SEBAGO TECHNICS

CIVIL ENGINEERING • SURVEYING • LANDSCAPE ARCHITECTURE

TOWN OF WINDHAM
MAJOR SITE PLAN AND SUBDIVISION FINAL PLAN REVIEW APPLICATION

Prepared for:

WDCJCS Subdivision
Former John A. Andrew School Site Redevelopment
55 High Street
Windham, ME 04062

Prepared for:

Great Falls Construction
20 Mechanic Street
Gorham, ME 04038

and

Westbrook Development Corp.
30 Liza Harmon Drive
Westbrook, ME 04092

Prepared by:

Sebago Technics, Inc.
75 John Roberts Road, Suite 4A
South Portland, Maine 04106

October 2024

240577

Major Site Plan & Subdivision – Final Plan Review Application
Table of Contents

October 10, 2024
240577

Steve Puleo, Planning Director
Town of Windham, ME Planning Department
8 School Road
Windham, Maine 04062

Re: Major Site Plan & Major Subdivision – Final Plan Review
Former John A. Andrew School Site Redevelopment
55 High Street; MBLU: 37-24

Dear Steve,

On behalf of Great Falls Construction, Inc. and Westbrook Development Corporation, Sebago Technics, Inc. has prepared this letter, the enclosed application materials, and attached plans for a Major Site Plan and Major Subdivision – Final Plan Application for the redevelopment of the former John A. Andrew school property. This site is located at 55 High Street in the Town of Windham, and can further be identified on the Town Tax Map 37 as Lot 24.

Existing Conditions: The property subject to this application is the site of the former John A. Andrew school building. The site is approximately 2.39 acres in size, and is zoned under the Windham Village Commercial District. The site is largely surrounded by undeveloped, wooded areas to the east, and residential development to the north, south and west across High Street.

The topography of the site is described as sloping upwards from High Street, relatively level in the middle (where the school building is located), and sloping back downwards towards the rear. The site also contains a small wetland area located along the northeastern border of the parcel.

Project Description: This proposed project offers a mixed-income development with a total of eighteen (18) affordable apartments for senior (55+) housing. This proposed development also includes associated parking areas, internal vehicular drive aisles, pedestrian pathways, a centralized open green space, and subsurface stormwater treatment area. Please see the proposed Plan Set enclosed within this application binder for the proposed layout of the site.

Project Team: A talented project team has been assembled for the design of this project. This team consists of: Great Falls Construction, Inc., Westbrook Development Corporation, Archetype Architects, and Sebago Technics, Inc. The enclosed *Section 5* contains a description of each firm involved and their respective roles in the project's design, construction, and management

Utilities: This project is proposed to be served by available public utilities currently located along High Street. Water and sewer service will be accomplished through connecting to the Portland Water District (PWD) mains within High Street, and will be extended interior to the site to serve each building. The project will also connect to the existing natural gas line in High Street. Similarly,

this development will connect to existing overhead electric service and continue power underground throughout the site.

Response to Site Walk Comments: A Site Walk was conducted on October 5, 2024, with the Planning Board, Town Staff, and project team. Listed below are the items that were discussed and our response to these items:

1. **Street Naming:** This project has received Town approval from the Economic Development and E911 Addressing for the authorization for the proposed internal drive to be named "*Academy Street*". This approved private road name is reflected on the enclosed Plan Set.
2. **Buffering/Landscaping/Tree Line:** The enclosed Plan Set has been revised to reflect a more accurate canopy line along the northern and southern property lines.
3. **Utility Room:** The proposed Floor Plan of Building 1 has been revised, thus altering the layout such that the utility room is closest to Building 2. Please see this change reflected on the enclosed Plan Set.
4. **Tree Preservation:** This proposed project preserves trees to the greatest extent practicable, with the exception of invasive and non-native tree species. Please see the enclosed Plan Set for tree removal areas, tree preservation, and proposed landscaping within this development.
5. **Fenestration:** For ease of reference, fenestration percentages have been added to the architectural plans and elevations enclosed within this application demonstrating that the total area of street facing facades meet the 25% requirement of the ordinance.
6. **Postal Service:** The Applicant is determining final coordination items with the Post Office for how postal service will be accomplished through this development. The current plan is for mail delivery to be interior to the building. Any alterations to what is currently proposed will come before the Reviewing Authority for approval.

Waivers: Two (2) waivers have been granted for this proposed project. One is related to submitting a high-intensity soil survey by a Certified Soil Scientist (per §120-910.C.3.a.). The other waiver granted was from providing a Hydrogeological Assessment (per §120-910.C.3.c.). Both of these were waived by the Planning Director, as this application includes a medium-intensity soil survey and will connect to available public water and sewer along High Street.

We appreciate your attention to this project, and we look forward to its successful completion. Upon your review, please contact me if you have any questions or require additional information.

Sincerely,

SEBAGO TECHNICS, INC.

Amy Bell Segal, RLA
Senior Project Manager & Landscape Architect
Maine Licensed Landscape Architect

Section 1

Application Forms

Town of Windham
Planning Department:
8 School Road
Windham, Maine 04062
Tel: (207) 894-5960 ext. 2
Fax: (207) 892-1916 -
www.windhammaine.us

MAJOR SITE PLAN REVIEW APPLICATION

FEES FOR MAJOR SITE PLAN REVIEW	**APPLICATION FEE:** (No Bldg.) (W/Bldg.: $25/1,000 SF up to 5,000 SF)		[X] $1,000.00 [X] $ 125.00	**TOTAL AMOUNT PAID:**	$ 5,025.00 Total for Final Site & Subd.		
	REVIEW ESCROW: (GFA) 2,000 SF - 5,000 SF = $2,000 5,000 SF - 15,000 SF = $3,000 15,000 SF - 35,000 SF = $4,000 Over 35,000 SF = $5,000 No Building = $2,000		[ ] $_____ [X] $ 3,000.00 [ ] $_____ [ ] $_____ [ ] $_____		DATE: 10/10/2024 *Office Use:*		
[ ] Amended Site Plan – (Each Revision)	AMENDED APPLICATION FEE: AMENDED REVIEW ESCROW:		[ ] $350.00 [ ] $250.00				*Office Stamp:*

PROPERTY DESCRIPTION	Parcel Information:	Map(s):	37	Lot(s):	24	Zoning District(s):	Village Comm. (VC)	Size of the Parcel in SF:	+/- 2.39 ac.
	Total Disturbance. >1Ac	[X] Y	[ ] N	Estimated. Building SF:		IF NO BUILDING; Estimated SF of Total Development:			
	Physical Address:	55 High Street, Windham				Watershed:	Upper Presumpscot River		

PROPERTY OWNER'S INFORMATION	Name:	Jonathan Smith, President	Name of the Business:	Great Falls Construction, Inc.
	Phone:	(207) 839-2744	Mailing Address:	20 Mechanic Street Gorham, ME 04038
	Fax or Cell:			
	Email:	jon@greatfallsinc.com		
APPLICANT'S INFORMATION (*IF DIFFERENT FROM OWNER*)	Name:	Tyler Norod	Name of Business:	Westbrook Development Corp.
	Phone	(207) 956-1575	Mailing Address:	30 Liza Harmon Drive Westbrook, ME 04092
	Fax or Cell			
	Email:	tnorod@westbrookdevelopmentcorp.org		
APPLICANT'S AGENT INFORMATION	Name:	Amy Bell Segal, RLA	Name of Business:	Sebago Technics, Inc.
	Phone:	(207) 200-2055	Mailing Address:	75 John Roberts Rd. Ste. 4A South Portland, ME 04106
	Fax or Cell:	(207) 856-2206		
	Email:	absegal@sebagotechnics.com		

PROJECT INFORMATION

Existing Land Use *(Use extra paper, if necessary)*:

Please see the Cover Letter attached with this application for information regarding the existing use and conditions of the property.

Provide a narrative description of the Proposed Project *(Use extra paper, if necessary)*:

Please see the Cover Letter attached with this application for information regarding the proposed project.

Provide a narrative description of construction constraints (wetlands, shoreland zone, flood plain, non-conformance, etc.):

Please see the Cover Letter attached with this application for a description of development and construction constraints.

MAJOR SITE PLAN REVIEW APPLICATION REQUIREMENTS

Section 120-811 of the Land Use Ordinance

The submission shall contain five (5) copies of the following information, including full plan sets. Along with one (1) electronic version of the entire submission, unless waiver of a submission requirement is granted, and one (1) complete plan set.

The Major Plan document/map:

A) Plan size: 24" X 36"
B) Plan Scale: No greater 1":100'
C) Title block: Applicant's name, project name, and address

- Name of the preparer of plans with professional information
- Parcel's tax map identification (map and lot) and street address, if available

- Complete application submission deadline: three (3) weeks (21-days) before the desired Planning Board meeting.
  - Five copies of the application and plans
  - Application Payment and Review Escrow
- A pre-submission meeting with the Town staff is required.
- Contact information:
  Windham Planning Department (207) 894-5960, ext. 2
  Steve Puleo, Town Planner sjpuleo@windhammaine.us
  Amanda Lessard, Planning Director allessard@windhammaine.us

APPLICANT/PLANNER'S CHECKLIST FOR MAJOR SITE PLAN REVIEW

SUBMITTALS THAT THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

The following checklist includes items generally required for development by the Town of Windham's LAND USE ORDINANCE, Sections 120-811, 120-812, 120-813 & 120-814. Due to projects specifics, the applicant is required to provide a complete and accurate set of plans, reports, and supporting documentation (as listed in the checklist below).

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

Column #1.			Column #2.		
1. Final Plan -Major Site Plan: Submission Requirements	**Applicant**	**Staff**	**Plan Requirements – Existing Conditions (Continued):**	**Applicant**	**Staff**
A. Completed Major Site Plan Application form	X	☐	vii. Zoning classification(s), including overlay and/or subdistricts, of the property and the location of zoning district boundaries if the property is located in 2 or more districts or abuts a different district	X	☐
B. Evidence of Payment of application & escrow fees	X	☐	viii. Bearings and lengths of all property lines of the property to be developed, and the stamp of the surveyor that performed the survey	X	☐
C. Written information – submitted in a **bounded and tabbed** report			ix. Existing topography of the site at 2-foot contour intervals.	X	☐
1. A narrative describing the proposed use or activity.	X	☐	x. Location and size of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property and on abutting streets or land that may serve the development.	X	☐
2. Name, address, & phone number of record owner, and applicant if different (see Agent Autorotation form).	X	☐	xi. Location, names, and present widths of existing public and/or private streets and rights-of-way within or adjacent to the proposed development.	X	☐
3. Names and addresses of all abutting property owners	X	☐	xii. Location, dimensions, and ground floor elevation of all existing buildings.	X	☐
4. Documentation demonstrating right, title, or interest in the property	X	☐	xiii. Location and dimensions of existing driveways, parking and loading areas, walkways, and sidewalks on or adjacent to the site.	X	☐
5. Copies of existing proposed covenants or deed restrictions.	N/A	☐	xiv. Location of intersecting roads or driveways within 200 feet of the site.	X	☐
6. Copies of existing or proposed easements on the property.	N/A	☐	xv. Location of the following		
7. Name, registration number, and seal of the licensed professional who prepared the plan, if applicable.	X	☐	a. Open drainage courses	X	☐
8. Evidence of applicant's technical capability to carry out the project.	X	☐	b. Wetlands	X	☐
			c. Stone walls	N/A	☐
9. Assessment of the adequacy of any existing sewer and water mains, culverts and drains, on-site sewage disposal systems, wells, underground tanks or installations, and power and telephone lines and poles on the property.	X	☐	d. Graveyards	N/A	☐

Continued from Column #1. (Page 2)			Continued from Column #2. (Page 2)		
10. Estimated demands for water and sewage disposal.	X	☐	e. Fences	X	☐
			f. Stands of trees or treeline, and	X	☐
			g. Other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources.	N/A	☐
11. Provisions for handling all solid wastes, including hazardous and special wastes.	X	☐	xvi. Direction of existing surface water drainage across the site	X	☐
12. Detail sheets of proposed light fixtures.	X	☐	xvii. Location, front view, dimensions, & lighting of exsiting signs.	X	☐
13. Listing of proposed trees or shrubs to be used for landscaping	X	☐			
14. Estimate weekday AM and PM and Saturday peak hours and daily traffic to be generated by the project.	X	☐	xviii. Location & dimensions of existing easements that encumber or benefit the site.	X	☐
15. Description of important or unique natural areas and site features, including floodplains, deer wintering areas, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and	X	☐	xix. Location of the nearest fire hydrant, dry hydrant, or other water supply.	X	☐
16. If the project requires a stormwater permit from MaineDEP or if the Planning Board or if the Staff Review Committee determines that such information is required, submit the following.			**E. Plan Requirements - Proposed Development Activity**		
			i. Location and dimensions of all provisions for water supply and wastewater disposal, and evidence of their adequacy for the proposed use, including soils test pit data if on-site sewage disposal is proposed	X	☐
a. stormwater calculations.	X	☐	ii. Grading plan showing the proposed topography of the site at 2-foot contour intervals	X	☐
b. erosion and sedimentation control measures.	X	☐	iii. The direction of proposed surface water drainage across the site and from the site, with an assessment of impacts on downstream properties.	X	☐
c. water quality and/or phosphorous export management provisions.	X	☐	iv. Location and proposed screening of any on-site collection or storage facilities	X	☐
17. If public water or sewerage will be utilized, provide a statement from the utility district regarding the adequacy of water supply in terms of quantity and pressure for both domestic and fire flows, and the capacity of the sewer system to accommodate additional wastewater.	X under separate cover	☐	v. Location, dimensions, and materials to be used in the construction of proposed driveways, parking, and loading areas, and walkways, and any changes in traffic flow onto or off-site	X	☐
18. Financial Capacity			vi. Proposed landscaping and buffering	X	☐
i. Estimated costs of development and itemize estimated major expenses.	X	☐	vii. Location, dimensions, and ground floor elevation of all buildings or expansions	X	☐
ii. Financing (submit one of the following)			viii. Location, front view, materials, and dimensions of proposed signs together with a method for securing sign	X	☐
a. Letter of commitment to fund	X	☐	ix. Location and type of exterior lighting. Photometric plan to demonstrate the coverage area of all lighting may be required by the Planning Board.	X	☐
b. Self-financing	☐	☐	x. Location of all utilities, including fire protection systems	X	☐
1. Annual corporate report	☐	☐	xi. Approval block: Provide space on the plan drawing for the following words, "Approved: Town of Windham Planning Board" along with space for signatures and date	X	☐
2. Bank Statement	☐	☐	**2. Major Final Site Plan Requirements as Exhibits to the Application**		
c. Other			a. Narrative and/or plan describing how the proposed development plan relates to the sketch plan.	X	☐
1. Cash equity commitment of 20% of the total cost of development	☐	☐	b. Stormwater drainage and erosion control program shows:		
2. Financial plan for remaining financing.	☐	☐	1. The existing and proposed method of handling stormwater runoff	X	☐

Continued from Column #1. (Page 3)		
3. Letter from institution indicating intent to finance.	X	☐
iii. If a registered corporation a Certificate of Good Standing from:		
- Secretary of State, or	X	☐
- the statement signed by a corporate officer	☐	☐
19. Technical Capacity (address both).		
i. Prior experience relating to developments in the Town.	X	☐
ii. Personnel resumes or documents showing experience and qualification of development designers	X	☐
D. Plan Requirements – Existing Conditions		
i. Location Map adequate to locate project within the municipality	X	☐
ii. Vicinity Plan. Drawn to a scale of not over 400 feet to the inch, and showing area within 250 feet of the property line, and shall show the following:	X	☐
a. Approximate location of all property lines and acreage of the parcel(s).	X	☐
b. Locations, widths, and names of existing, filed, or proposed streets, easements, or building footprints.	X	☐
c. Location and designations of any public spaces.	X	☐
d. Outline of the proposed site plan, together with its street system and an indication of the future probable street system of the remaining portion of the tract.	X	☐
iii. North Arrow identifying Grid North; Magnetic North with the declination between Grid and Magnetic; and whether Magnetic or Grid bearings were used.	X	☐
iv. Location of all required building setbacks, yards, and buffers.	X	☐
v. Boundaries of all contiguous property under the total or partial control of the owner or applicant.	X	☐
vi. Tax map and lot number of the parcel(s) on which the project is located	X	☐

Continued from Column #2. (Page 3)		
2. The direction of the flow of the runoff, through the use of arrows and a description of the type of flow (e.g., sheet flow, concentrated flow, etc.)	X	☐
3. Location, elevation, and size of all catch basins, dry wells, drainage ditches, swales, retention basins, and storm sewers	X	☐
4. Engineering calculations were used to determine drainage requirements based on the 25-year, 24-hour storm frequency.	X	☐
5. Methods of minimizing erosion and controlling sedimentation during and after construction.	X	☐
c. A groundwater impact analysis prepared by a groundwater hydrologist for projects involving on-site water supply or sewage disposal facilities with a capacity of 2,000 gallons or more per day	X	☐
d. Name, registration number, and seal of the Maine Licensed Professional Architect, Engineer, Surveyor, Landscape Architect, and/or similar professional who prepared the plan.	X	☐
e. A utility plan showing, in addition to provisions for water supply and wastewater disposal, the location and nature of electrical, telephone, cable TV, and any other utility services to be installed on the site.	X	☐
f. A planting schedule keyed to the site plan indicating the general varieties and sizes of trees, shrubs, and other vegetation to be planted on the site, as well as information of provisions that will be made to retain and protect existing trees, shrubs, and other vegetation.	X	☐
g. Digital transfer of any site plan data to the town (GIS format)	X	☐
h. A traffic impact study if the project expansion will generate 50 or more trips during the AM or PM peak hour, or if required by the Planning Board)	X	☐
PDF\Electronic Submission.	X	☐

The undersigned *hereby makes an application to the Town of Windham for approval of the proposed project and declares the foregoing to be true and accurate to the best of his/her knowledge.*

amybellsegal. 10/10/2024

DATE

Amy Bell Segal, RLA of Sebago Technics, Inc.

PLEASE TYPE OR PRINT NAME

Town of Windham
Planning Department:
8 School Road
Windham, Maine 04062
Tel: (207) 894-5960 ext. 2
Fax: (207) 892-1916 -
www.windhammaine.us

MAJOR SUBDIVISION – FINAL PLAN - REVIEW APPLICATION

FEES FOR MAJOR SUBDIVISION FINAL PLAN REVIEW	**APPLICATION FEE:**	☒ $350.00	**AMOUNT PAID:**		
	AMENDED APPLICATION FEE:	☐ $350.00	$ 5,025.00 Total for Final Site & Subd.		
☐ Amended Major Subdivision Each Lot / Revision	**REVIEW ESCROW:**	☒ $250.00	**DATE:** 10/10/2024		
	AMENDED REVIEW ESCROW:	☐ $250.00	*Office Use:*	*Office Stamp:*	

PROPERTY DESCRIPTION	Parcel ID	Map(s) # 37	Lot(s) # 24	Zoning District(s)	Village Comm. (VC)	Total Land Area SF:	+/- 2.39 ac.	
	# Lots/dwelling units: 18	Total Distr. >1Ac. ☒ Y ☐ N				Est. Road Length(ft):		
	Physical Address:	55 High Street, Windham		Watershed:	Upper Presumpscot River			
PROPERTY OWNER'S INFORMATION	Name:	Jonathan Smith, President		Name of Business:	Great Falls Construction, Inc.			
	Phone:	(207) 839-2744		Mailing Address:	20 Mechanic Street			
	Fax or Cell:				Gorham, ME 04038			
	Email:	jon@greatfallsinc.com						
APPLICANT'S INFORMATION (*IF DIFFERENT FROM OWNER*)	Name:	Tyler Norod		Name of Business:	Westbrook Development Corp.			
	Phone:	(207) 956-1575		Mailing Address:	30 Liza Harmon Drive			
	Fax or Cell:				Westbrook, ME 04092			
	Email:	tnorod@westbrookdevelopmentcorp.org						
APPLICANT'S AGENT INFORMATION	Name:	Amy Bell Segal, RLA		Name of Business:	Sebago Technics, Inc.			
	Phone:	(207) 200-2055		Mailing Address:	75 John Roberts Rd. Ste. 4A			
	Fax or Cell:	(207) 856-2206			South Portland, ME 04106			
	Email:	absegal@sebagotechnics.com						

PROJECT INFORMATION

Existing Land Use *(Use extra paper, if necessary)*:

Please see the Cover Letter attached with this application for information regarding the existing use and conditions of the property.

Provide a narrative description of the Proposed Project *(Use extra paper, if necessary)*:

Please see the Cover Letter attached with this application for information regarding the proposed project.

Provide a narrative description of construction constraints (wetlands, shoreland zone, flood plain, non-conformance, etc.):

Please see the Cover Letter attached with this application for a description of development and construction constraints.

MAJOR SUBDIVISION - FINAL PLAN - REVIEW APPLICATION REQUIREMENTS

Section 910 of the Land Use Ordinance

The submission shall contain, five (5) copies of the following information, including full plan sets. Along with one (1) electronic version of the entire submission unless a waiver of a submission requirement is granted.

The Major Plan document/map:

A) Plan size: 24" X 36"
B) Plan Scale: No greater 1":100'
C) Title block: Applicant's name and address

- Name of the preparer of plans with professional information
- Parcel's tax map identification (map and lot) and street address, if available

- Complete application submission deadline: three (3) weeks prior to the desired Staff Review Committee meeting.
  - Five copies of the application and plans
  - Application Payment and Review Escrow
- A pre-submission meeting with the Town staff is required.
- Contact information:
  Windham Planning Department (207) 894-5960, ext. 2
  Steve Puleo, Town Planner sjpuleo@windhammaine.us
  Amanda Lessard, Planning Director allessard@windhammaine.us

APPLICANT/PLANNER'S CHECKLIST FOR MAJOR SUBDIVISION REVIEW

SUBMITTALS THAT THE TOWN PLANNER DEEMS SUFFICIENTLY LACKING IN CONTENT WILL NOT BE SCHEDULED FOR PLANNING BOARD REVIEW.

The following checklist includes items generally required for development by the Town of Windham's LAND USE ORDINANCE, Sections 907.B., 910.C., & 911. Due to projects specifics, are required to provide a complete and accurate set of plans, reports, and supporting documentation (as listed in the checklist below).

IT IS THE RESPONSIBILITY OF THE APPLICANT TO PRESENT A CLEAR UNDERSTANDING OF THE PROJECT.

Final Plan - Major Subdivision - Submission Requirements:	Applicant	Staff	B. Mandatory Plan Information	Applicant	Staff
A. Written information – submitted in a bound report.					
1. A fully executed application form.	X	☐	1. All information presented on the Preliminary Plan, and any amendments suggested or required by the Board.	X	☐
2. Evidence that the escrow account balance is greater than 25% of the initial Preliminary Plan deposit.	X	☐	2. Map and lot numbers for all lots as assigned by the Town of Windham Assessing Department.	X	☐
3. If public open space is to be provided, written offers of cession to the Town of Windham shall be provided.	N/A	☐	3. Seal of the Maine Licensed Professional who prepared the plan.	X	☐
4. If the subdivider reserves title to spaces within the subdivision, provide copies of agreements or other documents.	N/A	☐	4. All public open spaces for which offers of cession are made by the subdivider and those spaces to which title is reserved by the subdivider.	N/A	☐
5. Copies of any outside agency approvals.	X	☐	5. Location of all permanent monuments.	X	☐
6. Statement from the Maine Inland Fisheries & Wildlife that no significant wildlife habitat exists on the site.	N/A see resource maps enclosed	☐	**PDF\Electronic Submission.**	X	☐
7. Digital transfer of subdivision plan data (GIS format).	X	☐			

The undersigned *hereby makes an application to the Town of Windham for approval of the proposed project and declares the foregoing to be true and accurate to the best of his/her knowledge.*

amy bell segal

10/10/2024
DATE

Amy Bell Segal, RLA of Sebago Technics, Inc.
PLEASE TYPE OR PRINT THE NAME

AGENT AUTHORIZATION

APPLICANT/ OWNER	Name	Jonathan Smith, Great Falls Construction and/or assigns			
PROPERTY DESCRIPTION	Physical Address	20 Mechanic Street Gorham, ME 04038		Map	37
				Lot	24
APPLICANT'S AGENT INFORMATION	Name	Sebago Technics, Inc. c/o Amy Bell-Segal, RLA			
	Phone	(207) 200-2100	Business Name & Mailing Address	SEBAGO TECHNICS, INC. 75 John Roberts Road, Suite 4A South Portland, ME 04106	

Jonathan Smith 9/9/24

APPLICANT SIGNATURE DATE

PLEASE TYPE OR PRINT NAME HERE

JONATHAN E. SMITH
PRESIDENT, GREAT FALLS CONSTRUCTION

amy bell segal.

APP)9/2024

Amy Bell-Segal, RLA
Project Manager
Sebago Technics, Inc.

PLEASE TYPE OR PRINT NAME HERE

AGENT AUTHORIZATION

APPLICANT/ OWNER	Name	Tyler Norod, Development Director Westbrook Development Corporation			
PROPERTY DESCRIPTION	Physical Address	30 Liza Harmon Drive Westbrook, ME 04092		Map	37
				Lot	24
APPLICANT'S AGENT INFORMATION	Name	Sebago Technics, Inc. c/o Amy Bell-Segal, RLA			
	Phone	(207) 200-2100	Business Name & Mailing Address	SEBAGO TECHNICS, INC. 75 John Roberts Road, Suite 4A South Portland, ME 04106	

Tyler Norod 10/1/24

APPLICANT SIGNATURE DATE

Tyler Norod

PLEASE TYPE OR PRINT NAME HERE

amybellsegal.

APP)9/2024

Amy Bell-Segal, RLA
Project Manager
Sebago Technics, Inc.

PLEASE TYPE OR PRINT NAME HERE

Section 2

Location & Resource Maps

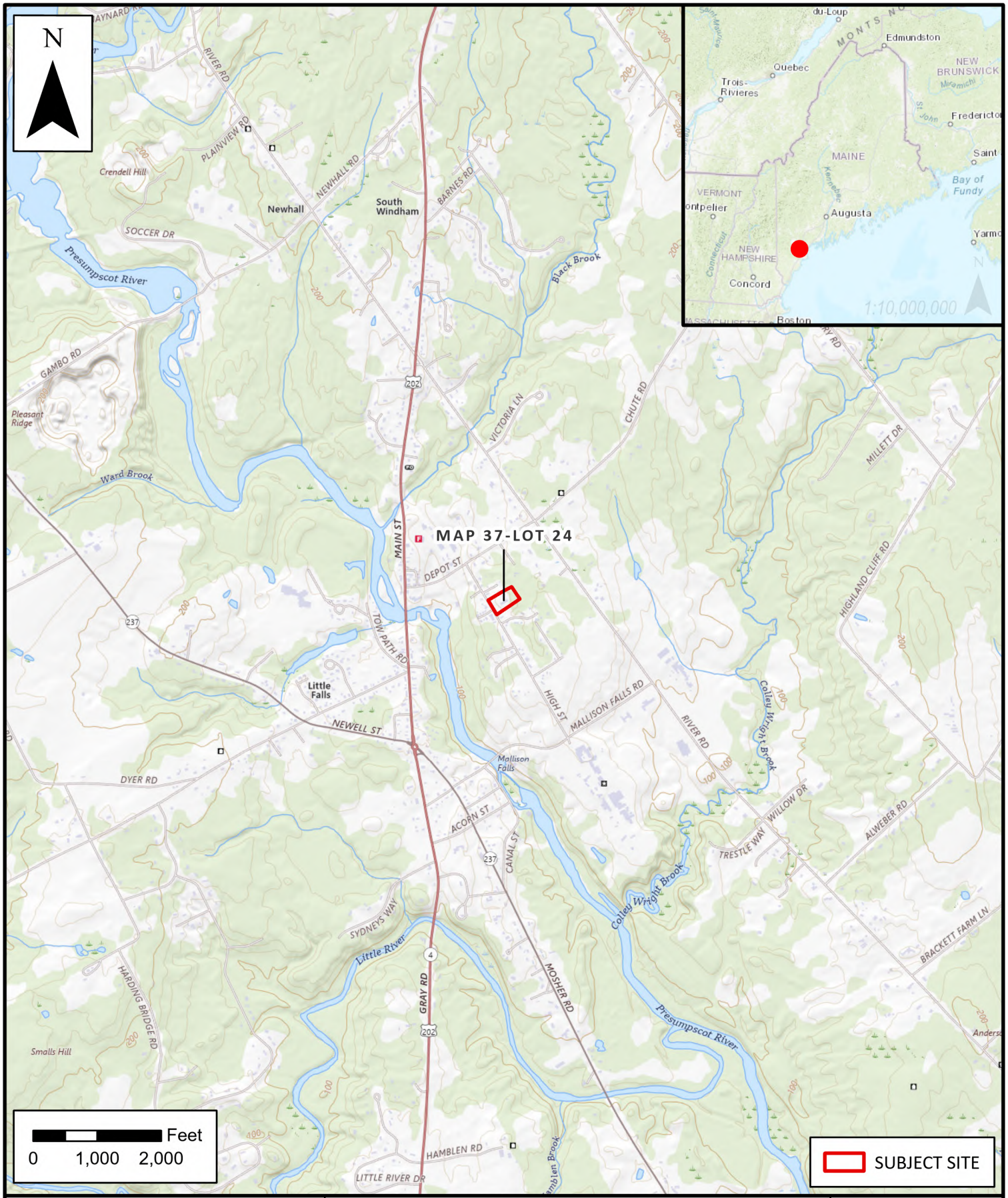
Section 2 – Location & Resource Maps

Location Map: Enclosed within this Section is a Location Map, a mapped excerpt from the USGS quadrangle showing the site's location for identification purposes. The project site is located at 55 High Street in the Town of Windham, Maine.

Tax Map: The site can further be identified on the Town of Windham's Tax Map 37 as Lot 24. The referenced Tax Map is also enclosed within this Section with a leader identifying the site.

Zoning Map: For reference, a Zoning Map is also enclosed within this Section. This map details the subject property is located within the Village Commercial (VC) Zoning District, and is abutting the Residential Medium (RM) district to the south and the Village Residential (VR) district to the northwest.

Resource Maps: There are two (2) additional maps enclosed within this Section that identify resources on and around the project site. The first is a Wetlands & Waterbodies map, that shows nearby wetlands and rivers in proximity to the site. The second map is a Plant & Animal Habitat Map, using data sourced from the Maine Department of Inland Fisheries & Wildlife (MDIFW) Beginning with Habitat data. This map shows that there are not any areas on or around the site that contain high value plant or animal habitats, water resources, or riparian habitats.



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

LOCATION MAP

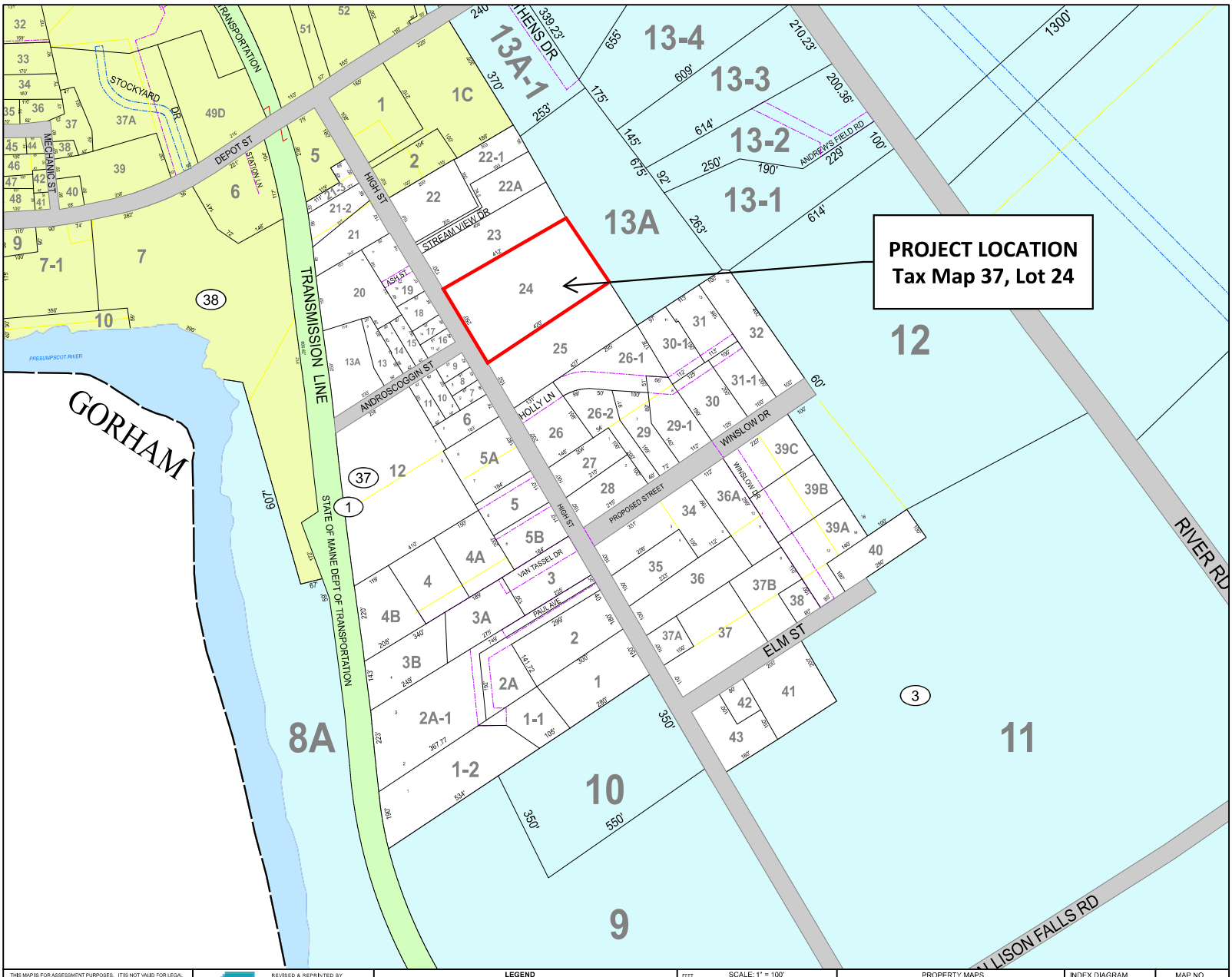
JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE: 1:24,000

DATE: 8/28/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
MAINE GEOLIBRARY
USGS QUADRANGLE



THIS MAP IS FOR ASSESSMENT PURPOSES. IT IS NOT VALID FOR LEGAL DESCRIPTION OR CONVEYANCE.

THE HORIZONTAL DATUM IS THE MAINE STATE PLANE COORDINATE SYSTEM, NAD 83.

