

THE COMMONS IN LINCOLN EXPANSION 2024 - LINCOLN, MA



The Commons in Lincoln Expansion 2024 - Lincoln, MA

Definitive Development and Use Plan

North Lincoln Planning Development
District Modifications

Special Permit Application Proposed to
the Town of Lincoln Planning Board

August 7, 2024

Prepared for:
The Commons in Lincoln



Prepared by:





August, 7 2024

Ms. Margaret Olson, Chair
Town of Lincoln Planning Board
16 Lincoln Road
Lincoln, MA 01773

Re: The Commons in Lincoln, 2024 Expansion
North Lincoln Planning Development District
1 Harvest Circle
Lincoln, Massachusetts 01773

Dear Ms. Olson,

On behalf of the owner New England Life Plan Communities (NELPC), OnePoint Partners is pleased to submit this Definitive Development and Use Plan(DDUP) for modifications to the North Lincoln Planned Development District as related to The Commons in Lincoln senior housing community. Attached please find:

- Definitive Development and Use Plan narrative
- Definitive Development and Use Plan – Plans (architectural and site)
- Supplemental reports and exhibits

NELPC acquired The Commons in January 2022 from Benchmark Senior Living (Benchmark), returning the senior housing community to its non-profit origins having originally developed by New England Deaconness and the Masonic Health System of Massachusetts. Benchmark successfully stabilized the community after early occupancy challenges due in part to the Great Financial Crisis of 2008 and then strengthened the campus with ninety (90) units of assisted living, memory care and skilled nursing, providing a full continuum of care. Benchmark is still involved as today as an essential member of the team, now in the role of third-party property manager.

Responding to a higher concentration of older adults than national or statewide averages and recent history of strong operations, The Commons proposes to expand its offering of independent living options for the seniors in the Lincoln area. This expansion will promote housing diversity by providing additional senior housing and affordable options while ensuring The Commons remains competitive in the marketplace. If approved and completed, the project will have a positive financial impact for the Town of Lincoln.

The proposed project is compliant with Zoning Bylaw section 14.5, Inclusionary Housing. In doing so, the project is expected to increase Lincoln's Subsidized Housing Inventory by three (3) units, consistent with the town's proactive approach to providing affordable housing that avoids 40B developments.

It is worth clarifying that there are presently 258 senior housing units on the campus and 1 vacant single family residence, totaling 259 units entitled through the 2014 special permit. Therefore, with the proposed demolition of the vacant single-family residence, when combined with the proposed 28 independent living units, the proposed net increase is 27 units for a total of 286 units.



The applicant has every intention to honor prior commitments made by predecessors regarding the conservation restriction area and no work is proposed in this environmental resource.

The proposed project received approval from the Historic Commission in December 2023 to demolish the vacant single-family home, and is scheduled to return to the Conservation Commission for the second public hearing on September 4, 2024.

The Commons and the Town of Lincoln have a special relationship, Lincoln is the number one place of origin for current residents of The Commons, for example. Our goal is to build upon and strengthen that bond through this project. We are available to answer any questions you may have regarding this application and look forward to being in front of the Planning Board very soon. The development team thanks all residents, staff, interested parties, and Board/Commission members for their feedback to date and look forward to working together in the months to come.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert Beal". The signature is fluid and cursive.

Robert Beal, on behalf of New England Life Plan Communities
Project Manager
OnePoint Partners
35 Main Street, Suite 211C
Topsfield, MA 01983

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1.0 INTRODUCTION

History

The Commons at Lincoln, located on 30.97 acres adjacent to the Lincoln-Concord border, was originally entitled in 2007 by the New England Deaconess Association – Abundant Life Communities, Inc. and constructed as an independent living facility in 2010 by the Masonic Health System of Massachusetts. More specifically, the Commons opened with one hundred (100) apartments located in the Russell building, thirty-eight (38) free-standing cottages, and thirty (30) apartments in the Flint building including 8 apartments designated for low- and moderate-income residents. The original special permit envisioned a second phase of an additional 28 cottages for a total independent living count of 196 units. Common areas at the community include a dining room, café and pub, lounges, fitness center, indoor swimming pool, card room and library, internet café, and an auditorium, all of which are in the Russell building. The campus grounds have planting beds, walking paths, trails, and ADA accessible paths.

The (8) Flint building low-income and moderate-income units are subject to a 2007 regulatory agreement with the Department of Housing and Community Development (DHCD), which was amended in 2013 and remains in effect today with perpetual obligations to provide restricted rents. The Commons has rented the eight (8) affordable units and met these commitments per the most recently submitted monitoring report submitted in March, 2022.

Benchmark Senior Living (BSL/BN Groves Commons CCRC LLC) acquired the property in 2013 pursuant to a bankruptcy auction. On March 30, 2013, Benchmark Senior Living obtained Town Meeting approval for an expansion project to add 40 units of assisted living, 24 units of memory care, and 26 units of skilled nursing (90 units total) as an addition to the Russell building. On March 11, 2014 the Lincoln Planning Board approved a Definitive Development and Use Plan special permit. Construction ensued in 2015 and 2016 with the care operations opening later that year. The Benchmark led Town Meeting, special permit, and definitive development use plan approvals also created a 5.1-acre conservation restriction area near Cider Lane per recorded easement, which remains in place today.

In January 2022, New England Life Plan Communities (NELP-Commons, LLC) acquired the property, returning the campus ownership to its non-profit origins. Benchmark Senior Living remains a value team member taking the role of third-party manager upon this.

The Commons is fully occupied with a lengthy waitlist of prospective residents that would take years to accommodate at current capacity. The community predominantly serves the local area, which is reflected in the top five towns that current residents moved from: Lincoln, Lexington, Belmont, Concord, and Wayland. The number one point of origin for current residents is the Town of Lincoln.

Proposed Project

Responding to strong market demand that is only projected to increase in coming years, The Commons respectively proposes to expand its offering of independent living options for the Lincoln area. The proposed Project would be the third and likely final phase of campus development by infilling selective areas of vacant land and expanding existing structures.

The proposed project would infill select areas of vacant land and expand existing structures with twenty eight (28) new independent living units, consisting of eight (8) freestanding and semi-attached cottages and twenty (20) apartments. All apartment style units would be additions to the existing Flint and Russell buildings. One vacant and obsolete single family residence is proposed to be demolished at the southwest corner of the site near Cider Lane. A net increase of fifty-two (52) parking spaces would be provided in the plan, a significant improvement of existing conditions.



Three (3) of the units proposed to be added to the Flint building would be designated as affordable housing and provided at rates affordable to the 80% area median income (AMI) threshold, allowing all 41 units in the expanded Flint building to count towards the town's Subsidized Housing inventory.

The existing and proposed density of The Commons is consistent with other senior housing operators in surrounding towns. However, The Commons is unique among these senior housing communities because it offers the broadest housing options across the continuum of care, providing the most appropriate setting for older adults as their needs change.

Senior Housing Community	Distance	Year Opened	Ownership	Acres	IL	AL	MC	SNF	Total	Density units/ac	Max Bldg Stories
The Commons at Lincoln	-	2010	Non-Profit	30.97							
<i>Existing</i>					168	40	24	26	258	8.3	
<i>Proposed</i>					208	40	24	26	298	9.6	
Newbury Court (Concord)	3.8 mi	1994	Non-Profit	34.85	230	0	27	42	299	8.6	6
Brookhaven at Lexington	6.8 mi	1989	Non-Profit	25.70	288	50	0	12	350	13.6	5
Waterstone of Lexington	7.4 mi	2022	For Profit	13.18	116	40	0	0	156	11.8	4
Carleton Williard Village (Bedford)	8.4 mi	1989	Non-Profit	59.36	154	57	0	100	311	5.2	2

Note: President's House is permitted as a unit, total existing unit count is 259

Subsequent Approvals

The proposed project would be permitted through a robust oversight process including:

- Planning Board review and approval of the amended Special Permit and Definitive Development and Use Plan
- Conservation Commission review and approval of activities in the Riverfront Area and compliance with state and local wetlands protection regulations.
- MassDEP approval of a Groundwater Discharge Permit (in process)

We are pleased to share that the project program presented and approved with the Preliminary Use and Development Plan has not changed as the design has continued to be developed. Below is a list of noteworthy updates to the project due to a recent value engineering exercise, and none of these updates require us to request additional relief:

1. A2 building plan modifications, to keep the existing emergency egress stair in-place. The plans previously called for this to be demolished and reconstructed in the same general location.
2. Eliminate under building parking garage at Building 'C', and relocate those parking spots to the surface.
3. Eliminate roofs over rear patios on proposed cottages B and E
4. Eliminate loft ½ bathrooms on all proposed cottages. This approach aligns with the existing cottages. Plumbing will be run to the lofts to allow for a resident upgrade if desired.
5. The previous plans called for the relocation of existing community gardens, and additional gardens being added. The relocation will still occur, with a small increase in the available gardening area, but the separate community gardens will be a future project and not part of this project.
6. The proposed bocce court has been removed from the project scope. The management team is reconsidering outdoor amenities, and if desired it will be a future project.

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Definitive Development and Use Plan

2.0 PROPERTY OWNERS OF SUBJECT PARCELS

Map 111, Parcel 12-0

NELP-Commons LLC & NELP-Commons Flint House, LLC
C/O One Point Partners LLC
35 Main Street Suite 211C
Topsfield, MA 01983



3.0 DEVELOPMENT TEAM

Owner:	NELP Commons LLC 1 Harvest Circle Lincoln, MA 01773
Owner's Representative	OnePoint Partners 35 Main Street, Suite 211C Topsfield, MA 01983 Ryan Herchenroether Development Project Manager 614-736-7071
Property Manager:	Benchmark Senior Living 1 Harvest Circle Lincoln, MA 01773 Reynaldo Leblanc Executive Director 781-430-6010
Architect:	Bechtel Frank Erickson 1723 Massachusetts Avenue Lexington, MA 02420 Jesse Widtfeldt Senior Associate, Project Lead 781-862-3313 x135
Civil Engineer, Traffic Engineer, Landscape Architect Wetland Scientist Fiscal Impact:	Stantec 40 Water Street Boston, MA 02114 Chris Fee, Principal, Project Lead 617-523-8103
Sanitary Engineer	OnSite Engineers 279 East Central Street PMB 241 Franklin, MA 02038 David Formato President 508-553-0616 x700
Construction Manager:	Windover Construction 66 Cherry Hill Drive Beverly, MA 01915 Bill Olsen Vice President, Construction Operations 617-595-7450

4.0 DEFINITIVE USE AND DEVELOPMENT PLAN

This written portion of the Definitive Development and Use Plan is prepared under the provisions of Section 12.5 of the Town of Lincoln Zoning By-Law as last amended March 2022.

4.1 PURPOSE

The purpose of this article is to amend and revise the definitive development and use plan for the North Lincoln Planned Development District No. 5 entitled Definitive Development and Use Plan for NL – North Lincoln Planned Development District No. 5 an age 62 and over Multifamily Independent Living and Continuing Care Community at 9, 11, 15 and 17-19 Cambridge Turnpike, Lincoln, Massachusetts..

4.2 LOCATION AND BOUNDARIES

The property that comprises The Commons today totals +/-31.0 acres and is contained within the North Lincoln Planning District. The property was originally 34.5 acres but approximately 3.5 acres was taken by MassDOT in order to facilitate the realignment of Route 2. See Figure 1-North Lincoln Development District Map. The Commons property is bounded by the Lincoln/Concord town line to the northwest, Route 2 (Cambridge Turnpike) to the northeast, Saw Mill Brook to the southwest and single family residences to the southeast. Refer to Figure 2-Site Location Map. A 5.07 acre Conservation Restriction and a trail easement was added to the parcel in 2015, which places limits on activities, construction and development that can take place within the limits of the restricted area and provides public access rights. The Conservation Restriction was added to protect forested and stream habitat and adjacent public conservation lands within the property surrounding the Saw Mill Brook. All the wetland resources on site are contained within the limits of the Conservation Restriction area.





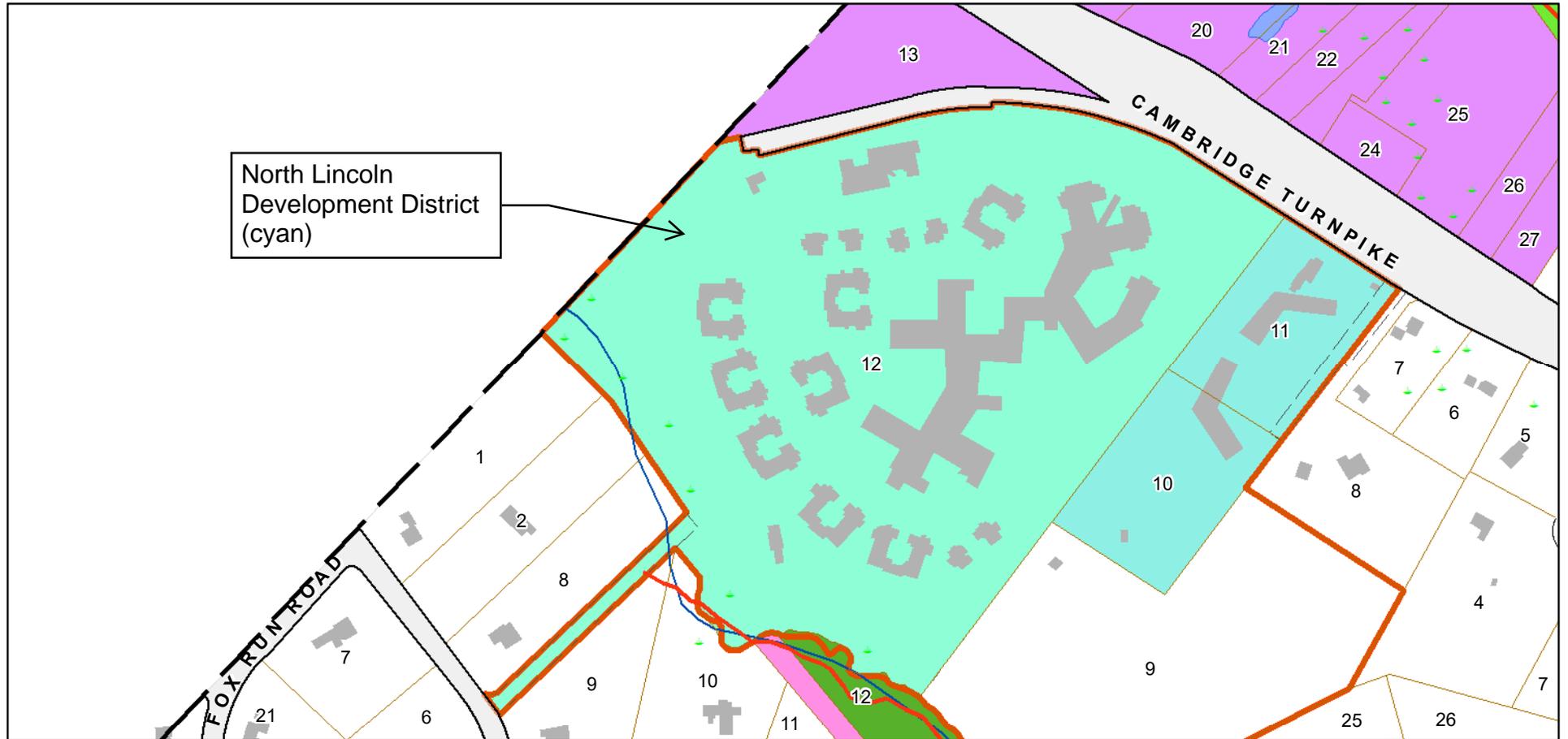
Lincoln, MA



January 27, 2023

1 inch = 350 Feet

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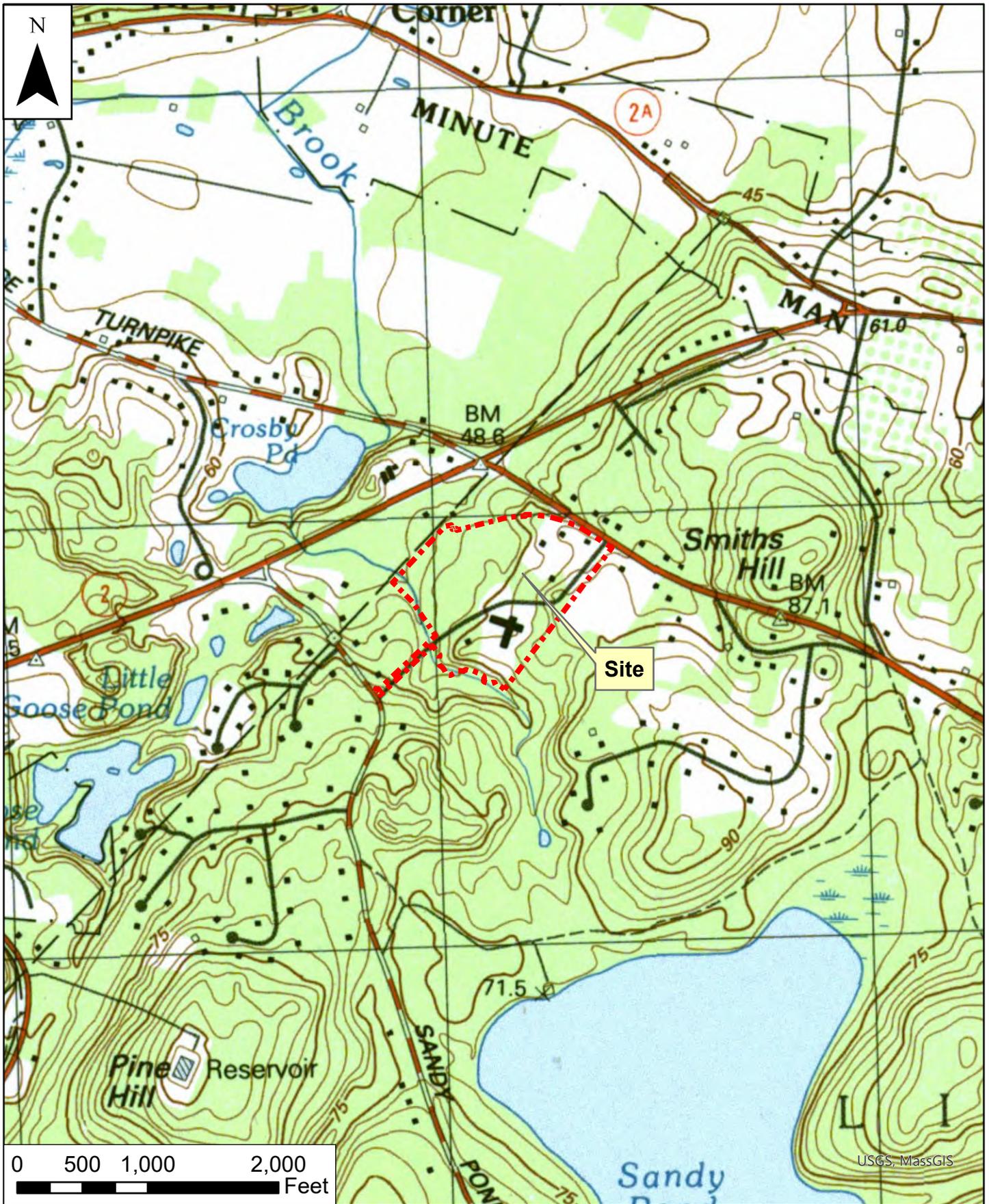


North Lincoln Development District (cyan)

CAI Town Line	Right of Way	Wireless Overlay Districts	Conservation Restrictions
Trail App Trails	Right of Ways	North Lincoln Overlay District	Town of Concord
Property Line	Wet Areas	The Commons (NL-5)	Town of Lincoln
Private Road	Stream	Oriole Landing (NL-6)	Commonwealth of Massachusetts
Public Road	Waterfills - Town	R-1	
Private Road ROW	Buildings	Conservation Deeds	

Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

Figure 1 North Lincoln Development District Map



40 Water St., 3rd Floor
Boston, MA 02109

Figure 2 Site Location Map

Figure 1 - USGS Topographic Map
Lincoln Commons
Lincoln, MA
February 2023

Data Source: "Office of Geographic Information (MassGIS),
Commonwealth of Massachusetts, Information Technology Division and USGS"

4.3 TYPES OF USES PERMITTED

The following principal uses are currently permitted: an age 62 and over Multifamily Independent Living Community including freestanding units, duplex, triplex, quad and congregate style dwelling unit types. This requires that at least one member residing in each dwelling unit must be at least 62 years of age.

Accessory uses within the congregate building include: dining, fitness and wellness areas, storage, retail, laundry, assembly, etc.. and would serve the residents of the community.

A Continuing Care Facility consisting of assisted living and memory care units (defined under Massachusetts General Laws Chapter 19D) and skilled nursing units (defined under Massachusetts General Laws Chapter 111, Section 71).

Other Uses Allowed By Special Permit: Other uses which are not listed in the Preliminary Development and Use Plan, but are listed in the Zoning By-Law of the Town of Lincoln, as amended and dated March 24, 2012, may be permitted provided a Special Permit is granted by the Planning Board.



- PROPOSED BUILDINGS
- 200' RIVERFRONT AREA
100' INNER RIPARIAN ZONE
- 100' WETLAND BUFFER
- LIMITS OF WETLAND RESOURCE
- CONSERVATION RESTRICTION AREA
- 10' TRAIL EASEMENT


 NORTH
 0 50 100

THE COMMONS IN LINCOLN EXPANSION 2024
 FIGURE 3 - SITE PLAN

4.4 DIMENSIONAL STANDARDS

The following analysis is based on the lands within the limits of the North Lincoln Development District.

Table 1 Dimensional Standards

District Dimensional	Approved December 2023	Proposed 2024
Total Area of District in Lincoln:	1,350,000 Square feet (31.0 Acres)	1,350,000 Square feet (31.0 Acres)
Developable Site Area:	1,129,000 Square Feet (25.92 Acres)	1,129,000 Square Feet (25.92 Acres)
Undevelopable Site Area	221,000 Square Feet (5.1 Acres) Includes Conservation Restriction and Conservation Trail Areas (encompasses wetland area)	221,000 Square Feet (5.1 Acres) Includes Conservation Restriction and Conservation Trail Areas (encompasses wetland area)
Area of Open Land:	1,008,277 Square Feet (23.15 Acres)	1,008,277 Square Feet (23.15 Acres)
Actual Height (as measured from average existing grade to highest	52.5 Feet	52.5 Feet
Minimum Frontage in Feet:	120 Feet	120 Feet
Minimum Width of Lot:	250 Feet	250 Feet
Minimum Front Yard Setback:	42 Feet 10 Inches ¹	42 Feet 10 Inches ¹
Minimum Rear Yard Setback:	50 Feet	50 Feet
Minimum Side Yard Setback:	50 Feet	50 Feet
Maximum Gross Floor Area:	504,190 Square feet	504,190 Square feet
Maximum Number of Units:	286 Units (11.03 units/developable acre)	286 Units (11.03 units/developable acre)
Maximum Ratio of Gross Floor Area to Developable Site Area:	0.45	0.45
Maximum Ratio of Gross Impervious Area to the developable site area:	0.41	0.41
Minimum number of parking spaces:	286	286
Maximum number of parking spaces:	370	370
Minimum number of parking spaces per each unit:	1 per dwelling unit	1 per dwelling unit

¹ 2009 Taking by the Commonwealth of Massachusetts put the existing Sewer Treatment Plant into noncompliance.

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Definitive Development and Use Plan

4.4.1 Gross Square Footage Buildings on Site

Phase I & II – Existing

Russell Building – Independent Congregate Units

Parking Level	45,236	
Ground Level	47,062	
Entry Level	58,225	
Second Level	56,506	
Third Level	<u>28,577</u>	
Total	235,606 GSF	(100 units)

Flint Building – Independent Rental Units

Basement	2,390	
Ground Level	12,263	
Second Level	12,223	
Third Level	<u>11,794</u>	
Total	38,670 GSF	(30 units)

Cottages – Freestanding Independent Living Units

Basement	12,850	
Ground Level	66,994	
Loft Level	<u>7,040</u>	
Total	86,884 GSF	(38 units)

Existing President's House 1,929 GSF (1 unit)

Waste Water Treatment Plant 1,200 GSF

Assisted Living/Memory Care /Skilled Nursing

Ground Level	44,191	
Second Level	17,884	
Third Level	<u>17,884</u>	
Total	79,959 GSF	(90 units)

Total Phase I & II Existing 444,248 GSF (259 units)

The Commons in Lincoln Expansion 2024 – Proposed

Russell Building Addition A1 – Independent Congregate Units

Parking Level	4,407	
Ground Level	4,000	
Entry Level	4,000	
Second Level	<u>3,856</u>	
Total	16,263 GSF	(6 units)

Russell Building Addition A2 – Independent Congregate Units

Parking Level	1,614	
Ground Level	1,755	



Entry Level	1,755	
Second Level	<u>1,732</u>	
Total	6,856 GSF	(3 units)

Cottages B – Freestanding Independent Living Units

Ground Level	4,490	
Loft Level	<u>1,014</u>	
Total	5,504 GSF	(2 units)

Building C – Independent Rental Units

Level One	4,688	
Level Two	4,959	
Level Three	<u>4,877</u>	
Total	14,524 GSF	(11 units)

Cottages D – Freestanding Independent Living Units

Ground Level	8,352	
Loft Level	<u>2,082</u>	
Total	10,434 GSF	(4 units)

Cottages E – Freestanding Independent Living Units

Ground Level	3,834	
Loft Level	<u>734</u>	
Total	4,568 GSF	(2 units)

Total Proposed	58,149 GSF	(28 units)
Existing President's House to be removed	-1,929 GSF	(-1 unit)

Total Project – Phase I, II & The Commons in Lincoln Expansion 2024

Total Existing & Proposed	500,468 GSF	(286 units)
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4.4.2 Lot Coverage Calculations

Russell Building Lot Coverage		58,225 SF
Cottage Unit Type A – Footprint 22	1,811 SF	39,842 SF
Cottage Unit Type B – Footprint 16	1,822 SF	29,152 SF
Flint Building Lot Coverage		12,263 SF
President's House (to be demolished)		0 SF
Wastewater Treatment Plant		1,200 SF
Assisted Living / Skilled Nursing		44,191 SF

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Proposed Building Addition A1	4,426 SF
Proposed Building Addition A2	1,652 SF
Proposed Building Addition B	4,499 SF
Proposed Building Addition C	4,476 SF
Proposed Building Addition D	8,348 SF
Proposed Building Addition E	<u>3,834 SF</u>
Subtotal Building Coverage	212,108 SF
Pavement, walks, paths and driveways (exis.+ proposed)	252,795 SF
Total Impervious Coverage	465,797 SF
% of Developable Lot Impervious	41.26%

4.4.3 Parking

Number of parking spaces provided:	318 existing spaces (includes garage spaces and 1 space at each cottage)
	90 new surface spaces (1 space at each cottage)
	5 new garage spaces
	43 Spaces removed for new construction
	52 Net additional spaces for 27 new units
Total Spaces	370 spaces (1.29 spaces per unit) Refer to Figure 4 – Proposed Parking Diagram



4.5 OTHER ZONING PROVISIONS

The actual footprint area of the buildings does not exceed 25 percent of the lot area.

4.5.1 Section 13.3- (Lot Coverage)

The Commons at Lincoln shall not be in compliance with Section 13.3 of the Zoning By-Law. The Gross Floor Area of all buildings will exceed 25% of the area of the lot.

4.5.2 Section 13.4- (Accessory Structure)

The Commons at Lincoln shall not be in compliance with Section 13.4 of the Zoning By-Law. The wastewater treatment plant building is located less than 50 feet from the street line of Mary's Way. This is due to an Order of Taking by the Commonwealth of Massachusetts in June of 2009 for the reconstruction of Route 2.

4.5.3 Section 15- (Off-Street Parking and Loading Areas)

The Commons at Lincoln shall not be in compliance with Section 15.3.3.1 of the Zoning By-Law: 15.3.3.1(c) "The width of a driveway for 2-way use shall be a minimum of 18 feet as measured at its narrowest point." The driveways leading to the existing cottages are 12 feet min. in width. Driveways leading to the proposed new buildings 'B', 'D' and 'E' are 12 feet min. in width. All of these drives enter and exit on to a private roadway within the community.



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FIGURE 4 - PARKING DIAGRAM

4.5.4 Section 16- (Signs)

The Commons in Lincoln requires an entry sign and accessory signage that are in excess of the two (2) square feet allowed without Special Permit. Drawings and location of such signage were submitted and approved as part of the previous Definitive Development and Use Plan and any modifications thereto will be provided as part of the Definitive Development and Use Plan.

4.6 TRAFFIC

Stantec has prepared a Trip Generation Assessment in accordance with Section 12.5 of the Town of Lincoln Zoning By-Laws. That study is included within Appendix A .

4.7 MUNICIPAL & FISCAL IMPACT

Refer to Appendix E for Fiscal Impact Analysis.

4.8 ENVIRONMENTAL IMPACT

4.8.1 Physical Environment

The property that comprises The Commons today totals 31.0 acres and is contained within the North Lincoln Planning District. The property was originally 34.5 acres but approximately 3.5 acres was taken by MassDOT in order to facilitate the realignment of Route 2. The construction of Phases I and II included the infrastructure to support the overall community including roads, utilities and the Waste Water Treatment Plant. Phase I improvements were completed in 2010.

Phase II developed an additional 4-5 acres in the northeast corner of the site, supplementing the existing facility with a new 90-unit building addition that contained assisted living, memory care and skilled nursing services and housing. The Phase II development also included site circulation, parking and infrastructure improvements associated with the additional 90 units and was completed in 2016.

While the Phase II project was geared toward adding new services, The Commons in Lincoln Expansion 2024 will add independent living units to help meet demand and alleviate the existing waiting list. Much of the site is built out, however there are several locations that can accommodate further infill development. New freestanding buildings are proposed in locations that are currently undeveloped open space or are existing parking lots. Additionally, there are several opportunities to add on to the existing Russell house building. Proposed new buildings have been designed to fit in with the character and density of the existing campus while building additions have been designed to complement the existing architecture.

4.8.2 Roadway Improvements

The primary point of access for The Commons at Lincoln is via Mary's way. The Route 2 & 2A Crosby's Corner Safety Improvement Project has been complete for several years and provides efficient access to Mary's way and to the campus. All proposed modifications to the roadway are on private roads interior to the campus. Roadway improvement construction will be sequenced to maintain vehicular access

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throughout the site. Portions of the road that need to be temporarily closed for construction will be coordinated with the Fire Department to ensure uninterrupted life safety access.

The Commons is committed to adhering to the conditions imposed in the 2007 Special Permit regarding access to/from Sandy Pond Road. Employees and deliveries have been directed to ingress/egress the property only from Route 2 and this will continue to be monitored. An electronically operated access gate has been installed on Cider Lane to restrict access from Sandy Pond Road to authorized vehicles only.

4.8.3 Site Soils

The soils on site consist of the following USDA Natural Resources Conservation Council (NRCC) soil classifications:

Table 2 Site Soils

Soil Map Unit	Description
245B – Merrimac fine Sandy loam	3 to 8 percent slopes, greater than 80 inches to restrictive feature, somewhat excessively drained, depth to water table typically greater than 80 inches
315B – Scituate Fine Sandy Loam	3 to 8 percent slopes, 18 to 33 inches depth to restrictive feature (dense material), moderately well drained, depth to water table typically 18 to 24 inches
420B – Canton Fine Sandy Loam	3 to 8 percent slopes, Greater than 80 inches depth to restrictive feature (dense material), well drained, depth to water table typically greater than 80 inches
422B – Canton Fine Sandy Loam	3 to 8 percent slopes, Greater than 80 inches depth to restrictive feature (dense material), well drained, depth to water table typically greater than 80 inches

4.8.4 Wetlands

Several wetland jurisdictional resources as defined by the Massachusetts Wetlands Protection Act (MA WPA) 310 CMR 10.00 are located within the limits of this project. These resources include a Bordering Vegetated Wetlands (BVW), an Inland Bank and a coincident Mean Annual High Water Line.

While no disturbance is proposed within the 100' Buffer Zone associated with the Bordering Vegetated Wetland (BVW), and no work is proposed within Bordering Land Subject to Flooding (BLSF), site



improvements are proposed within the 200' Riverfront Area. The proposed improvements within the 200' Riverfront Area fall solely within the 100' Outer Riparian Zone.

The proposed work within the 200' Riverfront Area includes demolition of an existing building that is in disrepair and construction of a new two-unit building, along with modifications to the vehicular paving, proposed new utilities, new stormwater infrastructure and new plantings. The project was designed to minimize additional alteration within the Riverfront Area by keeping proposed improvements within the limits of the existing building footprint as much as possible. Proposed disturbance within the Riverfront Area is less than the 10% of the total Riverfront Area on site, which is permissible under the Wetlands Protection Act.

Work within jurisdictional resources must be approved by the Conservation Commission via the Notice of Intent process. The Notice of Intent was submitted to the Conservation Commission and the project was presented at the hearing on July 2, 2024. Stantec is working with the Conservation Commission and their peer reviewer to gain approval, with the next hearing scheduled for September 4, 2024. Conservation Commission approval and an Order of Conditions will be obtained and recorded before any work within the jurisdictional area begins.

4.8.5 Floodplain

According to the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM), Map Number 25017C0379F, dated July 7, 2014, the project limits lie within Zone X, areas determined to be outside the 0.2% annual chance (500-year) floodplain.

4.8.6 Surface Water Drainage

4.8.6.1 Existing Conditions

The Commons stormwater system, constructed in prior phases, includes site drain piping, catch basins and manholes within site drives and paved areas, infiltration systems and detention basins to provide stormwater recharge, water quality treatment and mitigation of peak runoff rates. It has come to the attention of the applicant that prior maintenance obligations of the stormwater management system have not been met. Current facilities staff are now aware of these commitments and have contracted with a local stormwater management vendor to implement best practices and conduct ongoing maintenance and will coordinate these efforts with the Conservation Commission.

4.8.6.2 Proposed Conditions

As part of the definitive design for this project, stormwater impacts associated with this project have been evaluated. During final design of the project, stormwater management systems will be designed to include deep sump hooded catch basins, underground drainage piping systems, water quality treatment and peak rate control local to most building additions. In general, the intent is to capture, treat and recharge stormwater runoff from the proposed improvements while minimizing impacts to the existing site stormwater system. This is done by providing mostly localized best management practices to reduce peak rate of runoff to pre-development levels, promote groundwater recharge and improve overall quality

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of stormwater runoff in compliance with the MA Stormwater Handbook and the Town of Lincoln Stormwater Management Bylaw.

The only notable exception to this localized stormwater treatment approach is at the two new cottages at site E. Due to the installation of a new septic leach field near these buildings, stormwater runoff associated with these added impervious areas will be collected in the site stormwater drainage system and conveyed to the existing detention/infiltration basin on-site. Minor modifications to the existing downstream site piping and detention basins will be made to accommodate the added stormwater runoff associated with these site improvements.

4.8.7 Erosion and Sedimentation Control

During construction the following erosion control measures will be implemented to protect downgradient regulated resources and adjacent properties:

- Prior to any ground disturbance, a barrier of staked straw bales or equivalent barrier will be installed at the down gradient limit of work. The barrier will be placed to trap sediment transported by runoff before it reaches any drainage system or leaves the construction site.
- Temporary stabilized construction entrances will be installed at the site entrances to remove sediment attached to construction vehicle tires and to minimize sediment transport and deposition onto public road surfaces.
- Temporary silt & sediment sacks will be installed at nearby catch basin inlets to protect existing drainage systems adjacent to the site.
- A temporary vegetative cover will be established on areas of exposed soils (including stockpiles). The seeded surfaces will be covered with a layer of straw mulch, hydro mulch or erosion control mats as appropriate.
- Drainage outfalls will be constructed with rip-rap stone protection to prevent scouring of soils at pipe outfalls.
- Temporary catch basin inlet protection will be installed at all new site catch basins or other drain inlets to prevent site soils and sediments from entering any portion of the new drainage system.

An Operations and Maintenance program will be in place after construction which will ensure that the new stormwater system is inspected and maintained at regular periodic intervals and also after major storm events. Additionally, the owner is working with the Lincoln Conservation Commission to address stormwater system maintenance items required by the original Order of Conditions issued by the Lincoln Conservation Commission.

4.8.8 Wastewater

Onsite Engineering, Inc. has prepared a Wastewater Treatment Facility (WWTF) Assessment as it relates to the Commons in Lincoln. That Assessment Memorandum is included within Appendix B.



Also, the existing septic system servicing the existing President’s House will be decommissioned. The new building constructed in its place will be connected to the on-site wastewater collection and disposal system.

The project is seeking a modification to accommodate the increased flow from the new units with leach capacity is being added. Wastewater treatment facilities that are larger than 10,000 gpd are overseen by MassDEP and so the expansion needs to be approved via an amended Groundwater Discharge Permit.

This process is underway but not yet complete. The Town will be provided copies of the draft permit when issued by MassDEP. The current Groundwater Discharge Permit is attached for reference under appendix H.

4.8.9 Water

Water service to The Commons site is currently provided by the Town of Lincoln Water Department. The proposed buildings will either connect to existing site water mains within The Commons parcel or in the case of some building additions, by extending existing building services into the proposed additions. Preliminary water usage amounts were estimated based on Massachusetts Title V design flow rates and the types of units proposed to be constructed. The MA DEP “Housing for the Elderly” design flow rates of 150 gallons per day (GPD) per two-bedroom unit and 110 GPD per one-bedroom unit were used.

Additional One Bedroom Units: 6 units x 110 gal/bed	= 660 gpd
Additional Two Bedroom Units: 22 units x 150 gal/unit	= 3,300 gpd
<u>Total</u>	<u>= 3,960 gpd</u>
Net additional water usage:	= 3,960 gpd

4.9 DWELLING UNIT BREAKDOWN

Table 3 Dwelling Unit Breakdown

INDEPENDENT LIVING

Unit Type	Quantity	Bedrooms	Avg. SF
1 BR	6	6	809 sf
2 BR	22	44	1,567 sf
Total	28	50	

The project will provide three (3) units as affordable age-restricted rentals for those earning up to 80% area median income (AMI). These units will be located in building C, the Flint building addition. Two (2) of these units are anticipated to be one-bedroom units with at least 700 sf each and one (1) of these units are expected to be two-bedroom units having at least 900 sf. The Commons existing ground lease and

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regulatory agreement will be amended to encompass these new affordable units. Drafts of these amendments are included in Appendix G.

