MINOR SITE PLAN SUBMISSION

45 BELMONT AVENUE
CITY OF BELFAST

Prepared By:

ACORN ENGINEERING, INC.

For:

WALDO COMMUNITY ACTION PARTNERS

JULY 1, 2025

Section A

Cover Letter & Preliminary Comment Response

ACORN ENGINEERING, INC.

City of Belfast
Attn: Bub Fournier | Director, Planning and Codes Department
Attn: Alexandra Sykes | City Planner, Planning and Codes Department
131 Church Street
Belfast, ME 04915

July 1st, 2025

Subject: Waldo Community Action Partners Multifamily Development
Multi-Family Site Plan Application, 9 Units or More

Bub and Alexandra:

On behalf of Waldo Community Action Partners (WCAP), we are pleased to submit this Multi-Family Site Plan application for a proposed residential project located along Belmont Avenue, west of the existing Tractor Supply Company. The project includes the construction of an affordable 60-unit residential building with associated parking and other site amenities. The existing 78-acre subject parcel, Tax Map 5, Lot 23, is located in the Route 3 Commercial Zoning District. The project proposes the creation of one new 4.01-acre lot to run with this new development. The remaining 74 acres are not proposed for development at this time. No modifications or change in lot dimensions are proposed on the neighboring Tractor Supply Company lot (Map 5, Lot 23A).

The proposed 3-story multifamily building will provide a mixture of affordable 1, 2, and 3-bedroom. The units will be deed-restricted for affordability with the project seeking funding from the Maine State Housing Authority (MSHA). Architectural form will feature traditional New England styles, incorporating multi-pitch trusses resulting in a gable/hip roof form.

The project has been designed to utilize existing infrastructure to the greatest extent feasible, while minimizing land disturbance and avoiding any impacts to the surrounding wetlands. Landscaping has been incorporated throughout the site to complement the building and provide vegetated buffers. Additionally, stormwater treatment best management practices meeting the Maine Department of Environmental Protection's Chapter 500 standards will be implemented. The site will be accessed through an existing shared drive off Belmont Ave, located within a right-of-way owned by WCAP. This shared drive was previously permitted and constructed in tandem with the Tractor Supply Company facility.

We're excited to put forth this important project which will bring much-needed affordable housing to Belfast. This submission package is intended to meet the City's Site Plan submission requirements as outlined in the Site Plan Review standards, as well as various supplemental performance standards applicable to the subject parcel and proposed use. If you have any questions regarding these materials or the completeness of the application materials, please do not hesitate to contact us.

Sincerely,

Samuel J. Lebel, P.E.
Senior Project Manager
Acorn Engineering, Inc.

Finn A. Bondeson, P.E.
Associate Project Manager
Acorn Engineering, Inc.

The following materials have been submitted with this application to document the application's conformity with the local zoning ordinance and Site Plan application standards.

Documents:

A. Cover Letter & Preliminary Comment Response
B. Agent Letter
C. Right, Title, Interest & Certification of Corporate Good Standing
D. Waiver Requests
E. Zoning & Location Map
F. Financial Capacity
G. Technical Capacity
H. Abutter Map & List of Abutters within 150-feet
I. Natural Resources Reports – *by Mark Hampton Associates*
J. FEMA Mapping
K. Erosion & Sedimentation Control Report
L. Traffic Analysis
M. Photometric Plan & Lighting Cut Sheets – *by Reflex Lighting*
N. Utilities Coordination
O. Turning Templates
P. Stormwater Management Report
    1. Pre-Development Stormwater Plan
    2. Post-Development Stormwater Plan
    3. HydroCAD analyses
    4. Class A-High Intensity Soil Survey Report Soil Report – *by Mark Hampton Associates*
    5. Developed & Impervious Area Exhibit
Q. Site Plan & Nonresidential Development Standards Outline

Plans

- Civil/Site Plans & Details (dated 06/30/25)
- Architectural Floor Plans and Façade Schematic (dated 06/24/25, progress-level) – *by Callender + Delaney Architects*

ACORN ENGINEERING, INC.

City of Belfast
Attn: Alexandra Sykes, City Planner
131 Church Street
Belfast, Me 04915

July 1st, 2025

Subject: Site Plan Application, Preliminary Comment Response
45 Belmont Avenue Affordable Housing

Alexandra:

On behalf of WaldoCAP and the design team, Acorn Engineering is pleased to respond to the following preliminary comments from Staff and Olver Associates' review of the Site Plan Application submitted on June 17th, 2025. We are requesting to appear before the Belfast Planning Board on July 9th, 2025 for Preliminary Review and discussion. The following responses address City Staff and City Engineer comments received on the initial submission.

Miscellaneous

Comment: *In your cover letter, we recommend updating to include 'Item Q. Zoning Narratives'*

Response: Please see revised Cover Letter, Attachment A.

Comment: *As discussed, we are all aware there have been issues with the private access drive to tractor supply. Just to clarify, are you proposing any repairs/maintenance and/or updates to the private access road off Belmont Ave to your property that is shared with access to tractor supply?*

Response: At this time, we are not proposing changes to the private access road off Belmont Ave. shared with Tractor Supply Company (TSC). The Applicant will review the condition of the existing driveway further and discuss the condition and potential repairs with TSC. Depending on the results of the review and discussions, the Applicant may conduct in-kind repairs as part of the project.

Regarding Chapter 90 – Site Plan Criteria

Comment: *(2) Sufficient Water and Municipal Water Supply. Does this capacity letter accommodation for sprinkler requirements for the proposed multi-family building?*

Response: The capacity letter does not specify any additional accommodation for fire protection. In the letter, Belfast Water District acknowledges that the Applicant can install a new water service and a new fire service, and BWD has capacity to serve the development.

Mechanical and sprinkler design for the fire protection system is yet to occur, typical of residential projects at this stage, particularly affordable housing projects which have a prolonged funding and design phase. If required, a booster pump may be incorporated in the building to supplement the fire protection system.

Comment: *(5) Highway and public road construction. There will likely be a discussion regarding generation of a shared maintenance/snow plowing agreement between WCAP and Tractor Supply regarding private access road off Belmont Ave.*

Response: Understood, thank you for your review.

Comment: *(6) Sewage Waste Disposal + (7) Municipal solid waste and sewage waste disposal. No concern, just comment. This may warrant further discussion regarding WWTP comments regarding considerations for a plan to address prevention of materials detrimental to pump station operation from entering the waste stream. See City Engineer's comment regarding manhole detail within the civil details.*

Response: The Applicant has confirmed that they will provide educational materials to their tenants on proper disposal of materials detrimental to sanitary sewer operations, and agrees that this is generally good practice for landlords. Additionally, the manhole detail has been revised per City Engineer's comment, see Sheet C-43.

Comment: *(17) Access to direct sunlight for abutting property owners for solar energy systems. Not a concern, just curious – based on the topography of the site how much taller do you anticipate the proposed 3-story building sit in relation to the neighboring Tractor Supply building?*

Response: Comment received. Please see the Architectural Plans for a progress-level schematic representation of the proposed building's front façade. This schematic is a snip of the Architect's 3D model of the building and does not depict landscaping or site features. Further information on building elevations and relationship with the neighboring commercial use will be available at Final Review. It should be noted that there will be significant horizontal separation between the two buildings.

Comment: *(19) Exterior Lighting . Can you confirm that the lighting specified will be 'downward-directed, full-cut off, and less than or equal to 3000K in color temperature'?*

Response: Please see response from Reflex Lighting: "All fixtures proposed for this site are 3000K CCT and full cutoff, downward directed."

Comment: *(23) Landscaping. With the change in topography from site to private access road – the proposed development will essentially be up on a knoll – was the landscaping plan proposed designed with this in mind to provide adequate screening of adjacent Tractor Supply Building and parking area? It might be beneficial to speak to this elevation change as a means for buffering from a commercial use during the presentation at the Planning Board.*

Response: The proposed tree plantings shown on Sheet L-2 considered screening between the proposed multifamily building and the neighboring commercial use. Shade trees and shrub plantings provided to the southeast of the proposed building are intended to screen the building from the access drive and Tractor Supply Company. To the northeast of the proposed building, a combination of existing vegetation to remain, a slight knoll, and proposed tree and shrub plantings are intended to provide adequate screening.

Comment: *(25) Location of off-street parking. Please see City Engineer's comment re: turnaround area.*

Response: Please see Attachment O for turning templates demonstrating a passenger vehicle's ability to enter and exit the end-of-row spaces adjacent to the solid waste enclosure and proposed fire lane.

Comment: *(28) Protection of public health and safety. No question – just comment. I will note the initial conversation with Fire Chief in Findings regarding proper emergency vehicle access in relation to site layout. A future letter from Fire Chief regarding development may be discussed.*

Response: Comment received. Thank you for noting our initial conversation with Chief Richards.

<u>Regarding Chapter 102 – Zoning Criteria</u>

Comment: *102-1184 Minimum side setback and buffer yard. Within the Dimensional Tables for Division 16 – Northwesterly of the Bypass Outside Rural Zoning Districts – for Route 3 Commercial Zoning District – the side setback for multifamily is 25 feet – your site plan indicates 15 feet. Because this is a non-residential use there is not a reduction in buffer yard based on joint access drive to one or more adjacent uses.*

- *It currently appears that the side setback is taken from the 100' ROW easement with tractor supply. Does the 4.01-acre lot include the 100' ROW easement for the access road?*

  Response: The 4.01-acre lot does not include the 100' ROW easement for the access road. This easement will remain WaldoCAP property but will not be a portion of the Development Parcel.

- *If it does include the 100' ROW easement, the 25' set back would technically be from the edge of property line – but since it would exceed the 25' being roughly 120' to the edge of proposed parking lot - the 25' side setback and buffer yard will need to be represented from the edge of the parking outward towards the access road and layout should be fine to remain as is as long as buffer yard meets the 25'.*

  Response: N/A - Please see revised Sheet C-10 included with this submission for 25-foot side and rear buffer yard & setback depiction.

- *If it does not include the 100' ROW easement, essentially creating a new property line as shown, the 15' side setback and buffer yard would need to increase to 25' which would require the layout of the plan to shift slightly; as there is no parking allowing in the side buffer yard area.*

  Response: Please see revised Sheet C-10 included with this submission for 25-foot side and rear buffer yard & setback depiction.

Comment: *102-1185 Minimum rear setback and buffer yard. Within the Dimensional Tables for Division 16 – Northwesterly of the Bypass Outside Rural Zoning Districts – for Route 3 Commercial Zoning District – the rear setback for multifamily is 25 feet – your site plan indicates 15 feet. This would not impact the current layout as much as it appears there is 43' from the property line to edge of sidewalk adjacent to rear setback. Please update the setback on the plans to 25'.*

- *See additional notes above about what the 4.01 acre includes.*

  Response: Please see revised Sheet C-10 included with this submission for 25-foot side and rear buffer yard & setback depiction.

Comment: *Dimensional Standard – Route 3 Commercial - Lot Coverage. What is the total percentage of lot coverage of the site for all impervious area proposed (building, parking, roads, etc.)? I apologize if this is somewhere in the plan set and I missed this % calculation.*

Response: The total percentage of impervious area for the lot is 27.8%. Please see Sheet C-10 included with this submission for lot coverage calculation.

Comment: *102-1186 Minimum buffer yard planting requirements for nonresidential uses. All appears in accordance with code requirements except for rear buffer, which is 40-30 points – you have indicated 30 points. Since the majority of the property to the rear will remain in its native state and the Board as the authority to alter density – it should be ok. Just something I might highlight for further discussion with the Board.*

Response: Please see Attachment D for a waiver request of this rear buffer standard, requested in context of the 4.01-acre development parcel and surrounding vegetation and wetlands to remain.

Comment: *102-1187 Nonresidential design standards. I understand this is in preliminary stages of design however can you confirm that the pitch of the roof will be greater than or equal to a pitch of 3 in 12 for compliance with section C and will include three or more roof slope planes? I see you indicated that elevations are forthcoming- might these be available for the final plan review? If so, compliance can be verified then as well.*

Response: Please see the Architectural Plans for a progress-level schematic representation of the proposed building's front façade. This schematic is a progress still shot of the Architect's 3D model of the building and does not depict landscaping or site features.

Additional building elevations are forthcoming and will be provided for Final Review. It is anticipated the building will contain three or more roof slope planes. The steepest slope is currently depicted at 6:12.

Comment: *102-1188 Parking areas – amount and layout of parking. No concern, just comment. In your response you have indicated comments regarding having the majority of the parking at front and side of building than at rear. This will likely be a discussion point at the review – your response to code is clearly articulated and develops a good case for allowances for parking layout as presented.*

Response: Thank you, comment received.

Comment: *102-1189 Parking areas – landscaping requirements. Can you please clarify the width of landscaped strip between structure and sidewalk at front and sides of building? This may bring up a discussion of the types of trees/shrubs within the required planting islands as shown on the plan per the number of cars in a row within the parking layout. No further action required currently.*

Response: Thank you, comment received. Dimensions of the landscaped strip are variable and are depicted on Sheet C-10.

Comment: *102-1190 Curb cuts and site access. No action required, just a comment. This may prompt a further discussion about the need for a connector sidewalk within the City Right-of-Way from Belfast Soup Kitchen to proposed development to provide increased access to commercial entities by foot-traffic and/or bike.*

Response: Thank you, comment received.

Comment: *102-1191 Internal circulation. No action required, just a comment. Further discussion may occur regarding internal pedestrian features (such as safety of mowed grass path directly to Route 3 with no connection to sidewalk + navigation around stormwater detention area in close proximity). Have bike racks on the property been considered?*

Response: Thank you, comment received.

Comment: *102-1196 Glare/lighting. See response to Site Plan Criteria #19 above + ensure sections 1-8 of this section are in compliance with provided lighting plan.*

Response: Please see response from Reflex Lighting: "In my opinion, our lighting plan meets the standards set forth by the [City] ordinance." In addition, please see Attachment D for a waiver request of 102-1196 (5), technically required for one light pole located along the access drive.

Comment: *102-1207 Performance guarantee for required improvements. This will be a discussion topic for the Board at the meeting and will be able to give further direction then.*

Response: Thank you, comment received.

Comment: *102-1208 Determination of project ownership and mechanism to construct and maintain required improvements. See response to Site Plan criteria #5 above regarding maintenance/snow plow agreement discussion for private access road off Belmont Ave.*

Response: Comment received and communicated to the Applicant for further discussion.

Comment: *102-1209 Handicap accessibility. Will all the sidewalk curb ramps internally and externally to crossing on private access drive towards Tractor Supply be designed to be ADA accessible?*

Response: All curb ramps internally and externally to the crossing on the private access drive toward Tractor Supply Company will be designed to meet ADA standards. However, this sidewalk in its entirety will not be considered an "accessible route". A portion of the sidewalk run along the proposed driveway will be greater than 5% in running slope. All routes between ADA parking areas and primary entrance doorways will be accessible routes meeting ADA standards.

<u>Review Comments – Olver Associates, City Engineer</u>

Comment: *We do not have any concerns regarding the stormwater management system as proposed. The stormwater management design is intended to address both the Maine DEP water quality treatment standards and the city's peak flow rate quantity ordinance requirements. The proposed project would have 1.13 acres of impervious area added to the site. The existing topography brings the site surface runoff toward Route 3 either into the TSC driveway drainage and detention system or to the southern corner of the site into a 30 inch diameter culvert crossing under Route 3. The proposed drainage system will continue outletting to these locations with a peak post development rate restricted to predevelopment rates or less. Water quality treatment will be conducted using roof drip line filtration and initial pollutant trapping in the parking lot drainage systems. Both water quality and quantity treatment will occur in the proposed Vegetated Under Soil Filter (VUSF). The VUSF will discharge onto undisturbed land at the southern end of the site and flow to the existing 30 inch culvert under Belmont Avenue.*

Response: Thank you, comment received.

Comment: *We have reviewed the Erosion and Sedimentation Control Plan and have no questions or comments.*

Response: Thank you, comment received.

Comment: *A minor comment on the typical manhole Detail is that it is preferred that concrete risers be utilized rather than brick.*

Response: Please see Sheet C-43 for the revised Precast Concrete Manhole detail.

Comment: *Regarding the waiver request for compact car spaces, we feel this is reasonable and do not have a concern.*

Response: Thank you, comment received.

Comment: *Regarding the waiver request to narrow the parking lanes to 24 feet, its true that this is allowed especially for a low turnover parking application, so this could be considered further based on applicant's response to comment 6.*

Response: Thank you, comment received.

Comment: *For parking spaces on the end of the 7 compact spaces and for those at the end near the dumpster, how are vehicles exiting the lot going to turn around to face toward the exists as there is no turning space provided? At the compact space area, the grade will slope from the edge of the lot down into the VUSF. Will there be a barrier there (besides the curb)?*

Response: We have added a small turnaround area at the end of the drive aisle. A wood guardrail is proposed behind the curb along the southwesterly drive aisle.

Please let us know if you have any additional questions or comments.

Sincerely,

Samuel J. Lebel, P.E.
Senior Project Manager
Acorn Engineering, Inc.

Finn A. Bondeson, P.E.
Associate Project Manager
Acorn Engineering, Inc.

Section B

Agent Letter

Waldo Community Action Partners
WCAP
we care about people

DONNA M. KELLEY, LCSW
President & CEO

June 9, 2025

Waldo Community Action Partners
P.O. Box 130
Belfast, ME 04915

LB Development Partners
P.O. Box 10452
Portland, ME 04104

Acorn Engineering
P.O. Box 3372
Portland, ME 04104

To Whom It May Concern:

Waldo Community Action Partners (Waldo CAP) and LB Development Partners hereby grant Acorn Engineering the authority to act on their behalf in matters concerning permitting when engaging with Local and State of Maine authorities.

Both Waldo CAP and LB Development Partners request to be copied on all correspondence.

Thank you,

Donna M Kelley

Donna M. Kelley, LCSW
President and CEO
Waldo Community Action Partners

Section C

Right, Title, Interest &

Certification of Corporate Good Standing

Receipt # 159383 WALDO SS: RECEIVED
VOL 4699 PG 269
Instr # 2021-9610
08/27/2021 03:17:48 PM
6 Pages

ATTEST: Stacy L Grant, Waldo Co Registry of Deeds

WARRANTY DEED

KNOW ALL BY THESE PRESENTS that **B & G BELFAST PROPERTIES LLC,** a Maine limited liability company with offices at 2 Madison Avenue, Oxford, Maine 04270 ("Grantor"), for full value and consideration paid, hereby grants to **WALDO COMMUNITY ACTION PARTNERS**, a Maine nonprofit corporation, with principal offices at 9 Field Street, Belfast, Maine 04915-6661 ("Grantee") with WARRANTY COVENANTS,

"Maine Real Estate Transfer Tax Paid"

All of that certain real estate situate in the City of Belfast, County of Waldo and State of Maine, being more particularly described in the **EXHIBIT A** attached hereto and made a part hereof.

Said real estate is hereby conveyed subject to all easements, covenants, and restrictions of record.

IN WITNESS WHEREOF, the undersigned has caused this instrument to be executed as of the 25 day of August 2021.

WITNESS:

B & G BELFAST PROPERTIES LLC

By: _____
Gary G. Bahre, Manager

STATE OF MAINE
COUNTY OF OXFORD

August 25, 2021

Then personally appeared before me the above-named Gary G. Bahre, Manager of B & G Belfast Properties LLC, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of B & G Belfast Properties LLC.

Before me,

_____
Notary Public Nancy Ann Cushman
Commission Expiration: 8/7/2028

SEAL

EXHIBIT A

A certain lot or parcel of land located approximately 2,200 feet westerly of Route 1 Bypass on the northerly side of Route 3 (Belmont Ave.) in the City of Belfast, County of Waldo, State of Maine, being more particularly described as follows:

Beginning at a 5/8 inch rebar set in 1997 on the northerly right-of-way line of said Route 3 at the southeasterly corner of land of Bracebridge Corporation as described in a deed recorded in Book 2106, Page 348 of the Waldo County Registry of Deeds;

Thence North 21°33'39" West along said land of Bracebridge Corporation a distance of 285.10 feet to a 5/8 inch rebar set in 1997;

Thence North 15°48'35" West along said land of Bracebridge Corporation a distance of 86.48 feet to a 5/8 inch rebar set in 1997 at land now or formerly of Scott 86 Carol Pelletier as described in a deed recorded in Book 1095, Page 337 of the Waldo County Registry of Deeds;

Thence northwesterly partially along a stone wall, along said land now or formerly of Scott & Carol Pelletier and land now or formerly of Linewood K. and Shirley E. Walker as described in a deed recorded in Book 577, Page 247 of the Waldo County Registry of Deeds to a 1 inch iron pipe found in 1997. The tie-line for this course is North 15°30'19" West a distance of 414.80 feet;

Thence North 16°16'29" West along said land now or formerly of Linewood K. and Shirley E. Walker a distance of 197.96 feet to a 1 inch pipe (bedrail) found in 1997;

Thence North 15°50'38" West along said land now or formerly of Linewood K. and Shirley E. Walker, a distance of 95.59 feet to a 5/8 inch rebar set in 2000 at land of Springbrook Hill, LLC as described in a deed recorded in Book 2853, Page 68 of the Waldo County Registry of Deeds;

Thence North 54°01'21" East along said land of Springbrook Hill, LLC a distance of 53.25 feet to a 5/8 inch rebar set in 2000;

Thence North 15°50'59" West along said land of Springbrook Hill, LLC a distance of 2116.36 feet to a 5/8 inch rebar set in 2000 at land of Bracebridge Corporation as described in a deed recorded in Book 2095, Page 55 of the Waldo County Registry of Deeds;

Thence North 74°09'32" East along said land of Bracebridge Corporation a distance of 851.46 feet to a 5/8 inch rebar set in 1999 at land now or formerly of Burton B. and Maxine York as described in a deed recorded in Book 540, Page 372 of the Waldo County Registry of Deeds;

Thence South 23°35'56" East along said land now or formerly of Burton B. and Maxine York, land now or formerly of Sandra M. Boguen, Et Als as described in a deed recorded in Book 849, Page 339 of the Waldo County Registry of Deeds, land now or formerly of Emile S. Maroun and Wayne J. Corey as described in a deed recorded in Book 928, Page 12 of the

Waldo County Registry of Deeds, and land of Roger A. Webber as described in a deed recorded in Book 791, Page 923 of the Waldo County Registry of Deeds a distance of 842.41 feet to a 2-1/2 inch pipe found in 1997;

Thence South 22°44'53" East along said land now or formerly of Roger E. Webber a distance of 279.70 feet to a 5/8 inch rebar set in 1999 at the beginning of a stone wall;

Thence southeasterly, along said stone wall and along a wire fence, along said land of Roger E. Webber to a 5/8 inch rebar proposed at land now or formerly of Down East Wholesalers, Inc. as described in a deed recorded in Book 2574, Page 134 of the Waldo County Registry of Deeds. The tie-line for this course is South 85°12'20" East a distance of 745.58 feet;

Thence South 04°28'25" West along said land now or formerly of Down East Wholesalers, Inc. a distance of 703.53 feet to a 5/8 inch rebar proposed at a wire fence at land now or formerly of Charles L. and Florence A. Boynton as described in a deed recorded in Book 531, Page 245 of the Waldo County Registry of Deeds;

Thence northwesterly, along said wire fence and along a stone wall, along said land now or formerly of Charles L. and Florence A. Boynton to a 5/8 inch rebar with cap marked "RLS 1356" found in 1997 at a stone wall intersection. The tie-line for this course is North 83°32'09" West a distance of 391.64 feet;

Thence southeasterly partially along a stone wall and said land of Charles L. and Florence A. Boynton to a 5/8 inch rebar with cap marked "RLS 1356" found in 1997 at a stone wall angle point. The tie-line for this course is South 12°45'56" East a distance of 149.87 feet;

Thence Southeasterly, partially along a stone wall, along said land of now or formerly of Charles L. and Florence A. Boynton and land now or formerly of Joan E. Stewart as described in a deed recorded in Book 568, Page 319 of the Waldo County Registry of Deeds to a point on said northerly right-of-way line of Route 3 that is South 09°51'14" East a distance of 0.27 feet from a 7/8 inch rebar found in 1997. The tie-line for this course is South 09°38'51" East a distance of 1293.78 feet;

Thence North 82°44'38" West along said northerly right-of-way line of Route 3 a distance of 69.10 feet;

Thence South 85°41'30" West along said northerly right-of-way line of Route 3 a distance of 0.21 feet from a 5/8 inch rebar found in 1997;

Thence South 85°41'30" West along said northerly right-of-way line of Route 3 a distance of 115.50 feet to a 5/8 inch rebar set in 1997;

Thence South 85°41'30" West along said northerly right-of-way line of Route 3 a distance of 274.37 feet to a 5/8 inch rebar set in 1997;

Thence South 74°35'25" West along said northerly right-of-way line of Route 3 a distance of 166.00 feet to a granite monument found in 1997;

Thence South 74°34'56" West along said northerly right-of-way line of Route 3 a distance of 352.82 feet back to the point of beginning.

MEANING and intending to describe 84.23 acres of land as shown on a plan entitled "Proposed Conveyance, Bracebridge Corporation, Route 3, Belfast, Maine" by Gartley & Dorsky Engineering & Surveying, Inc., dated November 4, 2004.

ALSO CONVEYING a perpetual drainage easement over a "Drainage Easement Premises" as reserved by Bracebridge Corporation in its deed to Down East Wholesalers, Inc. recorded in the Waldo County Registry of Deeds in Book 2574 Page 134, subject to the terms and conditions described therein.

SUBJECT to a permanent 20 feet wide sanitary sewer easement extending from Belmont Avenue across the above-described premises to property conveyed to Springbrook Hill, LLC as described in a deed to Springbrook Hill, LLC recorded in Book 2853, Page 68 of the Waldo County Registry of Deeds.

ALSO SUBJECT to a permanent 20 feet wide drainage easement for a storm water line as described in a deed to Springbrook Hill, LLC recorded in Book 2853, Page 68 of the Waldo County Registry of Deeds.

ALSO SUBJECT to a permanent drainage easement for a water quality pond as described in a deed to Springbrook Hill, LLC recorded in Book 2853, Page 68 of the Waldo County Registry of Deeds.

ALSO SUBJECT to utility easements granted to the City of Belfast by deeds recorded in the Waldo County Registry of Deeds in Book 1266, Page 289, Book 1243, Page 137, Book 1238, Page 271 and Book 1240, Page 48.

ALSO SUBJECT to utility easements granted to Central Maine Power Company and New England Telephone and Telegraph Company by deeds recorded in the Waldo County Registry of Deeds in Book 907, Page 72 and Book 748, Page 491.

ALSO SUBJECT to a boundary line agreement between Linwood Walker and Shirley Walker and Leslie Hills and Eileen Hills recorded in the Waldo County Registry of Deeds in Book 1743 Page 41.

ALSO SUBJECT to any land and easement rights taken by the State of Maine by instruments recorded in the Waldo County Registry of Deeds in Book 778, Page 257 and Book 590, Page 114.

ALSO SUBJECT to a restrictive covenant that the property shall not be used to conduct a funeral home, mortuary, cremation or any similar or related business for a period of 25 years as described in a deed to John P. Jabar, Jr. recorded in the Waldo County Registry of Deeds in Book 1668, Page 141.

All directions are referenced to Magnetic North 1995. Reference is made to a plan entitled "PROPOSED CONVEYANCE, BRACEBRIDGE CORPORATION, ROUTE 3, BELFAST, MAINE" by Gartley & Dorsky Engineering 86 Surveying, dated November 4, 2004. Reference is also made to a plan entitled "BRACEBRIDGE CORPORATION BELFAST RESIDENTIAL, STORMWATER 86 SANITARY SEWER EASEMENT" by Gartley 86 Dorsky Engineering 86 Surveying, dated October 19, 2001.

All 5/8 inch rebars proposed are marked with a plastic surveyor's cap stamped "DORSKY PLS 2290".

Being all and the same premises conveyed by Bracebridge Corporation to B & G Belfast Properties LLC by deed dated December 27, 2007, and recorded in the Waldo County Registry of Deeds in Book 3171, Page 251.

EXCEPTING AND RESERVING FROM THE ABOVE-DESCRIBED PREMISES, HOWEVER, THE FOLLOWING DESCRIBED PROPERTY:

A certain lot or parcel of land, situated on the northerly side of Belmont Avenue, so-called, also known as State Route 3, so-called, in the City of Belfast, County of Waldo, and State of Maine, being more particularly bounded and described as follows, to wit:

Beginning at a 5/8 inch rebar, capped "PLS 1356", on the northerly side of Belmont Avenue at the southwesterly corner of land now or formerly of the Estate of Joan Kathryn J. Stewart (Book 2816, Page 348);

Thence, from the Point of Beginning, South 79° 47' 28" West, along the said northerly side of Belmont Avenue, a distance of 69.10 feet to a 5/8 inch rebar;

Thence, South 68° 58' 53" West, along the said northerly side of Belmont Avenue, a distance of 239.60 feet to a 5/8 inch rebar capped, "Buker 2397";

Thence, in a general northwesterly direction, along remaining land of B & G Belfast Properties LLC and a curve to the right, a distance of 44.64 feet to a 5/8 inch rebar capped, "Buker 2397", said curve having a radius of 30.00 feet;

Thence, North 25° 45' 52" West, along said remaining land of B & G Belfast Properties LLC, a distance of 67.39 feet to a 5/8 inch rebar capped, "Buker 2397";

Thence, in a general northwesterly direction, along remaining land of B & G Belfast Properties LLC and a curve to the left, a distance of 338.76 feet to a 5/8 inch rebar capped, "Buker 2397", said curve having a radius of 950.00 feet;

Thence, North 46° 11' 44" West, along said remaining land of B & G Belfast Properties LLC, a distance of 74.50 feet to a 5/8 inch rebar capped, "Buker 2397";

Thence, in a general northwesterly direction, along remaining land of B & G Belfast Properties LLC and a curve to the right, a distance of 190.45 feet to a 5/8 inch rebar capped, "Buker 2397", said curve having a radius of 650.00 feet;

Thence, North 29° 24' 29" West, along said remaining land of B & G Belfast Properties LLC, a distance of 10.00 feet to a 5/8 inch rebar capped, "Buker 2397";

Thence, North 63° 41' 56" East, along said remaining land of B & G Belfast Properties LLC, a distance of 448.13 feet to a 5/8 inch rebar capped, "Buker 2397" on the westerly side of land now or formerly of Christopher J. and Lynn R. Boyton (Book 4136, Page 292);

Thence, South 26° 13' 37" East, along said land now or formerly of Boyton, a distance of 349.39 feet to a 3/4 inch iron bolt at the northwesterly corner of said land now or formerly of the Estate of Joan Kathryn J. Stewart;

Thence, South 26° 56' 08" East, along said land now or formerly of the Estate of Joan Kathryn J. Stewart, a distance of 387.57 feet to the Point of Beginning.

The above-described parcel of land contains 6.08 acres, more or less.

All bearings are referenced to Maine State Grid, West Zone, NAD 83.

All Book and Pages refer to the Waldo County Registry of Deeds.

Meaning and intending to describe the same premises conveyed by B & G Belfast Properties LLC to DMK Development – Belfast, LLC by deed dated January 20, 2020, and recorded in the Waldo County Registry of Deeds in Book 4461, Page 167.

THE ABOVE PREMISES ARE CONVEYED SUBJECT TO AND WITH THE BENEFIT OF (1) an Easement / Maintenance Agreement between DMK Development Belfast, LLC and B & G Belfast Properties LLC dated January 20, 2020, and recorded in the Waldo County Registry of Deeds in Book 4461, Page 170, and (2) a Utility Easement Agreement between DMK Development Belfast, LLC and B & G Belfast Properties LLC dated October 28, 2020, and recorded in the Waldo County Registry of Deeds in Book 4572, Page 199.

Section D

Waiver Requests

D. Waiver Requests

Waiver Request #1:

- Ordinance: Section 98-248, Dimensions of Parking Stalls
- Language: The minimum dimensions for parking stalls shall be as follows. Stall depth is perpendicular to the aisle:
    - Standard 90-degree parking space are to be 9' in width by 18' in depth.
- Waiver Being Sought: We are requesting a waiver to construct seven (7) compact 90-degree spaces at 9' in width by 16' in depth at the south of the building.
- Justification for Waiver: The proposed compact space layout provides for a lower development footprint, reduced impervious area, and increased maneuverability for emergency vehicles around the south end of the building, and accommodates residents with smaller vehicle types. The proposed compact spaces account for approximately 11% of the total parking layout, which is well below best practice. These spaces will be signed appropriately and may be assigned to residents who own compact vehicles.

Waiver Request #2:

- Ordinance: Section 98-248, Dimensions of Parking Stalls
- Language: The minimum dimensions for parking stalls shall be as follows. Stall depth is perpendicular to the aisle:
    - Standard 90-degree parking arrays are to have a 26' minimum aisle width.
- Waiver Being Sought: We are requesting a waiver to construct 24' width aisles at all parking arrays onsite.
- Justification for Waiver: Twenty-four foot drive aisle width is a demonstrated best practice across the country for a variety of commercial, and particularly residential uses. This approach allows for a reduction in impervious area while maintaining a safe, functional arrangement in this low-volume, low-turnover setting while allowing for general and emergency vehicle access. Residents will be well acquainted with the site and its geometry vs a high turnover commercial establishment where the familiarity and muscle memory associated with turning movements is not necessarily present.

Waiver Request #3:*

- Ordinance: Section 102-1186, Minimum Buffer Yard Plantings for Nonresidential Use
- Language: The minimum rear buffer plantings should consist of 40 plant units/100 LF, of which 30 plant units should be canopy trees.
- Waiver Being Sought: We are requesting a waiver to plant fewer than the required canopy trees within the rear buffer on the Development Parcel.
- Justification for Waiver: The rear of the proposed Development Parcel abuts adjacent land owned by WCAP, which contains extensive mature and dense

vegetation and forested wetlands. This vegetation, and wetland area, will be preserved to act as a buffer between the proposed building and the nearest rear abutter, the Springbrook Condominiums residential development, which is approximately 800-feet away.

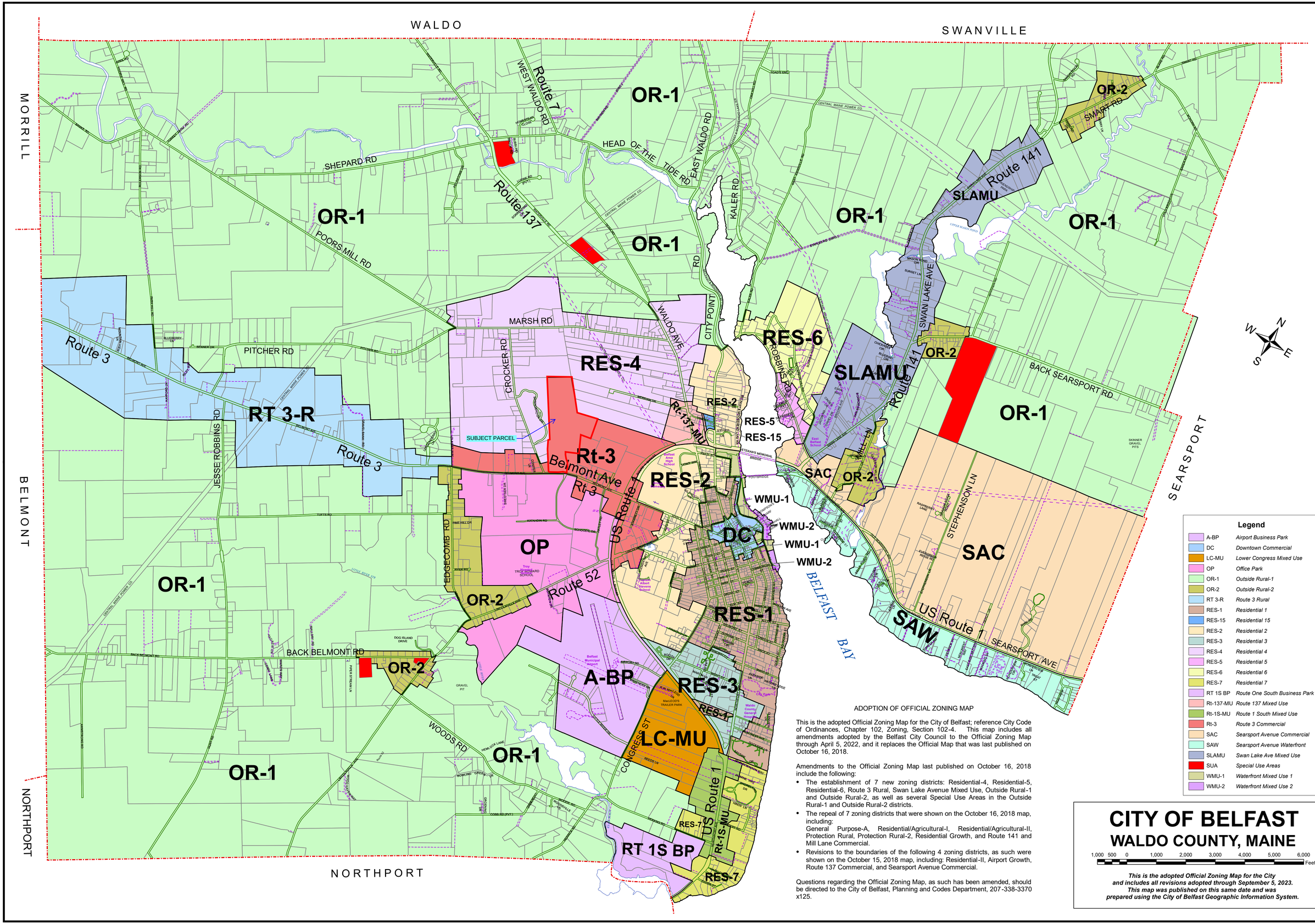
Waiver Request #4:*

- Ordinance: Section 102-1196 (5), Glare/lighting (light trespass)
- Language: Light levels measured 20 feet beyond the property line of the development site shall not exceed 0.1 footcandle as a direct result of the on-site lighting.
- Waiver Being Sought: We are requesting a waiver to construct one (1) light pole within the 100' right-of-way owned by WCAP to light the proposed development's driveway, and to allow modest light trespass beyond the Development Parcel boundary.
- Justification for Waiver: Although there is technically light trespass beyond the 4.01-acre Development Parcel, the proposed photometric plan in Attachment M does not depict light trespass beyond property contiguously owned and controlled by the Applicant. No light trespass is proposed elsewhere beyond the Development Parcel, or onto the Tractor Supply property or Belmont Avenue. Additionally, placing a light pole along the development's driveway will enhance vehicular and pedestrian safety for residents and guests.

* Waiver requested as a matter of technicality due to proposed 4.01-acre Development Parcel being located within WaldoCAP property. Additionally, Section 102 is largely pertinent to *nonresidential* development as written. As noted in Attachment Q, the Applicant is attempting to meet Section 102 standards where practicable as a good-faith effort.

Section E

Zoning & Location Map


WALDO
SWANVILLE
MORRILL
BELMONT
NORTHPORT
SEARSPORT
OR-1
OR-2
RES-4
RES-6
RES-2
RES-5
RES-15
RES-1
RES-3
RES-7
RT 3-R
Rt-3
OP
A-BP
LC-MU
DC
SAC
SAW
SLAMU
WMU-1
WMU-2
RT 1S BP
Rt-137-MU
Rt-1S-MU
SUBJECT PARCEL
Route 7
Route 137
Route 3
Route 52
Route 141
US Route 1
SHEPARD RD
POORS MILL RD
PITCHER RD
MARSH RD
BACK BELMONT RD
WOODS RD
BACK SEARSPORT RD
SEARSPORT AVE
WEST WALDO RD
HEAD OF THE TIDE RD
EAST WALDO RD
KALER RD
CITY POINT RD
WALDO AVE
CROCKER RD
JESSE ROBBINS RD
EDGECOMB RD
SWAN LAKE AVE
STEPHENSON LN
CONGRESS ST
BELFAST BAY
SMART RD
Belmont Ave
Rt-3
Belfast Area High School
Troy Howard School
Belfast Municipal Airport
Waldo County General Hospital
MacLEOD'S TRAILER PARK
SKINNER GRAVEL PITS
GRAVEL PIT
ADOPTION OF OFFICIAL ZONING MAP
This is the adopted Official Zoning Map for the City of Belfast; reference City Code of Ordinances, Chapter 102, Zoning, Section 102-4. This map includes all amendments adopted by the Belfast City Council to the Official Zoning Map through April 5, 2022, and it replaces the Official Map that was last published on October 16, 2018.
Amendments to the Official Zoning Map last published on October 16, 2018 include the following:
The establishment of 7 new zoning districts: Residential-4, Residential-5, Residential-6, Route 3 Rural, Swan Lake Avenue Mixed Use, Outside Rural-1 and Outside Rural-2, as well as several Special Use Areas in the Outside Rural-1 and Outside Rural-2 districts.
The repeal of 7 zoning districts that were shown on the October 16, 2018 map, including: General Purpose-A, Residential/Agricultural-I, Residential/Agricultural-II, Protection Rural, Protection Rural-2, Residential Growth, and Route 141 and Mill Lane Commercial.
Revisions to the boundaries of the following 4 zoning districts, as such were shown on the October 15, 2018 map, including: Residential-II, Airport Growth, Route 137 Commercial, and Searsport Avenue Commercial.
Questions regarding the Official Zoning Map, as such has been amended, should be directed to the City of Belfast, Planning and Codes Department, 207-338-3370 x125.
Legend
A-BP Airport Business Park
DC Downtown Commercial
LC-MU Lower Congress Mixed Use
OP Office Park
OR-1 Outside Rural-1
OR-2 Outside Rural-2
RT 3-R Route 3 Rural
RES-1 Residential 1
RES-15 Residential 15
RES-2 Residential 2
RES-3 Residential 3
RES-4 Residential 4
RES-5 Residential 5
RES-6 Residential 6
RES-7 Residential 7
RT 1S BP Route One South Business Park
Rt-137-MU Route 137 Mixed Use
Rt-1S-MU Route 1 South Mixed Use
Rt-3 Route 3 Commercial
SAC Searsport Avenue Commercial
SAW Searsport Avenue Waterfront
SLAMU Swan Lake Ave Mixed Use
SUA Special Use Areas
WMU-1 Waterfront Mixed Use 1
WMU-2 Waterfront Mixed Use 2
CITY OF BELFAST
WALDO COUNTY, MAINE
1,000 500 0 1,000 2,000 3,000 4,000 5,000 6,000 Feet
This is the adopted Official Zoning Map for the City and includes all revisions adopted through September 5, 2023. This map was published on this same date and was prepared using the City of Belfast Geographic Information System.

Section F

Financial Capacity

774 Main Street
Presque Isle, ME 04769

June 6, 2025

City of Belfast
131 Church Street
Belfast, ME 04915

RE: 45 Belmont Avenue, Belfast, ME

To Whom It May Concern:

On behalf of KeyBank, I am pleased to provide this letter in support of Waldo Community Action Partners for the development of a 60-unit, affordable housing project to be located at 45 Belmont Avenue in Belfast, Maine. Based on our years of working with the organization, we believe that the applicant has the ability to finance the proposed project costs. In addition, they have partnered with a development firm with the management skill and development expertise to successfully complete the proposed project.

While this letter of support is not a commitment to lend, KeyBank would welcome the opportunity to be a resource for project financing. Please feel free to call me at 207-760-4571.

Sincerely,

Brian V. Flewelling

Brian V. Flewelling
Vice President

Section G

Technical Capacity

G. Technical Capacity

Waldo Community Action Partners (WCAP) is a charitable, educational, 501(c)(3) private non-profit based in Belfast, Maine. WCAP utilizes and mobilizes public and private resources designed to assist low-income Waldo County residents in the alleviation of poverty and address its underlying causes, including barriers to housing access. WCAP was founded in 1965, has long-standing partnerships with other community organizations, and involves low-income clients in the agency's operation. WCAP's mission is to empower families, individuals, and communities by removing barriers, promoting economic stability, and improving quality of life, and administers a full range of coordinated programs designed to have a measurable impact on poverty. WCAP has partnered with LB Development who are professional residential developers and have managed the development of a multitude of residential projects, including Maine State Housing projects.

Acorn Engineering, Inc. is a civil and environmental engineering firm with offices in Portland and Kingfield, Maine that provides Maine with quality civil engineering services. Acorn has served as the civil engineer of record on hundreds of projects ranging from small drainage retrofits to Maine's tallest building. Acorn regularly partners with trusted community assistance organizations and developers and has performed civil design and permitting for over 1,000 low-and-moderate income residential units throughout the State of Maine.

Callender + Delaney Architects, *formerly Whipple | Callender Architects,* is a well-known and established architecture firm based in Portland, Maine serving residential, institutional, and commercial clientele throughout New England. Callender + Delaney's approach of creating a traditional New England feel, while implementing current modern design techniques, results in functional, practical spaces suited to the needs of their residents.

Other Members of the Project Team

The following includes qualified professionals which are members of the team responsible for designing and permitting this project:

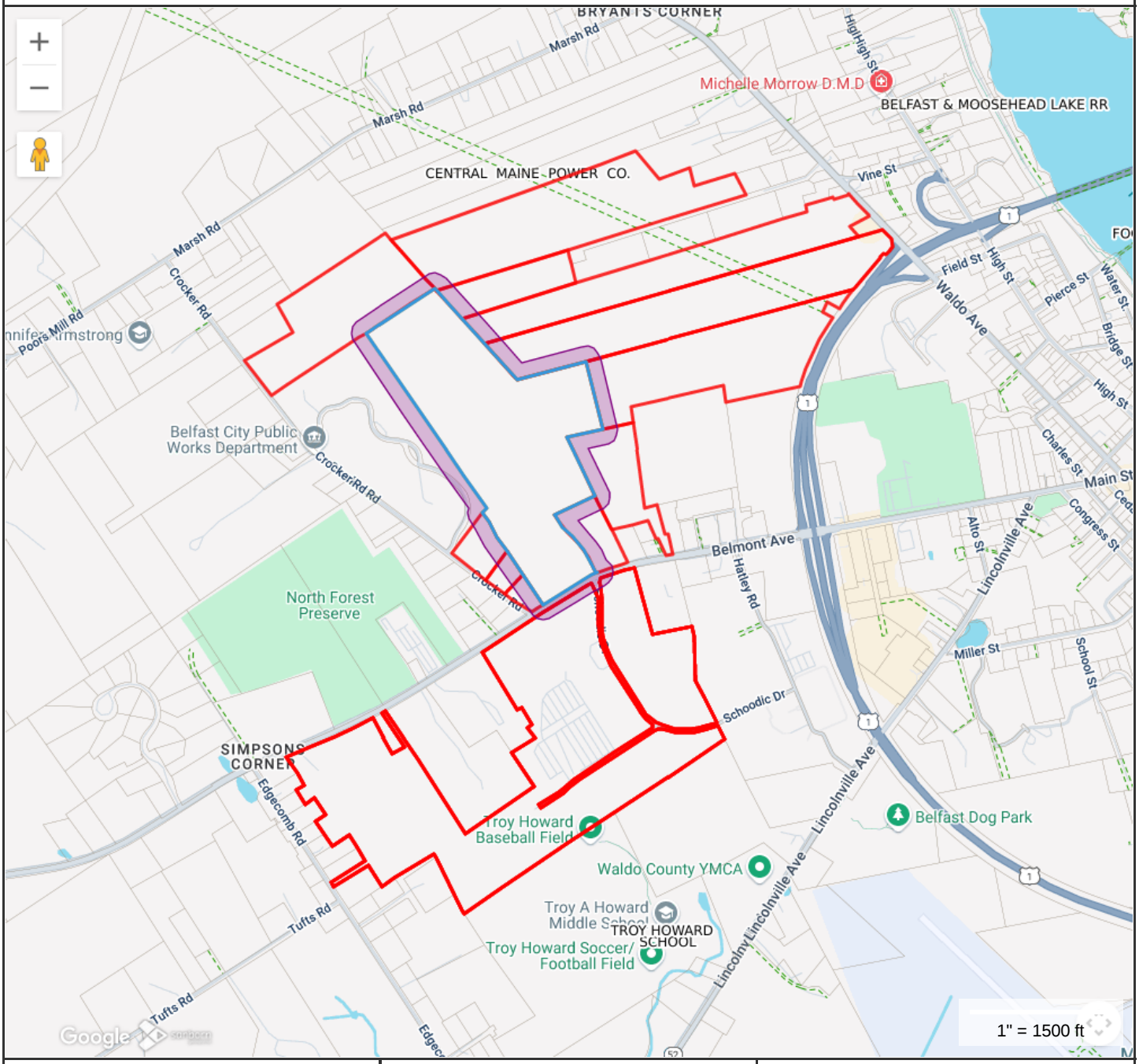
- **Surveyor** – E.S. Coffin Engineering & Surveying, Inc. – Professional Land Surveying
  Mailing Address: 432 Cony Road, Chelsea, Maine 04330

Section H

Abutter Map &

List of Abutters within 150 feet

45 Belmont Avenue



Property Information

Property ID	5714
Location	45 BELMONT AVENUE
Owner	WALDO COMMUNITY ACTION PARTNER

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Belfast, ME makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated September 2024
Data updated September 2024

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

BOYNTON, CHRISTOPHER J
214 CURTIS ROAD
BELFAST, ME 04915

WEBBER, BLAINE S
136 WALDO AVE
BELFAST, ME 04915

WEBBER, BLAINE S
136 WALDO AVE
BELFAST, ME 04915

BELFAST ROUTE 137 PROPERTY, LLC
61 HIGH STREET, APT. 1
BELFAST, ME 04915

YORK, WALTER R. & WINSTON H. TRUSTEES
c/o WALTER YORK
BELFAST, ME 04915

PENOBSCOT COMM HEALTH CTR
103 MAINE AVE.
BANGOR, ME 04402

PENOBSCOT COMM HEALTH CTR
103 MAINE AVE.
BANGOR, ME 04402

PENOBSCOT COMM HEALTH CTR
103 MAINE AVE.
BANGOR, ME 04402

PENOBSCOT COMM HEALTH CTR
103 MAINE AVE.
BANGOR, ME 04402

WALDO COMMUNITY ACTION PARTNERS
P.O.BOX 130
BELFAST, ME 04915

CRESSEY, MICHAEL E
987 DUNBAR HILL RD
GRANTHAM, NH 03753

PELLETIER, SCOTT
9 CROCKER ROAD
BELFAST, ME 04915

PRATT, DAVID R
83 CROCKER RD
BELFAST, ME 04915

BOGUEN, SANDRA M ET AL
19 HEAD OF THE TIDE ROAD
BELFAST, ME 04915

DOWN EAST WHOLESALERS, INC.
731 ROUTE 1
NEWCASTLE, ME 04553

REALTY INCOME PROPERTIES 28, LLC
ATTN: PM DEPT #12161
BRENTWOOD, TN 37027

Real Estate

Account List by Account (1004 - 1004)

Account	Card	Name / Address	Location	Map/Lot
01004	001	HAMLIN, SHIRLEY 27B SPRINGBROOK DRIVE BELFAST ME 04915	27 B SPRINGBROOK DRIVE (D1)	005-036-D1

Account	Card	Name / Address	Location	Map/Lot
03593	001	DANIEL J AVENER & TALLY RAE AVENER THE AVENER LIVING TRUST DATED OCT 27A SPRINGBROOK DR BELFAST ME 04915	27 A SPRINGBROOK DRIVE (D2)	005-036-D2
03594	001	QUIRK, BERNICE B 7430 N. HWY 1 APT. B103 COCOA FL 32927	30 A SPRINGBROOK DRIVE (D3)	005-036-D3
03595	001	TENOFF, DIANE M TENOFF, ALAN C 30B SPRINGBROOK DRIVE BELFAST ME 04915	30 B SPRINGBROOK DRIVE (D4)	005-036-D4
03596	001	OFFEN, BLAIR O 31B SPRINGBROOK DR BELFAST ME 04915	31 B SPRINGBROOK DR	005-036-D5
03597	001	ALLEN, ELEANOR G 31A SPRINGBROOK DRIVE BELFAST ME 04915	31 A SPRINGBROOK DR	005-036-D6
03598	001	RICHARDS, CLIFFORD EVERETT 32A SPRINGBROOK DR, Unit D-7 BELFAST ME 04915	32 A SPRINGBROOK DRIVE (D7)	005-036-D7
03599	001	BERGERON DEMAIO, FLORENCE KAY SERVIDIO, RICHARD L 20 PATTON WOODS ROAD CHARLOTTE VT 05445	32 B SPRINGBROOK DRIVE (D8)	005-036-D8
03600	001	GOODWIN, LAURA B 33B SPRINGBROOK DR. BELFAST ME 04915	33 B SPRINGBROOK DR	005-036-D9
03601	001	LEARNARD, GREGORY E LEARNARD, LINDA T 33A SPRINGBROOK DR BELFAST ME 04915	33 A SPRINGBROOK DRIVE	005-036-D10

Account	Card	Name / Address	Location	Map/Lot
03602	001	SHEEHAN, PATRICIA A 47 SPRINGBROOK DRIVE BELFAST ME 04915	47 SPRINGBROOK DRIVE (G1)	005-036-G1
03603	001	BELFAST CITY PROPERTIES LLC 7 HIGHVIEW TERRACE BELFAST ME 04915	47 SPRINGBROOK DRIVE (G2)	005-036-G2
03604	001	GOLDRICH, GERALDINE 47 SPRINGBROOK DRIVE #1-C BELFAST ME 04915	47 SPRINGBROOK DRIVE (G3)	005-036-G3
03605	001	BOWEN, ROBERT BOWEN, SANDRA 130 BAYSIDE DRIVE BELFAST ME 04915	47 SPRINGBROOK DRIVE (G4)	005-036-G4
03606	001	HOWARD, KEITH E HOWARD, SUZANNE M 47 SPRINGBROOK DR, UNIT 2B BELFAST ME 04915	47 SPRINGBROOK DRIVE (G5)	005-036-G5
03607	001	MAHFOUZ, ABDELHAMED ABDELHAMEED, NOURHAN 47 SPRINGBROOK DRIVE APT 2C BELFAST ME 04915	47 SPRINGBROOK DRIVE (G6)	005-036-G6
03608	001	STICKLER, ELIZABETH E 49-1A SPRINGBROOK DRIVE BELFAST ME 04915	49 SPRINGBROOK DRIVE (G7)	005-036-G7
03609	001	ELBERFELD, JOHN MCLEAN, JANE 49 SPRINGBROOK DR APT 1B BELFAST ME 04915	49 SPRINGBROOK DRIVE (G8)	005-036-G8
03610	001	ELLIOTT, WILLIAM C JONES-ELLIOTT, REIDUN E 49 SPRINGBROOK DRIVE BELFAST ME 04915	49 SPRINGBROOK DRIVE (G9)	005-036-G9

Account	Card	Name / Address	Location	Map/Lot
03611	001	TAUBE, JONATHAN C 49 SPRINGBROOK DR. G10 APT 2A BELFAST ME 04915	49 SPRINGBROOK DRIVE (G10)	005-036-G10
03612	001	BRYDON, ROBERT W 49 SPRINGBROOK DRIVE, UNIT G11 BELFAST ME 04915	49 SPRINGBROOK DRIVE (G11)	005-036-G11
03613	001	STEINMAN, STEVEN PAUL STEINMAN, CANDY COPELAND 104 WEE SCOT COVE LAKEWAY TX 78734	49 SPRINGBROOK DRIVE (G12)	005-036-G12
03614	001	TALBOT, ROBERT J TALBOT, DENISE L 59 SPRINGBROOK DRIVE UNIT 1A BELFAST ME 04915	59 SPRINGBROOK DRIVE (G13)	005-036-G13
03615	001	VOGE, JOHN P KRALLINGER, MARY L 909 COPELAND SCHOOL RD WEST CHESTER PA 19380	59 SPRINGBROOK DRIVE (G14)	005-036-G14
03616	001	MACMAKIN, BRUCE E 106 POSADA DOL SOL NOVATO CA 94949	59 SPRINGBROOK DRIVE (G15)	005-036-G15
03617	001	JOHN R LONG AND DIANNE M LONG 7 ALTO STREET BELFAST ME 04915	59 SPRINGBROOK DRIVE (G16)	005-036-G16
03618	001	ROY, MICHELLE 350 CLARKS POND ROAD SOUTH PORTLAND ME 04106	59 SPRINGBROOK DRIVE (G17)	005-036-G17
03619	001	BLAKE, GORDON N BLAKE, PHYLLIS J 59 SPRINGBROOK DRIVE - UNIT 2C BELFAST ME 04915	59 SPRINGBROOK DRIVE (G18)	005-036-G18

Account	Card	Name / Address	Location	Map/Lot
03620	001	CRAIG, AMBER R 61 SPRINGBROOK DRIVE UNIT 1A BELFAST ME 04915	61 SPRINGBROOK DRIVE (G19)	005-036-G19
03621	001	CHAMBERLIN, DOUGLAS P. LIVING DATED AUGUST 17 2015 311 BELMONT AVE BELFAST ME 04915	61 SPRINGBROOK DRIVE (G20)	005-036-G20
03622	001	61 SPRINGBROOK DRIVE 1C LLC 9 CAPTAINS LANE SPRUCE HEAD ME 04859	61 SPRINGBROOK DRIVE (G21)	005-036-G21
03623	001	UPSON, DEBORAH A 1161 SAWYER RD CAPE ELIZABETH ME 04107	61 SPRINGBROOK DRIVE (G22)	005-036-G22
03624	001	OESTERLIN, MATTHEW E OESTERLIN, RENEE A 61 SPRINGBROOK DRIVE UNIT 2B BELFAST ME 04915	61 SPRINGBROOK DRIVE (G23)	005-036-G23
03625	001	MAKARA, JOANNA P.O. BOX 115 ISLESBORO ME 04848	61 SPRINGBROOK DRIVE (G24)	005-036-G24
03626	001	PETERSON, NEILL C LOOMANS, DONNA L 12 SPRINGBROOK DRIVE BELFAST ME 04915	12 SPRINGBROOK DRIVE (T1)	005-036-T1
03627	001	SACCUCCI, KATHY E PO BOX 227 SEARSPORT ME 04974	12 SPRINGBROOK DRIVE (T2)	005-036-T2
03628	001	TATRO, ROBERTA 12C SPRINGBROOK DRIVE BELFAST ME 04915	12 SPRINGBROOK DRIVE (T3)	005-036-T3

Account	Card	Name / Address	Location	Map/Lot
03629	001	MARSANO, FRANCIS C, dcd 12 SPRINGBROOK DRIVE BELFAST ME 04915	12 SPRINGBROOK DRIVE (T4)	005-036-T4
03630	001	PARISE, CYNTHIA S 20A SPRINGBROOK DRIVE BELFAST ME 04915	20 SPRINGBROOK DRIVE (T5)	005-036-T5
03631	001	BICKFORD, LAURA W 20 SPRINGBROOK DR., UNIT B BELFAST ME 04915	20 SPRINGBROOK DRIVE (T6)	005-036-T6
03632	001	LEONARD, DAVID LEONARD, SANDRA 20 C SPRINGBROOK DRIVE BELFAST ME 04915	20 SPRINGBROOK DRIVE (T7)	005-036-T7
03633	001	ROMELCZYK, GERALD ROMELCZYK, CAROLYN 141 NATICK AVE WARWICK RI 02886	20 SPRINGBROOK DRIVE (T8)	005-036-T8
03634	001	MICHAEL R. & VALERIE THE CHRISTLE FAMILY REVOC. TRUST PO BOX 154 BELFAST ME 04915	28 SPRINGBROOK DRIVE (T9)	005-036-T9
03635	001	JOHN T. & TIMOTHY J. MOREY, JOHN T MOREY LIVING TRUST 28 SPRINGBROOK DR. UNIT B BELFAST ME 04915	28 SPRINGBROOK DRIVE (T10)	005-036-T10
03636	001	CUTSHALL, CARL CUTSHALL, TERRY 28 SPRINGBROOK DRIVE, UNIT 28C BELFAST ME 04915	28 SPRINGBROOK DRIVE (T11)	005-036-T11
03637	001	HOWELL, KENNETH A HOWELL, TERESA A 85 BERMUDA DOWNS SAINT HELENA ISLAND SC 29920	28 SPRINGBROOK DRIVE (T12)	005-036-T12

Section I

Natural Resources Report

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8228

May 13, 2025

Mr. Sam Label
Acorn Engineering, Inc.
P. O. Box 3372
Portland, ME 04101

Re: Wetland Delineation, 7.5-acre parcel Crocker Road and Belmont Avenue Belfast, ME

Dear Sam,

I have completed a delineation of wetlands on a 7.5-acre parcel located at the corner of Crocker Road and Belmont Avenue Belfast, Maine. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found were flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The wetland flags were located with GPS equipment capable of locating a point to less than a meter. I have previously submitted this data to your office. The centerline of the stream was also located and is included with the data.

The wetlands delineated on the parcel are wet meadow and scrub/shrub wetlands. There are no wetlands associated with the stream on the parcel. The wetlands located on the parcel do not meet the definition of wetlands of special significance as defined by the Maine Department of Environmental Protection.

Sincerely,

Mark J. Hampton L.S.E., C.S.S.
Licensed Site Evaluator #263
Certified Soil Scientist #216

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

Quality services that meet your deadline

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8228

May 13, 2025

Mr. Sam Label
Acorn Engineering, Inc
P. O. Box 3372
Portland, ME 04104

Re: Vernal pool assessment, 7.5-acre parcel Crocker Road and Belmont Avenue Belfast, ME

Dear Sam,

We have completed a vernal pool assessment on the 7.5-acre parcel located at the corner of Crocker Road and Belmont Avenue Belfast, ME. The vernal pool assessment was conducted in accordance with Chapter 335 Significant Wildlife Habitat, Section 9 Significant Vernal Pools for the Maine Department of Environmental Protection. This section outlines the definition of a vernal pool as well as the requirements of a vernal pool to meet the definition of significance as related to the number of amphibian egg masses counted during the breeding season.

Two site visits were made to the property over the course of six weeks beginning the first week in April. No eggs masses were found. As such there are no vernal pools on the property.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

Section J

FEMA Mapping

National Flood Hazard Layer FIRMette

FEMA

69°2'7"W 44°25'34"N

69°1'30"W 44°25'8"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/16/2025 at 6:58 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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Section K

Erosion & Sedimentation Control Report

ACORN ENGINEERING, INC.

K. EROSION & SEDIMENTATION CONTROL REPORT

Prepared For:

Waldo Community Action Partners
9 Field Street, Suite 201
Belfast, Maine 04915

Prepared By:

Acorn Engineering, Inc.
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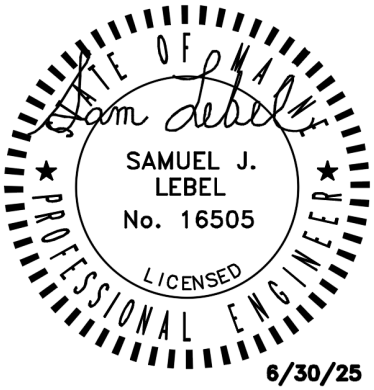
Portland, Maine 04101



June 2025

INTRODUCTION

The following Erosion and Sedimentation Control Report was developed in accordance with City standards and zoning regulations. This report also meets the standards required in the Maine DEP's Erosion & Sediment Control BMP Manual, revised in 2016.

1.0 EXISTING CONDITIONS

The project site is located along Belmont Avenue (Route 3) on a 78-acre parcel (Tax Map 5, Lot 23) in Belfast, Maine. An existing conditions survey of the project area was prepared by E.S. Coffin Engineering & Surveying, Inc, of Chelsea, Maine, dated April 16th, 2025, and is included in the Civil plan set. The majority of the site is currently undeveloped and is comprised of meadow and light forest cover. The eastern portion of the site contains an existing paved access drive, sidewalk, stormwater drainage network, and utilities services constructed during development of the abutting Tractor Supply Company. Wetland and stream complexes exist on the site as depicted in the civil plan set and were mapped and characterized by Mark Hampton Associates.

Existing Soils

Onsite soil information includes the following:

- Class A High Intensity Soil Survey Prepared by Mark Hampton Associates
- United States Department of Agriculture Web Soil Survey

Soils are predominantly sandy loams within the evaluated watershed. Based upon a Class A high intensity soil survey, the soils on site are rated under the Hydrological Soil Group (HSG) "C".

The area within and surrounding the project includes soil types listed in the table below. The susceptibility of soils to erosion is indicated on a relative "K" scale of values over a range of 0.02 to 0.69. Higher "K" values indicate more erodible soils.

Table 1 - "K" Value

Soils Type	Subsurface	Substratum
Peru	0.24	0.24
Brayton	0.32	0.24

The soil "K" value for the soil, listed above, shows a low to moderate susceptibility to erosion. The site's susceptibility to erosion is sourced from the Soil Conservation Service Medium Intensity Soil Survey for Waldo County.

1.1 Existing Erosion Problems

Limited areas of erosion exist on site, as prior land clearing and gravel drive improvements on this site did not require analyses or engineering controls to manage stormwater.

1.2 Critical Areas

During construction, care should be taken to stabilize disturbed slopes, and to protect the adjacent stream and other natural resources from sedimentation.

1.3 Protected Natural Resources

The site's natural resources have been identified by Mark Hamptons Associates, Inc. in a memorandum dated May 15, 2025. One stream and three wetland areas were identified.

1.4 Previous Construction Activity (5 years)

Acorn Engineering, Inc. is not aware of any construction-related activities within the project limits within the past 5 years.

1.5 Timber Harvesting

Acorn Engineering, Inc. is not aware of any timber harvesting within the past 5 years.

2.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

As part of site development, the following temporary and permanent erosion and sedimentation control devices shall be implemented. Devices shall be installed as described in this report or within the plan set. See the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices for further reference.

2.1 Temporary Erosion Control Measures

The following temporary erosion and sedimentation control measures are planned for the project's construction period:

2.1.1 Crushed stone stabilized construction entrances shall be placed at all access points to the project site where there are disturbed areas. The following specifications shall be followed at a minimum:

- Stone size shall be 2-3 inches or reclaimed or recycled concrete equivalent.
- The thickness of the entrance stone layer shall be no less than 6 inches.
- The entrance shall not be less than 20 feet wide, however not less than the full width of points where ingress or egress occurs. The entrance shall not be less than 50 feet in length.
- Geotextile fabric (woven or non-woven) shall be placed beneath the stone layer within the entire entrance area.
- The entrance/exit shall be maintained to the extent that it will prevent the tracking of sediment onto public roadways.

2.1.2 Siltation fence or erosion control berm shall be installed down gradient of any disturbed areas to trap runoff borne sediments until permanent stabilization is achieved. A double row of fence or berm, or a row of fence with a row of berm placed upgradient of the fence, shall be provided at the limits of disturbance when the limits of disturbance are less than 30-feet from, or within, a protected natural resource. Between November 1st and April 15th, similar double protections shall be provided when the limits of disturbance are within 75-feet of the protected resource. The silt fence or erosion control berm shall be installed per the details provided in the plan set and inspected before and immediately after each rainfall and at least daily during prolonged rainfall. Repairs shall be made if there are any signs of erosion or sedimentation below the fence line or berm. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind the fence or berm, the barrier shall be replaced with a stone check dam.

2.1.3 Hay mulch, including hydro seeding, is intended to provide cover for denuded or seeded areas until revegetation is established. Mulch placed between April 15th and November 1st on slopes of less than 15 percent shall be covered by fabric netting and anchored with staples in accordance with the manufacturer's recommendation. Mulch placed between November 1st and April 15th on slopes equal to or steeper than 8 percent and equal to or flatter than 2:1 shall use mats or fabric netting and anchored with staples in accordance with the manufacturer's recommendation.

2.1.4 At any time of the year, all slopes greater than 3:1 shall be stabilized with Double Net Erosion Control Blanket Bionet SC150BN by North American Green or Approved Equal, or Erosion Control Mix Slope Protection as detailed within the plans.

2.1.5 Belmont Avenue and the private access drive shall be swept as necessary to remove any mud and dust tracked from the construction site. Add additional stone to the stabilized construction entrance to minimize the tracking of material off the site and onto the surrounding roadways.

2.1.6 During demolition, clearing and grubbing operations, stone check dams shall be installed at any areas of concentrated flow. The maximum height of the check dam shall not exceed 2 feet. The center of the check dam shall be 6 inches below the outer edges of the dam. The contractor shall mulch the side slopes and install stone check dams for all newly excavated ditch lines within 24 hours of their creation.

2.1.7 Silt fence stake spacing shall not exceed 6 feet unless the fence is supported with 14-gauge wire in which case the maximum spacing shall not exceed 10 feet. The silt fence shall be "toed" into the ground.

2.1.8 Storm drain inlet protection shall be provided to storm drains using any of the following: hay bale drop inlet structures, silt fence drop inlet sediment filter, gravel and wire mesh drop inlet sediment filter, or curb inlet sediment filter. Barriers shall be inspected after every rainfall event and repaired as

necessary. Sediments shall be removed when accumulation has reached ½ the design height.

2.1.9 Dust control shall be accomplished using any of the following: water, calcium chloride, stone, or an approved MDEP product. Measures shall be applied as needed to accomplish dust control.

2.1.10 Temporary loam, seed, and mulching shall be used in areas where no other erosion control measure is used. Application rates for seeding are provided at the end of this report.

2.1.11 Stockpiles shall be stabilized within 7 days of formation unless a scheduled rain event occurs prior to the 7-day window, in which case the stockpile shall be stabilized prior to the rain event. Methods of stabilization shall be mulch, erosion control mix, or erosion control blankets/mats. Silt fence or a wood waste compost filter berm shall be placed downhill of any soil stockpile location.

2.1.12 For disturbance between November 1 and April 15, please refer to winter stabilization plan in this report and the Maine Erosion and Sediment Control BMP manual for further information.

2.1.13 It is of the utmost importance that stormwater runoff and potential sediment from the construction site be diverted around proposed underdrains until the trench is backfilled.

2.2 Permanent Erosion Control Measures

The following permanent erosion control measures are intended for post disturbance areas of the project.

2.2.1 All disturbed areas during construction, not subject to other proposed conditions, shall receive a minimum 4" of loam, limed, seeded, and mulched. Erosion control blankets or mats shall be placed over the mulch in areas noted in paragraph 4.1 of this report.

2.2.2 All stormwater devices shall be installed and tributary areas shall be stabilized prior to receiving stormwater.

2.2.3 Refer to the Maine Erosion and Sediment Control BMP manual for additional information.

3.0 EROSION AND SEDIMENTATION CONTROL PLAN

3.1 The Erosion and Sedimentation Control Plan is included within the plan set.

4.0 DETAILS AND SPECIFICATIONS

4.1 Erosion Control Details and Specifications are included in the plan set.

5.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

Winter Construction consists of earthwork disturbance between the dates of November 1 and April 15. If a construction site is not stabilized with pavement, a road gravel base, 90% mature vegetation cover or riprap by November 1st, then the site shall be protected with over-winter stabilization. Any area not stabilized with pavement, vegetation, mulching, erosion control mix, erosion control mats, riprap, or gravel base on a road shall be considered open.

The contractor shall limit the work area to areas that work will occur in during the subsequent 15 days and so that it can be mulched one day prior to a snow event. The contractor shall stabilize work areas prior to opening additional work areas to minimize areas without erosion control measures.

The following measures shall be implemented during winter construction periods:

5.1 Sediment Barriers

If installed during frozen conditions, sediment barriers may consist of erosion control mix berms or other sediment barriers as approved by Acorn, as frozen soil prevents the proper installation of hay bales or silt fences. Between November 1st and April 15th, a double row of fence or berm, or a row of fence with a row of berm placed upgradient of the fence, shall be provided at the limits of disturbance when the limits of disturbance are less than 75-feet from, or within, a protected natural resource.

5.2 Mulching

All areas shall be considered to be denuded until seeded and mulched. Hay and straw mulch shall be applied at a rate of 150 lb. per 1,000 square feet or 3 tons/acre (twice the normal accepted rate of 75-lbs./1,000 s.f. or 1.5 tons/acre) and shall be properly anchored. Erosion control mix must be applied with a minimum 4-inch thickness. Mulch shall not be spread on top of snow. The snow shall be removed down to a one-inch depth or less prior to application. After each day of final grading, the area shall be properly stabilized with anchored hay or straw or erosion control matting. An area shall be considered to have been stabilized when exposed surfaces have been either mulched or adequately anchored so that ground surface is not visible through the mulch. Between the dates of November 1 and April 15, all mulch shall be anchored by either mulch netting, tracking or wood cellulose fiber. The cover will be considered sufficient when the ground surface is not visible through the mulch. After November 1st, mulch and anchoring of all exposed soil shall occur at the end of each final grading workday.

5.3 Soil Stockpiling

Stockpiles of soil or subsoil shall be mulched for over winter protection with hay or straw at twice the normal rate or with a four-inch layer of erosion control mix. This shall be done within 24 hours of stocking and re-established prior to any rainfall or snowfall.

5.4 Seeding

Between the dates of November 1st and April 15th, loam or seed shall not be required. During periods of above freezing temperatures finished areas shall be fine graded and either protected with mulch or temporarily seeded and mulched until the final treatment can be applied. If the date is after November 1st and if the exposed area has not been loamed, final grading with a uniform surface, then the area may be dormant seeded at a rate of 3 times higher than specified for permanent seed and then mulched.

Dormant seeding may be placed prior to the placement of mulch or erosion control blankets. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5 lbs./1,000 s.f. All areas seeded during the winter shall be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 90% catch) shall be revegetated by replacing loam, seed and mulch. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

5.5 Over winter stabilization of disturbed soils

By September 15th, all disturbed soils on areas having a slope less than 15% shall be seeded and mulched. If the disturbed areas are not stabilized by this date, then one of the following actions shall be taken to stabilize the soil for late fall and winter:

- Stabilize the soil with temporary vegetation – By October 1st, seed the disturbed soil with winter rye at a seeding rate of 3lbs per 1,000 s.f., lightly mulch the seeded soil with hay or straw at 75 lbs per 1,000 s.f., and anchor the mulch with plastic netting. Monitor growth of the rye over the next 30 days. If the rye fails to grow at least three inches or fails to cover at least 75% of the disturbed soil before November 1st, then mulch the area for over-winter protection.

- Stabilize the soil with sod – Stabilize the disturbed soil with properly installed sod by October 1st. Proper installation includes pinning the sod onto the soil with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil.

- Stabilize the soil with mulch – By November 1st, mulch the disturbed soil by spreading hay or straw at a rate of at least 150 lbs per 1,000 s.f. on the area so that no soil is visible through the mulch. Immediately after applying the mulch, anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.

5.6 Over winter stabilization of disturbed slopes

All stone-covered slopes shall be constructed and stabilized by November 1st. All slopes to be vegetated shall be seeded and mulched by September 1st. A slope is considered a grade greater than 15%. If a slope to be vegetated is not stabilized by September 1st, then one of the following action shall be taken to stabilize the slope for late fall and winter:

- Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the disturbed slope shall be seeded with winter rye at a seeding rate of 3 lbs per 1,000 s.f. and then install erosion control mats or anchored mulch over the seeding. If the rye fails to grow at least three inches or fails to cover at least 90% of the slope by November 1st, then the contractor shall cover the slope with a layer of erosion control mix or with stone riprap.

- Stabilize the soil with sod – The disturbed slope shall be stabilized with properly installed sod by October 1st. Proper installation includes the contractor pinning the sod onto the slope with wire pins, rolling the sod to guarantee contact between the sod and underlying soil, and watering the sod to promote root growth into the disturbed soil. The contractor shall not use late-season sod installation to stabilize slopes having a grade greater than 3H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with erosion control mix – Erosion control mix shall be properly installed by November 1st. The contractor shall not use erosion control mix to stabilize slopes having grades greater than 2H:1V or having groundwater seeps on the slope face.

- Stabilize the soil with stone riprap – Place a layer of stone riprap on the slope by November 1st. A registered professional engineer shall be hired to determine the stone size needed for stability on the slope and to design a filter layer for underneath the riprap.

6.0 INSPECTION AND MAINTENANCE

A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct periodic visual inspections of installed erosion control measures. The frequency of inspection shall occur at least once every two weeks, as well as after a "storm event". A "storm event" shall consist 0.5 inches of rain within a 24-hour period. The following Erosion and Sediment Control - Best Management Practices (BMP's) shall inspected in the manner as described.

6.1 Sediment Barriers

Hay bale barriers, silt fences and filter berms shall be inspected and repaired for the following if there are any signs of erosion or sedimentation below them. If there are signs of undercutting at the center or the edges of the barrier, or impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits should be removed when deposits reach approximately one-half the height of the barrier. Filter berms should be reshaped as needed. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required should be dressed to conform to the existing grade, prepared and seeded.

6.2 Stabilized Stone Construction Entrances

The exit shall be maintained in a condition that will prevent tracking of sediment onto public rights-of-way. When the control pad becomes ineffective, the stone shall be removed along with the collected soil material and redistributed on site in a stable manner. The entrance should then be reconstructed. The contractor shall sweep or wash pavement at exits, which have experienced mud-tracking on to the pavement or traveled way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches, or waterways.

6.3 Mulched Areas

All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied. Nets must be inspected after rain events for dislocation or failure. If washouts or breakage occur, re-install the nets as necessary after repairing damage to the slope. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface. Repair as needed.

6.4 Dust Control

When temporary dust control measures are used, repetitive treatment shall be applied as needed to accomplish control.

6.5 Stormwater Appurtenances

All underdrains, storm drains, BMPs, and catch basins shall operate effectively and be free of debris.

6.6 Erosion and Sedimentation Control Inspections:

Acorn Engineering has personnel qualified to conduct Erosion and Sedimentation Control Inspections. For further information, contact:

Contact: Will Savage, PE
Telephone: (207) 775-2655

Qualifications:

- Maine Professional Engineering License #11419
- Maine DEP - Certified in Maintenance & Inspection of Stormwater BMP's Cert #14
- Certified Erosion, Sediment and Storm Water Inspector (CESSWI) Cert #0293
- Certified Professional in Erosion and Sediment Control (CPESC) Cert. #4620

The Contractor has sole responsibility for complying with the Erosion and Sedimentation Report/Plan, including control of fugitive dust. The Contractor shall be responsible for any monetary penalties resulting from failure to comply with these standards.

7.0 IMPLEMENTATION SCHEDULE

The following implementation sequence is intended to maximize the effectiveness of the above-described erosion control measures. Contractors should avoid overexposing disturbed areas and limit the amount of stabilization area.

1. Install a stabilized construction entrance in all locations where construction traffic will enter and exit the site.
2. Install perimeter silt fence or erosion control berm.
3. Commence installation of drainage infrastructure.
4. Install all other erosion control devices as necessary throughout the remainder of this schedule.
5. Commence earthwork operations associated with the roadway/drive construction.
6. Commence installation of utilities.
7. Continue earthwork and grading to subgrade as necessary for construction.
8. Complete installation of drainage infrastructure, as well as other utility work.
9. Complete remaining earthwork operations.
10. Install sub-base and base gravels in paved areas.
11. Install paving and curbing.
12. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
13. Once the site is stabilized, 90% catch of grass has been obtained, or mulching of landscape areas is complete, remove all temporary erosion control measures.
14. Touch up areas without a vigorous catch of grass with loam and seed.
15. Complete site signage and striping.
16. Execute proper maintenance of all temporary and permanent erosion control measures throughout the project.

The above implementation sequence should be generally followed by the site contractor. However, the contractor may construct several items simultaneously. The contractor shall submit to the owner a schedule of the completion of the work. If the contractor is to commence the construction of more than one item above, they shall limit the amount of exposed areas to those areas in which work is expected to be undertaken during the following 30 days.

The contractor shall re-vegetate disturbed areas as rapidly as possible. All areas shall be permanently stabilized within 7 days of final grading or before a storm event. The contractor shall incorporate planned inlets and drainage systems as early as possible into the construction phase.

8.0 CONCLUSION

The above erosion control narrative is intended to minimize the development impact by implementing temporary and permanent erosion control measures. The contractor shall also refer to the Maine Erosion and Sediment Control BMP manual for additional information.

9.0 ATTACHMENTS

- Temporary Seeding Plan
- Permanent Seeding Plan

TEMPORARY SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of temporary seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.	Recommended Seeding Dates
Winter Rye	2.57	Aug-15 to Oct-1
Oats	1.84	Apr-1 to Jul-1 Aug-15 to Sep-15
Annual Ryegrass	0.92	Apr-1 to Jul-1
Sudangrass	0.92	May-15 to Aug-15
Perennial	0.92	Aug-15 to Sep-15

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to temporary seeding and mulching.

PERMANENT SEEDING PLAN

Site Preparation

The seeded areas shall be feasibly graded out to provide the use of equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. If necessary, the site may require additional temporary erosion control measures outlined in the Erosion Control report.

Seedbed Preparation

Fertilizer shall be applied to the site at a rate of 13.8 pounds per 1,000 square feet. The composition of the fertilizer shall be 10-10-10 (N-P2O5-K2O) or equivalent.

Limestone shall be applied to the site at a rate of 138 pounds per 1,000 square feet.

Seeding

The composition and amount of permanent seed applied to a site shall be determined by the following table:

Seed	Pounds / 1,000 S.F.
Kentucky Bluegrass	0.46
Creeping Red Fescue	0.46
Perennial Ryegrass	0.11
Total	1.03

Mulching

Mulch shall be applied at a rate of 70 lbs – 90 lbs per 1,000 square feet. The mulch shall be installed at a minimum depth of 4 inches. The seeded area shall be mulched immediately after seed is applied. Mulching during the winter season shall be double the normal amount.

Recommendations

Permanent seeding is recommended to be completed in the spring. Later summer seeding is allowed if completed prior to September 1st. If seeding cannot be accomplished during the periods recommended for permanent seeding, then the contractor shall perform temporary seeding per the temporary seeding plan.

Conclusion

Please refer to the Maine Erosion and Sediment Control BMP manual for additional information pertaining to permanent seeding and mulching.

Section L

Traffic Analysis

ACORN ENGINEERING, INC.

L. Traffic Analysis

The following traffic analysis has been prepared to estimate traffic generation resulting from the proposed affordable residential facility located along Belmont Avenue in Belfast, Maine. The project, proposed by Waldo Community Action Partners, includes the construction of an affordable 60-unit residential building with associated parking and other site amenities. The site will be accessed via an existing shared private drive which was previously permitted and constructed as part of the neighboring Tractor Supply Company facility. The site is within an urban compact zone designated by the Maine Department of Transportation (MDOT).

Land Use Codes

To determine the increase in traffic resulting from the project, the Institute of Transportation Engineers Trip Generation Manual, 11th Edition was utilized. The Affordable Housing (Income Limits LUC 223) land use was utilized in the calculation of estimated traffic generation. LUC 223 is a new land use that was introduced in ITE 11. Calculations were performed for a General Urban/Suburban setting.

- LUC 223 – All multi-family housing that is rented at or below market rate.

