December 18, 2024
File No. 100165.000

City of Concord– Planning Board
111 Loudon Road
Concord, NH 03301
(603) 522-6205

Re: Project Narrative for Major Site Plan Application
Bangor Saving Bank – 111 Loudon Road
Tax Map 631Z, Lot 5
111 Loudon Road
Concord, NH 03301

On behalf of Bangor Savings Bank (Owner), Nobis Group (Nobis) is submitting this project narrative to the City of Concord Planning Board (PB) along with an application for a Major Site Plan. The proposed project is located at 111 Loudon Road, Tax Map 631Z, Lot 5 (Site). Please also refer to the attached Site Plan drawings for additional information.

BACKGROUND AND SITE CHARACTER

The approximate 0.77 acre site is currently occupied by a commercial building including a garage, shed, and parking area located at 111 Loudon road in Concord NH. The Site is located in the General Commercial District (CG) and is bounded by Residential Units to the north, McDonalds Fast Food to the east, Prescott Park commercial buildings to the west, and Loudon Road to the South.

SITE PLAN APPLICATION – PROJECT DESCRIPTION

The proposed project is to construct a 1-story ±3,600 SF Bangor Savings Bank branch facility. The project includes paved parking and access, concrete patio and sidewalks, a proposed dumpster, stormwater management system, and a 5 car capacity drive-thru. Utilities include municipal sewer, municipal water, electric, telecommunications, and natural gas. The proposed parking area complies with the required zoning ordinance. Zoning Board of Appeals (ZBA) unanimously approved the proposed dumpster pad location on December 4, 2024.

Nobis Group®
18 Chenell Drive
Concord, NH 03301
T (603) 224-4182

The access to the Site will be from the south, on Loudon Road. See attached Traffic Study provided by VHB. The curb cut for the site driveway will have curbing installed and a new parking area.

We trust this project narrative meets the requirements of the City of Concord and we look forward to meeting with Board members. Please feel free to contact me with any questions or if you need additional documentation.

Sincerely,

NOBIS GROUP®
Jon Ralphs
Project Manager
jralphst@nobis-group.com
(978) 703-6025

December 18, 2024
File No. 100165.00

City of Concord – Planning Board
41 Green Street
Concord, NH 03301
(603) 522-6205

Re: Waiver Request for Major Site Plan Application
Bangor Savings Bank
Tax Map 631Z, Lot 5
111 Loudon Road
Concord, NH 03301

On behalf of Bangor Savings Bank, Nobis Group (Nobis) requests a waiver from the following sections of the City of Concord Site Plan Regulations:

1. Section 12.03(6)
2. Section 15.01
3. Section 15.03(23)
4. Section 15.04(26)
5. Section 16.01
6. Section 16.02(13)
7. Section 16.02(18)
8. Section 16.02(22)
9. Section 16.03(5)
10. Section 16.03(7)
11. Section 16.03(8)
12. Section 16.03(9)
13. Section 16.03(11)
14. Section 18
15. Section 18.17
16. Section 18.20
17. Section 18.21
18. Section 19.04
19. Section 28.05(3)

5 Criteria for Waivers:

1) The granting of the waiver will not be detrimental to public safety, health, or welfare or injurious to other property;

Granting the above waivers will not be detrimental to public safety as most of the waivers are to omit information on the plans that do not enhance the plans and project. This project is a minor re-development with a building addition and upgrades to an unused parking lot area. This project will enhance the public safety, health and welfare of the public and will be a great improvement for the City of Concord.

Nobis Group®
18 Chenell Drive
Concord, NH 03301
T (603) 224-4182

2) The conditions upon which the request for a waiver is based are unique to the property for which the waiver is sought and are not applicable generally to other property;

The proposed site is a small site located at 111 Loudon Road. It narrow width and limited overall square footage limits the ability for site features and vehicular circulation. The proposed project includes improvements such as a new building, new landscape areas, new sidewalks, and new stormwater management system.

3) Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular and unnecessary hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations are carried out;

The hardship is, as stated above, that the site is narrow with a limited overall area. The proposed project will be an overall improvement to the commercial area.

4) Specific circumstances relative to the site plan or conditions of the land where a site plan is proposed indicate that the waiver will properly carry out, or not be contrary to, the spirit and intent of these regulations;

Granting the waiver will still allow the Board and the public to conduct a full review of the project, meeting the spirit and intent of the regulations.

5) The waivers will not in any manner vary the provisions of the Zoning Ordinance, Master Plan Reports, or Zoning Map.

The waivers do not vary from the Zoning Ordinance, Master Plan or Zoning Map.

If you have questions or require additional information, please contact us at (603) 290-5328 or jralphs@nobis-group.com.

Sincerely,

NOBIS GROUP®
Jon Ralphs
Project Manager

Bangor Savings Bank
111 Loudon Road
Concord, NH; Tax Map 631Z, Lot 5

Conditional Use Permit Project Narrative

Bangor Savings Bank is proposing to develop the above-referenced parcel for a new branch Bangor Savings Bank. The project site (Site) is located at 111 Loudon Road in Concord, New Hampshire. The Site is currently an existing commercial building situated in the commercial zone of Concord. The Site is bounded by residential units to the north, McDonalds to the east, Prescott Park commercial buildings to the west and Loudon Road to the south.

The proposed project consists of a new ±3,600 square foot building with a drive-through, dumpster pad, stormwater management system, and associated access and parking. Vehicle access is from Loudon Road. Traffic circulation onsite is a one-way to the right as you enter the site. Egress is provided at the same entry/exit point along Loudon Road.

In order to effectively develop the property, the project requires the following Conditional Use Permits:

1. CUP per Article 28-7-11(f) *Driveway Separation Alternatives* to allow the proposed driveway to be approximately 38-feet from the adjacent driveway where 100-feet is required.

In support of the Conditional Use Permit Applications, we offer the following supporting information:

- **The use is specifically authorized in this ordinance as a conditional use pursuant Article 28-7-11(f) *Driveway Separation Alternatives.***
- *If completed as proposed by the applicant, the development in its proposed location will comply with all requirements of this Article, and with the specific conditions or standards established in this ordinance for the particular use.*
    - **The proposed driveway has been located to maximize the ability for Fire truck and large delivery trucks to maneuver around the building with the minimum amount of pavement.**
- *The use will not materially endanger the public health or safety.*
    - **The site has been designed with a single driveway in the most suitable location to maximize access and minimize pavement.**
- *The use will be compatible with the neighborhood and with adjoining or abutting uses in the area in which it is to be located.* **Driveway location and lot coverage is consistent with the other abutting uses.**
- *The use will not have an adverse effect on highway or pedestrian safety.* **The proposed driveway has been located to maximize the ability for fire trucks and large delivery trucks to enter and maneuver around the building. The single accessway way and crosswalk provide an improvement to pedestrian safety.**

- *The use will not have an adverse effect on the natural, environmental, and historic resources of the city.* **The driveway location has no adverse effect on the natural, environmental, or historic resources of the city.**

- *The use will be adequately serviced by necessary public utilities and by community facilities and services of sufficient capacity to ensure the proper operation of the proposed use and will not necessitate excessive public expenditures to provide facilities and services with sufficient additional capacity.* **The project is in a commercial district and requires minimal of the existing municipal utilities.**

APPLICATION FOR CONDITIONAL USE PERMIT

CITY OF CONCORD, NH - PLANNING BOARD

GENERAL INFORMATION

OWNER'S NAME: Bangor Savings Bank

STREET ADDRESS: PO Box 930

CITY, STATE, & ZIP CODE: Bangor ME 04402

TELEPHONE #: _____ **EMAIL ADDRESS:** Jason.Donovan@bangor.com

AGENT'S NAME (IF APPLICABLE): _____

STREET ADDRESS: _____

CITY, STATE, & ZIP CODE: _____

TELEPHONE #: _____ **EMAIL ADDRESS:** _____

APPLICATION FEE $ 250.00

For the property being reviewed, please complete the following:

TYPE OF CONDITIONAL USE PERMIT REQUESTED: Article 28-7-11(f), Driveway Separation Alternatives

PROPERTY ADDRESS: 111 Loudon Road

ABUTTING STREETS: N/A

EXISTING LOT SIZE(S): 0.7 **ACRES OR** 33,600 **SQUARE FEET**

ASSESSOR'S MAP/BLOCK/LOT #(S): 63 /1z / 5 ___/___/___ ___/___/___

ZONING DISTRICT(S): Commercial General (CG)

OVERLAY DISTRICTS (CHECK ALL THAT APPLY):

HISTORIC (HI): _____ **SHORELAND PROTECTION (SP):** _____ **FLOOD HAZARD (FH):**_____
AQUIFER PROTECTION (AP): _____ **PENACOOK LAKE WATERSHED PROTECTION (WS):**_____

PROJECT DESCRIPTION

Please provide a brief description of your project and the proposed Conditional Use in the space below.
The proposed project consists of a new ±3,600 square foot building with drive thru, dumpster pad, stormwater management system, and associated access and parking. Vehicle access is from Loudon Road. Traffic circulation onsite is a one-way to the right as you enter the site. Egress is provided at the same entry/exit point along Loudon Road. The Site is bounded by residential units to the north, Mcdonalds fast food to the east, prescott park commercial buildings to the west and Loudon road to the south. CUP per Article 28-7-11(f) Driveway Separation Alternatives to allow the proposed driveway to be approximately 38-feet from the adjacent driveway where 100-feet is required.

REQUIRED INFORMATION

Please provide a detailed project narrative that describes the existing conditions of the property and the proposed improvements as they relate to the requested Conditional Use Permit. Include with this project narrative, photos of the existing structure and/or site from various vantage points and all required supporting information as required by the Zoning Ordinance, together with any other information that will help us understand your project.
YOUR PROJECT WILL NOT BE CONSIDERED COMPLETE WTIHOUT A DETAILED PROJECT NARRATIVE.

PROFESSIONAL SUPPORT

Please provide contact information for each professional involved in the preparation of this application, including the engineer, architect, surveyor, attorney, wetland scientist, landscape architect, etc.

NAME: Nobis Group c/o J. Jon Ralphs **PROFESSION:** Civil Engineer

STREET ADDRESS: 55 Technology Drive

CITY, STATE, & ZIP CODE: Lowell MA - 01851

TELEPHONE #: (978) 683-0891 **EMAIL ADDRESS:** Jralphs@nobis-group.com

NAME: Richard D. Bartlett & Assoc. c/o Mark Sargent **PROFESSION:** Land Surveyor

STREET ADDRESS: 214 North State Street

CITY, STATE, & ZIP CODE: Concord, New Hampshire 03301

TELEPHONE #: (603) 225-6770 **EMAIL ADDRESS:** mcsargent@richarddbertlett.com

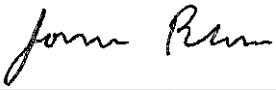
ATTACH ADDITIONAL SHEETS AS NECESSARY FOR ALL PROFESSIONALS INVOLVED WITH THE PROJECT

ENDORSEMENTS

I hereby request that the City of Concord Planning Board review this application for Conditional Use Permit approval, including all plans, documents, and information herewith. I represent to the best of my knowledge and belief that this application is being submitted in accordance with Site Plan Regulations and other applicable regulations of the City of Concord Planning Board. I also understand that submittal of this application for Site Plan Review approval shall be deemed as granting of permission for the City staff, Planning Board members, and their designees to enter onto the property for purposes of inspection and review. Permission to visit the property extends from the date an application is submitted to the Planning Division until approved work or construction is complete and any or all of the financial guarantees have been returned to the applicant, or until or the application is formally denied.

See Authorization Letter — 12/18/2024

SIGNATURE OF PROPERTY OWNER **DATE**



12/18/2024

SIGNATURE OF AGENT (IF APPLICABLE) **DATE**

Types of Conditional Use Permits

Disturbance to Buffers
Article 28-4-3(d), Disturbance to a Wetland Buffer
Article 28-4-4(d), Disturbance to Bluffs and Buffers to Bluffs
Article 28-4-4(e)(2), Expansion of a Building in a Buffer to a Bluff
Article 28-4-2(l), Alternative Residential Buffer Arrangements
Article 28-3-3(f), Disturbances of Buffers in the Shoreland Protection District
Article 28-3-2(e), Encroachment into Floodway

Parking and Driveway Layout
Article 28-7-11(a), Off-site Parking
Article 28-7-11(b), Construction of Fewer Parking Spaces
Article 28-7-11 (c), Shared Parking Arrangements
Article 28-7-11(d), Additional Compact Spaces
Article 28-7-11(e), Alternative Surfacing for Parking Lots
Article 28-7-11(f), Driveway Separation Alternatives
Article 28-7-11(g), Reduction of Driveway Width
Article 28-7-8(b), Additional Driveway

Relief from Dimensional Standards for Structures
Article 28-4-1(f)(3), Appurtenant Structure Exceeds Height Restriction
Article 28-4-1)g)(6), Structure to Exceed Height Limit in OCP District
Article 28-5-48(g), Relief from the Build-to Line in the CBP District

Signs
Article 28-6-9(b)(2), Sign to be Located Above 1st Floor Single Tenant Building
Article 28-6-9(c)(4), Monument Signs for Multiple Buildings and Uses
Article 28-6-9(c)(5), Offsite Sign Located at a Shared Common Drive
Article 28-6-9(d)(2), Directory Sign for Multiple Buildings and Uses

Special Land Uses Allowed by Conditional Use Permit
Article 28-5-26(e), Earth Materials Removal
Article 28-5-46, Standard Subdivision in the RO District
Article 28-4-7(g)(1), Minimum Common Open Space Standards for Minimum Contiguous Buildable Area
Article 28-3-6(d)(4), Conditional Use Permit Required for Certain Uses in the Aquifer Protection District
Article 28-2-4(j), Principal Uses Permitted by Conditional Use Permit
Article 28-2-4(k), Accessory Uses Permitted by Conditional Use Permit
Article 28-5-23(e), Telecommunication Equipment***

***There is a special CUP Application Form for Telecommunications Equipment

Bangor Savings Bank
111 Loudon Road
Concord, NH; Tax Map 631Z, Lot 5

Conditional Use Permit Project Narrative

Bangor Savings Bank is proposing to develop the above-referenced parcel for a new branch Bangor Savings Bank. The project site (Site) is located at 111 Loudon Road in Concord, New Hampshire. The Site is currently an existing commercial building situated in the commercial zone of Concord. The Site is bounded by residential units to the north, McDonalds to the east, Prescott Park commercial buildings to the west and Loudon Road to the south.

The proposed project consists of a new ±3,600 square foot building with a drive-through, dumpster pad, stormwater management system, and associated access and parking. Vehicle access is from Loudon Road. Traffic circulation onsite is a one-way to the right as you enter the site. Egress is provided at the same entry/exit point along Loudon Road.

In order to effectively develop the property, the project requires the following Conditional Use Permits:

1. CUP per Article 28-7-11(f) *Driveway Separation Alternatives* to allow the proposed driveway to be approximately 38-feet from the adjacent driveway where 100-feet is required.

In support of the Conditional Use Permit Applications, we offer the following supporting information:

- **The use is specifically authorized in this ordinance as a conditional use pursuant Article 28-7-11(f) *Driveway Separation Alternatives.***
- *If completed as proposed by the applicant, the development in its proposed location will comply with all requirements of this Article, and with the specific conditions or standards established in this ordinance for the particular use.*
    - **The proposed driveway has been located to maximize the ability for Fire truck and large delivery trucks to maneuver around the building with the minimum amount of pavement.**
- *The use will not materially endanger the public health or safety.*
    - **The site has been designed with a single driveway in the most suitable location to maximize access and minimize pavement.**
- *The use will be compatible with the neighborhood and with adjoining or abutting uses in the area in which it is to be located.* **Driveway location and lot coverage is consistent with the other abutting uses.**
- *The use will not have an adverse effect on highway or pedestrian safety.* **The proposed driveway has been located to maximize the ability for fire trucks and large delivery trucks to enter and maneuver around the building. The single accessway way and crosswalk provide an improvement to pedestrian safety.**

- *The use will not have an adverse effect on the natural, environmental, and historic resources of the city.* **The driveway location has no adverse effect on the natural, environmental, or historic resources of the city.**

- *The use will be adequately serviced by necessary public utilities and by community facilities and services of sufficient capacity to ensure the proper operation of the proposed use and will not necessitate excessive public expenditures to provide facilities and services with sufficient additional capacity.* **The project is in a commercial district and requires minimal of the existing municipal utilities.**

AnneMarie Skinner, AICP
City Planner

CITY OF CONCORD

New Hampshire's Main Street™

Community Development Department

Zoning Board of Adjustment

December 6, 2024

Philip Hastings
Cleveland, Waters and Bass, P.A.
PO Box 1137
Concord, NH 03301

RE: Notice of Decision – ZBA 0234-2024

Dear Mr. Hastings:

At a meeting of the Concord Zoning Board of Adjustment, held on December 4, 2024, the Board voted on the following:

> Cleveland, Waters and Bass, PA, on behalf of Bangor Savings Bank, requests approvals for variances from Sections 28-4-1(d) *Minimum Yard Requirements* and (h) *Table of Dimensional Regulations*, to permit a structure (refuse container and loading area enclosure) within 26 feet of the rear property line, where a minimum distance of 30 feet is required, and within 5 feet of the side property line, where a minimum distance of 25 feet is required; and, Section 28-7-14(d) *Setbacks for Refuse Container Loading Areas*, to permit a refuse container and loading area within 5 feet of the side property line, where a minimum distance of 10 feet is required, at Tax Map Lot 631Z 5, addressed as 111 Loudon Rd, in the Gateway Performance (GWP) District. (ZBA-0234-2024)

With a vote of 5-0, the Board granted the variances from Sections 28-4-1(d) *Minimum Yard Requirements* and (h) *Table of Dimensional Regulations*, to permit a structure (refuse container and loading area enclosure) within 26 feet of the rear property line, where a minimum distance of 30 feet is required, and within 5 feet of the side property line, where a minimum distance of 25 feet is required; and, **Section 28-7-14(d) *Setbacks for Refuse Container Loading Areas***, to permit a refuse container and loading area within 5 feet of the side property line, where a minimum distance of 10 feet is required, to allow maintaining the existing side setback of 10 feet 9 inches where a side setback of 15 feet is required, because all of the criteria under RSA 674:33 have been met based on the record before the Board, and the Board adopted the applicant's findings as the Board's findings of fact.