4.10 PLANS, EXHIBITS AND DOCUMENTS

Refer to Appendix C for Plans, Exhibits and other documents.

4.11 ABUTTERS LIST

Abutters lists for both the Town of Lincoln and the Town of Concord are included in this application. Refer to Figures 3 and 4 for the respective town assessor's maps. The certified abutters' lists are attached in Appendix D.

4.12 REVIEW BOARDS

The applicant met informally with the Planning Board on several occasions to discuss the proposed Definitive Development and Use Plan. In addition, the applicant and its development team are in the process of coordinating with various Town of Lincoln Departments (including representatives of Conservation, Police, Fire, Building, Water, Council on Aging and Housing Commission) following a scoping session organized by the Town Planner to discuss the project and identify relevant issues.

4.13 FILING FEE

The filing fee of \$6,200 is attached.



5.0 APPENDICES



Appendix A

TRIP GENERATION ASSESSMENT



To: Ryan Herchenroether
Senior Project Manager
One Point Partners

From: Peter Vasiliou, PE, PTOE, IMSAIII
Stantec
45 Network Dr 3rd Floor
Burlington, MA 01803

Project/File: The Commons in Lincoln / 210801974 Date: February 1, 2023

Reference: Traffic Investigation for Additional Units

We have completed an analysis of the expected traffic impacts associated with the addition of 40 housing units at The Commons. The analysis included a trip generation assessment and calculation of intersection operating levels of service. Overall, we find that the additional trips from the 40 proposed units will have a nominal impact on the operations of the site driveways at Mary's Way and Old Sandy Road and that additional analyses are not warranted.

Existing Trip Generation

The Commons in Lincoln (formerly the Groves at Lincoln) is a senior living community located at 17-19 Cambridge Turnpike (Route 2). Vehicular access is provided principally by way of a driveway at Mary's Way and a secondary driveway at Sandy Pond Road. The site includes 258 independent living units. Traffic counts conducted on the two site driveways show that the existing units generate up to 57 AM peak hour vehicle trips and 60 PM peak hour trips. The existing count data are summarized in Table 1. Hourly traffic data are attached.

Table 1: Existing Driveway Counts

Street	Direction	2022 AM Peak	2022 PM Peak
Main Entrance - Mary's Way at Groves Ave			
Mary's Way	EB TH	16	27
Mary's Way	EB RT	35	20
Mary's Way	WB LT	0	0
Mary's Way	WB TH	32	15
Groves Ave	NB LT	15	27
Groves Ave	NB RT	1	1
Total Entering site		35	20
Total Exiting site		16	28

Reference: The Commons in Lincoln

Street	Direction	2022	2022
		AM Peak	PM Peak
Total Site Trips		51	48
Sandy Pond Road at Cider Lane			
Sandy Pond Rd	NB TH	32	25
Sandy Pond Rd	NB RT	2	3
Sandy Pond Rd	SB LT	1	2
Sandy Pond Rd	SB TH	16	16
Cider Ln	WB LT	2	2
Cider Ln	WB RT	1	5
Total Entering site		3	5
Total Exiting site		3	7
Total Site Trips		6	12
Both Driveways			
All Entering (both driveways)		38	25
All Exit (both driveways)		19	35
All Total (both driveways)		57	60
LUC 251 – Sr. Housing-Detached		61	74

Stantec prepared a traffic impact assessment for The Groves in 2013, prior to the last project expansion. At the time, the development program was being expanded from 197 dwelling units to 258 dwelling units. As noted above, there are 57 AM and 60 PM peak hour trips associated with the existing 258 units. Applying Institute of Transportation Engineers (ITE) trip rates (*Trip Generation Manual, 11th Edition* for Land Use Code 251 Senior Housing – Detached) to the existing 258 units indicates 61 AM peak hour trips and 74 PM peak hour trips at the site. Consequently, actual site traffic generation is slightly less than indicated by average ITE trip rates. The observed vehicle trip generation indicates that the existing land use generates vehicle trips at rates of 0.22 and 0.23 vehicle trips per dwelling unit during the AM and PM peak hours, respectively. The ITE manual indicates slightly higher rates of 0.24 and 0.30 AM and PM peak hour vehicle trips per dwelling unit.

Proposed Trip Generation

Since the ITE trip rates are slightly higher than the locally observed trip rates, the ITE rates were applied to the proposed units to present a conservative (worse case) analysis condition. Traffic forecasts for the proposed 40 new dwelling units using the ITE Trip Generation Manual Land Use Code 251 Senior Housing – Detached are shown in Table 2. As noted, 20 new AM peak hour trips and 22 new PM peak hour trips are predicted.

Reference: The Commons in Lincoln

Table 2: Proposed Trip Generation

Time Period	Enter	Exit	Total
AM Peak Hour	6	14	20
PM Peak Hour	14	8	22
Daily	137	137	274

Based on ITE LUC 251 trip rates for 40 dwelling units

Traffic Operations

The anticipated new trips were added to the turning movement counts conducted on May 5, 2022 and analyzed using Synchro version 11 to determine intersection operating conditions. Intersection approach volume-to-capacity ratios, delay, Level of Service (LOS) and the 95th percentile queue lengths are presented in the following table for existing and Build conditions. As shown below, the two site driveway intersections operate at the highest level of service, LOS A, during both peak hours and will continue to operate at this level of service with the new units built and occupied.

Groves Ave at Mary's Way Intersection

Approach	Movement	AM Peak Period				PM Peak Period			
		V/C	Delay (Seconds)	LOS	95th Queue (Feet)	V/C	Delay (Seconds)	LOS	95th Queue (Feet)
Mary's Way	EB Thru/Right	-	-	-	-	-	-	-	-
Mary's Way	WB Left/Thru	-	0	A	0	-	0	A	0
Groves Ave	NB Left/Right	0.031	9	A	2.5	0.04	9	A	2.5

Sandy Pond Rd at Cider Lane Intersection

Approach	Movement	AM Peak Period				PM Peak Period			
		V/C	Delay (Seconds)	LOS	95th Queue (Feet)	V/C	Delay (Seconds)	LOS	95th Queue (Feet)
Sandy Pond Rd	NB Thru/Right	-	-	-	-	-	-	-	-
Sandy Pond Rd	SB Left/Thru	0.001	7.3	A	0	0.00	7.3	A	0
Cider Ln	WB Left/Right	0.006	8.7	A	0	0.01	8.6	A	0

Reference: The Commons in Lincoln

Conclusion

Stantec projected new vehicle trip generation for the proposed expansion of the senior living community. The new trips were added to existing driveway volumes and operations analyses were conducted to assess the impact of the added traffic on intersection performance. The analyses indicate that the proposed project expansion will have no significant impact on traffic operations on the roadway system adjacent to the project site.

Should you have any questions regarding the above, please do not hesitate to call. We appreciate having the opportunity to assist you with this project.

Sincerely,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in black ink, appearing to read 'Peter Vasiliou', is centered on the page. The signature is fluid and cursive.

Peter Vasiliou PE, PTOE, IMSA-III

Senior Traffic Engineer

Phone: 781-221-0453

peter.vasiliou@stantec.com

Attachment: Appendix – Traffic Counts & Synchro Report

u:\210801974\design\analysis\traffic study\2023-02-01_tis_40 units.docx

APPENDIX SUBTITLE

Appendix B

Appendix B

WASTEWATER TREATMENT FACILITY ASSESSMENT





Water, Wastewater and Stormwater Specialists

October 26, 2023

Mr. Chris Fee, Principal
Stantec
311 Summer Street
Boston, Massachusetts 02210-1723

Re: Lincoln Commons - Lincoln, Massachusetts
Onsite Wastewater Treatment System Assessment Report

Dear Chris:

We are pleased to submit this report summarizing the existing conditions of the onsite wastewater treatment facility (WWTF) and the modifications that may be necessary to accommodate the proposed expansion of the WWTF servicing Lincoln Commons Senior and Assisted Living and Skilled Nursing Facility in Lincoln, Massachusetts. The evaluation consisted of reviewing the current configuration of the treatment and disposal systems as well as identifying the components that most likely will need additional capacity in order to accommodate the increase in sewage generated from the proposed site expansion.

BACKGROUND INFORMATION

The Commons in Lincoln sewage disposal system is currently achieved via an onsite wastewater treatment facility that was originally constructed in 2008 and designed to serve the site as currently configured. Since that time, the facility has been expanded once (in 2014) to treat additional flow and has routinely been able to meet or exceed the requirements in the MassDEP issued groundwater discharge permit.

While treatment levels and permit compliance has been satisfactory, in 2022, Commons residents and staff observed surface breakout from the original Zones 1 & 2 (courtyard/lawn system) of the effluent disposal field, which suggested that the system was no longer percolating the fully treated effluent into the ground. In the past few months, subsurface investigations were undertaken to identify the source of the problem, which was determined, in concert with MassDEP, to most likely be inadequate venting combined with a densely compacted fill placed over the system allowing for excessive biomat growth, which is now impeding the downward percolation of the treated effluent into the ground. Addressing these issues required the replacement of Zones 1 & 2 of the effluent disposal system, which are located in the courtyard/lawn behind the Russell building. The underlying geologic conditions and soil characteristics were confirmed to be adequate at the time of the investigations. The replacement work began in June of 2023 and was recently

completed. During construction, any unsuitable soils found were removed and the underlying soils were perc tested in several areas to confirm their viability. In addition, the system was constructed with chambers and vent piping to allow for adequate venting. As of mid-September, the new zones have been constructed, the fields were tested in the presence of MassDEP and the approval by MassDEP to send flow to the new fields was issued in writing. At this time, the fields are online and functional. Final grading and landscaping to accommodate the proposed changes to the site is underway and is anticipated to be completed in the next month.

For the overall site, per Massachusetts Department of Environmental Protection (MassDEP) regulations, each unit is anticipated to generate maximum day wastewater flow depending on the type of use. Table 2, included later in this report, provides a detailed accounting of the exiting uses (by flow category) and the associated anticipated Title 5 sewage generation from those uses. Based upon these criteria, the MassDEP issued the most recent Groundwater Discharge Permit renewal (# 855-2) on July 22, 2022 with a maximum daily flow limit of 36,600 gallons.

The permit issued by MassDEP requires that the WWTF discharge be operated and monitored in accordance with 314 CMR 12.00 and that such operation results in the effluent discharge meeting the standards set forth in 314 CMR 5.00. Table 1 below details the parameters in the Groundwater Discharge Permit for this site that the discharged effluent is required to meet on a monthly basis:

Table 1
Groundwater Discharge Permit Summary
Lincoln Commons, Lincoln, Massachusetts

Permit Category	Limitation
Number	855-2
Flow ⁽¹⁾	36,600 Gallons
pH	6.5 to 8.5
Biochemical Oxygen Demand ⁽²⁾	30 mg/L
Total Suspended Solids ⁽²⁾	30 mg/L
Oil & Grease	15 mg/L
Nitrate-Nitrogen	10 mg/L
Total Nitrogen	10 mg/L

- (1) When effluent discharged for the annual average exceeds 80 percent of the permitted flow limitations, the permittee shall submit to the permitting authorities projected loadings and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- (2) The monthly average concentration of BOD and TSS in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD and TSS in the influent to the permittee's wastewater treatment facility.

To achieve this level of treatment, the wastewater treatment facility consists of a single train Amphidrome system comprised of two anoxic/flow equalization tanks, one Amphidrome Reactor, one clearwell, one Amphidrome Plus Reactor, an ultraviolet disinfection unit, an odor control system, an effluent disposal pump chamber and two subsurface effluent disposal areas. The system is currently designed and sized to treat a maximum day flow of 36,600 gallons of sewage flow and the effluent disposal system is sized accordingly to dispose of that volume of wastewater as well.

The system is currently being operated on a multi-year contract basis by WhiteWater, Inc. a regional wastewater contract operations firm that employs licensed wastewater treatment system operators throughout New England. WhiteWater specializes in operating facilities of this size and type for private clients and maintains staff that has the required levels of training, licensure and experience necessary to operate and maintain this facility. As part of our assessment of the system, we conducted a review of the required Daily Monitoring Report (DMR) data filed with MassDEP relative to the Permit discharge limits noted above. Upon review of the data, we feel that the facility is generally being run properly and has been consistently within the effluent discharge limits above, well within the normal variations in the effluent quality that are expected from these types of systems.

Anoxic/Flow Equalization Tanks

Sewage generated from the project is directed to the Anoxic/Flow Equalization tanks. The two tanks are installed in series so that raw sewage is mixed with return sludge from the Amphidrome process at the beginning of the first tank and then it travels through both tanks prior to flowing by gravity into the Amphidrome Reactor for aerobic biological treatment. These tanks contain three zones; sludge storage, flow equalization and a settling zone. The functions of these tanks are to collect and remove coarse solids and floatable material from the waste stream, attenuate peak flows occurring during the morning and evening hours of the day, and to provide storage of sludge from the backwashing of other treatment units.

Amphidrome Reactor

The Amphidrome Reactor serves as combination fixed-film reactor and denitrification filter to provide aerobic and anoxic treatment of wastewater. The Amphidrome Reactor consists of submerged granular media that is alternately supplied and deprived of air during multiple computer controlled aerobic and anoxic cycles.

The Amphidrome Reactor operates similar to a sequencing batch reactor, with alternating aerobic and anoxic cycles. The aerobic biological treatment cycle is utilized for the removal of dissolved organic matter, measured as Biochemical Oxygen Demand (BOD₅), and to accomplish oxidation of reduced forms of nitrogen (nitrification). In addition to removing the carbonaceous BOD during aeration, additional aerobic bacteria perform a series of biochemical reactions known collectively as nitrification to convert the reduced nitrogenous compounds present within the wastewater to the completely oxidized nitrate-nitrogen (NO₃-N) form. After completion of the aerobic cycle, the oxygen feed is discontinued to provide anoxic conditions necessary for the denitrification cycle. The denitrification cycle uses bacteria functioning in the anoxic (devoid of free dissolved oxygen) environment that are capable of using combined forms of oxygen for respiration thereby, converting the nitrate-nitrogen present in the wastewater to nitrogen gas.

Clearwell Tanks

The clearwell consists of a precast concrete tank that stores the treated effluent from the Amphidrome Reactor. The clearwell contains two sets of pumping systems that direct wastewater to either the Amphidrome Reactor or the Amphidrome Plus Reactor. The pumping systems direct wastewater based upon a preset time schedule that is controlled via a Programmable Logic Controller (PLC).

Amphidrome Plus Reactor

The Amphidrome Plus Reactor provides an additional anoxic zone to promote additional denitrification while also serving as a polishing filter designed to remove solids not removed in the Amphidrome Reactor. The silica sand media in the Amphidrome Plus Reactor is completely submerged in the wastewater and operates in an anoxic environment that allows the predomination of denitrifying organisms.

UV Feed Pump Station

The UV Feed pump station consists of a precast concrete tank that stores the treated effluent from the Amphidrome Plus Reactor for ultimate dosing to the UV system for disinfection prior to effluent disposal. This tank contains a duplex pumping system that directs wastewater into the WWTF building, through the UV unit and flow meter, prior to gravity flow into the leaching field dosing chamber. The pumping system runs based upon a preset time schedule and water levels that is controlled via a Programmable Logic Controller (PLC).

UV Disinfection

The UV disinfection system consists of a stainless steel channel that houses ultraviolet generating light bulb racks. The bulbs are contained in quartz glass sleeves so they never come in direct contact with the wastewater. The control system of the unit provides the electricity needed to generate the UV light and also monitors the amount of light that is being transmitted into the wastewater. This is an effective way to measure the intensity of the light, which is a good indicator of the effectiveness of the disinfection process.

Leaching Field Dosing Chamber

The leaching field dosing chamber consists of a precast concrete tank that stores the treated, disinfected effluent from the WWTF process prior to pumping it to the leaching fields for subsurface effluent disposal. This tank contains a triplex pumping system that directs wastewater into the two pressure dosed leaching systems that is configured in three zones, one pump for each zone.

Leaching Fields

The effluent disposal system consists of two pressure dosed leaching areas located to the east and southeast of the WWTF. The larger of the two areas, in the courtyard/lawn behind Russell Building, is broken up into two separate zones (zones 1 & 2). As both areas are hydraulically up-gradient of the WWTF, the effluent is pumped to both fields. The fields consist of pressure dosing manifolds, small diameter effluent distribution pipes and 2-ft by 2-ft stone trenches of various lengths. The effluent disposal system is sized to dispose of a maximum day sewage flow of 36,600 gallons and is based upon loading

rates of 2.5 gal/sf and 1.5 gal/sf for the two different leaching areas. As previously noted, the leaching area located in the Russell Building rear Courtyard has been replaced and is now online with the work having been completed per the permitting and oversight requirements of MassDEP’s regulations.

Proposed Conditions

Lincoln Commons, through OnePoint Partners, is seeking to increase the independent living unit count at the site which would result in a net increase of 28 units to the property. As shown in Table 2 below, this would result in an increase of the MassDEP sewage flow from the permitted 36,600 gallons to 40,560 gallons. To affect this change, expansion of the system and re-permitting of the site with MassDEP will be required.

Table 2
Title 5 Design Flow Calculations
The Commons at Lincoln, Lincoln, MA

Category	Unit	Flow/Unit	Flow
Initial Existing Uses			
Cottages	38 Units	150 gal/unit	5,700 gal
Russell Building	16 Bedrooms	110 gal/bedroom	1,760 gal
Russell Building	84 Units	150 gal/unit	12,600 gal
Flint Building	15 Bedrooms	110 gal/bedroom	1,650 gal
Flint Building	15 Units	150 gal/unit	2,250 gal
Assisted Living Facility	30 bedrooms	110 gal/bedroom	3,300 gal
Assisted Living Facility	10 Units	150 gal/unit	1,500 gal
Memory Care	14 Bedrooms	110 gal/bedroom	1,540 gal
Memory Care	10 Units	150 gal/unit	1,500 gal
Nursing Care	32 Units	150 gal/unit	4,800 gal
Total Existing Flows:			36,600 gal
Proposed Additional Flow			
<i>Independent Elderly Living</i>	<i>6 One Bedroom Units</i>	<i>110 gal/unit</i>	<i>660 gal</i>
<i>Independent Elderly Living</i>	<i>22 Two Bedroom Units</i>	<i>150 gal/unit</i>	<i>3,300 gal</i>
Site Total			40,560 gallons

As part of this feasibility assessment for the project, we conducted a preliminary review of the proposed site expansion. This included a review of the soil profiles/subsurface conditions at the site and of the treatment system itself to determine the actual capacities of each unit process relative to adding residential units and

more flow. For the leaching and WWTF components, our assessment revealed that it should be feasible to site additional leaching area and expand the WWTF, as necessary, to secure the required MassDEP permits and to affect system modifications that would allow for the WWTF to process the additional wastewater flow to within the current Permit limits. Generally, we envision that the additional flow would require the following process changes at the WWTF, (which we believe can be accommodated);

- Additional anoxic tank volume would be required to address the increase in suspended solids loading,
- A second Amphidrome Reactor would be required for organic pollutant removal,
- A larger Amphidrome Plus Reactor would be needed to achieve satisfactory nitrogen removal,
- Additional effluent pump and control systems would be necessary to accommodate an additional leaching field zone, and;
- A new control panel would be required to control these new systems.

As we've begun to move forward with the proposed expansion, the additional permitting with MassDEP will take place in two phases. The first phase will included conducting field investigations at the site to finalize the location and configuration of an additional leaching field. As the current effluent disposal leaching areas are sized to accommodate the existing flows, the additional flow added to the site will require more leaching area. This phase is underway and the site testing, soil characterization and hydraulic conditions have been identified and modeled. This information and results of the testing indicates that the site should be suitable to accommodate the increases in flow. Based on these results, we anticipate filing the necessary reports and applications with MassDEP in support of the leaching expansion in November, 2023.

In addition to determining the hydrogeological capacity of the site to adequately dispose of this additional wastewater, an assessment and re-permitting of the WWTF treatment system must be completed and approved by MassDEP for the additional flow as the second phase of the project. To complete the second phase tasks, a complete wastewater loading and capacity analysis of the system would be required to determine the extents of the required modifications and to then develop a program to be used in the design upgrade and permitting of the Amphidrome and Amphidrome Plus unit processes. These tasks will be completed by a licensed Engineer in concert with the system manufacturer, while being reviewed and approved by MassDEP. Upon final analysis and development of recommendations, as well as the design of any required modifications, a WWTF Modification Plan Approval application will be filed with MassDEP. At that time, the Department will review the application and provide comments or issue approvals, subject to public comment, on the feasibility of the proposed plan to increase the capacity of the onsite WWTF. Upon issuance of permits and approvals for the proposed upgrades, the system modifications would be completed by a licensed contractor with experience in the construction of onsite WWTFs.

Mr. Chris Fee, P.E., Principal
Stantec

October 26, 2023
Page 7

We thank you for the opportunity to assist you on this important project. We trust that the information included in this evaluation suits your present needs. If you wish to discuss these findings or have any questions, please feel free to contact us.

Sincerely,

Onsite Engineering, Inc.

A handwritten signature in blue ink that reads "David C. Formato". The signature is stylized and cursive.

David C. Formato, P.E.
President

THE COMMONS IN LINCOLN EXPANSION 2024 - LINCOLN, MA

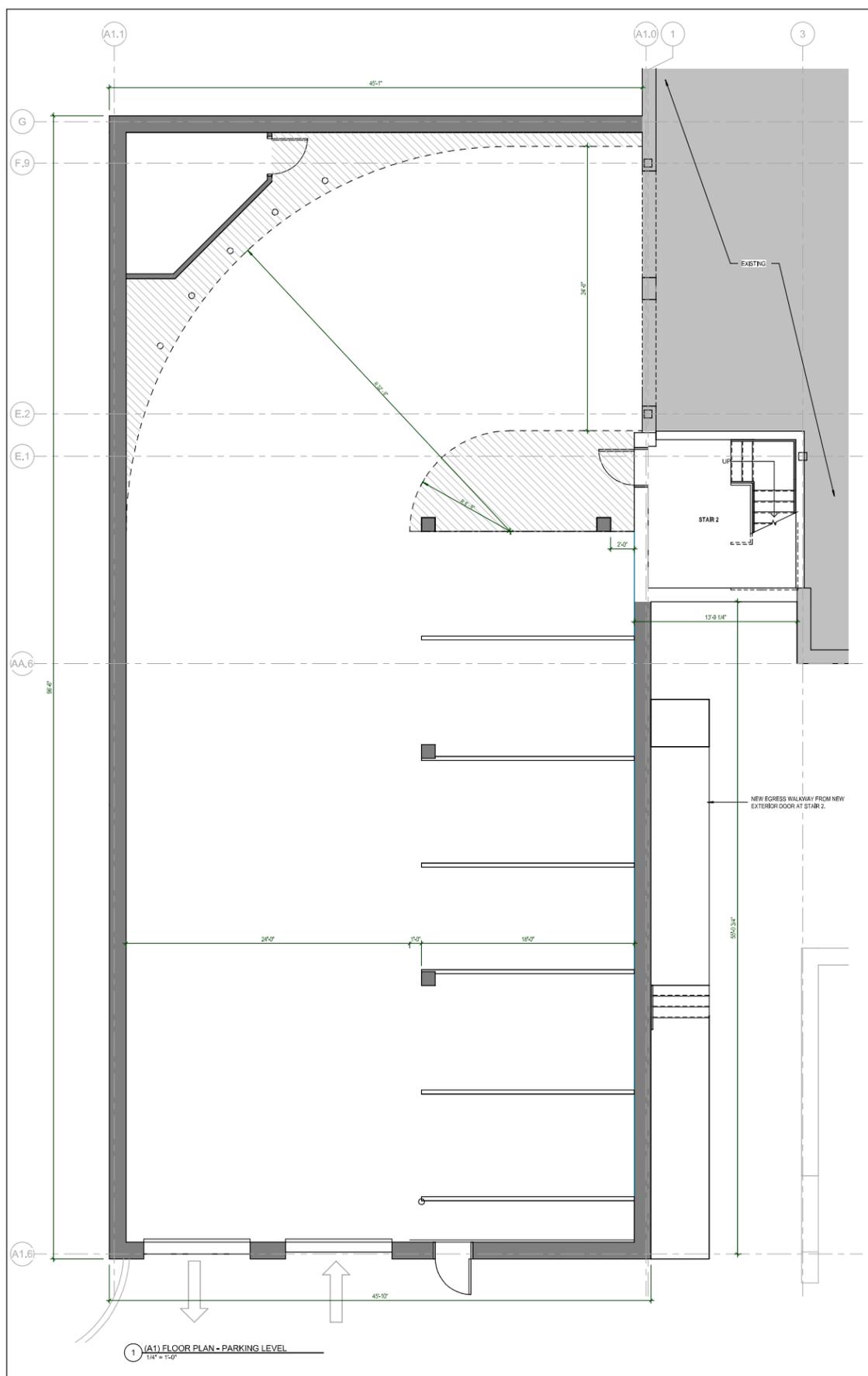
Appendix C

Appendix C

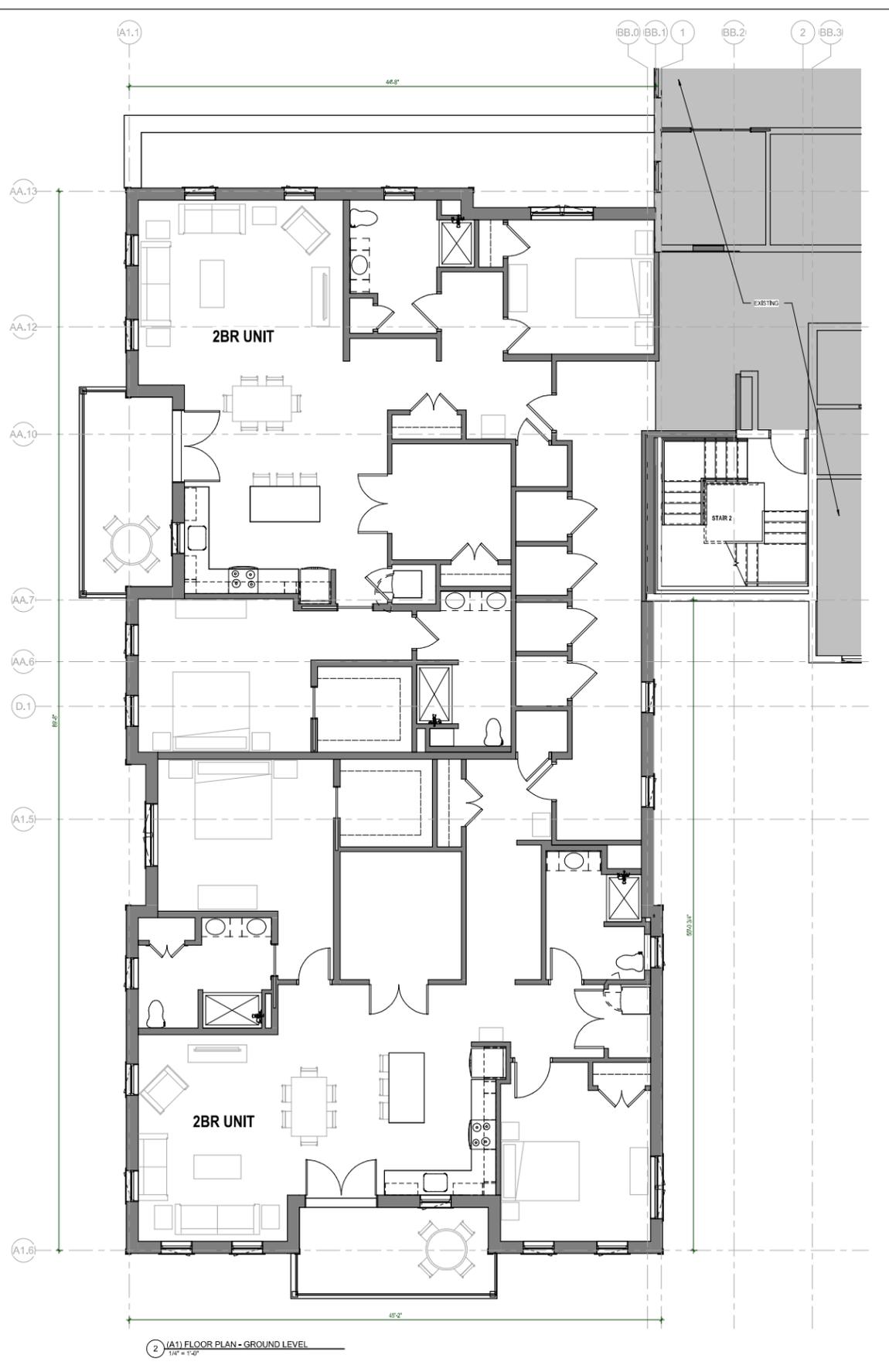
PLANS, EXHIBITS AND DOCUMENTS

Sheet	Plan Title	Plan date
	Existing Conditions 1	08/07/2024
	Existing Conditions 2	08/07/2024
3D-1	3D Perspective Views 1	08/07/2024
3D-2	3D Perspective Views 2	08/07/2024
A1/A-1	A-1 Floor Plans	08/07/2024
A1/A-2	A-1 Floor Plans	08/07/2024
A1/A-3	A-1 Elevations	08/07/2024
A1/A-4	A-1 Elevations	08/07/2024
A2/A-1	A-2 Floor Plans	08/07/2024
A2/A-2	A-2 Floor Plans	08/07/2024
A2/A-3	A-2 Elevations	08/07/2024
A2/A-4	A-2 Elevations	08/07/2024
B/A-1	B Floor Plans	08/07/2024
B/A-2	B Floor Plans	08/07/2024
B/A-3	B Floor Plans	08/07/2024
B/A-4	B Elevations	08/07/2024
B/A-5	B Elevations	08/07/2024
C/A-2	C Floor Plans	08/07/2024
C/A-3	C Floor Plans	08/07/2024
C/A-4	C Floor Plans	08/07/2024
C/A-5	C Elevations	08/07/2024
C/A-6	C Elevations	08/07/2024
D/A-1	D Floor Plans	08/07/2024
D/A-2	D Floor Plans	08/07/2024
D/A-3	D Elevations	08/07/2024
D/A-4	D Elevations	08/07/2024
D/A-5	D Elevations	08/07/2024
E/A-1	E Floor Plans	08/07/2024
E/A-2	E Floor Plans	08/07/2024
E/A-4	E Elevations	08/07/2024
EX-000	Existing Conditions Plan	08/07/2024
L-001	Site Preparation and Erosion and Sedimentation Control Plan	08/07/2024
C-100	Utility Overall Plan	08/07/2024
C-101	Utility Plan Enlargements	08/07/2024
C-102	Utility Plan Enlargements	08/07/2024
C-103	Utility Plan Enlargements	08/07/2024
C-104	Utility Plan Enlargements	08/07/2024
C-501	Site Utility Details	08/07/2024
C-502	Site Utility Details	08/07/2024
L-100	Overall Site Plan	08/07/2024
PR-100	Property Rights and Dimensional Standards Plan	08/07/2024
L-101	Layout and Materials Plan Enlargements	08/07/2024
L-102	Layout and Materials Plan Enlargements	08/07/2024
L-103	Layout and Materials Plan Enlargements	08/07/2024
L-104	Layout and Materials Plan Enlargements	08/07/2024
L-200	Grading and Drainage Plan	08/07/2024
L-300	Planting Plan	08/07/2024
L-400	Lighting Plan	08/07/2024
L-500	Site Details	08/07/2024
L-501	Site Details	08/07/2024
L-502	Site Details	08/07/2024
	Outline Specifications	08/07/2024





1 (A1.1) FLOOR PLAN - PARKING LEVEL
1/4" = 1'-0"



2 (A1.1) FLOOR PLAN - GROUND LEVEL
1/4" = 1'-0"

THE COMMONS IN LINCOLN
EXPANSION (A1)
1 HARVEST CIR
LINCOLN, MA 01773

ARCHITECT
BECHTEL FRANK ERICKSON
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1723 MASSACHUSETTS AVE
LEXINGTON, MA 02420
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Date	Issued For



DRAWING TITLE
(A1) FLOOR PLANS -
PARKING LEVEL &
GROUND LEVEL

SHEET ISSUE DATE: 08/07/24

PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

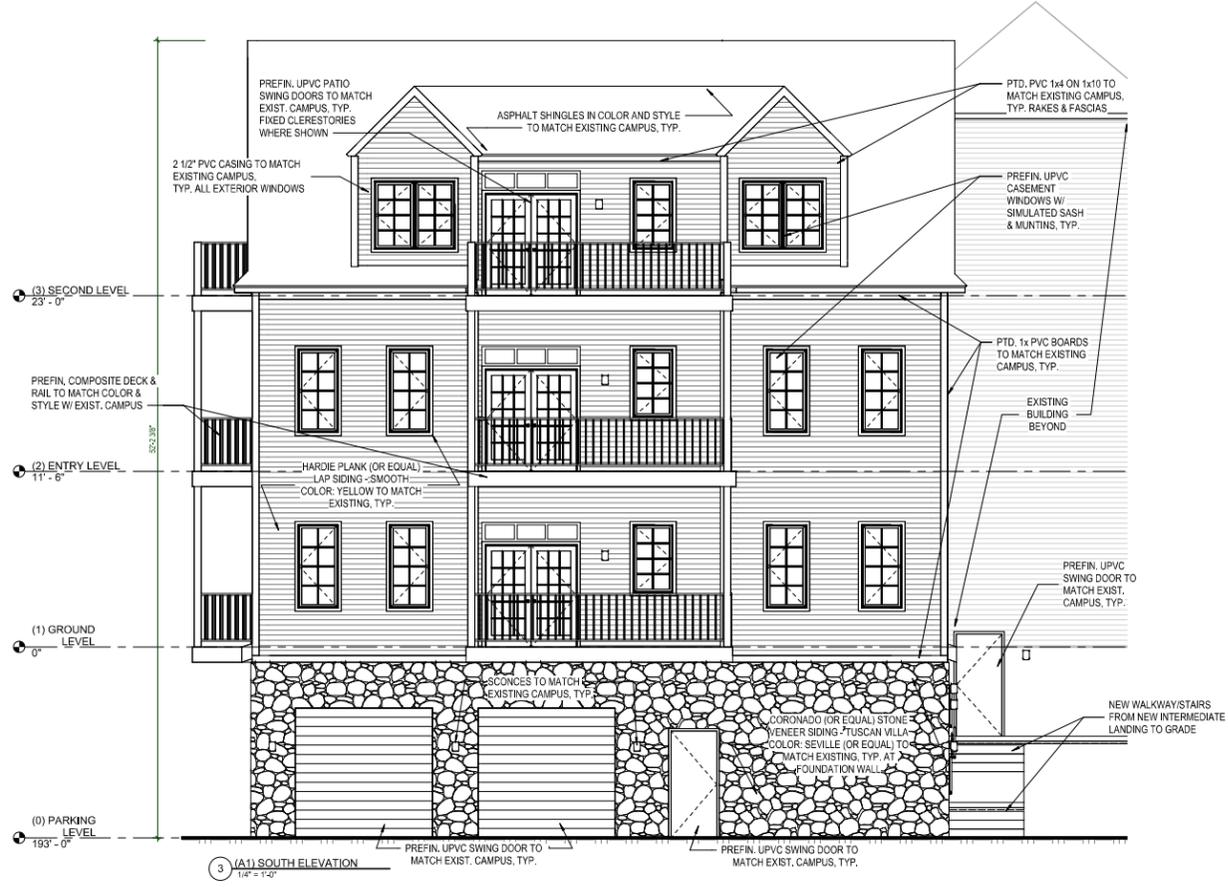
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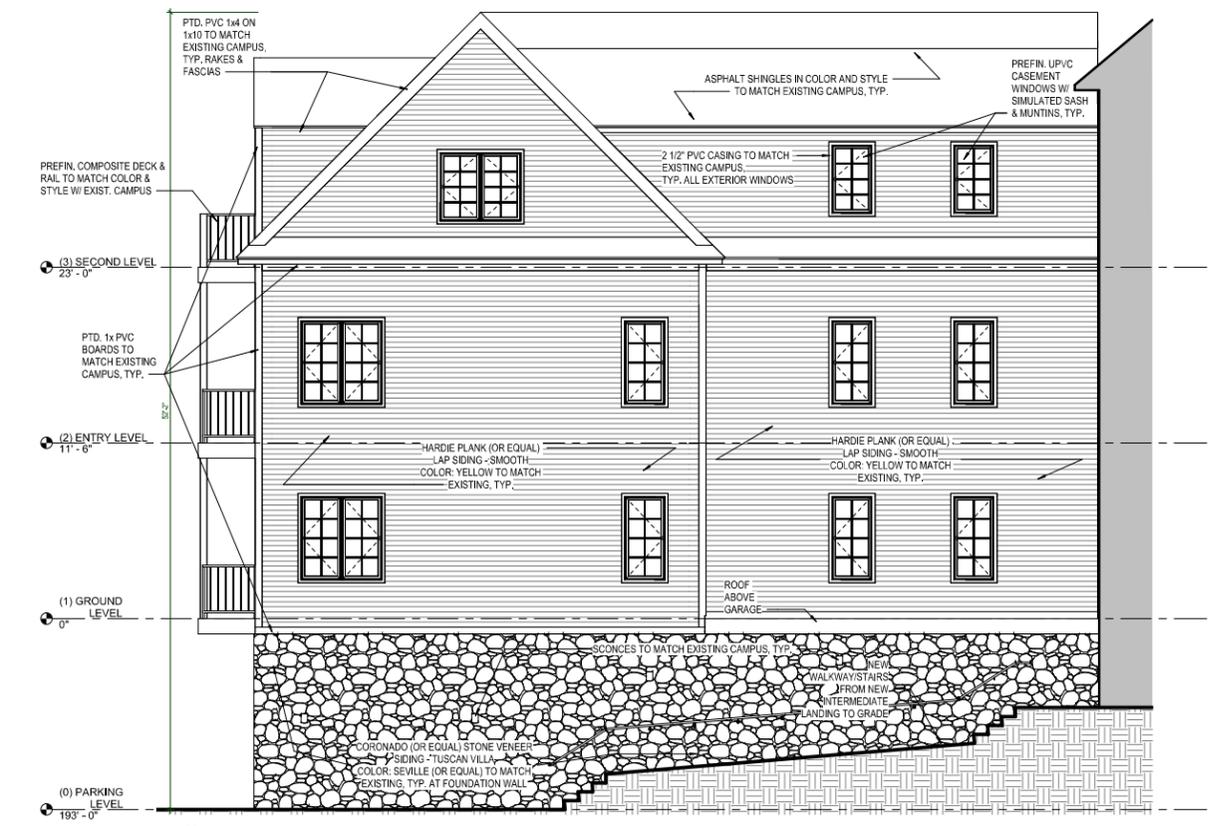
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EXTERIOR SIDING COLORS