Trip Generation

The trip generation for the proposed project has been estimated using the Institute of Transportation Engineers (ITE) "Trip Generation" 11th Edition publication, an excerpt of which has been provided to supplement this report. The proposed development's land use and dwelling unit count were used in tandem with ITE trip generation rates to estimate weekday AM and PM peak hour trips based on peak hour passenger car equivalents. Of note, LUC 223 contains only one sample point for weekend peak rates (1.28 trips per dwelling unit). This single-sample result is abnormally high when compared with rates for weekday AM and PM peak hours, which are characterized by a more robust data set. Considering the lack of data for weekend trip calculation, the highest weekday peak hour PM rate was assumed as a more suitable representation of the peak hour rate for weekend days. This approach is consistent with previous affordable housing projects permitted by Acorn and Acorn's professional traffic engineering partners across the State of Maine.

Land-Use #223: Affordable Housing – Income Limits (Per Unit)
[Setting/Location: General Urban/Suburban]

Weekday AM Peak Hour (Street)	= 0.36 trips/Unit
Weekday PM Peak Hour (Street)	= 0.46 trips/Unit
Weekday AM Peak Hour (Generator)	= 0.36 trips/Unit
Weekday PM Peak Hour (Generator)	= 0.50 trips/Unit
Weekend Peak Hour (Generator)*	= 0.50 trips/Unit

*Weekend rates are poorly characterized in manual, thus are estimated at the highest peak rate during the week.

Table 1, below, provides a summary of the new trip generation for the proposed development.

Table 1 – Peak Hour Trip Generation - Proposed	
	Net Increase Peak Hour Trip Generation
AM Peak Hour (Street)	22 trips
PM Peak Hour (Street)	28 trips
AM Peak Hour (Generator)	22 trips
PM Peak Hour (Generator)	30 trips
Weekend Peak Hour (Generator)*	30 trips

*Weekend rates are poorly characterized in manual, thus are estimated at the highest peak rate during the week.

Analysis

From this analysis, the maximum trip generation resulting from the proposed affordable housing project is estimated at 30 trips in the peak hour.

Crash Data

The street network in the project vicinity was analyzed for crashes. Belmont Avenue has been classified as a principal arterial by Maine DOT. The following tables represent the crash data on this road over the past four years.

Along Belmont Avenue	
Crash Date	**Type of Crash**
11/13/2021	Property Damage (Deer)
11/28/2024	Property Damage (Deer)

Crash data was obtained from MaineDOT for the most recent available four-year period (2021-2024). There have been 2 crashes near the property frontage, both involving deer.

Based on the relative minor nature of reported crashes and existing intersection conditions, the net trip generation provided, and proposed traffic calming improvements, it is not anticipated this project would have a negative impact on the surrounding roadway network.

Conclusion

Overall, the project does not anticipate negatively influencing the surrounding road system, nor does it meet the requirements for a Traffic Movement Permit with MDOT. Given the site's location and use of an existing private drive, the proposed project is expected to be seamlessly incorporated into the surrounding area and existing traffic patterns.

ATTACHED:

Institute of Transportation Engineers (ITE) 11th Edition, Excerpts from applicable Land Use Codes (LUC).

Land Use: 223
Affordable Housing

Description

Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age. Multifamily housing (low-rise) (Land Use 220), multifamily housing (mid-rise) (Land Use 221), and multifamily housing (high-rise) (Land Use 222) are related land uses.

Land Use Subcategory

Data are presented for three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, single mothers, recovering addicts and others living in a group setting.

Additional Data

For most study sites contained in this land use, all dwelling units in the development are classified as affordable units. For residential study sites that provide a mix of market value and affordable units, the study sites with at least 75 percent of the dwelling units designated as affordable are also included in this land use database.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1980s and 2010s in California, Ontario (CAN), and New Jersey.

Source Numbers

237, 918, 1003, 1004, 1046, 1057

Affordable Housing - Income Limits
(223)

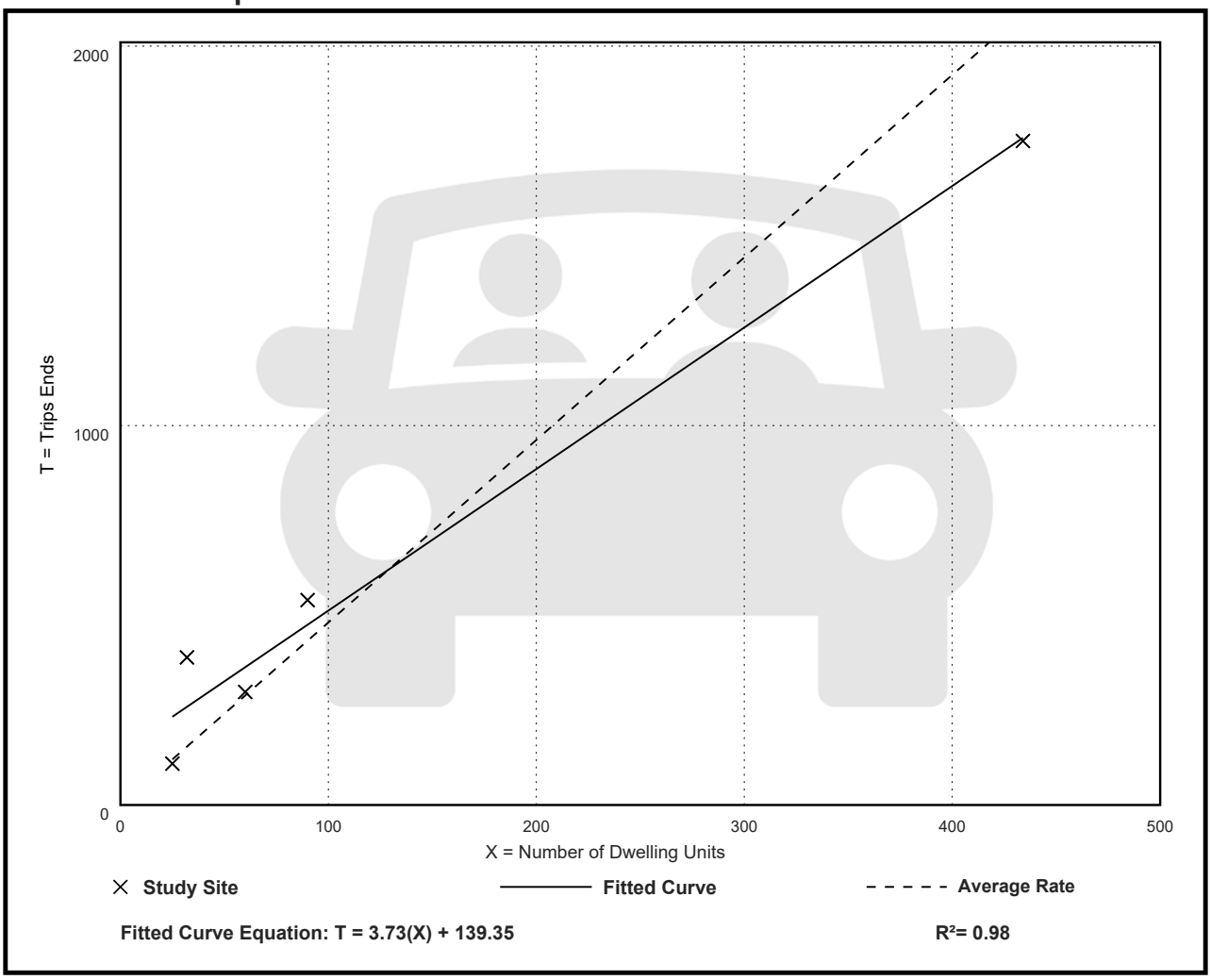
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 128
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.81	4.03 - 12.16	2.03

Data Plot and Equation



Fitted Curve Equation: T = 3.73(X) + 139.35

R^2= 0.98

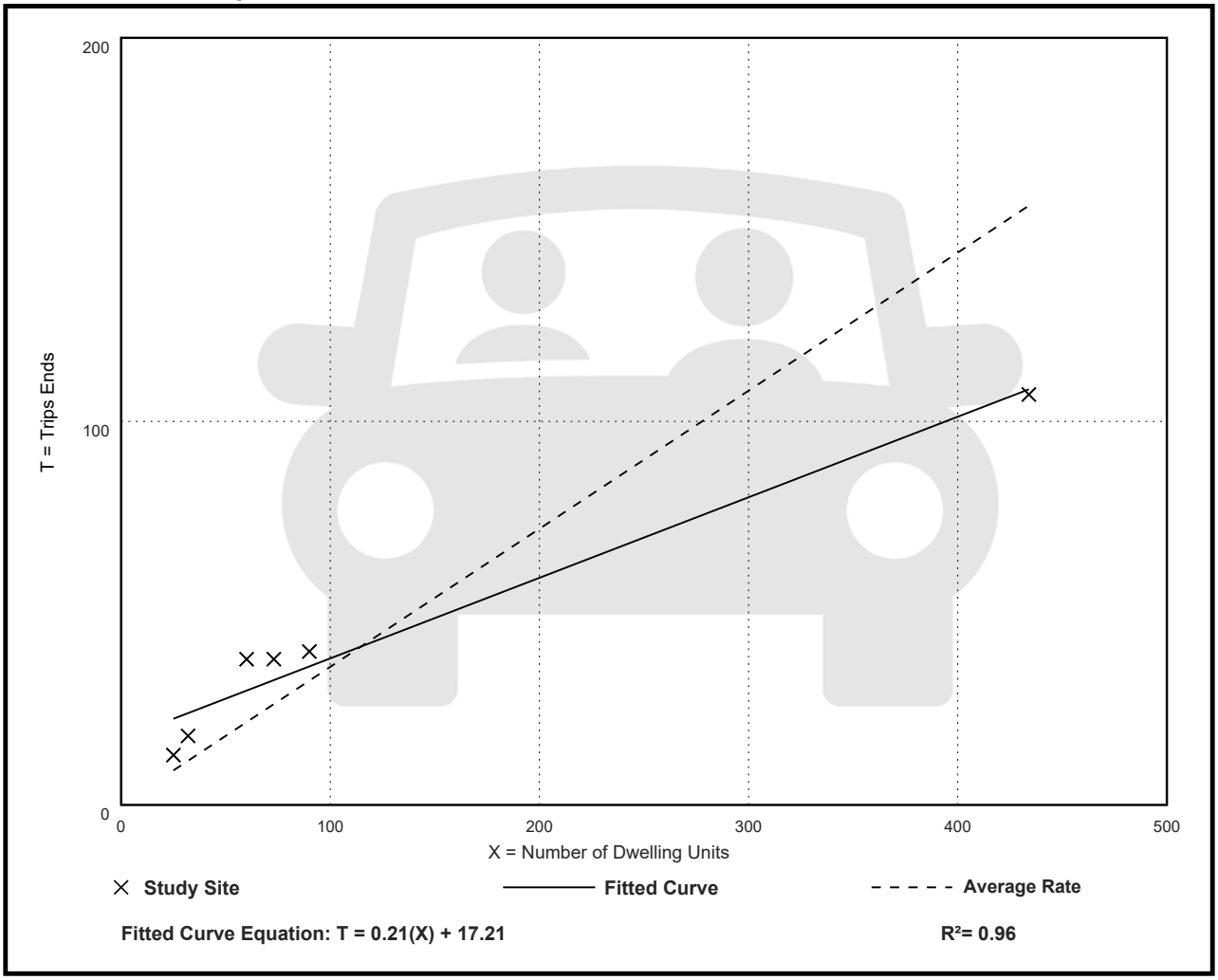
Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 119
Directional Distribution: 29% entering, 71% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.25 - 0.63	0.16

Data Plot and Equation



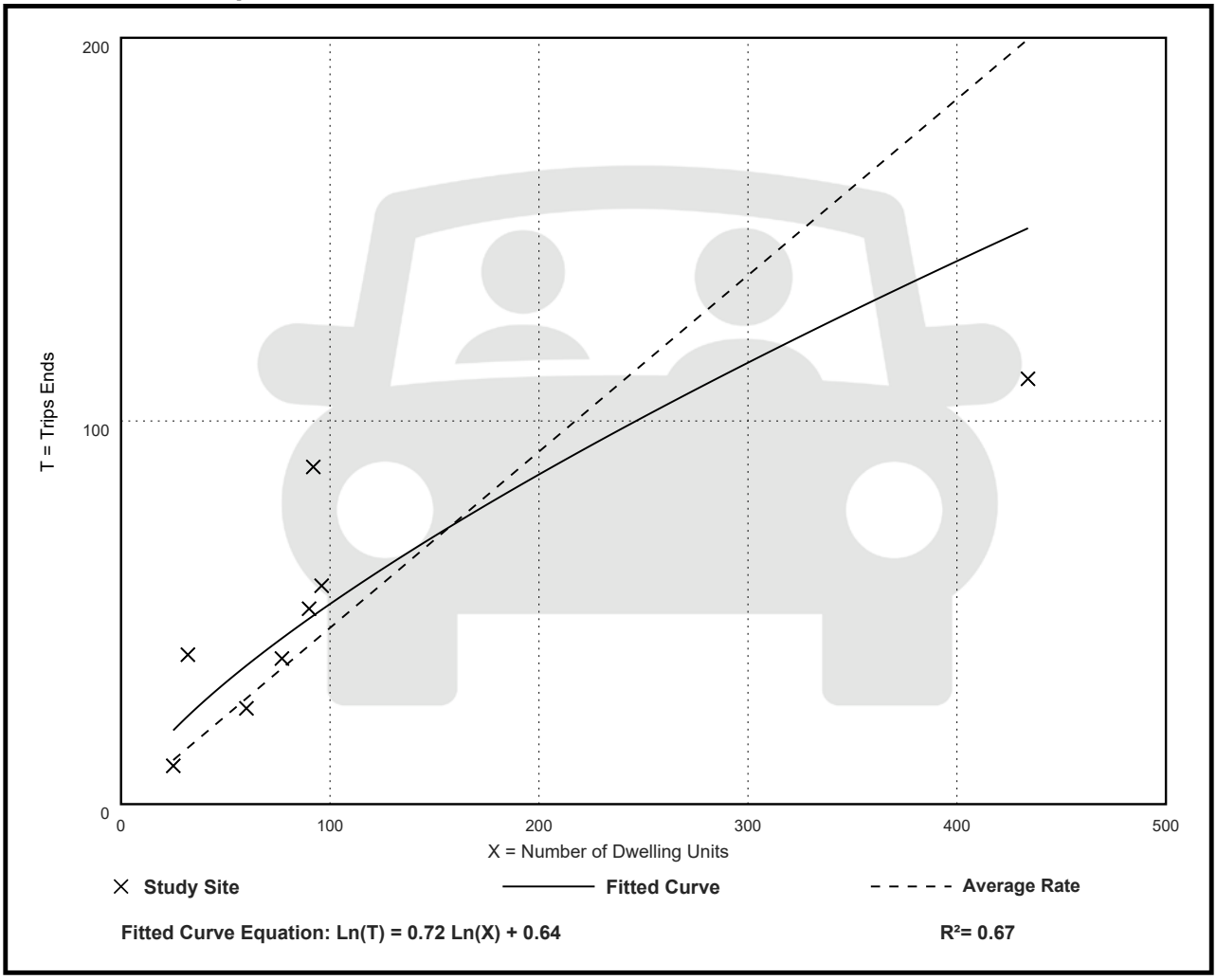
Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Dwelling Units: 113
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.26 - 1.22	0.28

Data Plot and Equation



Affordable Housing - Income Limits
(223)

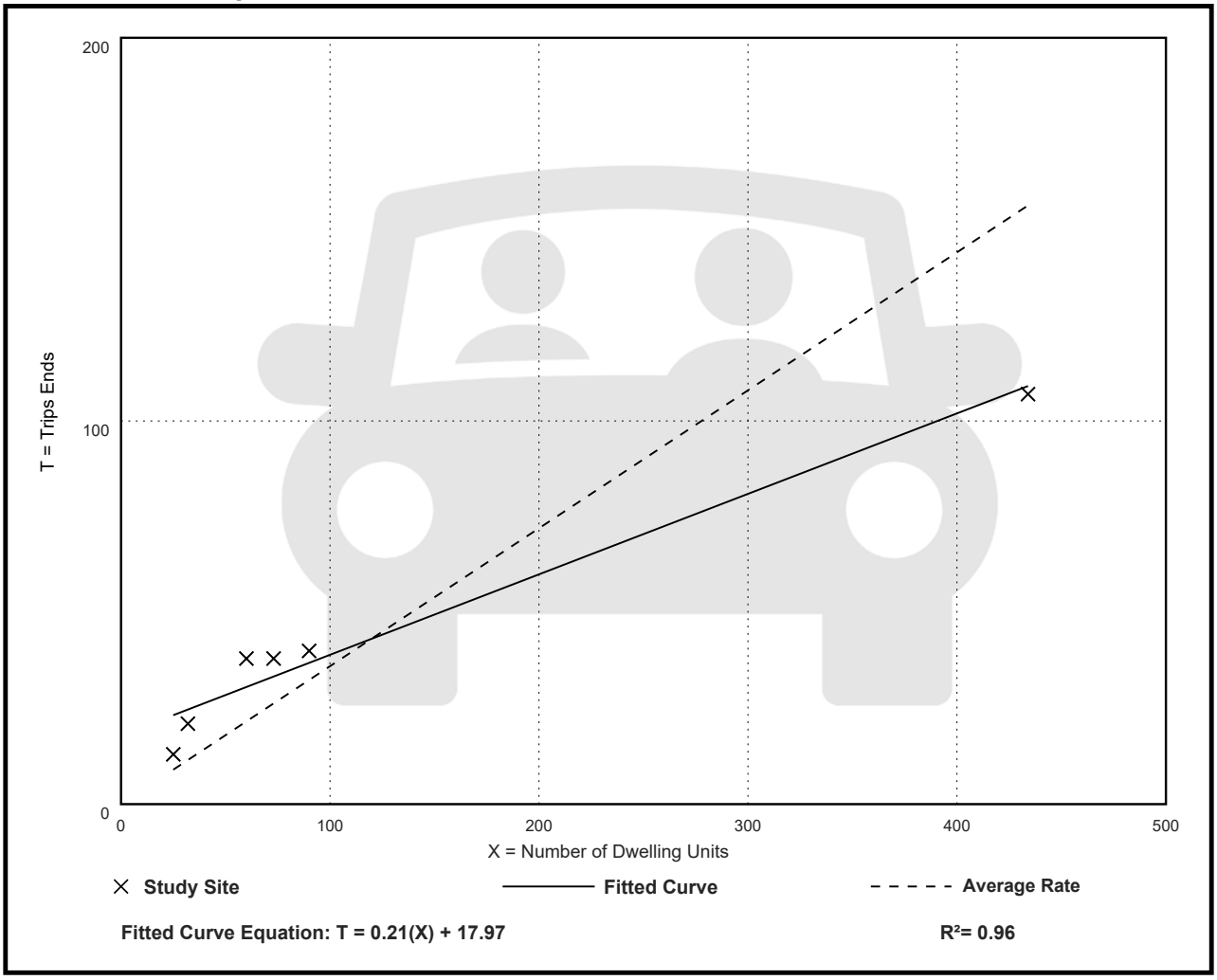
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 119
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.25 - 0.66	0.16

Data Plot and Equation



Fitted Curve Equation: T = 0.21(X) + 17.97

R^2= 0.96

Affordable Housing - Income Limits (223)

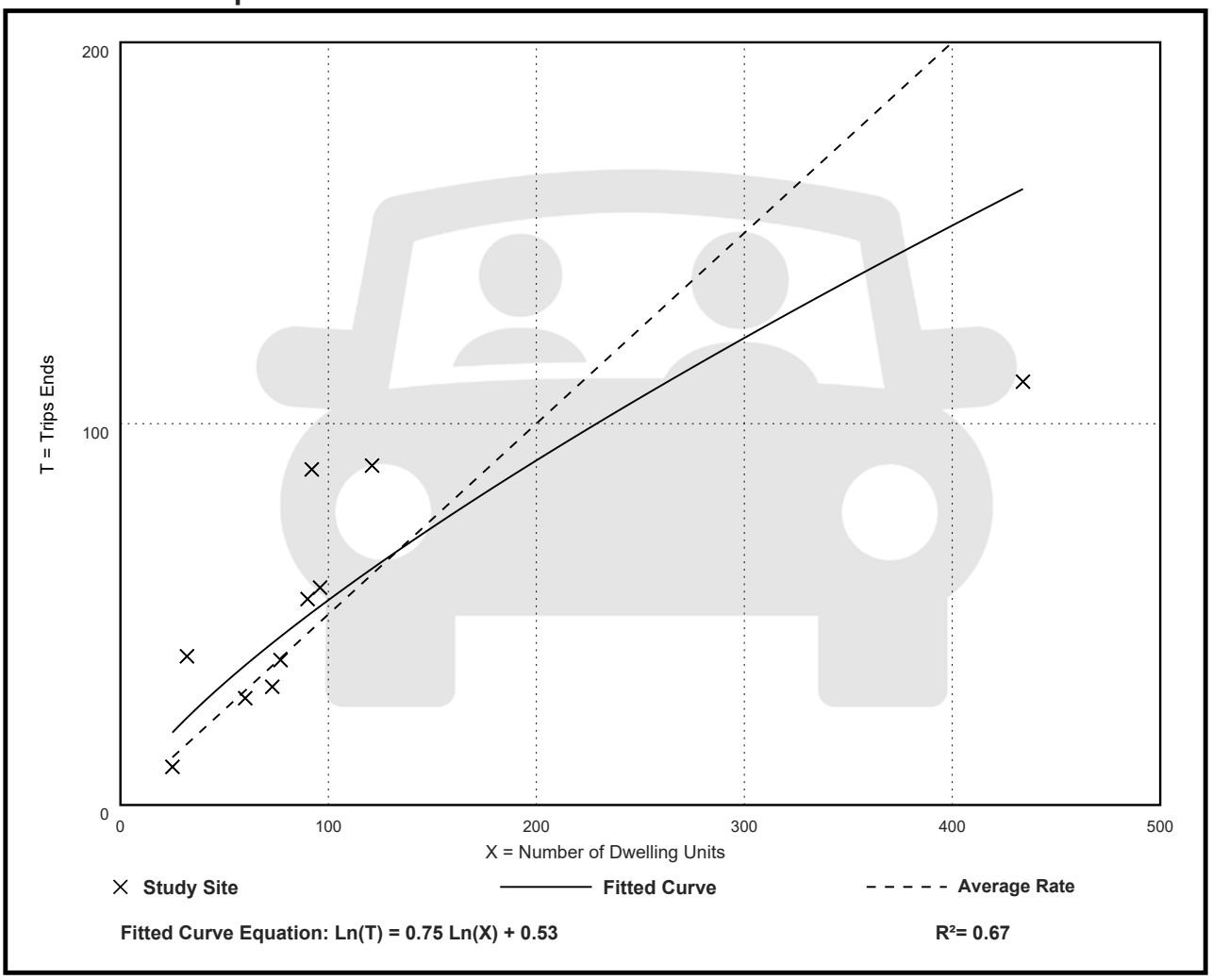
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 10
Avg. Num. of Dwelling Units: 110
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.50	0.26 - 1.22	0.27

Data Plot and Equation



Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

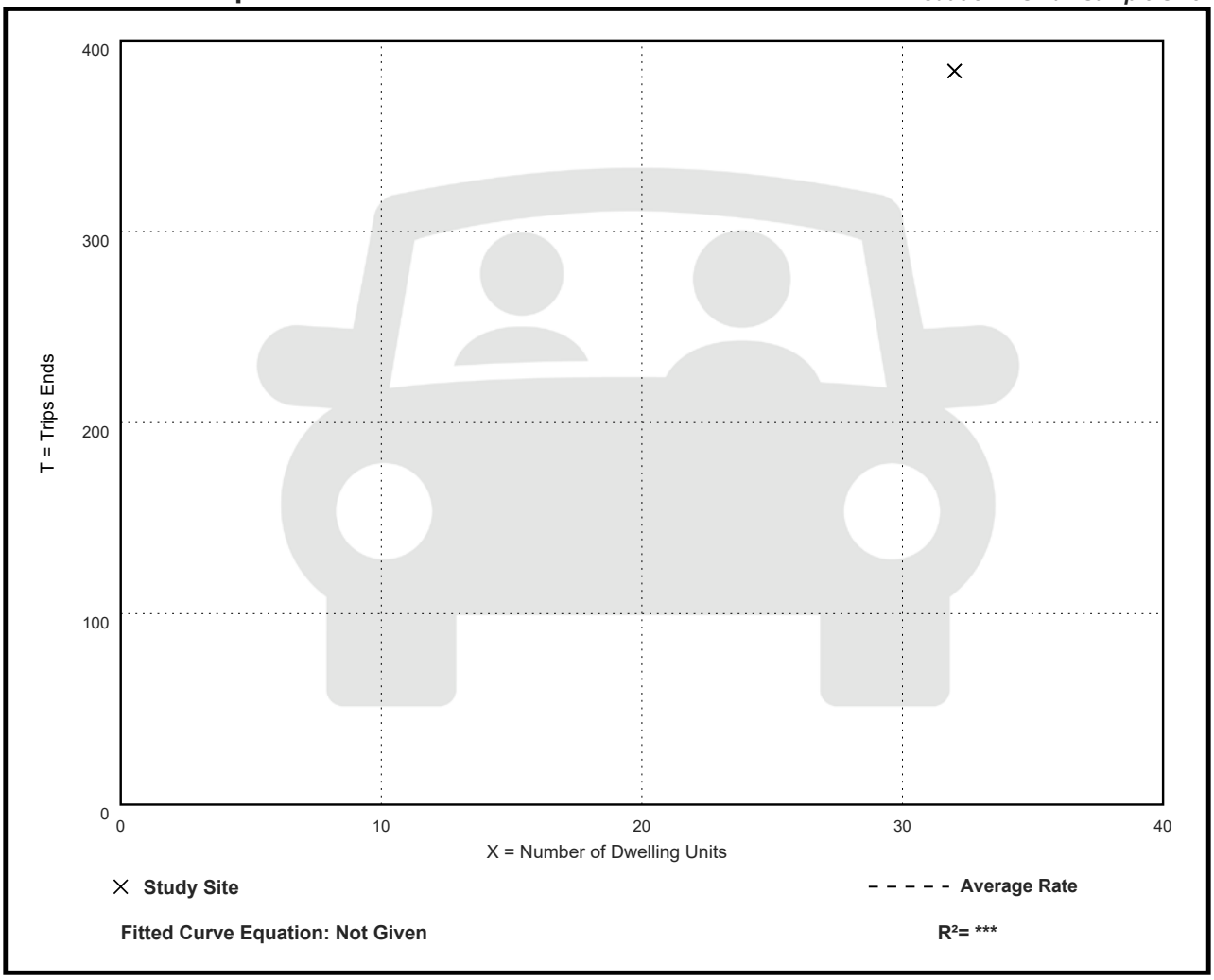
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Dwelling Units: 32
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
12.00	12.00 - 12.00	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

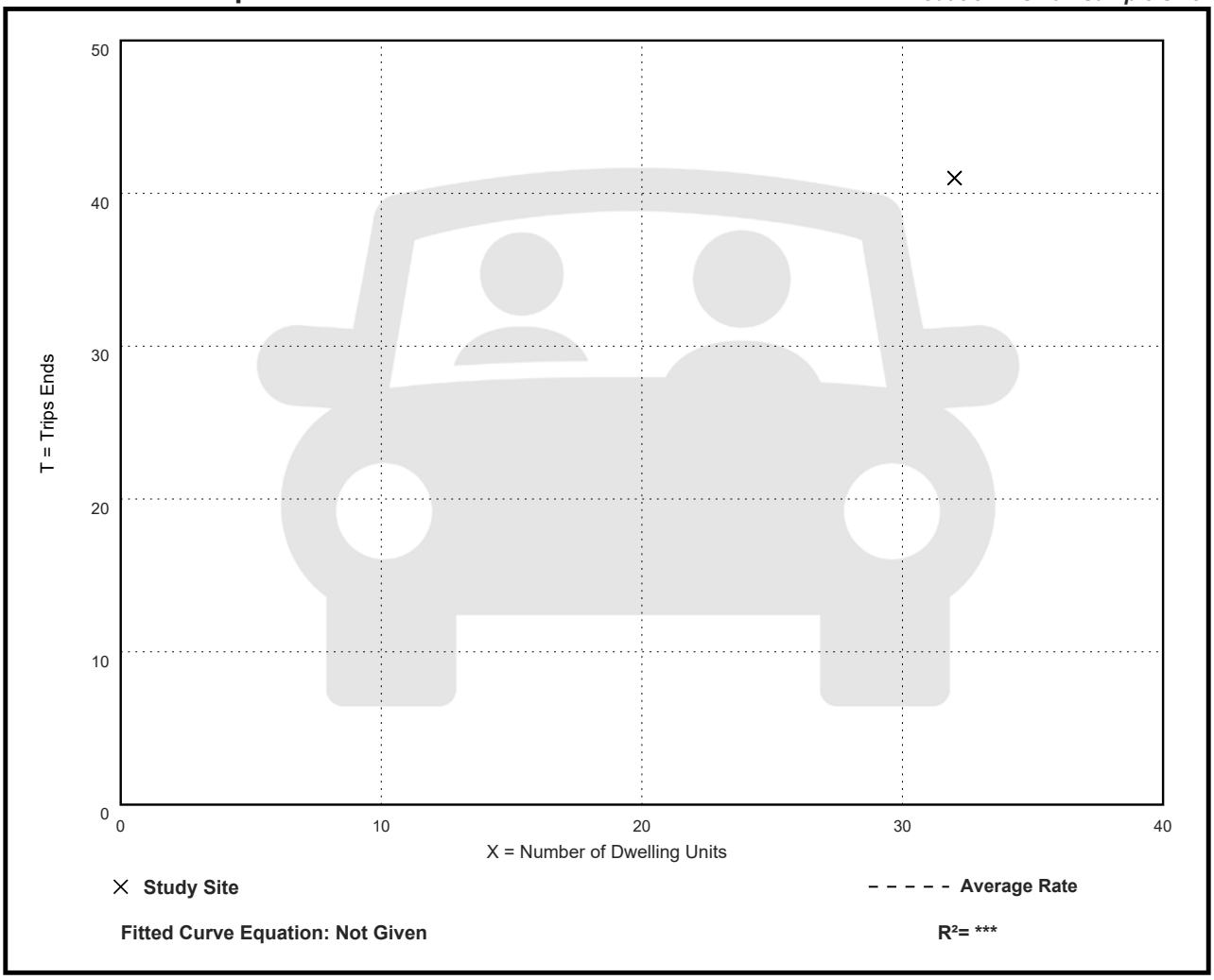
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Dwelling Units: 32
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.28	1.28 - 1.28	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Sunday

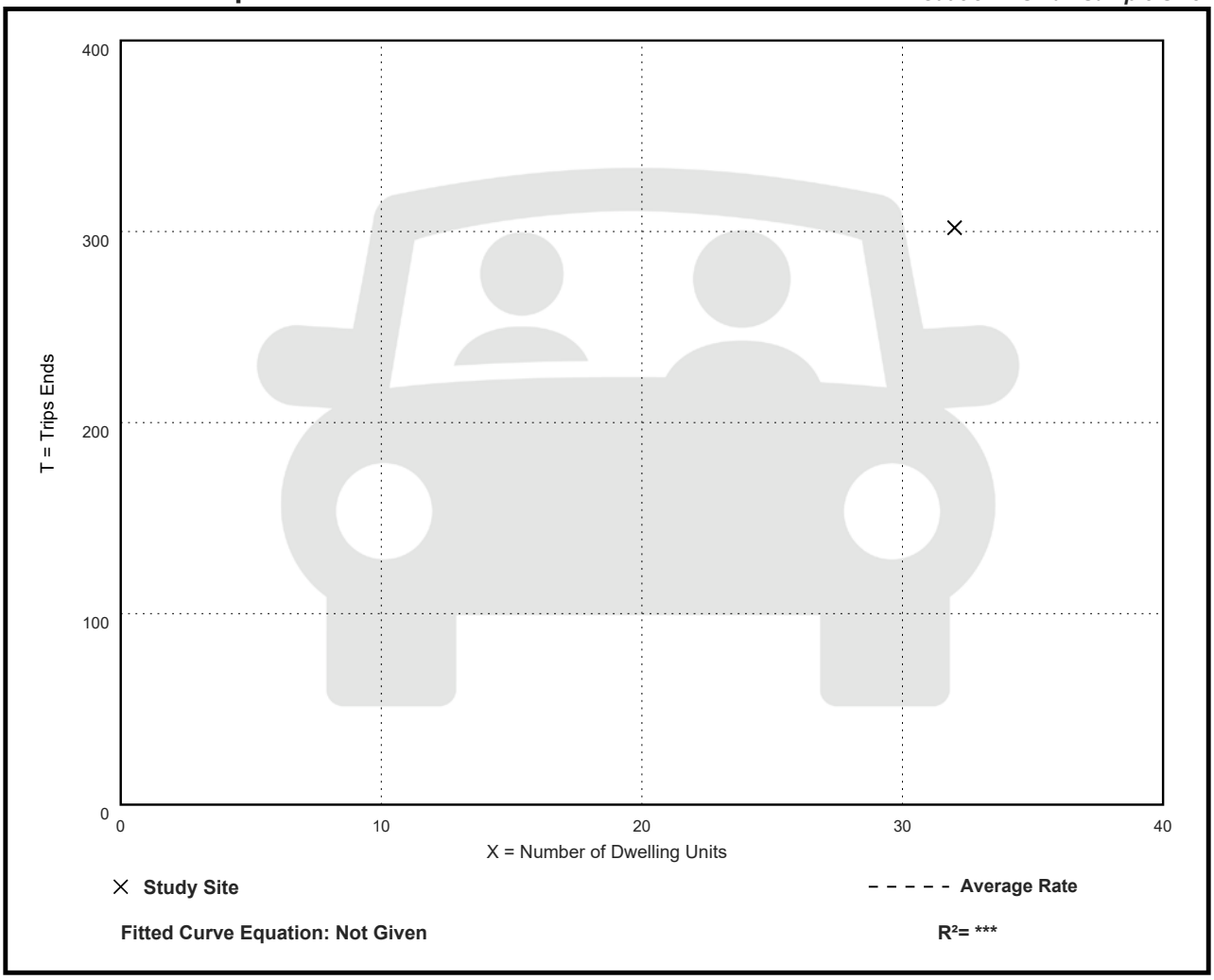
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Dwelling Units: 32
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	9.44 - 9.44	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Dwelling Units
On a: Sunday, Peak Hour of Generator

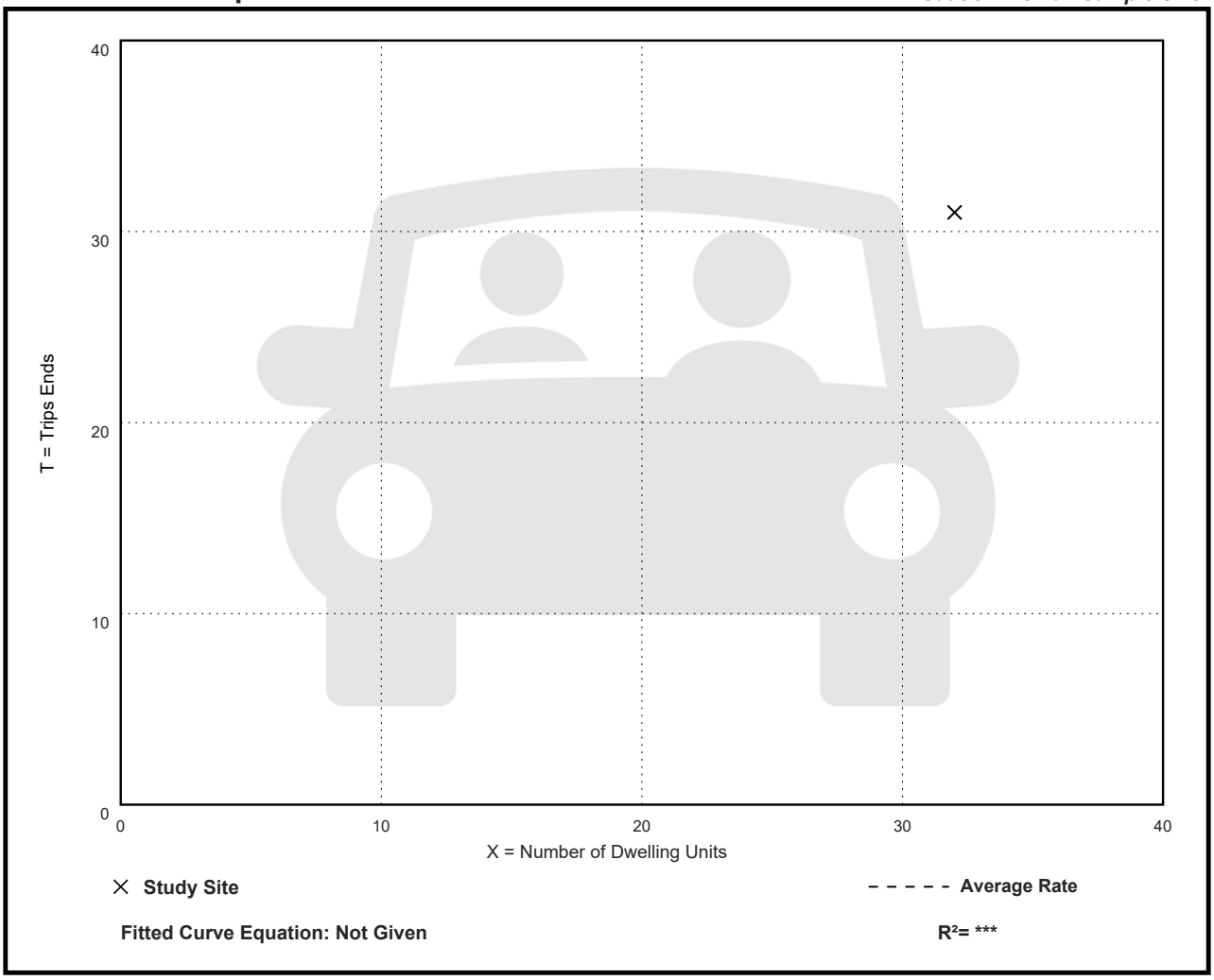
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Dwelling Units: 32
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.97	0.97 - 0.97	***

Data Plot and Equation

Caution – Small Sample Size



Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Residents
On a: Weekday

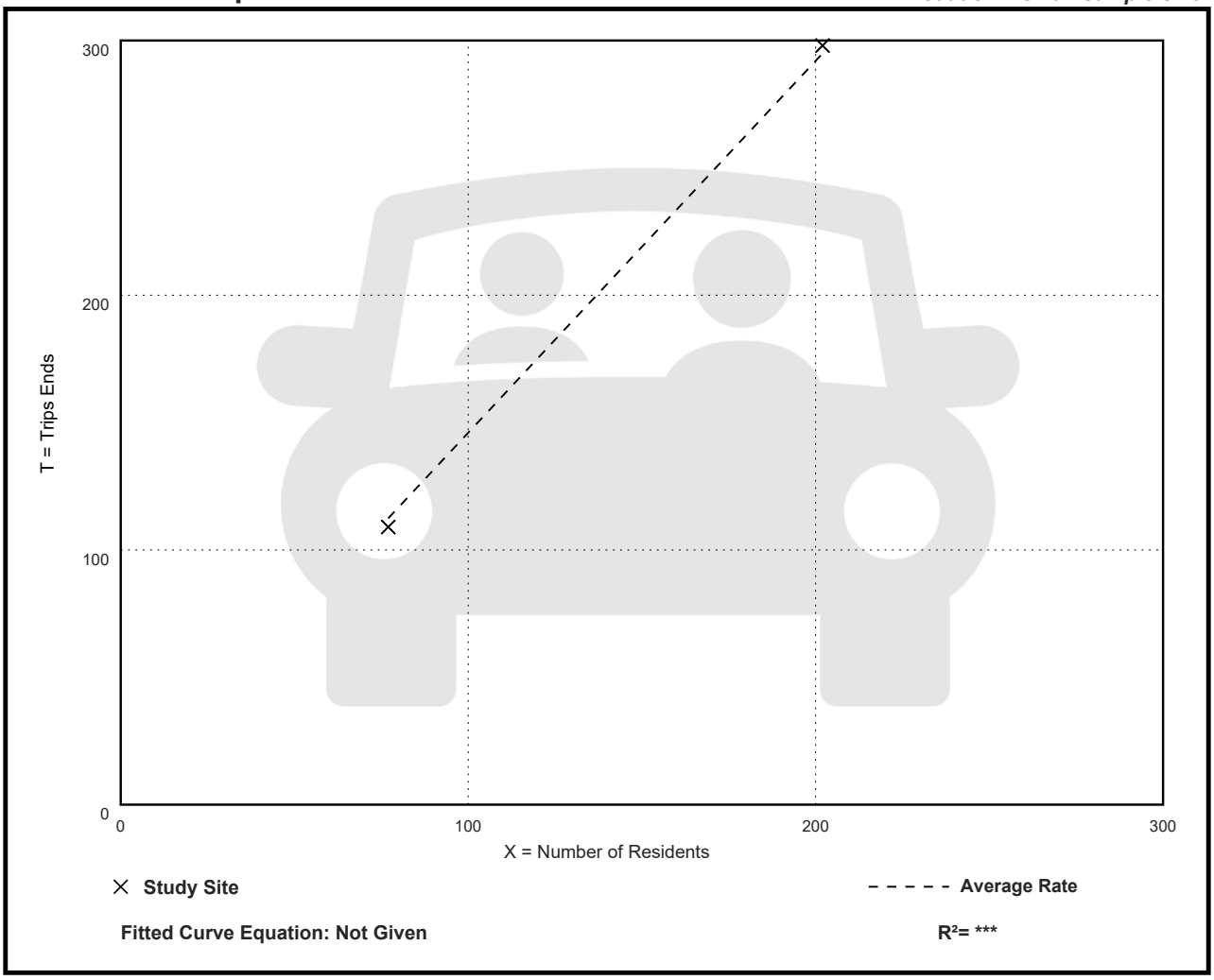
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Residents: 140
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
1.46	1.42 - 1.48	***

Data Plot and Equation

Caution – Small Sample Size



Affordable Housing - Income Limits
(223)

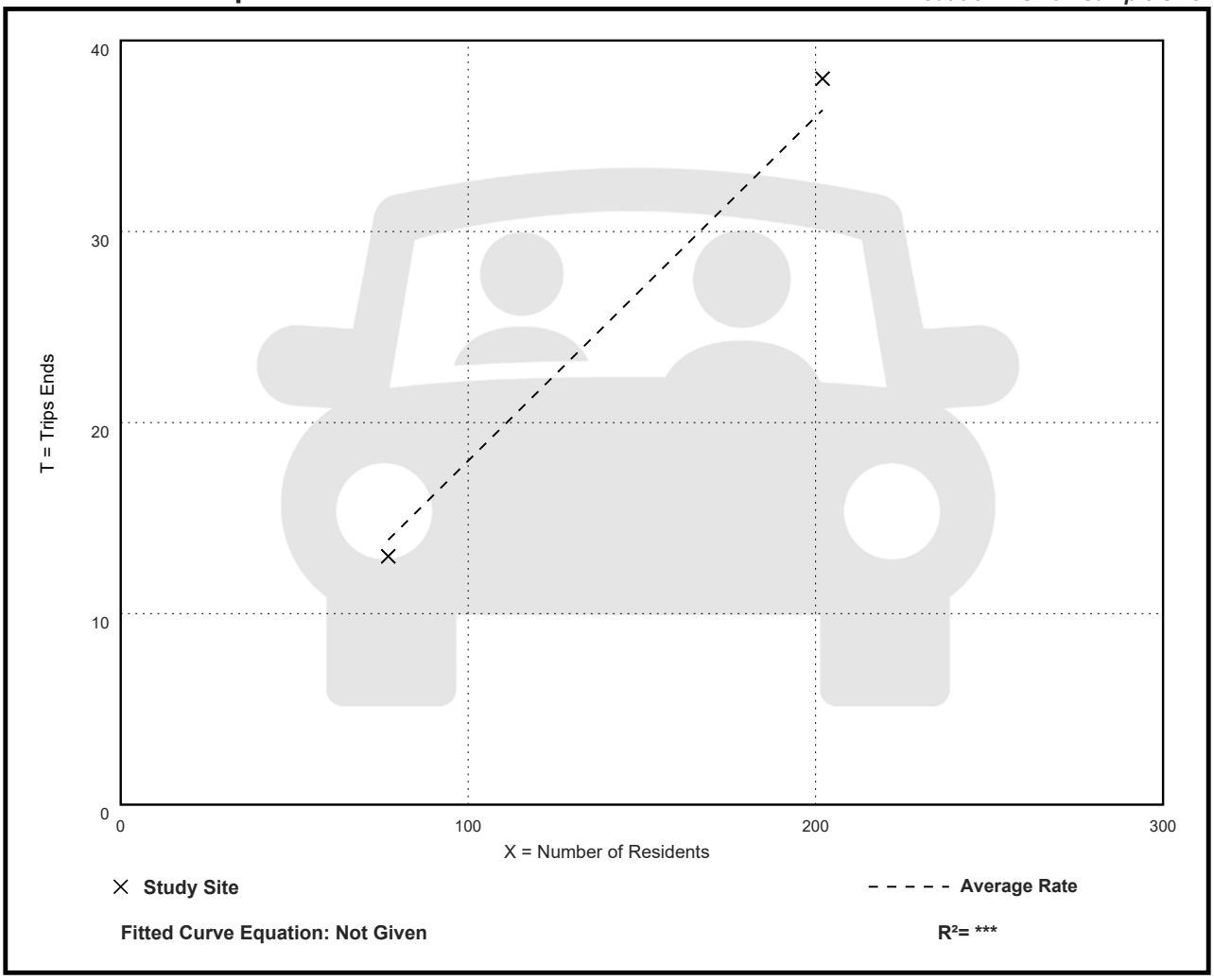
Vehicle Trip Ends vs: Residents
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Residents: 140
Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.18	0.17 - 0.19	***

Data Plot and Equation

Caution – Small Sample Size



Affordable Housing - Income Limits
(223)

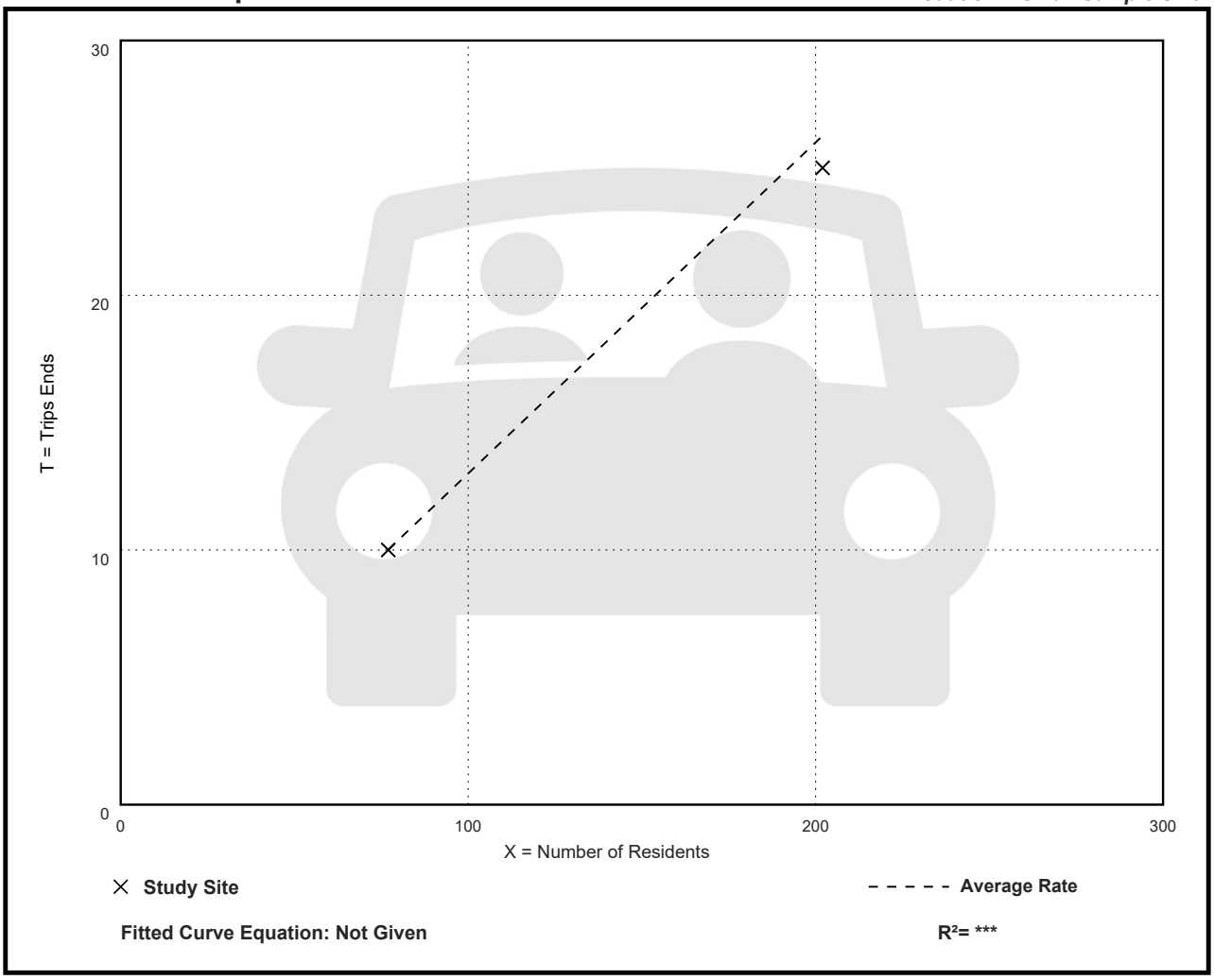
Vehicle Trip Ends vs: Residents
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Residents: 140
Directional Distribution: 71% entering, 29% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.13	0.12 - 0.13	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Affordable Housing - Income Limits (223)

Vehicle Trip Ends vs: Residents
On a: Weekday,
AM Peak Hour of Generator

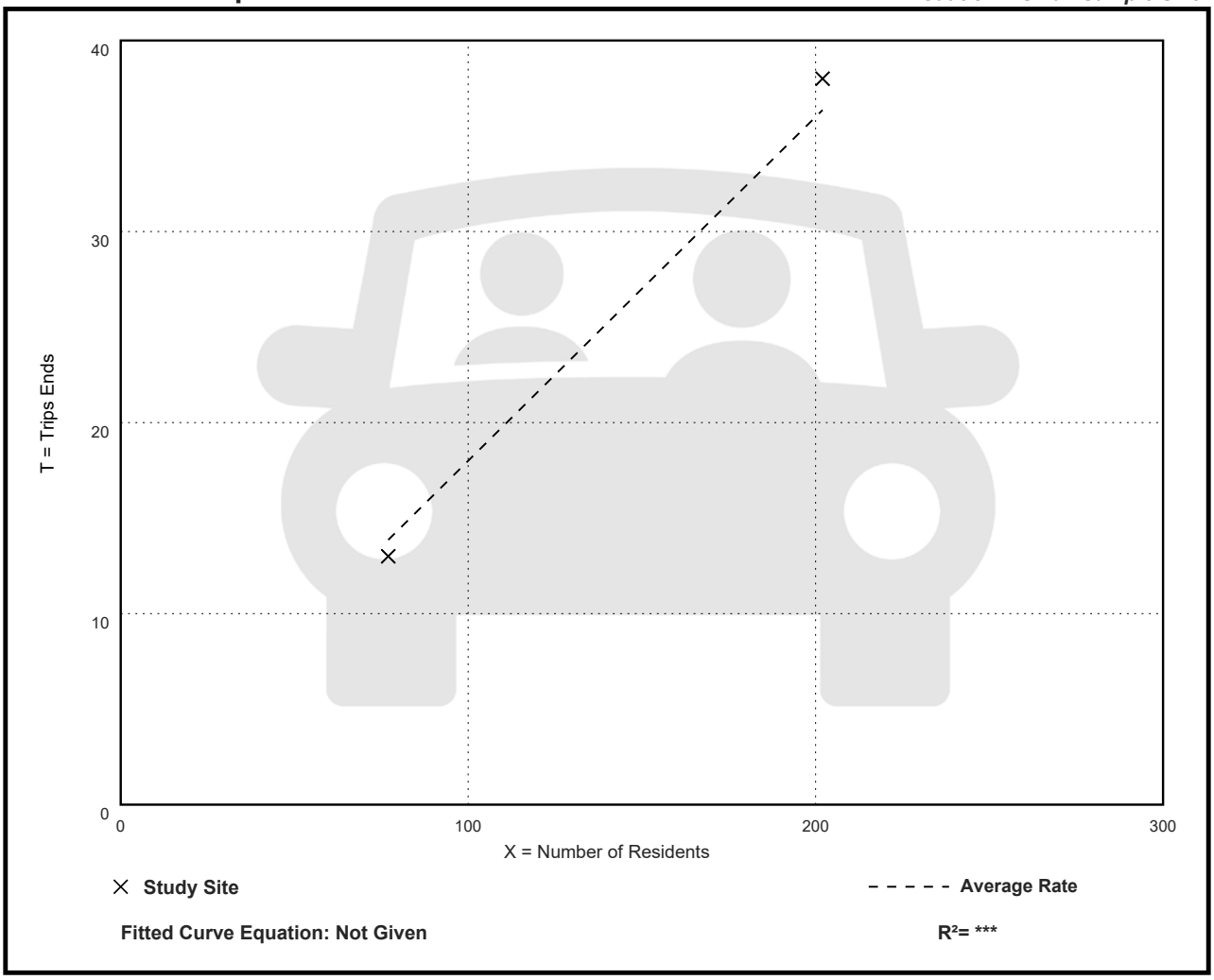
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Residents: 140
Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.18	0.17 - 0.19	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Affordable Housing - Income Limits
(223)

Vehicle Trip Ends vs: Residents
On a: Weekday,
PM Peak Hour of Generator

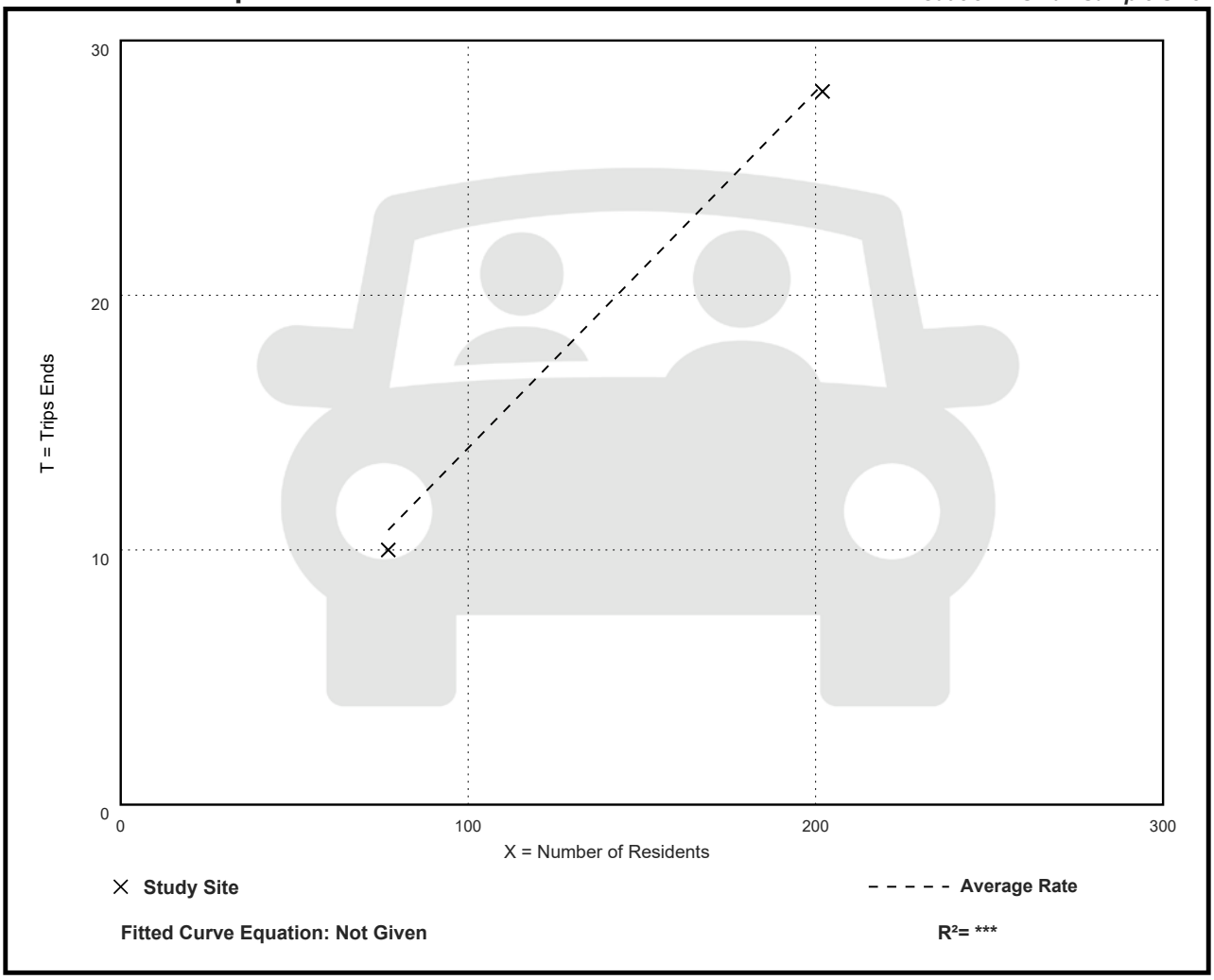
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Residents: 140
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.14	0.13 - 0.14	***

Data Plot and Equation

Caution – Small Sample Size

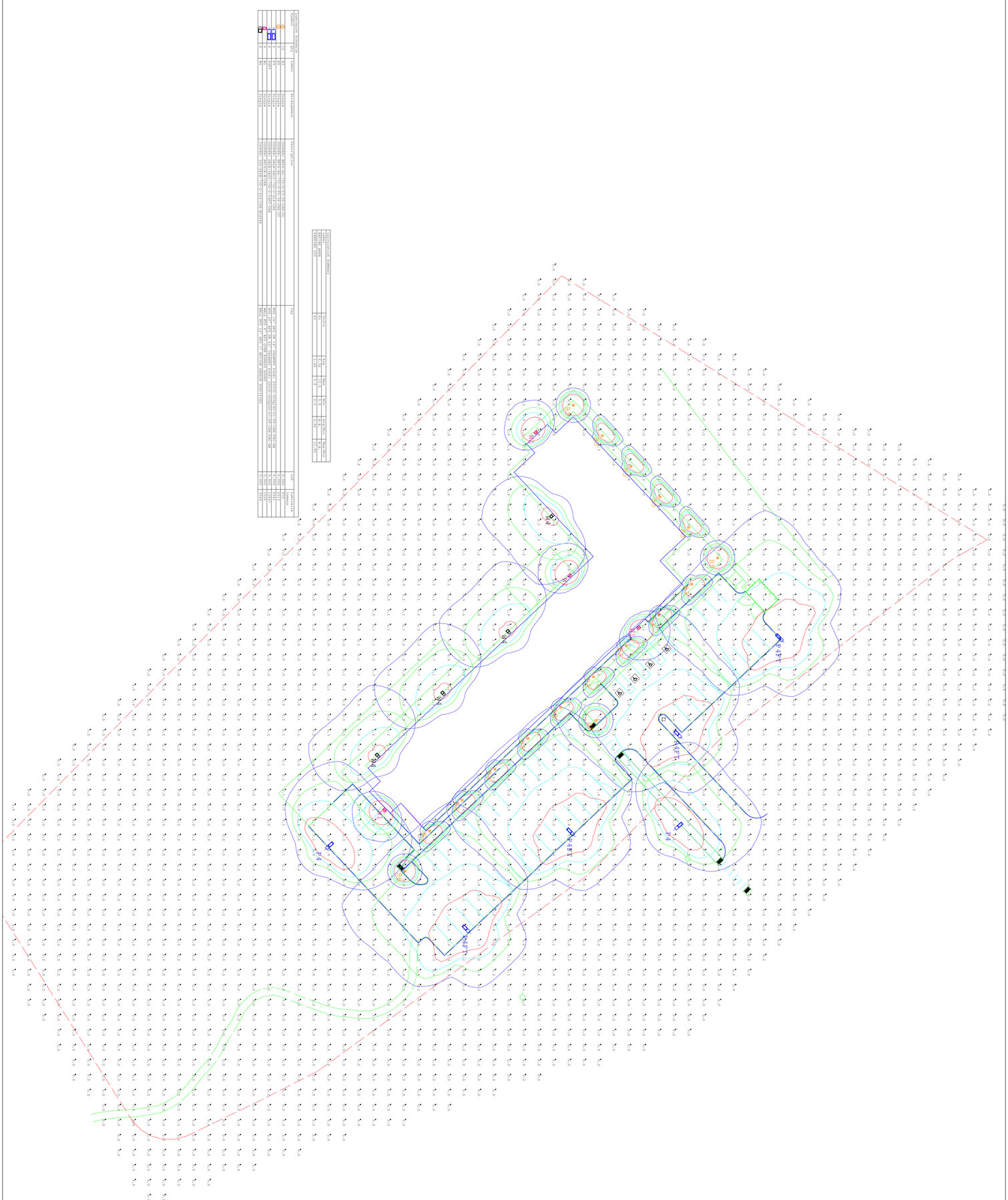


Fitted Curve Equation: Not Given

R^2= *

Section M

Photometric Plan & Lighting Cut Sheets

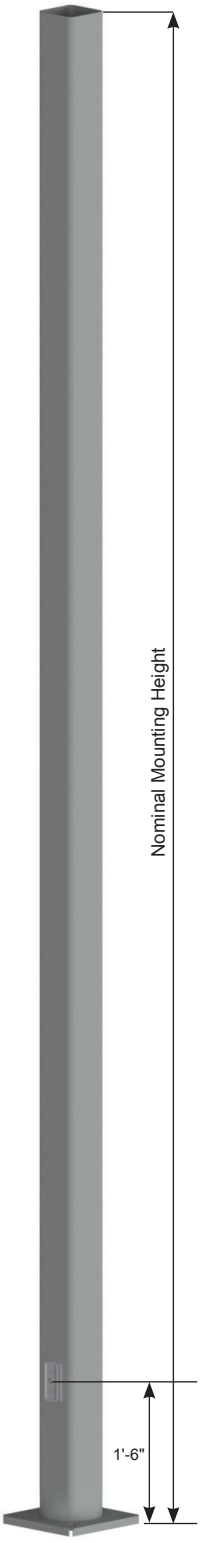


Page 1 of 1	45 BELMONT AVE BELFAST, ME	Drawn By: Michael O'Brien Checked By: Date:6/15/2025 Contact: mobrien@charroninc.com Scale: NTS	Revisions	# / Date / Comments	CHARRON REFLEX LIGHTING

valmont STRUCTURES

DS330
Fatigue Resistant Soft Square Steel Post

Job Name:	Client Name:
Job Location - City: State:	Created By: Date:
Product: DS330 Quote:	Customer Approval: Date:



Tenon Top*

Pole Cap - Plastic

Cross Section

Soft Square

Handhole

Full Base Cover (Standard)

Dart Square - 2T (Optional)

*Consult factory on loading criteria for pole top mounted luminaires and/or brackets.

SPECIFICATIONS

Pole Shaft - The pole shaft is fabricated from hot rolled welded steel tubing of one-piece construction with a minimum yield strength of 55 KSI.

Pole Top – A removable pole cap is provided for poles receiving drilling patterns for side-mount luminaire arm assemblies. For top mount luminaire and/or bracket consult the factory. Consult the luminaire manufacturer for correct tenon size or drill pattern. Other pole top options include pole cap only (PC) or plain top (PL) which is typical when the pole top diameter matches the necessary slip fit dimensions.

Handhole – A reinforced handhole with grounding provision is provided at 1'-6" from the base end of the pole assembly. Each handhole includes an easy to install, self-contained Swing Latch handhole cover assembly. U.S. Patent Swing Latch cover is fabricated from durable polycarbonate/ABS blend plastic. All pole assemblies are provided with a 2.50" x 5.00" rectangular handhole. Handhole dimensions are nominal.

Base Cover – A two-piece full base cover fabricated from ABS plastic is provided with each pole assembly. Additional base cover options, including the dart square (2T) cast aluminum cover, are available upon request.

Anchor Bolts - Anchor bolts conform to ASTM F1554 Grade 55 and are provided with two hex nuts and two flat washers. Bolts have an “L” bend on one end and are galvanized a minimum of 12" on the threaded end.

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

Finish - Standard finishes are either Galvanized (GV) or Finish Painted (FP). Additional finish options including Finish Paint over Galvanizing (FPGV) or any of the V-PRO™ Finish Coating Systems are available upon request. See the product ordering code for color options.

Design Criteria - Please reference Design Criteria Specification for appropriate design conditions.

DS330
Fatigue Resistant Soft Square Steel Post

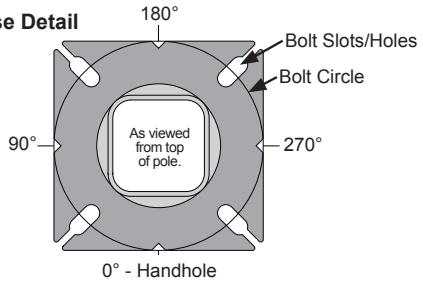
valmont STRUCTURES

Job Name:	Client Name:
Job Location - City: State:	Created By: Date:
Product: DS330 Quote:	Customer Approval: Date:

ANCHORAGE DATA

POLE		BASE PLATE				ANCHOR BOLTS		
POLE BASE SQUARE (IN)	WALL THK (GA)	BOLT CIRCLE DIA (IN)	BOLT CIRCLE ± (IN)	SQUARE (IN)	THK (IN)	DIA x LENGTH x HOOK (IN)	PROJECTION (IN)	± (IN)
4.00	11	8.50	0.50	8.25	0.750	0.75 x 17.00 x 3.00	3.50	0.25
4.00	7	8.50	0.50	8.25	0.875	0.75 x 17.00 x 3.00	3.63	0.25
5.00	11	11.00	1.00	11.00	1.000	0.75 x 17.00 x 3.00	3.75	0.25
5.00	7	11.00	1.00	11.00	1.000	0.75 x 17.00 x 3.00	3.75	0.25
6.00	7	12.00	1.00	12.50	1.000	1.00 x 36.00 x 4.00	4.25	0.25

Anchor Base Detail



DESIGNATION,LOAD AND DIMENSIONAL DATA

DESIGN INFORMATION							POLE DIMENSIONS[3]				DESIGNATION
	80 MPH w/1.3 GUST		90 MPH w/1.3 GUST		100 MPH w/1.3 GUST						
NOMINAL MOUNTING HEIGHT	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	MAX EPA[1] (SQ FT)	MAX WEIGHT[1] (LBS)	SHAFT BASE SQUARE[3] (IN)	SHAFT TOP SQUARE (IN)	WALL THK (GA)	STRUCTURE WEIGHT[2] (LBS)	
10'-0"	30.6	765	23.8	595	18.9	473	4.00	4.00	11	75	400Q100
12'-0"	24.4	610	18.8	470	14.8	370	4.00	4.00	11	90	400Q120
14'-0"	19.9	498	15.1	378	11.7	293	4.00	4.00	11	100	400Q140
16'-0"	15.9	398	11.8	295	8.9	223	4.00	4.00	11	115	400Q160
18'-0"	12.6	315	9.2	230	6.7	168	4.00	4.00	11	125	400Q180
20'-0"	9.6	240	6.7	167	4.5	150	4.00	4.00	11	140	400Q200
	17.7	443	12.7	343	9.4	235	5.00	5.00	11	185	500Q200
	28.1	703	21.4	535	16.2	405	5.00	5.00	7	265	500W200
25'-0"	4.8	150	2.6	100	1.0	50	4.00	4.00	11	170	400Q250
	10.8	270	7.7	188	5.4	135	4.00	4.00	7	245	400W250
	9.8	245	6.3	157	3.7	150	5.00	5.00	11	225	500Q250
	18.5	463	13.3	333	9.5	238	5.00	5.00	7	360	500W250
30'-0"	6.7	168	4.4	110	2.6	65	4.00	4.00	7	291	400W300
	4.7	150	2.0	50	N/A	N/A	5.00	5.00	11	265	500Q300
	10.7	267	6.7	167	3.9	100	5.00	5.00	7	380	500W300
	19.0	475	13.2	330	9.0	225	6.00	6.00	7	520	600W300
35'-0"	5.9	150	2.5	100	N/A	N/A	5.00	5.00	7	440	500W350
	12.4	310	7.6	190	4.2	105	6.00	6.00	7	540	600W350
40'-0"	7.2	180	3.0	75	N/A	N/A	6.00	6.00	7	605	600W400

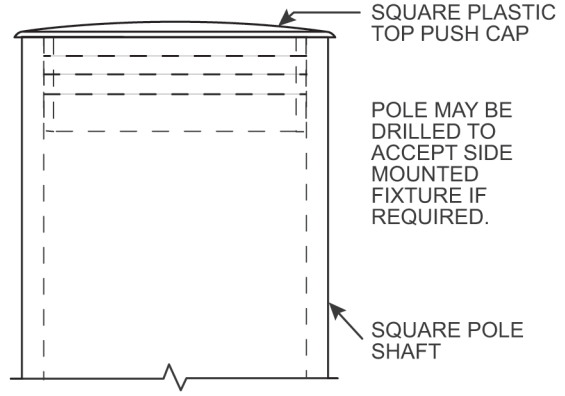
1. Maximum EPA (Effective Projected Area) and weight values are based on side mounted fixtures only. Consult factory on loading criteria for pole top mounted luminaires and/or brackets. Variations from sizes above are available upon inquiry at the factory. Satisfactory performance of poles is dependent upon the pole being properly attached to a supporting foundation of adequate design.
2. Structure weight is a nominal value which includes the pole shaft and base plate only.
3. Belled-bottom will have reduced thickness due to the cold-working process. However, the belled-bottom meets or exceeds the structural capacity of the original square section. In addition, the rounded section provides better fatigue resistance.

PRODUCT ORDERING CODES

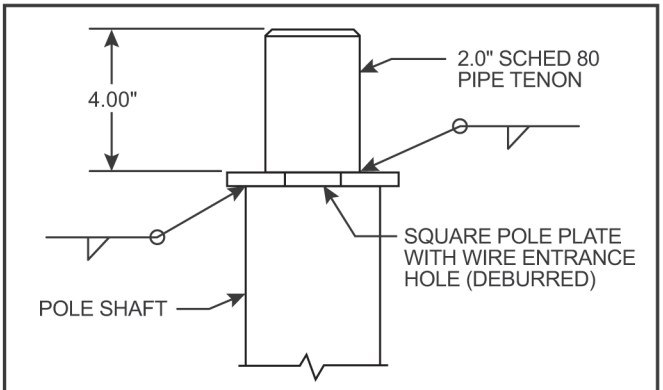
MODEL	DESIGNATION	FIXTURE MOUNTING	FINISH SYSTEM	STANDARD COLOR OPTIONS	BASE COVER	ANCHOR BOLTS	SUPPLEMENTAL INFO
DS330				--	--	--	
	Select Correct Designation from the Load and Dimensional Data Chart.	**Drill Mounting (See Orientation)** D1 = (1) Drilling @ 270° D2 = (2) Drillings @ 90° & 270° D4 = (4) Drillings @ 0°, 90°, 180°, & 270° D5 = (2) Drillings @ 180° & 270° D6 = (3) Drillings @ 90°, 180°, & 270° **Tenon Mounting** P2 = 2.38" OD x 4" tenon P4 = 4.00" OD x 6" tenon P5 = 2.88" OD x 4" tenon P6 = 2.88" OD x 5" tenon P7 = 2.38" OD x 5" tenon P9 = Special Size (Specify) **Other Options** PC = Pole Cap PL = Plain Top (No Cap)	GV = Galvanized FP = Finish Painted **-----OPTIONAL-----** FPGV = Finish Paint over Galvanizing VP30 = V-PRO™ 30 System VP32 = V-PRO™ 32 System VP53 = V-PRO™ 53 System VP54 = V-PRO™ 54 System VP57 = V-PRO™ 57 System VP100 = V-PRO™ 100 System VP105 = V-PRO™ 105 System	GV = Galvanized BK = Black DB = Dark Bronze MB = Medium Bronze WH = White LG = Light Gray CB = Bronze DG = Dark Green ST = Sandstone HTG= Hunter Green SG = Slate Gray SL = Silver SC = Special Color (Specify)	FBC = Full Base Cover **-----OPTIONAL-----** 2T = Square Dart Cover	AB = With Anchor Bolts LAB = Without Anchor Bolts	

SPC7207 12/17 valmontstructures.com carries the most current spec information and supersedes these guidelines.

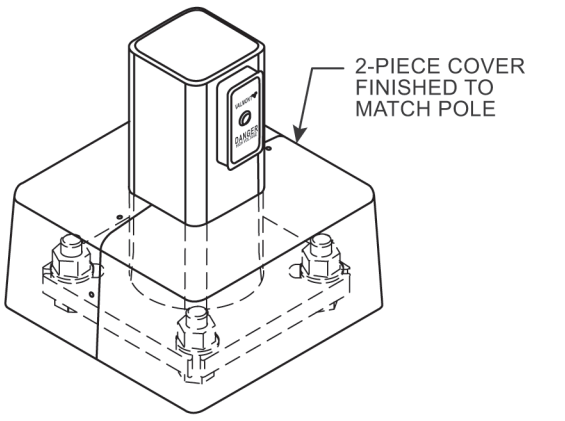
DS330 - Fatigue Resistant Square Non-Tapered Steel Pole



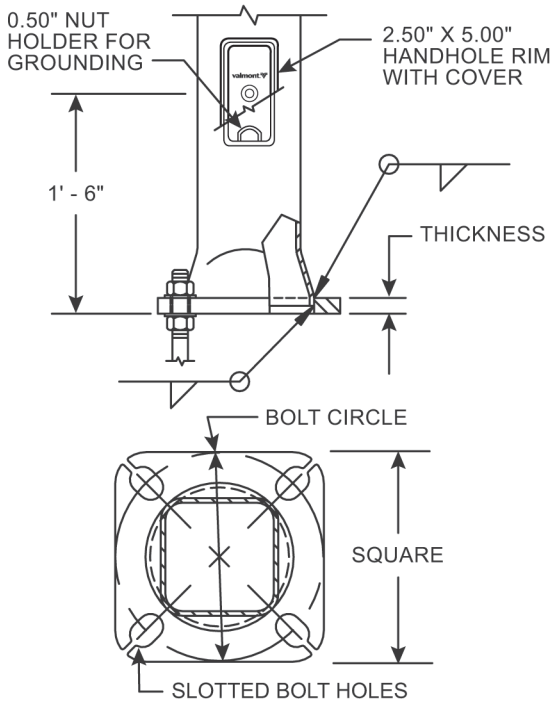
CAP DETAIL (STANDARD)



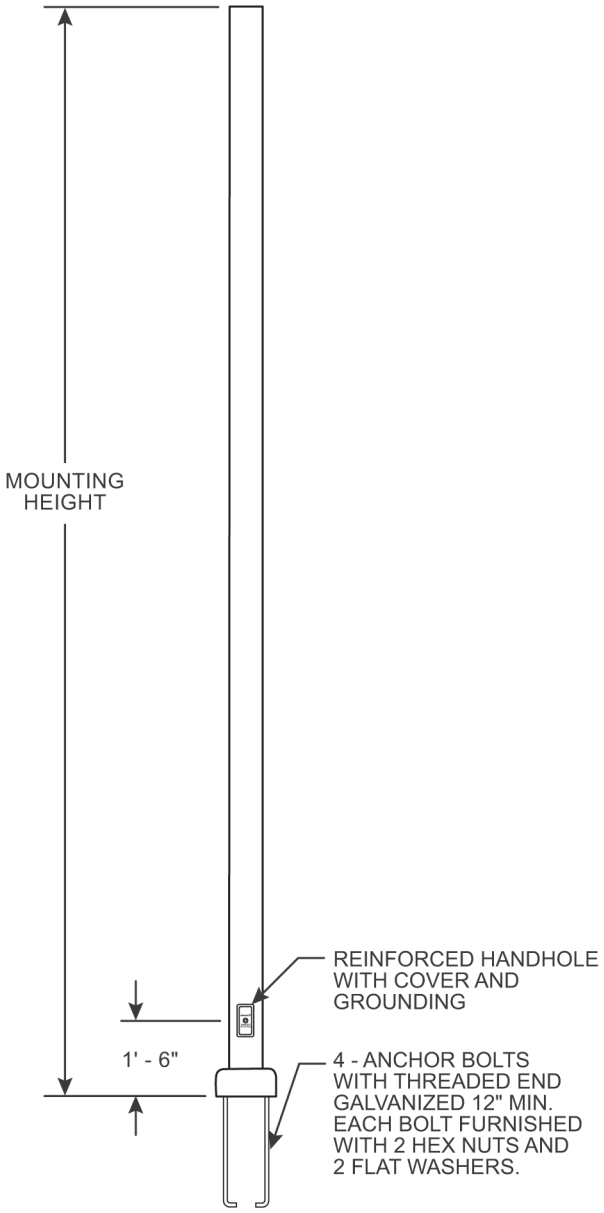
P2 TENON DETAIL (OPTIONAL)



FULL BASE COVER (STANDARD)



POLE BASE AND HANDHOLE DETAIL



DS330 POLE DETAIL

SPC7207 12/17 valmontstructures.com carries the most current spec information and supersedes these guidelines.

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

BRT6 Bollard

Round LED Pedestrian Luminaire

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Optical Distributions page 2
- Energy and Performance Data page 3

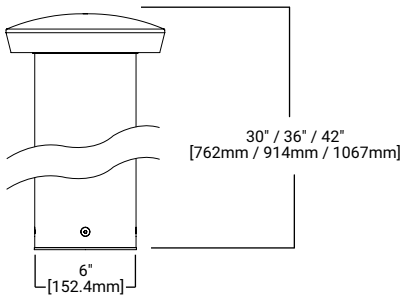
Product Certifications

Quick Facts

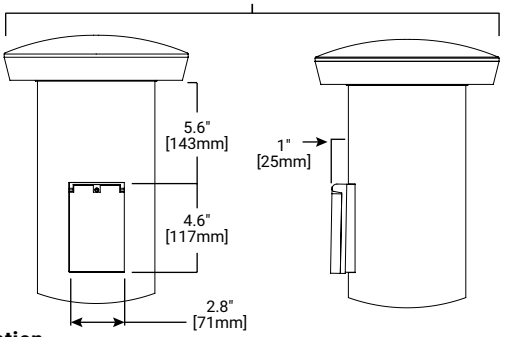
- 4 Optical Distributions
- Available in 30", 36", and 42"
- Lumen packages range from 560 - 4400 (5W - 49W)
- Efficacy up to 122 lumens per watt
- Zero uplight on all configurations

Dimensional Details

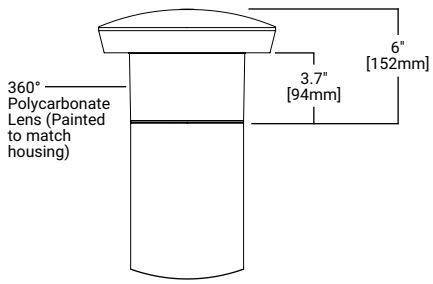
Side View



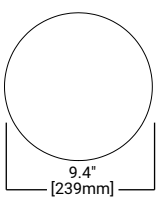
GFI and USB Options



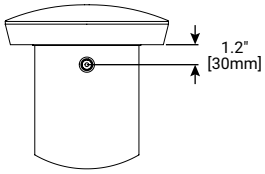
SM2 Option



Top View



CBP Option



Height	Weight
30"	7.2lb (3.3kg)
36"	8.7lb (4.0kg)
42"	10.3lb (4.7kg)

* Base model without options or controls

Ordering Information

SAMPLE NUMBER: **BRT6-A3-740-U-T4-36-GM**

Product Family	Configuration [1]	Color Temperature	Voltage	Distribution	Height	Finish
BRT6=Bollard, 6" Round Base **BAA-BRT6**=Bollard, 6" Round Base, Buy American Act Compliant [13] **TAA-BRT6**=Bollard, 6" Round Base, Trade Agreements Act Compliant [13]	**A1**=1000lm Nominal [11] **A2**=2000lm Nominal **A3**=3000lm Nominal **A4**=4000lm Nominal	**727**=70CRI, 2700K **730**=70CRI, 3000K **740**=70CRI, 4000K **750**=70CRI, 5000K **830**=80CRI, 3000K **AMB**=Amber, 590nm [2]	**U**=120-277V **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V [5] **9**=347V	**T3**=Path Asymmetric **T4**=Wide Path Asymmetric **T5**=Type V Symmetric **T5S**=Type V Square Symmetric	**30**=30" **36**=36" **42**=42"	**AP**=Gray **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White

Options (Add as Suffix)	Controls and Systems Options (Add as Suffix)	Accessories (Order Separately)[14]
DIM=External 0-10V Dimming Leads [4, 7] **F**=Single Fuse (120, 277 or 347V Specify Voltage) **FF**=Double Fuse (208, 240 or 480V Specify Voltage) **CC**=Coastal Construction [3] **HA**=50°C High Ambient **20K**=20kV UL 1449 fused surge protective device **CBP**=Battery Pack, Cold Weather Rated [9, 12] **DALI**=DALI Driver [4, 11] **LAB**=Less Anchor Bolts & Template [6] **GFI**=GFCI Outlet [8, 17] **USB**=USB charging receptacle [15, 17]	**BPC**=Button Type Photocontrol [10] **SM2**=Microwave Occupancy Sensor, 18' max range [16]	**BRT6ANCHOR**=Anchor bolt kit and template [6]

NOTES:
1. Nominal output based on symmetric distributions at 4000K CCT. See lumen table and IES files for details.
2. Narrow-band 590nm +/- 5nm for wildlife and observatory use. Available with configuration A1 only.
3. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
4. Not available with other controls options
5. 480V must utilize Wye system only. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems.)
6. Bollard ships with anchor bolts and template included, unless LAB is specified, in which case the BRT6ANCHOR accessory must be ordered separately.
7. Low voltage control leads brought out 18" from fixture
8. GFCI 125-Volt duplex tamper-proof outlet rated for 15A. Available in 120V only. Cannot be used in conjunction with USB option.
9. Operates at -20°C to +40°C. Not available with HA, GFI, USB or SM2 options. 6W initial output. 16.2Wh capacity.
10. Not available with "U" voltage, must specify voltage.
11. Available in 120V only, except with Amber (AMB).
12. Specify 120V or 277V.
13. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
14. For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
15. 120V only. Weather-resistant, tamper-resistant duplex 15A, 125V AC receptacle with (1) USB Type-A and (1) USB Type-C port. Must be installed on a GFCI-protected circuit. 1-Year Warranty. Model WRR26USBAC6BK. Cannot be used in conjunction with GFI Outlet option.
16. Includes microwave sensor with integral polycarbonate lens painted to match fixture. Does not include photocontrol. Use in conjunction with BPC or external photocontrol for dusk-to-dawn operation. Not available with HA High Ambient option.
17. Mounted to weatherproof, spring-loaded box suitable for covered areas. Not while-in-use capable.