Adopted Findings of Fact:

1. The variance will not be contrary to the public interest. A variance is contrary to the public interest when it unduly, and in a marked degree,conflicts with the Zoning Ordinance such that it violates the Zoning Ordinance's basic zoning objectives. Malacby Glen Assocs., Inc. v. Town of Chichester, 155 N.H. 102, 105 (2007). There are two methods for determining whether a variance would violate a Zoning Ordinance's basic zoning objectives: (1) "whether granting the variance would alter the essential character of the neighborhood" or (2) "whether granting the variance would threaten the public health, safety or welfare". Harborside Assocs., .P. v. Parade Residence Hotel, LLC, 162 N.H. 508,514 (2011).

The requested variances will be in the public interest as they will allow the Applicant to safely, properly and conveniently manage its solid waste consistent with the purpose of Zoning Ordinance and other applicable ordinances and regulations. As the proposed refuse container and loading area will be enclosed with appropriate fencing, it will not readily visible from any other property. The location of such facilities therefore will not be out of character with the neighborhood or threaten the public health, safety or welfare, and the requested variances will not be contrary to the public interest.

2. The spirit of the Ordinance is observed by granting the variance. The requirement that a variance not be "contrary to the public interest" is "related to the requirement that the variance be consistent with the spirit of the Zoning Ordinance." Malachy Glen, 155 N.H. at 105. Among the purposes of the Zoning Ordinance is to "protect and promote the public safety, convenience, comfort, aesthetics, prosperity, health, general welfare and quality of life" of the City's residents and to prevent pollution. See Zoning Ordinance, §28-1-5. The proposed location of the enclosed refuse container and loading area will provide a safe, convenient, and efficient location for solid waste management on the Property without detriment to any other property. Granting the variances therefore will not be contrary to the spirit and intent of the Zoning Ordinance.

3. Substantial justice will be done by granting the variance. The "substantial justice" element of a variance is guided by two rules: that any loss to the individual that is not outweighed by a gain to the general public is an injustice, and whether the proposed use is consistent with the area's present use. Malachy Glen, 155 N.H. at 109. In this case, the loss to the Applicant in denying this variance would be preventing the reasonable and beneficial location for solid waste management on the Property that is not out of character with the neighborhood. On the other hand, there is no benefit to the public in strict enforcement of the terms of the Zoning Ordinance. Granting the variances therefore will result in substantial justice.

4. The values of surrounding properties will not be diminished. As the Property is in a busy commercial area and the proposed refuse container and loading area will be screened and not readily visible from any other property, the requested variances will not diminish the value of surrounding properties.

5. Denial of the variance would result in unnecessary hardship because: a. The zoning restriction as applied to the property interferes with the reasonable use of the property: The Property is in a busy commercial area. The proposed location of the enclosed refuse container and loading area will not alter the essential character of the area and will allow for safe, convenient, and efficient solid waste management. A strict application of the zoning requirements in this case will result in the placement of solid waste management facilities and processes in a location that will either create potential safety issues with cars or pedestrians coming to the Property or impede the safe and orderly business operations within the building or on the site. b. No fair and substantial relationship exists between the general purposes of the Zoning Ordinance and the specific restrictions on the property because: As noted above, the purposes of the Zoning Ordinance are, among others, to "protect and promote the public safety, convenience, comfort, aesthetics, prosperity, health, general welfare and quality oflife" of the City's residents and to prevent pollution. See Zoning Ordinance, §28-1-5. The location of the proposed enclosed refuse container and loading area will provide a safe, convenient, and efficient location for solid waste management on the Property without detriment to any other property, supporting the objectives of the Zoning Ordinance. Strict compliance with terms of the Zoning Ordinance, on the other hand, will cause safety issues and impede the safe and orderly business operations within the building or on the site. There is therefore no fair and substantial relationship between general purposes of the Zoning Ordinance and the specific requirements at issue in this case.

If there is a significant change at any time in the future, you are hereby advised to discuss any proposed changes with the City Planner. If the use or construction authorized by this approval has not commenced within the two-year anniversary date of the original decision, it shall be deemed to have expired and authorization shall be considered null and void as specified in Section 28-9-3(b)(5) of the Zoning Ordinance.

Granting of a variance does not authorize construction or use prior to the applicaton for and approval of site plan review, architectural design review, and/or subdivision review, as applicable. Granting of a variance does not authorize construction or use prior to the application for and issuance of a building permit, if applicable.

Zoning Board of Adjustment
/AMS

PLANNING BOARD CITY OF CONCORD, NH
MAJOR SITE PLAN CHECKLIST

This checklist is intended to assist applicants and design professionals in the preparation of major site plan applications for consideration by the City of Concord Planning Board. The checklist is also intended as an aid to City staff in its review of a subdivision application. Any question about the applicability of any of the items in the checklist to a particular subdivision application should be discussed with a member of the Planning staff at 603-225-8515, before an application is submitted.

The first section lists the plans and documents needed for an application to be complete. The second section lists elements of each of the plans and documents required for an application to be complete. The third section is designed to provide guidance on the items to be completed after conditional Planning Board approval is obtained from the Planning Board.

Summary

Name of Development: Bangor Savings Bank

Owner's Name(s): Bangor Savings Bank

Street Address: 111 Loudon Road Nearest Street(s): _____

Map\Block\Lot(s): 631Z/5 Map\Block\Lot(s): _____ Map\Block\Lot(s): _____

Zoning District(s): General Commercial (CG) Overlay District(s): _____

Municipal Water Supply Available: Yes X No____ Municipal Sanitary Sewer Available: Yes X No_____

Lot Frontage: 130' Lot Frontage Required: 150'

Lot Size 32,722 SF Minimum Lot Size Required: 25,000 SF

Building Setbacks Required: Front 30' Back 30' Side 25' Shoreland _____

Building Setbacks Proposed: Front 62' Back 95' Side 25' Shoreland _____

Part 1: The following documents and plans are needed for an application to be determined complete by the Planning Board.

Documents

X An application either signed by all the current owner(s) of the property or signed by an individual authorized by the owner(s) to act as the agent. A letter must be submitted with the application authorizing the individual to act as agent on the owner(s) behalf when the agent signs the application. Authorization Letter

X The appropriate application fees. On-line Invoice

X List of the current abutters to the property including those property owners located across streets and streams from the property being subdivided. Please include the name, address, and profession of the professionals responsible for the preparation of the subdivision plans and supporting studies. C-1 Site Plan/ Online Application

X If the project is to be phased, a description of project phasing and the proposed start and completion date for each phase. N/A. Project Not Phased, See C-1 Site Plan Note

X Two (2) copies of a Storm Water Management Plan as called for in Section 22. Submitted Online

X Two (2) copies of a Traffic Study as called for in Section 32. Submitted Online

X Special Investigative fee for review of a Traffic Study as set forth in Section 32. Paid via Escrow

X One (1) copy of any Impact Study which may be required by the Clerk of the Board. N/A No Impact study included - see C-1 Site Plan

X Special Investigative or Third Party Review fees as set forth in Section 32. Traffic Study Paid for with Escrow Account.

X Requests for any waivers from the Site Plan Regulations if any. Waiver Request Letter Attached

X A copy of any variances or special exceptions, which have been granted by the Zoning Board of Adjustment. ZBA Approval Letter Attached

X Where Conditional Use Permits (CUP) are required in conjunction with a proposed subdivision, two (2) copies of complete CUP applications shall be provided for each CUP as set forth in Section 34.

Drawings

X Five (5) full sized hard copies of the site plans and one (1) digital copy sized at 11" x 17", including existing condition plan(s), demolition plan(s), site layout plan(s), grading, drainage and erosion control plan(s), utility plan(s), landscape plan(s), lighting plan(s), construction detail plan(s), and other improvement plans(s). Please note pursuant to Section 16, the plans may be consolidated onto one or more sheets, if the information can be clearly shown without obscuring information. Online Submittal

X Five (5) full sized hard copies of any off-site improvement plans and one (1) digital copy sized at 11" x 17". N/A - No Offsite Improvement Plans. See G-1 Notes and Legend

X Two (2) hard copies of the architectural elevations and one (1) digital copy. Architectural Elevation Attached

X Colored overview plan showing entire development with lot lines, buildings, parking lots, driveways, loading areas, solid waste facilities, green space and tree plantings, fences/walls/buffers, any outside sales and display areas, adjacent streets, along with other significant physical features shown on a single sheet suitable for display purposes.

X One (1) set of reductions (8½ x 11) of the site plan drawings except for construction detail plans, including architectural elevations.

X A New Hampshire Licensed Land Surveyor shall prepare, sign and seal the existing condition plan. Alta Survey

X A New Hampshire Licensed Professional Engineer shall prepare, sign and seal all plans where grading, drainage and utility information is proposed. Civil Site Plan Sheets

X Landscape plans shall be prepared by a New Hampshire Licensed Landscape Architect who shall sign and seal the landscape plan(s). Landscape Plans Attached

X Architectural elevations shall be signed or sealed by a New Hampshire Licensed Architect, or a New Hampshire Licensed Professional Engineer, as allowed by the State of New Hampshire professional licensing boards. Architectural Elevation Attached

X Where wetland boundaries are required to be delineated, the delineation shall be performed by a New Hampshire Certified Wetland Scientist who shall sign and seal the plan upon which the wetland boundaries are mapped. N/A No Wetlands On Site - See C-1 Site Plan Note

X Where soils are required to be identified, classified, and delineated, the identification, classification, and delineation shall be performed by a New Hampshire Certified Soil Scientist who shall sign and seal the plan upon which the soils are mapped. See Soils Info in Stormwater Report

Part 2: The following standards and items need to be shown on plans in order for a site plan application to be determined complete.

Drawing Standards Site Plans

X All drawings shall be shown at 1"=10', 1"=20', 1"=30', 1"=40' or 1"=50' for all drawing sheets except for location plans, cover sheets, architectural elevations or engineering detail sheets. If alternative map scales may be warranted by the size and/or shape of the site, consult with the Planning Division staff prior to preparing the drawings. Site Plans

X If multiple sheets are necessary to provide design detail at required scales, then a concept drawing sheet or cover sheet shall be included. The concept drawing sheet can be flexible in scale while showing general project information and a graphic conceptual layout. Each detail sheet must be indexed on the concept drawing sheet. Site Plans

X North arrow.
X Bar scale.
X Drawing sheets not exceed 24" x 36" except for the colored overlay plan.

Title Block On Site Plans
X Title of development.
X Name and address of the owner and applicant.
X Date the plan was prepared and the date of subsequent revisions.
X Name, address, seal, and signature of the licensed professional who prepared the plan.
X Street Address(s).

Vicinity Plan On Cover Sheet
X The location of the development shall be shown.
X Streets, water bodies, city limits, parks, schools, and other significant physical and man made features shall be shown on the vicinity plan. No waterbodies, city limits, parks, schools, or other significant man made features
X Scale between 1"=1000' and 1"=2000'.

Location Plan
X Proposed property to be developed.
X Property lines.
X Abutters' property lines.
X Names and locations of nearby and adjacent City streets. N/A No Adjacent Streets
X Names and locations of adjacent water bodies and watercourses. N/A No Adjacent Water bodies
X Names and locations of nearby and adjacent parks, schools, churches, and other significant physical and man-made features. N/A No nearby parks, schools, churches, or other significant man-made features
X Nearest street intersections. See Vicinity map on cover sheet - Ormond St
X The Tax Assessor's map-block-lot number, or map-lot number as applicable, for abutters and the properties to be developed.
X Zoning district designations and boundaries. Entire Site in GC - See C-1 Site Plan
X Other special information which may be required by the Planning Board. N/A
X Minimum scale 1" = 400'.

Standard Notes
X Purpose of the site plan. See C-1 Site Plan
X Ownership of parcel with deed references.
X Tax map-block-lot numbers, or map-lot number as applicable, of the existing parcels. See C-1 Site Plan
X Title reference for Book and Page number of the lot(s) being proposed for development and abutting properties from the Merrimack County Registry of Deeds. Title reference shall not be more than 5 days old at the time of filing. See C-1 Site Plan
X Plan references for prior recorded subdivisions or surveys on the properties proposed for development or abutting said properties proposed to be developed.
X Addresses for all proposed buildings or condominium units. See C-1 Site Plan
X Area of subject parcel(s). See C-1 Site Plan See Alta Survey
X Zoning designation of subject parcel(s) including all overlay zones. See C-1 Site Plan
X Minimum lot area, frontage, and setback dimensions required for the zoning district(s) and for wetland buffers, bluff setbacks, the Shoreland Protection Overlay District buffers, and Aquifer Protection Areas. See C-1 Site Plan
X Required useable lot and buildable lot area and calculations. See C-1 Site Plan
X Tabulations of existing and proposed areas of wetlands, bluffs and ravines, steep slopes greater than 15% and greater than 25%. Existing and proposed impervious surface areas. N/A No Wetlands On Site - See C-1 Site Plan Note

X Plan or deed references for recorded easements, whether public or private, on the properties proposed for development and existing easements on abutting properties, which are for the purposes of providing access, utilities, and drainage to the properties proposed to be subdivided.

X Deed reference and statement of any existing recorded covenants or restrictions relating to the use of the land proposed to be developed.

X Source of sanitary sewer and potable water supply.

X Zoning variances and/or special exceptions granted. ZBA Approval Attached

X Flood Insurance Rate Map sheets used to identify 100 year flood elevation and zone designation.

X If applicable, Flood Hazard Designation along Merrimack River (F1) or (F2) and minimum finished floor elevation. N/A

X List of required local, state, and federal permits. General Notes Sheet

X List of any Planning Board waivers and Conditional Use Permits requested. See attached Waiver Request Letter and Conditional Use Permit

X Phasing description. N/A - No Phasing

Existing Condition Plan

X Property lines for the parcel to be developed with bearings and dimensions.

X Full names and addresses of all abutters of the property.

X Addresses of the existing lots and/or uses located on the property.

X Title reference for Book and Page number of the lot from the Merrimack County Registry of Deeds. Title reference shall not be more than 5 days old at the time of filing.

X Zoning district designation and boundaries including Floodway and Floodplain Districts. N/A - Not in Floodway / Floodplain

X Building setback lines and dimensions for all lots including wetland buffers, bluff setbacks, the Shoreland Protection Overlay District buffers, and Aquifer Protection areas. N/A - Not in Wetland Buffer, Bluff, Shoreline etc.

X The location of existing features such as water courses and bodies, parks, open space, large trees, foliage lines, rock outcrops, railroads, buildings, and significant natural and man-made features. Other pertinent features such as, but not limited to, wetlands, cemeteries, and drainage ditches. N/A no Water Course

X The location of all existing buildings, structures, fences, stonewalls, driveways, parking, and any vehicular use areas.

X The location and dimensions of existing driveways, curb cuts, parking lots, loading areas, or any other vehicular use areas.

X The location of all existing access points (driveways) onto city streets.

X The location, travel way width, and rights-of-way of all existing adjacent city streets, as well as mapped future streets.

X The location, dimensions, and purpose of any easements or rights-of-way.

X Existing topographic conditions and all proposed changes in ground elevation at a contour interval of two (2) feet referred to sea level datum of the US Coast and Geodetic Survey.

X Where the land slopes less than two percent, spot elevations shall be shown at all breaks in grade, along all drainage channels or swales, and at selected points not more than 100 feet apart in all directions.

X Finished floor elevations and minimum finished floor elevations required within the Floodway or Floodplain Zoning District, if applicable.

X Wetland Delineation by NH Certified Wetland Scientist if the presence of wetlands is suspected. N/A - No Wetlands On Site - See C-1

X Steep slopes greater than 15% and greater than 25%.

X Buildable and Useable land area calculations as applicable.

X The location and size of existing ground signs.

X The type and location of existing outdoor lighting.

X The identification and classification of the extent and type of soils using the USDA Soil Conservation Services system, specifically identifying those soils recognized as wetlands and those important for agriculture. N/A - No Wetlands Soils - See Soils Map

See C-3 Utility Plan

X Soil test data as required by the NH Water Supply and Pollution Control Division, where municipal sewers are not present. A High Intensity Soil Survey may be required. N/A - No Septic System

X The location, size, and invert elevations of existing sanitary and storm sewers including manholes, catch basins, and culverts.

X The location and size of all existing water mains including hydrants, gates, valves, and blowoffs.

X The location of wells and subsurface disposal systems if the property is not served by municipal water and sanitary sewers, including those on abutting property.

X The location of all existing non-municipal utilities including electric, telephone, gas, steam, and CATV systems, along with fire alarm cables, both on-site and within abutting rights-of-way.

X The type and location of existing solid waste disposal facilities.

Demolition Plan

X The demolition plan shall be based on the existing condition plan.

X The location and extent of removal of all buildings, structures, paving and landscaping shall be shown on the plan including the limits of any clearing, or site disturbance.

X Provisions for the removal or reuse or any construction or demolition debris from the site.

X The location and extent of any removal of utilities and drainage along with the provisions for the removal, and capping of underground public and private utilities.

X Plans and provisions for site restoration, erosion control and repaving of public or private streets disturbed.

Site Plan

X Property lines of the parcel to be developed including bearings and dimensions.

X Zoning district designation and boundaries including the Floodway and Floodplain Districts.

X Building setback lines, including dimensions including wetland buffers, bluff setbacks, the Shoreland Protection Overlay District buffers, and Aquifer Protection areas including labels. N/A - Not in Wetland Buffer, Bluff, Shoreline etc.

X Full names and addresses of all abutters to the property.

X Title reference for Book and Page number of the lot from the Merrimack County Registry of Deeds. Title reference shall not be more than 5 days old at the time of filing.

X Locations of any wetlands, bluffs and ravines, and steep slopes greater than 15% and greater than 25%. N/A - No in Wetlands, bluffs, steep slopes, etc.

X Flood Hazard areas and boundaries. N/A - No Floodway or flood Hazard

X Finished floor elevations and minimum finished floor elevations required within the Floodway or Floodplain Zoning District, if applicable. N/A - No Floodway or flood Hazard

X Wetland Delineation by NH Certified Wetland Scientist if the presence of wetlands is suspected. N/A - Not in Wetlands

X The location, use and dimensions of all existing and proposed buildings and structures including fences, stonewalls, towers, mechanical equipment, etc. Separately identify proposed additions to buildings and structures.

X The location and dimensions of existing and proposed driveways, curb cuts, parking lots, loading areas, or any other vehicular use areas, including the number of parking and loading spaces per bay, and the designation of spaces for compact vehicles and the handicapped.

X The location and dimensions of existing and proposed pedestrian walkways, sidewalks and other paved surfaces, both on-site and within abutting rights-of-way.