ORIGINAL MAPPING BY JAMES W. SEWALL COMPANY, OLD TOWN, MAINE

REVISED & REPRINTED BY
CAI Technologies
Precision Mapping, Geospatial Solutions
11 Pleasant Street, Littleton, NH 03561
800.922.8363 • www.caimaps.com

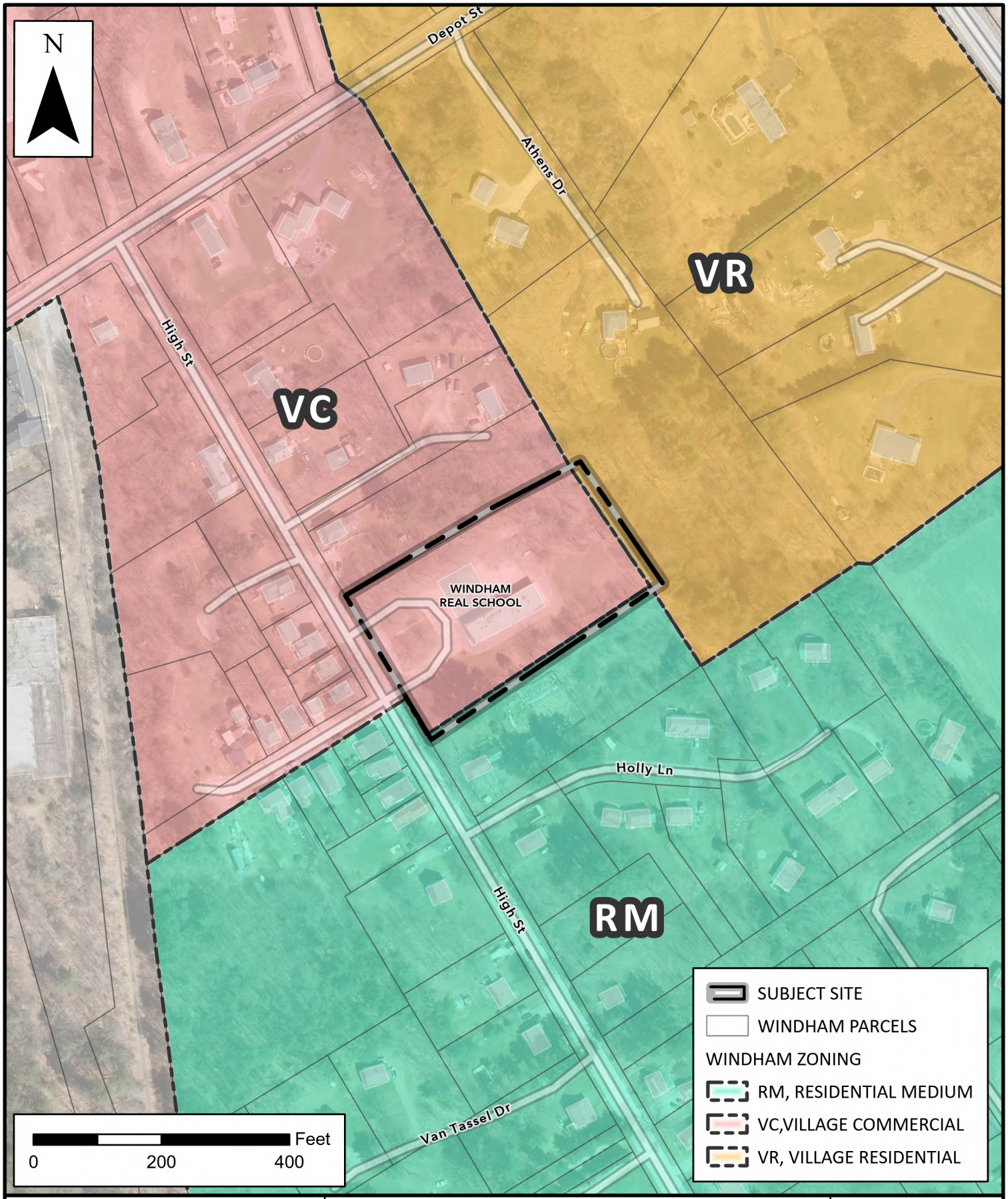
LEGEND
PARCEL NUMBER
RECORD DIMENSION
SUBDIVISION LOT NO.
COMMON OWNERSHIP
STREAMS
CEMETERY
CONSERVATION
FARMSTEAD
OLD PROPERTY LINES
UTILITY LINES
ROW EASEMENT
ROW EASEMENT FIXED

SCALE: 1" = 100'
FEET
METERS
REVISED TO: APRIL 1, 2023

PROPERTY MAPS
WINDHAM
MAINE

INDEX DIAGRAM

MAP NO.
37



SEBAGO TECHNICS
WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

ZONING MAP

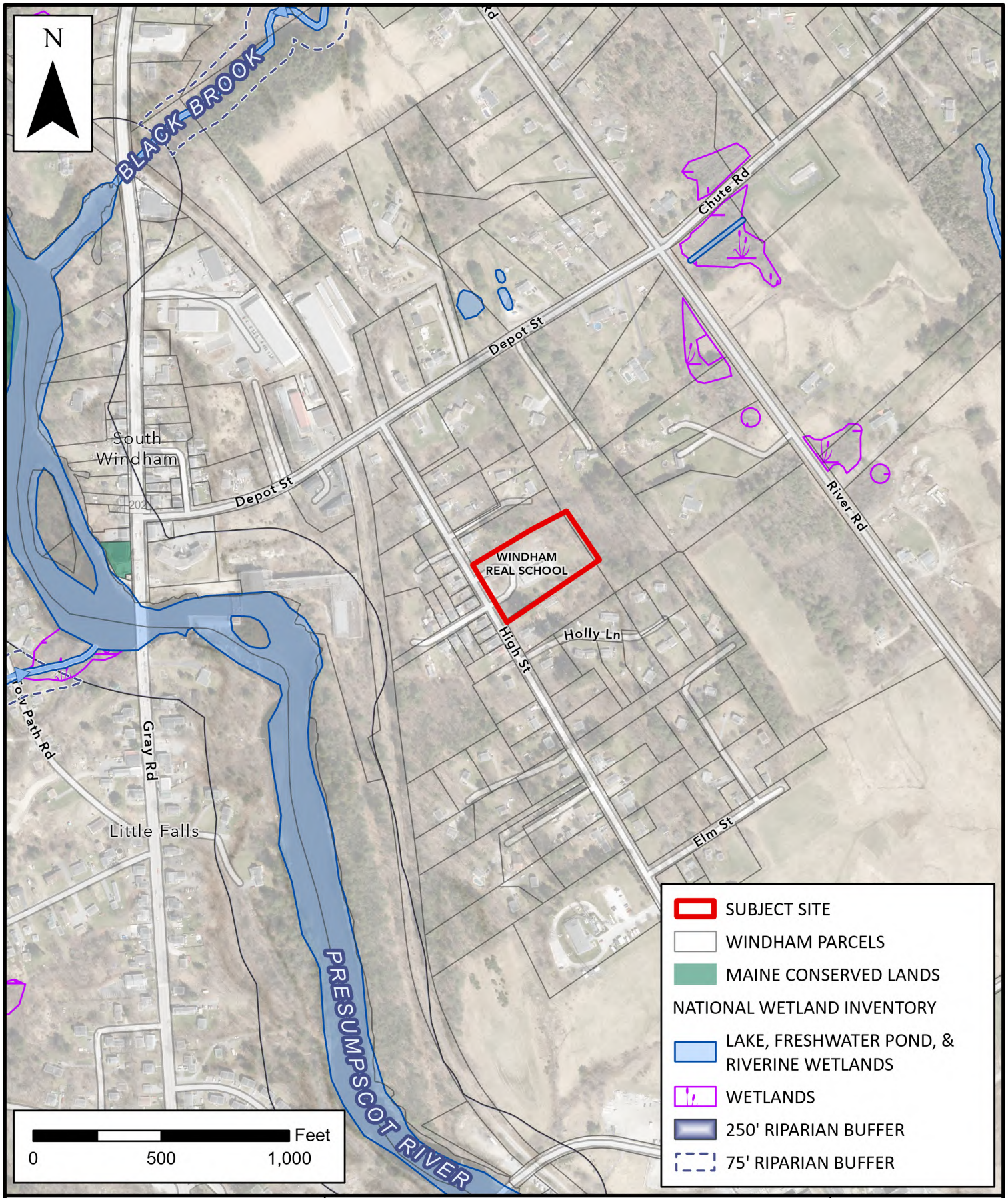
JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE: 1:2,400

DATE: 8/28/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
WINDHAM MAINE ZONING MAP
LAST UPDATED 2024-05-08



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South Portland, ME 04106
Tel. 207-200-2100

WETLANDS & WATERBODIES

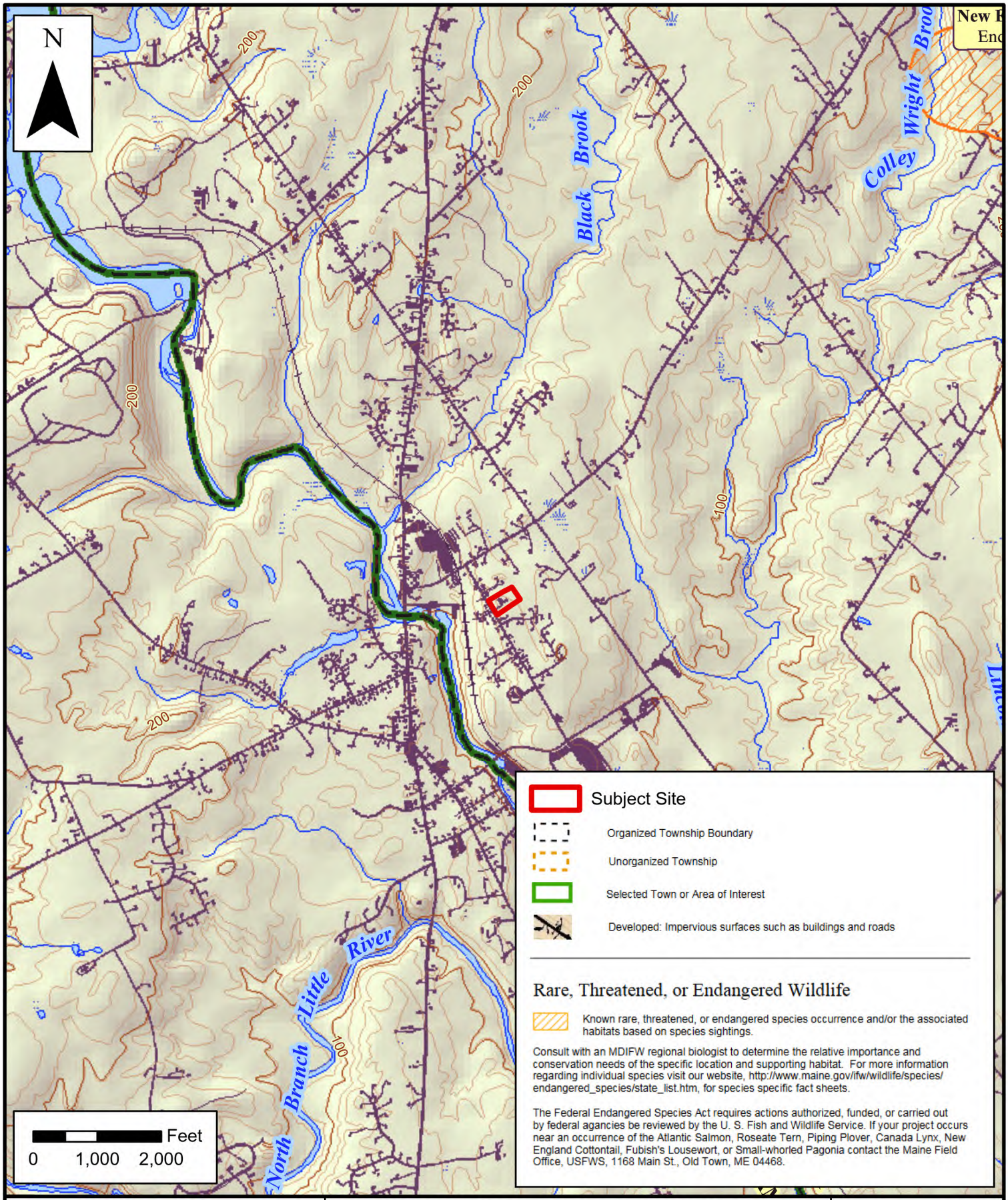
JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE: 1:6,000

DATE: 8/29/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
MAINE GEOLIBRARY
NATIONAL WETLAND INVENTORY



SEBAGO TECHNICS
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75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

HIGH VALUE PLANT & ANIMAL HABITAT

JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE: 1:24,000

DATE: 8/29/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
MDIFW BEGINNING WITH HABITAT
HIGH VALUE PLANT & ANIMAL HABITATS - APR. 2016

Section 3

Abutters Information

Section 3 – Abutters Information

For reference, we have included information pertaining to the abutters within a one hundred (100) ft. buffer around the project site. This list includes the map-lot number, location, and property owner. Please see the referenced list enclosed within this Section.

Abutting Properties for
55 HIGH ST WINDHAM, ME 04062
37/ 24/ / /
(100 Feet)

Location:
3/ 13/ A/ /
11 ATHENS DR
Owner:
REED HOLLY A
11 ATHENS DRIVE
WINDHAM, ME 04062

Location:
37/ 8/ / /
48 HIGH ST
Owner:
BUTTS TYLER W &
MONTIMURRO SARAH A
48 HIGH STREET
WINDHAM, ME 04062

Location:
37/ 17/ / /
56 HIGH ST
Owner:
HO CHARLIE
HO TIMMY
56 HIGH ST
WINDHAM, ME 04062

Location:
37/ 23/ / /
59 HIGH ST
Owner:
JACKSON SARAH
59 HIGH ST
WINDHAM, ME 04062

Location:
37/ 6/ / /
44 HIGH ST
Owner:
SEARS THOMAS
SEARS JENELL
44 HIGH ST
WINDHAM, ME 04062

Location:
37/ 9/ / /
50 HIGH ST
Owner:
MATTSON DOREEN
50 HIGH ST
WINDHAM, ME 04062

Location:
37/ 18/ / /
58 HIGH ST
Owner:
VILLACCI TERRI
58 HIGH STREET
WINDHAM, ME 04062

Location:
37/ 24/ / /
55 HIGH ST
Owner:
TOWN OF WINDHAM
JOHN A ANDREW SCHOOL
8 SCHOOL ROAD
WINDHAM, ME 04062

Location:
37/ 7/ / /
46 HIGH ST
Owner:
HIGGINS EOIN P &
SILLS ROBIN MARIE
46 HIGH ST
WINDHAM, ME 04062

Location:
37/ 16/ / /
54 HIGH ST
Owner:
SMUTZ CYNTHIA L
54 HIGH ST
WINDHAM, ME 04062

Location:
37/ 19/ / /
60 HIGH ST
Owner:
RANDALL ARNOLD P &
RANDALL PATRICIA A
60 HIGH STREET
WINDHAM, ME 04062

Location:
37/ 25/ / /
43 HIGH ST
Owner:
DAMON PAUL L & MARIE A &
DAMON GREGORY L
43 HIGH STREET
WINDHAM, ME 04062

Section 4

Right, Title, or Interest

Section 4 – Right, Title, or Interest

The current owner of the property subject to this application is the Town of Windham, in accordance with the deed recorded at the Cumberland County Registry of Deeds in Book 40367, Page 18. Please see this referenced deed is enclosed within this Section.

The Applicants, Great Falls Construction and Westbrook Development Corporation, were awarded the Request for Proposal (RFP) for the project site by Town Council on October 8, 2024. At the 10/8/2024 Town of Windham Council Meeting, the Town Council voted unanimously to award the purchase and redevelopment proposal for the former John A. Andrew School located at 55 High Street to Westbrook Development Corporation and Great Falls Construction and authorize the Town Manager to take any other action related thereto. The Town Manager, Barry Tibbets, confirmed the Council's action in an email to Tyler Norod (Westbrook Development Corporation) on 10/9/2024.

DLN: 1002340249390

Quitclaim Deed without Covenant

REGIONAL SCHOOL UNIT NO. 14, a Maine regional school unit with a mailing address of 228 Windham Center Road, Windham, ME 04062 ("RSU") for consideration paid, hereby grants to **TOWN OF WINDHAM**, a Maine municipality with a mailing address of 8 School Road, Windham, ME 04062 ("Town") RSU's right, title, and interest in and to that certain real property, together with any buildings and improvements thereon, known as the John H. Andrews School, situated at 55 High Street in the Town of Windham, County of Cumberland, and State of Maine, more particularly described in **Exhibit A**, attached hereto and made a part hereof.

See attached Exhibit A

For source of title, reference may be had to that certain deed from the Town to the RSU, dated October 1, 2012 and recorded in the Cumberland County Registry of Deeds in Book 30002, Page 222.

[Signature page follows.]

IN WITNESS WHEREOF, the authorized representative of the RSU has caused this instrument to be executed this 9/18 day of 2023.

WITNESS

REGIONAL SCHOOL UNIT NO. 14

Christopher Howell, Superintendent

STATE OF MAINE
COUNTY OF Cumberland, SS

Then personally appeared before me the above named Christopher Howell, Superintendent of Regional School Unit No. 14 and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of said entity.

Before me:

~~Notary Public~~ / Attorney at Law 6086
Print Name: Laura Hartz
Commission Expiry: N/A

DOC :33264 BK:40367 PG:20
RECEIVED - RECORDED, CUMBERLAND COUNTY REGISTER OF DEEDS
09/18/2023, 02:29:50P
Register of Deeds Jessica M. Spaulding E-RECORDED

EXHIBIT A

A certain lot or parcel of land, together with the buildings and improvements to realty thereon, situated in the Town of Windham, County of Cumberland and State of Maine, commonly known as the John Andrews School Property and being more particularly described as follows:

The premises described in the following deeds as recorded in the Cumberland County Registry of Deeds (the "Registry"):

a) Warranty Deed from Samuel Bragdon to the Inhabitants of School District No. 2 dated September 23, 1886 and recorded in the Registry at Book 574, Page 281;
b) Warranty Deed from Philip L. Ames to the Town of Windham dated May 5, 1953 and recorded in the Registry at Book 2118, Page 459; and
c) Warranty Deed from Edna A. Murch to the Town of Windham dated April 29, 1953 and recorded in the Registry at Book 2127, Page 447.

Also conveying, to the extent not included in the foregoing deeds, all of the Grantor's right, title and interest in and to any other real estate comprising the John Andrews School premises, so-called. Reference is made to Town of Windham Property Tax Map 37, Lot 24, revised as of April 1, 2010.

Being a portion of the premises conveyed by Quitclaim Deed without Covenant from the Inhabitants of the Town of Windham, a/k/a Inhabitants of Windham, a/k/a the Inhabitants of the Municipality of Windham, a/k/a the Town of Windham to Regional School Unit No. 14 dated October 1, 2012 and recorded in the Cumberland County Registry of Deeds in Book 30002, Page 222.

Town of Windham

Town Offices
8 School Road
Windham, Maine

Cover Sheet

File Number: 24-081

Agenda Date: 10/8/2024 **Version:** 1 **Status:** Agenda Ready

In Control: Town Council **File Type:** Order

I. Council Action Requested.

To award the purchase and redevelopment proposal for the former John A Andrew School located at 55 High Street to Westbrook Development Corporation and Great Falls Construction and authorize the Town Manager to take any other action related thereto to finalize the sale.

II. Basis for Council Action.

Council approval of this item is required because;

a. The Council has the authority to enter into contracts as the legislative body of the Town pursuant to Article II, Section 3(I) of the Charter, and
b. Article 21 of the approved town warrant of June 15, 2024 authorized “the Town Council to dispose of 55 High Street, Windham, formerly known as the John A Andrew School, by such process and on such terms and conditions which are determined reasonable and appropriate”.

III. Issue Summary.

Please find the attached materials. Bids were due July 25, 2024. Results are attached.

From: Barry A. Tibbetts <batibbetts@windhammaine.us>
Sent: Wednesday, October 9, 2024 1:26 PM
To: Tyler Norod <tnorod@westbrookdevelopmentcorp.org>; Stephen J. Puleo <sjpuleo@windhammaine.us>
Cc: Barry A. Tibbetts <batibbetts@windhammaine.us>; Julie Curran (jcurran@greatfallsinc.com) <jcurran@greatfallsinc.com>; Kristin Styles <KStyles@westbrookdevelopmentcorp.org>; Robert J. Burns <rjburns@windhammaine.us>
Subject: Re: Andrew School - P&S Agreement Execution

Hello Tyler,

I talked with Steve, please submit the documents tomorrow your application will be accepted and we can add in the P & S shortly. Steve is fine with this.

As you saw last evening, there is a verbal and vote on this by the Council and with that approval they authorized the Manager "to take any other action related thereto to finalize the sale". My attorney give me comments after your copy was provided to the Council, so I need to work through those comments. I will call to discuss.

It is all workable. The core items are the same.

Thanks Barry

Section 5

Financial & Technical Capacity

Section 5 – Financial & Technical Capacity

Financial Capacity:

Please see the enclosed letters from the Kennebunk Savings Bank and Gorham Savings Bank. These are the financial lenders for Great Falls Construction, Inc. and Westbrook Development Corporation, respectively. In the enclosed letters, each Bank states their standing with each Applicant, and that they each have the financial capacity to support and successfully complete the proposed project.

Technical Capacity:

The following professional teams have been assembled for the overall design and development of this proposed project. The project team consists of Applicants Westbrook Development Corporation and Great Falls Construction, Inc., with Archetype Architects and Sebago Technics, Inc. working on the design. Please see a brief description of each firm below and their respective attachments enclosed within this Section.

Great Falls Construction, Inc. (GFC) is one of Northern New England's premier construction management, design build, and general contacting firms. They are widely respected throughout the industry for meticulous craftsmanship, with a diverse portfolio of project throughout several industries. GFC will be responsible for the site development and building construction included under this project.

The Westbrook Development Corporation (WDC) is committed to the long-term growth of affordable housing throughout the Greater Portland area and Southern Maine region. They develop quality affordable housing to assist low- and middle-income individuals and families to encourage independence within a supportive community. WDC will be responsible for the building development and overall management of the proposed eighteen (18) affordable senior housing units.

Archetype Architects has decades of real-world experience, designing buildings of all types for clients throughout New England for over 20 years. These range from large scale office spaces, affordable and market rate housing, commercial retail spaces, and mixed-use developments.

Sebago Technics, Inc. is a multi-disciplinary engineering firm that offers a wide range of services specializing in land development, planning, permitting, and engineering design services. Sebago maintains a staff of professionals to provide services in the areas of general civil engineering, road and utility design, construction management, permitting, landscape architecture, environmental services, and soil and wetlands science. Resumes of key personnel at Sebago are also enclosed within this Section.

Kennebunk Savings
PURPOSE DRIVEN.

August 23, 2024

Stephen Puleo - Planner
Town of Windham, ME
8 School Street
Windham, ME 04062

RE: Andrews School Site Redevelopment Project – 55 High St. Windham, ME

Stephen:

Jonathan and Cynthia Smith, through their construction company Great Falls Builders and various other real estate entities, have been commercial customers of Kennebunk Savings Bank for more than twenty years. The Bank has extensive lending experience with this customer and long standing confidence in both their financial strength and construction management expertise completing commercial and residential projects.

It is the opinion of Kennebunk Savings Bank that Great Falls Builders has the technical and financial capacity to successfully undertake the above referenced project As such - this letter is confirmation of Kennebunk Savings Bank's "intent to fund" the portion of the 55 High St. project as proposed by Great Falls Construction. Please forward this letter to any Town or State agencies that require this document as part of the project approval process.

Full funding approval of the project is expected upon receipt of the final project plans, specs, estimates and projections to be provided by the borrower upon final Town approval.

Please do not hesitate to contact me directly at (603-334-1021) with any questions or concerns.

Sincerely,

Christopher Kehl
Executive Vice President

Gorham Savings Bank

August 26, 2024

Town of Windham
Attn: Planning Board
8 School Street
Windham, ME 04062

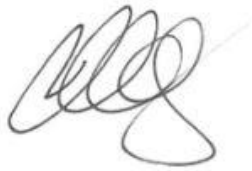
RE: New Project on High Street

To Whom It May Concern:

We have been working with Westbrook Development Corporation on their application to build 18, 1 Bedroom affordable housing apartments spread over four new buildings. The project will be located on the former Andrew School site located on High Street in Windham. The total development cost is approximately $6,500,000.00. Westbrook Development Corporation is an established and valued customer of Gorham Savings Bank. They have ample liquid funds and a long history of banking and lending with Gorham Savings Bank. Please be advised they have the cash resources, financial capacity, and track record to successfully complete this project.

Please feel free to contact me with any questions.

Sincerely,



Matthew W. Early
Senior Vice President
207-222-1493

MWE/JRS

MAINE
Department of the Secretary of State
Bureau of Corporations, Elections and Commissions

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Tue Aug 27 2024 15:33:14. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
GREAT FALLS BUILDERS, INC.	19941225 D	BUSINESS CORPORATION	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
12/28/1993	N/A	MAINE

Other Names	(A=Assumed ; F=Former)
GREAT FALLS CONSTRUCTION	A
GREAT FALL BUILDERS, INC.	F

Principal Home Office Address

Physical	Mailing
20 MECHANIC STREET	20 MECHANIC STREET
GORHAM, ME 04038	GORHAM, ME 04038

Clerk/Registered Agent

Physical	Mailing
PAUL F. DRISCOLL TWO CANAL PLAZA	PAUL F. DRISCOLL P.O. BOX 4600
PORTLAND, ME 04101	PORTLAND, ME 04112-4600

New Search

Click on a link to obtain additional information.

List of Filings — View list of filings

Obtain additional information:

Corporate Name Search

Information Summary

Subscriber activity report

This record contains information from the CEC database and is accurate as of: Tue Aug 27 2024 15:30:05. Please print or save for your records.

Legal Name	Charter Number	Filing Type	Status
WESTBROOK DEVELOPMENT CORPORATION	19870463ND	NON-PROFIT CORPORATION (UNDER TITLE 13-B)	GOOD STANDING

Filing Date	Expiration Date	Jurisdiction
04/22/1987	N/A	MAINE

Other Names **(A=Assumed ; F=Former)**

NONE

Principal Home Office Address

Physical	Mailing
30 LIZA HARMON DRIVE	30 LIZA HARMON DRIVE
WESTBROOK, ME 04092	WESTBROOK, ME 04092

Clerk/Registered Agent

Physical	Mailing
GARY D. VOGEL 84 MARGINAL WAY, SUITE 600	GARY D. VOGEL 84 MARGINAL WAY, SUITE 600
PORTLAND, ME 04101-2480	PORTLAND, ME 04101-2480

New Search

Click on a link to obtain additional information.

List of Filings — View list of filings

Obtain additional information:

Spring Crossing, 19 Ash Street, Westbrook, ME
A WDC project, General Contracted by GFC,
Designed by Archetype Architects, 2010-2011
34 Units of Affordable Senior Housing

Sketch Plan Application: Relevant Experiences 08/26/24

THE WDC/GFC CO-DEVELOPMENT TEAM'S RELEVANT EXPERIENCES/ DEMONSTRATED CAPACITY

Great Falls CONSTRUCTION WDC

Westbrook Development Corporation – Portfolio

Spring Crossing

Nestled on the scenic banks of the Presumpscot River in the heart of downtown Westbrook, Spring Crossing is conveniently located off Ash Street, surrounded by a plethora of dining options, financial institutions, and other daily essentials. This four-story apartment building comprises 34 affordable units that cater to seniors. In addition to providing heat and hot water, residents also have access to on-site laundry facilities, a fitness room, and a computer room.

Golder Apartments

Located off Lincoln Street in downtown Westbrook, Golder Apartments spans four-stories while offering 26-units of affordable apartments for families. The property is managed by Westbrook Housing Authority, which provides tenants with the added convenience of heat and hot water as part of their rent. Despite the challenges of being constructed on a small urban infill lot, Golder Commons has managed to emerge as a thriving and attractive member of the community, thanks to its quality design and modern amenities.

Robert L. Harnois Apartments

Designed to address the need for affordable senior housing, the Robert L. Harnois Apartments were completed in 2020. The building presents a unique challenge due to its location on a tight site, nestled within a granite hillside at the Westbrook Housing Authority's campus. Although not visible from the front due to grade changes along the rear of the site, this building includes a fifth story of apartments at the back of the building. In addition to the much-needed affordable housing, the Robert L. Harnois Apartments offer several amenities, including a community room, a library, exercise facilities, an on-site laundry, and a walking trail that runs alongside the property.

Lewis H. Emery Apartments

In 2021, the Lewis H. Emery Apartments were completed as a counterpart to the Robert L. Harnois apartments. This building comprises 30 low-income senior apartments, bringing the total number of new affordable apartments to 91 for both developments. The location of this site proved to be a challenge as it is situated near an old granite quarry, making access and construction difficult. The project relied primarily on 4% low-income housing tax credits for funding. As a fully ADA-compliant building, the Lewis H. Emery Apartments cater to a diverse range of residents.

Stroudwater Apartments

Commencing construction in June 2023, Stroudwater Apartments is set to provide 55 units of affordable housing for seniors. Working in collaboration with the City, WDC is transforming the former municipal lot located across from Westbrook High School. As part of this development, WDC has partnered with Portland Trails to extend trail access throughout the site for the benefit of the community. Along with offering much-needed housing, WDC plans to install new pedestrian infrastructure, public trails, and allocate funds towards the construction of a new public ice rink in the city.

Stacy M. Symbol Apartments

WDC recently broke ground on the Stacy M. Symbol Apartments, situated on the former Rivermeadow Golf Course, off Lincoln Street in Westbrook. This upcoming development will bring 60 units of affordable senior housing to the community upon completion. The project is just one component of a larger multi-phased endeavor spanning over 90 acres. The overall development encompasses 358 new housing units, presenting a mix of market-rate homeownership single-family homes and rental apartments.

An exciting aspect of this project is the dedication of over 40 acres of the proposed site to conservation land. This protected area will be managed by the Presumpscot Regional Land Trust, fostering environmental preservation and creating vital connectivity for segments of the Sebago to Sea Trail network. With a thoughtful blend of affordable senior housing and conservation efforts, the Stacy M. Symbol Apartments and the larger development project promise to make a meaningful and positive impact on the community and the environment.

References

Joshua J. Reny – Assistant City Manager, South Portland
jreny@southportland.org
(207) 767-7606

While at Avesta, Tyler teamed up with Kaplan Thompson Architects to work on a mixed-use development known as West End Apartments I & II. Prior to completing plans for the site, Tyler worked with the City on the West End Neighborhood Master Plan that envisioned a new urban village along Westbrook Street between Redbank and Brick Hill. The plan can be found here: https://www.southportland.org/files/3016/7725/3132/West_End_Neighborhood_Plan_08.21.2017.pdf

Tyler and Josh worked together to ensure that Avesta's development acted as a catalyst for the City's vision of creating a new mixed-use neighborhood center. Phase I of West End Apartments includes space for a new market, restaurant, community meeting space, and new office for Opportunity Alliance's Resource Hub. Phase II continued active uses along its ground floor with outdoor public seating options, community space, and new office space. The project was recently recognized with the Exemplary Smart Growth Development award by GrowSmart Maine at its 2023 annual conference.

Julia Morgan – Director of Community Investments, Evernorth
jmorgan@evernorthus.org
(603) 801-6377

Evernorth is a non-profit organization that provides affordable housing and community investments in Maine, New Hampshire, and Vermont. Evernorth has raised and deployed more than $1 billion in equity capital for affordable housing and built more than 15,000 affordable homes for low- and moderate-income people across northern New England.

As the Director of Community Investments, Julia has primary responsibility for overseeing and leading the underwriting of Low-Income Housing Tax Credit (LIHTC) and New Markets Tax Credit (NMTC) investments, performing a critical role in the adherence to investor driven expectations. Julia has over 20 years of experience in the finance industry, holding positions such as a securities trader, various analyst roles, and prior to joining Evernorth, as an underwriter in the low-income multi-family industry. Julia holds both a bachelor's degree and an MBA from Southern New Hampshire University, as well as a New Hampshire real estate license.

Tyler and Julia have worked together on several complex affordable housing projects across Maine and New Hampshire. Evernorth has been a key partner with Westbrook Development Corporation on several deals and is currently helping to finance WDC's Stacy M. Symbol and Stroudwater Apartments projects and the 100 unit occupied rehab of the Millbrook Apartments in Westbrook.

Dan Stevenson – Economic Development Director, City of Westbrook
dstevenson@westbrook.me.us
(207) 205-3808

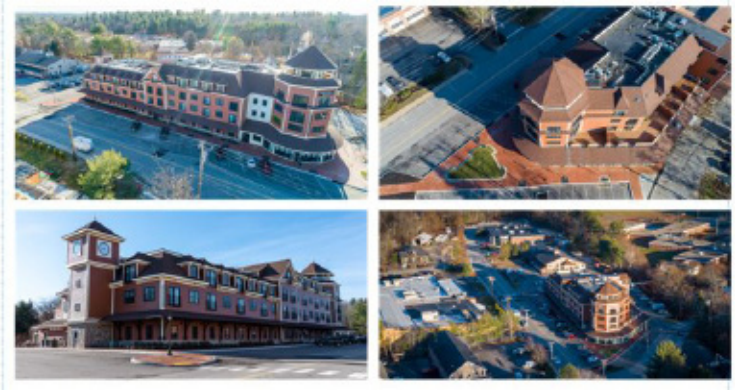
Dan Stevenson leads Westbrook's economic development initiatives fostering continued sustainable growth for Maine's 8th largest city. Tyler and Dan have worked closely on several development projects including most recently, Stroudwater Apartments. This 60-unit affordable housing complex for seniors stands as a testament to their partnership, leveraging municipal-owned land identified by the City as pivotal in tackling Westbrook's housing challenges. Through collaborative efforts with Westbrook Development Corporation (WDC), city staff, the City Council, and Planning Board, a visionary concept emerged. Beyond addressing critical housing needs, the project encompassed extensive public benefits. These included enhancements to local trail networks, bolstered pedestrian infrastructure, and funding earmarked for relocating and constructing a new public outdoor ice rink—a testament to their commitment to enhancing community life through thoughtful development.

RELEVANT PROJECTS

Great Falls CONSTRUCTION

Included within this section are relevant project experiences are similar to this project at hand. Our team has delineated its experience in both developing and constructing appropriate mixed use urban center facilities, focal space building design, and historically influenced designs. Throughout this section, you will become more familiar with the recent projects the GFC team has successfully developed, designed, and/or constructed and completed. Below are the "before and afters" followed by these similar project expanded upon in greater detail with photos. References are included at the end of this section.

AFTER



BEFORE

Station Square: a mixed-use Village center facility
7 Railroad Ave, Gorham, ME | Mixed Use Facility (33-apartments and 6-commercial units) | 70,000 SF facility
This was a design build project | Mike Richman, Custom Concepts, Inc. Architecture was the architect
Project construction timeline was 14 months with a June 2019 completion for residential and November 2019 for commercial fitups

AFTER

BEFORE

109 Main Street Redevelopment: a Village center prominent commercial facility
109 Main Street, Gorham, ME | Commercial Facility (4-first floor commercial offerings) | 10,000 SF facility
This was a design build project | Evan Carroll of Bild Architecture was the architect
Project construction timeline was 12 months with a completion in November 2015

RELEVANT PROJECTS CONTINUED

AFTER

BEFORE

Perennial Place: a renovation of historic school into multi-unit housing
7 North Gorham Road, Gorham, ME | Renovation of former school into residential units (12-first floor residential units)
11,360SF facility
This was a design build project | Bruce Macleod of Macleod was the designer
Project construction timeline was 12 months with a completion in January 2015

AFTER

BEFORE

Red City Ale: a renovation of an old and abandoned fire station currently being redeveloped into a restaurant space
8 Main Street, Windham, ME | Renovated ~6,800SF building from a fire station into a restaurant.
This was a design build project | Ryan Senatore of RSA Architecture was the architect & Sebago Technics is the Civil Designer
Project construction took 10 months with a completion in Spring 2023

AFTER

BEFORE

12 Sullivan Street, Berwick: a renovation of an old and abandoned mill building for 8-commercial units.
12 Sullivan Street, Berwick, ME | Renovated ~20,000SF building.
This was a design build project | Ryan Senatore of RSA Architecture was the architect & Sebago Technics is the Civil Designer
Project construction timeline was 12 months with a completion in Summer 2022

RELEVANT PROJECTS CONTINUED

8 Main Street, Berwick, ME: a mixed-use new construction with ten 1-bedroom apartements and two commercial units. This building is a ~9,860SF design build project | Ryan Senatore of RSA Architecture was the architect & Sebago Technics is the Civil Designer

3 School Street, Berwick, ME: a mixed-use new construction with 7 apartment units (four 2-beds, three 1-beds) and 2 commercial units. The building is a ~7,400SF design build project | Isaak Design is the architect & Sebago Technics is the Civil Designer

16-18 Sullivan Street, Berwick, ME: Currently under construction with anticipated completion Q4 2024-Q1 2025. Two 12-unit, 2 bedroom apartment buildings. Each building will be a ~12,400SF design build project. | Isaak Design is the architect & Sebago Technics is the Civil Designer

AMY BELL SEGAL, RLA

Senior Project Manager/Senior Landscape Architect

In the course of her 30 year career, Amy has worked on a great variety of projects in the public and private sectors across Maine and New England. Her work has included site planning, permitting and construction management for residential, commercial, institutional, and industrial properties as well as recreation, trail, and community planning. She has earned a wonderful reputation through great work, relationships and communication.