-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  CORONADO (OR EQUAL) STONE VENEER SIDING - OLD WORLD LEDGE
COLOR: HURON
-  CORONADO (OR EQUAL) STONE VENEER SIDING - TUSCAN VILLA
COLOR: SEVILLE (OR EQUAL) TO MATCH EXISTING



3 (A1) SOUTH ELEVATION
1/4" = 1'-0"



4 (A1) EAST ELEVATION
1/4" = 1'-0"

**THE COMMONS IN LINCOLN
EXPANSION (A1)**
1 HARVEST CIR
LINCOLN, MA 01773

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ISSUANCES



DRAWING TITLE
(A1) EXTERIOR ELEVATIONS 1

SHEET ISSUE DATE: 08/07/24

PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

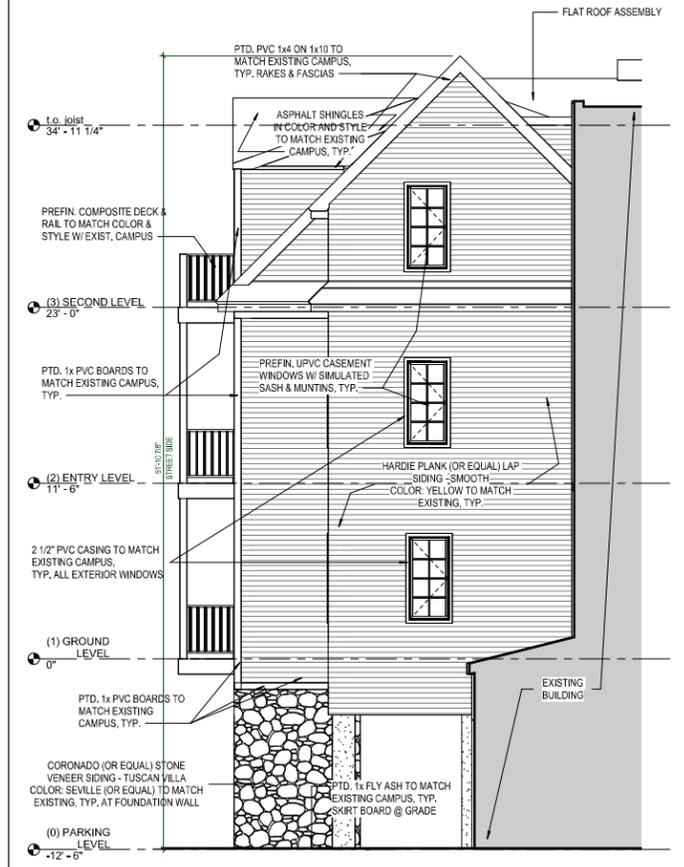
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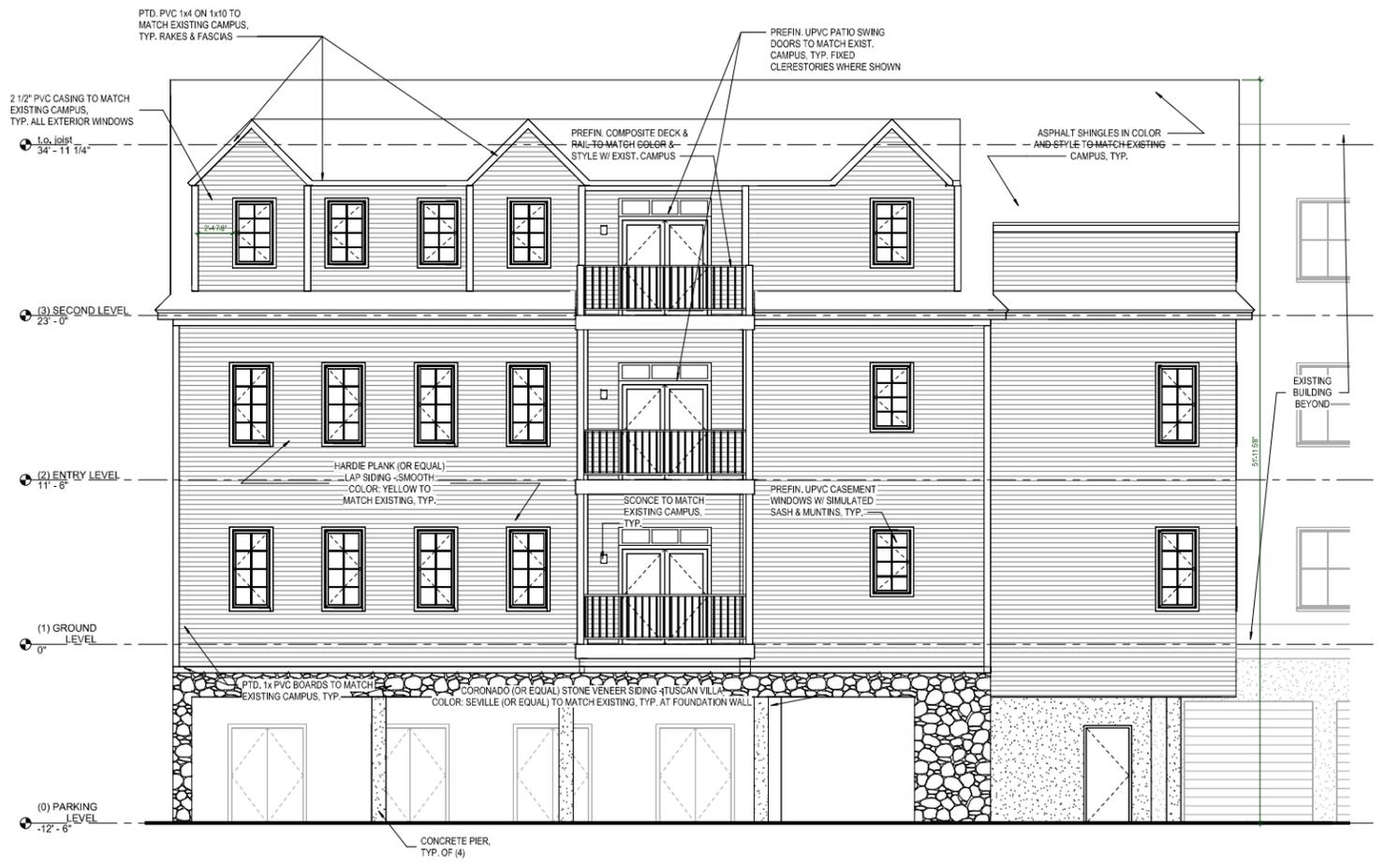
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EXTERIOR SIDING COLORS

-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BLUE TO MATCH EXISTING
-  CORONADO (OR EQUAL) STONE VENEER SIDING - OLD WORLD LEDGE
COLOR: HURON
-  CORONADO (OR EQUAL) STONE VENEER SIDING - TUSCAN VILLA
COLOR: SEVILLE (OR EQUAL) TO MATCH EXISTING



1 (A2) SOUTH ELEVATION
1/4" = 1'-0"



2 (A2) WEST ELEVATION
1/4" = 1'-0"

THE COMMONS IN LINCOLN
EXPANSION (A2)
1 HARVEST CIR
LINCOLN, MA 01773

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ISSUANCES



DRAWING TITLE
(A2) EXTERIOR ELEVATIONS 1

SHEET ISSUE DATE: 08/07/24

PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

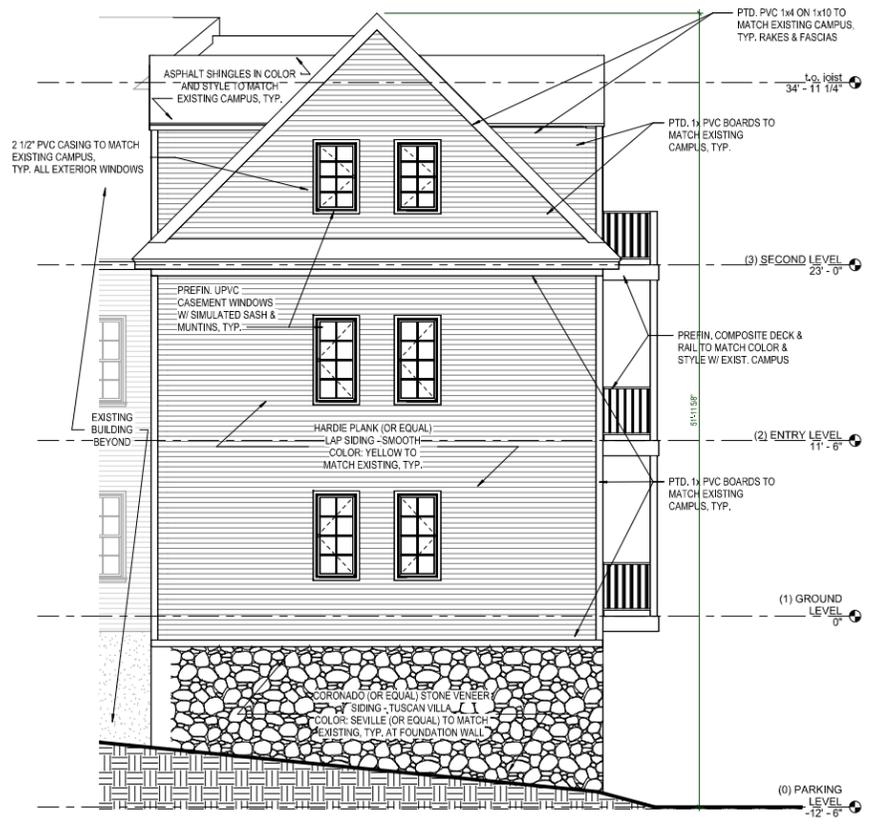
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A2/A-3

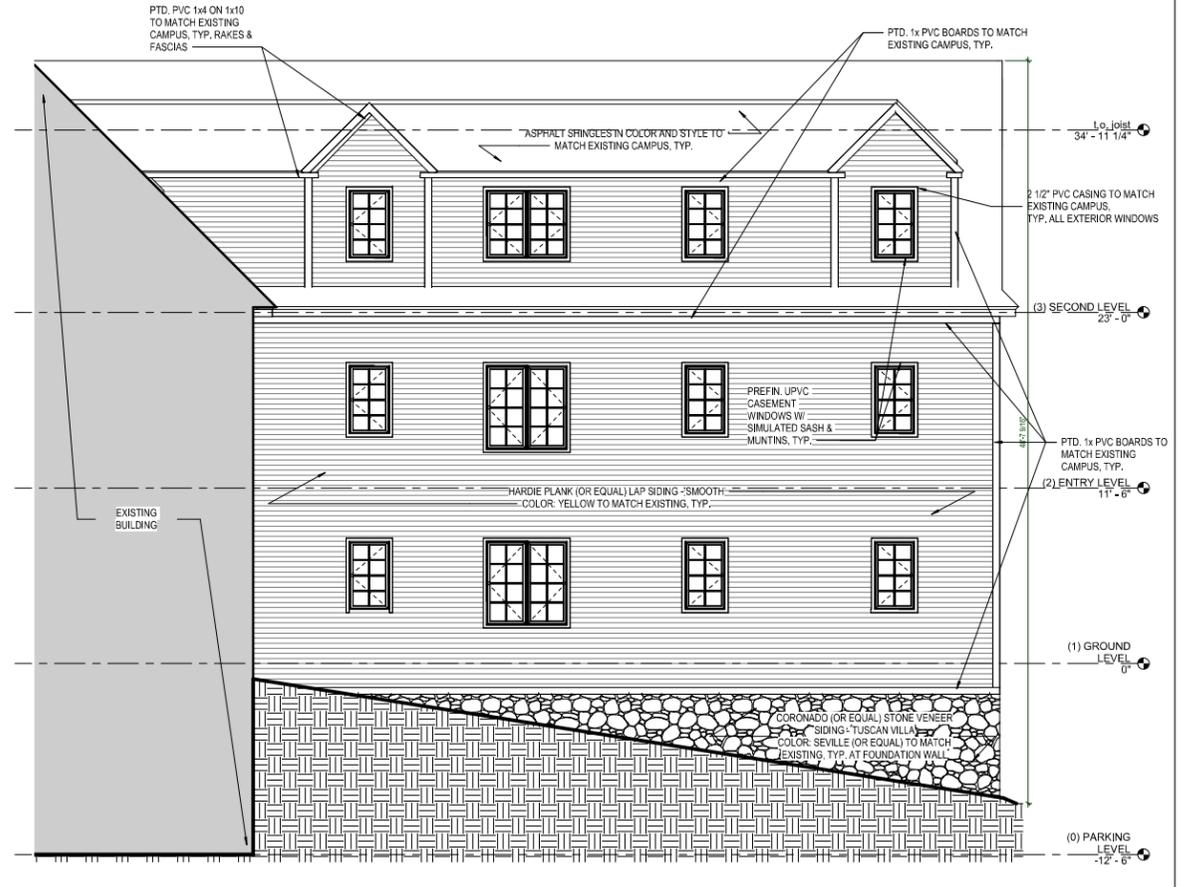
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EXTERIOR SIDING COLORS

-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BLUE TO MATCH EXISTING
-  CORONADO (OR EQUAL) STONE VENEER SIDING - OLD WORLD LEDGE
COLOR: HURON
-  CORONADO (OR EQUAL) STONE VENEER SIDING - TUSCAN VILLA
COLOR: SEVILLE (OR EQUAL) TO MATCH EXISTING



1 (A2) NORTH ELEVATION
1/4" = 1'-0"



2 (A2) EAST ELEVATION
1/4" = 1'-0"

**THE COMMONS IN LINCOLN
EXPANSION (A2)**
1 HARVEST CIR
LINCOLN, MA 01773

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DRAWING TITLE
(A2) EXTERIOR ELEVATIONS 2

SHEET ISSUE DATE: 08/07/24
PROJECT ISSUE DATE:

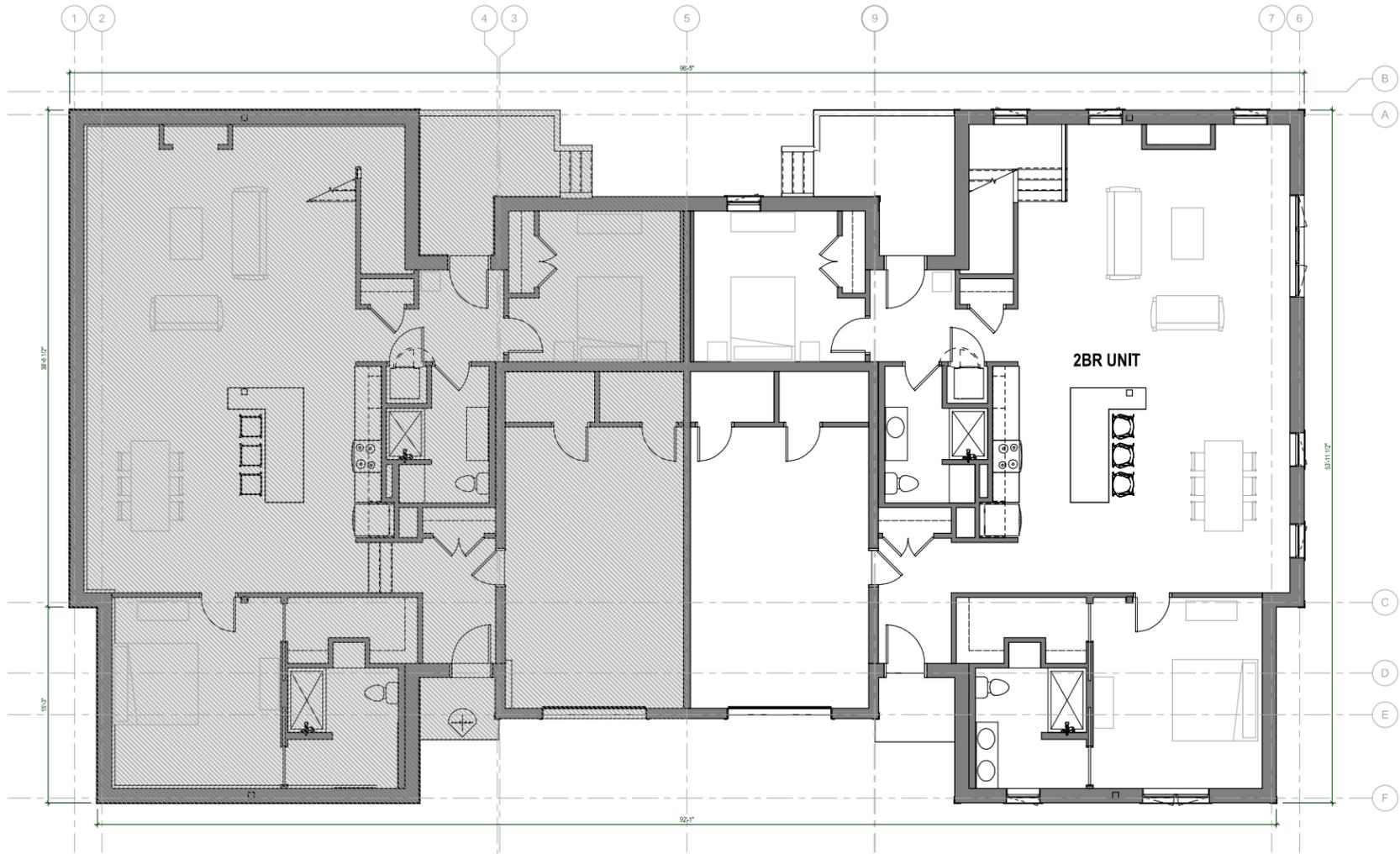
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A2/A-4

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1 (B) FLOOR PLAN - LOWER UNIT
GROUND LEVEL
1/4" = 1'-0"



THE COMMONS IN LINCOLN
EXPANSION (B)
1 HARVEST CIR
LINCOLN, MA 01773

ARCHITECT

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ISSUANCES



DRAWING TITLE
(B) FLOOR PLANS -
LOWER UNIT

SHEET ISSUE DATE: 08/07/24

PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

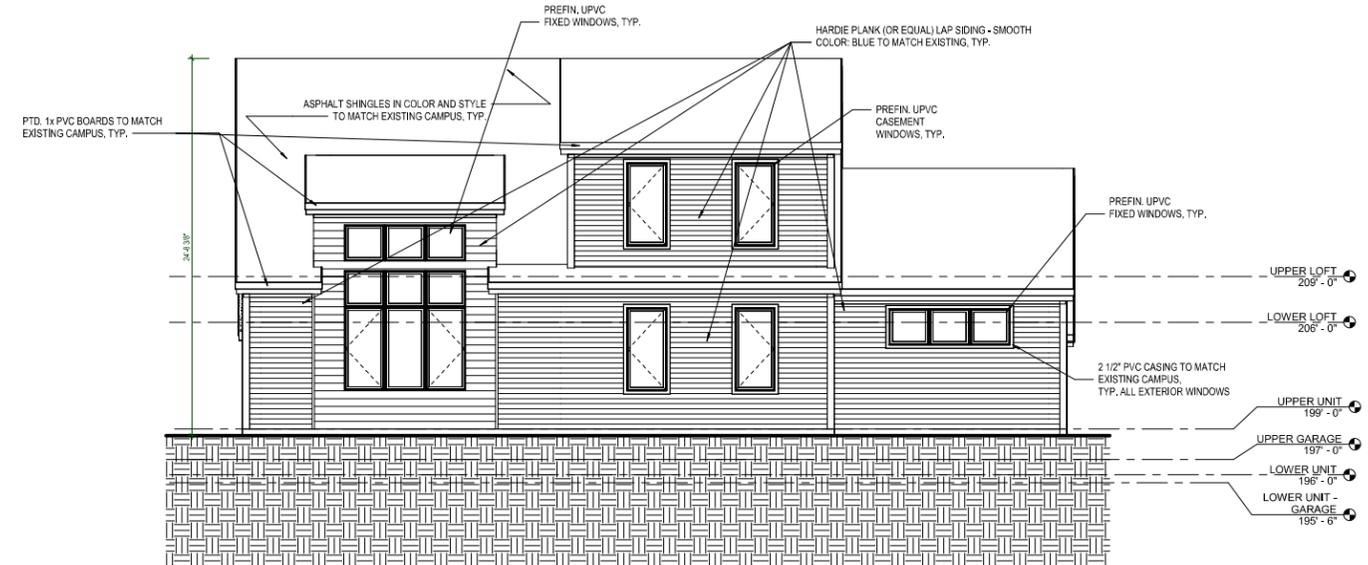
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B/A-1

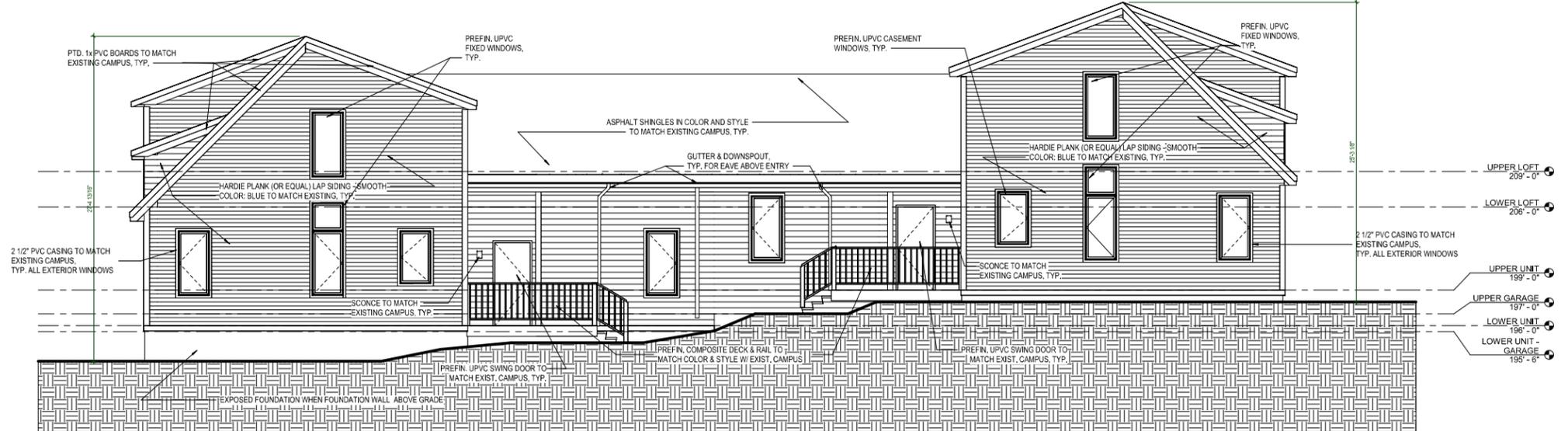
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EXTERIOR SIDING COLORS

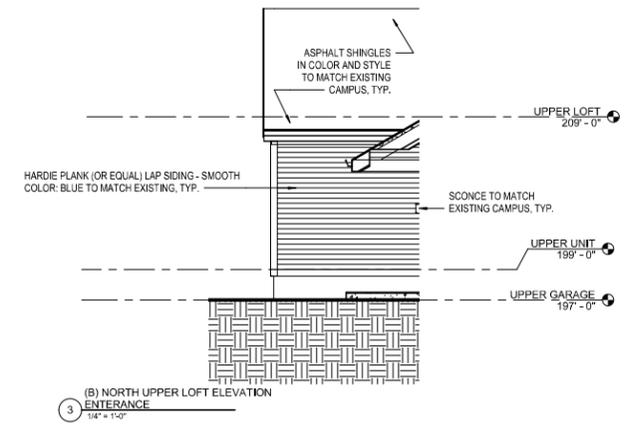
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COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BLUE TO MATCH EXISTING



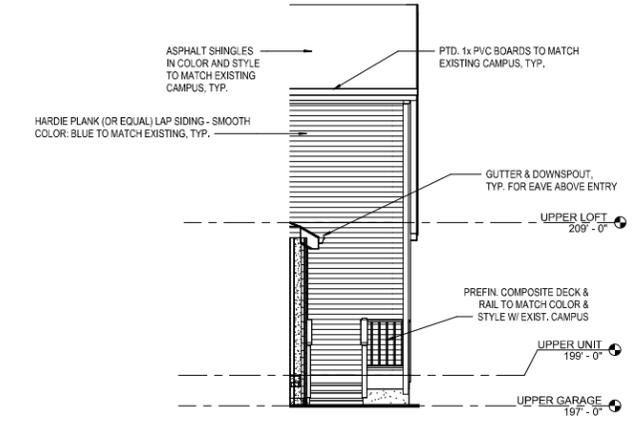
2 (B) SOUTH ELEVATION
1/4" = 1'-0"



1 (B) WEST ELEVATION
1/4" = 1'-0"



3 (B) NORTH UPPER LOFT ELEVATION
1/4" = 1'-0"



4 (B) NORTH UPPER LOFT ELEVATION
1/4" = 1'-0"

**THE COMMONS IN LINCOLN
EXPANSION (B)**
1 HARVEST CIR
LINCOLN, MA 01773

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Date Issued For

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DRAWING TITLE
(B) EXTERIOR ELEVATIONS 2

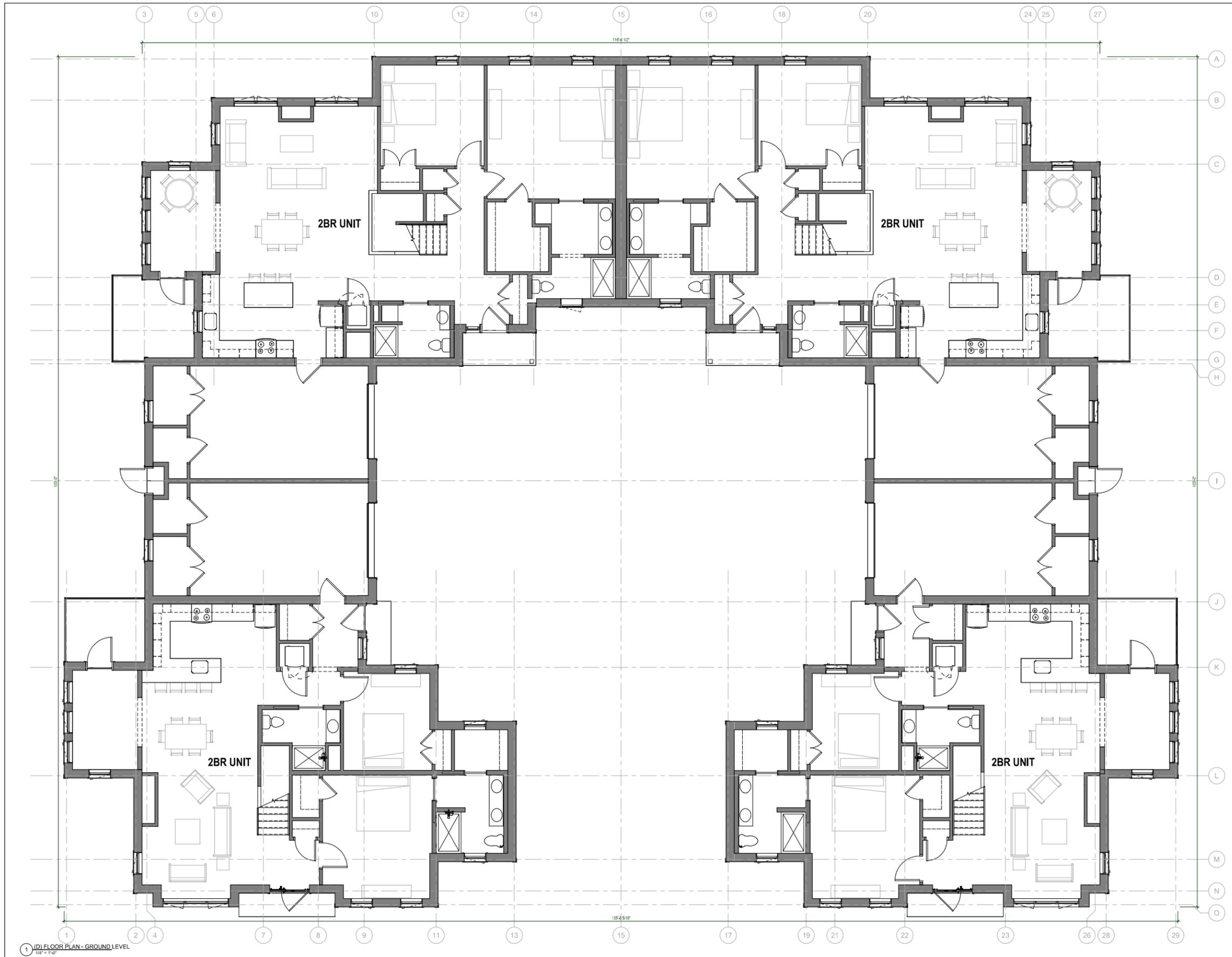
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PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

PROJ. NO. 2212.00

B/A-5



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1 (D) FLOOR PLAN - GROUND LEVEL
 1/4" = 1'-0"

**THE COMMONS IN LINCOLN
 EXPANSION (D)**
 1 HARVEST CIR
 LINCOLN, MA 01773

ARCHITECT
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DRAWING TITLE
 (D) FLOOR PLAN -
 GROUND LEVEL

SHEET ISSUE DATE: 06/07/24

PROJECT ISSUE DATE:

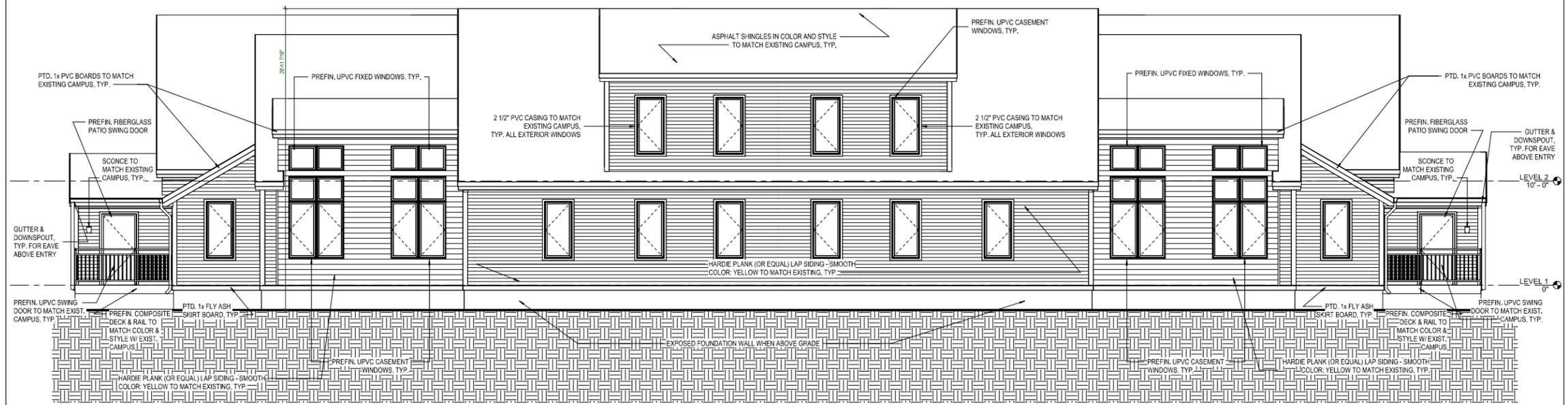
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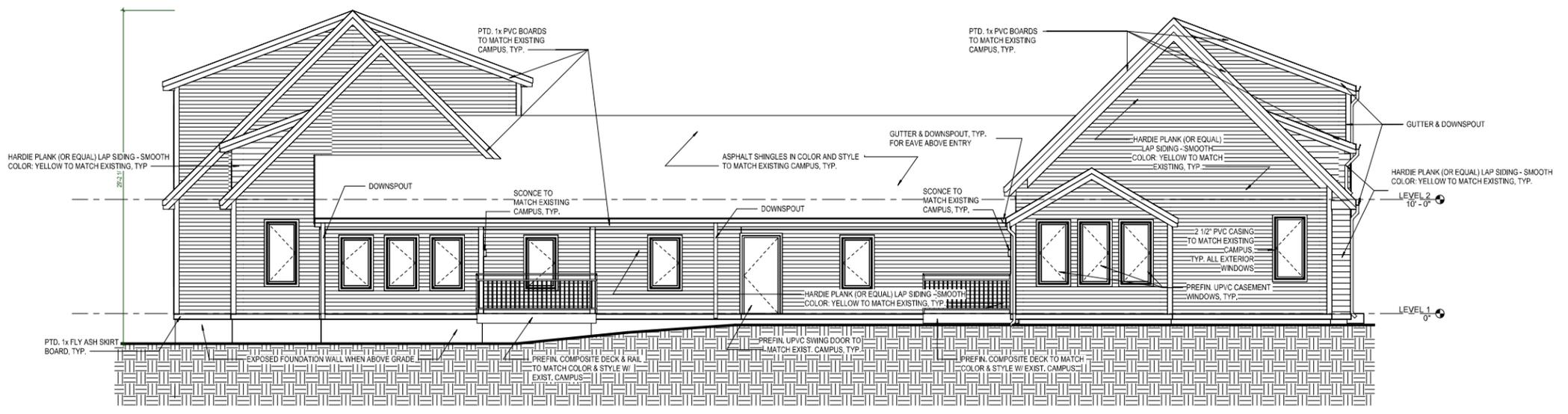
D/A-1

EXTERIOR SIDING COLORS

-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BLUE TO MATCH EXISTING



1 (D) WEST ELEVATION
1/4" = 1'-0"



2 (D) SOUTH ELEVATION
1/4" = 1'-0"

**THE COMMONS IN LINCOLN
EXPANSION (D)**
1 HARVEST CIR
LINCOLN, MA 01773

ARCHITECT
BECHTEL FRANK ERICKSON
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ISSUANCES



DRAWING TITLE
**(D) EXTERIOR
ELEVATIONS 2**

SHEET ISSUE DATE: 08/07/24

PROJECT ISSUE DATE:

SCALE: 1/4" = 1'-0"

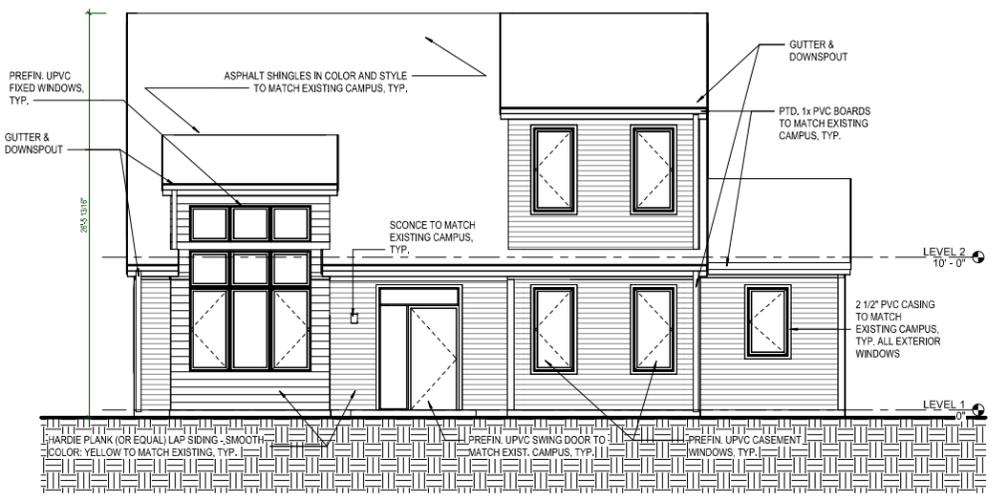
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D/A-4

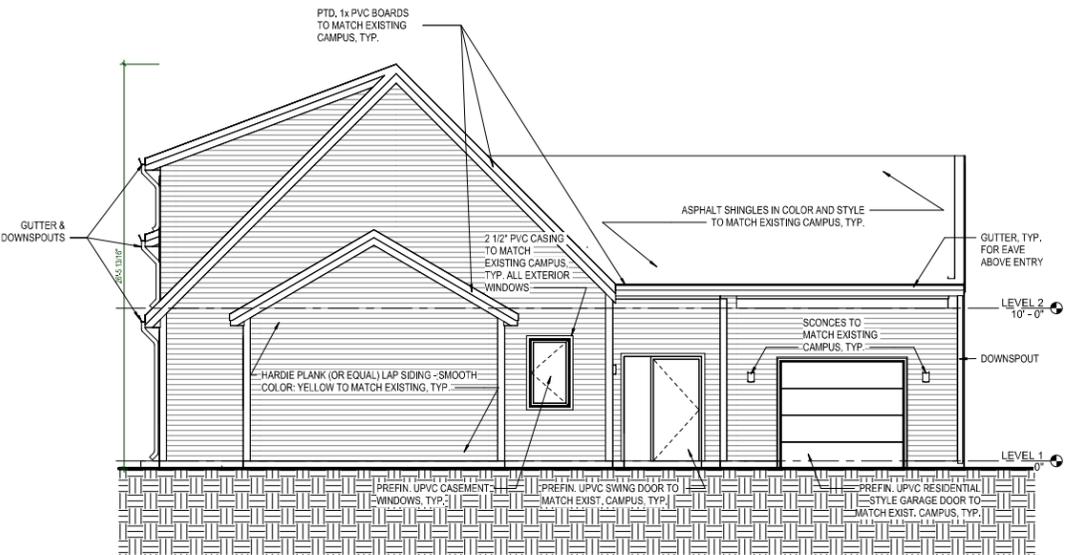
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EXTERIOR SIDING COLORS