X The location of existing features such as water courses and bodies, parks, open space, large trees, foliage lines, railroads, buildings, and significant natural and man-made features. Other pertinent features such as, but not limited to, wetlands, cemeteries, and drainage ditches.

X The location, travel way width, and right-of-way of all existing adjacent city streets, as well as mapped future streets.

X Existing public or private street names.

X Addresses for all existing and proposed buildings or condominium units.
X The location of any wells and the NHDES well radii. N/A - No wells onsite
X The location of septic tank drainfields and the required 4,000 square foot septic drain field area required by the NHDES. N/A - No Septic Tanks or Drain Fields
X Fire lanes and fire access for fire apparatus.
X Phase boundaries and labels. N/A - No Phasing
X The location, bearings, and dimensions and area of all property proposed to be set aside for park or playground use or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation.
X The location, bearings, and dimensions of all existing and proposed easements.
X Notations of all covenants, easements, self-imposed restrictions, and any other restrictions or notations required by the Board.

Tabulations

33,632 SF Gross acreage - Lot size in square feet is recommended for projects less than 1 acre.
Commercial -33,632 SF Square feet or acres devoted to the various uses.
3,627 SF (10%) Ground coverage of buildings and structures in square feet and percent.
4,934 SF (15%) Ground coverage for parking and loading areas including aisles and internal landscaping in square feet and percent.
667 SF (13%) Internal parking lot landscaping in square feet and percent.
22,624 SF (13%) Impervious surface coverage in square feet and percent.
26,905 SF (80%) Useable land area calculations for residential development and net land area calculations for non-residential development.
1 Total number of dwelling units, and total numbers of dwelling units by type and number of bedrooms.
3,627 SF Square feet of floor area by type of use for all non-residential uses.
N/A Projected number of employees by shift if necessary for calculating required parking.
N/A Building occupancy or fixed seating if necessary for calculating required parking.
1 Space Calculations of required parking and loading areas, including handicapped and compact spaces.
1 ADA Space
1 Compact Parking and loading areas provided including handicapped and compact spaces.

Note: Tabulations shall be completed for the entire project and for each development phase. When a site falls into more than one zoning district, separate tabulations will be required for each area covered by a different zoning district.

Please note the existing condition plan, demolition plan, grading and drainage plans, utilities plan, lighting, landscape and erosion control plans may be combined on the site plan or other drawing sheets if all the existing and proposed information is presented in a clear, understandable and legible manner.

Grading & Drainage Plans

X Existing topographic conditions and all proposed changes in ground elevation at a contour interval of two (2) feet referred to sea level datum of the North American Vertical Datum 1988 (NAVD88). Where the land slopes less than two percent (2%), spot elevations shall be shown at all breaks in grade, along all drainage channels or swales, and at selected points not more than one hundred (100) feet apart in all directions.

X Where the land slopes less than two percent, spot elevations shall be shown at all breaks in grade, along all drainage channels or swales, and at selected points not more than 100 feet apart in all directions.

X The identification and classification of the extent and type of soils using the USDA Soil Conservation Services system, specifically identifying those soils recognized as wetlands and those important for agriculture.

X The location of all significant natural features including, but not limited to, ledge outcroppings, streams and water bodies, wetlands, bluffs and ravines, and steep slopes in excess of 15% and 25%.

X Setbacks shall be shown and dimensioned including those required for yards, and the Shoreland Protection District, as well as bluff and wetland buffers and setbacks. N/A - Not in Shoreline or Wetland

X The location and size of all swales, drainage ditches, culverts, drain pipes, inlet and outlet structures, catch basins and manholes, storm water treatment structures, easements, and detention and retention ponds, including invert elevations and cross-sections as may be necessary to determine the suitability and adequacy of the proposed system.

X 2-year, 10-year, 25-year and 100-year storm water runoff estimates, including all calculations.

X The location and size of proposed buildings, driveways (including proposed grades), and septic tank drain fields and receiving layers.

X Where municipal sewer service is not available, soil data and test results sufficient to submit an application for subdivision approval to the NHDES including a plan showing the location of test pits, the soil profiles, ground water elevation, and seasonal high water table elevation at each test pit. The required 4,000 square foot septic drain field area required by the NHDES shall be shown. N/A - Connect to Municipal Sewer

X The location, width, and purpose of existing and proposed easements for road rights-of-way, utilities, drainage, slope, open space or conservation easements, and any other easement as required. The easements to be shown include both public and private easements. The dimensions and bearings shall be shown for the boundaries of all easement areas except slope easements. N/A - No Easements Onsite

Utility Plans

X The location, size, and invert elevations of existing and proposed sanitary and storm sewers, including manholes, catch basins, culverts, and the location of any pump stations, lift stations, and other appurtenant facilities or structures.

X The location and size of all existing and proposed water mains, including hydrants, gates, valves, and blowoffs, and the location of any other appurtenant facilities.

X Profiles of all municipal utilities.

W Details for pump or lift stations, manholes, catch basins, fire hydrants, valves, etc. The use of details from the City of Concord Construction Standards is required when available, unless otherwise approved by the City Engineer. Wavier required for Additional Non Concord Details

X The location and size of all existing and proposed private underground and overhead utility improvements including, but not limited to, gas lines, electric transmission lines, telephone transmission lines, cable television, steam distribution mains, and fire and police alarm transmission lines. The location of all manholes, transformers, poles, and other appurtenant facilities or structures shall be shown.

X In the absence of municipal water supply, a plan indicating individual well locations shall be submitted including the NHDES required well radii. N/A - No Wells Onsite

X Where municipal sewer service is not available, soil data and test results sufficient to submit an application for subdivision approval to the NHDES including a plan showing the location of test pits, soil profiles, ground water elevation, and seasonal high water table elevation at each test pit. The 4,000 square foot septic drain field area required by the NHDES shall be shown. N/A - Connect to Municipal Sewer

X The location, width, and purpose of existing and proposed easements for road rights-of-way, utilities, drainage, slope, open space or conservation easements, and any other easement as required. The easements to be shown include both public and private easements. The dimensions and bearings shall be shown for the boundaries of all easement areas except slope easements. N/A - No Easements Onsite

Lighting Plan

X Lighting including building and pole and luminaire locations and details for poles and fixtures including colors, materials, dimensions and wattage.
X A lighting plan showing light levels in foot-candles shall be provided.
X Details of fixtures, poles, and mounting details.

Landscaping and Erosion Control Plans

_____ Plantings including location, caliper size, common and botanical names, and planting specifications and details. A landscape table is required.
X Plants to be preserved and methods to preserve trees during construction. No Plants to be Preserved
X Clearing limits. See Demo & Erosion control Plan
_____ Calculations of trees required to be planted or preserved and the number and type provided and/or protected.
_____ Phased clearing plan with provisions for soil stabilization.
X Erosion Control and Sedimentation Plan.

Architectural Elevations

_____ Architectural elevations of all sides of all new buildings and of those sides or areas which are proposed to be altered showing the following types of information:
_____ Exterior materials and colors.
_____ Type and pitch of roofs.
_____ Size, spacing of windows, doors, and other openings.
_____ Size, location, colors, and copy of signs to be affixed to, or hanging from, the building.
_____ Size, height, colors, and copy of proposed ground signs.
_____ Size, type, and location of towers, chimneys, roof structures, flagpoles, antennas and similar structures.
_____ The relationship in bulk and height to other existing structures in the vicinity.
_____ Photographs of all existing facades and adjacent buildings and lots.

Off-site Improvement Plans No Off-Site Improvements

X Off-site improvement plans shall be prepared by a registered architect or engineer who shall sign the drawings and place his/her seal upon it.
X Any off-site improvement plans shall conform to the requirements as set forth in the City of Concord Subdivision Regulations and Construction Standards.

Part 3: The following documents and plans are required for a Certificate of Approval to successfully complete the site plan approval process prior to the issuance of any building permits.

Documents Needing Approval Prior To Issuance of a Certificate of Approval, where applicable.

_____ Easement deeds for street rights-of-way, utility, drainage, slope, conservation, or other public easements.
_____ Warranty deed or conservation easements for land set aside as open space.
_____ Agreements to convey easements for private access, utilities, drainage, or other common facilities to be recorded with a future property transfer.
_____ Construction cost estimate for all public and private common facilities.
_____ Financial guarantees for all public improvements.

_____ Where applicable, a Site Stabilization Guarantee.
_____ Agreements between the applicant and the City regarding public improvements.
_____ Certificate of City Council approval where required for utility extension.
_____ Copies of any approvals or permits required from State and Federal agencies.
_____ Electronic plan submission as set forth in Section 12.08 of the Subdivision Regulations.
_____ License from City Council, where applicable, for a use within the public right-of-way.

STORMWATER MANAGEMENT PLAN

BANGOR SAVINGS BANK
111 LOUDON ROAD
CONCORD, NEW HAMPSHIRE 03301

FOR

Mr. Jason Donavan – Facilities Manager
Bangor Savings Bank
PO Box 930
Bangor, ME 04402

BY
NOBIS GROUP®

(800) 394-4182

www.nobis-group.com

Nobis Project No. 100165.00

DECEMBER 18, 2024

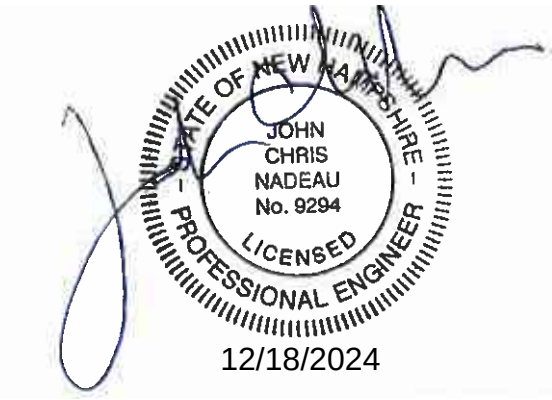


TABLE OF CONTENTS

Project Description

The approximately 0.77-acre (±33,600 SF) Site is currently occupied by a commercial building which includes a garage, shed, and parking area located at 111 Loudon Road in Concord, NH. The property is catalogued locally as Tax Map 631Z, Lot 5. The Site is bound by residential units to the North, McDonalds to the East, Prescott Park commercial buildings to the West, and Loudon Road to the South.

The proposed project is to demolish the existing commercial building and construct a 1-story ±3,600 SF Bangor Savings Bank branch facility. The project includes paved parking and access, concrete patio and sidewalks, a proposed dumpster, stormwater management system, and a 5 car capacity drive-thru. Vehicular access to the Site will be from the south via Loudon Road along with a new sidewalk for pedestrian traffic. The proposed building will be serviced by municipal sewer and water. Installation of a new water, sewer, gas, and electric/telecommunication service will be included in the project.

The purpose of this report is to demonstrate that the proposed project will comply with the City of Concords Site Plan Regulations.

Existing Site Conditions

The existing commercial building and paved parking area stormwater runoff is collected by an existing catch basin or sheet flows via overland flow to the closed drainage system on Loudon Road. A small grass and wooded area in the rear directs perimeter stormwater to the rear residential properties. Stormwater runoff from the existing paved areas discharge to the municipal system untreated and with no peak flow mitigation.

Proposed Site Conditions

The overall topography and stormwater drainage patterns will be maintained. The roof of the proposed building will be discharge directly to the ground at finished grade and flow to proposed

stormwater BMPs. Stormwater runoff from the 2, 10, 25 year storms will be collected, detained, and infiltrated on site. Excess Stormwater runoff from 100-year storms and larger will maintain existing drainage patterns by overflowing the proposed drainage system and flow offsite to Loudon Road.

The proposed best management practices (BMPs) will provide an improvement in water quality. Stormwater runoff will be collected by deep sump catch basins and discharged to a proposed sub-surface infiltration gallery. The proposed sub-surface infiltration gallery will include an isolator row for pre-treatment prior to infiltration. Stormwater runoff from the 2,10, & 25 year storm will be completely infiltrated onsite. The project also includes a Low Impact Design (LID) bio-retention area to promote and protect the natural ability of the site to capture precipitation. The proposed bio-retention area provides water quality volume treatment via a 2-foot thick soil media prior to a perforated pipe outlet. Overflow to the bio-retention area is captured by a catch basin.

Soils

Based on a NRCS Web Soils Survey data search, the hydrologic soils group data within this Site classifies the soil as 598B Windsor - Urban Land. Additional Boring and Test pits were also performed for the building and the hydrologic soil group (HSG) was determined to be HSG A.

Points of Analysis

Stormwater runoff from the Site flows to the North to the residential development and South to Loudon Road. There are two points of interest (POIs) evaluated in the stormwater analysis: POA 1 is the northern property line and POA 2 is the southern property line. Tributary area to POA-1 to the Residential Area has been reduced. Tributary Area to POA-2 is controlled by the proposed Stormwater BMPs.

Erosion and Sediment Control Practices / Site Stabilization

Temporary erosion/sediment control during construction will include use of wattles, and inlet protection at the field inlet, along with tracking control pads at the construction entrance in accordance with best management practices.

The contractor will be responsible for all temporary erosion and sediment control measures during construction, while the project owner will be responsible for maintaining all permanent erosion and sediment control measures as may be required.

Summary of Results

POI DESCRIPTION		STORM EVENT			
		2 Yr (cfs)	10 Yr (cfs)	25 Yr (cfs)	100 Yr (cfs)
POI 1	EXIST. =	0.0	0.0	0.0	0.03
North Property Line	PROP. =	0.0	0.0	0.0	0.01
POI 2	EXIST. =	0.52	1.24	1.88	3.25
South Property Line	PROP. =	0.0	0.0	0.0	2.22

VOLUMES		STORM EVENT			
		2 Yr (cf)	10 Yr (cf)	25 Yr (cf)	100 Yr (cf)
POI 1	EXIST. =	0.0	9.0	28.0	94.0
North Property Line	PROP. =	0.0	6.0	17.0	56.0
POI 2	EXIST. =	1,620	3,771	5,621	9,881
South Property Line	PROP. =	0.0	0.0	0.0	1,444

Conclusions

The preceding table and following calculations reflect the results of the proposed Site improvements on the peak stormwater discharge rates. The proposed stormwater management improvements yield a decrease in peak runoff rates while providing an improvement in overall stormwater quality. The proposed stormwater management design is a significant improvement

over the existing conditions. Calculations are included for the 2-year,10-year, 25-year, & 100-year storm events as required by the City of Concord for major impact site plans.

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	
Location	
Latitude	43.214 degrees North
Longitude	71.513 degrees West
Elevation	100 feet
Date/Time	Tue Dec 17 2024 10:23:47 GMT-0500 (Eastern Standard Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.39	0.49	0.64	0.80	1.00	**1yr**	0.69	0.98	1.16	1.47	1.86	2.36	2.57	**1yr**	2.09	2.47	2.90	3.59	4.12	**1yr**
2yr	0.31	0.48	0.60	0.79	1.00	1.25	**2yr**	0.86	1.15	1.45	1.81	2.26	2.82	3.15	**2yr**	2.49	3.03	3.51	4.19	4.79	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.58	**5yr**	1.08	1.45	1.83	2.29	2.84	3.51	3.99	**5yr**	3.11	3.84	4.43	5.21	5.91	**5yr**
10yr	0.42	0.66	0.84	1.14	1.48	1.89	**10yr**	1.28	1.71	2.19	2.73	3.38	4.15	4.78	**10yr**	3.67	4.60	5.30	6.14	6.92	**10yr**
25yr	0.50	0.79	1.01	1.39	1.85	2.38	**25yr**	1.59	2.15	2.76	3.45	4.25	5.19	6.07	**25yr**	4.59	5.84	6.71	7.64	8.55	**25yr**
50yr	0.57	0.91	1.17	1.63	2.19	2.84	**50yr**	1.89	2.56	3.31	4.12	5.06	6.14	7.27	**50yr**	5.44	7.00	8.02	9.02	10.03	**50yr**
100yr	0.64	1.04	1.35	1.91	2.60	3.39	**100yr**	2.25	3.04	3.96	4.93	6.03	7.28	8.72	**100yr**	6.44	8.39	9.60	10.66	11.78	**100yr**
200yr	0.74	1.21	1.57	2.24	3.09	4.04	**200yr**	2.67	3.61	4.72	5.87	7.17	8.62	10.47	**200yr**	7.63	10.06	11.48	12.59	13.83	**200yr**
500yr	0.89	1.46	1.91	2.77	3.87	5.10	**500yr**	3.34	4.55	5.97	7.42	9.02	10.81	13.33	**500yr**	9.57	12.81	14.57	15.71	17.11	**500yr**

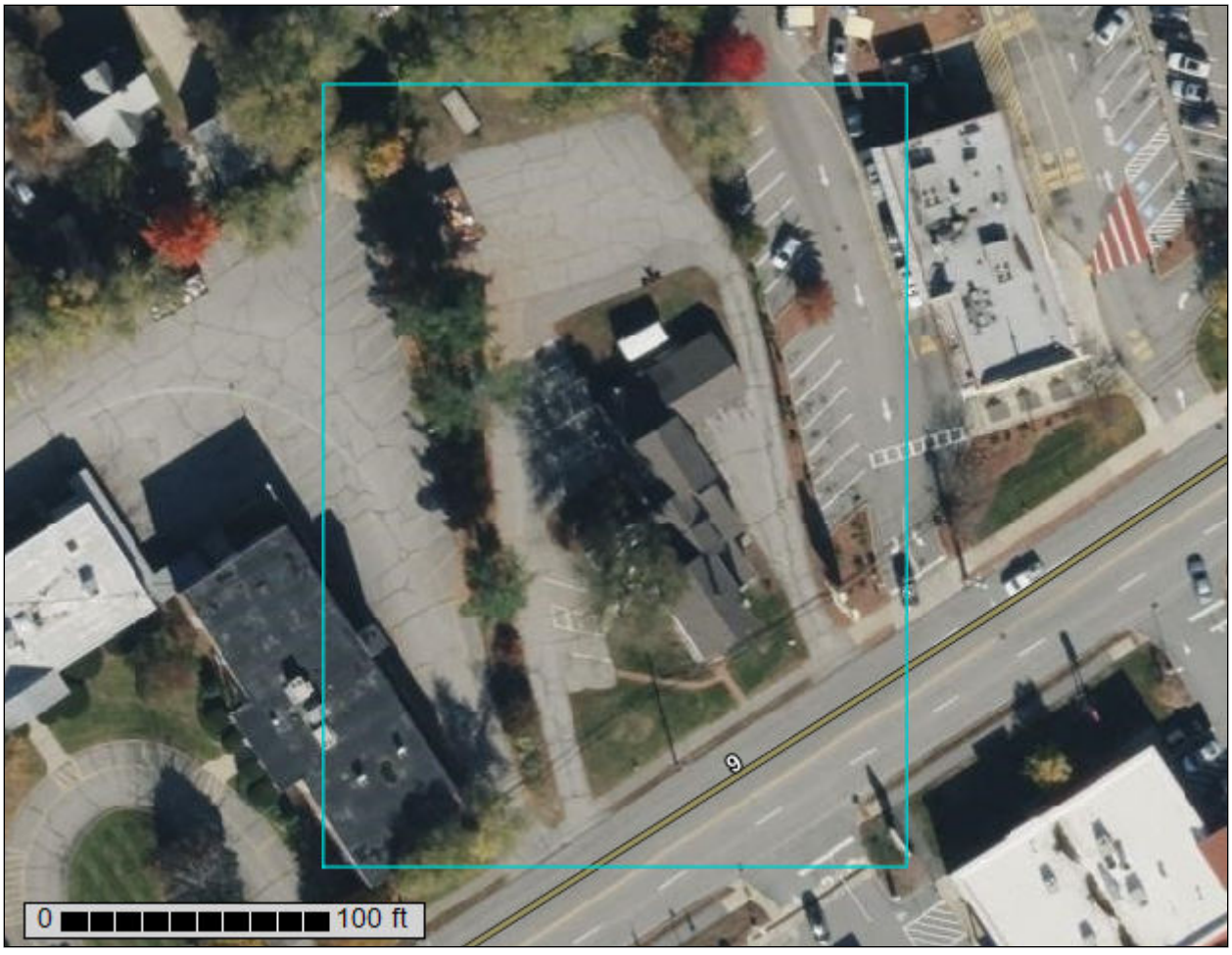
United States Department of Agriculture

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 Merrimack and Belknap Counties, New Hampshire



November 7, 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

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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.