EXPERIENCE

- **Portland Harbor Common Lot (Phase 1) Portland, ME:** Part of design team working with City staff and community working group to transform an oceanfront parking lot between Ocean Gateway and Maine State Pier into a park amenity for residents and visitors.
- **Portland Tree Canopy Project, Portland, ME**: Working with Parks and Forestry Staff to plan and implement tree planting strategies to increase the canopy within Bayside and Downtown neighborhoods.
- **Acadia Hospital, Northern Light Health, Bangor, ME**: Design of children, adolescent, and adult outdoor courtyard spaces to promote mental and physical well being in a safe environment. *With Lavallee Brensinger*
- **Shore Road Improvement Project, Cape Elizabeth, ME:** Working with transportation engineers and town staff to provide pedestrian and bicyclist amenities within road reconstruction design. Prepared visualizations from key locations for public outreach.
- **Deering Corner Roundabout, Portland, ME:** Designed pedestrian and landscape amenities adjacent to roundabout and within stormwater infrastructure. Collaboration with Metro and University of Southern Maine gateway planning. Worked with artist on sculpture placement and lighting. *Designed at TJD&A with Ransom Engineering, oversaw implementation at Sebago*
- **Lakeside Norway, ME.** Working with Left Turn Enterprises to develop a 6-acre four season event and recreation center and new brewery for Norway Brewing Company on Lake Pennesseewassee within the Downtown Gateway Area.
- **Arthur P. Girard Columbarium Garden,Westbrook, ME:** Conceptual design through construction documentation for a 400 niche columbarium garden in Woodlawn Cemetery. The Garden includes public and veterans sections, extensive landscaping, and a pergola for outdoor funeral services.
- **Red Cross Park Renovation, Greenville, ME:** Master Plan for renovation of 6-acre park on Moosehead Lake that provides swimming and boating access. Plan includes shoreland stabilization, improved parking, accessibility, playspace, trails, and a pump track. Park applying for funding through the Land & Water Conservation Fund Grant program.
- **Evergreen Cemetery Expansion, Rangeley, ME:** Master Plan for a multi generation expansion for Town-owned cemetery. Highlights of initial phases include a 500 in ground plots, 250 cremains plots, columbarium niche walls and a gathering space that overlooks Rangeley Lake and the western mountains.
- **Bonney Park, Androscoggin Riverwalk, Riverpark, Moulton Park Rail Trail, and Little Andy Park, Auburn, ME:** A series of linked open spaces along the Androscoggin River. Design, permitting, and construction management. *With TJD&A*

EDUCATION

BSLA, Cornell University
Denmark International Study, 1992

REGISTRATIONS

Maine Licensed Landscape Architect #2265
CLARB Certified
Maine DOT LPA Certified 2019 - 2023

SPECIAL TRAINING

MeDEP Low Impact Development Stormwater BMP training
Courses in ADA standards, Complete Streets, Sustainable Sites (ASLA LEED equiv)

PROFESSIONAL EMPLOYMENT

2020 - Present: Sebago Technics, Inc.
South Portland, ME

1992 - 2020: TJD&A
Landscape Architects & Planners
Yarmouth, ME

1988 - 1992: Bell & Spina Architects
Camillus, NY

SEBAGO TECHNICS

207.200.2055 ABSEGAL@SEBAGOTECHNICS.COM

MARGO BARAJAS, RLA

Landscape Architect

Ms. Barajas joined Sebago Technics, Inc., (STI) in January of 2023. Margo is a highly qualified Landscape Architect with a Master of Landscape Architecture degree from the University of Oregon. She has over 4 years of experience in the field and holds a Maine license as a Landscape Architect. She currently works as a part of the Project Delivery Team at Sebago Technics, bringing her extensive design and project management skills to the company.

EXPERIENCE

Narragansett School Playground - Gorham, ME: Conducted outreach with school staff, designed preschool playground, and guided construction documents. To be constructed Summer 2023.

Prior to her employment at Sebago Technics, Margo's experience includes:

Mercy Hospital Mixed-Use Redevelopment - Portland, ME: Co-lead design, construction documents, and construction administration of West End redevelopment project. Under Construction.

Homeless Services Center - Portland, ME: Worked with City of Portland, Developers, and extensive project team on the site and amenity space design at the recently completed HSC. Project completed April 2023.

Raise-Op Housing - Lewiston, ME: Designed and lead construction documentation for two affordable, family-focused housing projects on Blake and Walnut Streets in downtown Lewiston.

Jackson Labs Workforce Housing - Bar Harbor, ME: Twenty-four unit workforce housing project with tenant amenity space, including a playground.

Woodfords Family Services - New Gloucester, ME: Designed upgrades to a playground at a daycare center.

PROFESSIONAL EXPERIENCE

ACETO LANDSCAPE ARCHITECTURE (ALA) - *PROJECT MANAGER*
November 2020 - September 2022, Portland, ME

CARROLL & ASSOCIATES - *LANDSCAPE DESIGNER*
May 2019 - October 2020, Portland, ME

THE CULTURAL LANDSCAPE FOUNDATION - *BOASBERG FELLOW*
Summer 2017, Washington, D.C.

EDUCATION

University of Oregon, College of Design
Master of Landscape Architecture, 2018
Master's Project: *"Designing for Sea Level Rise: Back Cove, Portland, Maine."*

Boston University,
College of Communication
B.S. Journalism, 2009
London Internship Program, 2008

REGISTRATIONS

Maine Licensed Landscape Architect: #5544

MEMBERSHIPS

American Society of Landscape Architects,
Member of Maine Section 2018 - Present

Oregon State University, Extension Service,
Master Gardener, 2015 - 2016
Corvallis, Oregon

AWARDS

American Society of Landscape Architects
Honor Award for Communications
What's Out There: Cultural Landscapes Guides,
The Cultural Landscape Foundation

SEBAGO TECHNICS

207.200.2119 MBARAJAS@SEBAGOTECHNICS.COM

KELSEY WEIR, EI

Civil Engineer

Kelsey joined Sebago Technics, Inc. (Sebago) in February of 2024 as a Civil Engineer. Hailing from Ohio, Kelsey graduated from the University of Maine with a degree in Civil Engineering. Prior to her employment at Sebago, she had been working for a local civil engineering firm with experience in coastal permitting and design projects. While in college, Kelsey had internships with experience in research for the United States Army Corps of Engineers (USACE), teaching assistant roles, and worked on transportation projects for a national transportation engineering firm. Kelsey is proficient in Civil 3D, HydroCAD and Microstation.

EXPERIENCE

Cascades Subdivision – Saco, Maine
Design engineer for stormwater for a 195-unit residential subdivision. Assisted in site development plans.

Fairway Commons Subdivision – Gorham, Maine
Design engineer for a 14-unit residential subdivision. Provided site grading, stormwater treatment and design, and utility layout.

Private Residence – Cape Elizabeth, Maine
Assisted in the preliminary site development concepts for a sand dune restoration for a residence in Cape Elizabeth.

Prior to her employment at Sebago Technics, Kelsey's experience includes:

- Working on coastal shoreline stabilization projects in Peaks Island, Kennebunkport, and York, Maine
- Design riprap revetments with Civil-3D and Excel using Army Corp of Engineers Design Standards for residential and commercial properties.
- Permitted shoreline stabilization projects with the Department of Environmental Protection, Army Corp of Engineers, and local municipalities.
- Coordinated, scheduled, and communicated with private clients and surveying subconsultants.
- Performed stormwater drainage design and analysis for subdivisions utilizing Hydro-CAD software.
- Drafted residential and commercial stormwater drainage design, shoreline stabilization, and wetland delineation.
- Permitted SLODA stormwater permits with the Department of Environmental Protection for subdivisions.
- Coordinated and compiled Army Corp of Engineers permits for a multi marina dredge project.

EDUCATION

University of Maine - Orono, ME
B.S., Civil Engineering
Concentration: Structures
Minor: Marine and Ocean Engineering

CERTIFICATIONS

Engineering Intern (EI)

OSHA 10

MEMBERSHIPS

Society of Women Engineers

American Society of Civil Engineers (ASCE)

SEBAGO TECHNICS

207.482.6377 KWEIR@SEBAGOTECHNICS.COM

GRIFFIN R. STEINMAN, EI

Traffic Engineer

Mr. Steinman joined Sebago Technics, Inc., (STI) in April of 2021 as a Traffic Engineer within the Transportation Team. In this position, he conducts traffic studies and permitting for site development projects. He also provides support to our traffic signal design and operations practice. A Maine native, Mr. Steinman graduated from the University of Maine with a degree in Civil Engineering. He served in transportation intern roles with both the Maine Department of Transportation and City of Portland. In these roles, he gained experience in highway/bridge construction, parking inventory/demand, traffic counts and bike/ped planning. Since graduation, Griffin has worked as a Project Engineer/Estimator with a regional traffic signal equipment/services provider. In this role, he has gained technical knowledge regarding the design, operations, and installation of traffic signals and signal systems.

EXPERIENCE

186 Main Street – Auburn, Maine: Served as the Lead Engineer to provide traffic engineering permitting services for new infill multi-use development in Downtown Auburn. Worked with the City of Auburn to obtain a traffic movement permit (TMP) for the site as the City has Delegated Review Authority for TMPs from MaineDOT. Analysis included trip generation and assignments, safety analysis, and review of pedestrian infrastructure. Additional planning level efforts were coordinated with the City for long-term downtown improvements as a part of the permitting coordination.

Route 236 Traffic Study – South Berwick, Maine: Project responsibilities included modeling existing conditions and over ten proposed alternatives in Synchro SimTraffic for a major planning study along Route 236/Route 4 (Main Street) in South Berwick. The study focused on improving vehicular and pedestrian mobility along a commuter-heavy corridor that had significant existing capacity constraints.

Route 202 at Route 35 Traffic Signal Improvements – Hollis, Maine: Part of the design team in the creation of a new traffic signal plan, including a span wire layout, advanced signage plan, and strain pole cross-section loadings at the intersection of Route 202 and 35 in Hollis. The project is in conjunction with the MaineDOT to improve intersection safety.

Route 1 Traffic Signal Replacements – Kittery, Maine: Part of the design team including existing conditions modeling and preliminary design efforts for the ongoing MaineDOT projects 25433.00 and 25435.00 that include replacing existing signalized intersections along Route 1 in Kittery.

Rock Row Traffic Permitting and Off-Site Improvements – Westbrook/Portland, Maine: Project responsibilities include traffic impact studies to assess and permit the phased build-out of mixed-use development. Design efforts include the simulation modeling of existing and proposed traffic conditions and the monitoring/optimization of traffic signal timings. Work also included the creation of mast arm cross-section plans for a concept traffic signal design.

385 Congress Street – Portland, Maine: Traffic Impact Study to assess and permit the hotel, residential, and commercial mixed-use development. The study included an alternative analysis of proposed traffic configurations using Synchro/SimTraffic modeling software.

Bath Road Brunswick Apartments – Brunswick, Maine: Creation of traffic signal plan set including traffic signal notes, pavement marking plans, and the traffic signal plan sheets.

EDUCATION

University of Maine - Orono, ME
B.S., Civil Engineering, 2019
Concentration: Transportation Engineering

CERTIFICATIONS

Engineering Intern #7821

MaineDOT
Local Project Administration Certification

SEBAGO TECHNICS

207.482.6301 GSTEINMAN@SEBAGOTECHNICS.COM

BRETT WIEMKEN

Permitting Specialist/Project Coordinator

Mr. Wiemken joined Sebago Technics in September 2023 as Permitting Specialist / Project Coordinator. He holds a degree in City and Regional Planning from Ohio State University, underscoring his profound understanding of zoning and development projects. As a member of our Entitlements Group within Project Delivery, Brett plays an important role in orchestrating seamless permitting processes and ensuring regulatory compliance for our diverse projects.

Brett is the lead planner for many projects, from leading policy research, to public engagement design, and document development. Having relocated from Central Ohio to Maine, Brett uses his prior educational background and public sector experience to produce visual graphics from public input, coordinate with external entities in gathering document data, and structure the document's open space strategy.

EXPERIENCE

The Ohio State University, Columbus, Ohio
Brett is a graduate of The Ohio State University, with a Bachelor of Science in City and Regional Planning, minoring in Architectural Studies. This program is one of only sixteen undergraduate programs accredited by the Planning Accreditation Board. This community-based program offered a blend of planning history, law, communications, public participation, advocacy, forecasting, and data analysis.

At the heart of this program, Brett had the opportunity to join studio courses where he engaged in real-life planning. One of the studios was an adaptive reuse project for the Snyder Park Clubhouse in Springfield, Ohio. Using modeling, stakeholder meetings, SWOT analyses (Strengths, Weaknesses, Opportunities, & Threats), and researching cost projections, the studio group was able to develop recommendations for the City of Springfield as they looked to turn a vacant building into an accessible, functional, and essential component within the community park.

Orange Township, Delaware County, Ohio
Bordering the northern boundary of Columbus, Ohio, Orange Township is home to nearly 35,000 residents. This community is experiencing a growing population, having doubled in size since 2000, and even growing as much as 10,000 in population within the last decade. Located in the heart of a fast-developing Central Ohio, Orange Township has managed to maintain nearly forty percent of their land dedicated to parks, open spaces, and the Alum Creek Reservoir.

During his education at The Ohio State University, Brett secured a position working for the Orange Township Zoning Department in 2020. His job responsibilities included facilitation and management of the Board of Zoning Appeals, collaboration with Township staff for the implementation of the Comprehensive Plan, and management of the Township GIS database. Brett was also involved in the implementation and development of a New Urbanism style community, and the refinement of a transportation corridor overlay district.

As the Senior Zoning Officer, Brett also played a critical role in the Zoning Code Rewrite for Orange Township. Though the project is still ongoing to date, Brett played critical roles in participating in public engagement sessions, reviewing contemporary planning policies, and communicating with residents to ensure the premium quality of the zoning ordinance overhaul. Brett also actively participated in other Township planning projects like the Active Transportation Plan (adopted January 2024) and the 10-year Master Plan for Parks, recreation, and Trails (adopted August 2022).

EDUCATION

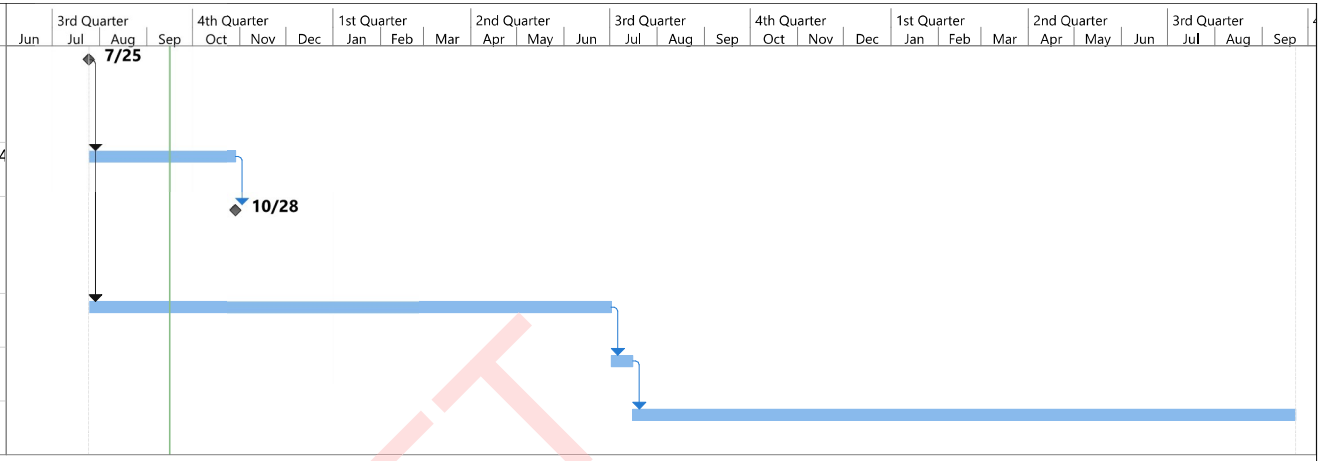
The Ohio State University
Columbus, OH
City & Regional Planning
Minor: Architectural Studies
2021

Columbus State Community College
Columbus, OH
Architectural CAD Drafting Certificate
2022

SEBAGO TECHNICS

207.482.6323 BWIEMKEN@SEBAGOTECHNICS.COM

ID	Task Mode	Task Name	Duration	Start	Finish
1		Notification of Award	0 days	Thu 7/25/24	Thu 7/25/24
2		Planning Board	68 days	Thu 7/25/24	Mon 10/28/24
3		Receive Board Approval	0 days	Mon 10/28/24	Mon 10/28/24
4		Preconstruction	244 days	Thu 7/25/24	Tue 7/1/25
5		Permitting	10 days	Wed 7/2/25	Tue 7/15/25
6		Construction	310 days	Wed 7/16/25	Tue 9/22/26



WESTBROOK DEVELOPMENT CORPORATION

Great Falls CONSTRUCTION

All timing is dependent upon funding.

Project: Andrews Draft PB Schedule
Date: Mon 9/16/24

Task	Project Summary	Manual Task	Start-only	Deadline	
Split	Inactive Task	Duration-only	Finish-only	Progress	
Milestone	Inactive Milestone	Manual Summary Rollup	External Tasks	Manual Progress	
Summary	Inactive Summary	Manual Summary	External Milestone		

Section 6

Traffic Information

Section 6 – Traffic Information

A Traffic Memorandum has been prepared for this project and is enclosed within this Section. This memorandum includes estimated trip generations for this proposed affordable senior housing project. As detailed within the Memo, this development is estimated to generate five (5), five (5), and six (6) trips during the AM, PM, and Saturday peak hours of the generator, respectively. Given this level of trip generation, a Traffic Movement Permit (TMP) is not required from the Maine Department of Transportation (MDOT), as this development does not exceed the one hundred (100) trip threshold during a peak hour period.

Additionally, sight distance on High Street exceeds the required minimum for a 25 miles per hour (mph) roadway, as defined by the Town of Windham's sight distance standards. Please see the enclosed Traffic Memorandum for additional information.

Memorandum

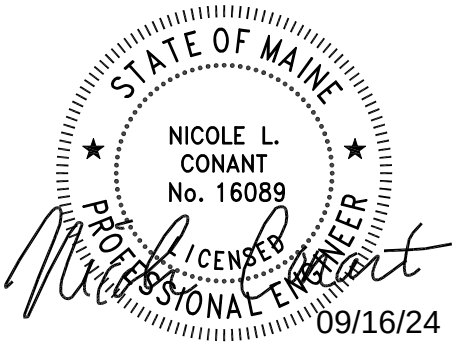
240577

To: Amy Bell Segal, Sebago Technics

From: Nikki Conant, P.E., Sebago Technics

Griffin Steinman, EI, Sebago Technics

Date: September 16, 2024



Subject: Traffic Impact Assessment, Andrew's School Redevelopment, Windham, Maine

Introduction

The purpose of this memorandum is to provide a Traffic Impact Assessment (TIA) for a proposed site redevelopment located at 55 High Street in Windham, Maine. The proposed development includes the conversion of the former Andrew's School to 18 units of multifamily affordable senior housing. Access to the site is proposed via a reconstructed access across from Androscoggin Street. This development also includes the removal of the existing access approximately 115 feet north of Androscoggin Street.

As such, this memorandum details the calculated trip generation for the development, provides a crash data review for roadways in the vicinity of the site, and reviews sight distance for the proposed access.

Trip Generation

Trip generation was completed utilizing the 11th Edition of the Institute of Transportation Engineers (ITE), *Trip Generation Manual.* Land use code (LUC) 252 – Senior Adult Housing – Multifamily was utilized based on 18 dwelling units. ITE defines LUC 252 as "independent living developments that are called various names including retirement communities, age-restricted housing, and active adult communities. The development has a specific age restriction for its residents, typically a minimum of 55 years of age for at least one resident of the household." Estimated trip generation for the proposed development is outlined in Table 1.

Table 1 – Proposed ITE Trip Generation
Land Use Code 252 – Senior Adult Housing – Multifamily
18 Dwelling Units

Time Period	*Average Rate per Dwelling Unit*	*Trips*	*Entering*	*Exiting*
Weekday	3.24	58	29 (50%)	29 (50%)
AM Peak Hour – Adjacent Street (7 – 9 AM)	0.20	4	1 (34%)	3 (66%)
AM Peak Hour – Generator	0.29	5	2 (45%)	3 (55%)
PM Peak Hour – Adjacent Street (4 – 6 PM)	0.25	5	3 (56%)	2 (44%)
PM Peak Hour – Generator	0.30	5	3 (54%)	2 (46%)
Saturday	2.74	50	25 (50%)	25 (50%)
Saturday Peak Hour	0.32	6	3 (54%)	3 (46%)

As demonstrated in Table 1, the development is estimated to generate a total of five (5) trips, five (5) trips, and six (6) trips during the AM, PM, and Saturday peak hour periods of the generator, respectively. Given this level of trip generation, a Traffic Movement Permit (TMP) is not required from the Maine Department of Transportation (MaineDOT) as project trip generation does not exceed the 100-trip threshold during a peak hour period.

Additionally, the Town of Windham *Land Use Ordinance* may require developments that exceed 140 vehicle trips per day to provide a full Traffic Impact Analysis. Given the development is calculated to generate 58 daily trips, no additional analysis is anticipated.

Crash Data

The MaineDOT Public Map Viewer was utilized to determine if there are any high crash locations (HCL) within the immediate vicinity of the site. An intersection or section of roadway is deemed an HCL if two criteria are met: a Critical Rate Factor (CRF) greater than 1.0 and a minimum of eight (8) crashes in a three-year period.

High Street from Depot Street was reviewed for the three-year study period from 2021 to 2023. Based on the available crash information, no high crash locations are located within the immediate vicinity of the site. As such, there are no recommendations for improvements in conjunction with this project.

Sight Distance Analysis

Sight distance was reviewed in the field on August 29, 2024, at the proposed site access location on High Street opposite Androscoggin Street.

The analysis was completed in accordance with the standards set forth by Town of Windham *Land Use Ordinance Appendix B - Street Design and Construction Standards*. Measurements were conducted from a point ten (10) feet behind the edge of the travel way, determined by offsetting 11 feet from the centerline of High Street, considering a height of eye of 3.5 feet and a height of object of 4.25 feet. Sight distance requirements are summarized in Table 2.

Table 2 – Sight Distance Requirements

Posted Speed (MPH)	*Minimum Sight Distance (feet)*
20	155’
25	200’
30	250’
35	305’
40	360’
45	425’
50	495’
55	570’

According to the MaineDOT Public Map Viewer, the posted speed limit on High Street in the vicinity of the site is 25 MPH. This was confirmed by signage in the field, thus corresponding to a required sight distance of 200 feet per the Town of Windham’s standards. Sight distance was measured to be 270 feet looking to the left as shown in Image 1, before obstructed by overgrown vegetation along High Street. Sight distance to the right was measured to exceed 700 feet as shown in Image 2. As such, sight distance on High Street exceeds the required minimum for a 25 MPH roadway. It is important to note that no landscaping, signage, or other features shall be located within the sight triangles of the driveways.

Image 1: Sight Distance Looking Left

Image 2: Sight Distance Looking Right

Conclusion

Sebago Technics, Inc. has completed the traffic impact assessment for the Andrew's School redevelopment in Windham, Maine and provides the following conclusions:

- The proposed redevelopment consisting of 18 units of multifamily senior housing is estimated to generate a total of five (5) trips, five (5) trips and six (6) trips during the AM, PM, and Saturday peak hour periods, respectively. As such, a TMP is not required by MaineDOT.
- Additionally, this level of traffic is not anticipated to require a full Traffic Impact Analysis by the Town of Windham for developments that exceed 140 vehicle trips per day, given the development is calculated to generate 58 new daily trips.
- The segment of High Street in the immediate vicinity of the site is not classified as a high crash location. As such, no recommendations for improvements are included with this development.
- Sight distance from the proposed access on High Street exceeds the Town of Windham minimum requirement for a 25 MPH. It is important to note that no landscaping, signage, or other features shall be located within the sight triangle of the proposed driveway.

Section 7

Utilities

Section 7 – Utilities

Water:

There is an existing water main located along High Street, operated by the Portland Water District (PWD). This project is proposing to connect to the available water main, and draw water service interior to the site near the site's proposed entrance. From there, this line will connect to a meter pit for oversight of total water usage within the development. From the meter pit, water will continue interior to the site and branch off to serve each of the proposed buildings. Each building will have submeters for oversight of each unit's water usage. An Ability to Serve letter was requested from PWD on September 16, 2024, and is enclosed within this Section. Please also see the *Grading & Utility Plan* within the Plan Set.

Sewer:

Similar to water, there is an existing sewer main located along High Street, also operated by the Portland Water District (PWD). This development is proposing to connect to the available sewer main, and connect to the internal sewer infrastructure, as detailed on the *Grading & Utility Plan*. The proposed system is gravity-fed with no pumps proposed at this time. An Ability to Serve letter was requested from PWD on September 13, 2024, and this correspondence is enclosed within this Section.

Sebago has consulted with PWD throughout the design phase. An Ability to Serve letter for water and sewer will be provided upon acceptance of our plans and is expected prior to the October 28, 2024, Planning Board meeting.

Electrical:

Central Maine Power currently has existing electrical service through overhead power lines running along High Street. One of these poles is directly adjacent to the site's access. Through this proposed project, electrical service is accomplished from dropping power down onto the site and installing underground electric lines that branch off to serve each residential building. Please see the *Grading & Utility Plan* enclosed within the Plan Set for additional information.

Natural Gas:

This proposed development will connect to the existing natural gas line within High Street in a similar location to the existing gas line connection. This new connection will conform with the applicable Maine Natural Gas Standards. Please see the *Grading & Utility Plan* for additional information.

September 17, 2024
240577

Robert Bartels, Senior Project Engineer
Portland Water District
225 Douglass Street, PO Box 3553
Portland, ME 04104

RE: John A. Andrew School Site Redevelopment
55 High Street, Windham, ME 04062; MBLU 37-24

To Whom It May Concern,

On behalf of the Westbrook Development Corporation and Great Falls Construction Inc., Sebago Technics, Inc. is requesting confirmation that there is sufficient capacity to accommodate the anticipated water and sewer demand for a residential development located at 55 High Street in the Town of Windham, Maine.

This development is for an affordable senior housing project containing eighteen (18) units housed within four (4) multi-unit buildings. According to the State of Maine Subsurface Wastewater Disposal Rules (Amended September 23, 2023), each multi-family 1-bedroom unit has a design flow of 120 gallons per day (gpd). With 120 gpd per unit, and there being a total of eighteen (18) units, we calculate the total design flow to amount to approximately 2,160 gpd.

There may also be potential future development on the site, with approximately seventeen (17) units contained within a 12-unit apartment building and five (5) townhomes. According to the State of Maine Subsurface Wastewater Disposal Rules (Amended September 23, 2023), each 2-bedroom unit has a design flow of 90 gpd per bedroom. With all additional units being two bedrooms and 17 additional units, we calculated the total design flow to approximately 3,060 gpd. In total, the currently proposed development with the potential future units amount to an anticipated demand of 5,220 gpd.

The Applicants propose connecting to existing water and sewer infrastructure along High Street. Water service will be pulled into the site to a meter pit that tracks the overall water usage for the site. From there, water service extends to each of the proposed buildings. Similarly, sewer service is proposed to connect to the existing infrastructure along High Street and will be gravity-fed throughout the site.

For your reference, we have attached a Location Map and conceptual Utility Plan. We look forward to confirmation that there is sufficient water supply to serve the proposed phased development. In the interim, please call with any questions or if you require additional information. We appreciate your time and consideration.

Sincerely,
SEBAGO TECHNICS, INC.

Brett Wiemken
Permitting Specialist/Project Coordinator

Section 8

Stormwater Management

Section 8 – Stormwater Management

Please see the *Stormwater Management Report* enclosed within this Section that has been prepared for this proposed development.

Section 9

Performance Standards & Approval Criteria

Section 9 – Performance Standards & Approval Criteria

This application is subject to review by several articles as defined within the Town of Windham's Land Use Ordinance (Chapter 120). Below, we offer the following narrative to directly address the applicable articles subject to this application:

ARTICLE 3 – DEFINITIONS:

Dwelling, Multifamily: A building containing three or more dwelling units. A multifamily dwelling may be attached to a nonresidential use.

The proposed project meets the definition of a multifamily dwelling development, as three (3) of the proposed buildings contain four (4) units, and one (1) proposed building contains six (6) units.

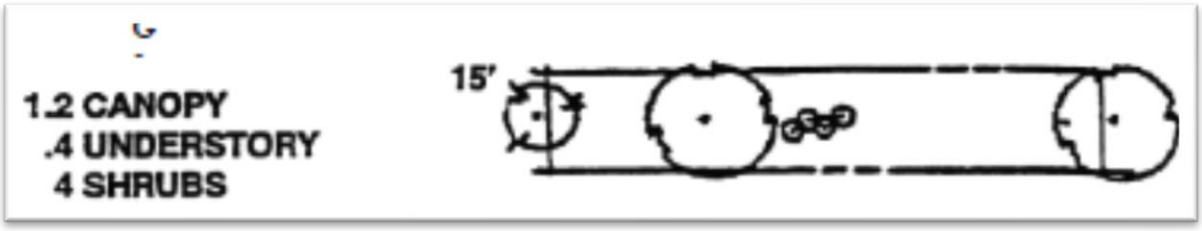
ARTICLE 4 – ZONING DISTRICTS:

(§120-415.B. – Village Commercial District (VC)): Permitted Uses – Dwelling, multifamily.

As defined above, the proposed multifamily dwelling development is a permitted use within the Village Commercial (VC) zoning district. The proposed site is identified on the Town's Tax Map 37 as Lot 24, and is also identified on the Town of Windham Land Use Map as being zoned within the VC District (Council approved, dated April 9, 2024).

ARTICLE 5 – PERFORMANCE STANDARDS

(§120-511.C.3.b. – Buffer Yard: Buffers Along Streets): Commercial Districts (C-1, C-2, C-3, C-4, VC, & WC Districts): Use Buffer Yard G.



The project site has approximately 260 linear feet of street frontage along High Street. As such, calculated below are the applicable Buffer Yard "G" standards:

	Required	*Proposed*
2.6 (frontage) x 1.2 =	*3.12 Canopy Trees*	*9 Canopy Trees (5 deciduous and 4 evergreen)*
2.6 (frontage) x 0.4 =	*1.04 Understory Trees*	*1 Understory Tree*
2.6 (frontage) x 4.0 =	*10 Shrubs*	*14 Shrubs (8 deciduous and 6 evergreen)*

The proposed trees and shrubs comply with the above standards, as the project is not required to round up from partial decimals. The proposed plantings use native species, as encouraged.

ARTICLE 8 – SITE PLAN REVIEW

This application is subject to the Site Plan Review criteria, as defined within the Town of Windham's Land Use Ordinance, §120-812 Major Site Performance Standards & Approval Criteria. As such, listed below are each of the applicable standards and how they relate to this proposed project.

§120-812.A. Utilization of the Site: *The property subject to this application is the site of the former John A. Andrew school building located at 55 High Street. The site is approximately 2.4 acres in size and is zoned under the Windham Village Commercial (VC) zoning district. The site generally slopes upwards from High Street, is relatively level in the middle (where the former school building was located), and slopes back downwards towards the rear. The site also contains a small wetland area located along the northeastern border of the parcel. No wetland impacts are proposed under the scope of this application, and the proposed development reflects the natural capabilities of the site.*

§120-812.B. Vehicular Traffic: *The site's layout includes two (2) turnaround areas designed to provide adequate emergency vehicular turnaround and maneuvering. Additionally, the proposed access driveway will be designed to meet the applicable private road standards.*

§120-812.C. Parking & Loading Requirements: *The proposed development is designed to include a total of twenty-seven (27) vehicular parking spaces. The parking sequence provides an adequate amount of parking for the senior housing use and complies with the minimum parking standard of a 1.5:1 ratio of parking spaces to dwelling units. In addition, the parcel is within the Town of Windham's Growth Zone as depicted in the 2024 Comprehensive Plan. As such, under State Housing Legislation LD 2003, the parking requirements for sites providing 51% or more of the units as affordable only are required to maintain a parking ratio of 0.66 spaces per residential unit.*

§120-812.D. Pedestrian Traffic: *The proposed development incorporates a network of sidewalks that provide both internal connectivity and link externally to the existing sidewalk on the west side of High Street. Please see the plan information submitted for specific locations and details of the proposed layout.*

§120-812.E. Stormwater Management: *A Stormwater Management Report has been prepared for this proposed project, and is included in the enclosed Section 8 – Stormwater Management.*

§120-812.F. Erosion Control: *An Erosion & Sedimentation Control Plan has been developed for this project and is enclosed within the Plan Set.*

§120-812.G. Water Supply Provisions: *This proposed residential development will connect to existing public water infrastructure that is available along High Street. Please see the enclosed Section 7 – Utilities for the Ability to Serve request correspondence with the Portland Water District (PWD).*

§120-812.H. Sewage Disposal Provisions: *This proposed residential development will connect to existing public sewer infrastructure that is available along High Street. Please see the enclosed Section 7 – Utilities for the Ability to Serve request correspondence with the Portland Water District (PWD).*

§120-812.I. Utilities: *This proposed development includes utility connections for electrical, water, and sewer services. There is also natural gas service available in High Street. The applicant has not determined whether or not it will require connection to natural gas for any of its HVAC systems and reserves the right to do so as necessary in the future as construction plans are further refined. All proposed utilities are located underground, including the electrical service which is accomplished from connecting to the existing overhead lines along High Street, then drawn underground near the site's frontage.* Please see the *Grading & Utility Plan* within the Plan Set.

§120-812.J. Groundwater Protection: *This proposed development will connect to available water supply provided by the Portland Water District (PWD) that has an existing main along High Street. The scale of this development is not anticipated to adversely impact the overall quality or quantity of available water supply.*

§120-812.K. Water Quality Protection: *The project site is located within the Upper Presumpscot River Watershed, which is not an At-Risk Lake Watershed or an Urban Impaired Stream Watershed, as defined by the Maine Department of Environmental Protection (MDEP). This project will utilize available public water supply from the existing connection along High Street and will incorporate a stormwater management system to provide treatment of runoff. Day-to-day operations do not require hazardous substances such as fuels, industrial chemicals, or wastes.*

§120-812.L. Hazardous, Special, & Radioactive Materials: *There are no anticipated sources or generators that may produce hazardous, special, or radioactive materials within the scope of the proposed development. Additionally, there are no flammable or explosive liquids, solids, or gases that will be stored in bulk above-ground within the project site.*

§120-812.M. Shoreland Relationship: *The project site is not located within the Shoreland Zoning District. The successful completion of this proposed development will not result in any adverse impacts to available water quality or quantity.*

§120-812.N. Technical & Financial Capacity: *Please see the enclosed Section 5 – Financial & Technical Capacity demonstrating that the Applicants have sufficient financial resources to construct, operate, and maintain all aspect of the proposed development. Additionally, Section 5 contains supplemental information related to the project team assembled and their history, qualifications, and evidence of prior experience.*

§120-812.O. Solid Waste Management: *The proposed development will handle and process solid waste privately through a licensed solid waste contractor. Internally, each of the proposed units will contain private bins to collect generated waste and the selected contractor will haul to a licensed facility.*

§120-812.P. Historical & Archaeological Resources: *The property subject to this application is a previously developed site, which contained the recently demolished John A. Andrew school building and its associated developed area. Upon our review of the National Register of Historic Places, the Town's Comprehensive Plan, and available local historical archives, there are no portions of the subject property or surrounding properties that are of significant historical or archaeological significance. A review request letter, dated September 13, 2024, was sent to the Maine Historic Preservation Commission (MHPC), seeking their respected consultation. No response has been recorded from MHPC at the time of this submission. For reference, we have included our letter and supplementary attachments sent to MHPC enclosed within this Section.*

§120-812.Q. Floodplain Management*: Please see the information provided within the enclosed Section 10 – Flooding Information. The project site is not located within the mapped Federal Emergency Management Agency (FEMA) 100-year Floodplain hazard area.*

§120-812.R. Exterior Lighting: *Photometrics and supplementary lighting details are provided within this Final Plan Review application.*

§120-812.S. Noise: *The proposed development is not anticipated to generate an unreasonable amount of noise detectable at property lines. This project is subject to the limitations regarding the timing of construction activities and will comply with the 10:00 p.m. – 6:00 a.m. restrictions.*

§120-812.T. Storage of Materials (Landscape Plan): *A Landscape Plan has been developed for this proposed residential development and is enclosed within the Plan Set. This project does not contain any exposed storage areas, machinery, or areas used for the storage or collection of automobile parts.*

This application is also subject to the criteria defined within the Town of Windham's Land Use Ordinance, §120-814 Multifamily Development Standards. As such, listed below are each of the applicable standards and how they relate to this proposed project.

§120-814.A. Building Architecture:

1. **Architectural Variety:** *Architectural renderings and designs for each structure are included within the enclosed Section 12. These renderings demonstrate that the proposed structures offer a variety in materials and design that satisfy the standards of this Section.*
2. **Façade:** *Facades of all proposed structures are included within the enclosed Section 12 that detail the horizontal and vertical definitions, with architectural articulation that creates visual interest. The primary facades visible from High Street meet the 25% fenestration requirements.*
3. **Orientation:** *Proposed buildings are oriented in a way that provides their respective entrances facing towards the internal private drives. The facades of the 4-Unit buildings facing High Street have porches which create a front-facing orientation.*

§120-814.B. Site Design:

1. **Parking:** *The proposed development incorporates parking areas directly off the internal private vehicular drives. A total of twenty-seven (27) parking spaces will serve the proposed eighteen (18) units.*
2. **Screening:** *This development proposes tree clearing along the High Street frontage and the northern and southern property lines. A landscape buffer will be reestablished along High Street with a combination of deciduous canopy trees, evergreen trees, understory trees and shrubs. Evergreen and deciduous plantings are proposed along the northern property line and a combination of fencing and evergreen trees proposed along the southern property line. Existing vegetation near the frontage on the southwest corner of the parcel will be preserved. Trash totes/bins will be stored within a shed-like structure attached to each building. Above ground utilities will also be screened, which are detailed on the Landscape Plan.*
3. **Bicycle/Pedestrian:** *The site's design incorporates internal walkways that connect the entrances of each building to the sidewalk network. The design also offers a connection to the existing sidewalk located along the western side of High Street. A total of (5) bike racks, located in two (2) areas, provide parking for ten (10) bicycles.*
4. **Recreation & Open Space:** *This proposed development offers an area designated for open space within the central portion of the site. Please see the Open Space requirements table listed on the Site Plan within the Plan Set.*
5. **Landscape/Lighting:** *A Landscape Plan is included within this Final Plan submission. The landscape design provides a mixture of hardy deciduous and evergreen species to promote seasonal interest, provide shade, and accent building entrances. A lighting Plan (Photometric Plan) and lighting specifications are included in this Final Plan Submission.*
6. **Access Drive Standards:** *This proposed development will retain one (1) of the existing access points off High Street, which will provide the framework for the proposed private access drive that will service this project. This access drive will remain private and shall not be maintained by the Town of Windham. This proposed location for primary access will be improved to meet the applicable 'Major Private Road' standards, as required by the ordinance.*

ARTICLE 9

This application is subject to the Subdivision regulations defined within the Town of Windham's Land Use Ordinance, §120-911 Performance & Design Standards. As such, listed below are each of the applicable standards and how they relate to this proposed project.

