ISSUE:	Permit to Demolish and Certificate of Appropriateness for New Construction
APPLICANT:	Eleventh Street Development, LLC
LOCATION:	Old and Historic Alexandria District 101 Duke Street
ZONE:	W-1/Waterfront mixed use zone

STAFF RECOMMENDATION

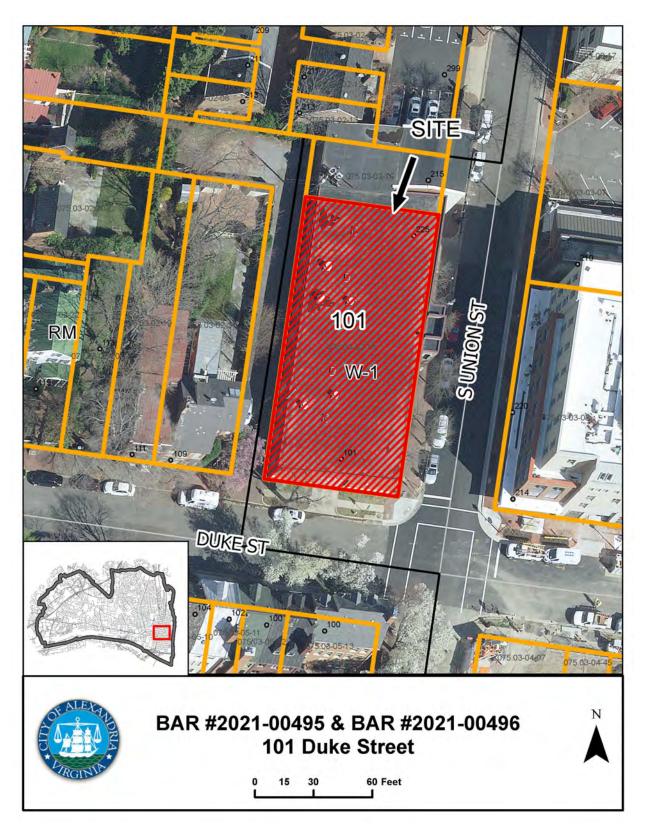
Noting the recommendations from Alexandria Archaeology, staff recommends approval of a Permit to Demolish and a Certificate of Appropriateness for new construction with the following conditions:

- 1. The applicant work with staff on the final details for the entry stoops on Union Street.
- 2. The applicant revise the configuration of the windows on the Duke Street elevation to a more regular spacing that is symmetrical and includes windows on each level.
- 3. The applicant work with staff on the introduction of a reveal at the alley elevation between each townhome to contain the twin downspouts.

GENERAL NOTES TO THE APPLICANT

- 1. APPEAL OF DECISION: In accordance with the Zoning Ordinance, if the Board of Architectural Review denies or approves an application in whole or in part, the applicant or opponent may appeal the Board's decision to City Council on or before 14 days after the decision of the Board.
- 2. COMPLIANCE WITH BAR POLICIES: All materials must comply with the BAR's adopted policies unless otherwise specifically approved.
- 3. BUILDING PERMITS: Most projects approved by the Board of Architectural Review require the issuance of one or more construction permits by Department of Code Administration (<u>including signs</u>). The applicant is responsible for obtaining all necessary construction permits after receiving Board of Architectural Review approval. Contact Code Administration, Room 4200, City Hall, 703-746-4200 for further information.
- 4. ISSUANCE OF CERTIFICATES OF APPROPRIATENESS AND PERMITS TO DEMOLISH: Applicants must obtain a copy of the Certificate of Appropriateness or Permit to Demolish PRIOR to applying for a building permit. Contact BAR Staff, Room 2100, City Hall, 703-746-3833, or preservation@alexandriava.gov for further information.
- 5. EXPIRATION OF APPROVALS NOTE: In accordance with Sections 10-106(B), 10-206(B) and 10-307 of the Zoning Ordinance, any Board of Architectural Review approval will expire 12 months from the date of issuance if the work is not commenced and diligently and substantially pursued by the end of that 12-month period.
- 6. HISTORIC PROPERTY TAX CREDITS: Applicants performing extensive, certified rehabilitations of historic properties may separately be eligible for state and/or federal tax credits. Consult with the <u>Virginia</u> <u>Department of Historic Resources (VDHR)</u> prior to initiating any work to determine whether the proposed project may qualify for such credits.

Docket #7 & 8 BAR #2021-00495 & 2021-00496 Old and Historic Alexandria District October 6, 2021



Docket #7 & 8 BAR #2021-00495 & 2021-00496 Old and Historic Alexandria District October 6, 2021

Note: Staff coupled the applications for a Permit to Demolish (BAR #2021-00496) and Certificate of Appropriateness (BAR #2021-00495) for clarity and brevity. The Permit to Demolish requires a roll call vote.

UPDATE

The Board's previous review of the proposed project includes three Concept Review hearings (January 21, March 3, and May 19). In addition to the BAR hearings, historic preservation staff attended several working sessions with the applicant to review the proposed design and provide feedback.

At the first hearing, the applicant proposed six attached townhouses designed to resemble historic townhomes found throughout the historic district. Board comments at that time included concerns about the use of historic townhomes for the architectural precedent of a building that was much larger than those townhomes. There was also concern about the more modern style of the fourth-floor massing in contrast to the more traditional three-story portions of the building. The Board also noted that the entry stoops on the units were too high above the adjacent sidewalk and made for an unfriendly streetscape. Some Board members were concerned about the height of the building.

In response to Board comments, the applicant returned to the Board for a second Concept Review with a heavily modified design. In place of six attached townhomes, the applicant submitted a design for two freestanding buildings with a break between the buildings. In lieu of the previous design, the new design drew inspiration from the warehouses that once were on this site and dominated the waterfront. The Board generally appreciated the applicant's responsiveness to their comments and liked the addition of the break between the buildings to break up the mass and reduce the feeling of a single monolithic building. The Board also found that the use of the industrial motif for the project was more successful than the use of historic townhomes and allowed for building proportions that are more compatible with the historic precedents. They asked the applicant to provide greater differentiation between the buildings. There was some discussion about the treatment of the southeast corner of the building and how the building fronts on Duke and Union Streets. The applicant also revised the design for the entry stoops, lowering them and providing variation in the heights. There were some comments from Board members noting that fewer units on the site could allow for a smaller building.

At the third hearing, the applicant submitted a design that showed a development of the previous version to include greater variation between the two buildings, continued evolution of the fourth-floor elements, and revisions to the south and west elevations, in response to Board comments. The Board again appreciated the continued design evolution in response to previous comments and noted that the variation between the two buildings helped the overall design. They asked that as the design progressed, greater variation between the two buildings be included and they expressed a preference for the detailing of the north building. There were some comments indicating that while the design had progressed, the overall size of the buildings was too large. The chair asked each of the Board members to discuss the height, scale, mass, and general architectural character of the project as laid out in the Concept Review Policy. The majority of

the members present supported the height and general architectural character, while there was less agreement on the mass and scale.

The project was approved by the City Council on September 18, 2021 (DSUP2021-10012) and the applicant now seeks approval of the Permit to Demolish and a Certificate of Appropriateness. Included in the DSUP was increased FAR and modifications to the side yard setbacks.

I. <u>APPLICANT'S PROPOSAL</u>

Following the May 19, 2021 Concept Review BAR hearing, the applicant has continued to study the design for the project and has met with staff on multiple occasions. During the Concept Review process, a comment that was made several times was that the Board wanted to see more differentiation between the two buildings. Some Board members expressed a preference for the design of the north building and asked the applicant to make modifications to the south building to further differentiate the two. In response to these comments, the applicant revised the south building to be clearly different than the north building while still maintaining a similar architectural language. The changes are summarized below:

Both Buildings

The applicant has revised the proposed material for the fourth floor from fiber cement horizontal siding and panels to metal siding and panels. The metal is a higher quality construction material and though the initial appearance will be similar, the metal will age better than the fiber cement.

South Building

The design for the east elevation of the south building that was shown at the May 19, 2021, Concept Review hearing was very similar to the north building in that the windows were the same and both buildings used vertical pilasters to give the building an overall vertical proportion (Figure 1). The south building used twice as many pilasters with one located between each window bay. Precast elements were used in lieu of brick details throughout the elevation. With the exception of the use of double the number of pilasters, the buildings were much the same with the chief variation between the two in the use of precast in key locations instead of brick.

To address the comments regarding differentiation between the buildings, the applicant has made some significant changes to the east elevation of the south building (Figure 2). The vertical pilasters have been removed entirely with a notch reveal added at the break point between each townhome that extends from the sill of the second-floor windows to the head of the third-floor windows. The number of windows on this elevation has increased and there are now three windows for each townhome instead of two in the previous version. These paired windows do not include the more traditional muntin patterns that are seen on the north building. A continuous precast band above the third-floor window heads creates a brick band that is punctuated by a rectangular brick detail centered above each window. Cast stone heads and sills are used on all of the windows on this elevation, differentiating it from the north building. The effect of these changes is that the south building now takes on a distinctly horizontal proportion and has larger areas of glass than the north building.

Docket #7 & 8 BAR #2021-00495 & 2021-00496 Old and Historic Alexandria District October 6, 2021



Figure 1: Design for east elevation of south building from May 19, 2021 BAR Hearing



Figure 2: Revised design for east elevation of south building

The design for the Duke Street elevation has been the source of many comments from staff, the public, and the Board. In the version of the design from the May 19, 2021 hearing, the pilasters, parapet treatment, and window pattern from the east elevation turned the corner and extended across the eastern third of the elevation. More simple punched windows and brick panels were

used on the remainder of the elevation (Figure 3, left image). Comments on this design focused on the idea that there was too much brick and that the building did not address Duke Street.

In the revised design, the applicant is continuing the horizontal precast bands and brick panels at the parapet from the east elevation across the width of this elevation (Figure 3, right image). These bands turn the corner at the west side of the building and end in a pilaster that forms the southwest corner of the building. The windows on this elevation consist of double and single punched windows aligned vertically. A brick panel at the center of the ground floor is meant to mimic the window above to complete the organization. The revised design for this elevation is simpler with a language that is consistent from the east elevation and features a more balanced distribution of windows than the previous version



Figure 3: Comparison of the May 19, 2021 version of the south elevation (left) and the current version(right)

Site context

The project site is located at the corner of Duke Street and South Union Street, with the longest portion of the site fronting Union Street. The alley to the west of the site is private.

This is a transitional area of the city with the Hotel Indigo directly across Union Street and historic two-story buildings to the immediate north and west of the site. Later four-story townhomes with ground floor garages are on the south side of Duke Street across from the proposed building. The townhouses constructed as part of the Robinson Terminal South are located diagonal from the project site.

II. <u>HISTORY</u>

The project site has a diverse history dating to the 1820s with a variety of uses taking place in this location. According to the 1993 edition of the *Fireside Sentinel*, "In the 1820s the building that stood on the site served as a hotel, or more properly a sailor's boarding house with a bar room attached...Many of the occupants of this rum house died when yellow fever visited Alexandria in the first third of the 19th Century. Later, a group of Washingtonians came to Alexandria one evening and set fire to the structure. It was subsequently rebuilt and was known as Monroe's

Cooper Shop. Stephen Shinn, a successful commission merchant, was the occupant of the building before the outbreak of the Civil War."¹

The 1885 Sanborn Map shows a complex of industrial buildings on the site which include WS Moore's Machine Shop and Brass and Iron Foundry and the Aitcheson Brothers Saw and Planing Mill (Figure 4). These structures appear on the Sanborn Maps through 1912, in 1921 only the two structures at the corner of Duke Street and South Union Street remain. According to the *Fireside Sentinel* a fire destroyed much of the factory in 1915. The entire site is vacant in the 1941 Sanborn Map.

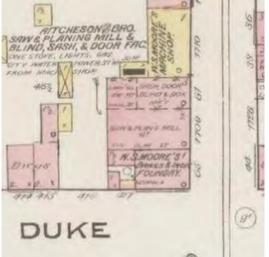


Figure 4: 1885 Sanborn Map showing complex of industrial buildings

The 1959 Sanborn Map shows an industrial building labeled as an "Arsenal" in the footprint of the parking garage in place today. In 1988 the BAR approved alterations to the warehouse (BAR #88-182) to convert the building being used by "Interarms Corporation for the storage of weapons and arms" into a multi-level parking garage. Modifications to the property included the removal of the roof, the infill of some existing windows, and the installation of metal shutters at other window openings.

III. <u>ANALYSIS</u>

Permit to Demolish

In considering a Permit to Demolish/Capsulate, the Board must consider the following criteria set forth in the Zoning Ordinance, §10-105(B), which relate only to the subject property and not to neighboring properties. The Board has purview of the proposed demolition/capsulation regardless of visibility.

¹ Aitcheson Brothers Planing Mill, The Fireside Sentinel, November/December 1993, page 9

Standard	Description of Standard	Standard Met?
(1)	Is the building or structure of such architectural or historical interest that its moving, removing, capsulating or razing would be to the detriment of the public interest?	No
(2)	Is the building or structure of such interest that it could be made into a historic shrine?	No
(3)	Is the building or structure of such old and unusual or uncommon design, texture and material that it could not be reproduced or be reproduced only with great difficulty?	No
(4)	Would retention of the building or structure help preserve the memorial character of the George Washington Memorial Parkway?	N/A
(5)	Would retention of the building or structure help preserve and protect an historic place or area of historic interest in the city?	No
(6)	Would retention of the building or structure promote the general welfare by maintaining and increasing real estate values, generating business, creating new positions, attracting tourists, students, writers, historians, artists and artisans, attracting new residents, encouraging study and interest in American history, stimulating interest and study in architecture and design, educating citizens in American culture and heritage, and making the city a more attractive and desirable place in which to live?	No

In the opinion of staff, none of the criteria are met for demolition of the existing structure on the site today. The structure is a concrete and brick two story parking garage with punched openings that include decorative exterior shutters. In 1988 the existing warehouse building on the site was dramatically altered to include removal of the roof and the removal of windows and the infill of existing window openings in order to retrofit the building into a three level parking garage. Any remnant of an older building on the site was altered to such an extent in 1988 that this becomes the date of significance for the existing structure. As such, this modern parking garage does not have any historic significance and staff supports its demolition.

Certificate of Appropriateness

Within the historic districts, the Board utilizes the *Design Guidelines* to determine if a potential new building would be compatible with nearby buildings of historic merit. The *Guidelines* do not mandate the use of historic styles for new construction. However, they do state that where new buildings recall historic building styles, the architectural details used throughout the building should be consistent with that same style noting, however, that the building should not be a slavish replica of any specific building in the district. Additionally, the *Design Guidelines* also note that

"new and untried approaches to common design problems are encouraged and should not be rejected out of hand simply because they appear to be outside the common practices outlined in the guidelines."

Staff finds the revisions to the design from the May 19, 2021, Concept Review to be responsive to comments from staff and the Board. As noted above, one of the main comments at that hearing was that the Board wanted to see some further refinement of the south building in order to provide greater variation between the two buildings (Figure 5). Therefore, the south building now has all of the same architectural components as the north but uses a configuration that has a distinct horizontal proportion in opposition to the vertical proportion of the north building. The two buildings share enough architectural language to be compatible and appear to be of their time, but without overwhelming the neighboring historic buildings.

The proposed design now includes significant and meaningful variations between the north and south buildings. While each building includes three distinct townhomes, the rendering of the bays is markedly different. The new design for the south building includes more windows with a design for those windows that is simpler in relation to the design for the building. The divisions within the windows are similar but the windows on the north building include greater articulation, consistent with the more traditional nature of this building. The differences in the stoop design do not have a significant impact on the overall composition but this variation will help to enliven the street scape. The fourth floor is minimally visible from Union Street so variation in that component is not necessary, in the opinion of staff.



Figure 5: Revised design for the east elevation showing the variation between the two buildings

Staff is pleased that the applicant has continued to evolve the design of the project and finds that the architecture is compatible with the character of the historic district. There are three minor design issues described below that staff recommends be studied, with staff, after the Board's approval.

Stoops

The entry stoops at Union Street vary in height from approximately three feet above the sidewalk to approximately six feet above the sidewalk. This height has been discussed throughout the design review process and is impacted by a number of site considerations. The design for the stoops includes brick steps with a brick landing with a hinged metal gate below and a black metal railing on the south building. On the north building, the design is the same with the exception of the steps, which are metal. The design intent is for the metal railings and the metal gate to recall raised stoops throughout the district. In some of these locations, the gate leads to an entrance to an English basement. Due to flooding considerations, an English basement is not included in this design.

Staff finds that the design for these stoops is a successful reference to historic architecture with a distinctly modern component that indicates this as a new building. The applicant has provided construction sections through the landing at the stoop which show how the brick will interface with the metal gate and the handrail (Figure 6). Staff suggests that the applicant work with staff to develop the final details for the handrail and the metal stairs to a similar level, keeping a reference to historic precedents as the design vision.

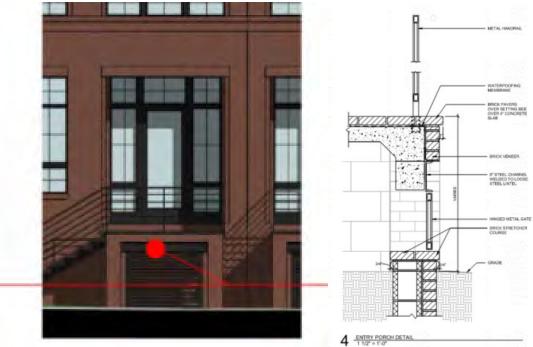


Figure 6: Elevation and section at building entry stoops

Duke Street elevation

The Duke Street elevation has been discussed numerous times and has evolved over time in response to those discussions. Like many of the corner buildings throughout the historic district, the main entrance is located on one of the streets and a secondary "front" faces the other street. In some locations in the district this secondary street is treated as a true side elevation with less

decorative trim and less formal materials. In other locations, the secondary elevation is treated with a similar vocabulary as the primary elevation but without a formal entrance. The design reviewed at the May 19, 2021 hearing included a hybrid approach that wrapped the eastern design a third of the way around this elevation and transitioned to a more simple elevation at a recessed notch reveal. It was found that this configuration did not successfully relate to Duke Street and that the design should take one of the more traditional approaches to this elevation mentioned above.

The current design uses the approach of continuing the architectural design from the primary elevation to the secondary elevation facing Duke Street. While an inclusion of an entry on this elevation would not be unprecedented, it does deter from the hierarchy of elevations that is commonly established in historic architecture. Staff finds this to be an appropriate and effective approach to the Duke Street elevation that treats this elevation as an important part of the building while remaining grounded in the historic precedent of corner buildings in the district. It should be noted that this approach is different from nearby examples of a side elevation without fenestration or ornament.

The proposed design has a fenestration pattern that is asymmetrical with a combination of single and double windows in a variation of sizes (Figure 7). The additional windows that have been added to this design are an improvement and help to address this important elevation; however, staff finds that the organization of the windows could be improved. This is clearly a secondary elevation so the windows on this elevation should have some variation from those on Union Street. Staff recommends that the applicant work with staff to develop a more balanced composition of windows on this elevation to reflect this secondary, less prominent, elevation.



Figure 7: Proposed Duke Street Elevation

Downspouts

The proposed rear elevation for both buildings is a simplified version of the main elevation that includes double punched windows with brick heads and sills and a simple brick panel above the third-floor windows. This simplified design is appropriate for a rear elevation and staff supports this approach to the design. The applicant is proposing to drain the third and fourth floor roofs to the rear of the site through the use of downspouts that are expressed along the outside of the building. While these downspouts are an important and necessary utilitarian feature, their location protruding from the exterior wall gives an unfinished appearance to this elevation (Figure 8).

Staff recommends that the applicant work with staff to introduce a reveal in this elevation that is similar to the one that has been introduced to the Union Street elevation of the southern building at the break point between each townhome and run the downspouts in this location. This would help to break up the alley elevation into thirds and would organize the downspouts into a discrete location.

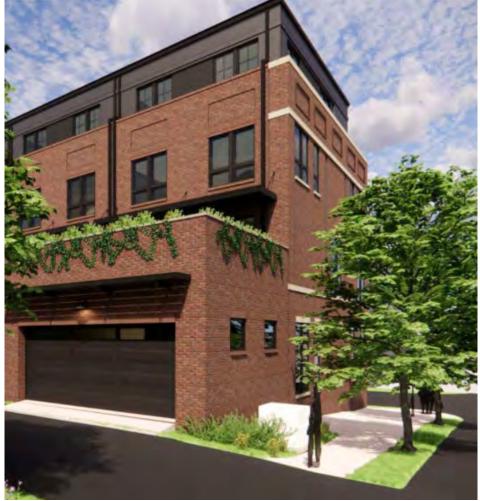


Figure 8: View of alley elevation including exposed downspouts

Conclusion

When considering the request for a Certificate of Appropriateness for the proposed project, the Board will consider the criteria specifically listed in Chapter 10-105 (A)(2) of the City of Alexandria Zoning Ordinance as the determining factors for the issuance of a Certificate of Appropriateness. In making a determination of how the proposed project meets these criteria, the Board should look to Chapter 6, New Construction – Residential, of the *Design Guidelines* for guidance. This chapter applies to all residential construction, including both multi-family and single-family dwellings. There are several specific portions of the *Design Guidelines* that are relevant to the proposed project.

As noted in the History section above, the project site, and much of the waterfront, was historically occupied by warehouse buildings. The area to the west of the site developed as a more residential area but this site and neighboring sites remained warehouses into the twentieth century. The *Design Guidelines* state that "No single architectural style is mandated. Designs should be complementary and reflect the architectural heritage of the city. For example, abstraction of historic design elements would be preferred to a building which introduces design elements that are not commonly used in historic districts. While new residential buildings in the historic districts should not create an appearance with no historical basis, direct copying of buildings is discouraged." The history of this site has been well documented and clearly the "architectural heritage" of the site lies in the language of the industrial warehouse rather than the single-family residence. The proposed project uses the language of this historic building type but abstracts it such that it complies with this portion of the Design Guidelines recommendation that the building does not "create an appearance with no historical basis."

Using this historic language for the design for the project, the applicant is proposing a building that is clearly modern while maintaining a historic vocabulary. The *Design Guidelines* state that "It is not the intention of the Board to dilute design creativity in residential buildings. Rather, the Board seeks to promote compatible development that is, at once, both responsive to the needs and tastes of the late 20th century while being compatible with the historic character of the districts." The architectural reference for the project is related to the history of the site, the departures from this style mark it as clearly a modern building and are "responsive to the needs and tastes of the late 20th century while being compatible with the historic character of the districts."

The *Design Guidelines* state that "New residential structures should be sited so that the front plane of the building is in line with the prevailing plane of the other residential buildings on the street." The applicant has located the building such that the face of the building on Duke Street is in a similar plane as the neighboring residential buildings. On Union Street, there is more variation of the relationship of the buildings to the sidewalk. Here, the applicant has placed the stoops in a similar plane as the building to the north where the mass of the building is pushed back from the sidewalk in an effort to allow for more space for this busy sidewalk. On both Duke Street and Union Street the proposed project locates the mass of the building such that "the front plane of the building is in line with the prevailing plane of the other residential buildings on the street."

Staff finds that when considering the criteria listed in Chapter 10 of the Zoning Ordinance and the sections pertaining to new construction in the *Design Guidelines*, the proposed design is

compatible with the architecture of the historic district and appropriately uses the history of this specific site for design inspiration. When considering the envelope and placement of the building on the site, the proposed building is similar in height to nearby buildings and the location relative to the sidewalk is similar to adjacent residential buildings.

Noting the recommendations from Alexandria Archaeology, staff recommends approval of a Permit to Demolish and a Certificate of Appropriateness for new construction with the following conditions:

- 1. The applicant work with staff on the final details for the entry stoops on Union Street.
- 2. The applicant revise the configuration of the windows on the Duke Street elevation to a more regular spacing that is symmetrical and includes windows on each level.
- 3. The applicant work with staff on the introduction of a reveal at the alley elevation between each townhome to contain the twin downspouts.

STAFF

William Conkey, AIA Historic Preservation Architect, Planning & Zoning Tony LaColla, AICP, Land Use Services Division Chief, Planning & Zoning

IV. <u>CITY DEPARTMENT COMMENTS</u>

Legend: C- code requirement R- recommendation S- suggestion F- finding

Code Administration

C-1 A building permit and plan review are required prior to the start of construction.

Transportation and Environmental Services

- F-1 Comply with all requirements of DSUP2021-10012. (T&ES)
- C-1 The Final Site Plan must be approved and released and a copy of that plan must be attached to the demolition permit application. No demolition permit will be issued in advance of the building permit unless the Final Site Plan includes a demolition plan which clearly represents the demolished condition. (T&ES)

<u>Alexandria Archaeology</u>

- R-1 Hire an archaeological consultant to complete a Documentary Study and an Archaeological Evaluation. If significant resources are discovered, the consultant shall complete a Resource Management Plan, as outlined in the City of Alexandria Archaeological Standards. Preservation measures presented in the Resource Management Plan, as approved by the City Archaeologist, will be implemented. (Archaeology)
- R-2 The Final Site Plan, Grading Plan, or any other permits involving 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) shall not be released until the City archaeologist confirms that all

archaeological field work has been completed or that an approved Resource Management Plan is in place to recover significant resources in concert with construction activities. * (Archaeology)

- R-3 Certificates of Occupancy shall not be issued for this property until interpretive elements have been constructed, interpretive markers have been erected, and the final archaeological report has been received and approved by the City Archaeologist.*** (Archaeology)
- R-4 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. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology)
- R-5 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. The language noted above shall be included on all final site plan sheets involving any ground disturbing activities. (Archaeology)
- F-1 The property at 101 Duke St. has been in use since the late eighteenth century. By 1810 a house owned by Mary Copper was sited on the corner, next to another house owned by Thomas Preston. To the north of Copper's house was house and stable owned by Horace Fields, a nailor (nail maker). By the mid-nineteenth century the block had become more industrial in nature and shops and small industries were located there. This property holds a high potential to contain significant archaeological deposits that speak to the late eighteenth and nineteenth-century development of Alexandria's waterfront.
- F-2 If this project is a federal undertaking or involves the use of any federal funding, the applicant shall comply with federal preservation laws, in particular Section 106 of the National Historic Preservation Act of 1966. The applicant will coordinate with the Virginia Department of Historic Resources and the federal agency involved in the project, as well as with Alexandria Archaeology.
- F-3 All required archaeological preservation measures shall be completed in compliance with Section 11-411 of the Zoning Ordinance.

V. <u>ATTACHMENTS</u>

- *1 Application Materials*
- 2 Supplemental Materials
- 3 Comments from the public received prior to publication of the staff report.

	BAR Case #
ADDRESS OF PROJECT: 101 Duke Street Alexandria, VA	22314
DISTRICT: Old & Historic Alexandria District: DISTRICT: Old & Historic Alexandria District Alexandria Dist	
APPLICATION FOR: (Please check all that apply)	
CERTIFICATE OF APPROPRIATENESS	
PERMIT TO MOVE, REMOVE, ENCAPSULATE OR DEMO (Required if more than 25 square feet of a structure is to be demolished/im	
WAIVER OF VISION CLEARANCE REQUIREMENT and/or CLEARANCE AREA (Section 7-802, Alexandria 1992 Zoning Ordina	
WAIVER OF ROOFTOP HVAC SCREENING REQUIREME (Section 6-403(B)(3), Alexandria 1992 Zoning Ordinance)	NT
Applicant: Property Owner Business (Please provide Name: Eleventh Street Development, LLC Address: 24 Cedar Street	business name & contact person)
City: Alexandria State: VA Zip: 2	22314
City:	etdevelopment.com
Authorized Agent (<i>if applicable</i>): Attorney Archite	ct × <u>Contract Purchaser</u> Phone: <u>703-519-3881</u>
E-mail:	
Legal Property Owner: Name [.] Cummings Investment Associates Inc	
Name: Cultimings investment Associates inc Address: PO Box 231	
City: Alexandria State: VA Zip: 2	22313
Phone: E-mail:	L.com
Yes No Is there an historic preservation easement on thi Yes No If yes, has the easement holder agreed to the preservation for this properties. Yes No Is there a homeowner's association for this properties. Yes No If yes, has the homeowner's association approved.	oposed alterations? erty?

If you answered yes to any of the above, please attach a copy of the letter approving the project.

BAR	Case	#
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NATURE OF PROPOSED WORK: Please check all that apply

xx	NEW CONSTRUCTIO	N		
	EXTERIOR ALTERAT	FION: Please check all that app	oly.	
	🗌 awning	🗌 fence, gate or garden wall	HVAC equipment	shutters
	🗌 doors	🗌 windows	🗌 siding	🗌 shed
	🗌 lighting	pergola/trellis	painting unpainted masonry	,
	🗌 other			
	ADDITION			
	DEMOLITION/ENCAPSU	JLATION		
	SIGNAGE			
_				

DESCRIPTION OF PROPOSED WORK: Please describe the proposed work in detail (Additional pages may be attached).

We propose to build six, four-story towhnouses facing South Union Street with attached two-car garages accessible from the alley along the western boundary. The townhouses will be divided into two separate three-towhnouse "buildings" with an 8'4" separation between Lot 3 and Lot 4. The first floor of each townhouse on South Union Street will have raised masonry stoops to accommodate teh floodplain at the northeast corner of the site the grade change. The townhouses will be three stories on the South Union Street facade, with the fourth floor setback from the South Union Street plane. The townhouses measure ~ 42 feet deep, with a 20 foot, one-story attached garage with rooftop open space. The height of each townhouse is less than 50 feet.

SUBMITTAL REQUIREMENTS:

Items listed below comprise the **minimum supporting materials** for BAR applications. Staff may request additional information during application review. Please refer to the relevant section of the *Design Guidelines* for further information on appropriate treatments.

Applicants must use the checklist below to ensure the application is complete. Include all information and material that are necessary to thoroughly describe the project. Incomplete applications will delay the docketing of the application for review. Pre-application meetings are required for all proposed additions. All applicants are encouraged to meet with staff prior to submission of a completed application.

Demolition/Encapsulation : All applicants requesting 25 square feet or more of demolition/encapsulation must complete this section. Check N/A if an item in this section does not apply to your project.

N/.

- Survey plat showing the extent of the proposed demolition/encapsulation.
- Existing elevation drawings clearly showing all elements proposed for demolition/encapsulation.
- Clear and labeled photographs of all elevations of the building if the entire structure is proposed to be demolished.
 - Description of the reason for demolition/encapsulation.
 - Description of the alternatives to demolition/encapsulation and why such alternatives are not considered feasible.

Additions & New Construction: Drawings must be to scale and should not exceed 11" x 17" unless approved by staff. Check N/A if an item in this section does not apply to your project.

BAR Case #

_	<u>N/A</u>	
\Box		Scaled survey plat showing dimensions of lot and location of existing building and other
		structures on the lot, location of proposed structure or addition, dimensions of existing
		structure(s), proposed addition or new construction, and all exterior, ground and roof mounted
		equipment.
		FAR & Open Space calculation form.
H		• •
		Clear and labeled photographs of the site, surrounding properties and existing structures, if
		applicable.
		Existing elevations must be scaled and include dimensions.
\square		Proposed elevations must be scaled and include dimensions. Include the relationship to
		adjacent structures in plan and elevations.
		Materials and colors to be used must be specified and delineated on the drawings. Actual
_	_	samples may be provided or required.
		Manufacturer's specifications for materials to include, but not limited to: roofing, siding, windows
		doors, lighting, fencing, HVAC equipment and walls.
		For development site plan projects, a model showing mass relationships to adjacent properties
		and structures.

Signs & Awnings: One sign per building under one square foot does not require BAR approval unless illuminated. All other signs including window signs require BAR approval. Check N/A if an item in this section does not apply to your project.

N/A	
	Linear feet of building: Front:Secondary front (if corner lot):
	Square feet of existing signs to remain:
	Photograph of building showing existing conditions.
	Dimensioned drawings of proposed sign identifying materials, color, lettering style and text.
	Location of sign (show exact location on building including the height above sidewalk).
	Means of attachment (drawing or manufacturer's cut sheet of bracket if applicable).
	Description of lighting (if applicable). Include manufacturer's cut sheet for any new lighting

fixture	es and	informa	ation	detailing	how	it will be	attached to	o the building's	facade

Alterations: Check N/A if an item in this section does not apply to your projec

N/A Clear and labeled photographs of the site, especially the area being impacted by the alterations, all sides of the building and any pertinent details.

	Manufacturer's specifications for materials to include, but not limited to: roofing, siding, window	vs,
	doors, lighting, fencing, HVAC equipment and walls.	

- Drawings accurately representing the changes to the proposed structure, including materials and overall dimensions. Drawings must be to scale.
 - An official survey plat showing the proposed locations of HVAC units, fences, and sheds.
 - Historic elevations or photographs should accompany any request to return a structure to an earlier appearance.

ALL APPLICATIONS: Please read and check that you have read and understand the following items:

- I have submitted a filing fee with this application. (Checks should be made payable to the City of Alexandria. Please contact staff for assistance in determining the appropriate fee.)
- I understand the notice requirements and will return a copy of the three respective notice forms to BAR staff at least five days prior to the hearing. If I am unsure to whom I should send notice I will contact Planning and Zoning staff for assistance in identifying adjacent parcels.
- I, the applicant, or an authorized representative will be present at the public hearing.
- I understand that any revisions to this initial application submission (including applications deferred for restudy) must be accompanied by the BAR Supplemental form and revised materials.

The undersigned hereby attests that all of the information herein provided including the site plan, building elevations, prospective drawings of the project, and written descriptive information are true, correct and accurate. The undersigned further understands that, should such information be found incorrect, any action taken by the Board based on such information may be invalidated. The undersigned also hereby grants the City of Alexandria permission to post placard notice as required by Article XI, Division A, Section 11-301(B) of the 1992 Alexandria City Zoning Ordinance, on the property which is the subject of this application. The undersigned also hereby authorizes the City staff and members of the BAR to inspect this site as necessary in the course of research and evaluating the application. The applicant, if other than the property owner, also attests that he/she has obtained permission from the property owner to make this application.

APPLICANT	OR	AUTHO	RIZED	AGENT:
		AO I I I C		AGENT.

3-n Signature:

Printed Name: Garrett Weis Erdle

Date: 9-7-2021

OWNERSHIP AND DISCLOSURE STATEMENT Use additional sheets if necessary

<u>1. Applicant.</u> 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.

Address	Percent of Ownership
24 Cedar Street Alexandria, VA 22301	10%
24 Cedar Street Alexandria, VA 22301	90%
	24 Cedar Street Alexandria, VA 22301

<u>2.</u> <u>Property.</u> State the name, address and percent of ownership of any person or entity owning an interest in the property located at <u>101 Duke Street Alexandria, VA 22314</u> (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.

Address	Percent of Ownership
3163 LaBaron Lane Jeffersonton, VA 22724	50%
3162 LaBaron Lane Jeffersonton, VA 22724	50%
	3163 LaBaron Lane Jeffersonton, VA 22724

3. <u>Business or Financial Relationships.</u> 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. Allison and Garrett Erdle	None	
² Diana and Susan Cumming	None	
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 a the information provided above is true and cor

Garrett Weis Erdle

t, I hereby attest to the best of my ability that

9-7-2021 Date

Printed Name

Signature

ESD ELEVENTH STREET

September 7, 2021

Bill Conkey, AIA Historic Preservation Architect City of Alexandria, Virginia Dept of Planning & Zoning

RE: Redevelopment of 101 Duke Street

Dear Bill,

The current structure was retrofitted into a parking garage in 1988 and the first level resides within the floodplain. The plan is to construct six new townhouses, with attached garages, within the footprint of the current garage.

We relied on prior experience to identify alternatives which would allow us to retain the structure but were unable to do so after a lengthy review process with our consultants.

We compiled a detailed archaeology report and look forward to sharing it with the City.