Product Specifications

Construction
- Extruded aluminum housing with cast base and top
- Patent-pending base plate design offers superior rigidity
- 3G vibration rated
- IK10 impact rating for housing and optic assembly

Optics
- High-efficiency injection-molded AccuLED optics technology
- 4 optical distributions; 2 symmetric and 2 asymmetric
- IDA Certified (3000K CCT and warmer only)

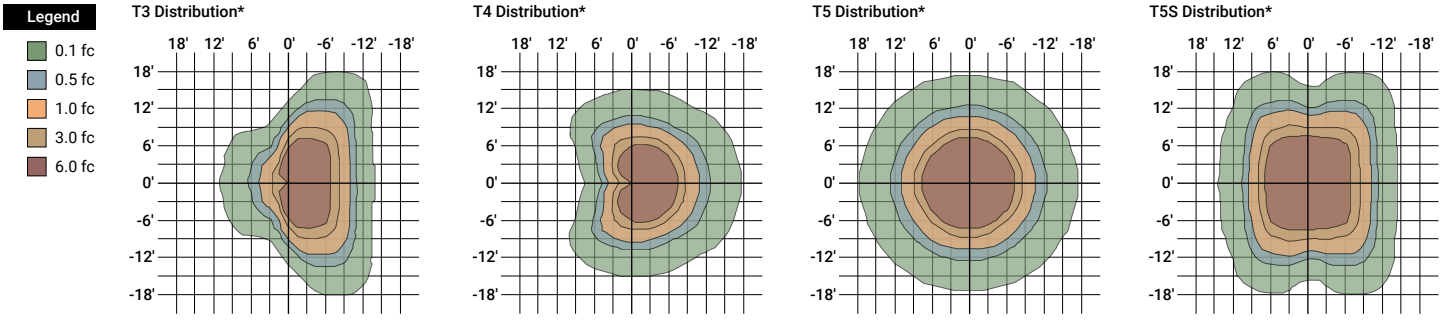
Electrical
- Standard with 0-10V dimming
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration
- 10kV surge module standard

Finish
- Super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness
- RAL and custom color matches available
- Coastal Construction (CC) option available

Typical Applications
- Outdoor, Walkway, Perimeter, Landscapes, Hardscapes

Warranty
- Five year warranty

Optical Distributions



***NOTE:** A4 lumen package, 4000K CCT, 3.5' MH

Energy and Performance Data

Asymmetric Power and Lumens

Optics			Configuration			
			A1	A2	A3	A4
4000K / 5000K CCT, 70 CRI	T3	Wattage	5	11	17	22
		Lumens	537	1075	1627	1961
		BUG Rating	B0-U0-G0	B0-U0-G1	B0-U0-G1	B0-U0-G1
		Lumens per Watt	99	99	94	91
	T4	Wattage	5	10	15	21
		Lumens	559	1101	1616	2193
		BUG Rating	B0-U0-G0	B0-U0-G1	B1-U0-G1	B1-U0-G1
		Lumens per Watt	110	115	110	104
3000K CCT, 70 CRI	T3	Wattage	5	11	17	22
		Lumens	489	979	1482	1786
		BUG Rating	B0-U0-G0	B0-U0-G1	B0-U0-G1	B0-U0-G1
		Lumens per Watt	99	99	94	91
	T4	Wattage	5	10	15	21
		Lumens	509	1003	1472	1997
		BUG Rating	B0-U0-G0	B0-U0-G1	B1-U0-G1	B1-U0-G1
		Lumens per Watt	110	115	110	104
3000K CCT, 80 CRI	T3	Wattage	5	11	17	22
		Lumens	427	854	1293	1558
		BUG Rating	B0-U0-G0	B0-U0-G1	B0-U0-G1	B0-U0-G1
		Lumens per Watt	99	99	94	91
	T4	Wattage	5	10	15	21
		Lumens	444	875	1284	1743
		BUG Rating	B0-U0-G0	B0-U0-G1	B1-U0-G1	B1-U0-G1
		Lumens per Watt	110	115	110	104
2700K CCT, 70 CRI	T3	Wattage	5	11	17	22
		Lumens	449	899	1361	1640
		BUG Rating	B0-U0-G0	B0-U0-G1	B0-U0-G1	B0-U0-G1
		Lumens per Watt	99	99	94	91
	T4	Wattage	5	10	15	21
		Lumens	467	921	1351	1834
		BUG Rating	B0-U0-G0	B0-U0-G1	B1-U0-G1	B1-U0-G1
		Lumens per Watt	110	115	110	104
AMB 590nm	T3	Wattage	13	--	--	--
		Lumens	457	--	--	--
		BUG Rating	B0-U0-G0	--	--	--
		Lumens per Watt	34	--	--	--
	T4	Wattage	11	--	--	--
		Lumens	352	--	--	--
		BUG Rating	B0-U0-G0	--	--	--
		Lumens per Watt	32	--	--	--

Symmetric Power and Lumens

Optics			Configuration			
			A1	A2	A3	A4
4000K / 5000K CCT, 70 CRI	T5	Wattage	9	18	29	42
		Lumens	1149	2210	3244	4401
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	122	120	111	105
	T5S	Wattage	10	21	35	49
		Lumens	1125	2230	3338	4367
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	110	107	97	89
3000K CCT, 70 CRI	T5	Wattage	9	18	29	42
		Lumens	1046	2013	2954	4008
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	122	120	111	105
	T5S	Wattage	10	21	35	49
		Lumens	1025	2031	3040	3977
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	110	107	97	89
3000K CCT, 80 CRI	T5	Wattage	9	18	29	42
		Lumens	913	1757	2578	3497
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	122	120	111	105
	T5S	Wattage	10	21	35	49
		Lumens	894	1772	2653	3470
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	110	107	97	89
2700K CCT, 70 CRI	T5	Wattage	9	18	29	42
		Lumens	960	1848	2712	3680
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	122	120	111	105
	T5S	Wattage	10	21	35	49
		Lumens	941	1865	2791	3652
		BUG Rating	B1-U0-G0	B1-U0-G1	B2-U0-G1	B2-U0-G1
		Lumens per Watt	110	107	97	89
AMB 590nm	T5	Wattage	21	--	--	--
		Lumens	575	--	--	--
		BUG Rating	B0-U0-G0	--	--	--
		Lumens per Watt	28	--	--	--
	T5S	Wattage	25	--	--	--
		Lumens	676	--	--	--
		BUG Rating	B1-U0-G0	--	--	--
		Lumens per Watt	27	--	--	--

Energy and Performance Data

Input Current (mA)

Optics		Voltage	Configuration			
			A1	A2	A3	A4
Asymmetric	T3	120V	47	97	152	190
		208V	--	59	89	110
		240V	--	52	78	97
		277V	--	48	70	85
		347V	--	40	59	72
		480V	--	29	43	53
	T4	120V	44	84	128	183
		208V	--	52	75	105
		240V	--	47	66	92
		277V	--	44	59	81
		347V	--	35	49	68
		480V	--	25	36	50
Symmetric	T5	120V	81	159	257	373
		208V	--	93	146	209
		240V	--	82	128	183
		277V	--	73	113	159
		347V	--	65	96	148
		480V	--	48	70	108
	T5S	120V	90	185	314	454
		208V	--	107	177	251
		240V	--	94	155	219
		277V	--	83	135	190
		347V	--	69	114	172
		480V	--	51	82	125

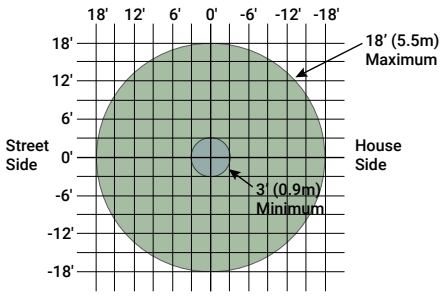
Lumen Maintenance (TM-21)

Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
25°C	95.9%	92.9%	91.7%	87.1%	271,000
40°C	95.7%	92.5%	91.3%	86.5%	256,000
50°C	95.3%	91.9%	90.6%	85.7%	242,000

* Supported by IES TM-21 standards
**Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, explaining proper use of IES TM-21 and LM-80.

View BRT6 IES files

SM2 Coverage*



***NOTE:** Applicable to heights of 30", 36" and 42"

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

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Specifications and dimensions subject to change without notice.

Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	

McGraw-Edison

GALN Galleon II

Area / Site Luminaire

Product Features

Light ARchitect™

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 5
- Product Specifications page 5
- Energy and Performance Data page 6
- Control Options page 13

Product Certifications

Quick Facts

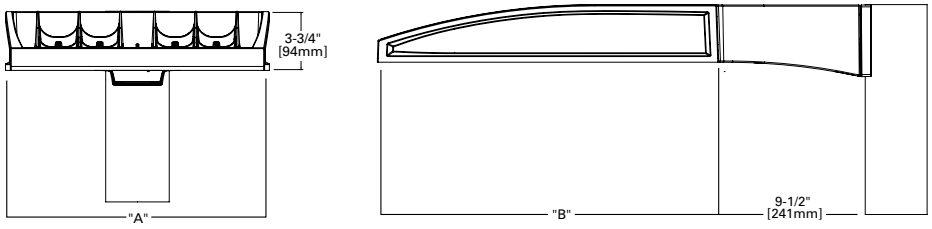
- Lumen packages range from 3,300 - 102,700 (33W - 658W)
- 17 optical distributions
- Efficacy up to 178 LPW

Connected Systems

- Wavelinx LITE Wireless
- Wavelinx PRO Wireless
- AirMesh Wireless

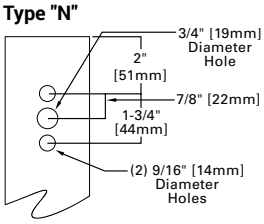
Dimensional Details

Standard Pole Mount Arm



Pole Drilling Pattern

Type "N"



Number of Light Squares	Width "A"	Housing Length "B"	Weight with Standard or QM Arm	EPA with Standard or QM Arm
1-4	16"	22"	29 lb	0.95
5-6	22"	22"	39 lb	0.95
7-9	22"	28-1/8"	48 lb	1.1

NOTES: For arm selection requirements and additional line art, see Mounting Details section.

Ordering Information

SAMPLE NUMBER: **GALN-SA4C-740-U-T4FT-GM**

Product Family [1, 2]	Light Engine Configuration			Color Temperature	Voltage	Distribution	Mounting	Finish
	Light Square	Square Count	Lumen Output					
GALN=Galleon II **BAA-GALN**=Galleon II Buy American Act Compliant [26] **TAA-GALN**=Galleon II Trade Agreements Act Compliant [26] **BABA-GALN**=Galleon II BABA/IIJA Compliant	**SA**=16 LED Light Square **SB**=26 LED Light Square	**1**=1 Light Square **2**=2 Light Squares **3**=3 Light Squares **4**=4 Light Squares **5**=5 Light Squares **6**=6 Light Squares **7**=7 Light Squares **8**=8 Light Squares **9**=9 Light Squares	**A**=Output Level 1 **B**=Output Level 2 **C**=Output Level 3 **D**=Output Level 4 [4, 16] **Z**=Configured Output[32]	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **760**=70CRI, 6000K **827**=80CRI, 2700K **830**=80CRI, 3000K **835**=80CRI, 3500K **840**=80CRI, 4000K **930**=90CRI, 3000K **935**=90CRI, 3500K **940**=90CRI, 4000K **950**=90CRI, 5000K **AMB**=Amber[14, 16]	**U**=120-277V **H**=347V-480V [7, 29] **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V [7, 29] **9**=347V [7] **DV**=277V-480V DuraVolt Drivers [28, 29, 30]	**T1**=Type I **T2**=Type II **T2R**=Type II Roadway **T3**=Type III **T3R**=Type III Roadway **T4FT**=Type IV Forward Throw **T4W**=Type IV Wide **5NQ**=Type V Narrow **5MQ**=Type V Square Medium **5WQ**=Type V Square Wide **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right **RW**=Rectangular Wide Type I **AFL**=Automotive Frontline	**[Blank]**=Standard Pole Mount Arm **QU**=Quick Mount Universal Arm **QM**=Pole Mount Arm with Quick Mount Adaptor **PA**=Pole Mount, Adjustable **SP**=3" Slipfitter, Adjustable [8] **SP2**=2-3/8" Slipfitter, Adjustable [8] **QMA**=Quick Mount Mast Arm, Fixed **MA**=Mast Arm, Fixed **WM**=Wall Mount, Fixed **WA**=Wall Mount, Adjustable **UP**=Upswept Arm	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **RALXX**=Custom Color

Options (Add as Suffix)

DIM=External 0-10V Dimming Leads [19]
F=Single Fuse (120, 277 or 347V Specify Voltage)
FF=Double Fuse (208, 240 or 480V Specify Voltage)
20K=20kV UL 1449 fused surge protective device [10]
2L=Two Circuits [10]
HA=50°C High Ambient [16]
HSS=Installed House Side Shield [17]
BCS=Backlight Control Shield [17, 37]
GRSBK=Glare Reducing Shield, Black [22]
GRSWH=Glare Reducing Shield, White [22]
LCF=Light Square Trim Painted to Match Housing [25]
TH=Tool-less Door Hardware [5]
CC=Coastal Construction finish [3]
L90=Optics Rotated 90° Left
R90=Optics Rotated 90° Right
3SDCM=3 Standard Deviation Color Matching [36]
AHD145=After Hours Dim, 5 Hours [21]
AHD245=After Hours Dim, 6 Hours [21]
AHD255=After Hours Dim, 7 Hours [21]
AHD355=After Hours Dim, 8 Hours [21]
DALI=DALI Drivers

Controls and Systems Options (Add as Suffix)

BPC=Button Type Photocontrol. Must specify voltage 120V, 208V, 240V or 277V. [6]
PR=NEMA 3-PIN Photocontrol Receptacle
PR7=NEMA 7-PIN Photocontrol Receptacle [20]
FADC=Field Adjustable Dimming Controller [31]
PSC=Photocontrol Shorting Cap
SPB2=Dimming Motion Sensor, 9'-20' mounting [23]
SPB4=Dimming Motion Sensor, 21'-40' mounting [23]
SPB2/X=Dimming Motion Sensor, limited square count, 9'-20' mounting [23]
SPB4/X=Dimming Motion Sensor, limited square count, 21'-40' mounting [23]
MS/DIM-L20=Motion Sensor for Dimming Operation, 9'-20' Mounting [33]
MS/DIM-L40=Motion Sensor for Dimming Operation, 21'-40' Mounting [33]
WLS2XX=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting [12, 18, 34]
WLS4XX=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting [12, 18, 34]
WPS2XX=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting [12, 13, 18, 34]
WPS4XX=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting [12, 13, 18, 34]
DIM10-L20=AirMesh Occupancy Sensor (9'-20' Mounting) [18, 35]
DIM10-L40=AirMesh Occupancy Sensor (21'-40' Mounting) [18, 35]

Accessories (Order Separately) [27]

OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V
OA/RA1027=NEMA Photocontrol - 480V
OA/RA1201=NEMA Photocontrol - 347V
OA/RA1013=Photocontrol Shorting Cap
OA/RA1014=120V Photocontrol
MA1252=10kV Surge Module Replacement
MA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon
MA1037-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon
MA1197-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1188-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1189-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1190-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1191-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon
MA1039-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon
MA1192-XX=3@120° Tenon Adapter for 3-1/2" O.D. Tenon
MA1193-XX=4@90° Tenon Adapter for 3-1/2" O.D. Tenon
MA1194-XX=2@90° Tenon Adapter for 3-1/2" O.D. Tenon
MA1195-XX=3@90° Tenon Adapter for 3-1/2" O.D. Tenon
SRA238=Adapter kit for mounting 3" SP arm to 2-3/8" O.D. vertical tenon
FSIR-100=Wireless Configuration Tool for MS/DIM [33]
LS/HSS=Field Installed House Side Shield for SA Light Squares [9, 17]
LS/HSS-SB=Field Installed House Side Shield for SB Light Squares [9, 17]
LS/BCS=Backlight Control Shield [9, 17, 37]
LS/GRSBK-2PK =Glare Reducing Shield, Black [9, 22]
LS/GRSWH-2PK =Glare Reducing Shield, White [9, 22]
LS/PFS=Perimeter Shield, Black [15]
WOLC-7P-10A=WaveLinx Outdoor Control Module [11, 18, 13]
TL7-G1-HV= AirMesh 7-PIN node, 110-480V [11, 18, 35]
CBSSW-450-002= AirMesh central base station with 5-button control [35]

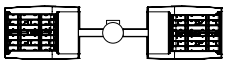
NOTES:

1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
3. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654. Not available with TH option.
4. When using SA light squares, Output Level 4 not available with color temperatures 722, 727, 827, 830 or 930 when HSS is used.
5. TH option not 3G rated. Not available with Coastal Construction (CC) option.
6. Not available with voltage options H, 8 or 9.
7. Not available with SB1A or SB2A configurations. Not available in combination with HA high ambient and sensor options at Output Level 3. H voltage not available with sensor options, choose voltage 8 or 9.
8. SP arm limited to 3" O.D. vertical tenon. SP2 limited to 2-3/8" O.D. vertical tenon.
9. One required for each Light Square.
10. 2L is not available with SB light squares. Not available with SPB at 347V or 480V. Not available with WaveLinx or 20kV surge option.
11. Requires PR7.
12. Replace XX with sensor color (WH, BZ or BK.).
13. WAC Gateway required to enable field-configurability: Order WAC-PoE and WPOE-120 (10V to PoE injector) power supply if needed. WAC not required for LC Bluetooth sensors.
14. Narrow-band 590nm +/- 5nm for wildlife and observatory use. Choose Output Level 1; supplied at 500mA drive current only. Not available with SB light squares. Exact luminaire wattage available in IES files. Available with 5WQ, 5MQ, SL2, SL3 and SL4 distributions. Can be used with HSS option.
15. Set of 4 pcs. One set required per Light Square.
16. HA option not available with Output Level 4 or AMB Amber.
17. Not for use with T1, 5NQ, 5MQ, 5WQ or RW optics.
18. Cannot be used with other control options.
19. Low voltage control lead brought out 18" outside fixture. Not available with DALI or integrated controls options.
20. Not available if any SPB, LWR, or WaveLinx sensor is selected. Motion sensor has an integral photocell.
21. Requires the use of BPC photocontrol or the PR7 or PR photocontrol receptacle with photocontrol accessory. Not available with SB light squares when using Output Level 4.
22. Not for use with T1, T4FT, T4W or SL optics. See IES files for details. Not available with SB light squares.
23. Sensor configuration mobile application required for configuration. See controls page for details.
24. Replace X with number of Light Squares controlled by the SPB, referencing the "SPB/X Availability Table" on the controls page.
25. Not available with HSS, GRSWH or GRSBK.
26. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
27. For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
28. DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.signify.com/duravolt for more information.
29. 480V not to be used with ungrounded or impedance grounded systems.
30. Not available with SA1A or SA1B. Not available with SB1, or any SB configuration using Output Level 1. Not available with any control option except SPB
31. Cannot be used with DALI, PR7, or other motion response control options. Not available with SB light squares when using Output Level 4.
32. Use GALN Product Configurator to specify lumen output, drive current and wattage. Not available with AMB. Not available with SB light squares.
33. Uses the FSP-211 motion sensor. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
34. Controls system is not available with photocontrol receptacles (PR , PR7) or other controls systems (FADC, SPBx).
35. Requires AirMesh central base station CBSSW-450-002 and Synapse commissioning for operation.
36. 3-step MacAdam ellipse binning. Available in 740 CRI/CCT only. Longer lead times apply, consult your lighting representative at Cooper Lighting Solutions for more information.
37. Not available with SB light squares.

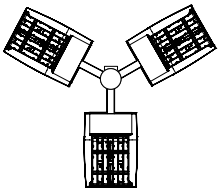
Mounting Details

Pole Configuration Options

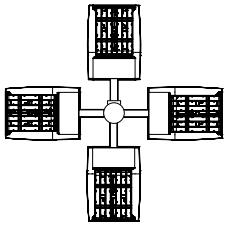
2 @ 180°



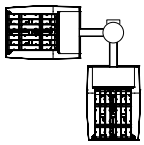
3 @ 120°
(Round poles only)



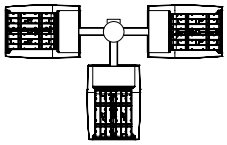
4 @ 90°



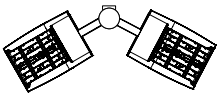
2 @ 90°



3 @ 90°

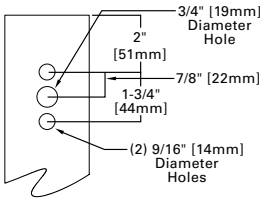


2 @ 120°
(Round poles only)

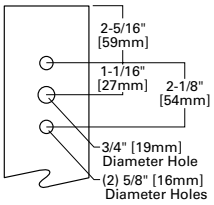


Pole Drilling Patterns

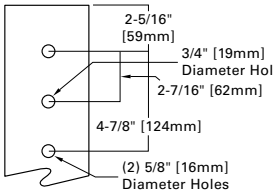
Type "N"



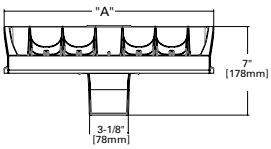
Type "R"

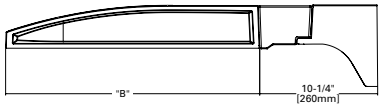


Type "M"



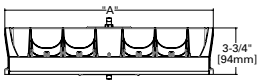
Quick Mount Universal Arm (QU)



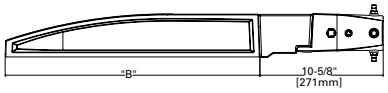


*NOTE: Universal bolt pattern compatible with Type N through Type M drilling patterns

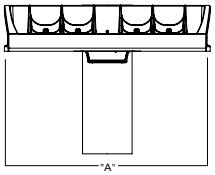
Quick Mount Mast Arm (QMA)

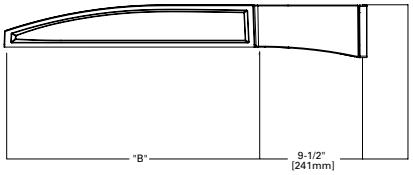


*NOTE: Fits 2-3/8" O.D. tenon



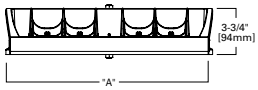
Pole Mount Arm with Quick Mount Adaptor (QM)



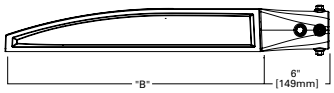


*NOTE: Use Type N drilling pattern

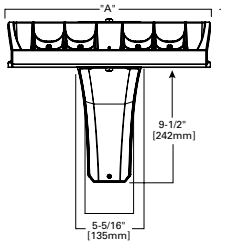
Mast Arm, Fixed (MA)

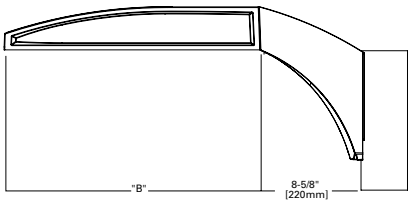


*NOTE: Fits 2-3/8" O.D. tenon



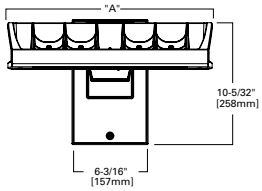
Upswept Arm (UP)

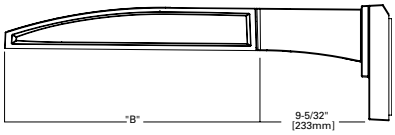




*NOTE: Universal bolt pattern compatible with Type N through Type M drilling patterns

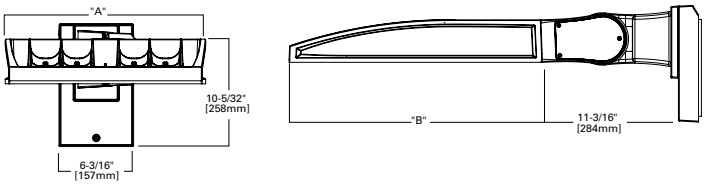
Wall Mount, Fixed (WM)



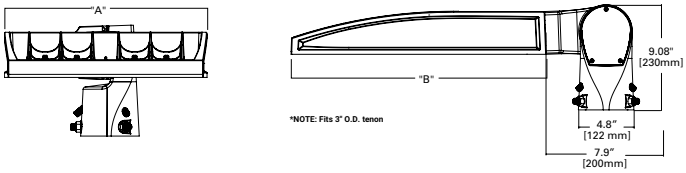


Mounting Details

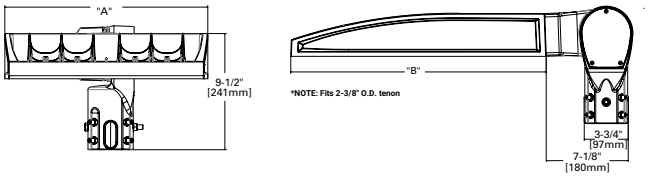
Wall Mount, Adjustable (WA)



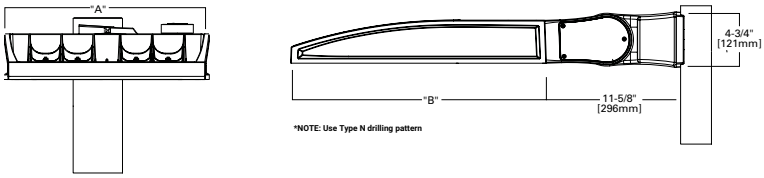
3" Slipfitter, Adjustable (SP)



2-3/8" Slipfitter, Adjustable (SP2)

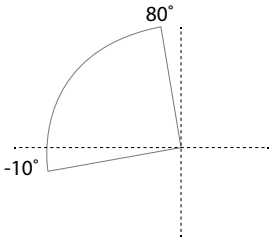


Pole Mount, Adjustable Arm (PA)



Adjustable Arm Range of Motion

- Includes WA, SP, SP2 and PA mounting options
- Adjustable in increments of 5°
- Must maintain downward facing orientation



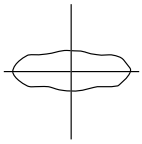
Fixture Weights and EPAs

Tilt Angle (Degrees)	Number of Light Squares	Weight	1 @ 90°	2 @ 180°	2 @ 90°	2 @ 120°	3 @ 90°	3 @ 120°	4 @ 90°
0°	1-4	33.5 lb (15.2 kg)	0.85	1.70	1.46	1.66	2.31	2.25	2.35
	5-6	43.5 lb (19.7 kg)	0.86	1.71	1.62	1.80	2.49	2.35	2.50
	7-9	52.5 lb (23.8 kg)	0.98	1.95	1.75	1.98	2.73	2.55	2.76
15°	1-4	33.5 lb (15.2 kg)	1.10	1.71	1.95	2.26	2.81	3.30	2.87
	5-6	43.5 lb (19.7 kg)	1.42	1.71	2.27	2.72	3.13	3.63	3.15
	7-9	52.5 lb (23.8 kg)	1.69	1.96	2.67	3.22	3.65	4.38	3.72
30°	1-4	33.5 lb (15.2 kg)	1.72	1.81	2.58	3.21	3.44	4.59	3.53
	5-6	43.5 lb (19.7 kg)	2.26	2.29	3.11	4.00	3.97	5.27	4.00
	7-9	52.5 lb (23.8 kg)	2.75	2.85	3.73	4.83	4.71	6.45	4.81
45°	1-4	33.5 lb (15.2 kg)	2.25	2.36	3.10	4.00	3.96	5.63	4.08
	5-6	43.5 lb (19.7 kg)	2.96	2.99	3.81	5.06	4.67	6.49	4.71
	7-9	52.5 lb (23.8 kg)	3.63	3.76	3.73	6.17	5.59	8.03	5.73
60°	1-4	33.5 lb (15.2 kg)	2.63	2.77	3.49	4.58	4.34	6.21	4.48
	5-6	43.5 lb (19.7 kg)	3.46	3.51	4.32	5.84	5.19	7.01	5.22
	7-9	52.5 lb (23.8 kg)	4.27	4.44	5.25	7.15	6.23	8.80	6.40

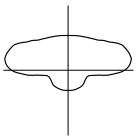
Optical Distributions

Asymmetric Area Distributions

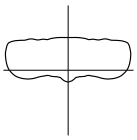
T1 (Type I)



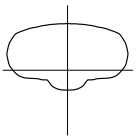
T2 (Type II)



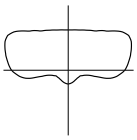
SL2 (Type II with Spill Control)



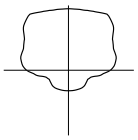
T3 (Type III)



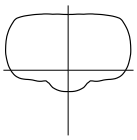
SL3 (Type III with Spill Control)



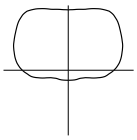
T4FT (Type IV Forward Throw)



T4W (Type IV Wide)

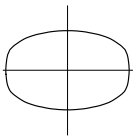


SL4 (Type IV with Spill Control)

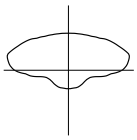


Asymmetric Roadway Distributions

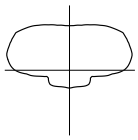
RW (Rectangular Wide Type I)



T2R (Type II Roadway)

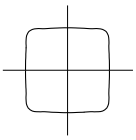


T3R (Type III Roadway)

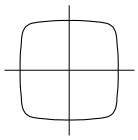


Symmetric Distributions

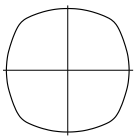
5NQ (Type V Square Narrow)



5MQ (Type V Square Medium)

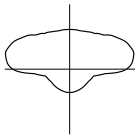


5WQ (Type V Square Wide)

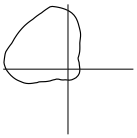


Specialized Distributions

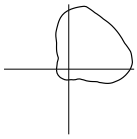
AFL (Automotive Frontline)



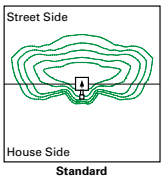
SLL (90° Spill Light Eliminator Left)



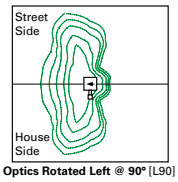
SLR (90° Spill Light Eliminator Right)



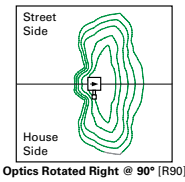
Rotated Optics



Standard



Optics Rotated Left @ 90° [L90]



Optics Rotated Right @ 90° [R90]

Product Specifications

Construction
- Die-cast aluminum housing and heat sink
- Three housing sizes, using 1 to 9 light squares

Optics
- High-efficiency injection-molded AccuLED Optics technology
- 17 optical distributions for area site and roadway applications
- 4 shielding options include HSS, BCS, GRS and PFS
- IDA Certified (3000K CCT and warmer only, fixed mounting options)
- 5 step MacAdam ellipse binning (5 SDCM) standard with 70CRI and 80CRI. 3SDCM option available with 740 CRI/CCT. 3 step MacAdam ellipse binning standard with 90CRI

Electrical
- Removable power tray assembly includes drivers, surge modules and control modules for ease of maintenance and serviceability
- Standard with 0-10V dimming
- Standard with 10kV surge module, optional 20kV surge module
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected

Mounting
- Arms are factory installed, enabling closed-housing installation
- All arms suitable for round or square pole installation
- All arms provide clearance for multiple fixture installations at 90°

Finish
- 6 standard finishes use super durable TGIC polyester powder coat paint, providing 2.5 mil nominal thickness and salt-spray tested to 3,000 hours per ASTM B117
- RAL and custom color matches available
- Coastal Construction (CC) option salt-spray tested to 5,000 hours per ASTM B117, achieving a scribe rating of 9 per ASTM D1654

Compliance
- Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified
- IDA Certified (3000K CCT and warmer only, fixed mounting options)
- Domestic preference options to meet BAA or BABA requirements. FHWA and FTA agencies are utilizing their BAA rules for BABA compliance. Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or the Buy America Build America Act (BABA).BABA is the minimum Government compliance requirement for the Buy America Build America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements

Typical Applications
- Outdoor, Parking Lots, Walkways, Roadways, Building Areas
- Sports lighting, including tennis, pickleball, basketball courts

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

Energy and Performance Data

Lumen Maintenance (TM-21)

Output Level	Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
Output Levels 1-3	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
Output Level 4	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

* Supported by IES TM-21 standards
** Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, explaining proper use of IES TM-21 and LM-80.

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
0ºC	1.02
10ºC	1.01
25ºC	1.00
40ºC	0.99
50ºC	0.97

FADC Settings
SA1-SA3 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	25%
2	48%
3	56%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: +/-5% typical value

FADC Settings
SA4-SA6 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	14%
2	25%
3	32%
4	43%
5	49%
6	57%
7	65%
8	72%
9	80%
10	100%

Note: +/-5% typical value

FADC Settings
SA7-SA9 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	19%
2	38%
3	47%
4	63%
5	74%
6	85%
7	95%
8	97%
9	100%
10	100%

Note: +/-5% typical value

Drive Currents

Lumen Output	SA Light Squares	SB Light Squares
Output Level 1	615mA	350mA
Output Level 2	800mA	450mA
Output Level 3	1050mA	615mA
Output Level 4	1200mA	900mA

SA Light Squares, Output Level 1, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		33	63	93	121	154	182	215	244	274
Input Current @ 120V		0.283	0.529	0.778	1.058	1.310	1.556	1.839	2.089	2.335
Input Current @ 208V		0.165	0.309	0.460	0.618	0.771	0.919	1.082	1.240	1.379
Input Current @ 240V		0.143	0.270	0.398	0.540	0.671	0.796	0.944	1.078	1.194
Input Current @ 277V		0.125	0.237	0.352	0.473	0.581	0.705	0.818	0.962	1.057
Input Current @ 347V		0.098	0.181	0.272	0.362	0.454	0.544	0.636	0.738	0.816
Input Current @ 480V		0.073	0.133	0.200	0.267	0.335	0.400	0.470	0.554	0.600
Optics										
T1	Lumens	4,619	9,180	13,628	18,059	22,861	27,070	31,796	36,863	41,385
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	140	146	147	149	148	149	148	151	151
T2	Lumens	4,654	9,249	13,730	18,194	23,032	27,273	32,034	37,138	41,694
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	141	147	148	150	150	150	149	152	152
T2R	Lumens	4,716	9,372	13,913	18,437	23,340	27,637	32,462	37,634	42,251
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	143	149	150	152	152	152	151	154	154
T3	Lumens	4,589	9,120	13,538	17,940	22,711	26,892	31,587	36,620	41,112
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	139	145	146	148	147	148	147	150	150
T3R	Lumens	4,735	9,411	13,970	18,513	23,436	27,751	32,596	37,790	42,425
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	143	149	150	153	152	152	152	155	155
T4FT	Lumens	4,617	9,176	13,622	18,051	22,851	27,058	31,782	36,847	41,366
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	140	146	146	149	148	149	148	151	151
T4W	Lumens	4,631	9,203	13,662	18,104	22,918	27,138	31,876	36,955	41,488
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	150	149	149	148	151	151
SL2	Lumens	4,619	9,180	13,627	18,058	22,860	27,069	31,795	36,861	41,383
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	149	148	149	148	151	151
SL3	Lumens	4,586	9,115	13,531	17,931	22,699	26,879	31,571	36,602	41,091
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	139	145	145	148	147	148	147	150	150
SL4	Lumens	4,529	9,002	13,363	17,708	22,417	26,544	31,178	36,146	40,580
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	137	143	144	146	146	146	145	148	148
5NQ	Lumens	4,829	9,598	14,247	18,880	23,901	28,301	33,242	38,539	43,266
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
	Lumens per Watt	146	152	153	156	155	155	155	158	158
5MQ	Lumens	4,853	9,645	14,318	18,974	24,020	28,442	33,407	38,731	43,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	147	153	154	157	156	156	155	159	159
5WQ	Lumens	4,843	9,625	14,288	18,934	23,969	28,382	33,337	38,649	43,390
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	147	153	154	156	156	156	155	158	158
SLL/ SLR	Lumens	3,989	7,927	11,768	15,594	19,741	23,375	27,456	31,831	35,736
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	121	126	127	129	128	128	128	130	130
RW	Lumens	4,774	9,488	14,085	18,665	23,628	27,979	32,863	38,100	42,774
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	145	151	151	154	153	154	153	156	156
AFL	Lumens	4,673	9,286	13,785	18,268	23,126	27,384	32,164	37,290	41,864
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	142	147	148	151	150	150	150	153	153

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

SA Light Squares, Output Level 2, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		44	82	121	164	204	243	286	325	364
Input Current @ 120V		0.367	0.689	1.014	1.378	1.704	2.027	2.393	2.716	3.041
Input Current @ 208V		0.213	0.401	0.594	0.802	0.997	1.188	1.400	1.605	1.782
Input Current @ 240V		0.184	0.347	0.510	0.694	0.860	1.021	1.210	1.386	1.531
Input Current @ 277V		0.160	0.303	0.449	0.605	0.757	0.898	1.065	1.242	1.347
Input Current @ 347V		0.125	0.235	0.355	0.471	0.592	0.710	0.828	0.958	1.065
Input Current @ 480V		0.092	0.172	0.258	0.344	0.432	0.517	0.605	0.706	0.775
Optics										
T1	Lumens	5,748	11,423	16,957	22,470	28,446	33,683	39,563	45,867	51,494
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T2	Lumens	5,790	11,508	17,083	22,638	28,658	33,935	39,859	46,210	51,879
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	132	140	141	138	140	140	139	142	143
T2R	Lumens	5,868	11,662	17,311	22,941	29,041	34,388	40,391	46,827	52,572
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
	Lumens per Watt	133	142	143	140	142	142	141	144	144
T3	Lumens	5,710	11,347	16,845	22,322	28,258	33,461	39,303	45,565	51,155
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	130	138	139	136	139	138	137	140	141
T3R	Lumens	5,892	11,710	17,383	23,035	29,161	34,530	40,558	47,020	52,788
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	134	143	144	140	143	142	142	145	145
T4FT	Lumens	5,745	11,418	16,949	22,460	28,433	33,668	39,546	45,847	51,471
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T4W	Lumens	5,762	11,451	16,999	22,526	28,517	33,767	39,662	45,982	51,622
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	140	140	137	140	139	139	141	142
SL2	Lumens	5,747	11,422	16,956	22,469	28,444	33,681	39,561	45,865	51,491
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
SL3	Lumens	5,707	11,342	16,836	22,311	28,244	33,444	39,283	45,542	51,129
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	130	138	139	136	138	138	137	140	140
SL4	Lumens	5,636	11,201	16,627	22,034	27,893	33,028	38,794	44,976	50,493
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	128	137	137	134	137	136	136	138	139
5NQ	Lumens	6,009	11,942	17,727	23,492	29,739	35,214	41,362	47,953	53,835
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	137	146	147	143	146	145	145	148	148
5MQ	Lumens	6,039	12,001	17,816	23,609	29,887	35,389	41,568	48,191	54,103
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	137	146	147	144	147	146	145	148	149
5WQ	Lumens	6,026	11,976	17,778	23,559	29,824	35,315	41,480	48,090	53,989
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	137	146	147	144	146	145	145	148	148
SLL/ SLR	Lumens	4,963	9,863	14,642	19,403	24,563	29,085	34,163	39,607	44,465
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	113	120	121	118	120	120	119	122	122
RW	Lumens	5,940	11,806	17,526	23,224	29,400	34,813	40,891	47,407	53,222
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	135	144	145	142	144	143	143	146	146
AFL	Lumens	5,814	11,555	17,153	22,730	28,775	34,073	40,021	46,398	52,090
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4
	Lumens per Watt	132	141	142	139	141	140	140	143	143

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

SA Light Squares, Output Level 3, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		57	108	160	213	269	321	377	429	481
Input Current @ 120V		0.478	0.905	1.338	1.810	2.244	2.675	3.150	3.584	4.013
Input Current @ 208V		0.279	0.532	0.780	1.064	1.313	1.559	1.845	2.093	2.339
Input Current @ 240V		0.243	0.458	0.664	0.916	1.123	1.328	1.582	1.788	1.991
Input Current @ 277V		0.213	0.404	0.582	0.808	0.997	1.164	1.401	1.589	1.745
Input Current @ 347V		0.164	0.322	0.471	0.644	0.795	0.943	1.117	1.269	1.414
Input Current @ 480V		0.121	0.235	0.341	0.469	0.579	0.681	0.814	0.923	1.022
Optics										
T1	Lumens	7,101	14,113	20,950	27,763	35,146	41,616	48,882	56,671	63,623
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T2	Lumens	7,154	14,219	21,107	27,970	35,408	41,927	49,247	57,094	64,098
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	132	132	131	132	131	131	133	133
T2R	Lumens	7,250	14,408	21,389	28,344	35,881	42,487	49,905	57,857	64,954
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	127	133	134	133	133	132	132	135	135
T3	Lumens	7,054	14,020	20,812	27,580	34,914	41,342	48,560	56,297	63,203
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
T3R	Lumens	7,280	14,468	21,477	28,461	36,029	42,663	50,111	58,096	65,222
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	128	134	134	134	134	133	133	135	136
T4FT	Lumens	7,098	14,107	20,941	27,751	35,130	41,598	48,860	56,646	63,594
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T4W	Lumens	7,119	14,148	21,003	27,832	35,233	41,720	49,004	56,812	63,781
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	131	131	130	130	132	133
SL2	Lumens	7,101	14,112	20,949	27,761	35,144	41,614	48,879	56,668	63,619
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
SL3	Lumens	7,051	14,013	20,802	27,566	34,897	41,321	48,535	56,269	63,172
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
SL4	Lumens	6,963	13,839	20,543	27,223	34,463	40,808	47,932	55,569	62,386
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	122	128	128	128	128	127	127	130	130
5NQ	Lumens	7,424	14,755	21,903	29,025	36,743	43,508	51,104	59,247	66,515
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	130	137	137	136	137	136	136	138	138
5MQ	Lumens	7,461	14,828	22,012	29,169	36,926	43,725	51,359	59,542	66,846
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	138	137	137	136	136	139	139
5WQ	Lumens	7,445	14,797	21,966	29,108	36,849	43,633	51,250	59,417	66,705
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	137	137	137	136	136	139	139
SLL/ SLR	Lumens	6,132	12,187	18,091	23,973	30,348	35,936	42,210	48,935	54,938
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	108	113	113	113	113	112	112	114	114
RW	Lumens	7,340	14,587	21,653	28,694	36,325	43,013	50,522	58,573	65,757
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	129	135	135	135	135	134	134	137	137
AFL	Lumens	7,183	14,276	21,193	28,084	35,552	42,098	49,448	57,327	64,359
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	126	132	132	132	132	131	131	134	134

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

SA Light Squares, Output Level 4, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		65	125	184	245	309	368	433	493	552
Input Current @ 120V		0.546	1.041	1.535	2.082	2.578	3.070	3.619	4.114	4.605
Input Current @ 208V		0.318	0.610	0.893	1.219	1.504	1.786	2.113	2.397	2.679
Input Current @ 240V		0.276	0.523	0.758	1.046	1.282	1.516	1.806	2.041	2.274
Input Current @ 277V		0.241	0.460	0.662	0.920	1.133	1.325	1.593	1.807	1.987
Input Current @ 347V		0.187	0.370	0.543	0.740	0.915	1.085	1.285	1.459	1.628
Input Current @ 480V		0.138	0.269	0.391	0.537	0.663	0.782	0.932	1.057	1.173
Optics										
T1	Lumens	7,814	15,529	23,053	30,549	38,672	45,793	53,787	62,358	70,007
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T2	Lumens	7,872	15,645	23,225	30,777	38,962	46,135	54,189	62,824	70,530
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	126	126	125	125	127	128
T2R	Lumens	7,977	15,854	23,535	31,188	39,482	46,751	54,913	63,663	71,472
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	127	128	127	127	129	129
T3	Lumens	7,762	15,427	22,901	30,348	38,418	45,491	53,433	61,947	69,546
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
T3R	Lumens	8,010	15,920	23,632	31,317	39,645	46,944	55,139	63,925	71,767
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	128	128	128	127	130	130
T4FT	Lumens	7,810	15,522	23,043	30,535	38,655	45,772	53,763	62,330	69,976
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T4W	Lumens	7,833	15,568	23,110	30,625	38,769	45,907	53,921	62,513	70,182
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	125	125	125	125	127	127
SL2	Lumens	7,813	15,528	23,052	30,547	38,670	45,790	53,784	62,354	70,003
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
SL3	Lumens	7,758	15,419	22,889	30,332	38,398	45,468	53,406	61,916	69,511
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
SL4	Lumens	7,662	15,228	22,605	29,955	37,921	44,903	52,742	61,146	68,646
	BUG Rating	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	118	122	123	122	123	122	122	124	124
5NQ	Lumens	8,169	16,235	24,101	31,938	40,431	47,874	56,232	65,193	73,190
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	126	130	131	130	131	130	130	132	133
5MQ	Lumens	8,210	16,316	24,221	32,097	40,632	48,113	56,512	65,517	73,554
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	131	132	131	131	131	131	133	133
5WQ	Lumens	8,192	16,282	24,170	32,029	40,546	48,011	56,393	65,379	73,399
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	130	131	131	131	130	130	133	133
SLL/ SLR	Lumens	6,747	13,410	19,906	26,379	33,394	39,542	46,445	53,846	60,451
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	104	107	108	108	108	107	107	109	110
RW	Lumens	8,076	16,050	23,826	31,574	39,970	47,329	55,592	64,450	72,356
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	124	128	129	129	129	129	128	131	131
AFL	Lumens	7,904	15,709	23,320	30,902	39,120	46,323	54,410	63,079	70,817
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	122	126	127	126	127	126	126	128	128

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

SB Light Squares, Output Level 1, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		31	57	85	114	142	171	199	227	256
Input Current @ 120V		0.263	0.484	0.717	0.952	1.201	1.434	1.685	1.918	2.151
Input Current @ 208V		0.154	0.280	0.420	0.552	0.700	0.839	0.979	1.119	1.259
Input Current @ 240V		0.136	0.245	0.370	0.483	0.615	0.740	0.860	0.985	1.110
Input Current @ 277V		0.122	0.216	0.330	0.425	0.546	0.660	0.762	0.876	0.989
Input Current @ 347V		-	-	0.248	0.328	0.413	0.495	0.577	0.665	0.743
Input Current @ 480V		-	-	0.182	0.238	0.304	0.364	0.426	0.493	0.547
Optics										
T1	Lumens	4,696	9,389	14,086	18,816	23,716	28,470	33,388	37,964	42,763
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
	Lumens per Watt	152	164	166	165	167	167	168	167	167
T2	Lumens	4,704	9,404	14,109	18,846	23,754	28,515	33,442	38,024	42,831
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5
	Lumens per Watt	152	164	167	165	168	167	168	167	168
T2R	Lumens	4,835	9,667	14,503	19,373	24,418	29,313	34,377	39,087	44,029
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	156	169	171	170	172	172	173	172	172
T3	Lumens	4,751	9,497	14,249	19,033	23,989	28,798	33,773	38,401	43,256
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	154	166	168	167	169	169	170	169	169
T3R	Lumens	4,874	9,743	14,618	19,526	24,611	29,544	34,648	39,396	44,376
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	158	170	173	171	174	173	174	173	174
T4FT	Lumens	4,692	9,380	14,074	18,799	23,694	28,444	33,358	37,929	42,724
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	152	164	166	165	167	166	168	167	167
T4W	Lumens	4,738	9,472	14,211	18,983	23,926	28,723	33,685	38,300	43,142
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	153	165	168	167	169	168	169	169	169
SL2	Lumens	4,719	9,433	14,153	18,905	23,828	28,605	33,546	38,143	42,965
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5
	Lumens per Watt	153	165	167	166	168	167	168	168	168
SL3	Lumens	4,640	9,276	13,916	18,589	23,430	28,127	32,986	37,506	42,247
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	150	162	164	163	165	165	166	165	165
SL4	Lumens	4,706	9,408	14,115	18,854	23,764	28,527	33,456	38,040	42,849
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	152	164	167	165	168	167	168	168	168
5NQ	Lumens	4,975	9,945	14,921	19,931	25,121	30,157	35,367	40,213	45,297
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	161	174	176	175	177	176	178	177	177
5MQ	Lumens	4,972	9,939	14,912	19,919	25,106	30,139	35,346	40,189	45,269
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	161	173	176	175	177	176	178	177	177
5WQ	Lumens	4,802	9,600	14,403	19,239	24,249	29,110	34,139	38,817	43,724
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	155	168	170	169	171	170	171	171	171
SLL/SLR	Lumens	4,730	9,457	14,188	18,952	23,887	28,676	33,630	38,238	43,072
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	153	165	168	166	169	168	169	168	169
RW	Lumens	4,889	9,773	14,663	19,586	24,686	29,635	34,755	39,517	44,513
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
	Lumens per Watt	158	171	173	172	174	173	175	174	174
AFL	Lumens	4,828	9,652	14,482	19,344	24,381	29,269	34,325	39,029	43,963
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	156	168	171	170	172	171	172	172	172

SB Light Squares, Output Level 2, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		40	74	109	147	183	220	257	293	330
Input Current @ 120V		0.330	0.627	0.919	1.255	1.547	1.838	2.174	2.466	2.758
Input Current @ 208V		0.192	0.370	0.533	0.739	0.902	1.066	1.272	1.435	1.598
Input Current @ 240V		0.169	0.327	0.467	0.655	0.794	0.933	1.121	1.260	1.400
Input Current @ 277V		0.150	0.294	0.412	0.588	0.706	0.823	1.000	1.118	1.235
Input Current @ 347V		0.112	0.215	0.316	0.431	0.531	0.632	0.746	0.847	0.947
Input Current @ 480V		0.086	0.160	0.230	0.320	0.390	0.460	0.550	0.620	0.690
Optics										
T1	Lumens	5,895	11,786	17,683	23,620	29,771	35,739	41,913	47,656	53,681
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	148	159	162	161	163	162	163	163	163
T2	Lumens	5,905	11,805	17,711	23,658	29,818	35,796	41,980	47,732	53,766
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	160	162	161	163	162	164	163	163
T2R	Lumens	6,070	12,135	18,206	24,319	30,652	36,797	43,154	49,067	55,270
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	153	164	167	165	168	167	168	168	168
T3	Lumens	5,963	11,922	17,887	23,892	30,114	36,151	42,396	48,206	54,300
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	150	161	164	163	165	164	165	165	165
T3R	Lumens	6,118	12,231	18,350	24,511	30,894	37,087	43,494	49,454	55,706
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	154	166	168	167	169	168	169	169	169
T4FT	Lumens	5,890	11,775	17,667	23,599	29,744	35,706	41,875	47,613	53,632
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	159	162	161	163	162	163	163	163
T4W	Lumens	5,948	11,891	17,840	23,830	30,035	36,056	42,285	48,079	54,157
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	161	163	162	164	164	165	164	164
SL2	Lumens	5,923	11,842	17,766	23,732	29,912	35,908	42,111	47,882	53,935
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	160	163	161	164	163	164	164	164
SL3	Lumens	5,824	11,644	17,469	23,335	29,412	35,308	41,407	47,081	53,033
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	146	158	160	159	161	160	161	161	161
SL4	Lumens	5,907	11,810	17,718	23,668	29,831	35,811	41,998	47,752	53,789
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	148	160	162	161	163	162	164	163	163
5NQ	Lumens	6,245	12,484	18,731	25,020	31,535	37,857	44,397	50,480	56,862
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	157	169	172	170	173	172	173	172	173
5MQ	Lumens	6,241	12,477	18,719	25,005	31,516	37,834	44,370	50,450	56,827
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	157	169	171	170	173	172	173	172	172
5WQ	Lumens	6,028	12,051	18,080	24,151	30,440	36,542	42,855	48,728	54,887
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	151	163	166	164	167	166	167	166	167
SLL/SLR	Lumens	5,938	11,871	17,811	23,791	29,986	35,997	42,216	48,001	54,069
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	161	163	162	164	163	164	164	164
RW	Lumens	6,137	12,268	18,406	24,587	30,989	37,201	43,628	49,606	55,877
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	154	166	169	167	170	169	170	169	170
AFL	Lumens	6,061	12,117	18,179	24,283	30,606	36,742	43,089	48,993	55,187
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4
	Lumens per Watt	152	164	166	165	168	167	168	167	167

SB Light Squares, Output Level 3, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		54	101	149	201	250	301	351	400	450
Input Current @ 120V		0.437	0.857	1.259	1.714	2.116	2.518	2.973	3.375	3.776
Input Current @ 208V		0.254	0.498	0.721	0.996	1.219	1.442	1.717	1.940	2.163
Input Current @ 240V		0.223	0.437	0.628	0.874	1.065	1.256	1.501	1.693	1.884
Input Current @ 277V		0.197	0.386	0.550	0.772	0.936	1.100	1.322	1.485	1.649
Input Current @ 347V		0.150	0.292	0.432	0.584	0.724	0.863	1.016	1.155	1.295
Input Current @ 480V		0.111	0.213	0.311	0.427	0.525	0.622	0.738	0.836	0.933
Optics										
T1	Lumens	7,841	15,675	23,517	31,414	39,594	47,531	55,743	63,381	71,393
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	144	155	158	157	159	158	159	159	159
T2	Lumens	7,853	15,700	23,555	31,464	39,657	47,607	55,832	63,482	71,507
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	144	156	158	157	159	158	159	159	159
T2R	Lumens	8,073	16,139	24,214	32,344	40,766	48,938	57,393	65,257	73,507
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	160	162	161	163	163	164	163	163
T3	Lumens	7,931	15,856	23,789	31,776	40,051	48,080	56,386	64,112	72,217
	BUG Rating	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	146	157	160	158	161	160	161	160	161
T3R	Lumens	8,137	16,267	24,405	32,599	41,088	49,325	57,846	65,773	74,087
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	150	161	164	162	165	164	165	165	165
T4FT	Lumens	7,834	15,661	23,496	31,385	39,558	47,488	55,692	63,324	71,329
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	144	155	158	156	159	158	159	158	159
T4W	Lumens	7,910	15,814	23,726	31,693	39,946	47,953	56,238	63,944	72,027
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	145	157	159	158	160	159	160	160	160
SL2	Lumens	7,878	15,749	23,629	31,562	39,781	47,756	56,006	63,681	71,731
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	145	156	158	157	159	159	160	159	159
SL3	Lumens	7,746	15,486	23,234	31,035	39,117	46,958	55,070	62,616	70,532
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	142	153	156	155	157	156	157	157	157
SL4	Lumens	7,857	15,707	23,565	31,477	39,674	47,627	55,855	63,509	71,538
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	144	156	158	157	159	158	159	159	159
5NQ	Lumens	8,305	16,604	24,911	33,275	41,940	50,348	59,046	67,137	75,624
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	153	165	167	166	168	167	168	168	168
5MQ	Lumens	8,300	16,594	24,896	33,255	41,915	50,318	59,010	67,097	75,578
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	153	164	167	166	168	167	168	168	168
5WQ	Lumens	8,017	16,027	24,046	32,120	40,484	48,600	56,996	64,806	72,998
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	147	159	161	160	162	162	163	162	162
SLL/SLR	Lumens	7,897	15,788	23,687	31,641	39,880	47,875	56,146	63,839	71,909
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	145	156	159	158	160	159	160	160	160
RW	Lumens	8,162	16,317	24,480	32,699	41,215	49,476	58,024	65,975	74,315
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	150	162	164	163	165	164	166	165	165
AFL	Lumens	8,061	16,115	24,177	32,295	40,705	48,865	57,307	65,160	73,397
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	148	160	162	161	163	162	164	163	163

SB Light Squares, Output Level 4, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		80	148	218	294	365	440	513	585	658
Input Current @ 120V		0.638	1.234	1.840	2.469	3.094	3.680	4.349	4.934	5.519
Input Current @ 208V		0.367	0.705	1.045	1.410	1.779	2.090	2.513	2.824	3.135
Input Current @ 240V		0.320	0.614	0.913	1.227	1.567	1.827	2.220	2.480	2.740
Input Current @ 277V		0.280	0.537	0.813	1.075	1.402	1.626	1.992	2.215	2.439
Input Current @ 347V		0.219	0.430	0.640	0.897	1.089	1.280	1.537	1.729	1.920
Input Current @ 480V		0.160	0.313	0.479	0.700	0.829	0.958	1.179	1.308	1.437
Optics										
T1	Lumens	10,654	21,299	31,955	42,684	53,800	64,585	75,742	86,121	97,008
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	144	147	145	147	147	148	147	147
T2	Lumens	10,671	21,333	32,006	42,752	53,886	64,688	75,863	86,258	97,162
	BUG Rating	B2-U0-G2	B3-U0-G3	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	147	148
T2R	Lumens	10,969	21,929	32,901	43,948	55,392	66,496	77,984	88,670	99,879
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	149	151	150	152	151	152	152	152
T3	Lumens	10,777	21,545	32,324	43,177	54,420	65,329	76,616	87,114	98,127
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	146	148	147	149	148	149	149	149
T3R	Lumens	11,056	22,103	33,161	44,295	55,830	67,022	78,600	89,371	100,668
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	139	150	152	151	153	152	153	153	153
T4FT	Lumens	10,644	21,280	31,926	42,646	53,751	64,526	75,674	86,043	96,920
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	144	146	145	147	147	148	147	147
T4W	Lumens	10,748	21,488	32,239	43,063	54,277	65,158	76,414	86,885	97,869
	BUG Rating	B2-U0-G2	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	146	148	147	149	148	149	149	149
SL2	Lumens	10,704	21,400	32,106	42,886	54,054	64,890	76,100	86,528	97,467
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	148	148
SL3	Lumens	10,525	21,042	31,570	42,169	53,151	63,805	74,828	85,082	95,837
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	132	143	145	144	146	145	146	145	146
SL4	Lumens	10,675	21,342	32,020	42,771	53,908	64,715	75,895	86,295	97,204
	BUG Rating	B2-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	148	148
5NQ	Lumens	11,285	22,561	33,849	45,214	56,988	68,412	80,230	91,224	102,756
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	142	153	155	154	156	155	156	156	156
5MQ	Lumens	11,278	22,547	33,828	45,187	56,954	68,371	80,182	91,169	102,694
	BUG Rating	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	142	153	155	154	156	155	156	156	156
5WQ	Lumens	10,893	21,778	32,673	43,644	55,009	66,037	77,445	88,057	99,189
	BUG Rating	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	137	148	150	149	151	150	151	151	151
SLL/SLR	Lumens	10,731	21,453	32,186	42,993	54,189	65,051	76,290	86,743	97,709
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	145	148	146	149	148	149	148	148
RW	Lumens	11,090	22,171	33,263	44,431	56,001	67,228	78,842	89,645	100,978
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	139	150	153	151	153	153	154	153	153
AFL	Lumens	10,953	21,897	32,852	43,882	55,309	66,397	77,868	88,538	99,730
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	148	151	149	152	151	152	151	152

Control Options

0-10V (DIM)
This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (BPC, PR and PR7)
Optional button-type photocontrol (BPC) and photocontrol receptacles (PR and PR7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PR7 receptacle.

After Hours Dim (AHD)
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (SPB and MS/DIM-LXX)
These passive infrared (PIR) sensors are factory installed in the luminaire housing. When the SPB (FSP-321 or FSP-311) or MS/DIM (FSP-211) sensor options are selected, the occupancy sensor is connected to a dimming driver and the luminaire dims when no motion is detected. After a set period of time, the luminaire turns off, and when motion is detected, the luminaire returns to full light output. Both sensors are factory preset to dim down to approximately 10% power with a time delay of five minutes. The MS/DIM sensor requires the FSIR-100 programming tool to adjust factory defaults. The SPB sensor default parameters are listed in the table below and can be configured utilizing the Sensor Configuration mobile application for iOS and Android devices. The SPB/X is configured to control only the specified number of light squares (See SPB/X Availability Table below.) An integral photocontrol can be activated with the app for "dusk-to-dawn" control or daylight harvesting - the factory default is off. Four sensor colors are available; Bronze, Black, Gray and White, and are automatically selected based on the luminaire finish as indicated by the table below.

SPB sensor finish matched to luminaire finish		
Luminaire Finish		SPB Sensor Finish*
WH	White	White
BK	Black	Black
GM	Graphite Metallic	Black
BZ	Bronze	Bronze
AP	Gray	Gray
DP	Dark Platinum	Gray

*SPB bezel color automatically selected based on luminaire finish

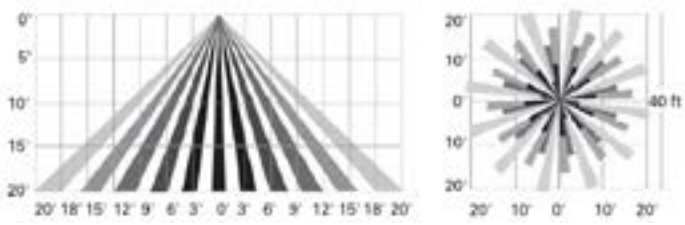
SPB/X Availability Table	
Fixture Square Count	Available SPB/X Square Count
1	Not Available
2	Not Available
3	Not Available
4	2
5	2 or 3
6	3
7	2, 3, 4 or 5
8	2, 3, 5 or 6
9	3 or 6

Default Program Settings (Out of the Box Functionality)

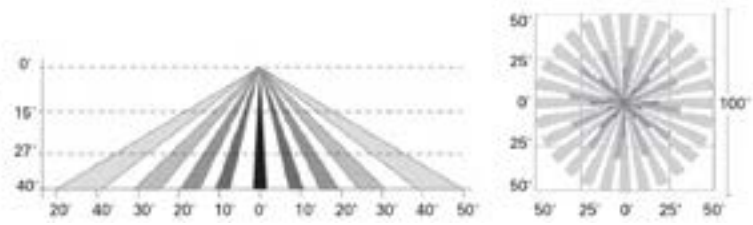
Occupancy Sensor				
Setting	MS/DIM	SPB	WaveLinx Lite (WLS4 / WLS2)	WaveLinx (WPS)
High Mode %	100%	100%	100%	100%
Low Mode %	10%	10%	50%	50%
Time Delay	5 min	5 min	15 min	15 min
Cut Off Delay	1 hr	1 hr	Disabled	Disabled
Photocell Enabled	No	No	Yes	Yes

WaveLinx Wireless Control and Monitoring System
Operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. WaveLinx (WPS2 to WPS4) outdoor wireless sensors offer passive infrared (PIR) occupancy and photocell for closed loop daylight harvesting. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets). WaveLinx Lite (WLS4 and WLS2) outdoor wireless sensors provide PIR occupancy and photocell for closed loop daylight harvesting. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx Lite mobile application for set-up and configuration. WAC not required. WaveLinx Outdoor Control Module (WOLC-7P-10A) accessory provides a photocontrol enabling astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

For mounting heights up to 15' (WPS2 and WLS2)



For mounting heights up to 40' (WPS4 and WLS4)



AirMesh (DIM10)
AirMesh integrated wireless controls system includes factory installed DIM10 Synapse control module and FSP-201 motion sensor; requires additional AirMesh components for operation. Contact Synapse at www.synapsewireless.com for product support, warranty and terms and conditions.

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Specifications and dimensions subject to change without notice.

Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	

Lumark

Axcent

Wall Mount Luminaire

Product Features

selectable lumens · DUSK-TO-DAWN · Light ARchitect™ · BAA

Product Certifications

ISO CERTIFIED · UL CERTIFIED · DLC LISTED · DLC LISTED PREMIUM · FC CLASS A CAN ICES-005 · DARKSKY APPROVED · IP66 · 3G VIB · RoHS COMPLIANT · 5 YEAR LIMITED WARRANTY

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 6

Quick Facts

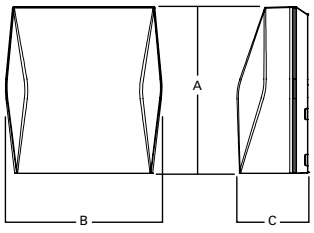
- Available in 12W - 116W (1,800 - 16,000 lumens) models
- Full cutoff and refractive lens models available
- Energy and maintenance savings up to 95% compared to HID
- Energy efficient illumination results in up to 177LPW
- Replaces 70W up to 450W HID equivalents

Connected Systems

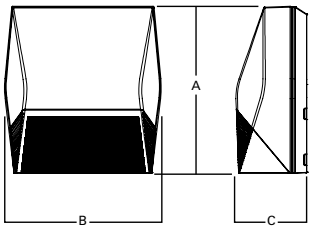
- WaveLinx PRO Wireless
- WaveLinx LITE Wireless
- Enlighted

Dimensional Details

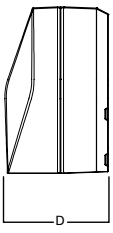
Full Cutoff



Refractive Lens



Deep Back Housing



Dimensional Data

	AXCS Small	AXCL Large
A	8" [202mm]	11-1/2" [292mm]
B	7-1/2" [190mm]	10-3/4" [273mm]
C	3-5/8" [94mm]	4-7/8" [124mm]
D	6-1/8" [155mm]	7-1/8" [181mm]

Ordering Information

SAMPLE NUMBER: **AXCS1A-AP-347V**

Domestic Preferences [27]	Model Series [1]	LED Color Temperature	Color	Options (Add as Suffix)
[Blank]=Standard **BAA**=Buy American Act **TAA**=Trade Agreements Act	**Full Cutoff** **AXCS1A**=12W **AXCS2A**=16W **AXCS3A**=23W **AXCS4A**=38W **AXCS5A**=45W **AXCL6A**=50W **AXCL8A**=66W **AXCL10A**=89W **AXCL12A**=116W **Refractive Lens** **AXCS1ARL**=12W **AXCS2ARL**=16W **AXCS3ARL**=23W **AXCS4ARL**=38W **AXCS5ARL**=45W **AXCL6ARL**=50W **AXCL8ARL**=66W **AXCL10ARL**=89W **AXCL12ARL**=116W	**[Blank]**=4000K, Neutral **C**=5000K, Cool **W**=3000K, Warm	**[Blank]**=Carbon Bronze (Standard) **WT**=Summit White **BK**=Black **AP**=Grey **GM**=Graphite Metallic **DP**=Dark Platinum	**347V**=347V [2] **480V**=480V [2] **PC1**=Photocontrol 120V [3, 4, 5] **PC2**=Photocontrol 208-277V, 347V, 480V [4, 5, 6] **PC**=Photocontrol 120-277V, 347V, 480V [4, 7, 8] **KKIT**=Knuckle Floodlight Mount [7] **TRNKIT**=Trunnion Floodlight Mount **SFKIT**=Slipfitter Floodlight Mount **PMAKIT**=Pole Mount Arm **WPS2XX**=Wavelinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting Height [4, 9, 10, 11] **WPS4XX**=Wavelinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting Height [4, 9, 10, 11] **WLS2XX**=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting [4, 9, 10, 11] **WLS4XX**=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting [4, 9, 10, 11] **LWR-LW**=Enlighted Wireless Sensor, Wide Lens for 8' - 16' Mounting Height [4, 9, 12] **LWR-LN**=Enlighted Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height [4, 9, 12] **MSP/DIM-L12**=Integrated Sensor for Dimming Operation, 8' - 12' Mounting Height [4, 9, 13] **MSP/DIM-L30**=Integrated Sensor for Dimming Operation, 12' - 30' Mounting Height [4, 9, 13] **MSP-L12**=Integrated Sensor for ON/OFF Operation, 8' - 12' Mounting Height [4, 9, 13] **MSP-L30**=Integrated Sensor for ON/OFF Operation, 12' - 30' Mounting Height [4, 9, 13] **CBP**=Cold Weather Battery Pack [3, 14, 15, 16, 17, 18] **CBP-CEC**=Cold Weather Battery Pack, CEC compliant [3, 14, 15, 16, 17, 18] **10K**=10kV/10kA Surge Protection **HA**=50°C High Ambient [15, 19] **GRF**=Glare Reducing Lens [20] **AHD145**=After Hours Dim, 5 Hours [5, 21] **AHD245**=After Hours Dim, 6 Hours [5, 21] **AHD255**=After Hours Dim, 7 Hours [5, 21] **AHD355**=After Hours Dim, 8 Hours [5, 21]

Accessories (Order Separately) [22,28]

VS/AXCS-XX=Vandal Shield Axcent Small [7, 23]
VS/AXCS-MS=Vandal Shield Axcent Small (With Motion Sensor) [7, 23]
WG/AXCS=Wire Guard Axcent Small [7]
WG/AXCS-MS=Wire Guard Axcent Small (With Motion Sensor) [7]
VS/AXCL-XX=Vandal Shield Axcent Large [5, 23]
VS/AXCL-MS=Vandal Shield Axcent (With Motion Sensor) [5, 23]
WG/AXCL=Wire Guard Axcent Large [5]
WG/AXCL-MS=Wire Guard Axcent (With Motion Sensor) [5]
BB/AXC=Axcent Lumen Select Back Box, Carbon Bronze [24]
BB/AXC-PC=Axcent Lumen Select Back Box with PC, Carbon Bronze [24, 25]
BB/AXC-WT=Axcent Lumen Select Back Box, Summit White [24]
BB/AXC-WT-PC=Axcent Lumen Select Back Box with PC, Summit White [24, 25]
KKIT/AXCS-XX=Knuckle and Visor Floodlight Kit (For Axcent Small) [7]
SFKIT/AXCS-XX=Slipfitter Floodlight Kit (For Axcent Small) [7]
TRNKIT/AXCS-XX=Trunnion and Visor Floodlight Kit (For Axcent Small) [7]
TRNKIT-XX=Trunnion Floodlight Kit (For Axcent Large) [5]
SFKIT-XX=Slipfitter Floodlight Kit (For Axcent Large) [5]
PMAKIT-XX=Pole Mount Kit
ISHH-01=Integrated Sensor Programming Remote [26]
MA1010-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon
MA1011-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon
MA1017-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon
MA1018-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon

NOTES:

1. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
2. Transformer used only when ordered with motion sensor or AXCS1 through AXCS5 or AXCL6 fixture wattages.
3. Not available in 347 or 480 VAC.
4. Button photocontrol and any motion sensor (MSP or LWR) not offered together.
5. Only available on AXCL6-AXCL12 models.
6. Used with 277, 347, and 480 VAC options.
7. Only available on AXCS1-AXCS5 models.
8. This configuration may contain materials that are not RoHS compliant. Contact your lighting representative for more information.
9. Uses deep back housing.
10. Sensor passive infrared (PIR) may be overly sensitive when operating below -20°C (-4°F). For the device to be field-configurable, requires WAC Gateway components WAC-PoE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more Wavelinx application information.
11. Replace XX with sensor color (WH, BZ, or BK).
12. Enlighted wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for application information.
13. The ISHH-01 accessory is required to adjust parameters.
14. Ambient operating temperature -20°C to 25°C for AXCL6 through AXCL10. Ambient operating temperature -20°C to 30°C on AXCS4 models. Ambient operating temperature -20°C to 40°C on AXCS1 through AXCS3 models.
15. Not available with AXCS5 or AXCL12 models.
16. Uses deep back housing for AXCS1, AXCLS2, AXCS3, and AXCS4 models.
17. Not to be mounted in upwards / inverted orientation. Downlight wall mount only for AXCS1 through AXCS4.
18. CBP cannot be used with PC and motion sensor (MSP or LWR). CBP can be used with PC or motion sensor (MSP or LWR).
19. Can not be ordered with CBP or PC options.
20. Use dedicated IES files on product website for lumen values and distributions.
21. Requires the use of PC1 or PC2 button photocontrol. See After Hours Dim supplemental guide for additional information.
22. Replace XX with color designation.
23. For use with full cutoff lens configurations only.
24. Lumen Select functionality not available in conjunction with any motion sensor option (MSP or LWR). Photocontrol back box not available with any photocontrol or motion sensor options (PC, MSP or LWR).
25. Photocell only operates at 120-277V input voltages. Not for use with 347 or 480V systems.
26. This tool enables adjustment to parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult you lighting representative for more information.
27. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be seperately analyzed under domestic preference requirements.
28. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

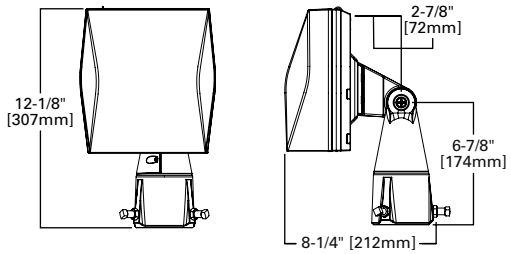
Stock Ordering Information

Model Series [1]			
Full Cutoff		Refractive Lens	
AXCS1A=12W	**AXCL10A**=102W	**AXCS1ARL**=12W	**AXCL10ARL**=89W
AXCS2A=16W	**AXCL12A**=123W	**AXCS2ARL**=16W	**AXCL12ARL**=116W
AXCS3A=23W	**AXCL6A-347V**=50W	**AXCS3ARL**=23W	**AXCL6ARL-347V**=50W
AXCS4A=38W	**AXCL8A-347V**=66W	**AXCS4ARL**=38W	**AXCL8ARL-347V**=66W
AXCS5A=45W	**AXCL10A-347V**=89W	**AXCS5ARL**=45W	**AXCL10ARL-347V**=89W
AXCL6A=56W	**AXCL12A-347V**=116W	**AXCL6ARL**=50W	**AXCL12ARL-347V**=116W
AXCL8A=72W		**AXCL8ARL**=66W	

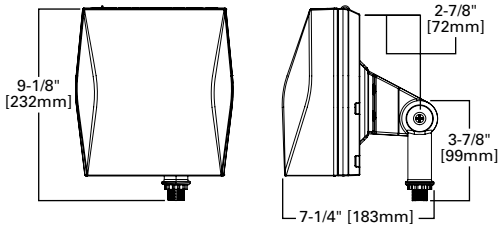
Note: All stock configurations are 4000K color temperatures, standard Carbon Bronze finish, and wall mount configuration.

Mounting Details

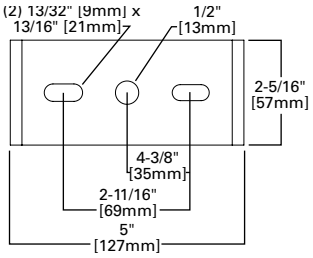
Slipfitter Mount (Small)
Tenon OD: 2-3/8" | **EPA:** 0.60



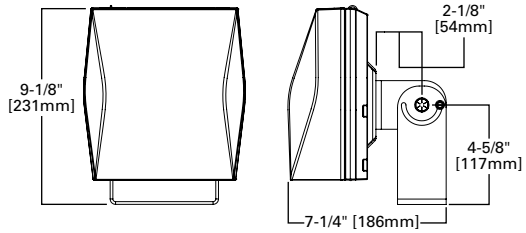
Knuckle Mount (Small)



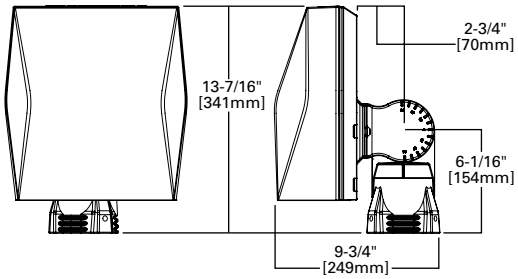
Trunnion Mount Detail



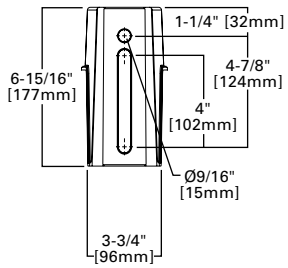
Trunnion Mount (Small)



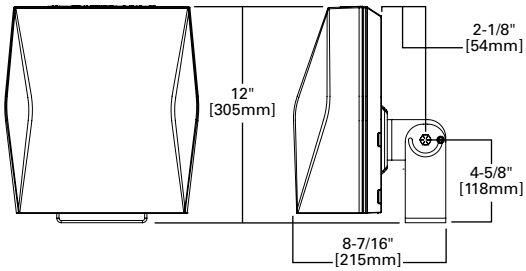
Slipfitter Mount (Large)
Tenon OD: 2-3/8" to 2-7/8" | **EPA:** 1.10



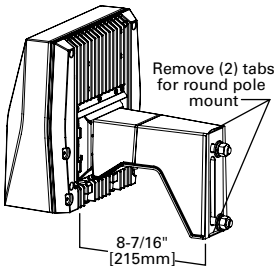
Pole Mount Arm Drill Pattern



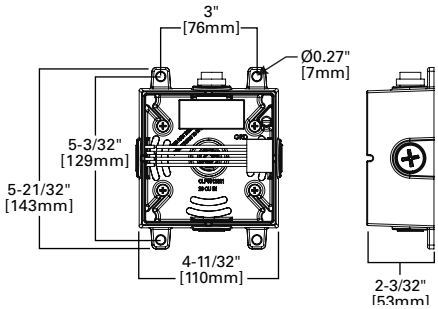
Trunnion Mount (Large)



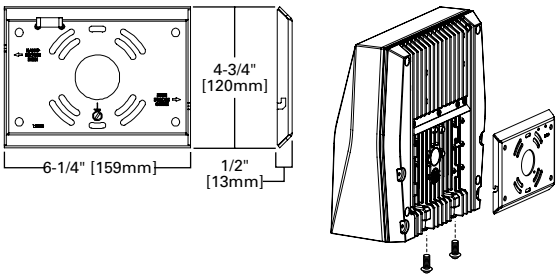
Pole Mount Arm (Large)
EPA: 1.10



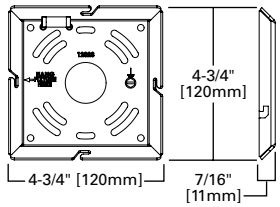
Lumen Select Back Box



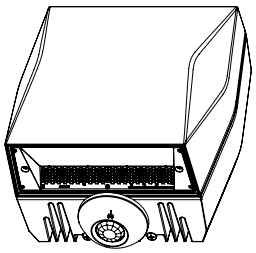
Wall Mount Plate Detail (Large)



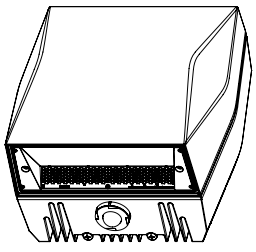
Wall Mount Plate Detail (Small)



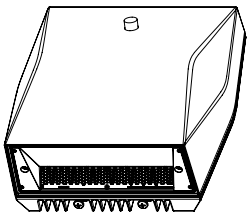
Enlighted Sensor



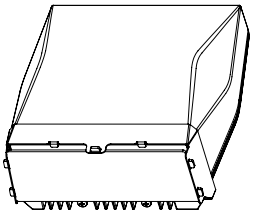
Occupancy Sensor



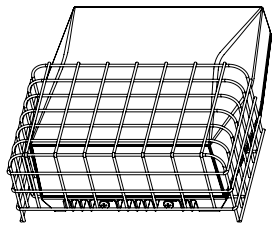
Button Photocontrol



Vandal Shield



Wire Guard



Product Specifications

Construction
- Die-cast aluminum housing
- External back fin design extracts heat from the surface to thermally optimize design for longer luminaire life

Optics
- Dark Sky Approved (Fixed mount, Full cutoff, and 3000K CCT only)
- Silicone-sealed optical LED chamber
- Acrylic refractive or full cutoff lens options for Type IV distributions

Electrical
- Standard universal voltage (120-277V, 50/60Hz)
- Driver incorporates 6kV surge protection
- -40°C minimum operating temperature
- 40°C maximum operating temperature
- <20% total harmonic distortion
- 0-10V dimming driver is standard with leads external to the fixture

Mounting
- Steel wedge mounting plate fits directly to 4" standard j-box or directly to wall with the "Hook-N-Lock" mechanism
- Stainless steel set screws
- Lumen Select Back Box accessory offers four 1/2" NPT conduit entry wire ways. Resistor Pack combinations allow field-dimming of 75% or 50% when connected to luminaire dimming leads
- Not suitable for indoor use when installed in inverted/uplight orientation

Emergency Egress
- Optional integral cold weather battery emergency egress includes emergency operation test switch, an AC-ON indicator light and a premium, maintenance-free battery pack
- The separate emergency lighting LEDs are wired to provide redundant emergency lighting. Listed to UL Standard 924, Emergency Lighting

Finish
- Five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness

Shipping Data
- Small fixture=5 lbs. [2.36 kgs.]
- Small with sensor or CBP=10 lbs. [4.40 kgs.]
- Large fixture=12 lbs. [5.45 kgs.]
- Large with sensor or CBP=17 lbs. [7.73 kgs.]
- Large with sensor & CBP=21 lbs. [9.54 kgs.]

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

Energy and Performance Data

Power and Lumens (Axcent Small)

Light Engine		AXCS1A	AXCS2A	AXCS3A	AXCS4A	AXCS5A
Power (Watts)		12	16	23	38	45
Input Current @ 120V (A)		0.10	0.13	0.19	0.32	0.38
Input Current @ 240V (A)		0.05	0.07	0.10	0.16	0.19
Input Current @ 277V (A)		0.04	0.06	0.08	0.14	0.16
Input Current @ 347V (A)		0.03	0.05	0.07	0.11	0.13
Input Current @ 480V (A)		0.03	0.03	0.05	0.08	0.09
Configuration						
Full Cutoff	4000K/5000K Lumens	1,786	2,589	3,551	5,500	6,348
	3000K Lumens	1,509	2,188	3,001	4,648	5,365
	BUG Rating	B1-U0-G0	B1-U0-G0	B1-U0-G0	B2-U0-G1	B2-U0-G1
Refractive Lens	4000K/5000K Lumens	1,894	2,745	3,765	5,832	6,731
	3000K Lumens	1,600	2,320	3,182	4,928	5,688
	BUG Rating	B1-U3-G2	B1-U3-G2	B1-U3-G2	B1-U4-G3	B1-U4-G3

Power and Lumens (Axcent Large)

Light Engine		AXCL6A	AXCL8A	AXCL10A	AXCL12A
Power (Watts)		50	66	89	115
Input Current @ 120V (A)		0.41	0.54	0.74	0.96
Input Current @ 240V (A)		0.21	0.27	0.37	0.48
Input Current @ 277V (A)		0.18	0.24	0.32	0.42
Input Current @ 347V (A)		0.14	0.19	0.26	0.33
Input Current @ 480V (A)		0.10	0.14	0.19	0.24
Configuration					
Full Cutoff	4000K Lumens	7,594	9,716	12,719	16,302
	5000K Rating	7,501	9,598	12,564	16,103
	3000K Lumens	6,502	8,319	10,890	13,958
	BUG Rating	B2-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G2
Refractive Lens	4000K Lumens	7,809	10,331	13,665	16,637
	5000K Rating	7,714	10,205	13,498	16,434
	3000K Lumens	6,686	8,845	11,700	14,244
	BUG Rating	B1-U4-G4	B2-U5-G5	B2-U5-G5	B2-U5-G5

Energy and Performance Data

Power and Lumens (Small + CBP)

Light Engine		AXCS1A	AXCS2A	AXCS3A	AXCS4A
Power (Watts)		16	20	27	42
Input Current @ 120V (A)		0.13	0.17	0.23	0.35
Input Current @ 240V (A)		0.07	0.08	0.11	0.18
Input Current @ 277V (A)		0.06	0.07	0.10	0.15
Configuration					
Full Cutoff	4000K/5000K Lumens	742	792	789	644
	3000K Lumens	627	670	667	545
Refractive Lens	4000K/5000K Lumens	787	841	837	684
	3000K Lumens	664	710	708	655

Note: Power and current based on full power consumption while CBP is charging. Lumen outputs are while operating in emergency mode only.

