-152 FOR SANITARY SEWER OUTFALL CONTINUATION.
- SEE SHEET 11A FOR L&M ON SITE SEWER COMPUTATIONS

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 _____

DATE RECORDED _____

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-01-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX 703.378.7888
www.urban-ltd.com

urban™
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. POCH
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

SANITARY SEWER COMPUTATIONS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
C.I.=N/A
DATE: MAY, 2024
SCALE: N/A

SHEET 11 OF 28

FILE No. SP-13141

Urban, Ltd. - J:_OBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-15-SANITARY OUTFALL.dwg [COMPS] June 07, 2024 - 11:31am awolla

BLOCK L & M ONSITE SEWER FLOW COMPUTATIONS

PROPOSED SANITARY SEWER FLOW COMPUTATIONS

Project: West End

	From Point	To Point	RESIDENTIAL 300 GPD/UNIT	OFFICE/RETAIL 200 GPD / 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
	GH2	GH			3		4.0	0.00	0.00	0.01	190.82	190.37	45.30	1.00%	8	1.02	3.25	0.41	0.010	PVC		BLDG C (3 units)
	GE1	GE			13		4.0	0.02	0.02	0.03	187.00	185.42	158.64	1.00%	8	1.02	3.25	1.79	0.010	PVC		BLDG F & G (13 units)
	GH1	GH			12		4.0	0.02	0.02	0.03	189.74	188.37	136.71	1.00%	8	1.02	3.25	1.65	0.010	PVC		BLDG C & D (12 units)
BLOCK L2 (RES.)	GH	GG					4.0	0.00	0.02	0.03	188.27	188.06	21.54	1.00%	8	1.02	3.25	2.06	0.010	PVC		
	GG	GF			8		4.0	0.01	0.03	0.05	187.96	186.39	157.03	1.00%	8	1.02	3.25	3.16	0.010	PVC		BLDG B (8 units)
	GF	GE			5		4.0	0.01	0.04	0.06	186.29	185.42	86.97	1.00%	8	1.02	3.25	3.85	0.010	PVC		BLDG A (5 units)
	GE	GD			3		4.0	0.00	0.06	0.10	185.32	184.47	67.95	1.25%	8	1.14	3.63	5.41	0.010	PVC		BLDG A (3 units)
	GD	GC					4.0	0.00	0.06	0.10	184.37	183.99	30.27	1.25%	8	1.14	3.63	5.41	0.010	PVC		
	GC	EX. GB					4.0	0.00	0.06	0.10	183.89	181.76	170.63	1.25%	8	1.14	3.63	5.41	0.010	PVC		
FUTURE BLOCK L1	EX. GB	EX. GA	216	11000			4.0	0.27	0.33	0.51	180.16	179.90	51.65	0.50%	10	1.31	3.07	25.25	0.010	PVC		Future Block L1
	FE1	FE			9		4.0	0.01	0.01	0.02	184.71	182.74	78.91	2.50%	8	1.61	5.14	0.78	0.010	PVC		BLDG H & O (9 units)
	FH	FG			12		4.0	0.02	0.02	0.03	186.41	184.60	120.31	1.50%	8	1.25	3.98	1.35	0.010	PVC		BLDG M & S (12 units)
	FG	FF			4		4.0	0.01	0.02	0.03	184.50	183.90	60.06	1.00%	8	1.02	3.25	2.20	0.010	PVC		BLDG N (4 units)
	FF	FE					4.0	0.00	0.02	0.03	183.80	182.74	106.60	1.00%	8	1.02	3.25	2.20	0.010	PVC		
	FE	FD			10		4.0	0.01	0.05	0.08	182.64	181.39	125.06	1.00%	8	1.02	3.25	4.81	0.010	PVC		BLDG I & P (10 units)
	FD	FC					4.0	0.00	0.05	0.08	181.29	181.00	28.79	1.00%	8	1.02	3.25	4.81	0.010	PVC		
	FJ	FJ			2		4.0	0.00	0.00	0.00	188.93	188.74	19.27	1.00%	8	1.02	3.25	0.27	0.010	PVC		BLDG L (2 units)
	FJ	FK			15		4.0	0.02	0.02	0.04	188.64	185.79	142.60	2.00%	8	1.44	4.61	1.65	0.010	PVC		BLDG L & R (15 units)
	FK	FL			2		4.0	0.00	0.03	0.04	185.69	184.83	43.12	2.00%	8	1.44	4.61	1.85	0.010	PVC		BLDG K (2 units)
	FL	FM			12		4.0	0.02	0.04	0.07	184.73	181.79	146.85	2.00%	8	1.44	2.67	3.01	0.010	PVC		BLDG J & Q (12 units)
	FM	FC					4.0	0.00	0.04	0.07	181.69	181.00	34.46	2.00%	8	1.44	2.67	3.01	0.010	PVC		
	FC	EX. FB					4.0	0.00	0.09	0.14	180.90	180.41	24.66	2.00%	8	1.44	3.58	6.42	0.010	PVC		
	EX. FB	EX. FA					4.0	0.00	0.09	0.14	178.41	178.08	66.33	0.50%	10	1.31	2.70	7.08	0.010	PVC		
BLOCK M (RES)	EX. FA	EX. F					4.0	0.00	0.09	0.14	177.98	177.82	31.68	0.50%	10	1.31	2.70	7.08	0.010	PVC		

ADEQUATE OUTFALL ANALYSIS

Blocks		Office Sanitary Flow	Office G.S.F	Retail Sanitary Flow	Retail G.S.F	MFH Sanitary Flow	MFH Units	SFA Units	Total Proposed Sanitary Flow (GPD)
HOSPITAL CAMPUS	A	200GPD/1,000 S.F.	571,074	200GPD/1,000 S.F.		300GPD/UNIT	-	-	114,215
	B	200GPD/1,000 S.F.	109,206	200GPD/1,000 S.F.	-	300GPD/UNIT	-	-	21,841
	C	200GPD/1,000 S.F.	82,835	200GPD/1,000 S.F.	-	300GPD/UNIT	-	-	16,567
Total			763,115		-		-	-	152,623
				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 (MOB & RES.)	200GPD/1,000 S.F.	119,630	200GPD/1,000 S.F.	89,971	300GPD/UNIT	146		85,720
	G	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	23,888	300GPD/UNIT	244		77,978
	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.	167,033	300GPD/UNIT	390		150,407
	J	200GPD/1,000 S.F.	52000			300GPD/UNIT	235		80,900
	K	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	32,000	300GPD/UNIT	337		107,500
	L	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	11,000	300GPD/UNIT	216	44	82,400
	M	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	-	350GPD/UNIT	0	66	23,100
	F	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	7,279	300GPD/UNIT	0		1,456
	N	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	4,064	300GPD/UNIT	0		813
	Ex. Garage Restroom	200GPD/1,000 S.F.	-	200GPD/1,000 S.F.	100	300GPD/UNIT	0		20
Total			171,630		377,335		2,254		824,493
				TOTAL FLOW FROM LANDMARK MALL BLOCKS (MGD)					3.30
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)					4.13

BLOCK L1

BLOCK L2 (RES)

Landmark Mall Breakdown by Manhole

	Block	Lateral #	Lateral Tie In Location	% of Block Flow	MH Flow Enters in
HOSPITAL CAMPUS	A	1	SMH W1	33.33%	W
		2	SMH V1	33.33%	V
		3	L6	33.34%	L5
	B	1	CO10	100.00%	R
	C	1	CO5	33.00%	L
		2	CO4	33.00%	K
	(Garage)	3	CO2	34.00%	Q
LANDMARK MALL	D	1	CO11	100%	I2
	E1 (MOB)	1	CO16	100%	EX. NN
	E (RES.)	1	CO12	50%	M1
		2	CO21	50%	M1
	G	1	CO13	50%	L7
		2	CO31A	50%	L7
	H	1	CO1	50%	I
		2	CO3	50%	O
	I	1	CO45	50%	M
		2	CO14	50%	EX. II
	J	1	CO7	100%	I
	K	1	CO35	50%	H1
		2	CO6	50%	E
	L	1	GB	100%	GA
	M	1	FB	100%	FA
	F	1	CO40	100%	Q
	N	1	CO41	100%	N
	Ex. Garage Restroom	1	CO17	100%	EX.II

NOTE:

- SEE WESTEND INFRASTRUCTURE (DSP #2021-00012) SHEETS 144A-152 FOR SANITARY SEWER OUTFALL CONTINUATION.

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

DATE RECORDED _____

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10 - 20 - 2023
03 - 21 - 2024
05 - 03 - 2024
06 - 07 - 2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban™
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TUCK
Lic. No. 038780
PROFESSIONAL ENGINEER
06/07/2024

SANITARY SEWER COMPUTATIONS

WEST END

BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

C.I.= N/A

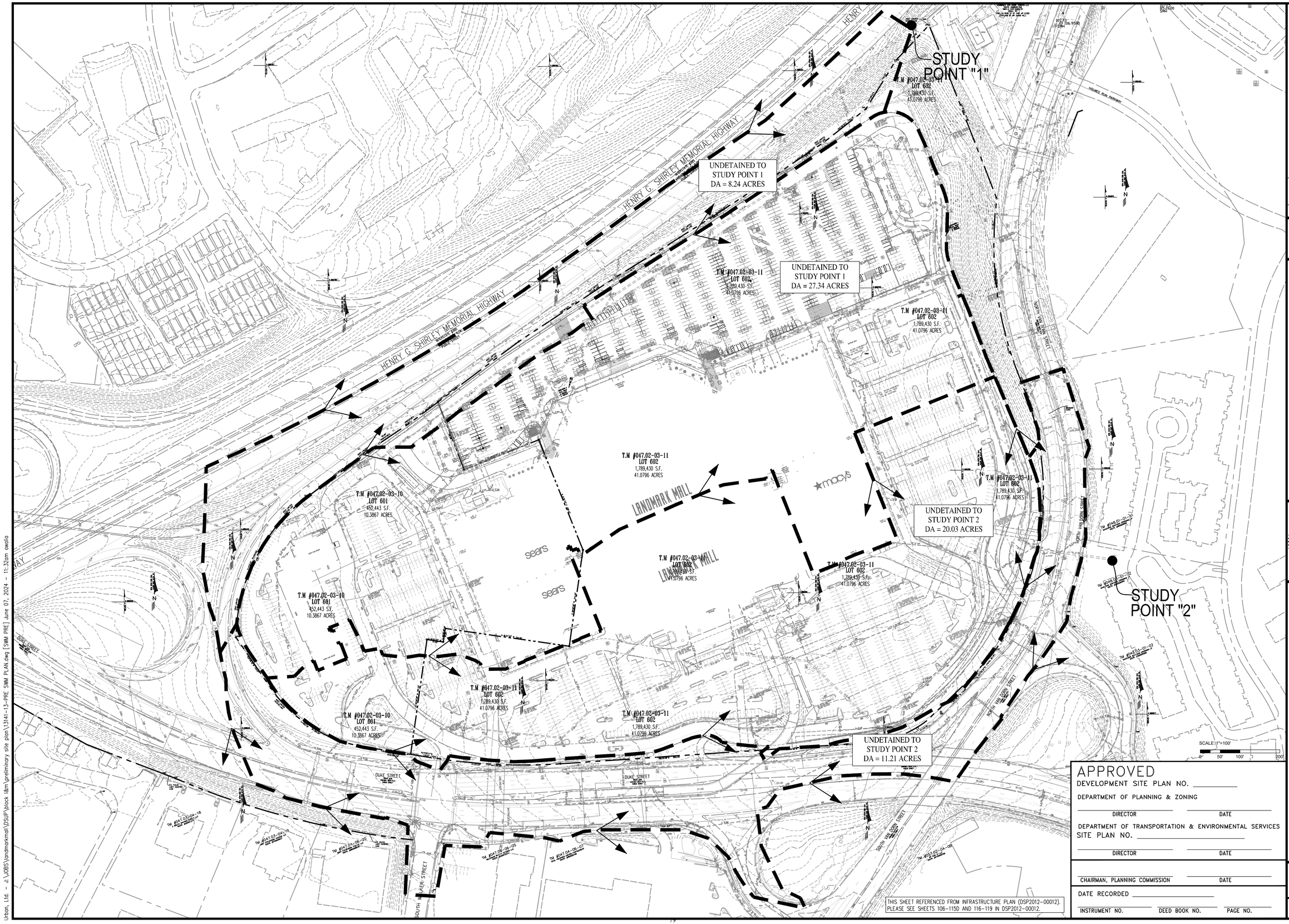
DATE: MAY, 2024

SCALE: N/A

SHEET 11A OF 28

FILE No. SP-13141

Urban, Ltd. - z:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-15-SANITARY OUTFALL.dwg [COMPS (2)] June 07, 2024 - 11:31am owolia



THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012). PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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

DATE RECORDED _____

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-01-2024
05-01-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039780
PROFESSIONAL ENGINEER
06/07/2024

SWM PRE DEVELOPMENT PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=100' C.I.= 2' DATE: MAY, 2024

SHEET 12 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-13-PRE SWM PLAN.dwg [SWM PRE] June 07, 2024 - 11:32am awalo

SWM PRE - Study Point "2"

SWM PRE OFFSITE Undetained Runoff Calculations

Curve Number Calculations

	Area (ac)	CN	Description
*	11.210	98	Urban commercial, 85% imp, HSG D
	1.682		15.00% Pervious Area
	9.528		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 = 33.04 cfs @ 12.08 hrs, Volume= 95,334 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 = 39.16 cfs @ 12.08 hrs, Volume= 114,673 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 = 56.97 cfs @ 12.08 hrs, Volume= 191,351 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"

SWM PRE ONSITE Undetained Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
8.210	98	Paved parking, HSG D
11.820	80	>75% Grass cover, Good, HSG D
20.030	87	Weighted Average
11.820		59.01% Pervious Area
8.210		40.99% Impervious Area

Time of Concentration Calculations

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

1 Year Flow Calculations

Runoff = 48.77 cfs @ 12.03 hrs, Volume= 99,926 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 = 62.66 cfs @ 12.03 hrs, Volume= 129,838 cf, Depth> 1.79"

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 = 106.06 cfs @ 12.03 hrs, Volume= 255,599 cf, Depth> 3.52"

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 2 SWM PRE FLOWS

1 Year Flow Calculations

Inflow Area = 1,360,814 sf, 56.78% Impervious, Inflow Depth > 1.72" for 1-yr event
Inflow = 76.56 cfs @ 12.04 hrs, Volume= 195,259 cf
Primary = 76.56 cfs @ 12.04 hrs, Volume= 195,259 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 = 1,360,814 sf, 56.78% Impervious, Inflow Depth > 2.16" for 2-yr event
Inflow = 95.46 cfs @ 12.04 hrs, Volume= 244,511 cf
Primary = 95.46 cfs @ 12.04 hrs, Volume= 244,511 cf, Atten= 0%, Lag= 0.0 min

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

3 Year Flow Calculations

Inflow Area = 1,360,814 sf, 56.78% Impervious, Inflow Depth > 3.94" for 10-yr event
Inflow = 153.75 cfs @ 12.04 hrs, Volume= 446,950 cf
Primary = 153.75 cfs @ 12.04 hrs, Volume= 446,950 cf, Atten= 0%, Lag= 0.0 min

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

SWM PRE - Study Point "1"

SWM PRE OFFSITE Undetained Runoff Calculations

Curve Number Calculations

	Area (ac)	CN	Description
*	7.370	95	
	7.370		100.00% Pervious 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 = 16.82 cfs @ 12.15 hrs, Volume= 54,327 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 = 20.36 cfs @ 12.15 hrs, Volume= 66,748 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 = 31.07 cfs @ 12.15 hrs, Volume= 116,470 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 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 2 SWM PRE FLOWS

1 Year Flow Calculations

Inflow Area = 1,511,968 sf, 32.30% Impervious, Inflow Depth > 1.51" for 1-yr event
Inflow = 67.19 cfs @ 12.10 hrs, Volume= 190,486 cf
Primary = 67.19 cfs @ 12.10 hrs, Volume= 190,486 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 = 1,511,968 sf, 32.30% Impervious, Inflow Depth > 1.93" for 2-yr event
Inflow = 85.47 cfs @ 12.10 hrs, Volume= 243,683 cf
Primary = 85.47 cfs @ 12.10 hrs, Volume= 243,683 cf, Atten= 0%, Lag= 0.0 min

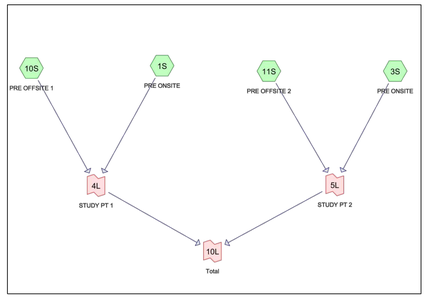
Primary outflow = Inflow, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs

3 Year Flow Calculations

Inflow Area = 1,511,968 sf, 32.30% Impervious, Inflow Depth > 3.69" for 10-yr event
Inflow = 143.92 cfs @ 12.10 hrs, Volume= 464,816 cf
Primary = 143.92 cfs @ 12.10 hrs, Volume= 464,816 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"



THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012).
PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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

REVISIONS

No.	DATE	DESCRIPTION

PLAN DATE
10-20-2023
03-21-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. POCH
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

SWM PRE DEVELOPMENT COMPUTATIONS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
C.I.= N/A
SCALE: N/A

SHEET 13 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-13-PRE SWM PLAN.dwg [SWM PRE COMPS] June 07, 2024 - 11:32am awallo

STORMWATER MANAGEMENT NARRATIVE

OVERALL, 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 DRAINAGE AREA OF 32.86 ACRES DRAINS TO STUDY POINT 1, WHEREAS A TOTAL OF 31.94 ACRES DRAINS TO STUDY POINT 2.

SPECIFIC TO THE SUBJECT SITE, BLOCK L1,L2 & M STORM SYSTEM DRAINS TO VAULT #3 THEN DISCHARGE TO AN EXISTING MANMADE STORMWATER CONVEYANCE SYSTEM LOCATED ON THE EAST SIDE OF THE LANDMARK DEVELOPMENT. STORMWATER MANAGEMENT IS TO BE PROVIDED IN VAULT 3 WHICH IS LOCATED SOUTH OF BLOCK I AND HAS A TOTAL DRAINAGE AREA OF 20.73 ACRES WHICH ENCOMPASSES BLOCKS D, L, K, L1, L2, M AND PART OF INOVA SITE. 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 FACILITY.

THE ALLOWABLE RELEASE RATE FOR EACH STUDY POINT HAS BEEN CALCULATED IN ACCORDANCE 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 SHEET 24. 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

STUDY POINT "1"

STUDY POINT "2"

HENRY G. SHIRLEY MEMORIAL HIGHWAY

OFFSITE UNDETAINED DRAINAGE AREA TO STUDY POINT "1" DA = 7.37 AC CN= 95 TC = 15 MINS

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

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

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

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

VAULT 4

VAULT 3

VAULT 2

BLOCK I

BLOCK G

BLOCK E

BLOCK K

BLOCK H

BLOCK M

BLOCK J

BLOCK D

BLOCK L1

BLOCK L2

6001 DUKE STREET
T.M.: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY OF THE CITY OF ALEXANDRIA
INSTR. 210026063
LOT 601

DUKE STREET

SOUTH WALKER STREET

N VAN DORN STREET

SCALE: 1"=100'
0 50' 100' 200'

THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012). PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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.
*** VAULT NUMBERS ASSOCIATED WITH THE INFRASTRUCTURE PLAN BEGIN WITH VAULT #2. VAULT #1 IS NOT PART OF THIS PLAN.

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-01-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039790
PROFESSIONAL ENGINEER
06/07/2024

SWM POST DEVELOPMENT PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=100' C.I.= 2' DATE: MAY, 2024

SHEET 14 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-14-POST SWM PLAN.dwg [SWM POST] June 07, 2024 - 11:34am awalo

SWM POST - Study Point "1"

SWM POST OFFSITE Undetained Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
7.370	95	Urban commercial, 85% imp, HSG D
1.106		15.00% Pervious Area
6.264		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 = 16.82 cfs@ 12.15 hrs, Volume= 54,327 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 = 20.36 cfs@ 12.15 hrs, Volume= 66,748 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 = 31.07 cfs@ 12.15 hrs, Volume= 116,470 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 Onsite DETAINED (VAULT #2) Runoff Calculations

Curve Number Calculations

	Area (ac)	CN	Description
*	17.460	95	
	17.460		

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 = 47.42 cfs @ 12.08 hrs, Volume= 128,878 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 = 57.27 cfs @ 12.08 hrs, Volume= 158,337 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 = 86.27 cfs @ 12.08 hrs, Volume= 276,287 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 #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 = 1,432,688 sf, 43.55% Impervious, Inflow Depth > 2.07" for 1-yr event
Inflow = 41.04 cfs @ 12.18 hrs, Volume= 247,586 cf
Primary = 41.04 cfs @ 12.18 hrs, Volume= 247,586 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 = 1,432,688 sf, 43.55% Impervious, Inflow Depth > 2.53" for 2-yr event
Inflow = 54.67 cfs @ 12.20 hrs, Volume= 302,203 cf
Primary = 54.67 cfs @ 12.20 hrs, Volume= 302,203 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 = 1,432,688 sf, 43.55% Impervious, Inflow Depth > 4.36" for 10-yr event
Inflow = 122.14 cfs @ 12.15 hrs, Volume= 520,261 cf
Primary = 122.14 cfs @ 12.15 hrs, Volume= 520,261 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"

$Q_{(Developed)}$=	41.04	cfs
$Q_{(Pre-Developed)}$=	67.19	cfs
$RV_{(Pre-Developed)}$=	4.37	ac-ft
$RV_{(Developed)}$=	5.68	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 ($Q_{Pre-Developed}$ X $RV_{Pre-Developed}$)/$RV_{Developed}$
41.04	≤	41.35

VAULT #2

1 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf 0.00% 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= 189.98'@ 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=189.98'(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)

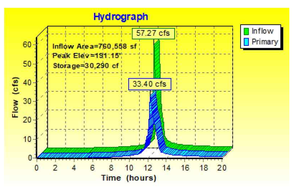
2 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf, 0.00% 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= 191.15'@ 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=191.15' (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)



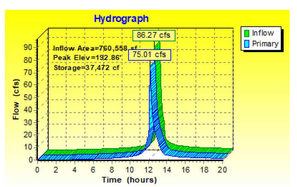
10 YEAR EVENT SUMMARY

Inflow Area = 760,558 sf, 0.00% 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= 192.86'@ 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=192.86'(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 = 2.81 cfs @ 12.70 hrs, Volume= 65,307 cf, Atten= 88% Lag= 37.1 min
Primary = 2.81 cfs @ 12.70 hrs, Volume= 65,307 cf
Routed to Link 8L : STUDY POINT 1
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 181.11'@ 12.70 hrs Surf.Area= 4,211 sf Storage= 34,160 cf

Plug-Flow detention time= 139.4 min calculated for 65,274 cf (95% of inflow)
Center-of-Mass det. time= 120.3 min (853.2 - 732.9)

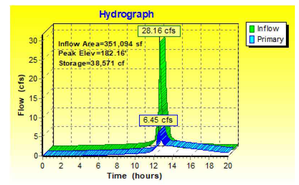
Primary OutFlow Max=2.81 cfs@ 12.70 hrs HW=181.11' (Free Discharge)
└1=Culvert (Passes 2.81 cfs of 109.40 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 2.81 cfs @ 13.50 fps)
├3=Orifice/Grate (Orifice Controls 0.00 cfs @ 0.15 fps)
└4=Orifice/Grate (Controls 0.00 cfs)

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 = 6.45 cfs @ 12.57 hrs, Volume= 78,131 cf, Atten= 77% Lag= 29.2 min
Primary = 6.45 cfs @ 12.57 hrs, Volume= 78,131 cf
Routed to Link 8L : STUDY POINT 1
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 182.16'@ 12.57 hrs Surf.Area= 4,211 sf Storage= 38,571 cf

Plug-Flow detention time= 132.3 min calculated for 78,092 cf (95% of inflow)
Center-of-Mass det. time= 111.4 min (840.9 - 729.5)

Primary OutFlow Max=6.45 cfs@ 12.57 hrs HW=182.16' (Free Discharge)
└1=Culvert (Passes 6.45 cfs of 117.74 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 2.99 cfs @ 14.37 fps)
├3=Orifice/Grate (Orifice Controls 3.45 cfs @ 3.29 fps)
└4=Orifice/Grate (Controls 0.00 cfs)

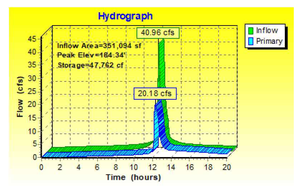


10 YEAR EVENT SUMMARY

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 = 20.18 cfs @ 12.28 hrs, Volume= 128,856 cf, Atten= 51% Lag= 11.8 min
Primary = 20.18 cfs @ 12.28 hrs, Volume= 128,856 cf
Routed to Link 8L : STUDY POINT 1
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 184.34'@ 12.28 hrs Surf.Area= 4,211 sf Storage= 47,762 cf

Plug-Flow detention time= 104.2 min calculated for 128,791 cf (94% of inflow)
Center-of-Mass det. time= 78.8 min (798.0 - 719.2)

Primary OutFlow Max=20.18 cfs@ 12.28 hrs HW=184.34' (Free Discharge)
└1=Culvert (Passes 20.18 cfs of 133.47 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 3.34 cfs @ 16.04 fps)
├3=Orifice/Grate (Orifice Controls 8.54 cfs @ 7.88 fps)
└4=Orifice/Grate (Orifice Controls 8.30 cfs @ 6.22 fps)



THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012).
PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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

REVISIONS

No.	DATE	DESCRIPTION

PLAN DATE
10-20-2023
05-21-2024
06-14-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCK
Lic. No. 036790
PROFESSIONAL ENGINEER
06-07-2024

SWM POST DEVELOPMENT COMPUTATIONS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: N/A C.I.=N/A DATE: MAY, 2024

SHEET 15 OF 28
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\LandmarkMall\DSUP\block L&M\preliminary site plan\13141-14-POST SWM PLAN.dwg [SWM POST COMPS] June 07, 2024 - 11:34am owolla

SWM POST - Study Point "1"

VAULT #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Primary (cfs)
183.94	**4,200**	0	0.00
184.14	4,200	840	0.50
184.34	4,200	1,680	1.98
184.54	4,200	2,520	4.40
184.74	4,200	3,360	6.42
184.94	4,200	4,200	7.78
185.14	4,200	5,040	8.91
185.34	4,200	5,880	9.90
185.54	4,200	6,720	10.81
185.74	4,200	7,560	11.64
185.94	4,200	8,400	12.41
186.14	4,200	9,240	13.14
186.34	4,200	10,080	13.83
186.54	4,200	10,920	14.49
186.74	4,200	11,760	15.11
186.94	4,200	12,600	15.72
187.14	4,200	13,440	16.30
187.34	4,200	14,280	16.86
187.54	4,200	15,120	17.40
187.74	4,200	15,960	17.92
187.94	4,200	16,800	18.43
188.14	4,200	17,640	18.93
188.34	4,200	18,480	19.41
188.54	4,200	19,320	19.89
188.74	4,200	20,160	20.35
188.94	4,200	21,000	20.80
189.14	4,200	21,840	21.24
189.34	4,200	22,680	21.67
189.54	4,200	23,520	22.10
189.74	4,200	24,360	22.51
189.94	4,200	25,200	22.92
190.14	4,200	26,040	23.73
190.34	4,200	26,880	25.10
190.54	4,200	27,720	26.79
190.74	4,200	28,560	28.74
190.94	4,200	29,400	30.90
191.14	4,200	30,240	33.25
191.34	4,200	31,080	36.61
191.54	4,200	31,920	40.49
191.74	4,200	32,760	44.78
191.94	4,200	33,600	49.45
192.14	4,200	34,440	54.46
192.34	4,200	35,280	59.78
192.54	4,200	36,120	65.40
192.74	4,200	36,960	71.29
192.94	4,200	**37,800**	77.44
193.14	4,200	37,800	83.83

Volume	Invert	Avail.Storage	Storage Description
#1	183.94'	37,800 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
183.94	4,200	0	0
192.94	4,200	37,800	37,800

Device	Routing	Invert	Outlet Devices
#1	Primary	183.94'	60.0" Round Culvert L= 87.6' RCP, groove end w/ headwall, Ke= 0.200 Inlet / Outlet Invert= 183.94' / 176.72' S= 0.0824 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 19.63 sf
#2	Device 1	183.94'	9.0" W x 8.0" H Vert. Orifice/Grate X 4.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	189.98'	24.0" W x 15.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	191.15'	48.0" W x 24.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

VAULT #4

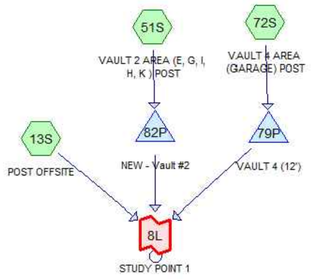
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Primary (cfs)
173.00	4,211	0	0.00
173.30	4,211	1,263	0.22
173.60	4,211	2,527	0.58
173.90	4,211	3,790	0.80
174.20	4,211	5,053	0.97
174.50	4,211	6,317	1.12
174.80	4,211	7,580	1.25
175.10	4,211	8,843	1.36
175.40	4,211	10,106	1.47
175.70	4,211	11,370	1.57
176.00	4,211	12,633	1.66
176.30	4,211	13,896	1.75
176.60	4,211	15,160	1.84
176.90	4,211	16,423	1.92
177.20	4,211	17,686	1.99
177.50	4,211	18,950	2.07
177.80	4,211	20,213	2.14
178.10	4,211	21,476	2.21
178.40	4,211	22,739	2.28
178.70	4,211	24,003	2.34
179.00	4,211	25,266	2.41
179.30	4,211	26,529	2.47
179.60	4,211	27,793	2.53
179.90	4,211	29,056	2.59
180.20	4,211	30,319	2.64
180.50	4,211	31,583	2.70
180.80	4,211	32,846	2.76
181.10	4,211	34,109	2.81
181.40	4,211	35,372	3.36
181.70	4,211	36,636	4.37
182.00	4,211	37,899	5.66
182.30	4,211	39,162	7.30
182.60	4,211	40,426	9.32
182.90	4,211	41,689	11.62
183.20	4,211	42,952	14.13
183.50	4,211	44,216	16.07
183.80	4,211	45,479	17.68
184.10	4,211	46,742	19.11
184.40	4,211	48,005	20.42
184.70	4,211	49,269	21.64
185.00	4,211	50,532	22.77

Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	50,532 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
173.00	4,211	0	0
185.00	4,211	50,532	50,532

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	36.0" Round Culvert L= 106.7' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 173.00' / 167.56' S= 0.0510 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	173.00'	5.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	181.11'	12.0" W x 13.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	182.16'	16.0" W x 12.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

POST DEVELOPMENT ROUTING SCHEMATIC
STUDY POINT '1'



THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012). PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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

DATE RECORDED _____

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-17-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX 703.378.7888
www.urban-ltd.com

urban™
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. POCH
Lic. No. 038790
PROFESSIONAL ENGINEER
06-07-2024

SWM POST DEVELOPMENT COMPUTATIONS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
C.I.= N/A
SCALE: N/A

SHEET 16 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-14-POST SWM PLAN.dwg [SWM POST COMPS 2] June 07, 2024 - 11:34am awallo

SWM POST - Study Point "2"

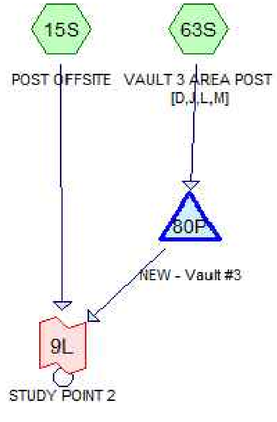
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Primary (cfs)
167.90	7,254	0	0.00
168.20	7,254	2,176	0.44
168.50	7,254	4,352	1.24
168.80	7,254	6,529	2.24
169.10	7,254	8,705	2.92
169.40	7,254	10,881	3.46
169.70	7,254	13,057	3.92
170.00	7,254	15,233	4.33
170.30	7,254	17,410	4.70
170.60	7,254	19,586	5.05
170.90	7,254	21,762	5.37
171.20	7,254	23,938	5.67
171.50	7,254	26,114	5.96
171.80	7,254	28,291	6.24
172.10	7,254	30,467	6.50
172.40	7,254	32,643	6.75
172.70	7,254	34,819	7.00
173.00	7,254	36,995	7.23
173.30	7,254	39,172	7.46
173.60	7,254	41,348	7.68
173.90	7,254	43,524	7.90
174.20	7,254	45,700	8.11
174.50	7,254	47,876	8.31
174.80	7,254	50,053	8.51
175.10	7,254	52,229	8.71
175.40	7,254	54,405	8.90
175.70	7,254	56,581	9.08
176.00	7,254	58,757	9.27
176.30	7,254	60,934	9.45
176.60	7,254	63,110	9.62
176.90	7,254	65,286	9.80
177.20	7,254	67,462	9.97
177.50	7,254	69,638	11.46
177.80	7,254	71,815	15.11
178.10	7,254	73,991	19.99
178.40	7,254	76,167	26.86
178.70	7,254	78,343	37.51
179.00	7,254	80,519	50.53
179.30	7,254	82,696	65.19
179.60	7,254	84,872	76.27
179.90	7,254	87,048	85.28

Volume	Invert	Avail.Storage	Storage Description
#1	167.90'	87,048 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
167.90	7,254	0	0
179.90	7,254	87,048	87,048

Device	Routing	Invert	Outlet Devices
#1	Primary	167.90'	36.0" Round Culvert L= 46.8' RCP, groove end w/headwall, Ke= 0.200 Inlet / Outlet Invert= 167.90' / 166.49' S= 0.0301 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 7.07 sf
#2	Device 1	167.90'	10.0" W x 10.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	177.28'	48.0" W x 24.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	178.24'	60.0" W x 12.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

POST DEVELOPMENT ROUTING SCHEMATIC
STUDY POINT '2'



SWM POST OFFSITE Undetained Runoff Calculations

Curve Number Calculations

Area (ac)	CN	Description
11.210	95	Urban commercial, 85% imp, HSG D
1.682		15.00% Pervious Area
9.529		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 = 30.45 cfs@ 12.08 hrs Volume= 82,745 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 = 36.77 cfs@ 12.08 hrs Volume= 101,658 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 = 55.39 cfs@ 12.08 hrs Volume= 177,387 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 Runoff Calculations

Area (ac)	CN	Description
20.730	95	
20.730		

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 = 56.31 cfs @ 12.08 hrs, Volume= 153,015 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 = 68.00 cfs @ 12.08 hrs, Volume= 187,991 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 = 102.42 cfs @ 12.08 hrs, Volume= 328,031 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"

VAULT #3

1 YEAR EVENT SUMMARY

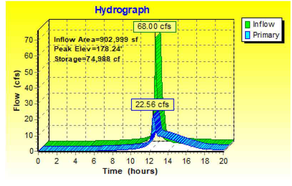
Inflow Area = 902,999 sf, 0.00% Impervious, Inflow Depth > 2.03" for 1-yr event
Inflow = 56.31 cfs @ 12.08 hrs, Volume= 153,015 cf
Outflow = 10.01 cfs @ 12.63 hrs, Volume= 149,754 cf Atten= 82% Lag= 32.8 min
Primary = 10.01 cfs @ 12.63 hrs, Volume= 149,754 cf
Routed to Link 9L : STUDY POINT 2
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 177.28@ 12.63 hrs Surf.Area= 7,254 sf Storage= 68,019 cf

Plug-Flow detention time=81.3 min calculated for 149,679 cf (98% of inflow)
Center-of-Mass det. time=72.4 min (828.9 - 756.5)
Primary OutFlow Max=10.01 cfs@ 12.63 hrs HW=177.28' (Free Discharge)
└1=Culvert (Passes 10.01 cfs of 119.40 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 10.01 cfs @ 14.41 fps)
├3=Orifice/Grate (Controls 0.00 cfs)
└4=Orifice/Grate (Controls 0.00 cfs)

2 YEAR EVENT SUMMARY

Inflow Area = 902,999 sf, 0.00% Impervious, Inflow Depth > 2.50" for 2-yr event
Inflow = 68.00 cfs @ 12.08 hrs, Volume= 187,991 cf
Outflow = 22.56 cfs @ 12.39 hrs, Volume= 184,345 cf Atten= 67% Lag= 18.6 min
Primary = 22.56 cfs @ 12.39 hrs, Volume= 184,345 cf
Routed to Link 9L : STUDY POINT 2
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 178.24@ 12.39 hrs Surf.Area= 7,254 sf Storage= 74,988 cf

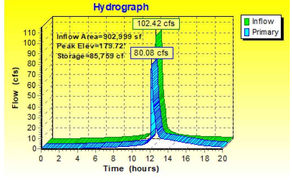
Plug-Flow detention time=75.7 min calculated for 184,253 cf (98% of inflow)
Center-of-Mass det. time=67.5 min (819.3 - 751.8)
Primary OutFlow Max=22.55 cfs@ 12.39 hrs HW=178.24' (Free Discharge)
└1=Culvert (Passes 22.55 cfs of 126.47 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 10.53 cfs @ 15.16 fps)
├3=Orifice/Grate (Orifice Controls 12.02 cfs @ 3.14 fps)
└4=Orifice/Grate (Controls 0.00 cfs)



10 YEAR EVENT SUMMARY

Inflow Area = 902,999 sf, 0.00% Impervious, Inflow Depth > 4.36" for 10-yr event
Inflow = 102.42 cfs @ 12.08 hrs, Volume= 328,031 cf
Outflow = 80.08 cfs @ 12.17 hrs, Volume= 322,649 cf Atten= 22% Lag= 5.0 min
Primary = 80.08 cfs @ 12.17 hrs, Volume= 322,649 cf
Routed to Link 9L : STUDY POINT 2
Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.01 hrs
Peak Elev= 179.72@ 12.17 hrs Surf.Area= 7,254 sf Storage= 85,759 cf

Plug-Flow detention time=60.3 min calculated for 322,649 cf (98% of inflow)
Center-of-Mass det. time=53.0 min (791.7 - 738.7)
Primary OutFlow Max=80.07 cfs@ 12.17 hrs HW=179.72' (Free Discharge)
└1=Culvert (Passes 80.07 cfs of 136.68 cfs potential flow)
├2=Orifice/Grate (Orifice Controls 11.29 cfs @ 16.26 fps)
├3=Orifice/Grate (Orifice Controls 45.20 cfs @ 5.65 fps)
└4=Orifice/Grate (Orifice Controls 23.57 cfs @ 4.71 fps)



STUDY POINT 2 SWM POST FLOWS

1 Year Flow Calculations

Inflow Area = 1,391,306 sf, 29.83% Impervious, Inflow Depth > 2.01" for 1-yr event
Inflow = 37.59 cfs @ 12.09 hrs, Volume= 232,499 cf
Primary = 37.59 cfs @ 12.09 hrs, Volume= 232,499 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 = 1,391,306 sf, 29.83% Impervious, Inflow Depth > 2.47" for 2-yr event
Inflow = 44.82 cfs @ 12.09 hrs, Volume= 286,003 cf
Primary = 44.82 cfs @ 12.09 hrs, Volume= 286,003 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 = 1,391,306 sf, 29.83% Impervious, Inflow Depth > 4.31" for 10-yr event
Inflow = 126.23 cfs @ 12.14 hrs, Volume= 500,036 cf
Primary = 126.23 cfs @ 12.14 hrs, Volume= 500,036 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 "2"

$Q_{(Developed)}$=	37.59	cfs
$Q_{(Pre-Developed)}$=	76.56	cfs
$RV_{(Pre-Developed)}$=	4.48	ac-ft
$RV_{(Developed)}$=	5.34	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 ($Q_{Pre-Developed}$ x $RV_{Pre-Developed}$)/$RV_{Developed}$
37.59		51.42

THIS SHEET REFERENCED FROM INFRASTRUCTURE PLAN (DSP2012-00012).
PLEASE SEE SHEETS 106-115D AND 116-119 IN DSP2012-00012.

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-03-2024
06-07-2024

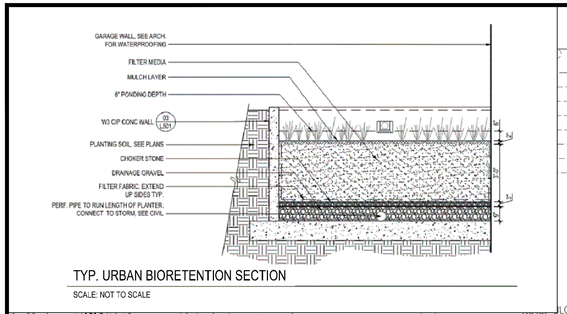
Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX 703.378.7888
www.urban-ltd.com
urban™
Planners•Engineers•Landscape Architects•Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038780
PROFESSIONAL ENGINEER
06/07/2024

SWM POST DEVELOPMENT COMPUTATIONS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
C.I.= N/A
SCALE: N/A

SHEET 16A OF 28
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-14-POST SWM PLAN.dwg [SP2 NEW] June 07, 2024 - 11:34am owolio



TYP. URBAN BIORETENTION SECTION

SCALE: NOT TO SCALE

BLOCK TO DRAIN USING EXISTING SEDIMENT BASIN RISER AND STORM CONNECTION

DA AREA=1.31 AC TO BIORETENTION

DA AREA=1.00 AC TO BIORETENTION

LEGEND

- DRAINAGE AREA
- DRAINAGE AREA TO BIORETENTION BMP
- BIORETENTION BMP

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
10-20-2023
03-01-2024
05-15-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

BMP PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: MAY, 2024

SHEET 17 OF 28

FILE No. SP-13141

Urban, Ltd. – J:\JOBS\Landmark\all\DSUP\block l&m \preliminary site plan\13141-16-BMP PLAN.dwg [BMP PLAN] June 07, 2024 – 11:35am awallio

Project Name: West End - Block LM
Date: 12/19/2022
Linear Development Project? No

(Ctrl+Shift+R)

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 4.86

Maximum reduction required: 20%
The site's net increase in impervious cover (acres) is: 0
Post-Development TP Load Reduction for Site (lb/yr): ~~1.99~~ 4.22

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

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)				4.59	4.59
					4.59

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)				4.59	4.59
Area Check	OK.	OK.	OK.	OK.	4.59

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)	4.59	4.59
Rv(impervious)	0.95	0.95
% Impervious	100%	100%
Total Site Area (acres)	4.59	4.59
Site Rv	0.95	0.95

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	0.3634	0.3634
Pre-ReDevelopment Treatment Volume (cubic feet)	15,829	15,829
Pre-ReDevelopment TP Load (lb/yr)	**9.95**	**9.95**
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)		*1.88*

[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 & consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).

Column I shows load reduction requirement 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)	4.59
Rv(impervious)	0.95
% Impervious	100%
Final Site Area (acres)	4.59
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)	4.59
Rv(impervious)	0.95
% Impervious	100%
Total ReDev. Site Area (acres)	4.59
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)	0.3634	Post-ReDevelopment Treatment Volume (acre-ft)	0.3634	Post-Development Treatment Volume (acre-ft)	--
Final Post-Development Treatment Volume (cubic feet)	15,829	Post-ReDevelopment Treatment Volume (cubic feet)	15,829	Post-Development Treatment Volume (cubic feet)	--
Final Post-Development TP Load (lb/yr)	**9.95**	Post-ReDevelopment Load (TP) (lb/yr)*	**9.95**	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)	**1.99**	**TP Load Reduction Required for New Impervious Area (lb/yr)**	**0**

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr) ~~1.99~~ 4.22

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	71.15	Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	71.15

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)				1.79	1.79	0.95
				Total	1.79	

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	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
6. Bioretention (RR)													
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80		1.00	0	2,759	690	3,449	50	0.00	2.16	1.95	0.22	

Drainage Area B

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)				2.80	2.80	0.95
				Total	2.80	

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists-

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft³)	Runoff Reduction (ft³)	Remaining Runoff Volume (ft³)	Total BMP Treatment Volume (ft³)	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
6. Bioretention (RR)													
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80		1.31	0	3,614	904	4,518	50	0.00	2.84	2.55	0.28	

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)	1.79	2.80	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	1.00	1.31	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 (ft³) 15,829

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 (ft³)	2,759	3,614	0	0	0	6,373
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	3.88	6.07	0.00	0.00	0.00	9.95
TP LOAD REDUCTION ACHIEVED (lb/yr)	1.95	2.55	0.00	0.00	0.00	4.50
TP LOAD REMAINING (lb/yr)	1.93	3.52	0.00	0.00	0.00	5.45
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	14.24	18.66	0.00	0.00	0.00	32.90

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	9.95	
TP LOAD REDUCTION REQUIRED (lb/yr)	~~1.99~~	REQUIRED REDUCTION PER APPROVED (DSP #2021-00017)= 4.22 LB/YR
TP LOAD REDUCTION ACHIEVED (lb/yr)	4.50	
TP LOAD REMAINING (lb/yr):	5.45	TP REMOVAL PER APPROVED (DSP #2021-00017)= 4.22 LB/YR
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.00 **	

** TARGET TP REDUCTION EXCEEDED BY ~~2.51 LB~~/YEAR ** 0.28 LB/YR

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	71.15
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	32.90
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	38.24

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 THREE (3) STORMWATER BEST MANAGEMENT PRACTICE (BMP) FACILITIES IN CONFORMANCE WITH THE STORMWATER BMP CLEARINGHOUSE WEBSITE. THE THREE (3) BMP FACILITIES PROPOSED ARE:

- 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 4.22 LBS/YEAR. THE TOTAL PHOSPHOROUS LOAD REDUCTION ACHIEVED IS 4.50 LBS/YEAR, THEREFORE THE TOTAL PHOSPHOROUS LOAD REDUCTION IS EXCEEDED BY 0.28 LBS/YEAR.

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
10-20-2023
03-21-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA ENGINEER CLAYTON C. TOCK Lic. No. 039700 PROFESSIONAL 06/07/2024

BMP COMPS & NARRATIVE
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
C.I.= 2'
SCALE: 1"=30'

SHEET 18 OF 28
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-16-BMP PLAN.dwg [BLK LM VRRM] June 07, 2024 - 11:35am awalo

PROPOSED BMP COMPUTATIONS FOR BLOCK L&M

Project Description

Development or Redevelopment

Drainage Area	Impervious	Pervious	Total
Site Area	4.59 AC.		4.59 AC.
On-Site Treated	2.31 AC.		2.31 AC.
Off-Site Treated	0 AC.		0 AC.
Total Treated	2.31 AC.		
Any On-Site Disconnected by a Vegetated Buffer (25 ft)			
Total On-Site Treated or Disconnected			

Water Treatment on site

BMP Type	*Area treated by BMP (acres)*	*Impervious area treated by BMP (acres)*	*BMP efficiency (%)*
Bioretention #1	1.31 AC.	1.31 AC.	50%
Bioretention #2	0.70 AC.	0.70 AC.	50%
Bioretention #3	0.30 AC.	0.30 AC.	50%

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 = 4.59 AC OR 200,091 SF

SITE WQV REQUIRED = 4.22 TP REMOVAL PER YEAR REQUIRED (PER MASTER SWM PLAN #2021-00017)

SITE WQV PROPOSED = 3,449+4,518 = 7,967 CF OR 0.183 AC-FT (SEE SHEET 18 FOR TOTAL BMP TREATMENT VOLUME VALUES)

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
10-20-2023
03-21-2024
05-15-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. YOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

WQVD DATA BLOCKS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.= 2' DATE: MAY, 2024

SHEET 19 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-16-BMP PLAN.dwg [WQVD] June 07, 2024 - 11:35am awolla

STUDY POINT "1"

TIME OF CONCENTRATION TRAVEL PATH

OFFSITE UNDETAINED DRAINAGE AREA TO OUTFALL POINT "1" DA = 0.86 AC CN= 96 TC = 15 MINS

OUTFALL POINT #1

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 = 7.37 AC CN= 95 TC = 15 MINS

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

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

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

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

OFFSITE UNDETAINED DRAINAGE AREA TO EX. CHANNEL DA = 0.29 AC

TIME OF CONCENTRATION TRAVEL PATH

OUTFALL POINT #2

FEMA ZONE FLOODPLAIN BOUNDARY

STUDY POINT "2"

HENRY G. SHIRLEY MEMORIAL HIGHWAY

SOUTH WALKER STREET

DUKE STREET

BLOCK E

BLOCK G

BLOCK H

BLOCK I

BLOCK J

BLOCK K

BLOCK L

BLOCK L1

BLOCK L2

BLOCK M

BLOCK D

6001 DUKE STREET
TM: 047.02-03-10
THE INDUSTRIAL DEVELOPMENT AUTHORITY OF THE CITY OF ALEXANDRIA
INSTR. 210026063
LOT 001

LOT 708 966,615 S.F. 21.1903 ACRES

LOT 707 130,369 S.F. 2.9929 ACRES

LOT 706 77,919 S.F. 1.7888 ACRES

LOT 705 79,901 S.F. 1.8343 ACRES

LOT 704 90,689 S.F. 2.0819 ACRES

LOT 703 70,076 S.F. 1.6087 ACRES

LOT 702 63,315 S.F. 1.4535 ACRES

LOT 701 175,805 S.F. 4.0361 ACRES

LOT 700 958,199 S.F. 21.9971 ACRES

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

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

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-02-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOPE
Lic. No. 036790
PROFESSIONAL ENGINEER
06/07/2024

OUTFALL ANALYSIS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"= 125' C.I.= 2' DATE: MAY, 2024

SHEET 20 OF 28

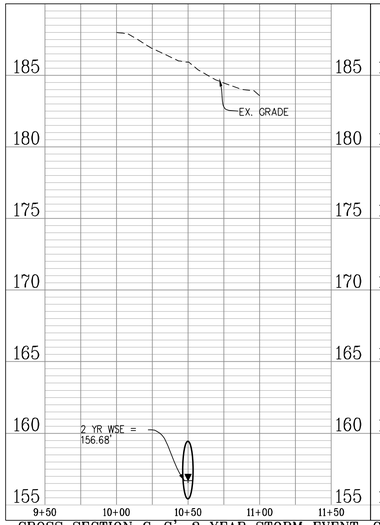
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block 1&m\preliminary site plan\13141-19-OUTFALL ANALYSIS.dwg [ANALYSIS] June 07, 2024 - 11:36am awolio

CROSS SECTION A-A': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 3.5 ft²
Wetted Perimeter: 4.8 ft
Hydraulic Radius: 8.7 in
Top Width: 3.74 ft
Normal Depth: 15.4 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 12.84 ft/s
Velocity Head: 2.56 ft
Specific Energy: 3.85 ft
Froude Number: 2.342
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.003 ft/ft
Flow Type: Supercritical

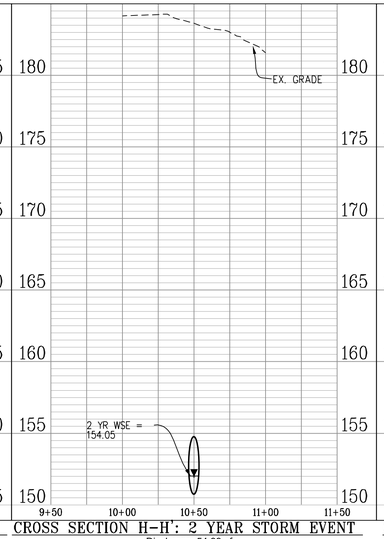
V2ALLOW=15 FPS



CROSS SECTION B-B': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 3.5 ft²
Wetted Perimeter: 4.8 ft
Hydraulic Radius: 8.7 in
Top Width: 3.74 ft
Normal Depth: 15.4 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 12.84 ft/s
Velocity Head: 2.56 ft
Specific Energy: 3.85 ft
Froude Number: 2.342
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.003 ft/ft
Flow Type: Supercritical

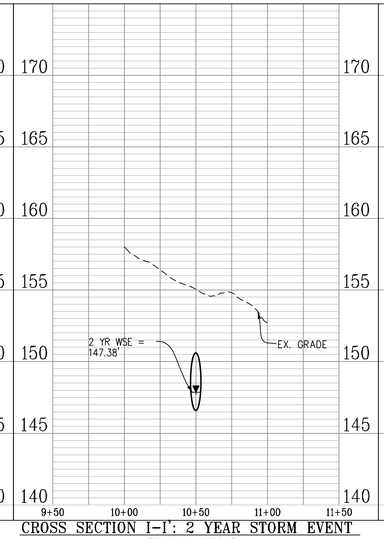
V2ALLOW=15 FPS



CROSS SECTION C-C': 2 YEAR STORM EVENT

Discharge: 44.83 cfs
Flow Area: 3.5 ft²
Wetted Perimeter: 4.8 ft
Hydraulic Radius: 8.7 in
Top Width: 3.74 ft
Normal Depth: 15.4 in
Critical Depth: 24.0 in
Critical Slope: 0.013 ft/ft
Velocity: 12.84 ft/s
Velocity Head: 2.56 ft
Specific Energy: 3.85 ft
Froude Number: 2.342
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.003 ft/ft
Flow Type: Supercritical

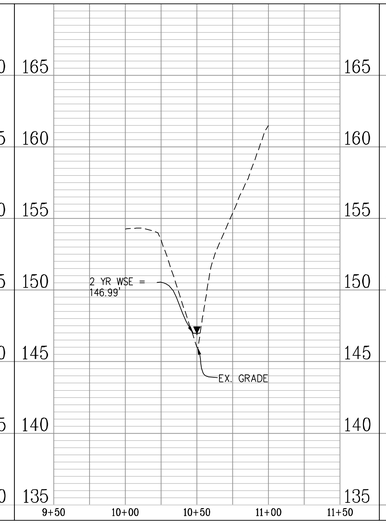
V2ALLOW=15 FPS



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

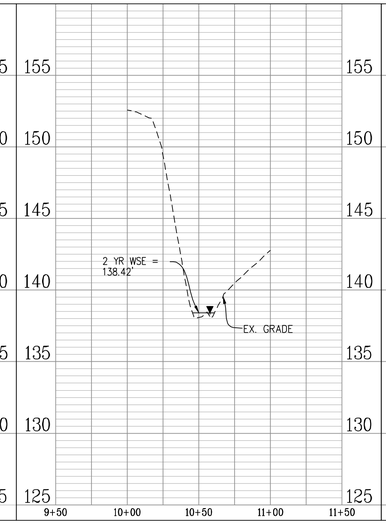
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

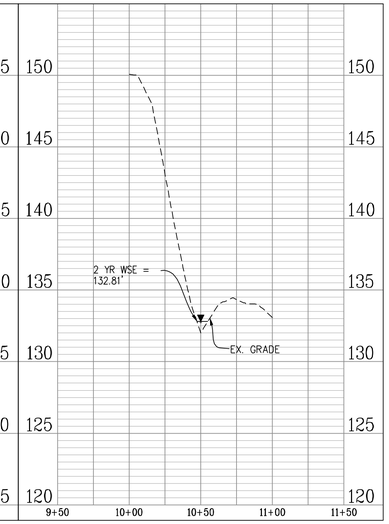
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

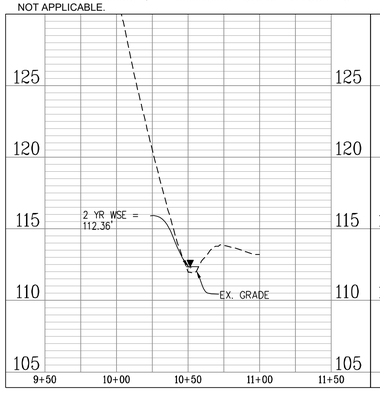
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

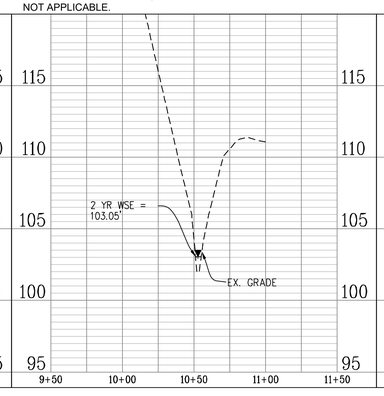
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

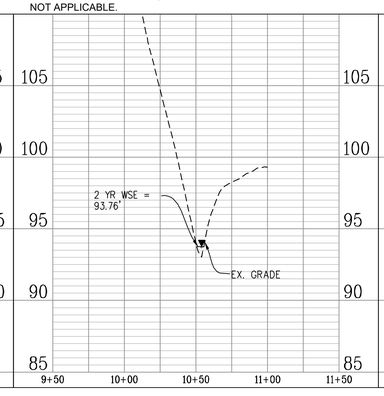
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

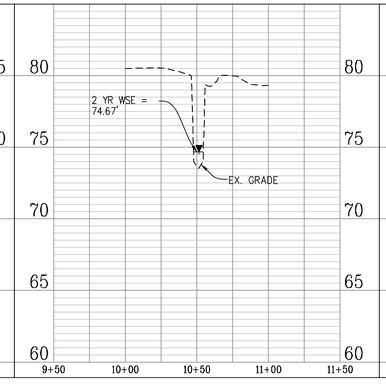
*MANMADE CHANNEL LINED WITH CONCRETE. PER TABLE 7-1 OF THE VDOT DRAINAGE MANUAL, THE MAXIMUM ALLOWABLE VELOCITY IS NOT APPLICABLE.