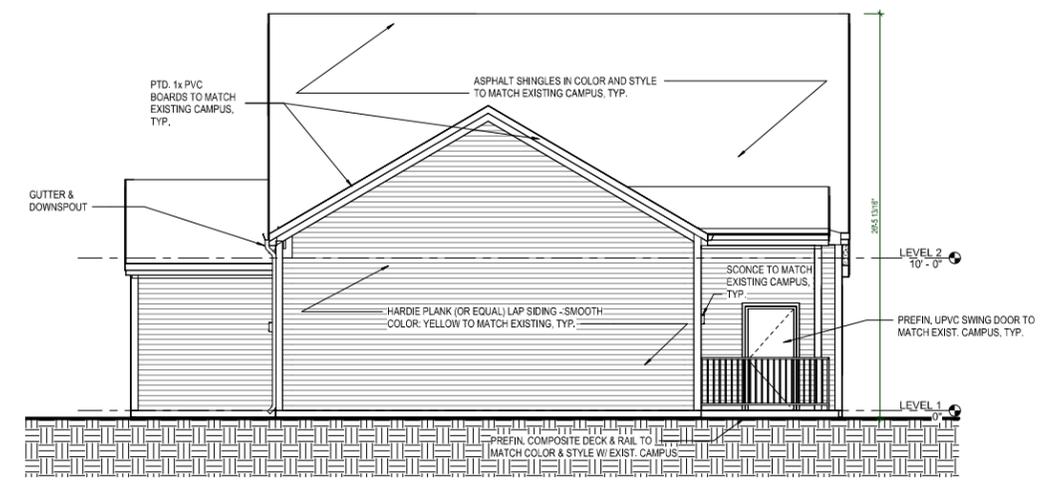
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COLOR: YELLOW TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: GREEN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BROWN TO MATCH EXISTING
-  HARDIE PLANK (OR EQUAL) LAP SIDING - SMOOTH
COLOR: BLUE TO MATCH EXISTING



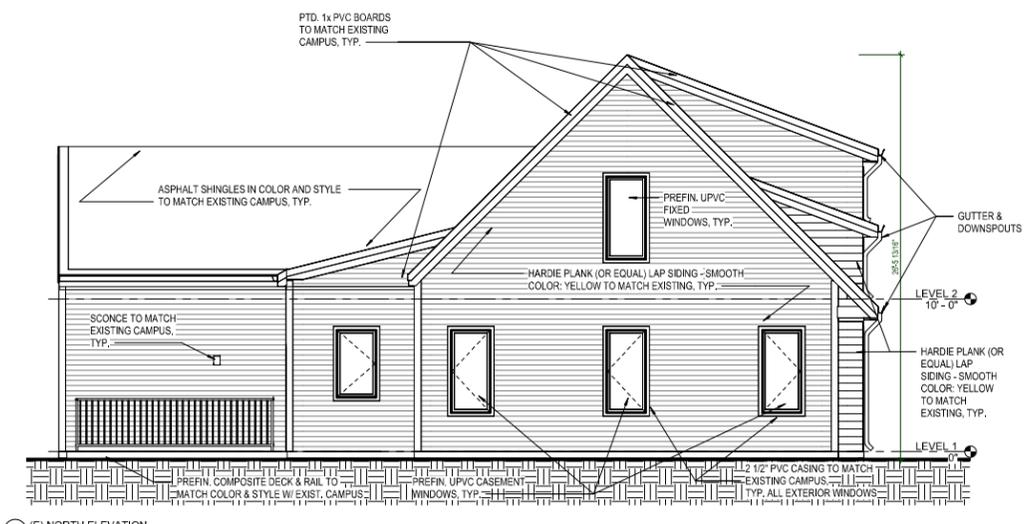
1 (E) WEST ELEVATION
1/4" = 1'-0"



2 (E) SOUTH ELEVATION
1/4" = 1'-0"



3 (E) EAST ELEVATION
1/4" = 1'-0"



4 (E) NORTH ELEVATION
1/4" = 1'-0"

**THE COMMONS IN LINCOLN
EXPANSION (E)**
1 HARVEST CIR
LINCOLN, MA 01773

ARCHITECT
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ARCHITECTS, INC.
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LEWISTON, MA 04203
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Date Issued For

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DRAWING TITLE
(E) EXTERIOR ELEVATIONS

SHEET ISSUE DATE: 08/07/24

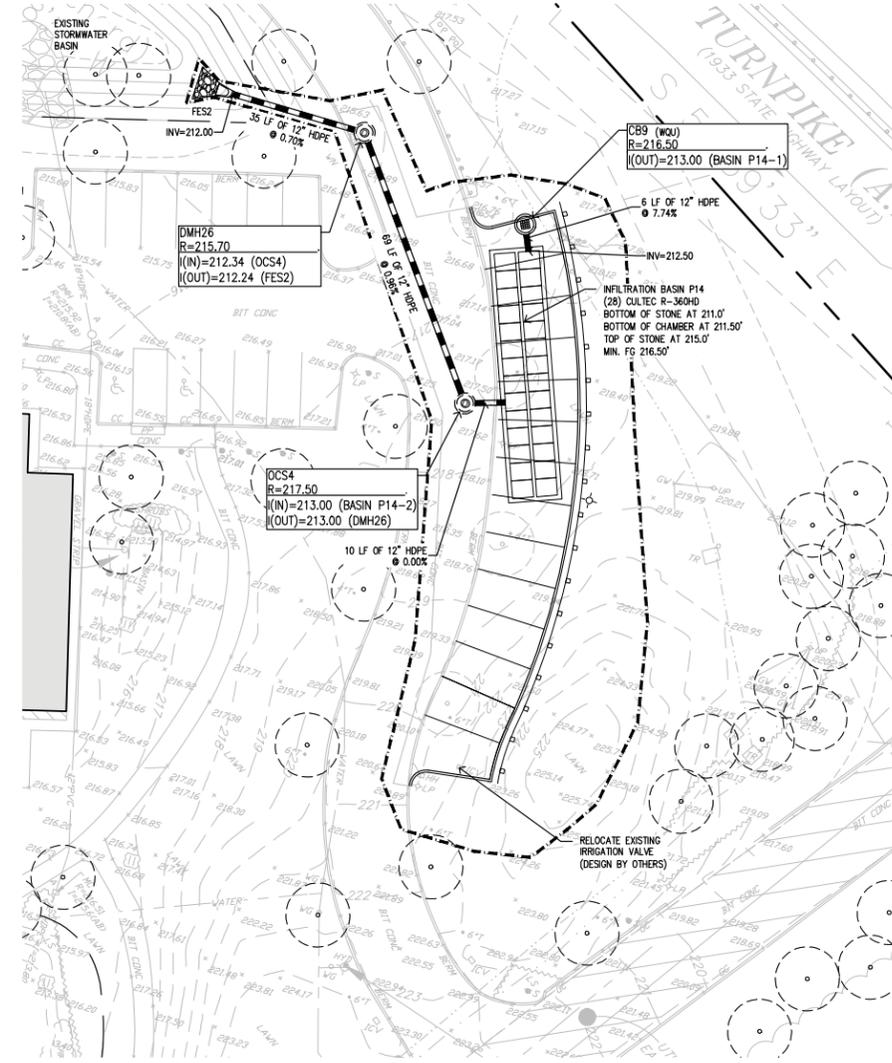
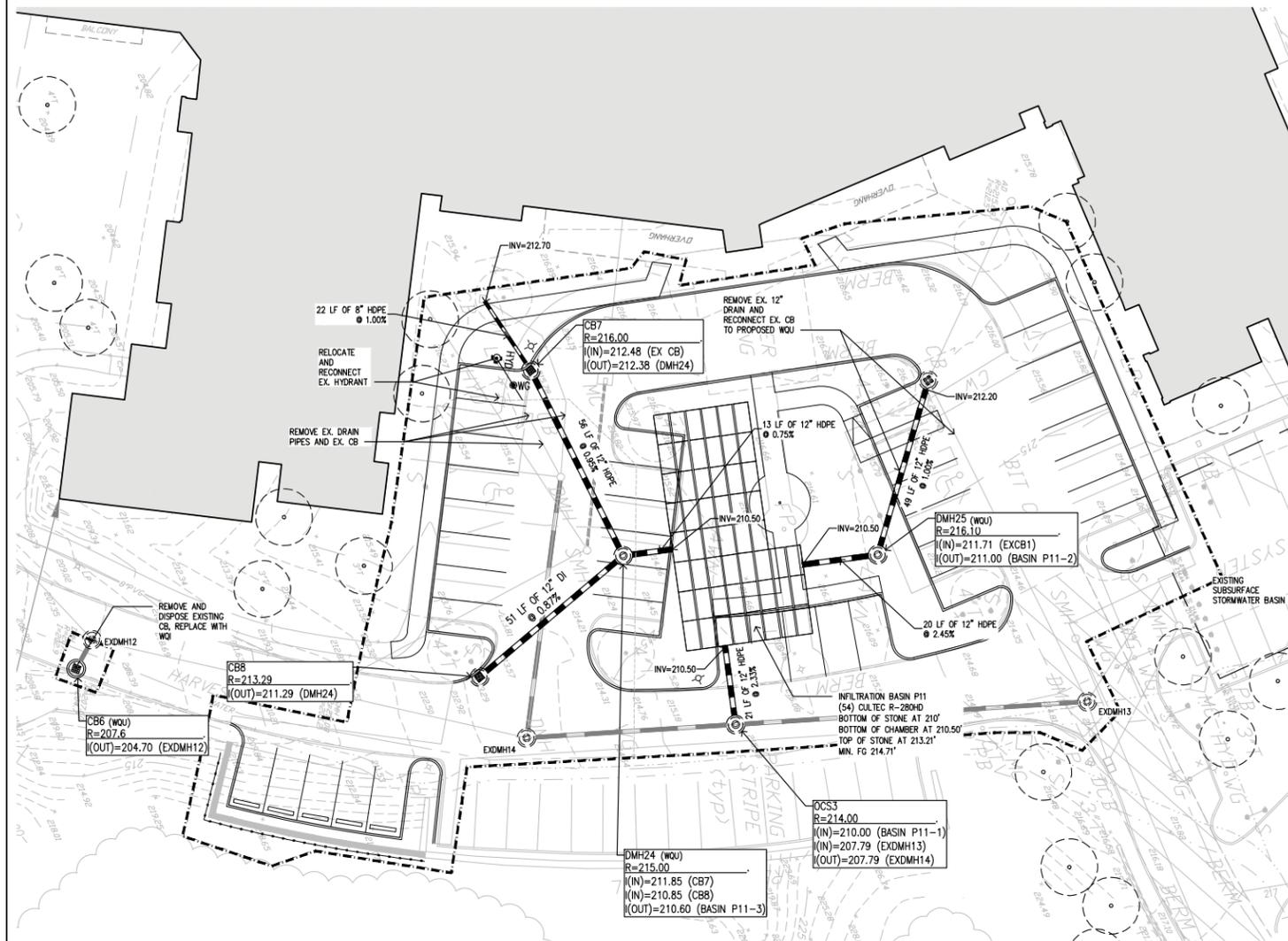
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SCALE: 1/4" = 1'-0"

PROJ. NO. 0000

E/A-3

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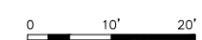
UTILITY NOTES

- EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY PRECISION LAND SURVEYING, INC. OF SOUTHBOROUGH, MASSACHUSETTS AND IS DATED NOVEMBER 30, 2022.
- PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT, BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE TOWN OF LINCOLN PUBLIC WORKS DEPARTMENT SPECIFICATIONS.
- ALL WORK TO BE DONE WITHIN PUBLIC RIGHT-OF-WAYS SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE TOWN OF LINCOLN PUBLIC WORKS DEPARTMENT AND/OR THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MAY BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE, AS NECESSARY, ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC., FROM MAINTAINED UTILITY AND SITE SYSTEMS, UNLESS OTHERWISE NOTED OR DIRECTED BY OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAIN AND SEWER STRUCTURES AS NECESSARY, FOR CHANGES IN GRADE. CONTRACTOR SHALL RESET UTILITY FRAMES, GRATES, AND COVERS MEANT TO BE FLUSH WITH GRADE (CLEANOUTS, UTILITY MANHOLES, CATCH BASINS, INLETS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
- ALL SEWER PIPES SHALL BE PVC PER ASTM D2024, SDR-35 AND ASTM D1784 WITH RUBBER GASKET JOINTS, UNLESS OTHERWISE NOTED.
- SITE LIGHTING IS SHOWN ON THIS PLAN FOR COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS FOR EXACT TYPE AND LOCATION.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PRIVATE UTILITY SERVICES SHALL BE PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRICAL) AND INSTALLED ACCORDING TO THOSE REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION, ALTERATION OR ADJUSTMENT OF THE UTILITY CONNECTIONS WITH THE RESPECTIVE COMPANIES PRIOR TO ANY UTILITY CONSTRUCTION.
- ALL CEMENT LINED DUCTILE IRON JOINTS AT FITTINGS (CLASS 52) VALVES, AND HYDRANT LATERALS SHALL BE MECHANICAL WITH NEOPRENE GASKETS. JOINTS AT OTHER LOCATIONS SHALL BE PUSH-ON TYPE WITH NEOPRENE OR SYNTHETIC RUBBER GASKETS. ALL WATER GATES SHALL OPEN AS PER MUNICIPAL REQUIREMENTS. ALL WATER LINES SHALL HAVE A MINIMUM OF FIVE FEET OF GROUND COVER AND A MINIMUM SEPARATION OF TEN FEET FROM THE SEWER SYSTEM. AT WATER AND SEWER CROSSINGS, THE WATER LINE SHALL BE ENCASED IN SIX INCHES OF CONCRETE FOR A DISTANCE OF TEN FEET ON EITHER SIDE OF THE CROSSING.
- PROTECT AND MAINTAIN EXISTING ON-SITE DRAINAGE STRUCTURES AND PIPES UNLESS OTHERWISE NOTED.
- THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND REQUIRES A PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. AT LEAST 14 DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL FILE AN ELECTRONIC NOTICE OF INTENT (eNOI) WITH THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA) FOR CONSTRUCTION DISCHARGES ASSOCIATED WITH THIS PROJECT AND MAINTAIN A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REGULATIONS.
- CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES AND PLANTING BEDS.
- ENSURE ALL EXISTING (TO REMAIN) AND PROPOSED MANHOLE COVERS PROPERLY IDENTIFY UTILITIES SERVICED.
- BITUMINOUS CONCRETE ELEVATIONS SHALL BE 1/4 INCH ABOVE THE RIM ELEVATION SHOWN FOR EACH CATCH BASIN.
- ALL PROPOSED STORM DRAIN LINES SHALL BE 12" NON-PERFORATED HDPE UNLESS OTHERWISE NOTED ON PLANS.
- REFER TO ARCHITECTURAL PLUMBING PLANS FOR PROPOSED LOCATION OF UTILITY SERVICE STUBS AT BUILDINGS. FINAL DESIGN AND LOCATIONS OF UTILITY SERVICE STUBS WILL BE PROVIDED BY THE ARCHITECT.
- ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF ANY EARTH MOVING ACTIVITIES. REFER TO SITE PREPARATION PLAN FOR COMPLETE EROSION AND SEDIMENTATION CONTROLS.
- WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, THE CONTRACTOR SHALL ACCURATELY DETERMINE THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY AND TRANSMIT THIS INFORMATION TO THE ENGINEER WITHOUT DELAY.
- ALL PIPING WITHIN 10 FEET OF BUILDING IS COVERED UNDER THE COMMONWEALTH OF MASSACHUSETTS UNIFORM STATE PLUMBING CODE AND IS SHOWN FOR COORDINATION ONLY. REFER TO PLUMBING PLANS AND SPECIFICATIONS FOR UTILITY WORK WITHIN 10 FEET OF BUILDINGS.
- THE ENGINEER-OF-RECORD SHALL WITNESS INSTALLATION OF ALL SUBSURFACE INFILTRATION SYSTEMS. IF THE SUBSURFACE SOIL CONDITIONS DIFFER FROM THAT SHOWN ON THE PLAN, THE DESIGN SHALL BE MODIFIED AND RESUBMITTED TO TOWN OF LINCOLN FOR APPROVAL PRIOR TO CONTINUING INSTALLATION.
- THE USE OF FIRE HYDRANTS FOR CONSTRUCTION IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE TOWN OF LINCOLN WATER AND SEWER DEPARTMENT AND FIRE DEPARTMENT.
- CONTRACTOR SHALL COORDINATE ANY WATER SHUT DOWNS THE TOWN OF LINCOLN WATER AND SEWER DEPARTMENT AND FIRE DEPARTMENT.
- ALL TRENCH EXCAVATION CONTRACTORS SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES. TRENCH EXCAVATION PERMITS ARE REQUIRED. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.



UTILITY LEGEND

	PROPERTY LINE		STORM DRAIN MANHOLE; WATER QUALITY UNIT; OUTLET CONTROL STRUCTURE
	LIMIT OF WORK		CATCH BASIN; WATER QUALITY INLET
	LIMITS OF MEAN ANNUAL HIGH WATER LINE/IN AND BANK OR BORDERING VEGETATED WETLAND		AREA DRAIN
	50' BUFFER ZONE		FLARED-END STRUCTURE
	100' BUFFER ZONE		HIGH-DENSITY POLYETHYLENE
	100' INNER RIPARIAN ZONE		CEMENT-LINED DUCTILE IRON
	200' RIVERFRONT AREA		POLYVINYL CHLORIDE
	STORM DRAIN LINE		ROOF DRAIN
	SANITARY SEWER LINE		FOUNDATION DRAIN
	SANITARY SEWER FORCE MAIN		WATER QUALITY UNIT, WATER QUALITY INLET
	WATER LINE		HYDRANT
	GAS LINE		WATER GATE VALVE
	FIRE ALARM LINE		EXISTING TRANSFORMER
	UNDERGROUND TELECOM		NEW ELECTRICAL HANDHOLE
	UNDERGROUND ELECTRIC		NEW COMMUNICATIONS HANDHOLE
	PROPOSED SEPTIC LEACH FIELD		EXISTING COMMUNICATIONS HANDHOLE
	TRENCH DRAIN		ELECTRICAL METER



DATE: 08/24/24
ISSUED: 08/24/24

FILE NAME: 210801974_utility.dwg
DWN: CKD: DGN: MVD:YY

PERMIT:



Client/Project: NELP-Commons LLC

COMMONS IN LINCOLN EXPANSION

1 HARVEST CIRCLE, LINCOLN, MASSACHUSETTS 01773
MAP 111 PARCEL 12-0

Title: UTILITY PLAN ENLARGEMENTS

Project No. 210801974 Scale AS NOTED

Drawing No.

PLANTING NOTES

- CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND WILL CONTINUE UNTIL FINAL WRITTEN ACCEPTANCE OF PLANT MATERIAL.
- CONTRACTOR SHALL VERIFY ALL TREE REMOVALS AND/OR TRANSPLANTS WITH OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION START.
- CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES, AND PLANTING BEDS.
- MAXIMUM SLOPE WITHIN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
- THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTINGS SHOWN ON THIS DRAWING.
- ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
- ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
- ALL PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
- MULCH FOR PLANTED AREAS TO BE AGED PINE BARK, PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH.
- PLANTING SOIL MIX MUST FOLLOW PROVIDED SPECIFICATIONS AND RECOMMENDATIONS OF THE SOILS ANALYSIS. FERTILIZER ADDED PER RECOMMENDED RATES OF THE SOILS ANALYSIS.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE.
- ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT, AT THE NURSERY, AND AT THE SITE.
- ALL AREAS OF THE SITE WHICH HAVE BEEN DISTURBED AND NOT OTHERWISE DEVELOPED SHALL BE LOAMED AND SEEDDED WITH A MINIMUM DEPTH OF 6" DEPTH TOPSOIL.
- PLANT MAINTENANCE SHALL BE CONSISTENT WITH CURRENT CAMPUS STANDARDS.

LEGEND

- — — — — PROPERTY LINE
- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS



PLANT_SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
DECIDUOUS TREES				
AO	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2"-2.5" CAL	16
CO	CARYA OVATA	SHAGBARK HICKORY	2"-2.5" CAL	4
LS	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	2"-2.5" CAL	2
LT	LIRIODENDRON TULIPIFERA	TULIP POPLAR	2"-2.5" CAL	5
NS	NYSSA SYLVATICA	TUPELO	2"-2.5" CAL	4
PO	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2"-2.5" CAL	4
QA	QUERCUS ALBA	WHITE OAK	2"-2.5" CAL	7
QB	QUERCUS BICOLOR	SWAMP WHITE OAK	2"-2.5" CAL	4
QC	QUERCUS COCCINEA	SCARLET OAK	2"-2.5" CAL	12
UP	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2"-2.5" CAL	12
EVERGREEN TREES				
AB	ABIES BALSAMEA	BALSAM FIR	7-8' HT.	10
CP	CHAMAECYPARIS NOOTKATENSIS 'PENDULA'	WEeping NOOTKA CYPRESS	7-8' HT.	1
JE	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	7-8' HT.	5
PA	PICEA ABIES	NORWAY SPRUCE	7-8' HT.	7
PG	PICEA GLAUGA	WHITE SPRUCE	7-8' HT.	4
PS	PINUS STROBUS	WHITE PINE	7-8' HT.	4
TS	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	7-8' HT.	4
TC	TSUGA CANADENSIS	EASTERN HEMLOCK	7-8' HT.	10
ORNAMENTAL TREES				
AS	AMELANCHIER ALNIFOLIA	SERVICEBERRY	7-8' HT.	4
BP	BETULA POPULIFOLIA	GRAY BIRCH	10' HT.	2
GF	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY EASTERN REDBUD	7-8' HT.	4
CF2	CORNUS FLORIDA	FLOWERING DOGWOOD	7-8' HT.	3
HI	HAMAMELIS VIRGINIANA	AMERICAN WITCH-HAZEL	6-7' HT.	1
ML	MAGNOLIA X LOEBNERI 'LEONARD MESSEL'	LEONARD MESSEL LOEBNER MAGNOLIA	6-7' HT.	3
MS	MALUS X 'SUTYZAM'	SUGAR TYME CRABAPPLE	7-8' HT.	3
SHRUBS				
AJ	ARCTOSTAPHYLOS UVA-URSII	KINNIKINICK	#3 POT	14
CS	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	#5 POT	8
GK	CORNUS SERICEA 'KELSEY'	KELSEY'S DWARF RED TWIG DOGWOOD	#5 POT	21
FG	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	#5 POT	10
HL	HYDRANGEA PANICULATA 'SMHPLOF'	LITTLE QUICK FIRE PANICLE HYDRANGEA	#5 POT	19
HO	HYDRANGEA QUERCIFOLIA 'SNOW QUEEN'	SNOW QUEEN OAKLEAF HYDRANGEA	#5 POT	7
IS	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY HOLLY	#5 POT	2
IV	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY WINTERBERRY	#5 POT	1
IR	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	#5 POT	12
IV2	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	#5 POT	21
JUN	JUNIPERUS HORIZONTALIS 'WILTONII'	BLUE RUG JUNIPER	#5 POT	105
JO	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL EASTERN REDCEDAR	#5 POT	12
KL	KALMIA LATIFOLIA	MOUNTAIN LAUREL	#5 POT	29
LB	LINDERA BENZONII	SPICEBUSH	#5 POT	21
PM	PIERIS FLORIBUNDA	MOUNTAIN PIERIS	#5 POT	10
RC	RHODODENDRON X 'CUNNINGHAM'S BLUSH'	CUNNINGHAM'S BLUSH RHODODENDRON	#5 POT	16
RO	RHODODENDRON X 'OLGA MEZITT'	OLGA MEZITT PJM RHODODENDRON	#5 POT	6
TC3	TAXUS CANADENSIS	CANADA YEW	B&B	4
VA	VIBURNUM TRILOBUM	AMERICAN CRANBERRYBUSH	#5 POT	6
GROUND COVERS				
BA	BAPTISIA AUSTRALIS	BLUE WILD INDIGO	#1 POT	2 SF
CG	COREOPSIS VERTICILLATA	TICKSEED	#1 POT	50 SF
DF	DEINOSTAEDIA FUNGIBOLUBA	HAY-SCENTED FERN	#1 POT	275 SF
DE	DICENTA EXIMIA	FRINGED BLEEDING HEART	#1 POT	150 SF
MB	MONARDA FISTULOSA	BERGAMOT	#1 POT	85 SF
PS2	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#1 POT	6 SF
SN	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND ASTER	#1 POT	33 SF
TC2	TIARELLA CORDIFOLIA	FOAMFLOWER	#1 POT	303 SF

SITE PLAN REVIEW	SR	CF	08.07.24
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Client/Project
 NELP-Commons LLC

COMMONS IN LINCOLN EXPANSION

1 HARVEST CIRCLE, LINCOLN, MASSACHUSETTS 01773
 MAP 111 PARCEL 12-0

Title
 PLANTING PLAN

Project No. 210801974 Scale AS NOTED

illuminate - OMNI-LITE, INC.
263 WINN STREET BURLINGTON, MA 01803
PH # 781-272-2300, FAX # 781-272-0759 www.omnilite.com

PROJECT:
The Groves Lincoln Proj.

CLIENT:
XXX

SCALE: **FEET** FILE: **omni the groves 8012024 00.adr**

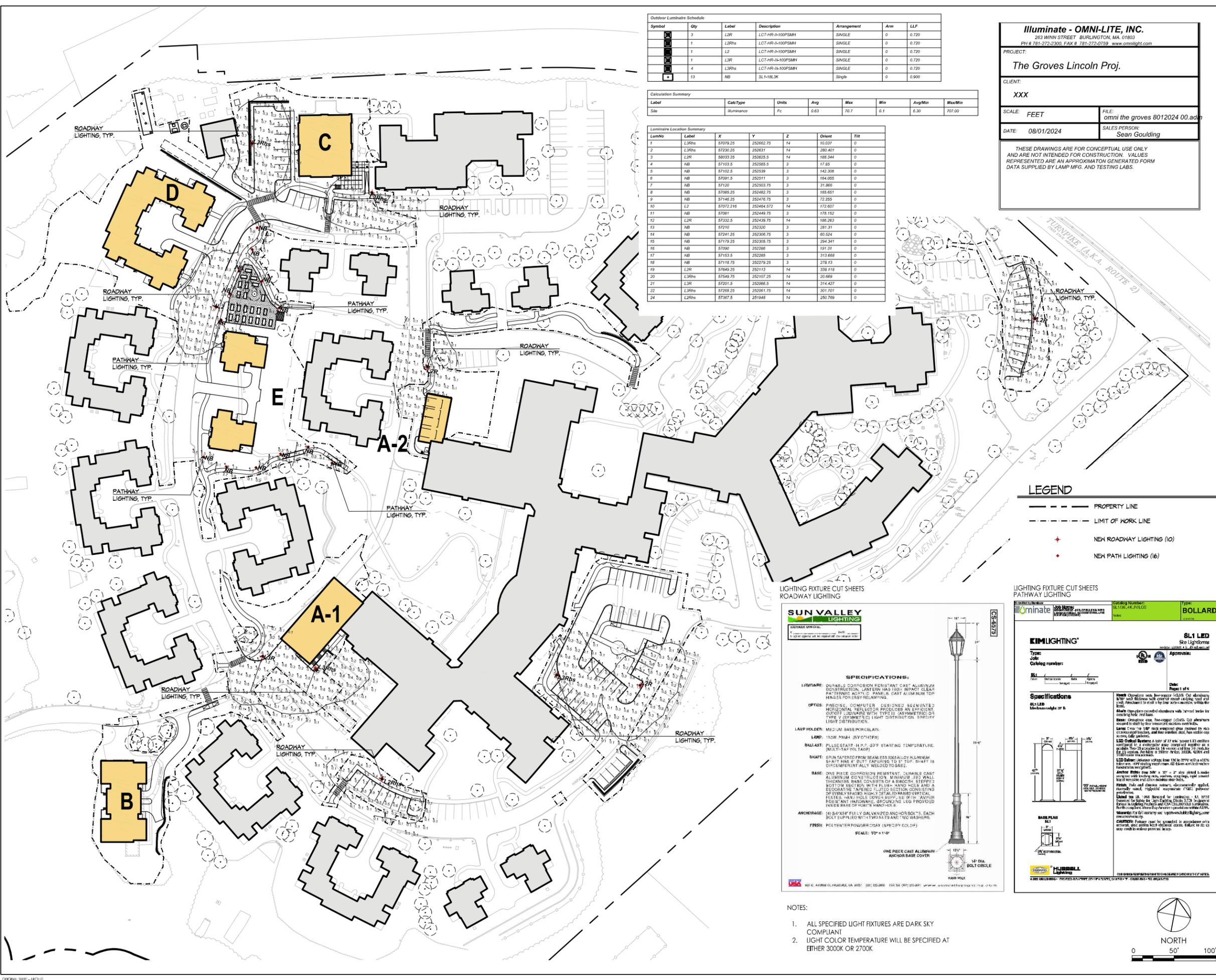
DATE: **08/01/2024** SALES PERSON: **Sean Goulding**

THESE DRAWINGS ARE FOR CONCEPTUAL USE ONLY AND ARE NOT INTENDED FOR CONSTRUCTION. VALUES REPRESENTED ARE AN APPROXIMATELY GENERATED FORM DATA SUPPLIED BY LAMP MFG. AND TESTING LABS.

Symbol	Qty	Label	Description	Arrangement	Arm	LLF
[Symbol]	3	L2R	LCT-HR-I-100PSMH	SINGLE	0	0.720
[Symbol]	1	L2R	LCT-HR-I-100PSMH	SINGLE	0	0.720
[Symbol]	1	L2	LCT-HR-I-100PSMH	SINGLE	0	0.720
[Symbol]	1	L2R	LCT-HR-I-100PSMH	SINGLE	0	0.720
[Symbol]	4	L2R	LCT-HR-I-100PSMH	SINGLE	0	0.720
[Symbol]	13	NB	SL-1-18L3K	Single	0	0.900

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	illuminate	Fc	0.63	70.7	0.1	6.30	707.00

LumNo	Label	X	Y	Z	Orient	Tilt
1	L2R	57079.25	252662.75	14	30.037	0
2	L2R	57230.25	252631	14	280.401	0
3	L2R	58033.25	252625.5	14	168.344	0
4	NB	57103.5	252565.5	3	17.85	0
5	NB	57102.5	252539	3	142.306	0
6	NB	57097.5	252511	3	164.055	0
7	NB	57120	252503.75	3	31.860	0
8	NB	57085.25	252482.75	3	165.651	0
9	NB	57140.25	252476.75	3	72.255	0
10	L2	57072.216	252464.572	14	172.607	0
11	NB	57081	252449.75	3	178.152	0
12	L2R	57332.5	252439.75	14	168.263	0
13	NB	57270	252320	3	281.31	0
14	NB	57247.25	252296.75	3	80.524	0
15	NB	57179.25	252305.75	3	294.341	0
16	NB	57090	252296	3	191.31	0
17	NB	57153.5	252285	3	313.668	0
18	NB	57116.75	252279.25	3	278.13	0
19	L2R	57649.25	252113	14	338.118	0
20	L2R	57549.75	252107.25	14	20.669	0
21	L2R	57207.5	252086.5	14	314.427	0
22	L2R	57287.5	252081.75	14	307.707	0
23	L2R	57387.5	251948	14	250.769	0



SUN VALLEY LIGHTING

SPECIFICATIONS:

LUMINAIRE: DURABLE CORROSION RESISTANT CAST ALUMINUM DISTRIBUTION, JUNCTION HAS HIGH IMPACT CLEAR PATTERNED ALUMINUM PANELS. CAST ALUMINUM TOP HOUSING POLYURETHANE FINISH.

OPTICS: PRECISION, COMPUTER DESIGNED SEGMENTED HORIZONTAL REFLECTOR PRODUCES AN EFFICIENT OUTPUT. COMBINED WITH TYPE II (ASYMMETRIC) OR TYPE V (SYMMETRIC) LIGHT DISTRIBUTION. SPREED LIGHT DISTRIBUTION.

LAMP HOLDER: MEDIUM BASE PHOSPHOR.

LAMP: 150W P96H (BY OTHERS)

BALLAST: FLUORESCENT, H.P.T., 230V STARTING TEMP. (MULTI-TAP VOLTAGE)

SHAFT: SPUN TAPERED FROM SEAMLESS 5052 ALUMINUM. SHAFT HAS 4" DIA. TAPERED TO 3" DIA. SHAFT IS DISCIRCUMFERENTIALLY WELDED TO BASE.

BASE: ONE PIECE CORROSION RESISTANT, CLIMBER CAST ALUMINUM CONSTRUCTION. MINIMUM .75" WALL THICKNESS. BASE CONSISTS OF A SMOOTH, STEPPED BOTTOM SECTION WITH FLARE, HAND HOLD AND A DECORATIVE APPLIED FLUTED SECTION. FLUTES, FLARE AND HAND COVER SUPPLY 5/16" DIA. HOLE FOR RESISTANT HANGING. HANGING LUG PROVIDED INSIDE BASE FOR 1/2" DIA. HANGING LUG.

ANCHORAGE: (4) 3/4"x4" FULLY GALVANIZED ANCHOR BOLTS. EACH BOLT SUPPLIED WITH TWO LOCK WASHERS.

FINISH: POLYESTER POWDER COAT (SPRINKLE COLOR)

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

ONE PIECE CAST ALUMINUM ANCHOR BASE COVER

illuminate **BOLLARD**

KIM LIGHTING **SL-1 LED**

Type: **SL-1 LED**
Color: **White**
Casting number: **SL108-4K-POLICE**

SPECIFICATIONS:

Material: Die-cast aluminum with powder coat finish. 100% aluminum body. 100% aluminum base. 100% aluminum mounting bracket. 100% aluminum mounting hardware.

Finish: Powder coat finish. 100% aluminum body. 100% aluminum base. 100% aluminum mounting bracket. 100% aluminum mounting hardware.

LED: LED Chips: 100% aluminum. 100% aluminum body. 100% aluminum base. 100% aluminum mounting bracket. 100% aluminum mounting hardware.

Mounting: 100% aluminum. 100% aluminum body. 100% aluminum base. 100% aluminum mounting bracket. 100% aluminum mounting hardware.

Warranty: 5 Year. 100% aluminum. 100% aluminum body. 100% aluminum base. 100% aluminum mounting bracket. 100% aluminum mounting hardware.

- NOTES:
- ALL SPECIFIED LIGHT FIXTURES ARE DARK SKY COMPLIANT
 - LIGHT COLOR TEMPERATURE WILL BE SPECIFIED AT EITHER 3000K OR 2700K

DATE	BY	APP'D.	DESCRIPTION
08.07.24	SB	CF	SITE PLAN REVIEW
			Issued

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MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT
CHRISTOPHER TEE
NO. 1457

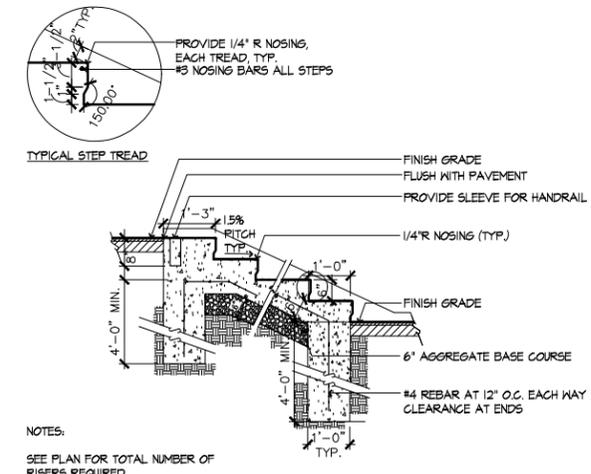
Client/Project
NELP-Commons LLC

COMMONS IN LINCOLN EXPANSION

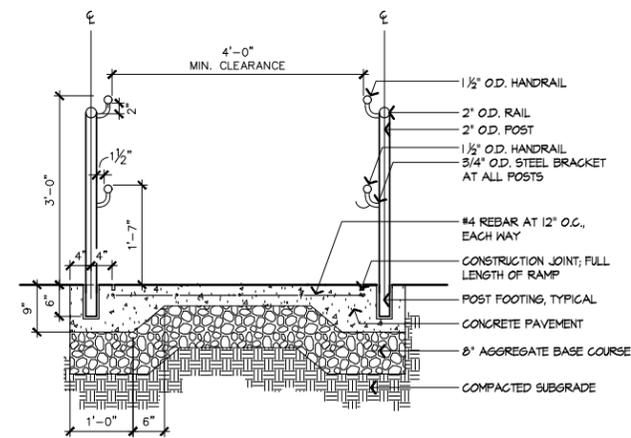
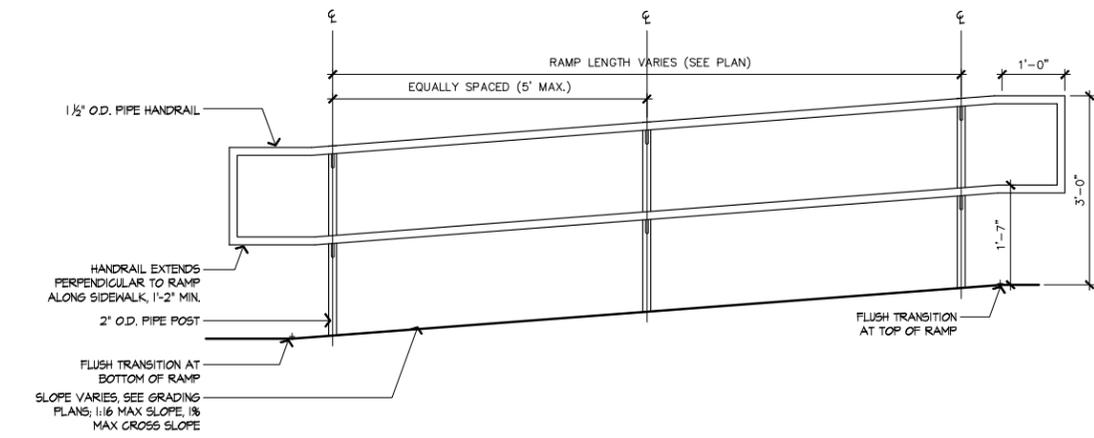
1 HARVEST CIRCLE, LINCOLN, MASSACHUSETTS 01773
MAP 111 PARCEL 12-0

Title
LIGHTING PLAN

Project No. **210801974** Scale **AS NOTED**



NOTES:
SEE PLAN FOR TOTAL NUMBER OF RISERS REQUIRED.