Power and Lumens (Large + CBP)

Light Engine		AXCL6A	AXCL8A	AXCL10A
Power (Watts)		54	70	93
Input Current @ 120V (A)		0.45	0.58	0.77
Input Current @ 240V (A)		0.22	0.29	0.38
Input Current @ 277V (A)		0.19	0.25	0.33
Configuration				
Full Cutoff	4000K/5000K Lumens	141*10W=1410		
	3000K Lumens	122*10=1220		
Refractive Lens	4000K/5000K Lumens	151*10=1510		
	3000K Lumens	131*10=1310		

Note: Power and current based on full power consumption while CBP is charging. Lumen outputs are while operating in emergency mode only.

Power and Lumens Multipliers
(Lumen Select Back Box + Axcent Small)

Configuration		~75% Nominal Output	~50% Nominal Output
Catalog Number	**Material Number**	**Connect per Installation Instructions**	
AXCS1A*	13109741 or 13109939 or Other	74%	50%
AXCS2A*	13109698 or 13109938 or Other	74%	50%
AXCS3A*	13109697 or 13109937 or Other	74%	50%
AXCS4A*	13109695 or 13109936	75%	40%
AXCS4A*	13495299 or 13495470 or Other	72%	50%
AXCS5A*	13109652 or 13109935	75%	40%
AXCS5A*	13495471 or 13495472 or Other	72%	50%

Power and Lumens Multipliers
(Lumen Select Back Box + Axcent Large)

Configuration		~75% Nominal Output	~50% Nominal Output
Catalog Number	**Material Number**	**Connect per Installation Instructions**	
AXCL6A*	13645910 or 13645979	69%	47%
AXCL8A*	13645970 or 13645984	69%	47%
AXCL10A*	13645971 or 13645989	69%	47%
AXCL12A*	13645972 & 13645993	72%	49%

Lumen Maintenance (Axcent Small)

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)
Up to 3A	
25°C	88%
40°C	87%
50°C	87%
Up to 4A	
25°C	88%
40°C	87%
50°C	87%
Up to 5A	
25°C	87%
40°C	86%

Lumen Maintenance (Axcent Large)

Ambient Temperature	TM-21 Lumen Maintenance (72,000 Hours)
Up to 8A	
25°C	89%
40°C	87%
50°C	86%
Up to 10A	
25°C	88%
40°C	86%
50°C	85%
Up to 12A	
25°C	85%
40°C	82%

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.97

Control Options

0-10V This fixture is offered standard with 0-10V dimming driver(s) for use with a lighting control panel or other control method.

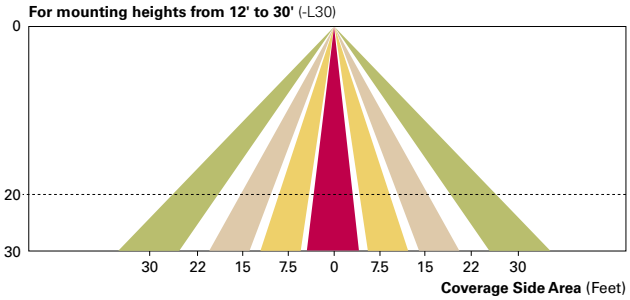
Photocontrol (PC1, PC2 and PC) Optional button-type photocontrol provides a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels.

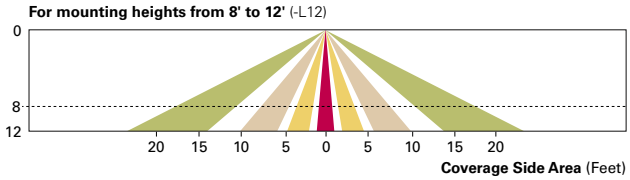
After Hours Dim (AHD) This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (MSP/DIM-LXX and MSP-LXX) These sensors are factory installed in the luminaire housing. When the MSP/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MSP/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of ten minutes. The MSP-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity.

These occupancy sensors includes an integrated photocell that can be activated with the ISHH-01 accessory for "dusk-to-dawn" control or daylight harvesting - the factory preset is ON. The ISHH-01 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

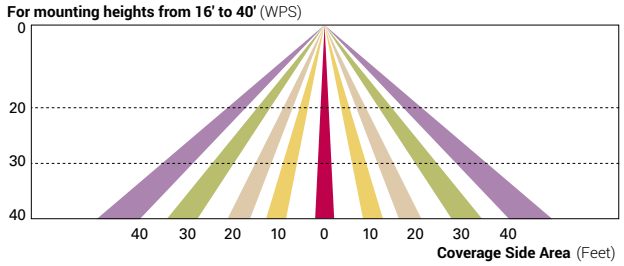
A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-30'.



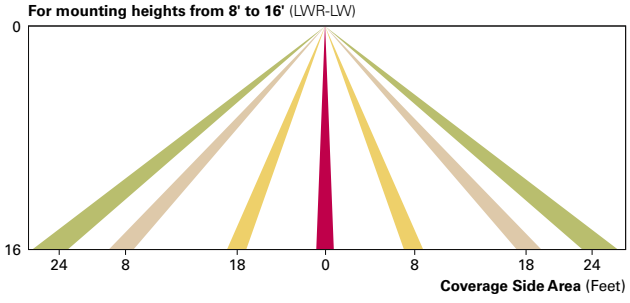


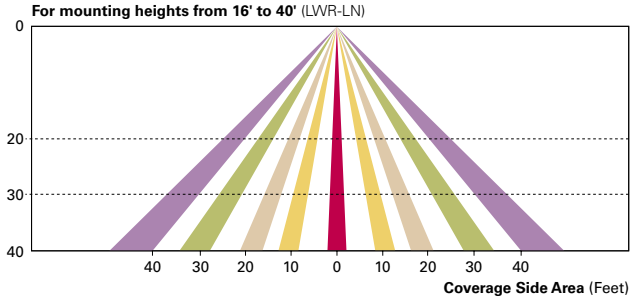
WaveLinx Wireless Control and Monitoring System The WaveLinx Outdoor control platform operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. Use the WaveLinx Mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets).

WaveLinx Wireless Sensor (WPS2 and WPS4) These outdoor sensors offer passive infrared (PIR) occupancy and a photocell for closed loop daylight sensing. These sensors are factory preset to dim down to approximately 50 percent power after 15 minutes of no activity detected. These occupancy sensors include an integral photocell for "dusk-to-dawn" control or daylight harvesting that is factory-enabled. A variety of sensor lenses are available to optimize the coverage pattern for mounting heights from 7'-40'.



Enlighted Wireless Control and Monitoring System (LWR-LW and LWR-LN) The Enlighted System is a connected lighting solution that combines LED luminaires with an integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of other resources beyond lighting.





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P: 770-486-4800
www.cooperlighting.com

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Specifications and dimensions
subject to change without notice.

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

Impact Elite LED

Wall Mount Luminaire

Interactive Menu

- Ordering Information page 2
- Product Specifications page 2
- Energy and Performance Data page 3
- Control Options page 4

Product Certifications

Quick Facts

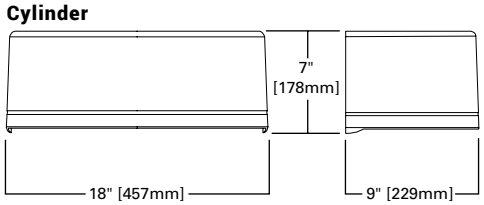
- 15 Optical Distributions
- Lumen packages range from 2,459 to 11,480 (20W - 95W)
- Efficacy up to 149 lumens per watt

Connected Systems

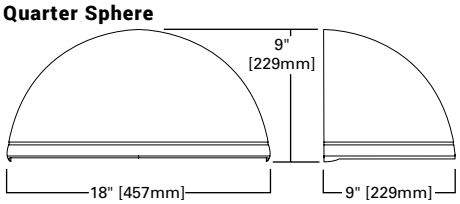
- WaveLinx PRO Wireless
- WaveLinx LITE Wireless
- Enlighted

Dimensional Details

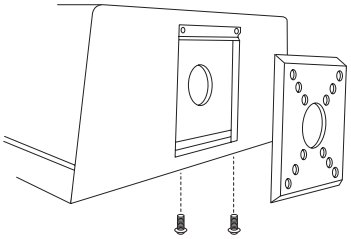
Cylinder



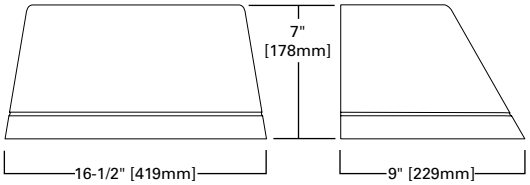
Quarter Sphere



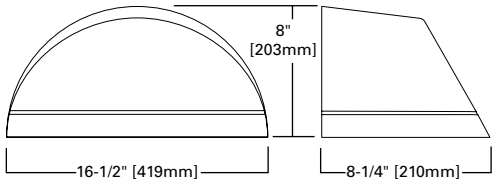
Hook -n- Lock



Trapezoid



Wedge



NOTES:
1. IDA Certified for 3000K CCT and warmer only.

Ordering Information

SAMPLE NUMBER: **ISC-SA1F-740-U-T3-BZ**

Product Family [1]	Light Engine		Color Temperature	Voltage	Distribution	Finish
	Configuration	Drive Current				
ISC=Impact Elite LED Small Cylinder **ISS**=Impact Elite LED Small Quarter Sphere **IST**=Impact Elite LED Small Trapezoid **ISW**=Impact Elite LED Small Wedge **BAA-ISC**=Impact Elite LED Small Cylinder Buy American Act Compliant [23] **TAA-ISC**=Impact Elite LED Small Cylinder Trade Agreements Act Compliant [23] **BAA-ISS**=Impact Elite LED Small Quarter Sphere Buy American Act Compliant [23] **TAA-ISS**=Impact Elite LED Small Quarter Sphere Trade Agreements Act Compliant [23] **BAA-IST**=Impact Elite LED Small Trapezoid Buy American Act Compliant [23] **TAA-IST**=Impact Elite LED Small Trapezoid Trade Agreements Act Compliant [23] **BAA-ISW**=Impact Elite LED Small Wedge Buy American Act Compliant [23] **TAA-ISW**=Impact Elite LED Small Wedge Trade Agreements Act Compliant [23]	**SA1**=1 Square (16 LED) **PA1**=1 Panel (24 LED) [26]	**A**=350mA **B**=450mA **C**=600mA **D**=800mA **E**=1000mA **F**=1200mA [2]	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **760**=70CRI, 6000K **827**=80CRI, 2700K **830**=80CRI, 3000K **AMB**=Amber, 590nm [3, 4]	**U**=120-277V **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V [5] **9**=347V	**SA1 Optics** **T2**=Type II **T3**=Type III **T4FT**=Type IV Forward Throw **T4W**=Type IV Wide **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right **RW**=Rectangular Wide Type I **PA1 Optics** **5WQ**=Type V Square Wide **T2R**=Type II **T2U**=Type II Urban **T3**=Type III **T4W**=Type IV Wide	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **RALXX**=Custom Color [27]

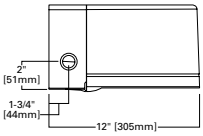
Options (Add as Suffix)	Controls and Systems Options (Add as Suffix)	Accessories (Order Separately)[24]
X=Driver Surge Protection (6kV) Only [17] **20K**=Series 20kV UL 1449 Surge Protective Device **CBP**=Battery Pack with Back Box, Cold Weather Rated [14, 15] **CBP-CEC**=Battery Pack with Back Box, Cold Weather Rated, CEC compliant [14] **HSS**=Factory Installed House Side Shield [16] **ULG**=Uplight Glow [6, 7, 25] **LCF**=Light Square Trim Plate Painted to Match Housing [28] **TR**=Tamper Resistant Hardware **CC**=Coastal Construction [21] **HA**=50°C High Ambient [8] **AHD145**=After Hours Dim, 5 Hours, 50% [9] **AHD245**=After Hours Dim, 6 Hours, 50% [9] **AHD255**=After Hours Dim, 7 Hours, 50% [9] **AHD355**=After Hours Dim, 8 Hours, 50% [9]	**BPC**=Button Type Photocontrol (120, 208, 240 or 277V. Must Specify Voltage) **PR7**=NEMA 7-PIN Twistlock Photocontrol Receptacle [2, 6, 7] **SPB1**=Dimming Occupancy Sensor with Bluetooth Interface, <8' Mounting [12, 22] **SPB2**=Dimming Occupancy Sensor with Bluetooth Interface, 8'-20' Mounting [12, 22] **SPB4**=Dimming Occupancy Sensor with Bluetooth Interface, 21'-40' Mounting [12, 22] **MS/DIM-LXX**=Motion Sensor for Dimming Operation [7, 10, 11, 12] **LWR-LW**=Enlighted Wireless Sensor, Wide Lens for 8'-16' Mounting Height [6, 12, 13] **LWR-LN**=Enlighted Wireless Sensor, Narrow Lens for 16'-40' Mounting Height [6, 12, 13] **WLS2XX**=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting [7,18,20] **WLS4XX**=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting [7,18,20] **WPS2XX**=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting [7,18,20] **WPS4XX**=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting [7,18,20]	**MA1253**=10kV Circuit Module Replacement **MA1254-XX**=Thruway Back Box - Impact Elite Trapezoid **MA1255-XX**=Thruway Back Box - Impact Elite Cylinder **MA1256-XX**=Thruway Back Box - Impact Elite Quarter Sphere **MA1257-XX**=Thruway Back Box - Impact Elite Wedge **FSIR-100**=Wireless Configuration Tool for Occupancy Sensor **WOLC-7P-10A**=WaveLinx Outdoor Control Module (7-pin) [7, 19]

NOTES:

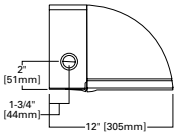
1. DesignLight Consortium® Qualified. Refer to www.designlights.org, Qualified Products List under Family Models for details.
2. Not available with ULG option.
3. Choose Drive Current "A" for Amber 590nm, which is provided at 500mA only.
4. Narrow-band 590nm +/- 5nm for wildlife and observatory use. Exact luminaire wattage available in IES files. Available with 5WQ, 5MQ, SL2, SL3 and SL4 distributions. Can be used with HSS option.
5. 480V not to be used with ungrounded or impedance grounded systems.
6. Not available with ISS or ISW.
7. Cannot be used in conjunction with other control options.
8. Suitable for 50°C provided no options other than motion sensor are included and driver output set to 1000mA or less.
9. Requires the use of photocontrol. Not available with 350mA drive current. See After Hours Dim supplemental guide for additional information.
10. Replace LXX with L08 (<8' mounting), L20 (8'-20' mounting) or L40W (21'-40' mounting.)
11. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
12. Includes integral photocell.
13. Enlighted wireless sensors are factory installed and require network components in appropriate quantities.
14. Battery pack operating temperature of -20C to +40C. Operates downlight for 90-minutes.
15. Must specify 120V or 277V.
16. Not for use with 5NQ, 5MQ, 5WQ or RW optics. A black trim plate is used when HSS is selected.
17. Removes additional surge module.
18. Replace XX with sensor color (WH, BZ, or BK).
19. Requires PR7.
20. For WaveLinx applications, WAC Gateway required to enable field-configurability: Order WAC-PoE and WPOE-120 (10V to PoE injector) power supply if needed. Gateway not required for WaveLinx Lite Commercial (LC) applications.
21. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
22. Smart device with mobile application required to change system defaults. See controls section for details.
23. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information Components shipped separately may be separately analyzed under domestic preference requirements.
24. For BAA or TAA requirements, Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
25. Only available in 3000K, 4000K or 5000K CCT.
26. Not available with motion sensor controls, including SPB, MS/DIM, LWR or WaveLinx.
27. Specify RAL number for Custom Color. Custom color matching available upon request. Consult your lighting representative at Cooper Lighting Solutions for more information.
28. Not available with PA1 configuration.

Thruway Back Box

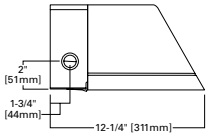
Cylinder



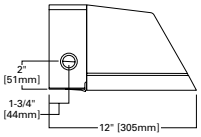
Quarter Sphere



Trapezoid



Wedge



Product Specifications

Construction

- Heavy-wall, die-cast aluminum housing and removable hinged door frame
- Optional tamper-resistant fasteners offer vandal resistant access
- IK10 impact rated

Optics

- High-efficiency injection-molded AccuLED optics technology
- 15 optical distributions
- IDA Certified (3000K CCT and warmer only)

Electrical

- Standard with 0-10V dimming
- Standard with Cooper Lighting Solutions proprietary circuit module designed to withstand 10kV of transient line surge
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration.

Mounting

- Utilizes "Hook-N-Lock" mounting mechanism, securing to a gasketed and zinc plated mounting attachment
- Two black oxide coated Allen set screws concealed but accessible from below

Finish

- Super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness
- RAL and custom color matches available
- Coastal Construction (CC) option available

Warranty

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

Energy and Performance Data

View Impact Elite IES files

1 Light Square (SA)		Cylinder (ISC) and Quarter Sphere (ISS)						Trapezoid (IST) and Wedge (ISW)					
Drive Current (mA)		350	450	600	800	1000	1200	350	450	600	800	1000	1200
Power (Watts)	120 - 277V	20.1	25.4	34.2	45.2	58.2	66.0	20.1	25.4	34.2	45.2	58.2	66.0
Current (A)	120	0.17	0.22	0.29	0.38	0.48	0.56	0.17	0.22	0.29	0.38	0.48	0.56
	277V	0.09	0.10	0.13	0.17	0.21	0.25	0.09	0.10	0.13	0.17	0.21	0.25
Power (Watts)	347V or 480V	23.3	28.7	36.6	49.5	60.7	70.1	23.3	28.7	36.6	49.5	60.7	70.1
Current (A)	347V	0.07	0.08	0.11	0.15	0.18	0.21	0.07	0.08	0.11	0.15	0.18	0.21
	480V	0.05	0.06	0.08	0.11	0.13	0.16	0.05	0.06	0.08	0.11	0.13	0.16
Optics (4000K, 70 CRI)													
T2	Lumens	2,802	3,500	4,618	5,778	7,231	7,895	2,772	3,475	4,576	5,733	7,175	7,834
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	139	138	135	128	124	120	138	137	134	127	123	119
T3	Lumens	2,778	3,470	4,578	5,729	7,169	7,827	2,731	3,424	4,508	5,648	7,069	7,718
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	138	137	134	127	123	119	136	135	132	125	121	117
T4FT	Lumens	2,751	3,436	4,534	5,673	7,099	7,751	2,762	3,462	4,559	5,712	7,149	7,805
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	137	135	133	126	122	117	137	136	133	126	123	118
T4W	Lumens	2,780	3,473	4,582	5,733	7,174	7,833	2,739	3,434	4,522	5,665	7,089	7,740
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	138	137	134	127	123	119	136	135	132	125	122	117
SL2	Lumens	2,763	3,451	4,554	5,698	7,130	7,785	2,730	3,422	4,507	5,646	7,066	7,715
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
	Lumens Per Watt	137	136	133	126	123	118	136	135	132	125	121	117
SL3	Lumens	2,745	3,429	4,524	5,660	7,084	7,734	2,709	3,396	4,472	5,603	7,012	7,655
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	137	135	132	125	122	117	135	134	131	124	120	116
SL4	Lumens	2,680	3,348	4,417	5,526	6,916	7,551	2,666	3,342	4,401	5,514	6,900	7,534
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	133	132	129	122	119	114	133	132	129	122	119	114
SLL	Lumens	2,447	3,057	4,033	5,046	6,315	6,895	2,459	3,083	4,059	5,086	6,365	6,949
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2
	Lumens Per Watt	122	120	118	112	109	104	122	121	119	113	109	105
RW	Lumens	2,883	3,601	4,751	5,945	7,440	8,123	2,818	3,533	4,652	5,828	7,294	7,964
	BUG Rating	B2-U0-G1	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1	B2-U0-G1	B2-U0-G1	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G1
	Lumens Per Watt	143	142	139	132	128	123	140	139	136	129	125	121

1 Light Panel (PA)		Cylinder (ISC) and Quarter Sphere (ISS)						Trapezoid (IST) and Wedge (ISW)					
Drive Current (mA)		350	450	600	800	1000	1200	350	450	600	800	1000	1200
Power (Watts)	120 - 277V	28.9	36.4	48.9	63.0	82.4	94.4	28.9	36.4	48.9	63.0	82.4	94.4
Current (A)	120V	0.24	0.31	0.41	0.53	0.69	0.79	0.24	0.31	0.41	0.53	0.69	0.79
	277V	0.11	0.14	0.18	0.23	0.30	0.34	0.11	0.14	0.18	0.23	0.30	0.34
Power (Watts)	347V or 480V	30.5	37.7	49.0	63.9	83.2	95.0	30.5	37.7	49.0	63.9	83.2	95.0
Current (A)	347V OR 480V	0.09	0.11	0.14	0.19	0.24	0.28	0.09	0.11	0.14	0.19	0.24	0.28
	480V	0.07	0.08	0.11	0.14	0.18	0.20	0.07	0.08	0.11	0.14	0.18	0.20
Optics (4000K, 70 CRI)													
T2R	Lumens	4,296	5,369	7,010	8,733	10,721	11,750	4,154	5,211	6,738	8,386	10,329	11,338
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B1-U0-G1	B1-U0-G1	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2
	Lumens Per Watt	149	147	143	139	130	124	144	143	138	133	125	120
T2U	Lumens	4,241	5,300	6,920	8,621	10,584	11,600	4,123	5,172	6,688	8,323	10,252	11,253
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B1-U0-G1	B2-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3
	Lumens Per Watt	147	146	142	137	128	123	143	142	137	132	124	119
T3	Lumens	4,193	5,240	6,842	8,524	10,464	11,468	4,079	5,117	6,616	8,235	10,143	11,133
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3	B2-U0-G3
	Lumens Per Watt	145	144	140	135	127	121	141	141	135	131	123	118
T4W	Lumens	4,165	5,205	6,796	8,467	10,394	11,392	4,083	5,122	6,623	8,243	10,152	11,144
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3	B1-U0-G2	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G3
	Lumens Per Watt	144	143	139	134	126	121	141	141	135	131	123	118
5WQ	Lumens	4,255	5,318	6,943	8,650	10,619	11,638	4,206	5,276	6,822	8,491	10,458	11,480
	BUG Rating	B3-U0-G1	B3-U0-G2	B3-U0-G2	B3-U0-G2	B4-U0-G3	B4-U0-G3	B3-U0-G1	B3-U0-G2	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G3
	Lumens per Watt	147	146	142	137	129	123	146	145	140	135	127	122

Lumen Maintenance (TM-21)

Drive Current	Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
Up to 1A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
1.2A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

* Supported by IES TM-21 standards
** Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, explaining proper use of IES TM-21 and LM-80.

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
10ºC	1.02
15ºC	1.01
25ºC	1.00
40ºC	0.99

Control Options

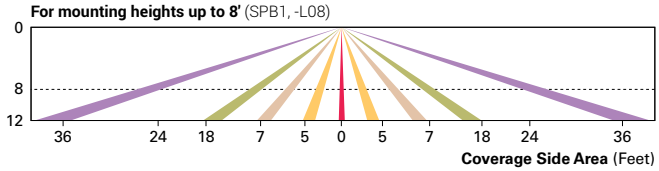
0-10V
This fixture is offered standard with 0-10V dimming driver(s).

Photocontrol (BPC and PR7)
Optional button-type photocontrol provides a flexible solution to enable “dusk-to-dawn” lighting by sensing light levels.

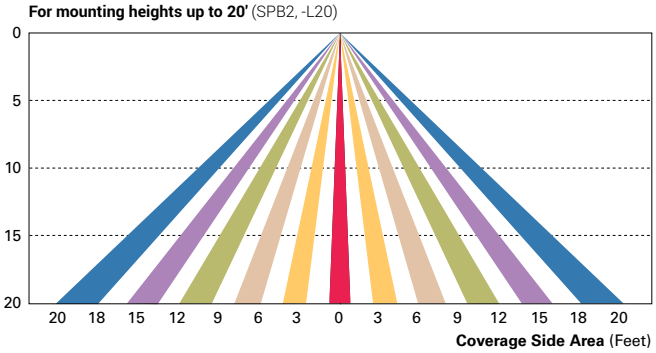
After Hours Dim (AHD)
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a “dusk-to-dawn” period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (SPB, MS/DIM-LXX)
These sensors are factory installed in the luminaire housing. When the SPB or MS/DIM sensor options are selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. SPB motion sensors require the Sensor Configuration mobile application by Wattstopper to change factory default dimming level, time delay, sensitivity and other parameters. Available for iOS and Android devices. The SPB sensor is factory preset to dim down to approximately 10% power with a time delay of five minutes. The MS/DIM occupancy sensors require the FSIR-100 programming tool to adjust factory defaults.

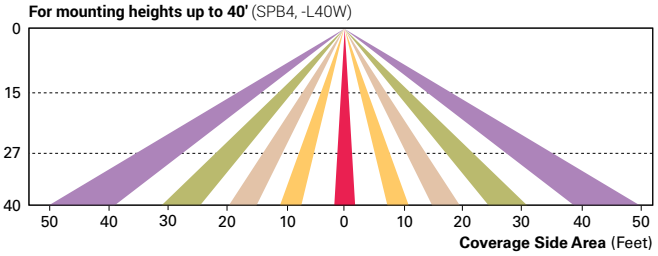
For mounting heights up to 8' (SPB1, -L08)



For mounting heights up to 20' (SPB2, -L20)

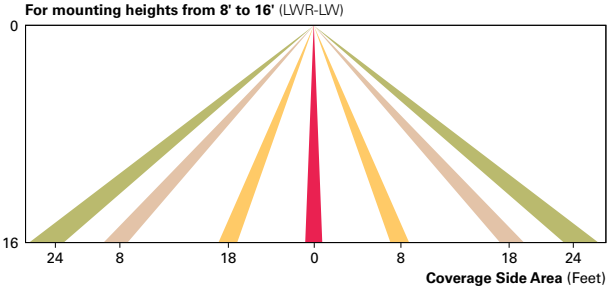


For mounting heights up to 40' (SPB4, -L40W)

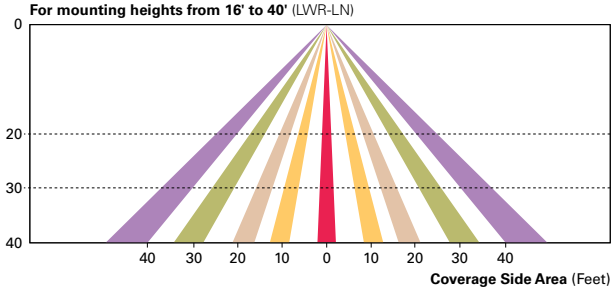


Enlighted Wireless Control and Monitoring System (LWR-LW and LWR-LN)
Enlighted is a connected lighting solution that combines a broad selection of energy-efficient LED luminaires with a powerful integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of building resources, beyond lighting.

For mounting heights from 8' to 16' (LWR-LW)

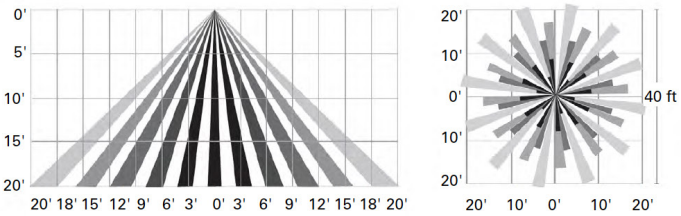


For mounting heights from 16' to 40' (LWR-LN)

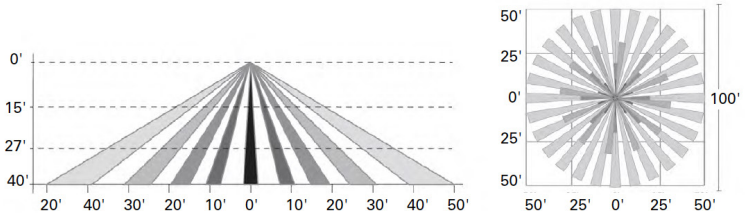


WaveLinx Wireless Control and Monitoring System
Operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. WaveLinx Pro (WPS2 to WPS4) outdoor wireless sensors offer passive infrared (PIR) occupancy and photocell for closed loop daylight harvesting, and can be factory or field-installed. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7′ to 40′. Use the WaveLinx mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-sets). WaveLinx Lite (WLS4 and WLS2) outdoor wireless sensors provide PIR occupancy and photocell for closed loop daylight harvesting, and can be factory or field-installed. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7′ to 40′. Use the WaveLinx Lite mobile application for set-up and configuration. WAC not required. WaveLinx Outdoor Control Module (WOLC-7P-10A) accessory provides a photocontrol enabling astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

For mounting heights up to 15' (WPS2 and WLS2)



For mounting heights up to 40' (WPS4 and WLS4)



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

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Specifications and dimensions subject to change without notice.

Section N

Utilities Coordination

N. Utilities Coordination

The proposed project will include installation of multiple utility services to the proposed building. Please see Sheet C-20 of the Civil Plan Set for proposed utility layout.

Water:

The site will be served by the Belfast Water District. Separate fire and domestic water services to the proposed building will be installed off the existing 8" private service within the private right-of-way on the Applicant's property. The existing line was installed during construction of the neighboring Tractor Supply Company facility. Please see the attached letter from Belfast Water District confirming their ability to serve the development.

Sewer:

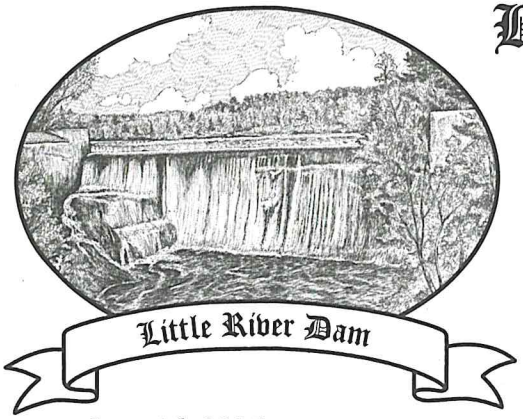
This site would be served by the City of Belfast's sanitary sewer system. A single 6" service would be installed from the building to a proposed manhole, and an 8" line would be installed from the proposed manhole to an existing 8" sewer stub located within the private right-of-way on the Applicant's property. This stub was installed during construction of the neighboring Tractor Supply Company facility. Please see the attached correspondence from Olver Associates confirming the Belfast Wastewater Treatment Facility has the capacity to serve the development.

Electric/Communications:

The site's electrical demand would be served by Central Maine Power. A telecommunications service provider is yet to be determined. The project proposes to install an electrical vault at CMP's existing 3-phase duct bank along Belmont Avenue and extend primary 3-phase power overhead within the access road and then to the building's transformer via a series of utility poles, vaults, and underground service. Telecommunications service would utilize the same pole and trench configuration as the electric service. The proposed design is currently in coordination with the wired utility providers.

Stormwater:

The site's stormwater runoff will be treated and detained via roof drip edge filters and a vegetated underdrained soil filter, meeting Maine Department of Environmental Protection Stormwater Law standards. No direct connections to the City's stormwater system are proposed. Please refer to the Stormwater Management Report for more information which outlines how the project is meeting the Basic, General, and Flooding standards under local and State law. A Stormwater Permit Application with Maine DEP will be applied for on June 20, 2025, a copy of which will be provided to the City.



Belfast Water District

41 Wight Street
P.O. Box 506
Belfast, Maine 04915-0506

www.belfastwater.org
email: info@belfastwater.org

TEL 207-338-1200
FAX 207-338-0444

June 16, 2025

To: Finn Bondeson

RE: 45 Belmont Avenue-WCAP 60-unit Residential Building

First of all, I am pleased to advise you that the Belfast Water District has the capacity to serve your proposed development for a 60-unit building.

The property owner's contractor can install a new water service and a new fire service for the building using the District's specified materials. The Belfast Water District specifications can be found on our website at: **www.belfastwater.org** under the Customer Service tab (New Service Installation).

A New Water Service Installation Application is required to provide a cost estimate. This fillable application can also be found on our website under the same tab as mentioned above. The District must receive payment in advance before the start of construction. Upon determination of the final cost incurred, the amount of advanced payment shall be adjusted to the actual cost of the construction either by the District's return to the applicant any excess amount or by additional payment by the applicant to the District to recover any deficiency.

The Belfast Water District will require a pressure test and that the new services to be disinfected by a third-party contractor approved by the District.

The private 8-inch ductile iron (D.I.) water main is fed off a 12-inch D.I. water main which is teed off a 12-inch D.I. on the opposite side of the road of the development. These water mains will provide plenty of capacity to serve your building's needs. Fire Hydrant #128, located near the intersection of Schoodic Drive and Belmont Avenue, has a static pressure of 81 p.s.i. with an available flow of 3,100 GPM.

At this time, the Belfast Water District does not have any proposed infrastructure improvements planned for this area.

If I may be of any further assistance, please feel free to contact me.

Sincerely,

Frank Short, Superintendent
Belfast Water District

Outlook

RE: WCAP - Belfast

From Travis Jones <travis@olverassociatesinc.com>
Date Tue 6/17/2025 12:16 PM
To Finn Bondeson <fbondeson@acorn-engineering.com>
Cc Annaleis Hafford <annaleis@olverassociatesinc.com>; Bub Fournier <directorplanning@cityofbelfast.org>; Mandy Holway <Mandy@olverassociatesinc.com>; Sam Lebel <slebel@acorn-engineering.com>; Brad Kaden <bkaden@acorn-engineering.com>; Alexandra Sykes <cityplanner@cityofbelfast.org>

Hi Finn,

Thank you for your submittal regarding the proposed 60-unit residential development at 45 Belmont Avenue. After review, I can confirm that the City of Belfast Wastewater Treatment Facility has the capacity to serve the anticipated flow of approximately 9,690 gallons per day as presented.

Please note the following additional information:

- **Mapping:** Any maps or utility plans that we would have for this area would be available in hard copy at the Belfast Wastewater Treatment Plant. We are happy to make these available for review with reasonable notice.
- **Planned Infrastructure Improvements:** At this time, there are no imminent infrastructure improvements planned in the vicinity of this project.
- **Collection System Considerations:** This development will ultimately be served by the Nickerson Street Pump Station. As such, we would ask if a plan is in place to help prevent materials detrimental to pump station operation from entering the waste stream. These include, but are not limited to:
    - So-called “flushable” wipes (which are not truly flushable),
    - Fats, oils, and grease (FOG),
    - And hygiene products or similar solids that could impair pump performance or require increased maintenance.

We appreciate your attention to this matter and welcome continued coordination as the project progresses. Please feel free to contact me with any questions.

-Travis

Travis Jones
Assistant Operations Manager

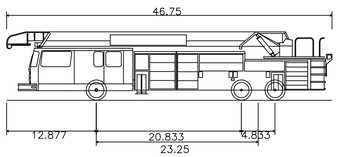
OLVER ASSOCIATES INC.
290 Main St
PO Box 679
Winterport, Maine 04496
207-479-3330 – C
207-223-2232 – O

From: Finn Bondeson <fbondeson@acorn-engineering.com>
Sent: Monday, June 9, 2025 12:29 PM
To: Travis Jones <travis@olverassociatesinc.com>
Cc: Annaleis Hafford <annaleis@olverassociatesinc.com>; Bub Fournier <directorplanning@cityofbelfast.org>; Mandy Holway <Mandy@olverassociatesinc.com>; Sam Lebel <slebel@acorn-engineering.com>; Brad Kaden <bkaden@acorn-engineering.com>; Alexandra Sykes <cityplanner@cityofbelfast.org>
Subject: Re: WCAP - Belfast

Good afternoon Travis,

Section O

Turning Templates



Firetruck	
Overall Length	46.750ft
Overall Width	8.500ft
Overall Body Height	9.851ft
Min Body Ground Clearance	0.920ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

LEGEND

- VEHICLE OVERHANG
- VEHICLE TIRE TRACK
- VEHICLE OUTLINE

VAN

20 0 20 40

SCALE: 1" = 20'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: **FIRE TRUCK TURNING TEMPLATE**

PROJECT NAME: **45 BELMONT AVENUE AFFORDABLE HOUSING**

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.
PO BOX 3370
CAPE ELIZABETH, MAINE 04107
(207) 775-2655

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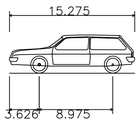
FILE:	1287_TT
JN:	1287
SCALE:	1" = 20'
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

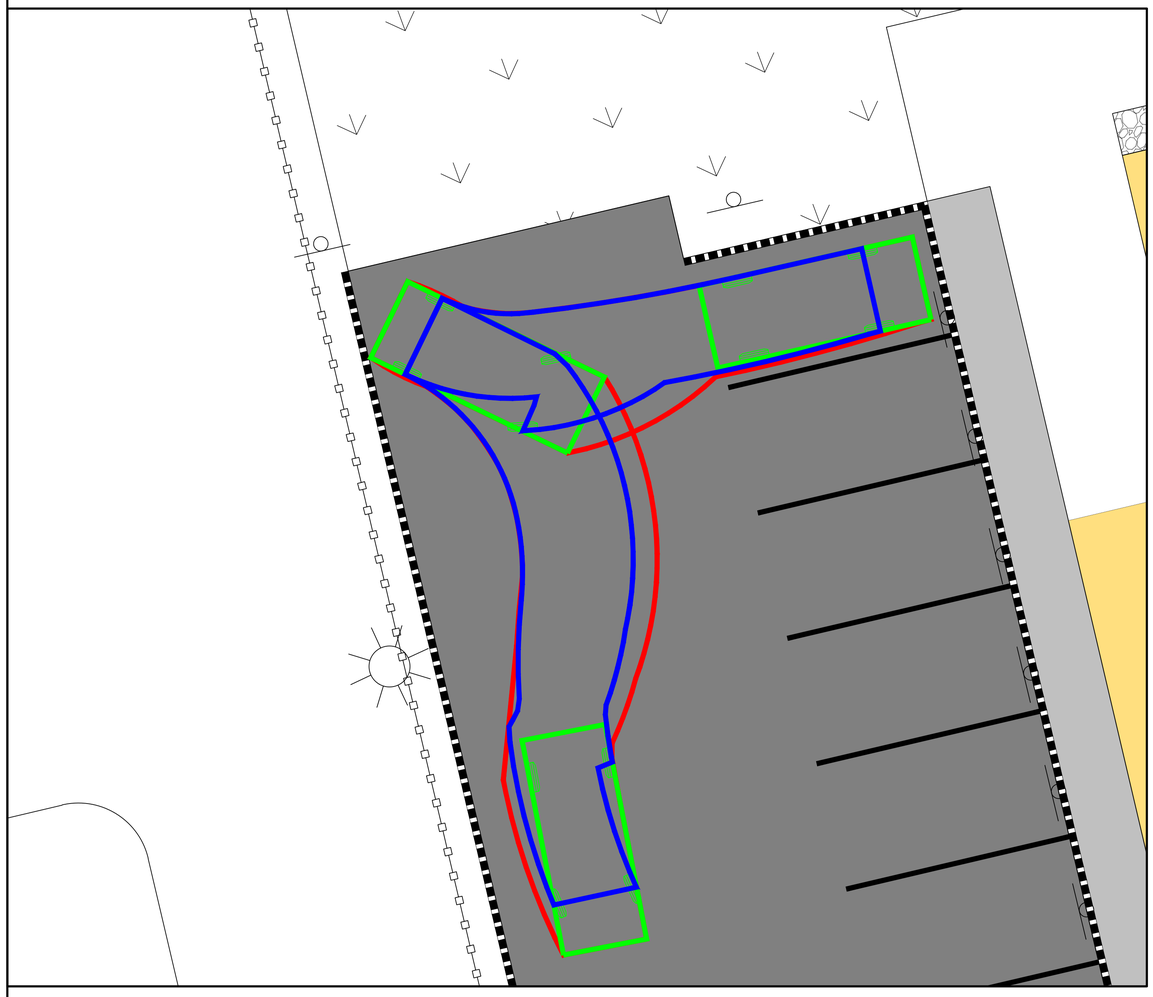
DRAWING NO.
TT-1



Honda Civic LX	
Overall Length	15.275ft
Overall Width	5.908ft
Overall Body Height	4.671ft
Min Body Ground Clearance	0.870ft
Track Width	5.908ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	18.050ft

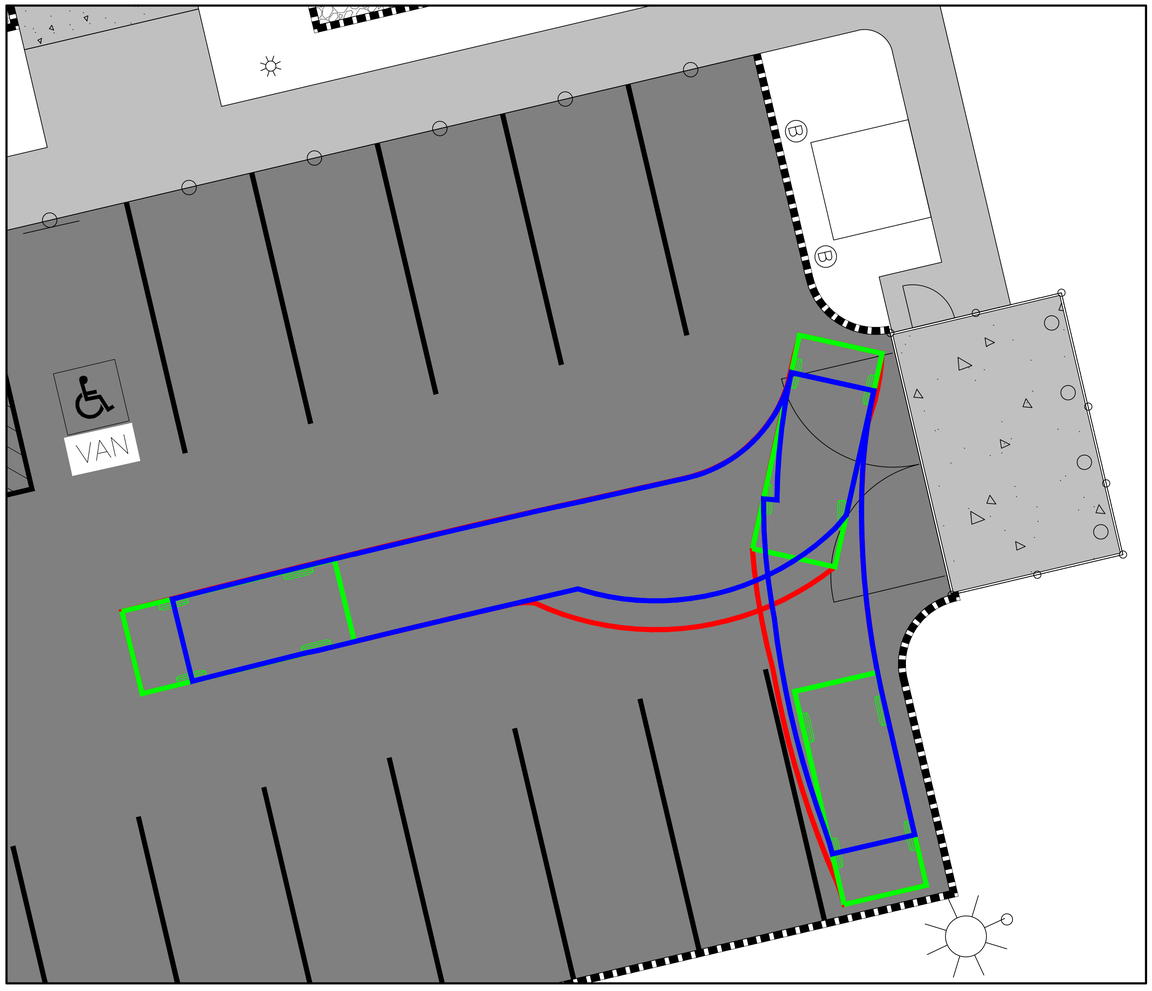
LEGEND

- VEHICLE OVERHANG
- VEHICLE TIRE TRACK
- VEHICLE OUTLINE



TURN-AROUND BY FIRE LANE

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



TURN-AROUND BY DUMPSTER

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'

10 0 10 2

SCALE: 1" = 10'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: TURNING TEMPLATE – 1

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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P.O. BOX 432 BELFAST, MAINE 04104
(207) 775-2655

FILE:	1287_TT
JN:	1287
SCALE:	1" = 5'
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
TT-2

Section P

Stormwater Management Report

ACORN ENGINEERING, INC.

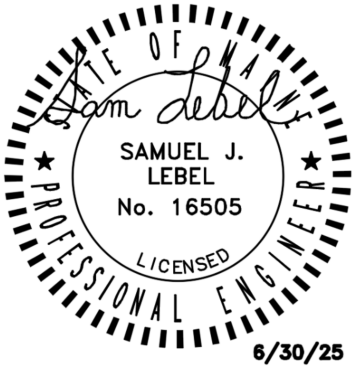
STORMWATER MANAGEMENT REPORT

Prepared For:

Waldo Community Action Partners
9 Field Street Suite 201
Belfast, Maine 04915

Prepared By:

Acorn Engineering, Inc.
16 Middle Street, Suite 302
Portland, Maine 04101



June 2025

INTRODUCTION

Acorn Engineering, Inc. has been retained by Waldo Community Action Partners to provide civil engineering services for the proposed 60-unit residential building in Belfast, Maine. The project will require minor site plan application by the City of Belfast Planning Board and will require review by the Maine Department of Environmental Protection (Maine DEP) through a Stormwater Management Law Permit application, which will be submitted concurrently with the local Site Plan application. The project has been designed to meet the Basic, General, and Flooding Standards.

EXISTING CONDITIONS

The project site is located along Belmont Avenue (Route 3) on a 78-acre parcel (Tax Map 5, Lot 23) in Belfast, Maine. An existing conditions survey was prepared by E.S. Coffin Engineering & Surveying, Inc, of Chelsea, Maine, Dated April 16th, 2025. The site is currently undeveloped containing both wetland and stream complexes which have been mapped by Mark Hampton Associates.

The site slopes predominately 10 percent from the northeast to the southwest. The majority of the site drains to an existing 30" RCP cross culvert underneath Route 3. The other proportion of the lot drains within a ditch along the private access drive to an existing catching basin and stormwater system leading to an existing underdrained soil filter in the front yard of the abutter, Tractor Supply.

Soils

Onsite soil information includes the following:

- Class A High Intensity Soil Survey Prepared by Mark Hampton Associates (See Attachment 4)

Soils are predominantly sandy loams within the evaluated watershed. The below table lists soils and their associated hydrologic soils group as defined in the Class A soil survey prepared for this project.

Soils Type	Hydrologic Soil Group
Peru	C
Brayton	C

PROPOSED DEVELOPMENT

The project features the construction of one 19,175 sf building for a total of 60 dwelling units. 63-parking spaces, access drives, walkways, patio, fire lane, and associated stormwater management infrastructure will be incorporated into the site design. Placement of the proposed site features is a result of various analyses to balance vegetative clearing and natural recourse impacts while maintaining drainage schemes and ensuring constructability and safety. The project proposes to disturb approximately 2.85 acres, of which 1.62 acres will be developed and 1.13 acres will be impervious.

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes outside the extents of the parking areas, access drive, and landscaped areas will be appropriately stabilized per the specifications in the plans. Once stabilized, these slopes shall be mown fewer than twice annually for further slope protection and buffering.

The site has been graded to slope with the existing topography while providing for appropriate slopes in the parking lot. The slopes on the outside of the parking field that are not part of a stormwater system will be appropriately stabilized per the specifications in the plans and are anticipated to be heavily landscaped for further slope protection and buffering.

The new drive aisle and parking areas will be collected via a network of catch basins with sumps and outlet snouts and directed towards the vegetated underdrained soil filter (VUSF) located to the southeastern property boundary. The piped stormwater will be first pre-treated via a sediment forebay to reduce sediment load and reduce velocities before entering the VUSF. The VUSF will feature a grassed bottom on top of 18" of soil filter to provide water quality benefits as stormwater flows vertically through the soil filter and into the VUSF underdrain network. The VUSF will consist of a ball valve on the underdrain network outlet to regulate the discharge leaving the BMP so that the water quality volume is slowly released over a 24-48 hour time frame. The VUSF will be hard piped to a level lip spreader to the southeast of the BMP that will reduce flow velocities and return the flow condition back to sheet flow through the wooded area as it drains towards POI #2.

A dripline filtration BMP is proposed to provide treatment and detention benefits to the senior housing building roof area. The dripline filtration BMPs will enter a 24" stone reservoir designed to provide capacity of the first 1" of runoff from the tributary area, then flowing vertically through a 12" soil filter layer before entering the underdrain network where the runoff will be hard piped to a stabilized outlet.

GENERAL STANDARDS - WATER QUALITY

Treatment requirements for the project are determined by MDEP Chapter 500 4.C. General Standards, Table 1. The proposed design provides primary water quality and quantity control through several Best Management Practices (BMP) approved by the Maine DEP which will provide water quality treatment for no less than 95% of the new impervious area and no less than 80% of the developed area.

The stormwater treatment Best Management Practices (BMPs) have been designed in accordance with the Maine Stormwater Design Manual Chapter 7 to provide water treatment for the required impervious & developed areas associated with the project. The following table shows how the project exceeds each of the MDEP treatment requirements:

Table 1: Treatment Summary

	Total Proposed Area (SF),	Treatment Required	Treatment Provided	Area Treated (SF)
Impervious Area	50,391	95%	95.0%	47,876
Developed Area	71,194	80%	82.6%	58,835

Please refer to the development exhibit regarding how the project numbers were calculated for developed area treated and untreated.

Vegetated Underdrained Soil Filters:

The VUSF soil filter areas are sized upon the following equation:

[(Imp. SF x 0.05) + (Veg. SF x 0.02)] = Filter Area (SF)

The water quality volume is then analyzed to ensure the first 18" of ponding is capturing the required runoff. The required treatment volume is characterized by the following equation:

$$\left(\frac{\text{Imp. SF x 1.0"}}{\text{12"/1'}}\right) + \left(\frac{\text{Veg. SF x 0.4"}}{\text{12"/1'}}\right) = \text{Treatment Volume (CF)}$$

The following table summarizes each VUSF's required & proposed filter areas & treatment volumes:

Table 2: VUSF Sizing Summary

VUSF	Total Tributary Area (SF),	Impervious Area (SF)	Vegetated Area (SF)	Filter Area Required (SF)	Treatment Volume Required (CF)	Filter Area Provided (SF)	Treatment Volume Provided (CF)
1	36,074	26,068	10,006	1,503	2,506	2,019	~3,500

Pretreatment

Sediment pretreatment is provided by a sediment forebay at the inlet of each VUSF receiving flow from sanded areas. The forebays are sized to accommodate a minimum of 10 storms per year based upon 500 pounds of sand per storm and a density of 90 pounds per cubic foot, in accordance with Chapter 7.2 of the design manual. The forebays have been designed to hold greater than the minimum volume required by this standard.

Roof Dripline Filtration BMP

There is a Roof Dripline Filtration BMPs being proposed on this project. The 60-unit residential building will have a dripline BMP along the northern western face of the building. The 60-unit residential building will be a galvanized angled roof directing roof drainage towards the dripline BMP.

The top 24" crushed stone reservoir layer was sized (length and width) based upon 1" of roof runoff and 1" of direct entry. The 24" reservoir course allows for the crushed stone to detain the first inch with stormwater spreading out across the entire filter area and slowly rising within the stone equally.

Table 3 – Roof Dripline Filtration BMP Reservoir Sizing				
	Tributary Roof Area (SF)	1" Roof Runoff (CF)	Drip Edge Length along Building (FT)	Min. Drip Edge Width (FT)
Dripline #1	21,794	1,816	811	2.80
Min. drip edge width = Roof Runoff / (L x H x stone porosity) L = drip edge length along each building H = 2.0' (drip edge thickness) Porosity = 40% (crushed stone)				

The dripline filter will be equipped with a ball valve on the outlet end of the underdrain system to regulate the water quality volume outflow from the BMP and match the modeled peak flow rates. In the larger storm events, once the crushed stone reservoir fills, it will overflow and drain away from the building, which is included in the model as well.

FLOODING STANDARDS - WATER QUANTITY

The proposed project was modeled using HydroCAD to verify that the post-development conditions do not exceed the pre-development conditions. A 24-hour SCS Type III storm distribution for the 2, 10, 25, and 50-year storm events were used. The corresponding rainfall amounts for these storms are 2.90", 4.20", 5.20", and 6.10" respectively. The storm events are modeled as type III, 24-hour storm events in HydroCAD for Waldo County.

HydroCAD Adjustments:

Filter BMP's:

For each Filter BMP, a simulation water quality outlet (orifice) was modeled to mimic the minimum 24-hour release time through the soil filter media. This was completed by adjusting the rainfall amount in HydroCAD until the inflow volume was equal to the calculated water quality volume (1" inflow depth), discharged over 24 hours. The simulated vertical orifice was then adjusted until the corresponding discharge flowrate (WQV released over 24 hours) was derived during the water quality storm. This vertical orifice was then modeled in HydroCAD at the outlet of each BMP. In summary, the simulation orifice diameter was sized to mimic the percolation rate through the soil filter media. A physical orifice is not actually proposed at the fractional inch diameters identified in the model. However, a 2" ball valve is provided at the downstream end of each underdrain system to provide a physical orifice in the event the installed filter media does not provide a 24-48 hour release time.

This method is consistent with the provisions within Chapter 7 and corresponding specifications within the plan set requiring the soil filter media to release the water quality volume over 24-48 hours. As such, the model was able to analyze the effects from the corresponding infiltration rate that the vertical orifice mimics.

Time of Concentration (T_c):

Time of concentration values were derived by calculating a combined Tc from the flow segments within each subcatchment in pre- and post-development conditions. Associated with these flow segments is the classification of stormwater flow and the corresponding land surface. Refer to the attached HydroCAD calculations for a breakdown of the Tc calculations. For subcatchments whose cumulative Tc segments equated to less than six minutes, a direct entry of six minutes (0.1 hour) was provided, consistent with TR-55 recommendations.

Pre-development Calculations:

The existing conditions have been modeled in HydroCAD using three different subcatchments.

- Subcatchment 1.0 – Northeastern tributary draining along ditch of private access drive to existing catch basin and stormwater system leading to abutter's vegetated soil filter
- Subcatchment 2.0 – Northeastern tributary draining along ditch of private access drive to existing catch basin leading to abutter's vegetated soil filter.
- Subcatchment 4.0 – Central tributary draining to southwestern corner of parcel draining to a cross culvert under Belmont Avenue.

Note that Subcatchment 3.0 was not utilized due to the use of POA 3 as common node (summation of POA 1 and 2), and does not have its own unique subcatchment.

The subcatchment boundaries were derived in coordination with the proposed development footprint and disturbed areas in an effort to evaluate the specific components of the larger watershed that are being affected by the proposed development. This approach allows for a comprehensive analysis of the hydrological effects of the proposed change in land use, while not necessarily modeling the entire 80+ acre subject parcel, or the off-site run-on to the subject parcel. This approach provides the optimal level of analysis in that it's accurate and comprehensive, but does not contain unnecessary data which unnecessarily increases time input for model development and City/Peer review, but also increases the chances for human error.

A Pre-Development Stormwater Plan developed for this project is included as Attachment 1, and detailed pre-development HydroCAD calculations are included within Attachment 3. Peak flow rates for selected storm events for the pre-development condition are given in Table 1 below

Table 4 – Pre-Development Peak Stormwater Flows

Drainage Point	2 – Year Storm Event (cfs)	10 – Year Storm Event (cfs)	25-Year Storm Event (cfs)	50 – Year Storm Event (cfs)
POI 1	0.9	2.2	3.5	4.7
POI 2	0.3	0.8	1.2	1.7
POI 3	1.0	2.7	4.1	5.5
POI 4	6.8	14.5	21.1	27.2

Post-development Calculations:

The proposed conditions have been modeled in HydroCAD using five different subcatchments.

- Subcatchment 1.0 – Northeastern tributary draining along ditch of private access to the proposed cross culvert. Approximately 1,570 sf of existing gravel trails have been removed from this subcatchment leading to POI #1.
- Subcatchment 1.1 – Tributary contains the proposed drive aisle pavement that will not be treated by the proposed VUSF and will lead to an existing catch basin and stormwater system leading to the abutter's existing VUSF. This tributary is approximately 290 sf.
- Subcatchment 1.2 – Tributary contains the proposed sidewalk and grassed area drain to a ditch along the private access drive to an existing catch basin and stormwater system leading to the abutter's existing VUSF.
- Subcatchment 2.0 – Northeastern tributary draining along ditch of private access drive to existing catch basin leading to abutter's existing vegetated soil filter.
- Subcatchment 4.0 – Central tributary draining to southwestern corner of parcel draining to a cross culvert under Belmont Avenue.
- Subcatchment 4.1- Tributary contains the building roof leading to a drip edge. The drip edge will be outlet to a catch basin within the VUSF, where it will disperse into a level lip spreader leading to POI #4.
- Subcatchment 4.2 – Tributary contains the parking lot, sidewalks, landscaping, and other miscellaneous site features. This area drains to the VUSF where it will be treated, attenuated, and outlet to a level lip spreader.

A Post-Development Stormwater Plan developed for this project is included as Attachment 2, and detailed post-development HydroCAD calculations are included within Attachment 3. The post development calculations include changes to the land use and compensation provided by the BMP system. The following table presents post-development conditions with peak runoff rates for the proposed facility.

Table 5 – Post-Development Peak Stormwater Flows

Drainage Point	2 – Year Storm Event (cfs)	10 – Year Storm Event (cfs)	25-Year Storm Event (cfs)	50 – Year Storm Event (cfs)
POI 1	0.8	2.0	3.2	4.2
POI 2	0.2	0.5	0.7	1.0
POI 3	0.9	2.5	3.8	5.2
POI 4	6.2	13.2	19.2	27.0

As shown in Tables 1 and 2, the modeled post development peak flows remain at or below the postdevelopment flow magnitudes for the two, ten, and twenty-five-year storms, indicating that the proposed stormwater structures will meet the attenuation criteria outlined in the City of Belfast's stormwater management standards. These results are further summarized in Table 3.

Table 6 – Pre & Post Development Peak Stormwater Comparison Flows								
Drainage Point	**2–yr Storm Event (CFS)**		**10–yr Storm Event (CFS)**		**25-yr Storm Event (CFS)**		**50-yr Storm Event (CFS)**	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
POI 1	0.9	0.8	2.2	2.0	3.5	3.2	4.7	4.2
POI 2	0.3	0.2	0.8	0.5	1.2	0.7	1.7	1.0
POI 3	1.0	0.9	2.7	2.5	4.1	3.8	5.5	5.2
POI 4	6.8	6.2	14.5	13.2	21.1	19.2	27.2	27.0

CONCLUSION

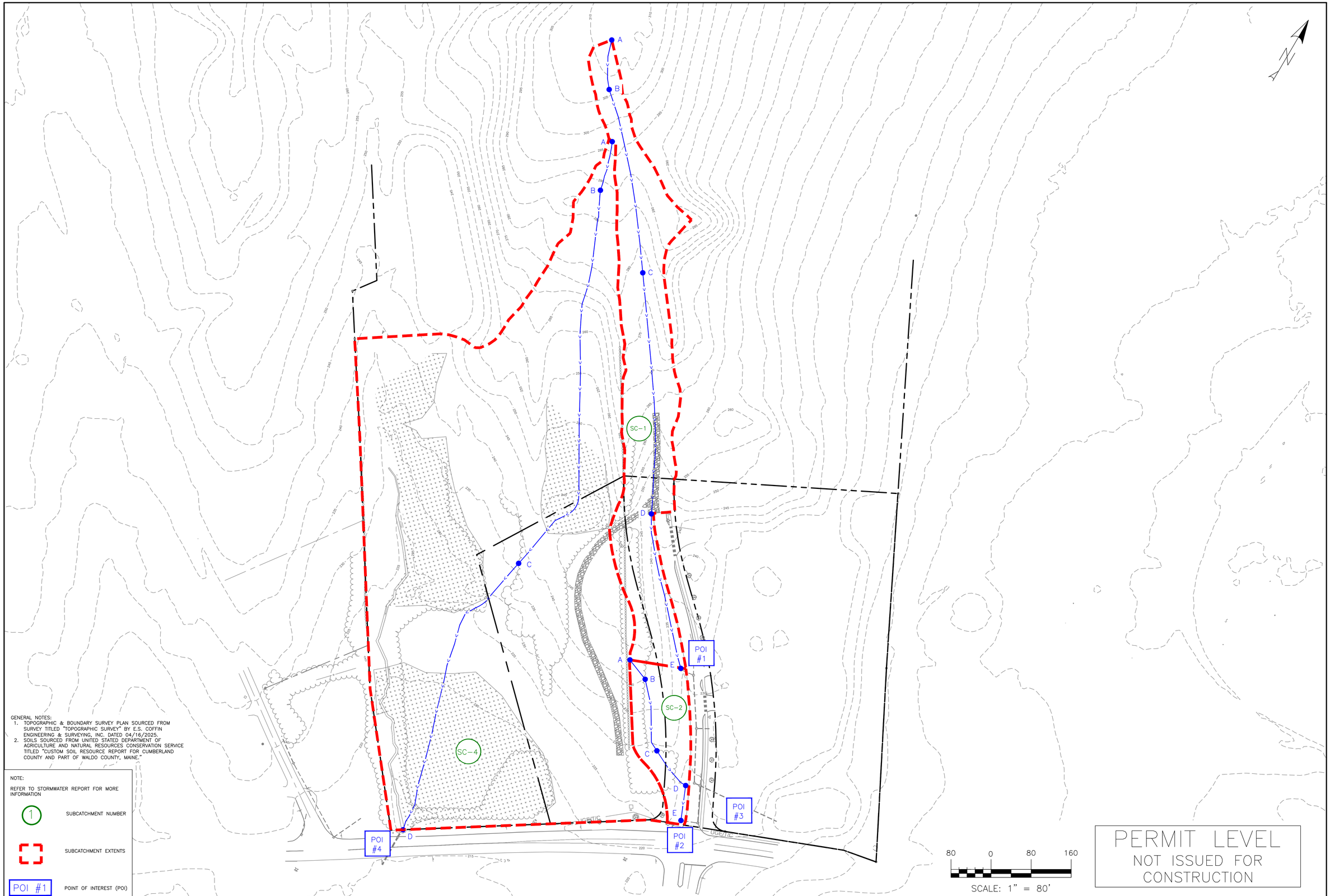
The proposed development was designed to meet the requirements implemented by the City of Belfast Site Plan Ordinances and applicable MDEP Basic, General, and Flooding standards. As a result, we do not anticipate that the proposed development will create erosion, drainage, or runoff problems within the development or at adjacent properties and rights-of-way. The BMPs have been designed to provide cooling and pollutant removal for storm events before slowly releasing to the surrounding land mimicking existing conditions, while exceeding the requirements for treatment.

ATTACHMENTS

Attachment 1: Pre-Development Stormwater Plan
Attachment 2: Post-Development Stormwater Plan
Attachment 3: HydroCAD Analyses
Attachment 4: Class A-High Intensity Soil Survey Report Soil Report
Attachment 5: Developed/Impervious Area Exhibit

Section P.1

Pre-Development Stormwater Plan



GENERAL NOTES:

1. TOPOGRAPHIC & BOUNDARY SURVEY PLAN SOURCED FROM SURVEY TITLED "TOPOGRAPHIC SURVEY" BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED 04/16/2025.
2. SOILS SOURCED FROM UNITED STATED DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE TITLED "CUSTOM SOIL RESOURCE REPORT FOR CUMBERLAND COUNTY AND PART OF WALDO COUNTY, MAINE."

NOTE:

REFER TO STORMWATER REPORT FOR MORE INFORMATION

1	SUBCATCHMENT NUMBER
	SUBCATCHMENT EXTENTS
POI #1	POINT OF INTEREST (POI)

80 0 80 160

SCALE: 1" = 80'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: **PRE-DEVELOPMENT STORMWATER PLAN**

PROJECT NAME: **45 BELMONT AVENUE AFFORDABLE HOUSING**

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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ACORN ENGINEERING, INC.
70 ALDER STREET, PORTLAND, MAINE 04104
PO BOX 3422, PORTLAND, MAINE 04104
(207) 775-2655

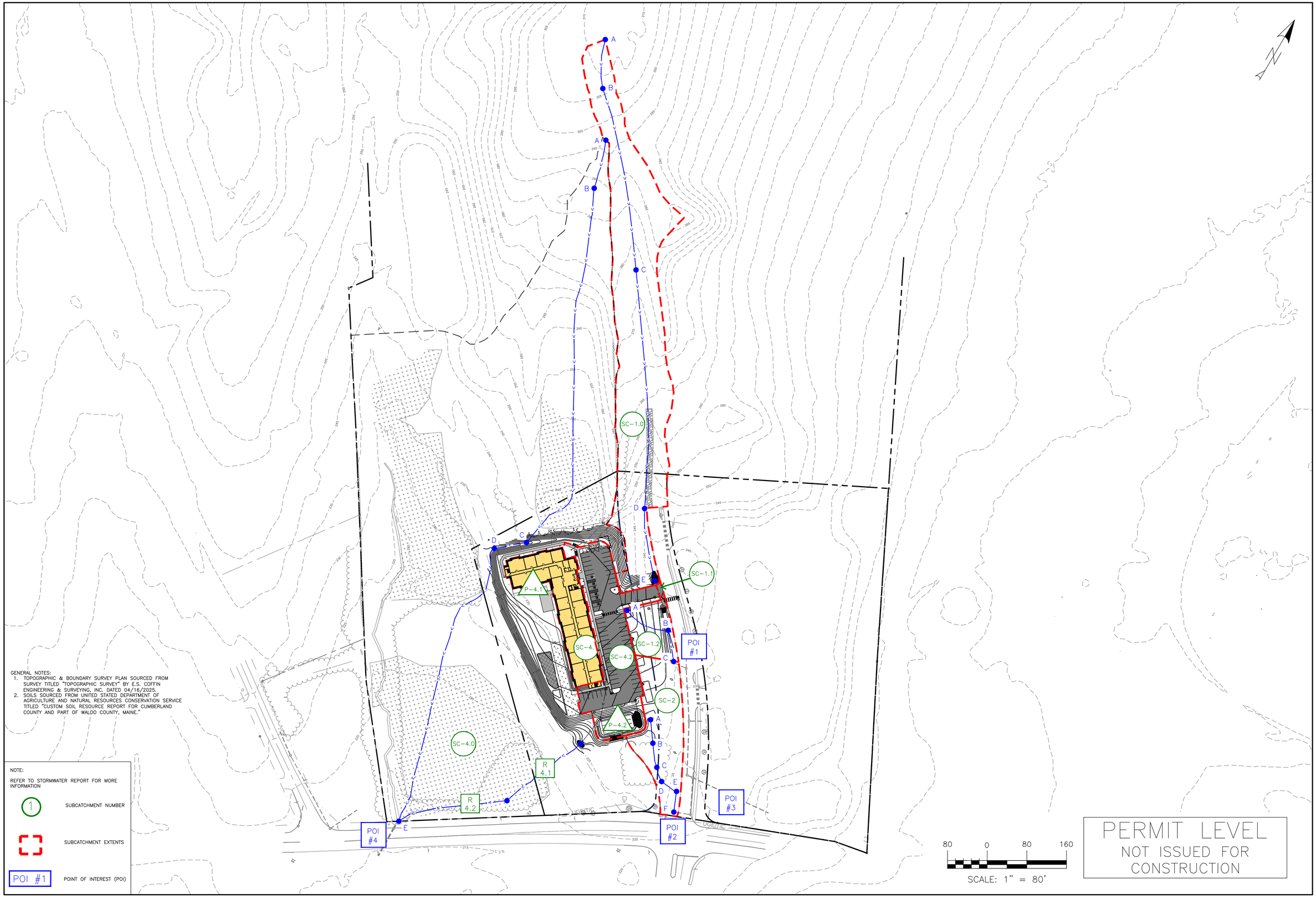
FILE:	1287_WQ
JN:	1287
SCALE:	
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/30/25

DRAWING NO.
PRE

Section P.2

Post-Development Stormwater Plan



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NOTE:

REFER TO STORMWATER REPORT FOR MORE INFORMATION

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 — POINT OF INTEREST (POI)

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: POST OVERALL-DEVELOPMENT STORMWATER PLAN

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

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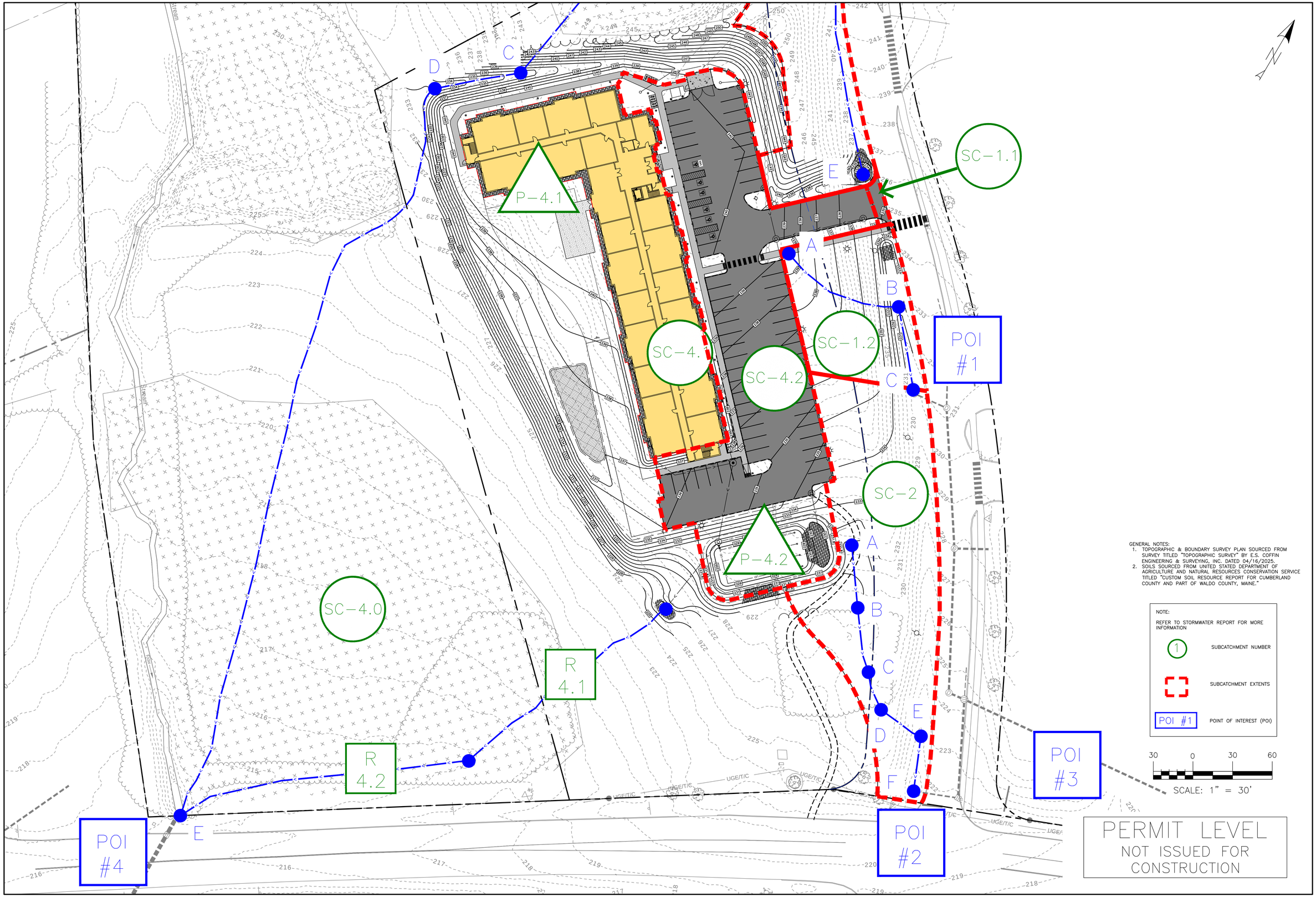
70 ALFRED STREET, BIDDEFORD, MAINE 04104
PO BOX 3287, PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1287_WQ
JN:	1287
SCALE:	
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/30/25

DRAWING NO.
POST-1



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1. TOPOGRAPHIC & BOUNDARY SURVEY PLAN SOURCED FROM SURVEY TITLED "TOPOGRAPHIC SURVEY" BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED 04/16/2025.
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NOTE:
REFER TO STORMWATER REPORT FOR MORE INFORMATION

1 — SUBCATCHMENT NUMBER

SUBCATCHMENT EXTENTS

POI #1 — POINT OF INTEREST (POI)

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: POST SITE –DEVELOPMENT STORMWATER PLAN

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

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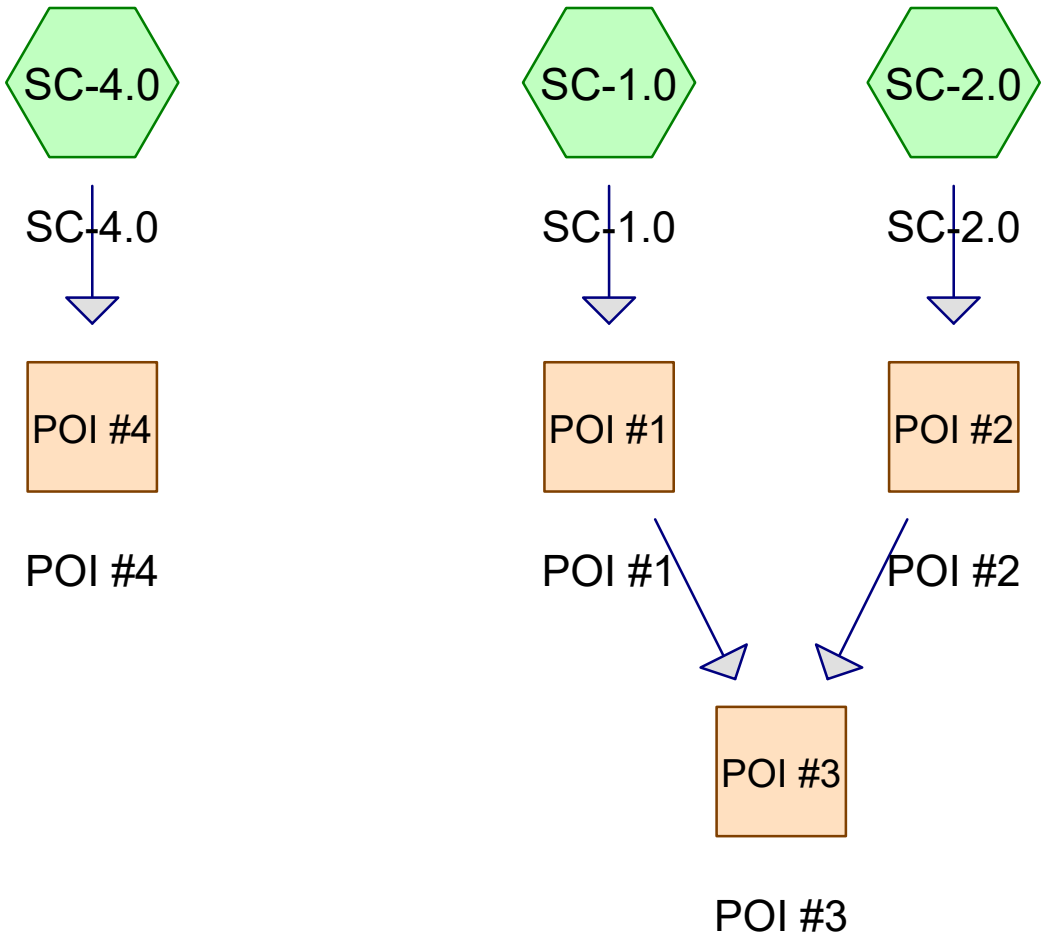
FILE:	1287_WQ
JN:	1287
SCALE:	
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/30/25

DRAWING NO.
POST-2

Section P.3

HydroCAD Analyses



Subcat Reach Pond Link

Routing Diagram for 1287_Pre
Prepared by {enter your company name here}, Printed 7/1/2025
HydroCAD® 10.00-26 s/n 00620 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.880	65	Brush, Good, HSG C (SC-1.0, SC-2.0)
0.233	95	Impervious-Gravel (SC-1.0)
0.138	96	Impervious-Gravel (SC-4.0)
4.092	71	Meadow, non-grazed, HSG C (SC-4.0)
5.347	80	Wetland (SC-4.0)
4.103	70	Woods, Good, HSG C (SC-1.0, SC-2.0, SC-4.0)
0.200	72	Woods/grass comb., Good, HSG C (SC-4.0)
15.993	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
10.275	HSG C	SC-1.0, SC-2.0, SC-4.0
0.000	HSG D	
5.717	Other	SC-1.0, SC-4.0
15.993		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.880	0.000	0.000	1.880	Brush, Good	SC-1.0, SC-2.0
0.000	0.000	0.000	0.000	0.371	0.371	Impervious-Gravel	SC-1.0, SC-4.0
0.000	0.000	4.092	0.000	0.000	4.092	Meadow, non-grazed	SC-4.0
0.000	0.000	0.000	0.000	5.347	5.347	Wetland	SC-4.0
0.000	0.000	4.103	0.000	0.000	4.103	Woods, Good	SC-1.0, SC-2.0, SC-4.0
0.000	0.000	0.200	0.000	0.000	0.200	Woods/grass comb., Good	SC-4.0
0.000	**0.000**	**10.275**	**0.000**	**5.717**	**15.993**	**TOTAL AREA**	

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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=112,638 sf 0.00% Impervious Runoff Depth>0.54"
Flow Length=1,272' Tc=30.8 min CN=69 Runoff=0.9 cfs 0.117 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=29,011 sf 0.00% Impervious Runoff Depth>0.47"
Flow Length=358' Tc=11.0 min CN=67 Runoff=0.3 cfs 0.026 af

SubcatchmentSC-4.0: SC-4.0 Runoff Area=554,994 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=1,499' Tc=32.9 min CN=75 Runoff=6.8 cfs 0.855 af

Reach POI #1: POI #1 Inflow=0.9 cfs 0.117 af
Outflow=0.9 cfs 0.117 af

Reach POI #2: POI #2 Inflow=0.3 cfs 0.026 af
Outflow=0.3 cfs 0.026 af

Reach POI #3: POI #3 Inflow=1.0 cfs 0.144 af
Outflow=1.0 cfs 0.144 af

Reach POI #4: POI #4 Inflow=6.8 cfs 0.855 af
Outflow=6.8 cfs 0.855 af

Total Runoff Area = 15.993 ac Runoff Volume = 0.999 af Average Runoff Depth = 0.75"
100.00% Pervious = 15.993 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment SC-1.0: SC-1.0

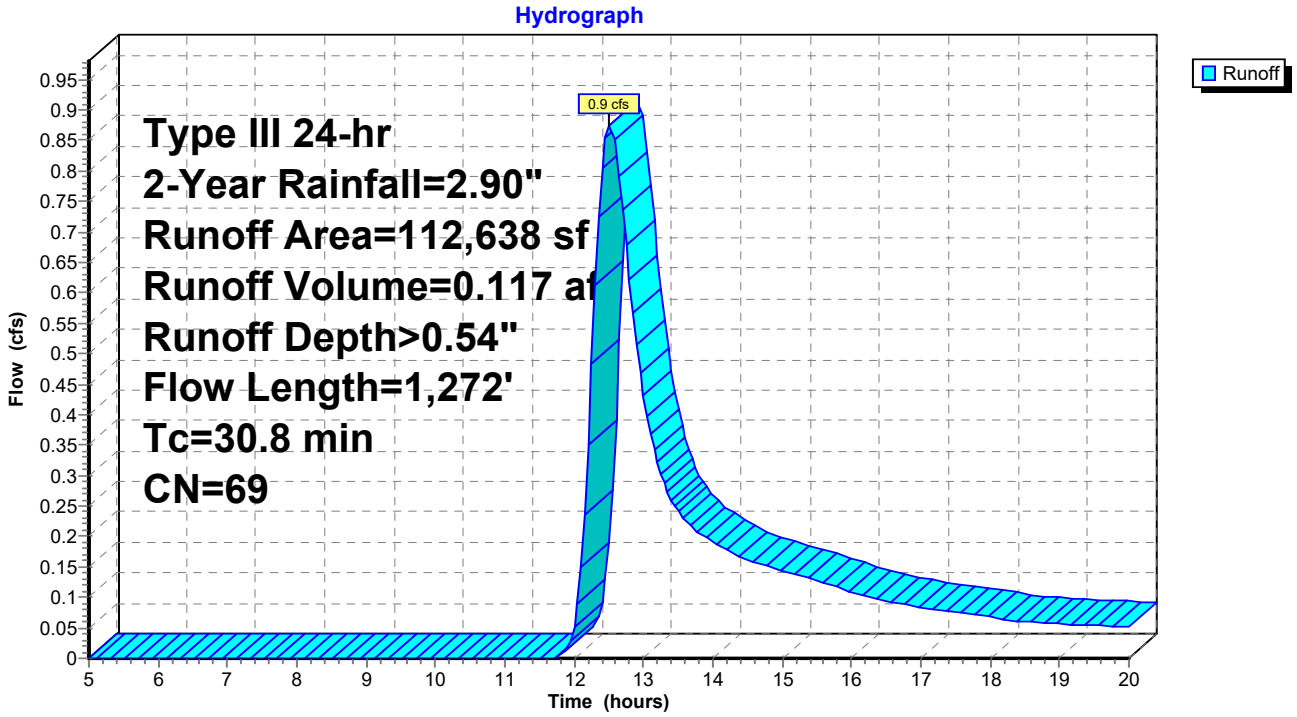
Runoff = 0.9 cfs @ 12.51 hrs, Volume= 0.117 af, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
	5,279	65	Brush, Good, HSG C
*	10,146	95	Impervious-Gravel
	42,072	65	Brush, Good, HSG C
	29,212	70	Woods, Good, HSG C
*	11,200	70	Woods, Good, HSG C
*	14,729	65	Brush, Good, HSG C
	112,638	69	Weighted Average
	112,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.6	316	0.0410	8.62	86.16	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.8	1,272	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-2.0: SC-2.0