§120-911.A. Basic Subdivision Layout: *This proposed project consists of the development of one (1) parcel for the construction of four (4) residential buildings that contain a collective total of eighteen (18) affordable senior housing units. This amount conforms with the applicable density requirements of §120-541 Net Residential Area or Acreage. The proposed site will utilize subsurface utilities (water, sewer, electrical) that are located along High Street, as indicated on the Grading & Utility Plan. Proposed locations of monuments are also shown within the Plan Set.*

§120-911.B. Sufficient Water; Water Supply: *This proposed residential development will connect to existing and available public water infrastructure along High Street. Please see the enclosed Section 7 – Utilities for the Ability to Serve request correspondence with the Portland Water District (PWD). The overall scale of this development is not anticipated to adversely impact the overall quality or quantity of available water supply. Each proposed structure will also be sprinklered.*

§120-911.C. Erosion & Sedimentation Control: *An Erosion & Sedimentation Control Plan has been developed for this project and is enclosed within the Plan Set.*

§120-911.D. Sewage Disposal: *This proposed residential development will connect to existing public sewer infrastructure that is available along High Street. Please see the enclosed Section 7 – Utilities for the Ability to Serve request correspondence with the Portland Water District (PWD).*

§120-911.E. Impact on Natural Beauty, Aesthetics, Historic Sites, Wildlife Habitat, Rare Natural Areas, or Public Access to the Shoreline: *The proposed project is primarily located over existing developed area that has been cleared for the former John A. Andrews school building, and utilizes an existing driveway into the site for access. Tree clearing is required for this project, the resulting decrease in buffer will be mitigated with proposed plantings. The Subdivision Plan details which areas of trees will be cleared and others that will be protected for a period of at least five (5) years unless the site plan is formally amended with the Town. This development also incorporates street trees into the overall design. These street trees are planted at locations which conform with the fifty (50) ft. minimum spacing standard. One existing street tree will remain.*

A Landscape Plan has been developed for this Final Plan Review application. On this plan, a centralized open green space is proposed within the center of the site. This space will provide an adequate common area for internal users of the site. This designated open space will be owned and operated by the owners of the property and will not be used for any future buildings or lots.

§120-911.F. Conformance with Land Use Ordinances: *The proposed project meets the goals of the Town of Windham's 2017 Comprehensive Plan, and meets the applicable dimensional and performance standards within the Town of Windham's Land Use Ordinance.*

§120-911.G. Financial & Technical Capacity: *Please see the enclosed Section 5 – Financial & Technical Capacity demonstrating that the Applicants have sufficient financial resources to construct, operate, and maintain all aspect of the proposed development. Additionally, Section 5 contains supplemental information related to the project team assembled and their relevant history, prior experience, and qualifications for evidence that they have proficient technical knowledge to complete this project.*

§120-911.H. Impact on Groundwater Quality or Quantity: *This proposed development will connect to available water supply provided by the Portland Water District (PWD) that has an existing main along High Street. The scale of this development is not anticipated to adversely impact the overall quality or quantity of available water supply.*

§120-911.I. Floodplain Management: *Please see the information provided within the enclosed Section 10 – Flooding Information. The project site is not located within a mapped special flood hazard area, as defined by the Federal Emergency Management Agency (FEMA).*

§120-911.J. Stormwater Management: *A Stormwater Management Report has been prepared for this project and is included within the enclose Section 8 - Stormwater Management. This project will require a Stormwater Permit-By-Rule from the Maine Department of Environmental Protection (MDEP), which will be submitted concurrently with our Final Plan Review application.*

§120-911.K. Conservation Subdivisions: *This Section is not applicable to this proposed project, as this development is not a conservation subdivision.*

§120-911.L. Compliance with Timber Harvesting Rules: *There is not any timber harvesting activities proposed under the scope of this application. As such, this Section is not applicable to this proposed project.*

§120-911.M. Traffic Conditions & Streets: *A Traffic Memorandum has been prepared for this project and is enclosed within Section 6 – Traffic Information. This memo includes estimated trip generations for this proposed affordable senior housing project. As detailed within the Memo, this development is estimated to generate five (5), five (5), and six (6) trips during the AM, PM, and Saturday peak hours of the generator, respectively. Given this level of trip generation, a Traffic Movement Permit (TMP) is not required from the Maine Department of Transportation (MDOT), as this development does not exceed the one hundred (100) trip threshold during a peak hour period. Additionally, sight distance on High Street exceeds the required minimum for a 25 miles per hour (mph) roadway, as defined by the Town of Windham's sight distance standards. Please see the Traffic Memorandum for additional information.*

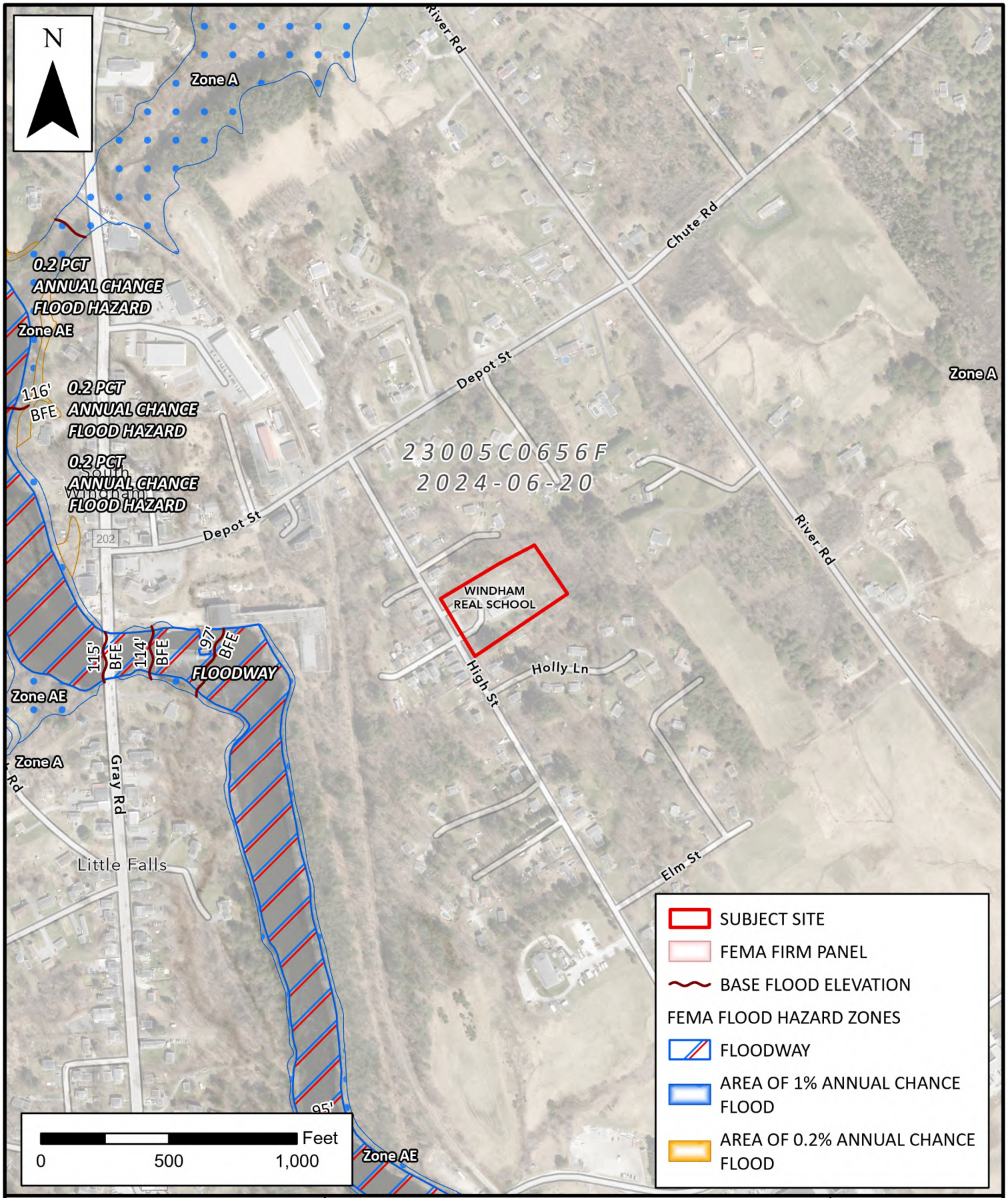
§120-911.N. Maintenance of Common Elements: *Draft Condominium Association documents are not required for this submission as all units will be owned and managed by Westbrook Development Corporation.*

Section 10

Flooding Information

Section 10 – Flooding Information

Flood Map: The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 23005C0656F, effective June 20, 2024, shows that the site is wholly located within an area of minimal flooding. A copy of this map is also enclosed within this Section.



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM
75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

FEMA NATIONAL FLOOD HAZARDS

JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE: 1:6,000

DATE: 8/28/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
MAINE GEOLIBRARY
FEMA NFHL 2024-07-17

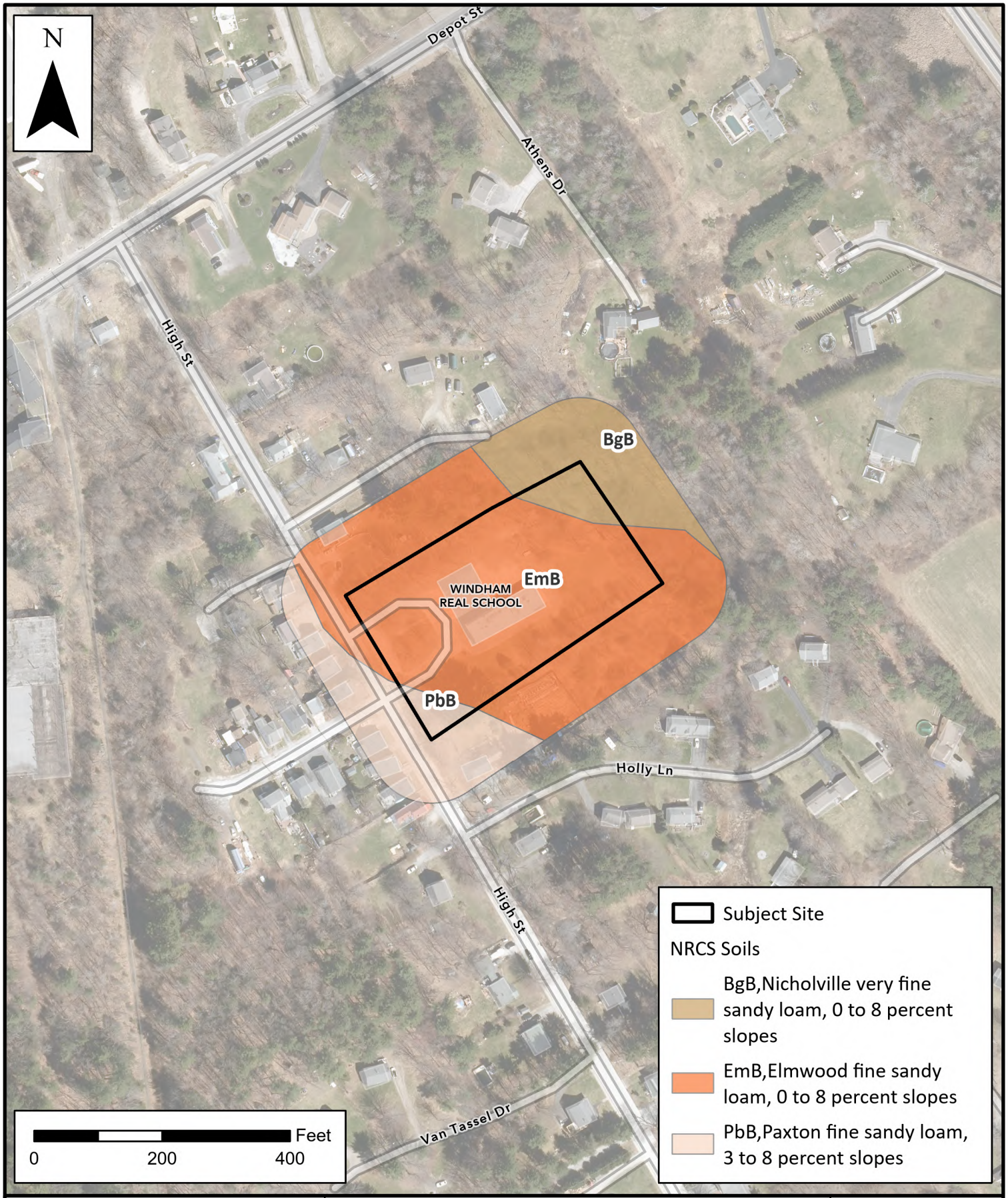
Section 11

Soils Information

Section 11 – Soils Information

Enclosed within this section is a custom Soil Resource Report derived from the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) online tool. This report was generated by specifying an approximate area of interest that contains the entire subject parcel area. This report also includes a Soil Map, detailing the project boundary in accordance with the existing soil classifications within and around the property.

Also enclosed within this Section is a Geotechnical Report performed by S.W. Cole to obtain subsurface information at the project site. This work consisted of test borings explorations, soils laboratory testing, a geotechnical analysis of the subsurface findings, and the preparation of the attached report.



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75 John Roberts Rd. - Suite 4A
South Portland, ME 04106
Tel. 207-200-2100

NRCS SOIL SURVEY MAP

JOHN A. ANDREW SCHOOL - SITE REDEVELOPMENT

SCALE:	1:2,400
DATE:	8/29/2024

LOCATION:
55 HIGH ST
WINDHAM, ME

INFORMATION:
MAINE GEOLIBRARY
USDA NRCS SOIL SURVEY 2020

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine

August 29, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,120 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County and Part of Oxford County, Maine
Survey Area Data: Version 20, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 22, 2021—Oct 7, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BgB	Nicholville very fine sandy loam, 0 to 8 percent slopes	0.2	6.8%
EmB	Elmwood fine sandy loam, 0 to 8 percent slopes	2.2	88.7%
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	0.1	4.5%
Totals for Area of Interest		**2.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Cumberland County and Part of Oxford County, Maine

BgB—Nicholville very fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2yjg5
Elevation: 20 to 2,300 feet
Mean annual precipitation: 34 to 50 inches
Mean annual air temperature: 37 to 45 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Nicholville and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nicholville

Setting

Landform: Lakebeds (relict)
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciomarine deposits

Typical profile

Ap - 0 to 7 inches: very fine sandy loam
Bs - 7 to 19 inches: very fine sandy loam
BC - 19 to 30 inches: very fine sandy loam
C - 30 to 65 inches: loamy very fine sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)
Hydric soil rating: No

EmB—Elmwood fine sandy loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: blh8
Elevation: 10 to 900 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 130 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Elmwood and similar soils: 88 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elmwood

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 25 inches: sandy loam
H3 - 25 to 65 inches: silty clay loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F144BY402ME - Clay Hills
Hydric soil rating: No

PbB—Paxton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bljf
Elevation: 0 to 930 feet
Mean annual precipitation: 48 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 145 to 155 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 87 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Drumlinoid ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from mica schist

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 65 inches: fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 40 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 30 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144BY501ME - Loamy Slope (Northern Hardwoods)
Hydric soil rating: No

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REPORT

24-1695 S

October 1, 2024

Explorations and Geotechnical Engineering Services

Proposed Andrew School Housing Development
55 High Street
Windham, Maine

Prepared For:
Great Falls Construction, Inc.
Attention: Julie Curran
20 Mechanic Street
Gorham, ME 04038

Westbrook Development Corporation
Attention: Tyler Norod
30 Liza Harmon Drive
Westbrook, ME 04092

Prepared By:
S. W. Cole Engineering, Inc.
286 Portland Road
Gray, ME 04039
T: 207-657-2866

TABLE OF CONTENTS

24-1695 S

October 1, 2024

Great Falls Construction
Attention: Julie Curran
20 Mechanic Street
Gorham, ME 04038

Westbrook Development Corporation
Attention: Tyler Norod
30 Liza Harmon Drive
Westbrook, ME 04092

Subject: Explorations and Geotechnical Engineering Services
Proposed Andrew School Housing Development
55 High Street
Windham, Maine

Dear Julie & Tyler:

In accordance with our Proposal, dated August 28, 2024, we have observed subsurface explorations for the subject project. This report summarizes our findings and geotechnical recommendations and its contents are subject to the limitations set forth in Appendix A.

1.0 INTRODUCTION

1.1 Scope and Purpose

The purpose of our services was to obtain subsurface information at the site in order to develop geotechnical recommendations relative to foundations and earthwork associated with the proposed construction. Our scope of services included observation of test pit explorations, a geotechnical analysis of the subsurface findings, and preparation of this report.

1.2 Site and Proposed Construction

The site is located at the former Andrew School at 55 High Street in Windham, Maine. The site is currently occupied by a single-story school building with associated gravel, paved, lawn, and wooded areas. Existing grades are relatively flat around the existing building, but slope down on each side, ranging from approximately elevation to 170 to 186 feet (project datum).

We understand development plans call for demolition of the existing building and site improvements for construction of:

- Three, four-unit, two-story, on-grade residential buildings on the westerly side of the site;
- One, six-unit, two-story, on-grade residential building on the southerly side of the site;
- One, five-unit, two-story, on-grade townhouses on the easterly side of the site, and;
- One, twelve-unit, three-story, on-grade residential building on the easterly side of the site.
- New access drive off High Street and associated paved areas

We understand the proposed new buildings will be on-grade structures with no basements. Proposed finish grades are unavailable at this time; however, we anticipate finish grades to be within about 5 feet of existing grades.

Proposed and existing site features are shown on the “Exploration Location Plan” attached in Appendix B.

2.0 EXPLORATION AND TESTING

2.1 Explorations

Thirteen test pits (TP-1 through TP-13) were made at the site on September 9, 2024 by Great Falls Construction. The exploration locations were selected by S. W. Cole Engineering, Inc. (S.W.COLE) and established in the field by Great Falls Construction. The completed test pits were located by Sebago Technics using a mapping grade GPS. The approximate exploration locations are shown on the “Exploration Location Plan”

attached in Appendix B. Logs of the explorations and a key to the notes and symbols used on the logs are attached in Appendix C. The elevations shown on the logs were estimated based on topographic information shown on the "Exploration Location Plan".

2.2 Testing

The soils encountered in the test pits were visually classified in the field. Pocket Penetrometer Tests (PPT) were performed where stiffer silts and clays were encountered in the test pits. PPT results are shown on the logs.

3.0 SUBSURFACE CONDITIONS

3.1 Soil and Bedrock

Underlying a surficial layer of topsoil or pavement, the test pits encountered a subsurface profile generally consisting of uncontrolled fill and buried relic topsoil, overlying native glaciomarine and glacial till deposits, overlying refusal surfaces (probable bedrock). The principal soils encountered at the explorations are summarized below. Not all of the strata were encountered at each exploration; refer to the attached boring logs for more detailed subsurface information.

Uncontrolled Fill and Buried Relic Topsoil: Underlying a surficial layer of topsoil or pavement, several of the test pits encountered uncontrolled fill extending to depths ranging from about 1 to 3 feet below existing ground surface (bgs). The fill consisted of brown sand with varying portions of silt, gravel, organics, and debris including coal ash and slag and concrete blocks.

Underlying the uncontrolled fill, test pits TP-10 and TP-11 encountered buried relic topsoil up to about 1-foot thick.

Glaciomarine Soils: Underlying the uncontrolled fill and buried relic topsoil, where present, several test pits encountered layered glaciomarine soil deposits consisting of silty sand, silt and sand, and silty clay.

Glacial Till: Underlying the uncontrolled fill, buried relic topsoil, and glaciomarine soils, where present, several test pits encountered glacial till consisting of brown and gray-brown sand with varying portions of silt, gravel, and cobbles.

Refusal Surfaces: Underlying the glaciomarine or glacial till soils, where present, test pits TP-4, TP-5, TP-6, TP-7, TP-9, TP-10, TP-11, TP-12 and TP-13, encountered refusal surfaces (probable bedrock) at depths ranging from about 3.3 to 9 feet bgs. Up to about 2 feet of probable weathered bedrock was penetrated by the excavator before encountering refusal in certain test pits.

3.2 Groundwater

The soils encountered in the test pits were generally damp to moist from the ground surface. Saturated soils and groundwater were not observed in the test pits. Groundwater likely becomes perched on the relatively impervious silt and clay layers in the glaciomarine soils, as well as the glacial till, and refusal surfaces encountered in the test pits. Long term groundwater information is not available. It should be anticipated that groundwater levels will fluctuate, particularly in response to periods of snowmelt and precipitation, as well as changes in site use.

4.0 EVALUATION AND RECOMMENDATIONS

4.1 General Findings

Based on the subsurface findings, the proposed construction appears feasible from a geotechnical standpoint. The principle geotechnical considerations include:

- The test pits encountered layers of uncontrolled fill and buried relic topsoil which are unsuitable for support of the proposed buildings. We recommend all existing uncontrolled fill, buried relic topsoil, organics, pavement, structures, utilities, and foundations be completely removed from beneath the proposed buildings (including foundations, floor slabs, and entrance slabs) and backfilled with compacted Granular Borrow.

- Following removal and replacement of the unsuitable soils, spread footing foundations and a slab-on-grade floors bearing on properly prepared subgrades appear suitable for the proposed building. Footings should bear on at least 6-inches of compacted Crushed Stone overlying undisturbed native non-organic soils. On-grade floor slabs should bear on at least 12-inches of compacted Crushed Stone overlying properly prepared subgrades.

- Relatively shallow refusal surfaces (probable bedrock) were encountered at several of the test pits. Depending on final proposed finish grades, bedrock removal be required for construction. If blasting is used, overblasting must be limited so foundation bearing conditions are not compromised.

- Beneath paved and hardscaped areas, we recommend the existing fills be proof-rolled and densified. Areas that become soft or yielding after proof-rolling must be removed and replaced with compacted Granular Borrow prior to installing pavement subbase or hardscape base materials.

- Subgrades in portions of the site will consist of sensitive silts and clays. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native silt and clay when wet. Excavation of bearing surfaces should be completed with a smooth-edged bucket to lessen subgrade disturbance.

- The coal ash and slag encountered in certain test pits likely has special handling and disposal requirements. We recommend consulting an environmental professional to further investigate and provide guidance on handling and disposal of these materials.

4.2 Site and Subgrade Preparation

We recommend that site preparation begin with the construction of an erosion control system to protect adjacent drainage ways and areas outside the construction limits. Surficial organics, roots and topsoil should be completely removed from areas of proposed fill and construction. As much vegetation and pavement as possible should remain outside the construction areas to lessen the potential for erosion and site disturbance.

Building Pad and Footings: As discussed, the site is currently developed and the test pits encountered layers of uncontrolled fill and buried relic topsoil which are unsuitable for support of the proposed buildings. We recommend all existing uncontrolled fill, buried relic topsoil, organics, pavement, structures, utilities, and foundations be completely removed from beneath the proposed buildings (including foundations, floor slabs, and entrance slabs) to expose undisturbed, non-organic native soils or sound intact bedrock. The extent of removal should extend 1 foot laterally outward from outside edge of perimeter footings

for every 1-foot of excavation depth (1H:1V bearing splay). Overexcavations should be backfilled with compacted Granular Borrow.

We recommend that footings be excavated using a smooth-edged bucket and that footings be underlain by at least 6 inches of compacted Crushed Stone. Where overlying bedrock subgrades, the Crushed Stone should be compacted and worked into the bedrock surface to choke off voids and fractures.

If blasting is used, overblasting must be limited so foundation bearing conditions are not compromised. All loose and overblasted bedrock should be removed and backfilled with compacted Structural Fill.

Paved Areas: Existing fills should be proof-rolled and densified beneath proposed paved areas. Areas that become soft or continue to yield after densification, as well as any organics or deleterious material exposed at pavement subgrade elevation, should be removed and replaced with compacted Granular Borrow.

4.3 Excavation and Dewatering

Excavation work will generally encounter uncontrolled fills, buried relic organics, glaciomarine sands, silts, and clays, glacial till, and potentially bedrock. Care must be exercised during construction to limit disturbance of the bearing soils. Earthwork and grading activities should occur during drier, non-freezing weather of Spring, Summer and Fall. Rubber tired construction equipment should not operate directly on the native soils, when wet. Final cuts to subgrade should be performed with a smooth-edged bucket to help reduce strength loss from soil disturbance.

Based on the subsurface findings, we anticipate bedrock removal may be required for construction. If blasting is used, we recommend a licensed blasting contractor be engaged to provide bedrock removal. Pre-blast surveys should be completed on surrounding structures, water supply wells and infrastructure prior to commencing blasting activities.

Vibrations from construction should be controlled below threshold limits of 0.5 in/sec for structures, water supply wells and infrastructure within 500 feet of the project site. More restrictive vibration limits may be warranted in specific cases with sensitive equipment, historic structures or artifacts on-site or within close proximity.

Sumping and pumping dewatering techniques should be adequate to control groundwater in excavations. Controlling the water levels to at least one foot below planned excavation depths will help stabilize subgrades during construction. Excavations must be properly shored or sloped in accordance with OSHA Regulations to prevent sloughing and caving of the sidewalls during construction. Care must be taken to preclude undermining adjacent structures, utilities and roadways. The design and planning of excavations, excavation support systems, and dewatering is the responsibility of the contractor.

4.4 Foundations

We recommend the proposed buildings be supported on spread footings founded on at least 6-inches of compacted Crushed Stone overlying undisturbed, non-organic soils or overlying compacted Granular Borrow used to backfill overexcavations down to undisturbed, non-organic, native soils. For foundations bearing on properly prepared subgrades, we recommend the following geotechnical parameters for design consideration:

Geotechnical Parameters for Spread Footings and Foundation Walls	
Design Frost Depth (100 year AFI)	4.5 feet
Net Allowable Soil Bearing Pressure	2.0 ksf
Base Friction Factor	0.35
Total Unit Weight of Backfill	125 pcf
At-Rest Lateral Earth Pressure Coefficient	0.5
Internal Friction Angle of Backfill	30°
Seismic Soil Site Class	D (IBC 2015)
Estimated Total Settlement	1-inch
Differential Settlement	½-inch

4.5 Foundation Drainage

We recommend an underdrain system be installed on the outside edge perimeter footings. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drain pipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and

backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the "Foundation Detail Sketch" attached in Appendix B.

4.6 Slab-On-Grade

On-grade floor slabs in heated areas may be designed using a subgrade reaction modulus of 100 pci (pounds per cubic inch) provided the slab is underlain by at least 12-inches of compacted Crushed Stone placed over properly prepared subgrades. The structural engineer or concrete consultant must design steel reinforcing and joint spacing appropriate to slab thickness and function, as well as to prevent cracking and curling.

We recommend a sub-slab vapor retarder and radon venting system be installed beneath on-grade floor slabs. The vapor retarder must have a permeance that is less than the floor cover or surface treatment that is applied to the slab. The vapor retarder must have sufficient durability to withstand direct contact with the sub-slab base material and construction activity. The vapor retarder material should be placed according to the manufacturer's recommended method, including the taping and lapping of all joints and wall connections. The architect and/or flooring consultant should select the vapor retarder products compatible with flooring and adhesive materials.

The floor slab should be appropriately cured using moisture retention methods after casting. Typical floor slab curing methods should be used for at least 7 days. The architect or flooring consultant should assign curing methods consistent with current applicable American Concrete Institute (ACI) procedures with consideration of curing method compatibility to proposed surface treatments, flooring and adhesive materials.

4.7 Entrance Slabs and Sidewalks

Entrance slabs and sidewalks adjacent to the building must be designed to reduce the effects of differential frost action between adjacent pavement, doorways, and entrances. We recommend that non-frost susceptible Structural Fill be provided to a depth of at least 4.5 feet below the top of entrance slabs. This thickness of Structural Fill should extend the full footprint of the entrance slab, thereafter transitioning up to the bottom of the adjacent sidewalk or pavement gravels at a 3H:1V or flatter slope. General details of this frost transition zone are shown on the "Foundation Detail Sketch" attached in Appendix B.

4.8 Fill, Backfill and Compaction

We recommend the following fill and backfill materials: recycled products must also be tested in accordance with applicable environmental regulations and approved by a qualified environmental consultant.

Common Borrow: Fill to raise grades in landscape areas should be non-organic compactable earth meeting the requirements of 2020 MaineDOT Standard Specification 703.18 Common Borrow.

Granular Borrow: Fill to raise grades in building and paved areas should be sand meeting the requirements of 2020 MaineDOT Standard Specification 703.19 Granular Borrow.

Structural Fill: Backfill for foundations and material below exterior entrances slabs should be clean, non-frost susceptible sand and gravel meeting the gradation requirements for Structural Fill as given below:

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

Crushed Stone: Crushed Stone, used beneath foundations and for underdrain aggregate, should be washed ¾-inch crushed stone meeting the requirements of 2020 MaineDOT Standard Specification 703.13 Crushed Stone ¾-Inch.

Reuse of Site Soils: The on-site soils are unsuitable for reuse in building and paved areas, but may be suitable for reuse as Common Borrow in landscape areas provided they are free of organics and deleterious materials and are at a compactable moisture content at the time of reuse.

Placement and Compaction: Fill should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. We recommend that fill and backfill in building and paved areas be compacted to at least 95 percent of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

4.9 Weather Considerations

Construction activity should be limited during wet and freezing weather and the site soils may require drying or thawing before construction activities may continue. The contractor should anticipate the need for water to temper fills in order to facilitate compaction during dry weather. If construction takes place during cold weather, subgrades, foundations and floor slabs must be protected during freezing conditions. Concrete and fill must not be placed on frozen soil; and once placed, the concrete and soil beneath the structure must be protected from freezing.

4.10 Design Review and Construction Testing

S.W.COLE should be retained to review the construction documents prior to bidding to determine that our earthwork and foundation recommendations have been properly interpreted and implemented.

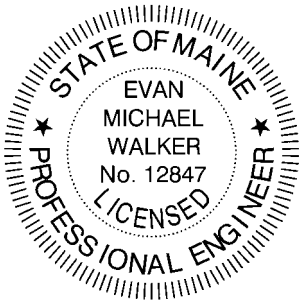
A construction materials testing and quality assurance program should be implemented during construction to observe compliance with the design concepts, plans, and specifications. S.W.COLE is available to observe earthwork activities, the preparation of foundation bearing surfaces and pavement subgrades, as well as to provide testing and IBC Special Inspection services for soils, concrete, steel, spray-applied fireproofing, structural masonry, and asphalt construction materials.

5.0 CLOSURE

It has been a pleasure to be of assistance to you with this phase of your project. We look forward to working with you during the construction phase of the project.

Sincerely,

S. W. Cole Engineering, Inc.



Evan M. Walker, P.E.
Senior Geotechnical Engineer

EMW:tjb

APPENDIX A

Limitations

This report has been prepared for the exclusive use of Great Falls Construction and Westbrook Development Corporation for specific application to the proposed Andrew School Housing Development at 55 High Street in Windham, Maine. S. W. Cole Engineering, Inc. (S.W.COLE) has endeavored to conduct our services in accordance with generally accepted soil and foundation engineering practices. No warranty, expressed or implied, is made.

The soil profiles described in the report are intended to convey general trends in subsurface conditions. The boundaries between strata are approximate and are based upon interpretation of exploration data and samples.

The analyses performed during this investigation and recommendations presented in this report are based in part upon the data obtained from subsurface explorations made at the site. Variations in subsurface conditions may occur between explorations and may not become evident until construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and to review the recommendations of this report.

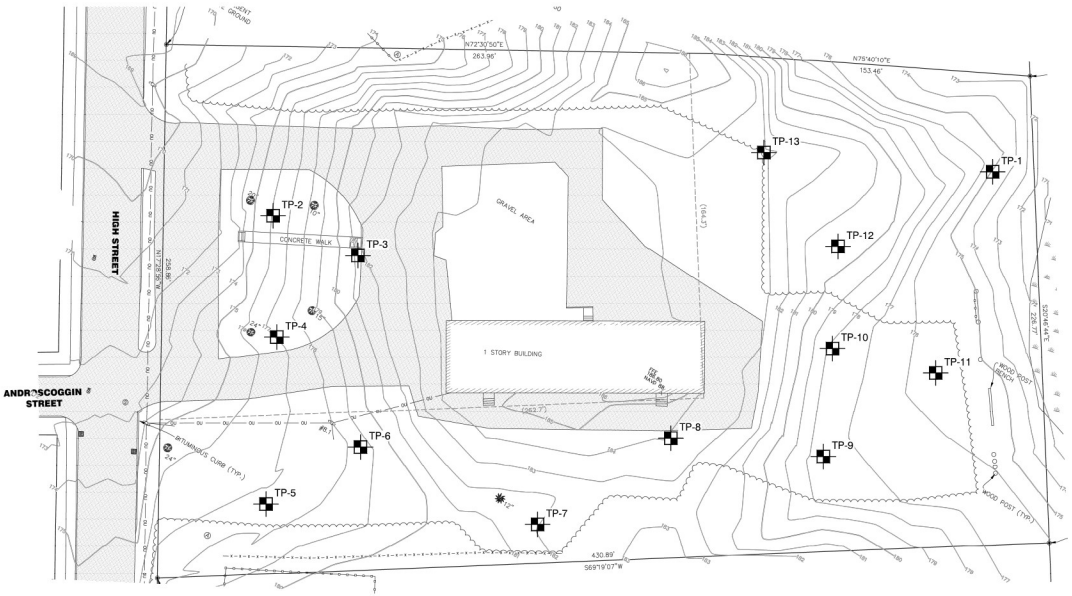
Observations have been made during exploration work to assess site groundwater levels. Fluctuations in water levels will occur due to variations in rainfall, temperature, and other factors.

S.W.COLE's scope of services has not included the investigation, detection, or prevention of any Biological Pollutants at the project site or in any existing or proposed structure at the site. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and the byproducts of any such biological organisms.

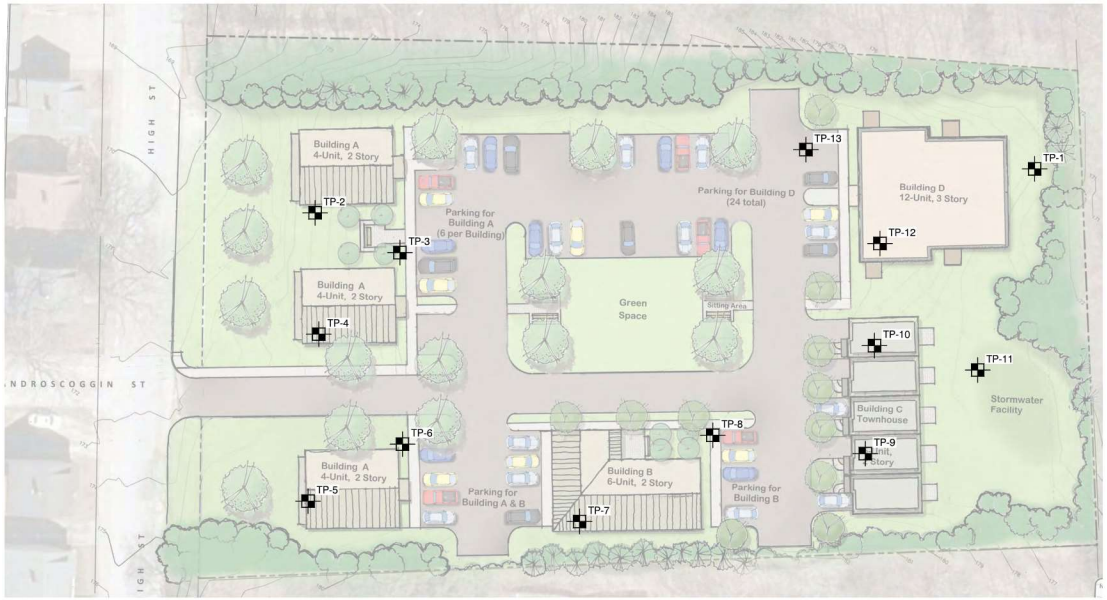
Recommendations contained in this report are based substantially upon information provided by others regarding the proposed project. In the event that any changes are made in the design, nature, or location of the proposed project, S.W.COLE should review such changes as they relate to analyses associated with this report. Recommendations contained in this report shall not be considered valid unless the changes are reviewed by S.W.COLE.