Sincerely,

Tur

Garrett W. Erdle



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A. Property Information A1. 101 Duke Street - Lot 1 Street Address A2. 1.692.00 Total Lot Area B. Existing Gross Floor Area Existing Gross Floor Area Basement First Floor Statisting Gross Floor Area Basement Basement First Floor Statiways** Backeny/Deck Porches Balcony/Deck Garage Other*** Porches Basement Porches Balcony/Deck Garage Other*** Other*** Balcony/Deck Garage Other*** Basement** Propposed Gross		Due verster les f									
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Balcony/Deck Garage** Garage 440.00 ELEVATOR 100.00 Other*** LAVATORY 248.00 Notes C1. Total Gross 3,846.00 C2. Total Exclusions 916.00 D. Total Floor Area E. Open Space (RA & RB Zones) *Gross floor area for residential single an two-family dwellings in the R-20, R-12, R-6 D. Total Floor Area E. Open Space (RA & RB Zones) **Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for som exclusions. D2. 3,204.00 E2. 300.00 Sq. Ft. Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions.		Porches			Balc	onv/Deck**					
Garage 440.00 ELEVATOR 100.00 Other*** LAVATORY 248.00 Notes C1. Total Gross 3,846.00 C2. Total Exclusions 916.00 D. Total Floor Area E. Open Space (RA & RB Zones) "Gross floor area for residential single an two-family dwellings in the R-20, R-12, R-6, R-5, R-2-5, RB and RA zones (not including properties located within a Historic District) in the sum of all areas under roof of a low measured from exterior walls. D. Total Floor Area E. Open Space (RA & RB Zones) "* Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for som exclusions. D2. 3,204.00 Sq. Ft. E2. 300.00 Sq. Ft. Total Floor Area Allowed E2. 300.00 Sq. Ft. "** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for som exclusions.		Balconv/Deck	_			•					
Other*** LAVATORY 248.00 Notes C1. Total Gross 3,846.00 C2. Total Exclusions 916.00 *Gross floor area for residential single and two-family dwellings in the R-20, R-12, R-6 D. Total Floor Area E. Open Space (RA & RB Zones) *Gross floor area for residential single and two-family dwellings in the R-20, R-12, R-6 D. Total Floor Area E. Open Space (RA & RB Zones) *The sum of all areas under roof of a log measured from exterior walls. D1. 2,930.00 Sq. Ft. E1. 0.00 Sq. Ft. Total Floor Area (add B3 and C3) E1. 0.00 Sq. Ft. *** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for some exclusions. D2. 3,204.00 Sq. Ft. E2. 300.00 Sq. Ft. Total Floor Area Allowed Required Open Space *** Refer to the Zoning Ordinance (Section exclusions.		_	440.00				100.00				
C1. Total Gross3,846.00C2. Total Exclusions916.00*Gross floor area for residential single and two-family dwellings in the R-20, R-12, R-6 R-5, R-2-5, RB and RA zones (not including properties located within a Historic District) in the sum of all areas under roof of a loc measured from exterior walls.D. Total Floor AreaE. Open Space (RA & RB Zones)** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for some exclusions.D2.3,204.00 Total Floor Area AllowedSq. Ft. Required Open SpaceSq. Ft. Required Open Space		Ū					248.00			Notes	
C1. Total Gloss 0,040,00 C2. Total Exclusions 010,00 R-5, R-2-5, RB and RA zones (not including properties located within a Historic District) in the sum of all areas under roof of a log measured from exterior walls. D. Total Floor Area E. Open Space (RA & RB Zones) ** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for some exclusions. D2. 3,204.00 Sq. Ft. Total Floor Area Allowed E2. 300.00 Sq. Ft. Required Open Space *** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for some exclusions.	~		3 846 00								
D. Total Floor Area E. Open Space (RA & RB Zones) the sum of all areas under roof of a low measured from exterior walls. D1. 2,930.00 Sq. Ft. Total Floor Area (add B3 and C3) E1. 0.00 Sq. Ft. Existing Open Space ** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for some exclusions. D2. 3,204.00 Sq. Ft. Total Floor Area Allowed E2. 300.00 Sq. Ft. Required Open Space *** Refer to the Zoning Ordinance (Section 2.145(A))	C1.	Total Gross	3,040.00		C2. <u>10ta</u>	I EXClusions	310.00			R-5, R-2-5, RB and RA zones (n	ot includin
D1. Account of the second	D.	Total Floor A	rea		E.	Open Spa	I CE (RA & RE	3 Zones)		the sum of <u>all areas under ro</u>	/
Total Floor Area (add B3 and C3) E1. 0.00 Sq. Ft. 2-145(A)) and consult with Zoning Staff for information regarding allowable exclusions. Sections may also be required for som exclusions. D2. 3,204.00 Sq. Ft. 2.300.00 Sq. Ft. Total Floor Area Allowed Required Open Space *** Refer to the Zoning Ordinance (Section)	D1.	2,930.00		Sg. Ft.	=4						
D2. 3,204.00 Sq. Ft. exclusions. Total Floor Area Allowed Required Open Space Sq. Ft. *** Refer to the Zoning Ordinance (Section			(add B3 an) ·	E1.		en Space	Sq. Ft.			
Total Floor Area Allowed Required Open Space *** Refer to the Zoning Ordinance (Section	20	3.204.00		Sa Et						Sections may also be required	
	02.	Total Floor Area	Allowed	94. г.	E2.		en Space	Sq. Ft.			e (Section
		by Zone (A2)									
E3. 334.00 Sq. Ft. additional allowable exclusions. Additional Proposed Open Space balconies, retractable awnings, etc.						224.00				additional allowable evolutions	Addition

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

23

Signature:

ODELL



Α

Α.	Property Info	rmation						
A1.	101 Duke Street -	Lot 2						W-1
	Street Address						Zon	e
A2.	1,540.00		x 2.00				3,08	
	Total Lot Area		FIOO	r Area Ratio A	llowed by Zone	•	Max	imum Allowable Floor Area
В.	Existing Gros	s Floor Area						
	Existing Gross		Allo	wable Exclu	<u>isions</u> **			
	Basement		Bas	ement**			B1.	0.00 Sq.
	First Floor		Stai	rways**				Existing Gross Floor Area*
	Second Floor		Mec	hanical**			B2.	0.00 Sq.
	Third Floor		Attic	less than 7'*'	*			Allowable Floor Exclusions**
	Attic			ches**			B3.	
								Existing Floor Area Minus Exclusions (subtract B2 from B1)
	Porches			ony/Deck**		_	Cor	nments for Existing Gross Floor Area
	Balcony/Deck			age**				Intents for Existing Gloss Floor Area
	Garage		Othe	er***			Ιı	ot is being subdivided. Existing building is
	Other***		Othe	er***			L	being demolished.
B1.	<u>Total Gross</u>	0.00	B2. <u>Tota</u>	I Exclusions	0.00			
	Proposed Gross Basement	0.00	Bas	ement**			C1.	- 4.
	First Floor	901.00	Stai	rways**	479.00			Proposed Gross Floor Area*
	Second Floor	901.00	Mec	hanical**	89.00		C2.	916.00 Sq.
	Third Floor	901.00	Attic	less than 7'**	*			Allowable Floor Exclusions** 2,930.00
F	OURTH FLOOR	703.00	Porc	ches**			C3.	Sq. Proposed Floor Area Minus Exclusion
	Porches		Balo	ony/Deck**				(subtract C2 from C1)
	Balcony/Deck			age**				
	Garage	440.00		EVATOR	100.00			
	Other***			ATORY	248.00			Notes
		2 846 00						*Gross floor area for residential single a two-family dwellings in the R-20, R-12, R
C1.	<u>Total Gross</u>	3,846.00	C2. <u>Tota</u>	I Exclusions	916.00			R-5, R-2-5, RB and RA zones (not include properties located within a Historic District,
-			E	Onen Eng		7		the sum of <u>all areas under roof of a l</u>
	Total Floor A		Ε.	Open Spa	ICE (RA & RB 2	zones)		measured from exterior walls.
D1.	2,930.00	Sq. Ft.	E1.	0.00		Sq. Ft.		** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff
	Total Floor Area (auu Do allu Co)		Existing Ope	en Space			information regarding allowable exclusions Sections may also be required for so
D2.	3,080.00	Sq. Ft.	E2.			Sq. Ft.		exclusions.
	Total Floor Area / by Zone (A2)	Allowed		Required Op	en Space			*** Refer to the Zoning Ordinance (Section 2-145(A)) and consult with Zoning Staff
			E3.	333.00		Sq. Ft.		additional allowable exclusions. Addition

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

Proposed Open Space

Signature:

ODELL

Date: 09.07.21

balconies, retractable awnings, etc.



Δ

A.	Property Info	rmation								
A1.									W -1	
	Street Address							Zon	e	
A2.	1,875.00			x 2.00				3,75		
	Total Lot Area			Floo	r Area Ratio A	Ilowed by Zor	ne	Maxi	mum Allowable Floor Area	
В.	Existing Gros		Area	٨١١	owable Exclu	icione**				
	Basement	Alea			ement**	1310113		-	0.00	
	First Floor			Stai	rways**			B1.	Existing Gross Floor Area*	Sq. Ft.
	Second Floor				chanical**			B2.	0.00	Sq. Ft.
								Β2.	Allowable Floor Exclusions**	Зү. г.
	Third Floor				c less than 7'*			B3.	0.00	Sq. Ft.
	Attic			Por	ches**				Existing Floor Area Minus Excl	
	Porches			Balo	cony/Deck**				(subtract B2 from B1)	
	Balcony/Deck			Gar	age**			Cor	nments for Existing Gross Flo	or Area
	Garage			Oth	er***			Ι.	ot is being subdivided. Existing bu	ilding is
	Other***			Oth	er***			'	being demolished.	liaing is
B1.	<u>Total Gross</u>	0.00		B2. Tota	al Exclusions	0.00				
	Proposed Gross Basement	0.00			ement**	<u>isions</u> **		C1.		Sq. Ft.
	First Floor	901.00		Stai	rways**	479.00		•	Proposed Gross Floor Area*	04.11.
	Second Floor	901.00		Мес	hanical**	89.00		C2.	916.00	Sq. Ft.
	Third Floor	901.00		Attio	c less than 7'*'	*			Allowable Floor Exclusions**	
F	OURTH FLOOR	703.00		Por	ches**			C3.	2,930.00	Sq. Ft.
L	Porches				cony/Deck**				Proposed Floor Area Minus Ex (subtract C2 from C1)	Clusions
	Balcony/Deck				•					
		440.00		·	age** EVATOR	100.00				
	Garage	440.00		<u> </u>		248.00			Notes	
	Other***	0.040.00			VATORY	·			*Gross floor area for residential two-family dwellings in the R-20,	
C1.	<u>Total Gross</u>	3,846.00		C2. <u>Tota</u>	al Exclusions	916.00			R-5, R-2-5, RB and RA zones (n properties located within a Histori	ot including
D.	Total Floor A	rea		E.	Open Spa	ICE (RA & RE	3 Zones)		the sum of <u>all areas under roo</u> measured from exterior walls.	
D1.	2,930.00		Sq. Ft.	E1.	0.00		Sq. Ft.		** Refer to the Zoning Ordinance 2-145(A)) and consult with Zonii	•
	Total Floor Area (′add B3 an	d C3)		Existing Ope	en Space			information regarding allowable e. Sections may also be required	xclusions.
D2.	3,750.00		Sq. Ft.	E2.	300.00		Sq. Ft.		exclusions.	i ioi sonne
	Total Floor Area by Zone (A2)	Allowed			Required Op	en Space			*** Refer to the Zoning Ordinance 2-145(A)) and consult with Zonin	ng Staff for
				E3.			Sq. Ft.		additional allowable exclusions. exclusions may include spa	ace under
					Proposed O	pen Space			balconies, retractable awnings, et	С.

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

25

Signature:

ODELL



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_										
	Property Info									
A1.	101 Duke Street - Street Address	LOT 4						Zon		
Δ2.	1,875.00			x 2.00			_	3,75	0.00	
	Total Lot Area				Area Ratio A	llowed by Zor			mum Allowable Floor Area	
D	Evicting Groo	s Eleor A	roo							
Ъ.	Existing Gross		lea		wable Exclu	isions**				
	Basement			Base	ment**			B1.	0.00	Sq. Ft.
	First Floor			Stair	ways**				Existing Gross Floor Area*	
	Second Floor			Mech	nanical**			B2.	0.00	Sq. Ft.
	Third Floor			Attic	less than 7'*'	t i i i i i i i i i i i i i i i i i i i			Allowable Floor Exclusions**	
	Attic		_	Porcl	hes**		_	B3.	0.00	Sq. Ft.
	Porches				ony/Deck**				Existing Floor Area Minus Excl (subtract B2 from B1)	usions
	Balcony/Deck		_	Gara	•			Cor	nments for Existing Gross Flo	or Area
				Othe	-					
	Garage		_					L	ot is being subdivided. Existing but	ilding is
	Other***			Othe					being demolished.	
B1.	<u>Total Gross</u>	0.00		B2. <u>Total</u>	Exclusions	0.00				
	Proposed Gross Basement	6.00			wable Exclu ment**	isions**		C1.		Sq. Ft.
	First Floor	901.00		Stain	ways**	479.00	_		Proposed Gross Floor Area* 916.00	
	Second Floor	901.00		Mech	nanical**	89.00		C2.	Allowable Floor Exclusions**	Sq. Ft.
	Third Floor	901.00		Attic	less than 7'*'	•		~ ~	2,930.00	0 m Et
F	OURTH FLOOR	703.00		Porch	nes**			C3.	Proposed Floor Area Minus Ex	Sq. Ft.
	Porches			Balco	ony/Deck**				(subtract C2 from C1)	
	Balcony/Deck			Gara	ge**					
	Garage	440.00		ELE	VATOR	100.00				
	Other***			LAV	ATORY	248.00			Notes *Gross floor area for residential	single and
C1.	Total Gross	3,846.00		C2. <u>Total</u>	Exclusions	916.00			two-family dwellings in the R-20, R-5, R-2-5, RB and RA zones (no	R-12, R-8,
D.	Total Floor A	rea		E. (Open Spa	I CE (RA & RE	3 Zones)		properties located within a Historic the sum of <u>all areas under roc</u> measured from exterior walls.	c District) is
D1.	2,930.00	s	q. Ft.	E1.	0.00		Sq. Ft.		** Refer to the Zoning Ordinance (2-145(A)) and consult with Zonir	
	Total Floor Area (add B3 and C	C3)		Existing Ope	en Space			information regarding allowable ex Sections may also be required	clusions.
D2.	3,750.00	s	q. Ft.	E2.	300.00		Sq. Ft.		exclusions.	ior some
	Total Floor Area by Zone (A2)	Allowed			Required Op	en Space			*** Refer to the Zoning Ordinance 2-145(A)) and consult with Zonir	ng Staff for
				E3.	333.00 Proposed O	pen Space	Sq. Ft.		additional allowable exclusions. exclusions may include spa balconies, retractable awnings, et	ce under

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

Signature:

ODELL



Δ

Α.	Property Info	rmation								
A1.									W -1	
	Street Address							Zon	e	
A2.	1,540.00			x 2.00	Area Datia A	llours d by 70		3,080		
	Total Lot Area			FIOOr	Area Ralio A	llowed by Zo	ne	waxi	mum Allowable Floor Area	
В.	Existing Gros		Area							
	Existing Gross	<u>Area</u>			wable Exclu	<u>isions</u> **				
	Basement				ement**			B1.	0.00 Existing Gross Floor Area*	Sq. Ft.
	First Floor				ways**					
	Second Floor			Mec	hanical**			B2.	Allowable Floor Exclusions**	Sq. Ft.
	Third Floor			Attic	less than 7'*'	*		В3.	0.00	Sa Et
	Attic			Porc	hes**			БЭ.	Existing Floor Area Minus Excl	Sq. Ft. usions
	Porches			Balc	ony/Deck**				(subtract B2 from B1)	
	Balcony/Deck			Gara	age**			Con	nments for Existing Gross Flo	or Area
	Garage			Othe	er***					
	Other***			Othe	er***				ot is being subdivided. Existing bui being demolished.	Iding is
B1.	Total Gross	0.00		B2. Tota	l Exclusions	0.00				
	Proposed Gross Basement First Floor Second Floor Third Floor OURTH FLOOR Porches			Base Stair Mecl Attic Porc	wable Exclu ement** ways** hanical** less than 7'** hes** ony/Deck**	479.00 89.00		C1. C2. C3.	3,846.00 Proposed Gross Floor Area* 916.00 Allowable Floor Exclusions** 2,930.00 Proposed Floor Area Minus Ex (subtract C2 from C1)	Sq. Ft. Sq. Ft. Sq. Ft. clusions
	Balcony/Deck			Gara	•					
	Garage	440.00			VATOR	100.00				
	Other***				ATORY	248.00			Notes	
~1		3,846.00				916.00			*Gross floor area for residential two-family dwellings in the R-20,	
	Total Gross)		<u>l Exclusions</u> Open Spa	ICE (RA & RE	3 Zones)		R-5, R-2-5, RB and RA zones (no properties located within a Historio the sum of <u>all areas under roo</u> measured from exterior walls.	ot including District) is <u>f of a lot</u> ,
D1.	2,930.00	(add D2 -	Sq. Ft.	E1.	0.00		Sq. Ft.		** Refer to the Zoning Ordinance (2-145(A)) and consult with Zonin	g Staff for
	Total Floor Area (add B3 an	a C3)		Existing Ope	en Space			information regarding allowable ex Sections may also be required	
D2.	3,080.00	A 11	Sq. Ft.	E2.	300.00		Sq. Ft.		exclusions.	
	Total Floor Area / by Zone (A2)	Allowed		E3.	Required Op 333.00 Proposed O		Sq. Ft.		*** Refer to the Zoning Ordinance 2-145(A)) and consult with Zonin additional allowable exclusions. exclusions may include spa balconies, retractable awnings, etc	g Staff for Additional ce under

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

Signature:

ODELL



Α.	Property Info	rmation							
	101 Duke Street -							W-1	
	Street Address						Zon	е	
A2.	1,791.00		x 2.00				3,58		
	Total Lot Area		FIOOI	Area Ratio A	llowed by Zone)	Max	mum Allowable Floor Area	
В.	Existing Gros	s Floor Area							
	Existing Gross	Area	<u>Allo</u>	wable Exclu	isions**				
	Basement		Base	ement**			B1.	0.00	Sq. Ft.
	First Floor		Stair	ways**				Existing Gross Floor Area*	
	Second Floor		Mec	hanical**			B2.		Sq. Ft.
	Third Floor		Attic	less than 7'**	ł			Allowable Floor Exclusions** 0.00	
	Attic		Porc	hes**			B3.	Existing Floor Area Minus Exclu	Sq. Ft.
	Porches		Balc	ony/Deck**				(subtract B2 from B1)	
	Balcony/Deck			age**			Cor	nments for Existing Gross Floo	r Area
	Garage		Othe	-					
	U						L	ot is being subdivided. Existing build	ding is
	Other***		Othe					being demolished.	
B1.	<u>Total Gross</u>	0.00	B2. <u>Tota</u>	I Exclusions	0.00				
	Proposed Gross Basement	<u>s Area</u> 0.00		wable Exclu	isions**		C1.	3,846.00	Sq. Ft.
	First Floor	901.00	Stair	ways**	479.00		•1.	Proposed Gross Floor Area*	0q. r t.
	Second Floor	901.00		hanical**	89.00		C2.	916.00	Sq. Ft.
	Third Floor	901.00		less than 7'**				Allowable Floor Exclusions**	
	OURTH FLOOR	703.00		hes**			C3.	2,930.00	Sq. Ft.
		703.00				_		Proposed Floor Area Minus Exc (subtract C2 from C1)	lusions
	Porches			ony/Deck**					
	Balcony/Deck			age**		_			
	Garage	440.00		EVATOR	100.00			Notes	
	Other***			/ATORY	248.00	_		*Gross floor area for residential s	ingle and
C1.	Total Gross	3,846.00	C2. <u>Tota</u>	I Exclusions	916.00			two-family dwellings in the R-20, F R-5, R-2-5, RB and RA zones (not	
								properties located within a Historic the sum of all areas under roof	/
D.	Total Floor A	rea	E.	Open Spa	I CE (RA & RB 2	Zones)		measured from exterior walls.	
D1.		Sq. Ft.	E1.	0.00		Sq. Ft.		** Refer to the Zoning Ordinance (S 2-145(A)) and consult with Zoning	
	Total Floor Area (add B3 and C3)		Existing Ope	en Space			information regarding allowable exc Sections may also be required	lusions.
D2.	3,582.00	Sq. Ft.	E2.	300.00		Sq. Ft.		exclusions.	
	Total Floor Area A by Zone (A2)	Allowed		Required Op	en Space			*** Refer to the Zoning Ordinance (2-145(A)) and consult with Zoning	
			E3.	334.00		Sq. Ft.		additional allowable exclusions.	Additional

The undersigned hereby certifies and attests that, to the best of his/her knowledge, the above computations are true and correct.

28

Proposed Open Space

Signature:

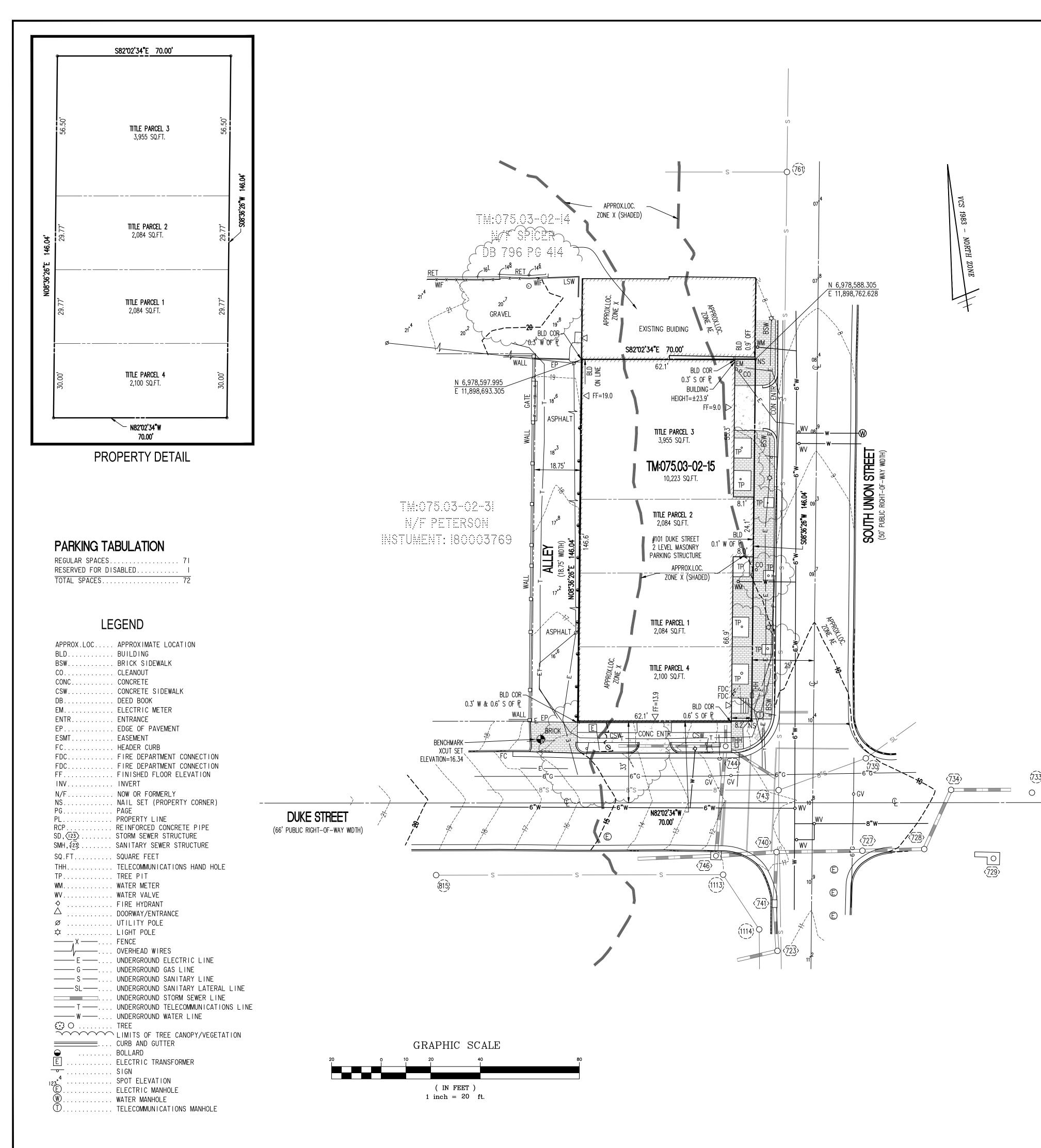
ODELL

09.07.21 Date:

exclusions may include space

balconies, retractable awnings, etc.

under



NOTES:

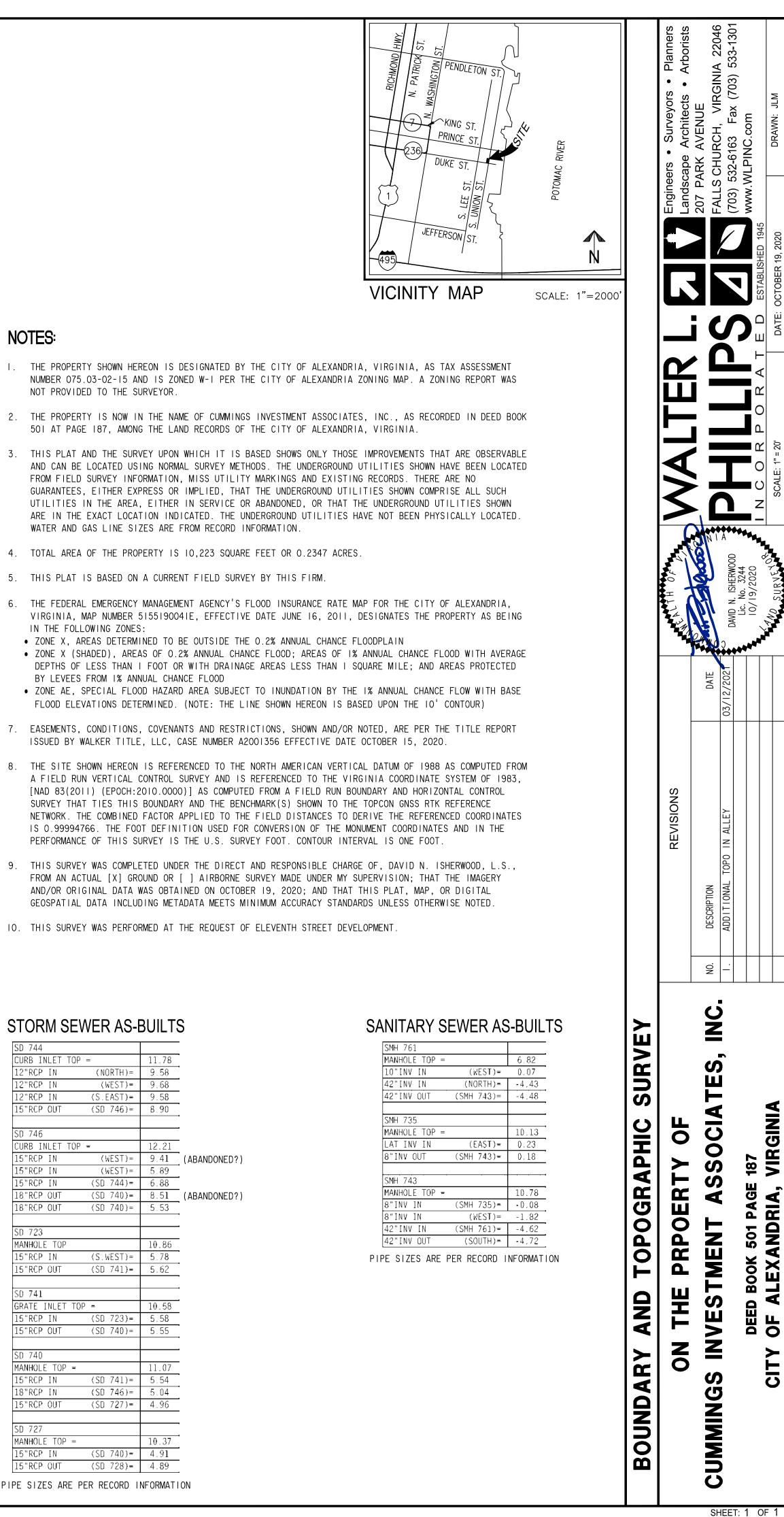
- NOT PROVIDED TO THE SURVEYOR.

- IN THE FOLLOWING ZONES:
- BY LEVEES FROM 1% ANNUAL CHANCE FLOOD

STORM SEWER AS-BUILTS

(733)

SD 744		
CURB INLET TOP =		
12"RCP IN 12"RCP IN 12"RCP IN	(N(DRTH
12"RCP IN	()	VEST
12"RCP IN	(S.E	EAST
15"RCP OUT	(SD	746
CD 744		
SD 746		
CURB INLET TOP -		
15"RCP IN		VEST
15"RCP IN	()	VEST
15"RCP IN	(SD	744
18"RCP OUT		740
18"RCP OUT	(SD	740
CD 700		
SD 723 MANHOLE TOP		
15"RCP IN	151	vest
15 RCP OUT		741
10 1101 001	(50	741
SD 741		
GRATE INLET TOP	-	
15"RCP IN 15"RCP OUT	(SD	723
15"RCP OUT	(SD	740
SD 740		
MANHOLE TOP =		
IS RUP IN	(SD	741
18"RCP IN	(SD	746 727
15"RCP OUT	(SD	727
SD 727		
MANHOLE TOP = 15"RCP IN	(CD	740
ID KUP IN	(50	740
15"RCP OUT		128



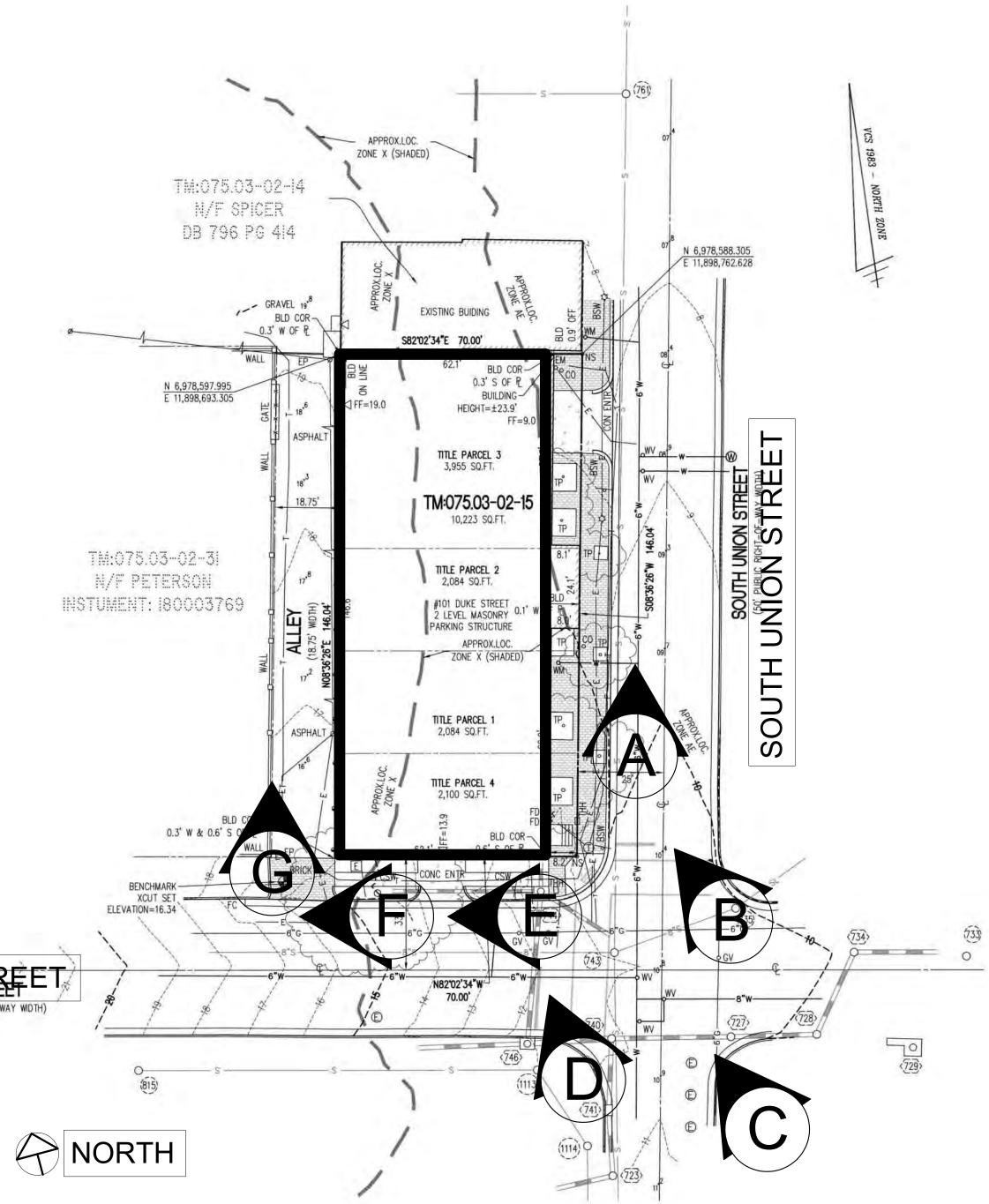














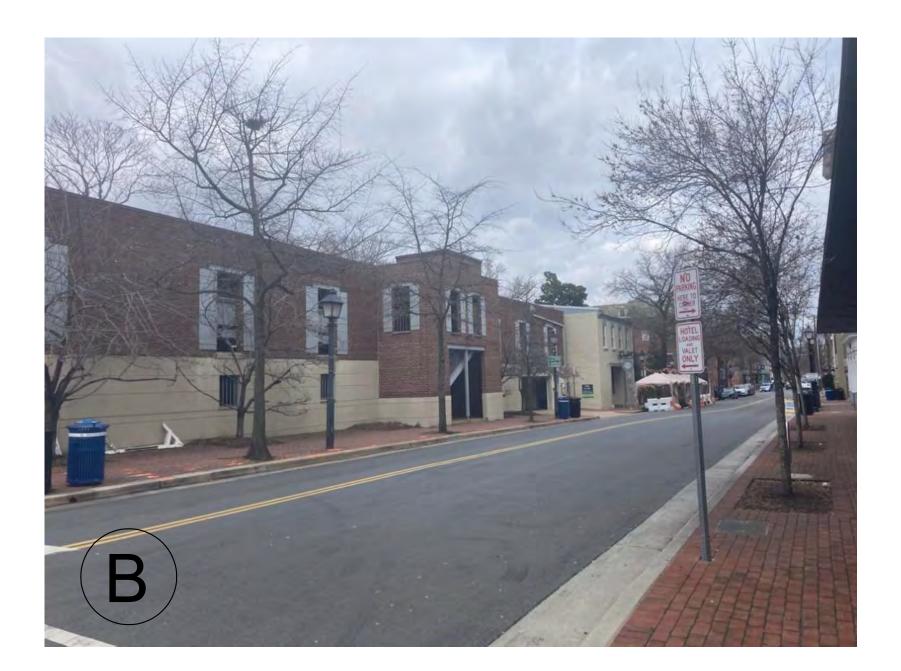


EXISTING PHOTOS

NW CORNER OF SOUTH UNION AND DUKE STREETS

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101 Duke Street Alexandria, VA 01



UNION ST PERSPECTIVE

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NW CORNER OF SOUTH UNION AND DUKE STREETS

02







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NW CORNER OF SOUTH UNION AND DUKE STREETS

03



ALLEY PERSPECTIVE CLOSEUP



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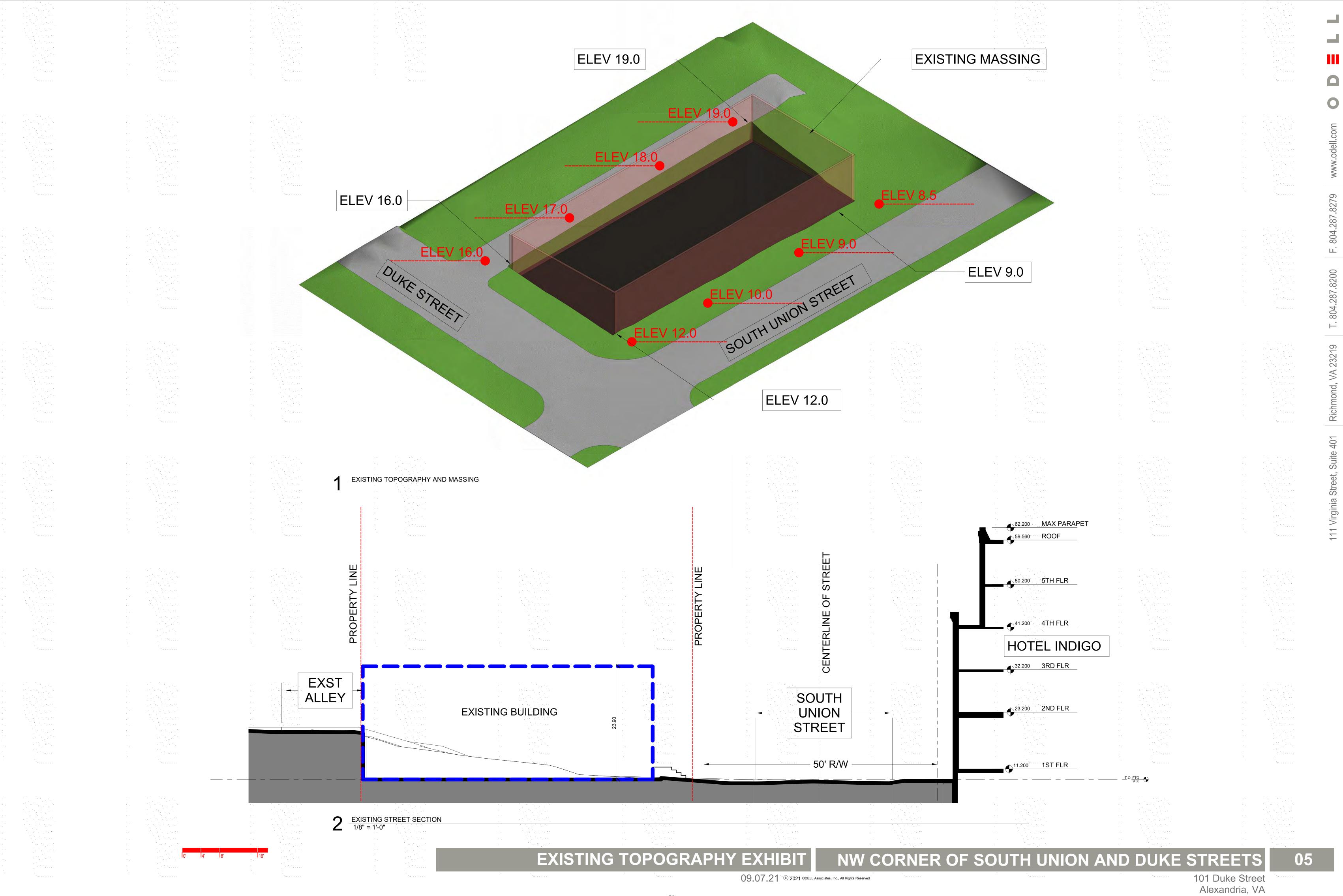
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NW CORNER OF SOUTH UNION AND DUKE STREETS

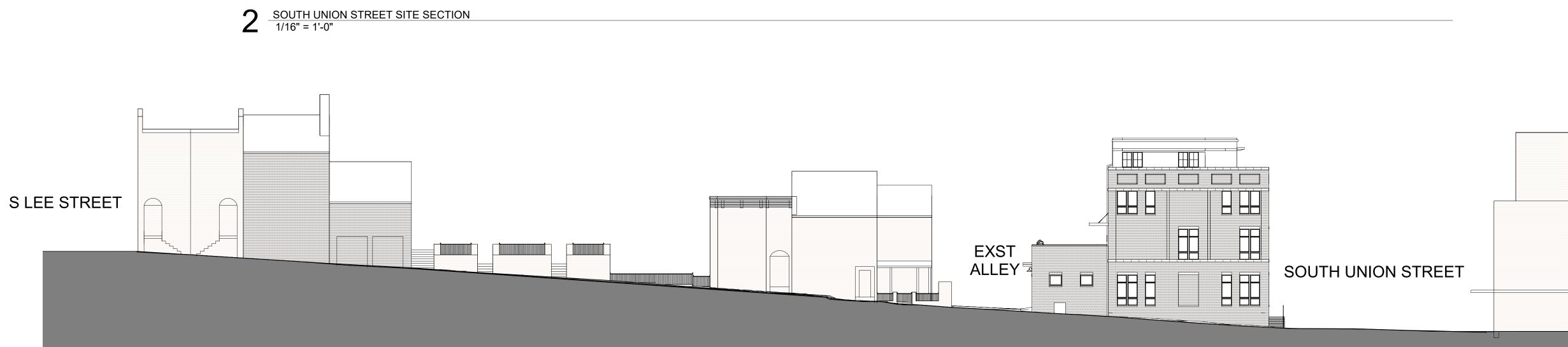






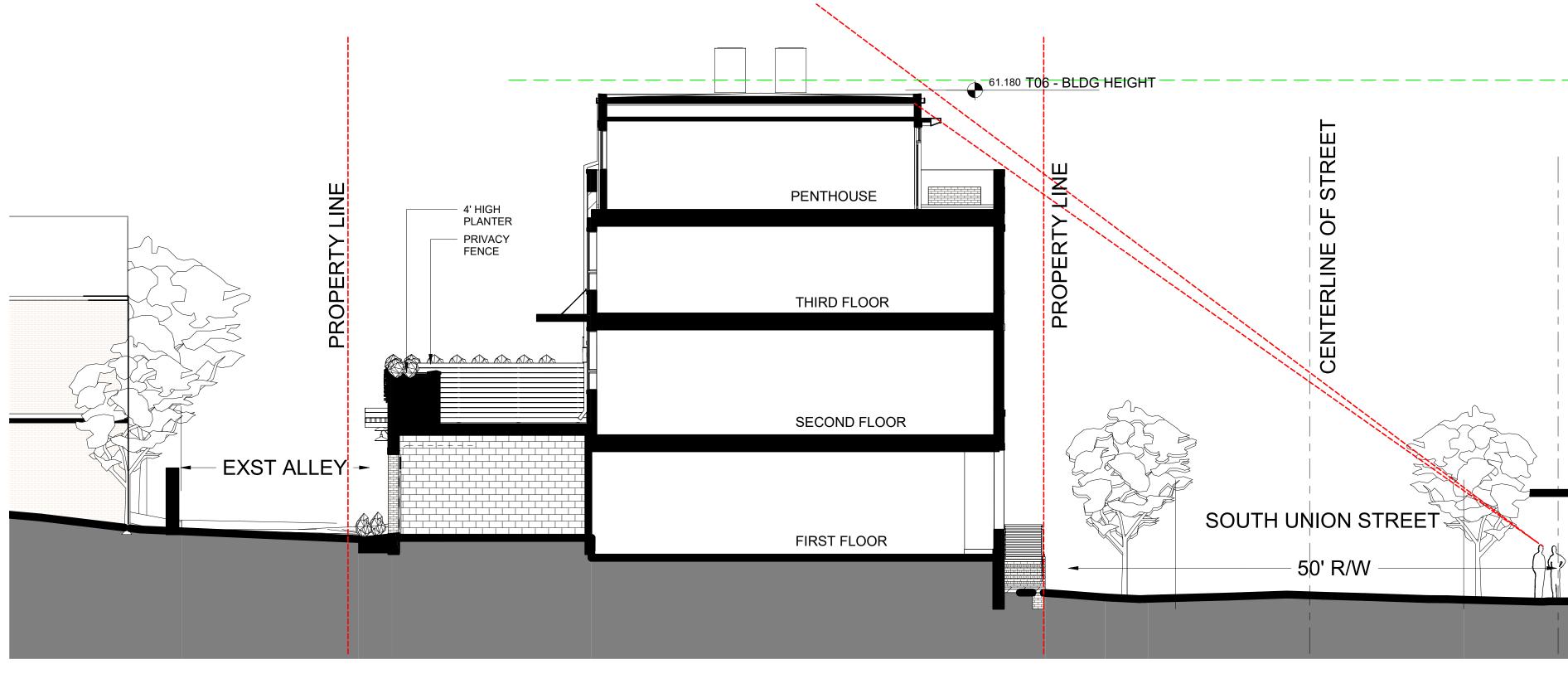








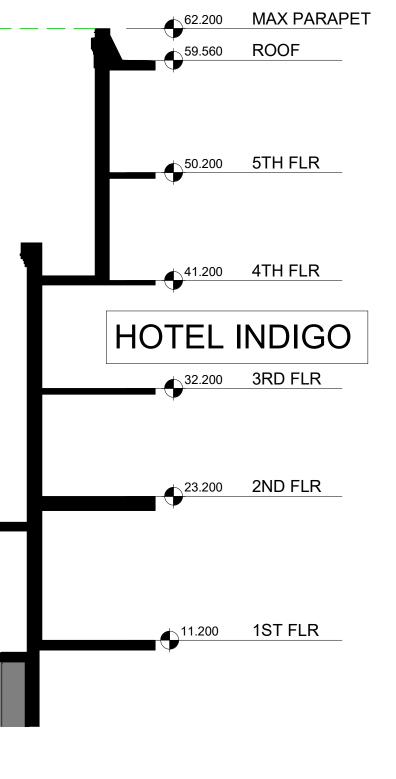
3 SITE SECTION THRU ALLEY AND SOUTH UNION STREET 1/8" = 1'-0"