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

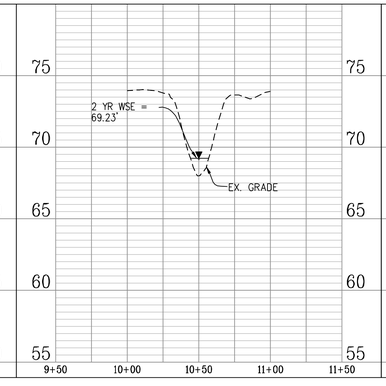
V2ALLOW= 13 FPS



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

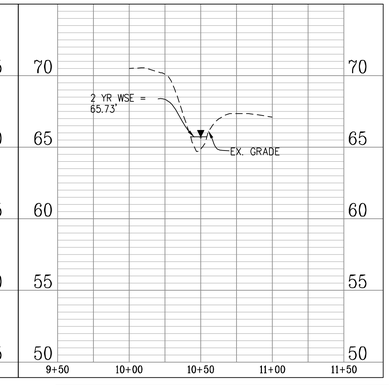
V2ALLOW= 13 FPS



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



PER INFRASTRUCTURE PLAN DSP#2021-00012

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039790
ENGINEER
PROFESSIONAL
06/07/2024

OUTFALL ANALYSIS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: H:1"=40'; V:1"=5' C.I.=N.A.
DATE: MAY, 2024

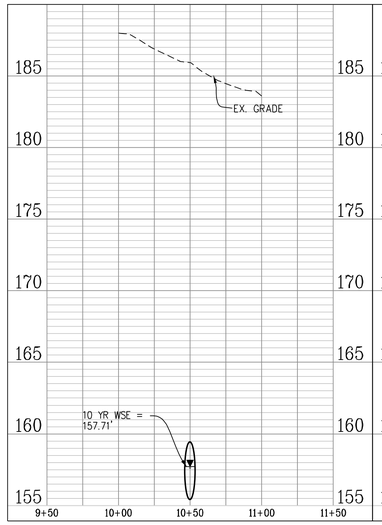
SHEET 21 OF 28

FILE No. SP-13141

Urban, Ltd. - J:_OBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-19-OUTFALL ANALYSIS.dwg [2 years] June 07, 2024 - 11:37am owalia

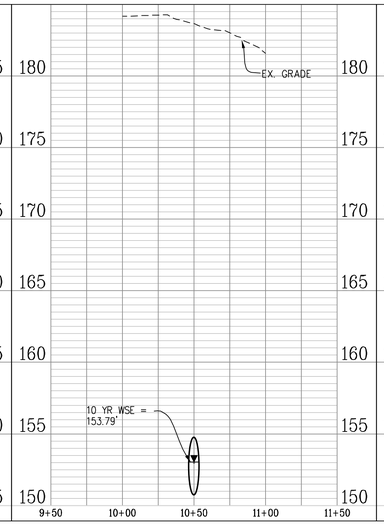
CROSS SECTION A-A': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 7.5 ft²
Wetted Perimeter: 6.9 ft
Hydraulic Radius: 13.0 in
Top Width: 3.95 ft
Normal Depth: 27.7 in
Critical Depth: 40.5 in
Critical Slope: 0.025 ft/ft
Velocity: 16.84 ft/s
Velocity Head: 4.41 ft
Specific Energy: 6.71 ft
Froude Number: 2.156
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.026 ft/ft
Flow Type: Supercritical



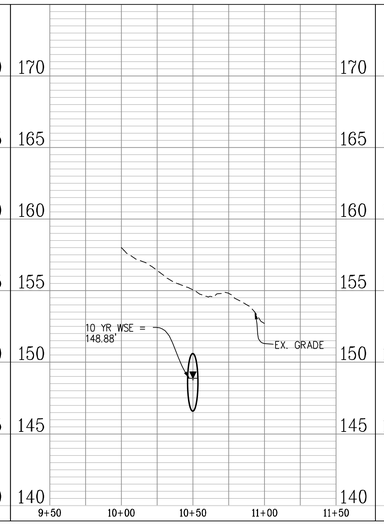
CROSS SECTION B-B': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 7.5 ft²
Wetted Perimeter: 6.9 ft
Hydraulic Radius: 13.0 in
Top Width: 3.95 ft
Normal Depth: 27.7 in
Critical Depth: 40.5 in
Critical Slope: 0.025 ft/ft
Velocity: 16.84 ft/s
Velocity Head: 4.41 ft
Specific Energy: 6.71 ft
Froude Number: 2.156
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.026 ft/ft
Flow Type: Supercritical



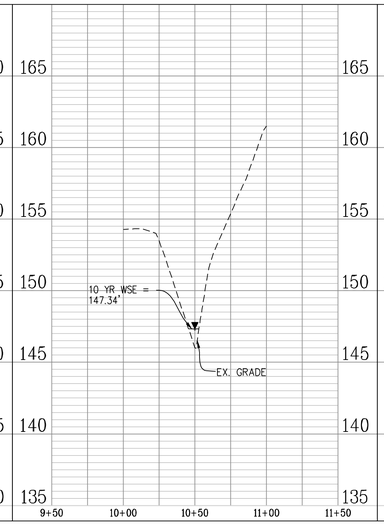
CROSS SECTION C-C': 10 YEAR STORM EVENT

Discharge: 126.27 cfs
Flow Area: 7.5 ft²
Wetted Perimeter: 6.9 ft
Hydraulic Radius: 13.0 in
Top Width: 3.95 ft
Normal Depth: 27.7 in
Critical Depth: 40.5 in
Critical Slope: 0.025 ft/ft
Velocity: 16.84 ft/s
Velocity Head: 4.41 ft
Specific Energy: 6.71 ft
Froude Number: 2.156
Maximum Discharge: 215.34 cfs
Discharge Full: 200.18 cfs
Slope Full: 0.026 ft/ft
Flow Type: Supercritical



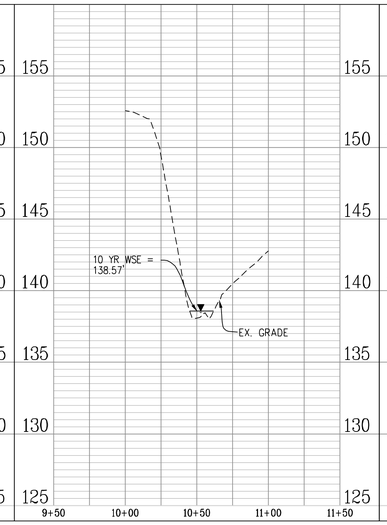
CROSS SECTION D-D': 10 YEAR STORM EVENT

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



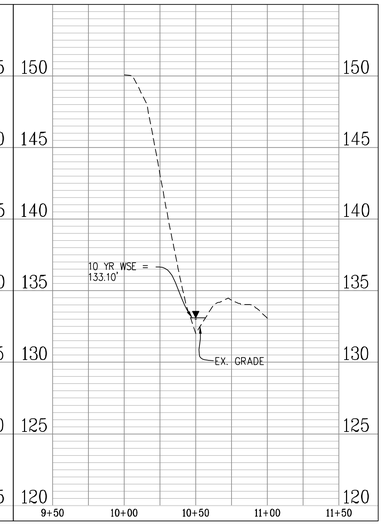
CROSS SECTION E-E': 10 YEAR STORM EVENT

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



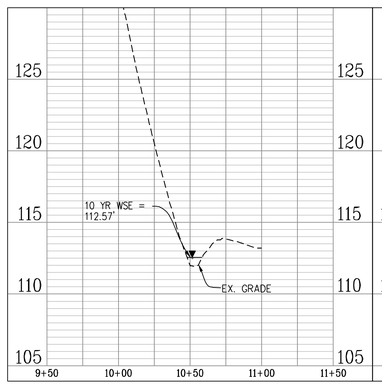
CROSS SECTION F-F': 10 YEAR STORM EVENT

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



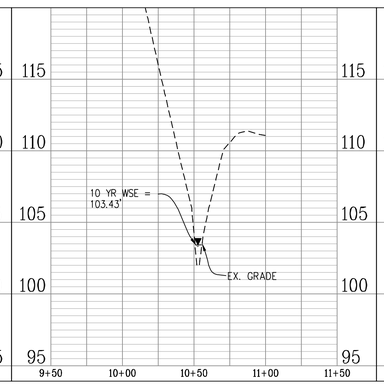
CROSS SECTION G-G': 10 YEAR STORM EVENT

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



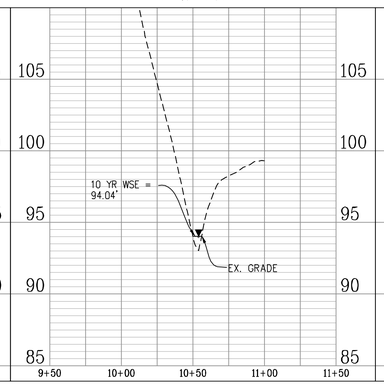
CROSS SECTION H-H': 10 YEAR STORM EVENT

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



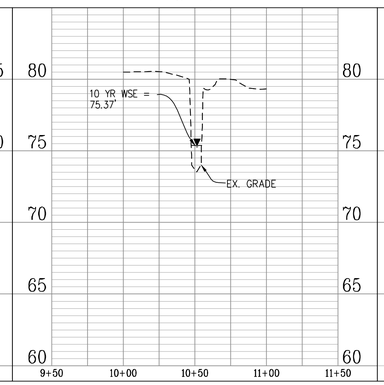
CROSS SECTION I-I': 10 YEAR STORM EVENT

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



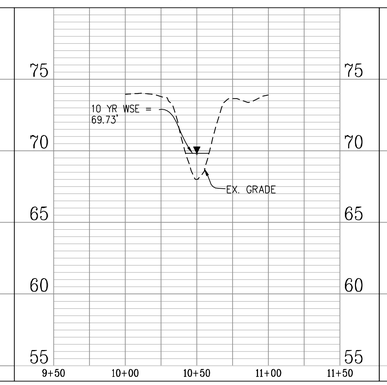
CROSS SECTION J-J': 10 YEAR STORM EVENT

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



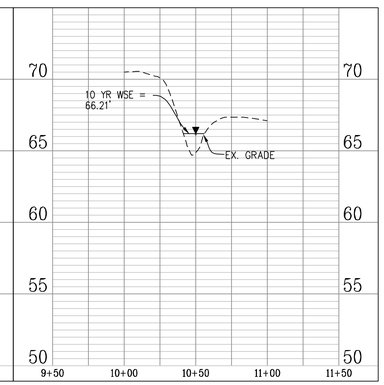
CROSS SECTION K-K': 10 YEAR STORM EVENT

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



PER INFRASTRUCTURE PLAN DSP#2021-00012

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 _____

DATE RECORDED _____

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
05-21-2024
05-31-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban™
Planners • Engineers • Landscape Architects • Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

OUTFALL ANALYSIS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
SCALE: H:1"=40', V:1"=5' C.I.= N.A.

SHEET 22 OF 28

FILE No. SP-13141

Urban, Ltd. – J:\JOBS\Landmark\all\DSUP\block l&m \preliminary site plan\13141-19-OUTFALL ANALYSIS.dwg [10 years] June 07, 2024 – 11:37am owolio

SWM PRE OFFSITE Undetained Runoff Calculations To Ex. Ditch

Curve Number Calculations

Area (ac)	CN	Description
0.276	80	>75% Grass cover, Good, HSG D
0.149	98	Paved roads w/curbs & sewers, HSG D
0.425	86	Weighted Average
0.276		64.94% Pervious Area
0.149		35.06% Impervious Area

Time of Concentration Calculations

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

1 Year Flow Calculations

Runoff = 0.98 cfs @ 12.03 hrs , Volume= 2,014 cf , Depth> 1.31"

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 = 1.27 cfs @ 12.03 hrs , Volume= 2,635 cf , Depth> 1.71"

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 = 2.20 cfs @ 12.03 hrs , Volume= 5,269 cf , Depth> 3.42"

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 OFFSITE Undetained Runoff Calculations To Ex. Ditch

Curve Number Calculations

Area (ac)	CN	Description
0.236	80	>75% Grass cover, Good, HSG D
0.057	98	Paved roads w/curbs & sewers, HSG D
0.293	84	Weighted Average
0.236		80.55% Pervious Area
0.057		19.45% Impervious Area

Time of Concentration Calculations

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

1 Year Flow Calculations

Runoff = 0.61 cfs @ 12.03 hrs , Volume= 1,249 cf , Depth> 1.17"

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 = 0.80 cfs @ 12.03 hrs , Volume= 1,659 cf , Depth> 1.56"

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 = 1.44 cfs @ 12.03 hrs , Volume= 3,425 cf , Depth> 3.22"

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"

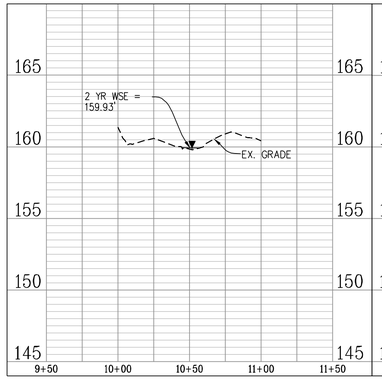
ENERGY BALANCE METHOD TO Ex. Channel at Str. 43.

$Q_{(Developed)}$=	0.61	cfs
$Q_{(Pre-Developed)}$=	0.98	cfs
$RV_{(Pre-Developed)}$=	2014.00	c.f.
$RV_{(Developed)}$=	1249.00	c.f.
I.F. =	0.9	(0.8 for sites greater than one acre) (0.9 for sites less than or equal to one acre)

Q Developed	≤	I.F x ($Q_{Pre-Developed}$ X $RV_{Pre-Developed}$)/$RV_{Developed}$
0.61		1.42

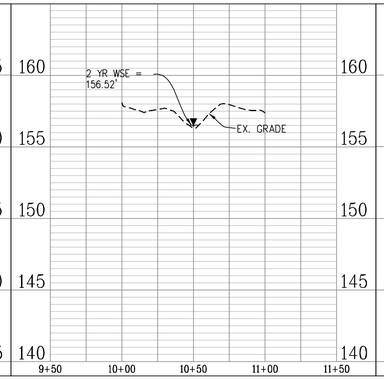
CROSS SECTION M-M': 2 YEAR STORM EVENT

Discharge: 0.80 cfs
Flow Area: 0.9 ft²
Wetted Perimeter: 12.2 ft
Hydraulic Radius: 0.9 in
Top Width: 12.16 ft
Normal Depth: 1.8 in
Critical Depth: 1.4 in
Critical Slope: 0.093 ft/ft
Velocity: 0.88 ft/s
Velocity Head: 0.01 ft
Specific Energy: 0.16 ft
Froude Number: 0.568
Flow Type: Subcritical
V2ALLOW= 13 FPS



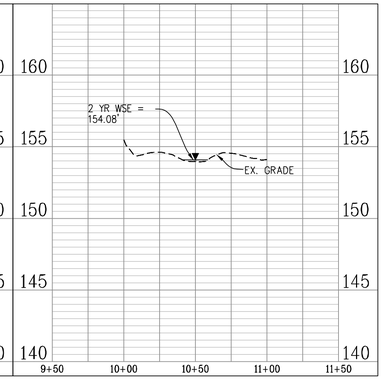
CROSS SECTION N-N': 2 YEAR STORM EVENT

Discharge: 0.80 cfs
Flow Area: 0.5 ft²
Wetted Perimeter: 4.8 ft
Hydraulic Radius: 1.3 in
Top Width: 4.79 ft
Normal Depth: 2.5 in
Critical Depth: 2.4 in
Critical Slope: 0.079 ft/ft
Velocity: 1.58 ft/s
Velocity Head: 0.04 ft
Specific Energy: 0.25 ft
Froude Number: 0.858
Flow Type: Subcritical
V2ALLOW= 13 FPS



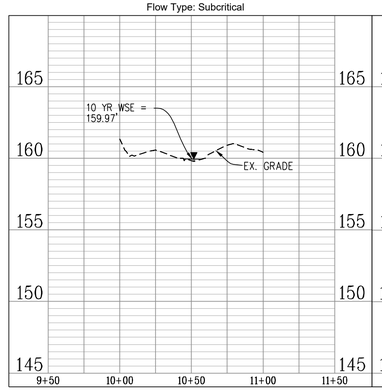
CROSS SECTION O-O'-: 2 YEAR STORM EVENT

Discharge: 0.80 cfs
Flow Area: 0.7 ft²
Wetted Perimeter: 9.9 ft
Hydraulic Radius: 0.8 in
Top Width: 9.88 ft
Normal Depth: 1.6 in
Critical Depth: 1.5 in
Critical Slope: 0.092 ft/ft
Velocity: 1.20 ft/s
Velocity Head: 0.02 ft
Specific Energy: 0.16 ft
Froude Number: 0.819
Flow Type: Subcritical
V2ALLOW= 13 FPS



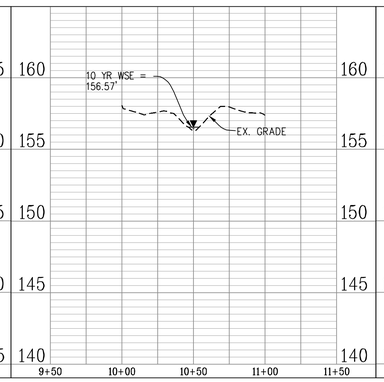
CROSS SECTION M-M': 10 YEAR STORM EVENT

Discharge: 1.44 cfs
Flow Area: 1.4 ft²
Wetted Perimeter: 15.2 ft
Hydraulic Radius: 1.1 in
Top Width: 15.16 ft
Normal Depth: 2.2 in
Critical Depth: 1.8 in
Critical Slope: 0.086 ft/ft
Velocity: 1.02 ft/s
Velocity Head: 0.02 ft
Specific Energy: 0.20 ft
Froude Number: 0.589
Flow Type: Subcritical



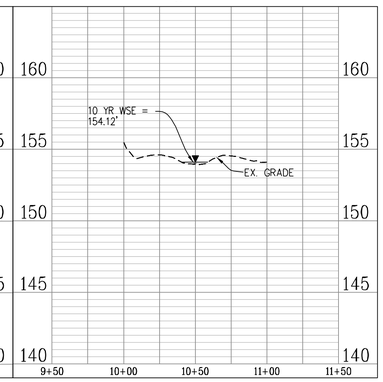
CROSS SECTION N-N': 10 YEAR STORM EVENT

Discharge: 1.44 cfs
Flow Area: 0.8 ft²
Wetted Perimeter: 6.0 ft
Hydraulic Radius: 1.6 in
Top Width: 5.97 ft
Normal Depth: 3.2 in
Critical Depth: 3.0 in
Critical Slope: 0.073 ft/ft
Velocity: 1.83 ft/s
Velocity Head: 0.05 ft
Specific Energy: 0.32 ft
Froude Number: 0.890
Flow Type: Subcritical



CROSS SECTION O-O': 10 YEAR STORM EVENT

Discharge: 1.44 cfs
Flow Area: 1.0 ft²
Wetted Perimeter: 12.3 ft
Hydraulic Radius: 1.0 in
Top Width: 12.31 ft
Normal Depth: 2.0 in
Critical Depth: 1.9 in
Critical Slope: 0.085 ft/ft
Velocity: 1.40 ft/s
Velocity Head: 0.03 ft
Specific Energy: 0.20 ft
Froude Number: 0.850
Flow Type: Subcritical



PER INFRASTRUCTURE PLAN DSP#2021-00012

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

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039790
ENGINEER
PROFESSIONAL
06/07/2024

OUTFALL ANALYSIS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
SCALE: H:1"=40'; V:1"=5' C.I.=N.A. DATE: MAY, 2024

SHEET 23 OF 28
FILE No. SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-19-OUTFALL ANALYSIS.dwg [M-M' to O-O'] June 07, 2024 - 11:37am awallo

OUTFALL ANALYSIS NARRATIVE

OVERALL, 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 DRAINAGE AREA OF 32.86 ACRES DRAINS TO STUDY POINT 1, WHEREAS A TOTAL OF 31.94 ACRES DRAINS TO STUDY POINT 2.

SPECIFIC TO THE SUBJECT SITE, BLOCK L1,L2 & M STORM SYSTEM DRAINS TO VAULT #3 THEN DISCHARGE TO AN EXISTING MANMADE STORMWATER CONVEYANCE SYSTEM LOCATED ON THE EAST SIDE OF THE LANDMARK DEVELOPMENT. STORMWATER MANAGEMENT IS TO BE PROVIDED IN VAULT 3 WHICH IS LOCATED SOUTH OF BLOCK I AND HAS A TOTAL DRAINAGE AREA OF 20.73 ACRES WHICH ENCOMPASSES BLOCKS D, L, K, L1, L2, M AND PART OF INOVA SITE. 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 FACILITY.

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:

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

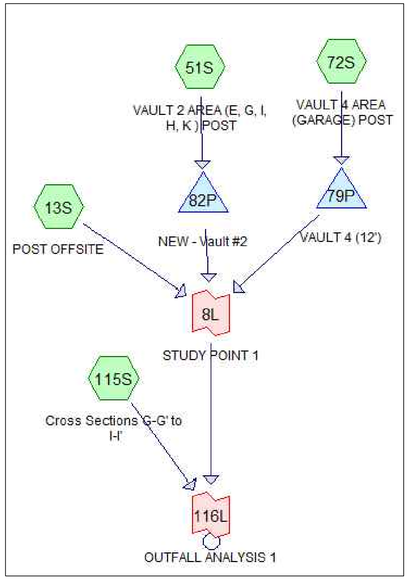
AND THE PEAK FLOW RATE FOR THE 10-YEAR 24-HOUR STORM EVENT IS LESS THAN THE PRE-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT. AS SHOWN IN THE FLOW SUMMARY TABLE ON THIS SHEET. THE PROPOSED FLOW TO THE STUDY POINTS ARE LESS THAN THE ALLOWABLE RUNOFF.

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

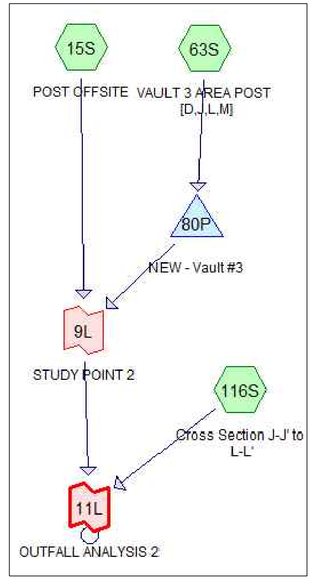
Clayton Tock

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

POST-DEVELOPMENT NODE SUMMARIES FOR OUTFALL POINT #1



POST-DEVELOPMENT NODE SUMMARIES FOR OUTFALL POINT #2



NODE LEGEND

ROUTING DIAGRAM NODE SYMBOLS:

Subcat — HYDROCAD SUBCATCHMENT - USED TO MODEL THE EFFECT OF RAINFALL ON A SPECIFIC SECTION OF THE WATERSHED, AND PRODUCES A RUNOFF HYDROGRAPH. SUBCATCHMENTS ARE DESCRIBED BY A NUMBER OF PARAMETERS SUCH AS AREA, CURVE NUMBER, AND TIME OF CONCENTRATION.

Pond — HYDROCAD POND -USED TO MODEL THE STORAGE EFFECTS OF ANY RETENTION OR DETENTION AREA, SUCH AS A RESERVOIR, DETENTION POND, OR STORAGE CHAMBER. A POND CAN ALSO INCORPORATE A VARIETY OF ANY OUTLET CONTROL DEVICES, SUCH AS CULVERTS, WEIRS, ETC., WITH THE ABILITY TO ACCOUNT FOR HEADWATER AND TAILWATER EFFECTS.

Link — HYDROCAD LINK -USED TO INTERCONNECT SEVERAL ROUTING DIAGRAMS AND PRODUCES A RUNOFF HYDROGRAPH SCALED APPROPRIATELY FOR TIME. THIS PROVIDES A REPRESENTATION OF DISCHARGE OF RUNOFF WHERE MULTIPLE HYDROGRAPHS ARE ACCUMULATED TO A POINT OF ANALYSIS.

**NOTE - THE NUMBER AND LETTER GENERATED WITHIN THE ROUTING DIAGRAM NODE IS AUTOMATICALLY GENERATED BY THE HYDROCAD SOFTWARE. THE NUMBER AND LETTER HAS NO EFFECT ON THE ROUTING CALCULATIONS. THE TEXT BELOW EACH HYDROCAD NODE PROVIDES A BRIEF DESCRIPTION OF THE NODES REPRESENTATION.

FLOW SUMMARY TABLES

STUDY POINT 1:

FLOW SUMMARY		PRE-DEVELOPMENT			POST-DEVELOPMENT SUMMARY			Q ALLOW*
NODE ID	RETURN EVENT	Q PEAK hrs	Q PEAK cfs	Rv cu.ft.	Q PEAK hrs	Q PEAK cfs	Rv cu.ft.	CFS
ONSITE	1	12.09	52.17	136,159				
	2	12.09	67.33	176,935				
	10	12.09	116.25	348,346				
OFFSITE	1	12.15	16.82	54,327	12.15	16.82	54,327	
	2	12.15	20.36	66,748	12.15	20.36	66,748	
	10	12.15	31.07	116,470	12.15	31.07	116,470	
VAULT 2	1				12.27	23.00	127,952	
	2				12.23	33.40	157,324	
	10				12.14	75.01	274,936	
VAULT 4	1				12.67	3.28	66,871	
	2				12.56	6.70	80,392	
	10				12.28	20.39	132,914	
CROSS SECTIONS G-G TO I-I'	1				12.16	1.30	4,051	
	2				12.16	1.70	5,303	
	10				12.15	3.04	10,605	
STUDY POINT 1	1	12.10	67.19	190,486	12.18	41.46	249,150	41.35
	2	12.10	85.47	243,683	12.20	55.14	304,463	85.47
	10	12.10	143.92	464,816	12.15	125.38	534,923	143.92
OUTFALL POINT 1	1				12.18	42.76	253,200	
	2				12.20	56.77	309,766	
	10				12.15	121.50	520,368	

STUDY POINT 2:

FLOW SUMMARY		PRE-DEVELOPMENT			POST-DEVELOPMENT SUMMARY			Q ALLOW*
NODE ID	RETURN EVENT	Q PEAK hrs	Q PEAK cfs	Rv cu.ft.	Q PEAK hrs	Q PEAK cfs	Rv cu.ft.	CFS
ONSITE	1	12.03	48.77	99,926				
	2	12.03	62.66	129,838				
	10	12.03	106.06	255,599				
OFFSITE	1	12.08	33.04	95,334	12.08	30.45	82,745	
	2	12.08	39.16	114,673	12.08	36.77	101,658	
	10	12.08	56.97	191,351	12.08	55.39	177,387	
VAULT 3	1				12.63	10.03	153,017	
	2				12.39	22.60	187,991	
	10				12.17	80.15	326,881	
CROSS SECTION J-J' TO L-L'	1				12.09	12.95	34,232	
	2				12.09	16.01	42,944	
	10				12.08	25.30	78,364	
STUDY POINT 2	1	12.04	76.56	195,259	12.09	37.61	235,762	50.75
	2	12.04	95.46	244,511	12.09	44.83	289,649	95.46
	10	12.04	153.75	446,950	12.14	126.27	504,268	153.75
OUTFALL POINT 2	1				12.09	50.55	269,994	
	2				12.09	60.84	332,593	
	10				12.13	148.84	582,632	

POST-DEVELOPMENT 2-YEAR OUTFALL POINT #1

Inflow Area = 1,470,063 sf , 42.45% Impervious , Inflow Depth > 2.53" for 2-yr event
Inflow = 56.77 cfs @ 12.20 hrs , Volume= 309,766 cf
Primary = 56.77 cfs @ 12.20 hrs , Volume= 309,766 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 = 1,470,063 sf , 42.45% Impervious , Inflow Depth > 4.37" for 10-yr event
Inflow = 125.38 cfs @ 12.15 hrs , Volume= 534,923 cf
Primary = 125.38 cfs @ 12.15 hrs , Volume= 534,923 cf , Atten= 0% , Lag= 0.0 min

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

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

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

PER INFRASTRUCTURE PLAN DSP#2021-00012

No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-21-2024
05-10-2024
06-07-2024

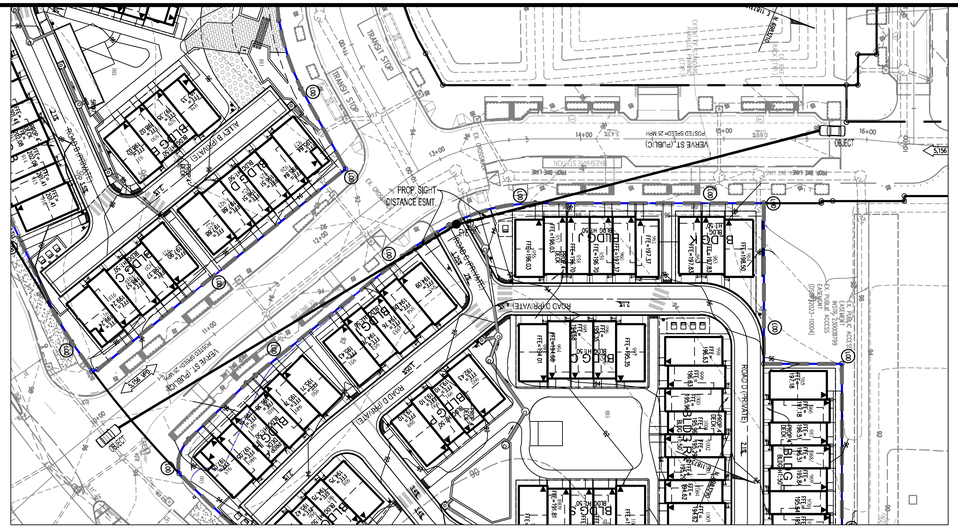
Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX 703.378.7888
www.urban-ltd.com
urban™
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039790
ENGINEER
PROFESSIONAL
06-07-2024

OUTFALL ANALYSIS
WEST END
BLOCK L&M - PRELIMINARY SITE PLAN
CITY OF ALEXANDRIA, VIRGINIA
DATE: MAY, 2024
SCALE: N.A.
C.I.=N.A.