APPENDIX B

Figures



EXISTING CONDITIONS / EXPLORATION LOCATION PLAN



CONCEPT / EXPLORATION LOCATION PLAN

LEGEND:

APPROXIMATE TEST PIT LOCATION

NOTES:

1. EXPLORATION LOCATION PLAN WAS PREPARED FROM A 1"=20' SCALE PLAN OF THE SITE TITLED "STANDARD BOUNDARY SURVEY," PREPARED BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC., DATED 5/1/2023 AND A 1"=20' SCALE CONCEPT PLAN OF THE SITE TITLED "DRAFT PRELIMINARY SITE PLAN," PREPARED BY SEBAGO TECHNICS.
2. THE TEST PITS WERE LOCATED IN THE FIELD BY SEBAGO TECHNICS USING GPS AND PROVIDED ON A GEOREFERENCED CAD FILE, RECEIVED 9/9/2024.
3. THIS PLAN SHOULD BE USED IN CONJUNCTION WITH THE ASSOCIATED S. W. COLE ENGINEERING, INC. GEOTECHNICAL REPORT.
4. THE PURPOSE OF THIS PLAN IS ONLY TO DEPICT THE LOCATION OF THE EXPLORATIONS IN RELATION TO THE EXISTING CONDITIONS AND PROPOSED CONSTRUCTION AND IS NOT TO BE USED FOR CONSTRUCTION.

0 30 60 Feet

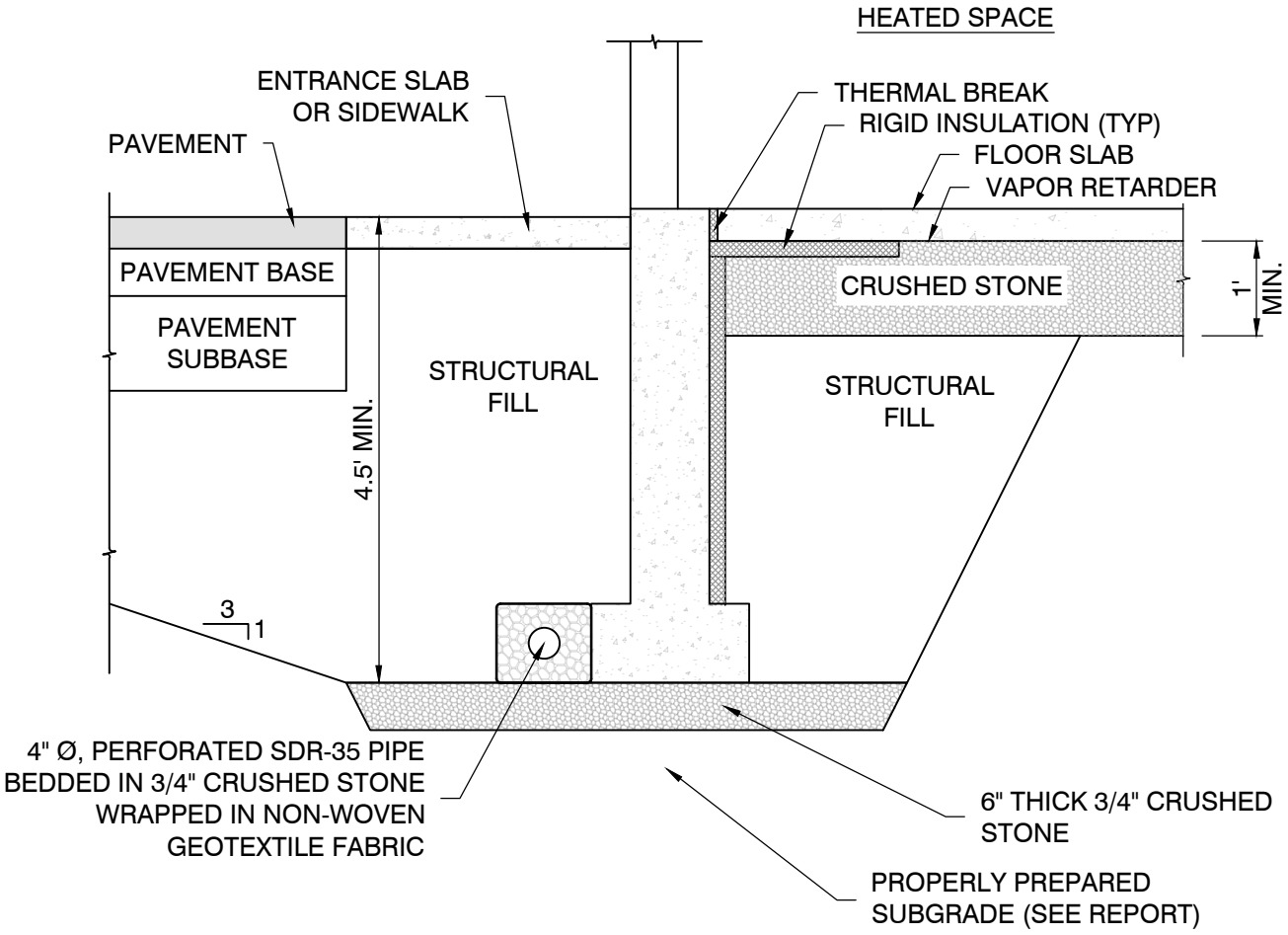
S.W. COLE ENGINEERING, INC.

GREAT FALLS CONSTRUCTION, INC. & WESTBROOK DEVELOPMENT CORPORATION

EXPLORATION LOCATION PLAN

PROPOSED ANDREW SCHOOL HOUSING DEVELOPMENT
55 HIGH STREET, WINDHAM, MAINE

Job No.:	24-1695	Scale:	1" = 20'
Date :	09/12/2024	Sheet:	1



NOTE:

1. UNDERDRAIN INSTALLATION AND MATERIAL GRADATION RECOMMENDATIONS ARE CONTAINED WITHIN THIS REPORT.
2. DETAIL IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY, NOT FOR CONSTRUCTION.

S.W.COLE ENGINEERING, INC.

GREAT FALLS CONSTRUCTION, INC. & WESTBROOK DEVELOPMENT CORPORATION

FOUNDATION DETAIL SKETCH

PROPOSED ANDREW SCHOOL HOUSING DEVELOPMENT
55 HIGH STREET, WINDHAM, MAINE

Job No.:	24-1695	Scale:	Not to Scale
Date :	10/01/2024	Sheet:	2

APPENDIX C

Exploration Logs and Key

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP- 1

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 175' +/- **COMPLETION DEPTH (FT):** 7.5
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		0.2 Forest Duff / Topsoil (FILL)					
		Brown, layered, silty SAND, and clayey SILT					
		4.0 Very stiff, brown, silty CLAY					
5						5-5.5	q_P=6 ksf
		7.1 Gray-brown, gravelly SILT AND SAND, with cobbles (Till)					

Bottom of Exploration at 7.5 feet

TEST PIT TP- 2

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 176' +/- **COMPLETION DEPTH (FT):** 6.5
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		0.3 Vegetation / Topsoil (FILL)					
		Brown and dark brown, silty SAND, some gravel (FILL)					
		1.5 Black, coal ash and slag (FILL)					
		2.5 Brown, SILT AND SAND					
5							

Bottom of Exploration at 6.5 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP- 3

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 181' +/- **COMPLETION DEPTH (FT):** 6.7
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.5 Dark brown, silty SAND, some gravel, with concrete blocks, roots, and organics (FILL)					
		2.5 Orange-brown to gray-brown, layered, silty SAND and silty CLAY					
5							

Bottom of Exploration at 6.7 feet

TEST PIT TP- 4

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 177' +/- **COMPLETION DEPTH (FT):** 4.0
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.3 Dark brown, silty SAND, with roots and organics (FILL)					
		1.0 Gray-brown, SILT AND SAND					

Refusal at 4.0 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP- 5

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 177' +/- **COMPLETION DEPTH (FT):** 3.5
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		0.3 Vegetation / Topsoil (FILL) Brown, silty SAND, some gravel, with roots and organics					
		1.2 Weathered Bedrock					

Refusal at 3.5 feet
Probable Bedrock

TEST PIT TP- 6

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 179' +/- **COMPLETION DEPTH (FT):** 3.3
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		1.2 Brown, silty SAND, some gravel (Till)					
		3.0 Weathered Bedrock					

Refusal at 3.3 feet
Probable Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP- 7

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 182' +/- **COMPLETION DEPTH (FT):** 6.2
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.5 Brown, silty SAND, trace gravel, with roots (FILL)					
		1.5 Brown, SILT AND SAND					
		4.0 Hard, brown, silty CLAY					
5						5-5.5	q_P=9 ksf

Refusal at 6.2 feet
Probable Bedrock

TEST PIT TP- 8

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 184' +/- **COMPLETION DEPTH (FT):** 9.0
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.5 Brown, silty SAND, some gravel, with roots (FILL)					
		1.5 Brown, gravelly silty SAND, with cobbles, boulders, and bedrock fragments (Till)					
5							

Bottom of Exploration at 9.0 feet

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP- 9

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 178' +/- **COMPLETION DEPTH (FT):** 5.2
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.5 Brown, SILT AND SAND, with roots (FILL)					
		2.3 Brown, silty SAND					
		3.7 Brown, gravelly silty SAND (Till)					
5							
		Refusal at 5.2 feet Probable Bedrock					

TEST PIT TP-10

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 178' +/- **COMPLETION DEPTH (FT):** 9.0
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.8 Brown, SAND, some silt (FILL)					
		3.0 Dark gray-brown, clayey SILT, some sand, with roots and organics (RELIC TOPSOIL)					
		3.5 Gray-brown, silty CLAY					
5							
		Refusal at 9.0 feet Probable Bedrock					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP-11

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 176' +/- **COMPLETION DEPTH (FT):** 4.0
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Vegetation / Topsoil (FILL)					
		0.5 Brown, silty SAND, some gravel, with roots (FILL)					
		2.0 Dark brown, SILT AND SAND, with root sand organics (RELIC TOPSOIL)					
		2.8 Gray-brown, clayey SILT AND SAND					
		Refusal at 4.0 feet Probable Bedrock				5-6	q_p=8-9 ksf

TEST PIT TP-12

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 180.5' +/- **COMPLETION DEPTH (FT):** 5.5
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		Forest Duff / Topsoil (FILL)					
		0.5 Brown, silty SAND, with roots (FILL)					
		2.0 Brown, silty CLAY					
5		Bottom of Exploration at 5.5 feet					

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:
Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT LOGS

CLIENT: Great Falls Construction, Inc. & Westbrook Development Corporation
PROJECT: Proposed Andrew School Housing Development
LOCATION: 55 High Street, Windham, ME

PROJECT NO.: 24-1695
LOGGED BY: Evan Walker
CONTRACTOR: Great Falls Construction, Inc.
EQUIPMENT: Takeuchi TB290

TEST PIT TP-13

DATE: 9/9/2024 **LOCATION:** See Exploration Location Plan **SURFACE ELEVATION (FT):** 183' +/- **COMPLETION DEPTH (FT):** 4.5
WATER LEVEL DEPTHS (FT): No Free Water Observed **REMARKS:**

Depth (feet)	Graphic Log	Stratum Description	H_20 Depth	Sample No.	Type	Sample Depth (ft)	Field / Lab Test Data
		0.2 Brown, silty SAND, with organics (FILL)					
		0.4 Asphalt Pavement					
		Brown, SAND, some silt, some gravel, with roots (FILL)					
		2.0 Brown, silty SAND, some gravel					

Refusal at 4.5 feet
Probable Boulder or Bedrock

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

KEY TO NOTES AND SYMBOLS:

Water Level
▽ At time of Digging
▼ At Completion of Digging
▼ After Digging

q_p = Pocket Penetrometer Strength, kips/sq.ft.

TEST PIT 24-1695.GPJ SWCE TEMPLATE.GDT 9/26/24

KEY TO NOTES & SYMBOLS

Test Boring and Test Pit Explorations

Stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Key to Symbols Used:

w	-	water content, percent (dry weight basis)
q_u	-	unconfined compressive strength, kips/sq. ft. - laboratory test
S_v	-	field vane shear strength, kips/sq. ft.
L_v	-	lab vane shear strength, kips/sq. ft.
q_p	-	unconfined compressive strength, kips/sq. ft. – pocket penetrometer test
O	-	organic content, percent (dry weight basis)
W_L	-	liquid limit - Atterberg test
W_P	-	plastic limit - Atterberg test
WOH	-	advance by weight of hammer
WOM	-	advance by weight of man
WOR	-	advance by weight of rods
HYD	-	advance by force of hydraulic piston on drill
RQD	-	Rock Quality Designator - an index of the quality of a rock mass.
γ_T	-	total soil weight
γ_B	-	buoyant soil weight

Description of Proportions:

Trace:	0 to 5%
Some:	5 to 12%
"Y"	12 to 35%
And	35+%
With	Undifferentiated

Description of Stratified Soils

Parting:	0 to 1/16" thickness
Seam:	1/16" to 1/2" thickness
Layer:	½" to 12" thickness
Varved:	Alternating seams or layers
Occasional:	one or less per foot of thickness
Frequent:	more than one per foot of thickness

REFUSAL: **Test Boring Explorations** - Refusal depth indicates that depth at which, in the drill foreman's opinion, sufficient resistance to the advance of the casing, auger, probe rod or sampler was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

REFUSAL: **Test Pit Explorations** - Refusal depth indicates that depth at which sufficient resistance to the advance of the backhoe bucket was encountered to render further advance impossible or impracticable by the procedures and equipment being used.

Although refusal may indicate the encountering of the bedrock surface, it may indicate the striking of large cobbles, boulders, very dense or cemented soil, or other buried natural or man-made objects or it may indicate the encountering of a harder zone after penetrating a considerable depth through a weathered or disintegrated zone of the bedrock.

Section 12

Architecturals & Elevations

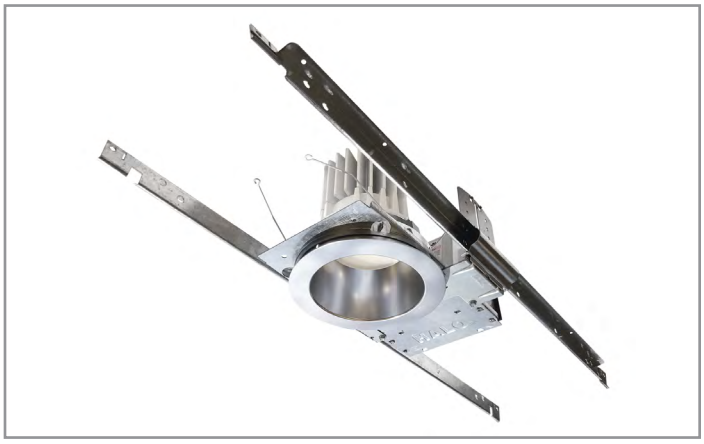
Section 13

Lighting Information

Section 13 – Lighting Information

The site lighting has been designed to provide safety and security by illuminating the driveway, parking lot, sidewalks, pedestrian areas, building entrances, and service areas. There are a total of twelve (12) lights mounted on 15 ft. tall poles, sited to avoid conflicts with landscaping, three (3) building mounted lights near service areas, and a total of sixteen (16) canopy lights over porches at building entrances. Please see the attached Photometric Plan and specifications for all proposed lighting fixtures.

Project		Catalog #		Type	
Prepared by		Notes		Date	



HALO Commercial

HC4 | HM4 | 41/41PS

4-inch LED downlight and wall wash

Typical Applications

Office • Healthcare • Hospitality • Institutional • Mixed-Use/Retail

Interactive Menu

Product Certification

ENERGY STAR · Efficiency Standards T24 Can be used to comply with California Title 24 Non-Residential · wet location · Chicago Plenum Approved · FC · RoHS Compliant · UL Certified

Product Features

QS Quick Spec · Showerlight

Control Compatibility

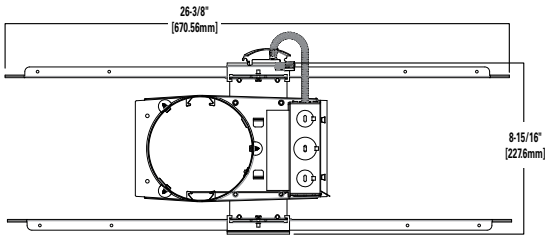
WaveLinx LITE · WaveLinx PRO

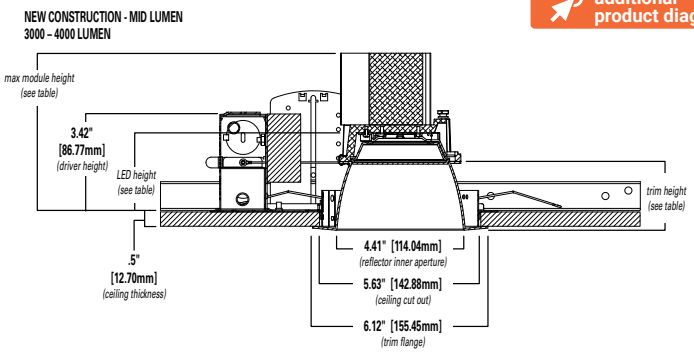
Top Product Features

- New construction/remodel series; 500 to 6,000 lumens
- Narrow, Medium and Wide distributions; Wall wash with rotatable linear spread lens
- 2700K, 3000K, 3500K, 4000K and 5000K CCT; 80 or 90 CRI
- Universal voltage 120V-277V; Standard 0-10V driver dims to 1%
- Mounting frame converts to remodel that installs from below the ceiling
- Quick Spec emergency backup mounting frames - fast delivery option

Dimensional and Mounting Details

additional product diagrams





Mid Lumen (3000 – 4000 Lumens)

Distribution	Max. Module Height	Trim Height	LED Height
Narrow	5.6"	2.5"	2.9"
Medium	5.7"	2.6"	3.0"
Wide	5.5"	2.4"	2.8"
Baffle	5.5"	2.4"	2.8"

Mounting Frame Order Information

Sample Number : HC420D010REM7 - HM40525930 - 41MDC

A complete luminaire consists of a housing frame, LED module, and reflector (ordered separately)

Mounting Frame	Lumens	Driver Options	Factory Installed Emergency & Connected Lighting Options	Accessories (Order & Install Separately)
HC4 = 4" new construction downlight housing **HC4CP** = 4" new construction housing, Chicago Plenum - CCEA compliant	**05** = 500 lm **07** = 750 lm **10** = 1000 lm **15** = 1500 lm **20** = 2000 lm **25** = 2500 lm **30** = 3000 lm **35** = 3500 lm **40** = 4000 lm **45** = 4500 lm (7) **50** = 5000 lm (7) **55** = 5500 lm (7) **60** = 6000 lm (7)	**D010**=UNV 120-277V, 50/60Hz, 0-10V 1%-100% dimming at 120-277V on 0-10V controls **Canada Option 500-5000 lumens:** **D010347** = 347VAC 50/60Hz 0-10V 1%-100% dimming. For 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000lm models only (1) **Canada Option 5500-6000 lumens:** **D010X347** = step down transformer factory installed (with standard "D010" 120V-277V LED driver). For 5500, 6000lm models only (1)	**REM7** = 7 watt emergency battery pack with remote test / indicator light, use with D010 only (1) (2) (6) **REM14** = 14 watt emergency battery pack with remote test / indicator light, use with D010 only (1) (2) (6) **IEM7** = 7 watt emergency battery pack with integral test / indicator light, use with D010 only (1) (2) (6) (10) **IEM14** = 14 watt emergency battery pack with integral test / indicator light, use with D010 only (1) (2) (6) (10) **BOD7ST** = 7.5 watt Bodine self-test emergency battery pack with remote test / indicator light, use with D010 only (1) (2) (6) **WTA** = Factory WaveLinx PRO Tilemount Sensor Kit (4) **WTK** = Factory WaveLinx LITE Tilemount Sensor Kit (5) **WPN** = WaveLinx PRO Wireless Node without Sensor (11) **WLN** = WaveLinx LITE Wireless Node without Sensor (12)	**HB128APK** = L channel hanger bar, 26", pair (replacement) **RMB22** = Adjustable wood joist mounting bars, pair, extend to 22" long **H347** = 347 to 120V step down transformer, 75VA **H347200** = 347 to 120V step down transformer, 200VA **WTA** = Field WaveLinx PRO Tilemount Sensor Kit (4) **WTK** = Field WaveLinx LITE Tilemount Sensor Kit (5)
		DLV = Distributed Low Voltage dimming driver 1%-100%, 1000-4000 lumens only. For use with DLVP system only, refer to DLVP specifications for details. (1)	**REMV7** = 7 watt emergency battery pack with remote test / indicator light, use with DLV only (1) (2) (3) (6) **REMV14** = 14 watt emergency battery pack with remote test / indicator light, use with DLV only (1) (2) (3) (6) **IEMV7** = 7 watt emergency battery pack with integral test / indicator light, use with DLV only (1) (2) (3) (6) (10) **IEMV14** = 14 watt emergency battery pack with integral test / indicator light, use with DLV only (1) (2) (3) (6) (12)	
Notes	**Notes**	**Notes**	**Notes**	**Notes**
	(7) Marked Spacing: Center to Center of Adjacent Luminaires = 36" Center of Luminaire to Building Member = 18" Minimum overhead = 0.5	(1) Not available with CP models	(1) Not available with CP models (2) Not available with D010347 (347V models) (3) ULus for U.S. only (4) WTA = WaveLinx PRO tilemount sensor kit for daylight dimming, PIR motion sensing, and optional RLTS - Real Time Location Services, use with D010 only (Refer to WaveLinx specifications) (5) WTK = WaveLinx LITE tilemount sensor kit for daylight dimming, PIR motion sensing, use with D010 only (Refer to WaveLinx LITE specifications) (6) Emergency battery backup options are Non-IC only, and rated for a minimum starting temperature of 0°C (10) IEM option requires compatible IEM reflector or baffle trim. See Trim Ordering below. (11) WPN = WaveLinx PRO wireless node provides luminaire-level control with scene and zone configuration without an integrated sensor; Connects wirelessly with daylight dimming sensor and PIR motion sensor if desired. Use with 0-10V driver only. Not compatible with 347V or Chicago plenum. (Refer to WaveLinx PRO specifications.) (12) WLN = WaveLinx LITE wireless node provides luminaire-level control with scene and zone configuration without an integrated sensor; Connects wirelessly with daylight dimming sensor and PIR motion sensor if desired. Use with 0-10V driver only. Not compatible with 347V or Chicago plenum. (Refer to WaveLinx LITE specifications.)	(4) WTA = WaveLinx PRO tilemount sensor kit for daylight dimming, PIR motion sensing, and optional RLTS - Real Time Location Services, use with D010 only. (Refer to WaveLinx PRO specifications.) (5) WTK = WaveLinx LITE tilemount sensor kit for daylight dimming, PIR motion sensing, use with D010 only. (Refer to WaveLinx LITE specifications.)

Quick Spec Emergency Mounting Frame Order Information

Sample Number :

Quick Spec Emergency Mounting Frame: RR-HC420D010REM7

LED module and reflectors are ordered separately.

Order separately: LED Module: HM40525835 | Reflector: 41MDC

Select from the Quick Spec Mounting Frame ordering information to receive the *Fast Delivery* option for the frame.

Quick Spec Code	Mounting Frame	Lumens	Driver Options	Factory Installed Emergency Options	Accessories (Order & Install Separately)
RR = East Region **BRR** = West Region	**HC4** = 4" new construction downlight housing	**10** = 1000 lm **15** = 1500 lm **20** = 2000 lm **30** = 3000 lm **40** = 4000 lm	**D010**=UNV 120-277V, 50/60Hz, 0-10V 1%-100% dimming at 120-277V on 0-10V controls	**REM7** = 7 watt emergency battery pack with remote test / indicator light, use with D010 only (2) (6) **REM14** = 14 watt emergency battery pack with remote test / indicator light, use with D010 only (2) (6) **IEM7** = 7 watt emergency battery pack with integral test / indicator light, use with D010 only (2) (6) (10) **IEM14** = 14 watt emergency battery pack with integral test / indicator light, use with D010 only (2) (6) (10)	**HB128APK** = L channel hanger bar, 26", pair (replacement) **RMB22** = Adjustable wood joist mounting bars, pair, extend to 22" long
	Notes	**Notes**	**Notes**	**Notes**	**Notes**
				(2) Not available with D010347 (347V models) (6) Emergency battery backup options are Non-IC only, and rated for a minimum starting temperature of 0°C (10) IEM option requires compatible IEM reflector or baffle trim. See Trim Ordering below.	

LED Module Order Information

LED Module	Lumens	CRI/CCT	
HM4 = 4" LED module	**0525** = 500 - 2500 lumen **3040** = 3000-4000 lumen **4560** = 4500-6000 lumen	**827** = 80CRI, 2700K **830** = 80CRI, 3000K **835** = 80CRI, 3500K **840** = 80CRI, 4000K **850** = 80CRI, 5000K	**927** = 90CRI, 2700K **930** = 90CRI, 3000K **935** = 90CRI, 3500K **940** = 90CRI, 4000K **950** = 90CRI, 5000K
Notes	**Notes**	**Notes**	

Trim Order Information

Reflector	Distribution[8]	Finish	Flange	Accessories
41 = 4" conical reflector	**ND** = narrow 50° beam angle 0.84 SC (nominal) **MD** = medium 60° beam angle 1.00 SC (nominal) **WD** = wide 75° beam angle 1.24 SC (nominal) **RWW** = rotatable wall wash with linear spread lens	**C** = Specular clear **H** = Semi-specular clear **W** = White	**Blank** = Polished flange standard with C & H reflectors **Blank** = White flange standard with W reflector **WF** = White flange option available with C & H reflectors	**41RWWPK** = Replacement part kit - wall wash lens insert - for use with 41RWW* only.
Notes	**Notes**	**Notes**	**Notes**	**Notes**
	(8) Values are nominal for white reflector, others may vary.			

Baffle	Distribution[8]	Finish	Flange	Accessories
41 = 4" baffle reflector	**WD** = wide 75° beam angle 1.24 SC (nominal) **RWW** = rotatable wall wash with linear spread lens	**BB** = Black baffle **WB** = White baffle	**Blank** = White flange standard with BB, & WB **BF** = Black flange option available with BB	**41RWWPK** = Replacement part kit - wall wash lens insert - for use with 41RWW* only.
Notes	**Notes**	**Notes**	**Notes**	**Notes**
	(8) Values are nominal for white reflector, others may vary.			

Reflector	Distribution[8]	Finish	Flange
41PS = 4" non-conductive polymer 'dead front' conical reflector [9]	**MD** = medium 60° beam angle 1.00 SC (nominal)	**W** = White	**Blank** = White flange standard with W reflector
Notes	**Notes**	**Notes**	**Notes**
(9) 41PS* is 1000-3000 lumens Non-IC rated. 500 & 750 lumens IC rated. 41PS is not for use over 3000 lumens in Non-IC or over 750 lumens in IC.	(8) Values are nominal for white reflector, others may vary.		

IEM Reflector	Distribution[8]	Finish	Flange	Integral Emergency
41 = 4" conical reflector for integral emergency only	**ND** = narrow 50° beam angle 0.84 SC (nominal) **MD** = medium 60° beam angle 1.00 SC (nominal) **WD** = wide 75° beam angle 1.24 SC (nominal)	**C** = Specular clear **H** = Semi-specular clear **W** = White	**Blank** = Polished flange standard with C & H reflectors **Blank** = White flange standard with W reflector **WF** = White flange option available with C & H reflectors	**IEM** = Reflector for use with integral emergency housings only. Provides access hole for integral emergency test switch.
Notes	**Notes**	**Notes**	**Notes**	**Notes**
	(8) Values are nominal for white reflector, others may vary.			

IEM Baffle	Distribution[8]	Finish	Flange	Integral Emergency
41 = 4" baffle reflector for integral emergency only	**WD** = wide 75° beam angle 1.24 SC (nominal)	**BB** = Black baffle **WB** = White baffle	**Blank** = White flange standard with BB, & WB **BF** = Black flange option with BB	**IEM** = Reflector for use with integral emergency housings only. Provides access hole for integral emergency test switch.
Notes	**Notes**	**Notes**	**Notes**	**Notes**
	(8) Values are nominal for white reflector, others may vary.			

Product Specifications

Housing Frame
- Boat shaped galvanized steel plaster frame with adjustable plaster lip
- Accommodates 1/2" to 1-1/2" thick ceilings
- Installs in new construction or from below the finished ceiling (non-accessible) for remodeling
- Provided with two remodel clips to secure the frame to the ceiling

Universal Mounting Bracket
- Adjusts 2" vertically from above and below the ceiling
- Use with the included mounting bars or with 1/2" Electric Metallic Tube (EMT)
- Removable to facilitate remodeling installation from below the finished ceiling

Mounting Bars
- Captive pre-installed No Fuss™ mounting bars lock to T-grid with screwdriver or pliers
- Centering detents allow for consistent positioning of fixtures

LED Module
- Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation
- Available in 80 or 90 color rendering index (CRI)
- Color accuracy within 3 SDCM provides color consistency and uniformity
- 90 CRI option: R9>50 (refer to chromaticity information for details)
- Available in 2700K, 3000K, 3500K, 4000K and 5000K correlated color temperature (CCT)
- Lumen options include 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000 lumens (nominal)
- Passive thermal management achieves 60,000 hours at 70% lumen maintenance (L70) in insulated ceilings (IC) and non-IC applications
- Integral diffuse lens provides visual shielding
- Integral connector allows quick connection to housing flex

Reflector
- Self-flanged aluminum reflectors available in narrow, medium or wide distribution patterns
- Medium distribution polymer non-conductive matte white reflector may be used to meet local codes for 'dead front' applications (500 & 750 lumen max. in IC and 3000 lumen max. in Non-IC)
- Wall wash reflector features a rotatable linear spread lens for alignment of vertical illumination
- Reflectors attach to LED module with three speed clamps
- Available in multiple painted or plated finishes

Reflector/Module Retention
- Reflector/module assembly is securely retained in the housing with two torsion springs

Driver
- Field-replaceable constant current driver provides low noise operation
- Universal 120-277VAC 50/60Hz input standard
- Continuous, 1% to 100% dimming with 0-10V analog control
- Optional low-voltage DC driver for use with Distributed Low Voltage Power (DLVP) system
- Distributed Low Voltage Power (DLVP) system combines power, lighting and controls with ease of installation (refer to DLVP Design Guide at www.cooperlighting.com for details)

Canada Options
- 347VAC 50/60Hz; 1% dimming on 0 -10V analog control, for 500, 750, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000 lumen models only
- 347V step down transformer factory installed with the standard "D010" 120V-277V, LED driver on 5500, 6000 lumen models only

Emergency Option
- Provides 90 minutes of standby lighting, meeting most life safety codes for egress lighting
- Available with integral or remote charge indicator and test switch
- Available Self-Test (self-diagnostic) with remote charge indicator and test switch
- Quick Spec emergency ordering option for quick-turn projects

Connected Lighting System
Two WaveLinx connected solutions to choose from. Refer to WaveLinx system specifications and application guides for details.

WaveLinx PRO Tilemount Sensor Kit
- WaveLinx PRO WTA tilemount sensor kit offers daylight dimming, PIR motion sensing, scene and zone configuration, automatic commissioning; and optional RLTS - Real Time Location Services available.

WaveLinx PRO Wireless Node
- WaveLinx PRO WPN wireless node provides luminaire-level control with scene and zone configuration without an integrated sensor; Connects wirelessly with daylight dimming sensor and PIR motion sensor if desired. Use with 0-10V driver only. **Note:** Not compatible with 347V or Chicago plenum.

WaveLinx LITE Tilemount Sensor Kit
- WaveLinx LITE WTK tilemount sensor kit offers daylight dimming and PIR motion sensing, scene and grouping configuration.

WaveLinx LITE Wireless Node
- WaveLinx LITE WLN wireless node provides luminaire level control with scene and zone configuration without an integrated sensor; Connects wirelessly with daylight dimming sensor and PIR motion sensor if desired. Use with 0-10V driver only. **Note:** Not compatible with 347V or Chicago plenum.

WaveLinx Tilemount Sensor Kits Application
- The WTA and WTK tilemount sensor kits include a control module mounted on the luminaire junction box via 1/2" knock-out, and a tilemount sensor on 54-inch whip; for ceiling installation by direct-mount spring clips or via mounting bracket in octagon ceiling boxes.
- The WTA and WTK tilemount sensor kits may be ordered as factory installed on the luminaire, or ordered separately as a field installed accessory kit.
- **Note: WaveLinx PRO devices are only compatible with the WaveLinx PRO system.**
- **Note: WaveLinx LITE devices are only compatible with the WaveLinx LITE system.**

Junction Box
- Galvanized steel junction box
- 20 in^3 internal volume excluding voltage barrier
- 25 in^3 internal total volume
- Voltage barrier for 0-10V dimming wires (occupies one 1/2" pry-out space)
- Listed for eight #12 AWG (four in, four out) 90˚C conductors and feed-thru branch wiring
- Three 1/2" and two 3/4" trade size pry-outs available
- Three 4-port push wire nuts for mains voltage with 1-port for fixture connection

Compliance
- cULus Certified to UL 1598 / C22.2 No. 250.0, suitable for damp locations and wet locations in covered ceilings only
- Emergency options provided with UL Listed emergency drivers to UL 924 / C22.2 No. 141, suitable for indoor/damp locations
- IP20 - Above finished ceiling; IP64 - Below finished ceiling
- Non-Insulated ceiling (Non-IC) rated for 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000 lumen models (insulation must be kept 3" from top and sides)
- Insulated ceiling (IC) rated for 500, 750, 1000, 1500 lumen models and suitable for direct contact with air permeable insulation* (IC models are also suitable for Non-IC installations)
- Non-IC marked spacing required for 4500, 5000, 5500, 6000 lumen models
  - Marked Spacing Center to Center of Adjacent Luminaires = 36"
  - Center of Luminaire to Building Member = 18"
  - Minimum overhead = 0.5"
- Airtight per ASTM-E283-04
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- EMI/RFI emissions FCC CFR Title 47 Part 15 Class A at 120/277V
- Contains no mercury or lead and RoHS compliant
- Photometric testing completed in accordance of IES LM-79-08
- Lumen maintenance projection in accordance of IES LM-80-08 and TM-21-11
- 1,000 and 1,500 lumen, 90 CRI, ICAT models may be used to comply with State of California Title 24 residential code, per JA8 certification standards
- May be used to comply with State of California Title 24 non-residential code as a dimmable LED luminaire
- ENERGY STAR® certified, reference certified light fixtures database

*Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013

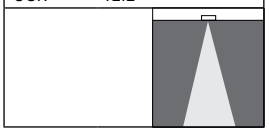
Warranty
- Five year limited warranty, consult website for details. www.cooperlighting.com/legal

Photometric Data

View IES files

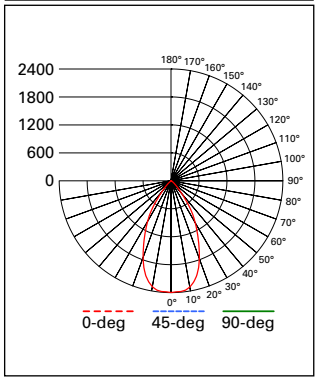
NARROW DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

NARROW (50° BEAM*)	
Test Number	P571728
Housing	HC420D010
Module	HM40525835
Reflector	41NDC
Lumens	2010 Lm
Efficacy	100.5 Lm/W
SC	0.84
UGR	12.2

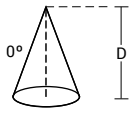


CANDLEPOWER DISTRIBUTION

Downlight



CONE OF LIGHT



MH	FC	L	W
5.5'	79.3	4.6	4.6
7'	49	5.8	5.8
8'	37.5	6.6	6.6
9'	29.6	7.4	7.4
10'	24	8.4	8.4
12'	16.7	10	10

CANDELA TABLE

Degrees Vertical	Candela
0	2400
5	2387
15	2110
25	1368
35	676
45	152
55	23
65	5
75	1
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1436	71.5
0-40	1848	92
0-60	2002	99.6
0-90	2010	100
90-180	0	0
0-180	2010	100

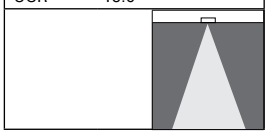
LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	26514
55	4968
65	1576
75	667
85	0

*Value are nominal for specular clear reflectors, other may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

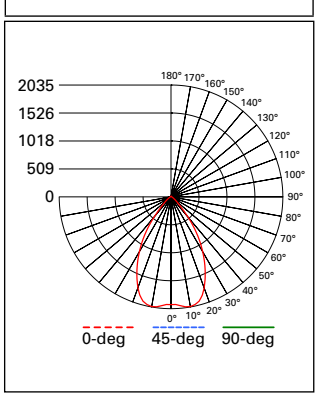
MEDIUM DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

MEDIUM (60° BEAM*)	
Test Number	P571727
Housing	HC420D010
Module	HM40525835
Reflector	41MDC
Lumens	2096 Lm
Efficacy	104.8 Lm/W
SC	1.0
UGR	13.6

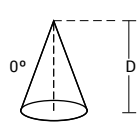


CANDLEPOWER DISTRIBUTION

Downlight



CONE OF LIGHT



MH	FC	L	W
5.5'	65.3	5.4	5.4
7'	40.3	6.8	6.8
8'	30.9	7.8	7.8
9'	24.4	8.8	8.8
10'	19.8	9.8	9.8
12'	13.7	11.8	11.8

CANDELA TABLE

Degrees Vertical	Candela
0	1969
5	1997
15	1974
25	1467
35	800
45	192
55	26
65	4
75	1
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1408	67.1
0-40	1899	90.6
0-60	2091	99.7
0-90	2096	100
90-180	0	0
0-180	2096	100

LUMINANCE

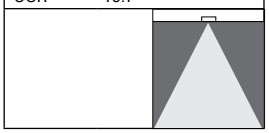
Average Candela Degrees	Average 0° Luminance
45	33405
55	5548
65	1197
75	667
85	0

*Value are nominal for specular clear reflectors, other may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

Note: Refer to IES files for more product data.