1 ACCESSIBLE RAMP WITH HANDRAILS

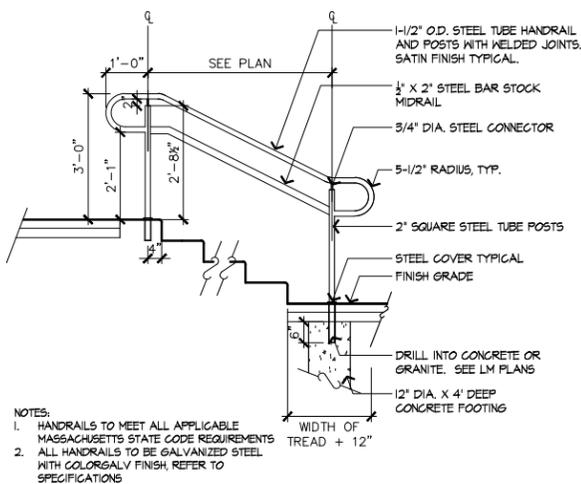
3/4" = 1'-0"

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2 CONCRETE STAIRS

1/2" = 1'-0"

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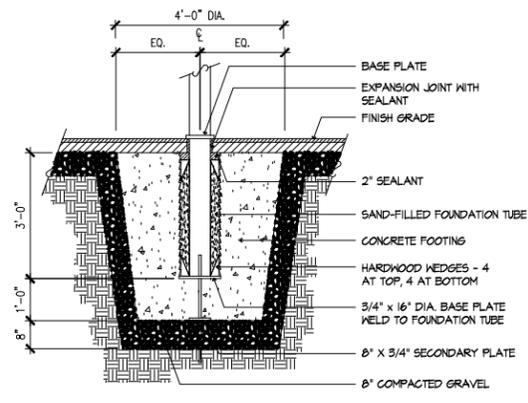


NOTES:
1. HANDRAILS TO MEET ALL APPLICABLE MASSACHUSETTS STATE CODE REQUIREMENTS
2. ALL HANDRAILS TO BE GALVANIZED STEEL WITH COLORGALV FINISH REFER TO SPECIFICATIONS

3 STAIRS HANDRAIL

1/2" = 1'-0"

BC2108-01974-10

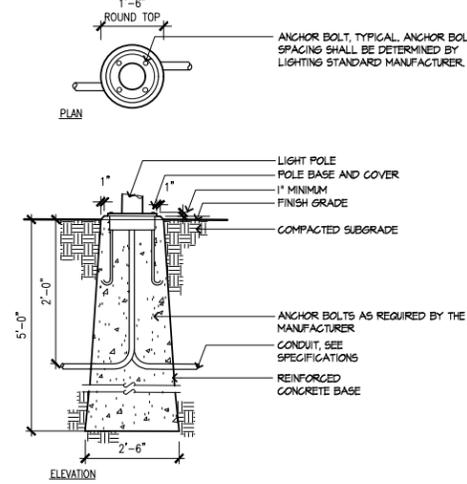


NOTES:
1. ALL TIMBER TO BE 6\"/>

4 FLAGPOLE FOOTING

1/2" = 1'-0"

BC2108-01974-14



NOTES FOR PLANTERS:
1. ALL TIMBER TO BE 6\"/>

5 PRECAST LIGHT POLE FLUSH BASE

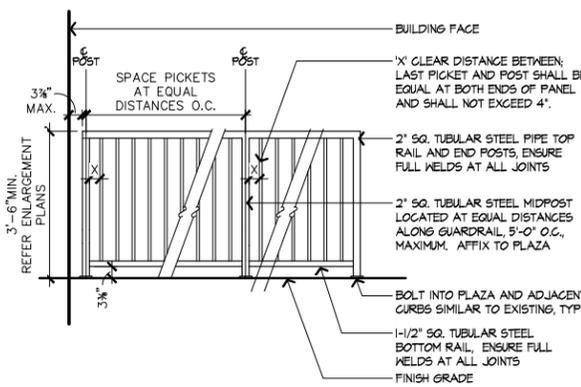
1/2" = 1'-0"

BC2108-01974-15

6 TIMBER PLANTER

3/4" = 1'-0"

BC2108-01974-22



NOTES:
1. SHOP DRAWINGS SHOWING ALL MATERIALS AND DIMENSIONS TO BE SUBMITTED FOR REVIEW BY LANDSCAPE ARCHITECT.

7 PEDESTRIAN GUARDRAIL

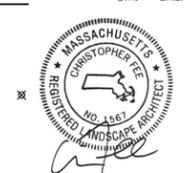
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Client/Project
NELP-Commons LLC

COMMONS IN LINCOLN EXPANSION

1 HARVEST CIRCLE, LINCOLN, MASSACHUSETTS 01773
MAP 111 PARCEL 12-0

Title

SITE DETAILS

Project No.	Scale
210801974	AS NOTED

Drawing No.

L-501

PROJECT MANUAL

THE COMMONS IN LINCOLN EXPANSION

One Harvest Circle
Lincoln, Massachusetts

DDUP SUBMISSION – OUTLINE SPECIFICATION
August 07, 2024

BECHTEL FRANK ERICKSON ARCHITECTS, INC.
1840 MASSACHUSETTS AVENUE
LEXINGTON, MA 02420 781-
862-3313 www.bfearc.com

PROJECT MANUAL

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- Section 011000 General Requirements
- Section 014525 Air Tightness Testing Requirements

DIVISION 02 - EXISTING CONDITIONS

- Section 024100 Demolition

DIVISION 03 - CONCRETE

- Section 033000 Cast-In-Place Concrete (See Structural drawings for specifications)

DIVISION 04 - MASONRY

- Section 044300 Stone Masonry

DIVISION 05 - METALS

- Section 051200 Structural Steel Framing (See Structural drawings for specifications)

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

- Section 061000 Rough Carpentry
- Section 061613 Insulating Sheathing
- Section 062010 Exterior Finish Carpentry
- Section 062500 Exterior Composite Decking

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

- Section 072100 Thermal Insulation
- Section 073113 Asphalt Shingles
- Section 074610 Fiber-Cement Siding

DIVISION 08 - OPENINGS

- Section 081400 Wood Doors
- Section 084110 Aluminum-Framed Entrances and Storefronts
- Section 085310 uPVC Windows

DIVISION 09 - FINISHES

- Section 099000 Painting and Coating

DIVISION 11 - EQUIPMENT

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APPENDICES

Appendix A Interior Finish Legend – 04/12/2024

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SECTION 011000

GENERAL REQUIREMENTS

- 1.1 General Provisions
- 1.2 Project Requirements
- 1.3 Specification Information
- 1.4 Industry Standards
- 1.5 Codes and Regulations
- 1.6 Procedures and Controls
- 1.7 Products and Substitutions
- 1.8 Record Documents
- 1.9 Project Close Out

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 PROJECT REQUIREMENTS

- A. Project Identification: The Commons In Lincoln Expansion, One Harvest Circle, Lincoln, MA.
- B. Sustainable Design Intent: Project will be HERS rated to achieve levels required with the Opt-In requirements of the 2023 IECC.
- C. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company back charges required to perform the work. Submit copies to Architect.
- D. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.

1.3 SPECIFICATION INFORMATION

- A. These specifications are a specialized form of technical writing edited from master specifications and contain deviations from traditional writing formats. Capitalization, underlining and bold print is only used to assist reader in finding information and no other meaning is implied.
- B. Except where specifically indicated otherwise, the subject of all imperative statements is the Contractor.
- C. Sections are generally numbered in conformance with Construction Specifications Institute Masterformat System. Numbering sequence is not consecutive. Refer to the Table of Contents for names and numbers of sections included in this Project.
- D. Pages are numbered separately for each section. Each section is noted with "End of Section" to indicate the last page of a section.

GENERAL REQUIREMENTS

1.4 INDUSTRY STANDARDS

- A. Referenced standards are part of the Contract Documents and have the same force and effect as if bound with these specifications.
- B. Except where specifically indicated otherwise, comply with the current standard in effect as of the date of the Owner/Contractor Agreement. Obtain copies of industry standards directly from publisher.
- C. The titles of industry standard organizations are commonly abbreviated; full titles may be found in Encyclopedia of Associations or consult Architect.

1.5 CODES AND REGULATIONS

- A. Comply with all applicable codes, ordinances, regulations and requirements of authorities having jurisdiction.
- B. Submit copies of all permits, licenses, certifications, inspection reports, releases, notices, judgments, and communications from authorities having jurisdiction to the Architect.
- C. COVID-19 Procedures: The Contractor shall submit a written plan for jobsite COVID-19 Procedures in compliance with applicable governmental regulations and as supplemented by the Contractor's own requirements, if any. Scope shall include that people and materials entering the site shall be required to comply with the written plan. Identify the Contractor's personnel responsible for implementing such procedures. For the record, submit a monthly statement certifying that the Contractor has enforced the provisions in its written plan. The Contractor acknowledges that its written plan and monthly statements are submitted for the record only and not for approval by neither the Owner nor the Architect nor their agents.

1.6 PROCEDURES AND CONTROLS

- A. Layout: Layout work and be responsible for all lines, elevations, and measurements of the building, grading, utilities and other work executed under the contract. Retain a registered professional engineer or registered land surveyor, acceptable to the Architect, to initially establish exterior lines and required elevations of all buildings and structures to be erected on the site. The registered professional engineer or registered land surveyor shall certify the actual location of the constructed facilities in relation to property lines, building lines, easements, setbacks, and other restrictive boundaries.
- B. Field Measurements: Verify measurements at the building prior to ordering materials or commencing work. No extra charge or compensation will be allowed because of differences between actual dimensions and measurements indicated on the Drawings. Differences which may be found shall be submitted to the Architect for decision before proceeding with the work.
- C. Project Limit Line: The boundaries of the site do not limit the responsibility of the Contractor to perform the work in its entirety. Make utility connections as indicated.
- D. Matching: Where matching is indicated, the Architect shall be the sole and final judge of what is an acceptable match. Mockups and sample submissions are required.
- E. Observation: Notify the Architect and authorities having jurisdiction at least thirty-six hours in advance of concealing any work.

- F. Utilities: Prior to interrupting utilities, services or facilities, notify the utility owner and the Owner and obtain their written approval a minimum 48 hours in advance.
- G. Furnishings, Fixtures, and Equipment: Cooperate and permit the Owner to install their furnishings and equipment during the progress of the work. Owner's installation of furnishings or equipment does not signify Owner's acceptance of any portion of the work.
- H. Clean-Up: Frequently clean-up all waste, remove from site regularly, and legally dispose of offsite.
 - 1. Comply with requirements of Section 017400 - CONSTRUCTION WASTE MANAGEMENT.
- I. Fire Prevention: Take every precaution to prevent fire. Provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and comply with recommendations regarding fire protection made by the representative of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.
- J. Egress: Maintain safe and legal means of egress at all times. At all times, provide at least two separate means of egress.

1.7 PRODUCTS AND SUBSTITUTIONS

- A. Specified Products: In all cases in which a manufacturer's name, trade name or other proprietary designation is used in connection with materials or articles to be furnished under this Contract, whether or not the phrase "or equal" is used after such name, the Contractor shall provide the product of the named manufacturers without substitution, unless a written request for a substitution has been submitted by the Contractor and approved in writing by the Architect.
- B. Deviations from Detailed Requirements: If the Contractor proposes to use material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the materials is submitted for approval, and shall request written approval of the deviation from the requirements of the Contract Documents.
- C. Approval of Substitutions: In requesting approval of deviations or substitutions, the Contractor shall provide evidence, including, but not limited to manufacturer's data, leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that attainable if the detailed requirements of the Contract Documents were strictly followed. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.
- D. Intent of Contract Documents: The Contract Documents are intended to produce a building of consistent character and quality of design. All components of the building including visible items of mechanical and electrical equipment have been selected to have a coordinated design in relation to the overall appearance of the building. The Architect shall judge the design and appearance of proposed substitutes on the basis of the suitability in relation to the overall design of the Project, as well as for their intrinsic merits. The Architect will not approve as equal to materials specified proposed substitutes which in the Architect's opinion, would be out of

character, obtrusive, or otherwise inconsistent with the character or quality of design of the Project. In order to permit coordinated design of color and finishes the Contractor shall furnish

the substituted material in any color, finish texture, or pattern which would have been available from the manufacturer originally specified, at no additional cost to the Owner.

- E. Manufacturers: To the greatest degree possible, provide primary materials and products from one manufacturer for each type or kind. Provide secondary materials as recommended by manufacturers of primary materials.
- F. Substitution Conditions: Substitution requests will be returned without action unless one of the following conditions is satisfied. The Contractor shall state which of the following conditions applies to the requested substitution:
 - 1. Request is due to an "or equal" clause.
 - 2. Specified material or product cannot be coordinated with other work.
 - 3. Specified material or product is not acceptable to authorities having jurisdiction.
 - 4. Substantial advantage is offered Owner in terms of cost, time, or other valuable consideration.
 - 5. Specified material or product is not available.
- G. Substitution Requests and Sustainable Design Intent:
 - 1. Proposed substitutions may be rejected where data is not provided or where data that is significantly different than specified materials would negatively impact the project's sustainable design intent.
 - 2. Data which impacts sustainable design intent includes, but is not limited to, location of manufacture, recycled content, and indoor air quality.
- H. Compatibility of Materials Used in the Work:
 - 1. Ensure complete compatibility between materials.
 - 2. Compatibility shall include adhesion, erosion, solubility, differential thermal response, and galvanic action.
 - 3. Provide evidence of compatibility.
 - 4. Provide custom testing where evidence is not available.
 - 5. Where materials are not compatible, provide necessary isolation or transition materials and provide details of same.
 - 6. Correct defects resulting from incompatibility including de-construction and reconstruction of assemblies – whether materials are part of a submittal and substitution process or not.
 - 7. Proposed substitutions may be rejected where compatibility information is not provided; or where compatibility is not adequately addressed, according to the Architect's judgment; or where incompatible materials would negatively impact the project's success.

1.8 RECORD DOCUMENTS

- A. Definition of As-Constructed Record Drawings: (commonly called "as-builts") are the record of the Project as constructed based on information the Contractor provides to the Owner under the contract for construction. Because the As-constructed Record Drawings will be based on the Contractor's mark-ups, the Architect is not responsible for the accuracy or completeness of the As-constructed Record Drawings.

- B. Definition of As-Designed Record Drawings: The record of everything the Architect designed for the Project, and including the original Construction Documents plus all addenda, Architect's

1.9 PROJECT CLOSE OUT

- A. Complete the following prior to Substantial Completion:
 - 1. Provide Contractor's Punch List of incomplete items stating reason for incompleteness and value of incompleteness.
 - 2. Advise Owner of insurance change over requirements.
 - 3. Submit all warranties, maintenance contracts, final certificates and similar documents.
 - 4. Obtain Certificate of Occupancy and similar releases which permit the Owner's full and unrestricted use of the areas claimed "Substantially Complete".
 - 5. Submit record documents.
 - 6. Deliver maintenance stocks of materials where specified.
 - 7. Make final change over of lock cylinders or cores and advise Owner of change of security responsibility.
 - 8. Complete startup of all systems and instruct Owner's personnel in proper operation and routine maintenance of systems and equipment.
 - 9. Complete clean up and restoration of damaged finishes.
 - 10. Remove all temporary facilities and utilities that are no longer needed.
 - 11. Request Architect's inspection for Substantial Completion.
- B. Architect will either issue a Certificate of Substantial Completion or notify Contractor of work which must be performed prior to issue of certificate.
- C. Complete the following prior to Final Acceptance and payment:
 - 1. Obtain Certificate of Substantial Completion.
 - 2. Submit final application for payment, showing final accounting of changes in the work.
 - 3. Provide final releases and lien waivers not previously submitted.
 - 4. Submit certified copy of final punch list stating that Contractor has completed or corrected each item.
 - 5. Submit final meter readings, record of stored fuel and similar information.
 - 6. Submit Consent of Surety for final payment.
 - 7. Submit evidence of Contractor's continuing insurance coverage (if required by Contract Documents).

END OF SECTION

SECTION 014525

AIR TIGHTNESS TESTING REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

- A. Work Included: General requirements and procedures for quality assurance and quality control, related to air tightness of building envelope.
1. Whole Building Testing: Perform a Blower Door Test for the whole building.
 2. Compartmentalization Testing, for Multizone Buildings: Perform Blower Door Tests for each unit to meet requirements for airtightness between of individual units and zones.
 3. Test will be performed by Testing Agency with cooperation and some preparation by the Contractor.
 4. Additional tests may be required if blower door test does not achieve required ACH rating.
- B. Sustainable Design Intent: Refer to Section 018110 - SUSTAINABLE DESIGN REQUIREMENTS for certification requirements.
- C. Related Work: The following items are not included in this Section and will be specified under the designated Sections:
1. Section 019100 - COMMISSIONING for other testing requirements.
 2. Section 072100 - THERMAL INSULATION for insulation at exterior envelope and infrared camera survey requirements.
 3. Section 072700 - AIR BARRIERS for air sealing at exterior envelope.
 4. Division 23 - HVAC for testing and balancing.

1.3 DEFINITIONS

- A. Blower Door Test: A blower door test, depressurized and pressurized, is used to quantify building air leakage. The standard blower door test is a depressurization test. This means that air will be blown out from the building, creating a negative pressure in the building.
- B. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 PERFORMANCE REQUIREMENTS

- A. Comply with ABAA T0001, "Standard Test Method for Building Enclosure Airtightness Compliance Testing" and requirements of local authority having jurisdiction.

1.5 SUBMITTALS

- A. Field Test Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of tests and inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. For individual zones, including residential units, provide unit numbers.
 8. Identification of product and Specification Section.
 9. Complete test or inspection data.
 10. Test and inspection results and an interpretation of test results.
 11. Ambient conditions at time of sample taking and testing and inspecting.
 12. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 13. Name and signature of laboratory inspector.
 14. Recommendations on retesting and reinspecting.

1.6 QUALITY CONTROL

- A. Accredited Test Agency Qualification: Independent firm specializing in performing testing and inspections of the type specified in this section, having at least 5 years of documented experience.
1. Testing agency employs at least one individual who is certified in accordance with ISO 17024 by the Air Barrier Association of America (ABAA).
- B. Blower Door Testing Requirements: Perform test in accordance with ASTM E 779 "Test Method for Determining Air Leakage by Fan Pressurization" and ASTM E 1827 "Test Method for Determining Airtightness of Buildings Using an Orifice Blower Door."
1. For multizone buildings, test in accordance with ASTM E 3158, "Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building."
- C. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Notify Architect and Owner's Testing Agency at least 14 days in advance of test dates.
 2. Schedule times for tests, inspections, obtaining samples, and similar activities.
 - a. For Multizone Buildings: Plan at least 4 hours for blower door testing.
 - b. For additional fog test and air sealing remediation work, plan for at least one full day.
 - c. Consult Testing Agency about test preparation and readiness.

PART 2 - EXECUTION

2.1 PRE-TEST PREPARATION

- A. Before conducting the blower door test, the building needs to be placed in its normal heating or cooling configuration. This includes closing operable openings and preparing combustion appliances. Prepare the building as follows:
 - 1. Mockup: Prepare one corner unit for testing of exterior wall as soon after rough-in of electrical and plumbing as possible. Complete insulation and air sealing and drywall prior to mockup unit blower door testing. Take corrective action as necessary based on test results.
 - 2. Power: Provide at least one working 20-amp circuit available to power the blower door fan and accompanying fog testing equipment.
 - 3. Attend a pre-construction air sealing meeting with all subcontractors that can affect air sealing, including, but not limited to, plumbing, electrical, HVAC, gypsum wall board (drywall), and insulation.
 - 4. Coordinate with subcontractors, vendors, employees, Owner, and design team, to confirm that no one will open doors or windows during testing or otherwise disrupt testing procedures.
- B. Preparation of Doors, Windows, and Other Openings: Comply with “Default Conditions for Building Preparation”.

2.2 BLOWER DOOR TEST PROCEDURES

- A. Install blower door frame, panel, and fan in an exterior doorway with a clear path to outdoors.
- B. Follow manufacturer's instruction for fan orientation and manometer setup for both pressurization and depressurization.
- C. Connect the building-pressure manometer to measure building with respect to outdoors.
- D. Connect the airflow manometer to measure fan with respect to zone near fan inlet. The zone near the fan inlet is indoors for depressurization and outdoors for pressurization.
- E. Make pretest adjustments to manometer following manufacturer's instruction. Zero manometers as described previously.
- F. Turn on the fan and increase its speed to 50 pascals of pressure difference between indoors and outdoors.
- G. Read the cubic feet per minute (CFM) values off the airflow manometer or from the second channel of a two-channel digital manometer.

END OF SECTION

SECTION 024100

DEMOLITION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK A.

Work Included:

1. Demolition and removal of selected portions of buildings and structures and as required for new work. Refer to the Drawings for additional requirements.
2. Demolition and removal of selected site elements and as required for new work. Refer to the Drawings for additional requirements.
3. Salvage of existing items to be reused or turned over to the facility.
4. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at their expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
5. Maintenance, watering and care of trees designated to remain by a certified arborist during the construction period.
6. Demolition and removal work shall properly prepare for alteration work and new construction to be provided under the Contract.
7. Scheduling and sequencing operations without interruption to utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and the Owner.

1.3 QUALITY ASSURANCE

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.
- B. Demolition Firm Qualifications: An experienced firm that specializes in demolition work similar in material and extent to that indicated for this Project.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- D. Standards: Comply with ANSI A10.6 and NFPA 241.

DEMOLITION
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PART 2 - EXECUTION

2.1 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies and Owner.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
4. Prior to commencing cutting work in existing surfaces, take all precautionary measures to assure that mechanical and electrical services to the particular area have been made inactive. Coordinate with Fire Suppression, Plumbing, HVAC, and Electrical subcontractors. Only licensed tradesmen of that particular trade shall disconnect and cap existing mechanical and electrical items that are to be removed, abandoned and/or relocated.
5. If, during the process of cutting work, existing utility lines are encountered which are not indicated on the Drawings, regardless of their condition, immediately report such items to the Architect. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

2.2 PROTECTION OF PUBLIC AND PROPERTY

- A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Owner's employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Owner.
- C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.

END OF SECTION

DEMOLITION
024100 - 2

SECTION 044300

STONE MASONRY

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Stone masonry anchored to concrete backup and to cold-formed metal framing and sheathing.
- B. Sustainable Design Intent: Stone masonry shall not interrupt any continuous insulation where placed outboard of structural components and masonry shall be installed to be anchored through said insulation where required.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Provide stone veneer to match existing, stone veneer in general color, shape, size and variety of stone.
 - 1. For stone varieties proposed for use on Project, include test data indicating compliance with physical properties specified or required by referenced ASTM standards.
- B. Samples for Initial Selection: For colored mortar and other items involving color selection.
- C. Samples for Verification:
 - 1. For each stone type indicated. Include at least five samples in each set for each type of stone, exhibiting extremes of the full range of color and other visual characteristics expected in completed Work.
 - 2. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.
 - 3. Weep holes/vents.
 - 4. Accessories embedded in masonry.
- D. Qualification Data: For qualified Installer.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs experienced stonemasons and stone fitters.

- B. Source Limitations for Stone: Obtain each variety of stone, regardless of finish, from one quarry with resources to provide materials of consistent quality in appearance and physical properties.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

PART 2 - PRODUCTS

2.1 STONE, GENERAL

- A. Regional Materials: Provide stone that have been extracted, harvested, or recovered, as well as fabricated, within 500 miles of Project site.
- B. Varieties and Sources: Subject to compliance with requirements, provide one of the stone varieties specified for each stone type in Part 2 "Stone Types" Article.
- C. Match Architect's samples for variety, color, finish, and other stone characteristics relating to aesthetic effects.
- D. Provide stone that is free of cracks, seams, and starts impairing structural integrity or function.
- E. Provide stone from a single quarry for each variety of stone required.
- F. Quarry stone in a manner to ensure that as-quarried block orientations yield finished stone with required characteristics.
- G. Make stone slabs available for Architect to examine for appearance characteristics.
 - 1. Architect will select aesthetically acceptable slabs and will indicate aesthetically unacceptable slabs and portions of slabs.
 - 2. Segregate slabs selected for use on Project and mark backs indicating approval.
 - 3. Mark and photograph aesthetically unacceptable portions of slabs as directed by Architect.

2.2 STONE TYPES

- A. Granite: Provide granite complying with ASTM C 615 and NBGQA's "Specifications for Architectural Granite" and as follows:
 - 1. Varieties, Cut and Finish: As selected by Architect.

2.3 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.

- C. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Available Products:
 - a. LanXess; Bayferrox Iron Oxide Pigments.
 - b. Davis Colors; True Tone Mortar Colors.
 - c. Solomon Grind-Chem Services, Inc.; SGS Mortar Colors.
- D. Aggregate for Mortar: ASTM C 144. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone. E. Aggregate for Grout: ASTM C 404.
- F. Water: Potable.

2.4 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Weep/Vent Products: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.
- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity. Provide sheets, full-depth of cavity extending full height of cavity. Available products:
 - 1. Advanced Building Products Inc.; Mortar Break II.
 - 2. Archovations, Inc.; CavClear Masonry Mat.
 - 3. Dayton Superior Corporation, Dur-O-Wal Division; Polytite MortarStop.
 - 4. Mortar Net USA, Ltd.; Mortar Net.

2.5 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Limit cementitious materials in mortar to portland cement and lime.

- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
 - 1. For masonry below grade or in contact with earth, use Type M.
 - 2. For reinforced masonry, use Type S.
 - 3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- C. Pigmented Mortar: Use colored cement product. Pigments shall not exceed 10 percent of portland cement by weight.
- D. Grout for Unit Masonry: Comply with ASTM C 476.
 - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 - 2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

2.6 POINTING

- A. Prepare stone-joint surfaces for pointing with mortar by removing dust and mortar particles. Where setting mortar was removed to depths greater than surrounding areas, apply pointing mortar in layers not more than 3/8 inch (10 mm) deep until a uniform depth is formed.
- B. Point stone joints by placing and compacting pointing mortar in layers not more than 3/8 inch (10 mm) deep. Compact each layer thoroughly and allow to become thumbprint hard before applying next layer.
- C. Tool joints, when pointing mortar is thumbprint hard, with a smooth jointing tool to produce the following joint profile:
 - 1. Joint Profile: As indicated.

END OF SECTION

SECTION 061000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. OSB: Oriented strand board.
- E. Timber: Lumber of 5 inches nominal size or greater in least dimension.

1.3 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSB Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated wood.
 - 2. Fire-retardant-treated wood.
 - 3. Engineered wood products.
 - 4. Power-driven fasteners.
 - 5. Post-installed anchors.
 - 6. Metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Regional materials: Wood products shall be manufactured within 500 miles of Project site from wood that has been harvested and milled within 500 miles of the Project site.

- B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC

Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Dress lumber, S4S, unless otherwise indicated.

- C. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

- D. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade.

1. Application: Interior partitions not indicated as load bearing.
2. Species:

- a. Hem-fir (north); NLGA.
- b. Southern pine or mixed southern pine; SPIB.
- c. Spruce-pine-fir; NLGA.
- d. Hem-fir; WCLIB, or WWPA.
- e. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- f. Northern species; NLGA.
- g. Eastern softwoods; NeLMA.
- h. Western woods; WCLIB or WWPA.

B. Load-Bearing Partitions: No. 1 grade.

1. Application: Exterior walls and interior load-bearing partitions.
2. Species:

- a. Hem-fir (north); NLGA.
- b. Southern pine; SPIB.
- c. Douglas fir-larch; WCLIB or WWPA.
- d. Southern pine or mixed southern pine; SPIB.
- e. Spruce-pine-fir; NLGA.
- f. Douglas fir-south; WWPA.
- g. Hem-fir; WCLIB or WWPA.

- h. Douglas fir-larch (north); NLGA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
 - C. Load-Bearing Partitions: Any species of machine stress-rated dimension lumber with a grade of not less than 1650f-1.5E No. 1 grade.
 - 1. Application: Exterior walls and interior load-bearing partitions.
 - D. Load-Bearing Partitions: Any species and grade with a modulus of elasticity of at least 1,500,000 psi and an extreme fiber stress in bending of at least 1000 psi for 2-inch nominal thickness and 12-inch nominal width for single-member use.
 - 1. Application: Exterior walls and interior load-bearing partitions. E. Ceiling
- Joists: Construction or No. 2 grade.
- 1. Species:
 - a. Hem-fir (north); NLGA.
 - b. Southern pine; SPIB.
 - c. Douglas fir-larch; WCLIB or WWPA.
 - d. Douglas fir-larch (north); NLGA.
 - e. Southern pine or mixed southern pine; SPIB.
 - f. Spruce-pine-fir; NLGA.
 - g. Hem-fir; WCLIB or WWPA.
 - h. Douglas fir-south; WWPA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
 - j. Northern species; NLGA.
 - k. Eastern softwoods; NeLMA.
 - l. Western woods; WCLIB or WWPA.
- F. Joists, Rafters, and Other Framing Not Listed Above: Construction or No. 2 grade.
- 1. Species:
 - a. Hem-fir (north); NLGA.
 - b. Southern pine; SPIB.
 - c. Douglas fir-larch; WCLIB or WWPA.
 - d. Southern pine or mixed southern pine; SPIB.
 - e. Spruce-pine-fir; NLGA.
 - f. Douglas fir-south; WWPA.
 - g. Hem-fir; WCLIB or WWPA.
 - h. Douglas fir-larch (north); NLGA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- G. Joists, Rafters, and Other Framing Not Listed Above: Any species of machine stress-rated dimension lumber with a grade of not less than 1650f-1.5E Construction or No. 2 grade.
- H. Joists, Rafters, and Other Framing Not Listed Above: Any species and grade with a modulus of elasticity of at least 1,500,000 psi and an extreme fiber stress in bending of at least 1000 psi for 2-inch nominal thickness and 12-inch nominal width for single-member use.

- I. Exposed Framing Indicated to Receive a Stained or Natural Finish: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
 1. Species and Grade: As indicated above for load-bearing construction of same type.
 2. Species and Grade: Hem-fir (north); No. 1 grade; NLGA.
 3. Species and Grade: Southern pine; No. 1 grade; SPIB.
 4. Species and Grade: Douglas fir-larch; No. 1 grade; WCLIB or WWPA.

 5. Species and Grade: Mixed southern pine; No. 1 grade; SPIB.
 6. Species and Grade: Spruce-pine-fir; No. 1 grade; NLGA.
 7. Species and Grade: Douglas fir-south; No. 1 grade; WWPA.
 8. Species and Grade: Hem-fir; No. 1 grade; WCLIB or WWPA.
 9. Species and Grade: Douglas fir-larch (north); No. 1 grade; NLGA.
 10. Species and Grade: Spruce-pine-fir (south); No. 1 grade; NeLMA, WCLIB, or WWPA.
 11. Species and Grade: Eastern hemlock-balsam fir or eastern hemlock-tamarack; No. 1 grade grade; NeLMA.
 12. Species and Grade: Beech-birch-hickory; No. 1 grade; NeLMA.
 13. Species and Grade: Northern red oak; No. 1 grade; NeLMA.
 14. Species and Grade: Redwood; No. 1 grade; RIS.
 15. Species and Grade: Mixed oak; No. 1 grade; NeLMA.
 16. Species and Grade: Mixed maple; No. 1 grade; NeLMA.
 17. Species and Grade: Western cedars; No. 1 grade; WCLIB or WWPA.

2.3 TIMBER FRAMING

- A. Comply with the following requirements, according to grading rules of grading agency indicated:

1. Species and Grade: Douglas fir-larch, Douglas fir-larch (north), or Douglas fir-south; No. 1 grade; NLGA, WCLIB, or WWPA.
2. Species and Grade: Eastern hemlock, eastern hemlock-tamarack, or eastern hemlocktamarack (north); No. 1 grade; NeLMA or NLGA.
3. Species and Grade: Hem-fir or hem-fir (north); No. 1 grade; NLGA, WCLIB, or WWPA.
4. Species and Grade: Mixed maple; No. 1 grade; NeLMA.
5. Species and Grade: Mixed oak; No. 1 grade; NeLMA.
6. Species and Grade: Southern pine; No. 1 grade; SPIB.
7. Maximum Moisture Content: 20 percent.
8. Additional Restriction: Free of heart centers.

2.4 ENGINEERED WOOD PRODUCTS

- A. Source Limitations: Obtain each type of engineered wood product from single source from a single manufacturer.
- B. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.

1. Products: Provide one of the following
 - a. “Microllam LVL”, Weyerhaeuser Company
 - b. “Versa-Lam LVL” Boise Cascade Corporation
 - c. “LP SolidStart LVL” Louisiana-Pacific Corporation
 2. Extreme Fiber Stress in Bending, Edgewise: 2600 psi for 12-inch nominal depth members.
 3. Modulus of Elasticity, Edgewise: 2,000,000 psi.
- C. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.
1. Products: Provide one of the following
 - a. “Parallam PSL”, Weyerhaeuser Company
 2. Extreme Fiber Stress in Bending, Edgewise: 2900 psi for 12-inch nominal depth members.
 3. Modulus of Elasticity, Edgewise: 2,200,000 psi.
- D. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Comply with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
1. Products: Provide one of the following
 - a. “Trus Joist TJI Joist”, Weyerhaeuser Company
 - b. “ALLJOIST” Boise Cascade Corporation
 - c. “LP SolidStart I Joist” Louisiana-Pacific Corporation
 2. Web Material: Either OSB or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1.
 3. Structural Properties: Depths and design values not less than those indicated.
 4. Comply with APA PRI-400. Factory mark I-joists with APA-EWS trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA-EWS standard.
- E. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research or evaluation report for I-joists.
1. Manufacturer: Provide products by same manufacturer as I-joists.
 2. Material: All-veneer product.
 3. Thickness: 1-1/4 inches.
 4. Comply with APA PRR-401, rim board plus grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.
- F. Insulated Rim Boards: Insulated product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research/evaluation report for I-joists.
1. Manufacturer: Provide products by same manufacturer as I-joists.
 2. Rim Board Material: All-veneer product.
 3. Rim Board Thickness: 1-1/4 inches.

4. Insulation: 1-1/2-inch thick polyisocyanurate foam complying with ASTM C 1289.
5. Inside Facing: 7/16-inch thick OSB.
6. Comply with APA PRR-401, rim board plus grade. Factory mark rim boards with APA-EWS trademark indicating thickness, grade, and compliance with APA-EWS standard.

END OF SECTION

SECTION 061613
INSULATING SHEATHING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Insulation / oriented strand board (OSB) sheathing system attached to framing members at exterior wall and roof assemblies.
- B. Sustainable Design Intent: Elimination of Thermal Breaks via continuous board form insulation installed outboard of structural exterior wall.

PART 2 - PRODUCTS

2.1 INSULATING SHEATHING BOARD

- A. Composite Insulating Wall Sheathing: Oriented-strand-board Exposure 1 sheathing 7/16 inch thick, with factory-laminated water-resistive barrier exterior facer, and with rigid foam plastic insulating board laminated to interior face.
1. Basis-of-Design: Huber Engineered Woods LLC; ZIP System R Sheathing.
 2. Span Rating and Performance Category of Sheathing Layer: Not less than 24/16; 7/16 Performance Category.
 3. Thickness: 2 inch
 4. Thermal Resistivity (R Value): 9.6 deg F x h x sq. ft./Btu x in. at 75 deg F.
 5. Edge Profile: Square edge.
 6. Exterior Facer: Medium-density, phenolic-impregnated polymer-modified sheet material meeting requirements for ASTM D779 Grade D weather-resistive barrier in accordance with ICC AC38 and AC310, with fastener spacing symbols on exterior facer for 16-inch and 24-inch on center spacing, with the following characteristics
 - a. Water Resistance of Coatings, ASTM D2247: Pass 14 day exposure test.
 - b. Moisture Vapor Transmission, ASTM E96: Not less than 12 perms.
 - c. Water Penetration, ASTM E331: Pass at 2.86 lbf/sq. ft.
 - d. Wind Driven Rain, TAS-100: Pass.
 - e. Accelerated Weathering, ASTM G154: Pass.

2.2 MATERIALS

- A. Oriented Strand Board: DOC PS 2, made with binder containing no added urea formaldehyde.

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- B. Rigid Foam Plastic Insulating Board: Rigid polyisocyanurate foam core complying with ASTM C1289 Type II, Class 2, and ICC-ES AC12, with coated glass fiber facers on both sides, with the following characteristics:

1. Nominal Density: 2.0 pcf (32 kg/cu. m).
2. Compressive Strength, ASTM D1621: Not less than 20 psi (150 kPa).
3. Vapor Permeance, ASTM E96/E96M: Less than 1.0 perm.
4. Edge Configuration: Square finished.

- C. Self-Adhering Seam and Flashing Tape: Pressure-sensitive, self-adhering, cold-applied, seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC AC148.

1. Basis-of-Design: Huber Engineered Woods; ZIP System Tape.
2. Thickness: 0.012 inch

END OF SECTION

INSULATING SHEATHING
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SECTION 062010

EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Exterior wood siding, soffits, and trim.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Environmental Product Declarations (EPD): Industry-wide EPDs for wood products are available from the American Wood Council and Canadian Wood Council.
- B. Certified Wood: Materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."
1. Salvaged and reclaimed wood is excluded from certified wood requirements.
- C. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," for lumber and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.
- D. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps entirely and provide certificates of grade compliance issued by inspection agency.