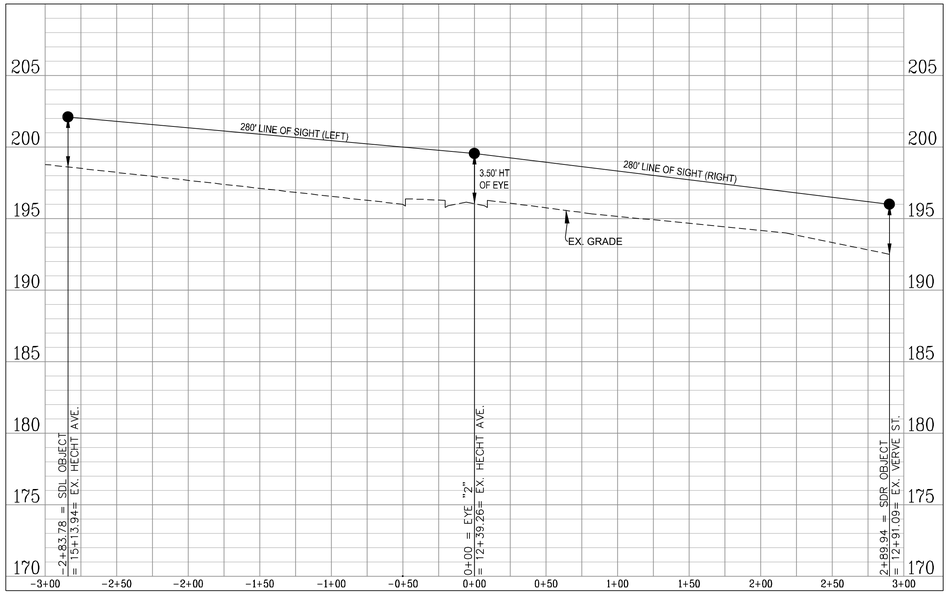
SHEET 24 OF 28
FILE No. SP-13141

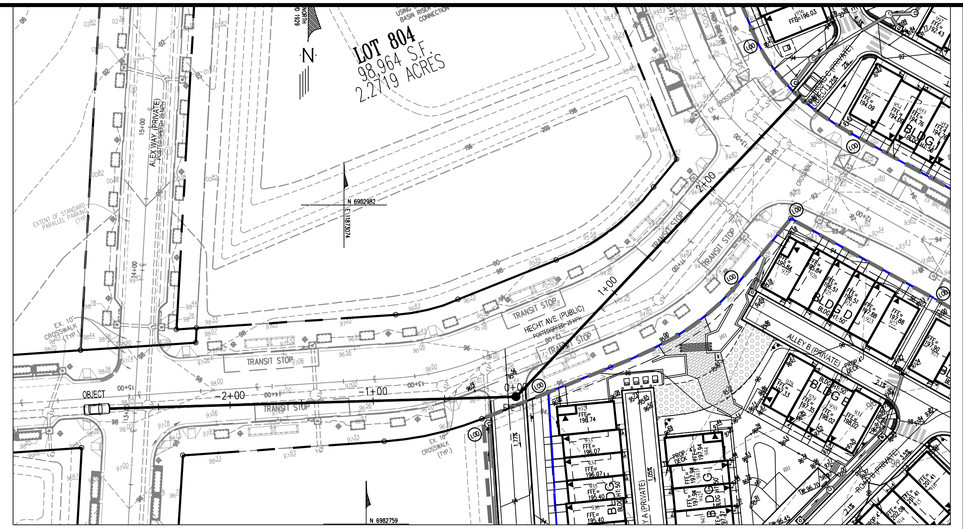
Urban, Ltd. - J:_JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-19-OUTFALL ANALYSIS.dwg [NARR] June 07, 2024 - 11:37am awallo



PLAN VIEW
SCALE: 1"=50'

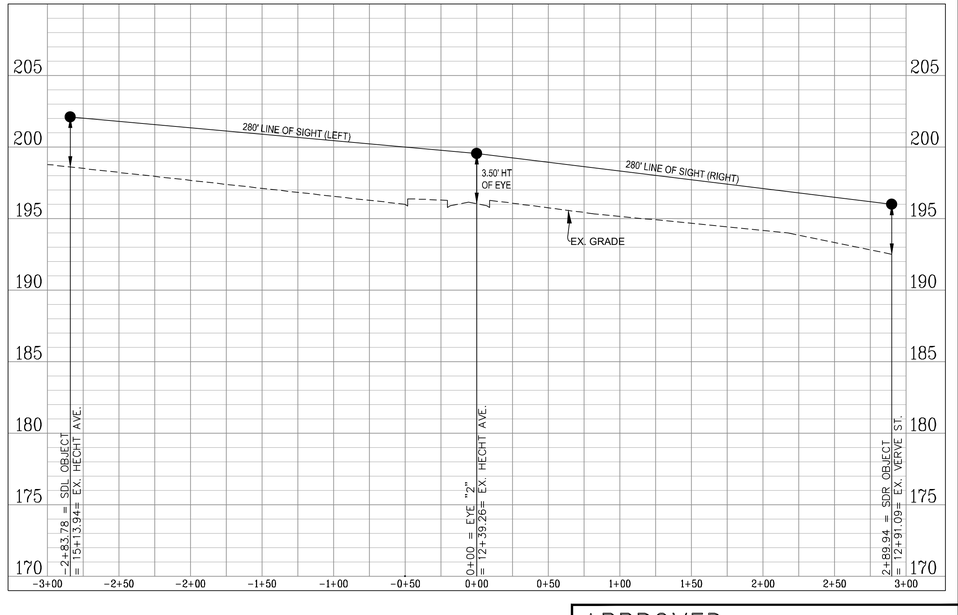
SIGHT DISTANCE PROFILE
PROP. ROAD C AND EX. VERVE ST. INTX.
EYE "2"
POSTED SPEED = 25MPH
DESIGN SPEED = 25MPH





PLAN VIEW
SCALE: 1"=50'

SIGHT DISTANCE PROFILE
PROP. ROAD A AND EX. HECHT AVE INTX.
EYE "1"
POSTED SPEED = 25 MPH
DESIGN SPEED = 25 MPH



No.	DATE	DESCRIPTION
		REVISIONS

PLAN DATE
10-20-2023
03-01-2024
05-03-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 039780
PROFESSIONAL ENGINEER
06/07/2024

SIGHT DISTANCE PROFILES

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

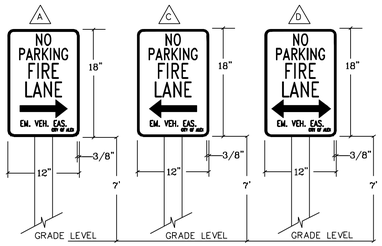
DATE: MAY, 2024
SCALE: H: 1"=50' ; V: 1"=5'
C.I.= 2'

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
25
OF
28

FILE No.
SP-13141

Urban, Ltd. - J:\JOBS\landmarkmall\DSUP\block l&m\preliminary site plan\13141-18-SIGHT DISTANCE.dwg [SIGHT DISTANCE] June 07, 2024 - 11:39am awalia



FIRE LANE SIGN DIMENSIONS:
SIGN DIMENSIONS – 12"x 18"
3/8" RED TRIM NEAR OUTSIDE BORDER
LETTERING : RED ON WHITE BACKGROUND
"NO PARKING" – 2" HIGH
"FIRE LANE" – 2 1/2" HIGH
"EM. VEH. EAS." – 1" HIGH
"CITY OF ALEX" – 0.30" HIGH
DIRECTIONAL ARROWS – 1" BY 6" SOLID
SHAFT WITH SOLID HEAD – 1 1/2" WIDE AND 2" DEEP
POST (IF USED) – WOOD (4"x 4" TREATED) OR METAL CONSTRUCTION
USE HIGHWAY GOTHIC STYLE "C" LETTERING

PAVEMENT MARKING INDEX:

FIRE LANE CURB

(A) TYPE B, CLASS I, WHITE, 24" WIDTH.

300' RADIUS F.H. COVERAGE

VA STATE GRID NORTH NAD 1983 NORTH 1929

N

BLDG L
BLDG HT: 50'
BLDG K
BLDG HT: 50'
BLDG R
BLDG HT: 50'
BLDG J
BLDG HT: 50'
BLDG Q
BLDG HT: 50'
BLDG S
BLDG HT: 50'
BLDG M
BLDG HT: 50'
BLDG P
BLDG HT: 50'
BLDG N
BLDG HT: 55'
BLDG O
BLDG HT: 50'
BLDG I
BLDG HT: 50'
BLDG H
BLDG HT: 50'
BLDG F
BLDG HT: 50'
BLDG G
BLDG HT: 50'
BLDG D
BLDG HT: 50'
BLDG E
BLDG HT: 50'
BLDG C
BLDG HT: 50'
BLDG B
BLDG HT: 50'
BLDG A
BLDG HT: 50'

ROAD A (PRIVATE)
ROAD B (PRIVATE)
ALLEY A (PRIVATE)
HECHT AVE. (PUBLIC)
DUKE STREET
NORTH VAN DORN STREET

PROP 8" DIP WATERLINE
PROP 6" DIP WATERLINE
PROP F.H (6" SVC LINE)
PROP. E.V.E
PROP. STOP SIGN (R-1)
PROP 2" B.O.V
EX. FH
EX. 12" WATERLINE (AW)
EX. 8" WATERLINE (AW)
300.00'
22.00'
25.00'

No.	DATE	REVISIONS
		DESCRIPTION

PLAN DATE
10-20-2023
03-01-2024
05-01-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038780
PROFESSIONAL ENGINEER
06/07/2024

FIRE SERVICE PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
C.I.= N/A
SCALE: 1"=30'

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 26 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-20-FIRE SERVICE PLAN.dwg [FIRE SERVICE] June 07, 2024 - 11:40am owolio

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

LEGEND
- BLOCK L & M PROPERTY LINES
- LIMITS OF DISTURBANCE

BLOCK R

ROAD D (PRIVATE)

ROAD A (PRIVATE)

ROAD B (PRIVATE)

ROAD C (PRIVATE)

ALLEY A (PRIVATE)

ALLEY B (PRIVATE)

ALLEY C (PRIVATE)

ALLEY D (PRIVATE)

VERVE ST. (PUBLIC)
POSTED SPEED=25 MPH

HECHT AVE. (PUBLIC)
POSTED SPEED=25 MPH

ALLEY WAY (PRIVATE)
POSTED SPEED=25 MPH

LANDMARK ST. (PRIVATE)
POSTED SPEED=25 MPH

NORTH VAN DORN STREET
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE STREET
ROUTE #236
VARIABLE WIDTH R/W
PUBLIC STREET

DUKE ST. WB RAMP
VARIABLE WIDTH R/W
PUBLIC STREET

BLDG A
BLDG B
BLDG C
BLDG D
BLDG E
BLDG F
BLDG G
BLDG H
BLDG J
BLDG K
BLDG L
BLDG M
BLDG P
BLDG Q
BLDG S

SITE FEATURE

EX. PUBLIC ACCESS EASEMENT INSTR. 230008799

EX. PUBLIC ACCESS EASEMENT (DSUP#2023-10004)

EX. PUBLIC ACCESS EASEMENT INSTR. 230008799

EX. E.V.E. INSTR. 230008799

9' FRONTAGE ZONE SETBACK

6' FRONTAGE ZONE SETBACK

EX. BIKE RACK (TYP.)

PROP. BIKE RACK

PROP. BENCH

PROP. BOLLARD

PROP. 6' SCREEN WALL

PROP. PLANTER WALL(18")

EX. RET. WALL

PROP. 6' S/W

PROP. 8' S/W

PROP. 10' CROSSWALK (TYP.)

EX. CROSSWALK (TYP.)

PROP. CROSSWALK (TYP.)

PROP. 4' DECK

PROP. BIKE LANE

BIKESHARE STATION

GRASSPAVER

12' CONCRETE SHARED USE PATH

TRANSIT STOP

N 6983210
E 1183173

N 6982759
E 1182990

N 6982967
E 1183365

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

GIS DIMENSION PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

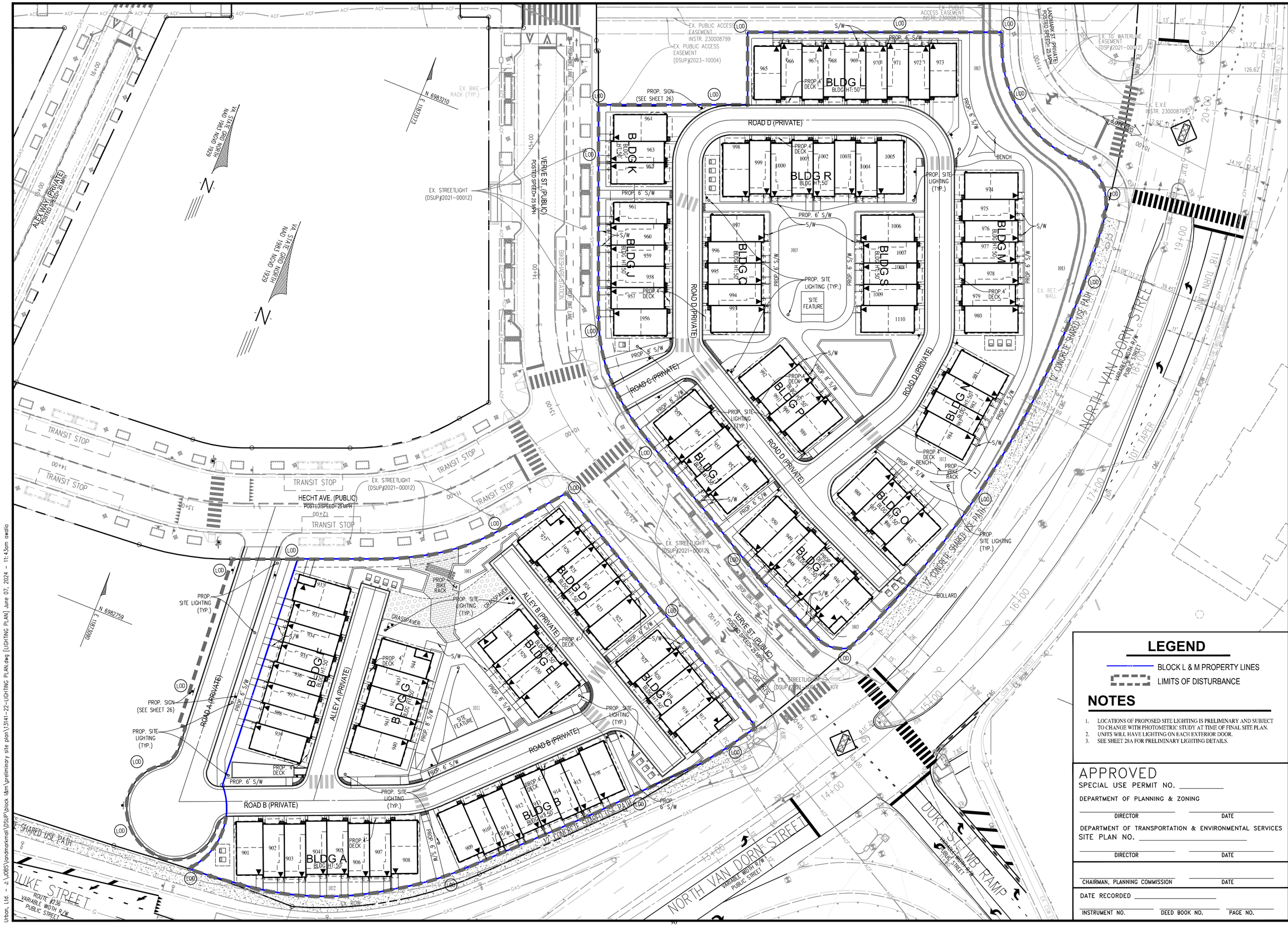
CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' — C.I.= N/A — DATE: MAY, 2024

SHEET 27 OF 28

FILE No. SP-13141

Urban, Ltd. -- J:\JOBS\Landmark mall USUP\block l&m \preliminary site plan\13141-21-GIS DIMENSION PLAN.dwg [GIS] June 07, 2024 - 11:42am owallio



LEGEND

BLOCK L & M PROPERTY LINES

LIMITS OF DISTURBANCE

NOTES

1. LOCATIONS OF PROPOSED SITE LIGHTING IS PRELIMINARY AND SUBJECT TO CHANGE WITH PHOTOMETRIC STUDY AT TIME OF FINAL SITE PLAN.
2. UNITS WILL HAVE LIGHTING ON EACH EXTERIOR DOOR.
3. SEE SHEET 28A FOR PRELIMINARY LIGHTING DETAILS.

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
10-20-2023
03-01-2024
05-03-2024
06-07-2024

Urban Ltd.
4200 D TECHNOLOGY CT.
CHANTILLY, VA. 20151
TEL. 703.642.2306
FAX. 703.378.7888
www.urban-ltd.com

urban
Planners+Engineers+Landscape Architects+Land Surveyors

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCE
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

LIGHTING PLAN

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1"=30' C.I.=N/A DATE: MAY, 2024

SHEET 28 OF 28

FILE No. SP-13141

Urban, Ltd. - J:\JOBS\1andmarkmall\DSUP\block l&m\preliminary site plan\13141-22-LIGHTING PLAN.dwg [LIGHTING PLAN] June 07, 2024 - 11:43am owolo

SITE LIGHTING

CARLYLE ACORN

THE CARLYLE ACORN STYLE LUMINAIRE IS FREQUENTLY USED WHERE GREATER VERTICAL ILLUMINATION AND A MODERATE AMOUNT OF UPLIGHT IS PREFERRED, SUCH AS IN URBAN STREETSCAPE AND PEDESTRIAN LIGHTING APPLICATIONS.

- BASIC STYLE LUMINAIRE
- 3000K COLOR TEMPERATURE
- FINISH COLOR BLACK
- TYPE III LIGHTING PATTERN
- INTERNAL GLASS REFRACTOR FOR LIGHT CONTROL
- 70W, 100W, 150W, 250W HID EQUIVALENTS

CARLYLE ACORN	
	REVISION DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES ALEXANDRIA, VIRGINIA	CSCA-1
	PAGE 69

UNIT LIGHTING (FRONT/SIDE DOORS)

Camillo™ 15" 1 Light Wall Light with Clear Seeded Glass Textured Black — 59080BKT

© 2024 Kichler Lighting LLC. All Rights Reserved.

SPECIFICATIONS

Certifications/Qualifications	
	www.kichler.com/warranty
Dimensions	
Base Backplate	4.75" X 6.25"
Extension	7.50"
Weight	4.60 LBS
Height from center of Wall opening (Spec Sheet)	3.25"
Height	14.75"
Width	6.00"
Light Source	
Dimmable	Yes
Lamp Included	Not Included
Lamp Type	A19
Light Source	Incandescent
Max or Nominal Watt	100.00
# of Bulbs/LED Modules	1
Max Wattage/Range	100.00
Socket Type	Medium
Socket Wire	150"
Mounting/Installation	
Interior/Exterior	Exterior
Location Rating	Wet
Mounting Style	Wall Mount
Mounting Weight	3.00 LBS

FIXTURE ATTRIBUTES

Housing	
Diffuser Description	Clear Seeded
Primary Material	ALUMINUM
Shade Dimensions	4.74" D X 10.75" H
Product/Ordering Information	
SKU	59080BKT
Finish	Textured Black
Style	Industrial
UPC	783927002257
Finish Options	
Natural Brass	
Textured Black	

ALSO IN THIS FAMILY

59139BKT | 59140BKT | 59141BKT

59142BKT | 59079NBR | 59079BKT

UNIT LIGHTING (REAR/GARAGE DOORS)

8.25" 1 Light Wall Light Black — 9611BK

© 2023 Kichler Lighting LLC. All Rights Reserved.

SPECIFICATIONS

Certifications/Qualifications	
	www.kichler.com/warranty
Dimensions	
Base Backplate	5.00" DIA
Extension	5.75"
Weight	1.05 LBS
Height from center of Wall opening (Spec Sheet)	2.75"
Height	8.25"
Width	5.00"
Light Source	
Dimmable	Yes
Lamp Included	Not Included
Lamp Type	A19
Light Source	Incandescent
Max or Nominal Watt	60.00
# of Bulbs/LED Modules	1
Socket Type	Medium
Socket Wire	105"
Mounting/Installation	
Interior/Exterior	Exterior
Location Rating	Wet
Mounting Style	Wall Mount

FIXTURE ATTRIBUTES

Housing	
Diffuser Description	Clear
Primary Material	Aluminum
Product/Ordering Information	
SKU	9611BK
Finish	Black
Style	Traditional
UPC	783927961158
Finish Options	
Black	
Olde Bronze	
Stainless Steel	
Tannery Bronze	

NOTES

1. LIGHTING FIXTURES/DETAILS PROVIDED HEREON ARE PRELIMINARY AND SUBJECT TO CHANGE AT TIME OF FINAL SITE PLAN.

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	REVISIONS
		DESCRIPTION

PLAN DATE
10-20-2023
03-21-2024
05-03-2024
06-07-2024

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

COMMONWEALTH OF VIRGINIA
CLAYTON C. TOCK
Lic. No. 038790
PROFESSIONAL ENGINEER
06/07/2024

LIGHTING PLAN DETAILS

WEST END
BLOCK L&M - PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VIRGINIA

DATE: MAY, 2024
SCALE: 1"=30'
C.I.= N/A

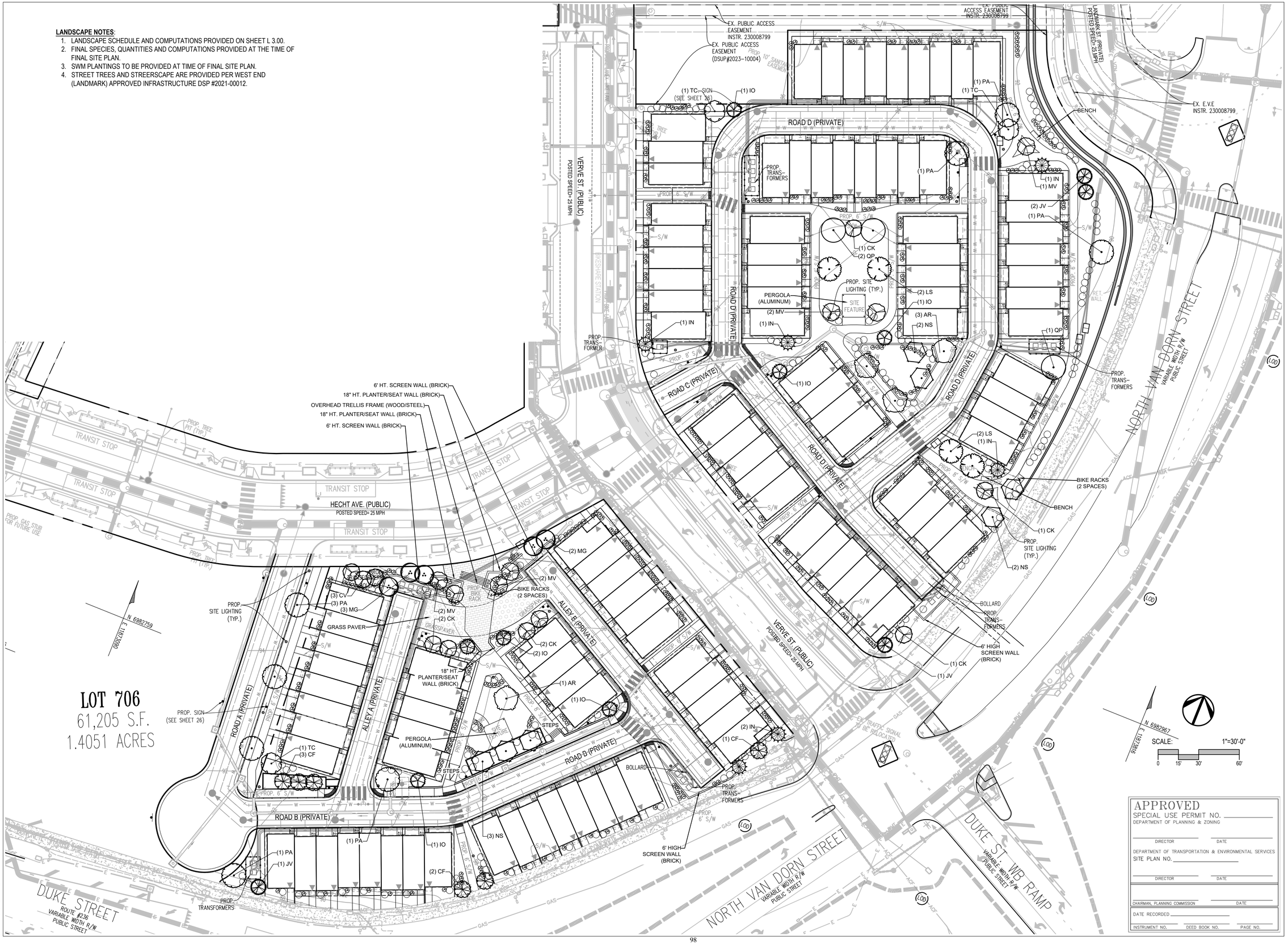
SHEET
28A
OF
28

FILE No.
SP-13141

Urban, Ltd. - J:\JOBS\Landmarkmall\DSUP\block l&m\preliminary site plan\13141-22-LIGHTING PLAN.dwg [DETAILS] June 07, 2024 - 11:43am awalia

LANDSCAPE NOTES:

1. LANDSCAPE SCHEDULE AND COMPUTATIONS PROVIDED ON SHEET L 3.00.
2. FINAL SPECIES, QUANTITIES AND COMPUTATIONS PROVIDED AT THE TIME OF FINAL SITE PLAN.
3. SWM PLANTINGS TO BE PROVIDED AT TIME OF FINAL SITE PLAN.
4. STREET TREES AND STREERSCAPE ARE PROVIDED PER WEST END (LANDMARK) APPROVED INFRASTRUCTURE DSP #2021-00012.



J2

4080 LAFAYETTE CENTER DRIVE
SUITE 330
CHANTILLY, VA 20151

CHANTILLY
LEESBURG
DUMFRIES
WARRENTON
ARLINGTON

P: 703.361.1550
J2ATWORK.COM

CLIENT

VAN METRE HOMES OF WESTEND, LLC
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031

SEAL

COMMONWEALTH OF VIRGINIA
Adam J. Steiner
Lic. No. 1237
06/07/24
LANDSCAPE ARCHITECT

CITY OF ALEXANDRIA, VA

OVERALL LANDSCAPE PLAN

WEST END - BLOCK L&M PRELIMINARY SITE PLAN

REVISION / ISSUANCE

NO.	DATE	DESCRIPTION
1	03.21.24	PRELIMINARY SITE PLAN
2	05.03.24	PRELIMINARY SITE PLAN
3	06.07.24	PRELIMINARY SITE PLAN

J2 PROJECT NO.
VM2308

PLAN DATE
06.07.2024

SCALE
1"=30'

SHEET NUMBER
L1.00

PRELIMINARY SITE PLAN

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. _____

X:\DRAWINGS\ACTIVE\West End Block L-M\DSUP\VM2308 – 01 – LANDSCAPE.dwg, Layout:L1.00 Jun 07, 2024 arogers
XREFS: VM2308 – 00 – TBK – DSUP VM2308 – C – PBASE VM2308 – C – PBASE "INFRASTRUCTURE VM2308 – 00 – BASE VM2308 – 00 – LA BASE

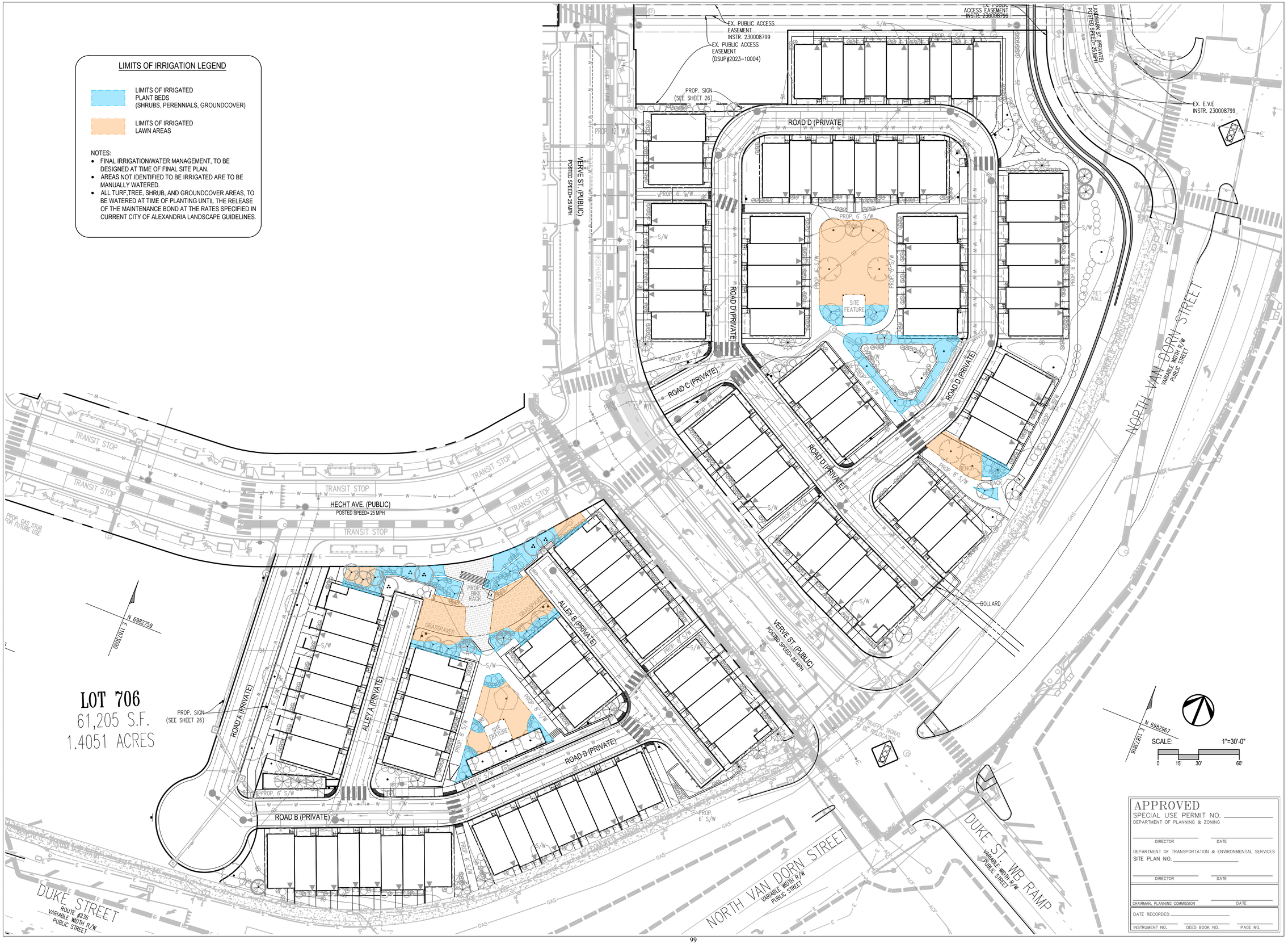
LIMITS OF IRRIGATION LEGEND

LIMITS OF IRRIGATED
PLANT BEDS
(SHRUBS, PERENNIALS, GROUNDCOVER)

LIMITS OF IRRIGATED
LAWN AREAS

NOTES:

- FINAL IRRIGATION/WATER MANAGEMENT, TO BE DESIGNED AT TIME OF FINAL SITE PLAN.
- AREAS NOT IDENTIFIED TO BE IRRIGATED ARE TO BE MANUALLY WATERED.
- ALL TURF,TREE, SHRUB, AND GROUNDCOVER AREAS, TO BE WATERED AT TIME OF PLANTING UNTIL THE RELEASE OF THE MAINTENANCE BOND AT THE RATES SPECIFIED IN CURRENT CITY OF ALEXANDRIA LANDSCAPE GUIDELINES.