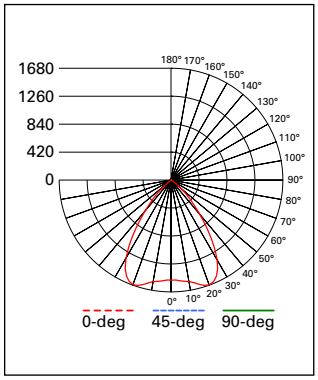
WIDE DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

WIDE (75° BEAM*)	
Test Number	P571730
Housing	HC420D010
Module	HM40525835
Reflector	41WDC
Lumens	2304 Lm
Efficacy	115.2 Lm/W
SC	1.25
UGR	15.7

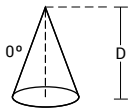


CANDLEPOWER DISTRIBUTION

Downlight



CONE OF LIGHT



MH	FC	L	W
5.5'	49.9	6.8	6.8
7'	30.8	8.6	8.6
8'	23.6	9.8	9.8
9'	18.6	11.2	11.2
10'	15.1	12.4	12.4
12'	10.5	14.8	14.8

CANDELA TABLE

Degrees Vertical	Candela
0	1509
5	1525
15	1630
25	1603
35	1012
45	369
55	44
65	5
75	1
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1334	57.9
0-40	1960	85.1
0-60	2296	99.7
0-90	2304	100
90-180	0	0
0-180	2304	100

LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	64437
55	9355
65	1576
75	667
85	0

*Value are nominal for specular clear reflectors, other may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen
0.33	0.44	0.54	0.74	1.00	1.24	1.54	1.85

4000 Lumen	4500 Lumen	5000 Lumen	5500 Lumen	6000 Lumen
2.15	2.28	2.44	2.52	2.62

Multipliers for relative lumen values with other series models.

Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Semi-Specular	Matte White White Baffle	Black Baffle
Multiplier	1.00	0.94	0.88	0.76

Multipliers for relative lumen values with other color finishes.

CCT Multipliers – 80CRI

2700K	3000K	3500K	4000K	5000K
0.89	0.96	1.00	1.03	1.03

Multipliers for relative lumen values with other series color temperatures.

CCT Multipliers – 90CRI

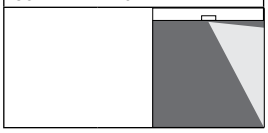
2700K	3000K	3500K	4000K	5000K
0.76	0.85	0.89	0.93	0.93

Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for more product data.

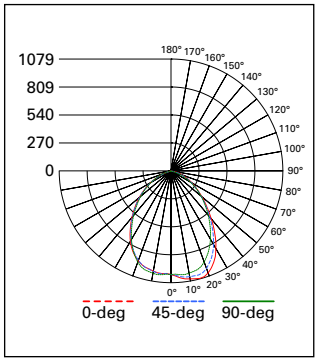
WALL WASH DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

WALL WASH	
Test Number	P571729
Housing	HC420D010
Module	HM40525835
Reflector	41RWWC
Lumens	2094 Lm
Efficacy	104.7 Lm/W
SC	1.15



CANDLEPOWER DISTRIBUTION

Downlight



CANDELA TABLE	
Degrees Vertical	Candela
0	1005
5	1041
15	1079
25	980
35	743
45	494
55	312
65	180
75	80
85	10
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	789	37.7
0-40	1221	58.3
0-60	1872	89.4
0-90	2094	100
90-180	0	0
0-180	2094	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	86207
55	67159
65	52681
75	38173
85	13445

SC = Spacing Criteria, nominal for specular clear reflector, other may vary.

SINGLE UNIT FOOTCANDLES

	2.5' from wall (distance from fixture along wall)						
1	18.7	13.6	6.1	2.3	0.8	0.3	0.1
2	28.4	22.3	12.2	5.7	2.6	1.2	0.6
3	25.9	21.4	13.3	7.2	3.8	2	1.1
4	19.6	16.9	11.6	7	4.1	2.4	1.4
5	13.6	12.3	9.2	6.2	3.9	2.5	1.5
6	9.3	8.6	7	5.1	3.5	2.3	1.6
7	6.4	6.1	5.2	4.1	3	2.1	1.5
8	4.6	4.4	3.9	3.2	2.5	1.8	1.3
9	3.3	3.2	2.9	2.5	2	1.6	1.2
10	2.5	2.4	2.2	2	1.7	1.4	1.1

MULTIPLE UNIT FOOTCANDLES

	2.5' from wall (Distance from fixture along wall) 3			2.5' from wall (Distance from fixture along wall) 4		
1	21	18.8	21	19.5	12.1	19.5
2	34.1	34.1	34.1	31	24.4	31
3	33.1	34.4	33.1	29.7	26.5	29.7
4	26.7	28.7	26.7	23.7	23.3	23.7
5	19.8	21.7	19.8	17.5	18.5	17.5
6	14.4	15.8	14.4	12.8	14	12.8
7	10.5	11.4	10.5	9.4	10.4	9.4
8	7.8	8.3	7.8	7	7.7	7
9	5.8	6.2	5.8	5.4	5.9	5.4
10	4.4	4.7	4.4	4.1	4.5	4.1

Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen
0.33	0.44	0.54	0.74	1.00	1.24	1.54	1.85

4000 Lumen	4500 Lumen	5000 Lumen	5500 Lumen	6000 Lumen
2.15	2.28	2.44	2.52	2.62

Multipliers for relative lumen values with other series models.

Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Semi-Specular	Matte White White Baffle	Black Baffle
Multiplier	1.00	0.94	0.88	0.76

Multipliers for relative lumen values with other color finishes.

CCT Multipliers – 80CRI

2700K	3000K	3500K	4000K	5000K
0.89	0.96	1.00	1.03	1.03

Multipliers for relative lumen values with other series color temperatures.

CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.76	0.85	0.89	0.93	0.93

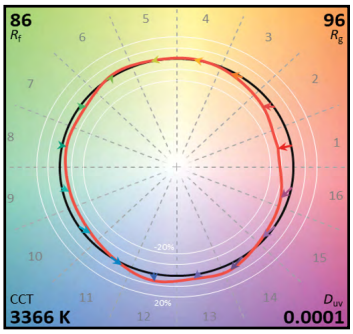
Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for more product data.

Energy & Performance Data

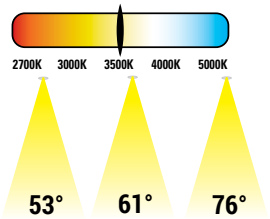
COLOR METRICS - TM-30-15 & CRI/CIE (3500K)

80 CRI Color Metric Summary - 3500K*

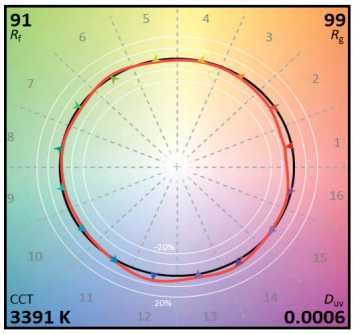


Reference Illuminant — Test Source

TM-30-15	Rf = 86
	Rg = 95.5
CRI/CIE	Ra = 83.8
	R9 = 10.3

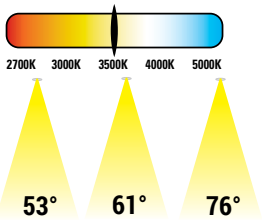


90 CRI Color Metric Summary - 3500K*



Reference Illuminant — Test Source

TM-30-15	Rf = 91.1
	Rg = 99
CRI/CIE	Ra = 92.4
	R9 = 55.1



* Color values are based on 61WDWB reflector, other finishes and field results may vary.

ENERGY DATA

Series	500 lumen		750 lumen		1000 lumen		1500 lumen		2000 lumen	
Input Voltage 120-277VAC	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Input Current (A)	0.051	0.026	0.067	0.036	0.083	0.039	0.119	0.053	0.171	0.077
Input Power (W)	6.1	6.5	7.9	8.3	10	10.4	14.5	14.5	20.9	20.6
In-rush (A)	1.9	8.4	2	8.4	2.2	8.5	2.7	8.5	2.1	9.7
Inrush duration (µs)	251	135	237	133	250	134	250	139	245	131
THD (%)	6.2	13.5	7.4	8.8	5.4	10.3	10	6.7	6.5	7.9
PF	≥ 0.99	≥ 0.9	≥ 0.98	≥ 0.92	≥ 0.99	≥ 0.95	≥ 0.99	≥ 0.97	≥ 0.99	≥ 0.96

Series	2500 lumen		3000 lumen		3500 lumen		4000 lumen		4500 lumen	
Input Voltage 120-277VAC	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Input Current (A)	0.23	0.103	0.24	0.107	0.292	0.152	0.351	0.159	0.384	0.172
Input Power (W)	27.5	27.5	28.6	28.5	34.6	35.1	42.1	42.1	45.9	45.6
In-rush (A)	2.5	5.6	2.5	11.6	3.4	13.9	3.1	14.7	3.1	14.8
Inrush duration (µs)	232	123	216	111	183	95	200	98	202	100
THD (%)	6.5	8.1	7.8	8.3	5.6	10	4.1	9.5	4.5	8.5
PF	≥ 0.99	≥ 0.96	≥ 0.99	≥ 0.96	≥ 0.99	≥ 0.93	≥ 0.99	≥ 0.94	≥ 0.99	≥ 0.95

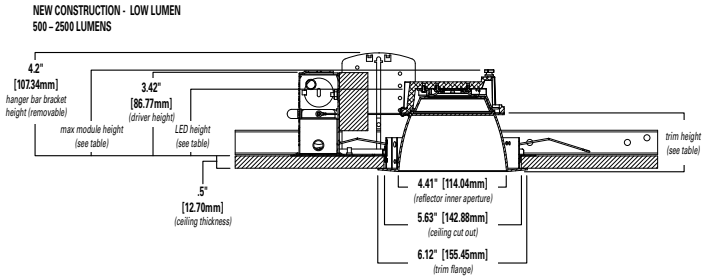
Series	5000 lumen		5500 lumen		6000 lumen	
Input Voltage 120-277VAC	120V	277V	120V	277V	120V	277V
Input Current (A)	0.419	0.186	0.457	0.201	0.489	0.214
Input Power (W)	50.1	49.5	54.6	53.7	58.4	57.4
In-rush (A)	3.1	15	3.2	14.8	3.4	14.8
Inrush duration (µs)	202	117	196	131	192	121
THD (%)	5.5	7.6	7	7.2	8.1	7.2
PF	≥ 0.99	≥ 0.96	≥ 0.99	≥ 0.96	≥ 0.99	≥ 0.97

Minimum starting temperature -30°C (-22°F)* (Nominal input 120-277VAC & 100% of rated output power)
Sound Rating: Class A standards

Notes:
* Emergency Battery packs are rated for a minimum starting temperature of 0°C.

Dimensional and Mounting Details

NEW CONSTRUCTIONS - LOW LUMEN 500 – 2500 LUMENS



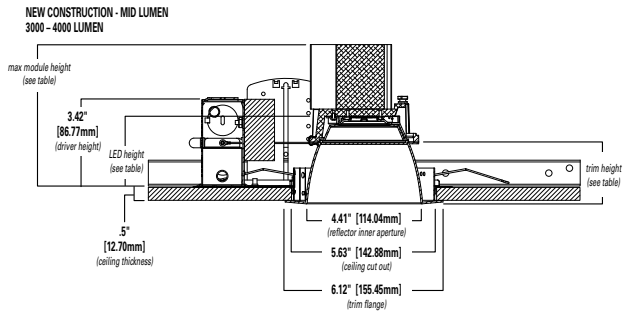
Low Lumen (500 – 2500 Lumens)*

Distribution	Max. Module Height	Trim Height	LED Height
Narrow	3.6"	2.5"	2.7"
Medium	3.7"	2.6"	2.8"
Wide	3.5"	2.4"	2.6"
Baffle	3.1"	2.4"	2.6"

*Max. height w/removable hanger bar bracket 4.2"

Low Lumen Module

NEW CONSTRUCTIONS - MID LUMEN 3000 – 4000 LUMENS

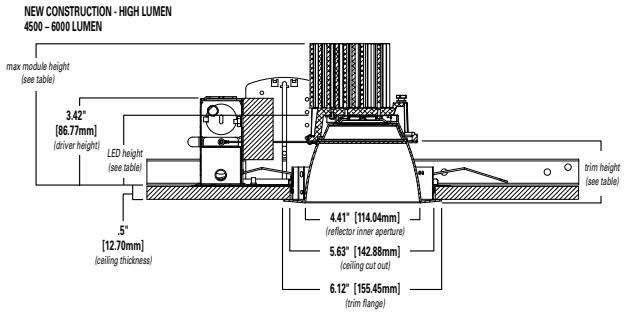


Mid Lumen (3000 – 4000 Lumens)

Distribution	Max. Module Height	Trim Height	LED Height
Narrow	5.6"	2.5"	2.9"
Medium	5.7"	2.6"	3.0"
Wide	5.5"	2.4"	2.8"
Baffle	5.5"	2.4"	2.8"

Mid Lumen Module

NEW CONSTRUCTIONS - HIGH LUMEN 4500 – 6000 LUMENS



High Lumen (4500 – 6000 Lumens)

Distribution	Max. Module Height	Trim Height	LED Height
Narrow	5.9"	2.5"	2.9"
Medium	6.0"	2.6"	3.0"
Wide	5.8"	2.4"	2.8"
Baffle	5.8"	2.4"	2.8"

High Lumen Module

Connected Solutions

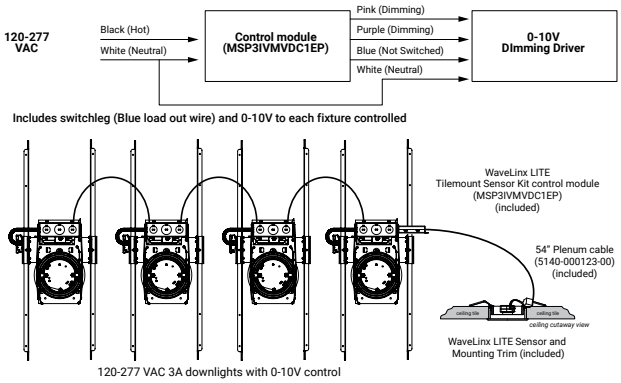
WaveLinx LITE - WTK Tilemount Sensor

WaveLinx LITE devices only compatible with the WaveLinx LITE system.

- Intuitive Android™ or Apple® iOS® app for basic system code compliant set up and configuration via Bluetooth
- Up to 28 unique areas per project site (WaveLinx LITE Bluetooth network)
- Up to 50 devices for an area, any one of 16 control zones, up to 6 occupancy sets, and custom lighting scenes
- Automatic occupancy or vacancy, sensor sensitivity, daylight dimming, etc. configurable through the app
- Refer to the WaveLinx system specifications for details

Device Security | Manual Dimmer | Occupancy Sensor | Daylighting Control | Manually Switched ON/OFF | Tuning Control | Lumen Maintenance Control | Scenes

WaveLinx LITE WTK Tilemount Wiring Diagram



WaveLinx LITE Bluetooth Enabled System

WaveLinx PRO – WTA Tilemount Sensor

WaveLinx PRO devices only compatible with the WaveLinx PRO system.

- WaveLinx PRO tilemount functionality configures zones and customizes settings from one secure mobile app
- Automatic code commissioning that meets the strictest codes
- Fixtures and sensors integrate with Wireless Area Controller, Wall Stations, and Control Devices
- Stand-Alone Offices or Entire Building Network Installations

Downlights with tilemount sensor wireless communication
Highly efficient LED fixtures

WaveLinx Area Controller
Provides centralized coordination of multiple area control options

Wireless Wall Station/Receptacle
Provides customized wireless control of each area

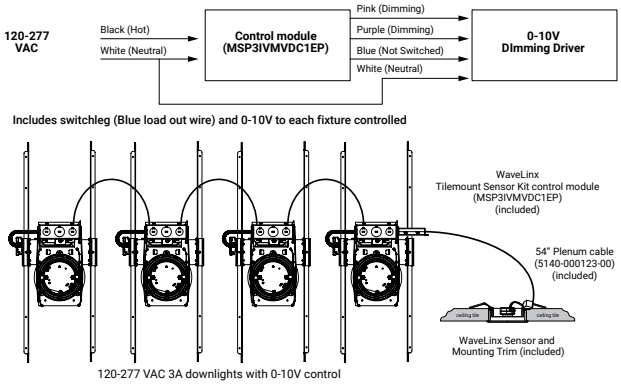
Mobile Applications
Provides personalized, local control from a tablet or smartphone

WaveLinx mobile app settings

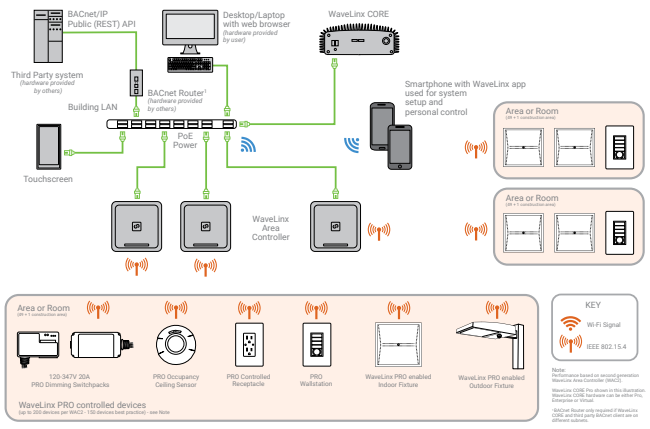
Manual Dimmer | Occupancy Sensor | Lumen Maintenance Control | Daylighting Control

Receptacle Control | Tuning Control | Scheduling | Manually Switched ON/OFF | Demand Response

WaveLinx WTA Tilemount Wiring Diagram



WaveLinx CORE Building Management Integration



Connected Solutions

WaveLinx LITE Wireless Node - WLN

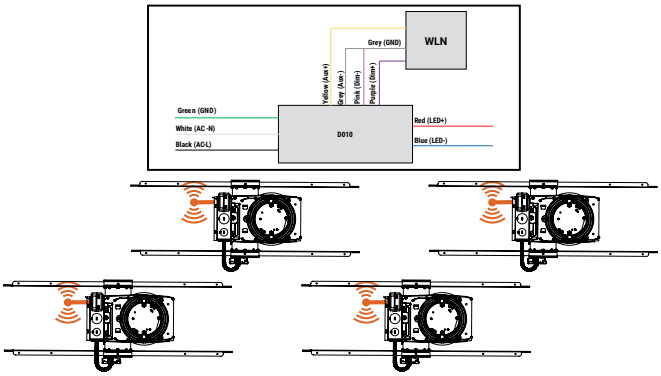
WaveLinx LITE devices only compatible with the WaveLinx LITE system.

- Intuitive Android™ or Apple® iOS® app for basic system code compliant set up and configuration via Bluetooth
- Up to 28 unique areas per project site (WaveLinx LITE Bluetooth network)
- Up to 50 devices for an area, any one of 16 control zones, up to 6 occupancy sets, and custom lighting scenes
- Refer to the WaveLinx system specifications for details

WaveLinx mobile app settings

Device Security · Manual Dimmer · Occupancy Sensor · Daylighting Control · Manually Switched ON/OFF · Tuning Control · Lumen Maintenance Control · Scenes

WaveLinx LITE Wireless Node (WLN) Wiring Diagram



WaveLinx LITE Bluetooth Enabled System

WaveLinx PRO Wireless Node - WPN

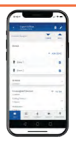
WaveLinx PRO devices only compatible with the WaveLinx PRO system.

- WaveLinx Wireless functionality configures zones and customizes settings from one secure mobile app
- Automatic code commissioning that meets the strictest codes
- Fixtures and sensors integrate with WaveLinx Area Controller, Wall Stations, and Control Devices
- Stand-Alone Offices or Entire Building Network Installations

Downlights with wireless communication
Highly efficient LED fixtures

WaveLinx Area Controller
Provides centralized coordination of multiple area control options

Wireless Wall Station/Receptacle
Provides customized wireless control of each area

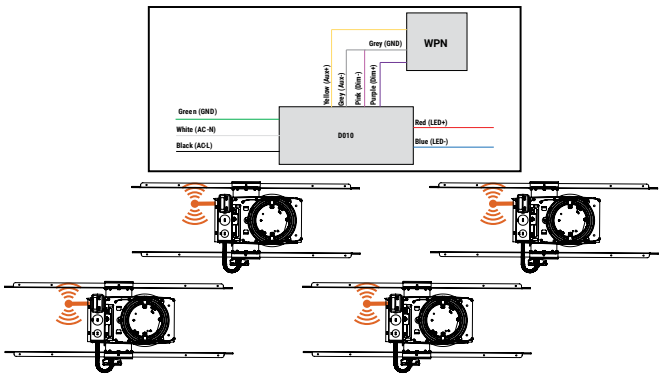


Mobile Applications
Provides personalized, local control from a tablet or smartphone

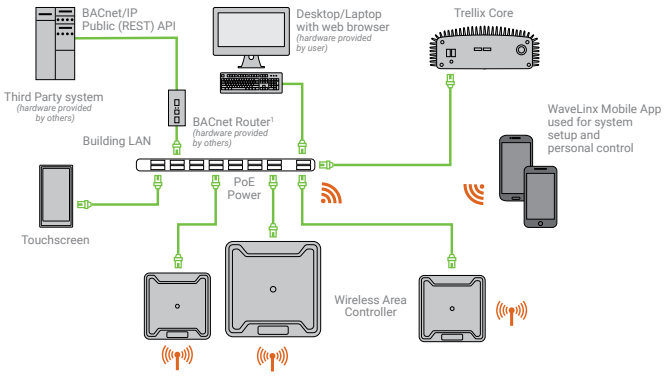
WaveLinx mobile app settings

Manual Dimmer · Occupancy Sensor · Lumen Maintenance Control · Daylighting Control · Receptacle Control · Tuning Control · Scheduling · Manually Switched ON/OFF · Demand Response

WaveLinx PRO Wireless Node (WPN) Wiring Diagram



WaveLinx CORE Building Management Integration

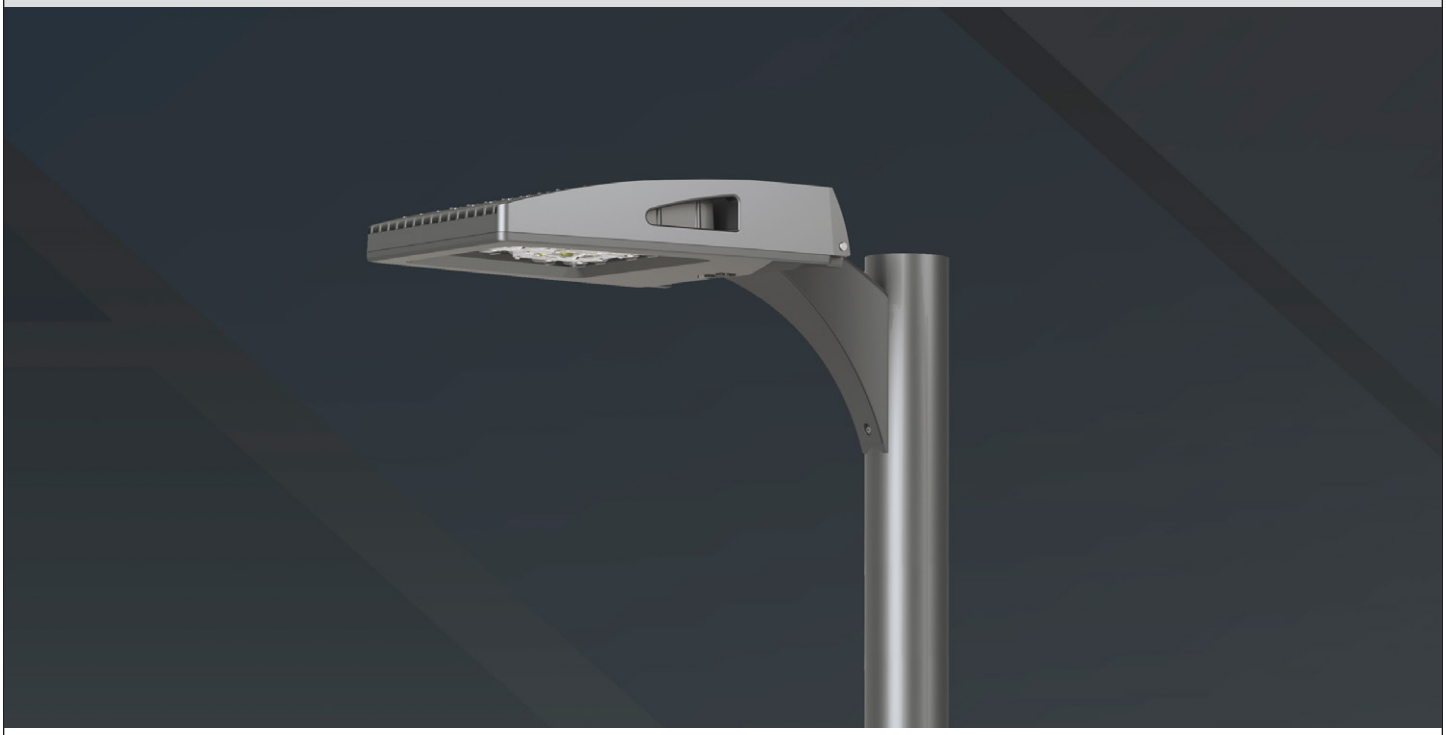


Cooper Lighting Solutions
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

NLS LIGHTING

NV-1

AREA, SITE & ROADWAY



LED WATTAGE CHART				
	16L	32L	48L	64L
400 milliamps	21w	-	-	-
530 milliamps	28w	-	-	-
700 milliamps	36w	71w	104w	136w
1050 milliamps	56w	106w	156w	205w

FORM AND FUNCTION

- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and fixtures per project
- Optical system designed for:
  - Parking Lots
  - Auto Dealerships
  - General Area Lighting

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

FINISH

- 3-5 mils electrostatic powder coat.
- NLS' standard high-quality finishes prevent corrosion, protects against extreme environmental conditions

WARRANTY

Five-year limited warranty for drivers and LEDs.

BUY AMERICAN

To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).

Project Name:	Type:

NV-1 ORDERING GUIDE

Cat#

NV-1
(NV-1)

Light Dist.

Type 2
(T2)

Type 3
(T3)

Type 4
(T4)

Type 5
(T5)

Nema 3
30o Narrow Beam
(N3)

Corner Distribution Left
(CDL)

Corner Distribution Right
(CDR)

of LEDs

16
(16L)

32
(32L) [15]

48
(48L) [15]

64
(64L) [15]

Miliamps

400
(40)

530
(53)

700
(7)

1050
(1)

Kelvin

Amber 586-600nM
(AMBER) [10, 12, 13]

2700K, 70 CRI
(27K7) [6]

2700K, 80 CRI
(27K8) [1, 6]

3000K, 70 CRI
(30K7) [6]

3000K, 80 CRI
(30K8) [1, 6]

3500K, 80 CRI
(35K8) [1]

4000K, 70 CRI
(40K7)

4000K, 80 CRI
(40K8) [1]

5000K, 70 CRI
(50K7)

5000K, 80 CRI
(50K8) [1]

Volts

120-277
(UNV)

347-480
(HV)

Mounting

Architectural Sweep Arm
(ASA)

Direct Pole 3" Arm Single
D180
(DPS3) [2]

Direct Pole 7" Arm
D180, D90, T90, T120, Quad
(DPS7) [2]

Knuckle Mount
(KM)

Wall Mount
(WM)

Trunnion Mount
(TM) [3]

Tennis Arm Mount
(TA)

Mast Arm Mount
(MA)

Color

Bronze Textured
(BRZ)

White Textured
(WHT)

Smooth White Gloss
(SWT)

Silver Metallic
(SVR)

Black Textured
(BLK)

Smooth Black Gloss
(SBK)

Graphite Textured
(GPH)

Grey Textured
(GRY)

Green Textured
(GRN)

Hunter Green Textured
(HGN)

Custom
(CS)

Controls Options

Nema 7-Pin Receptacle
(PE7)

Photocell + Receptacle
(PCR)

Receptacle + Shorting Cap
(PER)

FSP-211 with Motion Sensor
9'-20' Heights
(FSP-20) [4]

21'-40' Heights
(FSP-40) [4]

Custom Controls Integration
(CCI) [9]

Button Type Photocell
(PC) [4]

Options

Bird Spikes
(BS)

Marine Grade Finish
(MGF)

Optic Plate Painted
to Match Fixture
(OPP)

Quick Mount Bracket
(QMB)

Retrofit Mount Bracket
(RQMB)

Round Pole Adaptor
3"-4" Pole
(RPA4)

Round Pole Adaptor
5"-6" Pole
(RPA5)

Rotated Optic Left
(ROL)

Rotated Optic Right
(ROR)

House Side Shield
(HSS) [5]

Black Hardware
(BH)

Black Optic Frame
(BOF)

Buy American Act
(BAA) [11]

Trade Agreement Act
(TAA) [11]

Build America Buy American
(BABA) [11]

Lens Options

Glass Lens
(GL) [7, 14]

HAL Lens
(HAL) [8, 14]

NOTES:

1. Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
2. For Round Pole Specify RPA4 or RPA5
3. Standard finish is stainless steel. Can be painted to match fixture.
4. Universal Voltage 120-277
5. HSS not applicable with Nema 2.
6. 3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.
7. Glass Lens: Low iron glass, fully tempered per ANSI C1047 (QCH-2201-37)
8. HAL Lens: Yellow Polycarbonate Lens – less than 2% Blue Light Content
9. Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
10. Turtle Safe
11. Consult factory for all BAA/TAA/BABA requests
12. Consult Factory for Lead Time
13. Not Available above 1000mA
14. Contact Factory
15. Available only in 700mA and 1050mA

NLS LIGHTING
701 Kingshill Place, Carson, CA 90746
Call Us Today (310) 341-2037
nlslighting.com

PRODUCT SPECIFICATIONS

ELECTRICAL

- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP65 compartment
- CRI 70, 80 or 90 (Contact factory for 90 CRI)
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KVA supplied as standard

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP65 seal for electronics compartment
- One-piece Optics Plate™ mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate™ standard

OPTIONS

- BIRD SPIKES (BS) - Offers a practical and humane deterrent for larger bird species and provides a cost-effective long-term solution to nuisance bird infestations and protects your property
- MARINE GRADE FINISH (MGF) - A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness
- OPTIC PLATE PAINTED TO MATCH FIXTURE (OPP) - Optic plate is clear anodized as standard. The optic plate can be powder coated to match the finish of the fixture.
- QUICK MOUNT BRACKET (QMB) - Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Has a 2"x4" Drill Pattern
- RETROFIT MOUNT BRACKET - Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Drill Pattern is adjustable from 2"x4" to 2"x6"
- ROUND POLE ADAPTER (RPA) - When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3"-4" round poles, and RPA5 when installing on 5"-6" round poles
- ROTATED OPTICS (ROL) (ROR) - Rotated optics are designed for perimeter lighting for auto dealerships
- HOUSE SIDE SHIELD (HSS) Designed for full property line cut-off
- BLACK HARDWARE (BH) - Optional black, zinc coated steel hardware
- BLACK OPTIC FRAME (BOF) - Optional black optic frame. Standard is white
- GLASS LENS (GL) - Low Iron Glass, fully tempered
- High performance amber lens (hal)

CONTROL OPTIONS

- FSP-211 (FSP-X) - Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles
- FSP-20 mounting heights 9-20 feet
- FSP-40 mounting heights 21-40 feet
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field
- FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering
- NEMA 7-PIN RECEPTACLE (PE7)—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect
- PHOTOCELL + RECEPTACLE (PCR)–7-Pin Receptacle and Electronic Twist Lock Photocell for dusk to dawn operation
- RECEPTACLE + SHORTING CAP (PER)–7-Pin Receptacle and Shorting Cap
- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

FINISH

- 3-5 mils electrostatic powder coat
- NLS Light's standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

WARRANTY

Five-year limited warranty for drivers and LEDs.

OPTICS

Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time

LISTINGS

- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 3G Vibration Rated per ANSI C136.31-2010
- IDA Dark Sky Approved
- IK10 Rated

BUY AMERICAN OPTION

While all of the NLS Lighting products listed in this document qualify for the Buy America(n) Act of 1933, we reserve the right to change our listings without notice.

The information provided above is for general informational purposes only. We encourage you to consult legal professionals for advice particular to your projects concerning BAA, TAA, BABA or Buy America.

Additional NLS Products that meet BAA, TAA standards can be found at the following link:

https://nlslighting.com/buy-american/

The information and specifications on this document are subject to change without any notification. All values are design, nominal, typical or prorated values when measured under internal and external laboratory conditions.

PRODUCT SPECIFICATIONS

LUMENS CHART 16L, 32L, & 48L											
CAT#	N3	LM/W	T2	LM/W	T3	LM/W	T4	LM/W	T5	LM/W	W
NV-1-16L-40-27K7	1,749	83	2,324	111	2,342	112	2,307	110	2,360	112	21
NV-1-16L-40-30K7	2,037	97	2,333	111	2,532	121	2,316	110	2,552	122	21
NV-1-16L-40-40K7	2,436	116	2,715	129	2,736	130	2,695	128	2,757	131	21
NV-1-16L-40-50K7	2,520	120	2,715	129	2,736	130	2,695	128	2,757	131	21
NV-1-16L-53-27K7	2,543	91	2,588	92	3,015	108	2,920	104	3,041	109	28
NV-1-16L-53-30K7	3,136	112	3,192	114	3,220	115	3,119	111	3,248	116	28
NV-1-16L-53-40K7	3,248	116	3,472	124	3,472	124	3,444	123	3,500	125	28
NV-1-16L-53-50K7	3,360	120	3,612	129	3,640	130	3,584	128	3,668	131	28
NV-1-16L-7-27K7	3,269	91	3,327	92	3,876	108	3,755	104	3,910	109	36
NV-1-16L-7-30K7	4,032	112	3,960	110	3,960	110	3,973	110	3,996	111	36
NV-1-16L-7-40K7	4,176	116	4,428	123	4,284	119	4,212	117	4,320	120	36
NV-1-16L-7-50K7	4,320	120	4,644	129	4,500	125	4,428	123	4,500	125	36
NV-1-16L-1-27K7	5,085	91	5,176	92	6,030	108	5,841	104	6,082	109	56
NV-1-16L-1-30K7	6,272	112	6,160	110	6,384	114	6,232	111	6,440	115	56
NV-1-16L-1-40K7	6,496	116	6,832	122	6,888	123	6,776	121	6,944	124	56
NV-1-16L-1-50K7	6,720	120	7,168	128	7,224	129	7,112	127	7,280	130	56
NV-1-32L-7-27K7	6,447	91	7,313	103	7,313	103	7,246	102	7,379	104	71
NV-1-32L-7-30K7	7,952	112	7,810	110	7,810	110	7,739	109	7,881	111	71
NV-1-32L-7-40K7	8,236	116	9,017	127	8,449	119	8,307	117	8,520	120	71
NV-1-32L-7-50K7	8,520	120	9,159	129	8,875	125	8,733	123	8,946	126	71
NV-1-32L-1-27K7	11,116	105	10,917	103	11,314	107	11,067	104	11,414	108	106
NV-1-32L-1-30K7	11,872	112	11,660	110	12,084	114	11,820	112	12,190	115	106
NV-1-32L-1-40K7	12,296	116	12,932	122	13,038	123	12,826	121	13,144	124	106
NV-1-32L-1-50K7	12,720	120	13,568	128	13,674	129	13,462	127	13,780	130	106
NV-1-48L-7-27K7	10,906	105	10,711	103	10,711	103	10,614	102	10,809	104	104
NV-1-48L-7-30K7	11,648	112	11,440	110	11,440	110	11,336	109	11,544	111	104
NV-1-48L-7-40K7	12,064	116	13,208	127	12,376	119	12,168	117	12,480	120	104
NV-1-48L-7-50K7	12,480	120	13,520	130	13,000	125	12,792	123	13,104	126	104
NV-1-48L-1-27K7	16,359	105	16,067	103	16,651	107	16,359	105	16,798	108	156
NV-1-48L-1-30K7	17,472	112	17,160	110	17,784	114	17,472	112	17,940	115	156
NV-1-48L-1-40K7	18,096	116	19,032	122	19,188	123	18,876	121	19,344	124	156
NV-1-48L-1-50K7	18,720	120	19,968	128	20,124	129	19,812	127	20,280	130	156
3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.											