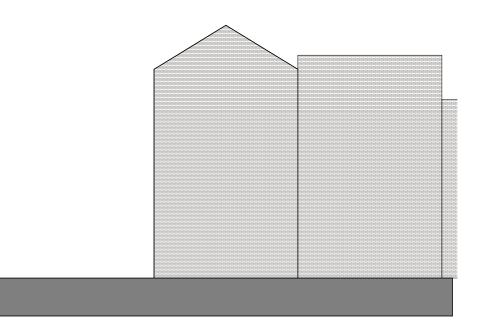


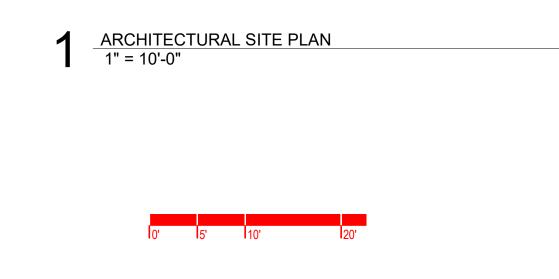
SITE SECTIONS AND STREETSCAPES

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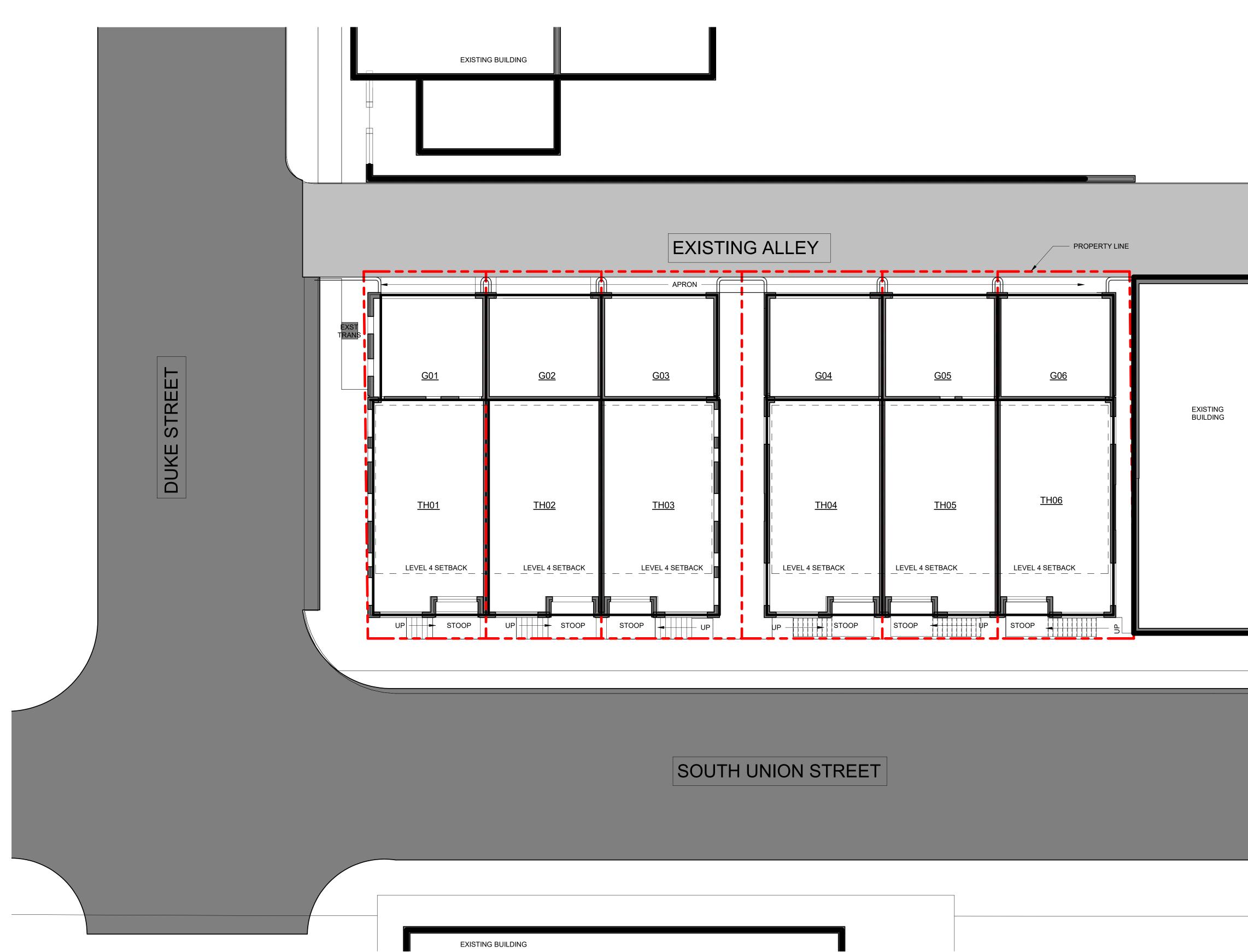
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ARCHITECTURAL SITE PLAN

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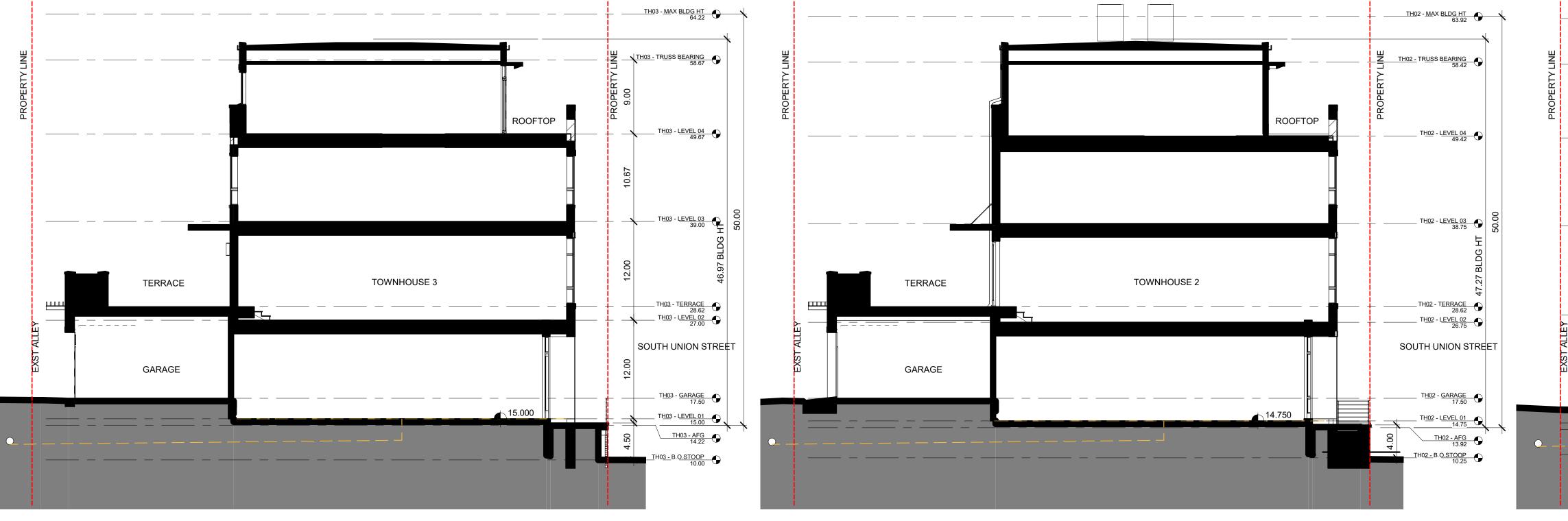
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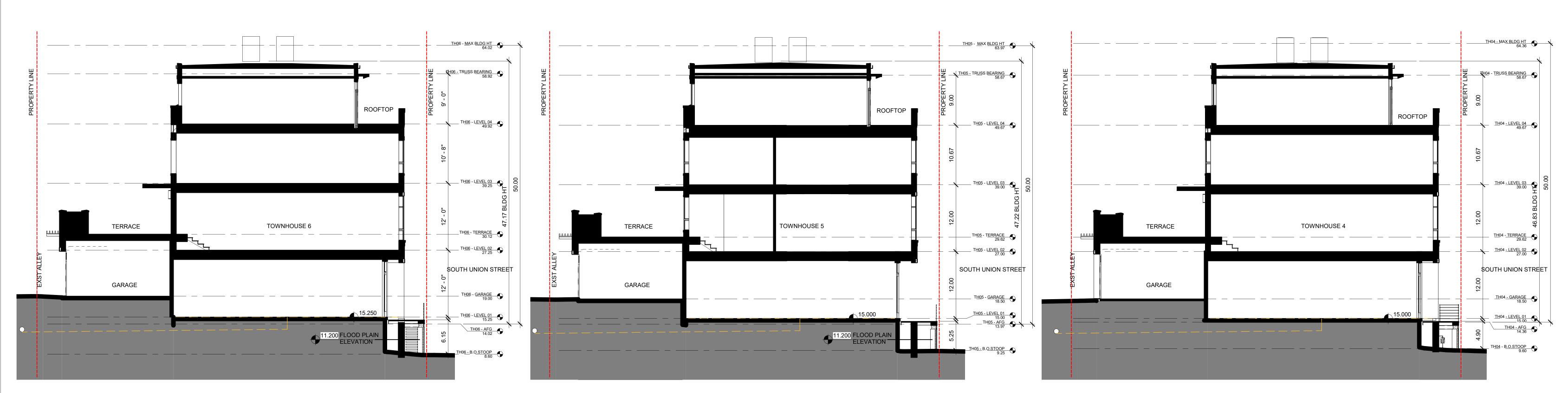
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3 TH 3 GRADING SECTION 1/8" = 1'-0"



6 TH 6 GRADING SECTION 1/8" = 1'-0"



2 TH 2 GRADING SECTION 1/8" = 1'-0"

TH GRADING SECTIONS

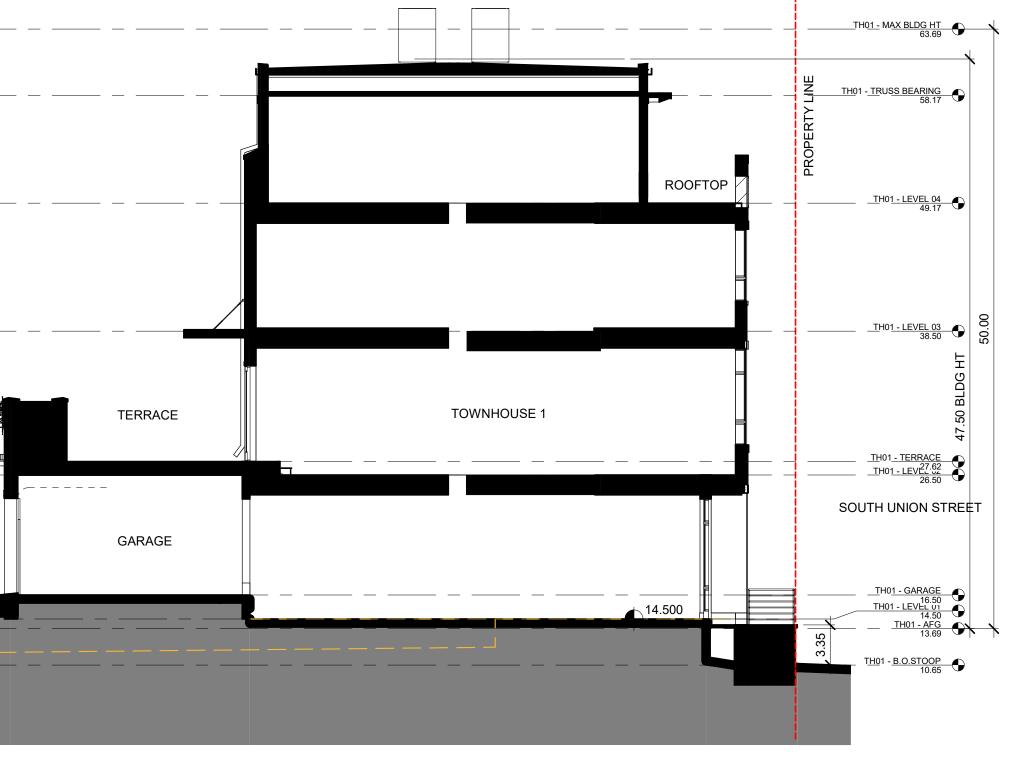
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5 TH 5 GRADING SECTION 1/8" = 1'-0"

4 TH 4 GRADING SECTION 1/8" = 1'-0"

NW CORNER OF SOUTH UNION AND DUKE STREETS

101 Duke Street Alexandria, VA



TH 1 GRADING SECTION 1/8" = 1'-0"



PHOTO MONTAGE



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NW CORNER OF SOUTH UNION AND DUKE STREETS

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NW CORNER OF SOUTH UNION AND DUKE STREETS

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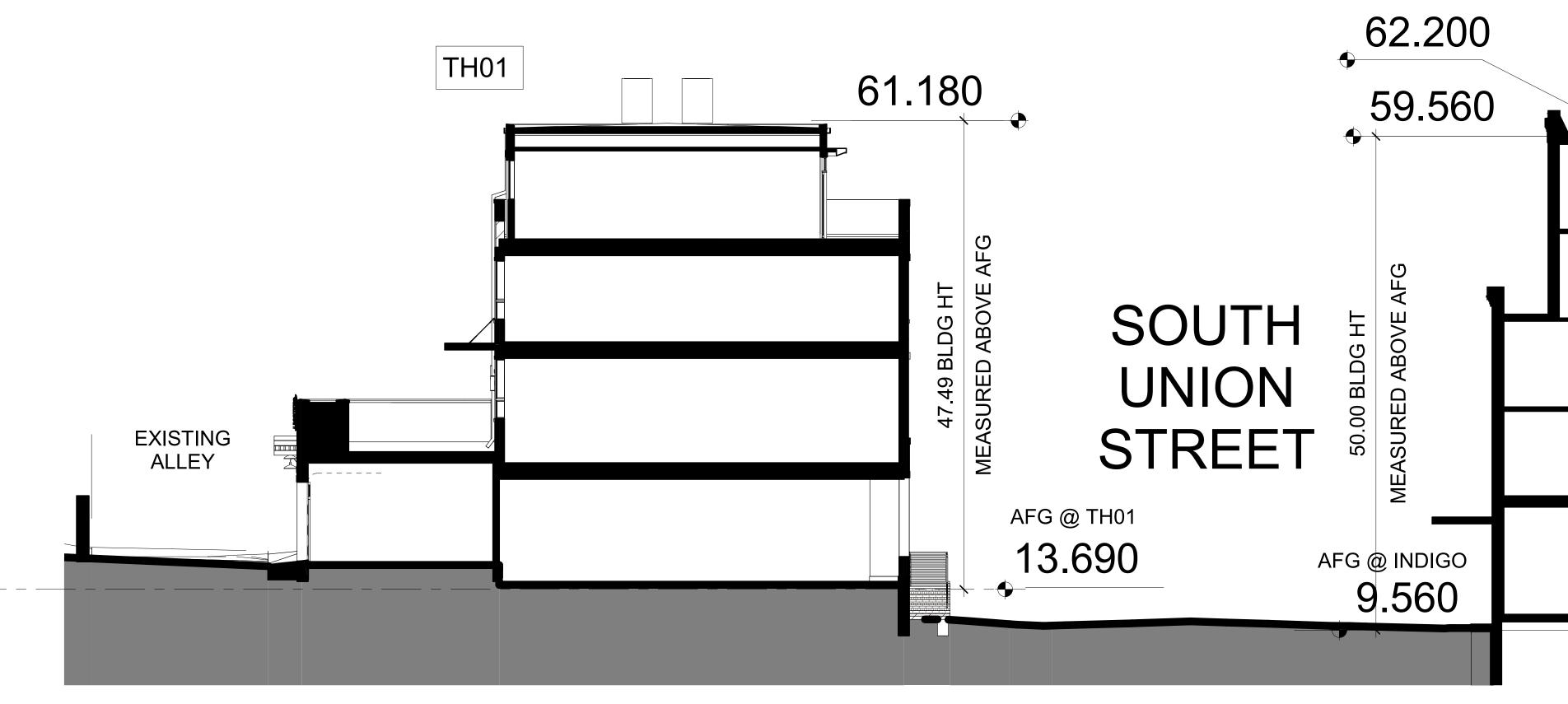
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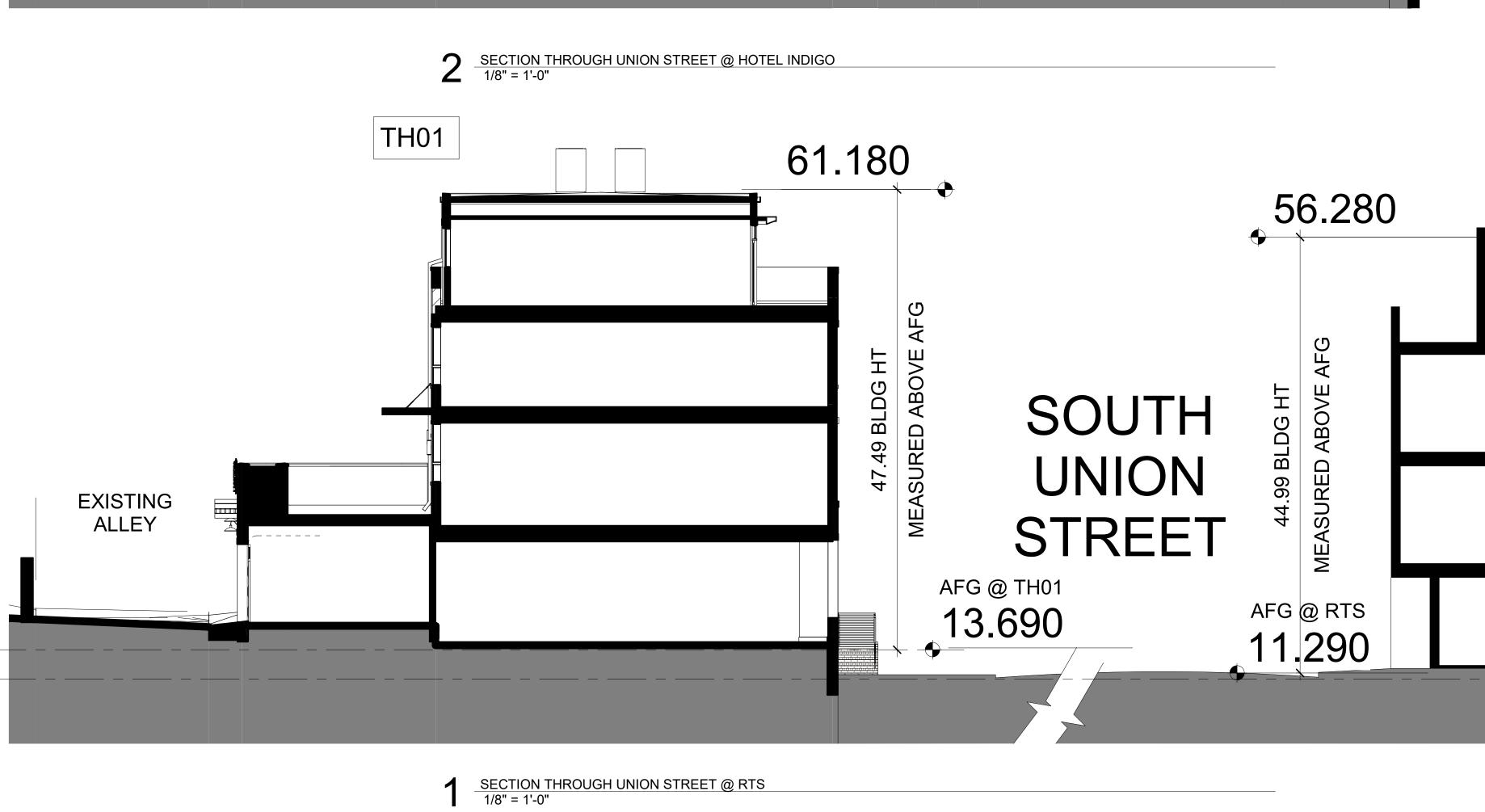


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NW CORNER OF SOUTH UNION AND DUKE STREETS

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0' 4' 8' 16'

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HEIGHT EXHIBIT

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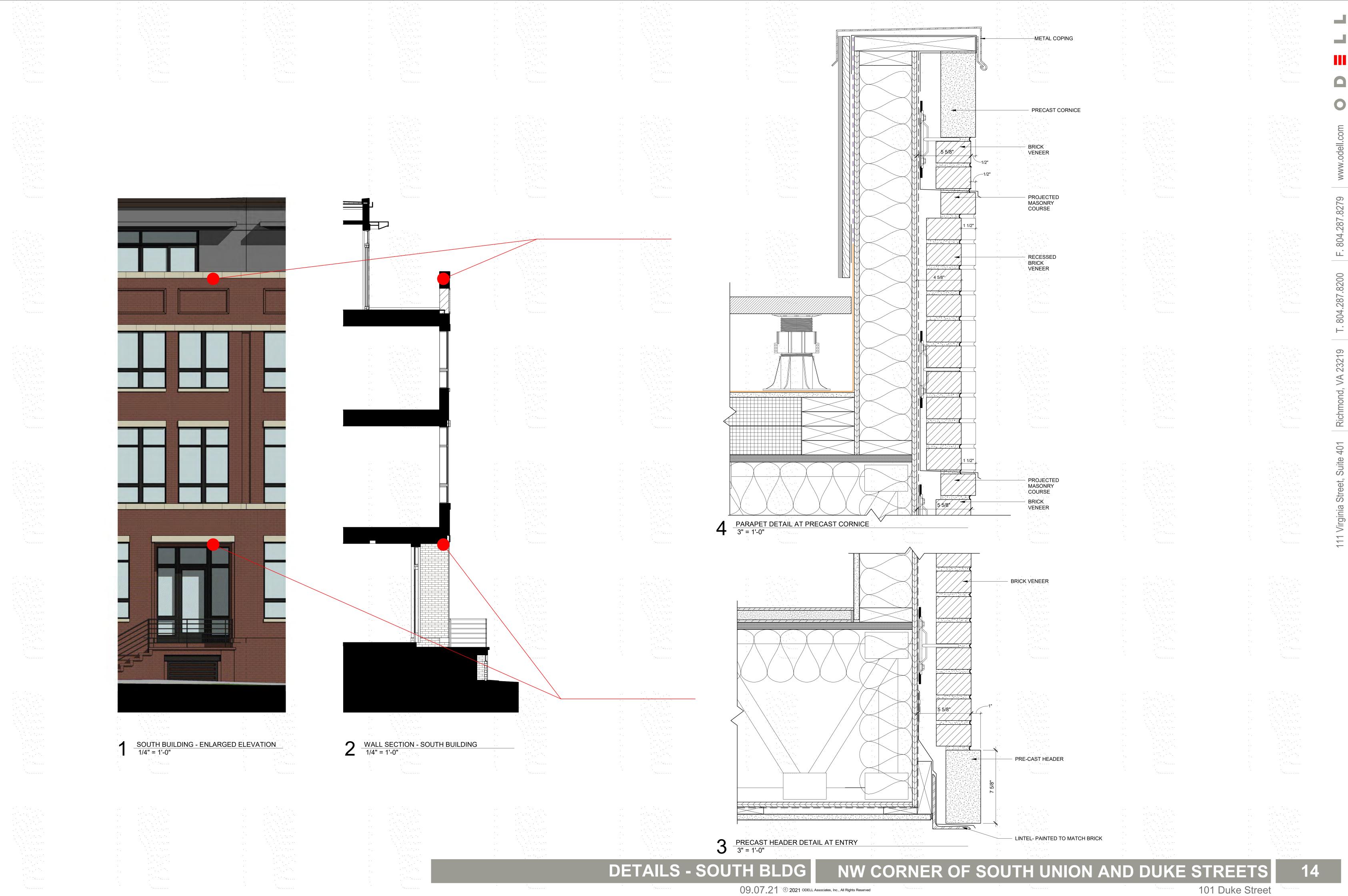
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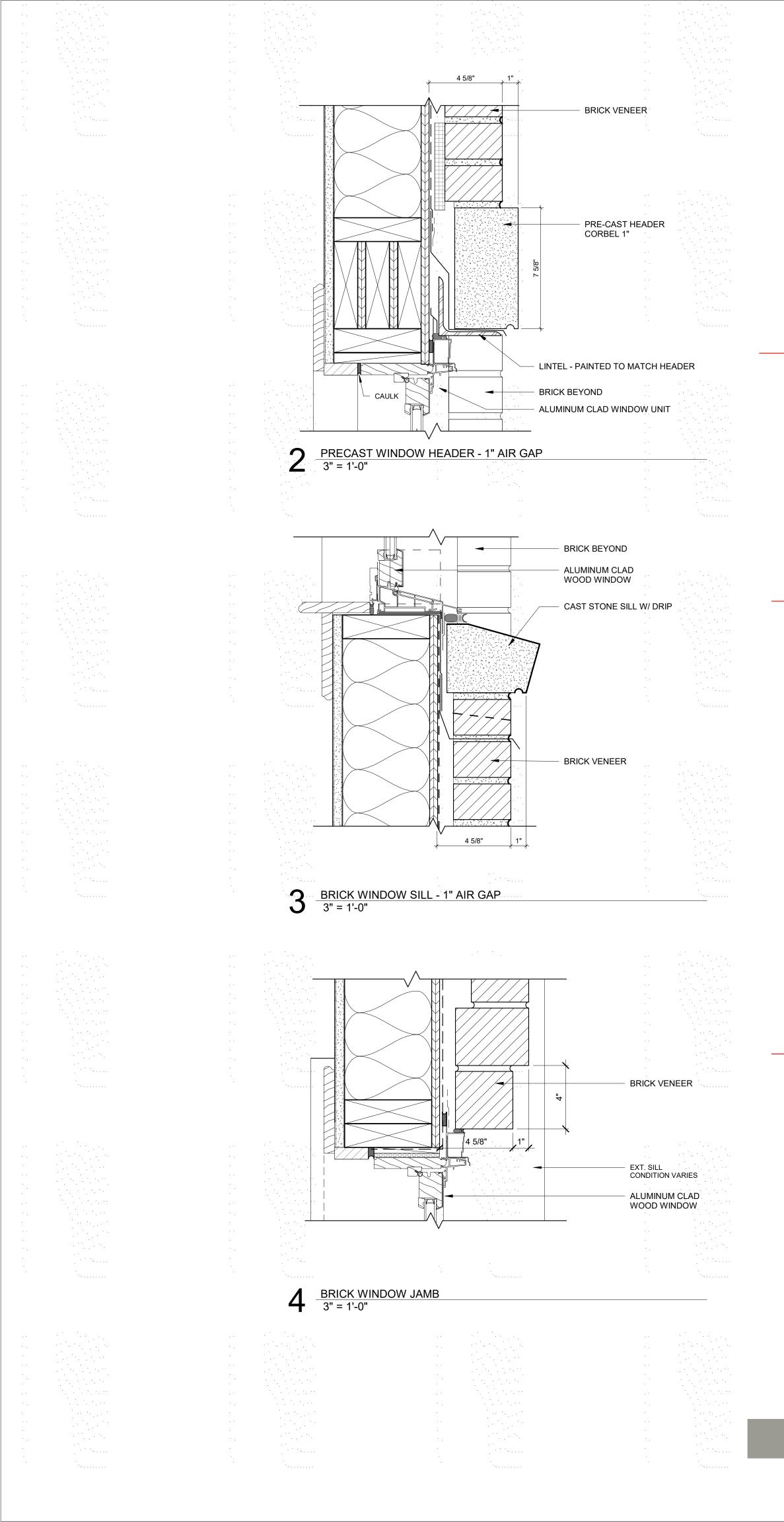
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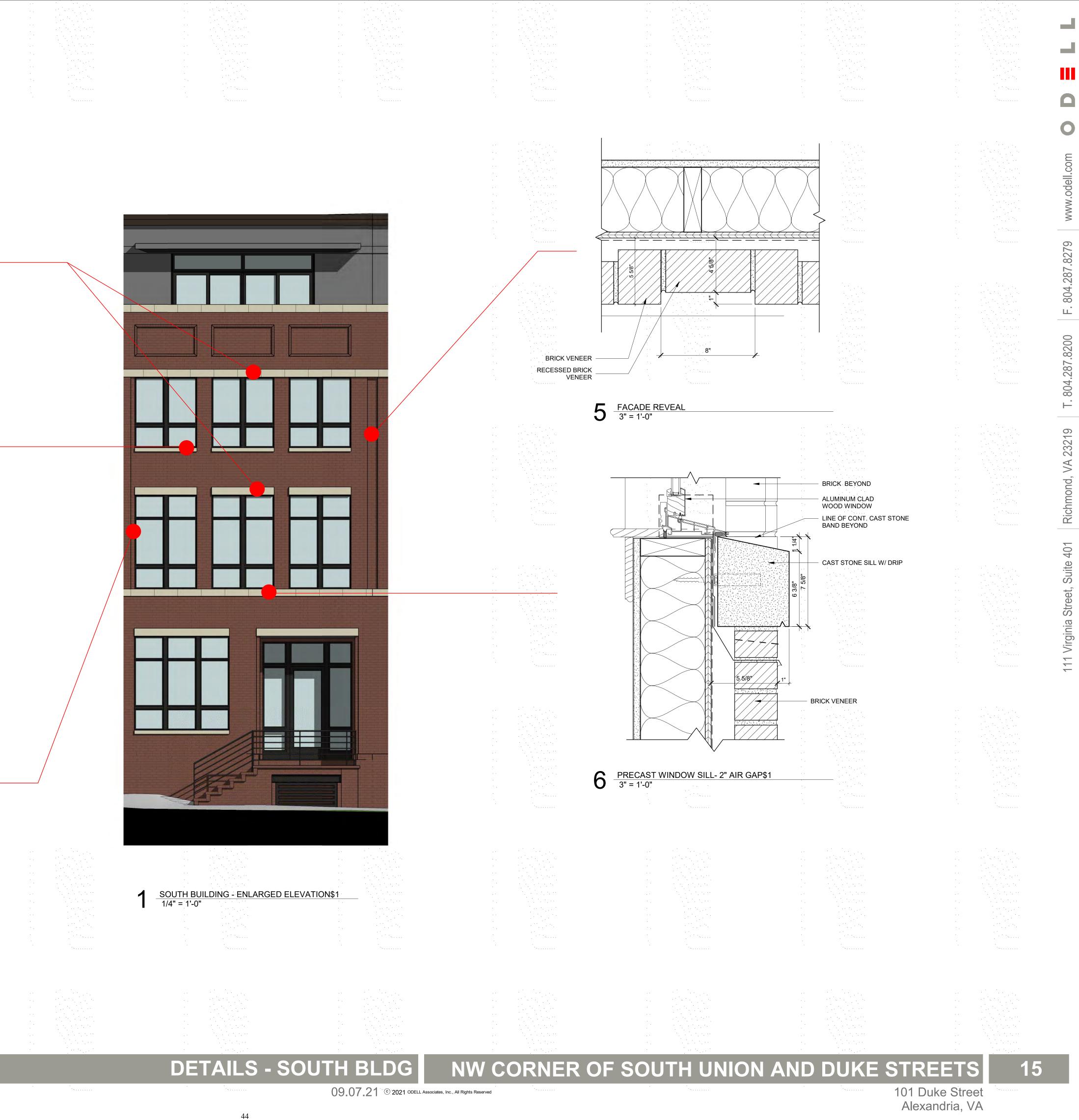