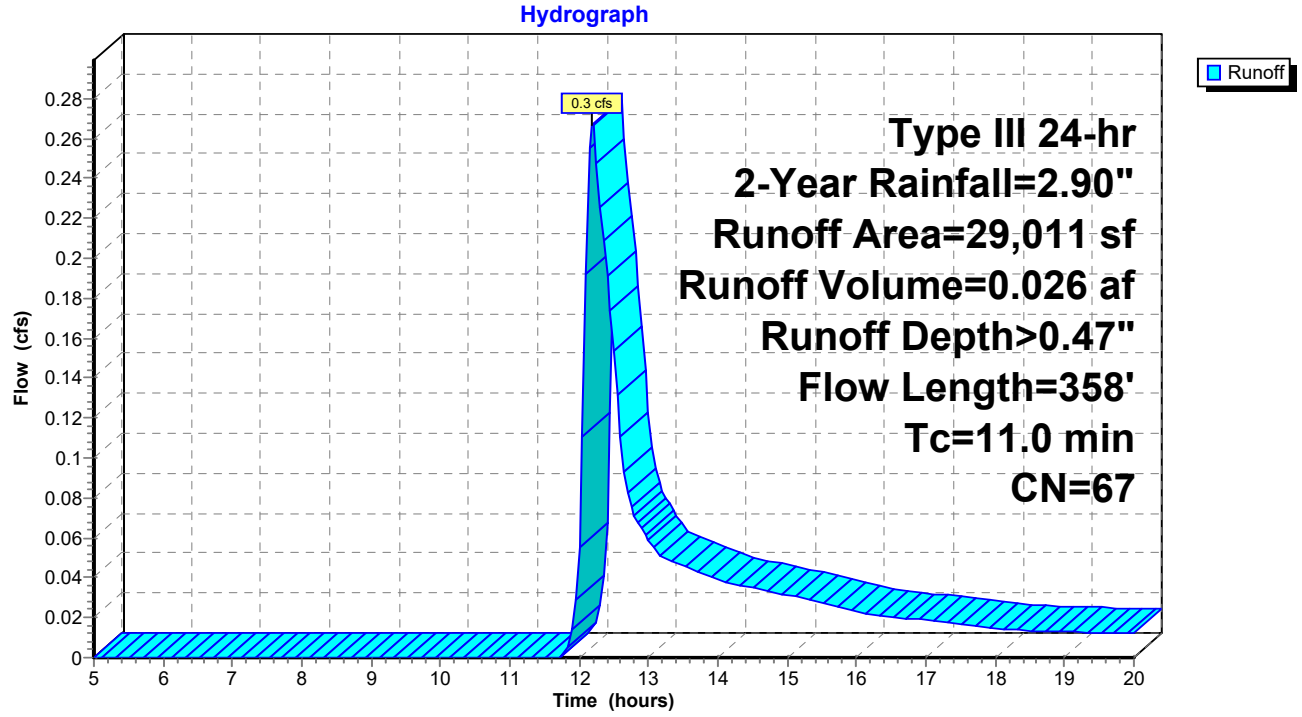
Runoff = 0.3 cfs @ 12.19 hrs, Volume= 0.026 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=2.90"

Area (sf)	CN	Description
9,203	70	Woods, Good, HSG C
19,808	65	Brush, Good, HSG C
29,011	67	Weighted Average
29,011		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0600	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.2	147	0.0820	2.00		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.3	91	0.0550	1.17		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	70	0.0430	7.60	76.04	**Channel Flow, D-E** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
11.0	358	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4.0: SC-4.0

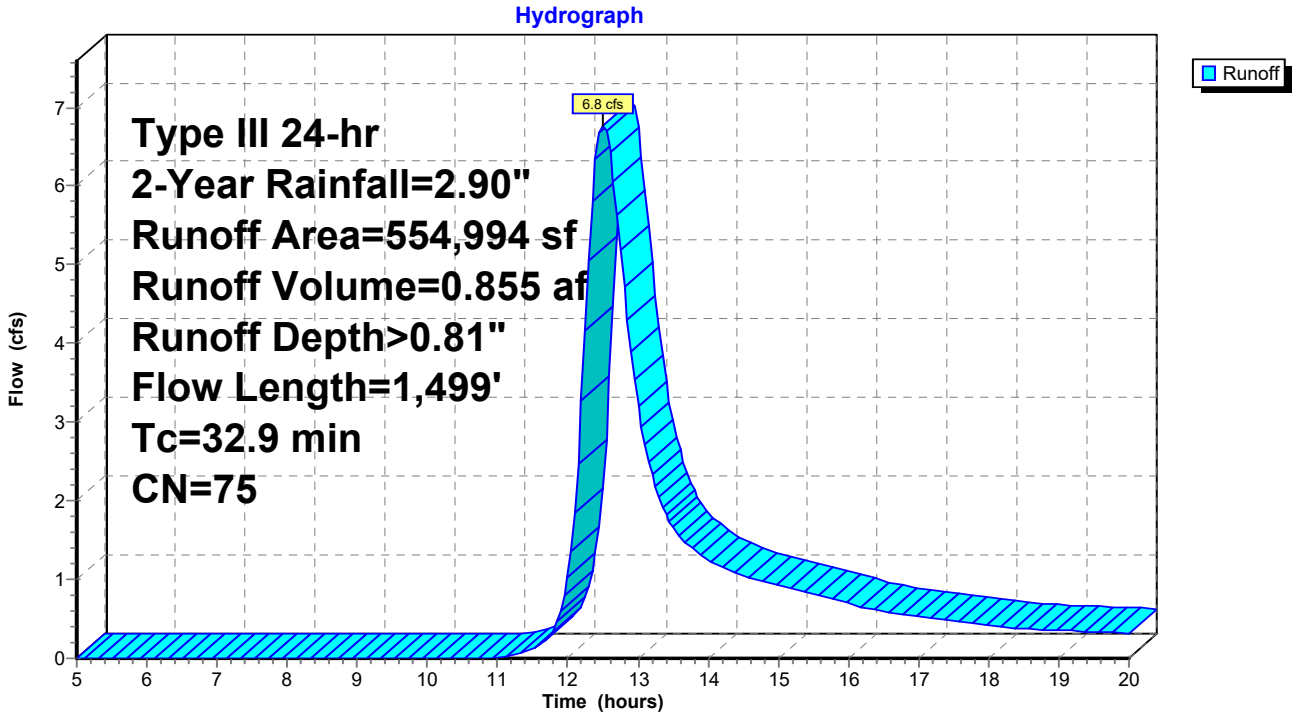
Runoff = 6.8 cfs @ 12.50 hrs, Volume= 0.855 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	8,706	72	Woods/grass comb., Good, HSG C
*	5,994	96	Impervious-Gravel
	178,254	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	63,564	70	Woods, Good, HSG C
	16,099	70	Woods, Good, HSG C
	554,994	75	Weighted Average
	554,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
7.0	599	0.0417	1.43		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
32.9	1,499	Total			

Subcatchment SC-4.0: SC-4.0

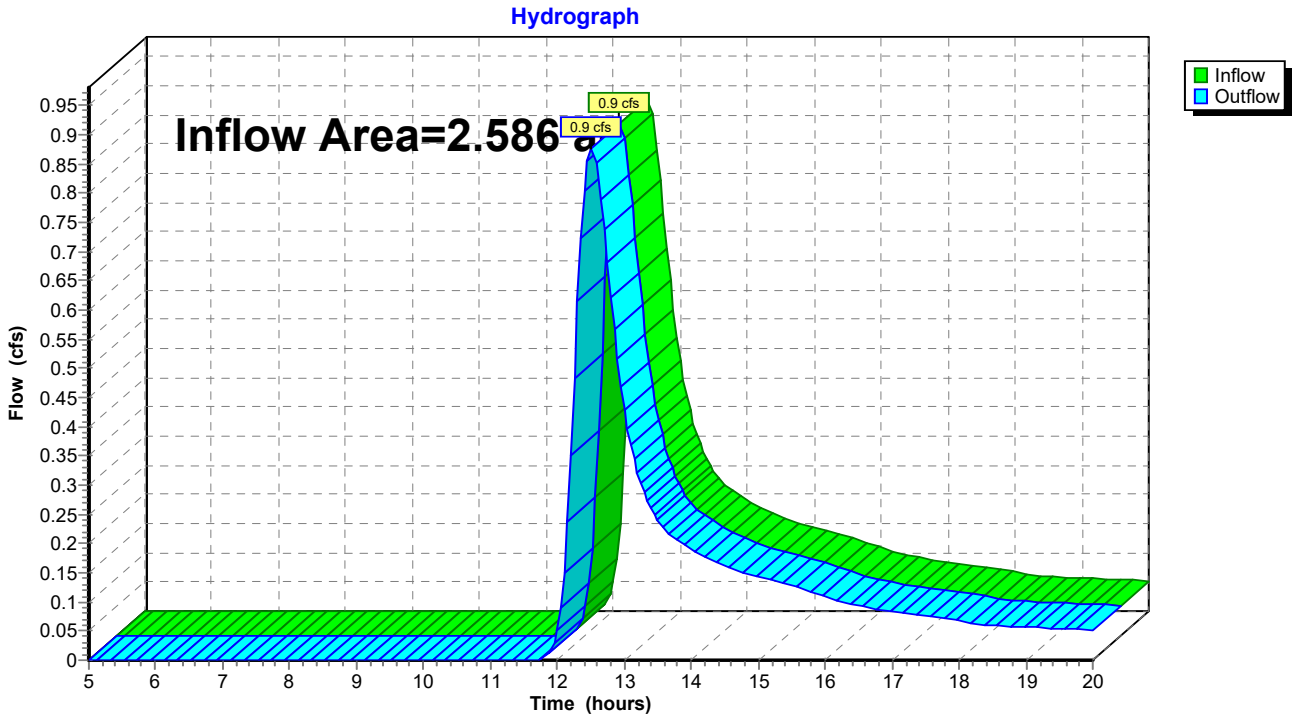


Summary for Reach POI #1: POI #1

Inflow Area = 2.586 ac, 0.00% Impervious, Inflow Depth > 0.54" for 2-Year event
Inflow = 0.9 cfs @ 12.51 hrs, Volume= 0.117 af
Outflow = 0.9 cfs @ 12.51 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #1: POI #1

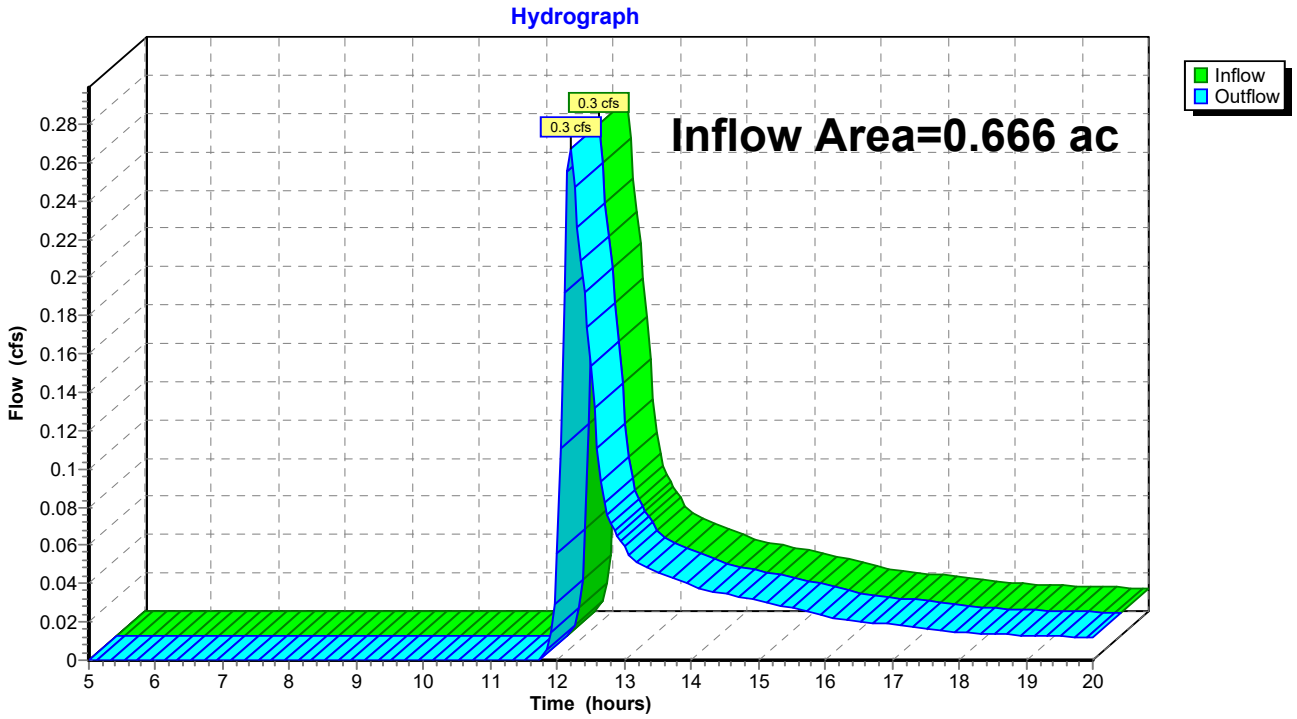


Summary for Reach POI #2: POI #2

Inflow Area = 0.666 ac, 0.00% Impervious, Inflow Depth > 0.47" for 2-Year event
Inflow = 0.3 cfs @ 12.19 hrs, Volume= 0.026 af
Outflow = 0.3 cfs @ 12.19 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #2: POI #2

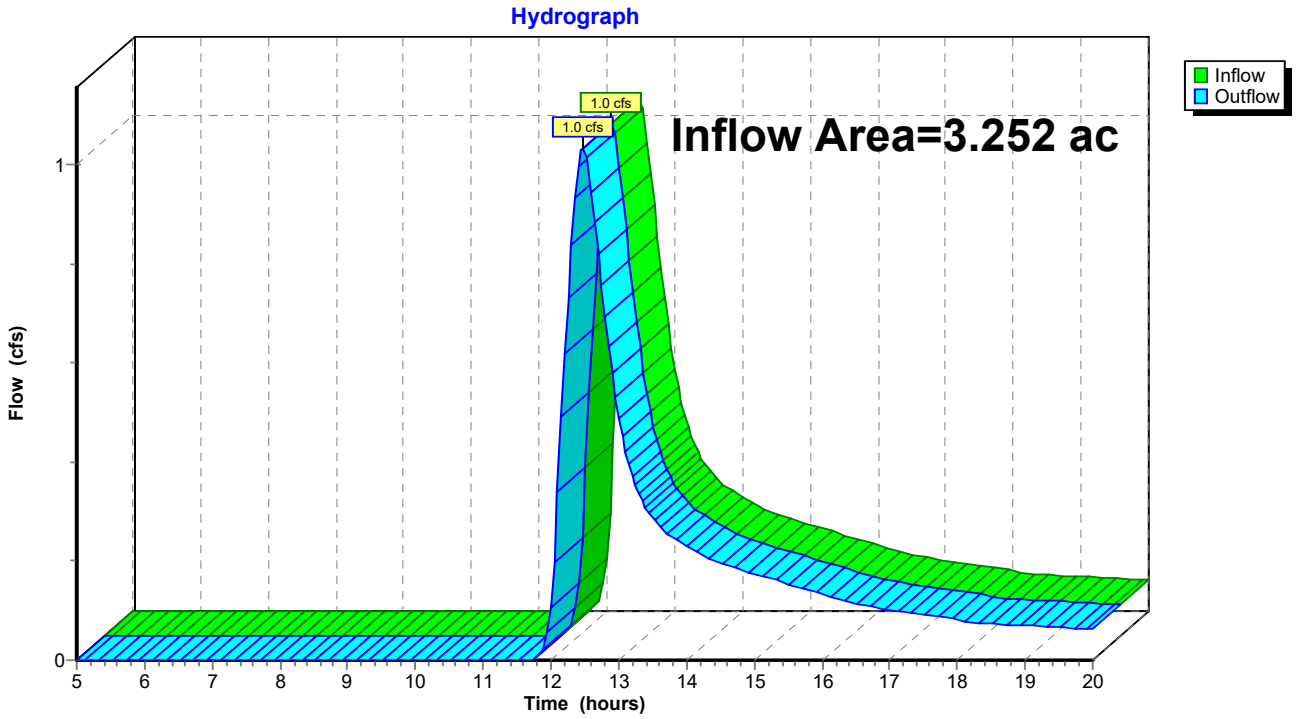


Summary for Reach POI #3: POI #3

Inflow Area = 3.252 ac, 0.00% Impervious, Inflow Depth > 0.53" for 2-Year event
Inflow = 1.0 cfs @ 12.48 hrs, Volume= 0.144 af
Outflow = 1.0 cfs @ 12.48 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #3: POI #3

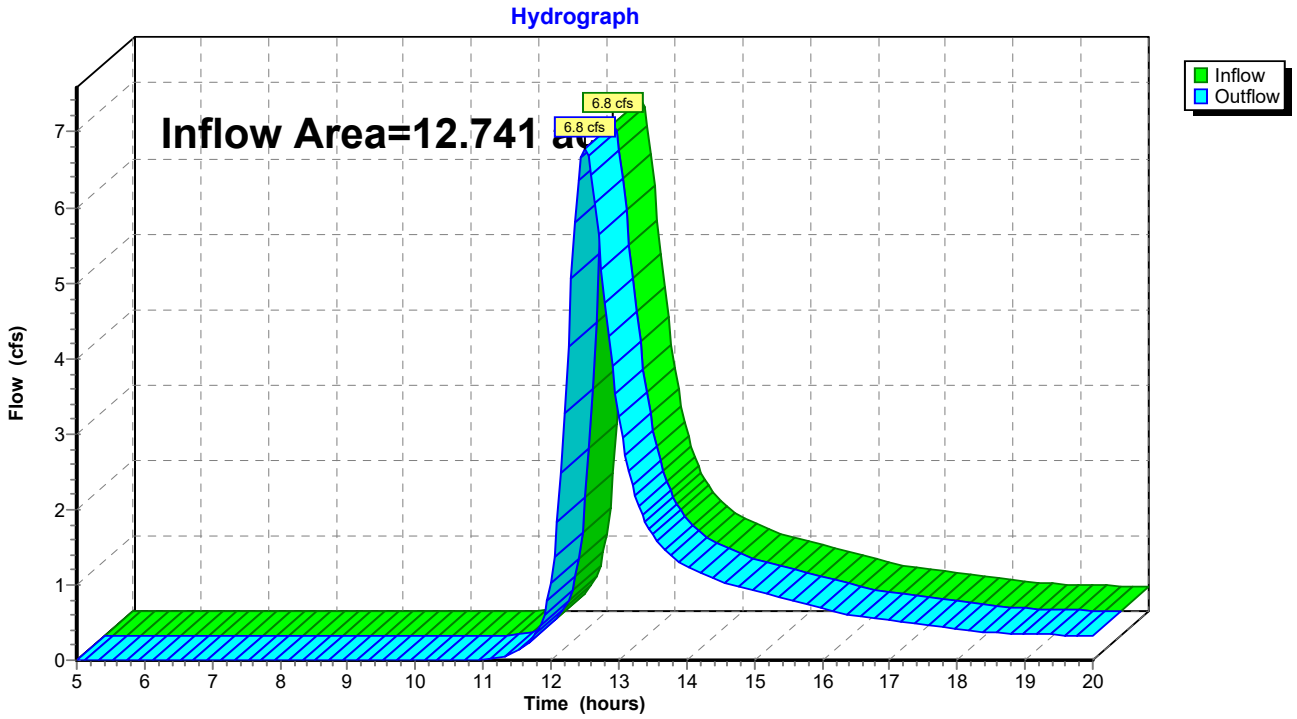


Summary for Reach POI #4: POI #4

Inflow Area = 12.741 ac, 0.00% Impervious, Inflow Depth > 0.81" for 2-Year event
Inflow = 6.8 cfs @ 12.50 hrs, Volume= 0.855 af
Outflow = 6.8 cfs @ 12.50 hrs, Volume= 0.855 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #4: POI #4



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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=112,638 sf 0.00% Impervious Runoff Depth>1.26"
Flow Length=1,272' Tc=30.8 min CN=69 Runoff=2.2 cfs 0.272 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=29,011 sf 0.00% Impervious Runoff Depth>1.15"
Flow Length=358' Tc=11.0 min CN=67 Runoff=0.8 cfs 0.064 af

SubcatchmentSC-4.0: SC-4.0 Runoff Area=554,994 sf 0.00% Impervious Runoff Depth>1.66"
Flow Length=1,499' Tc=32.9 min CN=75 Runoff=14.5 cfs 1.763 af

Reach POI #1: POI #1 Inflow=2.2 cfs 0.272 af
Outflow=2.2 cfs 0.272 af

Reach POI #2: POI #2 Inflow=0.8 cfs 0.064 af
Outflow=0.8 cfs 0.064 af

Reach POI #3: POI #3 Inflow=2.7 cfs 0.336 af
Outflow=2.7 cfs 0.336 af

Reach POI #4: POI #4 Inflow=14.5 cfs 1.763 af
Outflow=14.5 cfs 1.763 af

Total Runoff Area = 15.993 ac Runoff Volume = 2.099 af Average Runoff Depth = 1.58"
100.00% Pervious = 15.993 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment SC-1.0: SC-1.0

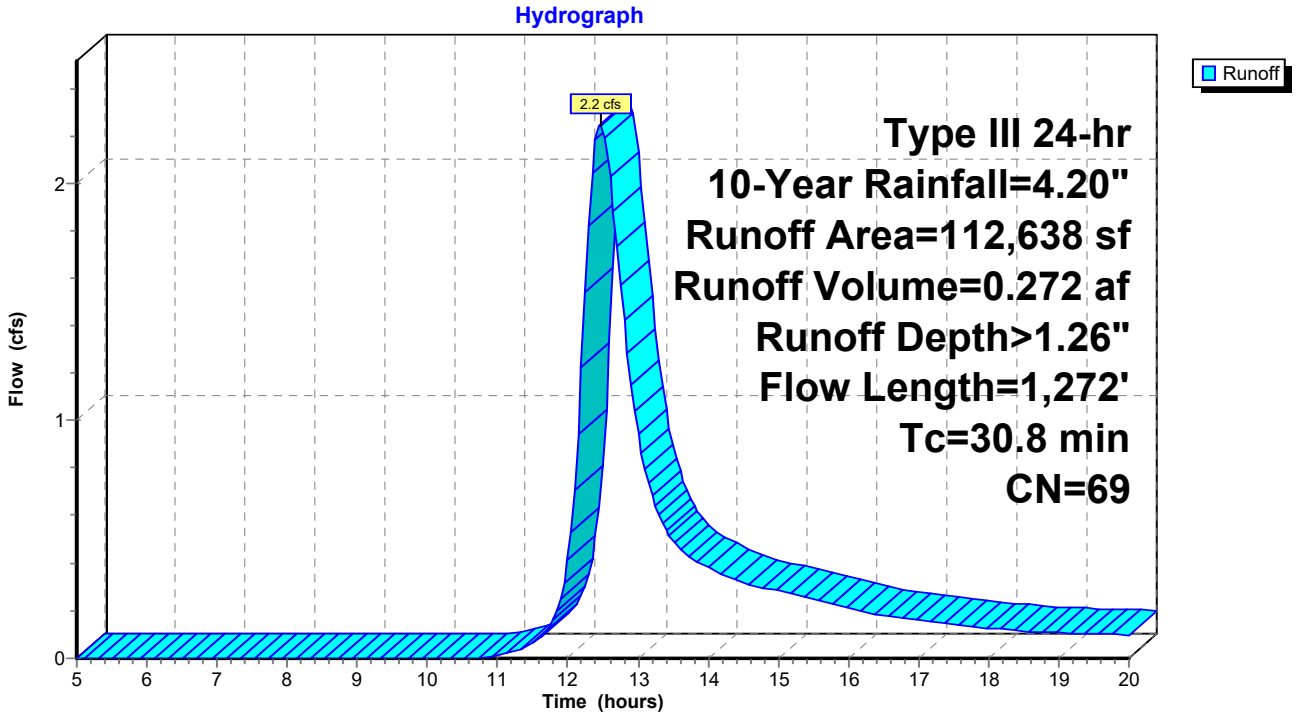
Runoff = 2.2 cfs @ 12.47 hrs, Volume= 0.272 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
	5,279	65	Brush, Good, HSG C
*	10,146	95	Impervious-Gravel
	42,072	65	Brush, Good, HSG C
	29,212	70	Woods, Good, HSG C
*	11,200	70	Woods, Good, HSG C
*	14,729	65	Brush, Good, HSG C
	112,638	69	Weighted Average
	112,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.6	316	0.0410	8.62	86.16	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.8	1,272	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-2.0: SC-2.0

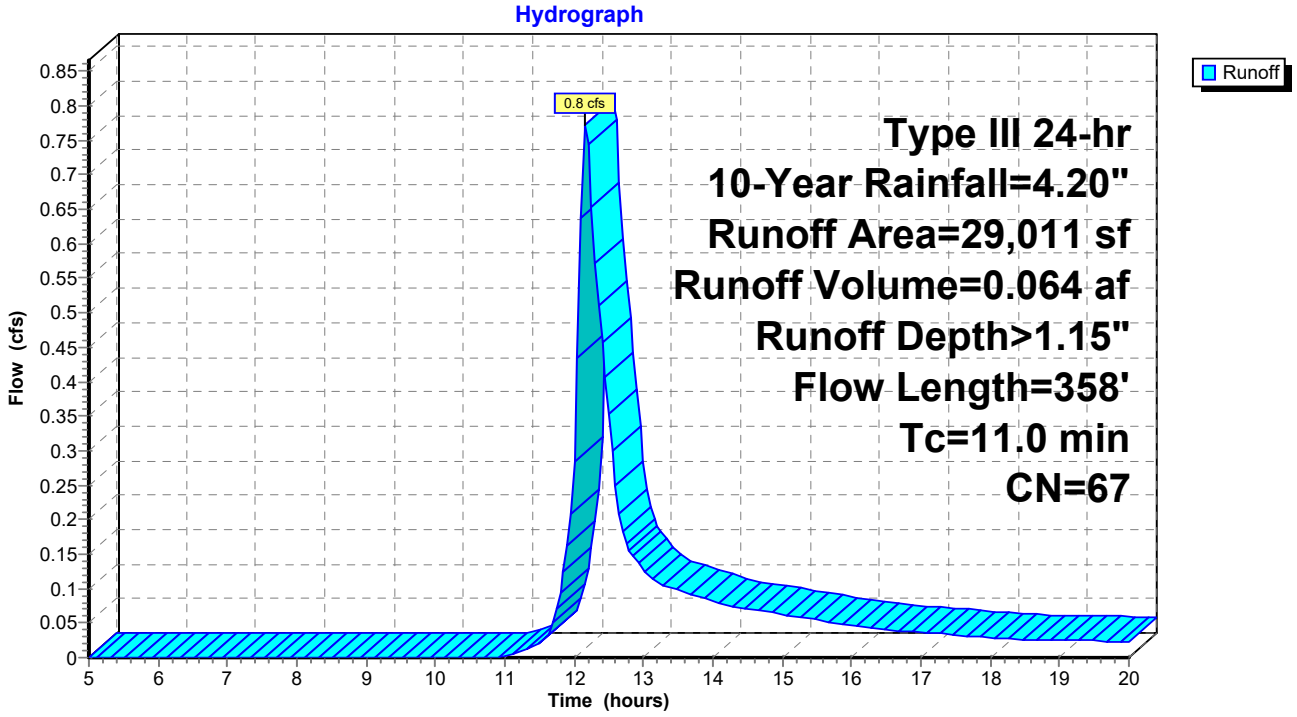
Runoff = 0.8 cfs @ 12.17 hrs, Volume= 0.064 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.20"

Area (sf)	CN	Description
9,203	70	Woods, Good, HSG C
19,808	65	Brush, Good, HSG C
29,011	67	Weighted Average
29,011		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0600	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.2	147	0.0820	2.00		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.3	91	0.0550	1.17		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	70	0.0430	7.60	76.04	**Channel Flow, D-E** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
11.0	358	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4.0: SC-4.0

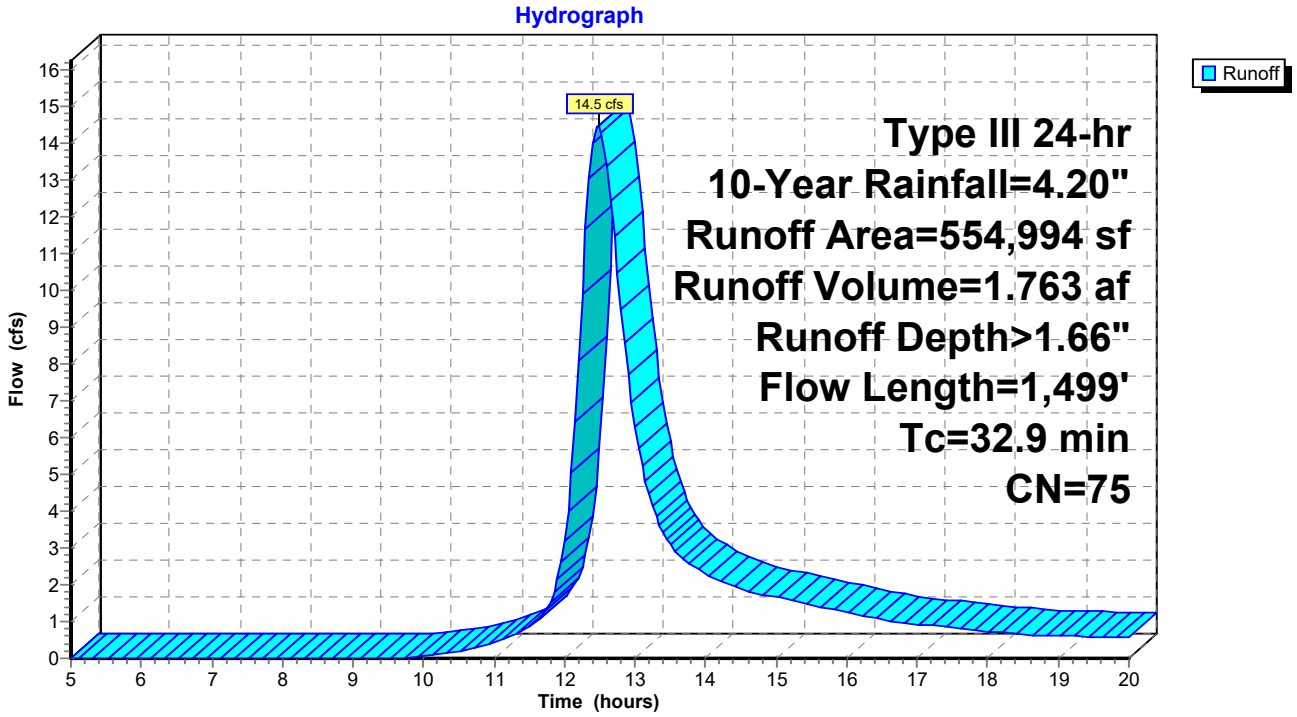
Runoff = 14.5 cfs @ 12.48 hrs, Volume= 1.763 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	8,706	72	Woods/grass comb., Good, HSG C
*	5,994	96	Impervious-Gravel
	178,254	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	63,564	70	Woods, Good, HSG C
	16,099	70	Woods, Good, HSG C
	554,994	75	Weighted Average
	554,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
7.0	599	0.0417	1.43		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
32.9	1,499	Total			

Subcatchment SC-4.0: SC-4.0

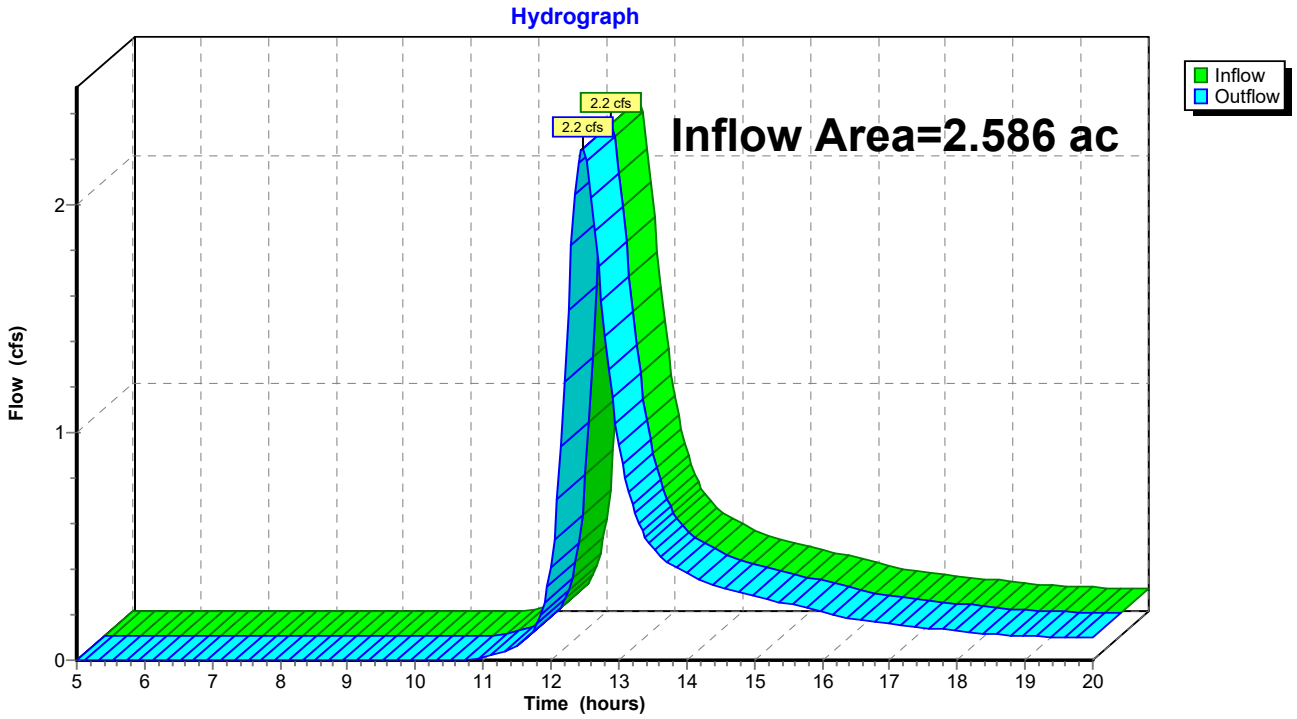


Summary for Reach POI #1: POI #1

Inflow Area = 2.586 ac, 0.00% Impervious, Inflow Depth > 1.26" for 10-Year event
Inflow = 2.2 cfs @ 12.47 hrs, Volume= 0.272 af
Outflow = 2.2 cfs @ 12.47 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #1: POI #1

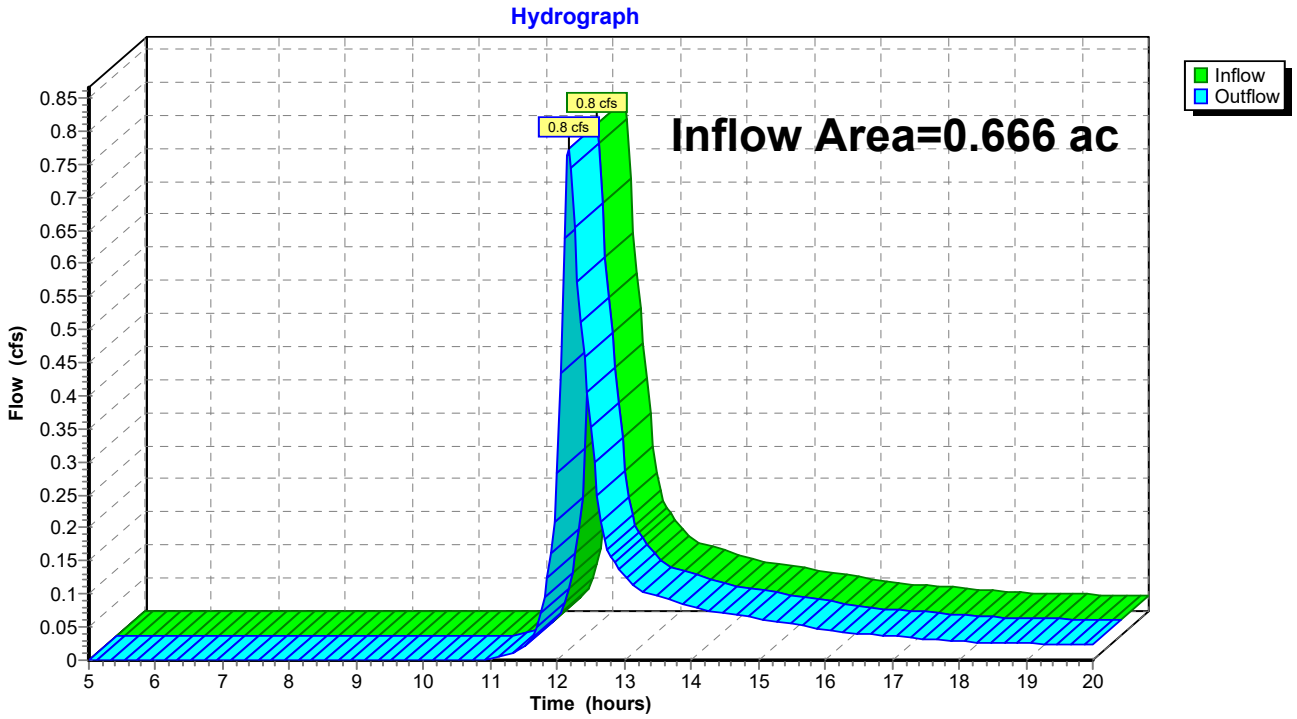


Summary for Reach POI #2: POI #2

Inflow Area = 0.666 ac, 0.00% Impervious, Inflow Depth > 1.15" for 10-Year event
Inflow = 0.8 cfs @ 12.17 hrs, Volume= 0.064 af
Outflow = 0.8 cfs @ 12.17 hrs, Volume= 0.064 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #2: POI #2

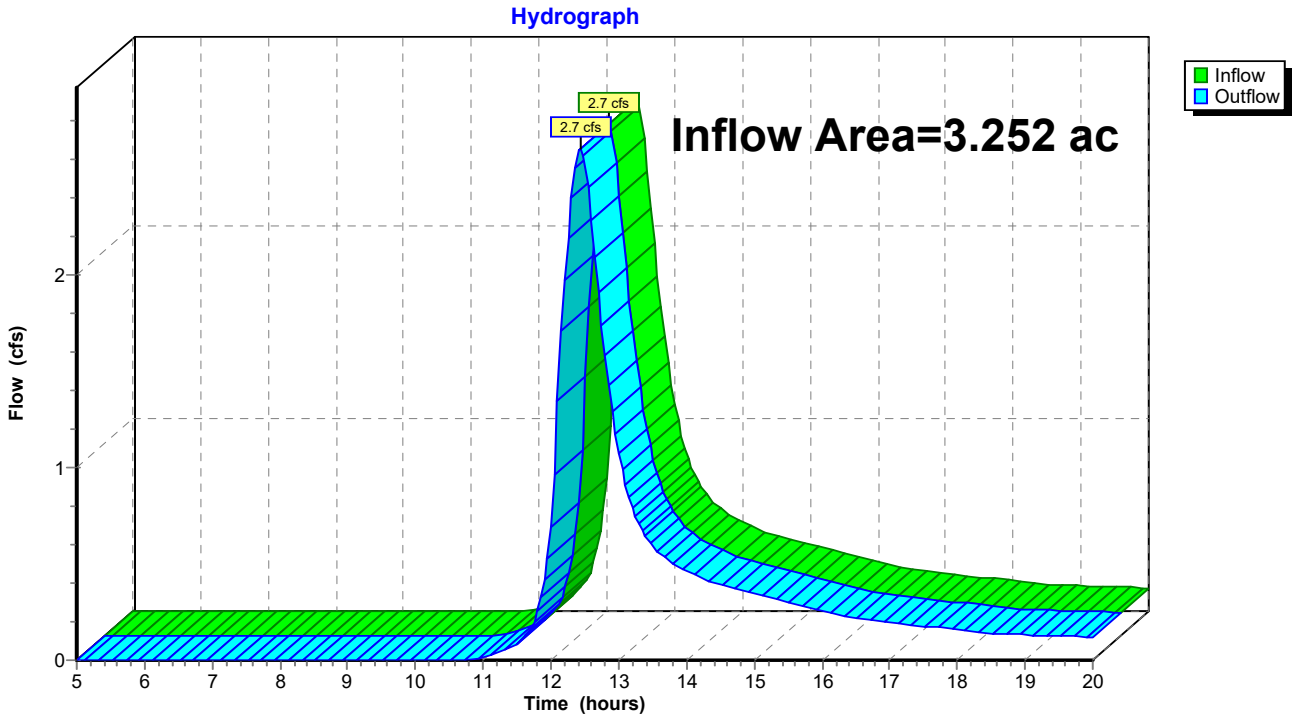


Summary for Reach POI #3: POI #3

Inflow Area = 3.252 ac, 0.00% Impervious, Inflow Depth > 1.24" for 10-Year event
Inflow = 2.7 cfs @ 12.43 hrs, Volume= 0.336 af
Outflow = 2.7 cfs @ 12.43 hrs, Volume= 0.336 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #3: POI #3

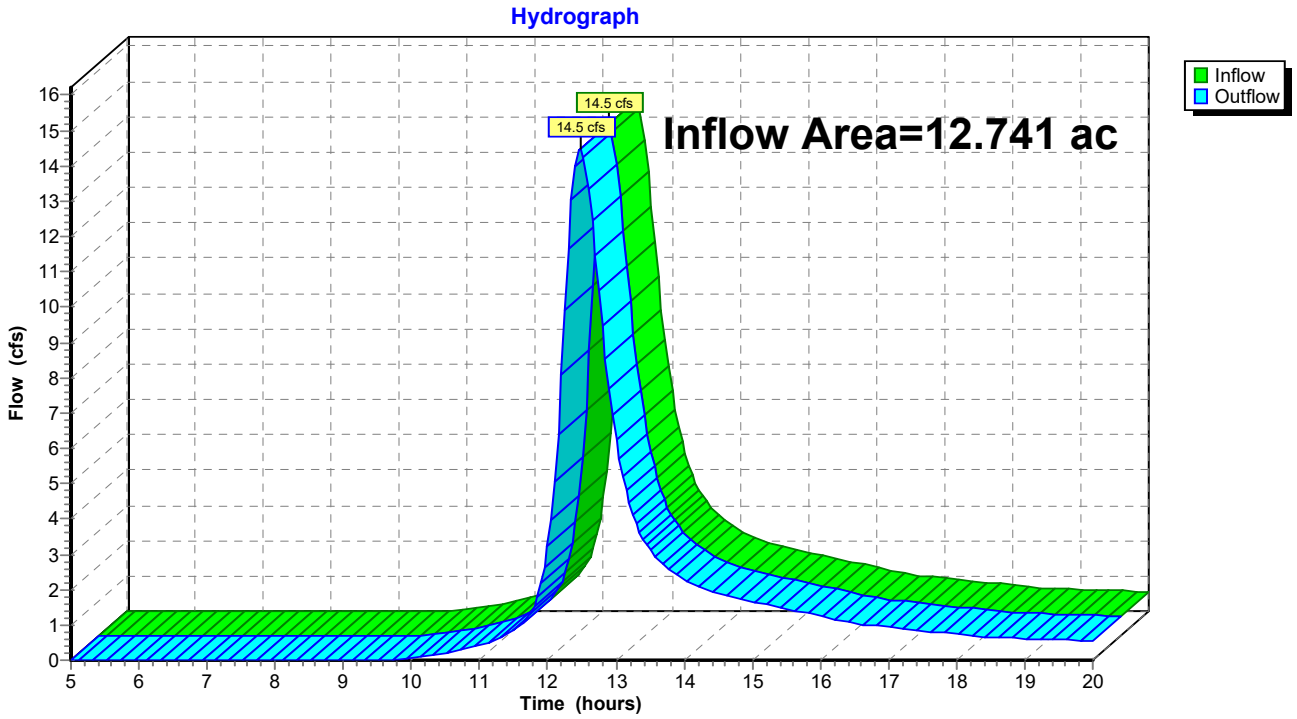


Summary for Reach POI #4: POI #4

Inflow Area = 12.741 ac, 0.00% Impervious, Inflow Depth > 1.66" for 10-Year event
Inflow = 14.5 cfs @ 12.48 hrs, Volume= 1.763 af
Outflow = 14.5 cfs @ 12.48 hrs, Volume= 1.763 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #4: POI #4



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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=112,638 sf 0.00% Impervious Runoff Depth>1.92"
Flow Length=1,272' Tc=30.8 min CN=69 Runoff=3.5 cfs 0.413 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=29,011 sf 0.00% Impervious Runoff Depth>1.78"
Flow Length=358' Tc=11.0 min CN=67 Runoff=1.2 cfs 0.099 af

SubcatchmentSC-4.0: SC-4.0 Runoff Area=554,994 sf 0.00% Impervious Runoff Depth>2.40"
Flow Length=1,499' Tc=32.9 min CN=75 Runoff=21.1 cfs 2.551 af

Reach POI #1: POI #1 Inflow=3.5 cfs 0.413 af
Outflow=3.5 cfs 0.413 af

Reach POI #2: POI #2 Inflow=1.2 cfs 0.099 af
Outflow=1.2 cfs 0.099 af

Reach POI #3: POI #3 Inflow=4.1 cfs 0.512 af
Outflow=4.1 cfs 0.512 af

Reach POI #4: POI #4 Inflow=21.1 cfs 2.551 af
Outflow=21.1 cfs 2.551 af

Total Runoff Area = 15.993 ac Runoff Volume = 3.063 af Average Runoff Depth = 2.30"
100.00% Pervious = 15.993 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment SC-1.0: SC-1.0

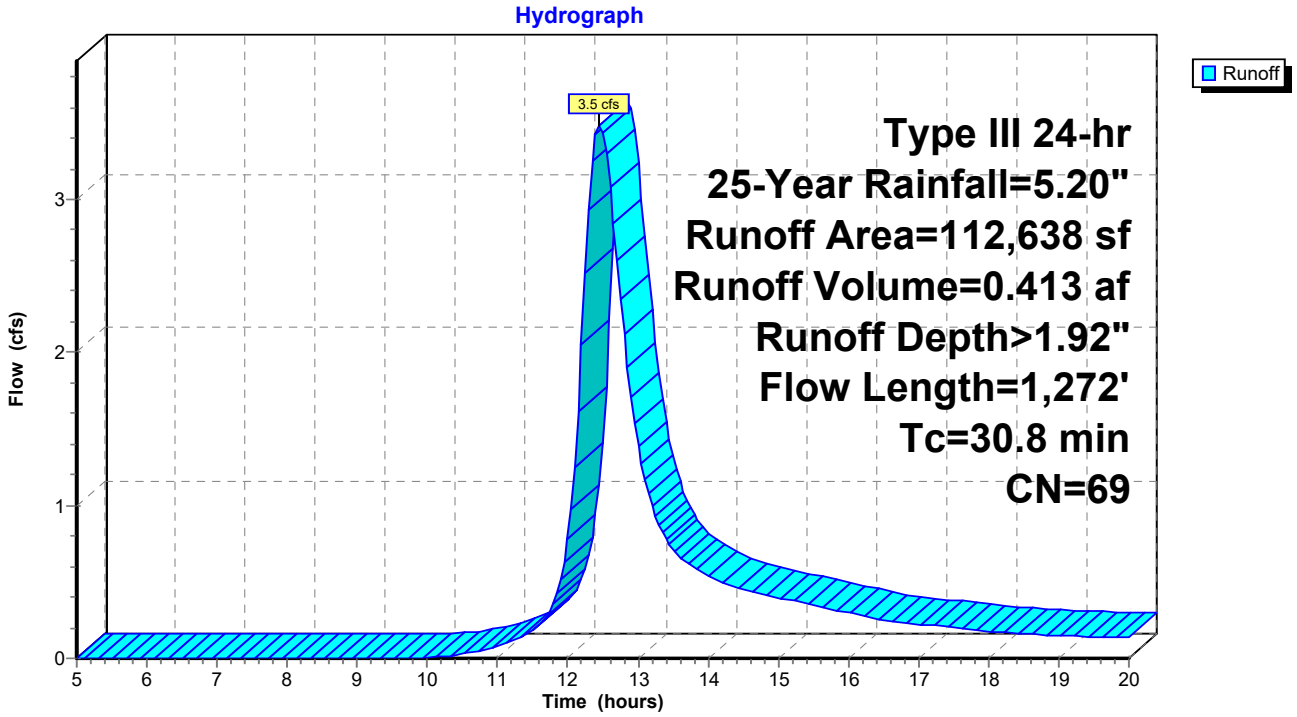
Runoff = 3.5 cfs @ 12.45 hrs, Volume= 0.413 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
	5,279	65	Brush, Good, HSG C
*	10,146	95	Impervious-Gravel
	42,072	65	Brush, Good, HSG C
	29,212	70	Woods, Good, HSG C
*	11,200	70	Woods, Good, HSG C
*	14,729	65	Brush, Good, HSG C
	112,638	69	Weighted Average
	112,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.6	316	0.0410	8.62	86.16	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.8	1,272	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-2.0: SC-2.0

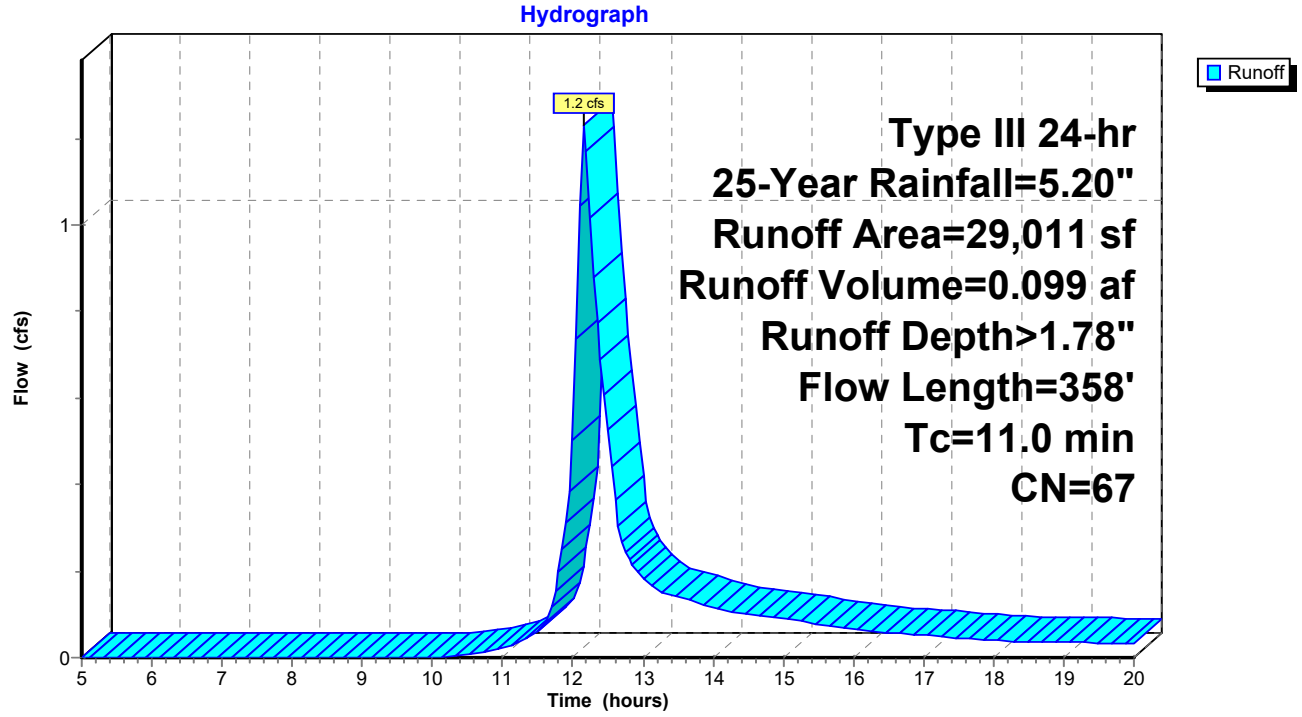
Runoff = 1.2 cfs @ 12.16 hrs, Volume= 0.099 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (sf)	CN	Description
9,203	70	Woods, Good, HSG C
19,808	65	Brush, Good, HSG C
29,011	67	Weighted Average
29,011		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0600	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.2	147	0.0820	2.00		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.3	91	0.0550	1.17		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	70	0.0430	7.60	76.04	**Channel Flow, D-E** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
11.0	358	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4.0: SC-4.0

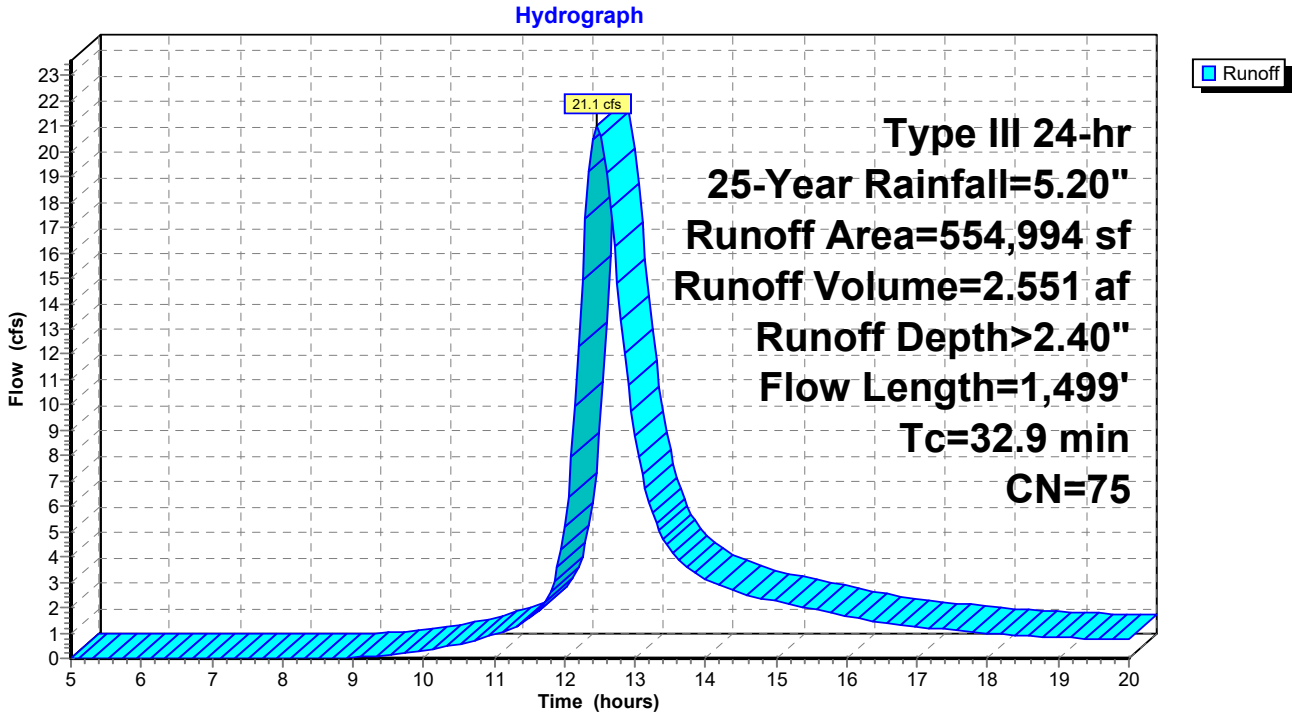
Runoff = 21.1 cfs @ 12.47 hrs, Volume= 2.551 af, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	8,706	72	Woods/grass comb., Good, HSG C
*	5,994	96	Impervious-Gravel
	178,254	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	63,564	70	Woods, Good, HSG C
	16,099	70	Woods, Good, HSG C
	554,994	75	Weighted Average
	554,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
7.0	599	0.0417	1.43		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
32.9	1,499	Total			

Subcatchment SC-4.0: SC-4.0

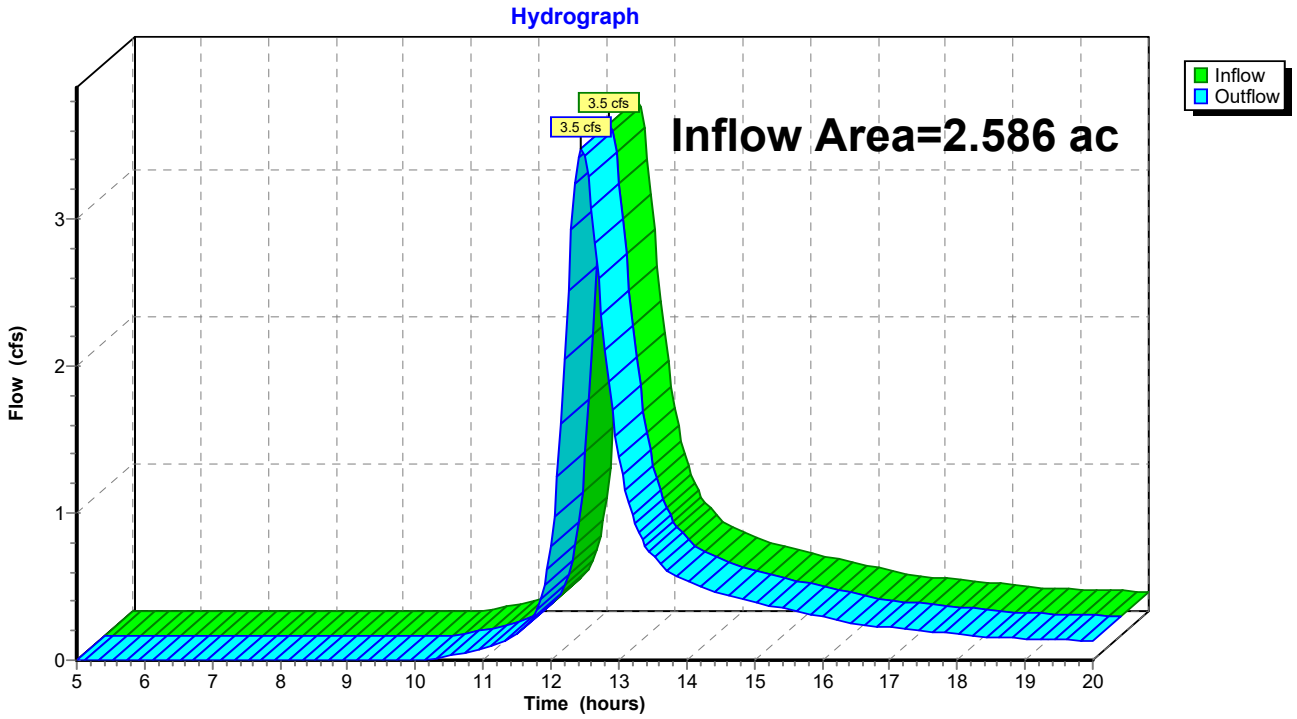


Summary for Reach POI #1: POI #1

Inflow Area = 2.586 ac, 0.00% Impervious, Inflow Depth > 1.92" for 25-Year event
Inflow = 3.5 cfs @ 12.45 hrs, Volume= 0.413 af
Outflow = 3.5 cfs @ 12.45 hrs, Volume= 0.413 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #1: POI #1

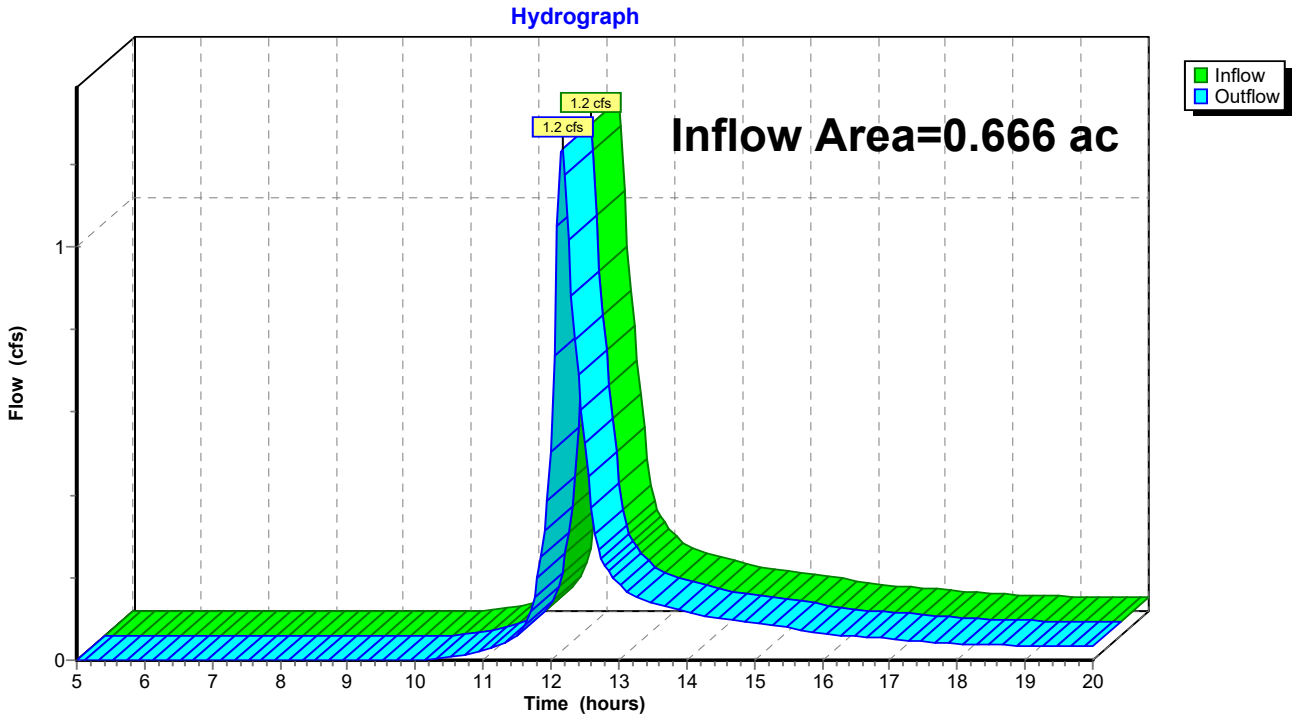


Summary for Reach POI #2: POI #2

Inflow Area = 0.666 ac, 0.00% Impervious, Inflow Depth > 1.78" for 25-Year event
Inflow = 1.2 cfs @ 12.16 hrs, Volume= 0.099 af
Outflow = 1.2 cfs @ 12.16 hrs, Volume= 0.099 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #2: POI #2

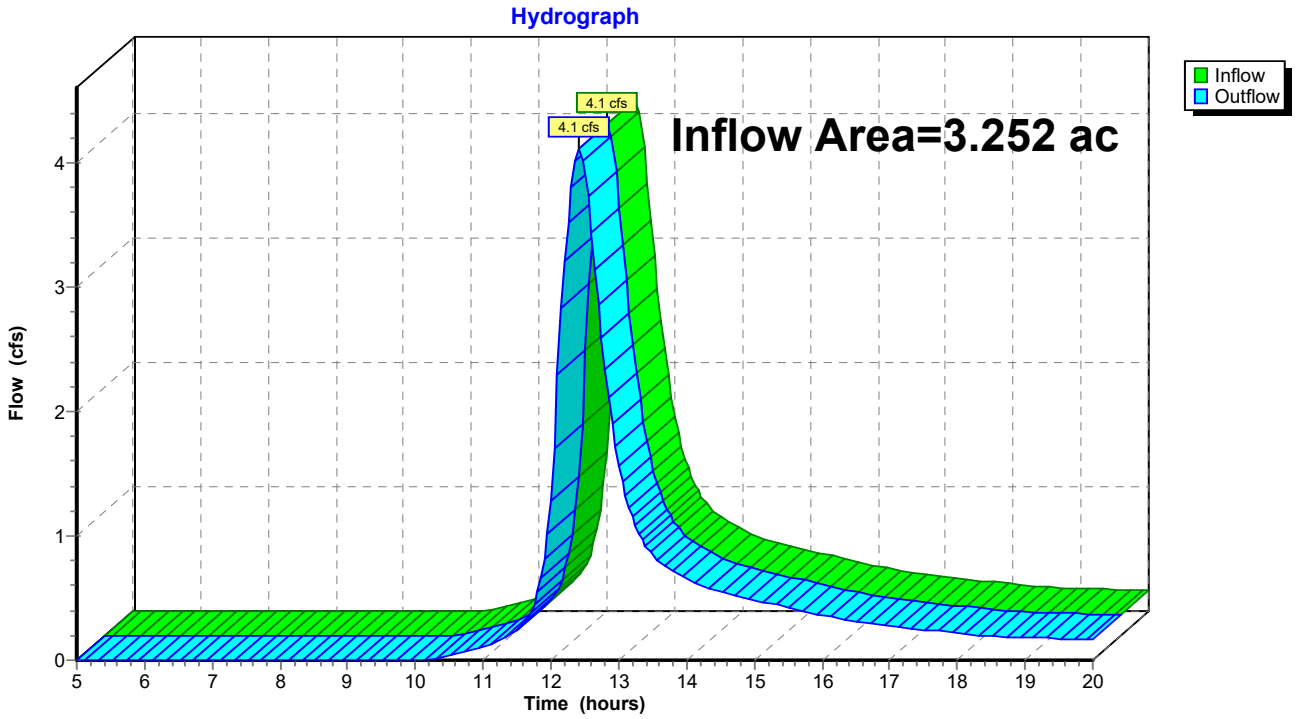


Summary for Reach POI #3: POI #3

Inflow Area = 3.252 ac, 0.00% Impervious, Inflow Depth > 1.89" for 25-Year event
Inflow = 4.1 cfs @ 12.41 hrs, Volume= 0.512 af
Outflow = 4.1 cfs @ 12.41 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #3: POI #3

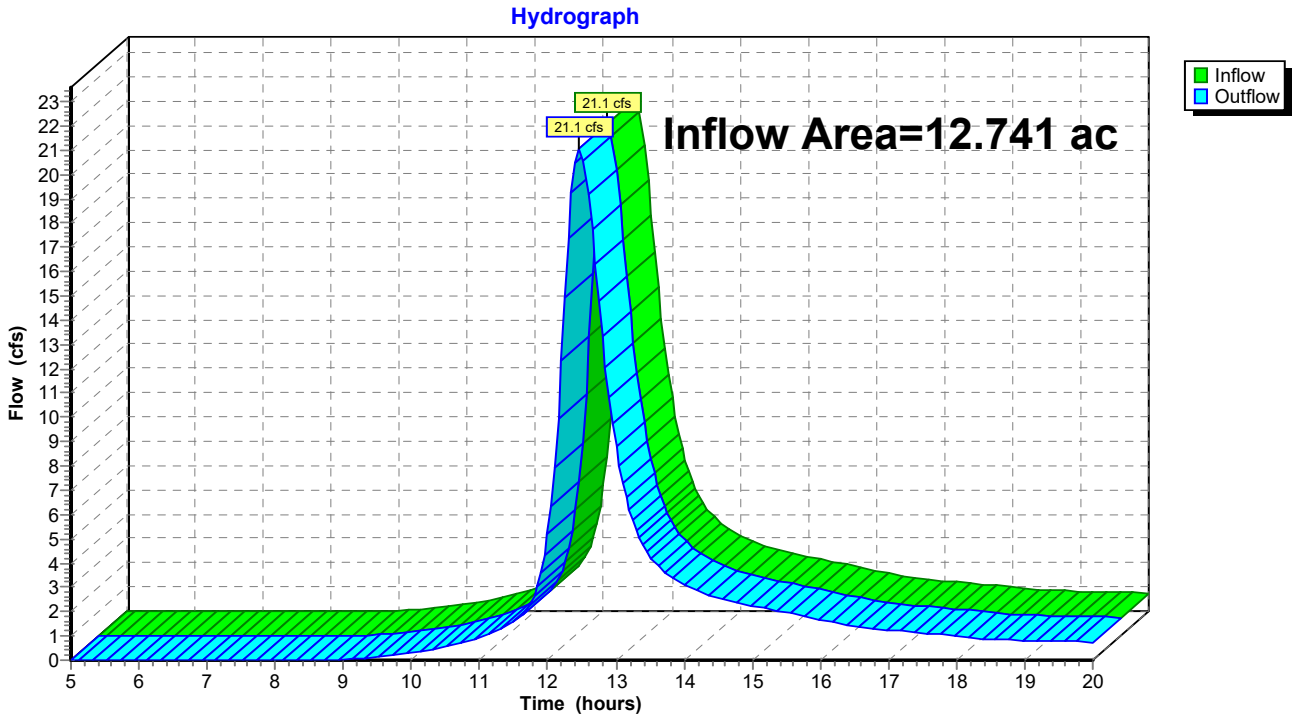


Summary for Reach POI #4: POI #4

Inflow Area = 12.741 ac, 0.00% Impervious, Inflow Depth > 2.40" for 25-Year event
Inflow = 21.1 cfs @ 12.47 hrs, Volume= 2.551 af
Outflow = 21.1 cfs @ 12.47 hrs, Volume= 2.551 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #4: POI #4



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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=112,638 sf 0.00% Impervious Runoff Depth>2.56"
Flow Length=1,272' Tc=30.8 min CN=69 Runoff=4.7 cfs 0.551 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=29,011 sf 0.00% Impervious Runoff Depth>2.40"
Flow Length=358' Tc=11.0 min CN=67 Runoff=1.7 cfs 0.133 af

SubcatchmentSC-4.0: SC-4.0 Runoff Area=554,994 sf 0.00% Impervious Runoff Depth>3.11"
Flow Length=1,499' Tc=32.9 min CN=75 Runoff=27.2 cfs 3.303 af

Reach POI #1: POI #1 Inflow=4.7 cfs 0.551 af
Outflow=4.7 cfs 0.551 af

Reach POI #2: POI #2 Inflow=1.7 cfs 0.133 af
Outflow=1.7 cfs 0.133 af

Reach POI #3: POI #3 Inflow=5.5 cfs 0.684 af
Outflow=5.5 cfs 0.684 af

Reach POI #4: POI #4 Inflow=27.2 cfs 3.303 af
Outflow=27.2 cfs 3.303 af

Total Runoff Area = 15.993 ac Runoff Volume = 3.987 af Average Runoff Depth = 2.99"
100.00% Pervious = 15.993 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment SC-1.0: SC-1.0

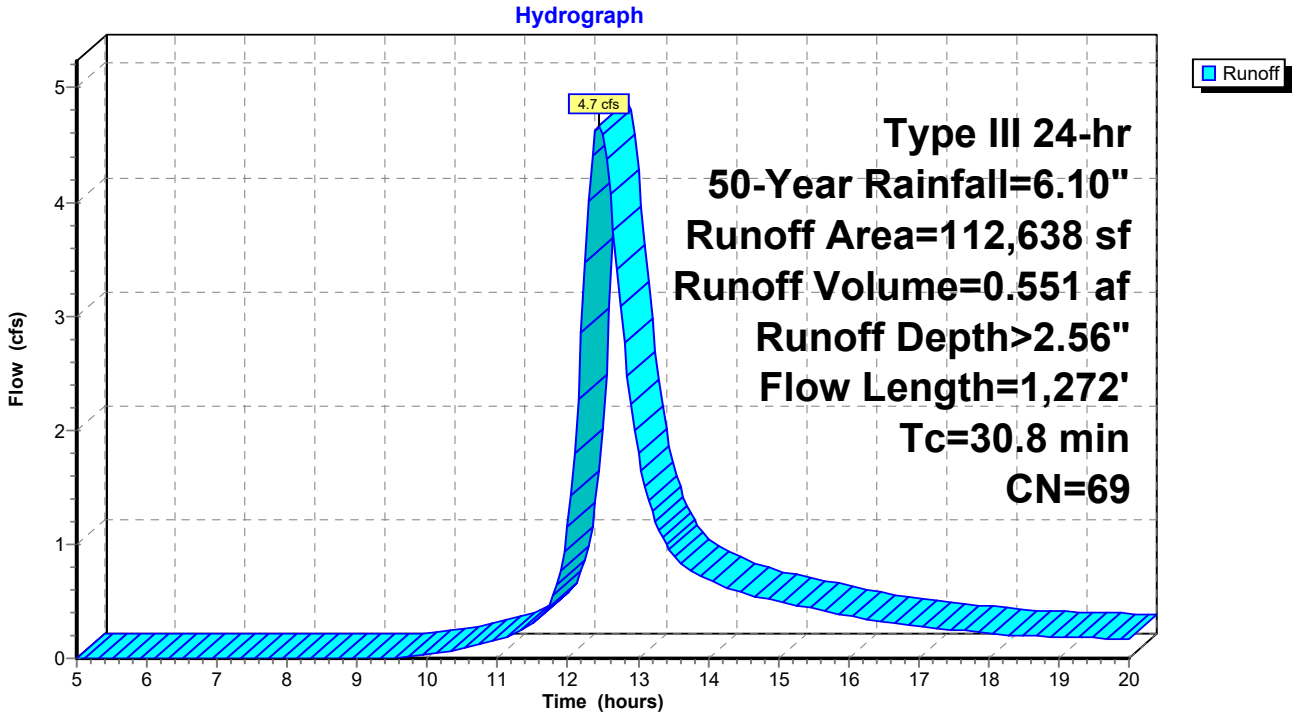
Runoff = 4.7 cfs @ 12.44 hrs, Volume= 0.551 af, Depth> 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
	5,279	65	Brush, Good, HSG C
*	10,146	95	Impervious-Gravel
	42,072	65	Brush, Good, HSG C
	29,212	70	Woods, Good, HSG C
*	11,200	70	Woods, Good, HSG C
*	14,729	65	Brush, Good, HSG C
	112,638	69	Weighted Average
	112,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.6	316	0.0410	8.62	86.16	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.8	1,272	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-2.0: SC-2.0

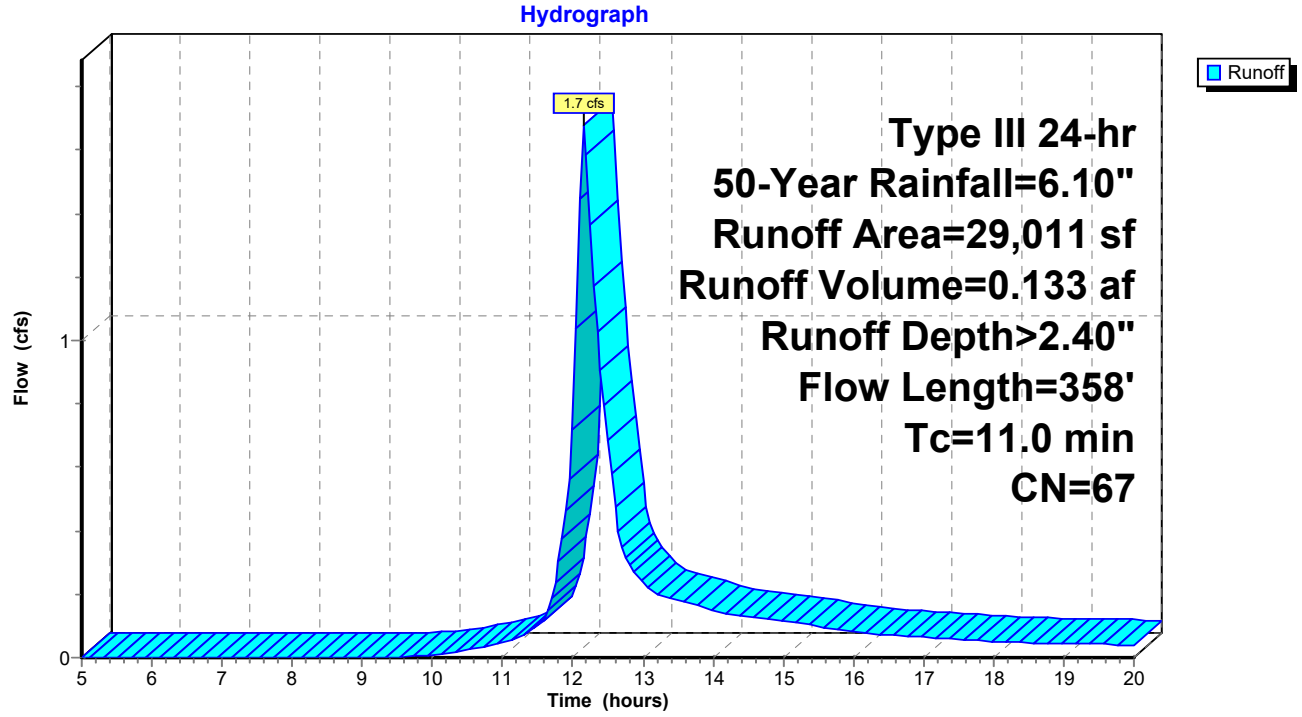
Runoff = 1.7 cfs @ 12.16 hrs, Volume= 0.133 af, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.10"

Area (sf)	CN	Description
9,203	70	Woods, Good, HSG C
19,808	65	Brush, Good, HSG C
29,011	67	Weighted Average
29,011		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0600	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 2.90"
1.2	147	0.0820	2.00		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.3	91	0.0550	1.17		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	70	0.0430	7.60	76.04	**Channel Flow, D-E** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
11.0	358	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4.0: SC-4.0

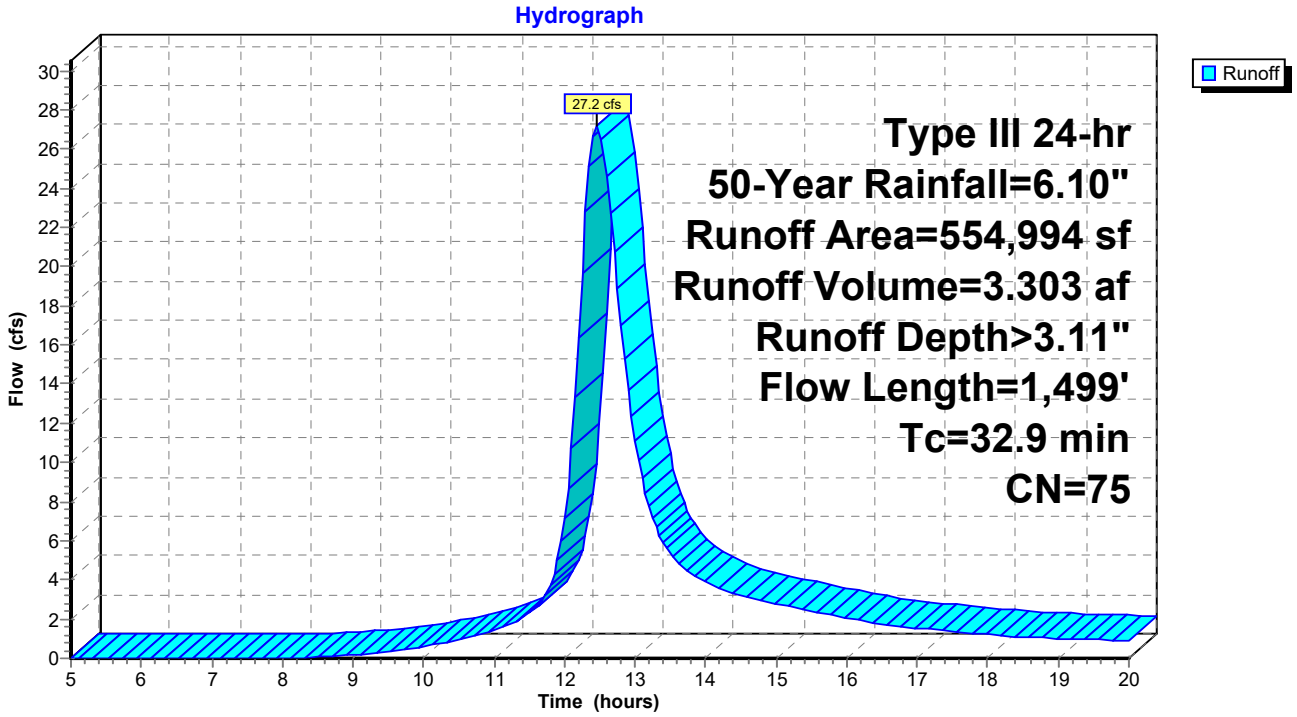
Runoff = 27.2 cfs @ 12.46 hrs, Volume= 3.303 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	8,706	72	Woods/grass comb., Good, HSG C
*	5,994	96	Impervious-Gravel
	178,254	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	63,564	70	Woods, Good, HSG C
	16,099	70	Woods, Good, HSG C
	554,994	75	Weighted Average
	554,994		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
7.0	599	0.0417	1.43		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
32.9	1,499	Total			

Subcatchment SC-4.0: SC-4.0

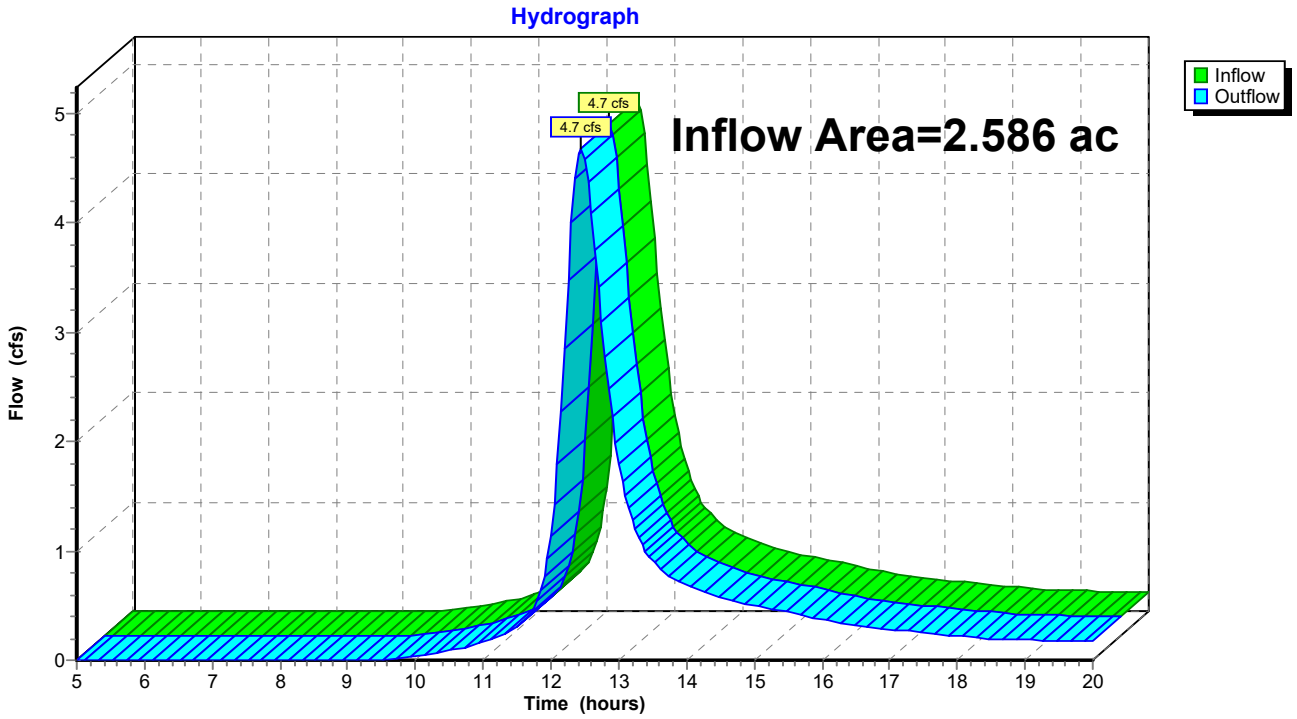


Summary for Reach POI #1: POI #1

Inflow Area = 2.586 ac, 0.00% Impervious, Inflow Depth > 2.56" for 50-Year event
Inflow = 4.7 cfs @ 12.44 hrs, Volume= 0.551 af
Outflow = 4.7 cfs @ 12.44 hrs, Volume= 0.551 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #1: POI #1