LUMENS CHART 64L ONLY															
CAT#	N3	LM/W	T2	LM/W	T3	LM/W	T4	LM/W	T5	LM/W	CDL*	LM/W	CDR*	LM/W	W
NV-1-64L-7-27K7	14,262	105	14,007	103	14,007	103	13,880	102	14,135	104	5,797	43	5,725	42	136
NV-1-64L-7-30K7	15,232	112	14,960	110	14,960	110	14,824	109	15,096	111	6,191	46	6,190	46	136
NV-1-64L-7-40K7	15,776	116	17,272	127	16,184	119	15,912	117	16,320	120	6,689	49	6,689	49	136
NV-1-64L-7-50K7	16,320	120	17,680	130	17,000	125	16,728	123	17,136	126	7,013	52	6,689	49	136
NV-1-64L-1-27K7	21,252	106	21,114	106	21,882	109	21,498	107	22,074	110	8,695	43	8,588	43	200
NV-1-64L-1-30K7	22,960	115	22,550	113	23,370	117	22,960	115	23,575	118	9,286	46	9,286	46	200
NV-1-64L-1-40K7	23,780	119	25,010	125	25,215	126	24,805	124	25,420	127	10,034	50	10,033	50	200
NV-1-64L-1-50K7	24,600	123	26,240	131	26,445	132	26,035	130	26,650	133	10,519	53	10,033	50	200
3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.															

LUMEN MAINTENANCE DATA							
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,00 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%
*Reported extrapolations per IESNA TM-21				**Projected extrapolations per IESNA TM-21			

MULTILPLIERS FOR 70/80 CRI (Scaling Factor of 5000K 70 CRI)		
CRI	70 CRI	80 CRI
2700K	0.8560	0.8015
3000K	-	0.8594
3500K	-	0.8594
4000K	-	0.9255
5000K	-	0.9255

PRODUCT SPECIFICATIONS

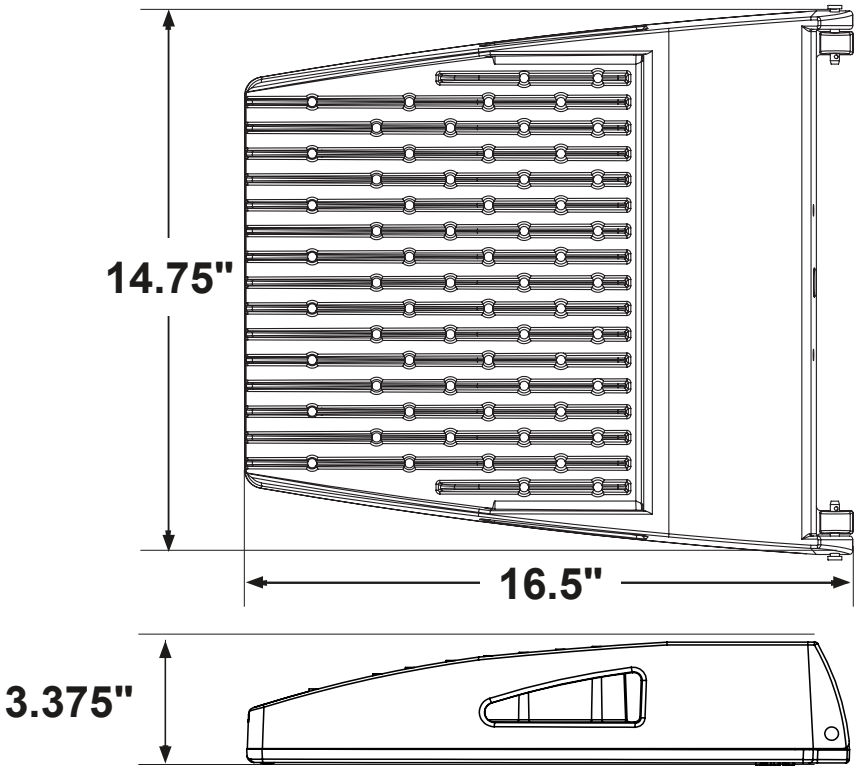
BUG RATINGS 16L, 32L, & 48L				
CAT#	**T2**	**T3**	**T4**	**T5**
NV-1-16L-40-27K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G0
NV-1-16L-40-30K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G0
NV-1-16L-40-40K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-40-50K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-53-27K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-53-30K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-53-40K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-53-50K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G1
NV-1-16L-7-27K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-7-30K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-7-40K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-7-50K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-1-27K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-1-30K7	B1-U0-G1	B1-U0-G1	B1-U0-G1	B3-U0-G1
NV-1-16L-1-40K7	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-16L-1-50K7	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-32L-7-27K7	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-32L-7-30K7	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-32L-7-40K7	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-32L-7-50K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G2
NV-1-32L-1-27K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B4-U0-G2
NV-1-32L-1-30K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B4-U0-G2
NV-1-32L-1-40K7	B2-U0-G2	B2-U0-G2	B3-U0-G2	B4-U0-G2
NV-1-32L-1-50K7	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G2
NV-1-48L-7-27K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B4-U0-G2
NV-1-48L-7-30K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B4-U0-G2
NV-1-48L-7-40K7	B2-U0-G2	B2-U0-G2	B2-U0-G2	B4-U0-G2
NV-1-48L-7-50K7	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G2
NV-1-48L-1-27K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G2
NV-1-48L-1-30K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G2
NV-1-48L-1-40K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B5-U0-G3
NV-1-48L-1-50K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B5-U0-G3
3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.				

BUG RATINGS 64L						
CAT#	**T2**	**T3**	**T4**	**T5**	**CDL***	**CDR***
NV-1-64L-7-27K7	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G2	B1-U0-G2	B1-U0-G2
NV-1-64L-7-30K7	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G2	B1-U0-G2	B1-U0-G2
NV-1-64L-7-40K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G2	B1-U0-G2	B1-U0-G2
NV-1-64L-7-50K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G2	B1-U0-G2	B1-U0-G2
NV-1-64L-1-27K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B5-U0-G3	B1-U0-G2	B1-U0-G2
NV-1-64L-1-30K7	B3-U0-G3	B3-U0-G3	B3-U0-G3	B5-U0-G3	B1-U0-G2	B1-U0-G2
NV-1-64L-1-40K7	B3-U0-G3	B3-U0-G3	B3-U0-G4	B5-U0-G3	B1-U0-G2	B1-U0-G2
NV-1-64L-1-50K7	B3-U0-G3	B3-U0-G3	B3-U0-G4	B5-U0-G3	B1-U0-G2	B1-U0-G2
3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.						

*64L Only

PRODUCT SPECIFICATIONS

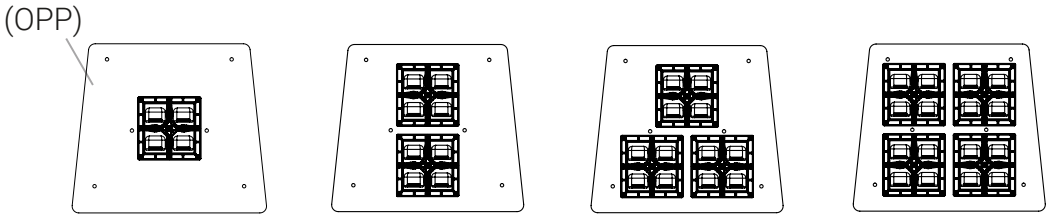
LUMEN HSS										
PART NUMBER	**T2 HSS**	**LM/W**	**BUG**	**T3 HSS**	**LM/W**	**BUG**	**T4 HSS**	**LM/W**	**BUG**	**W**
NV-1-16L-40-27K7	1386	66	B0-U0-G0	1336	64	B0-U0-G0	1343	64	B0-U0-G0	21
NV-1-16L-40-30K7	1499	71	B0-U0-G0	1445	69	B0-U0-G0	1452	69	B0-U0-G0	21
NV-1-16L-40-40K7	1620	77	B0-U0-G0	1561	74	B0-U0-G0	1569	75	B0-U0-G0	21
NV-1-16L-40-50K7	1620	77	B0-U0-G0	1561	74	B0-U0-G0	1569	75	B0-U0-G0	21
NV-1-16L-530-27K7	1837	66	B0-U0-G0	1771	63	B0-U0-G0	1780	64	B0-U0-G1	28
NV-1-16L-530-30K7	1986	71	B0-U0-G0	1914	68	B0-U0-G1	1924	69	B0-U0-G1	28
NV-1-16L-530-40K7	2146	77	B0-U0-G0	2068	74	B0-U0-G1	2079	74	B0-U0-G1	28
NV-1-16L-530-50K7	2146	77	B0-U0-G0	2068	74	B0-U0-G1	2079	74	B0-U0-G1	28
NV-1-16L-700-27K7	2426	67	B0-U0-G1	2338	65	B0-U0-G1	2350	65	B0-U0-G1	36
NV-1-16L-700-30K7	2623	73	B0-U0-G1	2528	70	B0-U0-G1	2541	71	B0-U0-G1	36
NV-1-16L-700-40K7	2835	79	B0-U0-G1	2732	76	B0-U0-G1	2746	76	B0-U0-G1	36
NV-1-16L-700-50K7	2835	79	B0-U0-G1	2732	76	B0-U0-G1	2746	76	B0-U0-G1	36
NV-1-16L-1050-27K7	3639	65	B0-U0-G1	3508	63	B0-U0-G1	3526	63	B0-U0-G1	56
NV-1-16L-1050-30K7	3935	70	B1-U0-G1	3792	68	B0-U0-G1	3812	68	B0-U0-G1	56
NV-1-16L-1050-40K7	4252	76	B1-U0-G1	4098	73	B0-U0-G1	4119	74	B0-U0-G1	56
NV-1-16L-1050-50K7	4252	76	B1-U0-G1	4098	73	B0-U0-G1	4119	74	B0-U0-G1	56
NV-1-32L-700-27K7	4853	68	B1-U0-G1	4677	66	B0-U0-G1	4701	66	B0-U0-G1	71
NV-1-32L-700-30K7	5247	74	B1-U0-G1	5057	71	B0-U0-G1	5083	72	B1-U0-G2	71
NV-1-32L-700-40K7	5669	80	B1-U0-G1	5464	77	B0-U0-G2	5492	77	B1-U0-G2	71
NV-1-32L-700-50K7	5669	80	B1-U0-G1	5464	77	B0-U0-G2	5492	77	B1-U0-G2	71
NV-1-32L-1050-27K7	7279	69	B1-U0-G2	7015	66	B1-U0-G2	7051	67	B1-U0-G2	106
NV-1-32L-1050-30K7	7870	74	B1-U0-G2	7585	72	B1-U0-G2	7624	72	B1-U0-G2	106
NV-1-32L-1050-40K7	8504	80	B1-U0-G2	8196	77	B1-U0-G2	8238	78	B1-U0-G2	106
NV-1-32L-1050-50K7	8504	80	B1-U0-G2	8196	77	B1-U0-G2	8238	78	B1-U0-G2	106
NV-1-48L-700-27K7	7279	70	B1-U0-G2	7015	67	B1-U0-G2	7051	68	B1-U0-G2	104
NV-1-48L-700-30K7	7870	76	B1-U0-G2	7585	73	B1-U0-G2	7624	73	B1-U0-G2	104
NV-1-48L-700-40K7	8504	82	B1-U0-G2	8196	79	B1-U0-G2	8238	79	B1-U0-G2	104
NV-1-48L-700-50K7	8504	82	B1-U0-G2	8196	79	B1-U0-G2	8238	79	B1-U0-G2	104
NV-1-48L-1050-27K7	10918	70	B1-U0-G2	10523	67	B1-U0-G2	10577	68	B1-U0-G2	156
NV-1-48L-1050-30K7	11805	76	B1-U0-G2	11377	73	B1-U0-G2	11436	73	B1-U0-G2	156
NV-1-48L-1050-40K7	12755	82	B1-U0-G2	12293	79	B1-U0-G2	12356	79	B1-U0-G2	156
NV-1-48L-1050-50K7	12755	82	B1-U0-G2	12293	79	B1-U0-G2	12356	79	B1-U0-G2	156
NV-1-64L-700-27K7	9705	71	B1-U0-G2	9354	69	B1-U0-G2	9402	69	B1-U0-G2	136
NV-1-64L-700-30K7	10493	77	B1-U0-G2	10113	74	B1-U0-G2	10165	75	B1-U0-G2	136
NV-1-64L-700-40K7	11338	83	B1-U0-G2	10927	80	B1-U0-G2	10983	81	B1-U0-G2	136
NV-1-64L-700-50K7	11338	83	B1-U0-G2	10927	80	B1-U0-G2	10983	81	B1-U0-G2	136
NV-1-64L-1050-27K7	14558	71	B1-U0-G2	14031	68	B1-U0-G2	14103	69	B1-U0-G3	205
NV-1-64L-1050-30K7	15740	77	B1-U0-G2	15170	74	B1-U0-G3	15248	74	B1-U0-G3	205
NV-1-64L-1050-40K7	17007	83	B2-U0-G2	16391	80	B1-U0-G3	16475	80	B1-U0-G3	205
NV-1-64L-1050-50K7	17007	83	B2-U0-G2	16391	80	B1-U0-G3	16475	80	B1-U0-G3	205
3000K or lower, with fixed mounting options only, must be selected to meet International Dark-Sky Association certification.										



Weight: 24 lbs

OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.



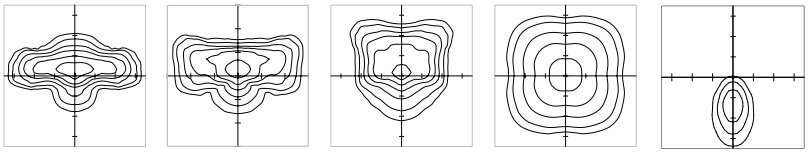
NV-1 / 16L **NV-1 / 32L** **NV-1 / 48L** **NV-1 / 64L**

* OPTIC PLATE PAINTED TO MATCH FIXTURE FINISH (OPP)– Optic Plate standard clear anodized, Grade 2. When (OPP) specified, Optic Plate finish will match fixture finish.

OPTICS

Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.

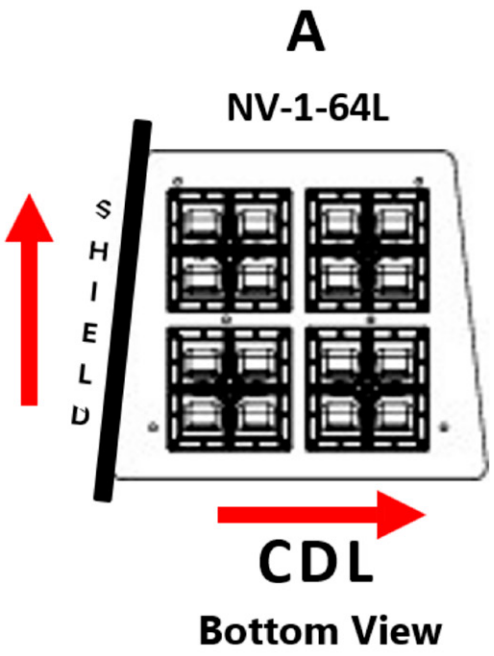
IES Types



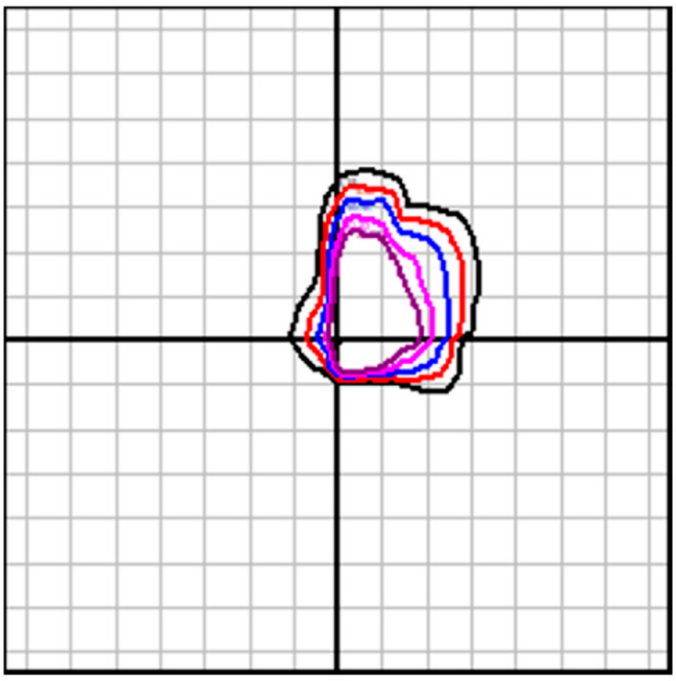
TYPE II (T2) TYPE III (T3) TYPE IV (T4) TYPE V (T5) NEMA 3 (N3)

OPTICAL CONFIGURATIONS (CONTINUED) - Corner Optics (CDL/CDR)

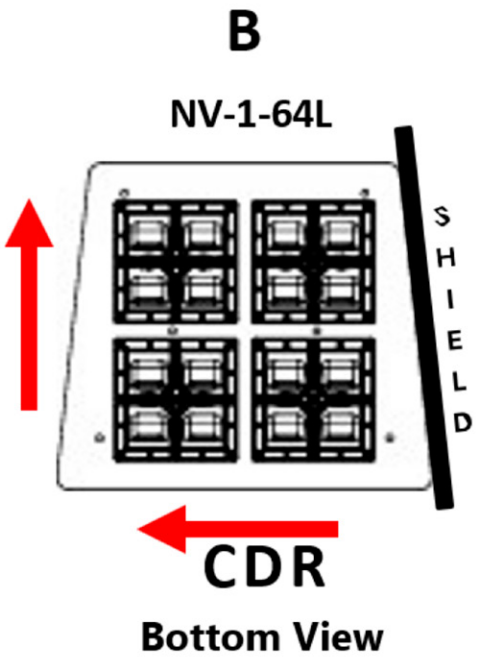
Blended optical distributions include a HSS over the optic and are aimed forward.
Fixtures also feature an external side mounted shield.



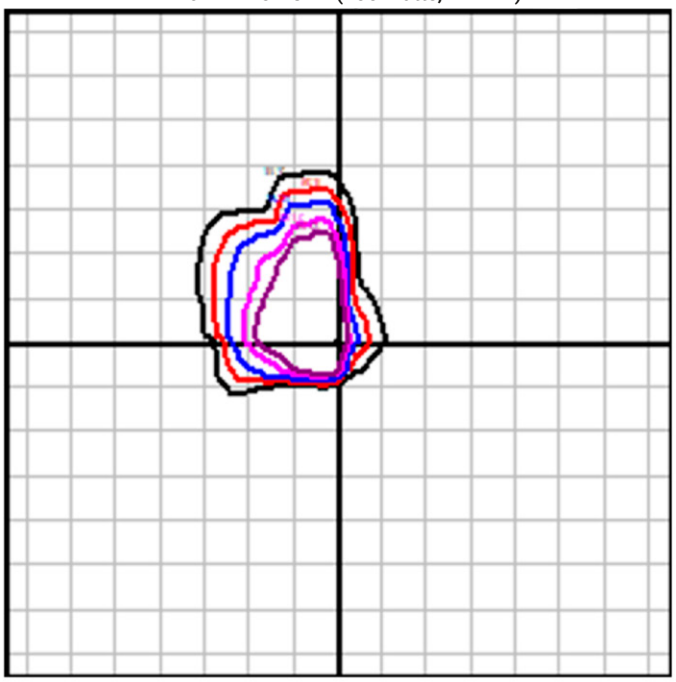
NV-64L-1-40K-CDL (205 Watts, 49LPW)



Mounting Height is 15ft, each sq equals 1 mounting height.



NV-64L-1-40K-CDR (205 Watts, 49LPW)

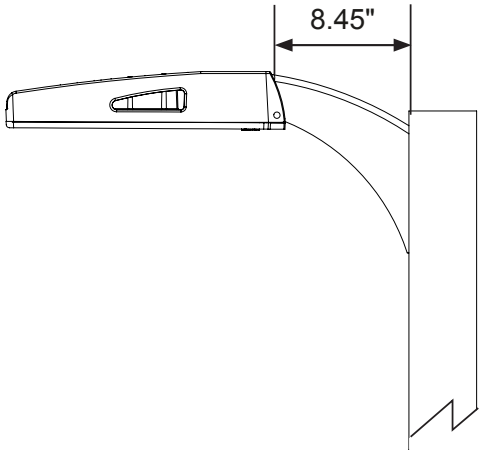


Mounting Height is 15ft, each sq equals 1 mounting height.

MOUNTING OPTIONS

ARCHITECTURAL SWEEP ARM (ASA)

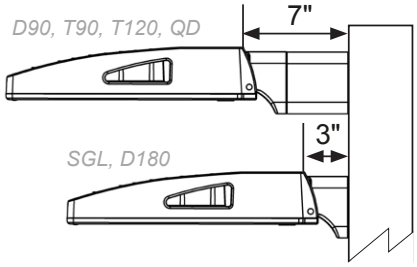
Cast Sweep Arm includes (as standard)
Internal Quick Mount Bracket.



DIRECT POLE (DP)

Standard mounting arm is extruded aluminum in lengths of 3" and 7".

**Arm lengths may vary depending on configuration*

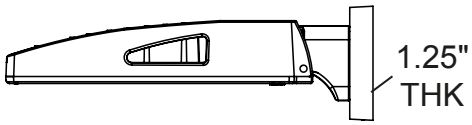


DPX ARM LENGTH

DPX ARM LENGTH	SGL	D90	D180	D180	T90	T120	QD
NV-1	3"	7"	3"	7"	7"	7"	7"

WALL MOUNT (WM)

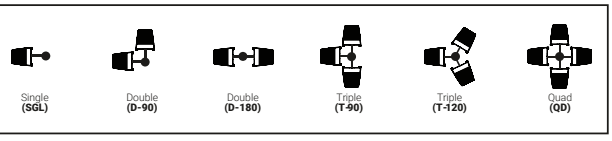
Cast Aluminum Plate for direct wall mount.
3" extruded aluminum arm mounts directly to a cast wall mount box.



EPA

EPA	SGL	D90	D180	T90	T120	QD
NV-1-DP3	0.46	-	0.92	-	-	-
NV-1-DP7	-	1.14	1.05	1.34	1.37	1.34
NV-1-KM	0.54	N/A	1.08	N/A	N/A	N/A
NV-1-ASA	0.75	1.29	1.50	1.99	2.05	1.99

MOUNTING CONFIGURATION

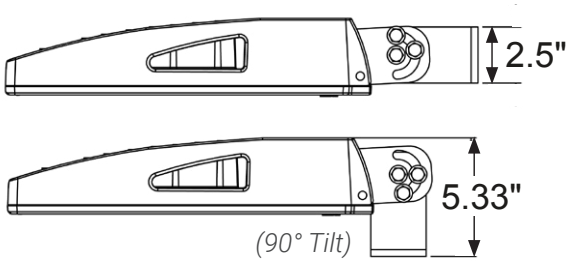


MOUNTING OPTIONS

TRUNNION MOUNT (TM)

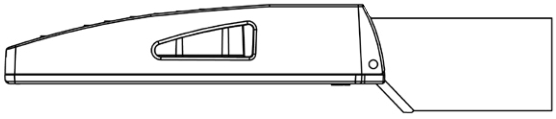
Steel, bolt-on-mounting for adjustable installation with a maximum uplift of 90 degrees.

**Unpainted stainless steel is standard*



TENNIS ARM (TA)

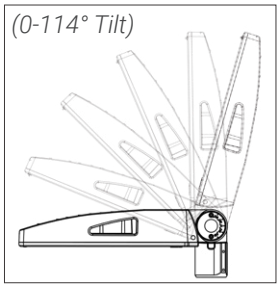
Steel fitter slips over 3.5" x 1.5" rectangular arm. *See Tennis Arm Spec Sheet for details

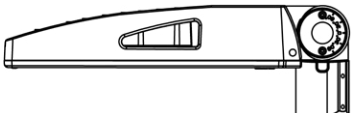


KNUCKLE MOUNT (KM)

Die Cast Knuckle great for adjustable installation on 2-3/8" OD vertical or horizontal tenon.

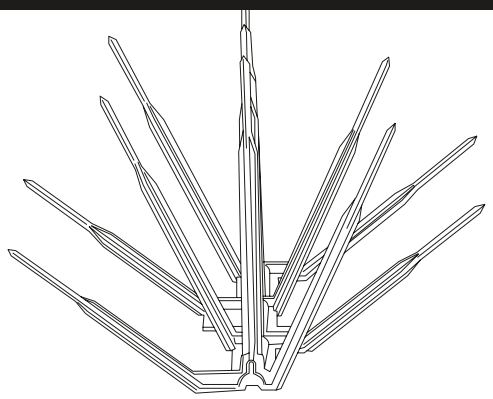
- Max Up-tilt of 90 degrees
- Adjustable in 6 degree increments
- 1.5G Vibration Rated per ANSI C136.31-2010





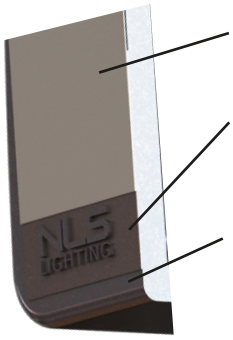
BIRD SPIKES (BS)

Bird Spikes offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.



MARINE GRADE FINISH (MGF)

The **(MGF)** is a multi step process. Chemically washed in a 5 stage cleaning system. Pre-baked. Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.



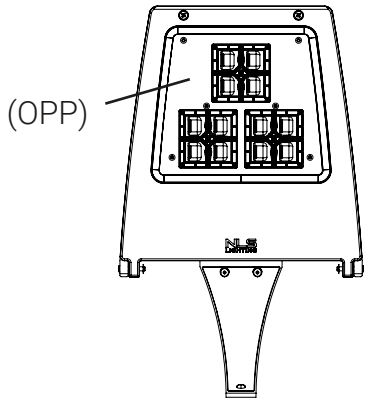
Powder Coat Finish
3-5 mil Powder Coat

Primer Layer
3-5 mil Zinc Rich Super Durable Polyester Primer

Prepared Casting
Chemically washed in multi Step 5 stage cleaning process

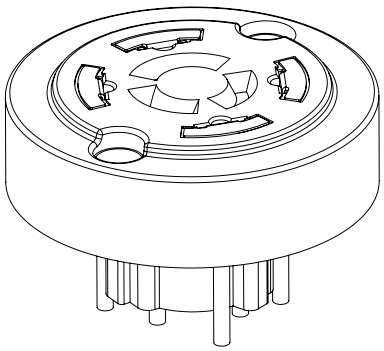
OPTIC PLATE PAINTED TO MATCH (OPP)

Optic plate is clear anodized as standard. The optic plate can be powder coated to match the finish of the fixture.



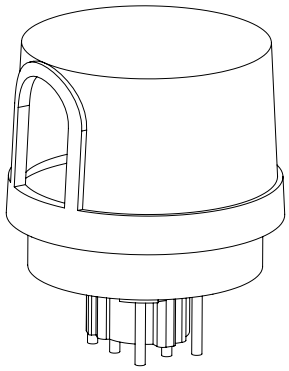
NEMA 7-PIN RECEPTACLE (PE7)

An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo control cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.



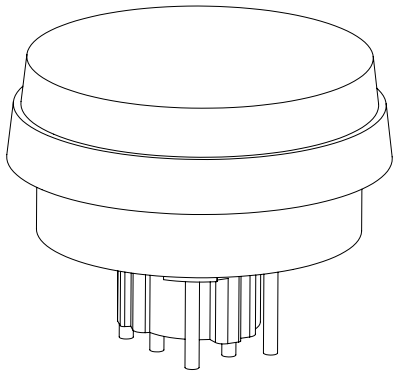
PHOTOCELL + RECEPTACLE (PCR)

7-Pin Receptacle and Electronic Twist Lock Photocell for dusk to dawn operation.



RECEPTACLE + SHORTING CAP (PER)

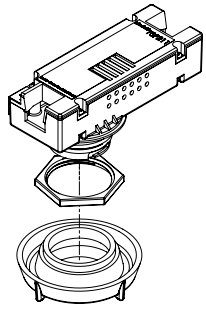
7-Pin Receptacle and Shorting Cap.



FSP-211 WITH MOTION SENSOR (FSP-XX)

- FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles
- FSP-20 mounting heights 9-20 feet
- FSP-40 mounting heights 21-40 feet
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field

FSP-211



QUICK MOUNT BRACKET (QMB)

Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Has a 2”x4” Drill Pattern.

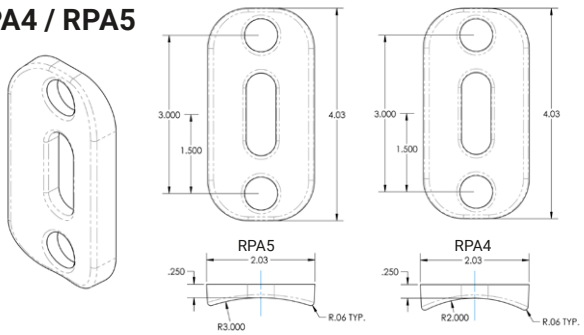
RETROFIT MOUNT BRACKET (RQMB)

Optional Cast Aluminum Bracket designed for quick mounting on Direct Square or Round Poles. Cleat mounts directly to pole for easily hung fixtures. Drill Pattern is adjustable from 2”x4” to 2”x6”.

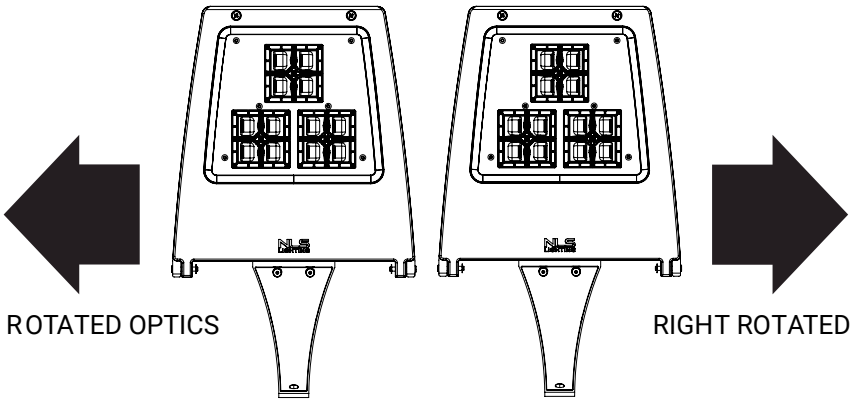
ROUND POLE ADAPTER OPTIONS (RPA4) (RPA5)

When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3”-4” round poles, and RPA5 when installing on 5”-6” round poles.

RPA4 / RPA5



ROTATED OPTICS (ROL) (ROR)



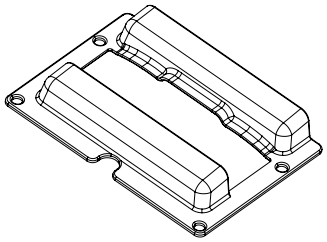
LEFT ROTATED OPTICS

RIGHT ROTATED OPTICS

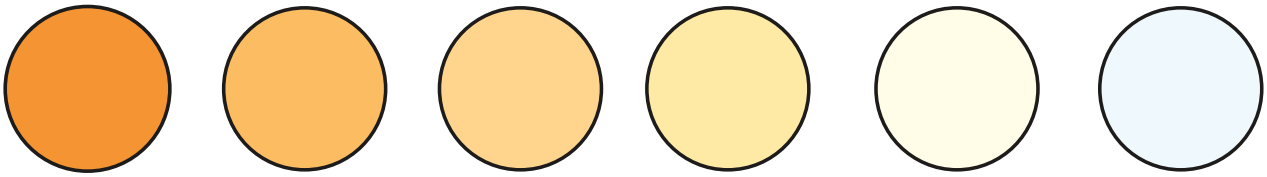
SHIELDING OPTIONS (AHS) (HSS)

SHIELDS (HSS, AHS)—House Side Shield (HSS) is designed for full property line cut-off.

HOUSE SIDE SHIELD



LED KELVIN RANGE



AMBER
585-600 nm

2700K 70 CRI

3000K 70 CRI

3500K 80 CRI

4000K 70 CRI

5000K 70 CRI

Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

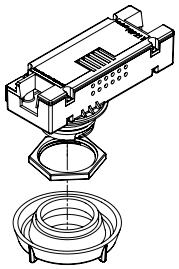
BLACK HARDWARE

Optional black, zinc coated steel hardware.

BLACK OPTIC FRAME

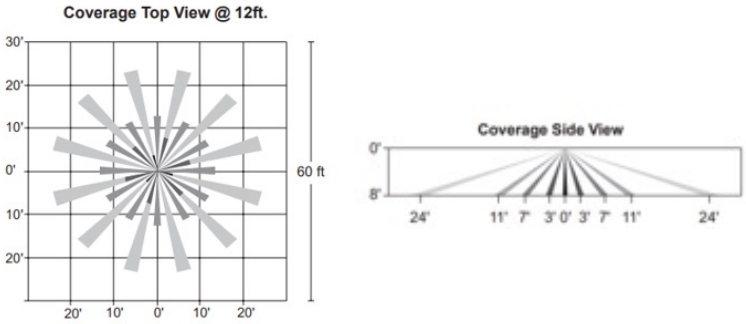
Optional Black Optic Frame.
Standard is white.