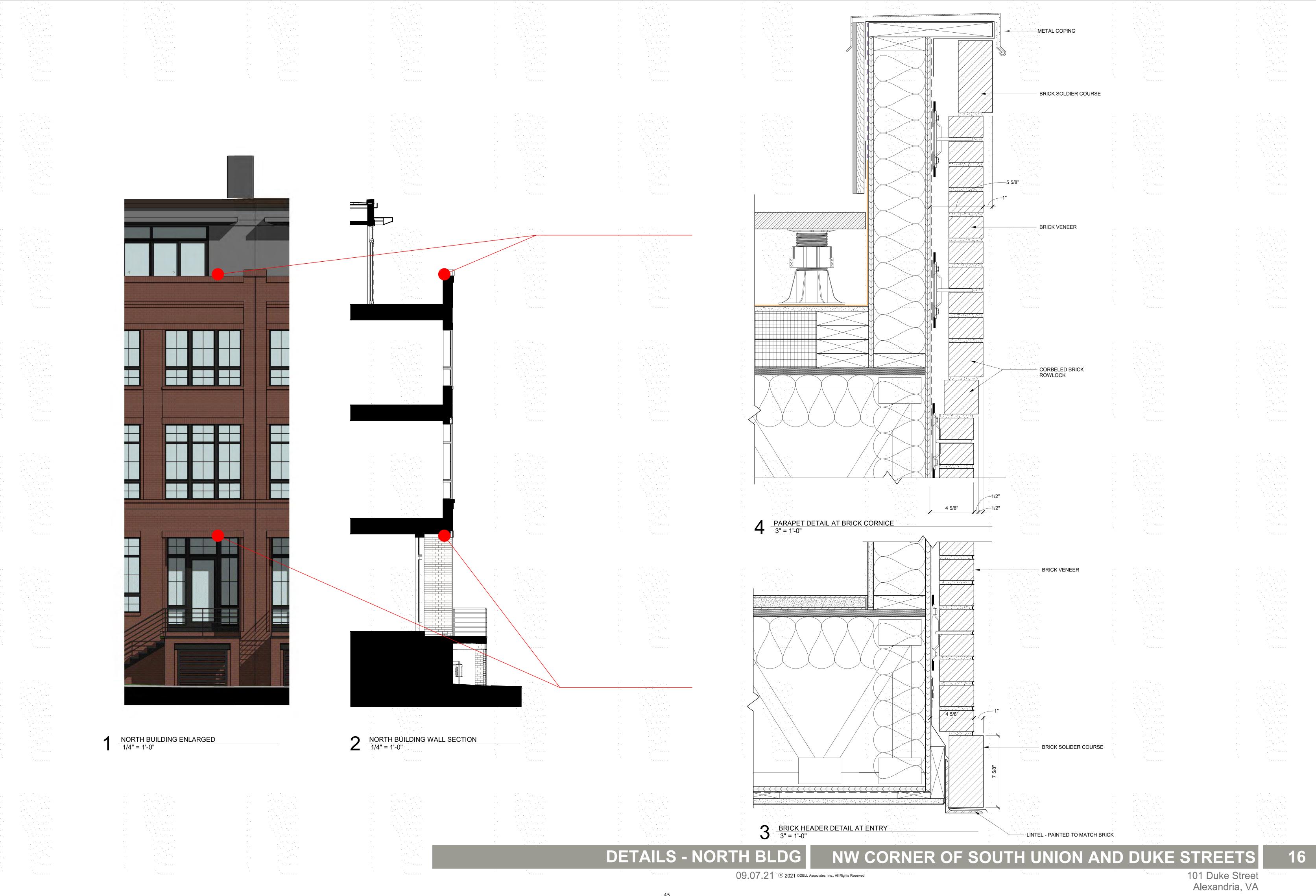
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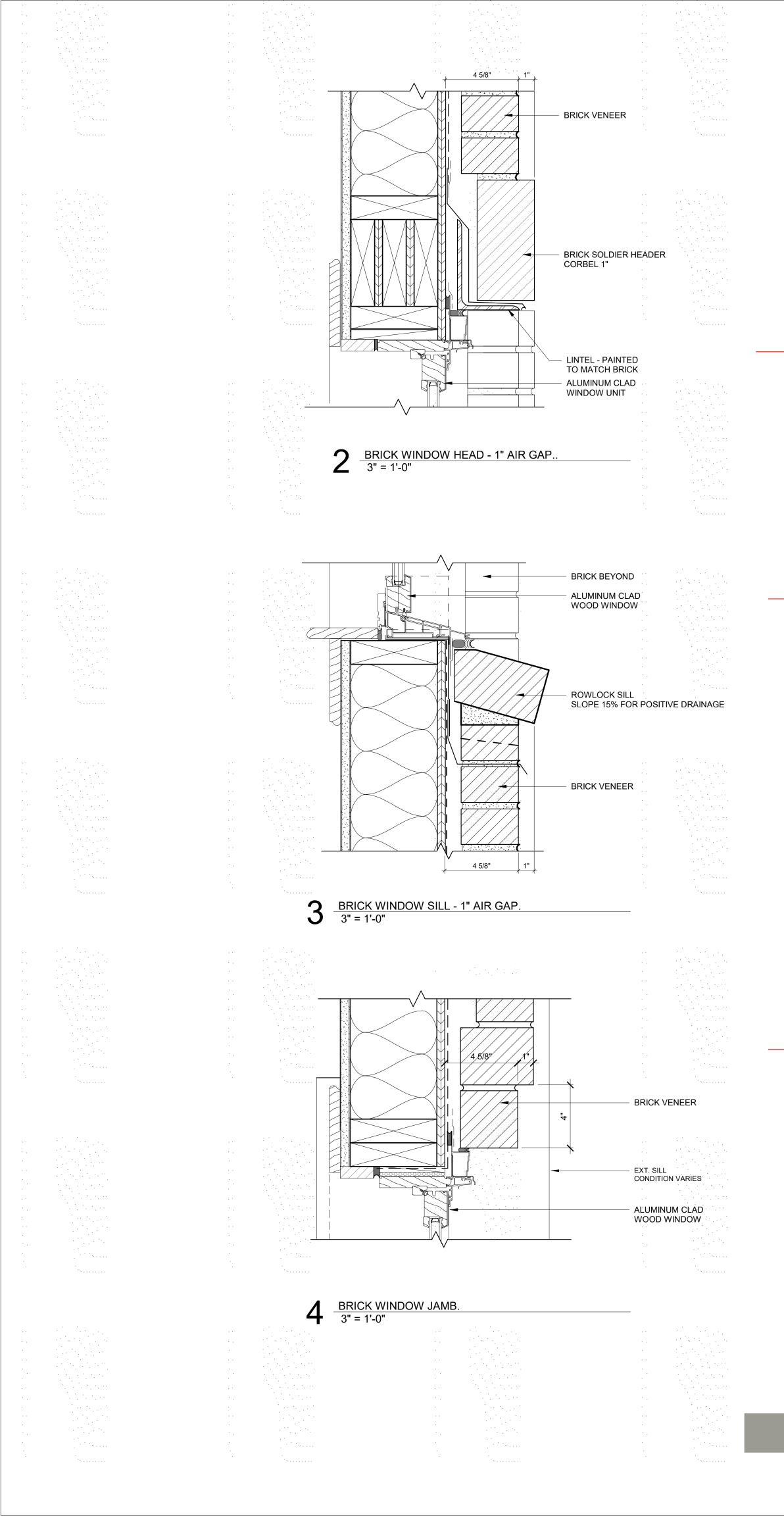
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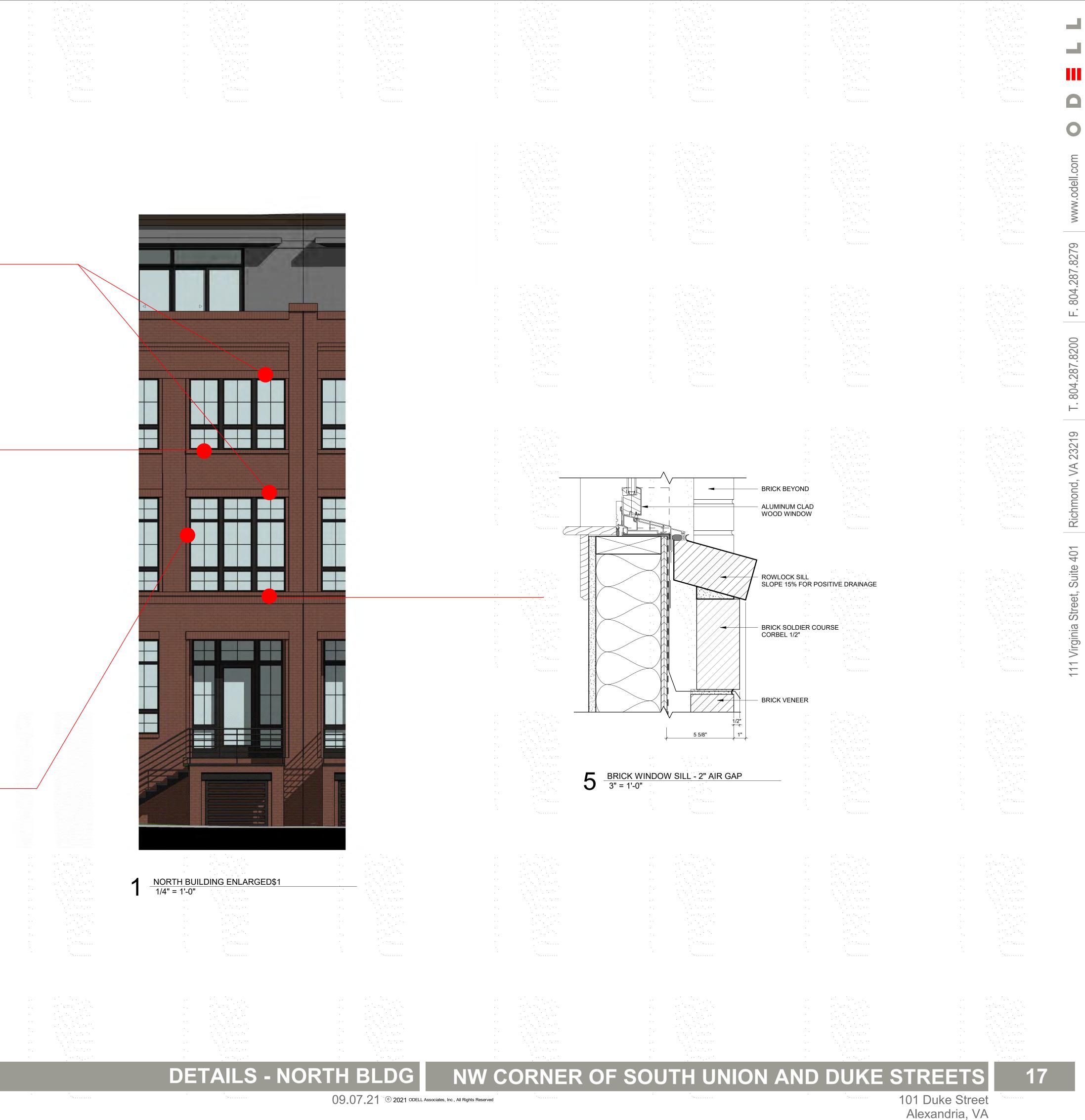
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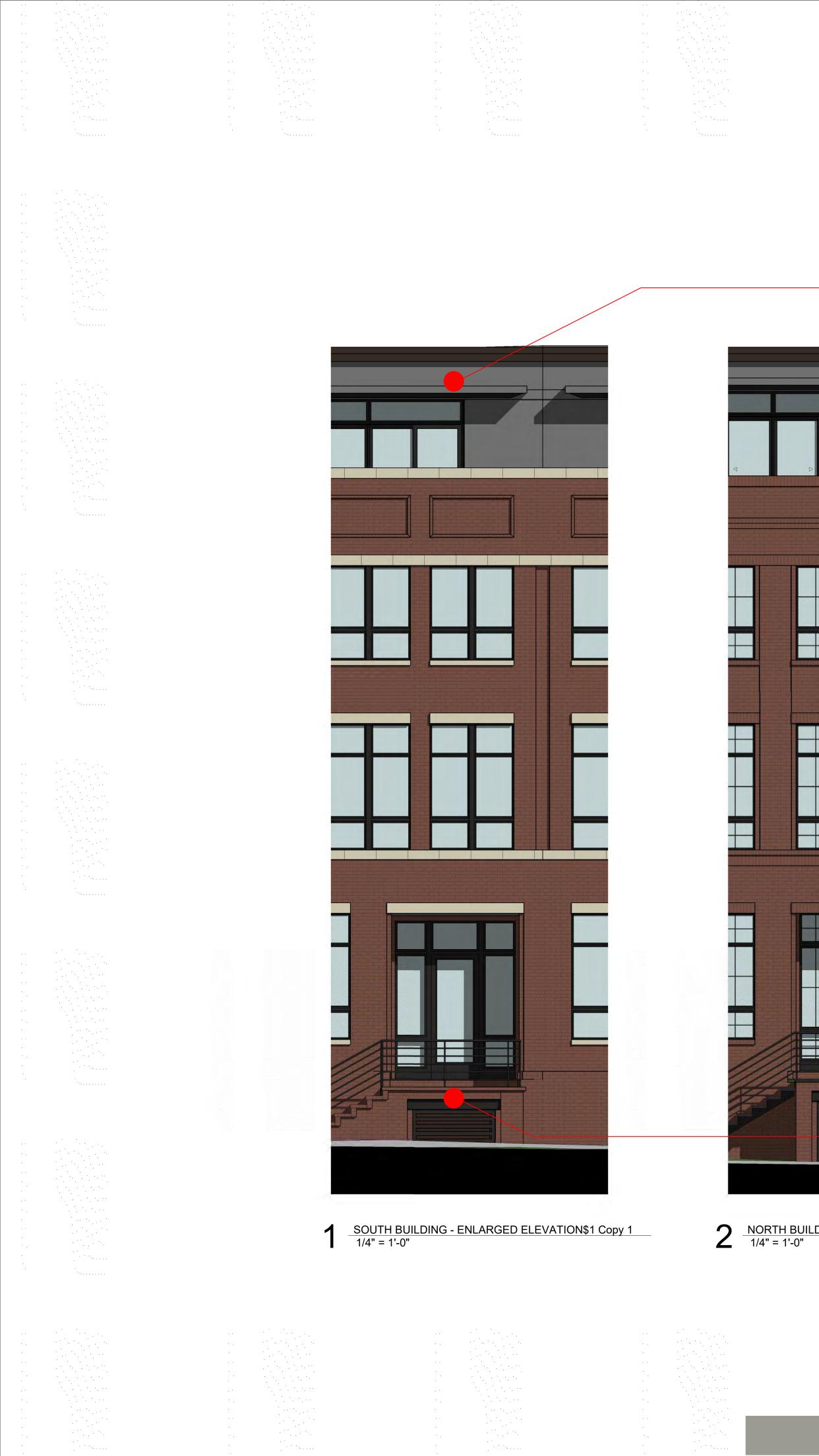
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	· ·	AND STOOP	NW CORNER O	F SOUTH UNION A		REETS 18	
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DEVELOPMENT SPECIAL USE PERMIT - PRELIMINAF NORTHWEST CORNER OF S(STREET AND DUKE ST

AREA TABULATIONS

TOTAL SITE AREA = TOTAL EXISTING IMPERVIOUS AREA = TOTAL PROPOSED IMPERVIOUS AREA = TOTAL DISTURBED AREA = TAX PARCEL IDENTIFICATION = ADDRESS:

±0.2347 AC OR ±10,223 SF ±0.2287 AC OR ±9,960 SF

±0.2189 AC OR ±9,535 SF

±0.3952 AC OR ±17,217 SF

075.03–02–15 EXISTING/PROPOSED ZONE: W–1

101 DUKE STREET, ALEXANDRIA VA 22314

PARKING TABULATION

PARKING REQUIRED

2 SPACES PER UNIT X 6 UNITS = 12 SPACES

PARKING PROVIDED

12 SPACES (STANDARD SPACES WITHIN INDIVIDUAL UNIT GARAGES)

LOADING REQUIRED NONE

BUILDING CODE ANALYSIS

13R

CODE USE GROUP : CONSTRUCTION TYPE : ALLOWABLE HEIGHT : ALLOWABLE NUMBER OF STORIES: ALLOWABLE AREA : NFPA :

2015 VIRGINIA CONSTRUCTION CODE R-3 VA 50' UNLIMITED

ARCHAEOLOGY NOTES

- ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED PRIOR TO GROUND-DISTURBING ACTIVITIES (SUCH A 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 703-746-4399.
- 2. THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.
- 3. THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORIZED BY THE ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAY.

ENVIRONMENTAL SITE ASSESSMENT

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

PLAN SHEET KEY

NOT APPLICABLE

DEVELOPMENT TEAM INFORMATION

1. OWNER: CUMMINGS INVESTMENTS ASSOCIATES, INC. PO BOX 231 ALEXANDRIA ,VA 22313

2. DEVELOPER: ELEVENTH STREET DEVELOPMENT 24 WEST CEDAR STREET ALEXANDRIA, VA 22301 ATTN: GARRETT ERDLE

3. LAND USE ATTORNEY: WIRE GILL LLP 1750 TYSONS BOULEVARD, SUITE 1500 TYSONS, VA 22102 ATTN: KEN WIRE

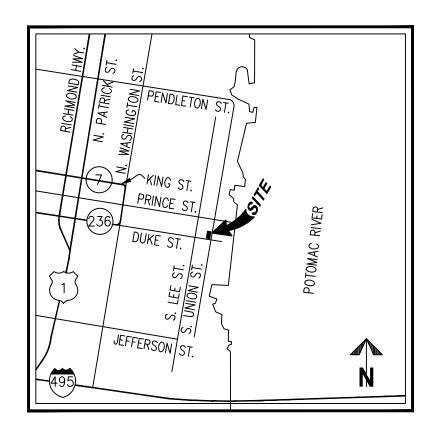
4. ARCHITECT: ODELL 111 VIRGINA STREET, SUITE 401 RICHMOND, VA 23219 ATTN: SHAWN GLERUM, AIA

5. CIVIL ENGINEER: WALTER L. PHILLIPS, INC. 207 PARK AVENUE FALLS CHURCH, VA 22046 ATTN: TRAVIS P. BROWN, P.E.

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VICINITY MAP



PROJECT DESCRIPTION NARRATIVE

THE SITE CURRENTLY CONSISTS OF A THREE (3) LEVEL PARKING GARAGE, CONSTRUCTED IN 1945, WITH APPROXIMATELY SPACES. TWO CURB CUTS, AT DUKE AND UNION STREETS, PROVIDE ACCESS TO TWO OF THE THREE PARKING LEVELS. ACCESS TO THE THIRD LEVEL IS FROM AN ALLEY ON THE WEST SIDE OF THE GARAGE. CURRENT ZONING DESIGNATION FOR THE PROPERTY IS W-1 AND IS LISTED AS 'INDUSTRIAL" ON THE GENERALIZED LAND USE PLAN. THE PROPERTY RESIDES WITHIN THE OLD TOWN SMALL AREA PLAN AND ACROSS THE STREET FROM THE 2012 WATERFRONT SMALL AREA PLAN. PER MAP 19 IN THE SMALL AREA PLAN, HEIGHT IS LIMITED TO 50 FEET.

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

THE FIRST FLOOR WILL BE ELEVATED TO MEET THE GRADE OF THE WESTERN ALLEY WITH STOOPS ALONG UNION STREET. THIS WILL ALSO KEEP THE BOTTOM FLOORS WELL ABOVE THE 100-YEAR FLOODPLAIN. OPEN SPACE WILL BE PROVIDED IN EACH INDIVIDUAL UNIT ON TERRACES OVER THE GARAGES.

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

SPECIAL USE PERMITS/ZONING MODIFICATIONS/WAIVERS

1. SPECIAL USE PERMIT TO INCREASE FAR TO 2.0 (5-504.C).

- 2. MODIFICATION TO SIDE YARD REQUIREMENT FOR INTERIOR END TOWNHOUSE UNITS (LOTS 3,4,6) FROM 8.0' TO 4.3', 4.2', AND 2.8' RESPECTIVELY (5–506.B.1).
- 3. MODIFICATION TO LOT WIDTH REQUIREMENT FOR END UNITS FOR LOTS 1 AND 6 FROM 26.0' TO 22.48' AND 25.99' RESPECTIVELY (5–505.C.2).
- 4. MODIFICATION TO VISION CLEARANCE SETBACK (7-801).

COMPLETE STREETS TABULATION

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

SCALE: <u>1"=2000</u>'

ARY SITE OUJ TRRESING ZONING : MASTER PLAN : SITE AREA (SQ. F USE: REQUIREMENT ZONE DENSITY (UNITS/ACRE)	EXISTING ZONE: WY OLD TOWN, OLD AI EXISTING: COM	ABU -1; prop ND HISTOF	LAT OSED ZON RIC DISTRI RESIDENTI	IONS NE: W-1 CT AL (SIX (LOT 3 W)	MPLE UN	TS)	TOTAL 	WALTER I 515		RATED ESTABL	ТАКК АУЕНИЕ ГАLLS СПОКСИ, 3) 532-6163 Fax (703) 533-1301 ww DATE: 10/21/2020		CEPT PLAN 04/02/2021 CEPT PLAN 04/22/2021 ETENESS
** MODIFICATION TO SID	N/A 20,446 SF TOTAL W/ SUP 1,452 SF PER LOT 0 FT 0 FT 8.0 FT 8.0 FT 18 FT 26 FT 300 SF PER DU (1800 SF TOTAL) 50 FT (MAX) 2 SPACES PER UNIT (12 TOTAL) WITH THIS PLAN. SEE ARCHITECT VE YARD FOR LOTS 3, 4, AND 6 I ATION CALCULATION ON THIS SHE	Requested					3846 2930 1791 4.1 N/A 2.8** 13.3 25.99** 334 14.02 50 2 5.86	23076 17580 10223 2000 12 36 ED.	OF SOUTH REVISION APPROVED BY	KE STREET NO. DESCRIPTION DATE BY APPROVED DATE				μ
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	SF AVERAGE FINISHED GRADE 13.69 FT 13.92 FT 14.22 FT 14.36 FT 13.97 FT 14.02 FT	existing u Proposed	USING "INS JSE: P. RI USE: RI SE* = 6 UI	STITUTE OF ARKING GA ETAIL AND ESIDENTIAL NITS X 5.80	TRANSPOR RAGE WITH RESIDENTI/ TOWNHOUS 6 TRIPS/UN	RTATION EN 72 SPACE AL USES SES NIT/DAY =	igineers: T Es serving 36 trips/	RIP GENERATION SURROUNDING DAY (WEEKDAYS	VEST C(N STREET AND	DEVELOPMENT SPECIAI	CITY OF ALEXANDRIA, V		COVER SHE
STILL I INDEA CIVIL/LANDSCAP P-0101 COVER SHEET P-0201 GENERAL NOTES P-0301 CONTEXT PLAN P-0302 EXISTING CONDITIONS PL P-0401 PRELIMINARY SITE PLAN P-0402 PRELIMINARY GEOMETRIC P-0403 PRELIMINARY OPEN SPAC P-0404 FLOODPLAIN NARRATIVE P-0405 PRELIMINARY SUBDIVISIO P-0501 PRELIMINARY SUBDIVISIO P-0701 PRELIMINARY SWM PLAN P-0702 PRELIMINARY SWM PLAN P-0702 PRELIMINARY VEHICULAR P-0703 ADEQUATE OUTFALL ANA P-1101 PRELIMINARY VEHICULAR P-1102 PRELIMINARY GARBAGE T P-1103 PRELIMINARY SIGHT DIST P-1201 EXISTING TREE SURVEY A P-1202 PRELIMINARY LANDSCAPE P-1203 PRELIMINARY HARDSCAP	AN C PLAN CE PLAN NN PLAT LAN AND NARRATIVE CADSHEET LYSIS MOVEMENT PLAN TRUCK MOVEMENT PLAN TRUCK MOVEMENT PLAN ANCE PLAN AND PROFILE AND INVENTORY E AND HARDSCAPE PLAN	ETAILS	AR A0 A1 A2 A3 A4 A5 A6 A7		SECTIONS SECTIONS IS INTAGE INTAGE				DEPAR DEPAR SITE	ROVED IAL USE PI RTMENT OF DIRECTOF MENT OF TRA PLAN No DIRECTOF	PLANNIN NSPORTATIO	G & ZONII	NG D/ NMENTA D/	ATE

EXISTING LO	DT AREA:	10,223 SF
PROPOSED	LOTS	AVERAGE FINISHED
LOT 1 = LOT 2 = LOT 3 = LOT 4 = LOT 5 = LOT 6 =	1,602 SF 1,540 SF 1,875 SF 1,875 SF 1,540 SF 1,540 SF 1,791 SF	13.69 FT 13.92 FT 14.22 FT 14.36 FT 13.97 FT 14.02 FT
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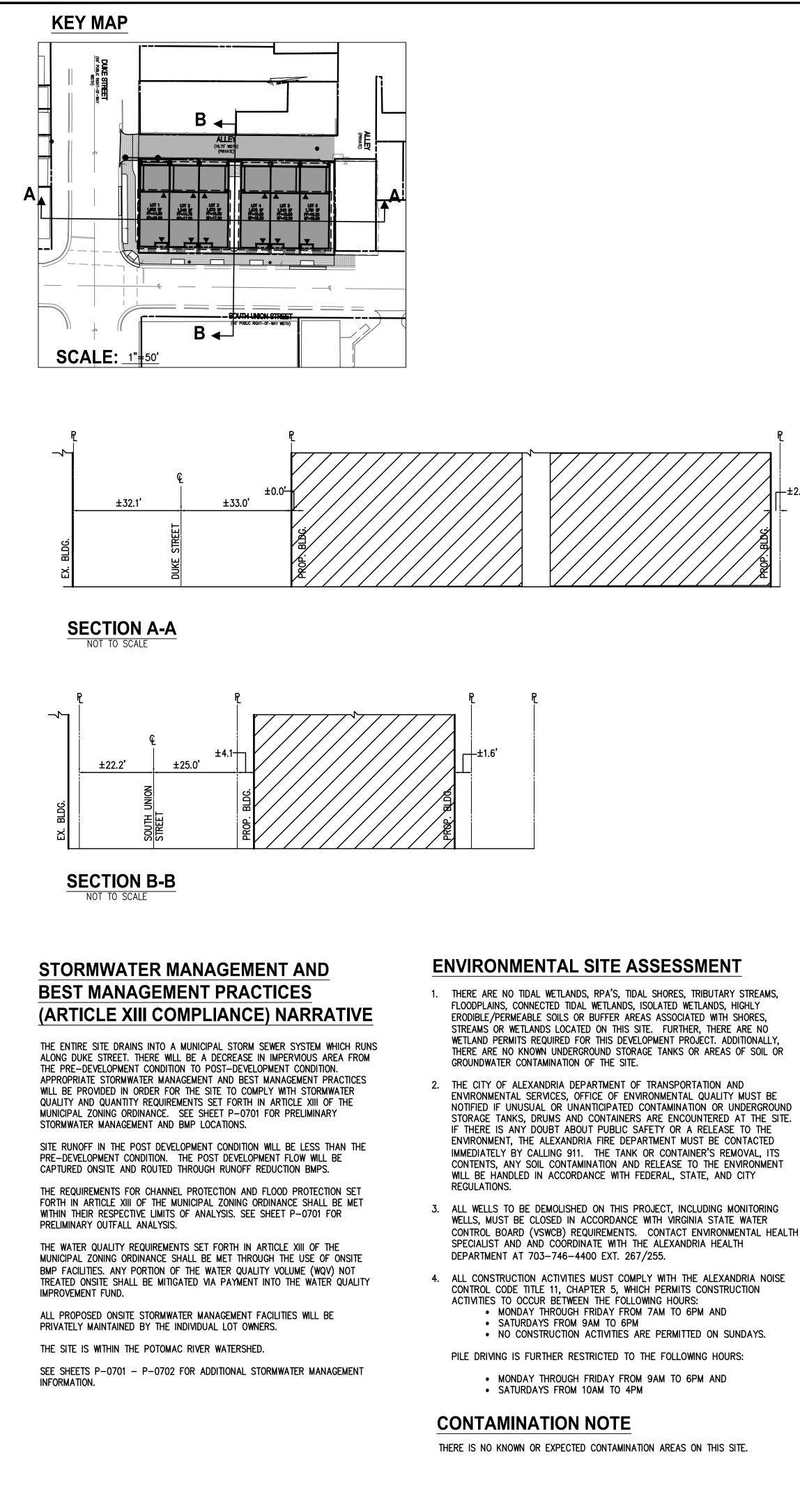
P-0201	GENERAL NOTES
P-0301	CONTEXT PLAN
P-0302	EXISTING CONDITIONS PLAN
P-0401	PRELIMINARY SITE PLAN
P-0402	PRELIMINARY GEOMETRIC PLAN
P-0403	PRELIMINARY OPEN SPACE PLAN
P-0404	FLOODPLAIN NARRATIVE
P-0405	PRELIMINARY SUBDIVISION PLAT
P-0501	PRELIMINARY GRADING PLAN
P-0701	PRELIMINARY SWM PLAN AND NARRATIVE
P-0702	PRELMINARY VRRM SPREADSHEET
P-0703	ADEQUATE OUTFALL ANALYSIS
P-1101	PRELIMINARY VEHICULAR MOVEMENT PLAN
P-1102	PRELIMINARY GARBAGE TRUCK MOVEMENT
P-1103	PRELIMINARY SIGHT DISTANCE PLAN AND P
P-1201	EXISTING TREE SURVEY AND INVENTORY
P-1202	PRELIMINARY LANDSCAPE AND HARDSCAPE
P-1203	PRELIMINARY HARDSCAPE AND LANDSCAPE
P-1301	PRELIMINARY FIRE SERVICE PLAN

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PE NOTES AND DETAILS



GREEN BUILDING NARRATIVE

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

GENERAL APPROACH

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

ENERGY (PROPOSED POINTS: APPROXIMATELY 16)

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

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

ENERGY MODELING

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

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

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

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

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

INDOOR AIR QUALITY (PROPOSED POINTS: LOW-VOCS 4, CONSTRUCTION INDOOR AIR 1, AND THERMAL COMFORT 3)

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

SAMPLE PRELIMINARY LEED FOR HOMES CHECKLIST

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

PREPARED BY KELLY GILLESPIE OF KELLY GREEN ENERGY RATERS, LLC KELLY GREEN ENERGY RATERS, LLC 618 OAKLEY PLACE

ALEXANDRIA, VA 22302 703.862.3847

WWW.KELLYGREENRATERS.COM CERTIFIED HERS RATER, LEED FOR HOMES GREEN RATER, AND NGBS GREEN VERIFIER

COMBINED SEWER NARRATIVE

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

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

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

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

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

SANITARY SEWER OUTFALL NARRATIVE

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

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

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

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

THE EXISTING SANITARY FLOW FROM THIS BUILDING IS NEGLIGIBLE.

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

ALEXRENEW NOTES

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

RESOURCE PROTECTION AREA NO

THE SUBJECT PROPERTY DOES NOT LIE WITHIN THE CITY OF ALEXA RESOURCE PROTECTION AREA (RPA) AND THERE ARE NO MAPPED R THIS PROPERTY.

FLOOD PLAIN NOTE

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

CEMETERY AND/OR BURIAL GROU

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

UTILITY CONTACTS

ELECTRIC: VIRGINIA DOMINION POWER C/O KEN HOLMES 907 WEST GLEBE ROAD ALEXANDRIA, VA 22305 (703) 838–2437

NATURAL GAS:

WASHINGTON GAS

C/O RAY BAKER

(703) 750-5953

6801 INDUSTRIAL ROAD

SPRINGFIELD, VA 22151

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

FEDERAL FUNDING NOTE

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

GEOTECHNICAL REPORT NOTE

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

STORMWATER BEST MANAGEME **PRACTICES (BMP) NOTES**

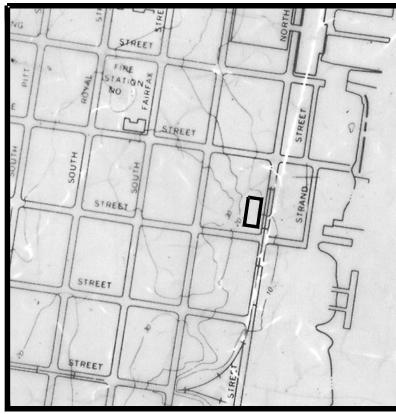
THE STORMWATER BEST MANAGEMENT PRACTICES (BMP) REQUIRED THIS PROJECT SHALL BE CONSTRUCTED AND INSTALLED UNDER THI DIRECT SUPERVISION OF THE DESIGN ENGINEER OR HIS DESIGNATED REPRESENTATIVE. THE DESIGN ENGINEER SHALL MAKE A WRITTEN CERTIFICATION TO THE CITY THAT THE BMPS ARE CONSTRUCTED A INSTALLED AS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

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

ARCHAEOLOGY NOTES

- 1. THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMI (703-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WAL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTI ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK N THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST THE SITE AND RECORDS THE FINDS.
- 2. THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION A ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY AUTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO CO RESULT IN PROJECT DELAY.

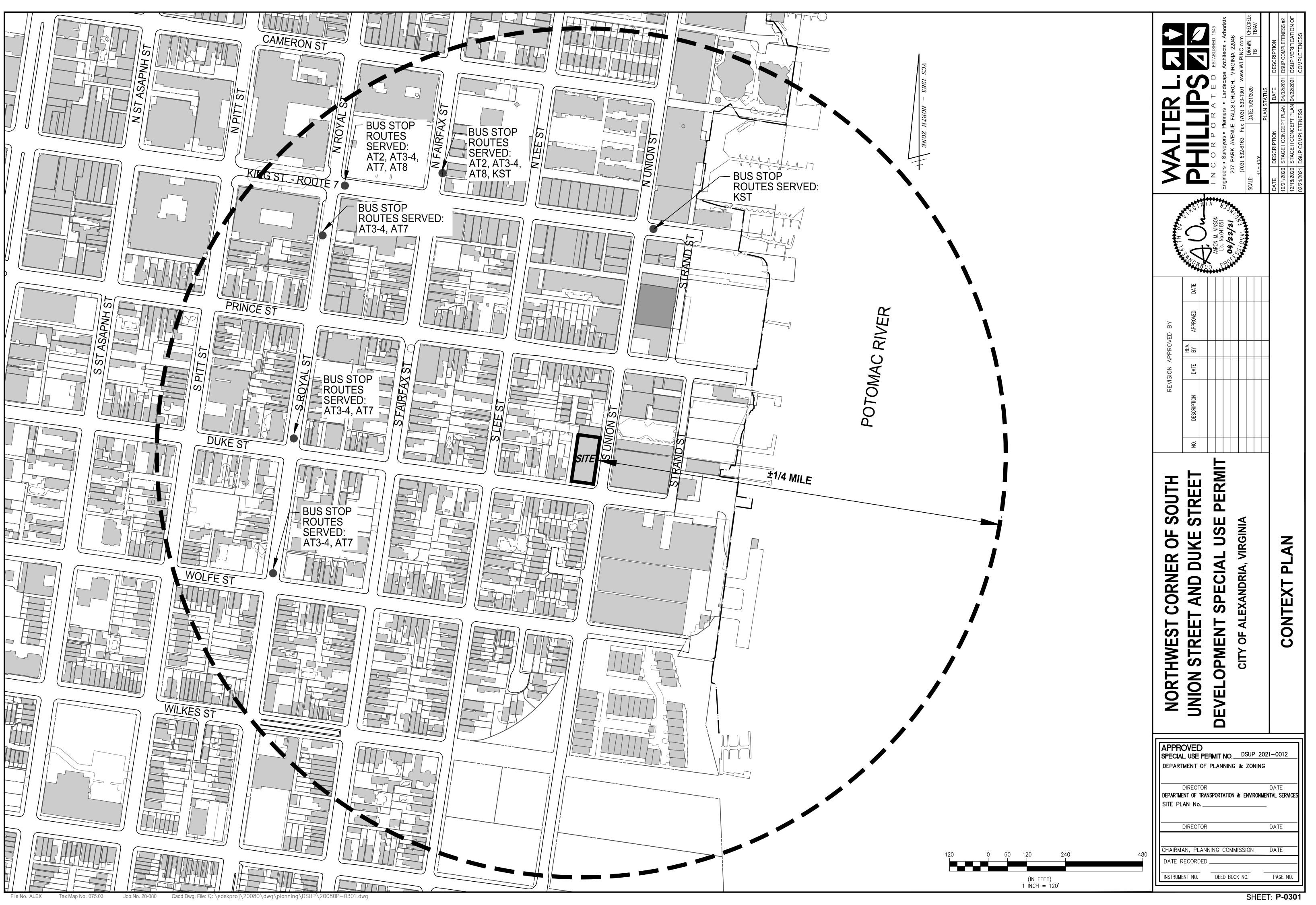
MARINE CLAY SOILS MAP



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

				-	
AREA NOTE		MASTER LEGEND		945 borists	TB TB/AV RIPTION COMPLETENESS #2 VERIFICATION OF PLETENESS
E CITY OF ALEXANDRIA	PROPOSED EP	DESCRIPTION EDGE OF PAVEMENT	EXISTING EP.		
ARE NO MAPPED RPA'S ON	MH WV	MANHOLE WATER VALVE	MH WV	D ESTABLISHED Cape Architects • A www.WLPINIC.com	DESCRIPTION DSUP COMPLET DSUP VERIFIC
	WM GM	WATER METER GAS METER	WM GM		
AIN WATER SURFACE	GV RD	GAS VALVE ROOF DRAIN	GV RD		
CURRENT FLOOD INSURANCE	TCB	TRAFFIC CONTROL BOX	TCB		
INCT MANAGEMENT AGENCT	LP TRLP	LIGHT POLE LIGHT POLE WITH SIGNALS	LP TRLP		PLAN S' PLAN S' PLAN PT PLAN ENESS
AL GROUNDS	TC	TOP OF CURB	TC		OTED DESCRIPTION PLAN BESCRIPTION STAGE I CONCEPT PLA STAGE II CONCEPT PLA DSUP COMPLETENESS
EOLOGICAL EVIDENCE OF RTY.	BC TW BW	BOTTOM OF CURB TOP OF WALL BOTTOM OF WALL	BC TW BW	O R P PARK AVE	DTED DESCRIPTION STAGE I CONC STAGE I CONC DSUP COMPL
	HP	HIGH POINT	H.P.		2
		CURB & GUTTER = CG-2 =			DATE DATE 10/21/2020 12/18/2020 02/24/2021
TELEPHONE:	L CG-	TRANSITION FROM CG-6			DATE DATE 10/21/2 02/24/2
VERIZON C/O VAL FISHER		SANITARY SEWER —	- — — S — — —	RGINIA 833	
2980 FAIRVIEW PARK N., 6TH FLOOR FALLS CHURCH, VA 22042	−−−−SL−−−− ● C.O.	— SANITARY LATERAL — CLEAN OUT	- — — SL — — — o C.O.	IB51	
(703) 204–5068		STORM SEWER =		N M M NO.041	
CATV/HS_INTERNET: COMCAST	-	COMBINED SEWER	└└└└└└└└└└└└└-	A CONTRACTOR	
C/O BRIAN SHADE 3900 WHEELER AVENUE ALEXANDRIA, VA 22304	₩ - ▲ -		- — — W — — — -&-	NONWOO PROF	
ALEXANDRIA, VA 22304 (703) 567–4449	ب ۲	PLUG	Ē		
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ANY REQUIRED FEDERAL PRIOR TO CONSTRUCTION.		RAMP GUARDRAIL			
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PREPARED FOR THIS		TEST PIT	→		
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		TREES ,	$\frown \frown \frown \frown$		
NAGEMENT		LIMITS OF CLEARING AND GRADING		Öz	
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(BMP) REQUIRED FOR TALLED UNDER THE	+ 44 <u>50</u>	SPOT ELEVATION	+44 50		
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				DIRECTOR DEPARTMENT OF TRANSPORTATION & ENV SITE PLAN No	/Ronmental services
STRAND STR		<u>- 25% SLOPE</u>		DIRECTOR DEPARTMENT OF TRANSPORTATION & ENV	IRONMENTAL SERVICES
		<u>- 25% SLOPE</u> CIAY AREAS		DIRECTOR DEPARTMENT OF TRANSPORTATION & ENV SITE PLAN No DIRECTOR	IRONMENTAL SERVICES
	UNDER 10%	SLOPE - 25% SLOPE OF CLAY AREAS SLOPE		DIRECTOR DEPARTMENT OF TRANSPORTATION & ENV SITE PLAN No	IRONMENTAL SERVICES
	UNDER 10%	SLOPE - 25% SLOPE OF CLAY AREAS SLOPE		DIRECTOR DEPARTMENT OF TRANSPORTATION & ENV SITE PLAN No DIRECTOR CHAIRMAN, PLANNING COMMISSION	IRONMENTAL SERVICES

SHEET: P-0201



STORM SEWER AS-BUILTS

SD 744			
CURB INLET TOP =		11.78	
12"RCP IN	(NORTH) =	9.58	
12"RCP IN	(WEST)=	9.68	
12"RCP IN (:	S.EAST)=	9.58	
15"RCP OUT (:	SD 746)=	8.90	
SD 746			
CURB INLET TOP =		12,21	
15"RCP IN	(WEST) =	9.41	(ABANDONED
15"RCP IN	(WEST)=	5.89	,
15"RCP IN (3	SD 744)	6.88	
18"RCP OUT ()	SD 740)=	8.51	(ABANDONED
18"RCP OUT (;	SD 740)=	5.53	
SD 723			
MANHOLE TOP		10.86	
15"RCP IN (:	S.WEST)=	5.78	
15"RCP OUT (SD 741)=	5.62	
SD 741			
GRATE INLET TOP =		10.58	
15"RCP IN (:	SD 723)=	5.58	
15"RCP OUT (:	SD 740)=	5.55	
SD 740			
MANHOLE TOP =		11.07	
15"RCP IN (3	SD 741)=	5.54	
18"RCP IN (3	SD 746)=	5.04	
15"RCP OUT (SD 727)	4.96	
SD 727			
MANHOLE TOP =		10.37	ĺ
15"RCP IN (S	SD 740)=	4.91	
15"RCP OUT (:	SD 728)=	4.89	

PIPE SIZES ARE PER RECORD INFORMATION

SANITARY SEWER AS-BUILTS

MANHOLE TOP =		6.82
10"TNV TN	(WEST) =	0.07
42"INV IN	(NORTH) =	-4.43
42"INV OUT	(SMH 743)=	-4.48
SMH 735		
MANHOLE TOP =		10.13
LAT INV IN	(EAST)	0.23
8"INV CUT	(SMH 743)=	0.18
SMH 743		
MANHOLE TOP =		10.78
8"INV IN	(SMH 735)=	-0.08
8"INV IN	(WEST) =	-1.82
42"INV IN	(SME1761)=	-4.62
42"INV OUT	(SOUTH) =	-4.72

PIPE SIZES ARE PER RECORD INFORMATION

	APPROX LOC	APPROXIMATE LOCATION
	BLD	
	BSW	
	CO	
	CONC	CONCRETE
	CSW	CONCRETE SIDEWALK
	DB	DEED BOOK
	ЕМ	
	ENTR	
		EDGE OF PAVEMENT
	ESMT	EASEMENT
	FC	HEADER CURB
	FDC	FIRE DEPARTMENT CONNECTION
		FIRE DEPARTMENT CONNECTION
		FINISHED FLOOR ELEVATION
	INV	
		NOW OR FORMERLY
	NS	· · ·
	PG	
	PL	
		REINFORCED CONCRETE PIPE
	SD, (123)	STORM SEWER STRUCTURE
		SANITARY SEWER STRUCTURE
	SQ.FT	
	ТНН	TELECOMMUNICATIONS HAND HOLE
	ΤΡ	TREE PIT
	WM	WATER METER
	WV	WATER VALVE
		FIRE HYDRANT
	Λ	DOORWAY/ENTRANCE
		•
	Ø	
	¢	
	X	FENCE
		OVERHEAD WIRES
	<u> </u>	UNDERGROUND ELECTRIC LINE
		UNDERGROUND GAS LINE
		UNDERGROUND SANITARY LINE
		UNDERGROUND SANITARY LATERAL LINE
		UNDERGROUND STORM SEWER LINE
	—T	UNDERGROUND TELECOMMUNICATIONS LINE
	—— W ——	UNDERGROUND WATER LINE
	€ 0	TREE
		LIMITS OF TREE CANOPY/VEGETATION
		CURB AND GUTTER
	<u> </u>	
		BOLLARD
		ELECTRIC TRANSFORMER
•	<u> </u>	
	₊ 4	SDAT ELEVATION

EX. 15" STORM —

SEWER @ 0.05%

-495

EX. 15" STORM SEWER @ 0.2%

LEGEND

NOTES:

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

SPOT ELEVATION

ELECTRIC MANHOLE

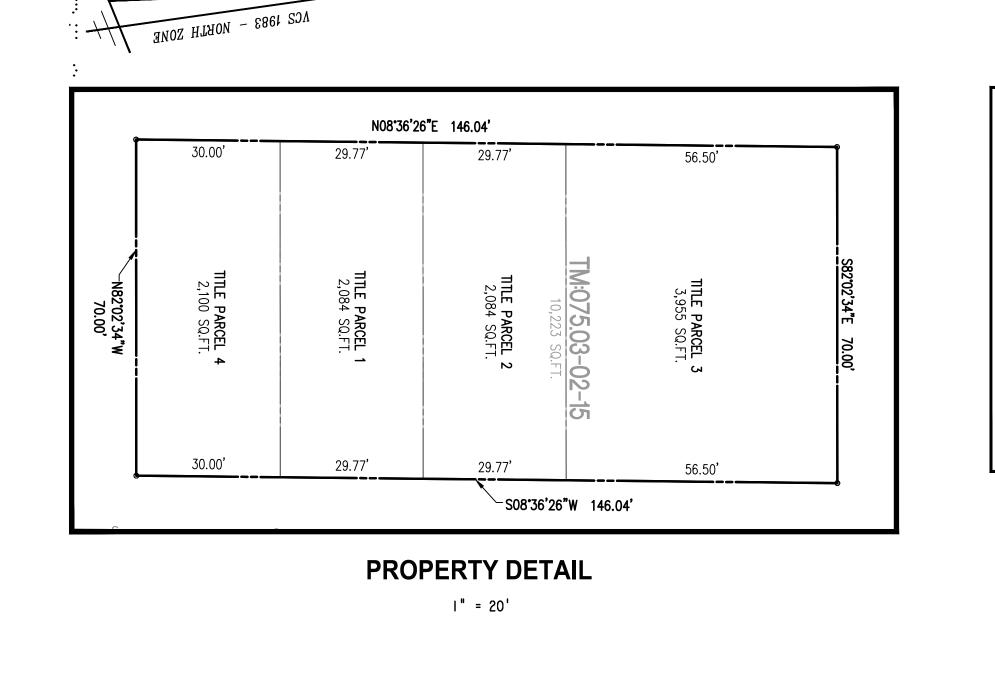
TELECOMMUNICATIONS MANHOLE

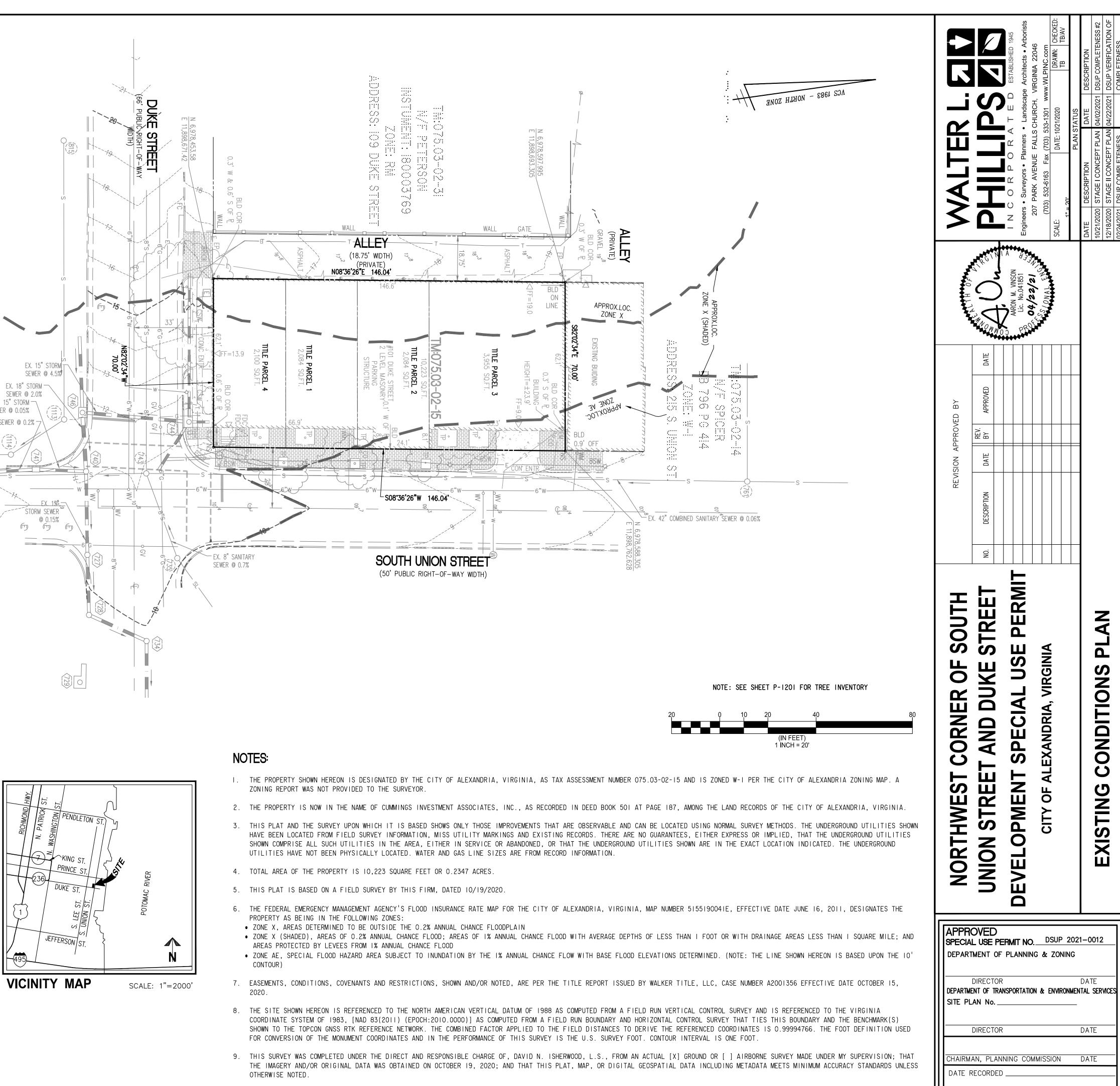
WATER MANHOLE

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

EXISTING PARKING TABULATION

72 (WITHIN PARKING GARAG)





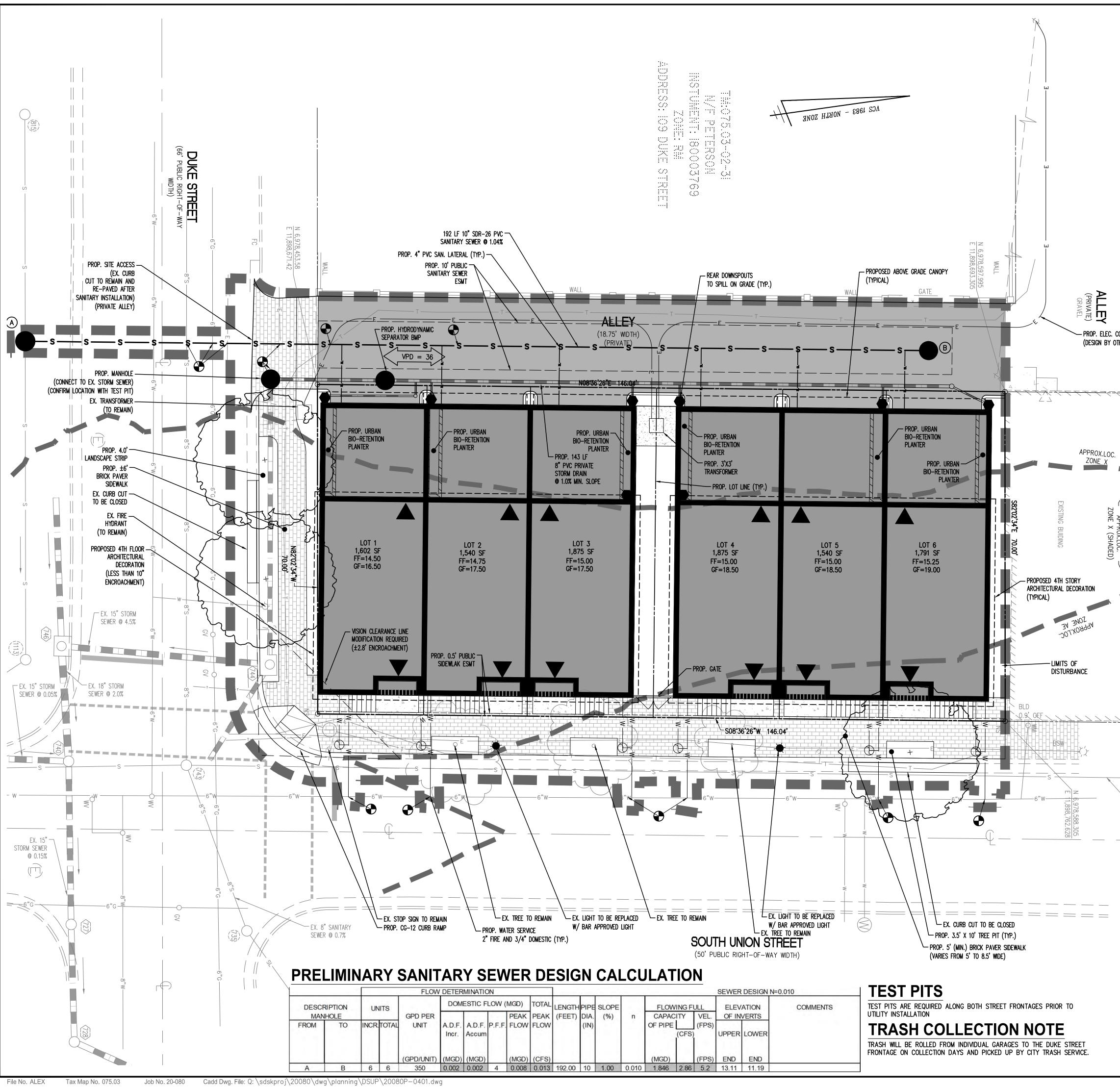


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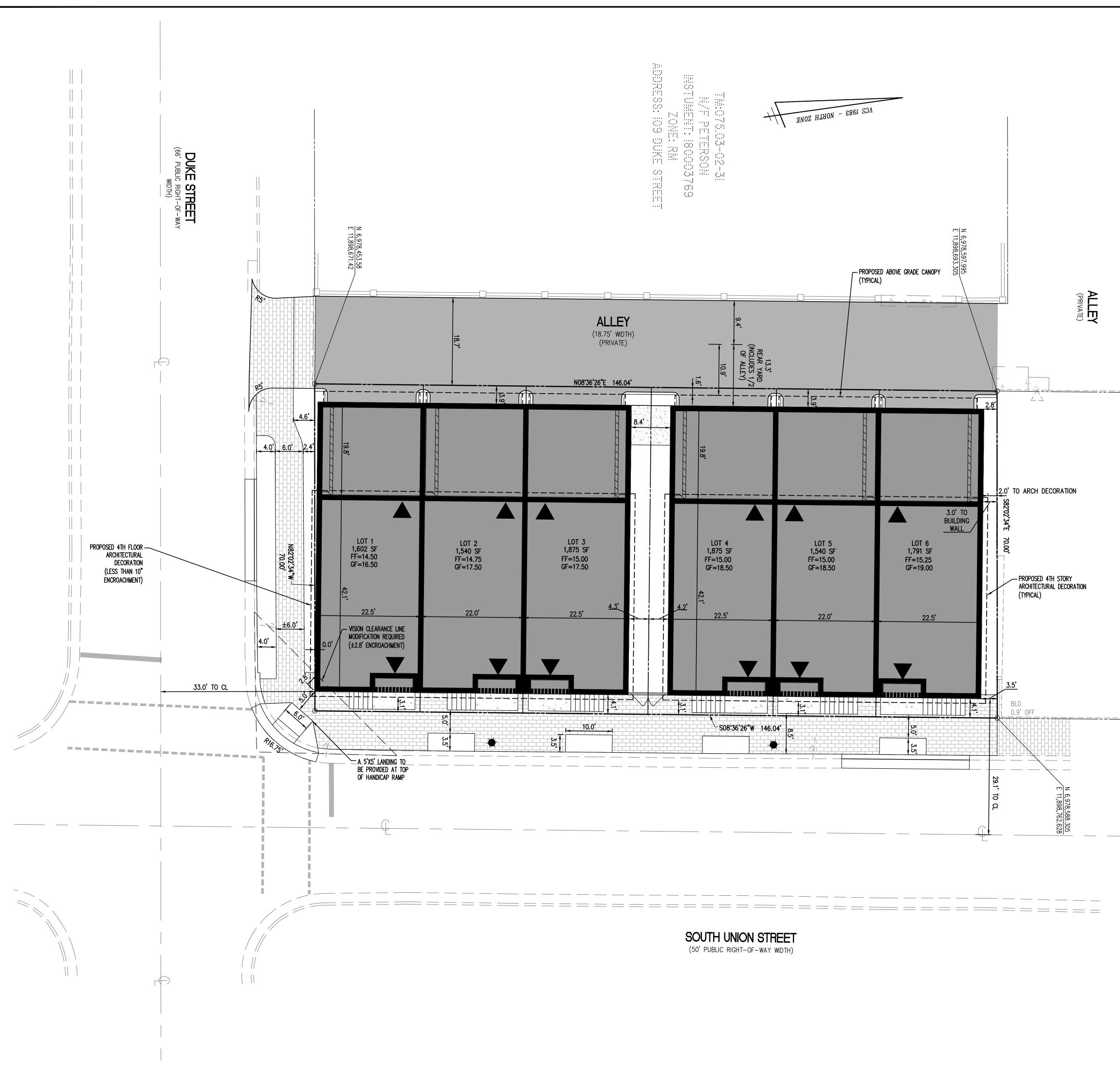
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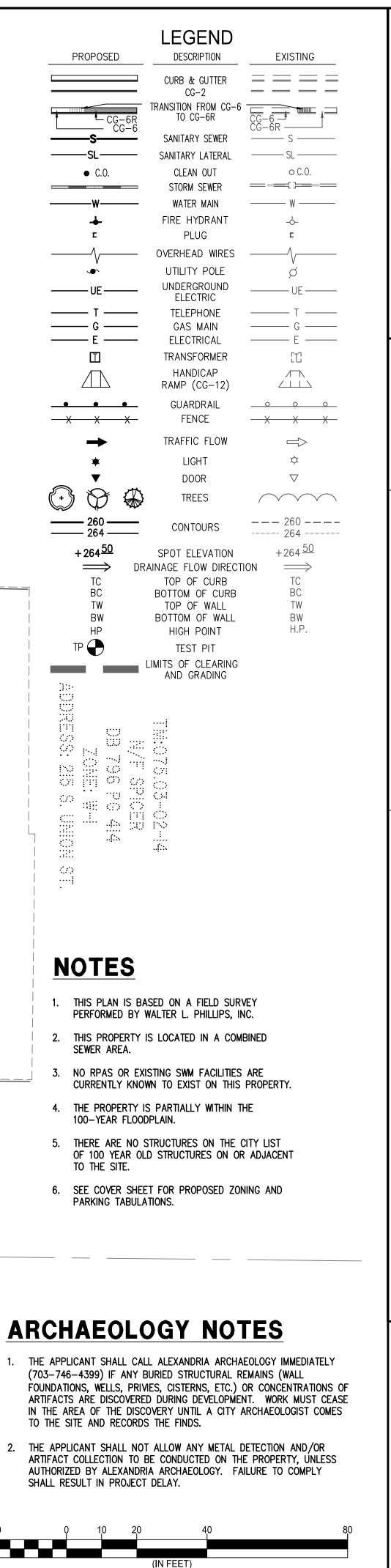
DEED BOOK NO.



	PROPOSED DESCRIPTION EXISTING URB & GUTTER CG-2 CURB & GUTTER CG-2 Image: CG-6 Image: CG-6 TRANSITION FROM CG-6 Image: CG-6 Image: CG-6 Image: CG-6 Image: CG-6 SL SL SANITARY SEWER SL SL SL SL • C.0. CLEAN OUT • C.0. CLEAN OUT • C.0. W WATER MAIN W Image: CG-6 Image: CG-6 Image: CG-6 W FIRE HYDRANT ->- ->- ->- ->- V OVERHEAD WIRES V ->- -	
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APPROX.LOC.	NOTES 1. THIS PLAN IS BASED ON A FIELD SURVEY PERFORMED BY WALTER L. PHILLIPS, INC. 2. THIS PROPERTY IS LOCATED IN A COMBINED SEWER AREA.	
S	 3. NO RPAS OR EXISTING SWM FACILITIES ARE CURRENTLY KNOWN TO EXIST ON THIS PROPERTY. 4. THE PROPERTY IS PARTIALLY WITHIN THE 100-YEAR FLOODPLAIN. 5. THERE ARE NO STRUCTURES ON THE CITY LIST OF 100 YEAR OLD STRUCTURES ON OR ADJACENT TO THE SITE. 6. SEE COVER SHEET FOR PROPOSED ZONING AND PARKING TABULATIONS. 7. ALL URBAN BIO-RETENTION PLANTERS ARE TO BE PRIVATELY MAINTAINED BY THE INDIVIDUAL HOME OWNER. 	
1. TH (7 FC AF IN TC 2. TH AF AL	EXAMPLE CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY 03-746-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL DUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF RIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES OF THE SITE AND RECORDS THE FINDS. WE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR RIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS JTHORIZED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY HALL RESULT IN PROJECT DELAY.	AP SPE DEF DEP/ SITE
	0 5 10 20 40 (IN FEET) 1 INCH = 10'	

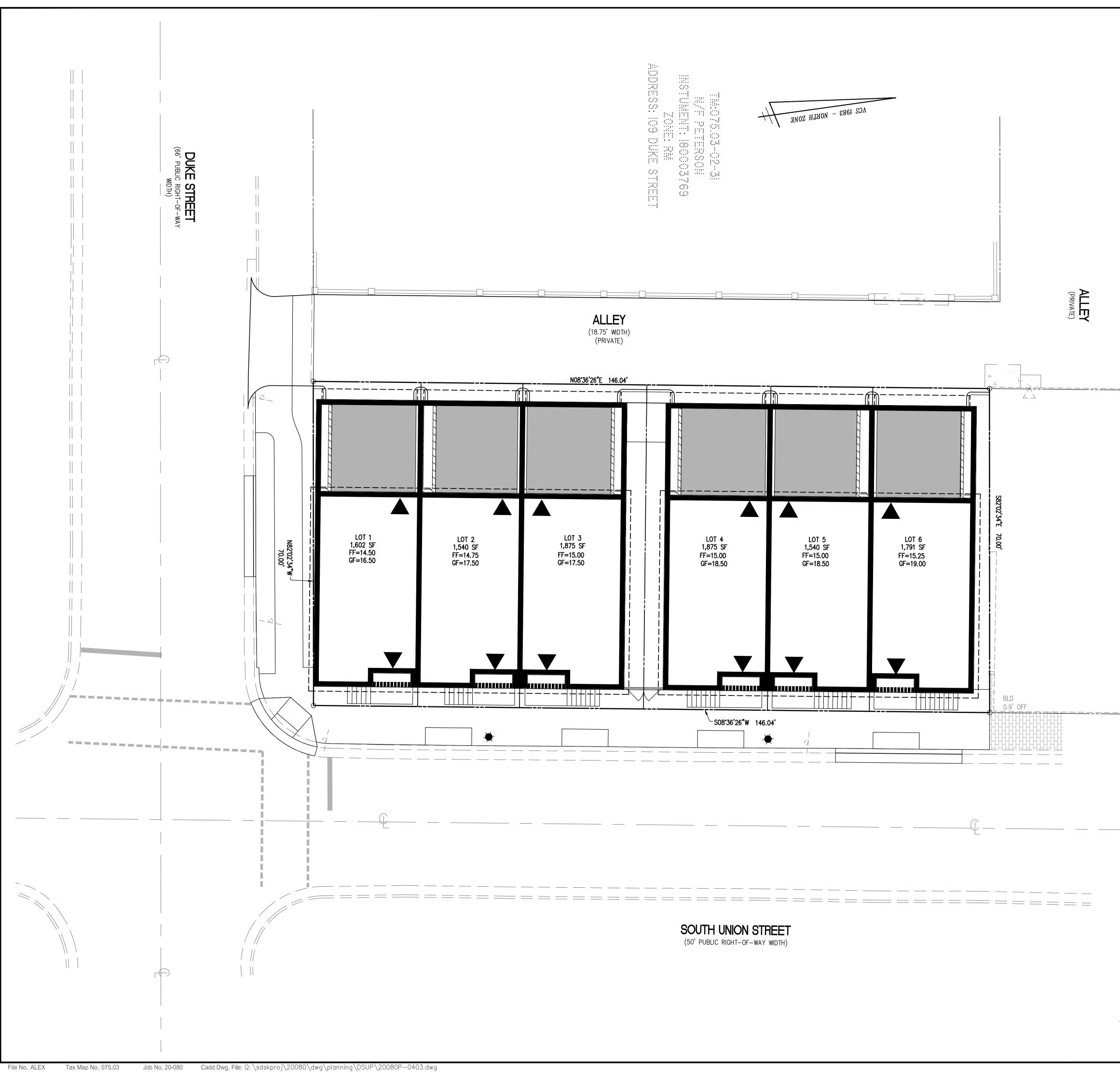
WALTER L. 5. V		ARON M. VINSON P I N C O R P O R A T E D ESTABLISHED 1945 Lic. No.041851 Engineers • Surveyors • Planners • Landscape Architects • Arborists	207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046	SCALE: DATE: $10/21/2020$ DATE: $10/21/2020$ DATE: TB TB/AV TB/AV	PLAN STATUS	DATE DESCRIPTION DATE DESCRIPTION	10/21/2020 STAGE I CONCEPT PLAN 04/02/2021 DSUP COMPLETENESS #2 12/18/2020 STAGE II CONCEPT PLAN 04/22/2021 DSUP VERIFICATION OF	02/24/2021 DSUP COMPLETENESS COMPLETENESS
REVISION APPROVED BY	NO. DESCRIPTION DATE BY APPROVED DATE							
NORTHWEST CORNER OF SOUTH	UNION STREET AND DUKE STREET	DEVELOPMENT SPECIAL USE PERMIT	CITY OF ALEXANDRIA, VIRGINIA				PRELIMINARY SITE PLAN	
APPROVED SPECIAL USE PERMIT NO. DSUP 2021-0012 DEPARTMENT OF PLANNING & ZONING DIRECTOR DATE DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. DIRECTOR DATE DIRECTOR DATE DIRECTOR DATE DIRECTOR DATE DIRECTOR DATE INTEL DATE DATE DATE DATE DATE DATE DATE DATE DATE DATE DATE								





1 INCH = 20'

WALTER L. 5. V	DHI HC	INCORPORATED ESTABLISHED 1945	Engineers • Surveyors • Planners • Landscape Architects • Arborists 207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046	(703) 532-6163 Fax (703) 533-1301 www.WLPINC.com	SCALE: DATE: 10/21/2020 DRAWN: CHECKED:	2	PLAN SIAIUS	DATE DESCRIPTION DATE DESCRIPTION	10/21/2020 STAGE I CONCEPT PLAN 04/02/2021 DSUP COMPLETENESS #2	12/18/2020 STAGE II CONCEPT PLAN 04/22/2021 DSUP VERIFICATION OF	02/24/2021 DSUP COMPLETENESS COMPLETENESS
JO H L L		ARON M. VINSON	04/22/21 NE	SLONAL ENG							
REVISION APPROVED BY	NO. DESCRIPTION DATE BY APPROVED DATE										
NORTHWEST CORNER OF SOUTH UNION STREET AND DUKE STREET DEVELOPMENT SPECIAL USE PERMIT CITY OF ALEXANDRIA, VIRGINIA PRELIMINARY GEOMETRIC PLAN											
APPROVED DSUP 2021-0012 SPECIAL USE PERMIT NO. DSUP 2021-0012 DEPARTMENT OF PLANNING & ZONING DIRECTOR DIRECTOR DATE DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. DIRECTOR DIRECTOR DATE											
CHAIRMAN, PLANNING COMMISSION DATE DATE RECORDED INSTRUMENT NO. DEED BOOK NO.											

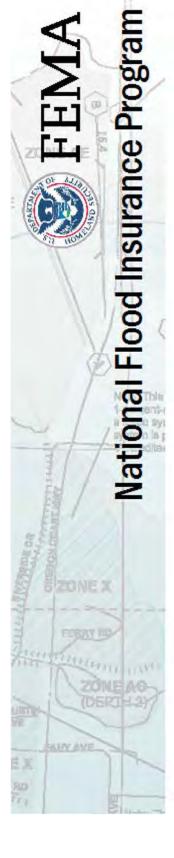


PROPOSED DESCRIPTION EXISTING CURB & GUTTER CG-2 CURB & GUTTER CG-2 Image: CG-6R Image: CG-6R CG-6R SANITARY SEWER SL SANITARY SEWER SL SL SANITARY LATERAL SL SL SL • C.O. CLEAN OUT • C.O. • C.O. W WATER MAIN W Image: CG-6R SL • C.O. STORM SEWER Image: CG-6R SL SL • C.O. CLEAN OUT • C.O. STORM SEWER Image: CG-6R SL • C.O. STORM SEWER Image: CG-6R SL SL SL SL • C.O. CLEAN OUT • C.O. STORM SEWER Image: CG-6R SL SL • C.O. CLEAN OUT • C.O. STORM SEWER Image: CG-6R SL SL • UTULITY POLE Ø Image: CG-7E Ø Image: CG-7E Image: C	ALTER L ALTER L ALTER L ALTER L A C O R P O R A T E D Ref sorters • Planners • Landscape 207 PARK AVENUE FALLS CHURCH, V (703) 532-6163 Fax (703) 533-1301 www (703) 532-6163 Fax (703) 533-1301 www (703) 532-6163 Fax (703) 533-1301 www	DATE DESCRIPTION DATE DESCRIPTION 10/21/2020 STAGE I CONCEPT PLAN 04/02/2021 DSUP COMPLETENESS #2 12/18/2020 STAGE II CONCEPT PLAN 04/22/2021 DSUP VERIFICATION OF 02/24/2021 DSUP COMPLETENESS COMPLETENESS COMPLETENESS
LIGHT C LIGHT C LIG	NORTHWEST CORNER OF SOUTH REVISION APPROVED BY NION STREET AND DUKE STREET No REVISION APPROVED BY UNION STREET AND DUKE STREET No DE DE <th>PRELIMINARY OPEN SPACE PLAN</th>	PRELIMINARY OPEN SPACE PLAN
ABOVE GRADE OPEN SPACE (±2,000 SF - 19.5%) (GARAGE TERRACES) OPEN SPACE AREA TABULATIONS REQUIRED PARCEL AREA = ±10,233 SF (±0.2349 AC) GROUND OPEN SPACE REQUIRED = 1,800 SF (300 SF/UNIT) <u>PROVIDED</u> TOTAL OPEN SPACE PROVIDED = ±2,000 SF (ALL ABOVE GRADE) 10 - 0 - 5 - 10 - 20 - 40 (IN FEET) 1 INCH = 10'	APPROVED SPECIAL USE PERMIT NODSUP 2021- DEPARTMENT OF PLANNING & ZONING DIRECTORD DEPARTMENT OF TRANSPORTATION & ENVIRONMENT SITE PLAN No DIRECTOR DIRECTOR DIRECTOR	DATE



Cľ Inde PAN

Panel Contains: CON ALEXA



PANEL 0041E

FIRM FLOOD INSURANCE RATE MAP

CITY OF ALEXANDRIA, VIRGINIA **INDEPENDENT CITY**

PANEL 41 OF 45

(SEE MAP INDEX FOR FIRM PANEL LAYOUT) CONTAINS: COMMUNITY ALEXANDRIA, CITY OF (INDEPENDENT CITY) NUMBER PANEL SUFFIX 515519 0041 Е

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER 5155190041E MAP REVISED

JUNE 16, 2011 Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP

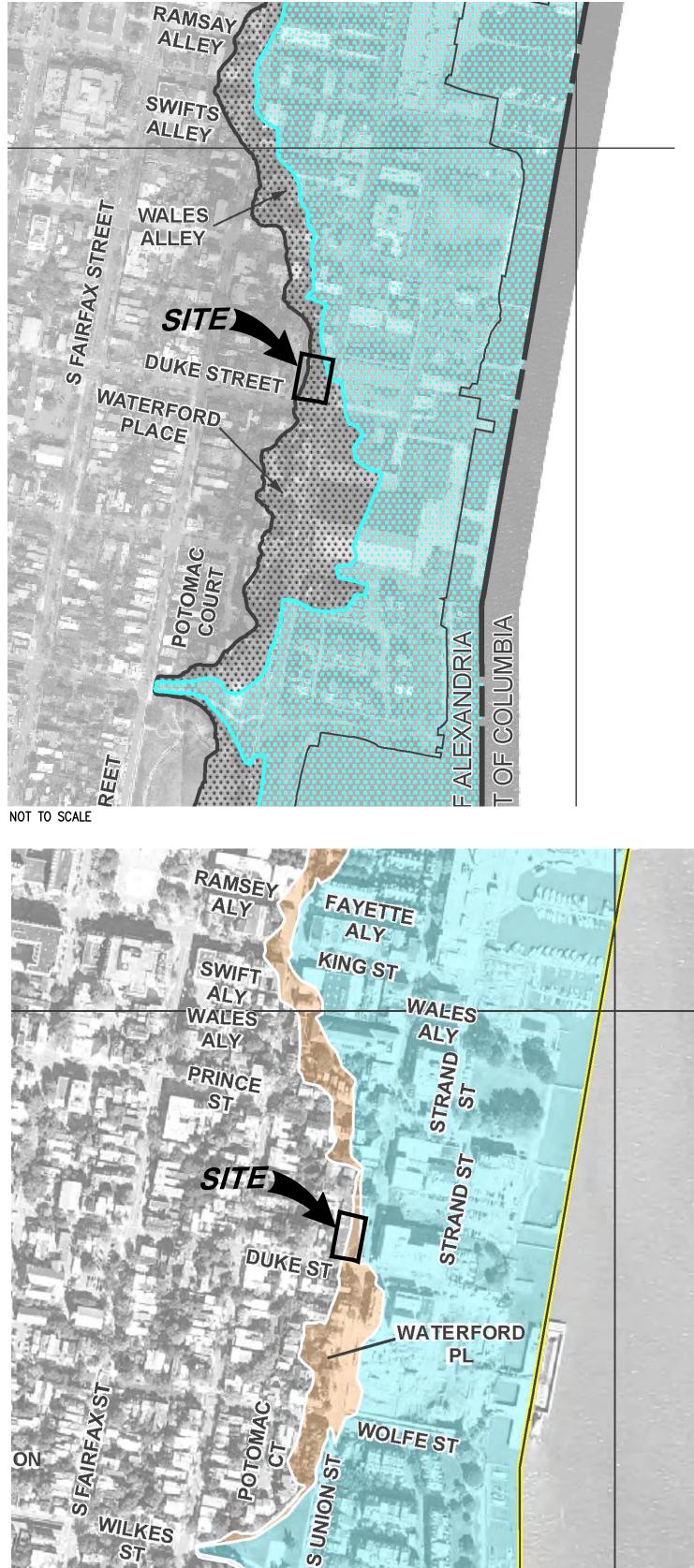
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TY OF ALEXANDRIA	A, VIRGINIA
IEL 41 OF 45	HOWER AND SECURIT
	FEMA

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MUNITY	NUMBER	PANEL	SUFFIX	
ANDRIA, CITY OF	515519	0041	F	

PRELIMINARY 9/30/2020

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



NOT TO SCALE

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

ELEVATION.

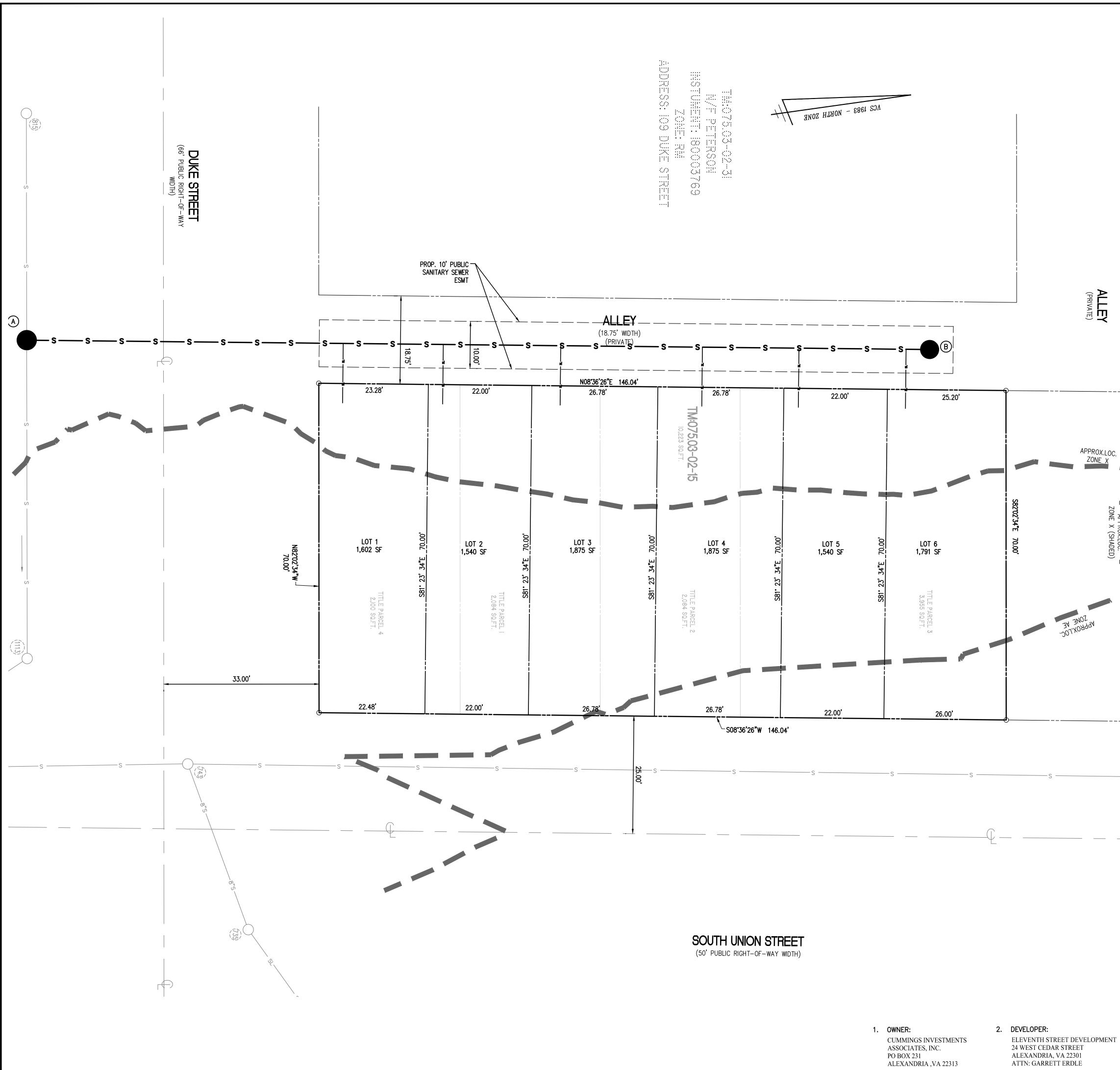
FLOODPLAIN NARRATIVE

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

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

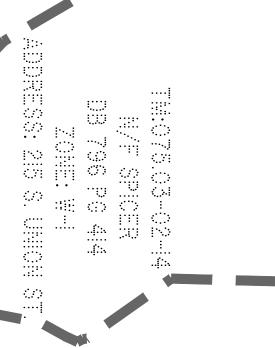
AS PER SECTION 6-306(E) AND 6-307(A). WE DO NOT ANTICIPATE THAT THE PROPOSED PROJECT WILL INCREASE THE WATER-SURFACE ELEVATION OF THE 100-YEAR FLOOD BY MORE THAN 0.5 FOOT, HOWEVER NO HYDRAULIC ANALYSIS HAS BEEN PREPARED TO-DATE. DUE TO THE SITE'S LOCATION AND THE SCALE OF FILL PROPOSED IN COMPARISON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

WALTER L. 5.1 W	DHI DS Z	INCORPORATED ESTABLISHED 1945 Engineers • Surveyors • Planners • Landscape Architects • Arborists	207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046 (703) 532-6163 Fax (703) 533-1301 www.WLPINC.com SCALE: DATE: 10/21/2020 DRAWN: CHECKED:	NTS TB/AV PLAN STATUS	DATE DESCRIPTION DATE DESCRIPTION 10/21/2020 STAGE I CONCEPT PLAN 04/02/2021 DSUP COMPLETENESS #2	12/18/2020 STAGE II CONCEPT PLAN 04/22/2021 DSUP VERIFICATION OF 02/24/2021 DSUP COMPLETENESS COMPLETENESS
JO HL		AARON M. VINSON Lic. No.041851	A ONAL ENGLY			
REVISION APPROVED BY	NO. DESCRIPTION DATE BY APPROVED DATE					
NORTHWEST CORNER OF SOUTH	UNION STREET AND DUKE STREET	DEVELOPMENT SPECIAL USE PERMIT	CITY OF ALEXANDRIA, VIRGINIA			
APPROVED DSUP 2021-0012 SPECIAL USE PERMIT NO. DSUP 2021-0012 DEPARTMENT OF PLANNING & ZONING DIRECTOR DIRECTOR DATE DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. DATE DIRECTOR DATE						
CHAIRMAN, PLANNING COMMISSION DATE DATE RECORDED INSTRUMENT NO. DEED BOOK NO. PAGE NO.						



NOTES:

- I. THE PROPERTY SHOWN HEREON IS DESIGNATED BY THE CITY OF ALEXANDRIA, VIRGINIA, AS TAX ASSESSMENT NUMBER 075.03-02-15 AND IS ZONED W-I PER THE CITY OF ALEXANDRIA ZONING MAP. A ZONING REPORT WAS NOT PROVIDED TO THE SURVEYOR.
- 2. THE PROPERTY IS NOW IN THE NAME OF CUMMINGS INVESTMENT ASSOCIATES, INC., AS RECORDED IN DEED BOOK 501 AT PAGE 187, AMONG THE LAND RECORDS OF THE CITY OF ALEXANDRIA, VIRGINIA.
- 3. TOTAL AREA OF THE PROPERTY IS 10,223 SQUARE FEET OR 0.2347 ACRES.
- 4. THIS PLAT IS BASED ON A FIELD SURVEY BY THIS FIRM, DATED 10/19/2020.
- 5. THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR THE CITY OF ALEXANDRIA, VIRGINIA, MAP NUMBER 5155190041E, EFFECTIVE DATE JUNE 16, 2011, DESIGNATES THE PROPERTY AS BEING IN THE FOLLOWING ZONES:
- ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
- ZONE X (SHADED), AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN I FOOT OR WITH DRAINAGE AREAS LESS THAN I SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD
- ZONE AE, SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOW WITH BASE FLOOD ELEVATIONS DETERMINED. (NOTE: THE LINE SHOWN HEREON IS BASED UPON THE IO' CONTOUR)
- 7. EASEMENTS, CONDITIONS, COVENANTS AND RESTRICTIONS, SHOWN AND/OR NOTED, ARE PER THE TITLE REPORT ISSUED BY WALKER TITLE, LLC, CASE NUMBER A2001356 EFFECTIVE DATE OCTOBER 15, 2020.
- 8. THE SITE SHOWN HEREON IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 AS COMPUTED FROM A FIELD RUN VERTICAL CONTROL SURVEY AND IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983, [NAD 83(2011) (EPOCH:2010.0000)] AS COMPUTED FROM A FIELD RUN BOUNDARY AND HORIZONTAL CONTROL SURVEY THAT TIES THIS BOUNDARY AND THE BENCHMARK(S) SHOWN TO THE TOPCON GNSS RTK REFERENCE NETWORK. THE COMBINED FACTOR APPLIED TO THE FIELD DISTANCES TO DERIVE THE REFERENCED COORDINATES IS 0.99994766. THE FOOT DEFINITION USED FOR CONVERSION OF THE MONUMENT COORDINATES AND IN THE PERFORMANCE OF THIS SURVEY IS THE U.S. SURVEY FOOT. CONTOUR INTERVAL IS ONE FOOT.



SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT I HAVE CAREFULLY SURVEYED THE PROPERTY DELINEATED BY THIS PLAT, AND THAT IT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF; THAT THIS IS A SUBDIVISION OF PART (OR ALL) OF THE LAND CONVEYED BY SAMUEL CUMMINGS TO CUMMINGS INVESTMENT ASSOCIATES, INC BY DEED DATED 09/01/1959 AND RECORDED AMONG THE LAND RECORDS OF THE CITY OF ALEXANDRIA IN DEED BOOK 501 AT PAGE 187 AND IS WITHIN THOSE BOUNDARIES; AND THAT ALL REQUIRED MONUMENTS HAVE BEEN INSTALLED WHERE INDICATED; EXCEPT THOSE THAT WILL BE INSTALLED AT A LATER DATE BUT BEFORE COMPLETION OF THE PROJECT.

CERTIFIED SURVEYOR OR ENGINEER

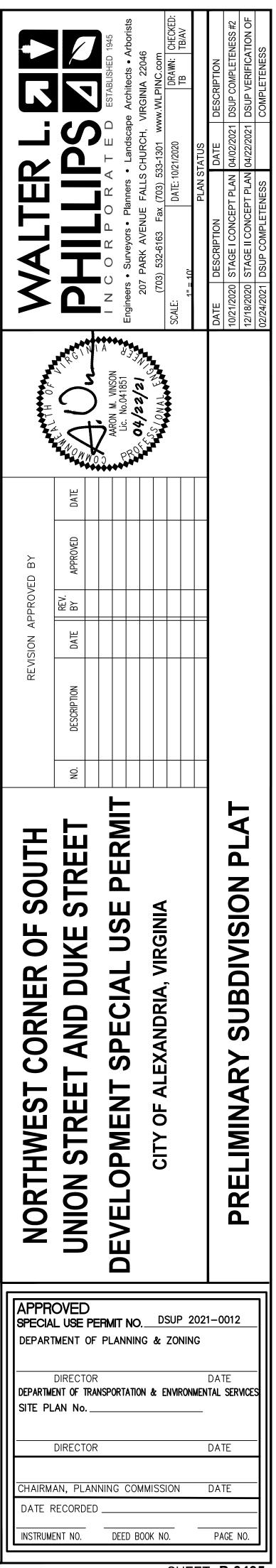
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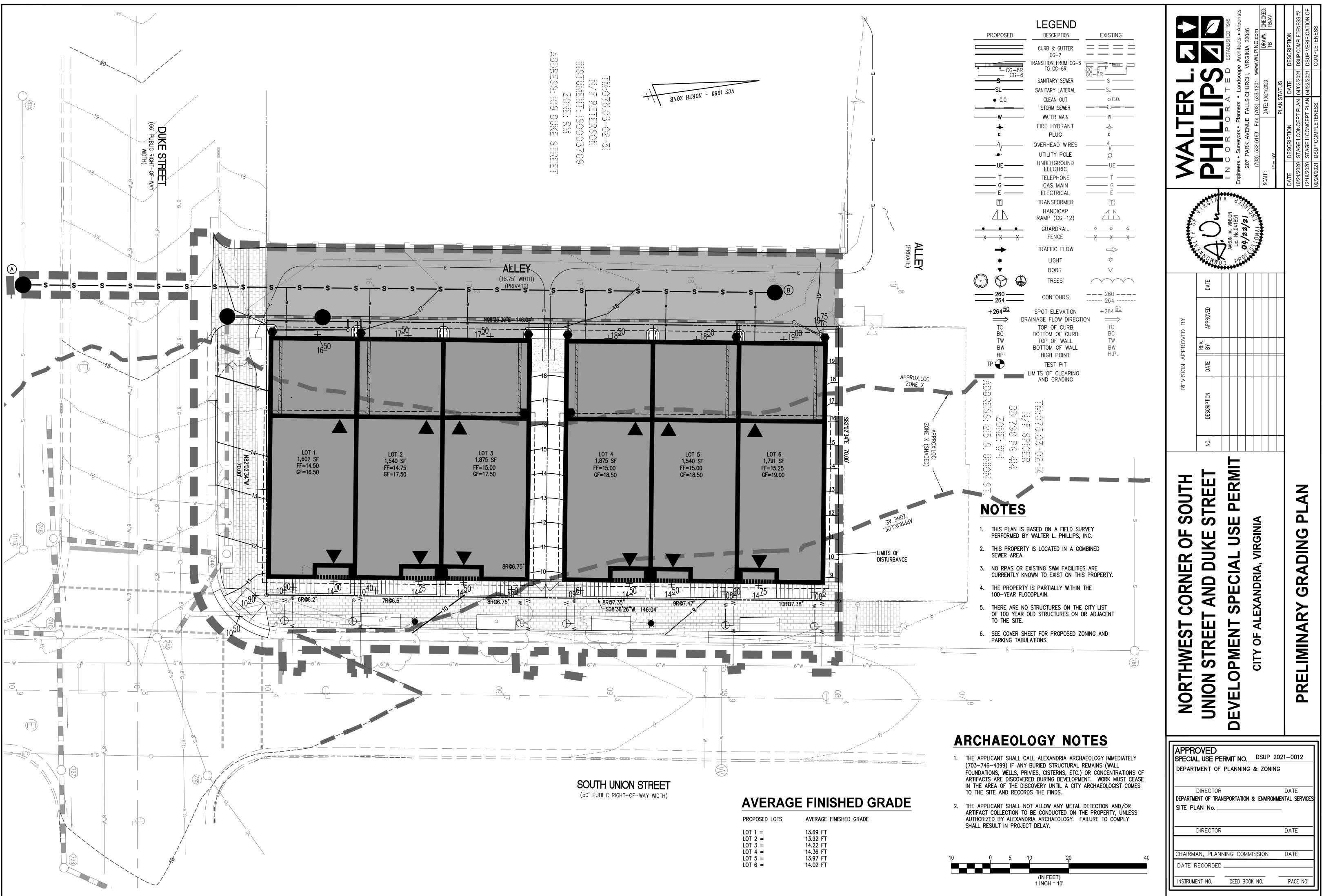
SUBDIVISION NAME:	101 DUKE STREET
TOTAL AREA:	10,223 SQ. FT. OR 0.2347 ACRES
NUMBER OF LOTS:	6 LOTS
ZONE:	W-1

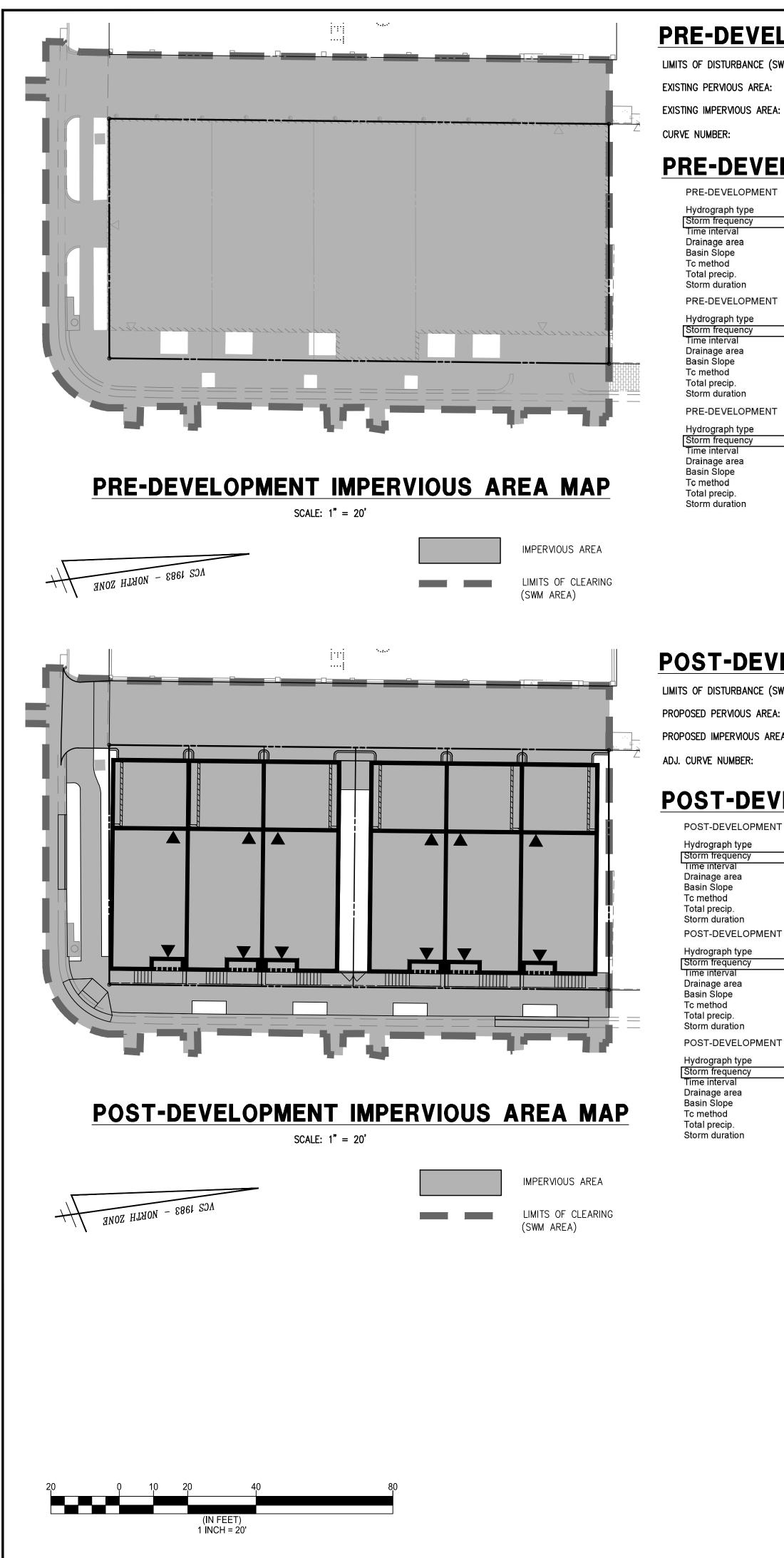
LOT AREA TABULATIONS

EXISTING LOT AR	EA: 10,223	SF OR 0.2347	ACRES
PROPOSED LOTS			
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	40 SF OR 0.0 75 SF OR 0.0 75 SF OR 0.0 40 SF OR 0.0	0368 ACRES 0354 ACRES 0430 ACRES 0430 ACRES 0354 ACRES 0411 ACRES	
TOTAL = 10,2	23 SF OR 0.2	2347 ACRES	
0 5	10	20	

(IN FEET) 1 INCH = 10'







PRE-DEVELOPMENT CURVE NUMBER

E (SWM	AREA):
EA:	
REA:	

17,217 SQ. FT. OR 0.3952 ACRES 656 SQ. FT. OR 0.0151 ACRES 16,561 SQ. FT. OR 0.3802 ACRES

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

PRE-DEVELOPMENT

MENT			
,	= SCS Runoff	Peak discharge	= 1.408 cfs
	= 1 yrs	Time to peak	= 716 min
	= 2 min	Hyd. volume	= 3,176 cuft
	= 0.395 ac	Curve number	= 97
	= 0.0 %	Hydraulic length	= Oft
	= User	Time of conc. (Tc)	= 5.00 min
	= 2.70 in	Distribution	= Type II
	= 24 hrs	Shape factor	= 484
MENT			
)	= SCS Runoff	Peak discharge	= 1.683 cfs
	= 2 yrs	Time to peak	= 716 min
	= 2 min	Hyd. volume	= 3,842 cuft
	= 0.395 ac	Curve number	= 97
	= 0.0 %	Hydraulic length	= 0 ft
	= User	Time of conc. (Tc)	= 5.00 min
	= 3.20 in	Distribution	= Type II
	= 24 hrs	Shape factor	= 484
MENT			
2	= SCS Runoff	Peak discharge	= 2.778 cfs
	= 10 yrs	Time to peak	= 716 min
	= 2 min	Hyd. volume	= 6,518 cuft
	= 0.395 ac	Curve number	= 97
	= 0.0 %	Hydraulic length	= 0 ft
	= User	Time of conc. (Tc)	= 5.00 min
	= 5.20 in	Distribution	= Type II
	= 24 hrs	Shape factor	= 484

EVELOPMENT	CURVE	NUMBER

E (SWM	AREA)
REA:	
AREA:	

17,217 SQ. FT. OR 0.3952 ACRES 1,180 SQ. FT. OR 0.0271 ACRES 16,037 SQ. FT. OR 0.3674 ACRES 97 (SEE VRRM SPREADSHEET - P-0702)

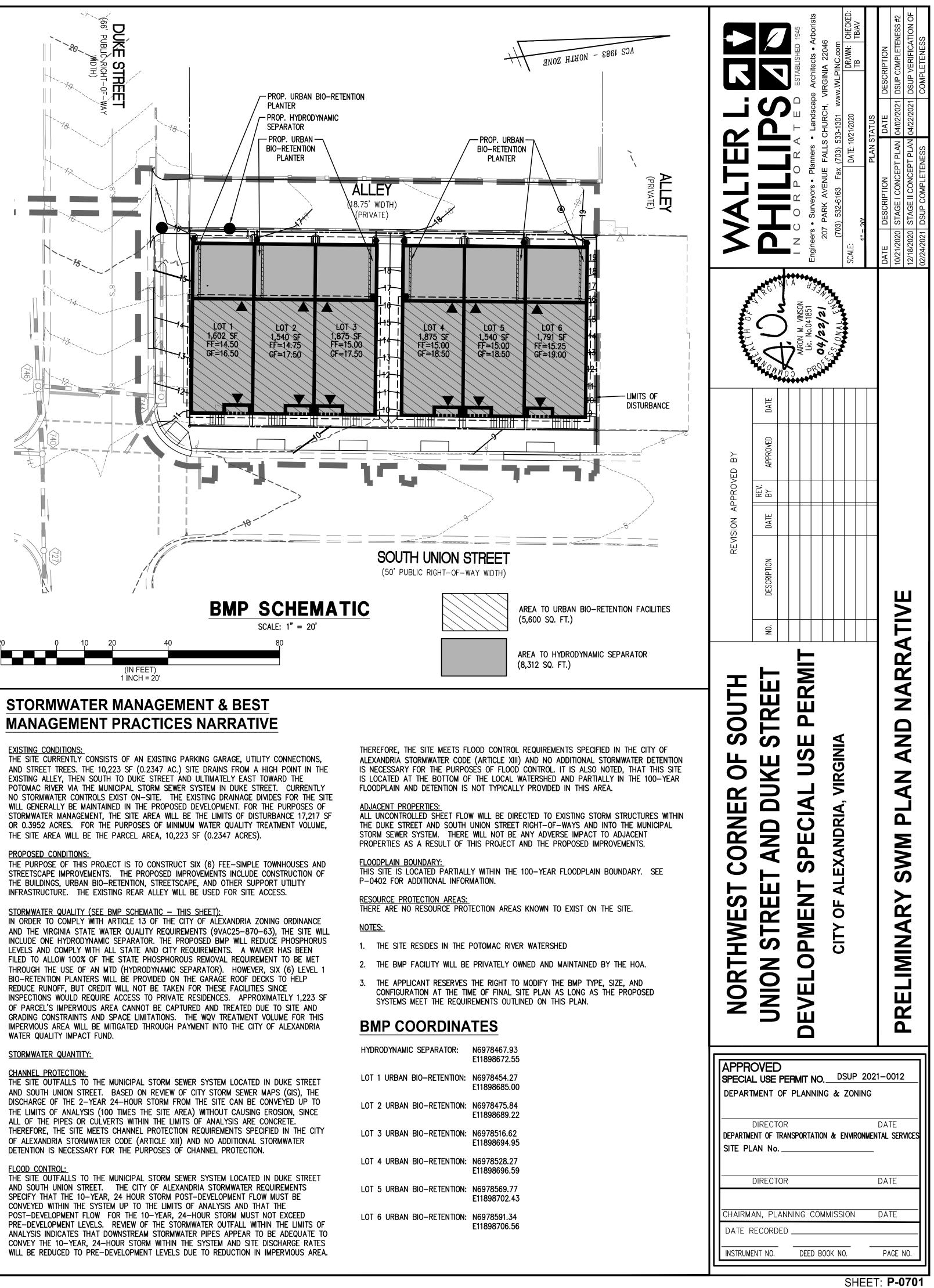
POST-DEVELOPMENT

	=	SCS Runoff
	=	1 yrs
	=	2 min
	=	0.395 ac
	=	0.0 %
	=	User
	=	2.70 in
	=	24 hrs
ENT		
	=	SCS Runoff
		2 yrs
		2 min
		0.395 ac
	=	0.0 %
	=	User
	=	3.20 in
	Ξ	24 hrs
ENT		
		SCS Runoff
	Ξ	10 yrs
	Ξ	2 min
	=	0.395 ac
	=	0.0 %
	Ξ	User
	=	5.20 in
	Ξ	24 hrs

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

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

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



NO DUMPING DETAIL NOT TO SCALE

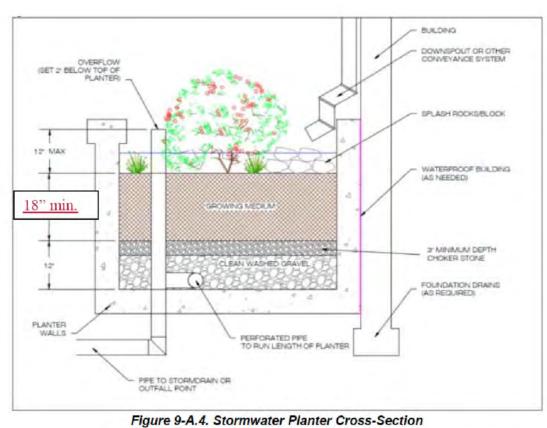


NOTES

FINAL ENGINEERING

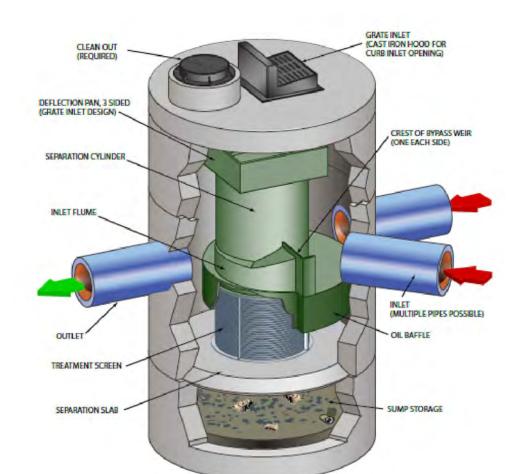
1. PROJECT SITE IS LOCATED WITHIN THE POTOMAC RIVER WATERSHED. ALL ONSITE INLETS AND PUBLIC INLETS WITHIN 50' OF SITE SHALL BE MARKED USING STANDARD CITY MARKERS.

TYPICAL BMP DETAILS **URBAN BIO-RETENTION**



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

HYDRODYNAMIC SEPARATOR



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

	Project Name:	NORTHW		DF SOUTH UNION ST AND DUK	EST	CLEAR	ALL	data input cells constant values			Site Results (Water Quality Compliance)
				and the second se)	Summarkan		calculation cells			
	Site Information							final results			IMPERVIOUS COVER (ac) 0.37 0.00 0.00 0.00 0.00 OK.
	Post-Development Project	: (Treatme	nt Volum	e and Loads)							MANAGED TURF AREA TREATED (ac) 0.00 0.00 0.00 0.00 0.00 0.00 OK.
<text></text>			Ente	er Total Disturbed Area (ac	res) \rightarrow 0.4	40	BMP Design Spe		2013 Draft Stds & Space		
			The site's ne					Linear project?			
									2		
	re-ReDevelopment Land Cover (acre	es)									TP LOAD AVAILABLE FOR REMOVAL (lb/yr) 0.81 0.00 0.00 0.00 0.00 0.81
		A Soils	B Soils	C Soils D So							
<form></form>	Nanaged Turf (acres) disturbed, graded for			0.0	2 0.1	02					NITROGEN LOAD REDUCTION ACHIEVED (lb/yr) 0.00 0.00 0.00 0.00 0.00
<form></form>				0.3	8						
	last Doublesment Land Cover (acres)				0.	40					TP LOAD REDUCTION REQUIRED (lb/yr) 0.06
<form></form>		A Soils	B Soils	C Soils D Sc							TP LOAD REMAINING (Ib/yr): 0.73
<form></form>	Managed Turf (acres) disturbed, graded for										** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR ** <u>*** NO CREDIT TAKEN FOR URBAN BIO-RETENTION</u>
	a construction of the cons				0	37					POST-DEVELOPMENT LOAD (lb/yr) 5.82
	Area Check	ОК.	ОК.	ОК. ОН	. 0	40					
								-			
	arget Rainfall Event (inches)	1.00		A Sc Forest/Open Space 0.0	2 0.	03 0.04	0.05				Forest/Open Space undisturbed, protected Area (acres) 0.00 0.00 0.00 0.00 Runoff Reduction
	otal Nitrogen (TN) EMC (mg/L)	1.86						1			forest/open space or reforested landCN30557077Volume (ft³):0Managed Turf disturbed, graded for yards or otherArea (acres)0.000.000.000.03
	j (unitless correction factor)	0.90									Area (acres) 0.00 0.00 0.37
			LOPMENT								CN 98 98 98 98 CN _(D.A. A)
			Adjusted ¹	Post F	eDev. & New Impervio		Post-ReDeve	5.5. C.			
	Characteric et caracteric de			Cover (acres) 0.1		Cover (acres)				RV _{Developed} (watershed-inch) with no Runoff Reduction* 2.36 2.86 4.85
	% Forest	0%	0%	% Fo	rest 0'	%	% Forest	0%			
				(acr	es) 0.1		(acres)				
<complex-block></complex-block>											
	Impervious Cover (acres)	0.38	0.38	Impervious C	over (acres) 0.	37		0.37		0.00	
		1			1		Rv(impervious)			-	
							Total ReDev. Site Area				PROJECT DESCRIPTION
	Site Rv	0.92	0.92	Final Post D	ev Site Rv 0.1	90		0.90			
	Treatment Volume and	l Nutrient Lo	ad			Treatm	ment Volume and	d Nutrient Loa	d		
		0.0304	0.0304	Treatment	Volume 0.03		Treatment Volume	0.0297	Treatment Volume	-	
				(acre	-10		(acre-ft)		(acre-ft)		ON-SITE TREATED 0.19 0.00 0.19
		1,325	1,325	Treatment	Volume 1,2	194	Treatment Volume	1,294	Treatment Volume (cubic		TOTAL TREATED/DETAINED 0.19 0.00 0.19
	(contract)						(cubic feet)		feet)		
		0.83	0.83	Developr	nent TP 0 :	81	Load (TP)	0.81		-	AREA TREATED BY BMP IMPERVIOUS AREA BMP TREATED
				(іь/	yr)						HYDRODYNAMIC
		2.11	2.11	TP Load p	er acre 2.0		Load per acre	2.06			SEPARATOR 0.19 20%
			0.10					1011			
Add Sub diverse di diverse di diverse diverse diverse diverse diverse d			0.16				(Below Pre-	10%			101AL 0.19 0.19
Number of the starting of the s				1		ſ	TP Load Reduction				
Image: Instance of the Advectore and up (Instance o	re ReDevelopment land cover minus pervious land		n space or				Required for Redeveloped Area	0.06	Required for New	0	
And Star Star Star Star Star Star Star Star	djusted total acreage is consistent with Post-ReD		ge (minus acreage				(Ib/yr)		(IV/YF)		
Post-Development Requirement for Site Area Image: Control of Control o	olumn I shows load reduction requriement for ne	w impervious cover	(based on new								
Post-Development Kequirement for sto Area T P Lasd Reduction Required (lb/yr) 0.05 Nitrogen Loads (Informational Purposes Only) methoderedement NitLad (bl/yr) 5.85 Trainage Area A CLEAR IMMP AREAS Total Phosphorus Available for Removal In D.A. A (bl/yr) Total Phosphorus Available for Removal In D.A. A (bl/yr) Total Phosphorus Available for Removal In D.A. A (bl/yr)											
TP Load Reduction Required (lip/yr) 0.66 Imperiod S55 S56 S56 Bit/yr) S55 S56 S56 Bit/yr) S55 S56 S56 Bit/yr) S57 S57 S57 Bit/yr) S57 S56 S56 Bit/yr) S57 Bit/yr) S57 Bit/yr) S58 Bit/yr)				Post-Developmer	nt Requiremen	nt for Site Area					
Pre-Redevelopment TNLoad (B/yr) S.95 S.95 S.95 S.92 Pre-Redevelopment TNLoad (B/yr) S.95 S.92 S.92 Pre-Redevelopment TNLoad (B/yr) S.95 S.92 S.92 Pre-Redevelopment TNLoad (B/yr) S.95 S.92 S.92 S.92 Pre-Redevelopment TNLoad (B/yr) S.95 S.92				TP Load Reduction	Required (Ib/yr)	0.06					
Pre-Redbeekspreent TNLoad (Byly) 5.35 Final Post-Development TN Load (Byly) 5.82 Oranage Area A Case <											
Pre-ReDucedopment TN Load (B/m) 5.95 Provinage Pre-ReDucedopment R & New Impervious 5.82 Drainage Area A Drainage Area A Land Cover (acres) CLEAR BMP AREAS				Nitrogen Loa	ds (Information	nal Purposes Only)					
A Soils B Soils C Soils D Soils Total Aud Cover (acres) A Soils (S rest/Open Space (acres)) A Soils (S rest/Open Space (acres)) CLEAR BMP AREAS Forest/Open Space (acres) A Soils (S rest/Open Space (acres)) Down and active to the point of the point o		Pre-ReDevelopm	ent TN Load (lb/yr)) 5.95		(Post-ReDevelopm	nent & New Impervious)	5.82			
rainage Araa A Land Cover (acres) A Soils B Soils C Soils D Soils Total Is Land Cover Rave Managed Turf (acres) Impervious Cover (acres) Imperviou	L					L	linλ λι)				
A Soils B Soils C Soils D Soils Totals Land Cover Note Forest/Open Space (acres) 0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0									CLEAR BMP AREAS		
Forest/Open Space (acres) Image	rainage Area A Land Cover (acres)	A Soils	s B So	ils C Soils D S	ioils Tota	als Land Cover Rv]				
Impervious Cover (acres) Impervious Cover (acres) O.37 O.37 O.95 Total Phosphorus Available for Removal in D.A. A (lb/yr) O.81 Post Development Treatment Volume in D.A. A (tr ³) 1,294					0.0	0 0.00					
Total 0.40 Post Development Treatment Volume in D.A. A (ft ³) 1,294 tormwater Best Management Practices (RR = Runoff Reduction) tormwater Best Management Practices (RR = Runoff Reduction) Runoff Managed Turf Impervious Volume from Remaining Total BMP Phosphorus Load Untreated Phosphorus Remaining Downstream Practice to be Nitrogen Nitrogen Nitrogen Remaining								1	otal Phosphorus Available for R	Removal in D.A.	(lb/yr) 0.81
Runoff Managed Turf Impervious Volume from Remaining Total BMP Phosphorus Load Untreated Phosphorus Load Untreated Phosphorus Remaining Downstream Practice to be									and the second second second second		
Runott	ormwater Best Manager										
Practice Reduction Credit Area Cover Credit Upstream Removal from Upstream Removal from Upstream Nitrogen Load to Removed By Nitrogen Load to Removed By Nitrogen Load to Removed By Nitrogen Load	Practice	Reducti	on Credit	Area Cover Credit Upst	ream Run	off Runoff Volume	Treatment	Removal	from Upstream Phosphorus	Load Remov	d By Phosphorus Load Downstream Practice to be Removal from Upstream Nitrogen Load to Removed By Nitrogen Load
Area (acres) Area (acres) Practice (ft ³) Reduction (ft ³) (ft ³) Volume (ft ³) Efficiency (%) Practice (lb) (lb) Employed Manufactured Treatment Devices (no RR) Volume (no RR) Volume (ft ³) Efficiency (%) Practice (lb) Volume (ft ³) Volume (ft ³) Efficiency (%) Practice (lb) (lb) Interview (lb) Interview (lb) Practice (lb) Practice (lb) (lb)		Search States of the local division of the l	%) (acre	es) Area (acres) Practi	ce (ft ³) Reduction	(ft ³)	Volume (ft ³)	Efficiency (%)	Practices (Ib) to Practice	(lb) Practic	(Ib) Employed Efficiency (%) Practices (Ibs) Practice (Ibs) (Ibs)
14.a. Manufactured Treatment Device- Hydrodynamic 0 0.19 0 0 658 658 20 0.00 0.41 0.08 0.33	14.a. Manufactured Treatment Device-	0		0.19	0 0	658	658	20	0.00 0.41	0.0	

Project Name:	NORTHWE		OUTH UNION ST AND DUKE ST		EAR ALL	data input cells			Site Results (Water Quality Compliance)	
Date:			4/2021 pment Project? No			constant values			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 0.00 0.00	
Site Information						final results			FOREST/OPEN SPACE (ac) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
Post-Development Project	(Treatmer	t Volume a	nd Loads)						MANAGED TURF AREA (ac) 0.03 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. OK.	
		Enter T	otal Disturbed Area (acres) \rightarrow	0.40	BMP Design Speci	Check: fications List: 2	013 Draft Stds & Specs		AREA CHECK OK. OK. OK. OK. OK.	_
			Maximum reduction required: rease in impervious cover (acres) is:	10% 0	Land cover areas enter		~		Runoff Reduction Volume and TP By Drainage Area	
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	F	ost-Developmen	t TP Load Reduction for Site (lb/yr):	0.06	Total disturbed o	area entered?	~		D.A. A D.A. B D.A. C D.A. D D.A. E RUNOFF REDUCTION VOLUME ACHIEVED (ft ³) 0 0 0 0 0	ļŪ
Pre-ReDevelopment Land Cover (acres) A Soils	B Soils	C Soils D Soils	Totals					TP LOAD AVAILABLE FOR REMOVAL (Ib/yr) 0.81 0.00 0.00 0.00 0.81 TP LOAD REDUCTION ACHIEVED (Ib/yr) 0.08 0.00 0.00 0.00 0.00 0.00	╎┣━
Forest/Open Space (acres) undisturbed forest/open space Managed Turf (acres) disturbed, graded for				0.00					TP LOAD REMAINING (lb/yr) 0.73 0.00 0.00 0.00 0.73	
yards or other turf to be mowed/managed Impervious Cover (acres)			0.02	0.02					NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	
			[0.40					FINAL POST-DEVELOPMENT TP LOAD (Ib/yr) 0.81 TP LOAD REDUCTION REQUIRED (Ib/yr) 0.06	>
Post-Development Land Cover (acres) Forest/Open Space (acres) - undisturbed,	A Soils	B Soils	C Soils D Soils	Totals					TP LOAD REDUCTION ACHIEVED (lb/yr) 0.08 TP LOAD REMAINING (lb/yr): 0.73 REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.00 **	
protected forest/open space or reforested land Managed Turf (acres) disturbed, graded for yards or other turf to be mowed/managed			0.03	0.00					** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR ** <u>*** NO CREDIT TAKEN FOR URBAN BIO-RETENTION</u>	
Impervious Cover (acres)			0.37	0.37					Total Nitrogen (For Information Purposes) POST-DEVELOPMENT LOAD (Ib/yr) 5.82 NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00	
Area Check	ОК.	ОК.	ок. ок.	0.40					REMAINING POST-DEVELOPMENT NITROGEN LOAD (Ib/yr) 5.82	
Constants Annual Rainfall (inches)	43	R	Inoff Coefficients (Rv)	B Soils C Soi	s D Soils				Drainage Area A A Soils B Soils C Soils D Soils Total Area (acres): 0.40	
Target Rainfall Event (inches) Total Phosphorus (TP) EMC (mg/L)	1.00 0.26	M	rest/Open Space 0.02 anaged Turf 0.15	0.03 0.04 0.20 0.22	0.05 0.25				Forest/Open Space undisturbed, protected forest/open space or reforested land Area (acres) 0.00 0.00 0.00 0.00 forest/open space or reforested land CN 30 55 70 77 Volume (ft ³): 0	
Total Nitrogen (TN) EMC (mg/L) Target TP Load (lb/acre/yr) Pj (unitless correction factor)	1.86 0.41 0.90	In	pervious Cover 0.95	0.95 0.95	0.95			Ma	aged Turf disturbed, graded for yards or otherArea (acres)0.000.000.000.03turf to be mowed/managedCN39617480	
LAND COVER SUMMARY PF	RE-REDEVEL	OPMENT		LAND CO	VER SUMMARY POS	ST DEVELO	PMENT		Impervious Cover Area (acres) 0.00 0.00 0.00 0.37 CN 98 98 98 98 98	
Land Cover Summa Pre-ReDevelopment	nry-Pre Listed	Adjusted ¹	Land Cover Summa Post ReDev. & Nev		Land Cover Summ Post-ReDevelo	-	Land Cover Sumn Post-Development Ne		97	B
Forest/Open Space Cover (acres)	0.00	0.00	Forest/Open Space Cover (acres)	0.00	Forest/Open Space Cover (acres)	0.00			1-year storm2-year storm10-year stormRVDeveloped (watershed-inch) with no Runoff Reduction*2.362.864.85	ROVED
Weighted Rv(forest) % Forest	0.00	0.00 0%	Weighted Rv(forest) % Forest Managed Turf Cover	0.00 0%	Weighted Rv(forest) % Forest Managed Turf Cover	0.00 0%			RV Developed (watershed-inch) with Runoff Reduction*2.362.864.85Adjusted CN*979797	APPR
Managed Turf Cover (acres) Weighted Rv(turf)	0.02	0.02	(acres) Weighted Rv (turf)	0.03	(acres) Weighted Rv (turf)	0.03		1	ear storm 2-year storm 10-year storm	REVISION
% Managed Turf	4%	4%	% Managed Turf	7%	% Managed Turf	7%		U	2.703.205.20NOAA Atlas 14 (http://hdsc.nws.noaa.gov/hdsc/pfds/)	REVI
Impervious Cover (acres)	0.38	0.38	Impervious Cover (acres)	0.37	ReDev. Impervious Cover (acres)	0.37	New Impervious Cover (acres)	0.00		
Rv(impervious) % Impervious	0.95 96%	0.95 96%	Rv(impervious) % Impervious	0.95 93%	Rv(impervious) % Impervious	0.95 93%	Rv(impervious)	-		
Total Site Area (acres)	0.40	0.40	Final Site Area (acres) Final Post Dev Site Rv	0.40	Total ReDev. Site Area (acres) ReDev Site Rv	0.40			PROJECT DESCRIPTION	
Site Rv Treatment Volume and		0.92 d	Final Post Dev Site KV		reatment Volume and I	0.90 Nutrient Load	1		DEVELOPMENT REDEVELOPMENT	
Pre-ReDevelopment Treatment Volume	0.0304	0.0304	Final Post-Development Treatment Volume	0.0297	Post-ReDevelopment Treatment Volume	0.0297	Post-Development Treatment Volume		DRAINAGE AREA IMPERVIOUS AREA PERVIOUS AREA TOTAL	
(acre-ft)	0.0304	0.0304	(acre-ft)	0.0237	(acre-ft)	0.0297	(acre-ft)		SITE AREA 0.22 0.02 0.23 ON-SITE TREATED 0.19 0.00 0.19	근
Pre-ReDevelopment Treatment Volume	1,325	1,325	Final Post-Development Treatment Volume	1,294	Post-ReDevelopment Treatment Volume	1,294	Post-Development Treatment Volume (cubic		OFF-SITE TREATED 0.00 0.00 0.00 TOTAL TREATED/DETAINED 0.19 0.00 0.19	
(cubic feet)			(cubic feet)		(cubic feet)		feet)		TOTAL UNDETAINED 0.03 0.02 0.04 WATER TREATMENT_ON/OFF-SITE	
Pre-ReDevelopment TP Load (lb/yr)	0.83	0.83	Final Post- Development TP Load	0.81	Post-ReDevelopment Load (TP)	0.81	Post-Development TP Load (lb/yr)	-	AREA TREATED BY BMP IMPERVIOUS AREA BMP TREATED	
			(Ib/yr) Final Post-Development		(lb/yr)*				BMP TYPE (AC) TREATED BY BMP (AC) EFFICIENCY (%) HYDRODYNAMIC 0.10 0.10 0.00%	Ц С
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.11	2.11	TP Load per acre (lb/acre/yr)	2.06	Load per acre (lb/acre/yr)	2.06			SEPARATOR 0.19 20%	
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment a		0.16			Max. Reduction Required (Below Pre-	10%			TOTAL 0.19 0.19	
pervious land proposed for new impervious	s cover)				ReDevelopment Load)				MISCELLANEOUS	
^L Adjusted Land Cover Summary: Pre ReDevelopment land cover minus pervious land	cover (forest/open	space or			TP Load Reduction Required for	0.06	TP Load Reduction Required for New		TOTAL WQV TREATED YES NO	
managed turf) acreage proposed for new imperviou Adjusted total acreage is consistent with Post-ReDe	is cover.				Redeveloped Area (lb/yr)	0.00	Impervious Area (Ib/yr)	Ŭ	DETENTION ON SITE YES NO	
of new impervious cover).									PROJECT IS WITHIN WHICH WATERSHED? <u>POTOMAC RIVER</u>	Ľ
Column I shows load reduction requriement for new development load limit, 0.41 lbs/acre/year).	impervious cover (oase a on new							PROJECT DISCHARGES TO WHICH BODY OF WATER? <u>POTOMAC RIVER</u> WQV TREATMENT = 1,816 CF/AC OF IMPERVIOUS AREA	EMH.
			Post-Development Requi	rement for Site Are	a				= 1,816 CF/AC X 0.2189 AC = 398 CF	L T T
			TP Load Reduction Required	lb/yr) 0.06	a training					
										Z
-			Nitrogen Loads (Infor							
	Pre-ReDevelopmer	t TN Load (lb/yr)	5.95		ost-Development TN Load velopment & New Impervious) (lb/yr)	5.82				APF
Drainage Area A				<u>C</u>						SPEC
Drainage Area A Land Cover (acres)							CLEAR BMP AREAS			DEP/
Forest/Open Space (acres)	A Soils	B Soils	C Soils D Soils	Totals Land Cov 0.00 0.00						DEPAR
Managed Turf (acres)			0.03	0.03 0.25					0.81	SITE
Impervious Cover (acres)			0.37 Total	0.37 0.95 0.40		То	tal Phosphorus Available for Post Development Treatme			
itormwater Best Managem	nent Practi	ces (RR = Ru	noff Reduction)						Select from dropdown lists	
Practice	Runoff Reductio	Managed Tu Credit Area	rf Impervious Volume from Cover Credit Upstream	Runoff Reduction (ft ³)	olume Treatment	Removal	Phosphorus Load Untreat from Upstream Phosphorus	Load Removed By	Remaining Phosphorus Load Downstream Practice to be Employed Nitrogen Nitrogen Load Untreated Nitrogen Remaining (III) Employed Employed Fficine (IIII) Description (IIIII) Description (IIIIII) Description (IIIIII) Description (IIIIII)	CHAI
	Credit (%) (acres)	Area (acres) Practice (ft ³)	(ft ³)	Volume (ft ³) Ef	ficiency (%)	Practices (Ib) to Practice	(lb) Practice (lb)	(ID) Efficiency (%) Practices (IDS) Practice (IDS) (IDS)	DAT
14. Manufactured Treatment Devices (I	no RR)								14. Manufactured BMP (no RR)	INSTR