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. _____

J2
4080 LAFAYETTE CENTER DRIVE
SUITE 330
CHANTILLY, VA 20151
CHANTILLY
LEESBURG
DUMFRIES
WARRENTON
ARLINGTON
P: 703.361.1550
J2ATWORK.COM

CLIENT
VAN METRE HOMES
OF WESTEND, LLC
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031

SEAL
COMMONWEALTH OF VIRGINIA
Adam J. Steiner
Lic. No. 1237
06/07/24
LANDSCAPE ARCHITECT

CITY OF ALEXANDRIA, VA

LANDSCAPE WATER MANAGEMENT PLAN
WEST END - BLOCK L&M
PRELIMINARY SITE PLAN

REVISION / ISSUANCE

NO.	DATE	DESCRIPTION
1	03.21.24	PRELIMINARY SITE PLAN
2	05.02.24	PRELIMINARY SITE PLAN
3	06.07.24	PRELIMINARY SITE PLAN

J2 PROJECT NO.
VM2308

PLAN DATE
06.07.2024

SCALE
1"=30'

SHEET NUMBER
L2.00

PRELIMINARY SITE PLAN

X:\DRAWINGS\ACTIVE\West End Block L-M\DSUP\VM2308 - 01 - LANDSCAPE.dwg, Layout:L2.00, Jun 07, 2024 - drogers
XREFS: VM2308 - 00 - TBK - DSUP VM2308 - C - PBASE VM2308 - C - PBASE - INFRASTRUCTURE VM2308 - 00 - BASE VM2308 - 00 - LA BASE

BLOCK L - CROWN COVER TABULATIONS	
TOTAL SITE AREA (SF)	**77,919**
25% CROWN COVER REQUIRED (SF)	**19,480**
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	16,500
Crown Cover from Proposed Shrubs	2,980
TOTAL CROWN COVER PROVIDED (%)	**25.0%**
TOTAL CROWN COVER PROVIDED (SF)	**19,480**

BLOCK M - CROWN COVER TABULATIONS	
TOTAL SITE AREA (SF)	**122,172**
25% CROWN COVER REQUIRED (SF)	**30,543**
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	25,750
Crown Cover from Proposed Shrubs	4,840
TOTAL CROWN COVER PROVIDED (%)	**25.0%**
TOTAL CROWN COVER PROVIDED (SF)	**30,590**

TOTAL PROPOSED CROWN COVER REQUIRED FOR BLOCK L AND M = 50,023 SF

TOTAL PROPOSED CROWN COVER PROVIDED FOR BLOCK L AND M = 50,070 SF

BLOCK L - PLANT SCHEDULE

PLANT TYPE	PLAN INFORMATION		BOTANIC / COMMON NAME				SIZE	NOTES	CROWN COVER ALLOWANCE (CCA)		NATIVE PLANTS PROVIDED		
	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
TREES	AR	1	Acer	saccharum		Sugar Maple	2" cal.	B&B; symmetrical, single leader	1,250	1,250	1		1
	NS	3	Nyssa	sylvatica		Black Gum	2" cal.	B&B; symmetrical, single leader	750	2,250	3		3
	PA	2	Platanus	occidentalis		Sycamore	2" cal.	B&B; symmetrical, single leader	1,250	2,500	2		2
	TC	1	Tilia	cordata		Littleleaf Linden	2" cal.	B&B; symmetrical, single leader	1,250	1,250			
	CF	6	Cornus	florida		Flowering Dogwood	2" cal.	B&B; multistem; full branching	250	1,500	6		6
	CK	4	Cornus	kousa		Kousa Dogwood	2" cal.	B&B; multistem; full branching	250	1,000			
	CV	3	Crateagus	viridis	Winter King	Winter King Hawthorn	2" cal.	B&B; symmetrical, multi-stem	500	1,500	3		3
	MV	4	Magnolia	virginiana		Sweetbay Magnolia	2" cal.	B&B; symmetrical, multi-stem	250	1,000	4		4
	IO	4	Ilex	opaca		American Holly	6' ht.	B&B; symmetrical, single leader	250	1,000	4		4
	IN	2	Ilex	x attenuata	Fosteri	Foster Holly	6' ht.	B&B; symmetrical, single leader	250	500			
	JV	1	Juniperus	virginiana		Eastern Redcedar	6' ht.	B&B; symmetrical, single leader	250	250	1		1
	MG	5	Magnolia	grandiflora	Little Gem	Southern Magnolia	6' ht.	B&B; symmetrical, single leader	500	2,500		5	5
	TOTALS	**36**							**TREE CCA:**	**16,500**	**24**	**5**	**29**
											66.7%	**13.9%**	**80.6%**
	PLAN KEY	**QUANTITY**					**HEIGHT**		**CCA PER SHRUB (SF)**	**TOTAL CROWN COVER (SF)**	**LOCAL/ REGIONAL (#)**	**EASTERN U.S. (#)**	**TOTAL**
SHRUBS	CATEGORY II	123					18" ht.		10	1,230	120	50	170
	CATEGORY III	70					18" ht.		25	1,750	60	26	86
	TOTALS	**193**							**SHRUB CCA:**	**2,980**	**180**	**76**	**256**
											93.3%	**39.4%**	**132.6%**

BLOCK M - PLANT SCHEDULE

PLANT TYPE	PLAN INFORMATION		BOTANIC / COMMON NAME				SIZE	NOTES	CROWN COVER ALLOWANCE (CCA)		NATIVE PLANTS PROVIDED		
	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
TREES	AR	3	Acer	saccharum		Sugar Maple	2" cal.	B&B; symmetrical, single leader	1,250	3,750	3		3
	LS	4	Liquidambar	styraciflua	Rotundiloba	Sweetgum	2" cal.	B&B; symmetrical, single leader	1,250	5,000	4		4
	NS	4	Nyssa	sylvatica		Black Gum	2" cal.	B&B; symmetrical, single leader	750	3,000	4		4
	PA	3	Platanus	occidentalis		Sycamore	2" cal.	B&B; symmetrical, single leader	1,250	3,750	3		3
	QP	3	Quercus	phellos		Willow Oak	2" cal.	B&B; symmetrical, single leader	1,250	3,750	3		3
	TC	2	Tilia	cordata		Littleleaf Linden	2" cal.	B&B; symmetrical, single leader	1,250	2,500			
	CK	3	Cornus	kousa		Kousa Dogwood	2" cal.	B&B; multistem; full branching	250	750			
	MV	3	Magnolia	virginiana		Sweetbay Magnolia	2" cal.	B&B; symmetrical, single leader	250	750	3		3
	IO	3	Ilex	opaca		American Holly	6' ht.	B&B; symmetrical, single leader	250	750	3		3
	IN	4	Ilex	x attenuata	Fosteri	Foster Holly	6' ht.	B&B; symmetrical, single leader	250	1,000			
	JV	3	Juniperus	virginiana		Eastern Redcedar	6' ht.	B&B; symmetrical, single leader	250	750	3		3
	TOTALS	**35**							**TREE CCA:**	**25,750**	**26**	**0**	**26**
											74.3%	**0.0%**	**74.3%**
	PLAN KEY	**QUANTITY**					**HEIGHT**		**CCA PER SHRUB (SF)**	**TOTAL CROWN COVER (SF)**	**LOCAL/ REGIONAL (#)**	**EASTERN U.S. (#)**	**TOTAL**
SHRUBS	CATEGORY II	244					18" ht.		10	2,440	180	64	244
	CATEGORY III	96					18" ht.		25	2,400	70	26	96
	TOTALS	**340**							**SHRUB CCA:**	**4,840**	**250**	**90**	**340**
											73.5%	**26.5%**	**100.0%**

BIODIVERSITY TABULATIONS

TREES (URBAN AND STANDARD)
TOTAL NUMBER OF TREES PROPOSED: 71

GENUS	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED	SPECIES	QTY.	PERCENT OF TOTAL PROPOSED	MAXIMUM PERCENT ALLOWED
Acer	4	5.6%	33%	saccharum	4	5.6%	10%
Crateagus	3	4.2%	33%	viridis "Winter King"	3	4.2%	10%
Liquidambar	4	5.6%	33%	styraciflua 'Rotundiloba'	4	5.6%	10%
Nyssa	7	9.9%	33%	sylvatica	7	9.9%	10%
Platanus	5	7.0%	33%	occidentalis	5	7.0%	10%
Quercus	3	4.2%	33%	phellos	3	4.2%	10%
Tilia	3	4.2%	33%	cordata	3	4.2%	10%
Cornus	13	18.3%	33%	florida	6	8.5%	10%
				kousa	7	9.9%	10%
Ilex	13	18.3%	33%	x Fosteri	6	8.5%	10%
				opaca	7	9.9%	10%
Juniperus	4	5.6%	33%	virginiana	4	5.6%	10%
Magnolia	12	16.9%	33%	virginiana	7	9.9%	10%
				grandiflora "Little Gem"	5	7.0%	10%

NATIVE PLANT TABULATIONS

PLANT TYPE	QUANTITY	NATIVE TYPE	MARCH 2, 2019 – JANUARY 1, 2020			JANUARY 2, 2020 – JANUARY 1, 2024			BEGINNING JANUARY 2, 2024		
			REQUIRED	PROVIDED		REQUIRED	PROVIDED		REQUIRED	PROVIDED	
			%	QTY.	%	%	QTY.	%	%	QTY.	%
Trees	71	Regional/Local	10%			15%	50	70.4%	20%		
		Total Natives	25%			25%	55	77.5%	50%		

OFF-SITE (PRIVATE ROAD A - BLOCK L) - PLANT SCHEDULE

PLANT TYPE	PLAN INFORMATION		BOTANIC / COMMON NAME				SIZE	NOTES
	PLAN KEY	QUANTITY	GENUS	SPECIES	VAR./CULTIVAR/HYBRID	COMMON NAME	CALIPER/HEIGHT	
TREES	PA	3	Platanus	occidentalis		Sycamore	2" cal.	B&B; symmetrical, single leader
	TOTALS	**3**						

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. _____

4080 LAFAYETTE CENTER DRIVE
SUITE 330
CHANTILLY, VA 20151
CHANTILLY
LEESBURG
DUMFRIES
WARRENTON
ARLINGTON
P: 703.361.1550
J2ATWORK.COM

CLIENT
VAN METRE HOMES
OF WESTEND, LLC
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031

SEAL
COMMONWEALTH OF VIRGINIA
Adam J. Steiner
Lic. No. 1237
06/07/24
LANDSCAPE ARCHITECT

LANDSCAPE SCHEDULE & COMPUTATIONS

WEST END - BLOCK L&M
PRELIMINARY SITE PLAN

CITY OF ALEXANDRIA, VA

REVISION / ISSUANCE

NO.	DATE	DESCRIPTION
1	03.21.24	PRELIMINARY SITE PLAN
2	05.03.24	PRELIMINARY SITE PLAN
3	06.07.24	PRELIMINARY SITE PLAN

J2 PROJECT NO.
VM2308

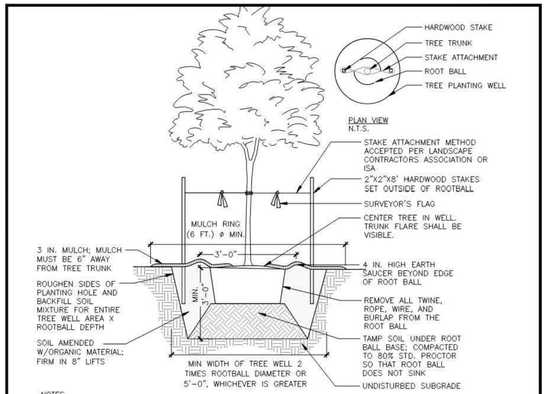
PLAN DATE
06.07.2024

SCALE

SHEET NUMBER
L3.00

PRELIMINARY SITE PLAN

X:\DRAWINGS\ACTIVE\West End Block L-M\DSUP\VM2308 - 01 - LANDSCAPE.dwg, Layout:L3.00 Jun 07, 2024 rogers
XREFS: VM2308 - 00 - TBK - DSUP VM2308 - C - PBASE VM2308 - C - PBASE - INFRASTRUCTURE VM2308 - 00 - BASE VM2308 - 00 - LA BASE



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.

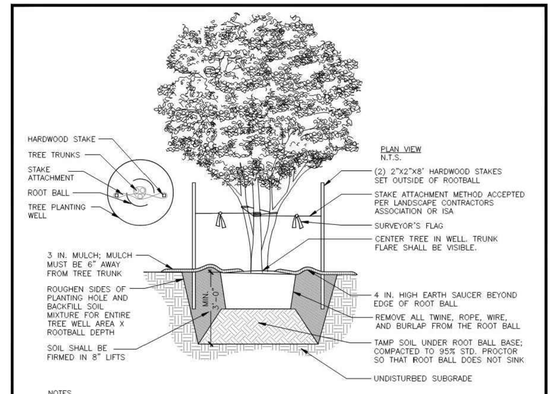
A DECIDUOUS TREE PLANTING
NOT TO SCALE

OF UPDATES: 01 LAST UPDATED: 12/02/2019

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

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

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



NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARDS A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.
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.

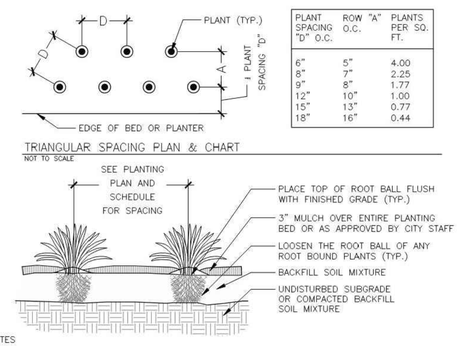
A MULTI-STEM TREE PLANTING
NOT TO SCALE

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	MULTI-STEM TREE PLANTING	
Approved By: COA	Date drawn: 01/01/19	LD 003
1 OF 1		



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

TRIANGULAR SPACING PLAN & CHART
NOT TO SCALE

NOTES

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

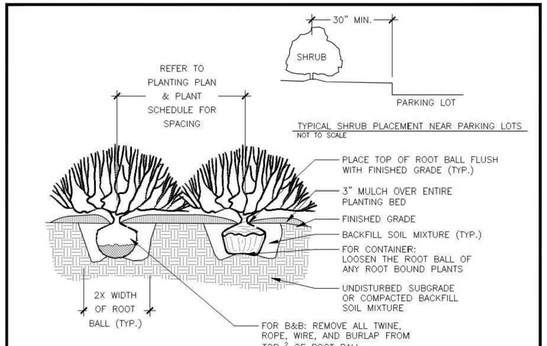
A GROUNDCOVER & PERENNIAL PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

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

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	GROUNDCOVER & PERENNIAL PLANTING	
Approved By: COA	Date drawn: 01/01/19	LD 011
1 OF 1		



NOTES

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

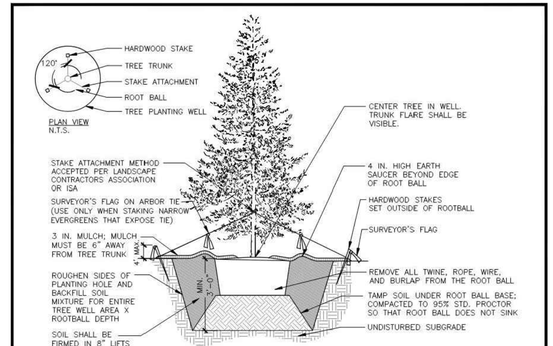
A SHRUB PLANTING
NOT TO SCALE

OF UPDATES: 00 LAST UPDATED:

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

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	SHRUB PLANTING	
Approved By: COA	Date drawn: 01/01/19	LD 009
1 OF 1		



NOTES

1. AT PLANTING PRUNE ONLY CROSSING LIMBS, BROKEN OR DEAD BRANCHES, AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS PER ANSI STANDARDS A300. DO NOT PRUNE INTO OLD WOOD ON EVERGREENS.
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 EVERGREEN 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	EVERGREEN TREE PLANTING	
Approved By: COA	Date drawn: 01/01/19	LD 002
1 OF 1		

A) STANDARD LANDSCAPE PLAN NOTES FOR ALL PLANS REQUIRING APPROVAL:

THE FOLLOWING NOTES SHALL BE PROVIDED ON LANDSCAPE PLAN SUBMISSIONS FOR ALL PROJECTS THAT REQUIRE APPROVAL BY THE CITY AS OUTLINED IN CHAPTER 3 OF THE CITY'S 2019 LANDSCAPE GUIDELINES:

1) THE PROPERTY OWNER AND/OR APPLICANT, SPECIFIER, CONTRACTOR AND INSTALLER OF PLANT MATERIAL ARE RESPONSIBLE FOR UNDERSTANDING AND ADHERING TO THE STANDARDS SET FORTH IN THE MOST RECENT VERSION OF THE CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND APPLICABLE CONDITIONS OF APPROVAL. ALL QUESTIONS REGARDING APPLICATION OF, OR ADHERENCE TO, THE STANDARDS AND/OR CONDITIONS OF APPROVAL SHALL BE DIRECTED TO THE CITY PRIOR TO COMMENCEMENT OF DEMOLITION, CONSTRUCTION, OR ANY LAND DISTURBING ACTIVITY.

2) THE CITY-APPROVED LANDSCAPE PLAN SUBMISSION, INCLUDING PLANT SCHEDULE, NOTES AND DETAILS SHALL BE THE DOCUMENT USED FOR INSTALLATION PURPOSES AND ALL PROCEDURES SET FORTH IN THE LANDSCAPE GUIDELINES MUST BE FOLLOWED.

3) THE CONTRACTOR SHALL NOT INTERFERE WITH ANY TREE PROTECTION MEASURES OR IMPACT ANY EXISTING VEGETATION IDENTIFIED TO BE PRESERVED PER THE APPROVED TREE AND VEGETATION PROTECTION PLAN.

4) ANY CHANGES, ALTERATIONS OR MODIFICATIONS TO THE SITE CONDITIONS THAT AFFECT VEGETATION PROTECTION ZONES WILL REQUIRE AN AMENDMENT TO THE APPROVED TREE AND VEGETATION PROTECTION PLAN AND/OR DETAILS.

5) INSTALLATION OF PLANT MATERIAL MAY ONLY OCCUR DURING THE PLANTING SEASONS IDENTIFIED IN THE LANDSCAPE GUIDELINES.

6) IN LIEU OF MORE STRENUOUS SPECIFICATIONS, ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA AND VIRGINIA; GAITHERSBURG, MARYLAND.

7) SUBSTITUTIONS TO THE APPROVED PLANT MATERIAL SHALL NOT OCCUR UNTIL WRITTEN APPROVAL IS PROVIDED BY THE CITY.

8) MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED BY THE OWNER, APPLICANT, SUCCESSOR(S) AND/OR ASSIGN(S) IN PERPETUITY AND IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND AS CONDITIONED BY PROJECT APPROVAL, AS APPLICABLE.

B) STANDARD LANDSCAPE PLAN NOTES FOR DEVELOPMENT SITE PLANS:

IN ADDITION TO THE NOTES PROVIDED ABOVE, THE FOLLOWING NOTES SHALL BE PROVIDED ON LANDSCAPE PLAN SUBMISSIONS FOR ALL DSP/DSUP PROJECTS:

1) THE APPROVED METHOD(S) OF PROTECTION MUST BE IN PLACE FOR ALL VEGETATION TO BE PRESERVED ON-SITE AND ADJACENT TO THE PROJECT SITE PURSUANT TO THE APPROVED TREE AND VEGETATION PROTECTION PLAN AND DETAILS PRIOR TO COMMENCEMENT OF DEMOLITION, CONSTRUCTION, OR ANY LAND DISTURBANCE. THE APPLICANT SHALL NOTIFY THE PLANNING & ZONING (P&Z) PROJECT MANAGER ONCE THE TREE PROTECTION METHODS ARE IN PLACE. NO DEMOLITION, CONSTRUCTION, OR LAND DISTURBANCE MAY OCCUR UNTIL AN INSPECTION IS PERFORMED BY THE CITY AND WRITTEN CONFIRMATION IS PROVIDED BY THE CITY WHICH VERIFIES CORRECT INSTALLATION OF THE TREE PROTECTION MEASURES.

2) THE APPLICANT MUST CONTACT THE P&Z PROJECT MANAGER PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATION TO SCHEDULE A PRE-INSTALLATION MEETING. THE MEETING SHOULD BE HELD BETWEEN THE APPLICANT'S GENERAL CONTRACTOR, LANDSCAPE CONTRACTOR, LANDSCAPE ARCHITECT, THE P&Z PROJECT MANAGER AND THE CITY ARBORIST (AS APPLICABLE) TO REVIEW THE SCOPE OF INSTALLATION PROCEDURES AND PROCESSES DURING AND AFTER INSTALLATION.

3) THE FOLLOWING INFORMATION SHALL BE PROVIDED TO THE P&Z PROJECT MANAGER AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO THE LANDSCAPE PRE-INSTALLATION MEETING: 1) A LETTER THAT CERTIFIES THAT THE PROJECT LANDSCAPE ARCHITECT PERFORMED PRE-SELECTION TAGGING FOR ALL TREES PROPOSED WITHIN THE PUBLIC RIGHT OF WAY AND ON PUBLIC LAND PRIOR TO INSTALLATION. THIS LETTER MUST BE SIGNED AND SEALED BY THE PROJECT LANDSCAPE ARCHITECT, AND 2) A COPY OF THE SOIL BULK DENSITY TEST REPORT VERIFYING THAT MAXIMUM COMPRESSION RATES ARE MET.

4) ALL CONSTRUCTION WASTE SHALL BE REMOVED PRIOR TO PLANTING.

5) AS-BUILT DRAWINGS FOR THIS LANDSCAPE AND/OR IRRIGATION/WATER MANAGEMENT SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES, THE CITY CODE OF ORDINANCES, AND ALL APPLICABLE PLAN PREPARATION CHECK-LISTS. AS-BUILT DRAWINGS SHALL INCLUDE CLEAR IDENTIFICATION OF ALL VARIATION(S) AND CHANGES FROM APPROVED DRAWINGS INCLUDING LOCATION, QUANTITY AND SPECIFICATION OF ALL PROJECT ELEMENTS.

6) AREAS OF BARE SOIL WILL NOT BE ACCEPTED. MULCHED AREAS AND PLANTING AREAS SHALL BE WEED FREE UPON ACCEPTANCE OF THE PROJECT BY THE CITY.

A STANDARD LANDSCAPE PLAN NOTES
NOT TO SCALE

OF UPDATES: 01 LAST UPDATED: 12/02/2019

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	STANDARD LANDSCAPE PLAN NOTES	
Approved By: COA	Date drawn: 01/01/19	LD 016
1 OF 1		

NOTES:

- ALL MATERIALS' SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE INDUSTRY STANDARD FOR GRADING PLANT MATERIAL-THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
- MAINTENANCE OF ALL TREES AND LANDSCAPE MATERIALS SHALL CONFORM TO ACCEPTED INDUSTRY STANDARDS SET FORTH BY THE LANDSCAPE CONTRACTORS ASSOCIATION, AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS, THE INTERNATIONAL SOCIETY OF ARBORICULTURE, AND THE AMERICAN NATIONAL STANDARDS INSTITUTE.

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. _____

J2
4080 LAFAYETTE CENTER DRIVE
SUITE 330
CHANTILLY, VA 20151
CHANTILLY
LEESBURG
DUMFRIES
WARRENTON
ARLINGTON
P: 703.361.1550
J2ATWORK.COM

CLIENT
VAN METRE HOMES OF WESTEND, LLC
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031

SEAL

COMMONWEALTH OF VIRGINIA
Adam J. Steiner
Lic. No. 1237
06/07/24
LANDSCAPE ARCHITECT

CITY OF ALEXANDRIA, VA

LANDSCAPE DETAILS

WEST END - BLOCK L&M
PRELIMINARY SITE PLAN

REVISION / ISSUANCE

NO.	DATE	DESCRIPTION
1	03.21.24	PRELIMINARY SITE PLAN
2	05.02.24	PRELIMINARY SITE PLAN
3	06.07.24	PRELIMINARY SITE PLAN

J2 PROJECT NO.
VM2308

PLAN DATE
06.07.2024

SCALE

SHEET NUMBER
L3.01

PRELIMINARY SITE PLAN

X:\DRAWINGS\ACTIVE\West End Block L-M\DSUP\VM2308 - 01 - LANDSCAPE.dwg, Layout: L3.01 Jun 07, 2024 rogers
XREFS: VM2308 - 00 - TBK - DSUP VM2308 - C - PBASE VM2308 - C - PBASE - INFRASTRUCTURE VM2308 - 00 - BASE VM2308 - 00 - LA BASE

1

February 22, 2024

Green Building Narrative for:

Townhouses at Landmark by Van Metre Homes

The following narrative is in support of the Completeness submission for the project referenced above.

General Approach

The 2020 National Green Building Standard (NGBS; ICC-700), verified at the Silver level with sufficient Performance Points achieved per the 2019 City of Alexandria Green Building Policy, is proposed for green building compliance.

Energy

- Dwelling-unit-specific energy models are being completed to ensure all involved building components contribute to achieving sufficient Performance Points for project energy use. These incorporate passive solar heating design elements by including in energy calculations all orientations, areas, and solar heat gain coefficients (SHGC's) of exterior fenestrations.
- Building envelopes will utilize light residential construction with 2x6 wood frame walls assembled with advanced framing techniques to save materials and enhance performance.
- 100% LED lighting will be used inside and on the exterior of all homes in this community.
- All equipment and appliances will be ENERGY STAR labeled or equivalent and included as installed in energy modeling to confirm adequate overall energy performance impacts.
- Renewable energy production is projected for a selection of homes to be net-zero-energy such that, relative to the total-site energy consumption of all the homes, 5% will be supplied by onsite solar photovoltaics. The NGBS scorecard provided is reflective of a home in projected worst-case configuration without any associated onsite generation. Energy report documentation is provided for the home projected to have the largest electricity demand and the home with the smallest projected electricity demand, both without any associated onsite generation.
- A HVAC Commissioning Agent certified by a HVAC Quality Installation Training and Oversight Organization (H-QUITO) will be contracted for the project to complete EPA's ENERGY STAR Single-Family New Homes National HVAC Commissioning Checklist.
- Dwelling units at this location will be individually metered.

Water

- Irrigation will be minimized through the assembly of an irrigation plan with implementation executed by a qualified professional. The plan will involve smart irrigation controllers in accordance with the performance criteria of the EPA WaterSense program. 50% reduction in irrigation demand will be demonstrated with the EPA WaterSense Water Budget Tool.
- Indoor water efficiency strategies are a) the installation of low-flow plumbing fixtures in kitchens and lavatories, b) ENERGY STAR labels specified for installed dishwashers and clothes washers, and c) suggestions for water use reduction provided to homeowners in "Your Green Home" homeowner manuals. 40% reduction in indoor water use will be demonstrated with the LEED Water Tool.

Proposed Flow Rates	
showerheads	1.5 gpm
lavatory faucets	1.0 gpm
kitchen faucets	1.5 gpm
toilets	1.28 gpf

February 22, 2024

Indoor Environmental Quality

- The project will be monitored at all key stages of construction to verify that best management practices are present in the following areas:
  1. installation of clean, uncontaminated products
  2. All installed structural plywood made with moisture-resistant adhesives
  3. Protection of installed ductwork during construction with temporary MERV 8+ filters placed in all return grilles
  4. Indoor air quality assessment to be performed post-completion per ASTM D7338 Section 6.3 and ASTM D7338 Section 7.4.3
- Low VOC/no-emitting site-applied finish components and insulation materials
- ASHRAE 62.2-compliant mechanical ventilation system specified
- All spot ventilation vented directly to outdoors
- Verification of spot and whole-house mechanical ventilation rates
- Prefinished building flooring, siding, and fenestration components
- MERV 8+ filters to be specified for HVAC system
- All-electric design eliminating on-site combustion
- No carpeting in bathrooms
- Mechanical equipment will be capable of operating in a dehumidification mode for humidity control in addition to temperature control.
- There are no requirements for a daylight analysis regarding this project according to Alexandria's 2019 Green Building Policy.

3975 Fair Ridge Drive Suite 400S Fairfax, VA 22033 ● Main 703.934.2777 ● Fax 703.934.2775 ● pegenv.com

2

NGBS 2020 Performance

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 20' TH signature, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 20' TH - Alexandria GBP Perform end unit	**Builder** Van Metre	

UNCONFIRMED

Annual Energy	Reference		As Designed	
Type	**Cost ($/yr)**	**MBtu**	**Cost ($/yr)**	**MBtu**
Heating	$466	15.7	$407	13.7
Cooling	$228	7.7	$199	6.7
Water Heating	$304	10.3	$303	10.2
Lights & Appliances	$797	26.9	$565	19.0
Onsite Generation	-$0	0.0	-$0	0.0
Total	$1,796	60.6	$1,474	49.7

NGBS Points: 66

The As Designed home consumes 18% less energy than the NGBS Reference Home and MEETS the requirements of the 2020 NGBS Section 702 for Chapter 7, Energy Efficiency, Performance path and is eligible for 66 points in section 702.2.2. This energy use summary compares the NGBS Proposed Design to the NGBS Reference Design. The NGBS Proposed Design includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, ventilation system efficiencies, duct sealing, water heating system efficiencies, lighting, appliances, and on-site renewable energy production. Points are assigned using the following formula: Points = 30 + (percent above NGBS Reference Design) * 2.

Energy Rating Index (ERI)

Index	56

General Information

Conditioned Area	2,364.9 ft²
Conditioned Volume	24,218.2 ft³
House Type	Townhouse, end unit
Foundation	Slab
Bedrooms	3

Mechanical Systems Features

Heating:	Air Source Heat Pump • Electric • 10 HSPF
Cooling:	Air Source Heat Pump • Electric • 18 SEER
Water Heating:	Residential Water Heater • Electric • 0.93 UEF
Duct Leakage to Outside:	2 CFM25 / 100 ft²
Ventilation System:	180 CFM • 36 Watts • Supply Only
Programmable Thermostat:	Yes

Ekotrope RATER - Version 4.2.1.3343

All results are based on data entered by Ekotrope users. Ekotrope disclaims all liability for the information shown on this report.

NGBS 2020 Performance

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 20' TH signature, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 20' TH - Alexandria GBP Perform end unit	**Builder** Van Metre	

UNCONFIRMED

Building Shell Features

Ceiling Flat	R-49
Vaulted Ceiling	R-51
Above Grade Walls	R-21
Foundation Walls	N/A
Slab	R-10
Exposed Floor	R-49
Window Type	U-Value: 0.32, SHGC: 0.3
Infiltration Rate	2.5 ACH50
Method	Blower-door tested

Lights and Appliances Features

% Interior LED Lighting	100%
% Garage LED Lighting	100%
Refrigerator (kWh/yr)	646.0
Dishwasher Efficiency	270 kWh
Range/Oven Fuel	Electric
Clothes Dryer Fuel	Electric
Clothes Dryer CEF	3.0
Ceiling Fan	None

Ekotrope RATER - Version 4.2.1.3343

All results are based on data entered by Ekotrope users. Ekotrope disclaims all liability for the information shown on this report.

Fuel Summary

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 20' TH signature, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 20' TH - Alexandria GBP Performance end unit	**Builder** Van Metre	

Annual Energy Cost

Electric	$905

Annual End-Use Cost

Heating	$238
Cooling	$91
Water Heating	$145
Lights & Appliances	$352
Onsite Generation	-$0
Service Charges	$79
Total	$905

Annual End-Use Consumption

Heating [Electric kWh]	4,082.3
Cooling [Electric kWh]	1,360.1
Hot Water [Electric kWh]	2,326.9
Lights & Appliances [Electric kWh]	5,581.2
Total [Electric kWh]	13,350.6
Total Onsite Generation [Electric kWh]	0.0

Peak Electric Consumption

Peak Winter kW	3.06
Peak Summer kW	2.22

Utility Rates

Electricity	Dominion 2022
Natural Gas	Default Gas Provid..

3

NGBS 2020 Performance

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 16' TH, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 16' TH - Alexandria GBP Perform inside unit	**Builder** Van Metre	

UNCONFIRMED

Annual Energy	Reference		As Designed	
Type	**Cost ($/yr)**	**MBtu**	**Cost ($/yr)**	**MBtu**
Heating	$302	10.2	$239	8.1
Cooling	$148	5.0	$134	4.5
Water Heating	$301	10.1	$299	10.1
Lights & Appliances	$697	23.5	$503	17.0
Onsite Generation	-$0	0.0	-$0	0.0
Total	$1,447	48.8	$1,176	39.7

NGBS Points: 68

The As Designed home consumes 19% less energy than the NGBS Reference Home and MEETS the requirements of the 2020 NGBS Section 702 for Chapter 7, Energy Efficiency, Performance path and is eligible for 68 points in section 702.2.2. This energy use summary compares the NGBS Proposed Design to the NGBS Reference Design. The NGBS Proposed Design includes improvements in building envelope, air infiltration, heating system efficiencies, cooling system efficiencies, ventilation system efficiencies, duct sealing, water heating system efficiencies, lighting, appliances, and on-site renewable energy production. Points are assigned using the following formula: Points = 30 + (percent above NGBS Reference Design) * 2.