2.2 SHOP PAINT

A. Linseed Based Wood Stains: Provide products of one of the following manufacturers that meet or exceed specified requirements:

1. Samuel Cabot, Inc. (Cabot) "Clear Solutions," "Bleaching Oil 6241" 2. Olympic Stain. (Olympic) "Weathering Stain" 350 g/l VOC max.

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B. Application: Provide one coat of stain on all sides of each piece, at spreading rate recommended by stain manufacturer for exterior wood siding, soffits, and trim. Color shall match Architect's sample.

END OF SECTION

EXTERIOR FINISH CARPENTRY
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SECTION 062500

EXTERIOR COMPOSITE DECKING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Exterior composite material decking.
 2. .

PART 2 - PRODUCTS

2.1 EXTERIOR COMPOSITE MATERIALS

- A. Exterior Composite Material: Recommended by manufacturer for exterior use, made from UV- and heat-stabilized, rigid material.
1. Available Manufacturers: Subject to compliance with requirements, provide products from one of the following:
 - a. Trex Company.
 2. Materials, Patterns, Shapes, and Textures: Refer to Drawings.
 3. Color: As selected by Architect from manufacturer's standard colors.
 4. Fasteners: Trex Hideaway Hidden Fastening System, with stainless steel deck screws.

2.2 ACCESSORIES

- A. Adhesive for Composite Material Products: Manufacturer's recommended adhesive for use with specific products and substrates.
- B. Brackets and Fasteners: Stainless steel Type 300 series, manufacturer's recommended fastener types.
1. For fastening to wood, use siding nails or ribbed bugle-head screws of sufficient length to penetrate a minimum of 1 inch into substrate.

END OF SECTION

EXTERIOR COMPOSITE DECKING
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SECTION 072100
THERMAL INSULATION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Rigid insulation under slabs-on-grade and at perimeter foundation walls.
 2. Mineral-wool blanket and board insulation.
 3. Spray-applied cellulose insulation at walls.
 4. Spray-applied cellulose insulation at ceilings.
 5. Vapor retarders.
- B. Sustainable Design Intent: Insulation where possible should be from a non-petroleum based source and where not possible, should be pre-formed and cured prior to delivery to eliminate off-gassing of on-site curing.

PART 2 - PRODUCTS

2.1 FOUNDATION WALL AND UNDER SLAB INSULATION

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. DuPont (formerly Dow Chemical); Reduced GWP Styrofoam series (gray color).
 2. Sika Corporation; Sarnatherm XPS
 3. Owens Corning; Foamular NGX (Next Generation Extruded) series.
- B. Extruded-Polystyrene (XPS) Board Insulation: ASTM C 578, square edged of type, density, and compressive strength indicated below:
1. For vertical applications, Type IV, 1.6-lb/cu. ft. minimum density and 25-psi minimum compressive strength.
 2. For horizontal applications, pedestrian traffic, Type VII, 2.2-lb/cu. ft. minimum density and 60-psi minimum compressive strength.
 3. For horizontal applications, vehicular traffic, Type V, 3-lb/cu. ft. minimum density and 100-psi minimum compressive strength.
 4. Thermal Resistivity (R-value): 5.0 per inch.

5. Blowing Agent: Honeywell; Solstice Liquid Blowing Agent, low global warming potential (GWP) hydrofluoro-olefin (HFO), or approved equal.
 - a. Other insulation manufacturers may be considered, if they have adopted the HFO blowing agents by start of construction.
 6. Recycled Content: 20 percent min.
- C. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.

2.2 CAVITY WALL INSULATION, MINERAL-WOOL BOARD

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Isolatek International.
 2. Owens Corning; Thermafiber.
 3. Rockwool (formerly Roxul).
- B. Unfaced, Mineral-Wool Board Insulation: ASTM C 612, Type IVB; with maximum flame-spread and smokedeveloped indexes of 15 and zero, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
1. Nominal density of 4 lb/cu. ft. Types IA and IB, thermal resistivity of 4 deg F x h x sq. ft./Btu x in. at 75 deg F minimum.
 2. Fiber Color: Natural, except darkened where visible through joints in cladding.
 3. Building Product Disclosure and Optimization, Environmental Product Declarations (EPD): Industry-wide EPD.
- C. Attachment to Substrate, Masonry Veneers: Manufacturer's recommended mechanical attachment clip or disk.
- D. Attachment to Substrate, Panel Veneers: Manufacturer's recommended adhesively attached, spindle-type insulation anchors.

2.3 BLANKET INSULATION, MINERAL-WOOL BLANKET

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Owens Corning; Thermafiber UltraBatt FF.
 2. Isolatek International.
 3. Rockwool (formerly Roxul).
- B. Mineral-Wool Blanket, Unfaced: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
1. Recycled Content: 70 percent min.

2. Building Product Disclosure and Optimization, Material Ingredients: Health Product Declaration (HPD) or Declare product labels.
 3. Low-Emitting Materials, General Emissions Evaluation: GreenGuard Gold certification, formaldehyde-free.
- C. Mineral-Wool Blanket, Reinforced-Foil Faced: ASTM C 665, Type III (reflective faced), Class A (faced surface with a flame-spread index of 25 or less per ASTM E 84); Category 1 (membrane is a vapor barrier), faced with foil scrim, foil-scrim kraft, or foil-scrim polyethylene. GreenGuard certified as formaldehyde free and low chemical emissions.

2.4 SPRAYED-FOAM INSULATION, LOW EXPANSION AT WINDOWS AND DOORS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
1. Dow Chemical; GreatStuff Window and Door Insulating Foam Sealant.
 2. ICP Building Solutions Group: HandiFoam Window and Door low-pressure, one-component, polyurethane foam sealant.
 3. Approved equal.
- B. Sprayed-Foam Insulation: Water-cure closed cell polyurethane containing no urea-formaldehyde and no CFCs.
1. Minimum density of 1.0 lb/cu. ft., thermal resistivity of 4.7 deg F x h x sq. ft./Btu x in. at 75 deg F.
 2. Fire Resistance: ASTM E84/UL 723, Flame Spread 25 max., and Smoke Developed 50 max.

2.5 SPRAY-APPLIED CELLULOSE INSULATION AT WALLS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. National Fiber; Cel-Pak.
 2. Nu-Wool Cellulose Insulation.
 3. US Greenfiber.
- B. Spray-Applied Cellulosic Insulation: ASTM C 739 cellulose materials intended for dry dense pack installation, as follows:
1. Minimum density of 3.5 lb/cu. ft., thermal resistivity of 3.6 deg F x h x sq. ft./Btu x in. at 75 deg F.
 2. Accessories: Non-woven, vapor-permeable netting, metal staples, and tape, as recommended by manufacturer for a complete assembly.

2.6 SPRAY-APPLIED THERMAL CELLULOSE INSULATION AT CEILINGS

- A. Basis of Design: International Cellulose Corporation; K-13.

- B. Spray-Applied Cellulosic Insulation: ASTM C 1149 cellulose materials intended for spray application at ceilings.
 - 1. R-Value: R-3.7 per inch.
 - 2. Thickness: 1-1/2 inches unless indicated otherwise on the Drawings.
 - 3. Color: White, unless selected otherwise by the Architect.
- C. Fire-Resistive Substrate: Where spray-applied insulation is intended for use over sprayed fire-resistive materials (SFRM) or intumescent fire-resistive materials (IFRM), provide evidence that the product and SFRM/IFRM system has been tested in accordance with UL 263 or ASTM E119.

2.7 SMART VAPOR RETARDERS

- A. Available Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. CertainTeed Corp.; MemBrain Continuous Air Barrier & Smart Vapor Retarder.
 - 2. ProClima; Intello.
 - 3. SIGA; Majrex.
- B. Smart Vapor Retarders: Polyamide-based (nylon) or polyethylene copolymer sheet.
 - 1. Water Vapour Permeance: ASTM E 96, Desiccant Method <1.0 perm.
 - 2. Water Vapour Permeance: ASTM E 96, Water Method >10 perm.
 - 3. Fire Resistance Rating: ASTM E 84, Class 1/A.
- C. Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports.
- B. Infrared Camera Survey: Perform an infrared camera scan of walls, floors, and ceilings to determine where insulation and air barrier are not continuous, after insulation has been installed, but prior to plaster patching or new gypsum board installation.
 - 1. Provide complete digital report with images of test results with recommendations for repairs.
- C. Repair or replace work where test results and inspections indicate that it does not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

END OF SECTION

SECTION 073113
ASPHALT SHINGLES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Asphalt shingles.
 2. Underlayment.

1.3 DEFINITION

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain ridge and hip cap shingles ridge vents from single source from single manufacturer.
- B. Energy Performance: Provide steep slope roofing system with Solar Reflectance Index (SRI) not less than 29 when calculated according to ASTM E 1980 based on testing identical products by a qualified testing agency.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Environmental Product Declarations (EPD): Industry-wide EPDs for asphalt shingles are available from the Asphalt Roofing Manufacturers Association (ARMA).
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Atlas Roofing Corporation.
 2. CertainTeed Corporation.
 3. GAF Materials Corporation.
 4. IKO.
 5. Owens Corning.

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- C. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Algae Resistance: Granules treated to resist algae discoloration.
 - 2. Color and Blends: As selected by Architect from manufacturer's full range.

2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-milthick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing, Inc.
 - b. GCP Applied Technologies (formerly W.R. Grace).
 - c. Henry Company.
- B. Felt: ASTM D 226, Type II, asphalt-saturated organic felts, nonperforated.

2.3 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard, rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips; for use under ridge shingles.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Air Vent, Inc.; a Gibraltar Industries company.
 - b. Cor-A-Vent, Inc.
 - c. GAF Materials Corporation.

END OF SECTION

ASPHALT SHINGLES
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SECTION 074610
FIBER-CEMENT SIDING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Fiber cement lap siding.
 2. Fiber-cement wall panels.
 3. Fiber cement board and batten siding.
 4. Fiber cement soffit panels.
 5. Fiber cement trim.
 6. Factory finishes, priming and sealing.
- B. Samples for Verification: For each type, color, texture, and pattern required.
1. 12-inch-long-by-actual-width Sample of siding and trim.

PART 2 - PRODUCTS

2.1 FIBER CEMENT PANELS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc. of Fontana CA or CemPlank Inc. of Blandon Park PA, www.cemplank.com, Certainteed, Mitten, Gentek Revere Building Products, Nichiha USA, Inc., or approved equal.
- B. Product: Provide a cement fiber autoclaved non-asbestos panel complying with ASTM C118698a grade II type A when tested according to C1185 and complying with James Hardie and CemPlank published physical and mechanical properties and having the following surface burning characteristics when tested according to ASTM E84:
1. Flame spread 0
 2. Fuel contributed 0
 3. Smoke density 5
 4. NFPA class A
- C. Product warranty: 50 year transferable limited warranty.

- D. Panel Units:
 - 1. Thickness: 5/16 inch, unless otherwise indicated.
 - 2. Size: As shown.

- E. Trim Units:
 - 1. Thickness: As shown, if not, 7/8 inch.
 - 2. Unit size: manufacturer standard widths to match indications shown on drawings. Where drawings show 4 inch provide 4.5 inch. Where drawings show 3.5 inch provide 3.5 inch. If 6 inch shown, provide 5.5 inch, etc. Provide pieces in longest lengths available.

- F. Miscellaneous Units: Provide manufacturer's standard lap siding, panels, perforated soffit panels, and non-perforated soffit panels. Refer to drawings for locations.

- G. Fasteners: Galvanized or stainless steel ring shank nails with blunt or diamond point and roofing head. Use nails of sufficient length to penetrate wood studs 1 inch.
 - 1. Exposed fasteners shall be color matched to adjacent siding.

- H. Texture: Provide smooth surface unless otherwise selected by Architect.

- I. Factory finish: Cementitious siding shall be shipped to the job site with factory applied latex acrylic primer and high performance finish coatings of type recommended and accepted by the siding manufacturer. Primers shall be applied to all six surfaces of panels and boards.
 - 1. Do not back prime components where manufacturer does not recommend application.
 - 2. Colors: Provide colors as selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION OF CEMENT FIBER SIDING PANELS

- A. Install cement fiber siding over properly installed specified building wrap or paper. Place fasteners 1 inch from top edge, between 3/4 to 1 inch from bottom edge and between 1/2 to 3/8 inch from side edge. Install siding with gap between planks and panels but not greater than 1/8 inch. Provide not less than 6 inch clearance between bottom edge to finish grade and 1 inch clearance to roofing. Lap siding shall be installed to provide a 1-1/4 inch minimum overlap.

- B. Lay butt joints only over stud or solid blocking. Do not use splice plates or other devices to install butt joints over spaces between studs or blocking.

- C. Where siding is required to be installed over concrete or masonry, fur out wall with fire retardant treated 1 x 2 inch wood framing spaced not more than 24 inches on center and secured to wall over a vapor barrier or specified building wrap. Install furring vertically unless otherwise indicated.

- D. In general, blind nail siding. Face nailing may be used where siding is covered with trim and in approved locations only. Do not blind nail "Hardiplank" when studs are spaced 24 inches on center nor when using 12 inch wide boards.

- E. Install approved corrosion resistant nails driven perpendicular to siding to a snug fit. Do not overdrive nail heads or drive nails at an angle. If nail is countersunk, caulk nail hole with approved material, and add a nail. Pneumatic nail guns may be used if provided with flush mount attachment and pressure set from proper snug (not overdriven) fit. Use of staples is not permitted. Where pre-finished material is used, use pre-finished fasteners.

3.2 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.
- C. Touch-up paint damaged finishes in accordance with manufacturers written installation instructions.

END OF SECTION

SECTION 081400

WOOD DOORS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Solid-core doors with wood-veneer faces.
 2. Solid MDF doors for painted finish.
 3. Factory fitting flush wood doors to frames and factory machining for hardware.
 4. Louvers for flush wood doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Interior Wood Doors:
 - a. Algoma Hardwoods Inc.
 - b. Eggers Industries; Architectural Door Division.
 - c. Marshfield Door Systems.
 - d. Masonite.
 - e. VT Industries Inc.

2.2 SOLID-CORE DOORS

- A. Cores: Comply with the following requirements:
1. Particle Core: ANSI A 208.1, Grade 1-LD-2 contributes to MR 4.1 and MR 4.2.
 2. Stave Lumber Core: FSC Certified contributes to MR 7 and EQ 4.4.
 3. Agrifiber Core: ANSI A 208.1, Grade 1-LD-2 contributes to MR 4.1. MR 4.2, MR 6, and EQ 4.4.
 4. Structural Composite Lumber Core: Timberstrand LSL contributes to EQ 4.4.
 5. Provide doors with structural composite lumber cores instead of particleboard cores at locations where exit devices are indicated or where light or louver cutouts exceed 40% of the door area.

B. Interior Veneer-Faced Doors:

1. Construction: Five plies, hot-pressed, with stiles and rails bonded to core, then entire unit abrasive planed before veneering. C. Fire-Rated Doors:

1. Construction: Construction and core specified above for type of face indicated or manufacturer's standard mineral-core construction as needed to provide fire rating indicated.
 - a. Fire Retardant Mineral Core with urea formaldehyde free cross-banding, contributes to EQ 4.4.
2. Blocking: For mineral-core doors, provide composite blocking with improved screwholding capability approved for use in doors of fire ratings indicated as needed to eliminate through-bolting hardware.
3. Edge Construction: At hinge stiles, provide manufacturer's standard laminated-edge construction with improved screw-holding capability and split resistance and with outer stile matching face veneer.
4. Pairs: Provide fire-rated pairs with fire-retardant stiles matching face veneer that are labeled and listed for kinds of applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals.

2.3 LOUVERS AND LIGHT FRAMES

A. Wood Louvers: Door manufacturer's standard solid-wood, chevron-style, louvers, unless otherwise indicated. Species to match veneer.

2.4 FABRICATION

A. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.

1. Fabricate door and transom panels with full-width, solid-lumber meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal doorframes.

B. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.

1. Light Openings: Trim openings with moldings of material and profile indicated.
2. Louvers: Factory install louvers in prepared openings.

2.5 SHOP PRIMING

A. Doors for Opaque Finish: Shop prime faces and edges of doors, including cutouts, with one coat of wood primer specified in Section 099000 - PAINTING AND COATING.

END OF SECTION

SECTION 084110

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Exterior and interior aluminum-framed storefronts.
 2. Exterior and interior manual-swing aluminum doors.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design entrance and storefront system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:
1. Structural loads.
 2. Thermal movements.
 3. Dimensional tolerances of building frame and other adjacent construction.
 4. Failure includes the following:
 - a. Deflection exceeding specified limits.
 - b. Thermal stresses transferred to building structure.
 - c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
 - d. Noise or vibration created by wind and thermal and structural movements.
 - e. Loosening or weakening of fasteners, attachments, and other components.
 - f. Sealant failure.
 - g. Failure of operating units to function properly.
- C. Structural Loads: Wind and seismic loads as indicated on the Structural Drawings, but not less than that required by Code.
- D. Deflection of Framing Members:
1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches (and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or

- an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller, amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components directly below to less than 1/8 inch and clearance between members and operable units directly below to less than 1/16 inch.
- E. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- F. Air Infiltration: Provide doors and storefront which comply with the following. Test unit in accordance with ASTM E 283.
1. Swinging Entrance Doors, ASHRAE Requirement: 1.0 cfm/sf maximum air leakage at a pressure differential of 1.57 psf.
 2. Storefront, ASHRAE Requirement: 0.06 cfm/sf maximum air leakage at a pressure differential of 1.57 psf or higher.
- G. Water Leakage Test: Test fixed framing system in accordance with ASTM E 331.
1. Test Pressure: 8 psf.
 2. Performance: No leakage as defined in test method at specified test pressure. No uncontrolled water penetrating system or appearing on normally exposed interior surfaces.
- H. Solar Heat-Gain Coefficient: Provide units with a whole-unit SHGC maximum as required by Code, determined according to NFRC 200 procedures. Submit proof of compliance with submittals as specified.
- I. Thermal Transmittance: Provide window units that have a U-value as required by Code rated in BTU/hour/sq. ft./degrees F at 15-mph exterior wind velocity, when tested in accordance with AAMA 1503.1. Test unit to be 4 ft. x 6 ft. Submit proof of compliance with submittals as specified.
- J. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 65 for fixed storefront units and not less than 55 for doors when tested according to AAMA 1503.
- 1.4 SUBMITTALS
- A. Performance Reports: Based on systems, components and glazing methods proposed for use on this Project, proof that units as glazed for this Project meet or exceed Code requirements for the following:
1. U-value.
 2. Solar heat-gain coefficient.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Storefront, Thermal Break, 2 inch by 4-1/2 inch profile:

- a. EFCO Corporation, 403X.
- b. Kawneer North America, 451UT.
- c. Oldcastle BuildingEnvelope, 3000XT.
- d. Tubelite Inc., TU24000.
- e. YKK AP America Inc., YES 45 XT.

2. Storefront, Interior, 1-3/4 inch by 4-1/2 inch profile:

- a. EFCO Corporation, 401 NT.
- b. Kawneer North America, Trifab 400.
- c. Oldcastle BuildingEnvelope, FG-1000.
- d. Tubelite Inc., INT45.
- e. YKK AP America Inc., YES 40 FS.

3. Doors, Medium Stile:

- a. EFCO Corporation, D-300.
- b. Kawneer North America, 350.
- c. Oldcastle BuildingEnvelope, MS-375.
- d. Tubelite Inc., Medium.
- e. YKK AP America Inc., 35D.

4. Doors, Medium Stile, Thermally-Broken:

- a. EFCO Corporation, D-302.
- b. Kawneer North America, Insulpour 350T.
- c. Oldcastle BuildingEnvelope, MS-375TC.
- d. Tubelite Inc., Medium Thermal Block.
- e. YKK AP America Inc., 35XT.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

- 1. Sheet and Plate: ASTM B 209.
- 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
- 3. Extruded Structural Pipe and Tubes: ASTM B 429.
- 4. Structural Profiles: ASTM B 308/B 308M.
- 5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

2.3 DOOR HARDWARE

- A. General: Provide heavy-duty units in sizes and types recommended by entrance system and hardware manufacturers for entrances and uses indicated.
 - 1. Opening-Force Requirements:
 - a. Egress Doors: Not more than 30 lbf required to set door in motion and not more than 15 lbf required to open door to minimum required width.
 - b. Accessible Interior Doors: Not more than 5 lbf. B. Pivot Hinges:

BHMA A156.4, Grade 1.
- C. Locking Devices, General: Do not require use of key, tool, or special knowledge for operation.
 - 1. Opening-Force Requirements:
 - a. Delayed-Egress Locks: Lock releases within 15 seconds after applying a force of not more than 15 lbf (67 N) for not more than 3 seconds.
 - b. Latches and Exit Devices: Not more than 15 lbf (67 N) required to release latch. D.

Mortise Auxiliary Locks: BHMA A156.5, Grade 1.
- E. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
 - 1. Standard: BHMA A156.3, Grade 1.
- F. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.
- G. Operating Trim: BHMA A156.6.
- H. Closers: With accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use, and adjustable to meet field conditions and requirements for opening force.
 - 1. Standard: BHMA A156.4, Grade 1.
- I. Concealed Overhead Holders: BHMA A156.8, Grade 1.
- J. Surface-Mounted Holders: BHMA A156.16, Grade 1.
- K. Door Stops: BHMA A156.16, Grade 1, floor or wall mounted, as appropriate for door location indicated, with integral rubber bumper.
- L. Weather Stripping: Manufacturer's standard replaceable components.
 - 1. Compression Type: Made of ASTM D 2000, molded neoprene, or ASTM D 2287, molded PVC.
- M. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.

- N. Silencers: BHMA A156.16, Grade 1.
- O. Thresholds: Raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch (13 mm).
 - 1. Standard: BHMA A156.21.
- P. Finger Guards: Manufacturer's standard collapsible neoprene or PVC gasket anchored to frame hinge-jamb at center-pivoted doors.

2.4 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- C. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
 - 1. Color and Gloss: As selected by Architect from manufacturer's full range.

END OF SECTION

SECTION 085310

UPVC WINDOWS & DOORS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Fixed and operable cellular uPVC windows with factory-installed glass and glazing.
- B. Sustainable Design Intent: Windows and Installation to be inspected and verified as part of the HERS inspection and review process for thermal envelope. Buildings must meet or exceed HERS 45 ratings.
- C. Performance: All windows shall be calculated as part of an area weighted U value and meet or exceed .3 W/m²k. Air leakage shall meet or exceed .3 cfm/sf for window units and .5 cfm/sf for swinging doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Intus Windows.
1. Series: Supera Fixed & Supera AW, Flangeless.
 2. Operation: As indicated on Drawings.
- B. Accessories: Sash Limiters: Limit operable area to 4 inches.
- C. Function: All windows to be casement or awning style window to close completely and securely to integral gasketing. Where windows are installed as part of an addition to an existing building with existing double hung windows, installation of a non-functioning check rail shall be installed to meet the appearance of the existing double hung units while providing the performance of a fully gasketed casement window.

2.2 GLAZING

- A. Triple-Glazed Insulating-Glass Units for Vertical Glazing: 1-1/4 inch thick insulating glass consisting of three lites of 1/4 inch (6 mm) glass, low e coating on the No. 2 surface and argon gas filled.

- B. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

2.3 INSECT SCREENS

- A. General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Provide for each operable exterior sash or ventilator.
- B. Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
 - 1. Aluminum Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet with minimum wall thickness as required for class indicated.
 - 2. Finish: Match window members.
- C. Glass-Fiber Mesh Fabric: 18-by-14 mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656.

END OF SECTION

SECTION 099000
PAINTING AND COATING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Field painting of exposed interior items and surfaces.
 - 2. Field painting of exposed exterior items and surfaces.
 - 3. Surface preparation for painting.
- B. Sustainable Design Intent: Painting products to be Low VOC to fullest extent possible. Refer to VOC limits set within section 2.2-E.

1.3 DEFINITIONS AND EXTENT

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
 - 3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 - 4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
 - 1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work are listed in the Finish Schedule at the end of this Section.

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- C. Paint Colors (PT-#): Provide colors as selected by Architect. Refer to Finish Schedule.
- D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- E. VOC Content Limits, for Interior Paints and Coatings:
 - 1. Default: 50 g/L.
 - 2. Dry-Fog Coatings: 50 g/L.
 - 3. Flats: 50 g/L.
 - 4. Floor Coatings: 50 g/L.
 - 5. Industrial Maintenance (IM) Coatings: 100 g/L.
 - 6. Color indicating safety coatings: 480 g/L.
 - 7. Zinc rich IM primers: 100 g/L.
 - 8. Metallic pigmented coatings: 150 g/L.
 - 9. Multi-color coatings: 250 g/L.
 - 10. Non-flat coatings: 50 g/L.
 - 11. Pre-treatment wash primers: 420 g/L.
 - 12. Primers, sealers and undercoaters: 100 g/L.
 - 13. Shellacs, Clear: 730 g/L.
 - 14. Shellacs, Pigmented: 550 g/L.
 - 15. Specialty Primers: 100 g/L.
 - 16. Stains: 100 g/L.
 - 17. Stains, Interior: 250 g/L.
 - 18. Wood Coatings, Varnish: 275 g/L.
 - 19. Wood Coatings, Sanding Sealer: 275 g/L.
 - 20. Wood Coatings, Lacquer: 275 g/L.
 - 21. Wood Conditioners: 100 g/L.
 - 22. Colorant Added to Architectural Coatings, excluding IM coatings: 50 g/L.
 - 23. Colorant Added to Solvent Based IM: 600 g/L.
 - 24. Colorant Added to Waterborne IM: 50 g/L.

2.3 PAINT SCHEDULE

- A. Schedule: Provide products and number of coats specified. Use of manufacturer's proprietary product names to designate colors, materials, generic class, standard of quality and perform

mance criteria and is not intended to imply that products named are required to be used to the exclusion of equivalent performing products of other manufacturers. B. Exterior Paint

Schedule:

1. Exterior Galvanized Metal (not shop-finished under Section 051200 - STRUCTURAL STEEL FRAMING, Section 055000 - METAL FABRICATIONS, Section 055100 - METAL STAIRS AND RAILINGS, and Section 081100 - HOLLOW METAL DOORS AND FRAMES), Alliphatic Acrylic Polyurethane System (Solvent-Based):
 - a. Surface Preparation: SSPC-SP16 Brush-off Blast of Galvanized Steel.
 - b. One Coat: Polyamide epoxy, high solids, low VOC, intermediate coat.
 - 1) AkzoNobel; International Intergard 475 HS at 5.0-10.0 mils DFT.
 - 2) Axalta (formerly Dupont); Corlar 2.1 ST at 3.0-5.0 mils DFT.
 - 3) PPG; PMC Amerlock 400 Hi-Build Epoxy at 4.0-5.0 mils DFT.
 - 4) Tnemec; V69 Hi-Build Epoxoline at 3.0 mils DFT (Basis of Design).
 - c. And One Coat: Aliphatic acrylic polyurethane, finish coat, semigloss.
 - 1) AkzoNobel; International Interthane 990V at 2.0-3.0 mils DFT.
 - 2) Axalta (formerly Dupont); Imron 2.1 SG at 2.0-4.0 mils DFT.
 - 3) PPG; PMC Amercoat 450 HSG at 3.0 mils DFT.
 - 4) Tnemec; 1095 Endura-Shield at 3.0 mils DFT (Basis of Design).
2. Exterior Wood, for Stained Finish:
 - a. Two Coats:
 - 1) AkzoNobel; Sikkens, approved equal.
 - 2) Moore; approved equal.
 - 3) S-W; Cabot Water-Based Semi-Transparent Stain 1300.
3. Exterior Wood and Poly-Ash trim, for Painted Finish:
 - a. Factory Primed per Section 062010 - EXTERIOR FINISH CARPENTRY.
 - b. One Coat, Primer:
 - 1) California Paint Grip-Coat Bonding Primer 505 series.
 - 2) Duron Bond N-Seal Exterior Acrylic Latex Primer 08-124.
 - 3) Moore; Ultra Spec Exterior Primer N558.
 - 4) PPG; Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer 17-921 series.
 - 5) S-W; Exterior Latex Acrylic Wood Primer.
 - c. And Two Coats, Flat Finish:
 - 1) California Paint Fresh Coat 100% Acrylic Velvet Flat 450 series.

- 2) Duron Weathershield Exterior 100% Acrylic Flat House Paint 34-914.
 - 3) Moore; Ultra Spec EXT Flat Finish N447.
 - 4) PPG; Speedhide flat finish 6-610XI.
 - 5) S-W; SuperPaint VinylSafe Exterior Latex Acrylic Flat A80 series.
- d. And Two Coats, Semi-Gloss Finish:
- 1) California Paint Fresh Coat 100% Acrylic Satin-Gloss 471 series.
 - 2) Duron Weathershield Exterior 100% Acrylic Semi-Gloss House Paint.
 - 3) Moore; Ultra Spec EXT Gloss Finish N449.
 - 4) PPG; Speedhide semi-gloss finish 6-900XI.
 - 5) S-W; SuperPaint VinylSafe Exterior Latex Acrylic Satin A89 series.
4. Exterior Fiber Cement Board, for Painted Finish:
- a. Factory Primed per Section 074610 - FIBER-CEMENT SIDING.
 - b. Two Coats, Flat Finish:
 - 1) Duron Weathershield Exterior 100% Acrylic Flat House Paint 34-914.
 - 2) PPG; Speedhide flat finish 6-610XI.
 - 3) S-W; SuperPaint Exterior Latex Acrylic Flat A80 series.
 - 4) California Paint Fresh Coat 100% Acrylic Velvet Flat 450 series.
 - c. Two Coats, Semi-Gloss Finish:
 - 1) Duron Weathershield Exterior 100% Acrylic Semi-Gloss House Paint.
 - 2) PPG; Speedhide semi-gloss finish 6-900XI.
 - 3) S-W; SuperPaint Exterior Latex Acrylic Satin A89 series.
 - 4) California Paint Fresh Coat Satin-Gloss 100% Acrylic 471 series.
- C. Interior Paint Schedule, Typical:
1. Interior Gypsum Wallboard (GWB), Latex Paint Finish:
 - a. One Coat, Primer: MPI 50 X-Green and 149 X-Green.
 - 1) Moore; Ultra Spec 500 Interior Latex Primer N534.
 - 2) PPG; Speedhide Pro EV Zero VOC Interior Primer 12-900XI series. 3) S-W; ProMar 200 HP Zero VOC Interior Primer.
 - b. And Two Coats, Flat Finish: At ceilings and elsewhere as indicated. MPI 53 XGreen.
 - 1) Moore; Ultra Spec 500 Interior Latex Flat T536.
 - 2) PPG; Speedhide Pro EV Zero VOC Interior Latex Flat 12-110XI series.
 - 3) S-W; ProMar 400 HP Zero VOC Interior Flat.
 - or
 - c. And Two Coats, Eggshell Finish: At walls and elsewhere as indicated. MPI 144 XGreen.

- 1) Moore; Ultra Spec 500 Interior Latex Eggshell T538.
 - 2) PPG; Speedhide Pro EV Zero VOC Interior Latex Eggshell 12-110XI series.
 - 3) S-W; ProMar 200 HP Zero VOC Interior Eg-Shel.
- or
- d. And Two Coats, Semi-Gloss Finish: At toilet rooms, other wet areas, and elsewhere as indicated. MPI 54 X-Green.
 - 1) Moore; Ultra Spec 500 Interior Latex Semi-Gloss T546.
 - 2) PPG; Speedhide Pro EV Zero VOC Interior Latex Semi-Gloss 12-110XI series.
 - 3) S-W; ProMar 200 HP Zero VOC Interior Semi-Gloss.
2. Interior Architectural Woodwork, Finish Carpentry, and Wood Doors (softwoods, paint grade hardwoods, MDF, MDO, and hardwood veneers), Latex Paint Finish:
 - a. One Coat, Primer:
 - 1) Moore; Ultra Spec 500 Interior Latex Primer N534.
 - 2) PPG; Pure Performance Interior Latex Primer 9-900.
 - 3) PPG; Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer 17-921 series.
 - 4) PPG; Speedhide Zero VOC Interior Primer 6-4900XI series.
 - 5) PPG; Speedhide Pro EV Zero VOC Interior Primer 12-900XI series. 6) S-W; ProMar 200 HP Zero VOC Interior Primer.
 - b. And Two Coats, Semi-Gloss:
 - 1) Moore; Ultra Spec 500 Interior Latex Semi-Gloss T546.
 - 2) PPG; Speedhide Zero VOC Interior Latex Semi-Gloss 6-4510XI. 3) S-W; ProMar 200 HP Zero VOC Interior Semi-Gloss.
 3. Interior Architectural Woodwork, Finish Carpentry and Millwork (hardwoods and hardwood veneers, except paint grade and factory-finished items), Transparent Polyurethane Finish:
 - a. Sand: 120 grit sandpaper.
 - b. Sand: 220 grit sandpaper.
 - c. One Coat, Stain: Not Used.
 - d. And Three Coats, Satin Finish:
 - 1) American Formulating & Manufacturing; Safecoat Polyureseal BP.
 - 2) Imperial Paints; ECOS Clear Varnish.
 - 3) Moore; Benwood Stays Clear Acrylic Polyurethane Low Lustre W423.
 - 4) PPG; DEFT water-based polyurethane 158.
 - 5) Vermont Natural Coatings; PolyWhey Natural Furniture Finish.
 - e. Sand Between Urethane Coats: 220 grit sandpaper.
 4. Interior Concrete Masonry Unit (CMU), Latex Paint Finish:

- a. One Coat, Block Filler:
 - 1) Moore; Ultra Spec Hi-Build Masonry Block Filler 571.
 - 2) PPG; Perma-Crete 4-603. Less than 100 g/L.
 - 3) PPG; Speedhide Interior Masonry Hi Fill Latex Block Filler 6-15XI. 4) S-W; PrepRite Block Filler B25W25.

 - b. And Two Coats, Eggshell Finish: At walls and elsewhere as indicated.
 - 1) Moore; Ultra Spec 500 Interior Latex Eggshell T538.
 - 2) PPG; Speedhide Zero VOC Interior Latex Eggshell 6-4310XI series. 3) S-W; ProMar 200 HP Zero VOC Interior Eg-Shel.
5. Interior Metals (Not specified to receive other coating systems/not shop finished), Acrylic Paint Finish:
- a. One Coat: Approved primer, in shop under other Sections (where specified). If not shop primed, provide primer recommended by finish coating manufacturer.
 - 1) Moore; Ultra Spec HP Acrylic Metal Primer HP04.

 - b. And Two Coats:
 - 1) Moore; Ultra Spec 500 Interior Latex Semi-Gloss T546.
 - 2) PPG; Speedhide Zero VOC Interior Latex Semi-Gloss 6-4510XI. 3) S-W; ProMar 200 HP Zero VOC Interior Semi-Gloss.

END OF SECTION

SECTION 111136

VEHICLE CHARGING STATIONS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Electric vehicle charging stations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Leviton Manufacturing Co.; evr-green.
 2. Schneider Electric; EVlink.
 3. SemaConnect, Inc.