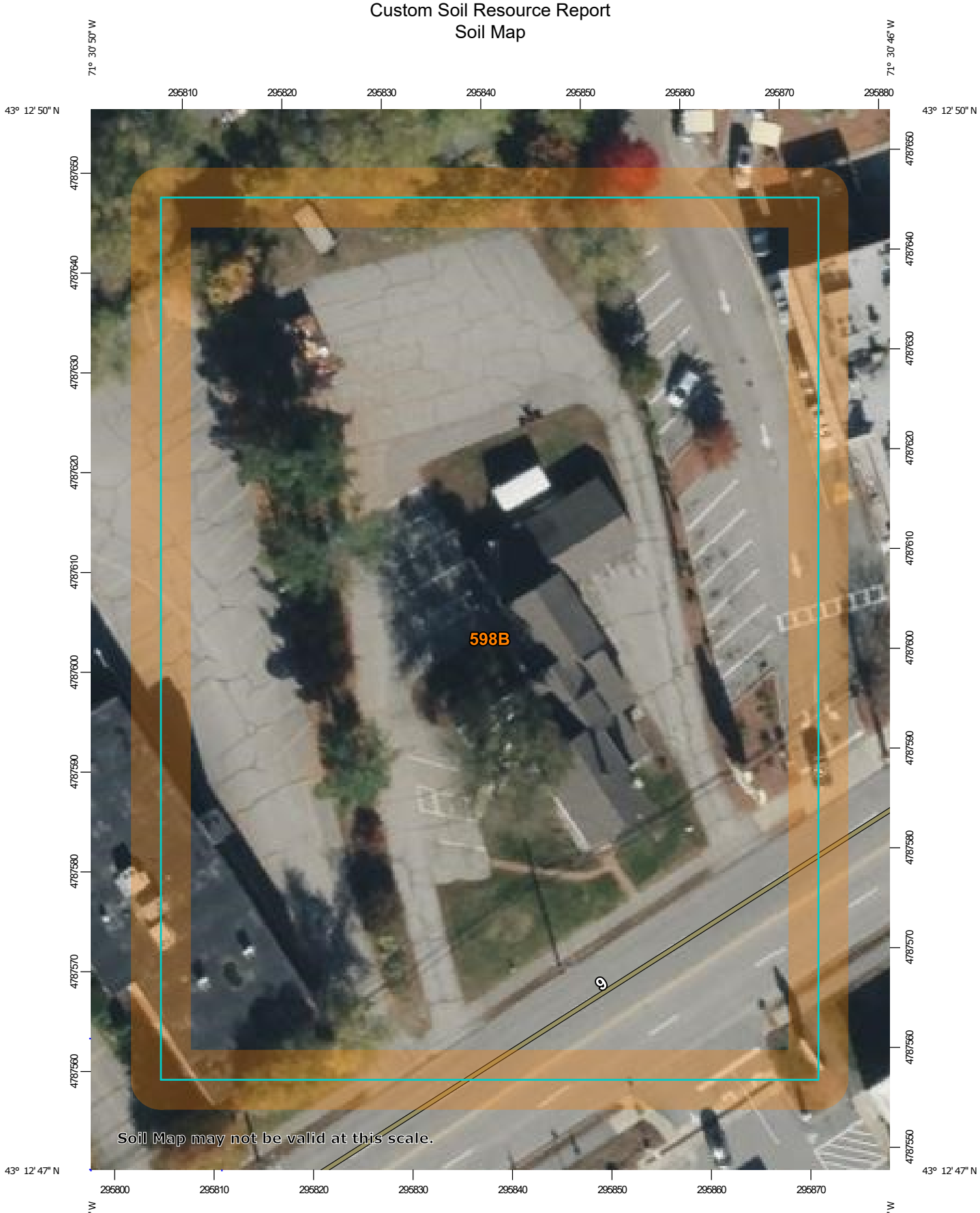
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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: 1:518 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

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: Merrimack and Belknap Counties, New Hampshire
Survey Area Data: Version 30, Sep 3, 2024

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

Date(s) aerial images were photographed: Oct 6, 2022—Oct 22, 2022

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
598B	Windsor-Urban land complex, 0 to 8 percent slopes	1.4	100.0%
Totals for Area of Interest		**1.4**	**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.

Merrimack and Belknap Counties, New Hampshire

598B—Windsor-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w2wq
Elevation: 0 to 920 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

A - 0 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 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: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 10 percent
Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Eskers, deltas, kames, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

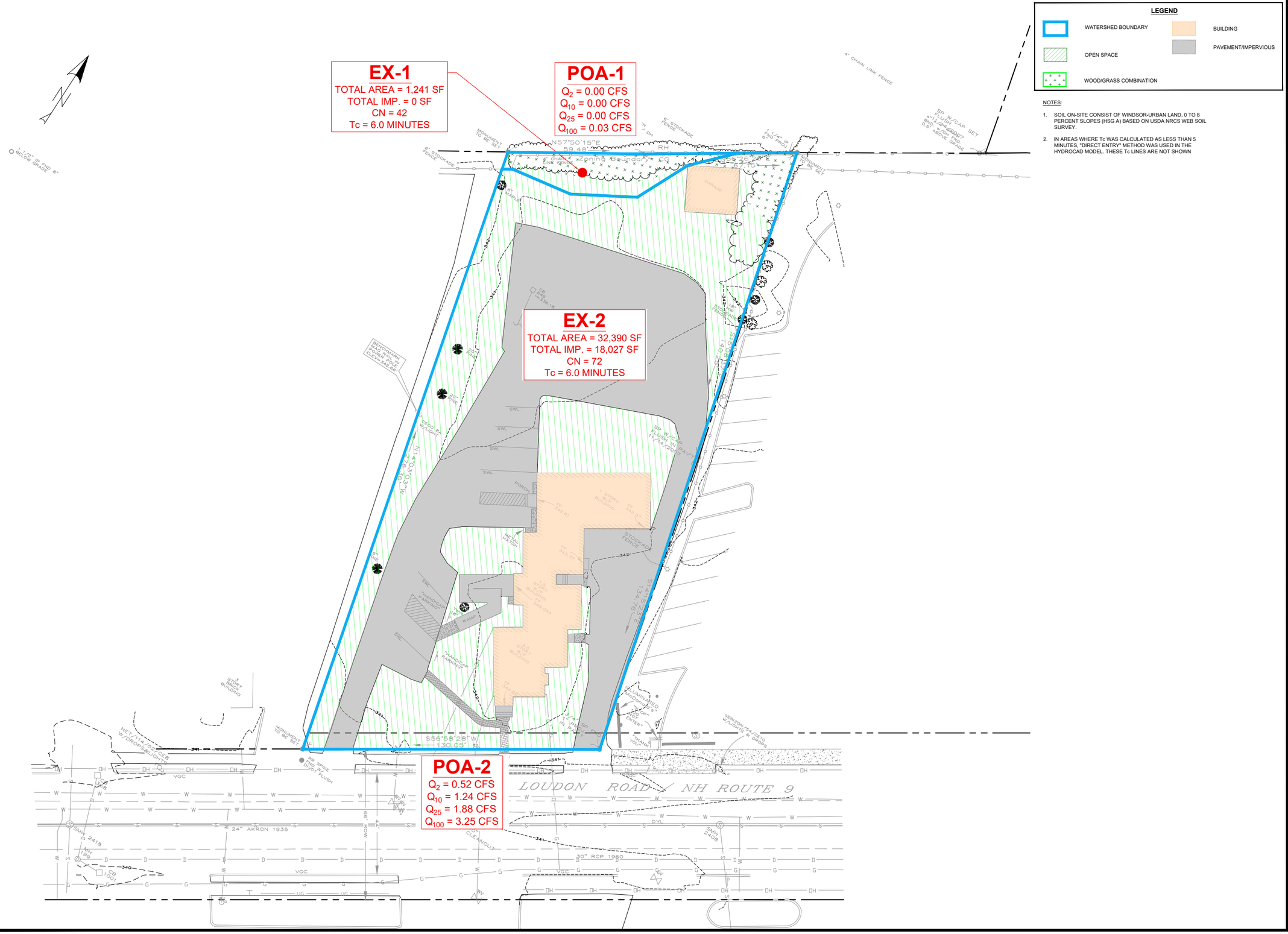
United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



nobis
Nobis Group®
18 Chenell Drive
Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

NOT ISSUED FOR CONSTRUCTION

BANGOR SAVINGS BANK

111 LOUDON ROAD
CONCORD, NEW HAMPSHIRE

APPLICANT:
BANGOR SAVINGS BANK
P.O BOX 930
BANGOR, ME 04402

NO.	DATE	DESCRIPTION

REVISIONS

0 20' 40'
GRAPHIC SCALE

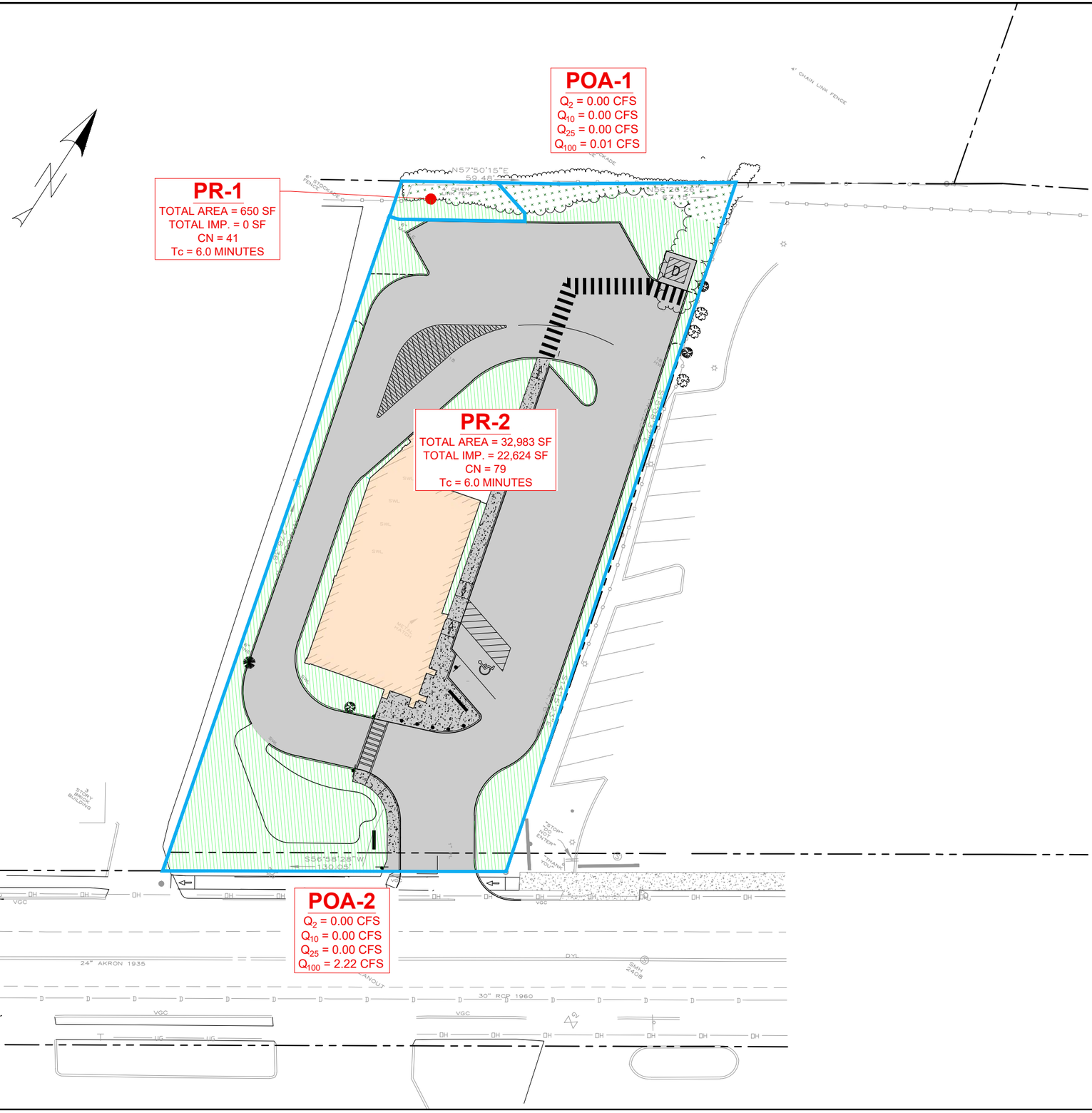
DATE:	DEC 2024
NOBIS PROJECT NO.	100165.00
DRAWN BY:	KLR
CHECKED BY:	JIR
CAD DRAWING FILE:	100165.000- EXISTING WATERSHED PLAN.dwg

SHEET TITLE

EXISTING WATERSHED PLAN

SHEET
FIGURE 1

J:\100165.000 Bangor Savings Bank 111 Loudon Rd. Concord, NH\Civil\Stormwater\Watershed\100165.000– EXISTING WATERSHED PLAN.dwg 12/17/2024 11:16 AM



LEGEND

- WATERSHED BOUNDARY
- OPEN SPACE
- WOOD/GRASS COMBINATION
- BUILDING
- PAVEMENT/IMPERVIOUS

NOTES:

1. SOIL ON-SITE CONSIST OF WINDSOR-URBAN LAND, 0 TO 8 PERCENT SLOPES (HSG A) BASED ON USDA NRCS WEB SOIL SURVEY.
2. IN AREAS WHERE Tc WAS CALCULATED AS LESS THAN 5 MINUTES, "DIRECT ENTRY" METHOD WAS USED IN THE HYDROCAD MODEL. THESE Tc LINES ARE NOT SHOWN

nobis
Nobis Group®
18 Chenell Drive
Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

NOT ISSUED FOR CONSTRUCTION

BANGOR SAVINGS BANK

111 LOUDON ROAD
CONCORD, NEW HAMPSHIRE

APPLICANT:
BANGOR SAVINGS BANK
P.O BOX 930
BANGOR, ME 04402

NO.	DATE	DESCRIPTION

REVISIONS

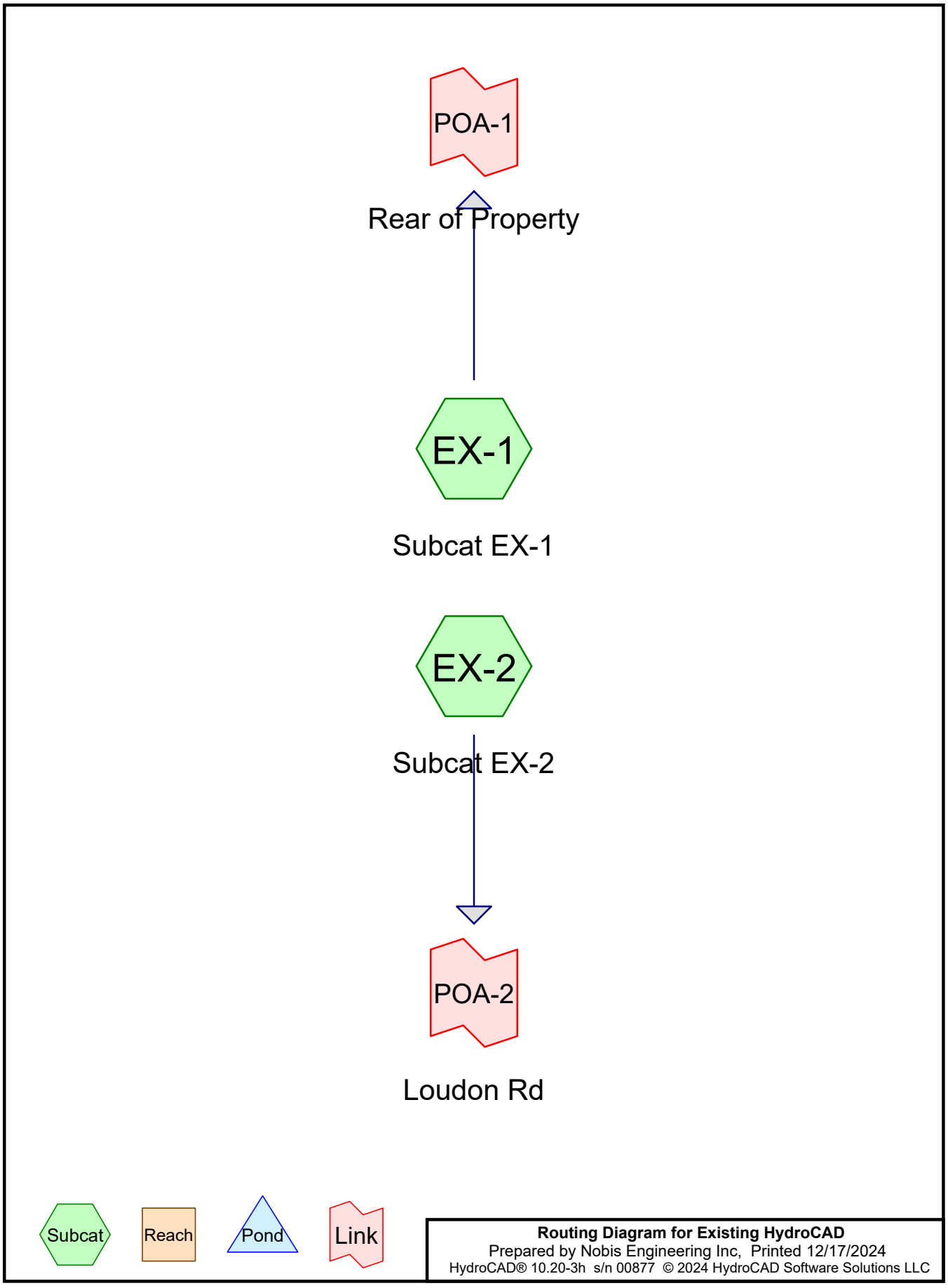
0 20' 40'
GRAPHIC SCALE

DATE:	DEC 2024
NOBIS PROJECT NO.	100165.00
DRAWN BY:	KLR
CHECKED BY:	JIR
CAD DRAWING FILE:	100165.000- PROPOSED WATERSHED PLA