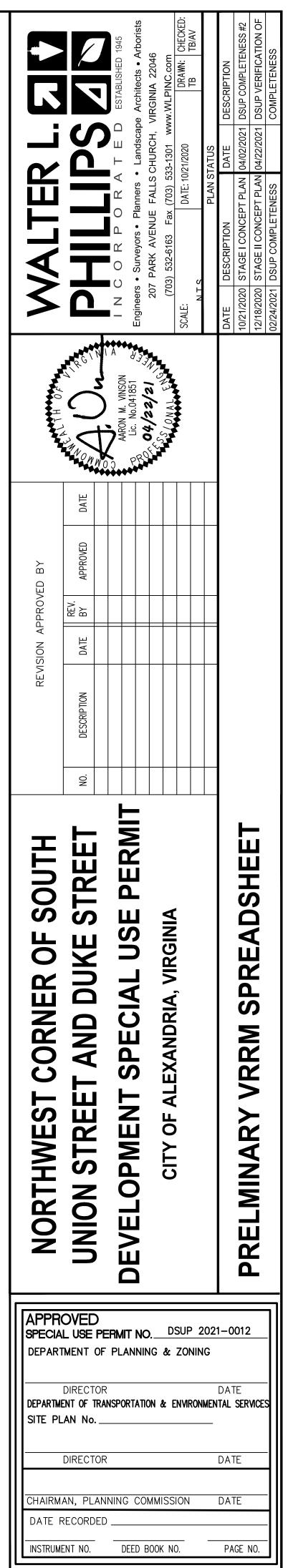
Land Cover Summary-Pre								
Pre-ReDevelopment	Listed	Adjusted ¹						
Forest/Open Space Cover (acres)	0.00	0.00						
Weighted Rv(forest)	0.00	0.00						
% Forest	0%	0%						
Managed Turf Cover (acres)	0.02	0.02						
Weighted Rv(turf)	0.25	0.25						
% Managed Turf	4%	4%						
Impervious Cover (acres)	0.38	0.38						
Rv(impervious)	0.95	0.95						
% Impervious	96%	96%						
Total Site Area (acres)	0.40	0.40						
Site Rv	0.92	0.92						

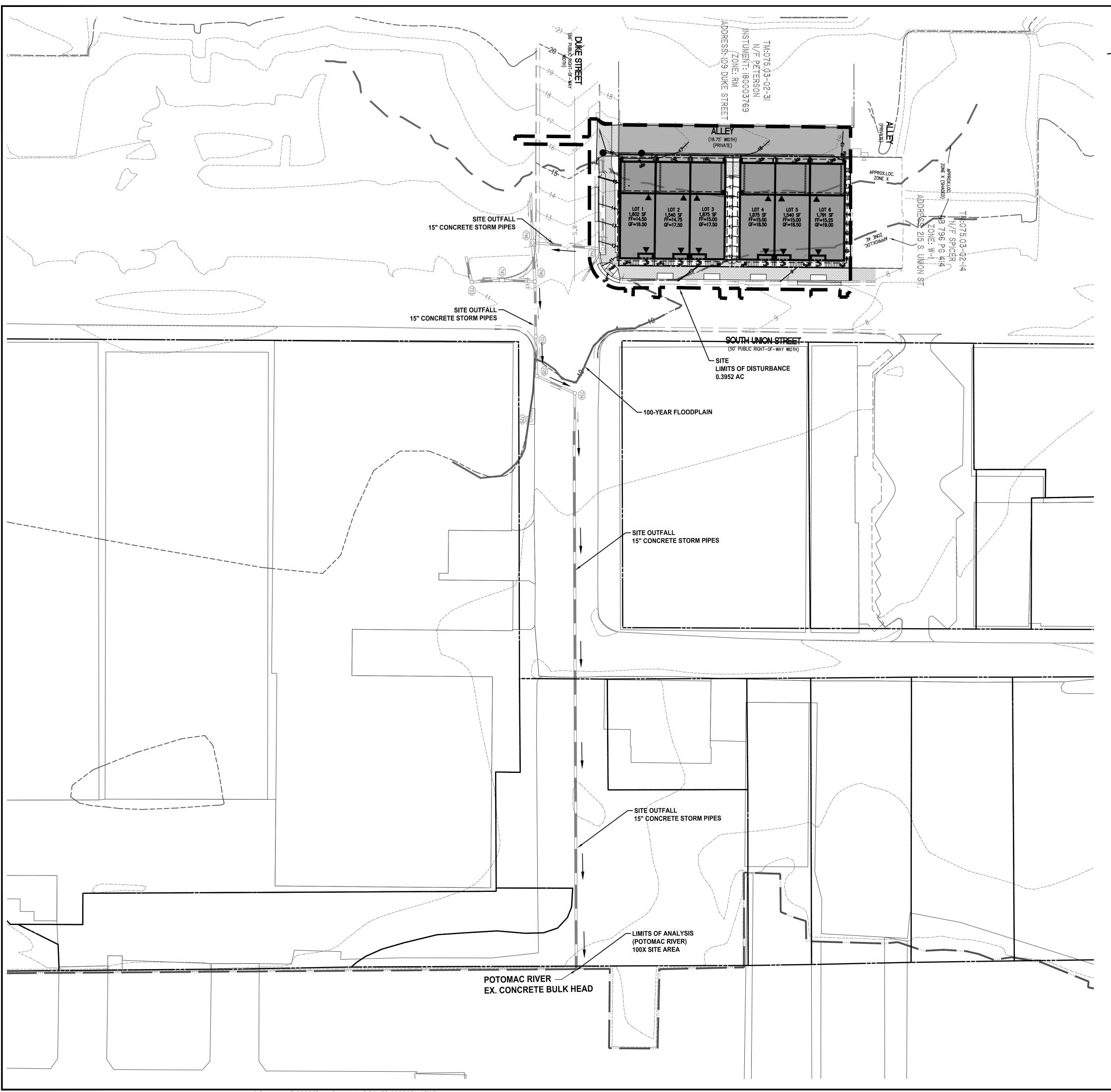
Treatment Volume and Nutrient Load							
Pre-ReDevelopment Treatment Volume (acre-ft)	0.0304	0.0304					
Pre-ReDevelopment Treatment Volume (cubic feet)	1,325	1,325					
Pre-ReDevelopment TP Load (Ib/yr)	0.83	0.83					
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.11	2.11					
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment pervious land proposed for new impervio		0.16					

Project Name:	NORTHWE		OUTH UNION ST AND DUKE ST		EAR ALL	data input cells			Site Results (Water Quality Compliance)	
Date:			4/2021 pment Project? No			constant values			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 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00<	
Site Information						final results			FOREST/OPEN SPACE (ac) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
Post-Development Project	(Treatmer	t Volume a	nd Loads)						MANAGED TURF AREA (ac) 0.03 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. OK.	
		Enter T	otal Disturbed Area (acres) \rightarrow	0.40	BMP Design Speci	Check: fications List: 2	013 Draft Stds & Specs		AREA CHECK OK. OK. OK. OK. OK.	_
			Maximum reduction required: rease in impervious cover (acres) is:	10% 0	Land cover areas enter		~		Runoff Reduction Volume and TP By Drainage Area	
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	F	ost-Developmen	t TP Load Reduction for Site (lb/yr):	0.06	Total disturbed o	area entered?	~		D.A. A D.A. B D.A. C D.A. D D.A. E RUNOFF REDUCTION VOLUME ACHIEVED (ft ³) 0 0 0 0 0	ļŪ
Pre-ReDevelopment Land Cover (acres) A Soils	B Soils	C Soils D Soils	Totals					TP LOAD AVAILABLE FOR REMOVAL (Ib/yr) 0.81 0.00 0.00 0.00 0.81 TP LOAD REDUCTION ACHIEVED (Ib/yr) 0.08 0.00 0.00 0.00 0.00 0.00	╎┣━
Forest/Open Space (acres) undisturbed forest/open space Managed Turf (acres) disturbed, graded for				0.00					TP LOAD REMAINING (lb/yr) 0.73 0.00 0.00 0.00 0.73	
yards or other turf to be mowed/managed Impervious Cover (acres)			0.02	0.02					NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	
			[0.40					FINAL POST-DEVELOPMENT TP LOAD (Ib/yr) 0.81 TP LOAD REDUCTION REQUIRED (Ib/yr) 0.06	>
Post-Development Land Cover (acres) Forest/Open Space (acres) - undisturbed,	A Soils	B Soils	C Soils D Soils	Totals					TP LOAD REDUCTION ACHIEVED (lb/yr) 0.08 TP LOAD REMAINING (lb/yr): 0.73 REMAINING TP LOAD REDUCTION REQUIRED (lb/yr): 0.00 **	
protected forest/open space or reforested land Managed Turf (acres) disturbed, graded for yards or other turf to be mowed/managed			0.03	0.00					** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR ** <u>*** NO CREDIT TAKEN FOR URBAN BIO-RETENTION</u>	
Impervious Cover (acres)			0.37	0.37					Total Nitrogen (For Information Purposes) POST-DEVELOPMENT LOAD (Ib/yr) 5.82 NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00	
Area Check	ОК.	ОК.	ок. ок.	0.40					REMAINING POST-DEVELOPMENT NITROGEN LOAD (Ib/yr) 5.82	
Constants Annual Rainfall (inches)	43	R	Inoff Coefficients (Rv)	B Soils C Soi	s D Soils				Drainage Area A A Soils B Soils C Soils D Soils Total Area (acres): 0.40	
Target Rainfall Event (inches) Total Phosphorus (TP) EMC (mg/L)	1.00 0.26	M	rest/Open Space 0.02 anaged Turf 0.15	0.03 0.04 0.20 0.22	0.05 0.25				Forest/Open Space undisturbed, protected forest/open space or reforested land Area (acres) 0.00 0.00 0.00 0.00 forest/open space or reforested land CN 30 55 70 77 Volume (ft ³): 0	
Total Nitrogen (TN) EMC (mg/L) Target TP Load (lb/acre/yr) Pj (unitless correction factor)	1.86 0.41 0.90	In	pervious Cover 0.95	0.95 0.95	0.95			Ma	aged Turf disturbed, graded for yards or otherArea (acres)0.000.000.000.03turf to be mowed/managedCN39617480	
LAND COVER SUMMARY PF	RE-REDEVEL	OPMENT		LAND CO	VER SUMMARY POS	ST DEVELO	PMENT		Impervious Cover Area (acres) 0.00 0.00 0.00 0.37 CN 98 98 98 98 98	
Land Cover Summa Pre-ReDevelopment	nry-Pre Listed	Adjusted ¹	Land Cover Summa Post ReDev. & Nev		Land Cover Summ Post-ReDevelo	-	Land Cover Sumn Post-Development Ne		97	B
Forest/Open Space Cover (acres)	0.00	0.00	Forest/Open Space Cover (acres)	0.00	Forest/Open Space Cover (acres)	0.00			1-year storm2-year storm10-year stormRVDeveloped (watershed-inch) with no Runoff Reduction*2.362.864.85	ROVED
Weighted Rv(forest) % Forest	0.00	0.00 0%	Weighted Rv(forest) % Forest Managed Turf Cover	0.00 0%	Weighted Rv(forest) % Forest Managed Turf Cover	0.00 0%			RV Developed (watershed-inch) with Runoff Reduction*2.362.864.85Adjusted CN*979797	APPR
Managed Turf Cover (acres) Weighted Rv(turf)	0.02	0.02	(acres) Weighted Rv (turf)	0.03	(acres) Weighted Rv (turf)	0.03		1	ear storm 2-year storm 10-year storm	REVISION
% Managed Turf	4%	4%	% Managed Turf	7%	% Managed Turf	7%		U	2.703.205.20NOAA Atlas 14 (http://hdsc.nws.noaa.gov/hdsc/pfds/)	REVI
Impervious Cover (acres)	0.38	0.38	Impervious Cover (acres)	0.37	ReDev. Impervious Cover (acres)	0.37	New Impervious Cover (acres)	0.00		
Rv(impervious) % Impervious	0.95 96%	0.95 96%	Rv(impervious) % Impervious	0.95 93%	Rv(impervious) % Impervious	0.95 93%	Rv(impervious)	-		
Total Site Area (acres)	0.40	0.40	Final Site Area (acres) Final Post Dev Site Rv	0.40	Total ReDev. Site Area (acres) ReDev Site Rv	0.40			PROJECT DESCRIPTION	
Site Rv Treatment Volume and		0.92 d	Final Post Dev Site KV		reatment Volume and I	0.90 Nutrient Load	1		DEVELOPMENT REDEVELOPMENT	
Pre-ReDevelopment Treatment Volume	0.0304	0.0304	Final Post-Development Treatment Volume	0.0297	Post-ReDevelopment Treatment Volume	0.0297	Post-Development Treatment Volume		DRAINAGE AREA IMPERVIOUS AREA PERVIOUS AREA TOTAL	
(acre-ft)	0.0304	0.0304	(acre-ft)	0.0237	(acre-ft)	0.0297	(acre-ft)		SITE AREA 0.22 0.02 0.23 ON-SITE TREATED 0.19 0.00 0.19	근
Pre-ReDevelopment Treatment Volume	1,325	1,325	Final Post-Development Treatment Volume	1,294	Post-ReDevelopment Treatment Volume	1,294	Post-Development Treatment Volume (cubic		OFF-SITE TREATED 0.00 0.00 0.00 TOTAL TREATED/DETAINED 0.19 0.00 0.19	
(cubic feet)			(cubic feet)		(cubic feet)		feet)		TOTAL UNDETAINED 0.03 0.02 0.04 WATER TREATMENT_ON/OFF-SITE	
Pre-ReDevelopment TP Load (lb/yr)	0.83	0.83	Final Post- Development TP Load	0.81	Post-ReDevelopment Load (TP)	0.81	Post-Development TP Load (lb/yr)	-	AREA TREATED BY BMP IMPERVIOUS AREA BMP TREATED	
			(Ib/yr) Final Post-Development		(lb/yr)*				BMP TYPE (AC) TREATED BY BMP (AC) EFFICIENCY (%) HYDRODYNAMIC 0.10 0.10 0.00%	Ц С
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	2.11	2.11	TP Load per acre (lb/acre/yr)	2.06	Load per acre (lb/acre/yr)	2.06			SEPARATOR 0.19 20%	
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment a		0.16			Max. Reduction Required (Below Pre-	10%			TOTAL 0.19 0.19	
pervious land proposed for new impervious	s cover)				ReDevelopment Load)				MISCELLANEOUS	
^L Adjusted Land Cover Summary: Pre ReDevelopment land cover minus pervious land	cover (forest/open	space or			TP Load Reduction Required for	0.06	TP Load Reduction Required for New		TOTAL WQV TREATED YES NO	
managed turf) acreage proposed for new imperviou Adjusted total acreage is consistent with Post-ReDe	is cover.				Redeveloped Area (lb/yr)	0.00	Impervious Area (Ib/yr)	Ŭ	DETENTION ON SITE YES NO	
of new impervious cover).									PROJECT IS WITHIN WHICH WATERSHED? POTOMAC RIVER	Ľ
Column I shows load reduction requriement for new development load limit, 0.41 lbs/acre/year).	impervious cover (oase a on new							PROJECT DISCHARGES TO WHICH BODY OF WATER? <u>POTOMAC RIVER</u> WQV TREATMENT = 1,816 CF/AC OF IMPERVIOUS AREA	EMH.
			Post-Development Requi	rement for Site Are	a				= 1,816 CF/AC X 0.2189 AC = 398 CF	L T T
			TP Load Reduction Required	lb/yr) 0.06	a training					
										Z
-			Nitrogen Loads (Infor							
	Pre-ReDevelopmer	t TN Load (lb/yr)	5.95		ost-Development TN Load velopment & New Impervious) (lb/yr)	5.82				APF
Drainage Area A				<u>C</u>						SPEC
Drainage Area A Land Cover (acres)							CLEAR BMP AREAS			DEPA
Forest/Open Space (acres)	A Soils	B Soils	C Soils D Soils	Totals Land Cov 0.00 0.00						DEPAR
Managed Turf (acres)			0.03	0.03 0.25					0.81	SITE
Impervious Cover (acres)			0.37 Total	0.37 0.95 0.40		То	tal Phosphorus Available for Post Development Treatme			
itormwater Best Managem	nent Practi	ces (RR = Ru	noff Reduction)						Select from dropdown lists	
Practice	Runoff Reductio	Managed Tu Credit Area	rf Impervious Volume from Cover Credit Upstream	Runoff Reduction (ft ³)	olume Treatment	Removal	Phosphorus Load Untreat from Upstream Phosphorus	Load Removed By	Remaining Phosphorus Load Downstream Practice to be Employed Nitrogen Nitrogen Load Untreated Nitrogen Remaining (III) Employed Employed Fficine (IIII) Description (IIIII) Description (IIIIII) Description (IIIIII) Description (IIIIII)	CHAI
	Credit (%) (acres)	Area (acres) Practice (ft ³)	(ft ³)	Volume (ft ³) Ef	ficiency (%)	Practices (Ib) to Practice	(lb) Practice (lb)	(ID) Efficiency (%) Practices (IDS) Practice (IDS) (IDS)	DAT
14. Manufactured Treatment Devices (I	no RR)								14. Manufactured BMP (no RR)	INSTR

Project Name:	NORTHW		F SOUTH UNION ST A	ND DUKE ST		CLEAR ALL	data input cells			Site Results (Water Quality Compliance)
Date:			2/24/2021 velopment Project?	No			constant values			Area Checks D.A. A D.A. B D.A. C D.A. D D.A. E AREA CHECK
Site Information							final results			FOREST/OPEN SPACE (ac) 0.00 0.00 0.00 0.00 O.K. IMPERVIOUS COVER (ac) 0.37 0.00 0.00 0.00 0.00 OK.
Post-Development Project	t (Treatme	nt Volum-	and Loads)							IMPERVIOUS COVER TREATED (ac) 0.19 0.00 0.00 0.00 0.00 OK. MANAGED TURF AREA (ac) 0.03 0.00 0.00 0.00 0.00 OK. MANAGED TURF AREA (ac) 0.00 0.00 0.00 0.00 OK. MANAGED TURF AREA TREATED (ac) 0.00 0.00 0.00 0.00 OK.
-ost-Development Project	t (meatine)		r Total Disturbed A	Area <i>(acres)</i> →	0.40		Check:			AREA CHECK OK. OK. OK. OK. OK.
1				duction required:		BMP Desig		2013 Draft Stds & Specs		Site Treatment Volume (ft ³) 1,294
			increase in imperviou ment TP Load Reductio	is cover (acres) is:	0		as entered correctly? turbed area entered?			Runoff Reduction Volume and TP By Drainage Area
	A	Post-Develop	nent IP Loud Reductio		0.00	Total us	urbeu ureu entereur	•		D.A. A D.A. B D.A. C D.A. D D.A. E TOTAL RUNOFF REDUCTION VOLUME ACHIEVED (ft ³) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""></t<>
re-ReDevelopment Land Cover (acre	es) A Soils	B Soils	C Soils	D Soils	Totals					TP LOAD AVAILABLE FOR REMOVAL (Ib/yr) 0.81 0.00 0.00 0.00 0.81 TP LOAD REDUCTION ACHIEVED (Ib/yr) 0.08 0.00 0.00 0.00 0.00 0.81
orest/Open Space (acres) undisturbed orest/open space					0.00					TP LOAD REMAINING (lb/yr) 0.73 0.00 0.00 0.00 0.73
Managed Turf (acres) disturbed, graded for ards or other turf to be mowed/managed				0.02	0.02					NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00 0.00 0.00 0.00 0.00
npervious Cover (acres)				0.38	0.38					Total Phosphorus FINAL POST-DEVELOPMENT TP LOAD (Ib/yr) 0.81
ost-Development Land Cover (acres)									TP LOAD REDUCTION REQUIRED (Ib/yr)0.06TP LOAD REDUCTION ACHIEVED (Ib/yr)0.08
orest/Open Space (acres) – undisturbed,	A Soils	B Soils	C Soils	D Soils	Totals 0.00					TP LOAD REMAINING (Ib/yr): 0.73 REMAINING TP LOAD REDUCTION REQUIRED (Ib/yr): 0.00 **
rotected forest/open space or reforested land Janaged Turf (acres) - disturbed, graded for ards or other turf to be mowed/managed				0.03	0.03					** TARGET TP REDUCTION EXCEEDED BY 0.02 LB/YEAR ** <u>*** NO CREDIT TAKEN FOR URBAN BIO-RETENTION</u> Total Nitrogen (For Information Purposes)
mpervious Cover (acres)				0.37	0.37					Iotal Nitrogen (For Information Purposes) POST-DEVELOPMENT LOAD (Ib/yr) NITROGEN LOAD REDUCTION ACHIEVED (Ib/yr) 0.00
Area Check	ОК.	ОК.	ОК.	ОК.	0.40					REMAINING POST-DEVELOPMENT NITROGEN LOAD (Ib/yr) 5.82
onstants			Runoff Coefficients ((Rv)						
nnual Rainfall (inches) iarget Rainfall Event (inches)	43 1.00		Forest/Open Space	A Soils 0.02	B Soils 0.03	C Soils D Soils 0.04 0.05				Drainage Area A A Soils B Soils C Soils D Soils Total Area (acres): 0.40 Forest/Open Space undisturbed, protected Area (acres) 0.00 0.00 0.00 0.00 Runoff Reduction
Total Phosphorus (TP) EMC (mg/L) Total Nitrogen (TN) EMC (mg/L)	0.26		Managed Turf Impervious Cover	0.15 0.95	0.20 0.95	0.22 0.25 0.95 0.95				Forest/open space or reforested land CN 30 55 70 77 Managed Turf disturbed, graded for yards or other Area (acres) 0.00 0.00 0.00 0.03
rget TP Load (Ib/acre/yr) (unitless correction factor)	0.41 0.90									turf to be mowed/managed CN 39 61 74 80 Area (acres) 0.00 0.00 0.00 0.37
LAND COVER SUMMARY F	PRE-REDEVE	LOPMENT			LAN	O COVER SUMMARY	POST DEVEL	OPMENT		Impervious Cover Impervious Cover CN 98 98 98 CN 000 000 000 CN 000 000 000 CN 000 000 000 CN 000 000 000
Land Cover Summ Pre-ReDevelopment	nary-Pre Listed	Adjust	1	Land Cover Summa Post ReDev. & New			er Summary-Post ReDevelopment	Land Cover Sum Post-Development Ne		97
Forest/Open Space Cover (acres)	0.00	Adjusted ¹ 0.00	1	Forest/Open Space Cover (acres)	0.00	Forest/Open S Cover (acre	pace 0.00	Fost-Development Ne	inpervious	1-year storm2-year storm10-year stormRVDeveloped (watershed-inch) with no Runoff Reduction*2.362.864.85
Weighted Rv(forest) % Forest	0.00	0.00		Weighted Rv(forest) % Forest	0.00	Weighted Rv(fo % Forest		-		RV _{Developed} (watershed-inch) with Runoff Reduction* 2.36 2.86 4.85
Managed Turf Cover (acres)	0.02	0.02] [¹	Managed Turf Cover (acres)	0.03	Managed Turf ((acres)				Adjusted CN* 97 97 97
Weighted Rv(turf)	0.25	0.25		Weighted Rv (turf)	0.25	Weighted Rv (turf) 0.25			1-year storm 2-year storm 10-year storm 2.70 3.20 5.20
% Managed Turf	4%	4%		% Managed Turf	7%	% Managed T				Use NOAA Atlas 14 (http://hdsc.nws.noaa.gov/hdsc/pfds/)
Impervious Cover (acres)	0.38	0.38	Im	npervious Cover (acres)	0.37	ReDev. Imperv Cover (acre	s) 0.37	New Impervious Cover (acres)	0.00	
Rv(impervious) % Impervious	0.95 96%	0.95 96%		Rv(impervious) % Impervious	0.95 93%	Rv(impervio % Impervio		Rv(impervious)	-	
Total Site Area (acres)	0.40	0.40	F	in al Site Area (acres)	0.40	Total ReDev. Sit (acres)				PROJECT DESCRIPTION
Site Rv	0.92	0.92	F	Final Post Dev Site Rv	0.90	ReDev Site	₹v 0.90			
Treatment Volume and	d Nutrient Lo	ad				Treatment Volum	e and Nutrient Lo	ad		DEVELOPMENT REDEVELOPMENT
Pre-ReDevelopment Treatment Volume (acre-ft)	0.0304	0.0304		nal Post-Development Treatment Volume	0.0297	Post-ReDevelop Treatment Vo	the state of the s	Post-Development Treatment Volume	-	DRAINAGE AREA IMPERVIOUS AREA PERVIOUS AREA TOTAL
(access)				(acre-ft)		(acre-ft)		(acre-ft)		SITE AREA 0.22 0.02 0.23 ON-SITE TREATED 0.19 0.00 0.19
Pre-ReDevelopment Treatment Volume	1,325	1,325		nal Post-Development Treatment Volume	1,294	Post-ReDevelop Treatment Vo		Post-Development Treatment Volume (cubic		OFF-SITE TREATED 0.00 0.00 0.00 TOTAL TREATED/DETAINED 0.19 0.00 0.19
(cubic feet)	2,323	1,525		(cubic feet)	1,254	(cubic feet		feet)		TOTAL UNDETAINED 0.03 0.02 0.04
Pre-ReDevelopment TP Load			1 1	Final Post- Development TP		Post-ReDevelop		Post-Development TP		WATER TREATMENT ON/OFF-SITE
(lb/yr)	0.83	0.83		Load (Ib/yr)	0.81	Load (TP) (lb/yr)*	0.81	Load (lb/yr)	-	AREA TREATED BY BMP IMPERVIOUS AREA BMP TREATED BMP TYPE (AC) TREATED BY BMP (AC) EFFICIENCY (%)
Pre-ReDevelopment TP Load per acre	2.11	2.11	FI	inal Post-Development TP Load per acre	2.06	Post-ReDevelopm Load per act				HYDRODYNAMICSEPARATOR0.190.1920%
(lb/acre/yr)			L L	(lb/acre/yr)		(lb/acre/yr				
Baseline TP Load (lb/yr) (0.41 lbs/acre/yr applied to pre-redevelopment		0.16				Max. Reduct Required (Below Pre	10%			TOTAL 0.19 0.19
pervious land proposed for new impervio	ous cover)					ReDevelopment	-	1		
Adjusted Land Cover Summary:						TP Load Redu		TP Load Reduction		MISCELLANEOUS
re ReDevelopment land cover minus pervious lar nanaged turf) acreage proposed for new impervi		n space or				Required f Redeveloped		Required for New Impervious Area (Ib/yr)	0	TOTAL WQV TREATED YES NO
djusted total acreage is consistent with Post-ReL f new impervious cover).	Development acreag	e (minus acreage				(lb/yr)				DETENTION ON SITE YES NO PROJECT IS WITHIN WHICH WATERSHED? <u>POTOMAC RIVER</u>
olumn I shows load reduction requriement for ne	ew impervious cover	(based on new								PROJECT IS WITHIN WHICH WATERSHED? <u>POTOMAC RIVER</u> PROJECT DISCHARGES TO WHICH BODY OF WATER? <u>POTOMAC RIVER</u>
evelopment load limit, 0.41 lbs/acre/year).										WQV TREATMENT = 1,816 CF/AC OF IMPERVIOUS AREA
			Post-Devel	opment Requi	irement for Site	Area				$= 1,816 \text{ CF/AC } \times 0.2189 \text{ AC} = 398 \text{ CF}$
			TP Load Re	duction Required	(Ib/yr)	0.06				
			Nitroe	gen Loads (Infor	rmational Purpos	es Only)				
			1			Final Post-Development TN Lo				
	Pre-ReDevelopme	ant TN Load (lb/yr)	5.95		(Po	t-ReDevelopment & New Impe (lb/yr)	rvious) 5.82			
Drainage Area A										
rainage Area A Land Cover (acres)		1						CLEAR BMP AREAS		
Envert/Dans from the st	A Soils	B Soi	ls C Soils	D Soils		d Cover Rv				
Forest/Open Space (acres) Managed Turf (acres)				0.03	0.00	0.00				
Impervious Cover (acres)				0.37	0.37	0.95		Total Phosphorus Available for	Removal in D.A	
				Total	0.40			Post Development Treatm	ent Volume in	D.A. A (ft ³) 1,294
Stormwater Best Manager				1	E a			Oberry 1		Select from dropdown lists
Practice	Runof	on Credit /		Upstream	Runoff	emaining Total BMI off Volume Treatmen	t Removal	Phosphorus Load Untreat from Upstream Phosphoru	s Load Rem	Oborus Remaining ved By Phosphorus Load (Ib) (Ib) Nitrogen Nitrogen Nitrogen Remaining Downstream Practice to be Removal from Upstream Nitrogen Load to Removed By Nitrogen Removel from Upstream Nitrogen Load to Removed By
14. Manufactured Treatment Devices	Credit (9 (no RR)	%) (acre	s) Area (acres)	Practice (ft ³)		(ft ³) Volume (ft	³) Efficiency (%)	Practices (lb) to Practic	e (lb) Prac	ice (Ib) (Ib) Efficiency (%) Practices (Ibs) Practice (Ibs) (Ibs) (Ibs) 14. Manufactured BMP (no RR)
14.a. Manufactured Treatment Device-	And the same of th		0.19	0	0	658 658	20	0.00 0.41	0	08 0.33 0 0 0.00 2.95 0.00 2.95
	0	.dwg	0.19	0	0	658 658	20	0.00 0.41		

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ACS 1983 – NORTH ZOVE

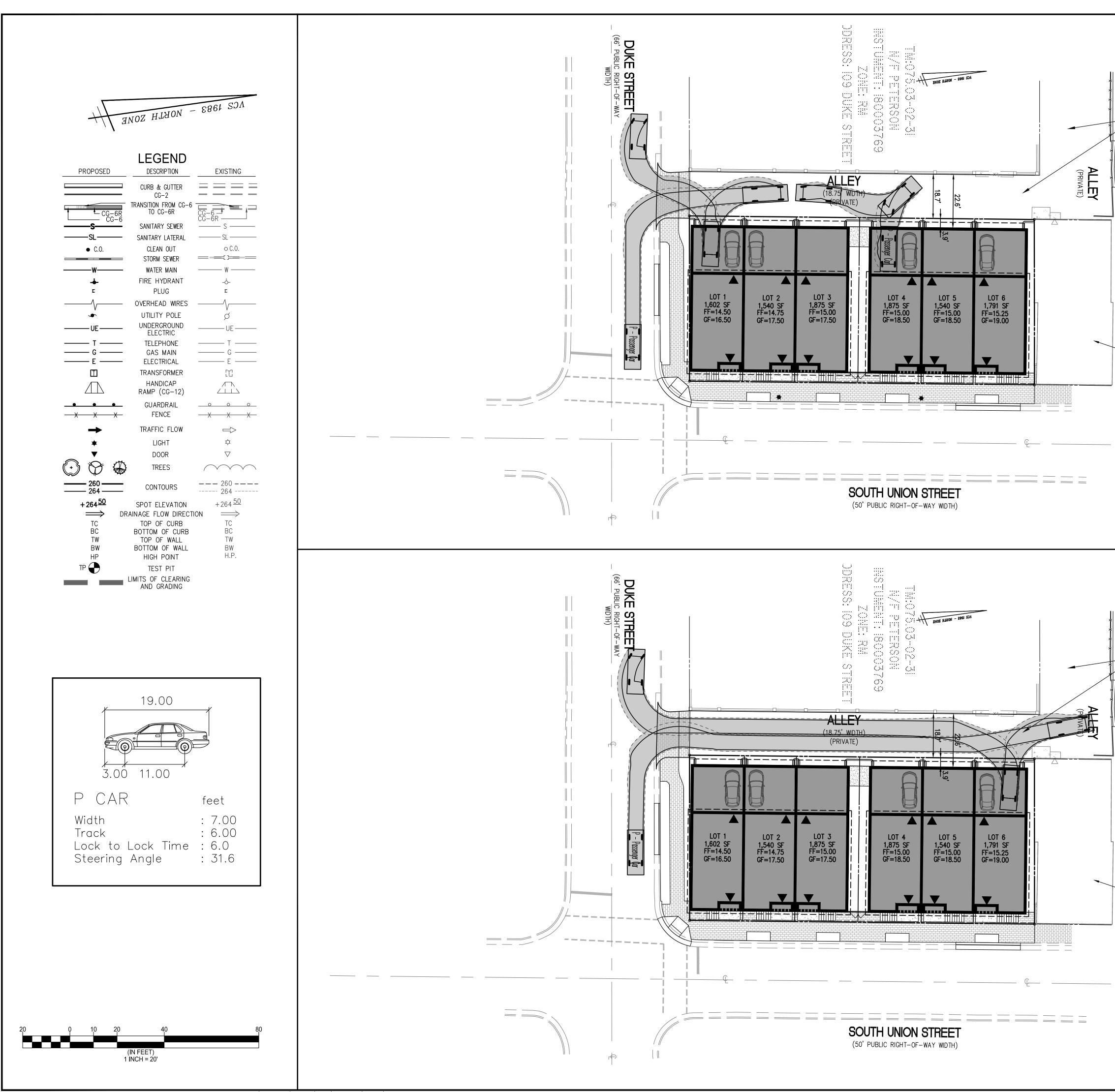
STORMWATER QUANTITY:

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

FLOOD CONTROL: THE SITE OUTFALLS TO THE MUNICIPAL STORM SEWER SYSTEM LOCATED IN DUKE STREET AND SOUTH UNION STREET. THE CITY OF ALEXANDRIA STORMWATER REQUIREMENTS SPECIFY THAT THE 10-YEAR, 24 HOUR STORM POST-DEVELOPMENT FLOW MUST BE CONVEYED WITHIN THE SYSTEM UP TO THE LIMITS OF ANALYSIS AND THAT THE POST-DEVELOPMENT FLOW FOR THE 10-YEAR, 24-HOUR STORM MUST NOT EXCEED PRE-DEVELOPMENT LEVELS. REVIEW OF THE STORMWATER OUTFALL WITHIN THE LIMITS OF ANALYSIS INDICATES THAT DOWNSTREAM STORMWATER PIPES APPEAR TO BE ADEQUATE TO CONVEY THE 10-YEAR, 24-HOUR STORM WITHIN THE SYSTEM AND SITE DISCHARGE RATES WILL BE REDUCED TO PRE-DEVELOPMENT LEVELS DUE TO REDUCTION IN IMPERVIOUS AREA. THEREFORE, THE SITE MEETS FLOOD CONTROL REQUIREMENTS SPECIFIED IN THE CITY OF ALEXANDRIA STORMWATER CODE (ARTICLE XIII) AND NO ADDITIONAL STORMWATER DETENTION IS NECESSARY FOR THE PURPOSES OF FLOOD CONTROL. IT IS ALSO NOTED, THAT THIS SITE IS LOCATED AT THE BOTTOM OF THE LOCAL WATERSHED AND PARTIALLY IN THE 100-YEAR FLOODPLAIN AND DETENTION IS NOT TYPICALLY PROVIDED IN THIS AREA.