2.2 ELECTRIC VEHICLE CHARGING SYSTEMS

- A. Electric Vehicle Charging System Components:
1. Electric vehicle charging station units.
 - a. Mounting Type: Bollard-, pedestal-, or wall-mounted, as indicated on Drawings.
 2. Access panel, for installation and maintenance.
 3. LED lights, for indication of electric vehicle charging station status.
 4. LCD messaging screen, to communicate instructions to electric vehicle drivers.
 5. Cable management, manufacturer's standard type.
 6. Smart card authentication system.
 7. Plug, manufacturer's standard type.
 8. Electricity Metering, for energy monitoring. END OF SECTION

MATERIAL TYPE	TAG	ROOM / DESCRIPTION	BASE DESIGN	
			MFR / MATERIAL	FINISH / COLOR
FLOORING				
	LVT-1	Kitchen	Shaw CorTec Stratum Linear 055UV; floating/direct glue	TBD - To be selected from full range
	LVT-1	Living Room	Shaw CorTec Stratum Linear 055UV; floating/direct glue	TBD - To be selected from full range
	CPT-1	Bedroom 1	Dreamweaver Montauk 2560	TBD - To be selected from full range
	CPT-2	Bedroom 2	Dreamweaver Montauk 2560	TBD - To be selected from full range
	PORC-1	Bathroom Floor Tile	Novabell Aspen Porcelain 12"x24"	(5) Finish Options
	GT-1	Bathroom Floor Tile Grout		TBD - To be selected from full range
WALL BASE				
	RB-1	Tarlett/Johnsonite Millwork Wall Finishing System Wall Base	Rubber; 4-1/2" High; Pattern TBD	TBD - To be selected from full range
SHOWER AND BATH ENCLOSURES				
	ENCL-1	Shower Enclosure with Shower Floor Pan	Fiberglass	TBD - To be selected from full range
	ENCL-2	Tub Enclosure - Walls	Fiberglass	TBD - To be selected from full range
PLUMBING				
	PL-1	Kitchen Sink	Pacific Enterprises	SP2116
	PL-2	Kitchen Faucet	Moen Adler	(4) Finish Options
	PL-3	Kitchen Garbage Disposal		
	PL-4	Instant Hot Water		
	PL-5	Bathroom Shower Trim Kit	Kohler Simplice - TS27392-4G-CP	(3) Finish Options
	PL-6	Bathroom Sink	Pacific Enterprises 1813	
	PL-7	Bathroom Faucet	Kohler Venza - 28125-4N-CP	(3) Finish Options

MATERIAL TYPE	TAG	ROOM / DESCRIPTION	BASE DESIGN	
			MFR / MATERIAL	FINISH / COLOR
BATHROOM ACCESSORIES				
	AC-1	Bathroom Towel Ring	Delta Ashlyn - 759460	(5) Finish Options
	AC-2	Bathroom Towel Bar	Delta Ashlyn - 759240	(5) Finish Options
	AC-3	Bathroom Robe Hook	Delta Ashlyn - 75935	(5) Finish Options
	AC-4	Bathroom Toilet Paper Holder	Delta Trinsic - 75950	(5) Finish Options
	AC-5	Grab Bar	Delta - 41742	(5) Finish Options
	AC-6	Shower Door	Kohler Composed	
	AC-7	Medicine Cabinets	Affina	
CLOSET SYSTEM / SHELVING				
	CL	General Closets and Laundry Storage	Coated Wire Shelf and Hanging Pole	
DOOR HARDWARE				
	HDWRE	Bedrooms and Bathrooms	Schlage Seville - J Series Privacy	Satin Nickel
CABINET HARDWARE				
	PU-1	Kitchen Cabinet Pull	Miseno Guynn - 3-inch	Satin Nickel
	PU-2	Bathroom Cabinet Pull	Miseno Guynn - 3-inch	Satin Nickel
COUNTER TOPS				
	CT-1	Kitchen Countertop	Corian Acrylic-Grade 1	
	CT-2	Bathroom Countertop	Corian Acrylic-Grade 1	

MATERIAL TYPE	TAG	ROOM / DESCRIPTION	BASE DESIGN	
			MFR / MATERIAL	FINISH / COLOR
APPLIANCES				
	AP-1	Washer	GE Energy Star 24" - GFW148SSMWW	
	AP-2	Dryer	GE Energy Star 24" - GFD14ESSNWW	
	AP-3	Refrigerator	Whirlpool - WRF560SEHZ	
	AP-4	Oven	Frigidaire - GCFE3060BF	
	AP-5	Microwave	Frigidaire - FMOS1846BS	
	AP-6	Dishwasher	Whirlpool - WDT750SAKZ	
LIGHTING				
	LT-1	Pendant Lights for Kitchen Bar	Mitzi Margot - H270701L-AGB	
	LT-2	Bathroom Lighting at Mirror	Kichler O Hara - 45502CH	Chrome
	LT-3	Recessed Lights in All Rooms	(2) in each bathroom; (4) in each bedroom; (4) in living/kitchen	
WINDOW TREATMENTS				
		BY OWNER		
PAINT				
	PT-1	Kitchen	Benjamin Moore - Color TBD	Finish: Eggshell
	PT-2	Living Room	Benjamin Moore - Color TBD	Finish: Eggshell
	PT-3	Bedroom 1	Benjamin Moore - Color TBD	Finish: Eggshell
	PT-4	Bedroom 2	Benjamin Moore - Color TBD	Finish: Eggshell
	PT-5	Bathroom	Benjamin Moore - Color TBD	Finish: Eggshell
	PT-6	Kitchen Cabinets	Benjamin Moore - Color TBD	Finish: Semigloss
	PT-7	Trim	Benjamin Moore - Color TBD	Finish: Semigloss
	PT-8	Ceiling	Benjamin Moore - Color TBD	Finish: Flat

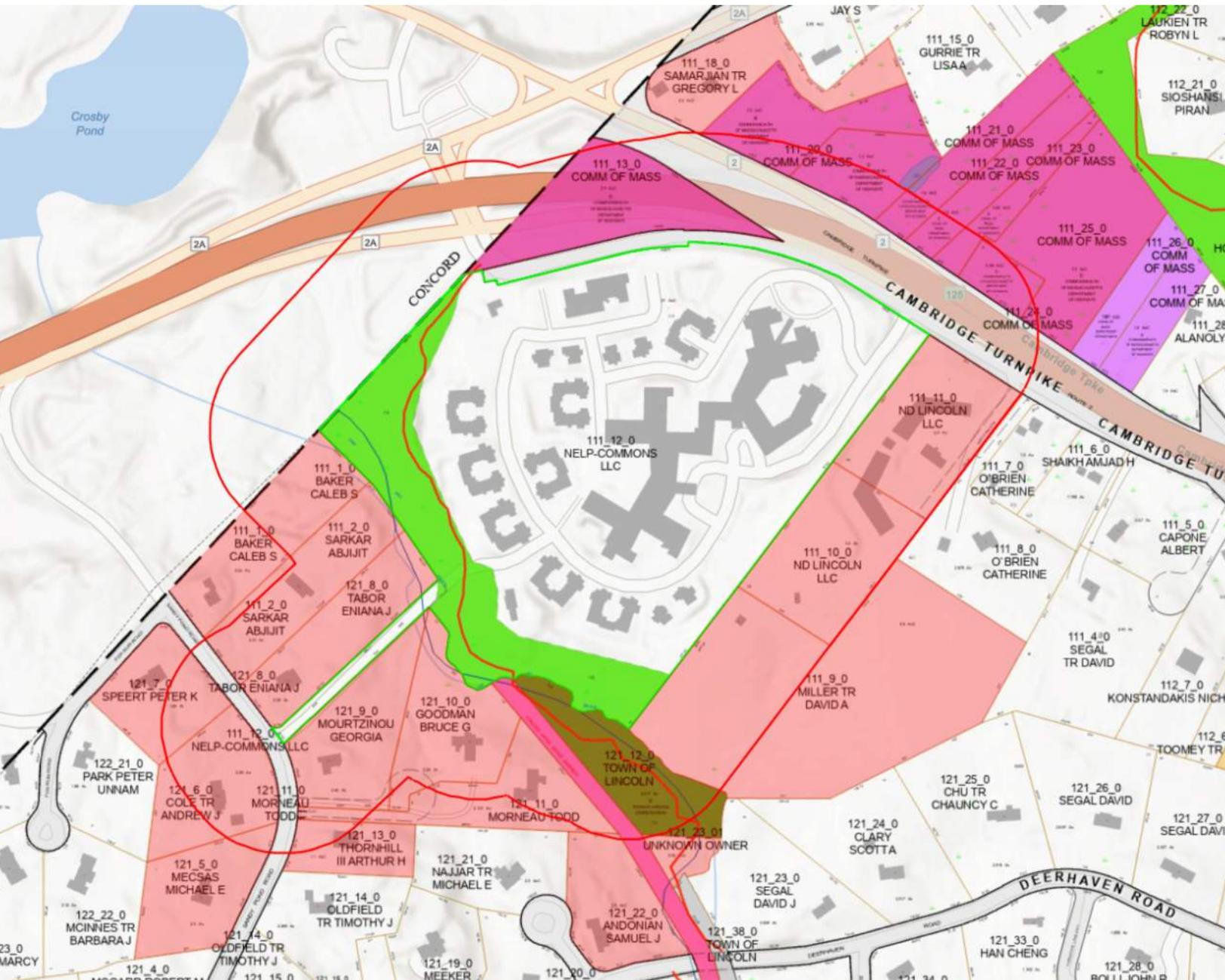
APPENDIX SUBTITLE

Appendix D

Appendix D

ABUTTERS LIST







300 feet Abutters List Report

Lincoln, MA
March 27, 2024

Subject Property:

Parcel Number: 111_12_0
CAMA Number: 111_12_0
Property Address: 1 HARVEST CR

Mailing Address: NERP-COMMONS LLC C/O ONE POINT PARTNERS LLC
35 MAIN STREET SUITE 211C
TOPSFIELD, MA 01983

Abutters:

Parcel Number: 111_1_0
CAMA Number: 111_1_0
Property Address: 225 SANDY POND RD

Mailing Address: BAKER CALEB S BAKER SUZANNE M
225 SANDY POND RD
LINCOLN, MA 01773-1802

Parcel Number: 111_10_0
CAMA Number: 111_10_0
Property Address: 0 MARY'S WAY

Mailing Address: ND LINCOLN LLC
2310 WASHINGTON STREET
NEWTON LOWER FALLS, MA 02462

Parcel Number: 111_11_0
CAMA Number: 111_11_0
Property Address: 1 MARY'S WAY

Mailing Address: ND LINCOLN LLC
2310 WASHINGTON STREET
NEWTON LOWER FALLS, MA 02462

Parcel Number: 111_13_0
CAMA Number: 111_13_0
Property Address: 0 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_18_0
CAMA Number: 111_18_0
Property Address: 50 BYPASS RD

Mailing Address: SAMARJIAN TR GREGORY L
SAMARJIAN TR ANN MARIE
50 BYPASS RD
LINCOLN, MA 01773-1202

Parcel Number: 111_19_0
CAMA Number: 111_19_0
Property Address: 4 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_2_0
CAMA Number: 111_2_0
Property Address: 223 SANDY POND RD

Mailing Address: SARKAR ABJIJIT BHATTACHARYA
DEBARATI
223 SANDY POND RD
LINCOLN, MA 01773-1802

Parcel Number: 111_20_0
CAMA Number: 111_20_0
Property Address: 8 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_21_0
CAMA Number: 111_21_0
Property Address: 16 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_22_0
CAMA Number: 111_22_0
Property Address: 18 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116



www.cai-tech.com

This is not a certified abutters list. For a certified abutters list, please contact the Lincoln Assessors Department at 781-259-2611 or blakeleyd@lincolntown.org.

3/27/2024

Page 1 of 3



300 feet Abutters List Report

Lincoln, MA
March 27, 2024

Parcel Number: 111_23_0
CAMA Number: 111_23_0
Property Address: 20 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_24_0
CAMA Number: 111_24_0
Property Address: 24 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_25_0
CAMA Number: 111_25_0
Property Address: 0 CAMBRIDGE TP

Mailing Address: COMM OF MASS DEPT OF HIGHWAYS
10 PARK PLAZA RM 6160
BOSTON, MA 02116

Parcel Number: 111_9_0
CAMA Number: 111_9_0
Property Address: 9 MARY'S WAY

Mailing Address: MILLER TR DAVID A YAGJIAN TR JOHN
11 MARY'S WAY
LINCOLN, MA 01773

Parcel Number: 121_10_0
CAMA Number: 121_10_0
Property Address: 215 SANDY POND RD

Mailing Address: GOODMAN BRUCE G SHAW LINDA S
215 SANDY POND RD
LINCOLN, MA 01773-1802

Parcel Number: 121_11_0
CAMA Number: 121_11_0
Property Address: 213 SANDY POND RD

Mailing Address: MORNEAU TODD MORNEAU SARA
213 SANDY POND RD
LINCOLN, MA 01773

Parcel Number: 121_12_0
CAMA Number: 121_12_0
Property Address: SANDY POND RD

Mailing Address: TOWN OF LINCOLN CONSERVATION
16 LINCOLN RD
LINCOLN, MA 01773

Parcel Number: 121_13_0
CAMA Number: 121_13_0
Property Address: 211 SANDY POND RD

Mailing Address: THORNHILL III ARTHUR H LOWER LUCY
B
211 SANDY POND ROAD
LINCOLN, MA 01773

Parcel Number: 121_22_0
CAMA Number: 121_22_0
Property Address: 34 GARLAND RD

Mailing Address: ANDONIAN SAMUEL J ANDONIAN
JENNIFER L
34 GARLAND RD
LINCOLN, MA 01773-1800

Parcel Number: 121_23_01
CAMA Number: 121_23_01
Property Address: 0 DEERHAVEN RD

Mailing Address: UNKNOWN OWNER C/O TOWN OF
LINCOLN
16 LINCOLN RD
Lincoln, MA 01773

Parcel Number: 121_39_0
CAMA Number: 121_39_0
Property Address: DEERHAVEN RD

Mailing Address: TOWN OF CONCORD
PO BOX 535
CONCORD, MA 01742

Parcel Number: 121_5_0
CAMA Number: 121_5_0
Property Address: 220 SANDY POND RD

Mailing Address: MECSAS MICHAEL E MECSAS MARY J
220 SANDY POND RD
LINCOLN, MA 01773-1801



www.cai-tech.com

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300 feet Abutters List Report

Lincoln, MA
March 27, 2024

Parcel Number: 121_6_0
CAMA Number: 121_6_0
Property Address: 228 SANDY POND RD

Mailing Address: COLE TR ANDREW J COLE TR HOLLY
BR
228 SANDY POND RD
LINCOLN, MA 01773-1801

Parcel Number: 121_7_0
CAMA Number: 121_7_0
Property Address: 4 FOX RUN RD

Mailing Address: SPEERT PETER K BERMAN FAYE
4 FOX RUN RD
LINCOLN, MA 01773-2404

Parcel Number: 121_8_0
CAMA Number: 121_8_0
Property Address: 219 SANDY POND RD

Mailing Address: TABOR ENIANA J TABOR JACOB N
219 SANDY POND
LINCOLN, MA 01773

Parcel Number: 121_9_0
CAMA Number: 121_9_0
Property Address: 217 SANDY POND RD

Mailing Address: MOURTZINO GEORGIA PASCHALIDIS
IOANNIS
217 SANDY POND RD
LINCOLN, MA 01773-1802

*For B &
For the Board of Assessors*



www.cai-tech.com

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Town of Concord
Board of Assessors
24 Court Lane
Concord, Massachusetts 01742
Tel: (978) 318-3070
www.concordma.gov

ABUTTERS LIST

PROPERTY: 4X Concord Turnpike
Concord, MA

PARCEL: 4059

As per *The Zoning Act 4-92*, Massachusetts General Laws Chapter 40A whereas the “Parties in interest” included shall be:

the petitioner, abutters, owners of land directly opposite any public or private street or way, and abutters to the abutters within three hundred feet.

The Board of Assessors hereby certifies that the attached list contains the record owners as of January 1, 2023 and recorded on the current tax rolls. In addition, the Board certifies that the list includes owners, as per recorded deeds as received up to February 29, 2024.

Carolyn H. Dee
Office Administrator

March 28, 2024

Parcel#	Owner	Mailing Address	City	State	Zip	Property Location
4057	COMMONWEALTH OF MASSACHUSETTS	100 CAMBRIDGE ST	BOSTON	MA	02202	10A CONCORD TPKE
4058	MASSACHUSETTS DEPT OF HIGHWAYS	10 PARK PLAZA - RM 6160	BOSTON	MA	02116	61 CONCORD TPKE
4059	MASSACHUSETTS DEPT OF HIGHWAYS	10 PARK PLAZA RM 6160	BOSTON	MA	02116	4X CONCORD TPKE
4060	MASSACHUSETTS DEPT OF HIGHWAYS	10 PARK PLAZA - RM 6160	BOSTON	MA	02116	1A CONCORD TPKE



Town of Concord
Board of Assessors
24 Court Lane
Concord, Massachusetts 01742
Tel: (978) 318-3070
www.concordma.gov

ABUTTERS LIST

PROPERTY: 10A Concord Turnpike
Concord, MA

PARCEL: 4057

As per *The Zoning Act 4-92*, Massachusetts General Laws Chapter 40A whereas the “Parties in interest” included shall be:

the petitioner, abutters, owners of land directly opposite any public or private street or way, and abutters to the abutters within three hundred feet.

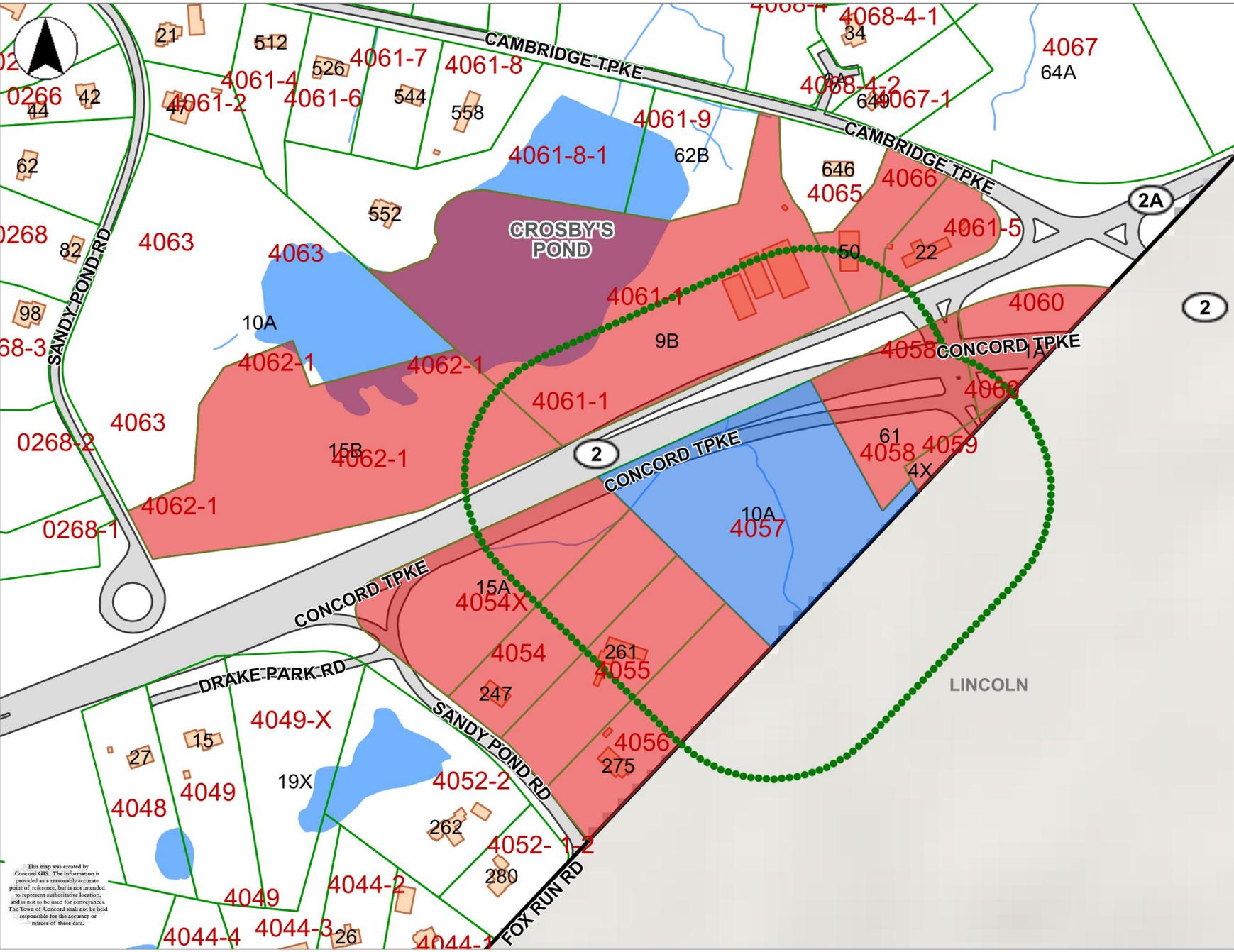
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Carolyn H. Dee
Office Administrator

March 28, 2024



- Town Boundary - State Survey
- Address Numbers
- Tax Map Parcel ID Labels
- Buildings (ft)
- Parcels
- MA Highways
 - Interstate
 - US Highway
 - Numbered Routes
- MBTA Commuter Rail Station
- Railroad
- Streams
- Streets Area
- Rivers & Ponds



This map was created by Concord GIS. The information is provided as a reasonably accurate point of reference, but is not intended to represent authoritative location, and is not to be used for convenience. The Town of Concord shall not be held responsible for the accuracy or misuse of these data.



Printed on 03/28/2024 at 09:34 AM

10A Concord Turnpike

Parcel#	Owner	Co-Owner	Mailing Address	abutters_address2	City	State	Zip	Property Location
2194-LL	BOYNTON JOHN W & ALBERT E WINEMILLER		PO BOX 1147		CONCORD	MA	01742	84-LL COMMONWEALTH AVE
4061-1	COMMONWEALTH OF MASSACHUSETTS		100 CAMBRIDGE ST		BOSTON	MA	02202	9B CONCORD TPKE
4054	CHUNG KYUNG MIN	CHUNG SUNHEE	247 SANDY POND RD		LINCOLN	MA	01773	247 SANDY POND RD
4054-X	COMMONWEALTH OF MASSACHUSETTS		100 CAMBRIDGE ST		BOSTON	MA	02202	15A CONCORD TPKE
4055	DEMBA STEPHEN R		261 SANDY POND RD		LINCOLN	MA	01773	261 SANDY POND RD
4056	MCGOWAN ADAM	MCGOWAN JENNIFER A	275 SANDY POND RD		LINCOLN	MA	01773	275 SANDY POND RD
4057	COMMONWEALTH OF MASSACHUSETTS		100 CAMBRIDGE ST		BOSTON	MA	02202	10A CONCORD TPKE
4058	MASSACHUSETTS DEPT OF HIGHWAYS		10 PARK PLAZA - RM 6160		BOSTON	MA	02116	61 CONCORD TPKE
4059	MASSACHUSETTS DEPT OF HIGHWAYS		10 PARK PLAZA RM 6160		BOSTON	MA	02116	4X CONCORD TPKE
4060	MASSACHUSETTS DEPT OF HIGHWAYS		10 PARK PLAZA - RM 6160		BOSTON	MA	02116	1A CONCORD TPKE
4062-1	TOWN OF CONCORD		141 KEYES RD		CONCORD	MA	01742	15B CONCORD TPKE
4061-5	GLOBAL MONTELLO GROUP CORP		PO BOX 9161	800 SOUTH STREET STE 500	WALTHAM	MA	02454	22 CONCORD TPKE
4066	FIFTY CONCORD TURNPIKE LLC		50 CONCORD TPKE		CONCORD	MA	01742	50 CONCORD TPKE



Town of Concord
Board of Assessors
24 Court Lane
Concord, Massachusetts 01742
Tel: (978) 318-3070
www.concordma.gov

ABUTTERS LIST

PROPERTY: 275 Sandy Pond Rd.
Concord, MA

PARCEL: 4056

As per *The Zoning Act 4-92*, Massachusetts General Laws Chapter 40A whereas the “Parties in interest” included shall be:

the petitioner, abutters, owners of land directly opposite any public or private street or way, and abutters to the abutters within three hundred feet.

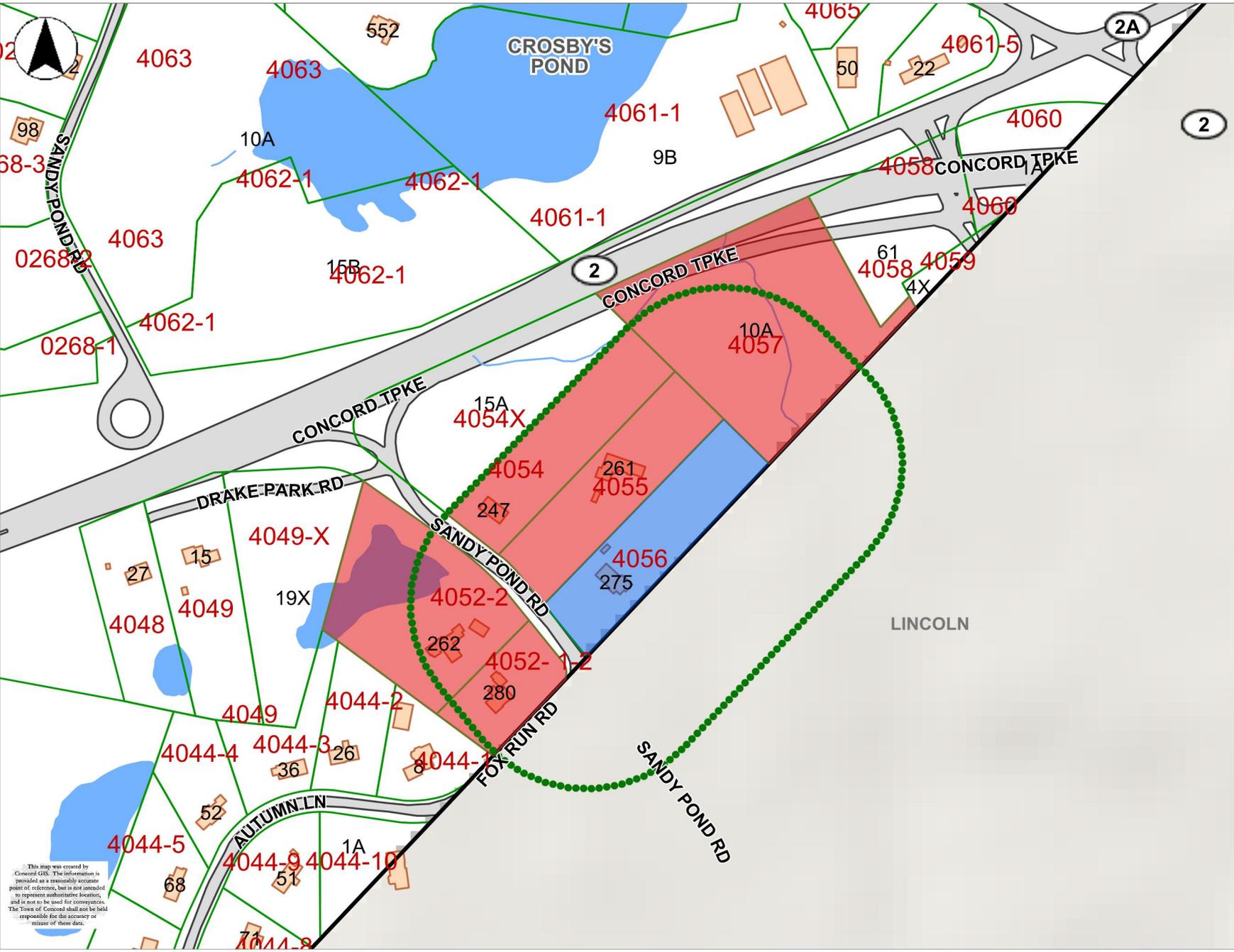
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Carolyn H. Dee
Office Administrator

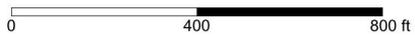
March 28, 2024



- Town Boundary - State Survey
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- Tax Map Parcel ID Labels
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- Streams
- Streets Area
- Rivers & Ponds



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Printed on 03/28/2024 at 09:14 AM

275 Sandy Pond Rd.

Parcel#	Owner	Co-Owner	Mailing Address	City	State	Zip	Property Location
4052-2	ANTHONY TR ELAINE M	ANTHONY JR TR ARTHUR J	262 SANDY POND RD	CONCORD	MA	01742	262 SANDY POND RD
4052-1-2	PRUSSING KAREN S		1 FOX RUN RD	LINCOLN	MA	01773	280 SANDY POND RD
4054	CHUNG KYUNG MIN	CHUNG SUNHEE	247 SANDY POND RD	LINCOLN	MA	01773	247 SANDY POND RD
4055	DEMBA STEPHEN R		261 SANDY POND RD	LINCOLN	MA	01773	261 SANDY POND RD
4056	MCGOWAN ADAM	MCGOWAN JENNIFER A	275 SANDY POND RD	LINCOLN	MA	01773	275 SANDY POND RD
4057	COMMONWEALTH OF MASSACHUSETTS		100 CAMBRIDGE ST	BOSTON	MA	02202	10A CONCORD TPKE

Appendix E

MUNICIPAL & FISCAL IMPACT





Fiscal Impact Analysis
40 Unit Independent Living Addition to The Commons in Lincoln; Lincoln, MA

October 30, 2023

1.0 Preface

This report is designed to determine the likely impact that the proposed 28-unit addition to the existing senior living facility at The Commons in Lincoln will have on local finances.

2.0 Summary of Methodology

The methodology adopted for this analysis focused on the increased property taxes that will be generated by the additional units, and the likely burden on local services that the additional units may generate.

It is worth noting that given the age restricted nature of the existing facility, which will also govern the proposed additional units, there will be no school age children generated by the proposed program and no burden placed on the local school district.

As further detailed in the body of the report, we do anticipate there to be modest additional demand for certain public services generated by the proposed program, and in proportion to the number of units being proposed.

2.1 Revenue Projections

The cost of increased use of municipal services, proportionate to the new units being proposed, is only one part of the equation. Additionally, given that this cost is almost entirely concentrated in EMS services, for which private insurance companies provide

reimbursements back to the Town, we feel it is rather inconsequential. Outside of EMS, we do not anticipate any measurable cost impact to police or fire services resulting from the proposed 28-unit program.

With respect to revenue generated by the one-time stimulus of construction as well as the stabilized operation of the proposed units, we have looked at permits and fees for planning and construction as well as the annual property taxes that will be generated by the new units.

2.2 Fiscal Profile

As previously noted, this report attempts to compare the anticipated cost to the town of the increased use of municipal services generated by the proposed 28 units with the increased revenue to the town that those same units will generate; in other words, to estimate the annual fiscal profile of the proposed program. The aim is to provide the town with a clear understanding of the likely fiscal impact of the proposed program and the relative merits of its contribution to the local economy.

The true economic and fiscal impact is likely to vary from year to year due to macroeconomic conditions and natural variability of some of the inputs forecasted (e.g. exact number of EMS visits, spending patterns of residents in local economy, etc.).

3.0 Summary of Findings

- **The Proposal does not generate any meaningful additional burden to municipal services. As such, we estimate a net positive fiscal impact as anticipated revenue will outpace costs to the Town.**

- **The Proposal’s additional annual estimated property tax yield at stabilization will be approximately \$143,892 (current dollars).**
- **The Proposal will generate approximately \$515,860 in one-time building permit and construction related fees paid to the Town.**

4.0 General Service Costs

As previously stated, the only municipal service that will be measurably impacted by the addition of the proposed 28 units is Town ambulance service. Discussions with Chief Young of the Town of Lincoln Fire Department indicate that calls to the property over the past two calendar years indicate a yearly average of 400 incident calls per year and the increase in Fire/EMS calls would be proportionate to the increase in units (i.e. 13% (52) more calls). When the ambulance is dispatched for servicing these additional calls at the property, it is unavailable for emergencies elsewhere, thus requiring the Town to seek temporary coverage, “mutual aid”, from neighboring communities. There is no measurable financial impact from requesting such “mutual aid” but it may impact the community and government relations between Lincoln and those that it may more regularly rely on.

Discussions with Chief Young confirm that insurance reimbursements pay the Town of Lincoln for the cost-of-service calls to The Commons and help contribute to an “Ambulance Revolving Account” for the periodic replacement of the ambulance and related equipment.

5.0 Municipal Revenue

Recurring revenue to the town in the form of property taxes are expected to be \$5,139 per unit per annum. This estimate is based on the property’s 2022 tax bill of \$1,331,101 against the current unit count of 259.



Applying this number to the proposed 28-unit program will result in \$143,892 (current dollars) in additional property taxes paid to the town annually.

While less impactful than annual property taxes, we anticipate Motor Vehicle Excise Taxes will also be paid by residents of the 28 Independent Living units being proposed. Management estimates that 85% of their current IL residents have cars, suggesting that 34 of the new residents will also have vehicles that will generate excise taxes for the Town. Assuming an average car value of \$35,000 and applying the Massachusetts excise tax of \$25 per \$1,000 of vehicle value, generates \$21,000 ($\$35,000/\$1,000 \times \25×24) in annual excises taxes being generated by the proposed 28-unt program.

6.0 Fiscal Profile

With an annual recurring revenue stream of \$143,892 at stabilization and no additional measurable annual service costs that aren't being reimbursed, the Proposal is estimated to produce a net positive fiscal benefit to the Town. The \$143,892,575 in annual revenues will contribute to helping the Town meet municipal costs and obligations. As previously mentioned, the additional insurance reimbursements received through serving the additional 28 units with EMS will also help fund the Ambulance Revolving Account that helps the Town ensure it has modern equipment and can best meet the needs of all its residents.

7.0 One-Time Fees

The proposed 28-unit program is estimated to encompass 58,609 square feet of building space. The one-time Planning Board fee of \$100 for every 1,000 of square feet will result in \$5,860. The Town also imposes a one-time Building Permit fee of \$12 per every \$1,000



of construction cost and 6% of the plumbing and electrical scope for related permits. The current estimated construction cost for the 28-unit development program is \$27,542,100 of which \$3,000,000 is related to plumbing and electrical work. This will result in \$330,000 in one time Building Permit fees ($\$27.5\text{m}/\$1,000 \times \$12$) and \$180,000 in one-time plumbing and electric permit fees ($\$3\text{m} \times 6\%$) for a total of \$510,000 in fees paid to the Town resulting from the proposed program.

8.0 Summary of Annual and One-Time Fees

Annual Recurring Fees

Property Taxes	\$143,892
Excise Taxes	<u>\$21,000</u>
TOTAL	<u>\$164,892</u>

One -Time Fees

Planning Board Fee	\$5,860
Building Permit Fee	\$330,000
Plumbing / Electrical Fee	<u>\$180,000</u>
TOTAL	<u>\$515,860</u>

8.0 Additional Considerations

While outside the scope of our fiscal analysis, it is worth mentioning the likely economic impact that the residents of the proposed 28-unit program will have on the Town through spending on local food, beverage, retail and entertainment. Additionally, it is estimated that the additional program will generate an additional 7 full-time employee, who's purchasing on good and services in Town will also help contribute to the local economy.

APPENDIX SUBTITLE

Appendix F

Appendix F

SLOPE ANALYSIS



Appendix G

DRAFT GROUND LEASE



REQUESTED BY AND
WHEN RECORDED RETURN TO:

SQUIRE PATTON BOGGS (US) LLP
2550 M STREET, NW
WASHINGTON, DC 20037
ATTENTION: JOHN THOMAS

**FIRST AMENDMENT TO REGULATORY AGREEMENT AND
DECLARATION OF RESTRICTIVE COVENANTS FOR RENTAL PROJECT**

This FIRST AMENDMENT TO REGULATORY AGREEMENT AND DECLARATION OF RESTRICTIVE COVENANTS FOR RENTAL PROJECT (as supplemented and amended from time to time, the “Amendment”), is made and entered into as of [_____], 2024, by and among the Commonwealth of Massachusetts, acting by and through the Department of Housing and Community Development (“DHCD”) pursuant to Chapter 204 of the Acts of 1996, the City/Town of Lincoln, Massachusetts (the “Municipality”), and NELP – Commons Flint House, LLC, a Delaware limited liability company (together with its successors and assigns, the “Owner”).

W I T N E S S E T H:

WHEREAS, The Groves Apartments – Deaconess, Inc. (the “Original Sponsor”), DCHD and the Municipality previously entered into a Regulatory Agreement and Declaration of Restrictive Covenants for Rental Project (the “Original Regulatory Agreement”) dated as of October 30, 2007, and recorded in as Instrument No. 200700200155 in Book 50307, Page 476201109130337 in the Middlesex South District Registry of Deeds. Capitalized terms not otherwise defined herein shall have the meaning provided in the Original Regulatory Agreement;

WHEREAS, the Owner is the successor in interest to the Original Sponsor as ground lessee under the Ground Lease for the Project Site;

WHEREAS, the Owner desires (i) amend the Ground Lease to expand the Project Site by approximately 65,416 square feet, and (ii) construct an additional eleven (11) Units on the Project Site, three (3) of which will be Low and Moderate Income Units (the “Expansion Project”);

WHEREAS, the Chief Elected Official of the Municipality (as that term is defined in the Regulations) and the Project Sponsor have made application to DHCD to certify that the Units in the Expansion Project are Local Initiative Units (as that term is defined in the Regulations) within the LIP Program; and

WHEREAS, in partial consideration of the execution of this Amendment, DHCD has issued or will issue its final approval of the Expansion Project within the LIP Program and has given and will give technical and other assistance to the Expansion Project;

NOW, THEREFORE, in consideration of this Amendment and the mutual covenants and undertakings set forth herein, and other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the Municipality, DCHD and the Owner hereby agree as follows:

Section 1. The Owner agrees to construct the Expansion Project in accordance with plans and specifications approved by the Municipality and DHCD (the "Plans and Specifications"). In addition, all Low and Moderate Income Units to be constructed as part of the Expansion Project must be indistinguishable from all other Units in the Commons Apartments from the exterior unless the Expansion Project has an approved "Alternative Development Plan" as set forth in the LIP Guidelines for Communities ("Guidelines"), and must contain complete living facilities including but not limited to a stove, kitchen cabinets, plumbing fixtures, and washer/dryer hookup, all as more fully shown in the Plans and Specifications.

Two (2) of the Low and Moderate Income Units shall be one bedroom units; and one (1) of the Low and Moderate Income Units shall be two (2) bedroom units.

All Low and Moderate Income Units to be occupied by families must contain two or more bedrooms. Low and Moderate Income Units must have the following minimum areas:

one bedroom units	700 square feet;
two bedroom units	900 square feet.

During the term of this Agreement, the Project Sponsor covenants, agrees, and warrants that the Project and each Low and Moderate Income Unit will remain suitable for occupancy and in compliance with all federal, state, and local health, safety, building, sanitary, environmental, and other laws, codes, rules, and regulations, including without limitation laws relating to the operation of adaptable and accessible housing for the handicapped. The Project must comply with all similar local codes, ordinances, and by-laws.

Section 2. Owner shall comply with Sections 2-9 of the Regulatory Agreement with regard to the Very Low Income Units.

Section 3. Confirmation of Prior Covenants. Except as specifically modified by this Amendment, as of the date of this Amendment, the Owner hereby confirms and ratifies each of its covenants set forth in the Original Regulatory Agreement as if fully set forth herein.

Section 4. The Original Regulatory Agreement. Except as provided herein, in general, each and every term and condition contained in the Original Regulatory Agreement shall apply to this Amendment, with such omissions, variations and modifications thereof as may be appropriate to make the same conform to this Amendment.

Section 5. Multiple Counterparts. This instrument may be simultaneously executed in multiple counterparts, all of which shall constitute one and the same instrument and each of which shall be deemed to be an original.

Attachments: Exhibit A – Legal Description for Project Site (including the Expansion Project)
Exhibit B – Site Plan Showing Project Site, as amended

Executed as a sealed instrument as of the date first above written.

NELP – COMMONS FLINT HOUSE, LLC,
a Delaware limited liability company

By: _____
Name:
Title:

State/Commonwealth of _____
County of _____

On this ___ day of _____, 2024, before me, the undersigned notary public, personally appeared _____ as _____ of NELP – Commons Flint House, LLC, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntary for its stated purpose as _____ of said corporation.

[Official signature and seal of notary]

My Commission expires:

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

By: _____
Name:
Title:

State/Commonwealth of _____
County of _____

On this ___ day of _____, 2024, before me, the undersigned notary public, personally appeared _____ as _____ of the Department of Housing and Community Development, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntary for its stated purpose as _____ of said corporation.

[Official signature and seal of notary]

My Commission expires:

TOWN OF LINCOLN

By: _____
Name:
Title:

State/Commonwealth of _____
County of _____

On this ___ day of _____, 2024, before me, the undersigned notary public, personally appeared _____ as _____ of the Town of Lincoln, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntary for its stated purpose as _____ of said corporation.