SHEET TITLE

PROPOSED WATERSHED PLAN

SHEET
FIGURE 2



Routing Diagram for Existing HydroCAD
Prepared by Nobis Engineering Inc, Printed 12/17/2024

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
14,134	39	>75% Grass cover, Good, HSG A (EX-1, EX-2)
13,658	98	Paved parking, HSG A (EX-2)
3,705	98	Roofs, HSG A (EX-2)
764	98	Unconnected pavement, HSG A (EX-2)
1,369	43	Woods/grass comb., Fair, HSG A (EX-1, EX-2)

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
33,630	HSG A	EX-1, EX-2
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=1,240 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=42 Runoff=0.00 cfs 0 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=32,390 sf 55.96% Impervious Runoff Depth>0.60"
Tc=6.0 min CN=72 Runoff=0.52 cfs 1,620 cf

Link POA-1: Rear of Property Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POA-2: Loudon Rd Inflow=0.52 cfs 1,620 cf
Primary=0.52 cfs 1,620 cf

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=1,240 sf 0.00% Impervious Runoff Depth>0.08"
Tc=6.0 min CN=42 Runoff=0.00 cfs 9 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=32,390 sf 55.96% Impervious Runoff Depth>1.37"
Tc=6.0 min CN=72 Runoff=1.24 cfs 3,711 cf

Link POA-1: Rear of Property Inflow=0.00 cfs 9 cf
Primary=0.00 cfs 9 cf

Link POA-2: Loudon Rd Inflow=1.24 cfs 3,711 cf
Primary=1.24 cfs 3,711 cf

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=1,240 sf 0.00% Impervious Runoff Depth>0.27"
Tc=6.0 min CN=42 Runoff=0.00 cfs 28 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=32,390 sf 55.96% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=72 Runoff=1.88 cfs 5,621 cf

Link POA-1: Rear of Property Inflow=0.00 cfs 28 cf
Primary=0.00 cfs 28 cf

Link POA-2: Loudon Rd Inflow=1.88 cfs 5,621 cf
Primary=1.88 cfs 5,621 cf

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=1,240 sf 0.00% Impervious Runoff Depth>0.91"
Tc=6.0 min CN=42 Runoff=0.03 cfs 94 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=32,390 sf 55.96% Impervious Runoff Depth>3.66"
Tc=6.0 min CN=72 Runoff=3.25 cfs 9,881 cf

Link POA-1: Rear of Property Inflow=0.03 cfs 94 cf
Primary=0.03 cfs 94 cf

Link POA-2: Loudon Rd Inflow=3.25 cfs 9,881 cf
Primary=3.25 cfs 9,881 cf

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-1: Subcat EX-1 Runoff Area=1,240 sf 0.00% Impervious Runoff Depth>0.08"
Tc=6.0 min CN=42 Runoff=0.00 cfs 9 cf

Subcatchment EX-2: Subcat EX-2 Runoff Area=32,390 sf 55.96% Impervious Runoff Depth>1.37"
Tc=6.0 min CN=72 Runoff=1.24 cfs 3,711 cf

Link POA-1: Rear of Property Inflow=0.00 cfs 9 cf
Primary=0.00 cfs 9 cf

Link POA-2: Loudon Rd Inflow=1.24 cfs 3,711 cf
Primary=1.24 cfs 3,711 cf

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 0.00 cfs @ 14.36 hrs, Volume= 9 cf, Depth> 0.08"
Routed to Link POA-1 : Rear of Property

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.15"

Area (sf)	CN	Description
0	39	>75% Grass cover, Good, HSG A
438	39	>75% Grass cover, Good, HSG A
802	43	Woods/grass comb., Fair, HSG A
1,240	42	Weighted Average
1,240		100.00% Pervious Area

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

Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 1.24 cfs @ 12.13 hrs, Volume= 3,711 cf, Depth> 1.37"
Routed to Link POA-2 : Loudon Rd

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.15"

Area (sf)	CN	Description
3,241	98	Roofs, HSG A
464	98	Roofs, HSG A
13,658	98	Paved parking, HSG A
276	98	Unconnected pavement, HSG A
488	98	Unconnected pavement, HSG A
7,476	39	>75% Grass cover, Good, HSG A
830	39	>75% Grass cover, Good, HSG A
1,450	39	>75% Grass cover, Good, HSG A
1,843	39	>75% Grass cover, Good, HSG A
1,021	39	>75% Grass cover, Good, HSG A
90	39	>75% Grass cover, Good, HSG A
567	43	Woods/grass comb., Fair, HSG A
986	39	>75% Grass cover, Good, HSG A
32,390	72	Weighted Average
14,263		44.04% Pervious Area
18,127		55.96% Impervious Area
764		4.21% Unconnected

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

Summary for Link POA-1: Rear of Property

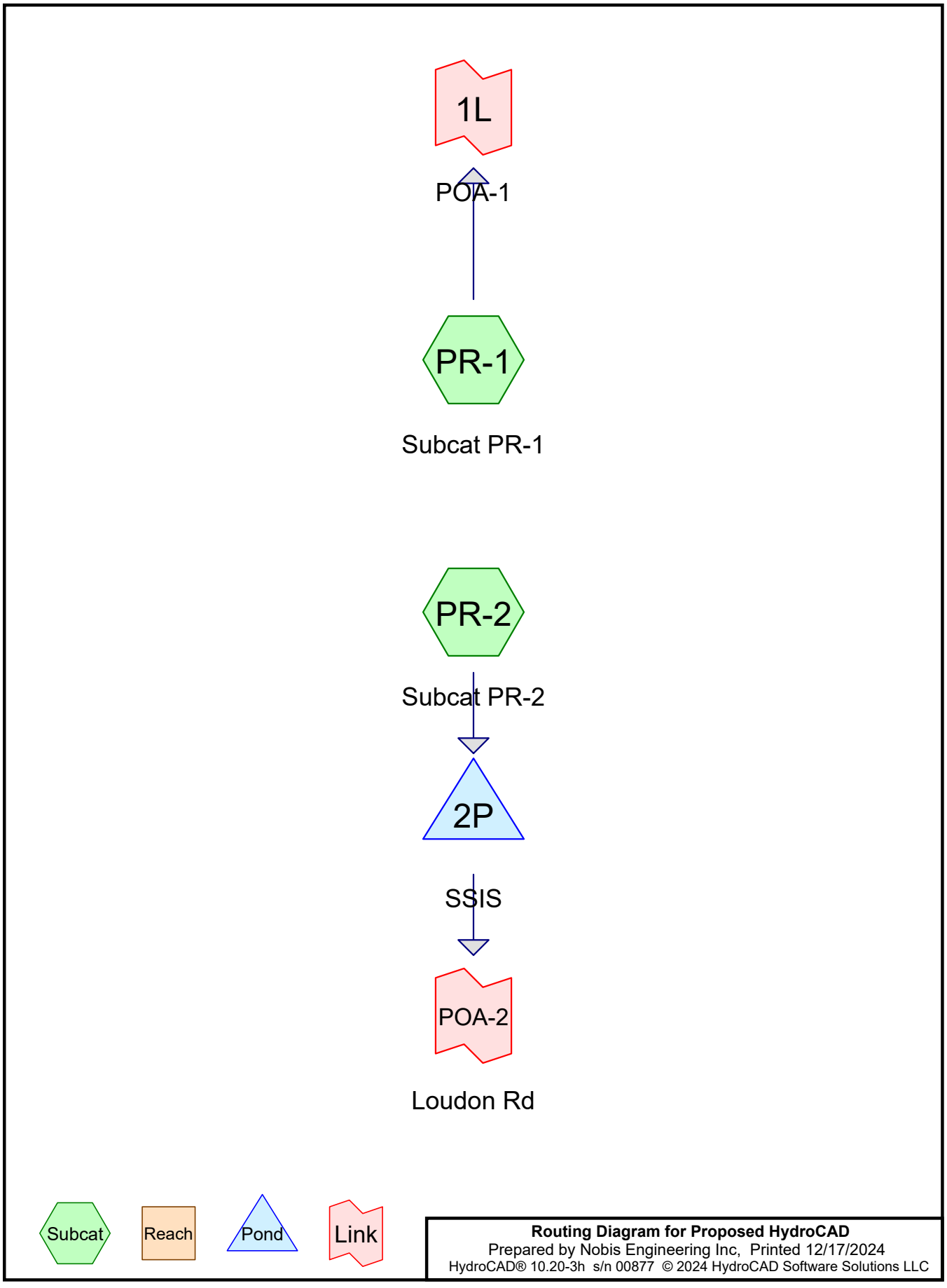
Inflow Area = 1,240 sf, 0.00% Impervious, Inflow Depth > 0.08" for 10-Year event
Inflow = 0.00 cfs @ 14.36 hrs, Volume= 9 cf
Primary = 0.00 cfs @ 14.36 hrs, Volume= 9 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link POA-2: Loudon Rd

Inflow Area = 32,390 sf, 55.96% Impervious, Inflow Depth > 1.37" for 10-Year event
Inflow = 1.24 cfs @ 12.13 hrs, Volume= 3,711 cf
Primary = 1.24 cfs @ 12.13 hrs, Volume= 3,711 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Routing Diagram for Proposed HydroCAD
Prepared by Nobis Engineering Inc, Printed 12/17/2024

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
10,292	39	>75% Grass cover, Good, HSG A (PR-1, PR-2)
16,498	98	Paved parking, HSG A (PR-2)
3,823	98	Roofs, HSG A (PR-2)
1,903	98	Unconnected pavement, HSG A (PR-2)
1,117	43	Woods/grass comb., Fair, HSG A (PR-1, PR-2)

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
33,633	HSG A	PR-1, PR-2
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=650 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=41 Runoff=0.00 cfs 0 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=32,983 sf 67.38% Impervious Runoff Depth>1.06"
Tc=6.0 min CN=79 Runoff=0.85 cfs 2,904 cf

Pond 2P: SSIS Peak Elev=336.09' Storage=665 cf Inflow=0.85 cfs 2,904 cf
Discarded=0.14 cfs 2,899 cf Primary=0.00 cfs 0 cf Outflow=0.14 cfs 2,899 cf

Link 1L: POA-1 Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link POA-2: Loudon Rd Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=650 sf 0.00% Impervious Runoff Depth>0.10"
Tc=6.0 min CN=41 Runoff=0.00 cfs 6 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=32,983 sf 67.38% Impervious Runoff Depth>2.08"
Tc=6.0 min CN=79 Runoff=1.70 cfs 5,724 cf

Pond 2P: SSIS Peak Elev=337.68' Storage=1,813 cf Inflow=1.70 cfs 5,724 cf
Discarded=0.19 cfs 5,715 cf Primary=0.00 cfs 0 cf Outflow=0.19 cfs 5,715 cf

Link 1L: POA-1 Inflow=0.00 cfs 6 cf
Primary=0.00 cfs 6 cf

Link POA-2: Loudon Rd Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=650 sf 0.00% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=41 Runoff=0.00 cfs 17 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=32,983 sf 67.38% Impervious Runoff Depth>2.96"
Tc=6.0 min CN=79 Runoff=2.41 cfs 8,140 cf

Pond 2P: SSIS Peak Elev=340.03' Storage=2,696 cf Inflow=2.41 cfs 8,140 cf
Discarded=0.31 cfs 8,128 cf Primary=0.00 cfs 0 cf Outflow=0.31 cfs 8,128 cf

Link 1L: POA-1 Inflow=0.00 cfs 17 cf
Primary=0.00 cfs 17 cf

Link POA-2: Loudon Rd Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-1: Subcat PR-1 Runoff Area=650 sf 0.00% Impervious Runoff Depth>1.03"
Tc=6.0 min CN=41 Runoff=0.01 cfs 56 cf

Subcatchment PR-2: Subcat PR-2 Runoff Area=32,983 sf 67.38% Impervious Runoff Depth>4.83"
Tc=6.0 min CN=79 Runoff=3.87 cfs 13,289 cf

Pond 2P: SSIS Peak Elev=341.25' Storage=3,579 cf Inflow=3.87 cfs 13,289 cf
Discarded=0.41 cfs 11,530 cf Primary=2.22 cfs 1,444 cf Outflow=2.63 cfs 12,975 cf

Link 1L: POA-1 Inflow=0.01 cfs 56 cf
Primary=0.01 cfs 56 cf

Link POA-2: Loudon Rd Inflow=2.22 cfs 1,444 cf
Primary=2.22 cfs 1,444 cf

Summary for Subcatchment PR-1: Subcat PR-1

Runoff = 0.00 cfs @ 16.55 hrs, Volume= 6 cf, Depth> 0.10"
Routed to Link 1L : POA-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.15"

Area (sf)	CN	Description
327	43	Woods/grass comb., Fair, HSG A
323	39	>75% Grass cover, Good, HSG A
650	41	Weighted Average
650		100.00% Pervious Area

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

Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 1.70 cfs @ 12.13 hrs, Volume= 5,724 cf, Depth> 2.08"
Routed to Pond 2P : SSIS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.15"

Area (sf)	CN	Description
36	98	Paved parking, HSG A
16,462	98	Paved parking, HSG A
790	43	Woods/grass comb., Fair, HSG A
2,644	39	>75% Grass cover, Good, HSG A
4,928	39	>75% Grass cover, Good, HSG A
829	39	>75% Grass cover, Good, HSG A
511	39	>75% Grass cover, Good, HSG A
885	39	>75% Grass cover, Good, HSG A
172	39	>75% Grass cover, Good, HSG A
455	98	Unconnected pavement, HSG A
225	98	Unconnected pavement, HSG A
1,223	98	Unconnected pavement, HSG A
3,823	98	Roofs, HSG A
32,983	79	Weighted Average
10,759		32.62% Pervious Area
22,224		67.38% Impervious Area
1,903		8.56% Unconnected

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

Summary for Pond 2P: SSIS

Inflow Area = 32,983 sf, 67.38% Impervious, Inflow Depth > 2.08" for 10-Year event
Inflow = 1.70 cfs @ 12.13 hrs, Volume= 5,724 cf
Outflow = 0.19 cfs @ 13.11 hrs, Volume= 5,715 cf, Atten= 89%, Lag= 58.5 min
Discarded = 0.19 cfs @ 13.11 hrs, Volume= 5,715 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link POA-2 : Loudon Rd

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 337.68' @ 13.11 hrs Surf.Area= 971 sf Storage= 1,813 cf

Plug-Flow detention time= 85.8 min calculated for 5,715 cf (100% of inflow)
Center-of-Mass det. time= 84.9 min (941.9 - 857.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	335.00'	946 cf	**12.75'W x 74.17'L x 4.00'H Field A** 3,782 cf Overall - 1,418 cf Embedded = 2,364 cf x 40.0% Voids
#2A	335.50'	1,418 cf	**Cultec R-360HD** x 38 Inside #1 Effective Size= 54.9"W x 36.0"H => 9.99 sf x 3.67'L = 36.6 cf Overall Size= 60.0"W x 36.0"H x 4.17'L with 0.50' Overlap 38 Chambers in 2 Rows Cap Storage= 6.5 cf x 2 x 2 rows = 25.8 cf
#3	335.00'	176 cf	**4.00'D x 7.00'H Vertical Cone/Cylinder** x 2
#4	339.50'	1,899 cf	**Bio-Retention Area (Irregular)** Listed below (Recalc)
		4,439 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
339.50	304	75.0	0	0	304
340.00	464	100.0	191	191	655
341.00	844	135.0	645	835	1,320
342.00	1,300	210.0	1,064	1,899	3,386

Device	Routing	Invert	Outlet Devices
#1	Discarded	335.00'	**5.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 331.00' Phase-In= 0.01'
#2	Primary	341.15'	**28.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.19 cfs @ 13.11 hrs HW=337.68' (Free Discharge)
1=Exfiltration (Controls 0.19 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=335.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Link 1L: POA-1

Inflow Area = 650 sf, 0.00% Impervious, Inflow Depth > 0.10" for 10-Year event
Inflow = 0.00 cfs @ 16.55 hrs, Volume= 6 cf
Primary = 0.00 cfs @ 16.55 hrs, Volume= 6 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link POA-2: Loudon Rd

Inflow Area = 32,983 sf, 67.38% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

INSPECTION AND MAINTENANCE PROCEDURES

Responsible Parties
Bangor Savings Bank
111 Loudon Road
Concord NH 03301

INSPECTION SCHEDULE

Catch Basins Drain Manholes Drain Pipes	Each Catch basin and drain manhole will be inspected when the system is installed and prior to directing stormwater to it. Structures inverts will be measured and documented at this time as a baseline reference for future inspections. Catch basins, drain manholes, and connecting piping will be inspected annually (minimum). Inspection results will be recorded using the Inspection Forms included at the end of this document.
Infiltration Gallery	The infiltration gallery will be inspected when the system is installed and prior to directing stormwater to it. The isolator row will be inspected via the inspection port annually (minimum). If, upon visual inspection, it is found that sediment has accumulated, the stadia rod will be inserted to determine the depth of sediment. Inlet structures and manifolds will be inspected annually (minimum). Inspection results will be recorded using the inspection forms included at the end of this document.
Bio-Retention Area with Pea Stone Diaphram	Bio-retention and Pea Stone Diaphragm will be inspected twice annually and after major storm events exceeding 2.5 inches in a 24 hour period. At leas once annually, the system will be inspected for draw down time. Vegetation will be inspected at least annually. Inspection results will be recorded using the inspection forms included at the end of this document.