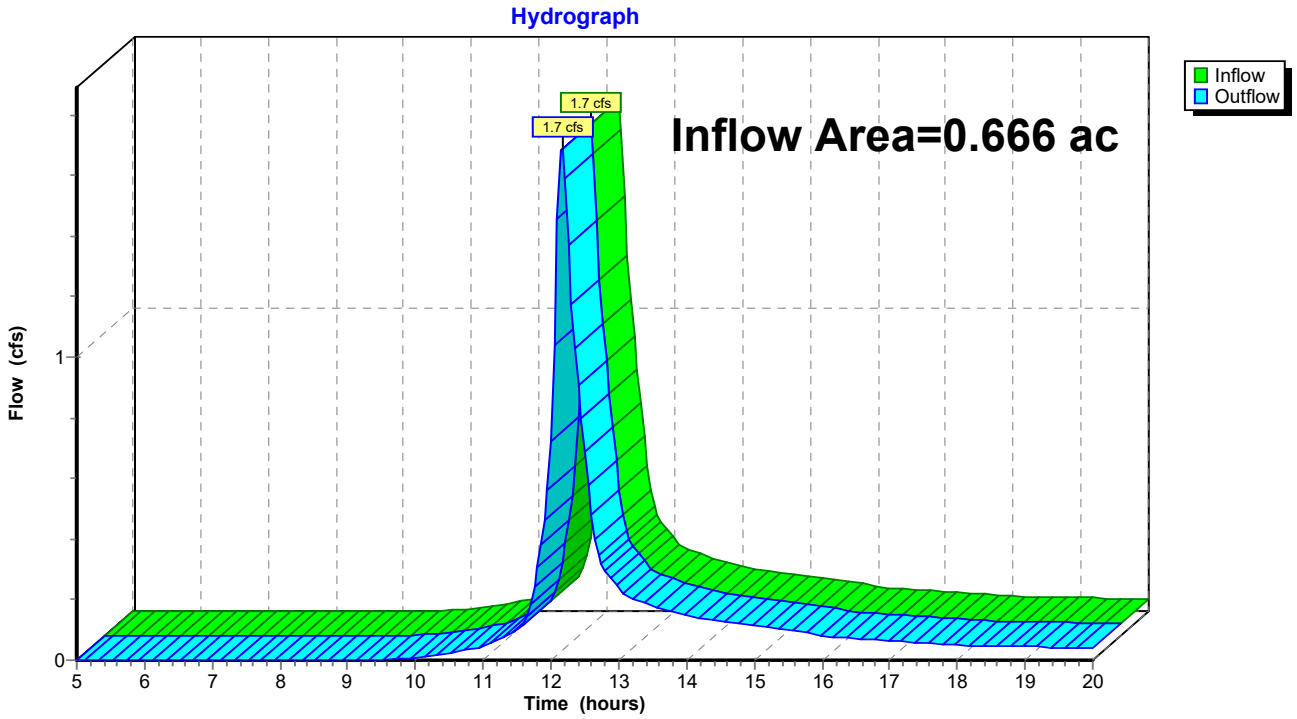


Summary for Reach POI #2: POI #2

Inflow Area = 0.666 ac, 0.00% Impervious, Inflow Depth > 2.40" for 50-Year event
Inflow = 1.7 cfs @ 12.16 hrs, Volume= 0.133 af
Outflow = 1.7 cfs @ 12.16 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #2: POI #2

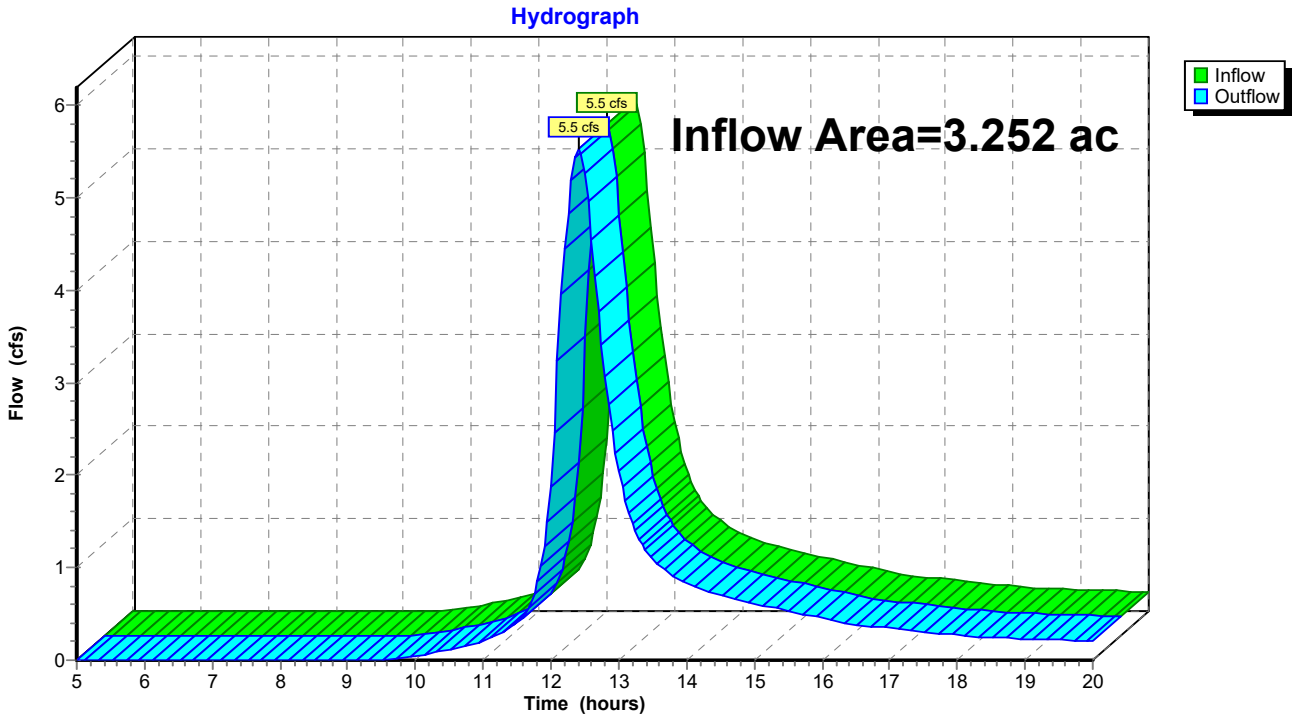


Summary for Reach POI #3: POI #3

Inflow Area = 3.252 ac, 0.00% Impervious, Inflow Depth > 2.53" for 50-Year event
Inflow = 5.5 cfs @ 12.41 hrs, Volume= 0.684 af
Outflow = 5.5 cfs @ 12.41 hrs, Volume= 0.684 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #3: POI #3

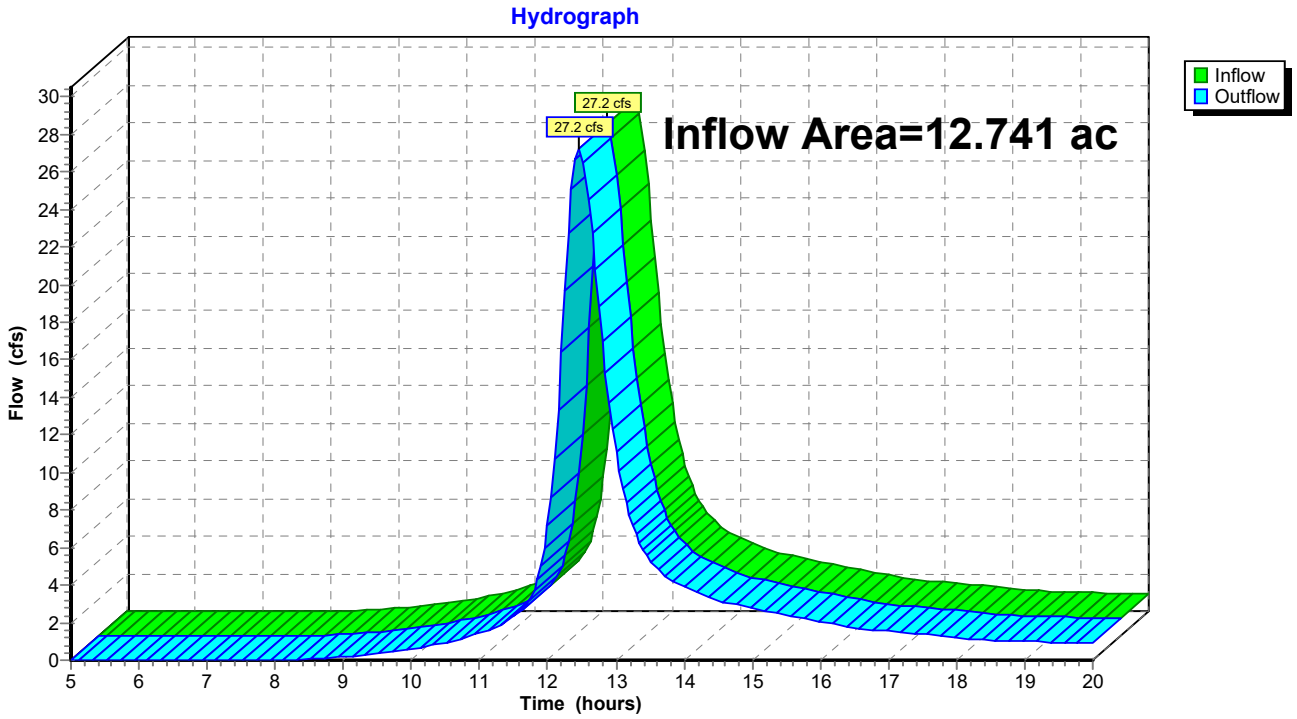


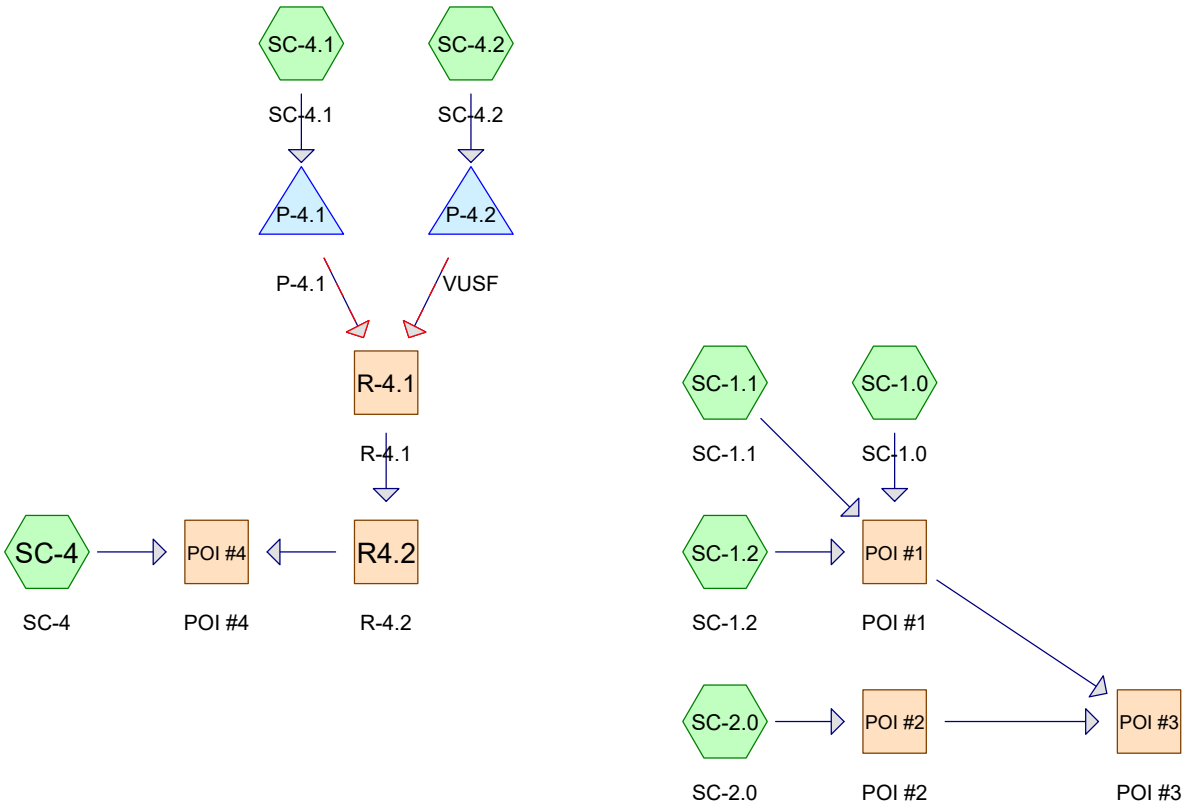
Summary for Reach POI #4: POI #4

Inflow Area = 12.741 ac, 0.00% Impervious, Inflow Depth > 3.11" for 50-Year event
Inflow = 27.2 cfs @ 12.46 hrs, Volume= 3.303 af
Outflow = 27.2 cfs @ 12.46 hrs, Volume= 3.303 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach POI #4: POI #4





Subcat Reach Pond Link

Routing Diagram for 1287_Post
Prepared by {enter your company name here}, Printed 7/1/2025
HydroCAD® 10.00-26 s/n 00620 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.242	74	>75% Grass cover, Good, HSG C (SC-1.1, SC-4)
1.986	65	Brush, Good, HSG C (SC-1.0, SC-1.2, SC-2.0)
0.054	96	Impervious - Drip Edge (SC-4.1)
0.022	98	Impervious - Patio (SC-4)
0.541	98	Impervious - Pavement (SC-1.1, SC-4.2)
0.446	98	Impervious - Roof (SC-4.1)
0.093	98	Impervious - Sidewalk (SC-1.2, SC-4, SC-4.2)
0.001	98	Impervious - Transformer (SC-4.2)
0.204	95	Impervious-Gravel (SC-1.0)
0.082	65	Landscaping - In Site (SC-4.2)
3.669	71	Meadow, non-grazed, HSG C (SC-4)
0.148	74	VUSF footprint (SC-4.2)
5.347	80	Wetland (SC-4)
3.075	70	Woods, Good, HSG C (SC-1.0, SC-2.0, SC-4)
0.084	72	Woods/grass comb., Good, HSG C (SC-4)
15.993	**75**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
9.056	HSG C	SC-1.0, SC-1.1, SC-1.2, SC-2.0, SC-4
0.000	HSG D	
6.937	Other	SC-1.0, SC-1.1, SC-1.2, SC-4, SC-4.1, SC-4.2
15.993		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.242	0.000	0.000	0.242	>75% Grass cover, Good	SC-1.1, SC-4
0.000	0.000	1.986	0.000	0.000	1.986	Brush, Good	SC-1.0, SC-1.2, SC-2.0
0.000	0.000	0.000	0.000	0.054	0.054	Impervious - Drip Edge	SC-4.1
0.000	0.000	0.000	0.000	0.022	0.022	Impervious - Patio	SC-4
0.000	0.000	0.000	0.000	0.541	0.541	Impervious - Pavement	SC-1.1, SC-4.2
0.000	0.000	0.000	0.000	0.446	0.446	Impervious - Roof	SC-4.1
0.000	0.000	0.000	0.000	0.093	0.093	Impervious - Sidewalk	SC-1.2, SC-4, SC-4.2
0.000	0.000	0.000	0.000	0.001	0.001	Impervious - Transformer	SC-4.2
0.000	0.000	0.000	0.000	0.204	0.204	Impervious-Gravel	SC-1.0
0.000	0.000	0.000	0.000	0.082	0.082	Landscaping - In Site	SC-4.2
0.000	0.000	3.669	0.000	0.000	3.669	Meadow, non-grazed	SC-4
0.000	0.000	0.000	0.000	0.148	0.148	VUSF footprint	SC-4.2
0.000	0.000	0.000	0.000	5.347	5.347	Wetland	SC-4
0.000	0.000	3.075	0.000	0.000	3.075	Woods, Good	SC-1.0, SC-2.0, SC-4
0.000	0.000	0.084	0.000	0.000	0.084	Woods/grass comb., Good	SC-4
0.000	**0.000**	**9.056**	**0.000**	**6.937**	**15.993**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	P-4.1	235.35	235.00	336.0	0.0010	0.011	4.0	0.0	0.0
2	P-4.1	230.40	228.00	63.0	0.0381	0.012	8.0	0.0	0.0
3	P-4.2	226.00	225.80	64.0	0.0031	0.012	15.0	0.0	0.0

Time span=0.00-30.00 hrs, dt=0.10 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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=95,761 sf 0.00% Impervious Runoff Depth=0.62"
Flow Length=1,104' Tc=30.4 min CN=69 Runoff=0.7 cfs 0.113 af

SubcatchmentSC-1.1: SC-1.1 Runoff Area=346 sf 85.84% Impervious Runoff Depth=2.35"
Tc=6.0 min CN=95 Runoff=0.0 cfs 0.002 af

SubcatchmentSC-1.2: SC-1.2 Runoff Area=9,714 sf 4.42% Impervious Runoff Depth=0.50"
Flow Length=144' Tc=8.7 min CN=66 Runoff=0.1 cfs 0.009 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=23,523 sf 0.00% Impervious Runoff Depth=0.50"
Flow Length=208' Tc=21.4 min CN=66 Runoff=0.2 cfs 0.022 af

SubcatchmentSC-4: SC-4 Runoff Area=509,451 sf 0.35% Impervious Runoff Depth=0.90"
Flow Length=1,567' Tc=33.8 min CN=75 Runoff=6.1 cfs 0.873 af

SubcatchmentSC-4.1: SC-4.1 Runoff Area=21,794 sf 89.17% Impervious Runoff Depth=2.67"
Tc=6.0 min CN=98 Runoff=1.3 cfs 0.111 af

SubcatchmentSC-4.2: SC-4.2 Runoff Area=36,074 sf 72.26% Impervious Runoff Depth=1.89"
Tc=6.0 min CN=90 Runoff=1.7 cfs 0.131 af

Reach POI #1: POI #1 Inflow=0.8 cfs 0.124 af
Outflow=0.8 cfs 0.124 af

Reach POI #2: POI #2 Inflow=0.2 cfs 0.022 af
Outflow=0.2 cfs 0.022 af

Reach POI #3: POI #3 Inflow=0.9 cfs 0.146 af
Outflow=0.9 cfs 0.146 af

Reach POI #4: POI #4 Inflow=6.2 cfs 1.029 af
Outflow=6.2 cfs 1.029 af

Reach R-4.1: R-4.1 Avg. Flow Depth=0.02' Max Vel=0.25 fps Inflow=0.2 cfs 0.159 af
n=0.080 L=190.0' S=0.0474 '/' Capacity=5.2 cfs Outflow=0.2 cfs 0.157 af

Reach R4.2: R-4.2 Avg. Flow Depth=0.04' Max Vel=0.27 fps Inflow=0.2 cfs 0.157 af
n=0.100 L=225.0' S=0.0211 '/' Capacity=160.9 cfs Outflow=0.2 cfs 0.156 af

Pond P-4.1: P-4.1 Peak Elev=238.42' Storage=2,227 cf Inflow=1.3 cfs 0.111 af
Primary=0.2 cfs 0.105 af Secondary=0.0 cfs 0.000 af Outflow=0.2 cfs 0.105 af

Pond P-4.2: VUSF Peak Elev=230.24' Storage=4,226 cf Inflow=1.7 cfs 0.131 af
Primary=0.0 cfs 0.054 af Secondary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.054 af

Total Runoff Area = 15.993 ac Runoff Volume = 1.261 af Average Runoff Depth = 0.95"
93.11% Pervious = 14.891 ac 6.89% Impervious = 1.103 ac

Summary for Subcatchment SC-1.0: SC-1.0

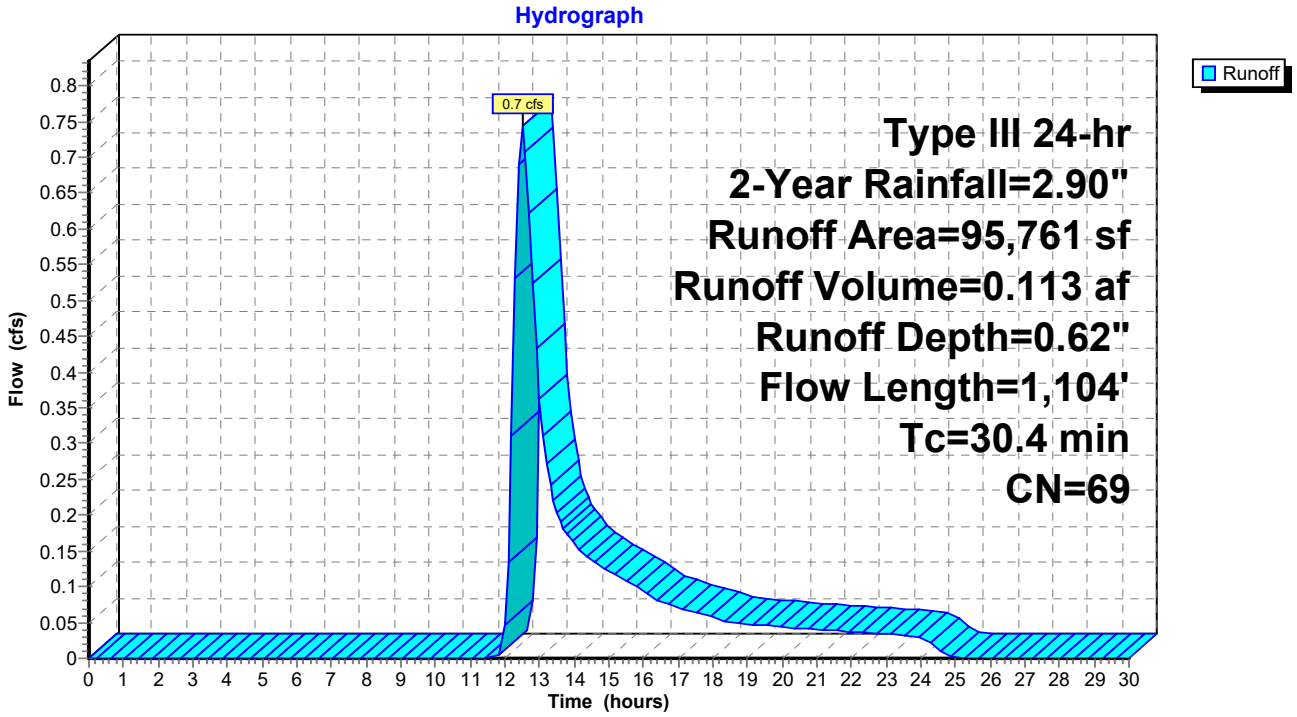
Runoff = 0.7 cfs @ 12.51 hrs, Volume= 0.113 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
	5,387	65	Brush, Good, HSG C
*	8,866	95	Impervious-Gravel
	41,534	65	Brush, Good, HSG C
	29,227	70	Woods, Good, HSG C
	10,747	65	Brush, Good, HSG C
	95,761	69	Weighted Average
	95,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	148	0.0760	11.73	117.30	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.4	1,104	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-1.1: SC-1.1

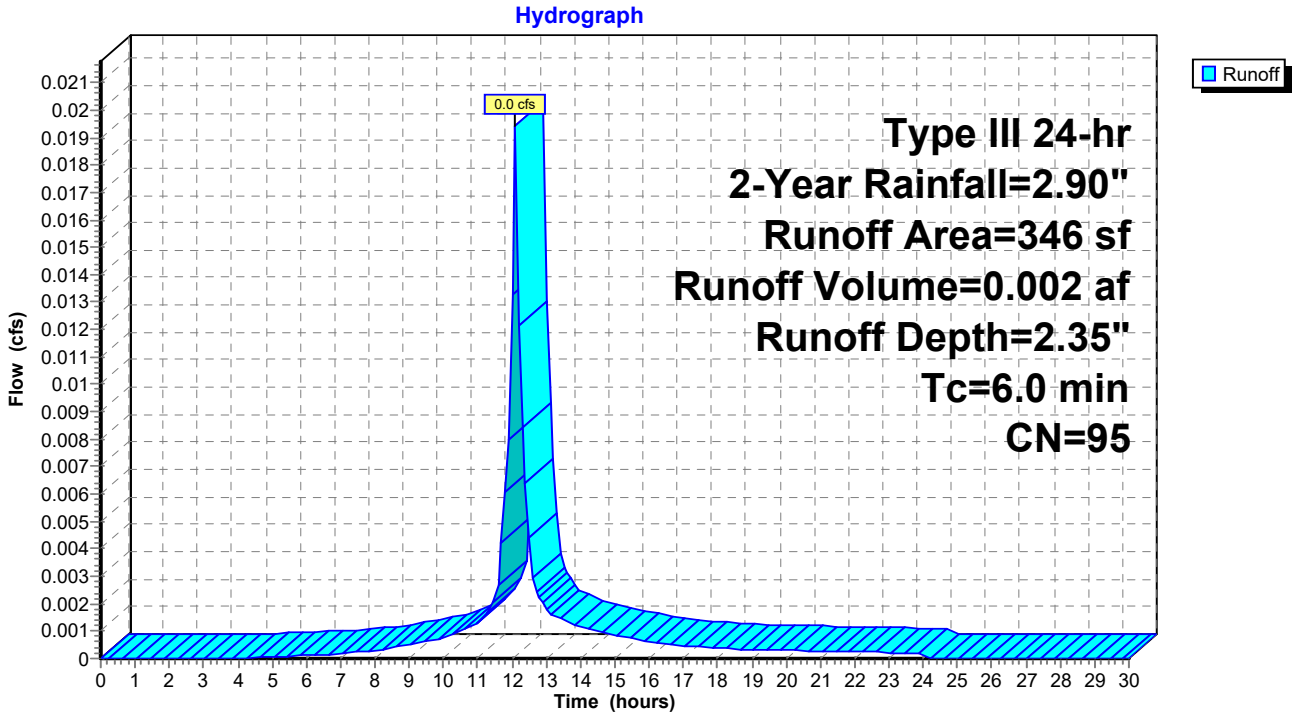
Runoff = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	297	98	Impervious - Pavement
	49	74	>75% Grass cover, Good, HSG C
	346	95	Weighted Average
	49		14.16% Pervious Area
	297		85.84% Impervious Area

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

Subcatchment SC-1.1: SC-1.1



Summary for Subcatchment SC-1.2: SC-1.2

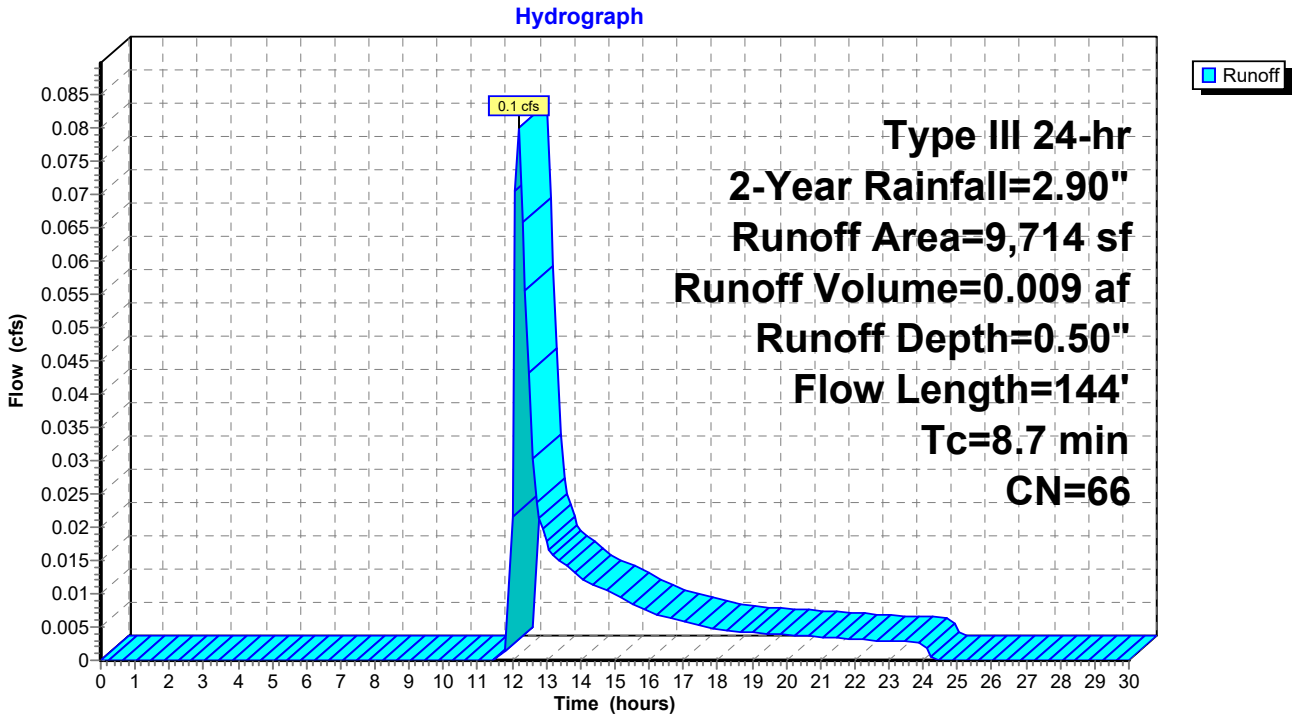
Runoff = 0.1 cfs @ 12.19 hrs, Volume= 0.009 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
	9,285	65	Brush, Good, HSG C
*	429	98	Impervious - Sidewalk
	9,714	66	Weighted Average
	9,285		95.58% Pervious Area
	429		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	98	0.0800	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.2	46	0.0100	4.26	42.55	**Channel Flow, B-C** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
8.7	144	Total			

Subcatchment SC-1.2: SC-1.2



Summary for Subcatchment SC-2.0: SC-2.0

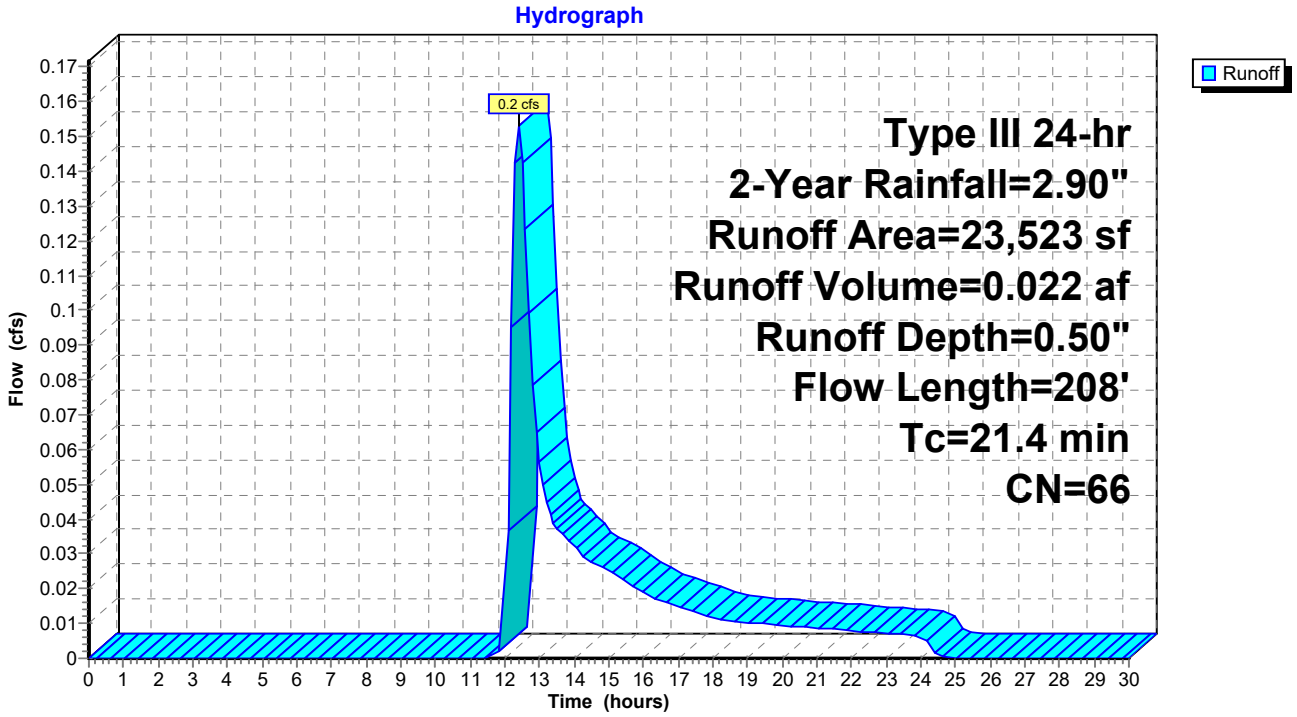
Runoff = 0.2 cfs @ 12.40 hrs, Volume= 0.022 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

Area (sf)	CN	Description
3,981	70	Woods, Good, HSG C
14,320	65	Brush, Good, HSG C
5,222	65	Brush, Good, HSG C
23,523	66	Weighted Average
23,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0300	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
13.0	50	0.0200	0.06		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 2.90"
0.8	30	0.0170	0.65		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	36	0.1700	2.89		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.1	42	0.0480	8.03	80.34	**Channel Flow, E-F** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
21.4	208	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4: SC-4

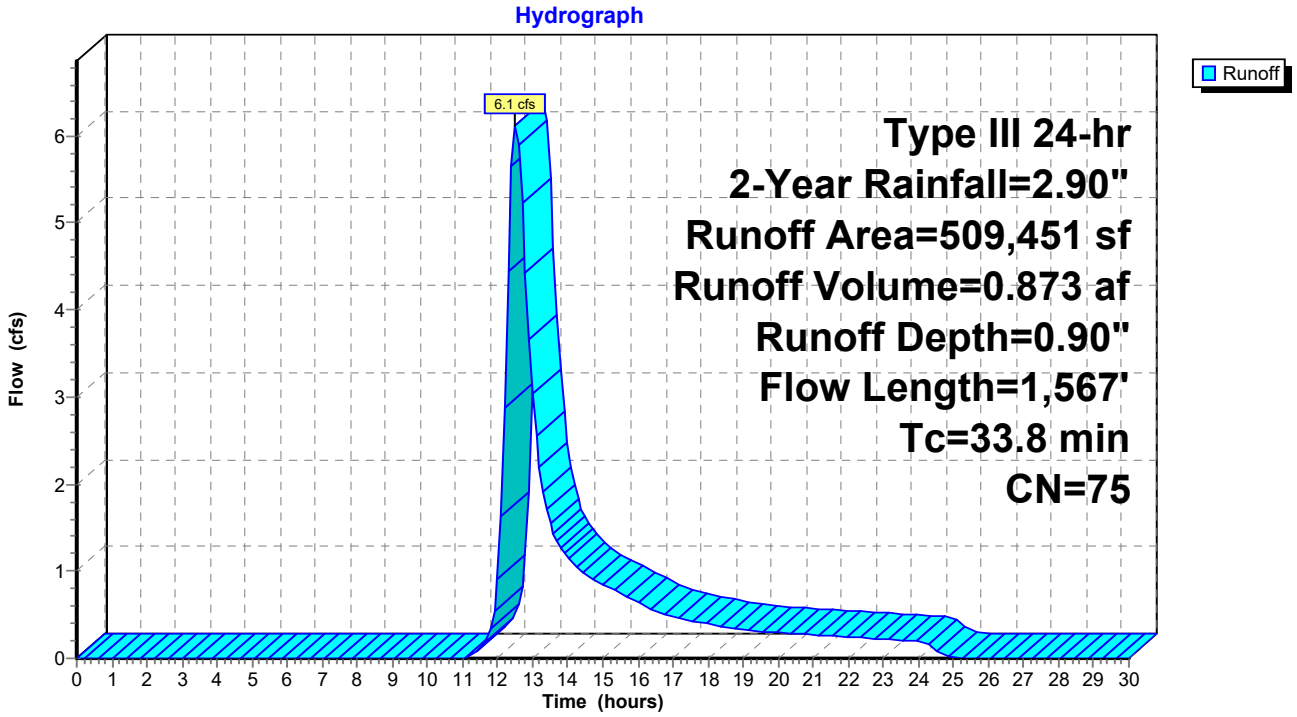
Runoff = 6.1 cfs @ 12.52 hrs, Volume= 0.873 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	3,669	72	Woods/grass comb., Good, HSG C
	159,843	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	34,705	70	Woods, Good, HSG C
	16,563	70	Woods, Good, HSG C
	10,491	74	>75% Grass cover, Good, HSG C
*	953	98	Impervious - Patio
*	850	98	Impervious - Sidewalk
	509,451	75	Weighted Average
	507,648		99.65% Pervious Area
	1,803		0.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	66	0.0380	5.79	28.97	**Channel Flow, C-D** Area= 5.0 sf Perim= 5.0' r= 1.00' n= 0.050
7.7	601	0.0349	1.31		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
33.8	1,567	Total			

Subcatchment SC-4: SC-4



Summary for Subcatchment SC-4.1: SC-4.1

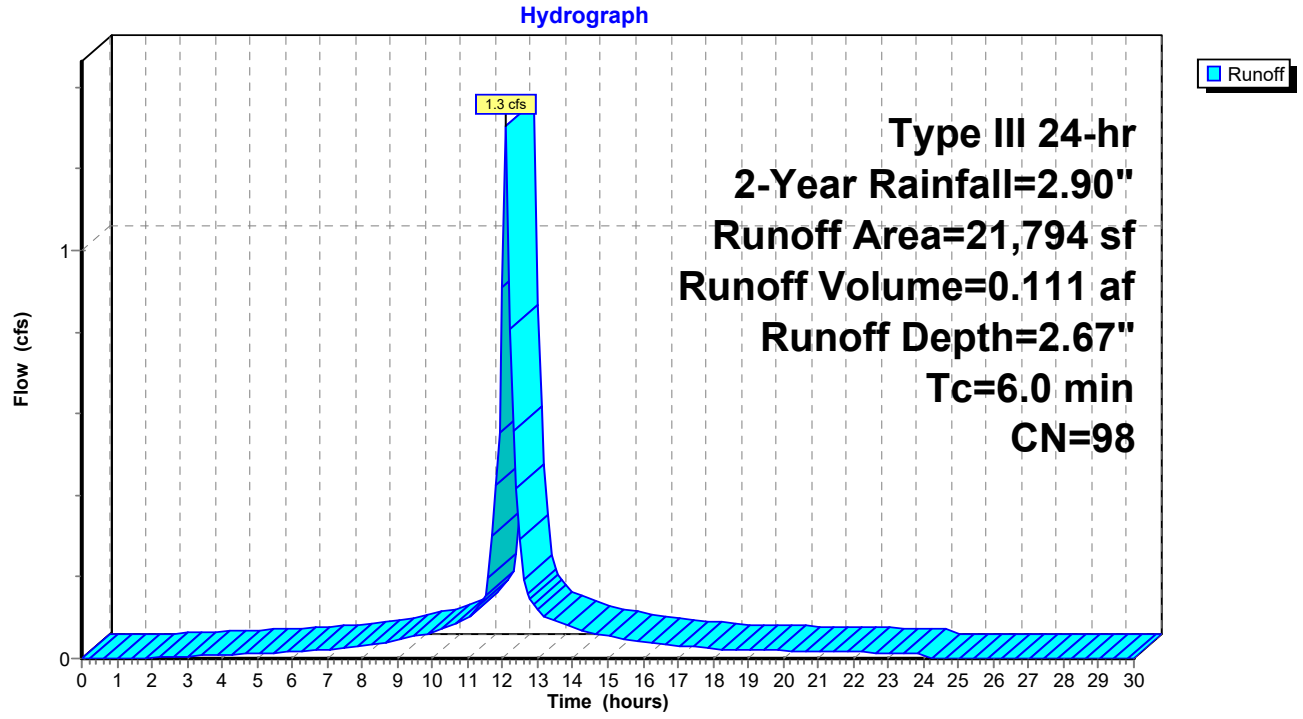
Runoff = 1.3 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	19,433	98	Impervious - Roof
*	2,361	96	Impervious - Drip Edge
	21,794	98	Weighted Average
	2,361		10.83% Pervious Area
	19,433		89.17% Impervious Area

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

Subcatchment SC-4.1: SC-4.1



Summary for Subcatchment SC-4.2: SC-4.2

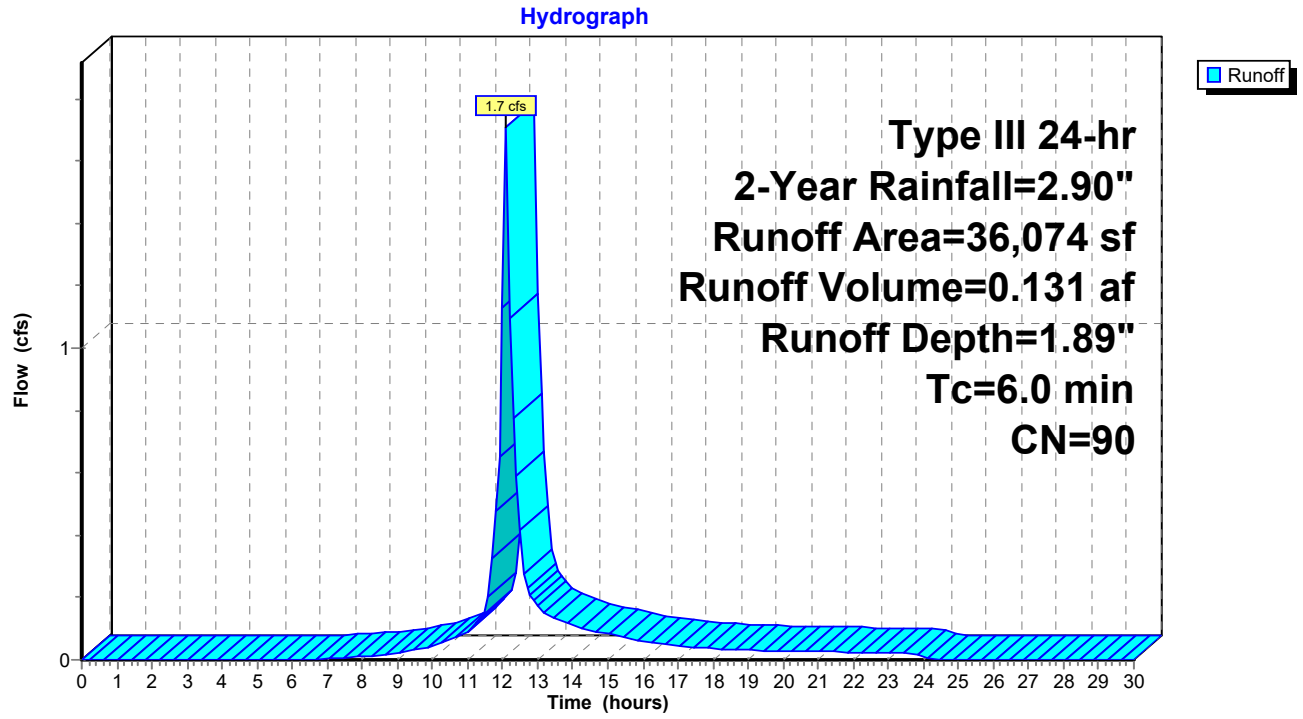
Runoff = 1.7 cfs @ 12.10 hrs, Volume= 0.131 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	23,250	98	Impervious - Pavement
*	2,769	98	Impervious - Sidewalk
*	49	98	Impervious - Transformer
*	3,576	65	Landscaping - In Site
*	6,430	74	VUSF footprint
	36,074	90	Weighted Average
	10,006		27.74% Pervious Area
	26,068		72.26% Impervious Area

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

Subcatchment SC-4.2: SC-4.2

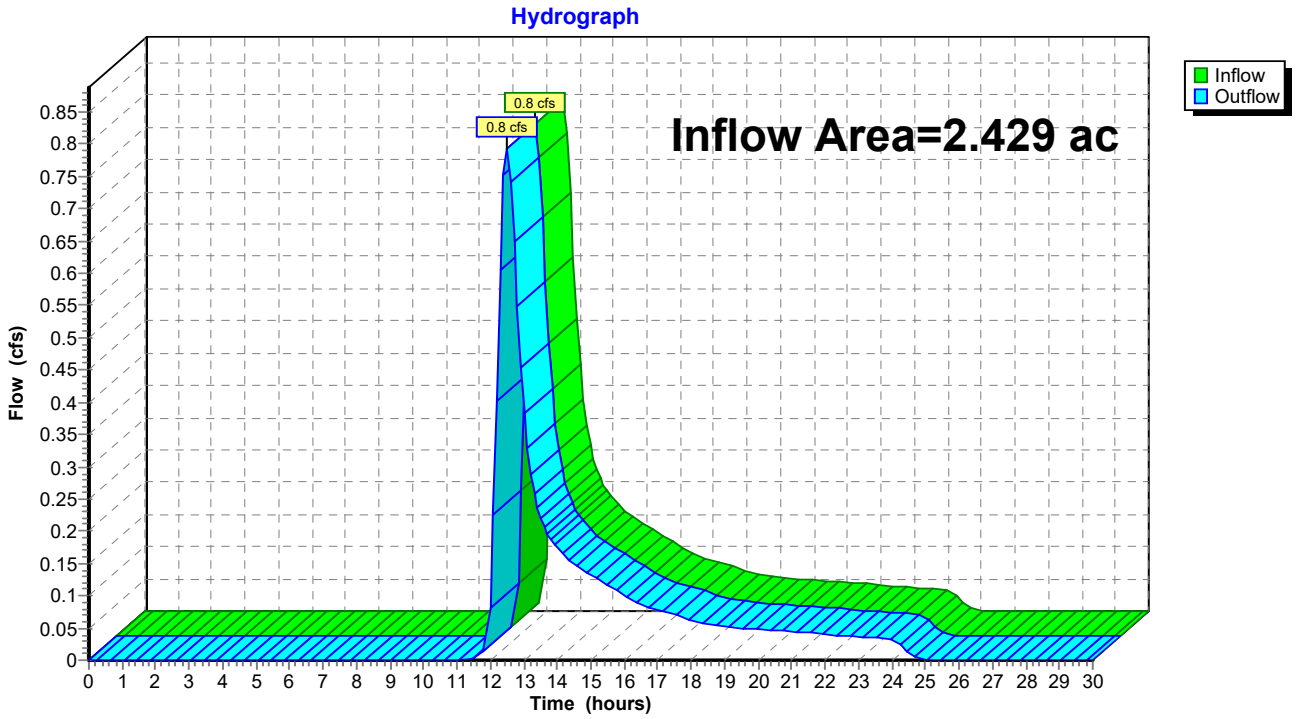


Summary for Reach POI #1: POI #1

Inflow Area = 2.429 ac, 0.69% Impervious, Inflow Depth = 0.61" for 2-Year event
Inflow = 0.8 cfs @ 12.49 hrs, Volume= 0.124 af
Outflow = 0.8 cfs @ 12.49 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #1: POI #1

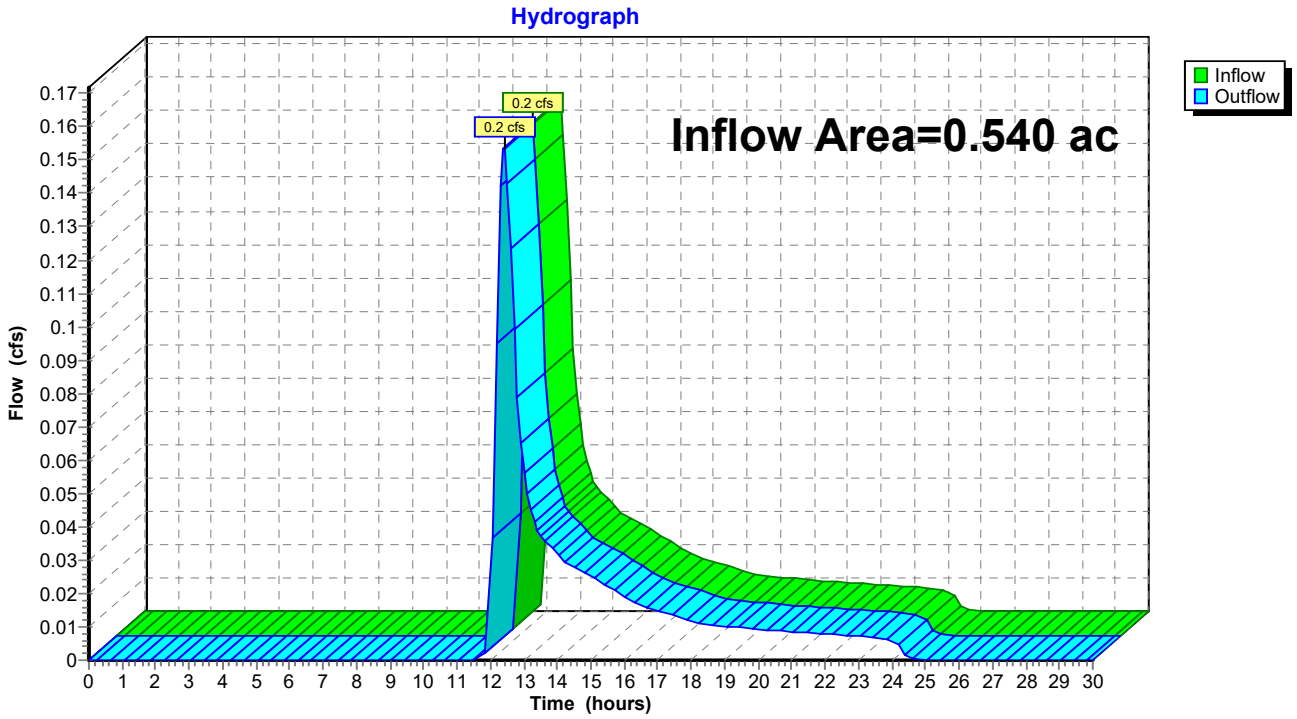


Summary for Reach POI #2: POI #2

Inflow Area = 0.540 ac, 0.00% Impervious, Inflow Depth = 0.50" for 2-Year event
Inflow = 0.2 cfs @ 12.40 hrs, Volume= 0.022 af
Outflow = 0.2 cfs @ 12.40 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #2: POI #2

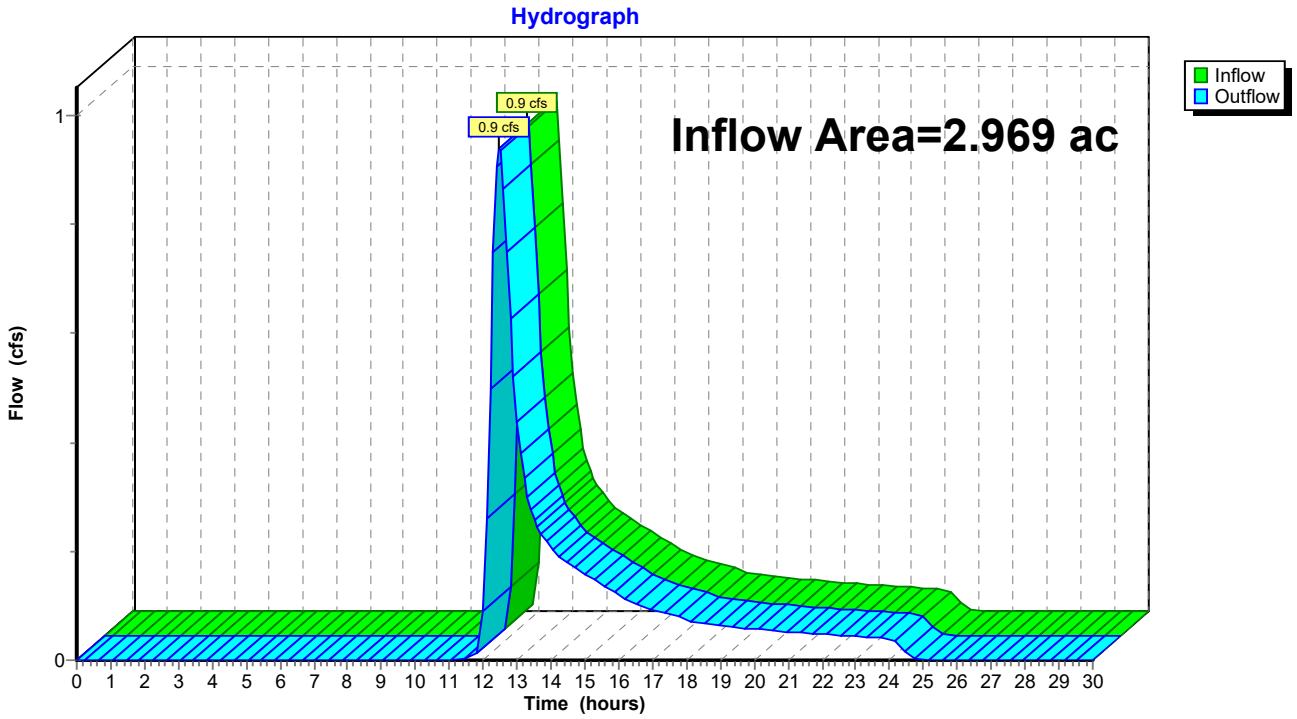


Summary for Reach POI #3: POI #3

Inflow Area = 2.969 ac, 0.56% Impervious, Inflow Depth = 0.59" for 2-Year event
Inflow = 0.9 cfs @ 12.48 hrs, Volume= 0.146 af
Outflow = 0.9 cfs @ 12.48 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #3: POI #3

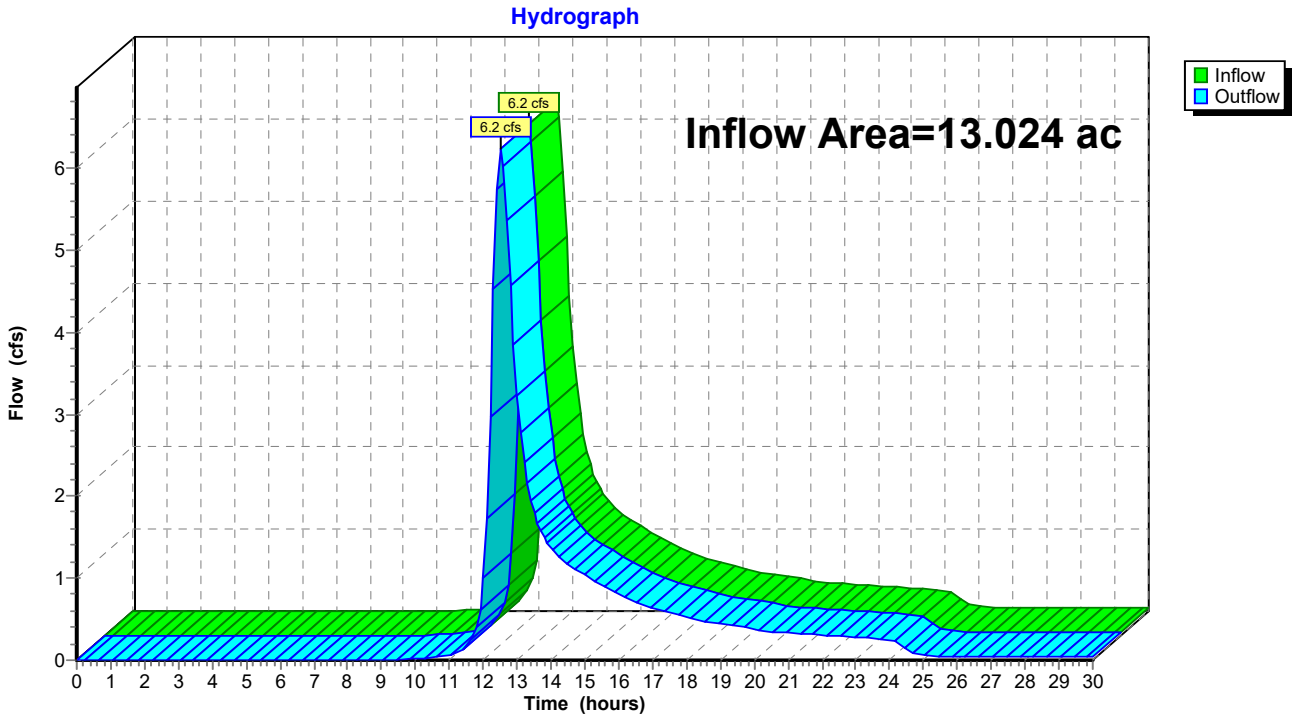


Summary for Reach POI #4: POI #4

Inflow Area = 13.024 ac, 8.34% Impervious, Inflow Depth > 0.95" for 2-Year event
Inflow = 6.2 cfs @ 12.52 hrs, Volume= 1.029 af
Outflow = 6.2 cfs @ 12.52 hrs, Volume= 1.029 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #4: POI #4



Summary for Reach R-4.1: R-4.1

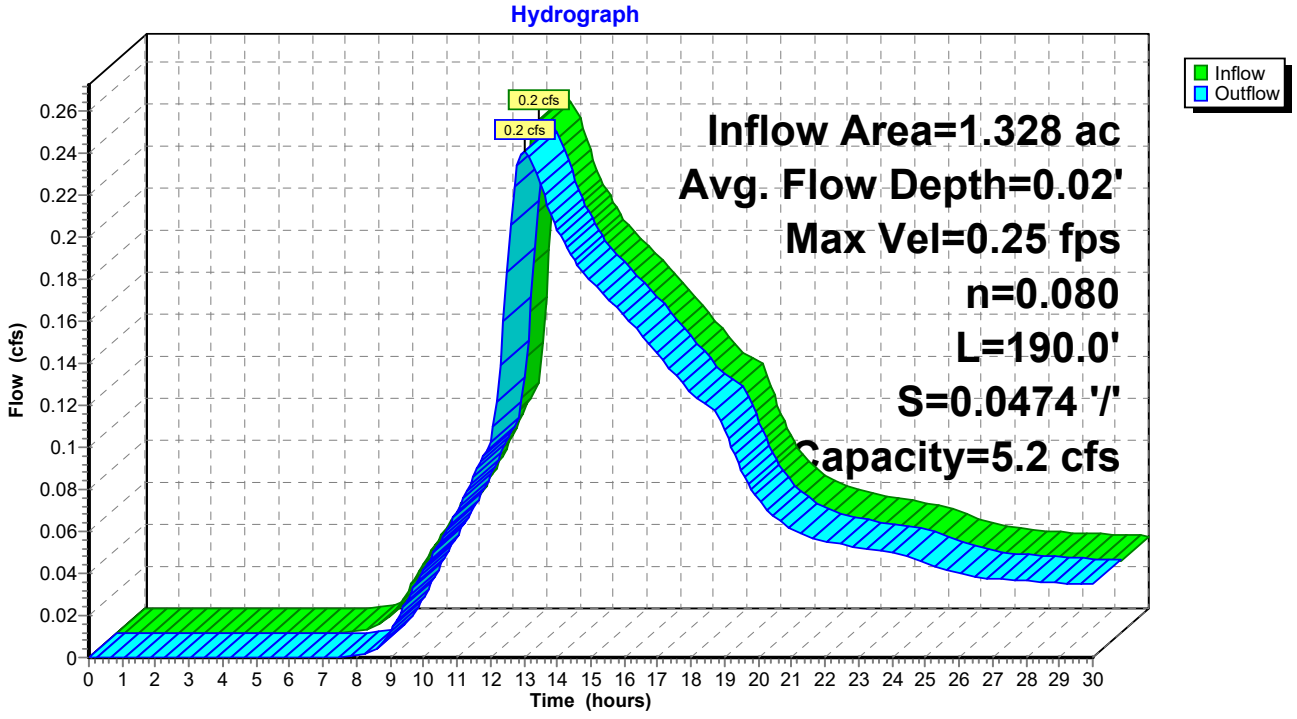
Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 1.44" for 2-Year event
Inflow = 0.2 cfs @ 12.62 hrs, Volume= 0.159 af
Outflow = 0.2 cfs @ 13.01 hrs, Volume= 0.157 af, Atten= 1%, Lag= 23.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.25 fps, Min. Travel Time= 12.4 min
Avg. Velocity = 0.14 fps, Avg. Travel Time= 23.2 min

Peak Storage= 180 cf @ 12.80 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 0.10' Flow Area= 6.0 sf, Capacity= 5.2 cfs

60.00' x 0.10' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 60.40'
Length= 190.0' Slope= 0.0474 '/'
Inlet Invert= 225.75', Outlet Invert= 216.75'

Reach R-4.1: R-4.1



Summary for Reach R4.2: R-4.2

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 1.42" for 2-Year event
Inflow = 0.2 cfs @ 13.01 hrs, Volume= 0.157 af
Outflow = 0.2 cfs @ 13.43 hrs, Volume= 0.156 af, Atten= 1%, Lag= 24.9 min

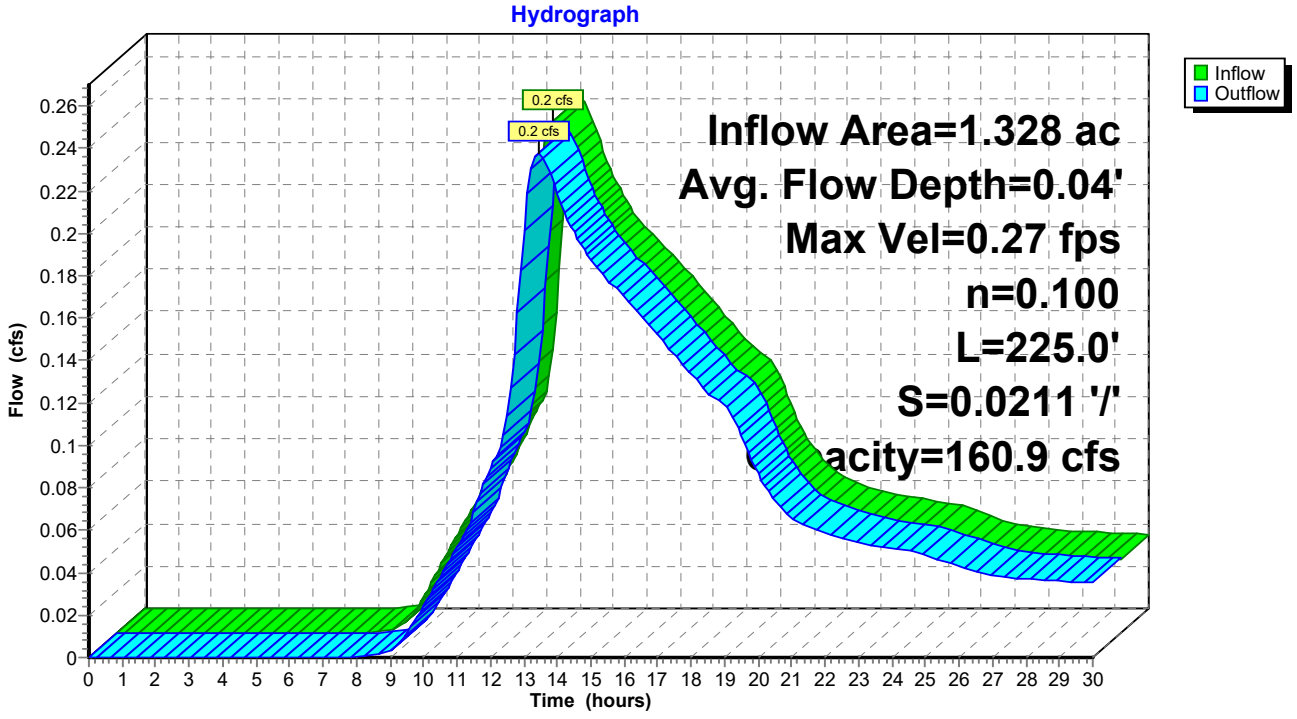
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.27 fps, Min. Travel Time= 13.9 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 20.6 min

Peak Storage= 198 cf @ 13.19 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 2.00' Flow Area= 56.0 sf, Capacity= 160.9 cfs

20.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 4.0 '/' Top Width= 36.00'
Length= 225.0' Slope= 0.0211 '/'
Inlet Invert= 216.75', Outlet Invert= 212.00'

‡

Reach R4.2: R-4.2



Summary for Pond P-4.1: P-4.1

Inflow Area = 0.500 ac, 89.17% Impervious, Inflow Depth = 2.67" for 2-Year event
Inflow = 1.3 cfs @ 12.09 hrs, Volume= 0.111 af
Outflow = 0.2 cfs @ 12.60 hrs, Volume= 0.105 af, Atten= 84%, Lag= 30.2 min
Primary = 0.2 cfs @ 12.60 hrs, Volume= 0.105 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 238.42' @ 12.60 hrs Surf.Area= 9,444 sf Storage= 2,227 cf

Plug-Flow detention time= 179.1 min calculated for 0.105 af (94% of inflow)
Center-of-Mass det. time= 149.5 min (908.0 - 758.5)

Volume	Invert	Avail.Storage	Storage Description
#1	235.10'	1,676 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 4,250 cf Overall - 59 cf Embedded = 4,191 cf x 40.0% Voids
#2	235.25'	59 cf	**4.0" Round Pipe Storage** Inside #1 L= 675.0' S= 0.0010 '/'
#3	236.90'	236 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 1,181 cf Overall x 20.0% Voids
#4	237.40'	236 cf	**Soil Filter (Prismatic)** Listed below (Recalc) 2,361 cf Overall x 10.0% Voids
#5	238.40'	1,889 cf	**Crushed Stone Top of Reservoir (Prismatic)** Listed below (Recalc) 4,722 cf Overall x 40.0% Voids
		4,096 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.10	2,361	0	0
236.90	2,361	4,250	4,250

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.90	2,361	0	0
237.40	2,361	1,181	1,181

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.40	2,361	0	0
238.40	2,361	2,361	2,361

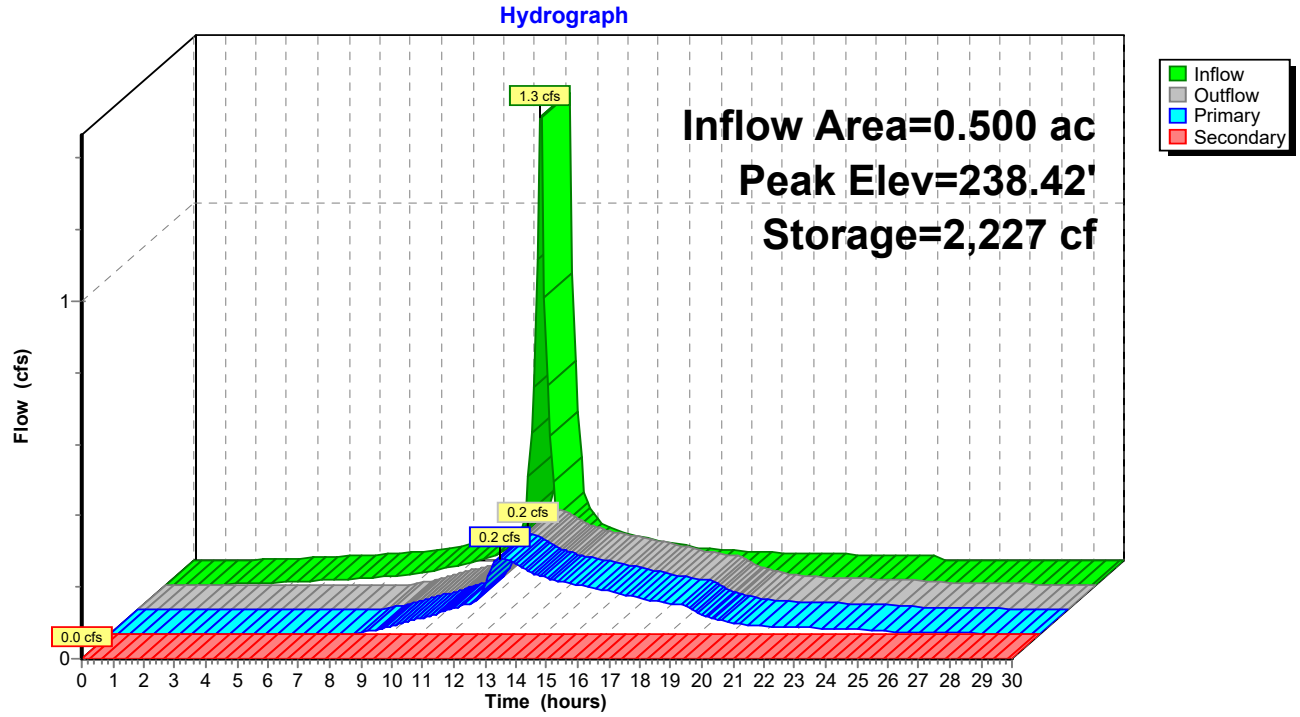
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.40	2,361	0	0
240.40	2,361	4,722	4,722

Device	Routing	Invert	Outlet Devices
#1	Secondary	240.40'	**200.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Device 4	235.10'	**0.1" Vert. Drawdown/Ball Valve** C= 0.600
#3	Device 4	235.35'	**4.0" Round 4" FD** L= 336.0' Ke= 0.600 Inlet / Outlet Invert= 235.35' / 235.00' S= 0.0010 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.09 sf
#4	Primary	230.40'	**8.0" Round 8" outlet** L= 63.0' Ke= 0.600 Inlet / Outlet Invert= 230.40' / 228.00' S= 0.0381 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.60 hrs HW=238.42' (Free Discharge)
└─**4=8" outlet** (Passes 0.2 cfs of 4.1 cfs potential flow)
  └─**2=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 8.77 fps)
  └─**3=4" FD** (Barrel Controls 0.2 cfs @ 2.41 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=235.10' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir**(Controls 0.0 cfs)

Pond P-4.1: P-4.1



Summary for Pond P-4.2: VUSF

Inflow Area = 0.828 ac, 72.26% Impervious, Inflow Depth = 1.89" for 2-Year event
Inflow = 1.7 cfs @ 12.10 hrs, Volume= 0.131 af
Outflow = 0.0 cfs @ 18.26 hrs, Volume= 0.054 af, Atten= 98%, Lag= 369.6 min
Primary = 0.0 cfs @ 18.26 hrs, Volume= 0.054 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 230.24' @ 18.26 hrs Surf.Area= 8,824 sf Storage= 4,226 cf

Plug-Flow detention time= 530.2 min calculated for 0.054 af (41% of inflow)
Center-of-Mass det. time= 409.7 min (1,220.5 - 810.8)

Volume	Invert	Avail.Storage	Storage Description
#1	229.00'	16,700 cf	**Surface Ponding (Prismatic)** Listed below (Recalc)
#2	227.50'	303 cf	**Loam & Soil Filter (Prismatic)** Listed below (Recalc) 3,029 cf Overall x 10.0% Voids
#3	227.17'	133 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 666 cf Overall x 20.0% Voids
#4	226.17'	801 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 2,019 cf Overall - 17 cf Embedded = 2,002 cf x 40.0% Voids
#5	226.42'	17 cf	**4.0" Round Pipe Storage** Inside #4 L= 200.0' S= 0.0010 '/'
		17,954 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
229.00	2,019	0	0
230.00	2,609	2,314	2,314
231.00	3,256	2,933	5,247
232.00	3,750	3,503	8,750
234.00	4,200	7,950	16,700

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.50	2,019	0	0
229.00	2,019	3,029	3,029

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.17	2,019	0	0
227.50	2,019	666	666

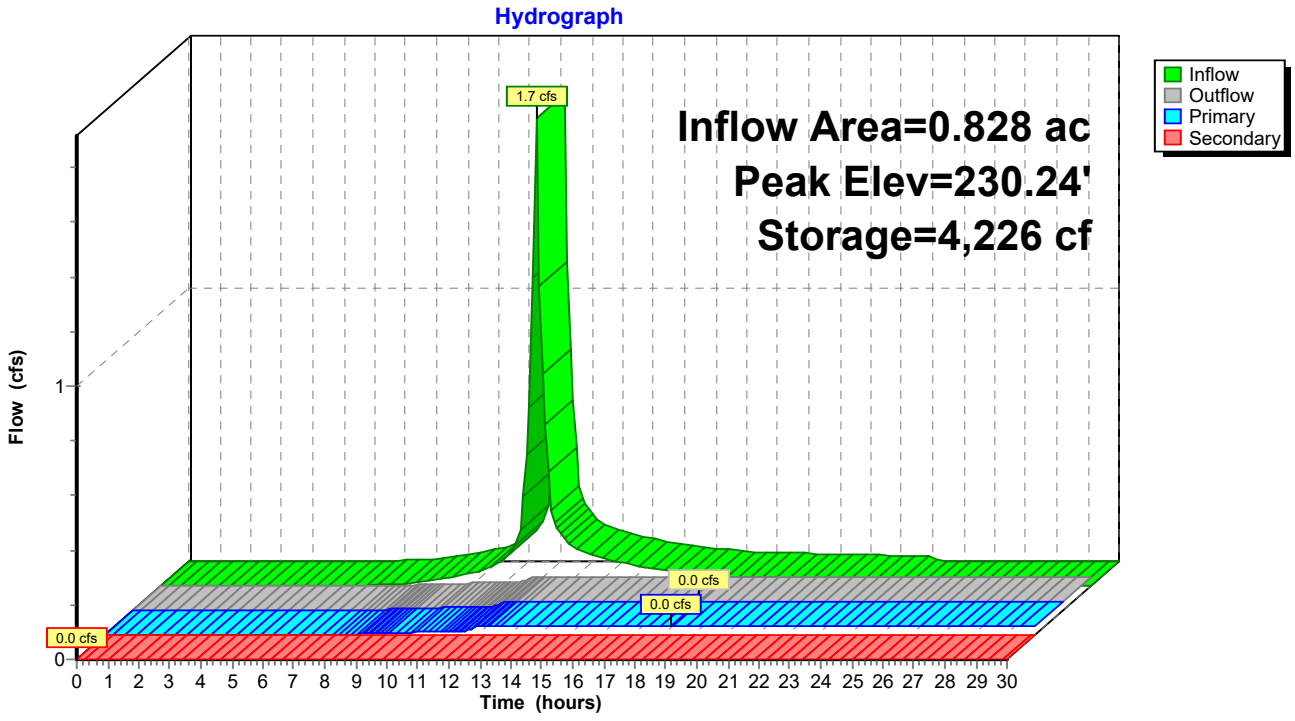
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.17	2,019	0	0
227.17	2,019	2,019	2,019

Device	Routing	Invert	Outlet Devices
#1	Secondary	231.30'	**20.0' long x 2.0' breadth Emergency Spillway** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Device 4	230.80'	**24.0" Horiz. CB Overflow** C= 0.600 Limited to weir flow at low heads
#3	Device 4	226.00'	**0.8" Vert. Drawdown/Ball Valve** C= 0.600
#4	Primary	226.00'	**15.0" Round 15" SD** L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.00' / 225.80' S= 0.0031 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 18.26 hrs HW=230.24' (Free Discharge)
└─**4=15" SD** (Passes 0.0 cfs of 10.6 cfs potential flow)
  └─**2=CB Overflow** (Controls 0.0 cfs)
  └─**3=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 9.88 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=226.17' (Free Discharge)
└─**1=Emergency Spillway** (Controls 0.0 cfs)

Pond P-4.2: VUSF



Time span=0.00-30.00 hrs, dt=0.10 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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=95,761 sf 0.00% Impervious Runoff Depth=1.40"
Flow Length=1,104' Tc=30.4 min CN=69 Runoff=1.9 cfs 0.256 af

SubcatchmentSC-1.1: SC-1.1 Runoff Area=346 sf 85.84% Impervious Runoff Depth=3.63"
Tc=6.0 min CN=95 Runoff=0.0 cfs 0.002 af

SubcatchmentSC-1.2: SC-1.2 Runoff Area=9,714 sf 4.42% Impervious Runoff Depth=1.21"
Flow Length=144' Tc=8.7 min CN=66 Runoff=0.2 cfs 0.022 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=23,523 sf 0.00% Impervious Runoff Depth=1.21"
Flow Length=208' Tc=21.4 min CN=66 Runoff=0.5 cfs 0.054 af

SubcatchmentSC-4: SC-4 Runoff Area=509,451 sf 0.35% Impervious Runoff Depth=1.82"
Flow Length=1,567' Tc=33.8 min CN=75 Runoff=13.1 cfs 1.772 af

SubcatchmentSC-4.1: SC-4.1 Runoff Area=21,794 sf 89.17% Impervious Runoff Depth=3.96"
Tc=6.0 min CN=98 Runoff=1.9 cfs 0.165 af

SubcatchmentSC-4.2: SC-4.2 Runoff Area=36,074 sf 72.26% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=90 Runoff=2.7 cfs 0.215 af

Reach POI #1: POI #1 Inflow=2.0 cfs 0.281 af
Outflow=2.0 cfs 0.281 af

Reach POI #2: POI #2 Inflow=0.5 cfs 0.054 af
Outflow=0.5 cfs 0.054 af

Reach POI #3: POI #3 Inflow=2.5 cfs 0.335 af
Outflow=2.5 cfs 0.335 af

Reach POI #4: POI #4 Inflow=13.2 cfs 2.026 af
Outflow=13.2 cfs 2.026 af

Reach R-4.1: R-4.1 Avg. Flow Depth=0.02' Max Vel=0.33 fps Inflow=0.5 cfs 0.258 af
n=0.080 L=190.0' S=0.0474 '/' Capacity=5.2 cfs Outflow=0.5 cfs 0.256 af

Reach R4.2: R-4.2 Avg. Flow Depth=0.06' Max Vel=0.34 fps Inflow=0.5 cfs 0.256 af
n=0.100 L=225.0' S=0.0211 '/' Capacity=160.9 cfs Outflow=0.4 cfs 0.254 af

Pond P-4.1: P-4.1 Peak Elev=239.57' Storage=3,309 cf Inflow=1.9 cfs 0.165 af
Primary=0.2 cfs 0.159 af Secondary=0.0 cfs 0.000 af Outflow=0.2 cfs 0.159 af

Pond P-4.2: VUSF Peak Elev=230.83' Storage=5,966 cf Inflow=2.7 cfs 0.215 af
Primary=0.2 cfs 0.099 af Secondary=0.0 cfs 0.000 af Outflow=0.2 cfs 0.099 af

Total Runoff Area = 15.993 ac Runoff Volume = 2.487 af Average Runoff Depth = 1.87"
93.11% Pervious = 14.891 ac 6.89% Impervious = 1.103 ac

Summary for Subcatchment SC-1.0: SC-1.0

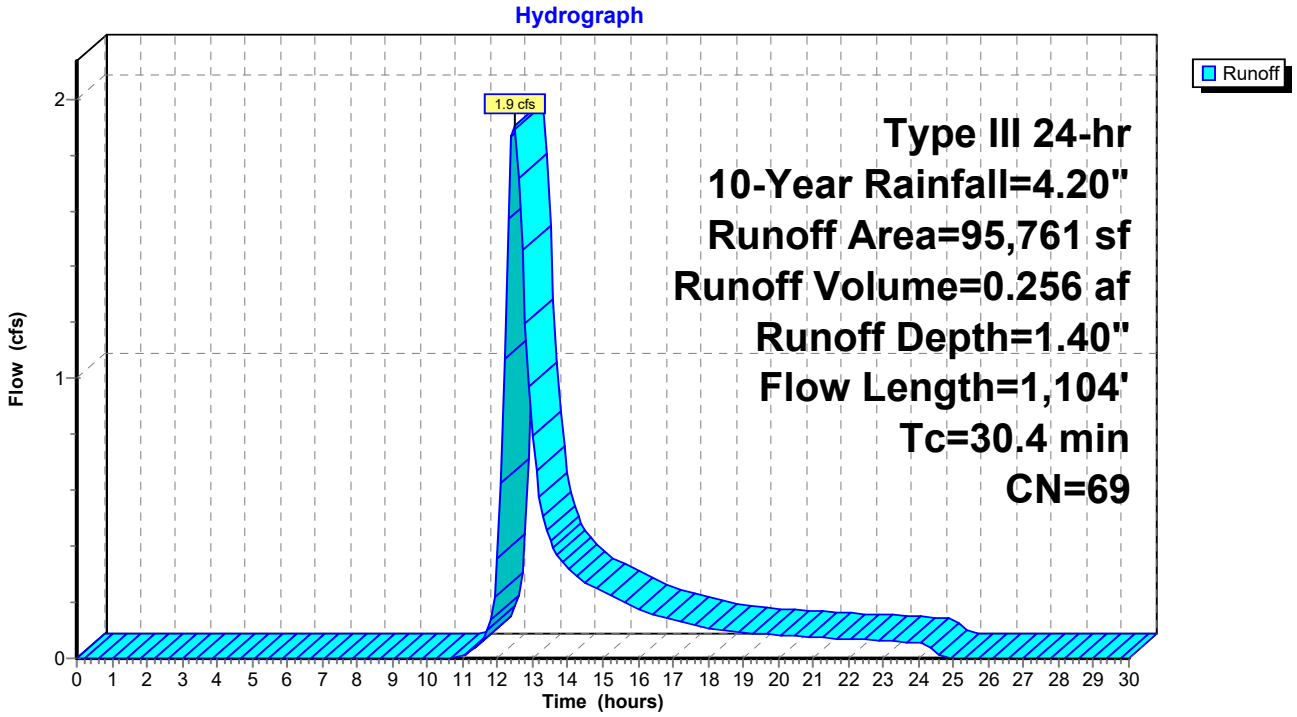
Runoff = 1.9 cfs @ 12.46 hrs, Volume= 0.256 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
	5,387	65	Brush, Good, HSG C
*	8,866	95	Impervious-Gravel
	41,534	65	Brush, Good, HSG C
	29,227	70	Woods, Good, HSG C
	10,747	65	Brush, Good, HSG C
	95,761	69	Weighted Average
	95,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	148	0.0760	11.73	117.30	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.4	1,104	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-1.1: SC-1.1