WALTER L. 5.1	DHLL PS Z Z	INCORPORATED ESTABLISHED 1945	Engineers • Surveyors • Planners • Landscape Architects • Arborists 207 PARK AVENUE FALLS CHURCH. VIRGINIA 22046	(703) 532-6163 Fax (703) 533-1301 www.WLPINC.com	SCALE: DATE: 10/21/2020 DRAMN: CHECKED: TB/AV	1 = 30' PLAN STATUS	DATE DESCRIPTION DATE DESCRIPTION	10/21/2020 STAGE I CONCEPT PLAN 04/02/2021 DSUP COMPLETENESS #2	12/18/2020 STAGE II CONCEPT PLAN 04/22/2021 DSUP VERIFICATION OF	02/24/2021 DSUP COMPLETENESS COMPLETENESS	
ARRON M. VINSON Lic. No.041851											
REVISION APPROVED BY	NO. DESCRIPTION DATE BY APPROVED DATE										
APPROVED SPECIAL USE PERMIT NO. DSUP 2021-0012 DEPARTMENT OF PLANNING & ZONING DIRECTOR DATE DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES SITE PLAN No. DIRECTOR DATE DIRECTOR DATE CHAIRMAN, PLANNING COMMISSION DATE											
DEPARTMI DEPARTMI SITE PL	L USE PE IMENT OF DIRECTOR ENT OF TRA .AN No DIRECTOR	PLAI	NNING TATION	& E		NG NMEN	TAL DAT	E	VICE	- S -	

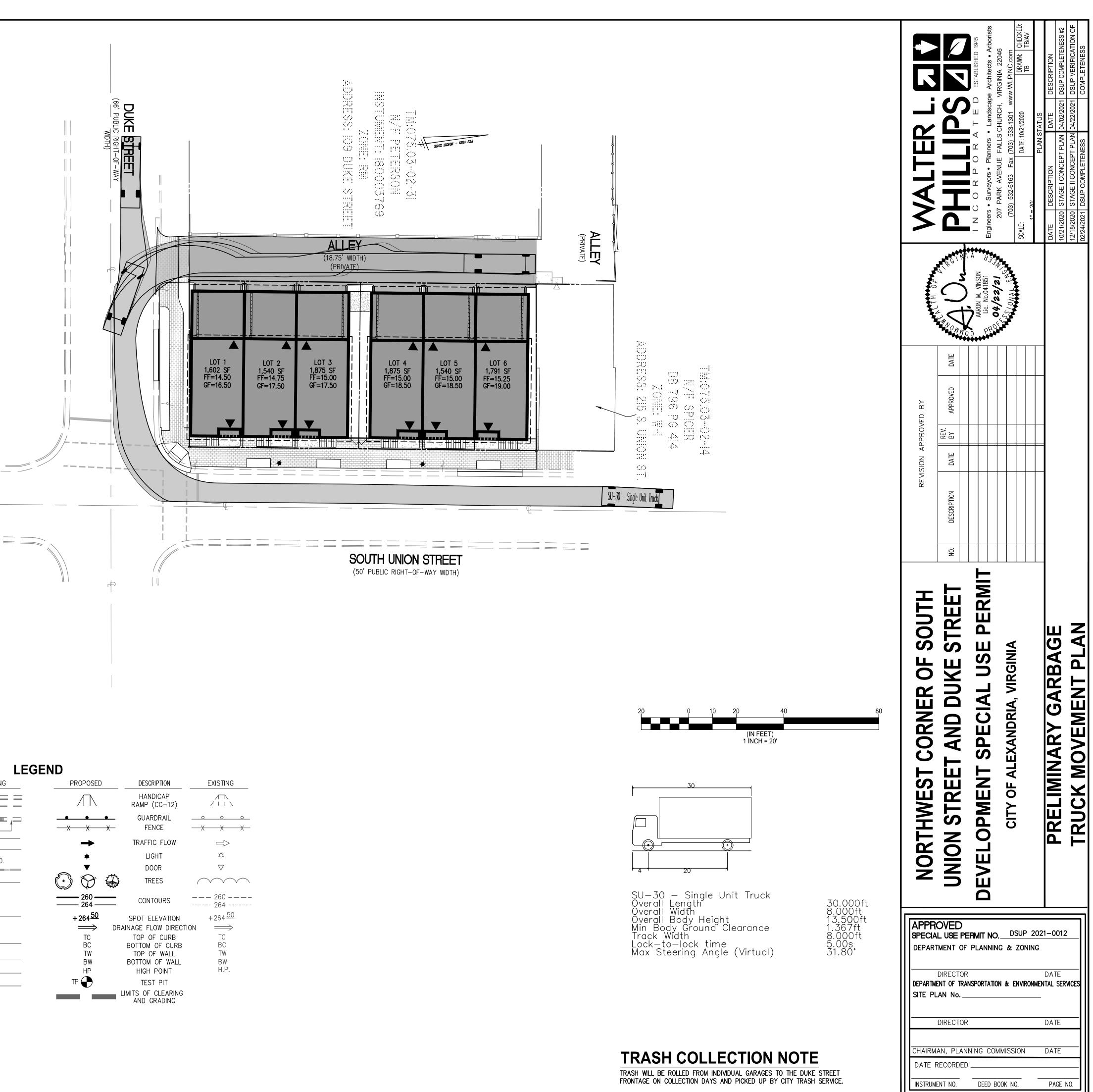
	NORTHWEST CORNER NORTHWEST CORNER UNION STREET AND DU DEVELOPMENT SPECIAL CITY OF ALEXANDRIA, VI
	APPROVED SPECIAL USE PERMIT NO. DSUP 202 DEPARTMENT OF PLANNING & ZONING
	DIRECTOR DEPARTMENT OF TRANSPORTATION & ENVIRONMEN SITE PLAN No.
	DIRECTOR
	CHAIRMAN, PLANNING COMMISSION
30 0 15 30 60 (IN FEET)	120 DATE RECORDED INSTRUMENT NO. DEED BOOK NO.
1 INCH = 30'	SHEE

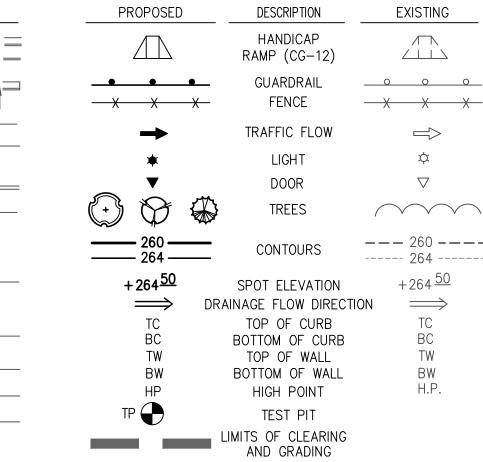


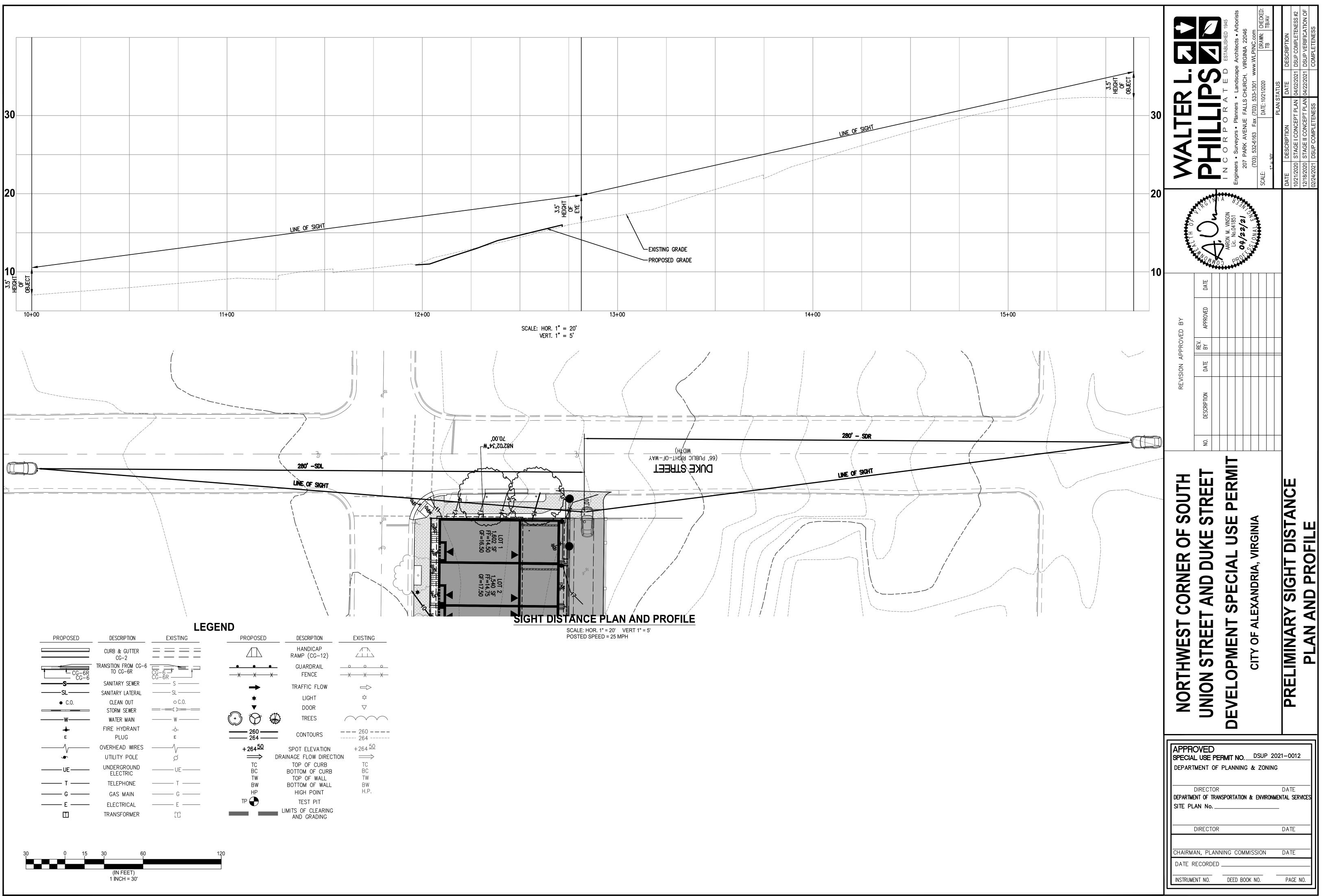
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CONTINUOUS ALLEY UNDER COMMON OWNERSHIP AGREEMENT WHICH ALLOWS ACCESS TO ALL ADJACENT PROPERTIES	Addrege Addrege Addrege Addrege PADLER C R R Addrege PADLER C R R Addrege Addrege PADLER C R R Addrege
TM:075.03-02-14 N/F SPICER DB 796 PG 414 ZONE: W-I ZONE: W-I S. UNION ST.	REVISION APPROVED BY BY APPROVED DATE DESCRIPTION DATE BY APPROVED DESCRIPTION DATE APPROVED
CONTINUOUS ALLEY UNDER COMMON OWNERSHIP AGREEMENT WHICH ALLOWS ACCESS TO ALL ADJACENT PROPERTIES	NORTHWEST CORNER OF SOUTH UNION STREET AND DUKE STREET DEVELOPMENT SPECIAL USE PERMIT CITY OF ALEXANDRIA, VIRGINIA CITY OF ALEXANDRIA, VIRGINIA PRELIMINARY VEHICULAR MOVEMENT PLAN
TM:075.03-02-14 W/F SPICER DB 796 PG 414 ZONE: W-I ZONE: W-I	Image: Noise of the second

PROPOSED	DESCRIPTION	EXISTING
	CURB & GUTTER CG-2	
CG-6R CG-6	TRANSITION FROM CG-6 TO CG-6R	CG-6
S	SANITARY SEWER	S
SL	SANITARY LATERAL	SL
• C.O.	CLEAN OUT STORM SEWER	o C.O.
W	WATER MAIN	W
+	FIRE HYDRANT	-6-
E	PLUG	E
/	OVERHEAD WIRES	/
•	UTILITY POLE	ģ
UE	UNDERGROUND ELECTRIC	UE
T	TELEPHONE	T
G	GAS MAIN	G
— Е —	ELECTRICAL	——— E ———
	TRANSFORMER	[]]

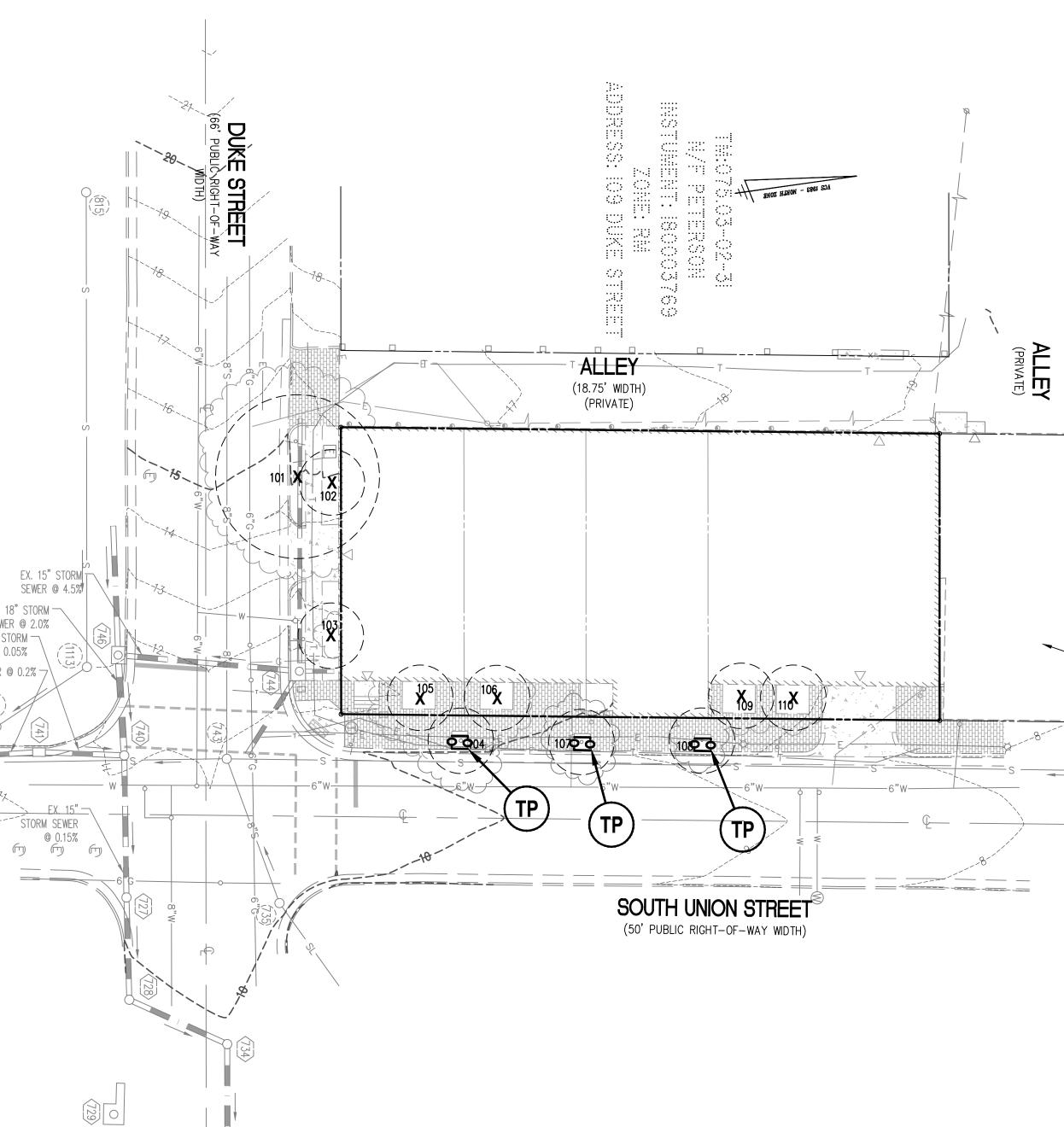






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 Job No. 20-080
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EX. 18" STORM SEWER @ 2.0% EX. 15" STORM SEWER @ 0.05% EX. 15" STORM SEWER @ 0.2%-



TREE LEGEND

TITLE SYMBOL KEY TP TREE PROTECTION FENCE Χ TREE TO BE REMOVED $\frown \frown \frown \frown$ EXISTING TREELINE CRITICAL ROOT ZONE (CRZ)

NOTES

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

ALLEY (B.75 WOTH) (PRVATE) (B.75 WOTH) (PRVATE) (B.75 WOTH) (PRVATE) (C.75 WOTH) (FRVATE) (C.75 WOTH) (FRVATE) (C.75 WOTH) (C.75 WOTH)		ALLEY (PRIVATE)					S	T CORNER OF SOUTH REVISION APPROVED BY T CORNER OF SOUTH REVISION APPROVED BY ET AND DUKE STREET In Excerption Intel in the term on ter
Alexandria Tree Inventory								HWEST STREE PMEN CITY OF A
Botanical Tree # Botanical 101 Fraxinus pennsylvanica Green ash 102 Lagerstroemia indica Crape Myrtle	c Critical Root	CRZ) Radius (ft) .0 (CRZ) Radius (ft) .0 \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$	x	Tree Protection Fence	Root Prune	Root Padding Hand Removal/ Selective Removal	Notes	NORTHWES UNION STREE DEVELOPMEN CITY OF A EXISTIN
102Lagerstroemia indicaCrape Myrtle103Lagerstroemia indicaCrape Myrtle104Quercus phellosWillow oak	2" 8	78% 66% 3' 78% 66% 3' 75% 63%	x	x				
104Quercus prieriosWillow Oak105Prunus spp.Ornamental Cherry106Prunus spp.Ornamental Cherry	5" 8	3' 55% 63% 3' 55% 63%	x					SPECIAL USE PERMIT NO. DSUP 2021-0012 DEPARTMENT OF PLANNING & ZONING
107 Quercus phellos Willow oak	7" 8	3' 75% 63%	, b	×				DIRECTOR DATE DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
108Quercus phellosWillow oak109Prunus spp.Ornamental Cherry	6" 8	3' 75% 59% 3' 55% 66%	x	×				SITE PLAN No.
110Prunus spp.Ornamental CherryDBH = Diameter at Breast Height (measured 4.5 feet above group)		3' 55% 66%	x x					DIRECTOR DATE
CRZ = Critical Root Zone = 1 foot radius per inch of tree diamete CRZ values for trees with multiple stems were calculated based o Condition Ratings provided as percentages based on methods out	r, trees over 3 n methods outl	ined in the 9th edit	ion of th	e Guide fo			ed by the LS.A.	CHAIRMAN, PLANNING COMMISSION DATE

NOTE: PLANT PERENNIALS/ GROUNDCOVERS IN A RANDOM PATTERN

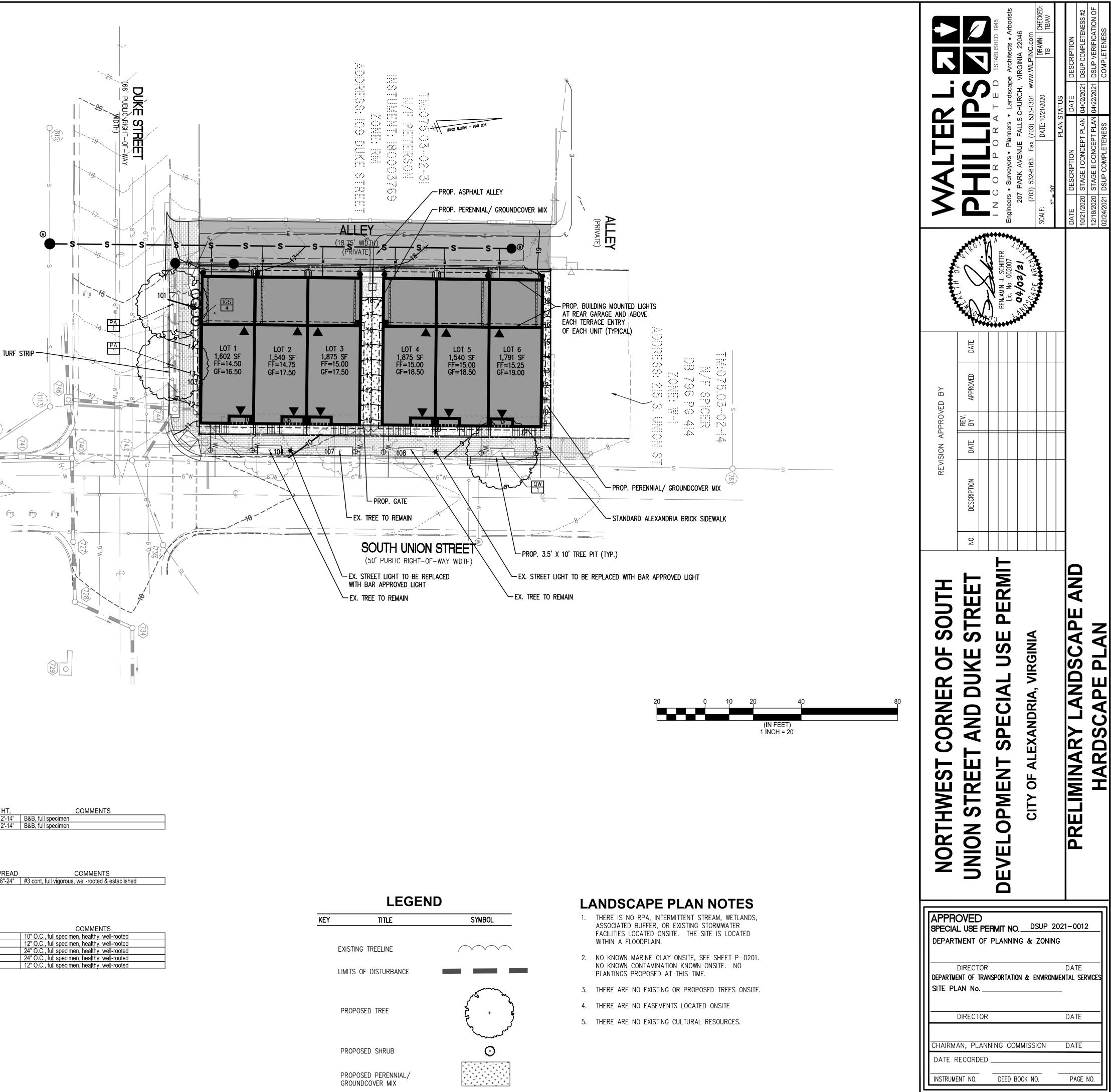
KEY	BOTANICAL NAME	COMMON NAME	QUANTIT	Y SIZE
CXP	Carex pensylvanica	Sedge	400	#1 cont.
HEU	Heuchera americna	American alumroot	75	#1 cont.
POL	Polystichum acrostichoides	Christmas fern	25	#1 cont.
TIA	Tiarella cordifolia	Foam Flower	25	#1 cont.
PHL	Phlox divaricata	Wild Blue Phlox	75	#1 cont.

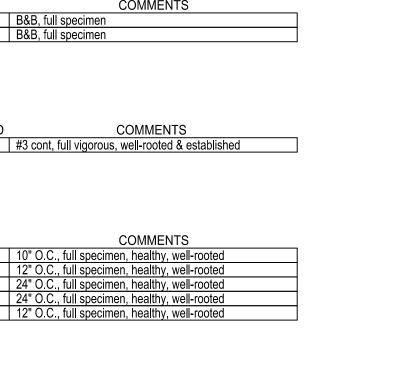
PERENNIALS/ GROUNDCOVER MIX

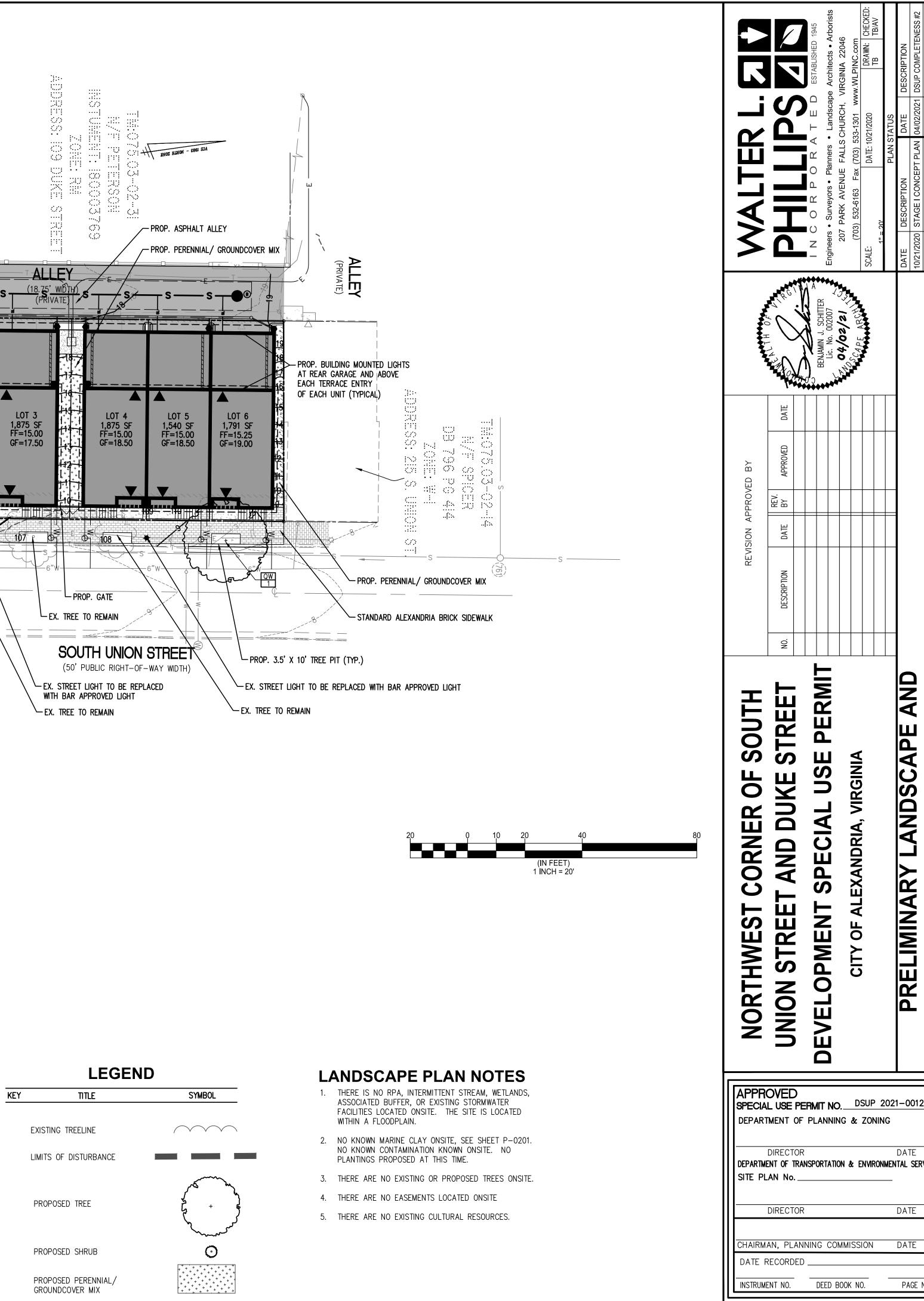
SHRU	JBS					
KEY	BOTANICAL NAME	COMMON NAME	QTY	HEIGHT	SPREAD	
IGS	llex glabra 'Shamrock'	Shamrock Inkberry	0	18"-24"	18"-24"	#

٦	IREE	S				
	KEY	BOTANICAL NAME	COMMON NAME	QTY	CAL.	HT.
	PA	Platanus x acerifolia 'Bloodgood'	Bloodgood London Planetree	2	2"-2.5"	12'-14'
	QW	Quercus phellos	Willow Oak	1	2"-2.5"	12'-14'
-						

PROP. 4' TURF STRIP ----



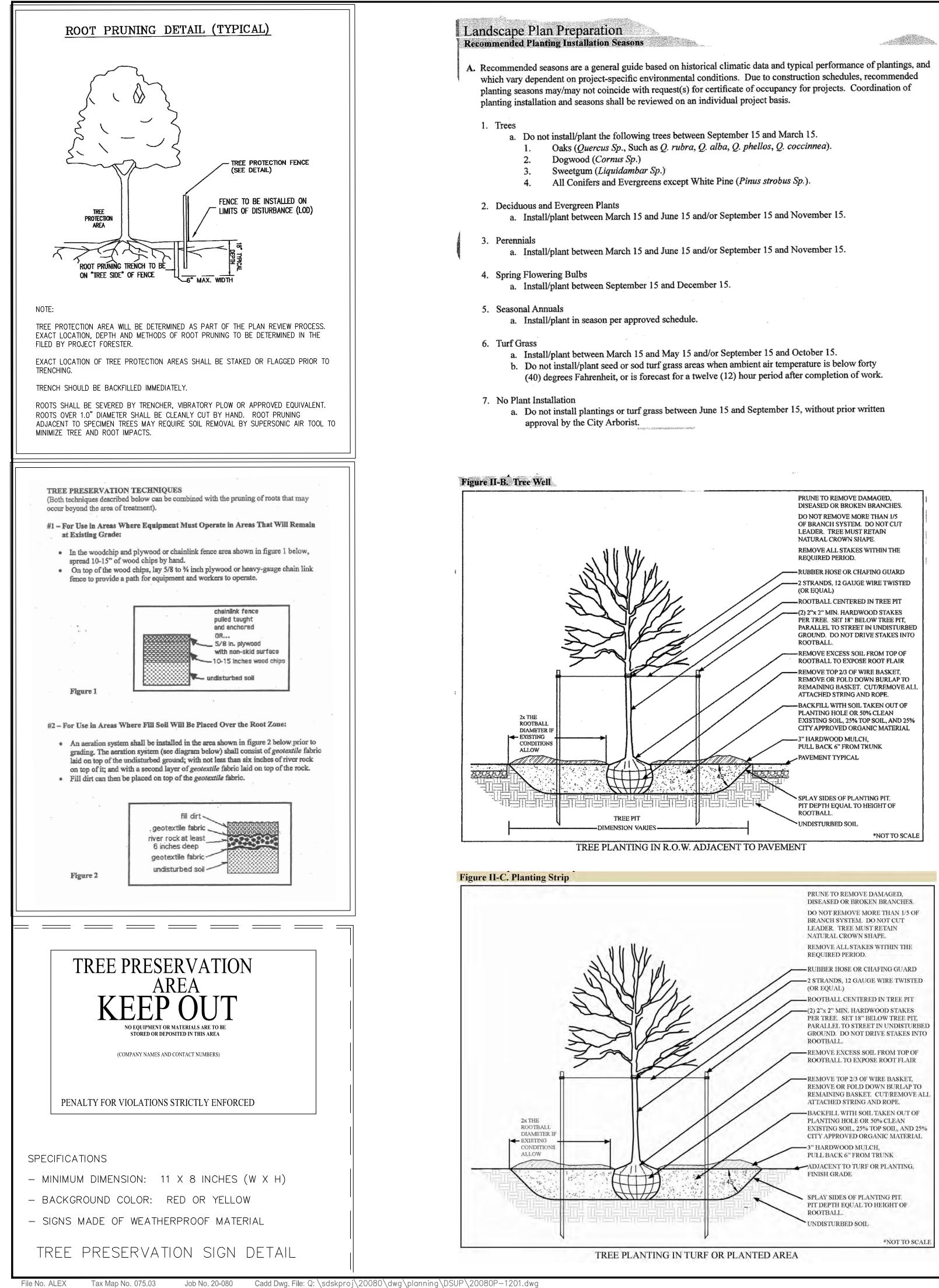




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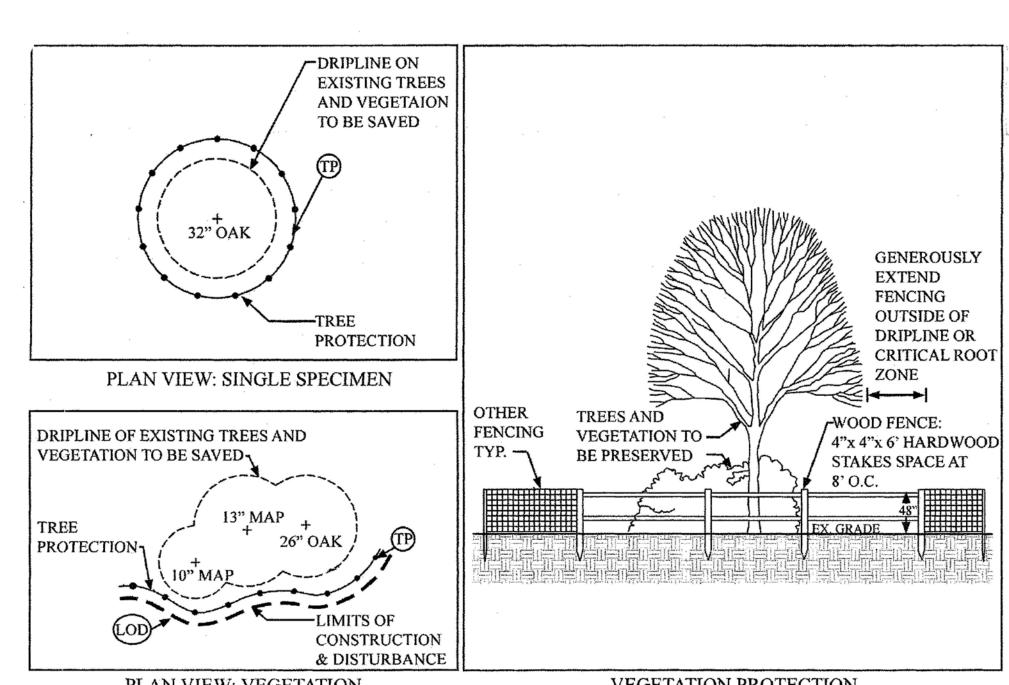
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Standards and Requirements Figure I-A. Required Notes on Drawing Submissions

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

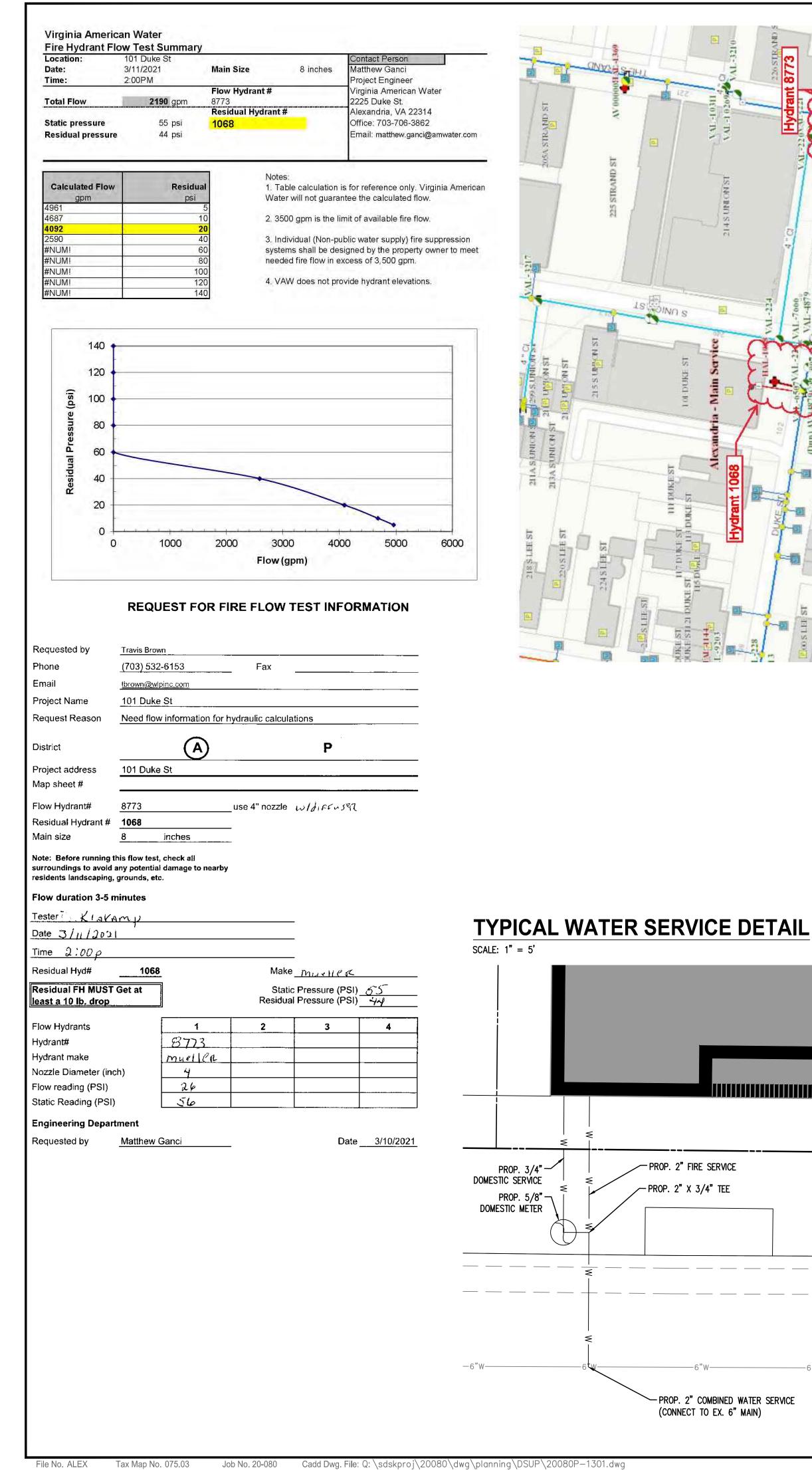


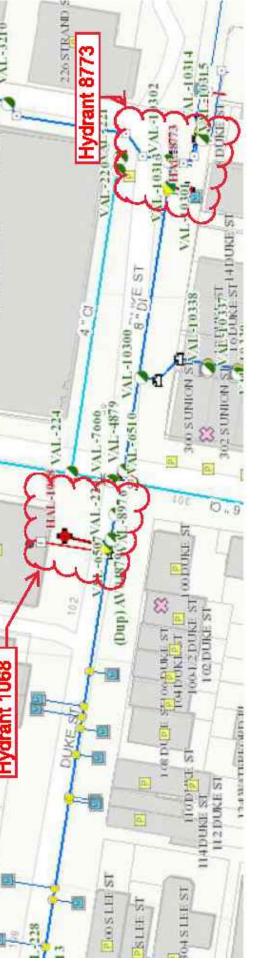


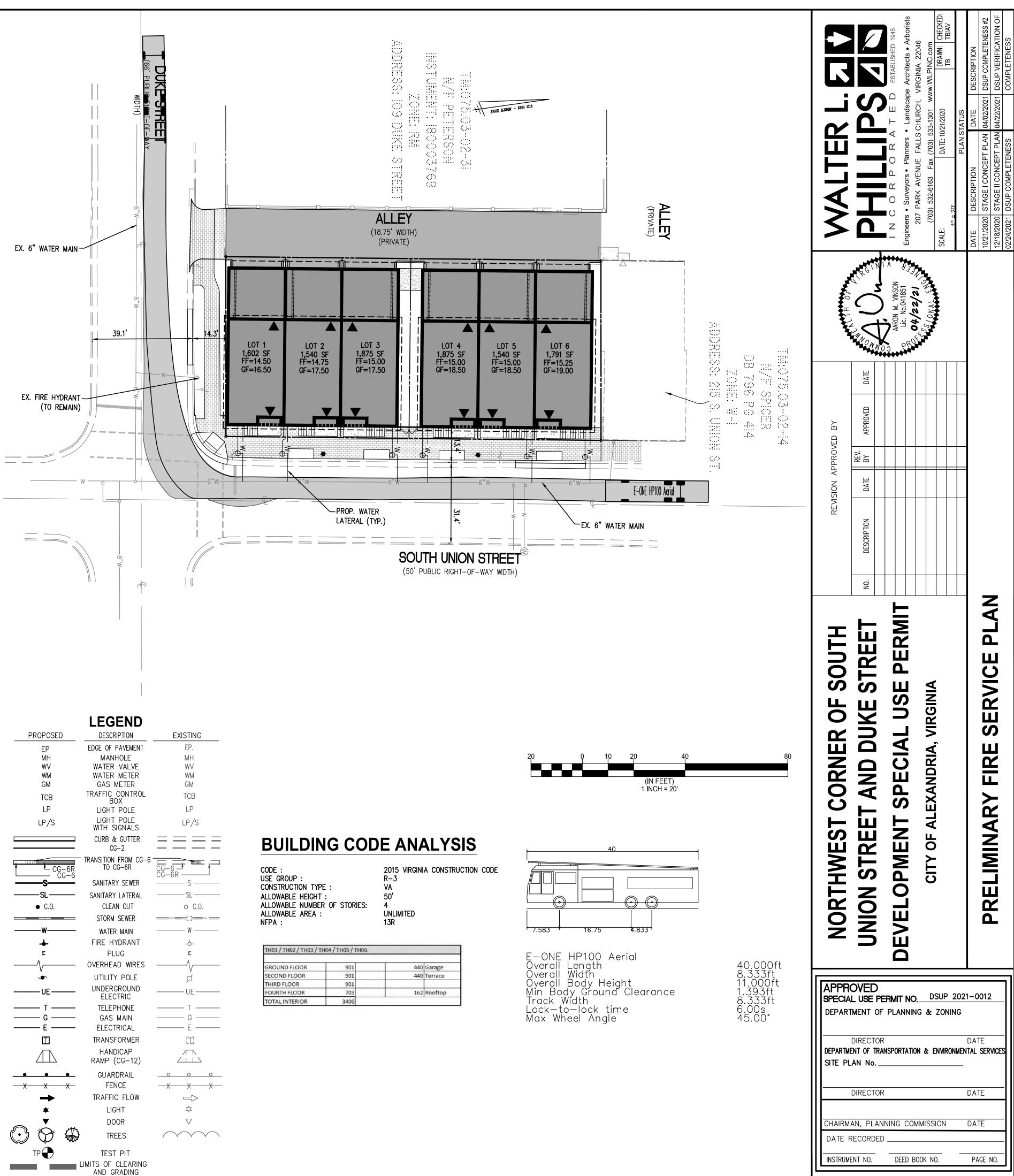
PLAN VIEW: VEGETATION

VEGETATION PROTECTION AND PRESERVATION DETAIL SECTION

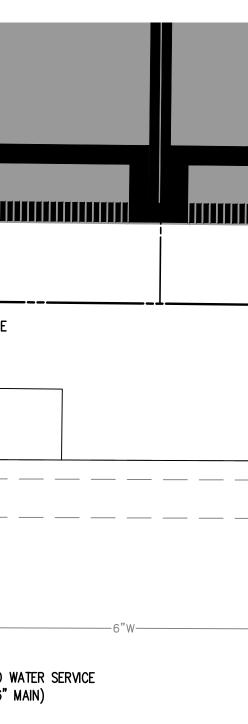
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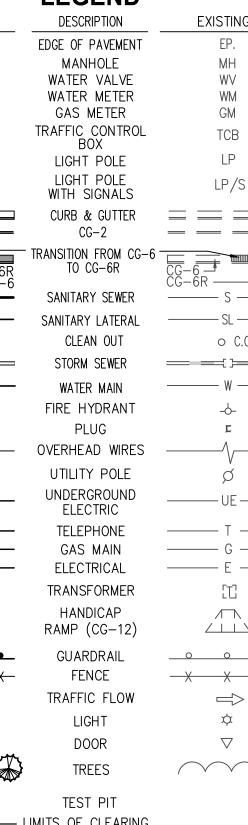












CODE :	
USE GROUP :	
CONSTRUCTION T	YPE :
ALLOWABLE HEIG	HT:
ALLOWABLE NUM	BER OF STORIE
ALLOWABLE AREA	٠.
NFPA :	

ТН01 / ТН02 / ТН03 / ТН	104/TH05/TH06		
GROUND FLOOR	901	440 Gara	ge
SECOND FLOOR	901	440 Terr	ace
THIRD FLOOR	901		
FOURTH FLOOR	703	162 Root	top
TOTAL INTERIOR	3406		

SHEET: P-1301

From:	Tim Foley
To:	Lia Niebauer
Subject:	[EXTERNAL]BAR Comment
Date:	Tuesday, September 28, 2021 9:16:37 PM

Ms. Niebauer,

Looking at BAR #2021-00495, the style of the proposed homes seems to hard and modern. I feel like the builder could use some molding/cornice and maybe take out some of the windows in favor of brick, something that's a little more aligned to some of the historic homes. I'm not an architect, but the style of the proposed homes seems a bit out of place.

Thank you, Tim

Sent from Yahoo Mail on Android

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