MAINTENANCE PROCEDURES

Catch Basins Drain Manholes Drain Pipes	Debris will be removed from catch basin inlet grates, and inlet/outlet pipes inside the structures. Sediment will be removed from the interior of the structures by vactor truck. Water and sediment from cleanout procedures must be disposed of in accordance with federal, state, and local regulations at an approved off-site disposal facility, and must not be discharged into sanitary sewer systems. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document.
Sub-surface Infiltration Gallery	When the average depth of sediment in the isolator row exceeds 3 inches, clean out will be performed with the JetVac process. Trash and debris will be removed from the inlet/outlet structures when observed during inspections. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document.
Bio-Retention Area with Pea Stone Diaphragm	Trash and debris will be removed at each inspection. During the drawdown inspection, if drawdown is greater than 72 hours, a qualified professional will be consulted to restore infiltration function of the system. Vegetation will be maintained in healthy condition. Invasive species will be removed as required. Maintenance will be recorded in the Inspection and Maintenance Log included at the end of this document.

RECORD KEEPING

Record keeping and inspection/maintenance activity will begin upon completion of all terrain activities that direct storm water to the practices described herein.

Catch Neighborhood Housing will be responsible for ensuring the long-term effectiveness of the storm water practices.

DEICING

If deicing materials are used on the site, a Deicing Log must be completed and is included at the end of this document. Chloride salt use for de-icing shall be restricted to the minimum amount needed for public safety. Where feasible, alternative de-icing materials should be used, such as sand, calcium magnesium acetate (CMA), calcium chloride, or proprietary blends such as CG-90. All de-icing materials must be stored in covered locations before application.

Catch Basin/Drain Manhole Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection:	❑ Routine (quarterly) ❑ Post-storm event

Structure ID	Blockage?	Floatable Debris?	Visible Damage?	Depth of Buildup*	Odor?	Maintenance Required? Provide detail below
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No		❑Petroleum ❑Sewage ❑Other	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No		❑Petroleum ❑Sewage ❑Other	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No		❑Petroleum ❑Sewage ❑Other	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No		❑Petroleum ❑Sewage ❑Other	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No		❑Petroleum ❑Sewage ❑Other	❑Yes ❑No

Corrective Action Needed and Notes

If the depth of sediment buildup in the bottom of the structure* ***has reached approximately 25% of the diameter of the structure, the unit requires cleaning.*

Infiltration Gallery Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection: ❑ Routine (annually) ❑ Other	

Trash/Debris?	Visible Sediment?	Depth of Sediment Buildup*	Maintenance Required? Provide detail below
❑Yes ❑No	❑Yes ❑No		❑Yes ❑No

Visible Damage:

❑Inlet

❑Outlet

❑None

Describe :

Corrective Action Needed and Notes

**If the average depth of sediment buildup in the isolator row exceeds 3 inches, the unit requires cleaning.*

Bio-retention Area Inspection Form

General Information	
Date of Inspection	
Inspector's Name(s)	
Inspector's Title(s)	
Type of Inspection: ❑ Routine (bi-annually) ❑ Post Storm Event ❑ Other	

Location	Trash/Debris?	Healthy Vegetation?	Maintenance Required? Provide detail below
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
	❑Yes ❑No	❑Yes ❑No	❑Yes ❑No
Corrective Action Needed and Notes			

Inspection and Maintenance Log

Inspection and Maintenance Log

Date:			
Performed by:			
Practice:	Catch Basins/Drain Manholes ❑Inspection ❑Maintenance	Infiltration Gallery ❑Inspection ❑Maintenance	Bio-retention Area ❑Inspection ❑Maintenance

Date:			
Performed by:			
Practice:	Catch Basins/Drain Manholes ❑Inspection ❑Maintenance	Infiltration Gallery ❑Inspection ❑Maintenance	Bio-retention Area ❑Inspection ❑Maintenance

Date:			
Performed by:			
Practice:	Catch Basins/Drain Manholes ❑Inspection ❑Maintenance	Infiltration Gallery ❑Inspection ❑Maintenance	Bio-retention Area ❑Inspection ❑Maintenance

Date:			
Performed by:			
Practice:	Catch Basins/Drain Manholes ❑Inspection ❑Maintenance	Infiltration Gallery ❑Inspection ❑Maintenance	Bio-retention Area ❑Inspection ❑Maintenance

Date:			
Performed by:			
Practice:	Catch Basins/Drain Manholes ❑Inspection ❑Maintenance	Infiltration Gallery ❑Inspection ❑Maintenance	Bio-retention Area ❑Inspection ❑Maintenance

Deicing Log

Date/Location of Application: Amount and Type of Material Applied: Performed by:
Date/Location of Application: Amount and Type of Material Applied: Performed by:
Date/Location of Application: Amount and Type of Material Applied: Performed by:
Date/Location of Application: Amount and Type of Material Applied: Performed by:
Date/Location of Application: Amount and Type of Material Applied: Performed by:
Date/Location of Application: Amount and Type of Material Applied: Performed by:

D-Series Size 0
LED Area Luminaire

Catalog Number

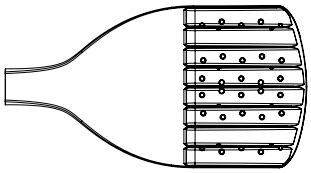
Notes

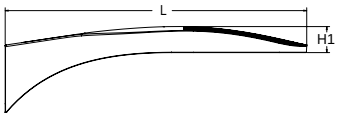
Type

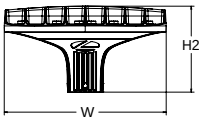
Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)







Design Select options indicated by this color background.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series
DSX0 LED

LEDs
Forward optics

P1	P5
P2	P6
P3	P7
P4	

Rotated optics

P10 [1]	P12 [1]
P11 [1]	P13 [1]

Color temperature [2]

(this section 70CRI only)	
30K	3000K
40K	4000K
50K	5000K
(this section 80CRI only, extended lead times apply)	
27K	2700K
30K	3000K
35K	3500K
40K	4000K
50K	5000K

Color Rendering Index [2]

70CRI
70CRI
70CRI
80CRI
80CRI
80CRI
80CRI
80CRI

Distribution

AFR	Automotive front row
T1S	Type I short
T2M	Type II medium
T3M	Type III medium
T3LG	Type III low glare [3]
T4M	Type IV medium
T4LG	Type IV low glare [3]
TFTM	Forward throw medium
T5M	Type V medium
T5LG	Type V low glare
T5W	Type V wide
BLC3	Type III backlight control [3]
BLC4	Type IV backlight control [3]
LCCO	Left corner cutoff [3]
RCCO	Right corner cutoff [3]

Voltage

MVOLT	(120V-277V) [4]
HVOLT	(347V-480V) [5,6]
XVOLT	(277V-480V) [7,8]
120	[16, 24]
208	[16, 24]
240	[16, 24]
277	[16, 24]
347	[16, 24]
480	[16, 24]

Mounting
Shipped included

SPA	Square pole mounting (#8 drilling, 3.5" min. SQ pole)
RPA	Round pole mounting (#8 drilling, 3" min. RND pole)
SPA5	Square pole mounting (#5 drilling. 3" min. SQ pole) [9]
RPA5	Round pole mounting (#5 drilling, 3" min. RND pole) [9]
SPA8N	Square narrow pole mounting (#8 drilling, 3" min. SQ pole)
WBA	Wall bracket [10]
MA	Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options
Shipped installed

NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. [11, 12, 18, 19]
PIR	High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc [13, 18, 19]
PER	NEMA twist-lock receptacle only (controls ordered separate) [14]
PER5	Five-pin receptacle only (controls ordered separate) [14, 19]
PER7	Seven-pin receptacle only (controls ordered separate) [14, 19]
FAO	Field adjustable output [15, 19]
BL30	Bi-level switched dimming, 30% [16, 19]
BL50	Bi-level switched dimming, 50% [16, 19]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) [17]

Other options
Shipped installed

HS	Houseside shield (black finish standard) [20]
L90	Left rotated optics [1]
R90	Right rotated optics [1]
CCE	Coastal Construction [21]
HA	50°C ambient operation [22]
BAA	Buy America(n) Act and/or Build America Buy America Qualified
SF	Single fuse (120, 277, 347V) [24]
DF	Double fuse (208, 240, 480V) [24]

Shipped separately

EGSR	External Glare Shield (reversible, field install required, matches housing finish)
BSDB	Bird Spikes (field install required)

Finish *(required)*

DDBXD	Dark Bronze
DBLXD	Black
DNAXD	Natural Aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

Ordering Information

Accessories

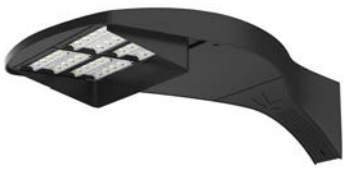
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [23]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [23]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [23]
DSHORT SBK	Shorting cap [23]
DSX0HS P#	House-side shield (enter package number P1-7, P10-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGSR (FINISH)	External glare shield (specify finish)
DSX0BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

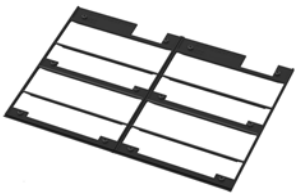
NOTES

1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT. NLTAIR2 PIRHN not available with P1 using MVOLT.
13 PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT. PIR not available with P1 using MVOLT.
14 PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify 120 or 277V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
18 Reference Motion Sensor Default Settings table on page 4 to see functionality.
19 Reference Controls Options table on page 4.
20 Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
21 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
22 Option HA not available with performance packages P6, P7, P12 and P13.
23 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
24 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories



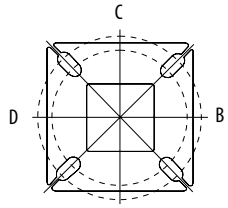
External Glare Shield (EGSR)



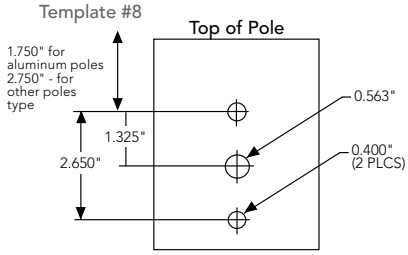
House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION
(from top of pole)



Template #8



Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Minimum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°C**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current (mA)	Wattage	120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	33W	20	530	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
P2	45W	20	700	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146
				T5W	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148
				T5LG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
P3	69W	20	1050	T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
				T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
P4	93W	20	1400	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
				T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	10,136	1	0	2	109
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125
				T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127
				T5W	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129
				T5LG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	90W	40	700	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
				T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				T5LG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
P6	137W	40	1050	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				T5M	17,168	4	0	2	125	17,893	5	0	3	131	18,241	5	0	3	133
				T5W	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				T5LG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
P7	171W	40	1300	T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

Performance Data

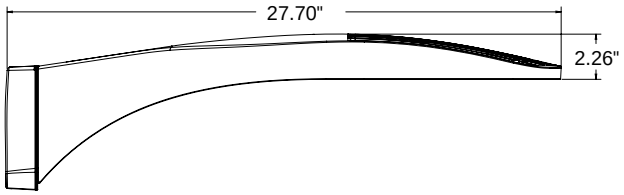
Lumen Output

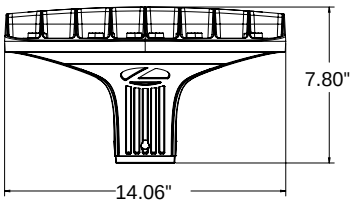
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Rotated Optics

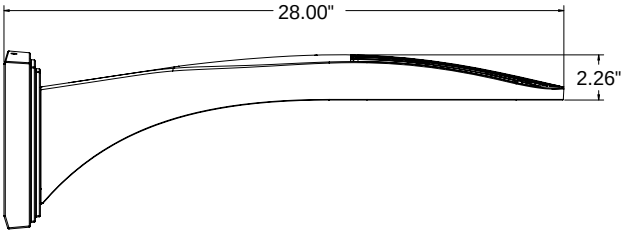
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	51W	30	530	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
P11	68W	30	700	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				T5W	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				T5LG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	3	0	3	98	6,777	3	0	3	100
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
P12	103W	30	1050	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
P13	129W	30	1300	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				T5M	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				T5W	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				T5LG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

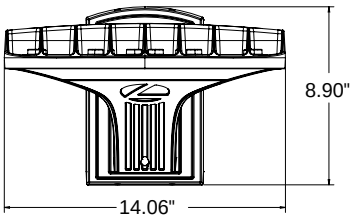
Dimensions



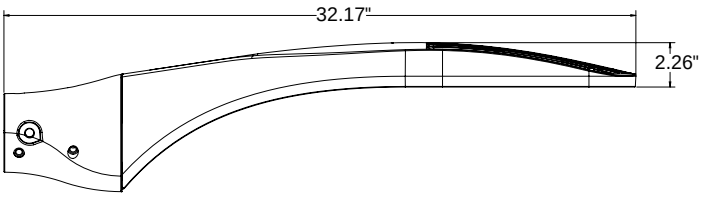


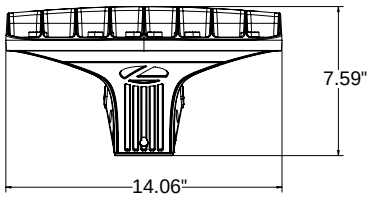
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs





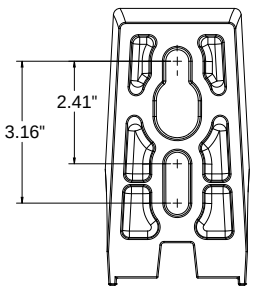
DSX0 with WBA mount
Weight: 27 lb



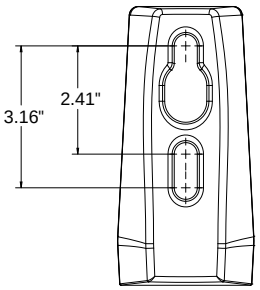


DSX0 with MA mount
Weight: 28 lbs

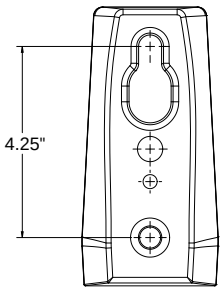
SPA (STANDARD ARM)



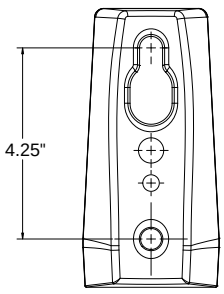
RPA



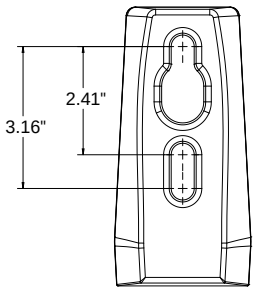
SPA5



RPA5



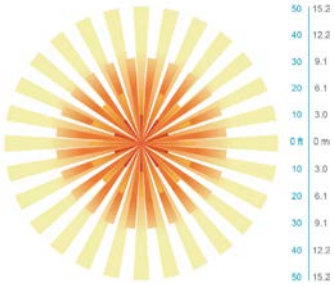
SPA8N



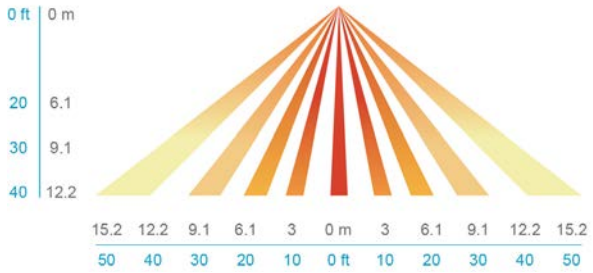
nLight Control - Sensor Coverage and Settings

nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



Top



Side

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft^2) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.
BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — **These specifications are for USA standards only.** Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION —

Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, 0.120"), or 50 KSI (7-gauge, 0.179"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include 4" tenon top, drilled for side mount fixture, tenon with drilling (includes extra handhole) and open top. Side drilled and open top poles include a removable top cap.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE — All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable painted finish is coated with TGIC (Triglycidyl Isocyanurate) Polyester powder that meets 5A and 5B classifications of ASTM D3359. Powder-coat finishes include Dark Bronze, White, Black, and Natural Aluminum colors. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes.

GOVERNEMENT PROCUREMENT —

BAA – Buy America(n) Act: Product qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product also qualifies as manufactured in the United States under DOT Buy America regulations.

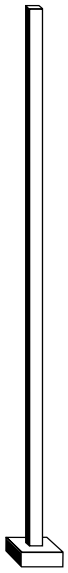
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.

Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — **Do not** erect poles without having fixtures installed. Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates. If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage. Lithonia Lighting is not responsible for the foundation design.

WARRANTY — 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application.
Specifications subject to change without notice.



Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL

BAA BABA

SSS Square Straight Steel Poles

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDBXD

SSS					
Series	**Nominal fixture mounting height**	**Nominal shaft base size/wall thickness[1]**	**Mounting[2]**	**Options**	**Finish**
SSS	10'-39' (for 1/2 ft increments, add -6 to the pole height. **Ex:** 20-6 equals 20ft 6in.) (See technical information table for complete ordering information.)	4C 4" 11g (0.120") 4G 4" 7g (0.179") 5C 5" 11g (0.120") 5G 5" 7g (0.179") 6G 6" 7g (0.179") (See technical information table for complete ordering information.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) KAC/KAD/KSE/KSF/KVR/KVF Drill mounting[3] DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° CSX/DSX/RSX/AERIS™/OMERO™/ KAX Drill mounting[3] DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° RAD drill mounting[3] DM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 90° DM39RAD 3 at 90° DM49RAD 4 at 90° ESX Drill mounting[3] DM19ESX 1 at 90° DM28ESX 2 at 180° DM29ESX 2 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°	Shipped installed VD Vibration damper[4] HAxy Horizontal arm bracket (1 fixture)[5,6] FDLxy Festoon outlet less electrical[5,7] CPL12/xy 1/2" coupling[5] CPL34/xy 3/4" coupling[5] CPL1/xy 1" coupling[5] NPL12/xy 1/2" threaded nipple[5] NPL34/xy 3/4" threaded nipple[5] NPL1/xy 1" threaded nipple[5] EHHxy Extra handhole[5,8] STLHHC Steel handhole cover (standard is plastic, finish is smooth)[9] FBCSTL2PC 2 Piece steel base cover (standard is plastic)[9] IC Interior coating[10] L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) UL UL listed with label (Includes NEC compliant cover) BAA Buy America(n) Act Compliant[11] VM/original order# Match pole to prior order or project[12]	Super durable paint colors DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DGCXD Charcoal gray DTGXD Tennis green DBRXD Bright red DSBXD Steel blue DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white Other finishes GALV Galvanized finish Architectural colors and special finishes[13] [PAINT] GALV Paint over galvanizing VP30 3 year warranty extension VP53 5 year warranty extension RAL#### Use designated Lithonia Lighting nomenclature in brochure Custom color Nomenclature assigned through Customer Care "Custom Color Process"

NOTES:

1. Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.120" | "G" - 0.179".
2. PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, specify as drilling option/tenon option. The combination includes a required extra handhole.
   Example: DM28/T20.
3. Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
4. On 4" and 5" poles, VD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height.
   Example: Pole height is 25ft, A provision cannot be placed above 16ft.
5. Specify location and orientation when ordering option.
   For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".
   Example: 5ft = 5 and 20ft 3in = 20-3
   For "y": Specify orientation from handhole (A,B,C,D) Refer to the Handhole Orientation diagram below.
   Example: 1/2" coupling at 5' 8 ", orientation C = CPL12/5-8C
6. Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAxyy.
   Example: HA20BD.
7. FDL does not come with GFCI outlet or handhole cover. These must be supplied by contractor or electrician.
8. Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
9. Plastic hand hole cover and base covers come standard with all poles. Items ship separately. Additional parts can be ordered as replacements.
10. Provides enhanced corrosion resistance. N/A with GALV.
11. Use when mill certifications are required.
12. Must add original order number. Not for replacement parts or post sales issues, contact tech support or post sales teams. VM is used to ensure poles match in appearance exactly from order to order, on a single project site. A common use case would be a multi-phase project with multiple orders.
    Example: VM/010-36784
13. Must be quoted through AQD. Finishes do not require RFA. RAL colors available are shown in "Architectural Colors brochure". Lead times may be extended up to 2 weeks due to paint procurement.

Accessories: *Order as separate catalog number.*	
PL DT20	Plugs for ESX drillings
PL DT8	Plugs for DMxxAS drillings
FVD xxFT	Field installed vibration damper (snake style)

OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 800-705-SERV (7378) www.lithonia.com

SSS Square Straight Steel Poles

TECHNICAL INFORMATION — EPA (ft^2) with 1.3 gust

Catalog Number	Nominal Shaft Length (ft.)*	Pole Shaft Size (Base in. x Top in. x ft.)	Wall thick (in)	Gauge	EPA (ft^2) with 1.3 gust						Approximate ship weight (lbs.)
					80 MPH	Max. weight	90 MPH	Max. weight	100 MPH	Max. weight	
SSS 10 4C	10	4.0 x 10.0	0.120"	11	30.6	765	23.8	595	18.9	473	75
SSS 12 4C	12	4.0 x 12.0	0.120"	11	24.4	610	18.8	470	14.8	370	90
SSS 14 4C	14	4.0 x 14.0	0.120"	11	19.9	498	15.1	378	11.7	293	100
SSS 16 4C	16	4.0 x 16.0	0.120"	11	15.9	398	11.8	295	8.9	223	115
SSS 18 4C	18	4.0 x 18.0	0.120"	11	12.6	315	9.2	230	6.7	168	125
SSS 20 4C	20	4.0 x 20.0	0.120"	11	9.6	240	6.7	167	4.5	150	140
SSS 20 4G	20	4.0 x 20.0	0.179"	7	14	350	11	275	8	200	198
SSS 20 5C	20	5.0 x 20.0	0.120"	11	17.7	443	12.7	343	9.4	235	185
SSS 20 5G	20	5.0 x 20.0	0.179"	7	28.1	703	21.4	535	16.2	405	265
SSS 25 4C	25	4.0 x 25.0	0.120"	11	4.8	150	2.6	100	1	50	170
SSS 25 4G	25	4.0 x 25.0	0.179"	7	10.8	270	7.7	188	5.4	135	245
SSS 25 5C	25	5.0 x 25.0	0.120"	11	9.8	245	6.3	157	3.7	150	225
SSS 25 5G	25	5.0 x 25.0	0.179"	7	18.5	463	13.3	333	9.5	238	360
SSS 30 4G	30	4.0 x 30.0	0.179"	7	6.7	168	4.4	110	2.6	65	295
SSS 30 5C	30	5.0 x 30.0	0.120"	11	4.7	150	2	50	--	--	265
SSS 30 5G	30	5.0 x 30.0	0.179"	7	10.7	267	6.7	167	3.9	100	380
SSS 30 6G	30	6.0 x 30.0	0.179"	7	19	475	13.2	330	9	225	520
SSS 35 5G	35	5.0 x 35.0	0.179"	7	5.9	150	2.5	100	--	--	440
SSS 35 6G	35	6.0 x 35.0	0.179"	7	12.4	310	7.6	190	4.2	105	540
SSS 39 6G	39	6.0 x 39.0	0.179"	7	7.2	180	3	75	--	--	605

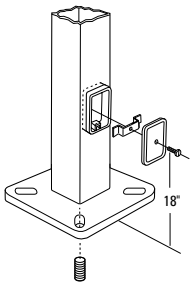
NOTE: EPA values are based ASCE 7-93 wind map.
* For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

TECHNICAL INFORMATION — EPA (ft^2) WITH 3-SECOND GUST PER AASHTO 2013

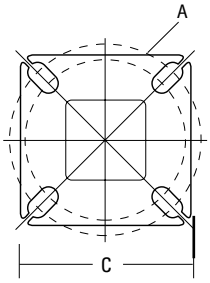
Series	Mounting Height (ft)*	Shaft Base Size	90 MPH	Max. weight	100 MPH	Max. weight	110 MPH	Max. weight	120 MPH	Max. weight	130 MPH	Max. weight	140 MPH	Max. weight	150 MPH	Max. weight	Approximate ship weight (lbs.)
SSS	10	4C	20	500	16	400	13	325	10.5	263	8.5	213	7	175	6	150	75
SSS	12	4C	16	400	13	325	10	250	8	200	6.5	163	5	125	4	100	90
SSS	14	4C	13.5	338	10	250	7.5	188	6	150	4.5	113	3.5	88	2.5	63	100
SSS	16	4C	10.5	263	7.5	188	5.5	138	4	100	3	75	1.5	38	1	25	115
SSS	18	4C	8	200	5.5	138	4	100	2.5	63	1.5	38	0.5	13	-	-	125
SSS	18	4G	13	325	9.5	238	7	175	5	125	3.5	88	2.5	63	1.5	38	185
SSS	18	5C	13	325	9.5	238	6.5	163	4.5	113	3	75	1.5	38	.5	13	170
SSS	20	4C	6	150	4	100	2.5	63	1	25	-	-	-	-	-	-	140
SSS	20	4G	10.5	263	7.5	188	5.5	138	3.5	88	2	50	1	25			205
SSS	20	5C	10	250	7	175	4.5	113	2.5	63	1	25	-	-	-	-	185
SSS	20	5G	20	500	15	375	11.5	288	8.5	213	6	150	4.5	113	3	75	265
SSS	25	4C	2	50	0.5	13	-	-	-	-	-	-	-	-	-	-	170
SSS	25	4G	5.5	138	3	75	1.5	38	-	-	-	-	-	-	-	-	245
SSS	25	5C	4.5	113	2	50	-	-	-	-	-	-	-	-	-	-	225
SSS	25	5G	12	300	8.5	213	5.5	138	3	75	1.5	38	-	-	-	-	360
SSS	25	6G	19	475	13.5	338	9	225	5.5	138	3	75	1	25			445
SSS	30	4G	1.5	38	-	-	-	-	-	-	-	-	-	-	-	-	291
SSS	30	5C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
SSS	30	5G	6.5	163	3.5	88	1	25	-	-	-	-	-	-	-	-	380
SSS	30	6G	11	275	6	150	2.5	63	-	-	-	-	-	-	-	-	520
SSS	35	5G	2	50	-	-	-	-	-	-	-	-	-	-	-	-	440
SSS	35	6G	4	100	-	-	-	-	-	-	-	-	-	-	-	-	540
SSS	39	6G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	605

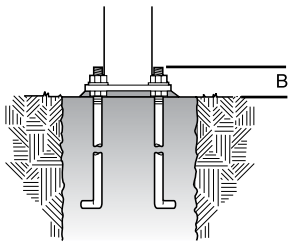
NOTE: AASHTO 2013 criteria is the most conservative existing EPA calculation. For poles not showing EPA values under AASHTO 2013, EPA values may exist under commercial criteria (see table above).
*For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

BASE DETAIL

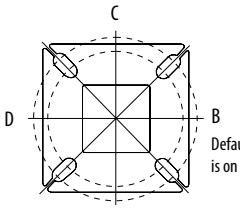


ANCHORAGE AND TEMPLATE INFORMATION								
Shaft base size	**Bolt circle A**	**Bolt projection B**	**Base square C**	**Base plate thickness**	**Template description**	**Anchor bolt description**	**Bolt size (in. x in. x in.)**	**Anchor bolt and template description**
4"C	8" – 9"	3.25"- 3.75"	8"- 8.25"	0.75"	ABTEMPLATE PJ50004	AB18-0	3/4 x 18 x 3	ABSSS-4C
4"G	8" – 9"	3.38"- 3.75"	8"- 8.25"	0.875"	ABTEMPLATE PJ50004	AB30-0	3/4 x 30 x 3	ABSSS-4G
5"	10" – 12"	3.5"- 4"	11"	1"	ABTEMPLATE PJ50010	AB36-0	1 x 36 x 4	ABSSS-5
6"	11" – 13"	4"- 4.50"	12.5"	1"	ABTEMPLATE PJ50011	AB36-0	1 x 36 x 4	N/A





HANDHOLE ORIENTATION



Default DM19 is on side B.

IMPORTANT INSTALLATION NOTES:

- **Do not** erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.
- Bolt circles have +/- 1/2" tolerance.

WDGE1 LED
Architectural Wall Sconce

Catalog Number

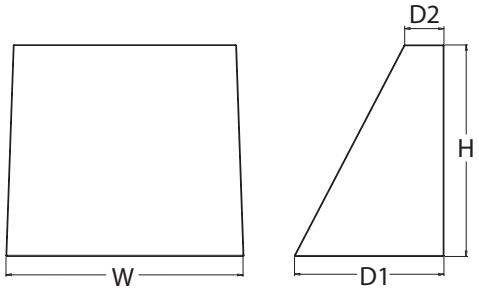
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth (D1): 5.5"
Depth (D2): 1.5"
Height: 8"
Width: 9"
Weight: (without options) 9 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing true site-wide solution.

WDGE1 delivers up to 2,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. The compact size of WDGE1, with its integrated emergency battery backup option, makes it an ideal over-the-door wall-mounted lighting solution.

design select Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE1 LED P2 40K 80CRI VF MVOLT SRM PE DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE1 LED	P0 P1 P2	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K[1] 5000K	80CRI 90CRI	VF Visual comfort forward throw VW Visual comfort wide	MVOLT 347[2]	**Shipped included** SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only)[3] **Shipped separately** AWS 3/8inch Architectural wall spacer[4] PBBW Surface-mounted back box (top, left, right conduit entry) Use when there is no junction box available.[4]

Options

E4WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)[5]
PE	Photocell, Button Type[6]
DS	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)[7]
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.
DSLE	Dual Switching (1 Driver, 2 Light Engines)
CCE	Coastal Construction[4]

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE1PBBW DDBXD U	WDGE1 surface-mounted back box (specify finish)

NOTES

1 50K not available in 90CRI.
2 347V not available with E4WH, DS, DSLE or PE.
3 Not qualified for DLC. Not available with E4WH.
4 For PBBW and AWS with CCE option, require an RFA.
5 E4WH not available with PE or DS.
6 PE not available with DS.
7 DS is not available with P0.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					35K (3500K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	7W	VF	693	99	0	0	0	718	103	0	0	0	739	106	0	0	0	759	108	0	0	0	764	109	0	0	0
		VW	694	99	0	0	0	720	103	0	0	0	740	106	0	0	0	760	109	0	0	0	766	109	0	0	0
P1	10W	VF	1,120	112	0	0	0	1,161	116	0	0	0	1,194	119	0	0	0	1,227	123	0	0	0	1,235	123	0	0	0
		VW	1,122	112	0	0	0	1,163	116	0	0	0	1,196	120	0	0	0	1,229	123	0	0	0	1,237	124	0	0	0
P2	15W	VF	1,806	120	1	0	0	1,872	125	1	0	0	1,925	128	1	0	0	1,978	132	1	0	0	1,992	133	1	0	0
		VW	1,809	120	1	0	0	1,876	125	1	0	0	1,929	128	1	0	0	1,982	132	1	0	0	1,996	133	1	0	0

Electrical Load

Performance Package	System Watts	Current (A)				
		120V	208V	240V	277V	347V
P0	7W	0.060	0.035	0.030	0.026	--
	9W	--	--	--	--	0.026
P1	10W	0.082	0.049	0.043	0.038	--
	13W	--	--	--	--	0.046
P2	15W	0.132	0.081	0.072	0.064	--
	18W	--	--	--	--	0.056

Lumen Multiplier for 90CRI

CCT	Multiplier
27K	0.845
30K	0.867
35K	0.845
40K	0.885
50K	0.898

Lumen Output in Emergency Mode (4000K, 80 CRI)

Option	Dist. Type	Lumens
E4WH	VF	646
	VW	647

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.95	>0.91

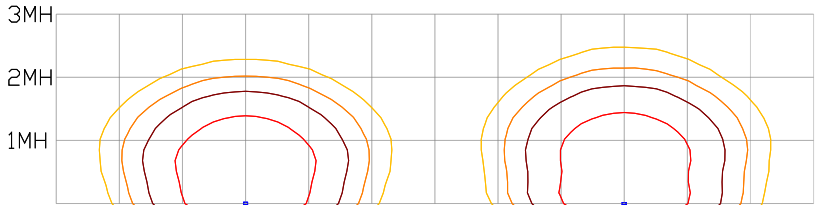
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND

- 0.25 fc
- 0.5 fc
- 1.0 fc
- 3.0 fc

MH = 8ft
Grid = 8ft x 8ft



WDGE1 LED P2 40K 80CRI VW

WDGE1 LED P2 40K 80CRI VF

Emergency Egress Options

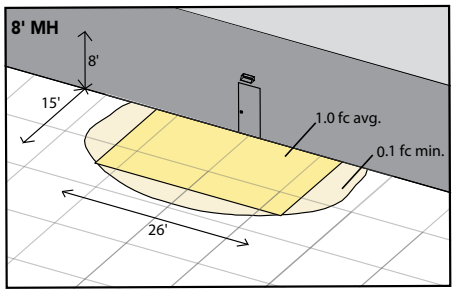
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The example below shows illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E4WH and VF distribution.

Grid = 10ft x 10ft

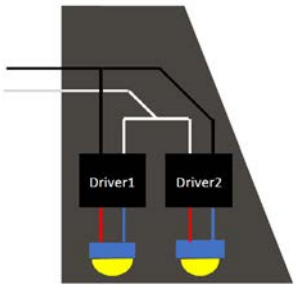


WDGE1 LED xx 40K 80CRI VF MVOLT E4WH

Dual Switching (DS) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with two drivers and two light engines. These work completely independent to each other so that a failure of any individual component does not cause the whole luminaire to go dark.

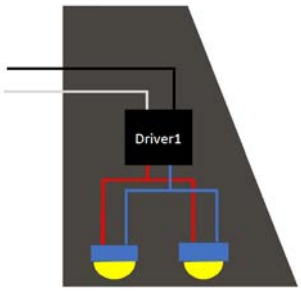
Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Dual Switching Light Engine (DSLE) Option

The dual switching option offers operational redundancy that certain codes require. With this option the luminaire comes integrated with one driver and two light engines. These work completely independent to each other so that a failure of either light engine does not cause the whole luminaire to go dark.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9



Mounting, Options & Accessories

E4WH – 4W Emergency Battery Backup

D = 5.5"

H = 8"

W = 9"

PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"

H = 8"

W = 9"

AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Well crafted reflector optics allow the light engine to be recessed within the luminaire, providing visual comfort, superior distribution, uniformity, and spacing in wall-mount applications. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting only.

GOVERNMENT PROCUREMENT
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Bangor Savings Bank
111 Loudon Road
Concord, NH 03301

Site Photos

Photo #1- View of existing site building on Loudon Road

Nobis Group®
18 Chenell Drive
Concord, NH 03301
T (603) 224-4182

Photo #2- View of site entrance off Loudon Road

Photo #3- View of west side of site building

Photo #4- View of west side of site building

Photo #5- View of rear west side of site building

Photo #6- View of rear west side parking lot

Photo #7- View of rear parking lot

Photo #8- View of rear parking lot

Photo #9-View of east side of site building

Memorandum

To: AnneMarie Skinner, AICP
Concord City Planner
41 Green Street
Concord, NH 03301

Date: December 13, 2024

Project #: 52938.19

From: Jason R. Plourde, PE, PTP

Re: Traffic Study
Bangor Savings Bank
Concord, New Hampshire

Introduction

As proposed, Bangor Savings Bank will be located at 111 Loudon Road (NH Route 9) in Concord, New Hampshire. The site currently includes structures totaling approximately 5,510 square feet of gross floor area previously occupied by Dermatology Associates of Concord with two curb cuts provided along the north side of Loudon Road. The build program consists of razing the existing structures, constructing a new 3,627 square foot drive-in bank, and consolidating the two existing curb cuts into one full access driveway. A copy of the preliminary site plan prepared by Nobis Group provided in the Appendix for reference.

Based on preliminary research, Loudon Road is under City of Concord jurisdiction. Therefore, review and approval are required with respect to traffic through the City of Concord permitting process. Bangor Savings Bank (the "Applicant") requested that this Traffic Study be prepared by the City's on-call traffic engineering consultant (VHB) in accordance with Section 32.03 of the City's Site Plan Regulations. On November 8, 2024, a traffic scoping meeting was held with Nobis Group (the "Site Engineer"), City of Concord officials, and VHB to define the parameters and methodology of this Traffic Study for the proposed development to be used during the local permitting process. This Traffic Study was determined by City officials to be required since the proposed bank development would exceed the City's threshold of 20 peak hour trips (Section 32.01 of the Site Plan Regulations).