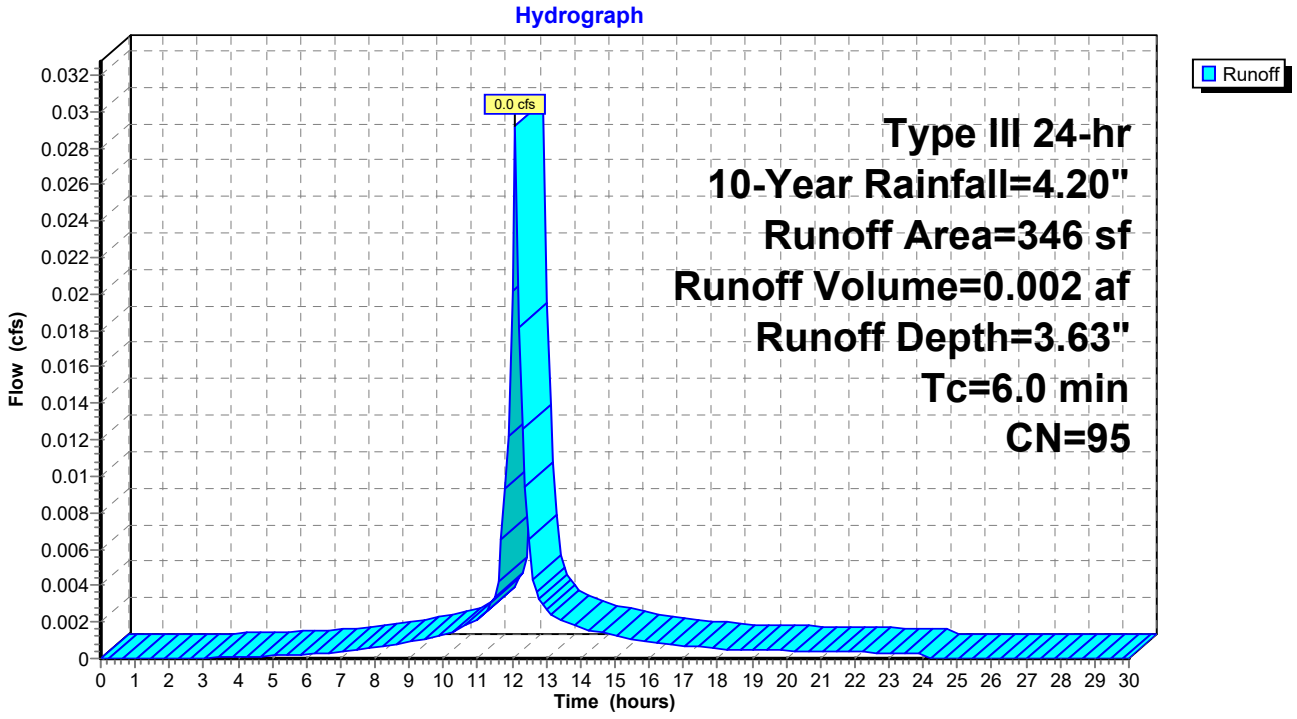
Runoff = 0.0 cfs @ 12.09 hrs, Volume= 0.002 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	297	98	Impervious - Pavement
	49	74	>75% Grass cover, Good, HSG C
	346	95	Weighted Average
	49		14.16% Pervious Area
	297		85.84% Impervious Area

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

Subcatchment SC-1.1: SC-1.1



Summary for Subcatchment SC-1.2: SC-1.2

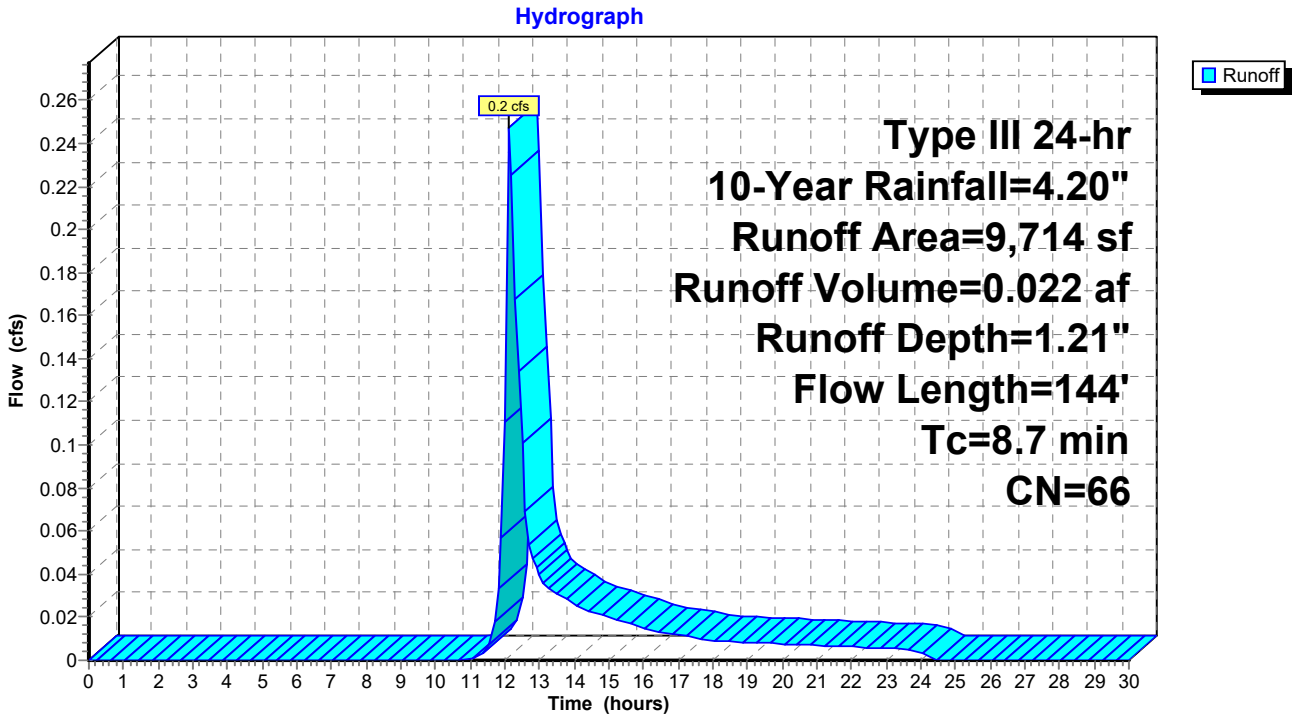
Runoff = 0.2 cfs @ 12.14 hrs, Volume= 0.022 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
	9,285	65	Brush, Good, HSG C
*	429	98	Impervious - Sidewalk
	9,714	66	Weighted Average
	9,285		95.58% Pervious Area
	429		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	98	0.0800	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.2	46	0.0100	4.26	42.55	**Channel Flow, B-C** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
8.7	144	Total			

Subcatchment SC-1.2: SC-1.2



Summary for Subcatchment SC-2.0: SC-2.0

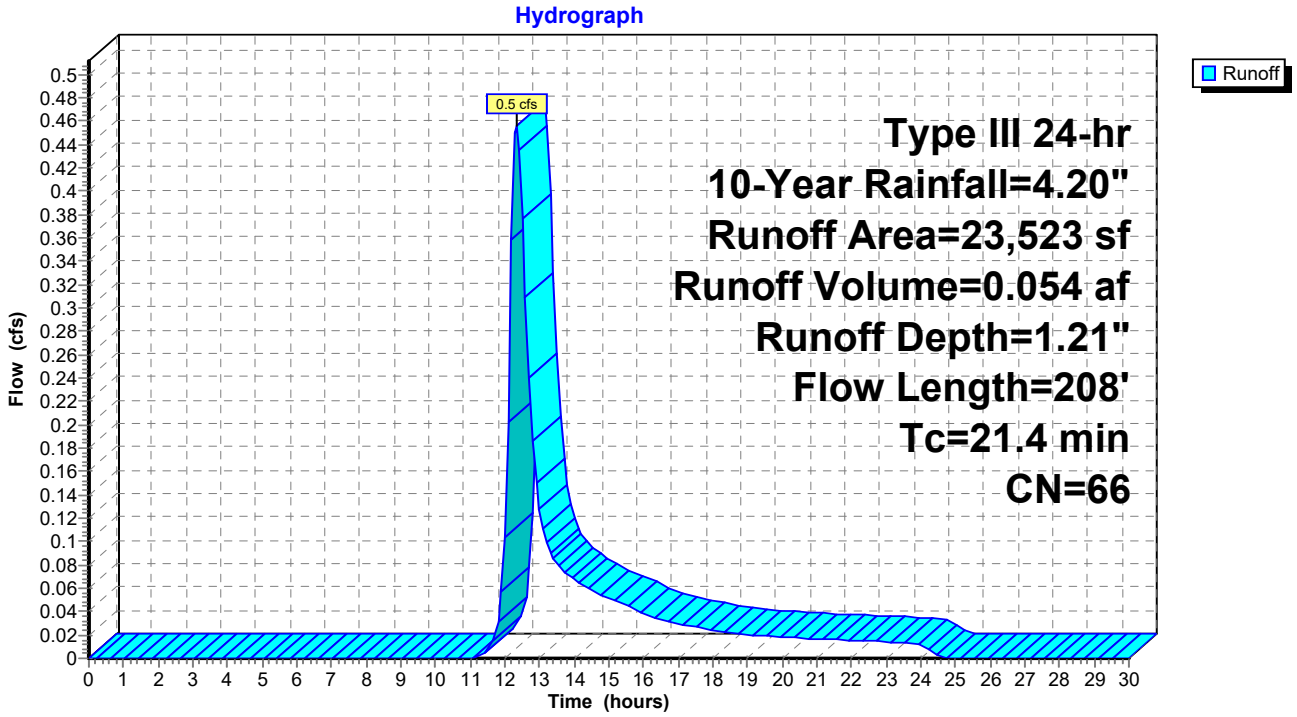
Runoff = 0.5 cfs @ 12.34 hrs, Volume= 0.054 af, Depth= 1.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

Area (sf)	CN	Description
3,981	70	Woods, Good, HSG C
14,320	65	Brush, Good, HSG C
5,222	65	Brush, Good, HSG C
23,523	66	Weighted Average
23,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0300	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
13.0	50	0.0200	0.06		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 2.90"
0.8	30	0.0170	0.65		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	36	0.1700	2.89		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.1	42	0.0480	8.03	80.34	**Channel Flow, E-F** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
21.4	208	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4: SC-4

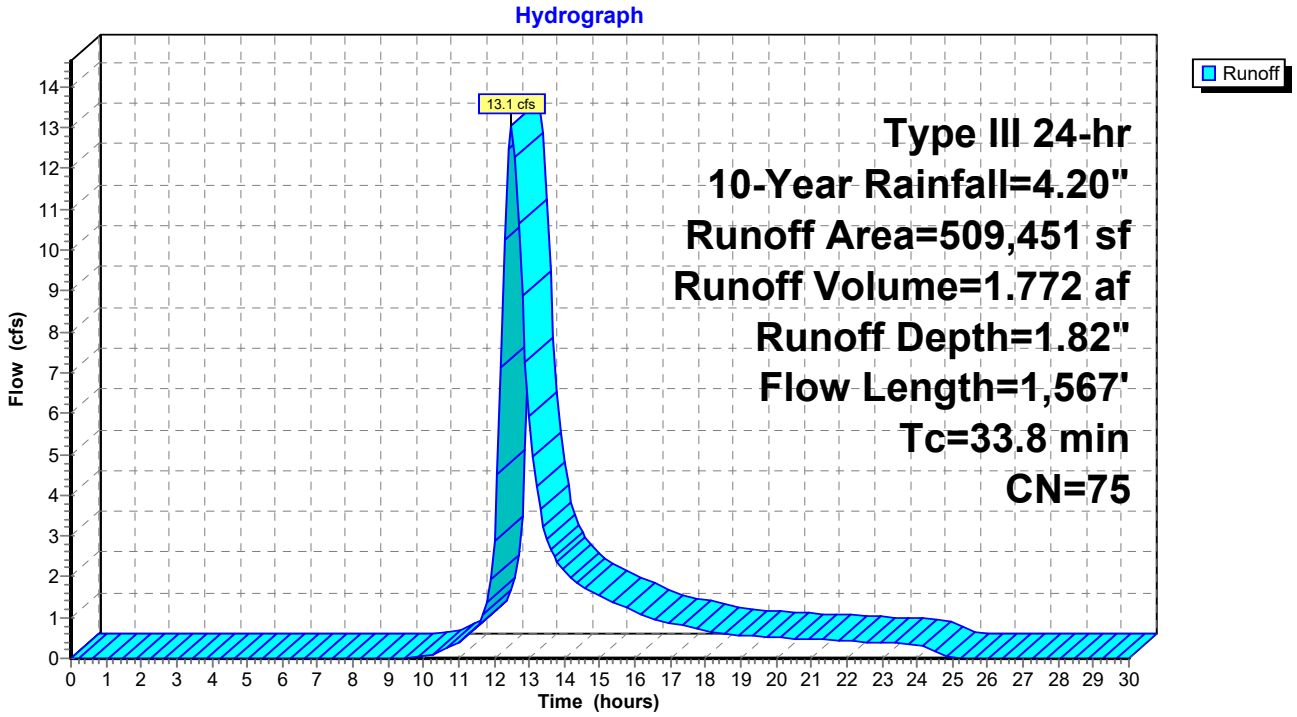
Runoff = 13.1 cfs @ 12.49 hrs, Volume= 1.772 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	3,669	72	Woods/grass comb., Good, HSG C
	159,843	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	34,705	70	Woods, Good, HSG C
	16,563	70	Woods, Good, HSG C
	10,491	74	>75% Grass cover, Good, HSG C
*	953	98	Impervious - Patio
*	850	98	Impervious - Sidewalk
	509,451	75	Weighted Average
	507,648		99.65% Pervious Area
	1,803		0.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	66	0.0380	5.79	28.97	**Channel Flow, C-D** Area= 5.0 sf Perim= 5.0' r= 1.00' n= 0.050
7.7	601	0.0349	1.31		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
33.8	1,567	Total			

Subcatchment SC-4: SC-4



Summary for Subcatchment SC-4.1: SC-4.1

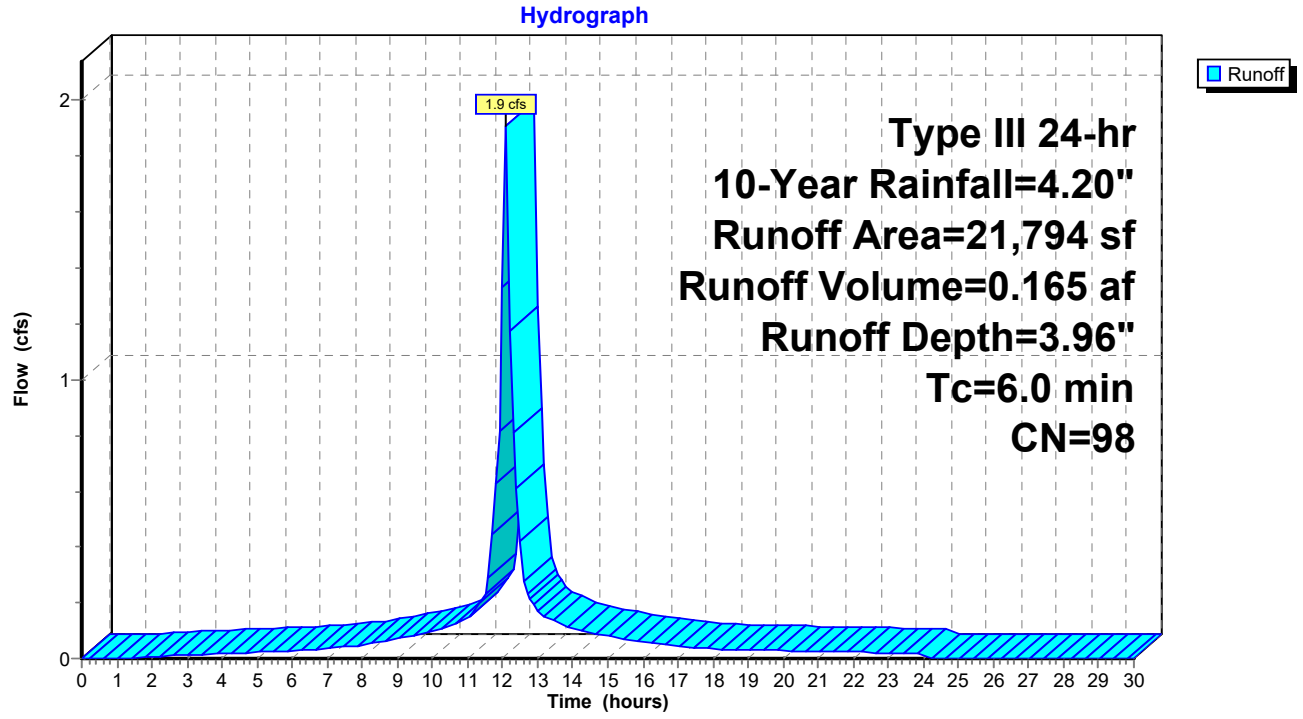
Runoff = 1.9 cfs @ 12.09 hrs, Volume= 0.165 af, Depth= 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	19,433	98	Impervious - Roof
*	2,361	96	Impervious - Drip Edge
	21,794	98	Weighted Average
	2,361		10.83% Pervious Area
	19,433		89.17% Impervious Area

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

Subcatchment SC-4.1: SC-4.1



Summary for Subcatchment SC-4.2: SC-4.2

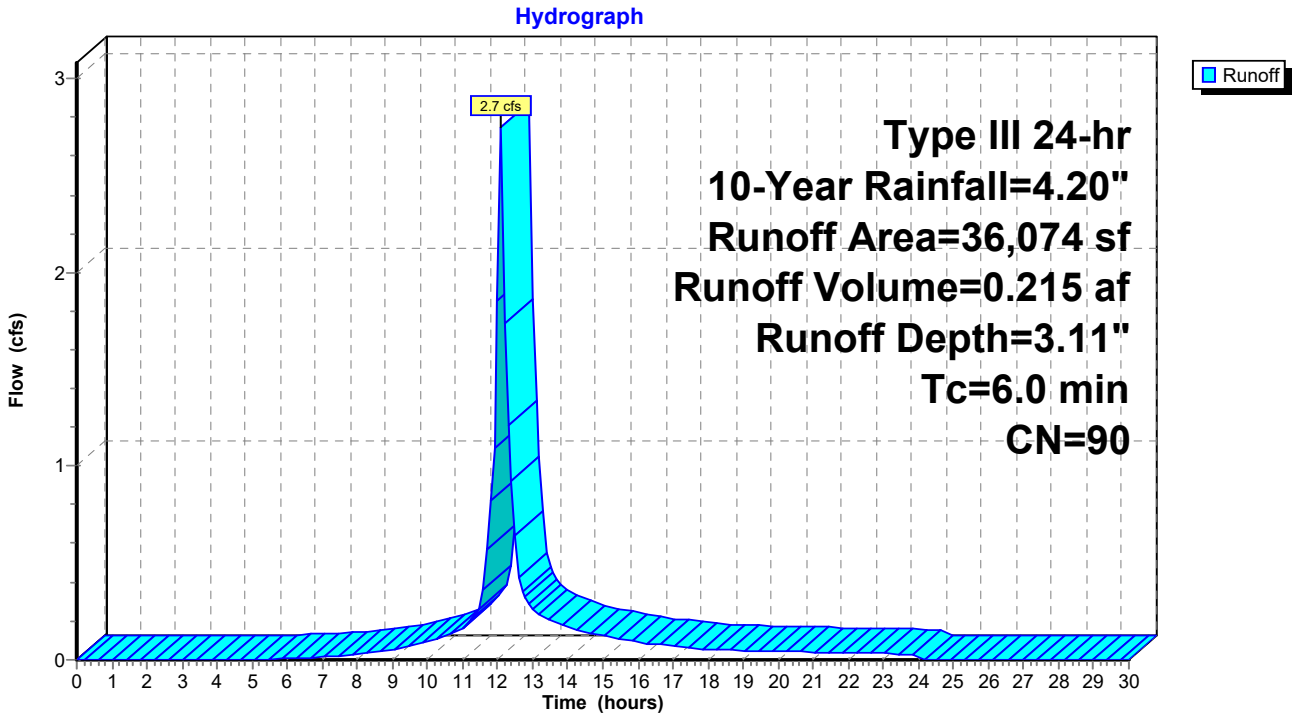
Runoff = 2.7 cfs @ 12.10 hrs, Volume= 0.215 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	23,250	98	Impervious - Pavement
*	2,769	98	Impervious - Sidewalk
*	49	98	Impervious - Transformer
*	3,576	65	Landscaping - In Site
*	6,430	74	VUSF footprint
	36,074	90	Weighted Average
	10,006		27.74% Pervious Area
	26,068		72.26% Impervious Area

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

Subcatchment SC-4.2: SC-4.2

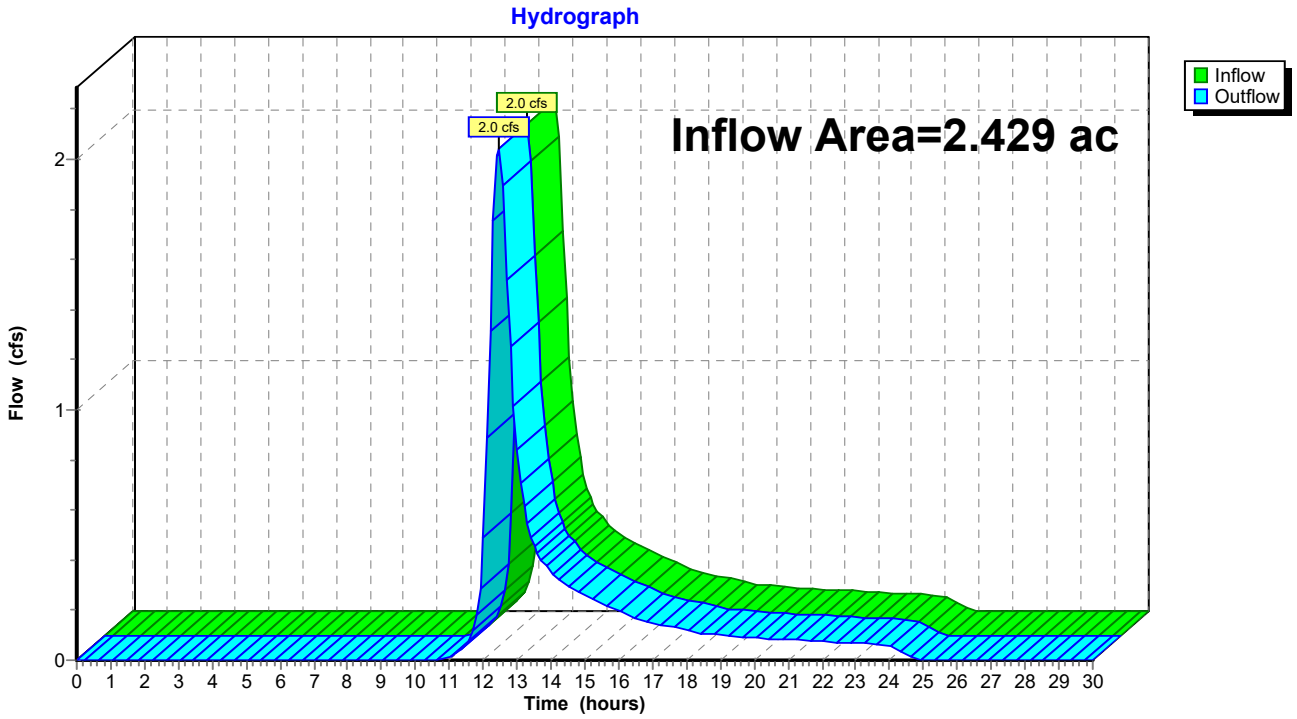


Summary for Reach POI #1: POI #1

Inflow Area = 2.429 ac, 0.69% Impervious, Inflow Depth = 1.39" for 10-Year event
Inflow = 2.0 cfs @ 12.45 hrs, Volume= 0.281 af
Outflow = 2.0 cfs @ 12.45 hrs, Volume= 0.281 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #1: POI #1

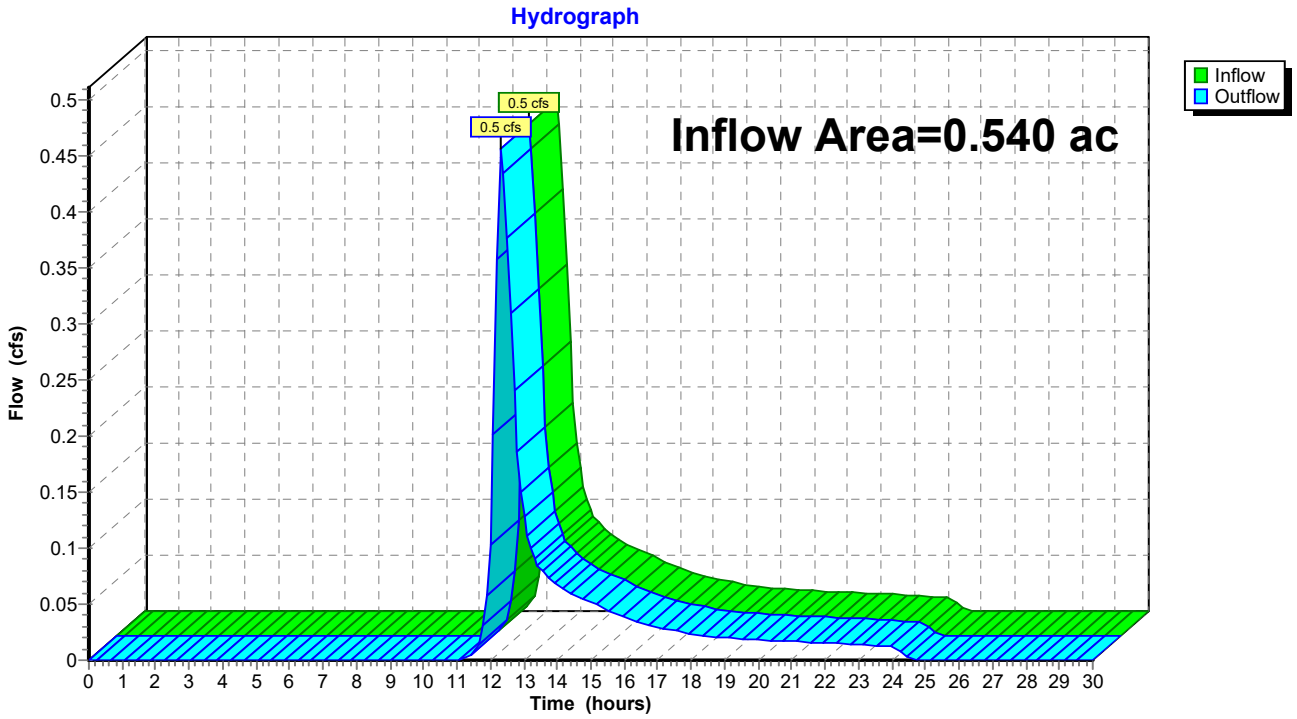


Summary for Reach POI #2: POI #2

Inflow Area = 0.540 ac, 0.00% Impervious, Inflow Depth = 1.21" for 10-Year event
Inflow = 0.5 cfs @ 12.34 hrs, Volume= 0.054 af
Outflow = 0.5 cfs @ 12.34 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #2: POI #2

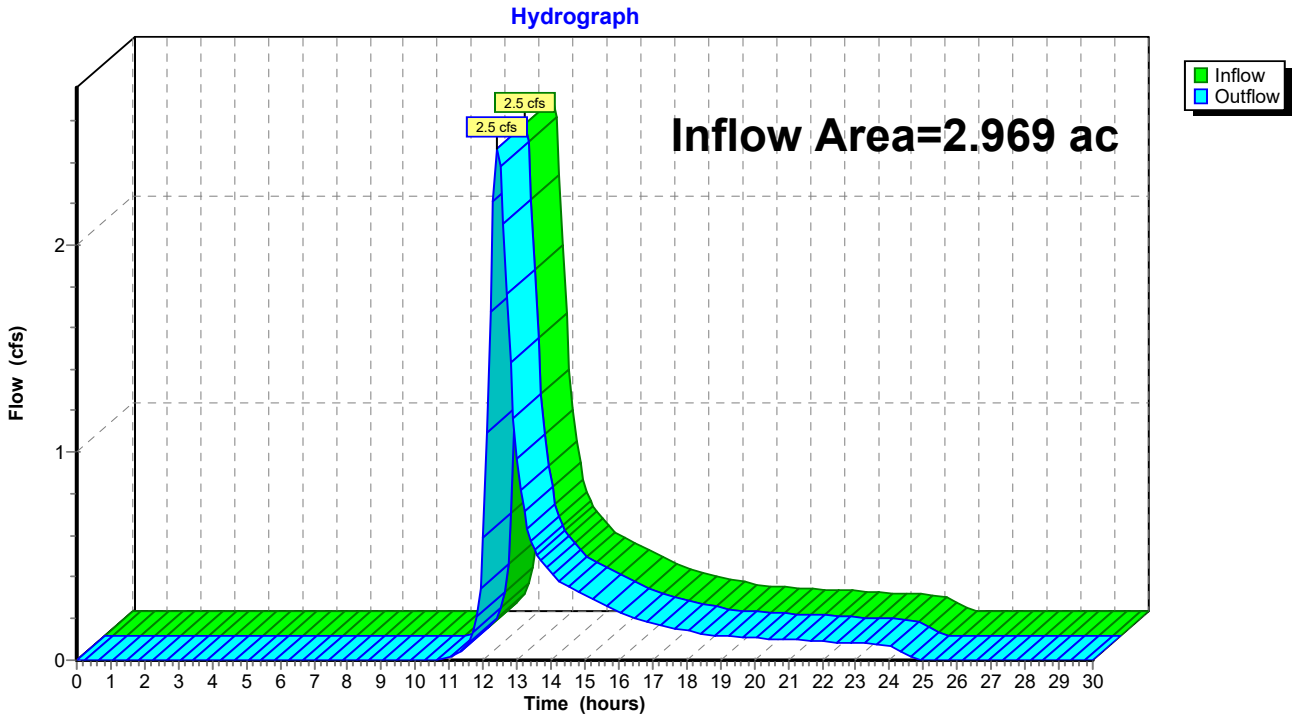


Summary for Reach POI #3: POI #3

Inflow Area = 2.969 ac, 0.56% Impervious, Inflow Depth = 1.36" for 10-Year event
Inflow = 2.5 cfs @ 12.43 hrs, Volume= 0.335 af
Outflow = 2.5 cfs @ 12.43 hrs, Volume= 0.335 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #3: POI #3

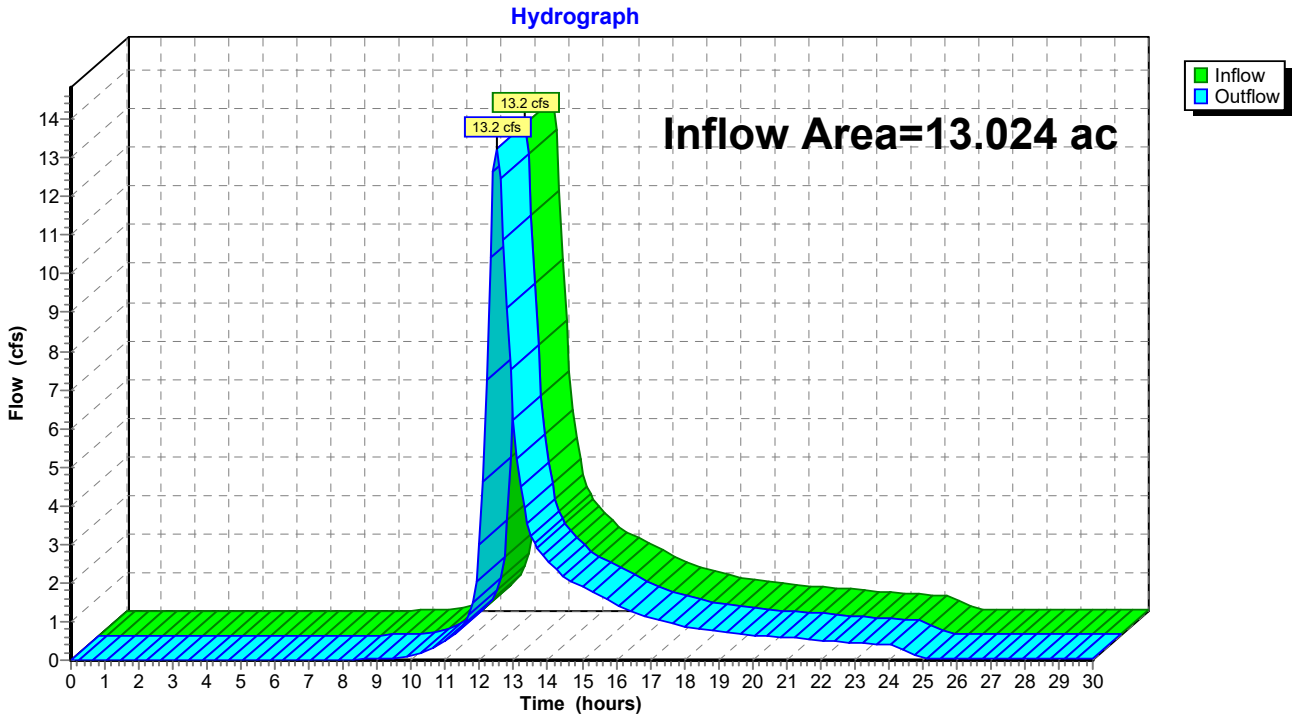


Summary for Reach POI #4: POI #4

Inflow Area = 13.024 ac, 8.34% Impervious, Inflow Depth > 1.87" for 10-Year event
Inflow = 13.2 cfs @ 12.49 hrs, Volume= 2.026 af
Outflow = 13.2 cfs @ 12.49 hrs, Volume= 2.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #4: POI #4



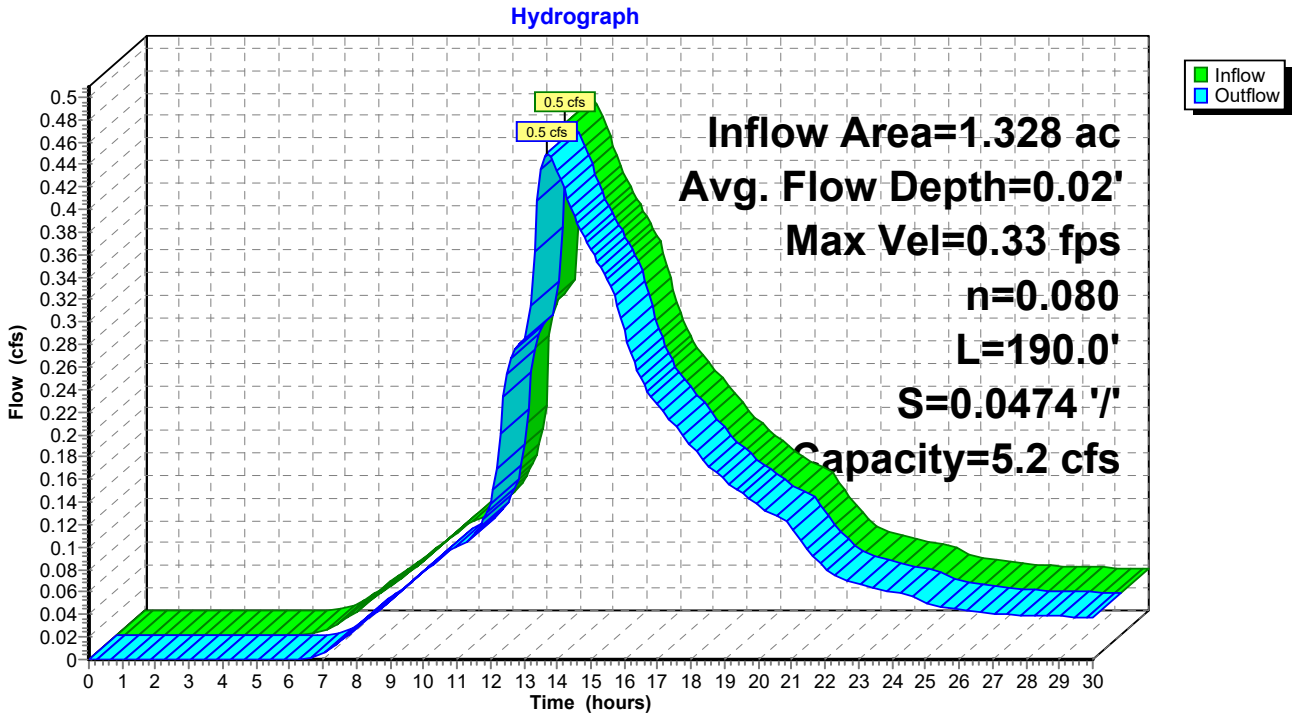
Summary for Reach R-4.1: R-4.1

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 2.33" for 10-Year event
Inflow = 0.5 cfs @ 13.39 hrs, Volume= 0.258 af
Outflow = 0.5 cfs @ 13.70 hrs, Volume= 0.256 af, Atten= 1%, Lag= 18.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 9.7 min
Avg. Velocity = 0.16 fps, Avg. Travel Time= 19.7 min

Peak Storage= 262 cf @ 13.53 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 0.10' Flow Area= 6.0 sf, Capacity= 5.2 cfs

60.00' x 0.10' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 60.40'
Length= 190.0' Slope= 0.0474 '/'
Inlet Invert= 225.75', Outlet Invert= 216.75'



Summary for Reach R4.2: R-4.2

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 2.31" for 10-Year event
Inflow = 0.5 cfs @ 13.70 hrs, Volume= 0.256 af
Outflow = 0.4 cfs @ 14.03 hrs, Volume= 0.254 af, Atten= 1%, Lag= 19.7 min

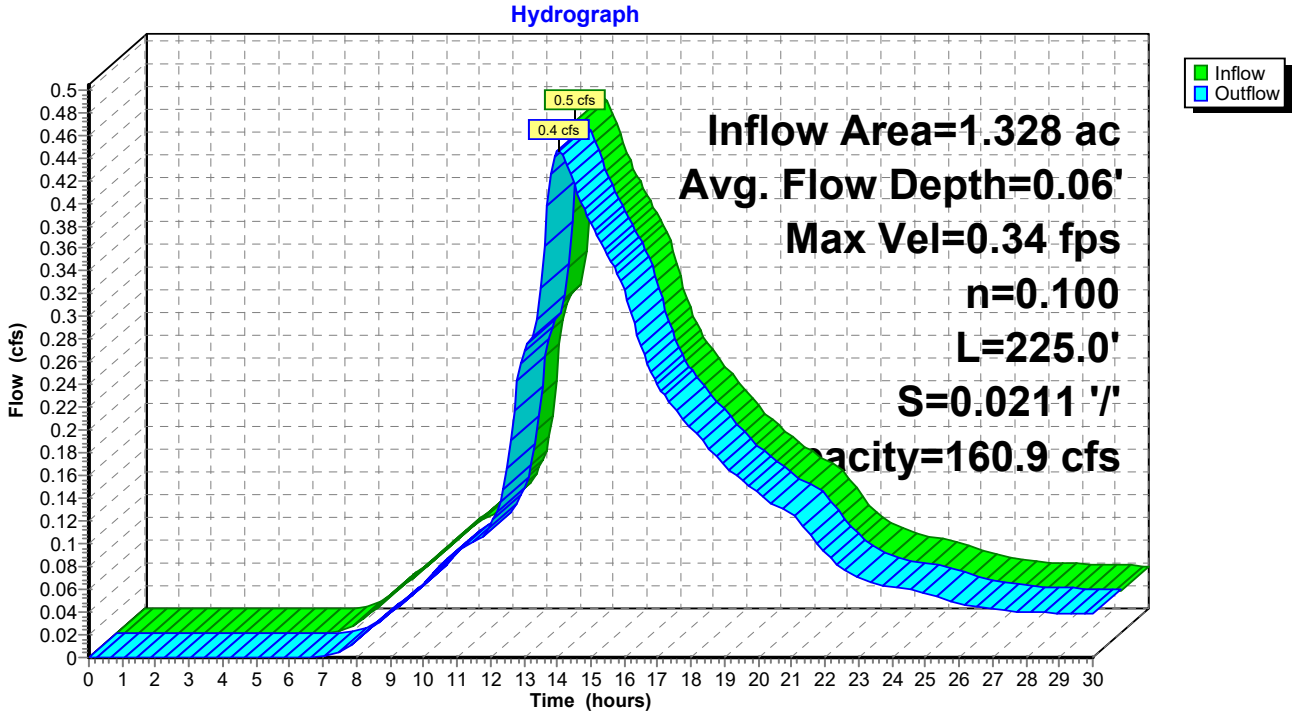
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.34 fps, Min. Travel Time= 10.9 min
Avg. Velocity = 0.20 fps, Avg. Travel Time= 18.6 min

Peak Storage= 291 cf @ 13.84 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 2.00' Flow Area= 56.0 sf, Capacity= 160.9 cfs

20.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 4.0 '/' Top Width= 36.00'
Length= 225.0' Slope= 0.0211 '/'
Inlet Invert= 216.75', Outlet Invert= 212.00'

‡

Reach R4.2: R-4.2



Summary for Pond P-4.1: P-4.1

Inflow Area = 0.500 ac, 89.17% Impervious, Inflow Depth = 3.96" for 10-Year event
Inflow = 1.9 cfs @ 12.09 hrs, Volume= 0.165 af
Outflow = 0.2 cfs @ 12.68 hrs, Volume= 0.159 af, Atten= 87%, Lag= 35.0 min
Primary = 0.2 cfs @ 12.68 hrs, Volume= 0.159 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 239.57' @ 12.68 hrs Surf.Area= 9,444 sf Storage= 3,309 cf

Plug-Flow detention time= 185.2 min calculated for 0.159 af (96% of inflow)
Center-of-Mass det. time= 162.7 min (913.7 - 751.1)

Volume	Invert	Avail.Storage	Storage Description
#1	235.10'	1,676 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 4,250 cf Overall - 59 cf Embedded = 4,191 cf x 40.0% Voids
#2	235.25'	59 cf	**4.0" Round Pipe Storage** Inside #1 L= 675.0' S= 0.0010 '/'
#3	236.90'	236 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 1,181 cf Overall x 20.0% Voids
#4	237.40'	236 cf	**Soil Filter (Prismatic)** Listed below (Recalc) 2,361 cf Overall x 10.0% Voids
#5	238.40'	1,889 cf	**Crushed Stone Top of Reservoir (Prismatic)** Listed below (Recalc) 4,722 cf Overall x 40.0% Voids
		4,096 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.10	2,361	0	0
236.90	2,361	4,250	4,250

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.90	2,361	0	0
237.40	2,361	1,181	1,181

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.40	2,361	0	0
238.40	2,361	2,361	2,361

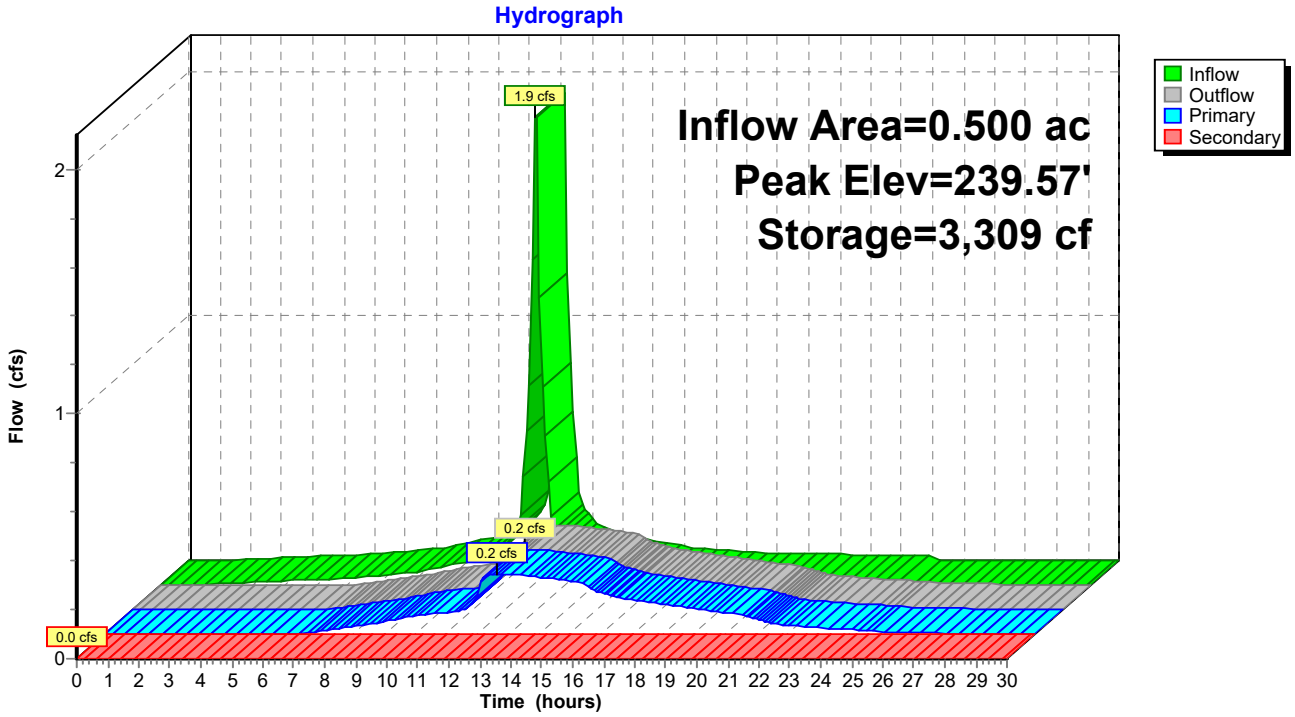
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.40	2,361	0	0
240.40	2,361	4,722	4,722

Device	Routing	Invert	Outlet Devices
#1	Secondary	240.40'	**200.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Device 4	235.10'	**0.1" Vert. Drawdown/Ball Valve** C= 0.600
#3	Device 4	235.35'	**4.0" Round 4" FD** L= 336.0' Ke= 0.600 Inlet / Outlet Invert= 235.35' / 235.00' S= 0.0010 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.09 sf
#4	Primary	230.40'	**8.0" Round 8" outlet** L= 63.0' Ke= 0.600 Inlet / Outlet Invert= 230.40' / 228.00' S= 0.0381 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.2 cfs @ 12.68 hrs HW=239.57' (Free Discharge)
└─**4=8" outlet** (Passes 0.2 cfs of 4.4 cfs potential flow)
  └─**2=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 10.17 fps)
  └─**3=4" FD** (Barrel Controls 0.2 cfs @ 2.82 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=235.10' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir**(Controls 0.0 cfs)

Pond P-4.1: P-4.1



Summary for Pond P-4.2: VUSF

Inflow Area = 0.828 ac, 72.26% Impervious, Inflow Depth = 3.11" for 10-Year event
Inflow = 2.7 cfs @ 12.10 hrs, Volume= 0.215 af
Outflow = 0.2 cfs @ 13.42 hrs, Volume= 0.099 af, Atten= 92%, Lag= 79.1 min
Primary = 0.2 cfs @ 13.42 hrs, Volume= 0.099 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 230.83' @ 13.42 hrs Surf.Area= 9,205 sf Storage= 5,966 cf

Plug-Flow detention time= 401.5 min calculated for 0.099 af (46% of inflow)
Center-of-Mass det. time= 284.4 min (1,081.2 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	229.00'	16,700 cf	**Surface Ponding (Prismatic)** Listed below (Recalc)
#2	227.50'	303 cf	**Loam & Soil Filter (Prismatic)** Listed below (Recalc) 3,029 cf Overall x 10.0% Voids
#3	227.17'	133 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 666 cf Overall x 20.0% Voids
#4	226.17'	801 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 2,019 cf Overall - 17 cf Embedded = 2,002 cf x 40.0% Voids
#5	226.42'	17 cf	**4.0" Round Pipe Storage** Inside #4 L= 200.0' S= 0.0010 '/'
		17,954 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
229.00	2,019	0	0
230.00	2,609	2,314	2,314
231.00	3,256	2,933	5,247
232.00	3,750	3,503	8,750
234.00	4,200	7,950	16,700

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.50	2,019	0	0
229.00	2,019	3,029	3,029

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.17	2,019	0	0
227.50	2,019	666	666

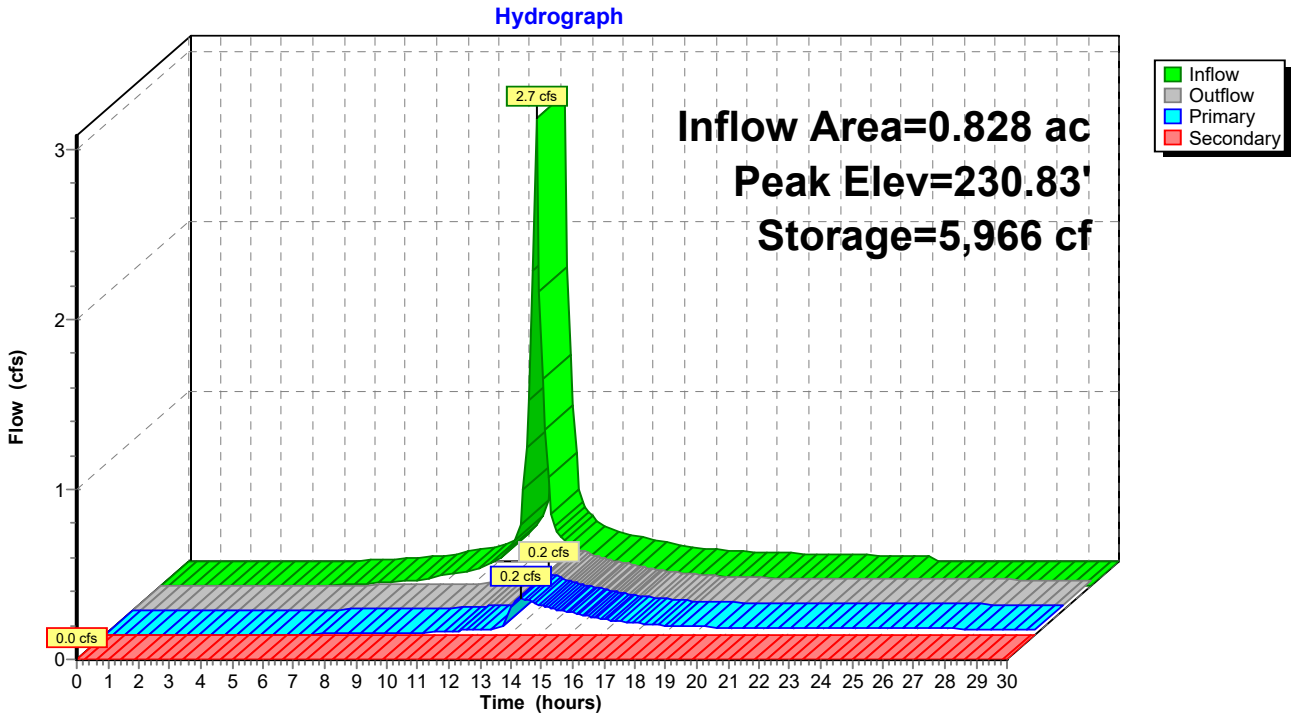
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.17	2,019	0	0
227.17	2,019	2,019	2,019

Device	Routing	Invert	Outlet Devices
#1	Secondary	231.30'	**20.0' long x 2.0' breadth Emergency Spillway** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Device 4	230.80'	**24.0" Horiz. CB Overflow** C= 0.600 Limited to weir flow at low heads
#3	Device 4	226.00'	**0.8" Vert. Drawdown/Ball Valve** C= 0.600
#4	Primary	226.00'	**15.0" Round 15" SD** L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.00' / 225.80' S= 0.0031 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=0.2 cfs @ 13.42 hrs HW=230.83' (Free Discharge)
└**4=15" SD** (Passes 0.2 cfs of 11.5 cfs potential flow)
└**2=CB Overflow** (Weir Controls 0.1 cfs @ 0.59 fps)
└**3=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 10.55 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=226.17' (Free Discharge)
└**1=Emergency Spillway** (Controls 0.0 cfs)

Pond P-4.2: VUSF



Time span=0.00-30.00 hrs, dt=0.10 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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=95,761 sf 0.00% Impervious Runoff Depth=2.10"
Flow Length=1,104' Tc=30.4 min CN=69 Runoff=3.0 cfs 0.385 af

SubcatchmentSC-1.1: SC-1.1 Runoff Area=346 sf 85.84% Impervious Runoff Depth=4.62"
Tc=6.0 min CN=95 Runoff=0.0 cfs 0.003 af

SubcatchmentSC-1.2: SC-1.2 Runoff Area=9,714 sf 4.42% Impervious Runoff Depth=1.87"
Flow Length=144' Tc=8.7 min CN=66 Runoff=0.4 cfs 0.035 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=23,523 sf 0.00% Impervious Runoff Depth=1.87"
Flow Length=208' Tc=21.4 min CN=66 Runoff=0.7 cfs 0.084 af

SubcatchmentSC-4: SC-4 Runoff Area=509,451 sf 0.35% Impervious Runoff Depth=2.61"
Flow Length=1,567' Tc=33.8 min CN=75 Runoff=19.0 cfs 2.546 af

SubcatchmentSC-4.1: SC-4.1 Runoff Area=21,794 sf 89.17% Impervious Runoff Depth=4.96"
Tc=6.0 min CN=98 Runoff=2.4 cfs 0.207 af

SubcatchmentSC-4.2: SC-4.2 Runoff Area=36,074 sf 72.26% Impervious Runoff Depth=4.07"
Tc=6.0 min CN=90 Runoff=3.5 cfs 0.281 af

Reach POI #1: POI #1 Inflow=3.2 cfs 0.423 af
Outflow=3.2 cfs 0.423 af

Reach POI #2: POI #2 Inflow=0.7 cfs 0.084 af
Outflow=0.7 cfs 0.084 af

Reach POI #3: POI #3 Inflow=3.8 cfs 0.507 af
Outflow=3.8 cfs 0.507 af

Reach POI #4: POI #4 Inflow=19.2 cfs 2.908 af
Outflow=19.2 cfs 2.908 af

Reach R-4.1: R-4.1 Avg. Flow Depth=0.05' Max Vel=0.52 fps Inflow=1.5 cfs 0.365 af
n=0.080 L=190.0' S=0.0474 '/' Capacity=5.2 cfs Outflow=1.4 cfs 0.363 af

Reach R4.2: R-4.2 Avg. Flow Depth=0.12' Max Vel=0.52 fps Inflow=1.4 cfs 0.363 af
n=0.100 L=225.0' S=0.0211 '/' Capacity=160.9 cfs Outflow=1.3 cfs 0.361 af

Pond P-4.1: P-4.1 Peak Elev=240.40' Storage=4,096 cf Inflow=2.4 cfs 0.207 af
Primary=0.3 cfs 0.198 af Secondary=0.2 cfs 0.003 af Outflow=0.5 cfs 0.201 af

Pond P-4.2: VUSF Peak Elev=230.95' Storage=6,332 cf Inflow=3.5 cfs 0.281 af
Primary=1.2 cfs 0.164 af Secondary=0.0 cfs 0.000 af Outflow=1.2 cfs 0.164 af

Total Runoff Area = 15.993 ac Runoff Volume = 3.541 af Average Runoff Depth = 2.66"
93.11% Pervious = 14.891 ac 6.89% Impervious = 1.103 ac

Summary for Subcatchment SC-1.0: SC-1.0

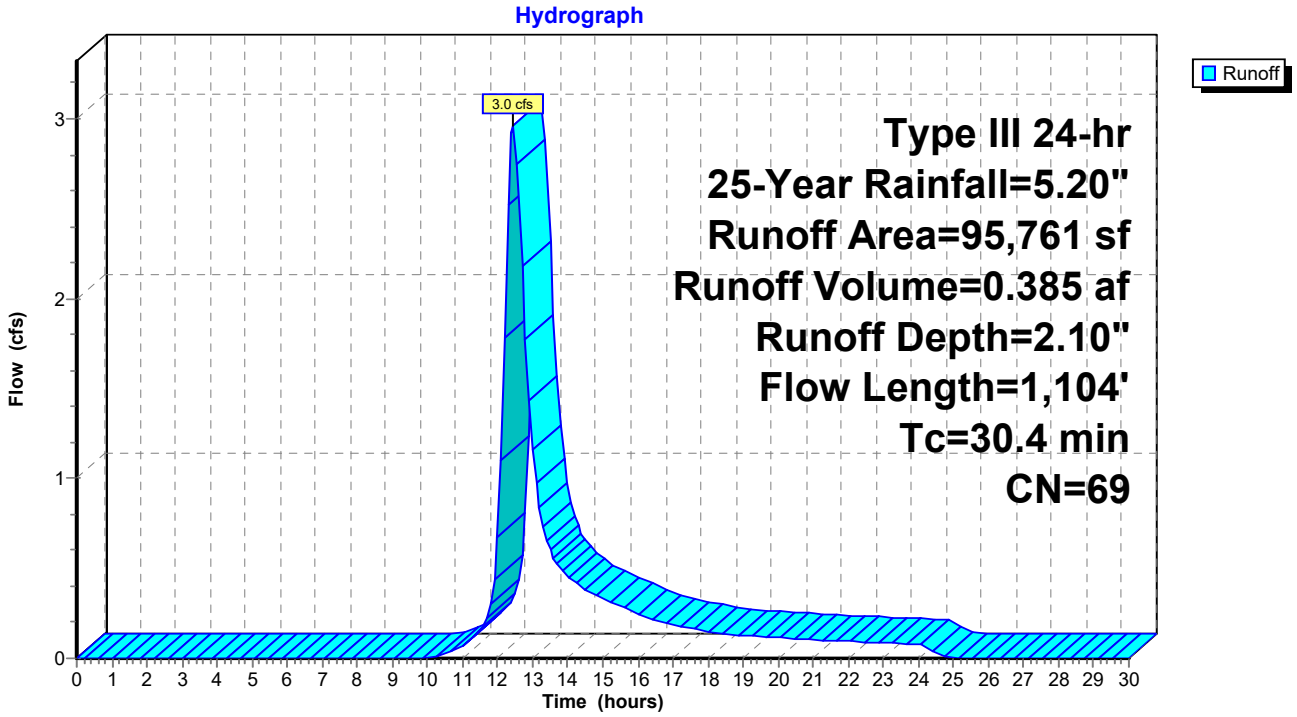
Runoff = 3.0 cfs @ 12.45 hrs, Volume= 0.385 af, Depth= 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
	5,387	65	Brush, Good, HSG C
*	8,866	95	Impervious-Gravel
	41,534	65	Brush, Good, HSG C
	29,227	70	Woods, Good, HSG C
	10,747	65	Brush, Good, HSG C
	95,761	69	Weighted Average
	95,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	148	0.0760	11.73	117.30	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.4	1,104	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-1.1: SC-1.1

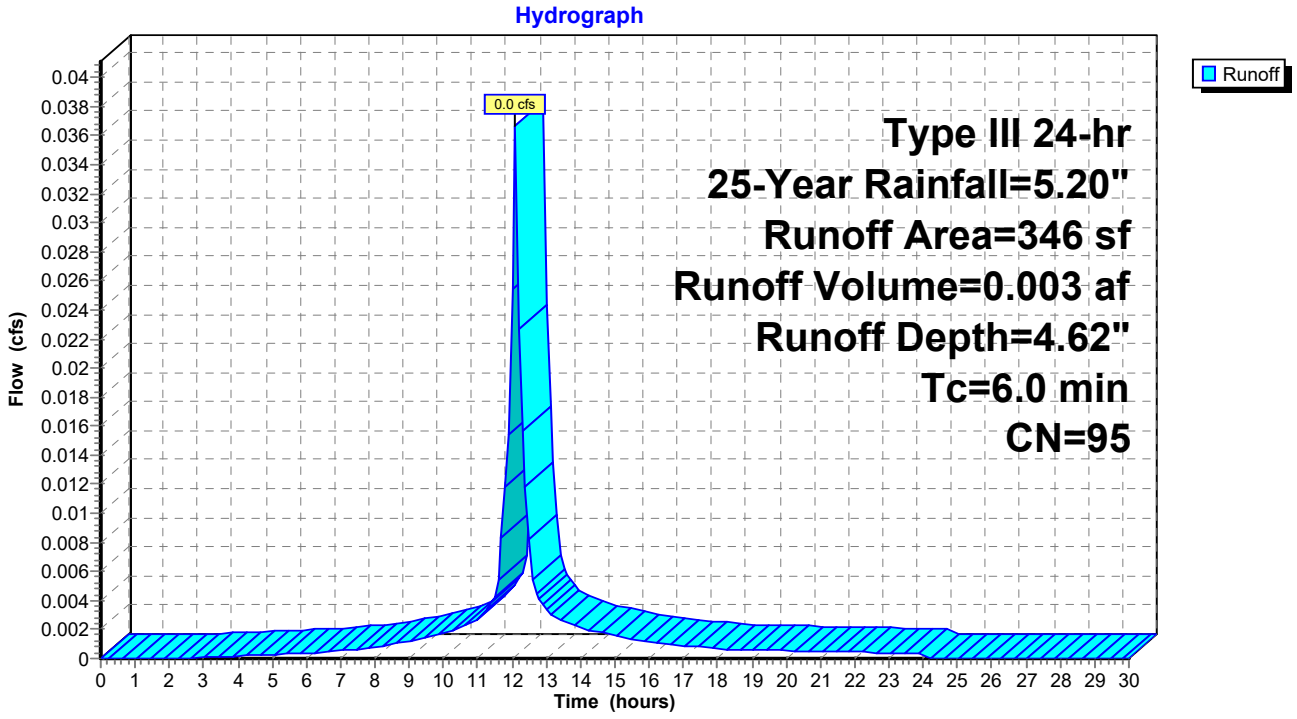
Runoff = 0.0 cfs @ 12.09 hrs, Volume= 0.003 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	297	98	Impervious - Pavement
	49	74	>75% Grass cover, Good, HSG C
	346	95	Weighted Average
	49		14.16% Pervious Area
	297		85.84% Impervious Area

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

Subcatchment SC-1.1: SC-1.1



Summary for Subcatchment SC-1.2: SC-1.2

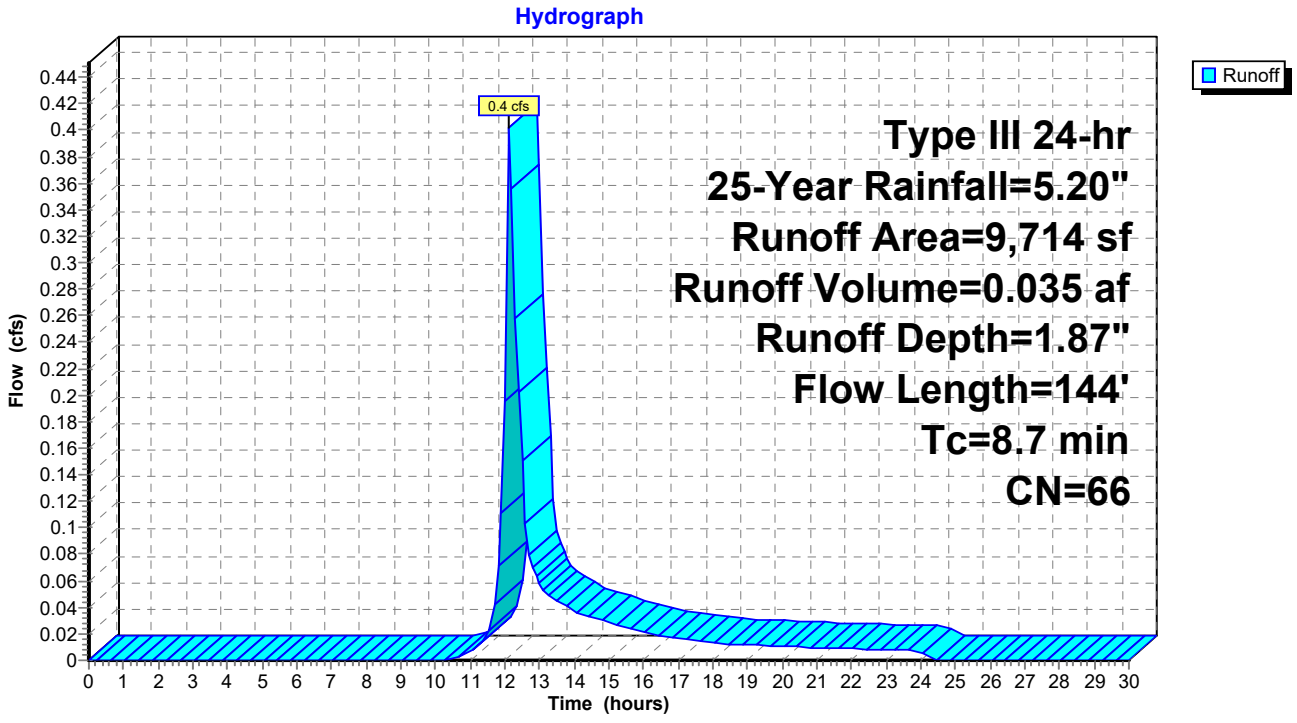
Runoff = 0.4 cfs @ 12.14 hrs, Volume= 0.035 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
	9,285	65	Brush, Good, HSG C
*	429	98	Impervious - Sidewalk
	9,714	66	Weighted Average
	9,285		95.58% Pervious Area
	429		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	98	0.0800	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.2	46	0.0100	4.26	42.55	**Channel Flow, B-C** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
8.7	144	Total			

Subcatchment SC-1.2: SC-1.2



Summary for Subcatchment SC-2.0: SC-2.0

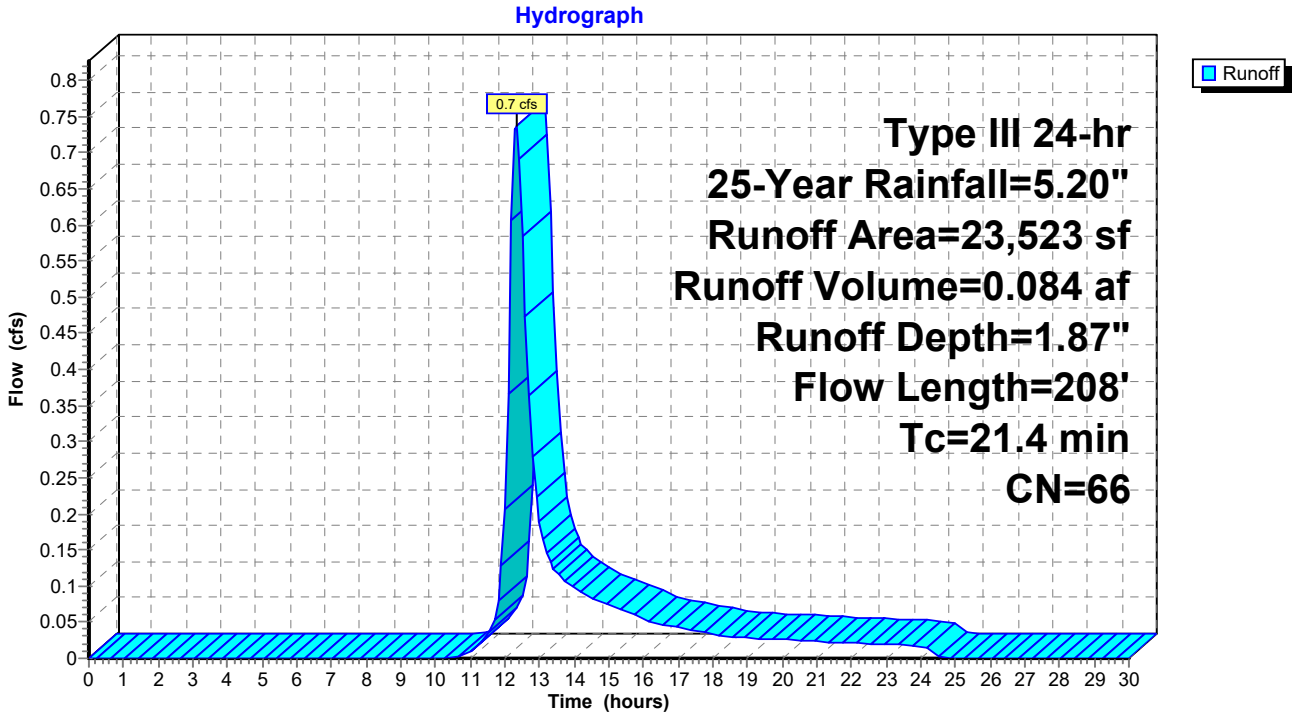
Runoff = 0.7 cfs @ 12.33 hrs, Volume= 0.084 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

Area (sf)	CN	Description
3,981	70	Woods, Good, HSG C
14,320	65	Brush, Good, HSG C
5,222	65	Brush, Good, HSG C
23,523	66	Weighted Average
23,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0300	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
13.0	50	0.0200	0.06		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 2.90"
0.8	30	0.0170	0.65		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	36	0.1700	2.89		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.1	42	0.0480	8.03	80.34	**Channel Flow, E-F** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
21.4	208	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4: SC-4

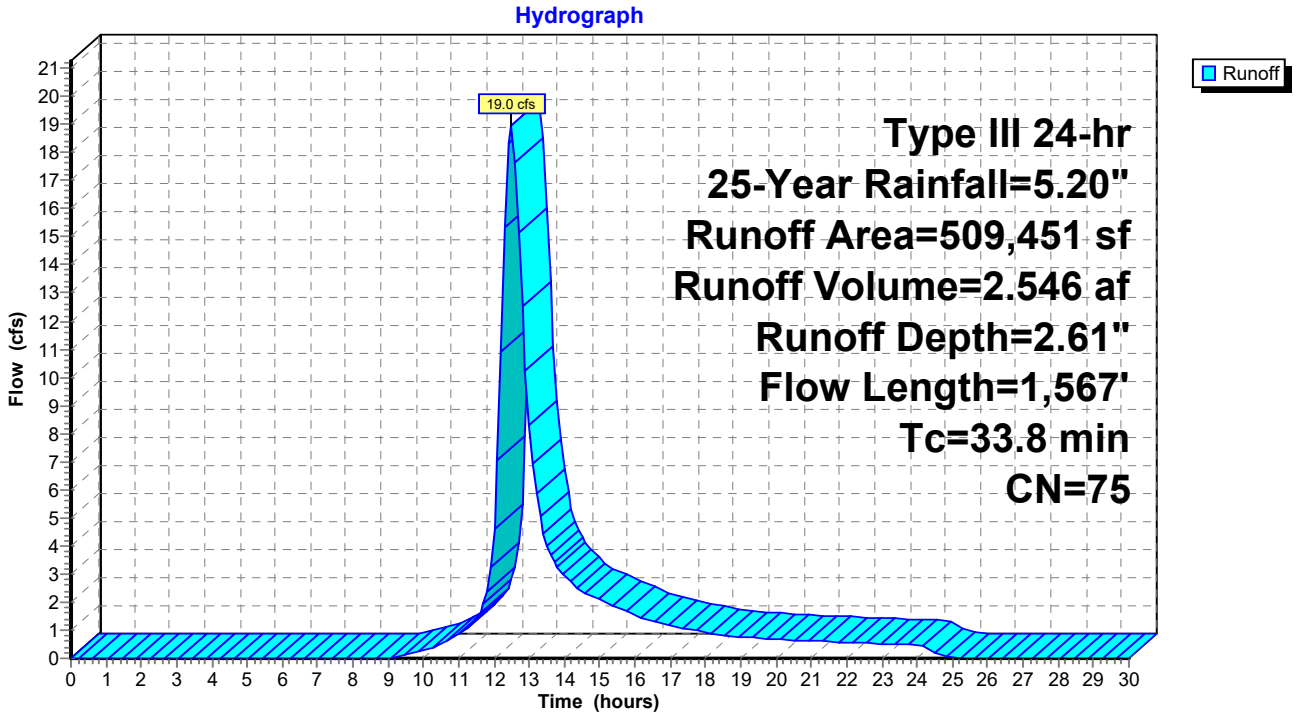
Runoff = 19.0 cfs @ 12.48 hrs, Volume= 2.546 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	3,669	72	Woods/grass comb., Good, HSG C
	159,843	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	34,705	70	Woods, Good, HSG C
	16,563	70	Woods, Good, HSG C
	10,491	74	>75% Grass cover, Good, HSG C
*	953	98	Impervious - Patio
*	850	98	Impervious - Sidewalk
	509,451	75	Weighted Average
	507,648		99.65% Pervious Area
	1,803		0.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B**
					Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C**
					Woodland Kv= 5.0 fps
0.2	66	0.0380	5.79	28.97	**Channel Flow, C-D**
					Area= 5.0 sf Perim= 5.0' r= 1.00' n= 0.050
7.7	601	0.0349	1.31		**Shallow Concentrated Flow, D-E**
					Short Grass Pasture Kv= 7.0 fps
33.8	1,567	Total			

Subcatchment SC-4: SC-4



Summary for Subcatchment SC-4.1: SC-4.1

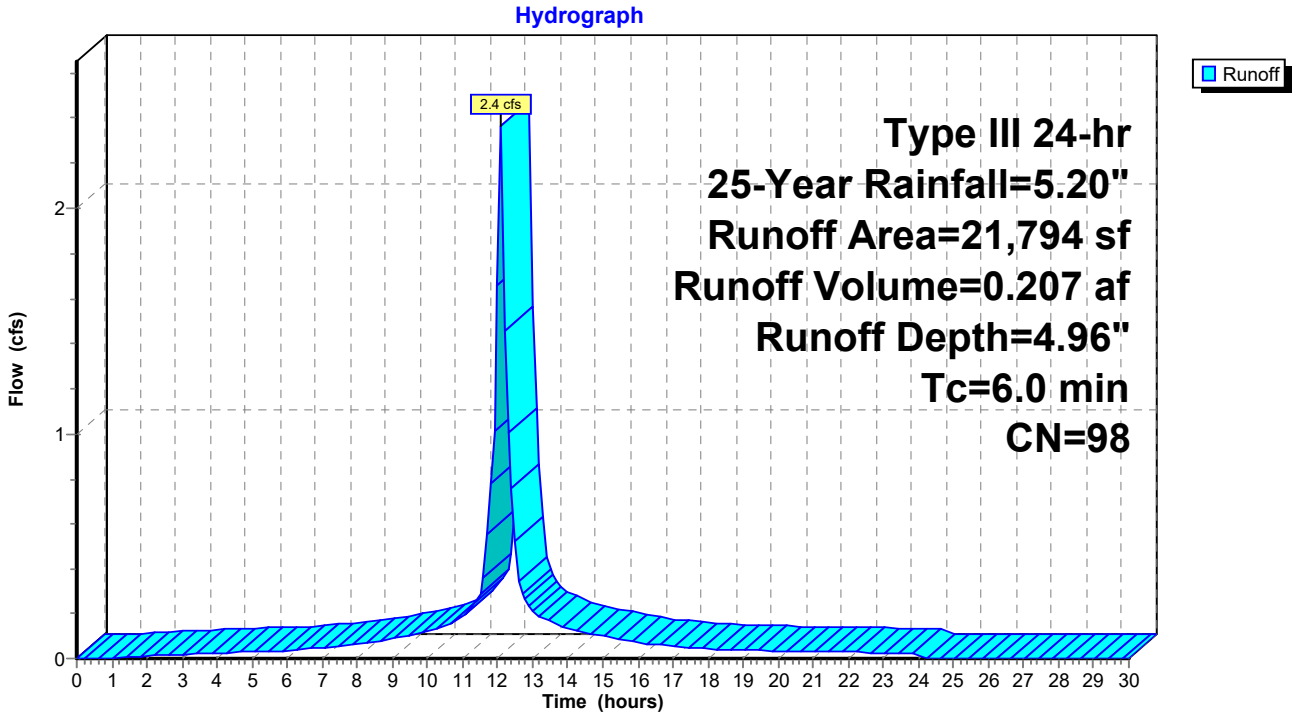
Runoff = 2.4 cfs @ 12.09 hrs, Volume= 0.207 af, Depth= 4.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	19,433	98	Impervious - Roof
*	2,361	96	Impervious - Drip Edge
	21,794	98	Weighted Average
	2,361		10.83% Pervious Area
	19,433		89.17% Impervious Area

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

Subcatchment SC-4.1: SC-4.1



Summary for Subcatchment SC-4.2: SC-4.2

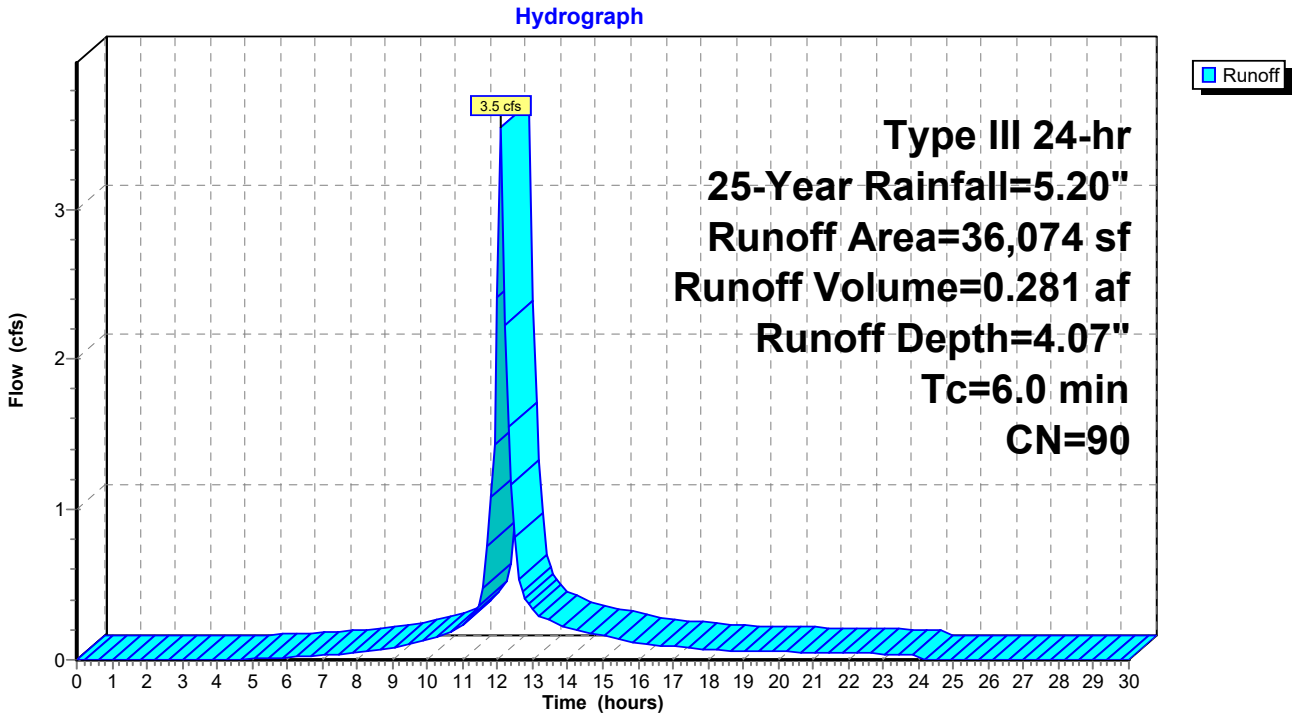
Runoff = 3.5 cfs @ 12.10 hrs, Volume= 0.281 af, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 25-Year Rainfall=5.20"

	Area (sf)	CN	Description
*	23,250	98	Impervious - Pavement
*	2,769	98	Impervious - Sidewalk
*	49	98	Impervious - Transformer
*	3,576	65	Landscaping - In Site
*	6,430	74	VUSF footprint
	36,074	90	Weighted Average
	10,006		27.74% Pervious Area
	26,068		72.26% Impervious Area

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

Subcatchment SC-4.2: SC-4.2

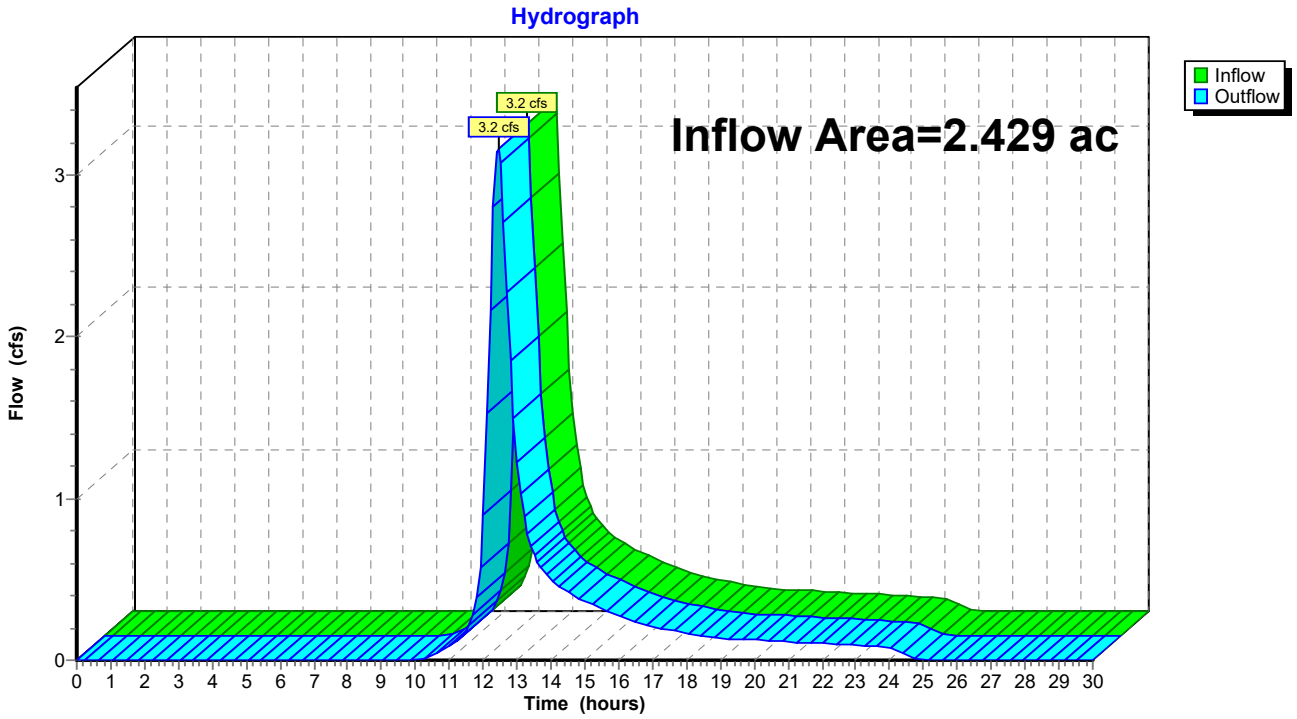


Summary for Reach POI #1: POI #1

Inflow Area = 2.429 ac, 0.69% Impervious, Inflow Depth = 2.09" for 25-Year event
Inflow = 3.2 cfs @ 12.43 hrs, Volume= 0.423 af
Outflow = 3.2 cfs @ 12.43 hrs, Volume= 0.423 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #1: POI #1