Energy Rating Index (ERI)

Index	53

General Information

Conditioned Area	1,818.6 ft²
Conditioned Volume	18,687.7 ft³
House Type	Townhouse, inside unit
Foundation	Slab
Bedrooms	3

Mechanical Systems Features

Heating:	Air Source Heat Pump • Electric • 10 HSPF
Cooling:	Air Source Heat Pump • Electric • 18 SEER
Water Heating:	Residential Water Heater • Electric • 0.93 UEF
Duct Leakage to Outside:	2 CFM25 / 100 ft²
Ventilation System:	150 CFM • 36 Watts • Supply Only
Programmable Thermostat:	Yes

Ekotrope RATER - Version 4.2.1.3343

All results are based on data entered by Ekotrope users. Ekotrope disclaims all liability for the information shown on this report.

NGBS 2020 Performance

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 16' TH, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 16' TH - Alexandria GBP Perform inside unit	**Builder** Van Metre	

UNCONFIRMED

Building Shell Features

Ceiling Flat	R-49
Vaulted Ceiling	R-51
Above Grade Walls	R-21
Foundation Walls	N/A
Slab	R-10
Exposed Floor	R-49
Window Type	U-Value: 0.32, SHGC: 0.3
Infiltration Rate	2.5 ACH50
Method	Blower-door tested

Lights and Appliances Features

% Interior LED Lighting	100%
% Garage LED Lighting	100%
Refrigerator (kWh/yr)	646.0
Dishwasher Efficiency	270 kWh
Range/Oven Fuel	Electric
Clothes Dryer Fuel	Electric
Clothes Dryer CEF	3.0
Ceiling Fan	None

Fuel Summary

Property	Organization	Inspection Status
West End Alexandria, VA 22206 Model: 16' TH, front terrace Community: West End	PEG Justin Krupa	Results are projected
West End 16' TH - Alexandria GBP Performance inside unit	**Builder** Van Metre	

Annual Energy Cost

Electric	$1,513

Annual End-Use Cost

Heating	$344
Cooling	$132
Water Heating	$325
Lights & Appliances	$713
Onsite Generation	-$0
Service Charges	$0
Total	$1,513

Annual End-Use Consumption

Heating [Electric kWh]	2,401.8
Cooling [Electric kWh]	918.8
Hot Water [Electric kWh]	2,268.1
Lights & Appliances [Electric kWh]	4,972.8
Total [Electric kWh]	10,561.6
Total Onsite Generation [Electric kWh]	0.0

Peak Electric Consumption

Peak Winter kW	2.27
Peak Summer kW	1.74

Utility Rates

Electricity	South Atlantic (DE, DC, FL, GA, MD, SC, NC VA, WV) Electric Provider
Natural Gas	Default Gas Provid..

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. XXXXX

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

GREEN BUILDING NARRATIVE & ENERGY SAVINGS ESTIMATES

SHEET NO.

A0.1

1

2

3

4

5

6

7

8

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

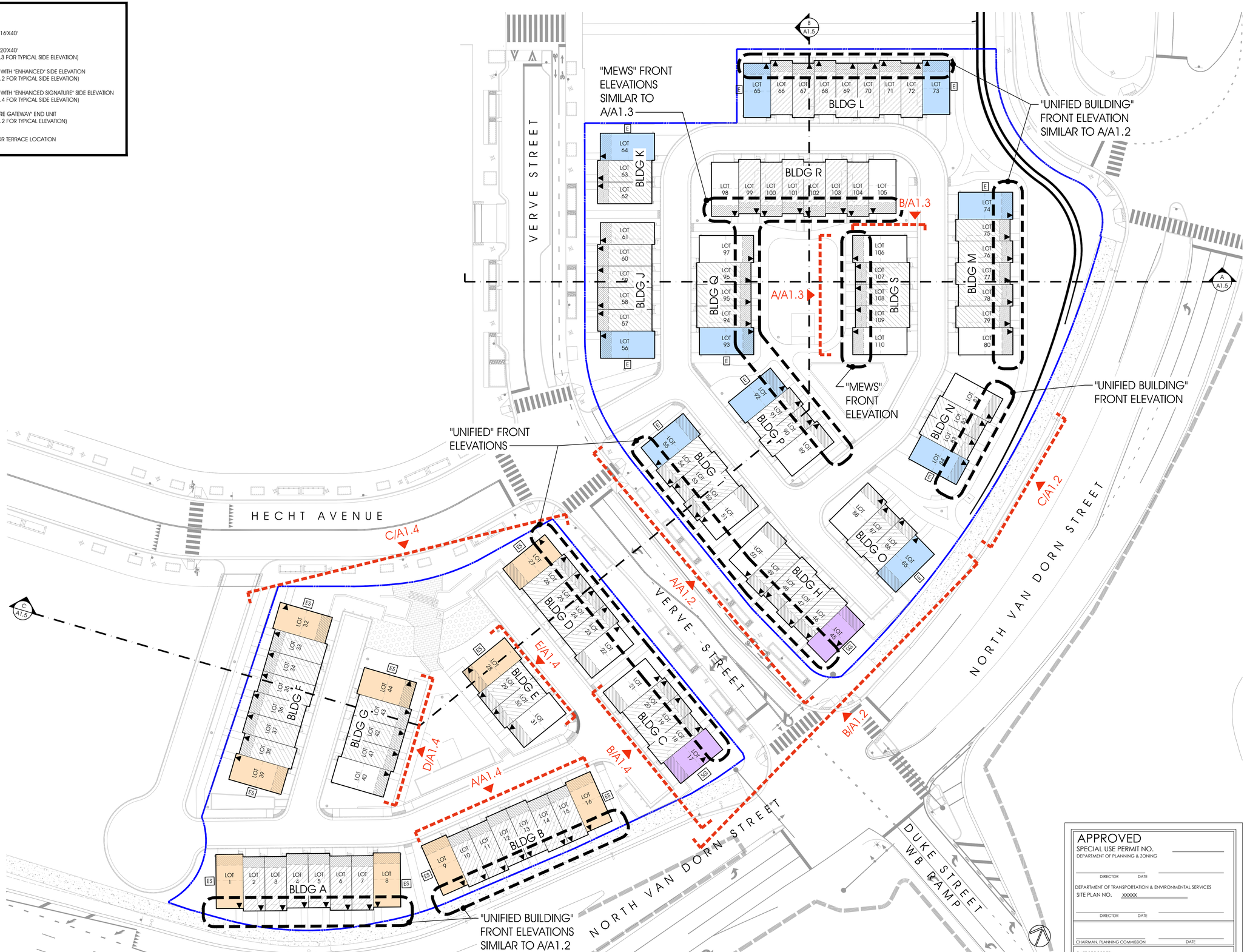
NGBS SILVER SCORECARD

SHEET NO.

A0.2

KEY

- TYP. UNIT 16'X40'
- TYP. UNIT 20'X40' (SEE B/A1.3 FOR TYPICAL SIDE ELEVATION)
- E — END UNIT WITH "ENHANCED" SIDE ELEVATION (SEE A/A1.2 FOR TYPICAL SIDE ELEVATION)
- ES — END UNIT WITH "ENHANCED SIGNATURE" SIDE ELEVATION (SEE A/A1.4 FOR TYPICAL SIDE ELEVATION)
- SG — "SIGNATURE GATEWAY" END UNIT (SEE A/A1.2 FOR TYPICAL ELEVATION)
- 4TH FLOOR TERRACE LOCATION



UNIT TYPES SCHEME WITH TERRACE ARRANGEMENT
1/32"=1'-0"

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. XXXXX
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING ARCHITECTURE
1215 CAMERON STREET
ALEXANDRIA, VA
22314
T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

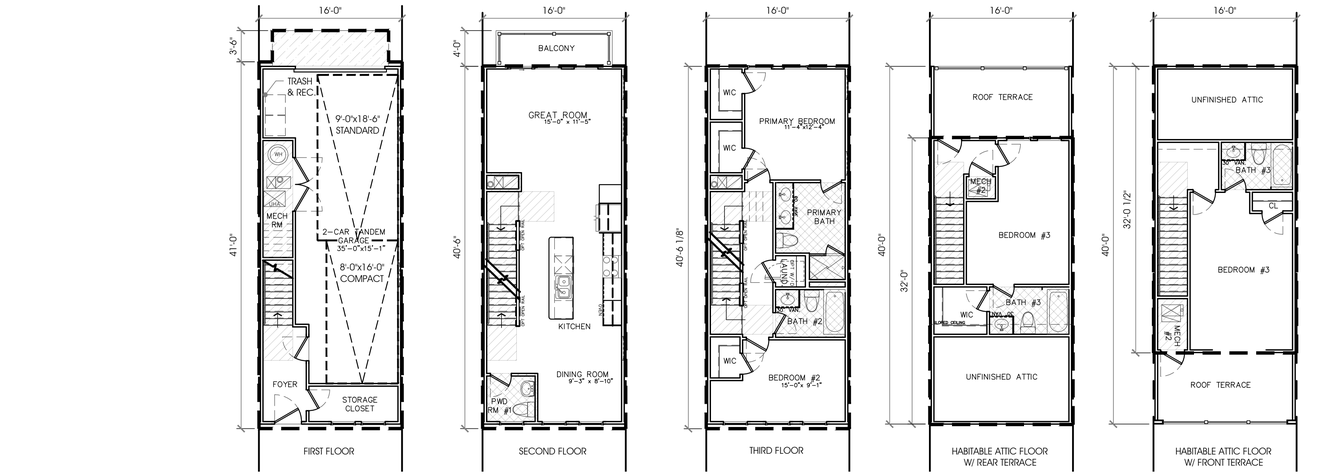
REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

SITE PLAN & STATISTICS

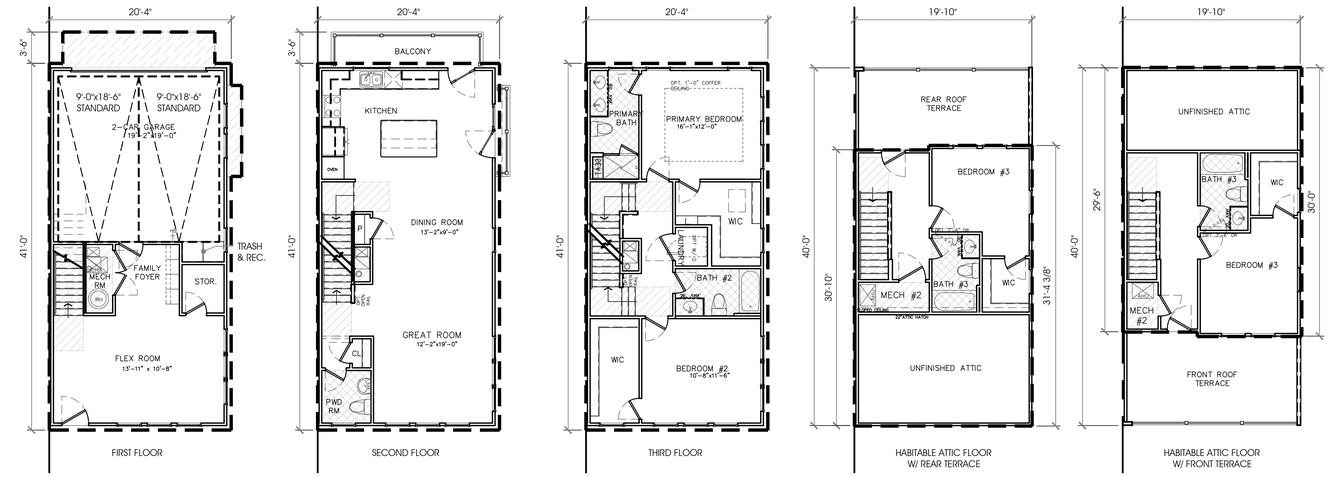
SHEET NO.
A1.0



C

16 FT UNIT- TYPICAL FLOOR PLANS

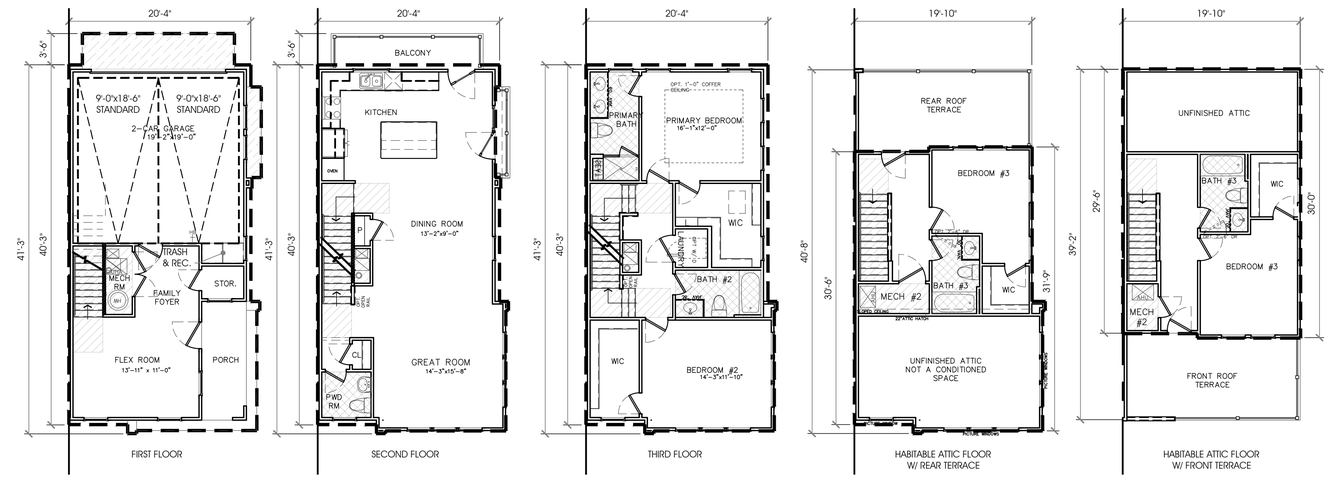
1/8"=1'-0"



B

20 FT UNIT- TYPICAL FLOOR PLANS

1/8"=1'-0"



A

20 FT SIGNATURE UNIT - TYPICAL FLOOR PLANS

1/8"=1'-0"

	UNIT TYPE	QTY	GSF	DEDUCTIONS (POSSIBLE)	DEDUCTIONS (TAKEN)	FLOOR AREA	SUBTOTAL
BLOCK L	20X40 UNITS (TYP.)	12	3,192	561	-	3,192	38,304 SF
	20X40 UNITS (SIGNATURE)	2	3,221	557	-	3,221	6,442 SF
	16X40 UNITS	30	2,511	526	-	2,511	75,330 SF
	BLOCK L TOTAL	44					120,076 SF
						SITE AREA	77,919 SF
						FAR PERMITTED	3.33
						FAR PROVIDED	**1.54**

	UNIT TYPE	QTY	GSF	DEDUCTIONS POSSIBLE (1)	DEDUCTIONS TAKEN	FLOOR AREA	SUBTOTAL
BLOCK M	20X40 UNITS (TYP.)	20	3,192	477	-	3,192	63,840 SF
	20X40 UNITS (SIGNATURE)	2	3,221	473	-	3,221	6,442 SF
	16X40 UNITS	44	2,511	475	-	2,511	110,484 SF
	TOTAL	66					180,766 SF
						SITE AREA	122,178 SF
						FAR PERMITTED	1.64
						FAR PROVIDED	**1.48**

BLOCK L + M	110 UNITS	TOTAL FLOOR AREA	**300,842 SF**

NOTE: EXTERIOR MATERIALS AND LOCATION OF TOP FLOOR TERRACE CAN AFFECT GSF AND/OR POSSIBLE FLOOR AREA DEDUCTIONS. THESE CALCULATIONS ASSUME THE "WORST CASE SCENARIO" PER UNIT.

FLOOR AREA KEY:

GROSS FLOOR AREA

AREAS ALLOWED TO BE DEDUCTED FROM GROSS SQ. FT. TO DETERMINE FAR:

- STAIRWAYS
- MECH. SPACES
- BATHROOMS (DEDUCT 50 SQ.FT. MAX. PER BATHROOM)
- SPACE UNDER OPEN BALCONIES AND SIMILAR STRUCTURES PROJECTING FROM A FLOOR ABOVE THE 1ST FLOOR UP TO A MAX. DEPTH OF 8 FEET

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. XXXXX
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

FLOOR PLANS & FAR CALCS

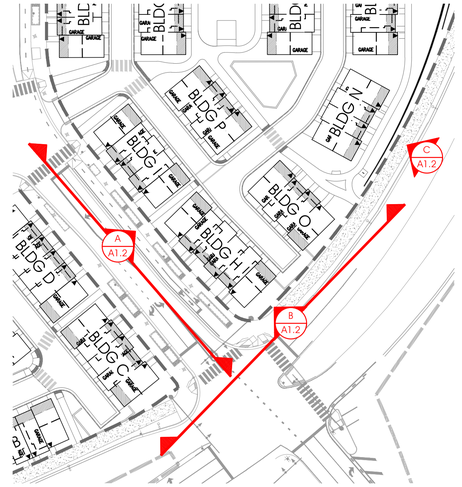
SHEET NO.

A1.1

C

NORTH VAN DORN STREET ELEVATION (BUILDING N FRONT ELEVATION)

3/32"=1'-0"



B

NORTH VAN DORN STREET ELEVATION (BUILDING C, H & O SIDE ELEVATIONS)

3/32"=1'-0"

A

VERVE STREET ELEVATION (BUILDINGS I & H FRONT ELEVATION)

3/32"=1'-0"

GENERAL NOTE: "SYNTHETIC WOOD" REFERS TO CLADDING MATERIALS THAT EMULATE TRADITIONAL WOOD CONSTRUCTION, SUCH AS CEMENTITIOUS, PVC, METAL, FRP OR OTHER COMPOSITE TRIM MATERIALS. FINAL PRODUCT TO BE BASED ON MANUFACTURER AND PRODUCT AVAILABILITY.

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. XXXXX
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

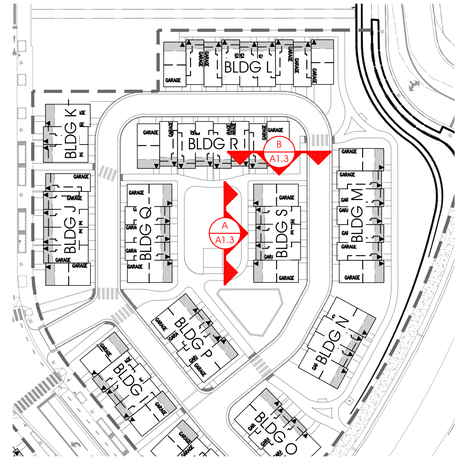
DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

BLOCK M EXTERIOR ELEVATIONS

SHEET NO.

A1.2



BUILDING T

"MEWS" SIDE ELEVATION

B

BUILDING S SIDE ELEVATION

TYPICAL SIDE ELEVATION U.N.O.

3/32"=1'-0"

BUILDING T

"MEWS" FRONT ELEVATIONS

A

BUILDING S "MEWS" FRONT ELEVATION

3/32"=1'-0"

GENERAL NOTE: "SYNTHETIC WOOD" REFERS TO CLADDING MATERIALS THAT EMULATE TRADITIONAL WOOD CONSTRUCTION, SUCH AS CEMENTITIOUS, PVC, METAL, FRP OR OTHER COMPOSITE TRIM MATERIALS. FINAL PRODUCT TO BE BASED ON MANUFACTURER AND PRODUCT AVAILABILITY.

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. XXXXX

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

BLOCK M EXTERIOR ELEVATIONS

SHEET NO.

A1.3

E

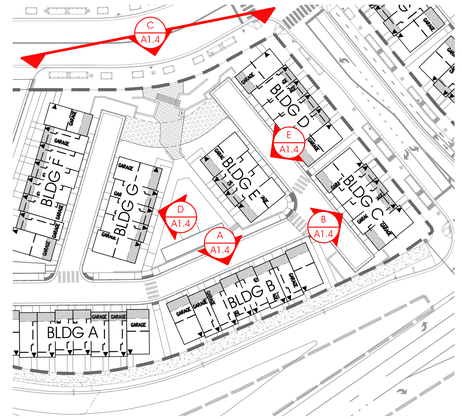
BUILDING E REAR ELEVATION

3/32"=1'-0"

D

BUILDING G FRONT ELEVATION

3/32"=1'-0"



C

HECHT AVENUE ELEVATION (BUILDINGS D, E, G, F "ENHANCED SIGNATURE" SIDE ELEVATIONS)

3/32"=1'-0"

B

BUILDING C REAR ELEVATION

3/32"=1'-0"

A

BUILDING B REAR ELEVATION

3/32"=1'-0"

GENERAL NOTE: "SYNTHETIC WOOD" REFERS TO CLADDING MATERIALS THAT EMULATE TRADITIONAL WOOD CONSTRUCTION, SUCH AS CEMENTITIOUS, PVC, METAL, FRP OR OTHER COMPOSITE TRIM MATERIALS. FINAL PRODUCT TO BE BASED ON MANUFACTURER AND PRODUCT AVAILABILITY.

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING

_____ _____
DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. XXXXX

_____ _____
DIRECTOR DATE

_____ _____
CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

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

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

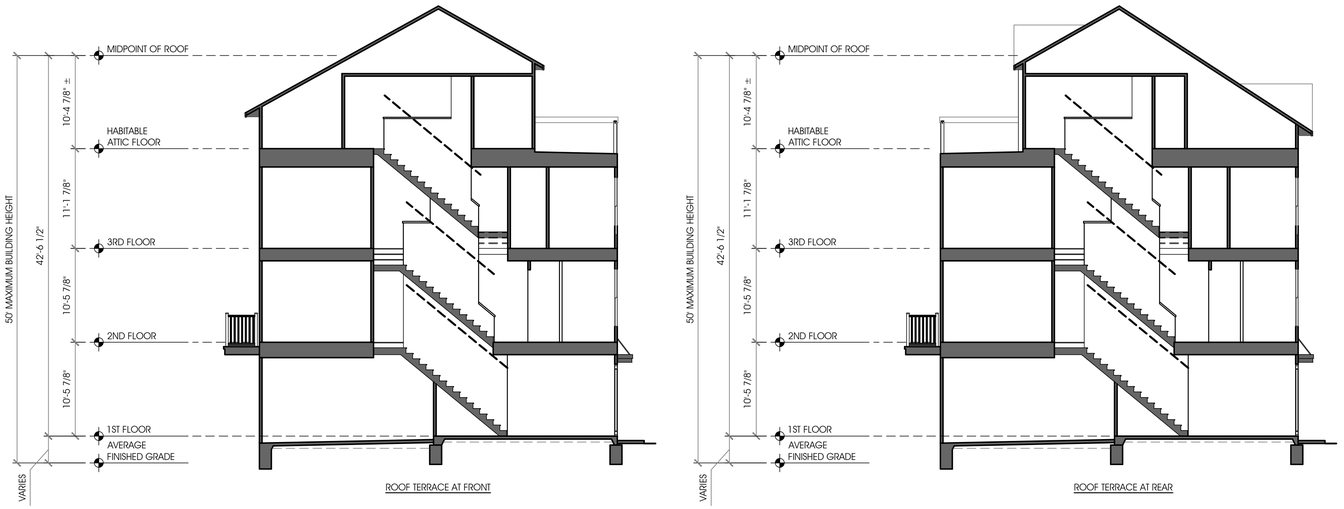
DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

BLOCK L EXTERIOR ELEVATIONS

SHEET NO.

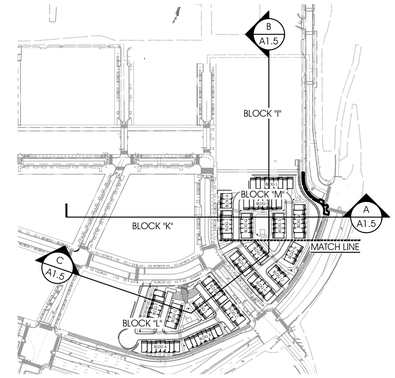
A1.4

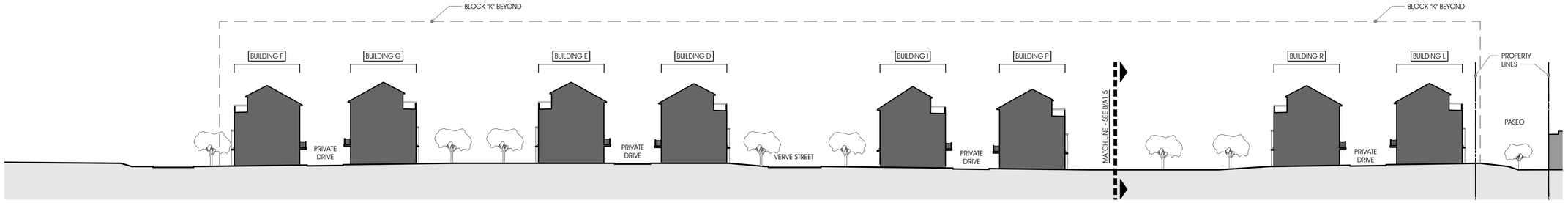


D

TYPICAL 20' UNIT BUILDING SECTION (16' UNIT SIMILAR)

1/8"=1'-0"

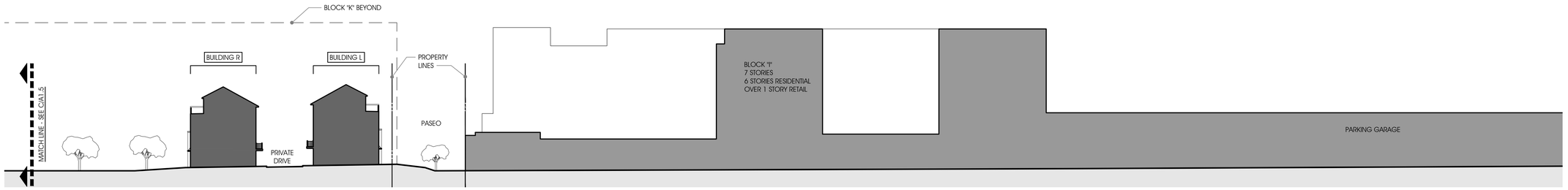




C

SITE SECTION

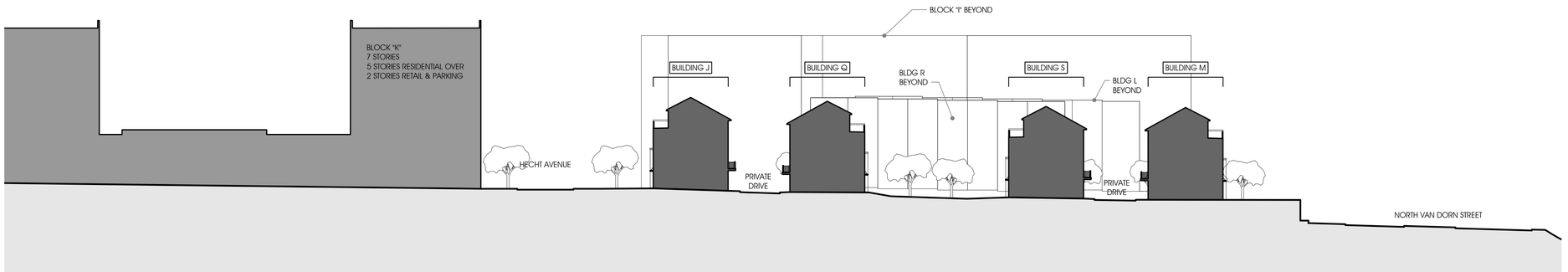
1/32"=1'-0"



B

SITE SECTION

1/32"=1'-0"



A

SITE SECTION

1/32"=1'-0"

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. XXXXX

DIRECTOR DATE

CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

INSTRUMENT NO. DEED BOOK NO. PAGE NO.

COMMONWEALTH OF VIRGINIA
SCOTT FLEMING
Lic. No. 13094
06/07/24
ARCHITECT

RUST | ORLING
ARCHITECTURE

1215 CAMERON STREET
ALEXANDRIA, VA
22314

T - 703.836.3205
F - 703.548.4779
admin@rustorling.com
www.rustorling.com

West End Townhomes

Blocks L & M
Alexandria, VA

23.003

REVISIONS

DATE	DESCRIPTION
03.21.24	COMPLETENESS
05.02.24	COMPLETENESS

COMPLETENESS

SECTIONS

SHEET NO.

A1.5

NOTES

1. THE PROPERTIES DELINEATED ON THIS PLAT ARE LOCATED ON CITY OF ALEXANDRIA TAX ASSESSMENT MAPS 047.02-03-16, 047.02-03-19, AND 047.02-03-21 AND ARE CURRENTLY ZONED CDD #29.

2. APPLICANT:
VAN METRE HOMES AT WESTEND, L.L.C.
9900 MAIN STREET, SUITE 500
FAIRFAX, VA 22031

OWNER:
LANDMARK LAND HOLDINGS L.L.C.
12435 PARK POTOMAC AVENUE, SUITE 200
POTOMAC, MD 20854

3. BOUNDARY INFORMATION SHOWN HEREON WAS DERIVED FROM EXISTING LAND RECORDS AND FIELD VERIFICATION. THE PLAT PREPARER WAS NOT PROVIDED WITH A CURRENT TITLE REPORT AND, AS SUCH, THIS PLAT MAY NOT INDICATE ALL EASEMENTS AND/OR ENCUMBRANCES WHICH MAY EXIST ON THE SUBJECT PROPERTIES.

4. THERE ARE NO KNOWN AREAS OF THIS SITE THAT CAN BE REASONABLY EXPECTED TO OR WHICH DO CONTAIN SOILS OR MATERIALS CONTAMINATED WITH, BUT NOT LIMITED TO, HEAVY METALS, PETROLEUM PRODUCTS, PCB'S, PESTICIDES, FLYASH, OR OTHER TOXIC OR HAZARDOUS MATERIALS.

5. THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS ON THIS SITE.

AREA TABULATION

BEGINNING AREA TAX MAP 047.02-03-19 (LOT 709)	77,919 SF OR 1.7888 ACRES
-SUBDIVISION	77,919 SF OR 1.7888 ACRES
ENDING AREA TAX MAP 047.02-03-19 (LOT 709)	0 SF OR 0.0000 ACRES
BEGINNING AREA TAX MAP 047.02-03-21 (LOT 807)	122,172 SF OR 2.8047 ACRES
-SUBDIVISION	122,172 SF OR 2.8047 ACRES
ENDING AREA TAX MAP 047.02-03-21 (LOT 807)	0 SF OR 0.0000 ACRES

PROPOSED EASEMENT LEGEND

EVE-1	EMERGENCY VEHICLE ACCESS EASEMENT – **25,117 SF (HEREBY GRANTED)**
EVE-2	EMERGENCY VEHICLE ACCESS EASEMENT – **20,482 SF (HEREBY GRANTED)**
ACC-1	PUBLIC ACCESS EASEMENT – **47,361 SF (HEREBY GRANTED)**
ACC-2	PUBLIC ACCESS EASEMENT – **57,316 SF (HEREBY GRANTED)**
ACC-3	PUBLIC ACCESS EASEMENT – **884 SF (HEREBY GRANTED)**
SAN-1	SANITARY SEWER EASEMENT – **8,851 SF (HEREBY GRANTED)**
SAN-2	SANITARY SEWER EASEMENT – **9,380 SF (HEREBY GRANTED)**
SAN-3	SANITARY SEWER EASEMENT – **4,200 SF (HEREBY GRANTED)**
WAT-1	WATERLINE EASEMENT – **8,737 SF (HEREBY GRANTED)**
WAT-2	WATERLINE EASEMENT – **9,957 SF (HEREBY GRANTED)**

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.

SURVEYOR'S CERTIFICATE

I, KEVIN P O'CONNOR, A DULY LICENSED LAND SURVEYOR IN THE COMMONWEALTH OF VIRGINIA, DO HEREBY CERTIFY THAT THIS IS A PLAT SHOWING RESUBDIVISION OF AND VARIOUS EASEMENTS ON THE PROPERTIES OF LANDMARK LAND HOLDINGS L.L.C., AS RECORDED IN INSTRUMENTS 230002712 AND 230009477, AMONG THE LAND RECORDS OF THE CITY OF ALEXANDRIA, VIRGINIA.

I FURTHER CERTIFY THIS PROPERTY IS WITHIN THE BOUNDS OF THE ORIGINAL TRACT AND THAT THE BEARINGS ARE CALCULATED TO VIRGINIA STATE GRID NORTH. GIVEN UNDER MY HAND THIS 2nd DAY OF MAY, 2024.

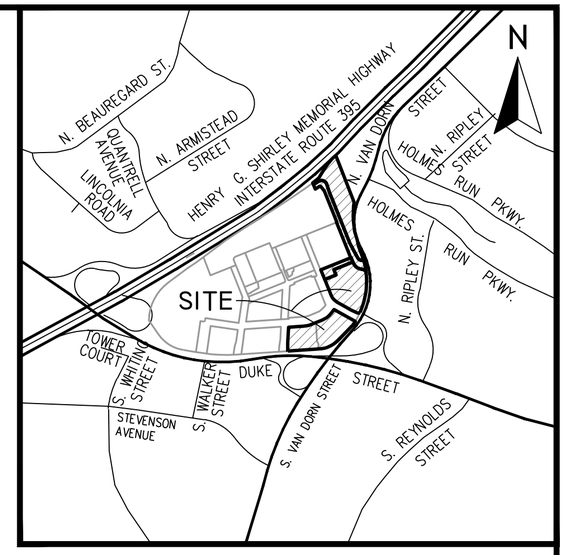
KEVIN P. O'CONNOR LS #1967

5/2/2024
DATE

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
LAND SURVEYOR

INDIVIDUAL LOT AREAS

901	1174 S.F. 0.0269 ACRES	957	808 S.F. 0.0185 ACRES
902	808 S.F. 0.0186 ACRES	958	808 S.F. 0.0185 ACRES
903	808 S.F. 0.0186 ACRES	959	808 S.F. 0.0185 ACRES
904	808 S.F. 0.0186 ACRES	960	808 S.F. 0.0185 ACRES
905	808 S.F. 0.0186 ACRES	961	922 S.F. 0.0212 ACRES
906	808 S.F. 0.0186 ACRES	962	917 S.F. 0.0211 ACRES
907	808 S.F. 0.0186 ACRES	963	827 S.F. 0.019 ACRES
908	1205 S.F. 0.0277 ACRES	964	1356 S.F. 0.0311 ACRES
909	1116 S.F. 0.0256 ACRES	965	1111 S.F. 0.0255 ACRES
910	815 S.F. 0.0187 ACRES	966	808 S.F. 0.0185 ACRES
911	818 S.F. 0.0188 ACRES	967	808 S.F. 0.0185 ACRES
912	821 S.F. 0.0189 ACRES	968	808 S.F. 0.0185 ACRES
913	824 S.F. 0.0189 ACRES	969	808 S.F. 0.0185 ACRES
914	827 S.F. 0.019 ACRES	970	808 S.F. 0.0185 ACRES
915	827 S.F. 0.019 ACRES	971	812 S.F. 0.0186 ACRES
916	1125 S.F. 0.0258 ACRES	972	875 S.F. 0.0201 ACRES
917	1111 S.F. 0.0255 ACRES	973	1466 S.F. 0.0337 ACRES
918	808 S.F. 0.0185 ACRES	974	1152 S.F. 0.0265 ACRES
919	808 S.F. 0.0185 ACRES	975	832 S.F. 0.0191 ACRES
920	808 S.F. 0.0185 ACRES	976	832 S.F. 0.0191 ACRES
921	1111 S.F. 0.0255 ACRES	977	832 S.F. 0.0191 ACRES
922	1112 S.F. 0.0255 ACRES	978	832 S.F. 0.0191 ACRES
923	808 S.F. 0.0185 ACRES	979	832 S.F. 0.0191 ACRES
924	808 S.F. 0.0185 ACRES	980	1153 S.F. 0.0265 ACRES
925	808 S.F. 0.0185 ACRES	981	1155 S.F. 0.0265 ACRES
926	808 S.F. 0.0185 ACRES	982	832 S.F. 0.0191 ACRES
927	1111 S.F. 0.0255 ACRES	983	832 S.F. 0.0191 ACRES
928	1111 S.F. 0.0255 ACRES	984	1197 S.F. 0.0275 ACRES
929	808 S.F. 0.0185 ACRES	985	1111 S.F. 0.0255 ACRES
930	808 S.F. 0.0185 ACRES	986	808 S.F. 0.0185 ACRES
931	1106 S.F. 0.0254 ACRES	987	808 S.F. 0.0185 ACRES
932	1144 S.F. 0.0263 ACRES	988	1115 S.F. 0.0256 ACRES
933	843 S.F. 0.0194 ACRES	989	1119 S.F. 0.0257 ACRES
934	853 S.F. 0.0196 ACRES	990	808 S.F. 0.0185 ACRES
935	863 S.F. 0.0198 ACRES	991	808 S.F. 0.0185 ACRES
936	872 S.F. 0.02 ACRES	992	1111 S.F. 0.0255 ACRES
937	882 S.F. 0.0202 ACRES	993	1111 S.F. 0.0255 ACRES
938	891 S.F. 0.0205 ACRES	994	808 S.F. 0.0185 ACRES
939	1242 S.F. 0.0285 ACRES	995	808 S.F. 0.0185 ACRES
940	1111 S.F. 0.0255 ACRES	996	808 S.F. 0.0185 ACRES
941	808 S.F. 0.0185 ACRES	997	1119 S.F. 0.0257 ACRES
942	808 S.F. 0.0185 ACRES	998	1114 S.F. 0.0256 ACRES
943	808 S.F. 0.0185 ACRES	999	808 S.F. 0.0185 ACRES
944	1111 S.F. 0.0255 ACRES	1000	808 S.F. 0.0185 ACRES
945	1111 S.F. 0.0255 ACRES	1001	808 S.F. 0.0185 ACRES
946	808 S.F. 0.0185 ACRES	1002	808 S.F. 0.0185 ACRES
947	808 S.F. 0.0185 ACRES	1003	808 S.F. 0.0185 ACRES
948	808 S.F. 0.0185 ACRES	1004	808 S.F. 0.0185 ACRES
949	809 S.F. 0.0186 ACRES	1005	1114 S.F. 0.0256 ACRES
950	1141 S.F. 0.0262 ACRES	1006	1152 S.F. 0.0265 ACRES
951	1111 S.F. 0.0255 ACRES	1007	832 S.F. 0.0191 ACRES
952	808 S.F. 0.0185 ACRES	1008	832 S.F. 0.0191 ACRES
953	808 S.F. 0.0185 ACRES	1009	832 S.F. 0.0191 ACRES
954	808 S.F. 0.0185 ACRES	1010	1151 S.F. 0.0264 ACRES
955	1111 S.F. 0.0255 ACRES	1011	36465 S.F. 0.8374 ACRES
956	1111 S.F. 0.0255 ACRES	1012	884 S.F. 0.0203 ACRES
		1013	60674 S.F. 1.394 ACRES
		TOTAL	200091 S.F. 4.5935 ACRES



VICINITY MAP

SCALE: 1" = 2000'

SYMBOL LEGEND

-○-	IRON PIPE 'TO BE SET'
℄	CENTERLINE OF STREET
IPF	IRON PIPE FOUND
INSTR.	INSTRUMENT NUMBER

LINETYPE LEGEND

- BOUNDARY LINE
- LOT LINE
- CENTERLINE OF STREET
- PROPOSED EMERGENCY VEHICLE ACCESS EASEMENT
- PROPOSED PUBLIC ACCESS EASEMENT
- PROPOSED SANITARY SEWER EASEMENT
- PROPOSED WATERLINE EASEMENT
- EXISTING EMERGENCY VEHICLE ACCESS EASEMENT
- EXISTING PUBLIC ACCESS EASEMENT

TABLE OF CONTENTS

SHEET 1:	COVER SHEET
SHEETS 2-4:	PROPOSED LOTS AND PROPOSED EMERGENCY VEHICLE ACCESS EASEMENTS
SHEETS 5-7:	PROPOSED PUBLIC ACCESS EASEMENTS
SHEETS 8-10:	PROPOSED SANITARY SEWER EASEMENTS AND PROPOSED WATERLINE EASEMENTS
SHEET 11:	LINE DATA
SHEET 12:	CURVE DATA

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: N/A DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

R.P.# 2024-029

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.

SEE SHEET 1 FOR INDIVIDUAL LOT AREAS

NAD 83 NORTH ZONE

MATCHLINE SEE SHEET 3

VERVE STREET
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

HECHT AVENUE
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

ALLEY B
PRIVATE STREET

ROAD A
PRIVATE STREET

ALLEY A
PRIVATE STREET

ROAD B
PRIVATE STREET

LOT 709
T.M.: 047.02-03-19
LANDMARK LAND HOLDINGS, L.L.C.
INSTR. 230002712
77,919 S.F.
1.7888 ACRES

LOT 706
T.M.: 047.02-03-16
LANDMARK LAND HOLDINGS, L.L.C.
DB. 1720 PG. 1762
61,205 S.F.
1.4051 ACRES

CENTERLINE PER VDOT
PLAN #0236-100-103

NORTH VAN DORN STREET
EX. VARIABLE WIDTH RIGHT-OF-WAY

DUKE STREET - ROUTE 236
EX. VARIABLE WIDTH RIGHT-OF-WAY

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1" = 30' DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 2 OF 12

R.P.# 2024-029

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

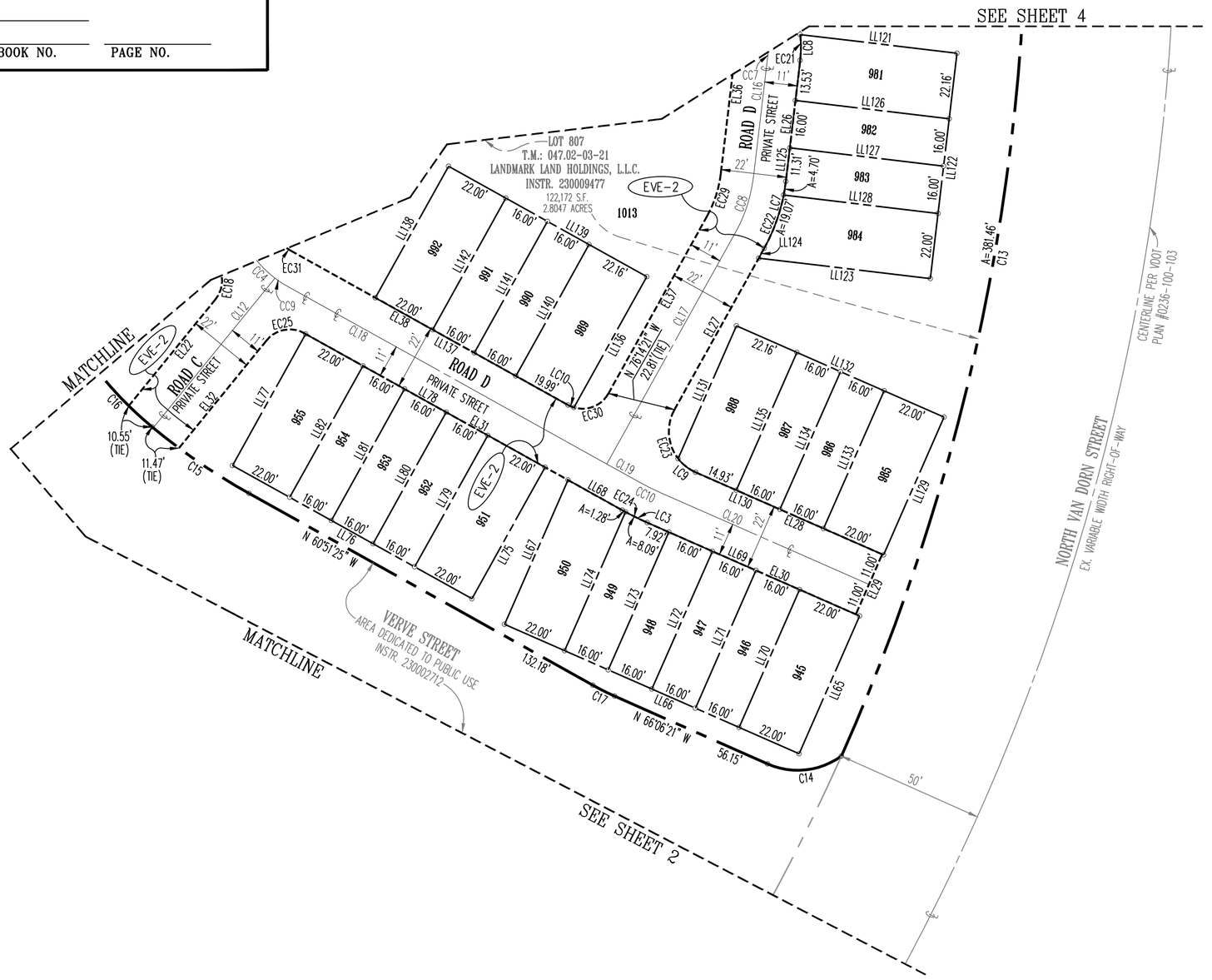
DATE RECORDED _____

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

SEE SHEET 1 FOR INDIVIDUAL LOT AREAS

NAD 83 NORTH ZONE

-N-



PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners • Engineers • Landscape Architects • Land Surveyors

SHEET 3 OF 12

R.P.# 2024-029

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

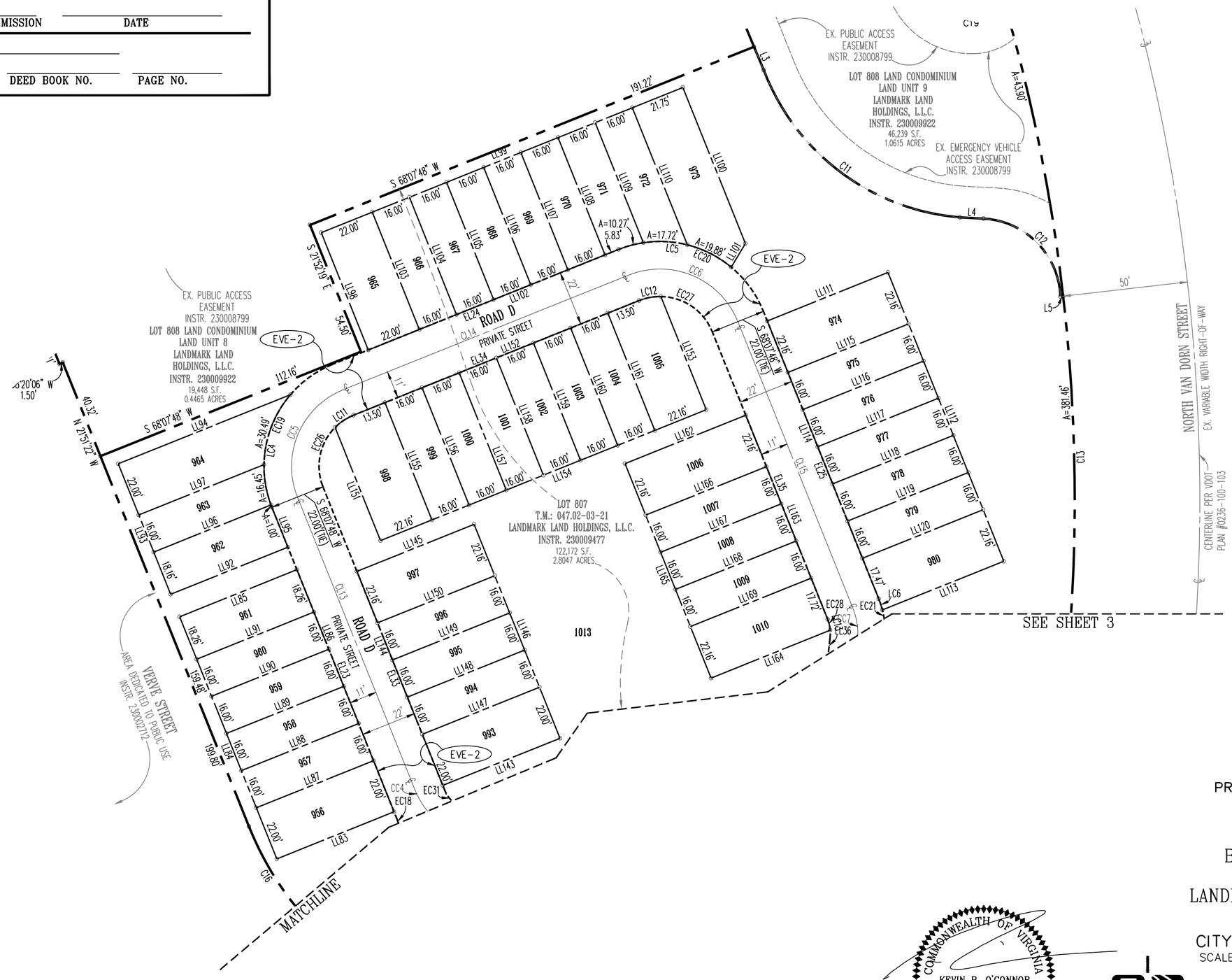
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

DATE RECORDED _____

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

SEE SHEET 1 FOR INDIVIDUAL LOT AREAS

NAD 83 NORTH ZONE



PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

urban
Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 4 OF 12

R.P.# 2024-029

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.

NAD 83 NORTH ZONE

MATCHLINE

SEE SHEET 6

VERVE STREET
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

HECHT AVENUE
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

ALLEY B
PRIVATE STREET

ROAD A
PRIVATE STREET

ALLEY A
PRIVATE STREET

ROAD B
PRIVATE STREET

LOT 709
T.M.: 047.02-03-19
LANDMARK LAND HOLDINGS, L.L.C.
INSTR. 230002712
77,919 S.F.
1.7888 ACRES

LOT 706
T.M.: 047.02-03-16
LANDMARK LAND HOLDINGS, L.L.C.
DB. 1720 PG. 1762
61,205 S.F.
1.4051 ACRES

NORTH VAN DORN STREET
EX. VARIABLE WIDTH RIGHT-OF-WAY

DUKE STREET - ROUTE 236
EX. VARIABLE WIDTH RIGHT-OF-WAY

CENTERLINE PER VDOT
PLAN #0236-100-103

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 5 OF 12

R.P.# 2024-029

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

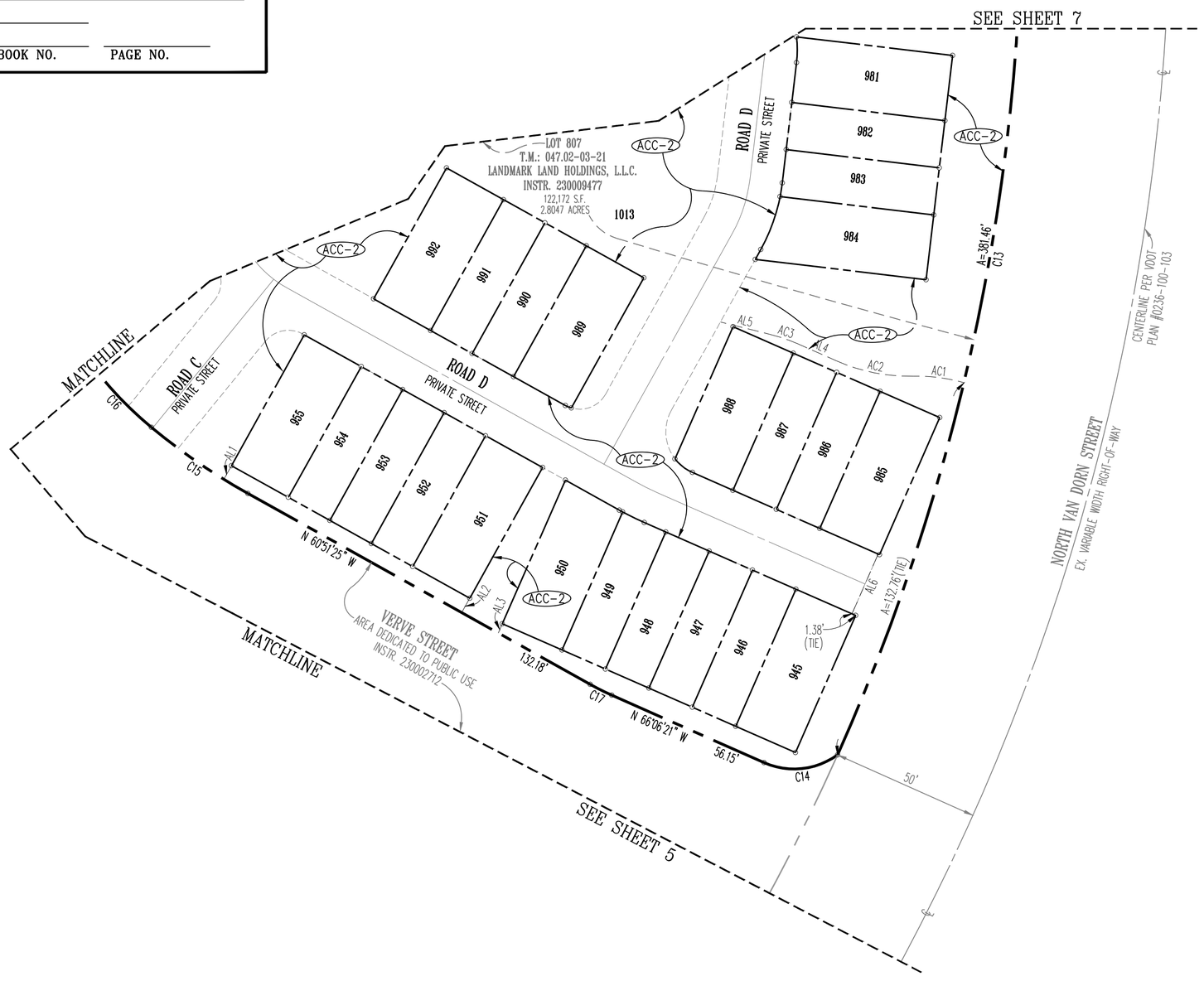
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

DATE RECORDED _____

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

NAD 83 NORTH ZONE

-N-



PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

urban™
Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 6 OF 12

R.P.# 2024-029

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

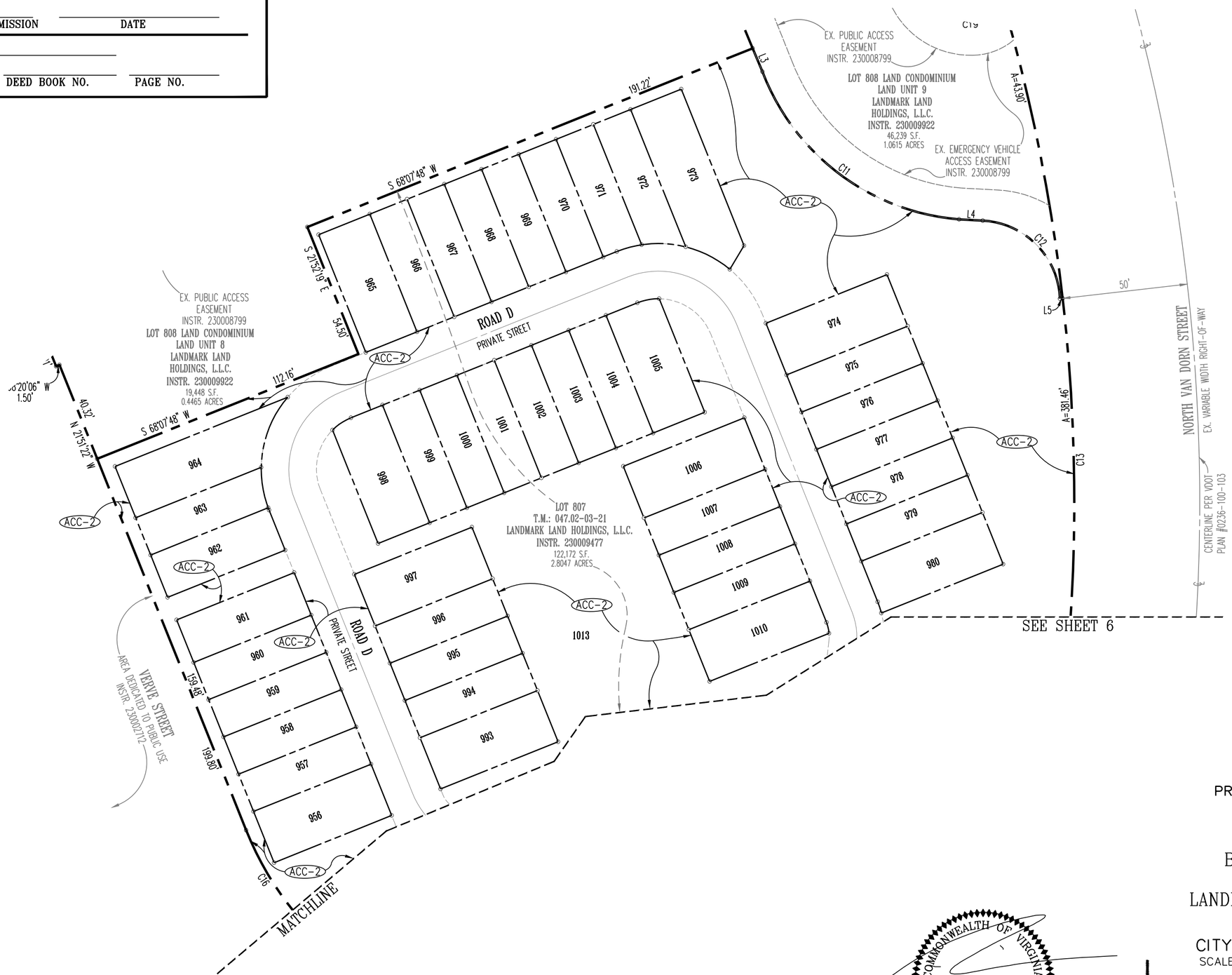
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

DATE RECORDED _____

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

NAD 83 NORTH ZONE

N



PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

urban
Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners • Engineers • Landscape Architects • Land Surveyors

SHEET 7 OF 12

R.P.# 2024-029

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.