CONTROLS

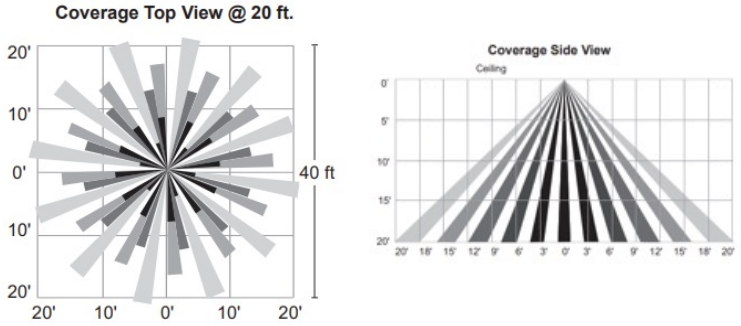


- DIMMING CONTROL (FSP)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution
- All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles
- FSP-8 mounting heights 8 feet and below
- FSP-20 mounting heights 9-20 feet
- FSP-40 mounting heights 21-40 feet
- Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field

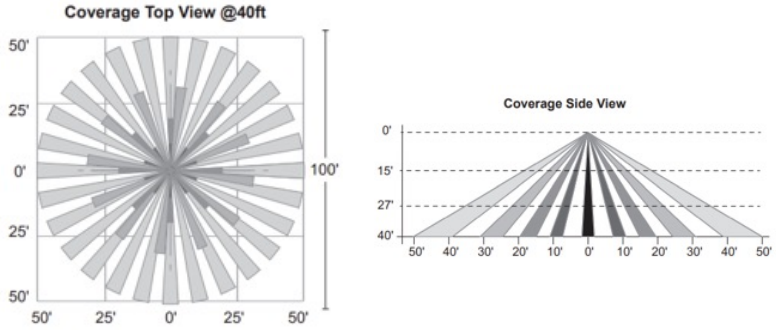
FSP-8



FSP-20



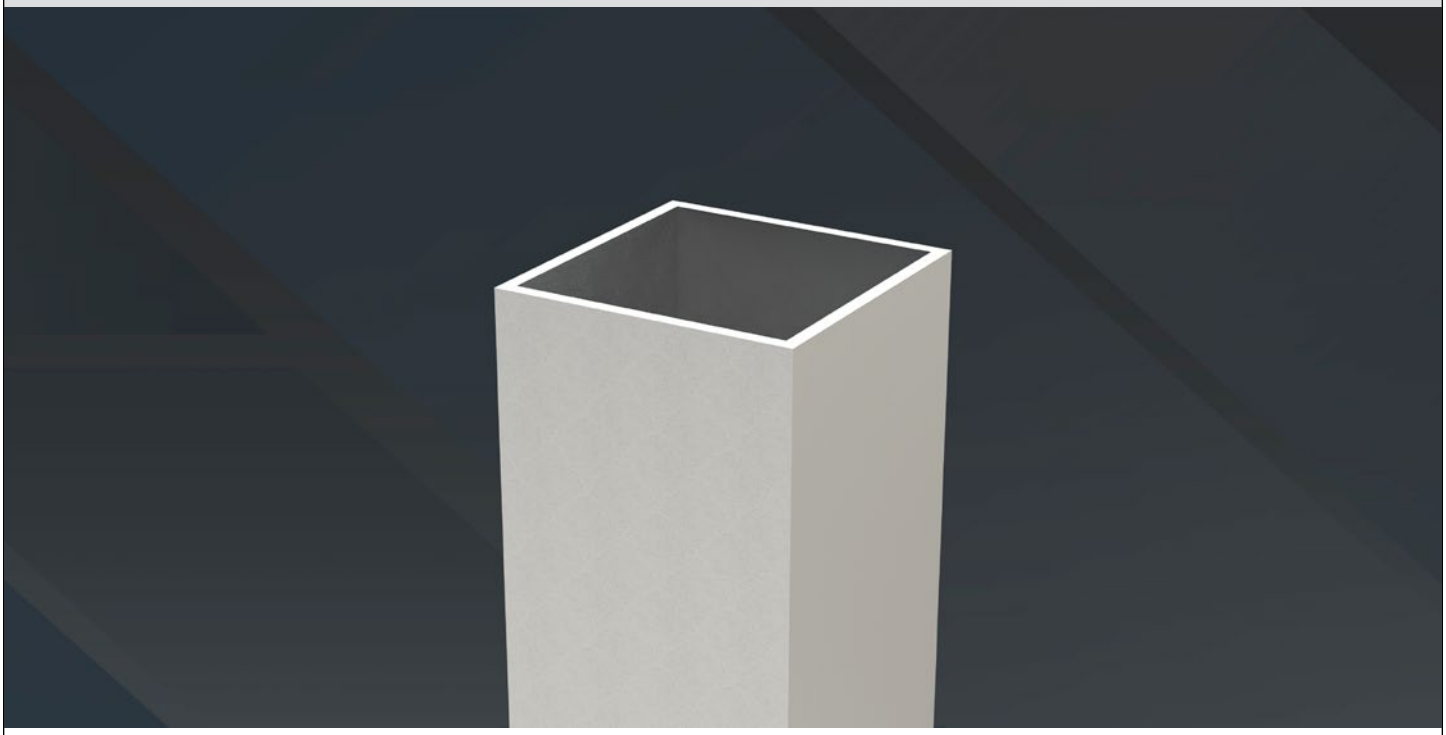
FSP-40



NLS LIGHTING

SSSP

SQUARE STRAIGHT STEEL POLE



HEIGHT
10' - 35'

POLE SHAFT
The pole shaft material is a weldable grade hot rolled commercial quality carbon steel tubing with a minimum yield of 46,000 psi. Conforms to ASTM A500 Grade B Standards. Poles have ground lug welded inside hand-hole opposite side of the hand-hole. Pole shaft is welded to base plate on top and bottom of base plate.

BASE PLATE
The Base Plate is manufactured from structural hot rolled steel that meets or exceeds a minimum yield strength of 36,000 psi, conforms the ASTM–A36 standards. Base Plate vary in size from 1" thick for poles 21 feet and over, 3/4" thick for poles 10 to 20 feet.

ANCHOR BOLTS
All anchor bolts are hot dipped galvanized steel and come with two galvanized nuts and washers per bolt. Minimum yield strength 55,000 psi. Anchor bolts are not included for Custom Bolt Circle.

BASE COVER
All base covers are fabricated two-piece 6063 aluminum and powder coated to match the pole.

HAND-HOLE
A reinforced hand-hole is 12" on center from the base plate and is constructed of 3"x 5" rectangular steel tubing which is welded to pole shaft for added strength. The hand-hole covers are provided with internal bridge support and powder coated to match pole finish.

POLE CAP
All poles come with a removable polymer pole cap installed. All pole caps are black finish. Aluminum Pole Cap option is painted to match pole.

FINISH
All poles are treated with shot blast media for a near white finish, power blasted with 100 psi prior to powder coat application. Electrostatically applied AAMA 2604 polyester powder coat with a 3 to 5 mil thickness for maximum adherence.

MARINE GRADE FINISH
All poles are washed through a 5-stage cleaning system with a deionized rinse, a 3 to 5 mils zinc rich durable polyester primer powder coat, followed by a 3 to 5 mils super durable AAMA 2604 polyester powder coat finish.

Recommended for applications near the coastline or in demanding environments.

GALVANIZED FINISH
All poles are Hot Dipped Galvanized in a multi stage process. Galvanizing Specification, Zinc (Hot Dipped Galvanized) per ASTM A 123/A 123M – 02

Zinc coatings on threaded materials shall conform to specification A 153 /A 153M. The coating shall be continuous and reasonably smooth and uniform in thickness and in weight.

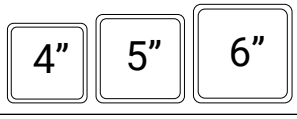
Galvanizing Adherence - The Zinc coating shall withstand handling consistent with the nature and thickness of the coating and normal use of the article without peeling or flaking.

Provides the most protection against the elements in coastal and harsh environments.

GALVANIZED UNDER POWDER
Galvanized Under Powder (GUP) adheres to above galvanized specification, and the second stage is a light sand blast on the outside of the pole, third stage is a 3-5 mils AAMA 2604 polyester powder coat finish for maximum adherence.

VIBRATION DAMPENER
The Vibration Dampener is factory installed and consists of a rugged galvanized chain coated with heavy duty polyester tubing that is factory secured at the bottom 2-3rds of the pole and can optionally be secured in the field by a contractor at the base during installation.

BUY AMERICAN
To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).



Project Name:	Type:

SSSP ORDERING GUIDE

Cat#

Square
Straight
Steel Pole
(SSSP)

Height

10′ **(10)**
12′ **(12)**
14′ **(14)**
15′ **(15)**
16′ **(16)**
18′ **(18)**
20′ **(20)**
22′ **(22)**
24′ **(24)**
25′ **(25)**
28′ **(28)**
30′ **(30)**
32′ **(32)**
35′ **(35)**

Pole Dimension

4″ Square
(4S)

5″ Square
(5S)

6″ Square
(6S)❸

Gauge

.120
Wall Thickness
(11G)

.180
Wall Thickness
(7G)

Base Pattern

(10′-20′)
8.187″ – 10.187″
Bolt Circle
(9BC)

(22′-35′)
10″ – 14″
Bolt Circle
(12BC)

Custom
Bolt Circle
(CBC)
** Consult Factory*

Mounting

Single
(SGL)

Double
(D-90)
(D-180)

Triple
(T-90)

Quad
(QD)

No Drill
(ND)
**Tenon Option*

Tenon

2 3/8″ Round **(T2R)**

3″ Round **(T3R)**

3 1/2″ Round **(T312R)**

4 1/2″ Round **(T412R)**

3 1/2″ Square **(T312S)**

4 1/2″ Square **(T412S)**

5 1/2″ Square **(T512S)**

Color

Bronze Textured
(BRZ)

White Textured
(WHT)

Smooth White
Gloss
(SWT)

Silver
(SVR)

Green Textured
(GRN)

Hunter Green Textured
(HGN)

Black Textured
(BLK)

Smooth Black
Gloss
(SBK)

Graphite Textured
(GPH)

Grey Textured
(GRY)

Custom
(CS)

Bolts

3/4″ x 30″
(3430)

1″ x 36″
(136)

Less Anchor
Bolts
(LAB)

Options

GFI Kit
(GFI20A)❹❺
20 Amp
Weather Proof Receptacle

GFI
Provision Only
(PROV)❺

Galvanized
(GLV)

Galvanized
Under Powder
(GUP)

1/2″ Coupling
(COUP)❺
** Specify Location*

Vibration Dampener
(VD)

Extra Hand Hole
(XHH)❺
** Specify Location*

Marine Grade Finish
(MGF)

UL Certified with label
(UL)❶

Aluminum Pole Cap
(APC)❷

Buy American Act
(BAA)❷

Trade Agreement Act
(TAA)❷

Build America Buy American
(BABA)❷

Notes:
❶ Aluminum Pole Cap must be selected for UL Certified Pole Option
❷ Consult Factory
❸ For 6S Pole, minimum bolt circle 10.19″
❹ Standard weatherproof cover comes standard with option.
For lockable cover requests, please contact factory
❺ Specify the Height (in feet) from base and degree orientation from hand hole.

NLS LIGHTING
701 Kingshill Place, Carson, CA 90746
Call Us Today (310) 341-2037
nlslighting.com

PRODUCT SPECIFICATIONS

Max. allowable EPA - SSSP poles (per AASHTO LRFDLTS-1)

Catalog Number	Shaft Length, ft	Wall thick-ness, in.	Shaft dia., in.	Base Plate, in.	Bolt Circle, in.	Bolts	80 mph	Max. wt. (lb)	90 mph	Max. wt. (lb)	100 mph	Max. wt. (lb)	110 mph	Max. wt. (lb)	115 mph	Max. wt., lb	120 mph	Max. wt., lb	130 mph	Max. wt., lb	140 mph	Max. wt., lb	150 mph	Max. wt., lb	160 mph	Max. wt., lb	170 mph	Max. wt., lb	180 mph	Max. wt., lb
SSSP-10-4S-11G-9BC-3430	10	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	17.8	250	15.6	250	13.2	250	11.4	250
SSSP-12-4S-11G-9BC-3430	12	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	19.5	250	16.3	250	13.7	250	11.9	250	10.1	250	8.7	218
SSSP-14-4S-11G-9BC-3430	14	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	19.3	250	15.9	250	13.1	250	10.9	250	9.1	227	7.3	183	6.3	158
SSSP-15-4S-7G-9BC-3430	15	0.188	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	17.7	250	14.7	250	11.9	250	9.9	248	8.3	208	6.9	173
SSSP-16-4S-11G-9BC-3430	16	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	18.1	250	16.1	250	14.7	250	11.9	250	9.7	242	7.9	198	6.1	153	5.1	128	4.1	103
SSSP-18-4S-11G-9BC-3430	18	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	19.2	250	15.2	250	13.2	250	12.0	250	9.2	230	7.2	180	5.6	140	4.6	115	3.2	80	2.2	60
SSSP-20-4S-11G-9BC-3430	20	0.120	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	16.1	250	12.3	250	10.7	250	9.7	242	7.1	178	5.3	133	3.9	98	2.7	68	1.7	60	0.9	60
SSSP-20-4S-7G-9BC-3430	20	0.188	4	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	15.7	250	14.1	250	12.5	250	9.5	238	7.7	193	5.7	143	4.3	108	3.1	78	2.1	60
SSSP-20-5S-11G-9BC-3430	20	0.120	5	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	19.3	250	16.9	250	15.0	250	11.6	250	9.0	226	6.9	172	5.1	128	3.7	92	2.5	63
SSSP-20-5S-7G-9BC-3430	20	0.188	5	9" sq.	9	3/4"x30"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	17.9	250	14.4	250	11.6	250	9.3	232	7.4	184	5.8	144
SSSP-22-4S-11G-12BC-136	22	0.120	4	12" sq.	12	1"x36"	20.0	250	16.7	250	12.4	250	9.2	231	7.9	198	6.8	169	4.9	123	3.4	85	2.2	60	1.2	60	0.4	60	0.0	-
SSSP-22-4S-7G-12BC-136	22	0.188	4	12" sq.	12	1"x36"	20.0	250	20.0	250	19.2	250	14.8	250	13.0	250	11.5	250	8.9	223	6.8	171	5.2	130	3.8	96	2.7	68	1.8	60
SSSP-22-5S-11G-12BC-136	22	0.120	5	12" sq.	12	1"x36"	20.0	250	20.0	250	19.3	250	14.6	250	12.7	250	11.0	250	8.2	206	6.0	151	4.2	106	2.8	71	1.6	60	0.6	60
SSSP-22-5S-7G-12BC-136	22	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	20.0	250	15.9	250	12.6	250	10.0	250	7.9	197	6.1	152	4.6	116
SSSP-24-4S-11G-12BC-136	24	0.120	4	12" sq.	12	1"x36"	19.6	250	14.0	250	10.4	250	7.2	180	6.0	150	5.2	130	3.2	80	1.8	60	1.0	60	0.0	-	0.0	-	0.0	-
SSSP-24-4S-7G-12BC-136	24	0.188	4	12" sq.	12	1"x36"	20.0	250	20.0	250	16.4	250	12.4	250	10.8	250	9.4	234	7.0	175	5.1	128	3.6	90	2.4	60	1.4	60	0.5	60
SSSP-24-5S-11G-12BC-136	24	0.120	5	12" sq.	12	1"x36"	20.0	250	20.0	250	16.2	250	11.9	250	10.1	250	8.6	215	6.1	152	4.1	101	2.4	61	1.1	60	0.0	-	0.0	-
SSSP-24-5S-7G-12BC-136	24	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	20.0	250	19.1	250	16.9	250	13.1	250	10.1	250	7.7	192	5.8	144	4.1	103	2.7	68
SSSP-25-4S-11G-12BC-136	25	0.120	4	12" sq.	12	1"x36"	18.2	250	13.2	250	9.4	235	6.6	165	5.4	135	4.4	110	2.8	70	1.2	60	0.4	60	0.0	-	0.0	-	0.0	-
SSSP-25-4S-7G-12BC-136	25	0.188	4	12" sq.	12	1"x36"	20.0	250	20.0	250	15.1	250	11.3	250	9.8	244	8.4	210	6.1	153	4.3	108	2.9	71	1.7	60	0.7	60	0.0	-
SSSP-25-5S-11G-12BC-136	25	0.120	5	12" sq.	12	1"x36"	20.0	250	20.0	250	14.7	250	10.6	250	9.0	224	7.5	188	5.1	127	3.1	78	1.6	60	0.3	60	0.0	-	0.0	-
SSSP-25-5S-7G-12BC-136	25	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	20.0	250	17.6	250	15.4	250	11.8	250	8.9	223	6.7	166	4.7	118	3.2	80	1.9	60
SSSP-26-4S-11G-12BC-136	26	0.120	4	12" sq.	12	1"x36"	17.2	250	11.8	250	8.4	210	5.4	135	4.6	115	3.4	85	1.8	60	0.8	60	0.0	-	0.0	-	0.0	-	0.0	-
SSSP-26-4S-7G-12BC-136	26	0.188	4	12" sq.	12	1"x36"	20.0	250	19.0	250	14.0	250	10.3	250	8.8	220	7.5	187	5.3	133	3.6	89	2.2	60	1.0	60	0.1	60	0.0	-
SSSP-26-5S-11G-12BC-136	26	0.120	5	12" sq.	12	1"x36"	20.0	250	18.8	250	13.4	250	9.5	237	7.8	196	6.5	161	4.1	103	2.3	60	0.8	60	0.0	-	0.0	-	0.0	-
SSSP-26-5S-7G-12BC-136	26	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	18.6	250	16.2	250	14.1	250	10.6	250	7.9	196	5.6	141	3.8	95	2.3	60	1.0	60
SSSP-28-4S-7G-12BC-136	28	0.188	4	12" sq.	12	1"x36"	20.0	250	16.4	250	11.8	250	8.4	210	7.0	175	5.8	144	3.8	94	2.2	60	0.9	60	0.0	-	0.0	-	0.0	-
SSSP-28-5S-11G-12BC-136	28	0.120	5	12" sq.	12	1"x36"	20.0	250	16.0	250	11.0	250	7.3	182	5.8	144	4.5	112	2.3	60	0.6	60	0.0	-	0.0	-	0.0	-	0.0	-
SSSP-28-5S-7G-12BC-136	28	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	15.7	250	13.5	250	11.6	250	8.4	209	5.8	145	3.7	93	2.0	60	0.6	60	0.0	-
SSSP-28-6S-7G-12BC-136	28	0.188	6	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	19.8	250	17.0	250	14.6	250	10.6	250	7.4	185	4.9	121	2.7	68	1.0	60	0.0	-
SSSP-30-5S-11G-12BC-136	30	0.120	5	12" sq.	12	1"x36"	19.9	250	13.4	250	8.7	218	5.3	132	3.9	98	2.7	67	0.6	60	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
SSSP-30-5S-7G-12BC-136	30	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	18.2	250	13.2	250	11.1	250	9.3	233	6.3	157	3.9	98	2.0	60	0.4	60	0.0	-	0.0	-
SSSP-30-6S-7G-12BC-136	30	0.188	6	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	16.6	250	14.0	250	11.8	250	8.0	201	5.1	126	2.7	66	0.7	60	0.0	-	0.0	-
SSSP-32-5S-7G-12BC-136	32	0.188	5	12" sq.	12	1"x36"	20.0	250	20.0	250	17.5	250	13.0	250	11.2	250	9.6	239	6.9	173	4.8	119	3.1	77	1.7	60	0.6	60	0.0	-
SSSP-32-6S-7G-12BC-136	32	0.188	6	12" sq.	12	1"x36"	20.0	250	20.0	250	20.0	250	16.4	250	14.1	250	12.1	250	8.8	219	6.2	154	4.0	101	2.3	60	0.9	60	0.0	-
SSSP-35-5S-7G-12BC-136	35	0.188	5	12" sq.	12	1"x36"	20.0	250	19.3	250	13.8	250	9.6	240	8.0	199	6.5	162	4.1	102	2.1	60	0.6	60	0.0	-	0.0	-	0.0	-
SSSP-35-6S-7G-12BC-136	35	0.188	6	12" sq.	12	1"x36"	20.0	250	20.0	250	17.3	250	12.2	250	10.1	250	8.3	207	5.3	132	2.9	72	1.0	60	0.0	-	0.0	-	0.0	-
SSSP-40-5S-7G-12BC-136	40	0.188	5	12" sq.	12	1"x36"	20.0	250	13.2	250	8.4	210	4.8	120	3.3	83	2.0	60	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-
SSSP-40-6S-7G-12BC-136	40	0.188	6	12" sq.	12	1"x36"	20.0	250	16.7	250	10.7	250	6.2	155	4.4	110	2.8	70	0.1	60	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-

*Pole Assemblies With EPA>9.0 Require Specific Review

CAUTION: Installation of poles without luminaire(s) will compromise pole strength. Any accessories attached to the pole, or other modifications done in the field, will compromise the pole strength and may result in pole failure. Wind load evaluations and provisions for appendages such as banner arms, signage, cameras, etc., must be evaluated and approved by the factory prior to placing an order. Additional evaluation and approval should be performed by the customer's local structural engineer on the project.

Anchor Bolts are NOT included with Custom Bolt Circle.
Do NOT pour concrete referencing this drawing. Consult Factory.

All wind loading calculations are based on sustained wind force plus an additional 1.3 gust.

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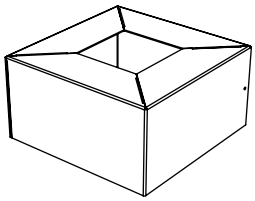
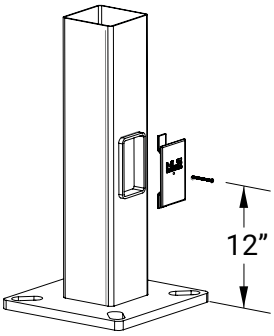
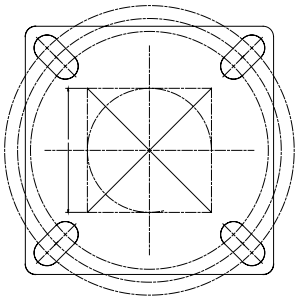
PRODUCT SPECIFICATIONS



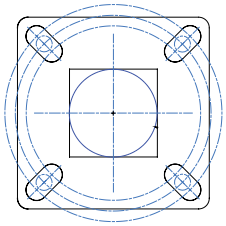
Base Cover



Base Detail



12” Base Detail



9” Base Detail

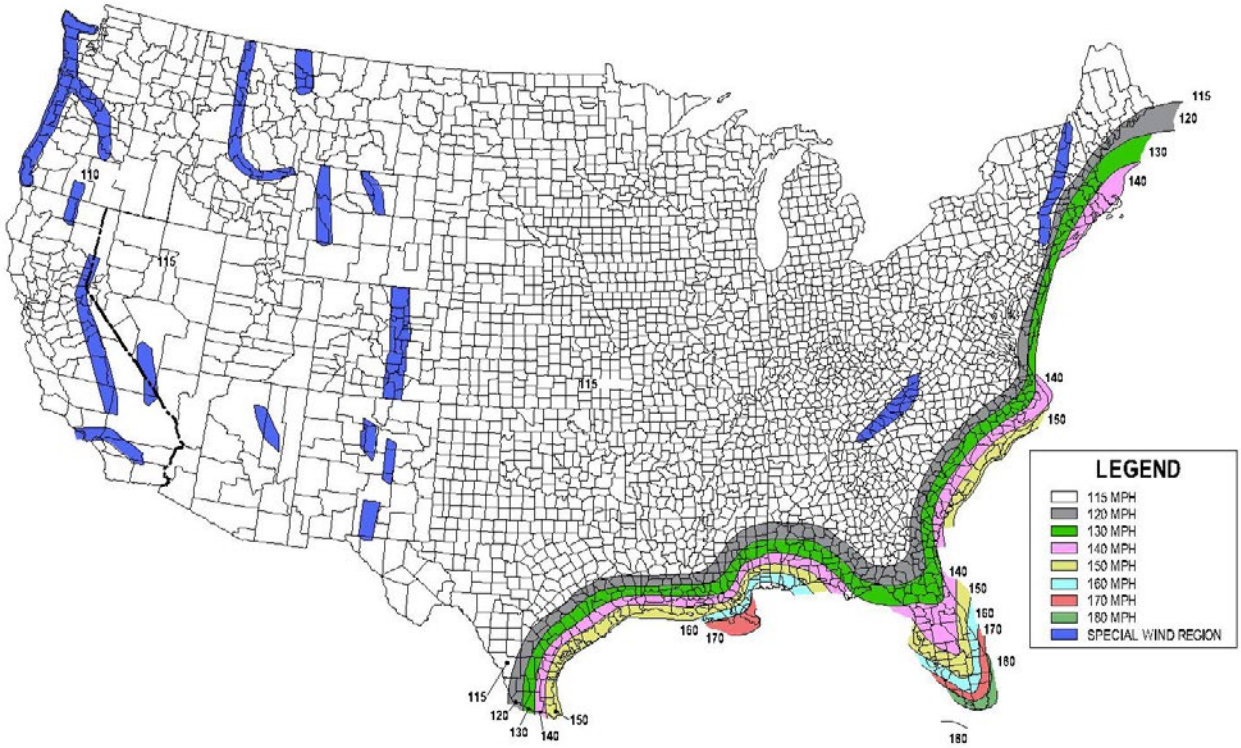


FIG. 3.8-1b - 700-Year MRI Basic Wind Speed, mph (AASHTO LRFDLTS-1)

1) All wind load calculations are based on sustained wind force plus and additional 1.3 gust
2) Wind Map is to be used as a reference only. Please coordinate with local agencies for further review.
3) Wind Map values are based on a 50 year mean recurrence. These values do not account for severe conditions, such as hurricanes, tornadoes, etc…
4) For review of poles with additional configurations (arms, banners, shorter/longer pole lengths, etc…), please contact factory.

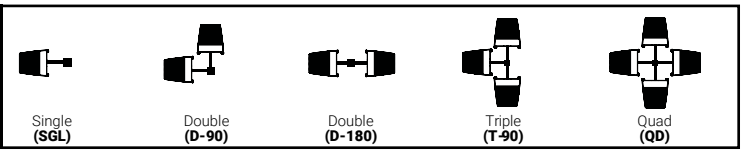
BUY AMERICAN OPTION
While all of the NLS Lighting products listed in this document qualify for the Buy America(n) Act of 1933, we reserve the right to change our listings without notice.

The information provided above is for general informational purposes only. We encourage you to consult legal professionals for advice particular to your projects concerning BAA, TAA, BABA or Buy America.

Additional NLS Products that meet BAA, TAA standards can be found at the following link:

https://nlslighting.com/wp-content/uploads/cs/NLS_BuyAmerica(n).pdf

MOUNTING CONFIGURATION



NLS LIGHTING

TRAC LINEAR ANGLED WALL MOUNT

TWA

LED WATTAGE CHART	
	16L
175 milliamps	10w (1206-1273 Lumens)
400 milliamps	21w (2478-2911 Lumens)
530 milliamps	28w (3508-3776 Lumens)
700 milliamps	36w (4385-4720 Lumens)
1050 milliamps	56w (6022-6482 Lumens)

Form
- 2 Architectural Wall Sconces
- Elegant Rectilinear Extruded Aluminum Housing
- Corrosion Resistant Stainless Steel External Hardware
- Sleek, Low Profile Housing
- Spec Grade Performance
- Engineered For Optimum Thermal Management
- 8 Architectural Finishes Standard, RAL Colors Available

Function
- Micro Optics IES Distributions T2, T3, T4
- 0-10V Dimming Drivers THD @ Max Load < 15% Power factor @ Max Load < 0.95
- Amber, 2700K, 3000K, 3500K, 4000K, or 5000K
- 16L LED Configuration
- 10-56 Watts
- CRI 70, 80, or 90
- Extruded Aluminum Heat Sink
- 5 Mils Powder Coat

Reliability
- Silicone Micro Optics
- 5 Year Standard Warranty
- IP67 Optics
- Reduces Energy Consumption And Costs Up To 65%

BUY AMERICAN

To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).

Project Name:	Type:

TWA ORDERING GUIDE

Cat#	Light Dist.	No. of LEDs	Milliamps	Kelvin
Trac Linear Angled Wall Mount **(TWA)**	Type 2 **(T2)** Type 3 **(T3)** Type 4 **(T4)**	16 **(16L)**	175 **(175)** 400 **(40)** 530 **(53)** 700 **(7)** 1050 **(1)**	Amber 585-600nM **(AMBER)**❸ 2700K, 70 CRI **(27K7)** 2700K, 80 CRI **(27K8)**❶ 3000K, 70 CRI **(30K7)** 3000K, 80 CRI **(30K8)**❶ 3500K, 80 CRI **(35K8)** 4000K, 70 CRI **(40K7)** 4000K, 80 CRI **(40K8)**❶ 5000K, 70 CRI **(50K7)** 5000K, 80 CRI **(50K8)**❶

Volts	Mounting	Color	Options
120-277 **(UNV)** 347-480 **(HV)**	Wall Mount **(WM)**	Bronze Textured **(BRZ)** White Textured **(WHT)** Smooth White Gloss **(SWT)** Silver Textured **(SVR)** Black Textured **(BLK)** Smooth Black Gloss **(SBK)** Graphite Textured **(GPH)** Grey **(GRY)** Green **(GRN)** Custom **(CS)**	Button Photo Cell **(PC)** Marine Grade Finish **(MGF)** Emergency Battery 8W **(EM8)** Vanity Plate **(VP)** 20KA Surge Protector **(20KA)** Buy American **(BAA)**❹ Trade American **(TAA)**❹ Build America Buy American **(BABA)**❹ Custom Controls Integration **(CCI)**❷

Notes:

❶ Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
❷ Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
❸ Turtle Safe
❹ Consult factory for all BAA/TAA/BABA requests

PRODUCT SPECIFICATIONS

ELECTRICAL
- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is ≥ .95, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All drivers, controls, and sensors housed in enclosed compartment
- Lumileds Luxeon MX LED's
- CRI 70, 80, or 90
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA optional.

CONSTRUCTION
- Formed Aluminum
- Internal cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures water tight seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP67 seal around each PCB

OPTIONS
- MARINE GRADE FINISH (MGF)—A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- EMERGENCY BATTERY BACKUP 8W (EM8)
- VANITY PLATE (VP)—The Vanity Plate was designed to cover the un-sightly remains on a wall where a larger HID wallpack was removed. The Vanity Plate will be painted to match the finish of the fixture, custom finishes are available, please consult factory. The standard Vanity Plate is 16" x 16".
- 20KA SURGE PROTECTOR (20KA)

CONTROLS
- Button Type Photo Cell (PC)

- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

FINISH
- 3-5 mils electrostatic powder coat.
- NLS Lighting standard high-quality finishes prevent corrosion and protects against extreme environmental conditions

WARRANTY
Five-year limited warranty for drivers and LEDs.

OPTICS
Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time

LISTINGS
- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- IP67 Rated Optics
- IK10 Rated

BUY AMERICAN OPTION
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Additional NLS Products that meet BAA, TAA standards can be found at the following link:

https://nlslighting.com/buy-american/

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PRODUCT SPECIFICATIONS

TWA LUMEN CHART

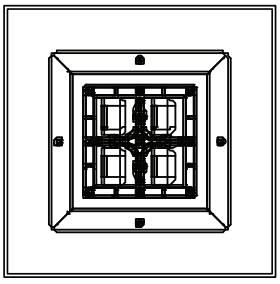
TRAC LUMEN CHART										
PART NUMBER	T2	LM/W	BUG	T3	LM/W	BUG	T4	LM/W	BUG	WATTS
TWA-16L-175-30K7	1,206	121	B0-U0-G0	1,213	121	B0-U0-G0	1,213	121	B0-U0-G1	10
TWA-16L-175-40K7	1,266	127	B0-U0-G0	1,273	127	B0-U0-G0	1,273	127	B0-U0-G1	10
TWA-16L-175-50K7	1,266	127	B0-U0-G0	1,273	127	B0-U0-G0	1,273	127	B0-U0-G1	10
TWA-16L-40-27K7	2478	118		2492	119		2491	119		21
TWA-16L-40-27K8	2320	110		2333	111		2332	111		21
TWA-16L-40-30K8	2488	118		2502	119		2501	119		21
TWA-16L-40-30K7	2679	128		2694	128		2693	128		21
TWA-16L-40-35K8	2488	118		2502	119		2501	119		21
TWA-16L-40-40K8	2679	128		2694	128		2693	128		21
TWA-16L-40-40K7	2895	138		2911	139		2910	139		21
TWA-16L-40-50K8	2679	128		2694	128		2693	128		21
TWA-16L-40-50K7	2895	138		2911	139		2910	139		21
TWA-16L-53-30K7	3,508	125	B1-U0-G1	3,527	126	B1-U0-G1	3,527	126	B1-U0-G1	28
TWA-16L-53-40K7	3,683	132	B1-U0-G1	3,704	132	B1-U0-G1	3,704	132	B1-U0-G1	28
TWA-16L-53-50K7	3,683	132	B1-U0-G1	3,704	132	B1-U0-G1	3,704	132	B1-U0-G1	28
TWA-16L-7-30K7	4,385	122	B1-U0-G1	4,409	122	B1-U0-G1	4,409	122	B1-U0-G1	36
TWA-16L-7-40K7	4,604	128	B1-U0-G1	4,630	129	B1-U0-G1	4,630	129	B1-U0-G1	36
TWA-16L-7-50K7	4,604	128	B1-U0-G1	4,630	129	B1-U0-G1	4,630	129	B1-U0-G1	36
TWA-16L-1-30K7	6,022	108	B1-U0-G1	6,056	108	B1-U0-G1	6,056	108	B1-U0-G1	56
TWA-16L-1-40K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G1	56
TWA-16L-1-50K7	6,323	113	B1-U0-G1	6,359	114	B1-U0-G1	6,359	114	B1-U0-G2	56

Lumen Maintenance Data							
Ambient Temperature	**Drive Current**	**L90 Hours***	**L70 Hours****	**30,000 Hours***	**50,000 Hours***	**60,00 Hours***	**100,000 Hours****
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%
*Reported extrapolations per IESNA TM-21 **Projected extrapolations per IESNA TM-21							

OPTICAL CONFIGURATIONS

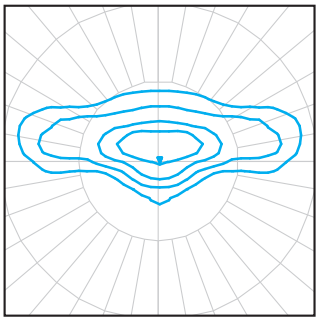
Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.

TWA / 16L



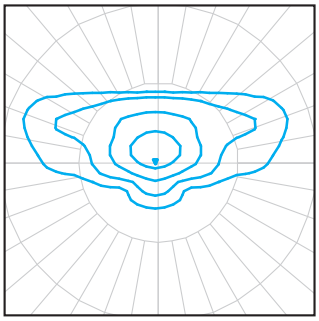
PRODUCT SPECIFICATIONS

IES DISTRIBUTIONS



T2 Optic

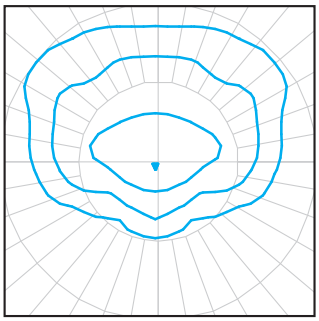
The Type II distribution is used for narrow pathways and trails, narrow entrances of shopping centers, parking lots and office complex's.



T3 Optic

The type III distribution is meant for roadway lighting, general parking areas and other areas where a larger area of lighting is required. Type III lighting needs to be placed to the side of the area, allowing the light to project outward and fill the area. This produces a filling light flow.

Type III light distributions have a preferred lateral width of 40 degrees. This distribution is intended for luminaires mounted at or near the side of medium width roadways or areas, where the width of the roadway or area does not exceed 2.75 times the mounting height.



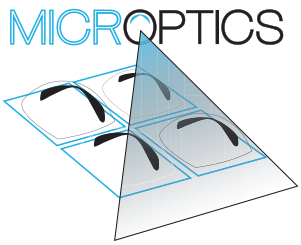
T4 Optic

The type IV distribution produces a semicircular light meant for mounting on the sides of buildings and walls. It's best for illuminating the perimeter of parking areas and businesses. The intensity of the Type IV lighting has the same intensity at angles from 90 degrees to 270 degrees.

Type IV light distributions have a preferred lateral width of 60 degrees. This distribution is intended for side-of-road mounting and is generally used on wide roadways where the roadway width does not exceed 3.7 times the mounting height.

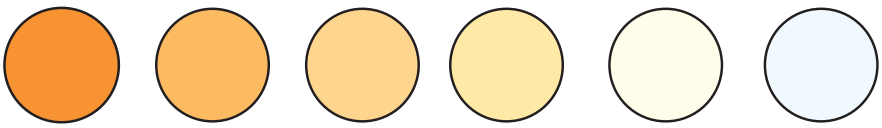
SILICONE OPTICS

NLS Lighting Silicone Micro Optical System technology takes quality and performance to the highest level. Vandal resistant, superior clarity—Micro Optics have become the best and lasting solution in the industry.



BENEFITS
- Produces superior 96% clarity
- Heat resistant to 150° C, 50% higher than acrylic
- Ecologically friendly—no glare
- Vandal-resistant
- Does not brittle, crack, or yellow over time

LED KELVIN RANGE



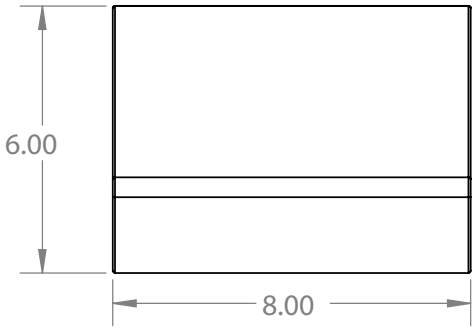
AMBER 585-600 nm | 2700K 70 CRI | 3000K 70 CRI | 3500K 80 CRI | 4000K 70 CRI | 5000K 70 CRI

Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

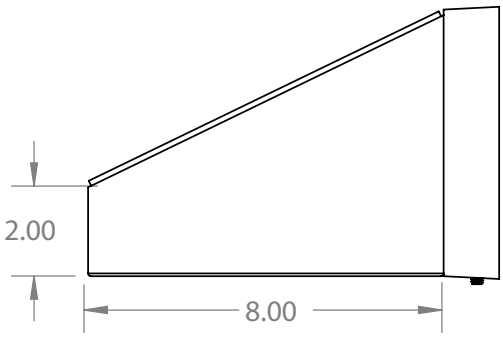
PRODUCT SPECIFICATIONS

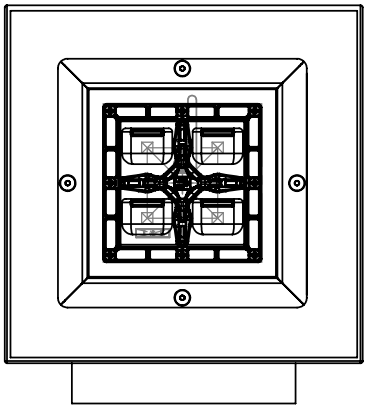
MODEL	WEIGHT
TWA	7.13 LBS

Front View



Side View





Bottom View