[Official signature and seal of notary]

My Commission expires:

JOINDER PARTY

NELP – Commons, LLC, a Delaware limited liability company, as fee owner of Project Site, hereby joins this Amendment to evidence that it shall be bound by the terms of Section 19 of the Original Regulatory Agreement.

NELP-COMMONS, LLC,
a Delaware limited liability company

By: _____
Name:
Title:

State/Commonwealth of _____
County of _____

On this ___ day of _____, 2024, before me, the undersigned notary public, personally appeared _____ as _____ of NELP–Commons, LLC, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntary for its stated purpose as _____ of said corporation.

[Official signature and seal of notary]

My Commission expires:

EXHIBIT A
Legal Description

A ground lease area located in the Commonwealth of Massachusetts, County of Middlesex, Town of Lincoln, situated southerly of Cambridge Turnpike and is shown as Expanded Ground Lease on "Ground Lease Exhibit Plan" dated November 15, 2023, by Precision Land Surveying, Inc., more particularly bounded and described as follows:

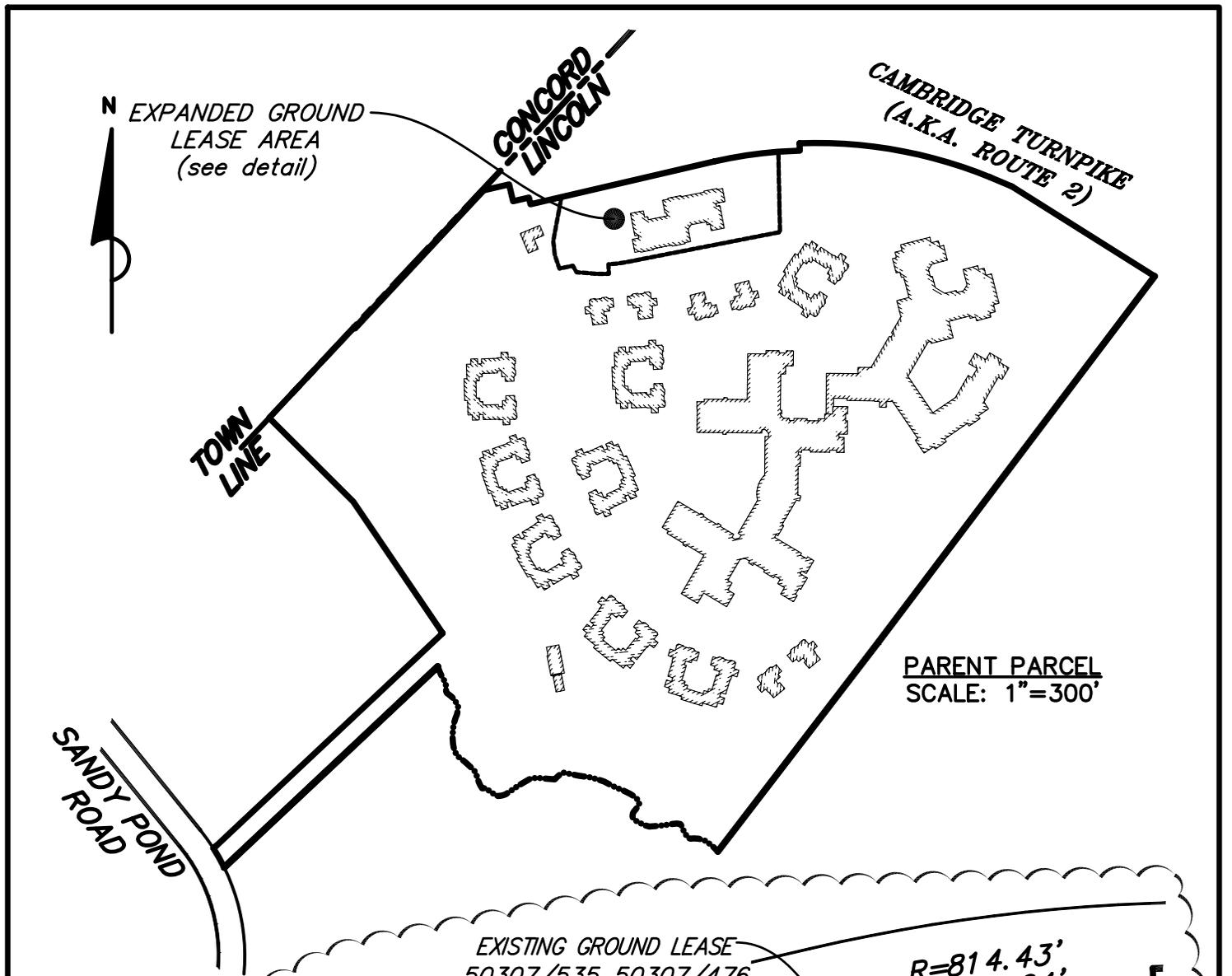
Beginning at the most northwesterly corner thereof; thence running

N 76°56'57" E	299.03' to a point of non-tangency; thence turning and running
EASTERLY	123.74' by a curve to the right having a radius of 814.43' to a point; thence turning and running
S 01°11'31" E	152.45' to a point; thence turning and running
S 79°00'00" W	298.58' to a point of curvature; thence running
WESTERLY	34.25' by a curve to the right having a radius of 234.60' to a point; thence turning and running
S 02°38'49" E	18.05' to a point; thence turning and running
S 89°00'46" W	14.53' to a point; thence turning and running
N 88°14'23" W	12.03' to a point; thence turning and running
N 85°24'27" W	34.99' to a point; thence turning and running
N 31°06'54" W	14.34' to a point; thence turning and running
S 78°07'44" W	25.94' to a point; thence turning and running
N 19°16'53" W	26.89' to a point; thence turning and running
N 06°12'57" W	26.89' to a point; thence turning and running
N 10°32'59" E	84.93' to the POINT OF BEGINNING.

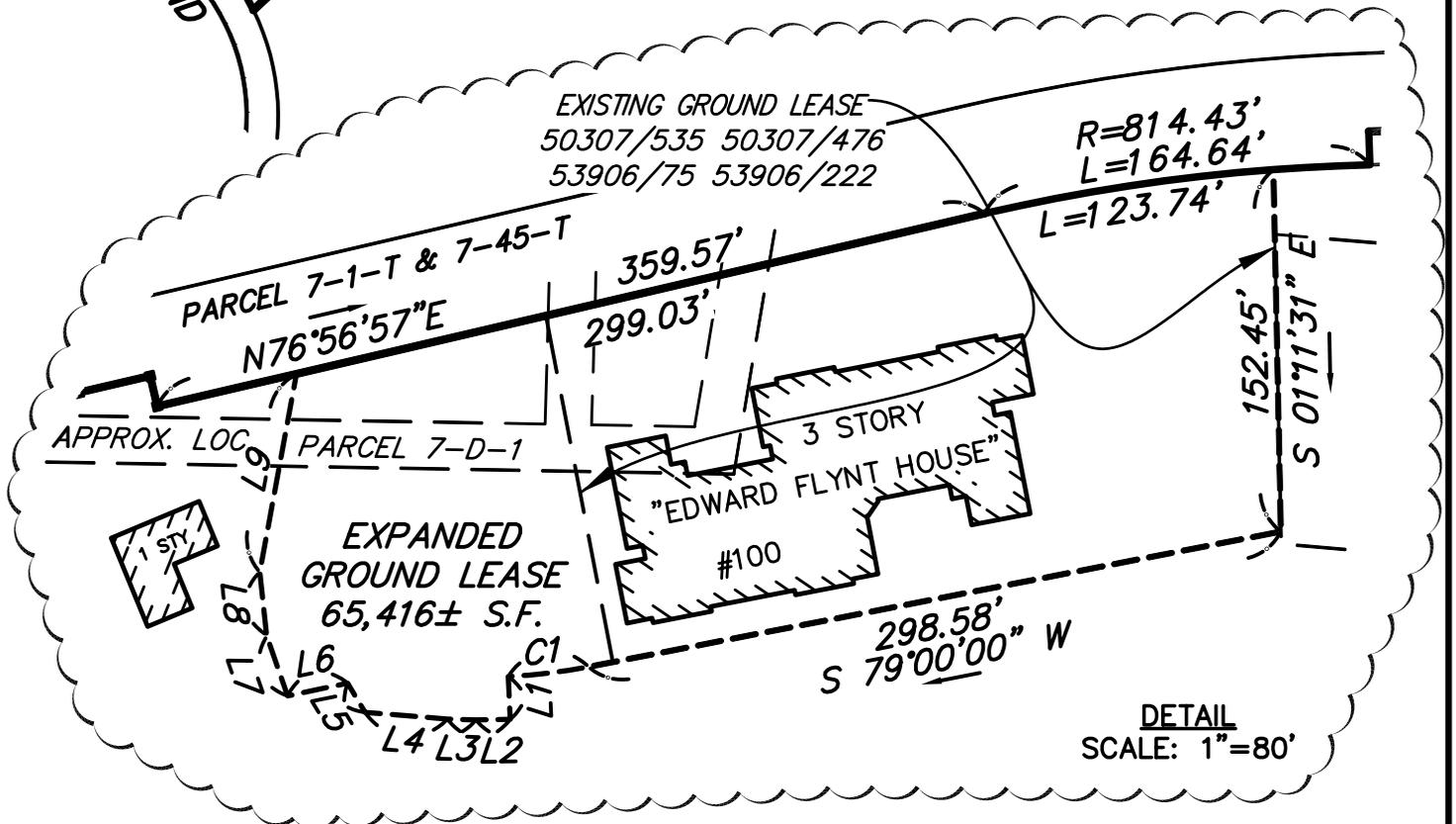
Containing 65,416 square feet more or less.

EXHIBIT B

Project Site



PARENT PARCEL
SCALE: 1"=300'



LINE TABLE		
LINE	LENGTH	BEARING
L1	18.05	S02°38'49"E
L2	14.53	S89°00'46"W
L3	12.03	S88°14'23"E
L4	34.99	N85°24'27"W
L5	14.34	N31°06'54"W
L6	25.94	S78°07'44"W
L7	26.89	N19°16'53"W
L8	26.89	N06°12'57"W
L9	84.93	N10°32'59"E

CURVE TABLE			
CURVE	LENGTH	RADIUS	Delta
C1	34.25'	234.60'	8°21'49"

LINCOLN COMMONS
GROUND LEASE EXHIBIT PLAN
IN
LINCOLN, MA
(MIDDLESEX COUNTY)

SCALE: AS SHOWN DATE: 11/15/2023

0 80 160 240 ft

Precision Land Surveying, Inc.
32 Turnpike Road
Southborough, Massachusetts 01772
TELE NO.: (508) 460-1789 FAX NO.: (508) 970-0096
372326PL1.DWG

APPENDIX SUBTITLE

Appendix H

Appendix H

GROUNDWATER DISCHARGE PERMIT





Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

July 22, 2020

Mr. David Sykes
Campus Plant Operations Director
1 Harvest Circle
Lincoln, MA 01773

RE: Individual Groundwater Discharge Permit
The Commons in Lincoln, 1861 Sudbury Road, Concord, MA 01742
MassDEP Transmittal No. X282523
Groundwater Discharge Permit No. 855-2

Dear Mr. Sykes:

In response to your application for a permit to discharge into the ground treated effluent from the wastewater treatment facility located at Commons in Lincoln, 1 Harvest Circle, Lincoln, MA 01773, and after due public notice, I hereby issue the attached final permit.

No comments objecting to the issuance or terms of the permit were received by the Department during the public comment period. Therefore, in accordance with 314 CMR 2.08, the permit becomes effective on the date of issuance.

Parties aggrieved by the issuance of this permit are hereby advised of their right to request an Adjudicatory Hearing under the provision of Chapter 30A of the Massachusetts General Laws and 314 CMR 1.00, Rules for the Conduct of Adjudicatory Proceedings. Unless the person requesting the adjudicatory hearing requests and is granted a stay of the terms and conditions of the permit, the permit shall remain fully effective.

Please contact Tenzin Lama at (978) 694-3241 or via email at Tenzin.Lama@mass.gov should you have any questions regarding issuance of this permit.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin Brander". The signature is fluid and cursive, with a large initial "K" and "B".

Kevin Brander, P.E.,
Section Chief
Wastewater Management Section
Bureau of Water Resources

KB/JN/TL

Enclosures

cc (*via email*): Dave Formato, P.E., President, Onsite Engineering, Inc.
Town of Lincoln, Board of Health
Eric Smith, Operations, WhiteWater Inc.
DEP/BWR/Wastewater Management Program/Boston
Julianne Ture/DEP/Boston



Commonwealth of Massachusetts
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Lieutenant Governor

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Secretary

Martin Suuberg
Commissioner

INDIVIDUAL GROUNDWATER DISCHARGE PERMIT

Name and Address of Applicant: **BSL/BN Groves CCRC, LLC., The Commons in Lincoln, 1 Harvest Circle, Lincoln, MA 01773**

Date of Application: **February 19, 2019**
Application/Permit No. **GWDP# 855-2/ X282523**

Date of Issuance: **July 22, 2020**
Date of Expiration: **July 22, 2025**

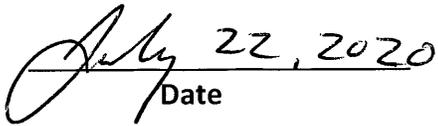
Effective Date: **July 22, 2020**

AUTHORITY FOR ISSUANCE

Pursuant to authority granted by Chapter 21, Sections 26-53 of the Massachusetts General Laws, as amended, 314 CMR 2.00, and 314 CMR 5.00, the Massachusetts Department of Environmental Protection (the Department or MassDEP) hereby issues the following permit to: **The Commons in Lincoln** (hereinafter called "the permittee") authorizing discharges to the ground from the on site wastewater treatment facility located at **1 Harvest Circle, Lincoln, MA 01773**, which is an elderly housing complex including- 137 residential units with 31 additional bedrooms, 30 assisted living bedrooms and 10 additional assisted living units, and 42 memory and nursing care units with 14 additional bedrooms, such authorization being expressly conditional on compliance by the permittee with all terms and conditions of the permit hereinafter set forth.



Kevin Brander, P.E.
Wastewater Management Section Chief



Date

I. SPECIAL CONDITIONS

A. **Effluent Limits**

- 1) The permittee is authorized to discharge into the ground from the wastewater treatment facilities for which this permit is issued a treated effluent whose characteristics shall not exceed the following values:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>
Flow	36,600 GPD
Biochemical Oxygen Demand (BOD ₅) (5 Day at 20°C)	30 mg/l
Total Suspended Solids (TSS)	30 mg/l
Nitrate Nitrogen	10 mg/l
Total Nitrogen (NO ₂ + NO ₃ + TKN)	10 mg/l
Oil & Grease	15 mg/l

- a) The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time or not more than 0.2 standard units outside the naturally occurring range.
- b) The discharge of the effluent shall not result in any demonstrable adverse effect on the groundwater or violate any water quality standards that have been promulgated.
- c) The monthly average concentration of BOD and TSS in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD and TSS in the influent into the permittee's wastewater treatment facility.
- d) When the average annual flow exceeds 80 percent of the permitted flow limitations, the permittee shall submit a report to the Department describing what steps the permittee will take in order to remain in compliance with the permit limitations and conditions, inclusive of the flow limitations established in this permit.

B. Monitoring and Reporting

- 1) The permittee shall monitor and record the quality of the **influent** and the quality and quantity of the **effluent** prior to discharge to the leaching facilities according to the following schedule and other provisions:

INFLUENT:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>	<u>Sample Type</u>
BOD ₅	Monthly	24-Hr. Composite
TSS	Monthly	24-Hr. Composite
Total Solids (TS)	Monthly	24-Hr. Composite
Ammonia Nitrogen	Monthly	24-Hr. Composite

EFFLUENT:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>	<u>Sample Type</u>
Flow	Daily	Reading Report Max-Min-Avg Grab
pH	Daily	Grab
BOD ₅	Monthly	24-Hr. Composite
TSS	Monthly	24-Hr. Composite
Nitrate Nitrogen	Monthly	24-Hr. Composite
Total Nitrogen (NO ₂ +NO ₃ +TKN)	Monthly	24-Hr. Composite
Oil & Grease	Monthly	Grab
Total Phosphorus (as P)	Quarterly	Grab
Orthophosphate	Quarterly	Grab
Volatile Organic Compounds	Annual	Grab

- a) After one full year of monitoring the Total Phosphorus and Orthophosphate results, the Department may determine, upon the request of the permittee, that the frequency of monitoring may be reduced if, in the judgment of the Department, the results of the sampling indicate that existing phosphorus levels will not adversely impact downgradient receptors. If the Department reduces the frequency of monitoring for Total Phosphorus and Orthophosphate, the Department reserves the right to resume more frequent monitoring if the Department determines that phosphorus levels are impacting downgradient receptors.

- 2) The permittee shall monitor, record and report the quality of water in the approved monitoring wells: the upgradient monitoring well, **UG-1R**, and the downgradient wells **DG-1R, DG-2, DG-3, and DG-4**, as shown on the approved plan entitled *Monitoring Well Survey Benchmark Senior Living* by Control Point Associates, Inc, dated February 4, 2020 according to the following schedule and other provisions:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>
pH	Monthly
Static Water Level	Monthly
Specific Conductance	Monthly
Nitrate Nitrogen	Quarterly
Total Nitrogen (NO ₂ +NO ₃ +TKN)	Quarterly
Total Phosphorus (as P)	Quarterly
Orthophosphate (as P)	Quarterly
Volatile Organic Compounds	Annually

- a) Static Water Level shall be expressed as an elevation and shall be referenced to the surveyed datum established for the site. It shall be calculated by subtracting the depth to the water table from the surveyed elevation of the top of the monitoring well's PVC well casing/riser.
 - b) After one full year of monitoring the Total Phosphorus and Orthophosphate results, the Department may determine, upon the request of the permittee, that the frequency of monitoring may be reduced if, in the judgment of the Department, the results of the sampling indicate that existing phosphorus levels will not adversely impact downgradient receptors. If the Department reduces the frequency of monitoring for Total Phosphorus and Orthophosphate, the Department reserves the right to resume more frequent monitoring if the Department determines that phosphorus levels are impacting downgradient receptors.
- 3) Any grab sample or composite sample required to be taken less frequently than daily shall be taken during the period of Monday through Friday inclusive. All composite samples shall be taken over the operating day.
 - 4) The permittee shall submit all monitoring reports within 30 days of the last day of the reporting month to MassDEP and to the Lincoln Board of Health, Town Hall, 2nd Floor, 16 Lincoln Road, Lincoln MA 01773. All discharge monitoring reports submitted to MassDEP must be submitted through eDEP. To register for electronic submission go to: <http://www.mass.gov/eea/agencies/massdep/service/online/edep-online-filing.html>

C. Financial Assurance Mechanisms

- 1) The permittee shall establish and maintain a financial assurance mechanism that provides for the continued availability of an immediate repair and replacement account. The immediate repair and replacement account shall contain adequate funds to correct any unanticipated problem immediately so that any disruption of operation is minimized, and a violation of the terms and conditions contained in the permit does not occur. To create an immediate repair and replacement account, the permittee shall

deposit at least 25% of the estimated construction cost of the PWTF into an interest bearing escrow account in accordance with the financial assurance mechanism and 314 CMR 5.15.

a) For purpose of the financial assurance mechanism requirement, the estimated construction cost of the wastewater treatment facility shall include the cost of constructing the wastewater treatment plant, collection system, associated mechanical equipment, but not including the land, ground and disposal area.

2) The permittee shall meet the obligation to establish the required financial assurance mechanism by using Department-approved form documents and shall submit said Department-approved form documents to the Department for its review and approval as follows:

a) A permittee that constructs the wastewater treatment facility after the issuance of the Individual permit may submit the financial assurance mechanism(s) to the Department for its review and approval no later than ninety (90) days prior to the start-up (clear water test) of the facility. Such a permittee shall not operate the facility unless and until the Department has approved the required financial assurance mechanism, the financial assurance mechanism is in full force and effect, and the permittee has made all contributions required thirty (30) days prior to the start-up (clear water test) of the facility; or,

b) A permittee with a wastewater treatment facility in existence prior to the submission of the individual permit renewal application may submit the financial assurance mechanism to the Department for its review and approval no later than ninety (90) days from the date of submission of the individual permit renewal application. Said permittee shall be in compliance with the provision of the approved financial assurance mechanism requiring contributions to the immediate repair and replacement account no later than thirty (30) days prior to the date on which the renewal is issued.

3) The permittee shall maintain the current form documents evidencing the required financial assurance mechanism approved by the Department. The permittee shall perform all its obligations under the required financial assurance mechanism as approved by the Department.

4) Once established and funded, the permittee shall keep an amount equal to at least 25% of the estimated construction cost of the PWTF in the immediate repair and replacement account and shall replenish the account within 90 days of any disbursement.

5) On or before January 31st of each year, the permittee shall submit an annual financial report identifying the initial and current balance in the immediate repair and replacement account and confirming the continuing availability of the funds in said

account for the purposes specified in the permit and 314 CMR 5.15. Said report shall be prepared in accordance with generally accepted accounting principles. Reports pertaining to the required financial assurance mechanism(s) shall be sent to the Wastewater Management Section Chief at the appropriate Regional Office.

D. Supplemental Conditions

- 1) The permittee shall notify the Department at least thirty (30) days in advance of the proposed transfer of ownership of the facility for which this permit is written. Said notification shall include a written agreement between the existing and new permittees containing a specific date for transfer of permit, responsibility, coverage and liability between them.
- 2) A staffing plan for the facility shall be submitted to the Department once every two years and whenever there are staffing changes. The staffing plan shall include the following components:
 - a) The operator(s)'s name(s), operator grade(s) and operator license number(s);
 - b) The number of operational days per week;
 - c) The number of operational shifts per week;
 - d) The number of shifts per day;
 - e) The required personnel per shift;
 - f) Saturday, Sunday and holiday staff coverage;
 - g) Emergency operating personnel
- 3) The permittee is responsible for the operation and maintenance of all sewers, pump stations, and treatment units for the permitted facility, which shall be operated and maintained under the direction of a properly certified wastewater operator.
- 4) Operation and maintenance of the proposed facility must be in accordance with 314 CMR 12.00, "Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharges", and, 257 CMR 2.00, "Rules and Regulations for Certification of Operators of Wastewater Treatment Facilities".
 - a) The facility has been rated (in accordance with 257 CMR 2.00), to be a Grade **4** facility. Therefore, the permittee shall provide for oversight by a Massachusetts Certified Wastewater Treatment plant operator (Chief Operator) Grade **4** or higher. The permittee will also provide for a backup operator who shall possess at least a valid Grade **3** license.
 - b) The date and time of the operator's inspection along with the operator's name and certification shall be recorded in the log book on location at the treatment facility. All daily inspection logs consistent with the O&M Manual requirements shall be kept at the facility for a period of three (3) years.

- c) Records of operation of wastewater treatment facilities or disposal systems required by the Department shall be submitted on forms supplied by the Department or on other forms approved by the Department for such use. Monthly reports shall be certified by the wastewater treatment plant operator in charge and shall be included in the discharge monitoring reports submitted each month.
- 5) If the operation and maintenance of the facility is contracted to a private concern, the permittee shall submit a copy of the contract, consistent with what is required by the approved Operation & Maintenance manual and signed only by the contractor, to the appropriate MassDEP Regional Office within thirty (30) days of permit issuance. Along with the contract, a detailed listing of all contract operation obligations of the proposed contractor at other facilities shall also be submitted.
 - 6) Any additional connections to the sewer system, beyond the 137 residential units with 31 additional bedrooms, 30 assisted living bedrooms and 10 additional assisted living units, and 42 memory and nursing care units with 14 additional bedrooms, shall be approved by MassDEP and the local Board of Health prior to the connection.
 - 7) All tests or analytical determinations to determine compliance with permit standards and requirements:
 - a) Effluent samples shall be collected, transported and stored in accordance with *Standard Methods for the Examination of Water and Wastewater*;
 - b) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 unless other methods are approved by the Department; and,
 - c) Samples shall be analyzed by a Massachusetts Certified laboratory unless otherwise approved by the Department.
 - 8) The permittee shall notify the appropriate MassDEP Regional Office, in writing, within thirty (30) days of the following events:
 - a) Any interruption of the treatment system operation, other than routine maintenance.
 - b) Final shutdown of the treatment system.
 - 9) The permittee shall contract to have any and all solids and sludges generated by the treatment system for which this permit is issued removed off site by a properly licensed waste hauler for disposal at an EPA/MassDEP approved facility. The name and license number of the hauler along with the quantity of wastes removed and the date(s) of removal shall be reported by the permittee in writing to the appropriate MassDEP Regional Office.

- 10) Simultaneously with the permit renewal application at year fifteen **2030** following the clearwater test of the modified plant in 2016, the permittee shall submit two reports to the Department for its review and approval:
 - a) An engineering report, prepared by a registered professional engineer, that outlines in sufficient detail what modifications (if any) to the facility or other changes are required to insure that the facility can remain in compliance with its GWDP and other applicable requirements through the next 5 year permit term (year 2035) and beyond; and
 - b) A financial plan that contains the cost estimates for implementing the facility modifications or other changes identified in the engineering report, and describes and demonstrates, how and when the permittee will finance the needed facility modifications or other changes.
- 11) In the event that effluent limits are not met, or the discharge is determined to impair groundwater quality in accordance with 314 CMR 5.16(1), the permittee may be obligated to modify, supplement or replace the permitted treatment process so as to ensure that the discharge does not impair the ability of the groundwater to act as an actual or potential source of potable water.
- 12) Pursuant to M.G.L. Chapter 21A, section 18(a), and 310 CMR 4.03, holders of this Permit may be subject to annual compliance assurance fees as assessed each year on July 1st and invoiced by MassDEP. Failure of the Permit holder to pay applicable annual compliance assurance fees shall result in the automatic suspension of the permit by operation of law under the statute. If fee non-payment continues for sixty days or more, MassDEP has the statutory option of revoking the Permit, denying any other pending permit applications filed by the Permit holder or taking other enforcement action. Permit holders are required to notify MassDEP in writing if they wish to relinquish or transfer a permit. Failure to do so will result in the continued assessment of fees.

E. Appeal Rights

During the thirty (30) day period following issuance of this permit, a Notice of Claim for an Adjudicatory Appeal may be sent by any person aggrieved (the "Petitioner") by the issuance to:

Case Administrator
Office of Appeals and Dispute Resolution
Massachusetts Department of Environmental Protection
One Winter Street/2nd Floor
Boston, MA 02108

310 CMR 1.01(6)(b) requires the Notice of Claim to: include sufficient facts to demonstrate aggrieved person status; state the facts which are grounds for the appeal specifically, clearly and concisely; and, state relief sought. The permit shall become or remain effective at the end of the 30 day appeal period unless the person filing the Notice of Claim requests, and is granted, a stay of its terms and conditions. If a permit is modified under 314 CMR 2.10, only the modified terms and conditions may be subject to an Adjudicatory Appeal. All other aspects of the existing permit shall remain in effect during any such Adjudicatory Appeal.

Per 310 CMR 4.06, the hearing request to the Commonwealth will be dismissed if the filing fee is not paid. Unless the Petitioner is exempt or granted a waiver, a valid check payable to the Commonwealth to Massachusetts in the amount of \$100.00 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The filing fee is not required if the Petitioner is a city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority effective January 14, 1994, or any municipal housing authority; or, per MGL 161A s. 24, the Massachusetts Bay Transportation Authority. The Department may waive the adjudicatory hearing filing fee for a Petitioner who shows that paying the fee will create an undue financial hardship. A Petitioner seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

II. GENERAL PERMIT CONDITIONS

5.16: General Conditions

The following conditions apply to all individual and general permits:

(1) No discharge authorized in the permit shall cause or contribute to a violation of 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*. Upon promulgation of any amended standard, the permit may be modified to comply with such standard in accordance with the procedures in 314 CMR 2.10: *Modification, Suspension, Revocation and Renewal of Permits and General Permit Coverage* and 314 CMR 5.12. Except as otherwise provided in 314 CMR 5.10(3)(c), 5.10(4)(a)2. and 5.10(9), no discharge authorized in the permit shall impair the ability of the ground water to serve as an actual or potential source of potable water. Evidence that a discharge impairs the ability of the ground water to serve as an actual or potential source of potable water includes, without limitation, analysis of samples taken in a downgradient well that demonstrates one or more exceedances of the applicable water quality based effluent limitations set forth in 314 CMR 5.10. In those cases where it is shown that a measured parameter exceeds the applicable water quality based effluent limitations set forth in 314 CMR 5.10 at the upgradient monitoring well, evidence that a discharge impairs the ability of the ground water to serve as an actual or potential source of potable water is deemed to exist if a measured parameter in any downgradient well exceeds the level of that same measured parameter in the upgradient well for the same sampling period. A statistical procedure approved by the Department shall be used to determine when a measured parameter exceeds the allowable level.

(2) Duty to Comply. The permittee shall comply at all times with the terms and conditions of the permit, 314 CMR 5.00, M.G.L. c. 21, §§ 26 through 53, and all applicable state and federal statutes and regulations.

(3) Standards and Prohibitions for Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established by § 307(a) of the Federal Act, 33 U.S.C. § 1317(a), for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

(4) Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to achieve compliance with the terms and conditions of the permit, 314 CMR 12.00: *Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharges*, and 257 CMR 2.00: *Certification of Operators of Wastewater Treatment Facilities*. All equipment shall be maintained in an acceptable condition for its intended use.

(5) Duty to Halt or Reduce Activity. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, discharges, or both, until the facility is restored or an alternative method of treatment is provided. A permittee may not raise as a defense in an enforcement action that it

would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

(6) Power Failure. In order to maintain compliance with the effluent limitations and prohibitions of the permit, the permittee shall either:

- (a) provide an alternative power source sufficient to operate the wastewater control facilities; or
- (b) halt, reduce or otherwise control production or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(7) Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any adverse impact on human health or the environment resulting from non-compliance with the permit. Additionally, the permittee shall take all necessary steps to prevent an operational upset of the PWTF or POTW.

(8) Duty to Provide Information. The permittee and any operator of the permitted facility shall furnish to the Department within a reasonable time as specified by the Department any information which the Department may request to determine whether cause exists for modifying, suspending, revoking and reissuing, or terminating the permit, or to determine whether the permittee is complying with the terms and conditions of the permit.

(9) Inspection and Entry. The permittee shall allow the Department or its authorized representatives to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records required by the permit are kept;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (c) Inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit; and
- (d) Sample or monitor at reasonable times for the purpose of determining compliance with the terms and conditions of the permit.

(9A) The permittee shall physically secure the treatment works and monitoring wells and limit access to the treatment works and monitoring wells only to those personnel required to operate, inspect and maintain the treatment works and to collect samples.

(9B) The permittee shall identify each monitoring well by permanently affixing to the steel protective casing of the well a tag with the identification number listed in the permit.

(10) Monitoring. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 unless other test procedures are specified in the permit.

(11) Recordkeeping. The permittee shall retain records of all monitoring information, including

all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and all records of all data used to complete the application for the permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time. Records of monitoring information shall include without limitation:

- (a) The date, exact place, and time of sampling or measurements;
- (b) The individual(s) who performed the sampling or measurement;
- (c) The date(s) analyses were performed;
- (d) The individual(s) who performed the analyses;
- (e) The analytical techniques or methods used; and
- (f) The results of such analyses.

(12) Prohibition of Bypassing. Except as provided in 314 CMR 5.16(13), bypassing is prohibited and the Department may take enforcement action against a permittee for bypassing unless:

- (a) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- (c) The permittee submitted notice of the bypass to the Department:
 - 1. In the event of an anticipated bypass, at least ten days in advance, if possible;
 - or
 - 2. In the event of an unanticipated bypass, as soon as the permittee has knowledge of the bypass and no later than 24 hours after its first occurrence.

(13) Bypass not Exceeding Limitations. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if necessary for the performance of essential maintenance or to assure efficient operation of treatment facilities.

(14) Permit Actions. The permit may be modified, suspended, or revoked for cause. The filing of a request by the permittee for a permit modification, reissuance, or termination, or a notification of planned changes or anticipated non-compliance does not stay any permit condition.

(15) Duty to Reapply. If the permittee wishes to continue an activity regulated by the permit after the expiration date of the permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department in writing.

(16) Property Rights. The permit does not convey any property rights of any sort or any exclusive privilege.

(17) Other Laws. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local law, or regulation.

(18) Oil and Hazardous Substance Liability. Nothing in the permit shall be construed to preclude the institution of any legal action or relieve the permittee of any responsibilities, liabilities, or penalties to which the permittee is or may be subject under § 311 of the Federal Act, 33 U.S.C. § 1321, and M.G.L. c. 21E.

(19) Removed Substances. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed in a manner consistent with applicable Federal and State laws and regulations including, but not limited to, the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53, and the Federal Act, 33 U.S.C. § 1251 *et seq.*, the Massachusetts Hazardous Waste Management Act, M.G.L. c. 21C, and the Federal Resource Conservation and Recovery Act, 42 U.S.C. § 6901, *et seq.*, 310 CMR 19.000: *Solid Waste Management* and 310 CMR 30.000: *Hazardous Waste*.

(20) Reporting Requirements.

(a) Monitoring Reports. Monitoring results shall be reported on a Discharge Monitoring Report (DMR) at the intervals specified in the permit. If a permittee monitors any pollutant more frequently than required by the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Beginning on December 2, 2017, a permittee shall submit all DMRs electronically, using the electronic reporting system designated by the Department. A permittee may seek a waiver of this requirement by submitting a written request for the Department's approval.

(b) Compliance Schedules. Reports of compliance or non-compliance with, or any progress reports on interim and final requirements contained in any compliance schedule in the permit shall be submitted no later than 14 days following each schedule date.

(c) Planned Changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility or activity which could significantly change the nature or increase the quantity of pollutants discharged. Unless and until the permit is modified, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(d) Anticipated Non-compliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in non-compliance with permit requirements.

(e) 24 Hour Reporting. The permittee shall report any non-compliance which may endanger health or the environment. Any information shall be communicated orally within 24 hours of the time the permittee becomes aware of the circumstances. A

written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain: a description of the non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance. The following shall be included as information which must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit; and
2. Any violation of a maximum daily discharge limitation for any of the pollutants required by the permit to be reported within 24 hours.

(f) Other Non-compliance. The permittee shall report all instances of non-compliance not reported under 314 CMR 5.16(20)(a), (b), or (e) at the time monitoring reports are submitted. The reports shall contain the information listed in 314 CMR 5.16(20)(e).

(g) Toxics. All manufacturing, commercial, mining, or silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

1. That any activity has occurred, or will occur, that would result in the discharge of any toxic pollutant listed in 314 CMR 3.17: *Appendix B - Toxic Pollutants* not limited by the permit, if that discharge will exceed the highest of the following notification levels:
 - a. 100 micrograms per liter (100 ug/l);
 - b. 200 micrograms per liter (200 ug/l) for acrolein and acrylonitrile, 500 micrograms per liter (500 ug/l) for 2,4-dinitrophenol, and for 2-methyl-4,6-dinitrophenol, and one milligram per liter (1 mg/l) for antimony;
 - c. Five times the maximum concentration value reported for that pollutant in the permit application; or
2. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

(h) Indirect Dischargers. All Publicly Owned Treatment Works shall provide adequate notice to the Department of the following:

1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to § 301 or § 306 of the Federal Act, 33 U.S.C. § 1311 or 1316, if it were directly discharging those pollutants; and
2. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

(i) Information. Where a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit the relevant facts or correct information.

(j) The permittee shall notify the Department in writing within seven days of any change in contract operators.

(21) Signatory Requirement. All applications, reports, or information submitted to the Department shall be signed and certified in accordance with 314 CMR 5.14 and 5.15.

(22) Severability. The provisions of the permit are severable. If any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

(23) Reopener Clause. The Department reserves the right to make appropriate revisions to the permit to establish any appropriate effluent limitations, schedules of compliance, or other provisions, as authorized by the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53, or the Federal Act, 33 U.S.C. § 1251 *et seq.*, to bring all discharges into compliance with these statutes.

(24) Approval of Treatment Works. All discharges and associated treatment works authorized in 314 CMR 5.00 shall remain in compliance with the terms and conditions of the permit. Any modification of the approved treatment works shall require written approval of the Department prior to the construction of the modification.

(25) Transfer of Permits.

(a) RCRA Facilities. Any permit which authorizes the operation of a RCRA facility subject to the requirements of 314 CMR 8.07: *Standards for all other RCRA Facilities* shall be valid only for the person to whom it is issued and may not be transferred.

(b) Transfers by Modification. Except as provided in 314 CMR 5.16(25)(a) and (c), a permit may be transferred by the permittee to a new permittee if the permit has been modified or revoked and reissued in accordance with 314 CMR 5.12(2), or a minor modification is made to identify the new permittee in accordance with 314 CMR 5.12(3) and (4).

(c) Automatic Transfers. For facilities other than Privately Owned Wastewater Treatment Facilities (PWTFs) that treat at least some sewage from residential uses, hospitals, nursing or personal care facilities, residential care facilities, or assisted living facilities, PWTFs that have been required to establish, fund and maintain financial assurance mechanism(s) pursuant to 314 CMR 5.15(6), and RCRA facilities subject to the requirements of 314 CMR 8.07: *Standards for all other RCRA Facilities*, a permit may be automatically transferred in accordance with 314 CMR 5.12(5).

(26) Permit Compliance Fees and Inspection Information. Except as otherwise provided, any permittee required to obtain a ground water discharge permit pursuant to M.G.L. c. 21, § 43, and 314 CMR 5.00 shall submit the annual compliance assurance fee established in accordance with M.G.L. c. 21A, § 18 and 310 CMR 4.00: *Timely Action Schedule and Fee Provisions*, as provided in 314 CMR 2.12: *Applications, Fees and Inspection Information*. The requirement to submit the annual compliance fee does not apply to any local government unit other than an authority. Any permittee required to obtain a ground water discharge permit pursuant to M.G.L. c. 21, § 43 and 314 CMR 5.00, may be required to submit inspection information annually, as provided in 314 CMR 2.12.