NAD 83 NORTH ZONE

N

MATCHLINE SEE SHEET 9

VERVE STREET
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

HECHT AVENUE
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

ALLEY B
PRIVATE STREET

ROAD A
PRIVATE STREET

ALLEY A
PRIVATE STREET

ROAD B
PRIVATE STREET

LOT 709
T.M.: 047.02-03-19
LANDMARK LAND HOLDINGS, L.L.C.
INSTR. 230002712
77,919 S.F.
1.7888 ACRES

LOT 706
T.M.: 047.02-03-16
LANDMARK LAND HOLDINGS, L.L.C.
DB. 1720 PG. 1762
61,205 S.F.
1.4051 ACRES

1011

1012

NORTH VAN DORN STREET
EX. VARIABLE WIDTH RIGHT-OF-WAY

DUKE STREET - ROUTE 236
EX. VARIABLE WIDTH RIGHT-OF-WAY

CENTERLINE PER VDOT
PLAN #0236-100-103

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477

CITY OF ALEXANDRIA, VIRGINIA

SCALE: 1" = 30' DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners • Engineers • Landscape Architects • Land Surveyors

SHEET 8 OF 12

R.P.# 2024-029

APPROVED

SPECIAL USE PERMIT NO. _____

DEPARTMENT OF PLANNING & ZONING

_____ DIRECTOR _____ DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES

SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

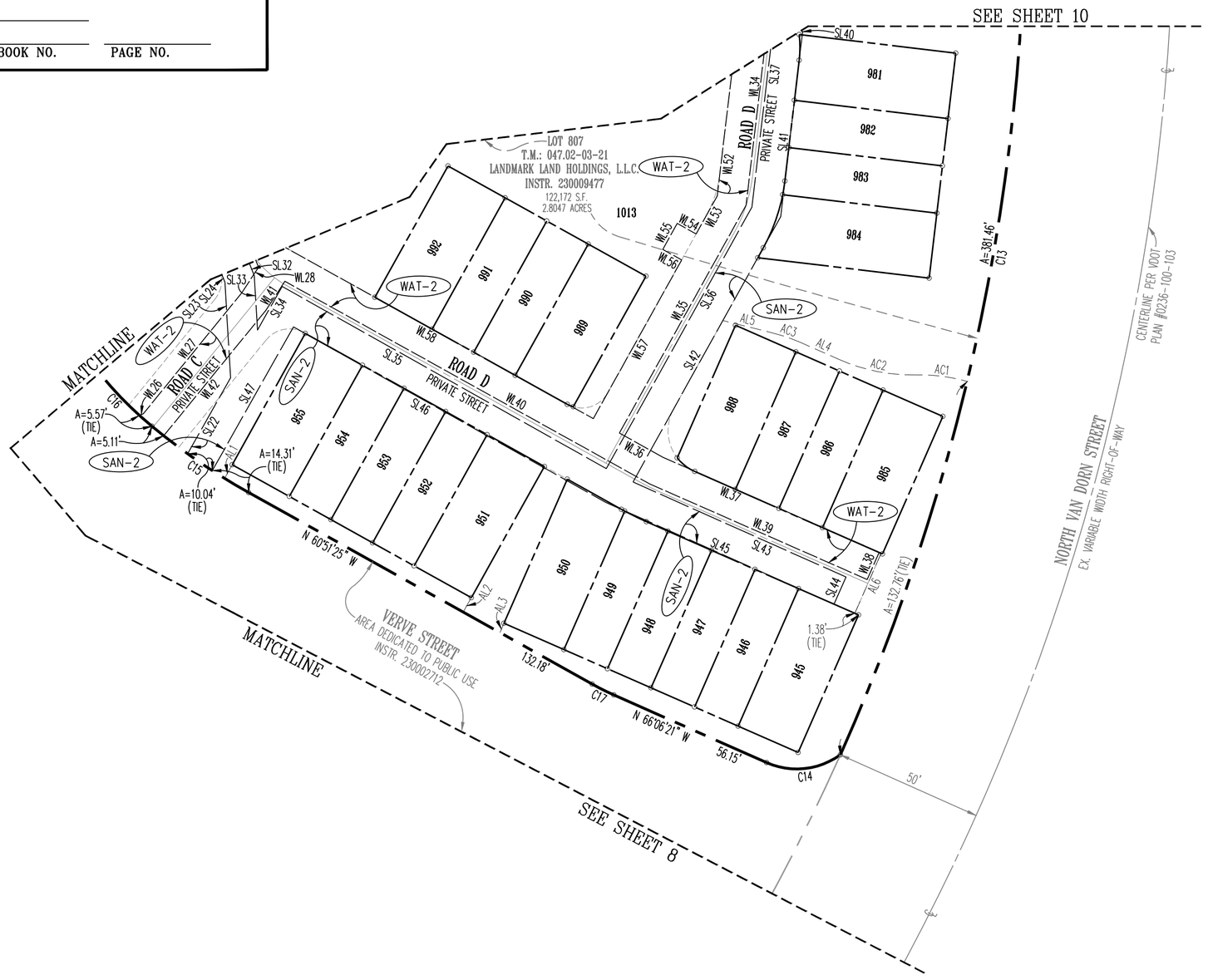
_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

DATE RECORDED _____

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

NAD 83 NORTH ZONE

-N-



PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

urban
Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners • Engineers • Landscape Architects • Land Surveyors

SHEET 9 OF 12

R.P.# 2024-029

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.

NAD 83 NORTH ZONE

N

LOT 808 LAND CONDOMINIUM
LAND UNIT 7
LANDMARK LAND
HOLDINGS, L.L.C.
INSTR. 230009922
127,646 S.F.
2.9304 ACRES

LOT 808 LAND CONDOMINIUM
LAND UNIT 9
LANDMARK LAND
HOLDINGS, L.L.C.
INSTR. 230009922
46,239 S.F.
1.0615 ACRES

EX. PUBLIC ACCESS EASEMENT
INSTR. 230008799

EX. EMERGENCY VEHICLE ACCESS EASEMENT
INSTR. 230008799

LOT 808 LAND CONDOMINIUM
LAND UNIT 8
LANDMARK LAND
HOLDINGS, L.L.C.
INSTR. 230009922
19,448 S.F.
0.4465 ACRES

LOT 807
T.M.: 047.02-03-21
LANDMARK LAND HOLDINGS, L.L.C.
INSTR. 230009477
122,172 S.F.
2.8047 ACRES

ROAD D
PRIVATE STREET

NORTH VAN DORN STREET
EX. VARIABLE WIDTH RIGHT-OF-WAY
CENTERLINE PER VDOT PLAN #0236-100-103

VERVE STREET
AREA DEDICATED TO PUBLIC USE
INSTR. 230002712

SEE SHEET 9

MATCHLINE

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: 1" = 30' DATE: MARCH 6, 2024

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 10 OF 12

R.P.# 2024-029

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.

CURVE DATA FOR BOUNDARY LINES

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	218.33'	70.27'	69.96'	N 77°03'01" E	18°26'22.50"	35.44'
C2	319.08'	51.73'	51.68'	N 64°44'32" E	9°17'22.95"	25.92'
C3	173.54'	50.30'	50.12'	N 50°07'20" E	16°36'25.97"	25.33'
C4	13.86'	4.10'	4.08'	N 38°25'53" W	16°56'14.05"	2.06'
C5	714.22'	24.86'	24.86'	N 32°36'43" E	1°59'40.48"	12.43'
C6	240.49'	56.29'	56.16'	N 51°46'31" E	13°24'36.38"	28.27'
C7	233.82'	117.47'	116.24'	N 69°47'47" E	28°47'04.57"	60.00'
C8	1512.69'	76.32'	76.32'	S 85°48'31" W	2°53'27.34"	38.17'
C9	5.00'	2.50'	2.47'	S 25°12'19" W	28°36'06.97"	1.27'
C10	50.02'	71.48'	65.55'	N 01°26'09" W	81°53'03.56"	43.39'
C11	91.84'	103.39'	98.01'	S 53°07'13" E	64°29'42.93"	57.94'
C12	32.50'	47.96'	43.73'	N 44°41'23" W	84°33'26.08"	29.55'
C13	714.22'	381.46'	376.94'	N 08°46'25" E	30°36'03.53"	195.40'
C14	25.00'	26.11'	24.94'	N 83°58'13" E	59°50'50.72"	14.39'
C15	215.00'	39.53'	39.47'	S 55°35'26" E	10°32'03.39"	19.82'
C16	126.00'	62.65'	62.01'	S 36°04'46" E	28°29'15.82"	31.99'
C17	79.27'	8.16'	8.16'	S 63°14'43" E	5°53'50.64"	4.08'
C18	20.57'	10.36'	10.25'	N 60°39'39" E	28°51'15.49"	5.29'
C19	19.64'	8.73'	8.66'	N 88°57'20" E	25°28'33.79"	4.44'
C20	54.84'	58.27'	55.57'	S 51°04'48" E	60°52'32.74"	32.22'

CURVE DATA FOR EMERGENCY VEHICLE ACCESS EASEMENTS

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
EC1	10.00'	18.95'	16.24'	S 58°03'47" E	108°35'06.11"	13.91'
EC2	10.00'	12.78'	11.93'	N 31°01'20" E	73°14'41.09"	7.43'
EC3	52.96'	25.08'	24.85'	N 70°52'29" E	27°07'50.51"	12.78'
EC4	53.00'	24.89'	24.67'	N 42°34'55" E	26°54'43.72"	12.68'
EC5	15.00'	19.55'	18.20'	S 81°46'53" W	74°41'24.03"	11.45'
EC6	74.00'	29.97'	29.77'	N 56°02'26" E	23°12'29.09"	15.20'
EC7	10.48'	13.27'	12.40'	S 31°22'29" W	72°32'22.50"	7.69'
EC8	44.52'	2.91'	2.91'	N 03°01'24" W	3°44'35.75"	1.45'
EC9	32.25'	50.54'	45.53'	N 41°01'22" E	89°47'56.74"	32.14'
EC10	39.56'	52.89'	49.04'	S 53°30'07" E	76°36'18.38"	31.24'
EC11	32.59'	37.92'	35.81'	S 20°39'34" W	66°39'51.79"	21.43'
EC12	20.50'	20.67'	19.80'	N 25°06'38" E	57°45'42.93"	11.31'
EC13	15.00'	27.57'	23.85'	N 08°13'08" W	105°18'39.47"	19.66'
EC14	52.00'	21.06'	20.92'	N 56°02'26" E	23°12'29.09"	10.68'
EC15	10.00'	18.63'	16.05'	S 58°58'39" E	106°45'20.79"	13.45'
EC16	74.96'	35.74'	35.40'	N 70°46'53" E	27°19'02.07"	18.22'
EC17	75.00'	35.47'	35.14'	N 42°40'31" E	27°05'54.88"	18.07'
EC18	10.00'	10.65'	10.15'	N 08°38'13" E	61°00'54.16"	5.89'
EC19	44.00'	69.11'	62.23'	S 23°07'48" W	89°59'58.72"	44.00'
EC20	44.50'	69.90'	62.93'	N 66°52'13" W	90°00'02.29"	44.50'
EC21	37.00'	18.50'	18.30'	N 07°32'59" W	28°38'27.61"	9.45'
EC22	61.00'	23.77'	23.62'	N 17°55'52" E	22°19'34.50"	12.04'
EC23	15.00'	24.97'	22.18'	S 18°35'31" E	95°22'17.46"	16.48'
EC24	100.00'	9.37'	9.37'	S 63°35'31" E	5°22'14.06"	4.69'
EC25	10.00'	13.95'	12.85'	S 79°07'05" W	79°57'00.80"	8.38'
EC26	22.00'	34.56'	31.11'	S 23°07'47" W	89°59'57.09"	22.00'
EC27	22.50'	35.34'	31.82'	N 66°52'13" W	90°00'02.29"	22.50'
EC28	15.00'	7.50'	7.42'	N 07°32'59" W	28°38'30.24"	3.83'
EC29	39.00'	15.20'	15.10'	N 17°55'53" E	22°19'47.53"	7.70'
EC30	10.00'	15.71'	14.14'	N 74°05'34" E	90°00'03.51"	10.00'
EC31	10.00'	6.81'	6.68'	S 41°23'18" E	39°02'12.56"	3.54'

CURVE DATA FOR CENTERLINES OF STREETS

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
CC1	63.96'	30.48'	30.19'	N 70°51'02" E	27°18'03.98"	15.53'
CC2	64.00'	30.18'	29.90'	N 42°38'11" E	27°01'18.40"	15.38'
CC3	63.00'	25.52'	25.34'	N 56°02'26" E	23°12'29.09"	12.94'
CC4	36.00'	19.37'	19.14'	S 37°17'10" E	30°49'56.75"	9.93'
CC5	33.00'	51.84'	46.67'	S 23°07'47" W	89°59'57.09"	33.00'
CC6	33.50'	52.62'	47.38'	N 66°52'13" W	90°00'02.29"	33.50'
CC7	26.00'	13.00'	12.86'	N 07°32'59" W	28°38'25.57"	6.64'
CC8	50.00'	19.48'	19.36'	N 17°55'55" E	22°19'22.03"	9.87'
CC9	36.00'	5.15'	5.15'	S 56°48'16" E	8°12'15.81"	2.58'
CC10	89.00'	8.34'	8.34'	S 63°35'31" E	5°22'14.06"	4.17'

CURVE DATA FOR LOT LINES

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
LC1	73.02'	13.95'	13.93'	N 62°10'54" E	10°56'41.68"	7.00'
LC2	73.98'	5.81'	5.81'	N 46°35'30" E	4°29'52.73"	2.91'
LC3	100.00'	9.37'	9.37'	S 63°35'31" E	5°22'14.06"	4.69'
LC4	44.00'	47.94'	45.61'	S 09°20'46" W	62°25'55.17"	26.66'
LC5	44.48'	47.87'	45.59'	N 81°03'27" W	61°39'43.02"	26.55'
LC6	37.00'	4.70'	4.70'	N 18°13'52" W	7°17'08.11"	2.36'
LC7	61.00'	23.77'	23.62'	N 17°55'55" E	22°19'39.14"	12.04'
LC8	37.00'	8.71'	8.69'	N 00°01'39" E	13°29'09.34"	4.37'
LC9	15.00'	7.54'	7.46'	S 52°00'58" E	28°47'40.48"	3.85'
LC10	10.00'	2.19'	2.18'	S 67°08'51" E	12°31'26.29"	1.10'
LC11	22.00'	8.90'	8.84'	S 56°32'22" W	23°10'53.20"	4.51'
LC12	22.68'	8.89'	8.83'	S 79°27'05" W	22°27'02.27"	4.50'
LC13	15.00'	4.50'	4.49'	N 13°16'03" W	17°12'16.74"	2.27'

CURVE DATA FOR PUBLIC ACCESS EASEMENTS

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
AC1	59.00'	17.42'	17.36'	N 82°42'18" W	16°54'59.21"	8.77'
AC2	61.00'	26.50'	26.29'	S 78°43'13" E	24°53'10.26"	13.46'
AC3	59.00'	10.01'	10.00'	N 71°08'16" W	9°43'17.54"	5.02'

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477
CITY OF ALEXANDRIA, VIRGINIA
SCALE: N/A DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

R.P.# 2024-029

LINE DATA FOR CENTERLINE OF STREETS

LINE	BEARING	DISTANCE
CL1	N 03°46'14" W	191.90'
CL2	N 67°38'40" E	101.22'
CL3	N 05°36'01" W	157.40'
CL4	N 05°36'01" W	9.54'
CL5	S 84°26'07" W	27.33'
CL6	S 29°07'34" W	29.84'
CL7	S 60°52'26" E	15.33'
CL8	S 60°52'26" E	134.28'
CL9	N 44°26'11" E	157.86'
CL10	N 67°38'40" E	65.85'
CL11	S 60°52'26" E	56.90'
CL12	N 39°08'38" E	64.78'
CL13	S 21°52'12" E	125.65'
CL14	S 68°07'46" W	123.00'
CL15	N 21°52'12" W	123.77'
CL16	N 06°46'14" E	40.84'
CL17	N 29°05'36" E	89.01'
CL18	S 60°54'24" E	122.53'
CL19	S 60°54'24" E	12.07'
CL20	S 66°16'38" E	76.54'

LINE DATA FOR BOUNDARY LINES

LINE	BEARING	DISTANCE
L1	S 37°04'34" W	22.46'
L2	N 83°41'26" E	23.22'
L3	S 22°38'53" E	10.12'
L4	S 86°58'04" E	9.48'
L5	N 85°08'59" E	1.07'
L6	N 22°38'54" W	22.35'
L7	N 21°52'20" W	21.32'
L8	S 28°30'10" E	3.36'

LINE DATA FOR WATERLINE EASEMENTS

LINE	BEARING	DISTANCE
WL1	S 03°51'22" E	170.86'
WL2	S 70°44'30" E	13.18'
WL3	N 67°38'40" E	79.24'
WL4	N 22°21'20" W	11.99'
WL5	N 05°36'00" W	144.13'
WL6	N 84°24'00" E	10.00'
WL7	S 05°36'00" E	142.66'
WL8	S 22°21'20" E	10.51'
WL9	N 67°38'40" E	18.73'
WL10	N 22°18'25" W	14.65'
WL11	N 68°01'17" E	10.00'
WL12	S 22°18'25" E	14.58'
WL13	N 67°38'40" E	32.37'
WL14	N 44°26'11" E	142.16'
WL15	N 29°07'34" E	9.55'
WL16	S 60°52'27" E	131.82'
WL17	S 29°07'33" W	10.00'
WL18	N 60°52'27" W	206.21'
WL19	N 29°07'33" E	10.00'
WL20	S 60°52'27" E	64.39'
WL21	N 29°07'34" E	10.89'
WL22	N 44°26'11" E	145.56'
WL23	N 67°38'40" E	156.20'
WL24	S 70°44'30" E	23.58'
WL25	S 03°51'22" E	174.21'
WL26	N 68°10'51" E	1.40'
WL27	N 39°08'38" E	52.42'
WL28	N 33°23'58" E	10.33'
WL29	N 22°02'12" W	111.97'
WL30	N 17°25'20" E	30.37'
WL31	N 68°07'46" E	146.52'
WL32	S 69°49'59" E	29.32'
WL33	S 21°52'12" E	143.02'
WL34	S 06°46'14" W	56.89'
WL35	S 29°05'36" W	87.61'
WL36	N 60°56'45" W	16.77'
WL37	N 66°16'38" W	79.39'
WL38	N 23°43'22" E	10.00'
WL39	S 66°16'38" E	79.85'
WL40	S 60°56'45" E	140.28'
WL41	N 33°23'58" E	11.75'
WL42	N 39°08'38" E	54.31'
WL43	N 22°02'12" W	139.98'
WL44	N 17°25'20" E	22.04'
WL45	N 68°07'46" E	137.94'
WL46	S 69°49'59" E	9.68'
WL47	N 20°10'01" E	9.03'
WL48	N 69°49'59" W	10.00'
WL49	S 20°10'01" W	9.03'
WL50	S 69°49'59" E	1.35'
WL51	S 21°52'12" E	136.02'
WL52	S 06°46'14" W	52.37'
WL53	S 29°05'36" W	14.59'
WL54	S 60°54'18" E	7.28'
WL55	N 29°05'42" E	10.00'
WL56	N 60°54'18" W	7.28'
WL57	S 29°05'36" W	61.06'
WL58	N 60°56'45" W	119.75'
WL59	N 22°02'12" W	25.38'
WL60	N 67°57'48" E	68.08'
WL61	N 67°57'48" E	68.04'

LINE DATA FOR EMERGENCY VEHICLE ACCESS EASEMENTS

LINE	BEARING	DISTANCE
EL1	N 03°46'14" W	166.26'
EL2	N 67°38'40" E	54.81'
EL3	N 05°36'01" W	151.33'
EL4	N 84°23'28" E	22.00'
EL5	S 05°36'01" E	1.45'
EL6	S 84°26'07" W	16.41'
EL7	S 29°07'34" W	18.84'
EL8	N 60°52'26" W	4.33'
EL9	N 29°08'31" E	22.00'
EL10	S 60°52'26" E	206.51'
EL11	S 29°07'34" W	22.00'
EL12	N 60°52'26" W	37.06'
EL13	S 44°26'11" W	138.02'
EL14	N 67°38'40" E	128.79'
EL15	N 03°46'14" W	149.76'
EL16	N 60°52'26" W	89.20'
EL17	N 44°26'11" E	123.78'
EL18	N 67°38'40" E	37.60'
EL19	S 05°36'01" E	118.14'
EL20	S 84°26'07" W	16.39'
EL21	S 29°07'34" W	18.84'
EL22	N 39°08'38" E	46.04'
EL23	N 21°52'12" W	134.55'
EL24	N 68°07'46" E	123.00'
EL25	S 21°52'12" E	123.77'
EL26	S 06°46'14" W	40.84'
EL27	S 29°05'36" W	61.98'
EL28	S 66°16'38" E	68.47'
EL29	S 23°43'22" W	22.00'
EL30	N 66°16'38" W	76.54'
EL31	N 60°54'24" W	122.20'
EL32	S 39°08'38" W	46.59'
EL33	S 21°52'12" E	130.97'
EL34	S 68°07'46" W	123.00'
EL35	N 21°52'12" W	123.77'
EL36	N 06°46'14" E	40.84'
EL37	N 29°05'36" E	68.01'
EL38	S 60°54'24" E	106.85'

LINE DATA FOR PUBLIC ACCESS EASEMENTS

LINE	BEARING	DISTANCE
AL1	S 29°05'36" W	5.25'
AL2	N 29°08'38" E	5.56'
AL3	N 23°43'22" E	3.43'
AL4	N 66°16'38" W	14.38'
AL5	N 75°59'55" W	17.10'
AL6	N 23°43'22" E	22.00'

LINE DATA FOR LOT LINES

LINE	BEARING	DISTANCE
LL1	S 22°21'18" E	50.36'
LL2	N 67°38'42" E	126.12'
LL3	S 22°21'18" E	53.48'
LL4	S 22°21'18" E	56.65'
LL5	S 22°21'18" E	50.51'
LL6	S 22°21'18" E	50.51'
LL7	S 22°21'18" E	50.51'
LL8	S 22°21'18" E	50.51'
LL9	S 22°21'18" E	50.51'
LL10	S 22°21'18" E	56.13'
LL11	N 67°38'42" E	96.00'
LL12	S 45°33'49" E	50.74'
LL13	S 44°26'11" W	134.16'
LL14	S 45°33'49" E	50.98'
LL15	S 45°33'49" E	50.84'
LL16	S 45°33'49" E	51.04'
LL17	S 45°33'49" E	51.23'
LL18	S 45°33'49" E	51.42'
LL19	S 45°33'49" E	51.61'
LL20	S 45°33'49" E	51.80'
LL21	S 45°33'49" E	51.52'
LL22	S 29°07'34" W	50.50'
LL23	S 60°52'26" E	92.00'
LL24	S 29°07'34" W	50.50'
LL25	S 60°52'26" E	92.00'
LL26	S 29°07'34" W	50.50'
LL27	S 29°07'34" W	50.50'
LL28	S 29°07'34" W	50.50'
LL29	S 29°07'34" W	50.50'
LL30	S 29°07'34" W	50.50'
LL31	S 60°52'26" E	108.01'
LL32	S 29°07'34" W	50.50'
LL33	S 60°52'26" E	108.01'
LL34	S 29°07'34" W	50.50'
LL35	S 29°07'34" W	50.50'
LL36	S 29°07'34" W	50.50'
LL37	S 29°07'34" W	50.50'
LL38	S 29°07'34" W	50.50'
LL39	N 29°07'34" E	50.50'
LL40	N 60°52'26" W	76.00'
LL41	N 29°07'34" E	44.12'
LL42	S 44°26'11" W	6.61'
LL43	N 60°52'26" W	74.26'
LL44	N 29°07'34" E	50.50'
LL45	N 29°07'34" E	50.50'
LL46	N 29°07'34" E	50.50'
LL47	S 84°22'55" W	51.58'
LL48	N 05°36'01" W	140.00'
LL49	S 84°23'59" W	56.86'
LL50	S 84°23'59" W	52.41'
LL51	S 84°23'59" W	53.01'
LL52	S 84°23'59" W	53.61'
LL53	S 84°23'59" W	54.22'
LL54	S 84°23'59" W	54.82'
LL55	S 84°23'59" W	55.42'
LL56	N 84°23'59" E	56.03'
LL57	S 84°23'59" W	50.50'
LL58	N 05°36'01" W	92.00'
LL59	S 84°23'59" W	50.50'
LL60	N 05°36'01" W	92.00'
LL61	S 84°23'59" W	50.50'
LL62	S 84°23'59" W	50.50'
LL63	S 84°23'59" W	50.50'
LL64	S 84°23'59" W	50.50'
LL65	N 23°43'22" E	50.50'
LL66	N 66°16'38" W	108.00'
LL67	N 23°43'22" E	52.89'
LL68	N 60°54'24" W	20.81'
LL69	N 66°16'38" W	77.92'
LL70	N 23°43'22" E	50.50'
LL71	N 23°43'22" E	50.50'
LL72	N 23°43'22" E	50.50'
LL73	N 23°43'22" E	50.50'
LL74	N 23°43'22" E	50.83'
LL75	S 29°05'36" W	50.50'
LL76	N 60°54'24" W	92.00'
LL77	S 29°05'36" W	50.50'
LL78	N 60°54'24" W	92.00'
LL79	S 29°05'36" W	50.50'
LL80	S 29°05'36" W	50.50'
LL81	S 29°05'36" W	50.50'
LL82	S 29°05'36" W	50.50'
LL83	S 68°07'48" W	50.50'
LL84	S 21°52'12" E	104.26'
LL85	S 68°07'48" W	50.50'
LL86	S 21°52'12" E	104.26'
LL87	S 68°07'48" W	50.50'
LL88	S 68°07'48" W	50.50'
LL89	S 68°07'48" W	50.50'
LL90	S 68°07'48" W	50.50'
LL91	S 68°07'48" W	50.50'
LL92	S 68°07'48" W	50.50'
LL93	S 21°52'12" E	56.16'
LL94	S 68°07'48" W	74.14'
LL95	N 21°52'12" W	17.16'
LL96	S 68°07'48" W	50.51'
LL97	S 68°07'48" W	53.92'
LL98	N 21°52'14" W	50.50'
LL99	N 68°07'46" E	155.75'
LL100	S 21°52'14" E	67.17'
LL101	S 30°49'28" W	11.03'
LL102	N 68°07'46" E	107.83'
LL103	N 21°52'14" W	50.50'
LL104	N 21°52'14" W	50.50'
LL105	N 21°52'14" W	50.50'
LL106	N 21°52'14" W	50.50'
LL107	N 21°52'14" W	50.50'
LL108	N 21°52'14" W	50.50'
LL109	N 21°52'14" W	51.68'
LL110	N 21°52'14" W	59.01'
LL111	N 68°07'48" E	52.00'
LL112	S 21°52'12" E	124.32'
LL113	N 68°07'48" E	52.30'
LL114	S 21°52'12" E	119.63'
LL115	N 68°07'48" E	52.00'
LL116	N 68°07'48" E	52.00'
LL117	N 68°07'48" E	52.00'
LL118	N 68°07'48" E	52.00'
LL119	N 68°07'48" E	52.00'
LL120	N 68°07'48" E	52.00'
LL121	S 83°13'46" E	53.02'
LL122	N 06°46'14" E	76.16'
LL123	S 83°13'46" E	58.02'
LL124	N 29°05'36" E	3.80'
LL125	N 06°46'14" E	40.84'
LL126	S 83°13'46" E	52.00'
LL127	S 83°13'46" E	52.00'
LL128	S 83°13'46" E	52.18'
LL129	N 23°43'22" E	50.50'
LL130	S 66°16'38" E	68.93'
LL131	N 23°43'22" E	48.66'
LL132	S 66°16'38" E	76.16'
LL133	N 23°43'22" E	50.50'
LL134	N 23°43'22" E	50.50'
LL135	N 23°43'22" E	50.50'
LL136	N 29°05'36" E	50.26'
LL137	S 60°54'24" E	73.99'
LL138	N 29°05'36" E	50.50'
LL139	S 60°54'24" E	76.16'
LL140	N 29°05'36" E	50.50'
LL141	N 29°05'36" E	50.50'
LL142	N 29°05'36" E	50.50'
LL143	S 68°07'48" W	50.50'
LL144	N 21°52'12" W	92.16'
LL145	S 68°07'48" W	50.50'
LL146	N 21°52'12" W	92.16'
LL147	S 68°07'48" W	50.50'
LL148	S 68°07'48" W	50.50'
LL149	S 68°07'48" W	50.50'
LL150	S 68°07'48" W	50.50'
LL151	N 21°52'14" W	48.72'
LL152	N 68°07'46" E	123.00'
LL153	N 21°52'14" W	48.77'
LL154	N 68°07'46" E	140.32'
LL155	N 21°52'14" W	50.50'
LL156	N 21°52'14" W	50.50'
LL157	N 21°52'14" W	50.50'
LL158	N 21°52'14" W	50.50'
LL159	N 21°52'14" W	50.50'
LL160	N 21°52'14" W	50.50'
LL161	N 21°52'14" W	50.50'
LL162	S 68°07'48" W	52.00'
LL163	S 21°52'12" E	87.88'
LL164	S 68°07'48" W	51.33'
LL165	S 21°52'12" E	92.32'
LL166	S 68°07'48" W	52.00'
LL167	S 68°07'48" W	52.00'
LL168	S 68°07'48" W	52.00'
LL169	S 68°07'48" W	52.00'

LINE DATA FOR SANITARY SEWER EASEMENTS

LINE	BEARING	DISTANCE
SL1	S 03°51'22" E	174.21'
SL2	S 70°44'30" E	25.09'
SL3	N 68°03'12" E	62.33'
SL4	S 05°36'00" E	159.89'
SL5	S 84°24'00" W	10.00'
SL6	N 05°36'00" W	156.96'
SL7	N 68°03'12" E	67.09'
SL8	N 68°03'11" E	12.14'
SL9	N 43°58'56" E	155.31'
SL10	N 29°07'34" E	15.88'
SL11	N 60°52'26" W	136.71'
SL12	N 29°07'34" E	10.00'
SL13	S 60°52'26" E	192.01'
SL14	S 29°07'34" W	10.00'
SL15	N 60°52'26" W	45.30'
SL16	N 29°07'34" E	17.19'
SL17	N 43°58'56" E	158.74'
SL18	N 68°03'11" E	14.35'
SL19	N 68°03'12" E	143.52'
SL20	S 70°44'30" E	35.45'
SL21	S 03°51'22" E	177.57'
SL22	S 29°26'39" W	29.35'
SL23	S 03°24'41" E	32.17'
SL24	S 21°52'12" E	147.92'
SL25	S 19°39'50" W	47.27'
SL26	S 68°07'46" W	146.13'
SL27	N 83°21'57" W	25.54'
SL28	N 06°38'03" E	10.00'
SL29	S 83°21'57" E	23.00'
SL30	N 68°07'46" E	139.08'
SL31	N 19°39'50" E	38.98'
SL32	N 21°52'12" W	145.75'
SL33	N 03°24'41" W	18.31'
SL34	S 29°26'39" W	16.83'
SL35	N 60°39'41" W	125.03'
SL36	S 29°05'36" W	100.59'
SL37	S 06°46'14" W	57.80'
SL38	S 21°52'12" E	124.04'
SL39	S 68°07'48" W	10.00'
SL40	N 21°52'12" W	126.59'
SL41	N 06°46'14" E	62.32'
SL42	N 29°05'36" E	102.12'
SL43	S 65°56'57" E	78.45'
SL44	S 24°03'03" W	10.00'
SL45	N 65°56'57" W	84.14'
SL46	N 60°39'41" W	120.30'
SL47	S 29°26'39" W	55.48'
SL48	N 18°52'18" E	31.93'
SL49	N 68°08'38" E	386.51'
SL50	N 68°08'38" E	381.92'
SL51	N 18°52'18" E	39.62'

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.

COMMONWEALTH OF VIRGINIA
KEVIN P. O'CONNOR
Lic. No 1967
5/2/2024
LAND SURVEYOR

PRELIMINARY SUBDIVISION PLAT

WEST END
BLOCK L&M

BEING A SUBDIVISION OF
LOTS 709 AND 807
LANDMARK MALL REDEVELOPMENT
INSTRUMENT 230002712
INSTRUMENT 230009477

CITY OF ALEXANDRIA, VIRGINIA

SCALE: N/A DATE: MARCH 6, 2024

Urban, Ltd.
4200 D Technology Court
Chantilly, Virginia 20151
Tel. 703.642.2306
www.urban-ltd.com
Planners · Engineers · Landscape Architects · Land Surveyors

SHEET 12 OF 12

R.P.# 2024-029