Trip Generation Estimates

To estimate the volume of traffic to be generated by the proposed project, trip rates were reviewed from the Institute of Transportation Engineers (ITE) Trip Generation Manual.[1] For the proposed development, ITE Land Use Code 912: Drive-In Bank was selected for the 3,627 square foot building. Not all of the vehicle trips expected to be generated by the proposed bank development represent new trips on the study area roadway system. Based on data presented in the ITE Trip Generation Handbook,[2] a portion of the vehicles visiting the proposed uses may already be present in the adjacent passing traffic stream or are diverted from another route to the subject site. Table 1 presents the trip-generation characteristics for the proposed development and the calculations are provided in the Appendix.

1 Institute of Transportation Engineers. Trip Generation Manual, 11th ed. Washington, DC, Sept. 2021.
2 Institute of Transportation Engineers. Trip Generation Handbook, 3rd ed. Washington, DC, Sept. 2017.

Memorandum

Table 1 Peak Hour Trip-Generation Summary

Peak Hour/Direction	Total Trips [a]	Pass-By Trips [b]	New Trips [c]
Weekday AM			
Enter	21	5	16
Exit	15	5	10
Total	36	10	26
Weekday PM			
Enter	39	14	25
Exit	39	14	25
Total	78	28	50
Saturday Midday			
Enter	49	18	31
Exit	47	18	29
Total	96	36	60

a ITE Land Use Code 912: Drive-In Bank for 3,627 square feet.
b Based on ITE Trip Generation Handbook, 29% of weekday AM peak hour trips, 35% of weekday PM peak hour trips, and 38% of Saturday midday peak hour trips.
c Total Trips minus Pass-By Trips.

In accordance with ITE methodologies[3] and New Hampshire Department of Transportation (NHDOT) general guidance,[4] a development may result in a change in vehicular operations if the addition of site trips would increase peak hour traffic volumes at an intersection by 100 vehicles or more. Traffic increases less than this threshold could be attributed to the fluctuation of vehicles due to driver patterns that occur during a day, on different days of a week, or different months of a year. Based on standard traffic engineering practice and methodologies, Table 1 shows that the proposed bank is projected to not meet this threshold at the site driveway during the weekday AM, weekday PM, and Saturday midday peak hours. Therefore, standard traffic engineering practice suggests that the proposed development would not be expected to result in noticeable impacts to the adjacent roadway system.

To understand the traffic differences between the existing and proposed uses, a trip-generation comparison was made between the proposed bank and ITE Land Use Code 720: Medical-Dental Office Building for the existing 5,510 square foot structures. Table 2 summarizes the trip-generation comparison for the existing and proposed uses. The trip-generation calculations are provided in the Appendix.

3 Institute of Transportation Engineers. Transportation Impact Analyses for Site Development: An ITE Proposed Recommended Practice. Washington, DC. 2010.

4 Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.

Memorandum

Table 2 Trip-Generation Comparison

Peak Hour/Direction	Existing Trips [a]	Proposed Trips [b]	Additional Trips [c]
Weekday Daily			
Enter	100	182	82
Exit	100	182	82
Total	200	364	164
Weekday AM			
Enter	13	21	8
Exit	4	15	11
Total	17	36	19
Weekday PM			
Enter	7	39	32
Exit	15	39	24
Total	22	78	56
Saturday Midday			
Enter	10	49	39
Exit	7	47	40
Total	17	96	79

a ITE Land Use Code 720: Medical-Dental Office Building for 5,510 square feet.
b From Table 1.
c Proposed Trips minus Existing Trips.

As shown, the proposed development would result in traffic volume increases of 164 vehicle trips on a typical weekday, 19 vehicle trips during the weekday AM peak hour, 56 vehicle trips during the weekday PM peak hour, and 79 vehicle trips during the Saturday midday peak hour.

Driveway Design

The proposed site driveway was designed in accordance with Section 9.01 of the City of Concord's Construction Standards and Details. Specifically, Section 9.01.A.3 requires driveways to be located at a minimum of 5 feet from property lines. The September 2024 Proposed Site Plan (Sheet C-2) prepared by the Site Engineer shows that the western side of the proposed site driveway would be located approximately 90 feet from the western property line and the eastern end would be approximately 12 feet from the eastern property line. The location of the proposed site driveway is shown to comply with the City's physical dimension design requirement.

In addition, the proposed site driveway was compared with the City of Concord's driveway opening standards. Section 9.01.A.5 of the City's Construction Standards and Details requires driveway openings along residential roadways to be no more than 28 feet wide at the right-of-way, and for major commercial uses (greater than 20,000 square feet of floor area) to be between 24 and 28 feet wide. Since Loudon Road is not considered a residential roadway and the proposed bank would not meet the square footage criteria for a major commercial use, Article 28-7, Section 28-7-7(f) of the City of Concord's Code of Ordinances was reviewed for driveway width requirements.

Accordingly, driveways connecting parking lots with a roadway shall be between 24 and 28 feet wide for two-way traffic flow. As depicted on the September 2024 Proposed Site Plan (Sheet C-2) prepared by the Site Engineer, the proposed site driveway has been designed to be no more than 28 feet wide at the right-of-way line. Therefore, the width of the proposed site driveway is shown to comply with the City's design requirement.

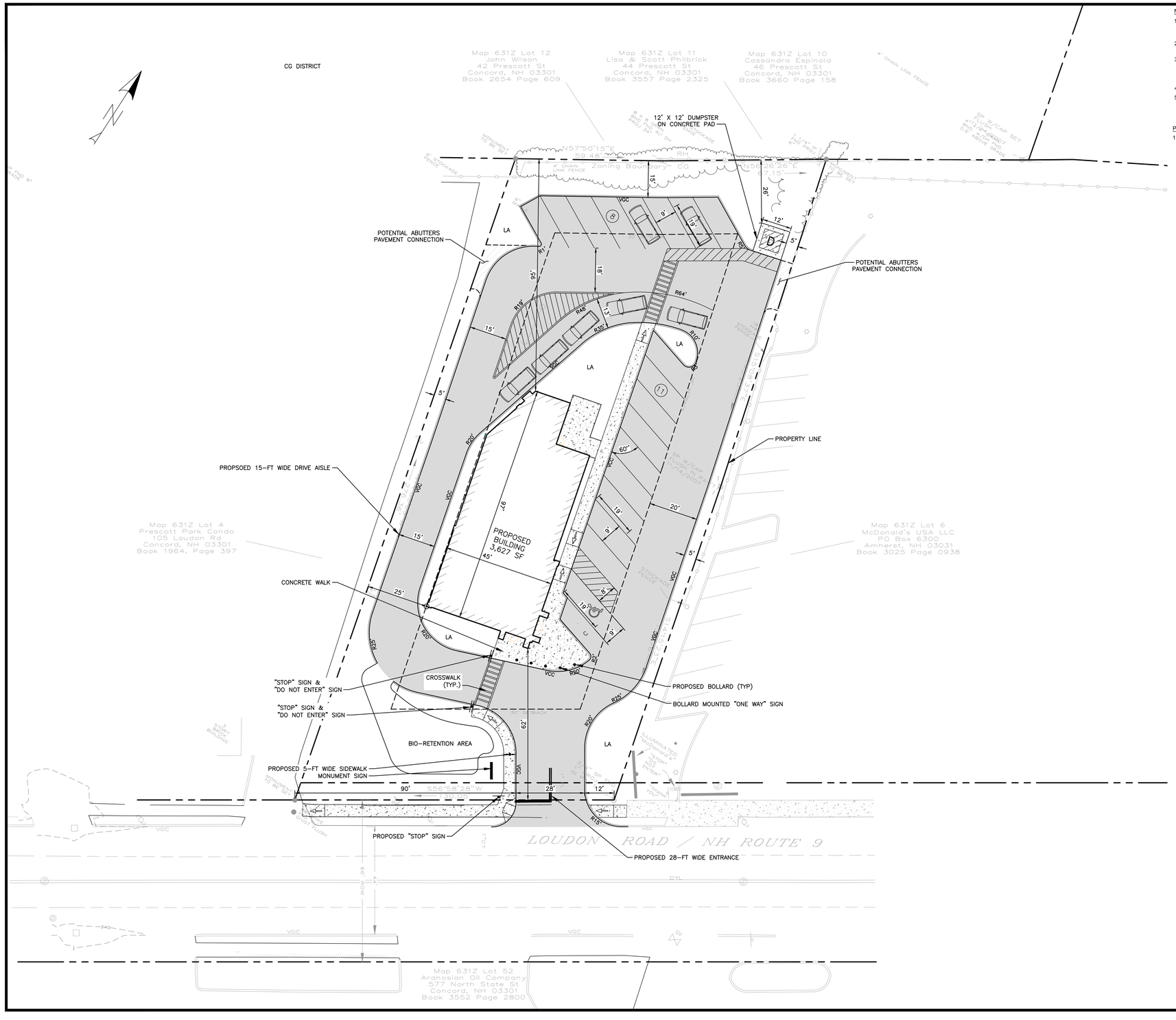
Conclusion

In summary, ITE and NHDOT methodologies suggest that a development may have a noticeable impact if the addition of site trips increases traffic volumes at an intersection by 100 vehicles per hour or more. Based on the findings of this Traffic Study, the site trips for the proposed bank development are below this threshold (between 36-96 total vehicle trips per hour and between 19-79 additional vehicle trips per hour). These site trips added to the roadway network are considered to be representative of the typical fluctuation of traffic volumes within the area. Therefore, the proposed development is anticipated to result in negligible impacts to the adjacent roadway network. In addition, the two existing site driveways will be consolidated into one access point along Loudon Road. The proposed site driveway was designed in accordance with Section 9.01.A.3 of the City of Concord's Construction Standards and Details for driveway location and with Article 28-7, Section 28-7-7(f) of the City of Concord's Code of Ordinances for driveway width.

Appendix

Conceptual Site Plan
Trip-Generation Calculations

Conceptual Site Plan



NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SITE LAYOUT FOR THE PROPOSED CONSTRUCTION OF A NEW BANGOR SAVINGS BANK WITH DRIVE THRU TELLER WINDOWS.
2. ALL BUILDING AND SITE CONSTRUCTION TO COMPLY WITH THE RULES AND REGULATIONS OF THE AMERICANS WITH DISABILITY ACT (ADA) 2010 EDITION.
3. DIMENSIONS SHOWN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR TO USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND / OR SPECIFICATIONS, THE ENGINEER WILL BE NOTIFIED BY THE CONTRACTOR.
4. PROPOSED BUILDING WILL BE SERVICED BY MUNICIPAL WATER AND SEWER.
5. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR WILL COORDINATE WORK WITH THE CITY FIRE, POLICE, AND COMMUNITY DEVELOPMENT DEPARTMENTS.

PLAN REFERENCES:

1. EXISTING CONDITIONS, TOPOGRAPHICAL INFORMATION, NORTH ORIENTATION, NORTH ARROW, AND COORDINATE VALUES DEPICTED ON THESE DRAWINGS ARE BASED ON PLANS TITLED "ALTA/NSPS LAND TITLE SURVEY OF THE LAND OF 95 LOUDON ROAD, LLC", DATED JUNE 22, 2021, PROVIDED TO NOBIS GROUP, BY RICHARD D. BARTLETT ASSOCIATES, LLC.

ZONING ANALYSIS

TAX MAP/BLOCK/LOT:	MAP 631Z / LOT 5
ADDRESS:	111 LOUDON RD CONCORD, NH
ZONING DISTRICT:	GENERAL COMMERCIAL (CG) DISTRICT
USE:	COMMERCIAL

MINIMUM LOT AREA	PROVIDED
25,000 SF	33,632 SF (0.77 ACRES)
MINIMUM LOT FRONTAGE	PROVIDED
150'	130'
MAXIMUM LOT COVERAGE	PROVIDED
80%	22,474 SF (67%)
BUILDING COVERAGE	PROVIDED
	3,627 SF (11.0%)

BUILDING SETBACKS REQUIRED		PROVIDED
FRONT YARD	30'	62'
SIDE YARD	25'	25'
REAR YARD	30'	95'

PARKING SETBACKS REQUIRED		PROVIDED
FRONT YARD	NO PARKING	NO PARKING
SIDE YARD	5'	26'
REAR YARD	15'	15'

REQUIRED PARKING SPACES
BANK WITH DRIVE THRU = 1 SPACE / 200 SF PLUS 5 STACKING SPACES PER WINDOW

	REQUIRED	PROPOSED
TOTAL SPACES:	19	19
ACCESSIBLE SPACES:		1
COMPACT SPACES:		1

SIGN SCHEDULE

M.U.T.C.D. NUMBER	SPECIFICATION WIDTH	SPECIFICATION HEIGHT	MOUNTING HEIGHT	SIGN
R1-1	30"	30"	7'-0"	STOP
R7-8	12"	18"	7'-0"	RESERVED PARKING
R7-8A	12"	6"	6'-5"	VAN ACCESSIBLE
R8-3A	12"	18"	7'-0"	NO PARKING
BZ-RA	12"	18"	7'-0"	COMPACT CAR PARKING ONLY

nobis
Nobis Group®
18 Chenell Drive
Concord, NH 03301
T(603) 224-4182
www.nobis-group.com

PROGRESS PRINT
Dec 13, 2024

NOT ISSUED FOR CONSTRUCTION

BANGOR SAVINGS BANK

111 LOUDON ROAD
CONCORD, NEW HAMPSHIRE

APPLICANT:
BANGOR SAVINGS BANK
P.O BOX 930
BANGOR, ME 04402

NO.	DATE	DESCRIPTION

REVISIONS

0 20' 40'
GRAPHIC SCALE
1 INCH = 20 FEET

DATE:	DEC 2024
NOBIS PROJECT NO.	100165.00
DRAWN BY:	KLR
CHECKED BY:	JIR
CAD DRAWING FILE:	100165.00-C-200-SITE.dwg

SHEET TITLE

PROPOSED SITE PLAN

SHEET
C-2

J:\100165.000 Bangor Savings Bank 111 Loudon Rd, Concord, NH\CAD\dwg\100165.00-C-200-SITE.dwg 12/13/2024 8:02 AM

Trip-Generation Calculations

ITE TRIP GENERATION WORKSHEET
(11th Edition, Updated 2021)

LANDUSE: Drive-In Bank
LANDUSE CODE: 912
SETTING/LOCATION: General Urban/Suburban
JOB NAME:
JOB NUMBER:

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

FLOOR AREA (KSF): 3.627

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	19	--	100.35	32.67	408.42	6	2.02	15.00	50%	50%
AM PEAK OF GENERATOR	51	--	14.78	4.18	47.03	5	1.50	15.00	53%	47%
PM PEAK OF GENERATOR	57	--	20.92	4.54	68.50	5	2.00	15.00	50%	50%
AM PEAK (ADJACENT ST)	44	--	9.95	2.12	29.47	5	2.02	15.00	58%	42%
PM PEAK (ADJACENT ST)	114	--	21.01	3.04	109.91	4	0.58	15.00	50%	50%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	364	182	182	--	--	--
AM PEAK OF GENERATOR	54	28	25	--	--	--
PM PEAK OF GENERATOR	76	38	38	--	--	--
AM PEAK (ADJACENT ST)	36	21	15	--	--	--
PM PEAK (ADJACENT ST)	78	39	39	--	--	--

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	--	86.48	42.46	171.78	3	2.02	5.12	50%	50%
PEAK OF GENERATOR	41	--	26.35	7.18	107.00	4	2.00	12.00	51%	49%

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	314	157	157	--	--	--
PEAK OF GENERATOR	96	49	47	--	--	--

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	5	--	31.96	23.41	69.31	3	2.02	5.12	50%	50%
PEAK OF GENERATOR	5	--	4.79	3.68	7.43	3	2.02	5.12	N/A	N/A

TRIPS:

	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	116	58	58	--	--	--
PEAK OF GENERATOR	17	--	--	--	--	--

ITE TRIP GENERATION WORKSHEET
(11th Edition, Updated 2021)

LANDUSE: Medical-Dental Office Building - Stand Alone
LANDUSE CODE: 720 Independent Variable --- 1,000 Sq. Feet Gross Floor Area
SETTING/LOCATION: General Urban/Suburban
JOB NAME: **FLOOR AREA (KSF):** 5.510
JOB NUMBER:

WEEKDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	18	0.92	36.00	14.52	100.75	15	1.575	60.000	50%	50%
AM PEAK OF GENERATOR	21	0.74	3.74	1.21	19.28	15	1.575	60.000	59%	41%
PM PEAK OF GENERATOR	22	0.95	4.79	1.88	15.55	18	1.575	90.000	40%	60%
AM PEAK (ADJACENT ST)	24	0.80	3.10	0.87	14.30	25	1.575	95.000	79%	21%
PM PEAK (ADJACENT ST)	30	0.77	3.93	0.62	8.86	23	1.575	95.000	30%	70%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	200	100	100	130	65	65
AM PEAK OF GENERATOR	21	12	8	22	13	9
PM PEAK OF GENERATOR	26	11	16	19	8	11
AM PEAK (ADJACENT ST)	17	13	4	18	14	4
PM PEAK (ADJACENT ST)	22	6	15	19	6	13

SATURDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	3	--	13.78	5.24	21.93	31.000	26.000	43.000	50%	50%
PEAK OF GENERATOR	2	--	3.02	1.33	4.02	34.000	26.000	43.000	57%	43%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	76	38	38	--	--	--
PEAK OF GENERATOR	17	9	7	--	--	--

SUNDAY

RATES:

	# Studies	R^2	Total Trip Ends Average	Total Trip Ends Low	Total Trip Ends High	Independent Variable Range Average	Independent Variable Range Low	Independent Variable Range High	Directional Distribution Enter	Directional Distribution Exit
DAILY	2	--	1.14	0.39	1.58	34.000	26.000	43.000	50%	50%
PEAK OF GENERATOR	2	--	0.22	0.12	0.28	34.000	26.000	43.000	52%	48%

TRIPS:

	BY AVERAGE Total	BY AVERAGE Enter	BY AVERAGE Exit	BY REGRESSION Total	BY REGRESSION Enter	BY REGRESSION Exit
DAILY	8	4	4	--	--	--
PEAK OF GENERATOR	1	1	1	--	--	--