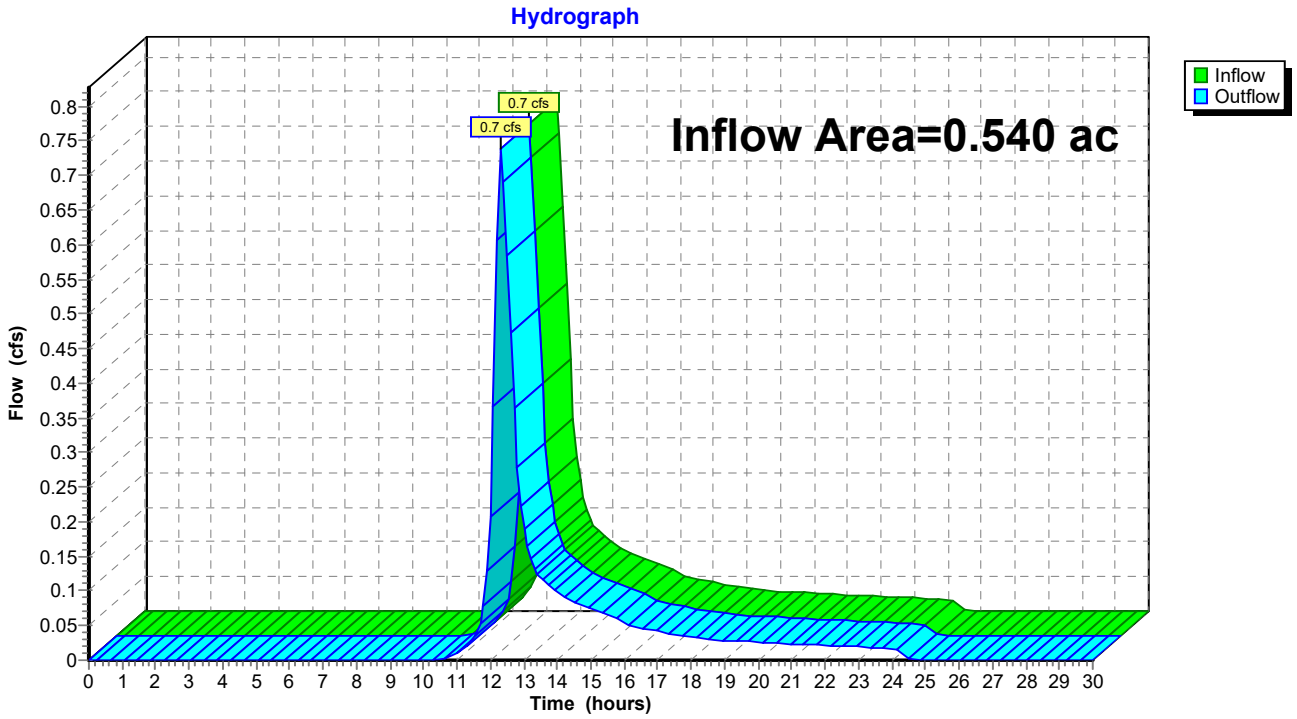


Summary for Reach POI #2: POI #2

Inflow Area = 0.540 ac, 0.00% Impervious, Inflow Depth = 1.87" for 25-Year event
Inflow = 0.7 cfs @ 12.33 hrs, Volume= 0.084 af
Outflow = 0.7 cfs @ 12.33 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #2: POI #2

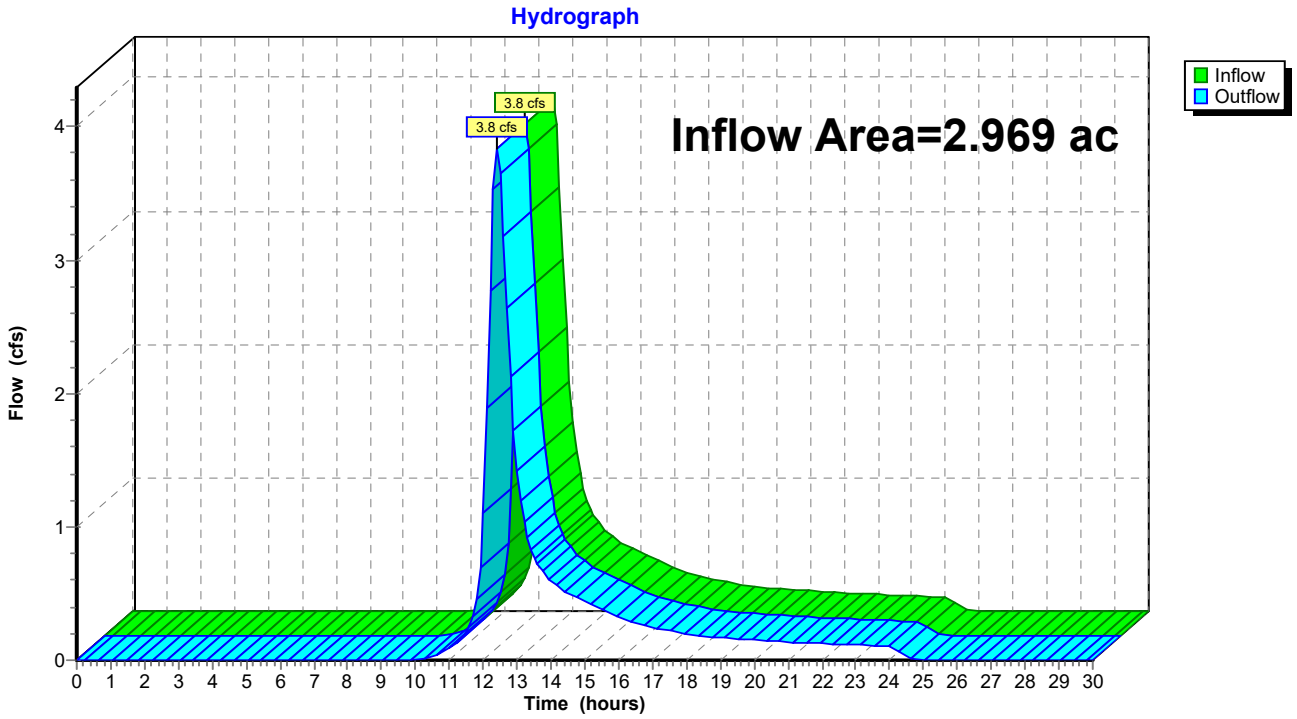


Summary for Reach POI #3: POI #3

Inflow Area = 2.969 ac, 0.56% Impervious, Inflow Depth = 2.05" for 25-Year event
Inflow = 3.8 cfs @ 12.41 hrs, Volume= 0.507 af
Outflow = 3.8 cfs @ 12.41 hrs, Volume= 0.507 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #3: POI #3

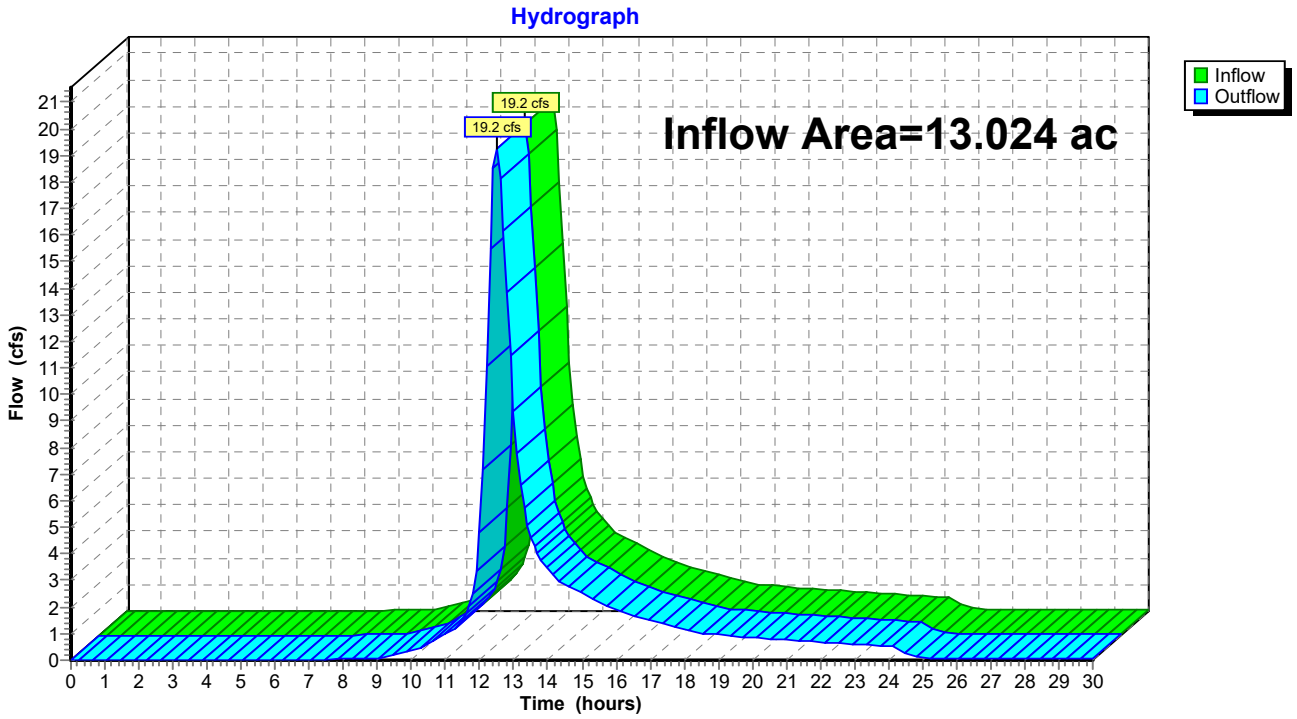


Summary for Reach POI #4: POI #4

Inflow Area = 13.024 ac, 8.34% Impervious, Inflow Depth > 2.68" for 25-Year event
Inflow = 19.2 cfs @ 12.49 hrs, Volume= 2.908 af
Outflow = 19.2 cfs @ 12.49 hrs, Volume= 2.908 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #4: POI #4



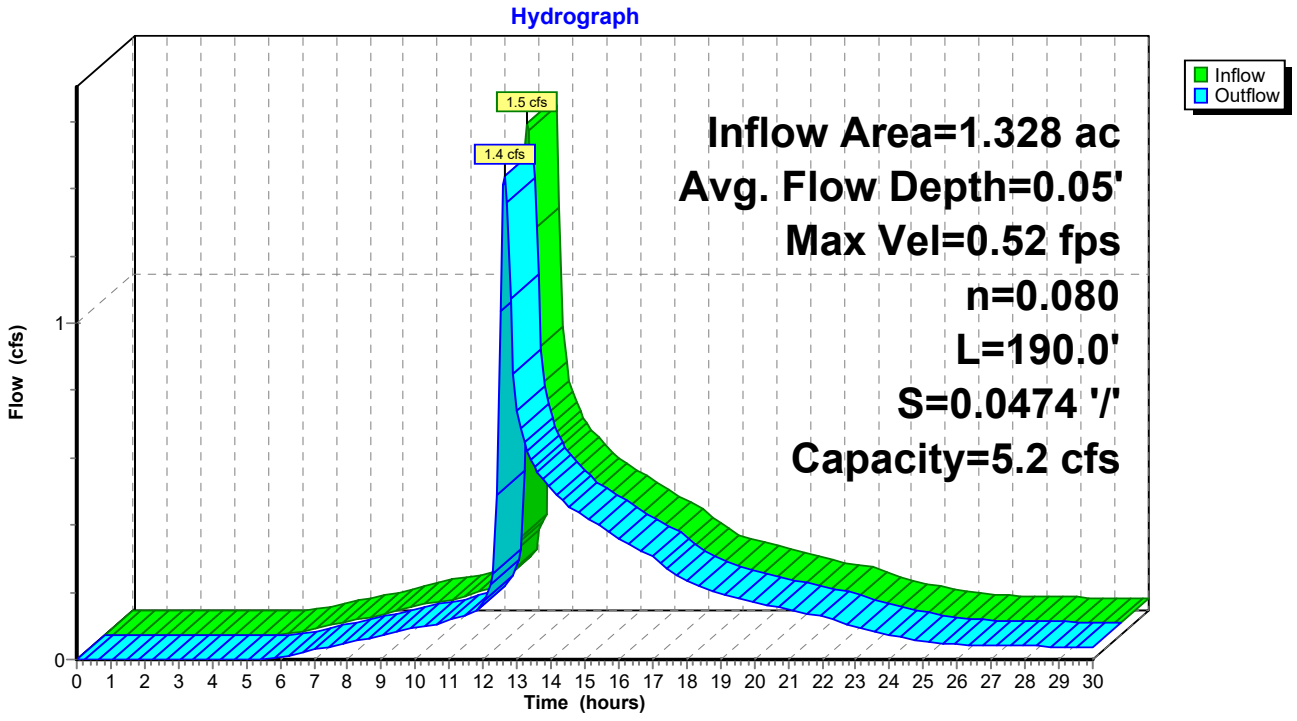
Summary for Reach R-4.1: R-4.1

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 3.29" for 25-Year event
Inflow = 1.5 cfs @ 12.46 hrs, Volume= 0.365 af
Outflow = 1.4 cfs @ 12.64 hrs, Volume= 0.363 af, Atten= 5%, Lag= 10.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.52 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 17.7 min

Peak Storage= 528 cf @ 12.54 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 0.10' Flow Area= 6.0 sf, Capacity= 5.2 cfs

60.00' x 0.10' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 60.40'
Length= 190.0' Slope= 0.0474 '/'
Inlet Invert= 225.75', Outlet Invert= 216.75'



Summary for Reach R4.2: R-4.2

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 3.28" for 25-Year event
Inflow = 1.4 cfs @ 12.64 hrs, Volume= 0.363 af
Outflow = 1.3 cfs @ 12.85 hrs, Volume= 0.361 af, Atten= 10%, Lag= 12.5 min

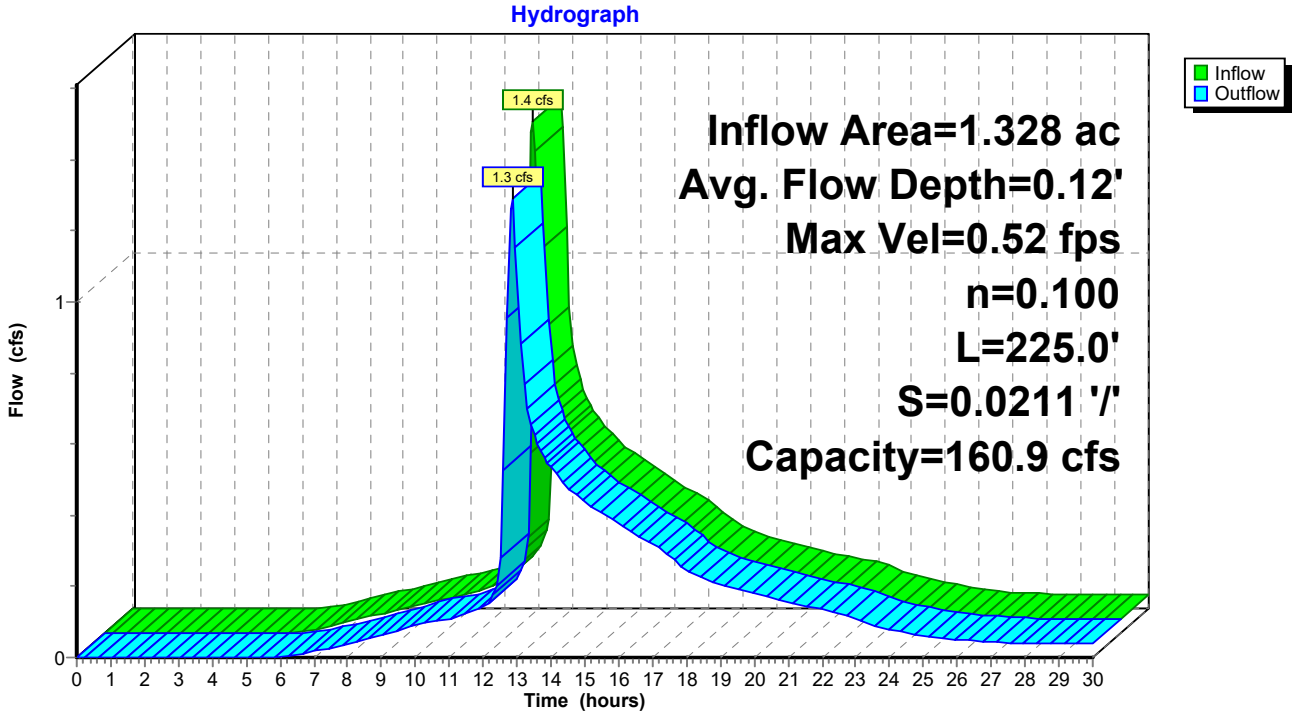
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.52 fps, Min. Travel Time= 7.2 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 17.2 min

Peak Storage= 567 cf @ 12.73 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 56.0 sf, Capacity= 160.9 cfs

20.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 4.0 '/' Top Width= 36.00'
Length= 225.0' Slope= 0.0211 '/'
Inlet Invert= 216.75', Outlet Invert= 212.00'

‡

Reach R4.2: R-4.2



Summary for Pond P-4.1: P-4.1

Inflow Area = 0.500 ac, 89.17% Impervious, Inflow Depth = 4.96" for 25-Year event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 0.207 af
Outflow = 0.5 cfs @ 12.53 hrs, Volume= 0.201 af, Atten= 80%, Lag= 26.5 min
Primary = 0.3 cfs @ 12.50 hrs, Volume= 0.198 af
Secondary = 0.2 cfs @ 12.53 hrs, Volume= 0.003 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 240.40' @ 12.50 hrs Surf.Area= 9,444 sf Storage= 4,096 cf

Plug-Flow detention time= 192.4 min calculated for 0.200 af (97% of inflow)
Center-of-Mass det. time= 174.6 min (922.0 - 747.4)

Volume	Invert	Avail.Storage	Storage Description
#1	235.10'	1,676 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 4,250 cf Overall - 59 cf Embedded = 4,191 cf x 40.0% Voids
#2	235.25'	59 cf	**4.0" Round Pipe Storage** Inside #1 L= 675.0' S= 0.0010 '/'
#3	236.90'	236 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 1,181 cf Overall x 20.0% Voids
#4	237.40'	236 cf	**Soil Filter (Prismatic)** Listed below (Recalc) 2,361 cf Overall x 10.0% Voids
#5	238.40'	1,889 cf	**Crushed Stone Top of Reservoir (Prismatic)** Listed below (Recalc) 4,722 cf Overall x 40.0% Voids
		4,096 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.10	2,361	0	0
236.90	2,361	4,250	4,250

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.90	2,361	0	0
237.40	2,361	1,181	1,181

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.40	2,361	0	0
238.40	2,361	2,361	2,361

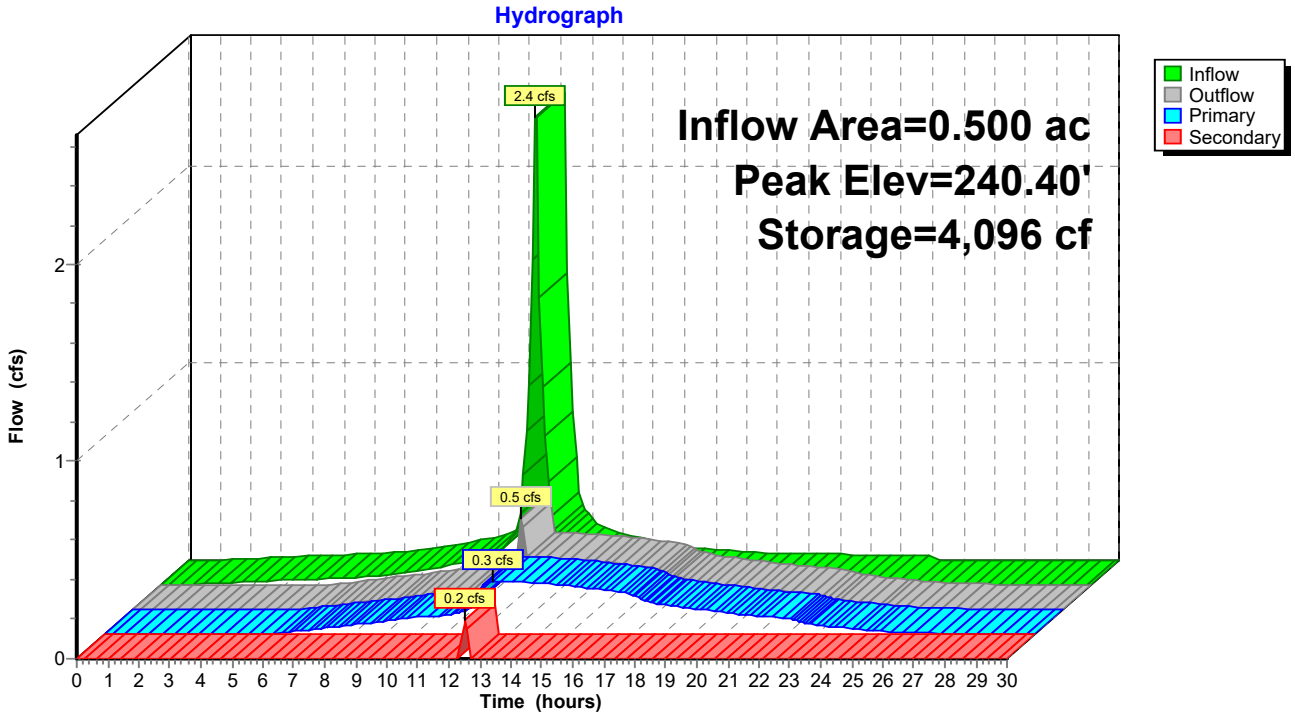
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.40	2,361	0	0
240.40	2,361	4,722	4,722

Device	Routing	Invert	Outlet Devices
#1	Secondary	240.40'	**200.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Device 4	235.10'	**0.1" Vert. Drawdown/Ball Valve** C= 0.600
#3	Device 4	235.35'	**4.0" Round 4" FD** L= 336.0' Ke= 0.600 Inlet / Outlet Invert= 235.35' / 235.00' S= 0.0010 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.09 sf
#4	Primary	230.40'	**8.0" Round 8" outlet** L= 63.0' Ke= 0.600 Inlet / Outlet Invert= 230.40' / 228.00' S= 0.0381 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.50 hrs HW=240.40' (Free Discharge)
└─**4=8" outlet** (Passes 0.3 cfs of 4.5 cfs potential flow)
  └─**2=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 11.08 fps)
  └─**3=4" FD** (Barrel Controls 0.3 cfs @ 3.09 fps)

Secondary OutFlow Max=0.0 cfs @ 12.53 hrs HW=240.40' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.10 fps)

Pond P-4.1: P-4.1



Summary for Pond P-4.2: VUSF

Inflow Area = 0.828 ac, 72.26% Impervious, Inflow Depth = 4.07" for 25-Year event
Inflow = 3.5 cfs @ 12.10 hrs, Volume= 0.281 af
Outflow = 1.2 cfs @ 12.43 hrs, Volume= 0.164 af, Atten= 66%, Lag= 19.9 min
Primary = 1.2 cfs @ 12.43 hrs, Volume= 0.164 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 230.95' @ 12.43 hrs Surf.Area= 9,279 sf Storage= 6,332 cf

Plug-Flow detention time= 288.7 min calculated for 0.164 af (58% of inflow)
Center-of-Mass det. time= 184.0 min (973.4 - 789.4)

Volume	Invert	Avail.Storage	Storage Description
#1	229.00'	16,700 cf	**Surface Ponding (Prismatic)** Listed below (Recalc)
#2	227.50'	303 cf	**Loam & Soil Filter (Prismatic)** Listed below (Recalc) 3,029 cf Overall x 10.0% Voids
#3	227.17'	133 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 666 cf Overall x 20.0% Voids
#4	226.17'	801 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 2,019 cf Overall - 17 cf Embedded = 2,002 cf x 40.0% Voids
#5	226.42'	17 cf	**4.0" Round Pipe Storage** Inside #4 L= 200.0' S= 0.0010 '/'
		17,954 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
229.00	2,019	0	0
230.00	2,609	2,314	2,314
231.00	3,256	2,933	5,247
232.00	3,750	3,503	8,750
234.00	4,200	7,950	16,700

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.50	2,019	0	0
229.00	2,019	3,029	3,029

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.17	2,019	0	0
227.50	2,019	666	666

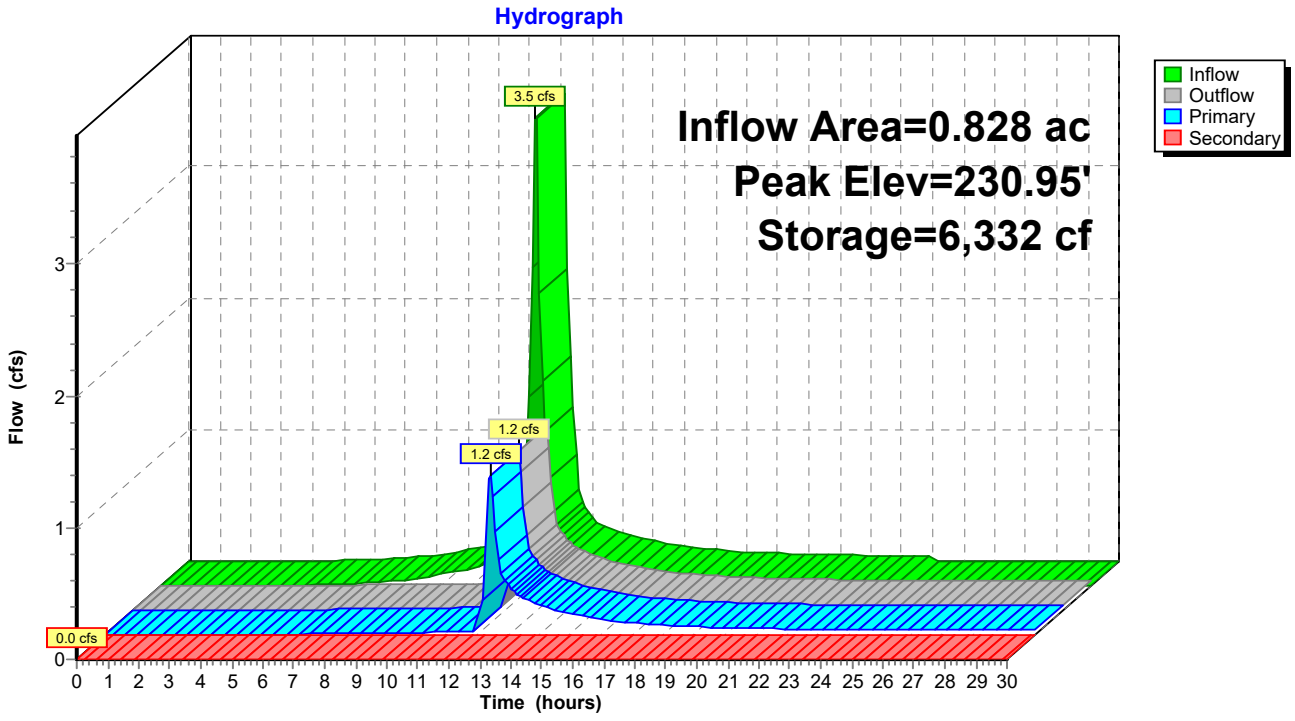
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.17	2,019	0	0
227.17	2,019	2,019	2,019

Device	Routing	Invert	Outlet Devices
#1	Secondary	231.30'	**20.0' long x 2.0' breadth Emergency Spillway** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Device 4	230.80'	**24.0" Horiz. CB Overflow** C= 0.600 Limited to weir flow at low heads
#3	Device 4	226.00'	**0.8" Vert. Drawdown/Ball Valve** C= 0.600
#4	Primary	226.00'	**15.0" Round 15" SD** L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.00' / 225.80' S= 0.0031 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=1.1 cfs @ 12.43 hrs HW=230.94' (Free Discharge)
└**4=15" SD** (Passes 1.1 cfs of 11.7 cfs potential flow)
└**2=CB Overflow** (Weir Controls 1.1 cfs @ 1.23 fps)
└**3=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 10.67 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=226.17' (Free Discharge)
└**1=Emergency Spillway** (Controls 0.0 cfs)

Pond P-4.2: VUSF



Time span=0.00-30.00 hrs, dt=0.10 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

SubcatchmentSC-1.0: SC-1.0 Runoff Area=95,761 sf 0.00% Impervious Runoff Depth=2.79"
Flow Length=1,104' Tc=30.4 min CN=69 Runoff=4.0 cfs 0.511 af

SubcatchmentSC-1.1: SC-1.1 Runoff Area=346 sf 85.84% Impervious Runoff Depth=5.51"
Tc=6.0 min CN=95 Runoff=0.0 cfs 0.004 af

SubcatchmentSC-1.2: SC-1.2 Runoff Area=9,714 sf 4.42% Impervious Runoff Depth=2.51"
Flow Length=144' Tc=8.7 min CN=66 Runoff=0.6 cfs 0.047 af

SubcatchmentSC-2.0: SC-2.0 Runoff Area=23,523 sf 0.00% Impervious Runoff Depth=2.51"
Flow Length=208' Tc=21.4 min CN=66 Runoff=1.0 cfs 0.113 af

SubcatchmentSC-4: SC-4 Runoff Area=509,451 sf 0.35% Impervious Runoff Depth=3.37"
Flow Length=1,567' Tc=33.8 min CN=75 Runoff=24.5 cfs 3.282 af

SubcatchmentSC-4.1: SC-4.1 Runoff Area=21,794 sf 89.17% Impervious Runoff Depth=5.86"
Tc=6.0 min CN=98 Runoff=2.8 cfs 0.244 af

SubcatchmentSC-4.2: SC-4.2 Runoff Area=36,074 sf 72.26% Impervious Runoff Depth=4.94"
Tc=6.0 min CN=90 Runoff=4.3 cfs 0.341 af

Reach POI #1: POI #1 Inflow=4.2 cfs 0.562 af
Outflow=4.2 cfs 0.562 af

Reach POI #2: POI #2 Inflow=1.0 cfs 0.113 af
Outflow=1.0 cfs 0.113 af

Reach POI #3: POI #3 Inflow=5.2 cfs 0.675 af
Outflow=5.2 cfs 0.675 af

Reach POI #4: POI #4 Inflow=27.0 cfs 3.741 af
Outflow=27.0 cfs 3.741 af

Reach R-4.1: R-4.1 Avg. Flow Depth=0.08' Max Vel=0.75 fps Inflow=4.7 cfs 0.462 af
n=0.080 L=190.0' S=0.0474 '/' Capacity=5.2 cfs Outflow=3.6 cfs 0.461 af

Reach R4.2: R-4.2 Avg. Flow Depth=0.21' Max Vel=0.74 fps Inflow=3.6 cfs 0.461 af
n=0.100 L=225.0' S=0.0211 '/' Capacity=160.9 cfs Outflow=3.1 cfs 0.459 af

Pond P-4.1: P-4.1 Peak Elev=240.42' Storage=4,096 cf Inflow=2.8 cfs 0.244 af
Primary=0.3 cfs 0.215 af Secondary=2.2 cfs 0.023 af Outflow=2.5 cfs 0.238 af

Pond P-4.2: VUSF Peak Elev=231.06' Storage=6,703 cf Inflow=4.3 cfs 0.341 af
Primary=2.6 cfs 0.224 af Secondary=0.0 cfs 0.000 af Outflow=2.6 cfs 0.224 af

Total Runoff Area = 15.993 ac Runoff Volume = 4.542 af Average Runoff Depth = 3.41"
93.11% Pervious = 14.891 ac 6.89% Impervious = 1.103 ac

Summary for Subcatchment SC-1.0: SC-1.0

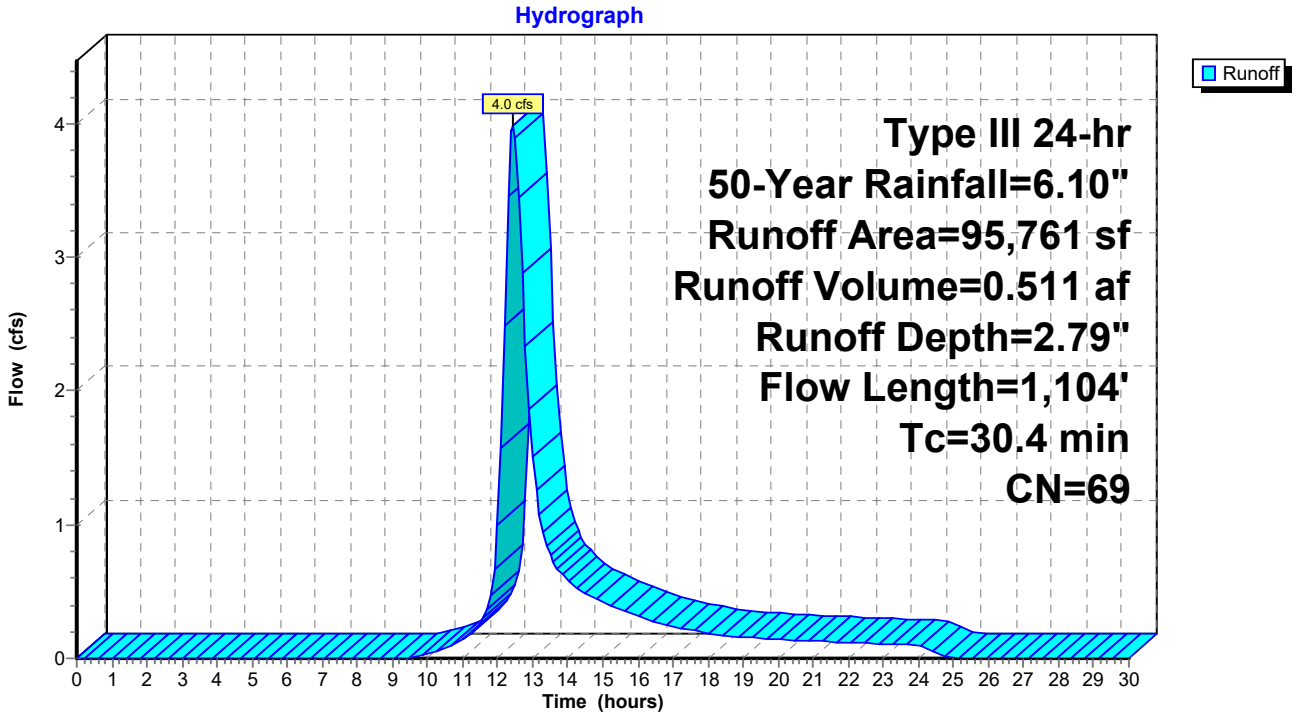
Runoff = 4.0 cfs @ 12.44 hrs, Volume= 0.511 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
	5,387	65	Brush, Good, HSG C
*	8,866	95	Impervious-Gravel
	41,534	65	Brush, Good, HSG C
	29,227	70	Woods, Good, HSG C
	10,747	65	Brush, Good, HSG C
	95,761	69	Weighted Average
	95,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0700	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
4.5	373	0.0750	1.37		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	483	0.0725	4.34		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	148	0.0760	11.73	117.30	**Channel Flow, D-E** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
30.4	1,104	Total			

Subcatchment SC-1.0: SC-1.0



Summary for Subcatchment SC-1.1: SC-1.1

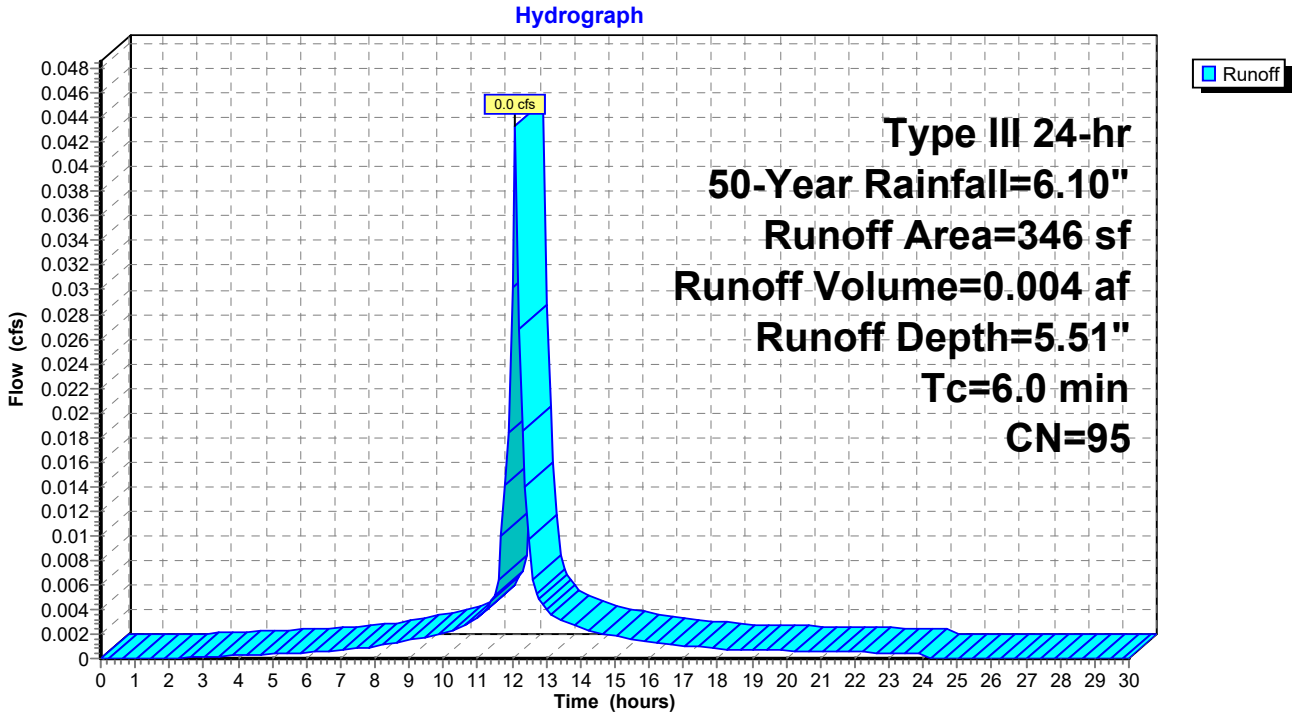
Runoff = 0.0 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 5.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	297	98	Impervious - Pavement
	49	74	>75% Grass cover, Good, HSG C
	346	95	Weighted Average
	49		14.16% Pervious Area
	297		85.84% Impervious Area

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

Subcatchment SC-1.1: SC-1.1



Summary for Subcatchment SC-1.2: SC-1.2

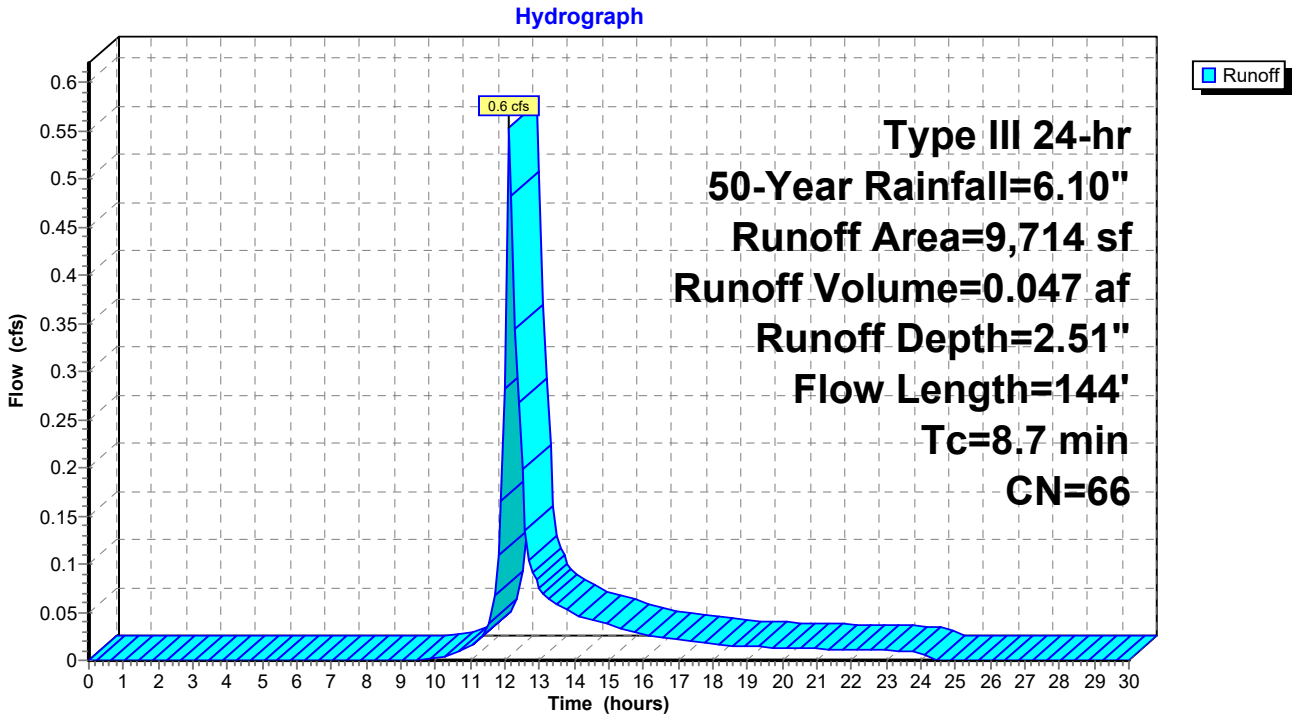
Runoff = 0.6 cfs @ 12.13 hrs, Volume= 0.047 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
	9,285	65	Brush, Good, HSG C
*	429	98	Impervious - Sidewalk
	9,714	66	Weighted Average
	9,285		95.58% Pervious Area
	429		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	98	0.0800	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
0.2	46	0.0100	4.26	42.55	**Channel Flow, B-C** Area= 10.0 sf Perim= 20.0' r= 0.50' n= 0.022 Earth, clean & straight
8.7	144	Total			

Subcatchment SC-1.2: SC-1.2



Summary for Subcatchment SC-2.0: SC-2.0

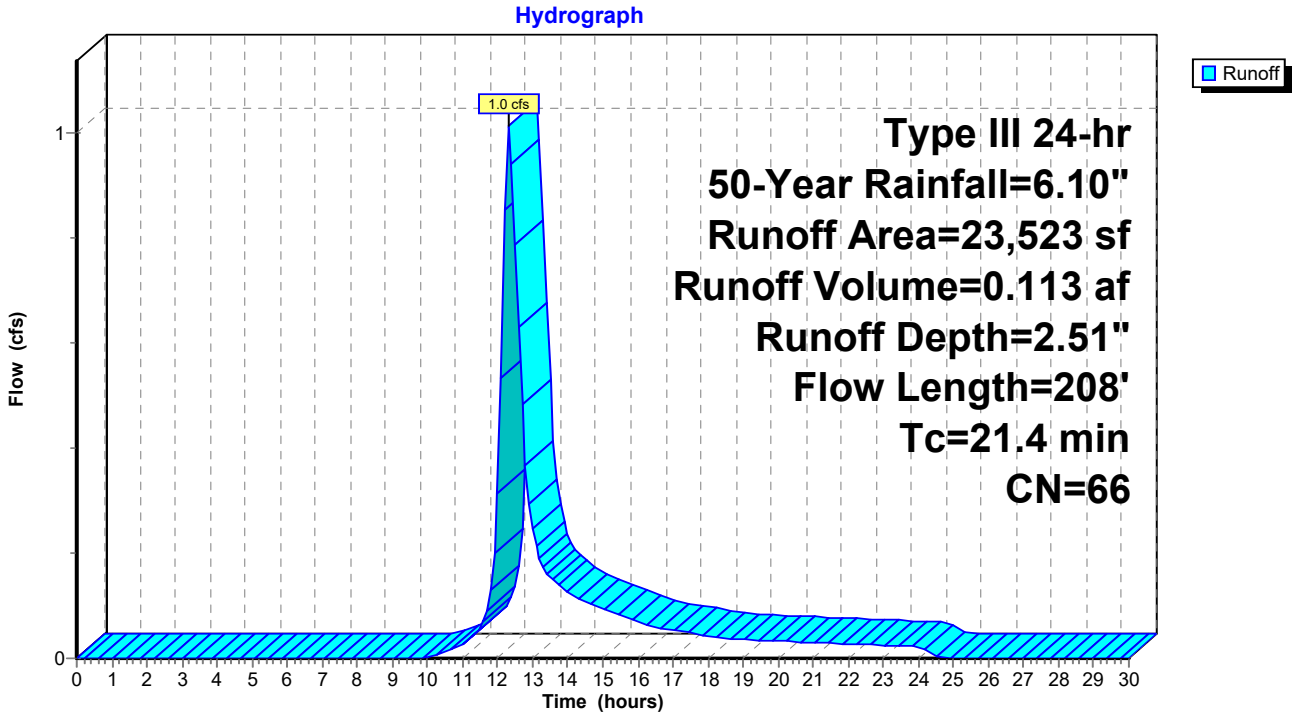
Runoff = 1.0 cfs @ 12.32 hrs, Volume= 0.113 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

Area (sf)	CN	Description
3,981	70	Woods, Good, HSG C
14,320	65	Brush, Good, HSG C
5,222	65	Brush, Good, HSG C
23,523	66	Weighted Average
23,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0300	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 2.90"
13.0	50	0.0200	0.06		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 2.90"
0.8	30	0.0170	0.65		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.2	36	0.1700	2.89		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.1	42	0.0480	8.03	80.34	**Channel Flow, E-F** Area= 10.0 sf Perim= 25.0' r= 0.40' n= 0.022 Earth, clean & straight
21.4	208	Total			

Subcatchment SC-2.0: SC-2.0



Summary for Subcatchment SC-4: SC-4

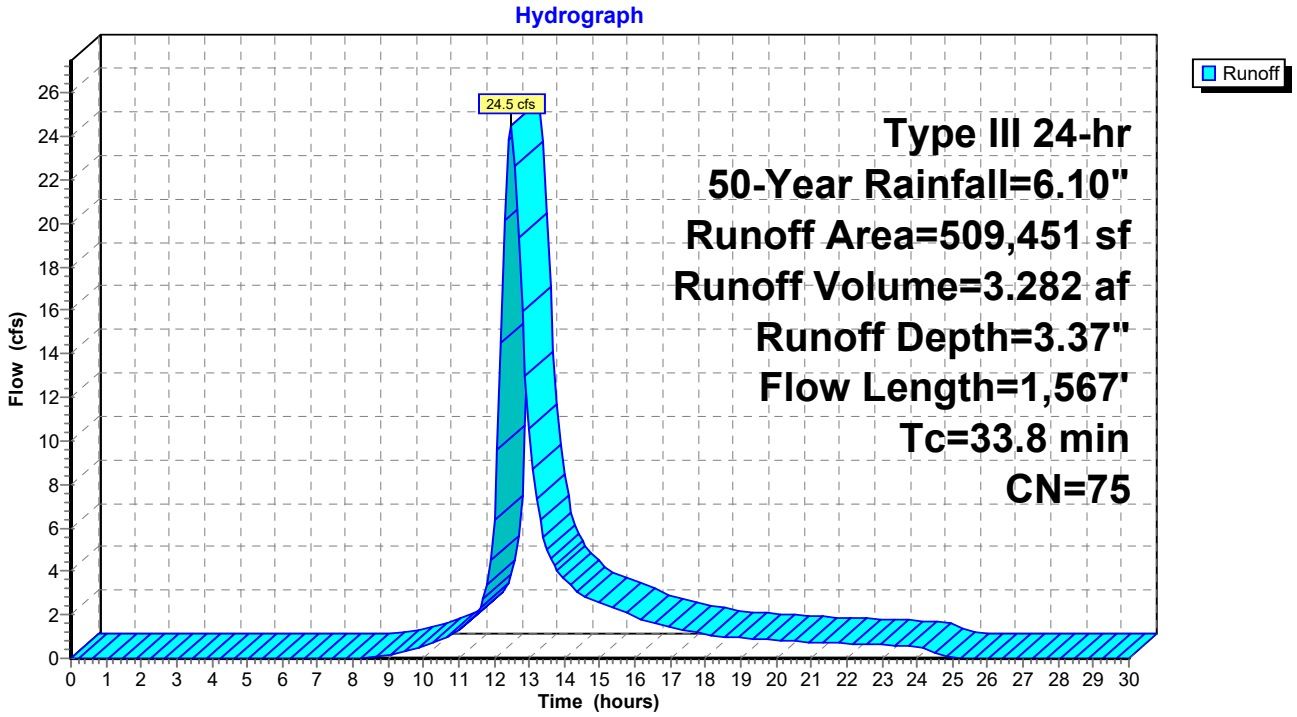
Runoff = 24.5 cfs @ 12.48 hrs, Volume= 3.282 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	81,801	80	Wetland
*	69,261	80	Wetland
*	81,847	80	Wetland
	3,669	72	Woods/grass comb., Good, HSG C
	159,843	71	Meadow, non-grazed, HSG C
	49,468	70	Woods, Good, HSG C
	34,705	70	Woods, Good, HSG C
	16,563	70	Woods, Good, HSG C
	10,491	74	>75% Grass cover, Good, HSG C
*	953	98	Impervious - Patio
*	850	98	Impervious - Sidewalk
	509,451	75	Weighted Average
	507,648		99.65% Pervious Area
	1,803		0.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow, A-B** Woods: Dense underbrush n= 0.800 P2= 2.90"
3.3	800	0.6375	3.99		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.2	66	0.0380	5.79	28.97	**Channel Flow, C-D** Area= 5.0 sf Perim= 5.0' r= 1.00' n= 0.050
7.7	601	0.0349	1.31		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
33.8	1,567	Total			

Subcatchment SC-4: SC-4



Summary for Subcatchment SC-4.1: SC-4.1

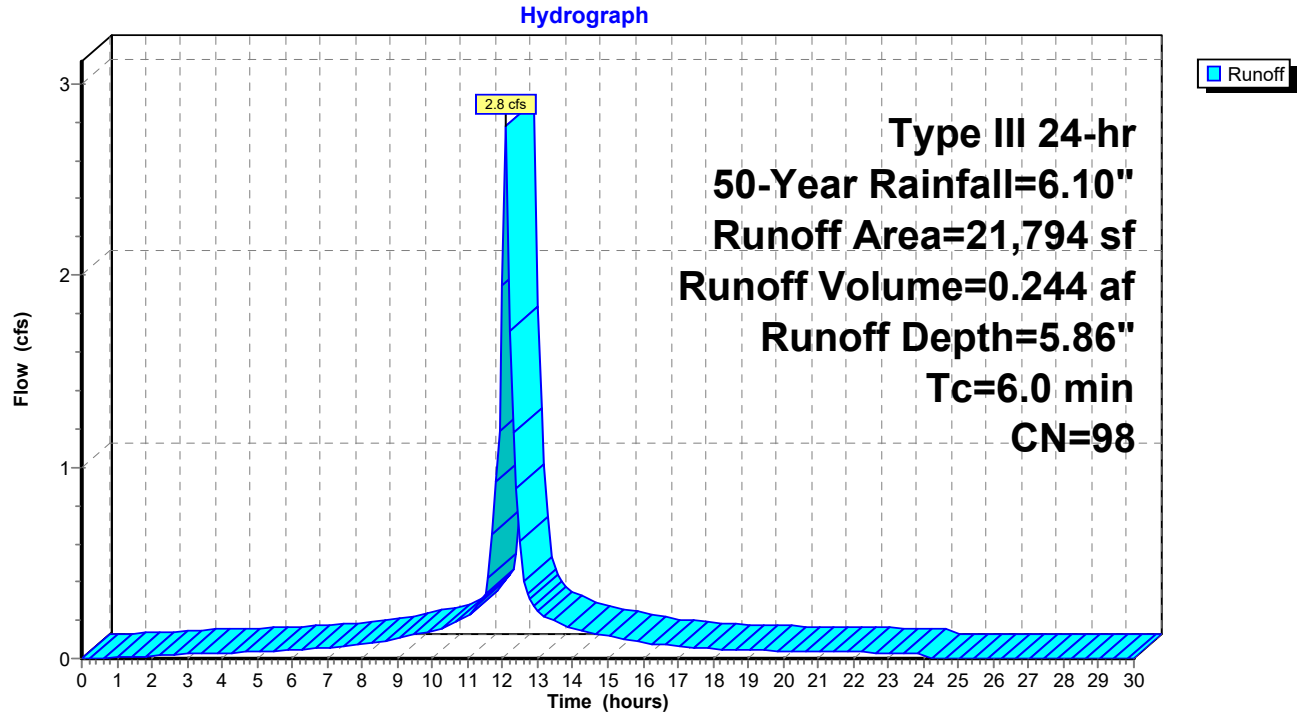
Runoff = 2.8 cfs @ 12.09 hrs, Volume= 0.244 af, Depth= 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	19,433	98	Impervious - Roof
*	2,361	96	Impervious - Drip Edge
	21,794	98	Weighted Average
	2,361		10.83% Pervious Area
	19,433		89.17% Impervious Area

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

Subcatchment SC-4.1: SC-4.1



Summary for Subcatchment SC-4.2: SC-4.2

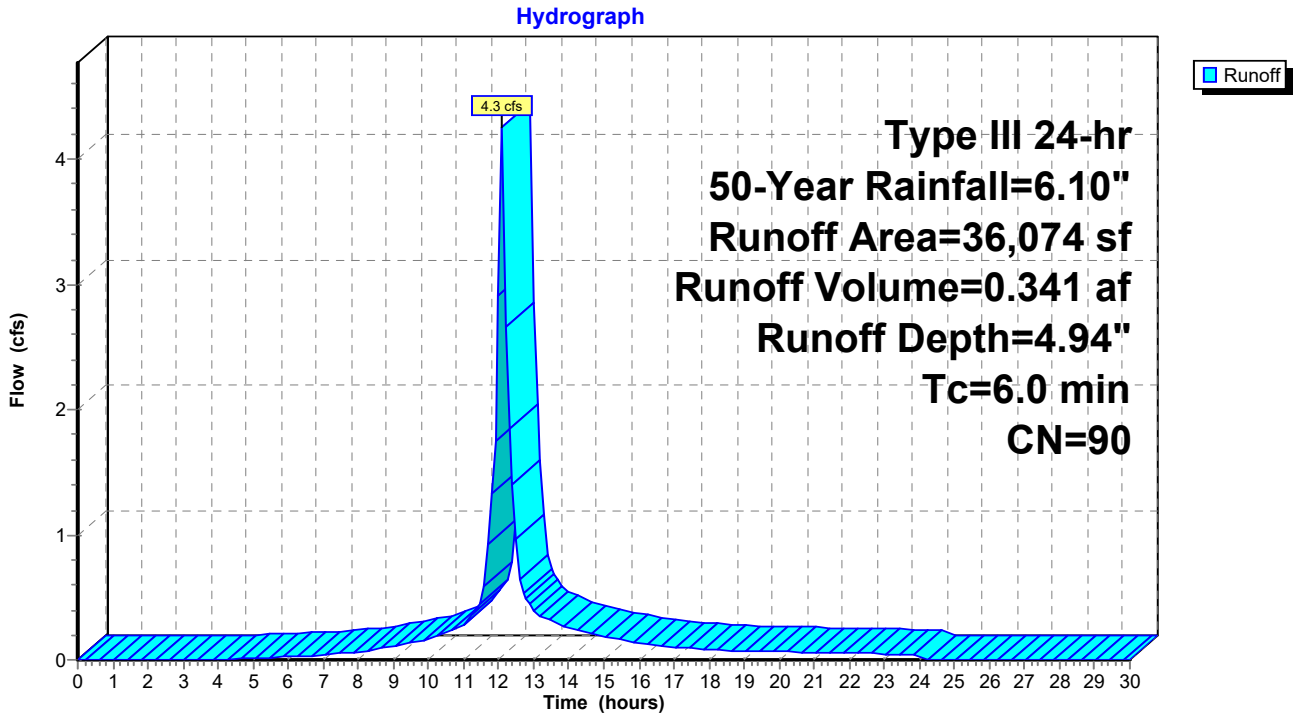
Runoff = 4.3 cfs @ 12.10 hrs, Volume= 0.341 af, Depth= 4.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Type III 24-hr 50-Year Rainfall=6.10"

	Area (sf)	CN	Description
*	23,250	98	Impervious - Pavement
*	2,769	98	Impervious - Sidewalk
*	49	98	Impervious - Transformer
*	3,576	65	Landscaping - In Site
*	6,430	74	VUSF footprint
	36,074	90	Weighted Average
	10,006		27.74% Pervious Area
	26,068		72.26% Impervious Area

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

Subcatchment SC-4.2: SC-4.2

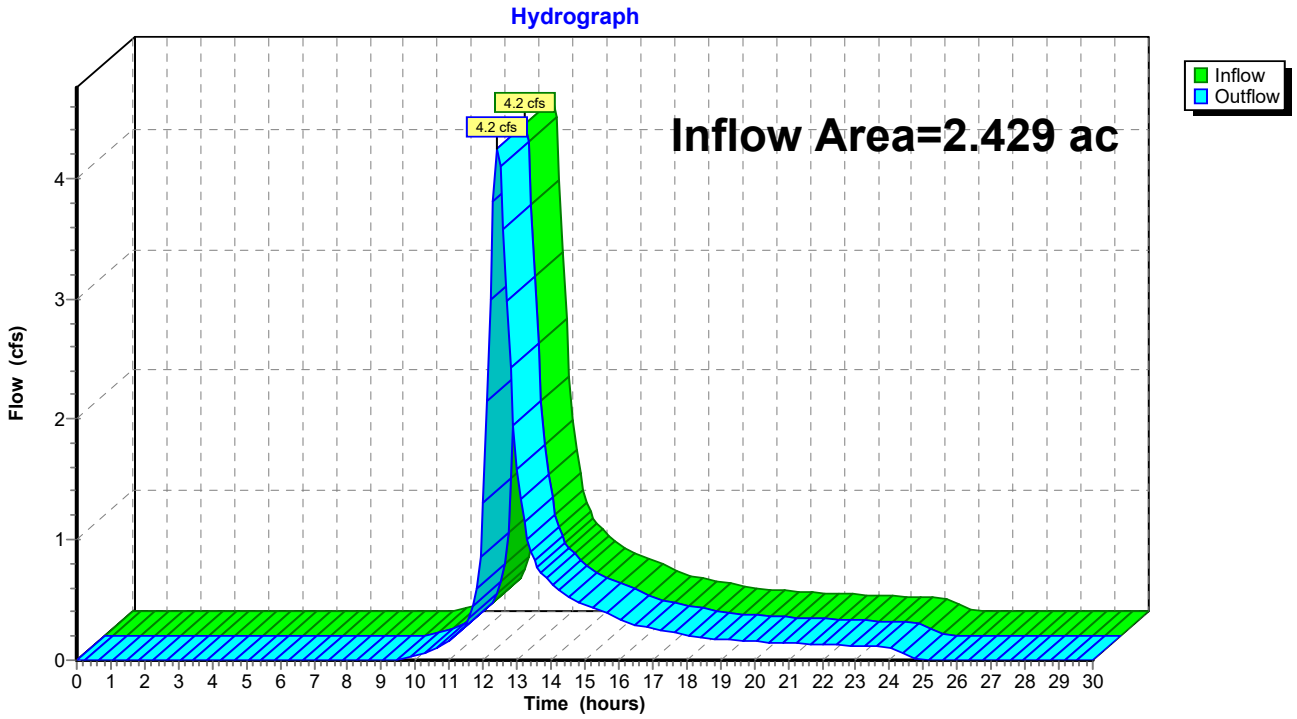


Summary for Reach POI #1: POI #1

Inflow Area = 2.429 ac, 0.69% Impervious, Inflow Depth = 2.77" for 50-Year event
Inflow = 4.2 cfs @ 12.43 hrs, Volume= 0.562 af
Outflow = 4.2 cfs @ 12.43 hrs, Volume= 0.562 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #1: POI #1

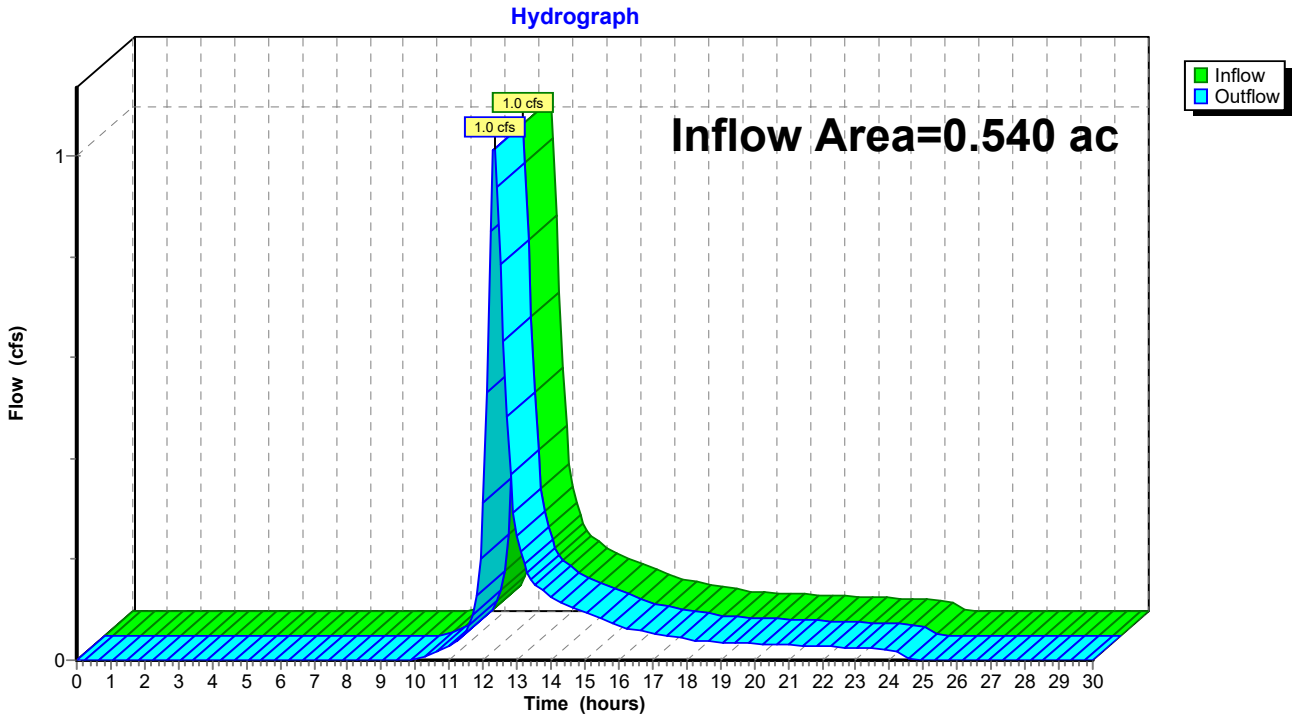


Summary for Reach POI #2: POI #2

Inflow Area = 0.540 ac, 0.00% Impervious, Inflow Depth = 2.51" for 50-Year event
Inflow = 1.0 cfs @ 12.32 hrs, Volume= 0.113 af
Outflow = 1.0 cfs @ 12.32 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #2: POI #2

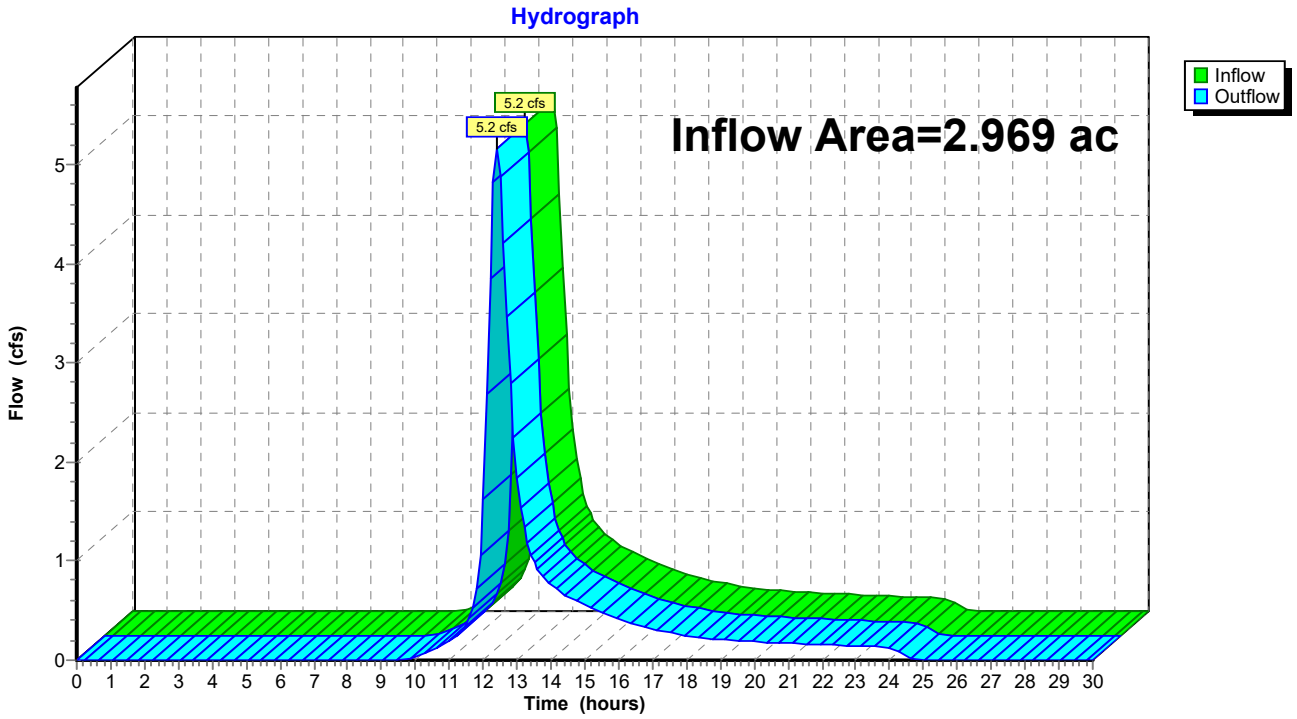


Summary for Reach POI #3: POI #3

Inflow Area = 2.969 ac, 0.56% Impervious, Inflow Depth = 2.73" for 50-Year event
Inflow = 5.2 cfs @ 12.40 hrs, Volume= 0.675 af
Outflow = 5.2 cfs @ 12.40 hrs, Volume= 0.675 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #3: POI #3

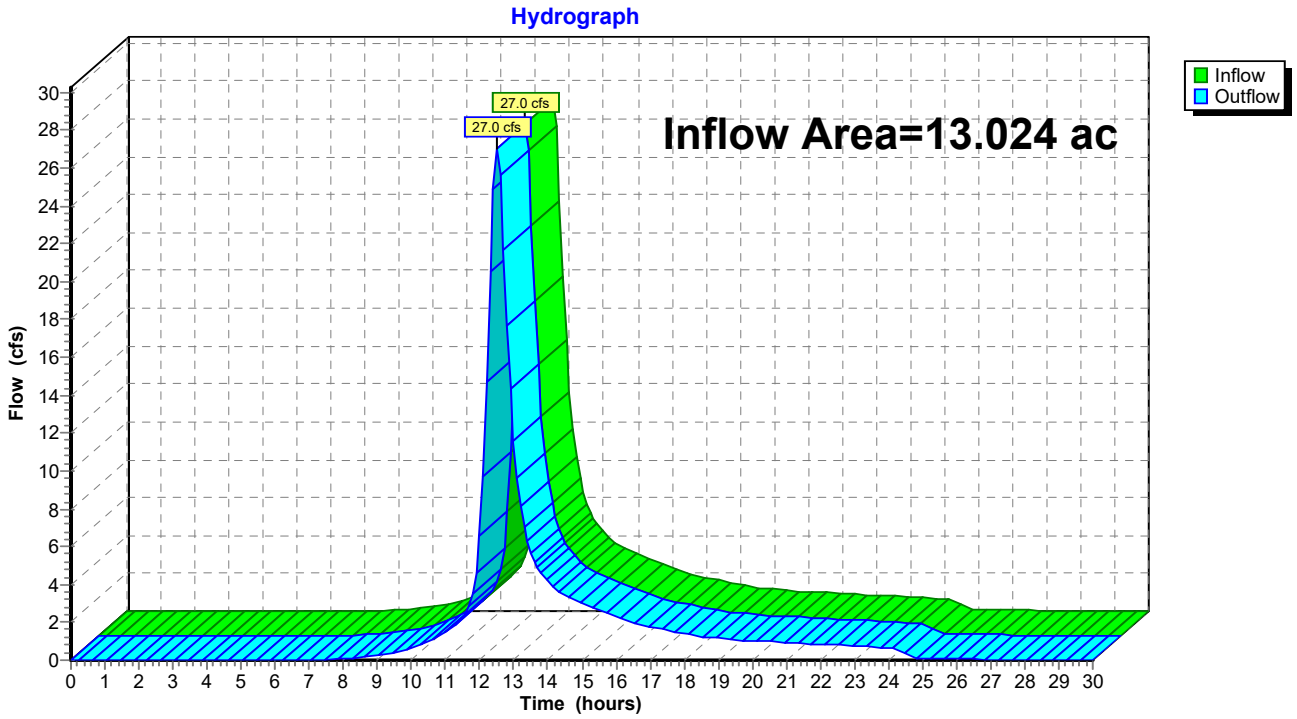


Summary for Reach POI #4: POI #4

Inflow Area = 13.024 ac, 8.34% Impervious, Inflow Depth > 3.45" for 50-Year event
Inflow = 27.0 cfs @ 12.51 hrs, Volume= 3.741 af
Outflow = 27.0 cfs @ 12.51 hrs, Volume= 3.741 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs

Reach POI #4: POI #4



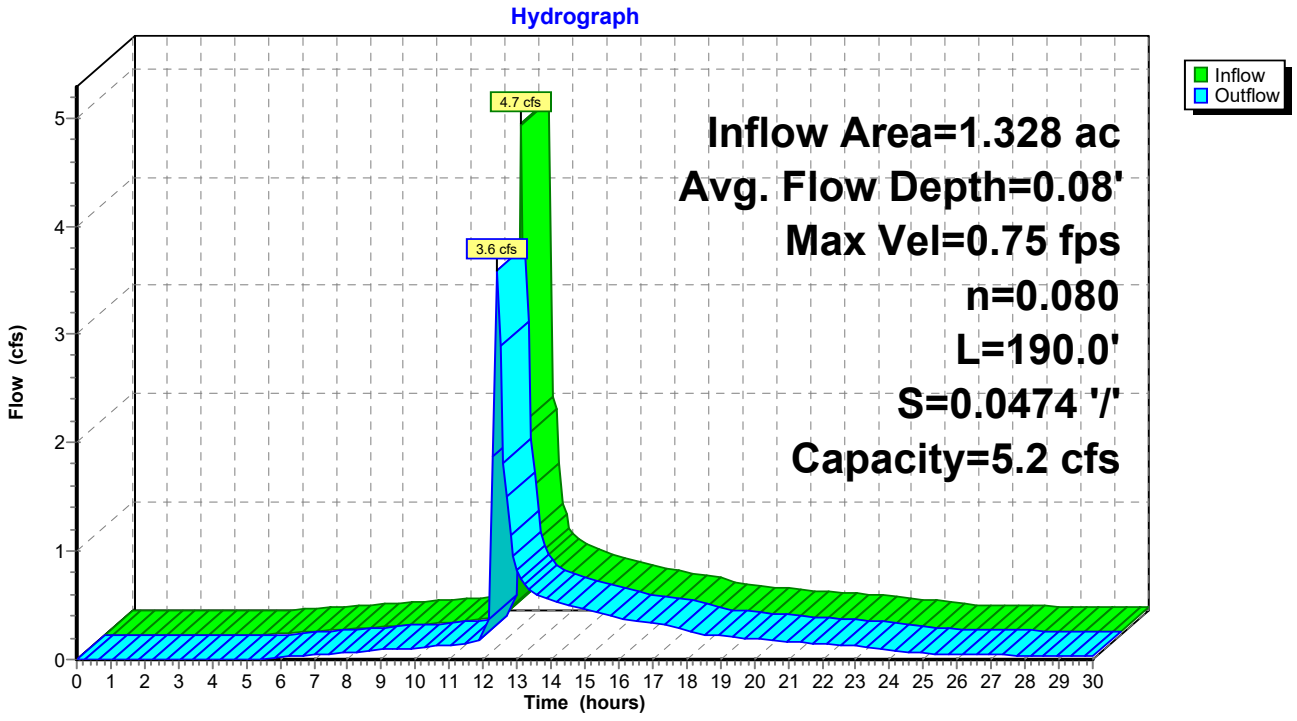
Summary for Reach R-4.1: R-4.1

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 4.18" for 50-Year event
Inflow = 4.7 cfs @ 12.29 hrs, Volume= 0.462 af
Outflow = 3.6 cfs @ 12.42 hrs, Volume= 0.461 af, Atten= 24%, Lag= 7.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.75 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 16.6 min

Peak Storage= 959 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 0.10' Flow Area= 6.0 sf, Capacity= 5.2 cfs

60.00' x 0.10' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.0 '/' Top Width= 60.40'
Length= 190.0' Slope= 0.0474 '/'
Inlet Invert= 225.75', Outlet Invert= 216.75'



Summary for Reach R4.2: R-4.2

Inflow Area = 1.328 ac, 78.63% Impervious, Inflow Depth > 4.16" for 50-Year event
Inflow = 3.6 cfs @ 12.42 hrs, Volume= 0.461 af
Outflow = 3.1 cfs @ 12.59 hrs, Volume= 0.459 af, Atten= 15%, Lag= 10.1 min

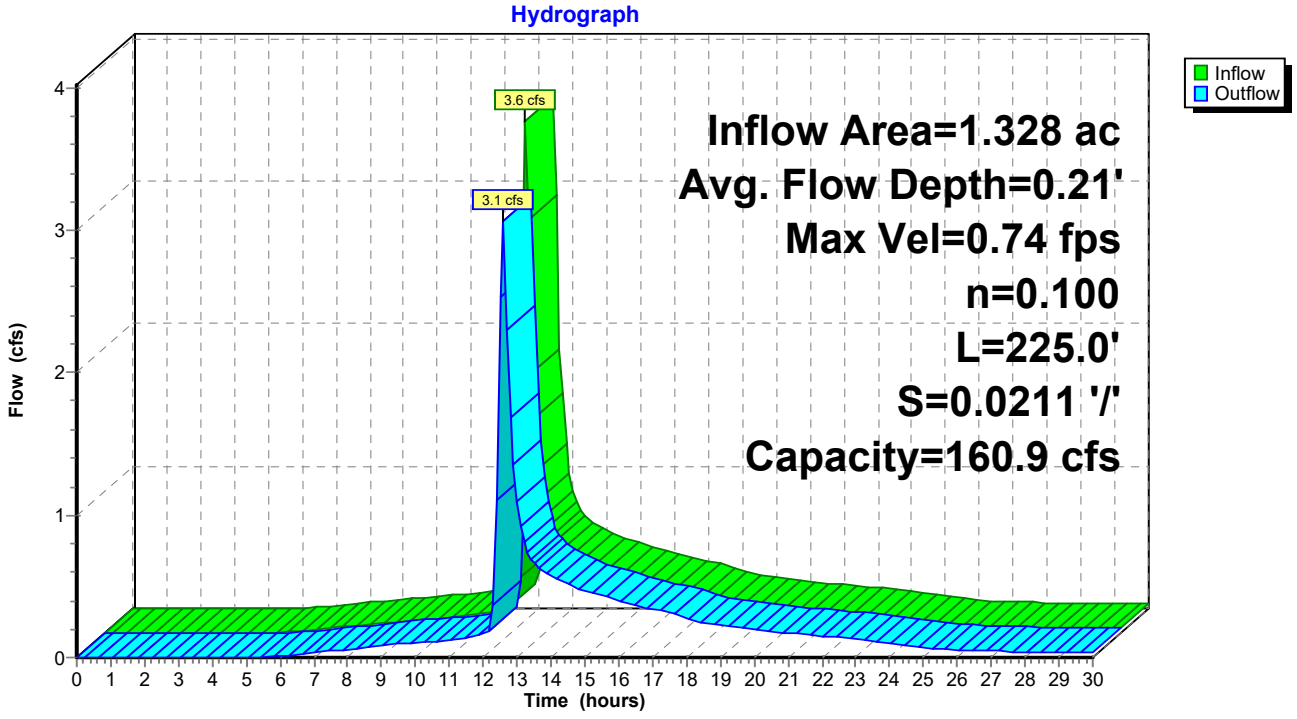
Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Max. Velocity= 0.74 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 16.4 min

Peak Storage= 971 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 56.0 sf, Capacity= 160.9 cfs

20.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 4.0 '/' Top Width= 36.00'
Length= 225.0' Slope= 0.0211 '/'
Inlet Invert= 216.75', Outlet Invert= 212.00'

‡

Reach R4.2: R-4.2



Summary for Pond P-4.1: P-4.1

Inflow Area = 0.500 ac, 89.17% Impervious, Inflow Depth = 5.86" for 50-Year event
Inflow = 2.8 cfs @ 12.09 hrs, Volume= 0.244 af
Outflow = 2.5 cfs @ 12.30 hrs, Volume= 0.238 af, Atten= 12%, Lag= 12.4 min
Primary = 0.3 cfs @ 12.30 hrs, Volume= 0.215 af
Secondary = 2.2 cfs @ 12.30 hrs, Volume= 0.023 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 240.42' @ 12.30 hrs Surf.Area= 9,444 sf Storage= 4,096 cf

Plug-Flow detention time= 177.0 min calculated for 0.237 af (97% of inflow)
Center-of-Mass det. time= 161.6 min (906.5 - 744.9)

Volume	Invert	Avail.Storage	Storage Description
#1	235.10'	1,676 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 4,250 cf Overall - 59 cf Embedded = 4,191 cf x 40.0% Voids
#2	235.25'	59 cf	**4.0" Round Pipe Storage** Inside #1 L= 675.0' S= 0.0010 '/'
#3	236.90'	236 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 1,181 cf Overall x 20.0% Voids
#4	237.40'	236 cf	**Soil Filter (Prismatic)** Listed below (Recalc) 2,361 cf Overall x 10.0% Voids
#5	238.40'	1,889 cf	**Crushed Stone Top of Reservoir (Prismatic)** Listed below (Recalc) 4,722 cf Overall x 40.0% Voids
		4,096 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.10	2,361	0	0
236.90	2,361	4,250	4,250

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.90	2,361	0	0
237.40	2,361	1,181	1,181

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.40	2,361	0	0
238.40	2,361	2,361	2,361

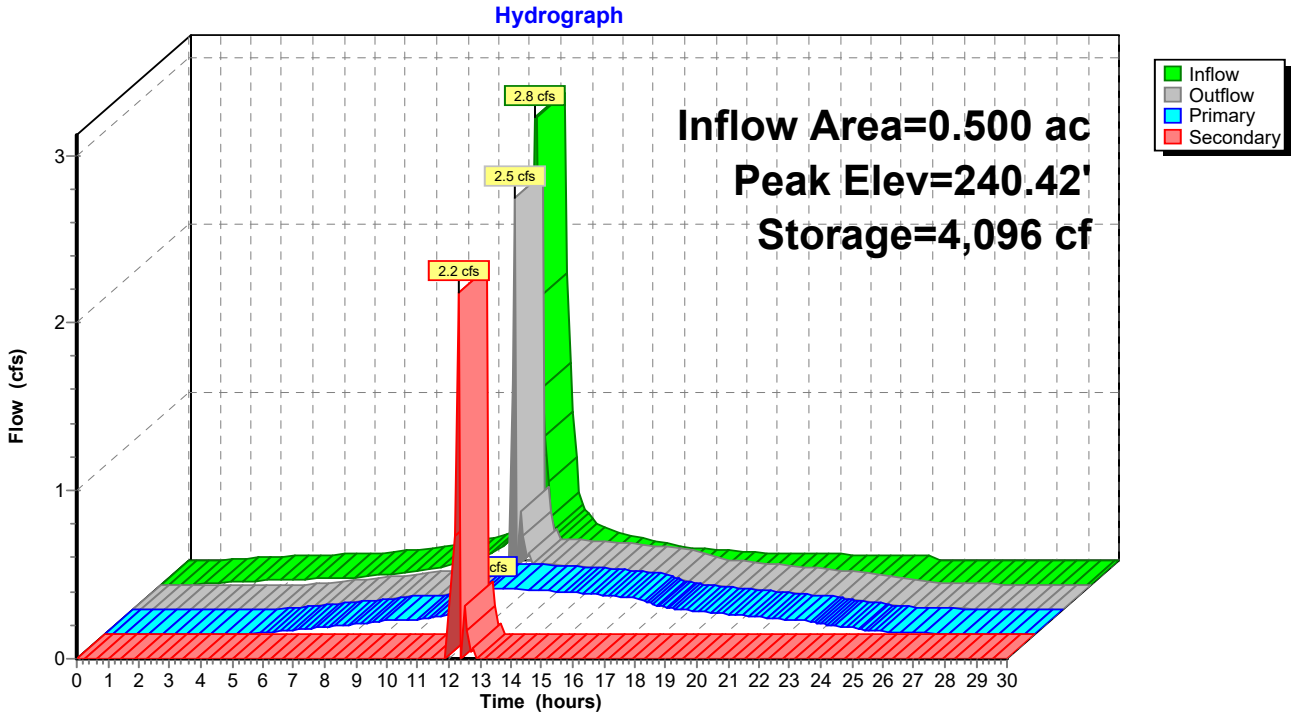
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.40	2,361	0	0
240.40	2,361	4,722	4,722

Device	Routing	Invert	Outlet Devices
#1	Secondary	240.40'	**200.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Device 4	235.10'	**0.1" Vert. Drawdown/Ball Valve** C= 0.600
#3	Device 4	235.35'	**4.0" Round 4" FD** L= 336.0' Ke= 0.600 Inlet / Outlet Invert= 235.35' / 235.00' S= 0.0010 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.09 sf
#4	Primary	230.40'	**8.0" Round 8" outlet** L= 63.0' Ke= 0.600 Inlet / Outlet Invert= 230.40' / 228.00' S= 0.0381 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.3 cfs @ 12.30 hrs HW=240.42' (Free Discharge)
└─**4=8" outlet** (Passes 0.3 cfs of 4.5 cfs potential flow)
  └─**2=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 11.10 fps)
  └─**3=4" FD** (Barrel Controls 0.3 cfs @ 3.09 fps)

Secondary OutFlow Max=1.2 cfs @ 12.30 hrs HW=240.42' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 1.2 cfs @ 0.36 fps)

Pond P-4.1: P-4.1



Summary for Pond P-4.2: VUSF

Inflow Area = 0.828 ac, 72.26% Impervious, Inflow Depth = 4.94" for 50-Year event
Inflow = 4.3 cfs @ 12.10 hrs, Volume= 0.341 af
Outflow = 2.6 cfs @ 12.25 hrs, Volume= 0.224 af, Atten= 39%, Lag= 9.1 min
Primary = 2.6 cfs @ 12.25 hrs, Volume= 0.224 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.10 hrs
Peak Elev= 231.06' @ 12.25 hrs Surf.Area= 9,344 sf Storage= 6,703 cf

Plug-Flow detention time= 238.0 min calculated for 0.224 af (66% of inflow)
Center-of-Mass det. time= 143.6 min (927.8 - 784.2)

Volume	Invert	Avail.Storage	Storage Description
#1	229.00'	16,700 cf	**Surface Ponding (Prismatic)** Listed below (Recalc)
#2	227.50'	303 cf	**Loam & Soil Filter (Prismatic)** Listed below (Recalc) 3,029 cf Overall x 10.0% Voids
#3	227.17'	133 cf	**Transition Gravel (Prismatic)** Listed below (Recalc) 666 cf Overall x 20.0% Voids
#4	226.17'	801 cf	**Crushed Stone (Prismatic)** Listed below (Recalc) 2,019 cf Overall - 17 cf Embedded = 2,002 cf x 40.0% Voids
#5	226.42'	17 cf	**4.0" Round Pipe Storage** Inside #4 L= 200.0' S= 0.0010 '/'
		17,954 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
229.00	2,019	0	0
230.00	2,609	2,314	2,314
231.00	3,256	2,933	5,247
232.00	3,750	3,503	8,750
234.00	4,200	7,950	16,700

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.50	2,019	0	0
229.00	2,019	3,029	3,029

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
227.17	2,019	0	0
227.50	2,019	666	666

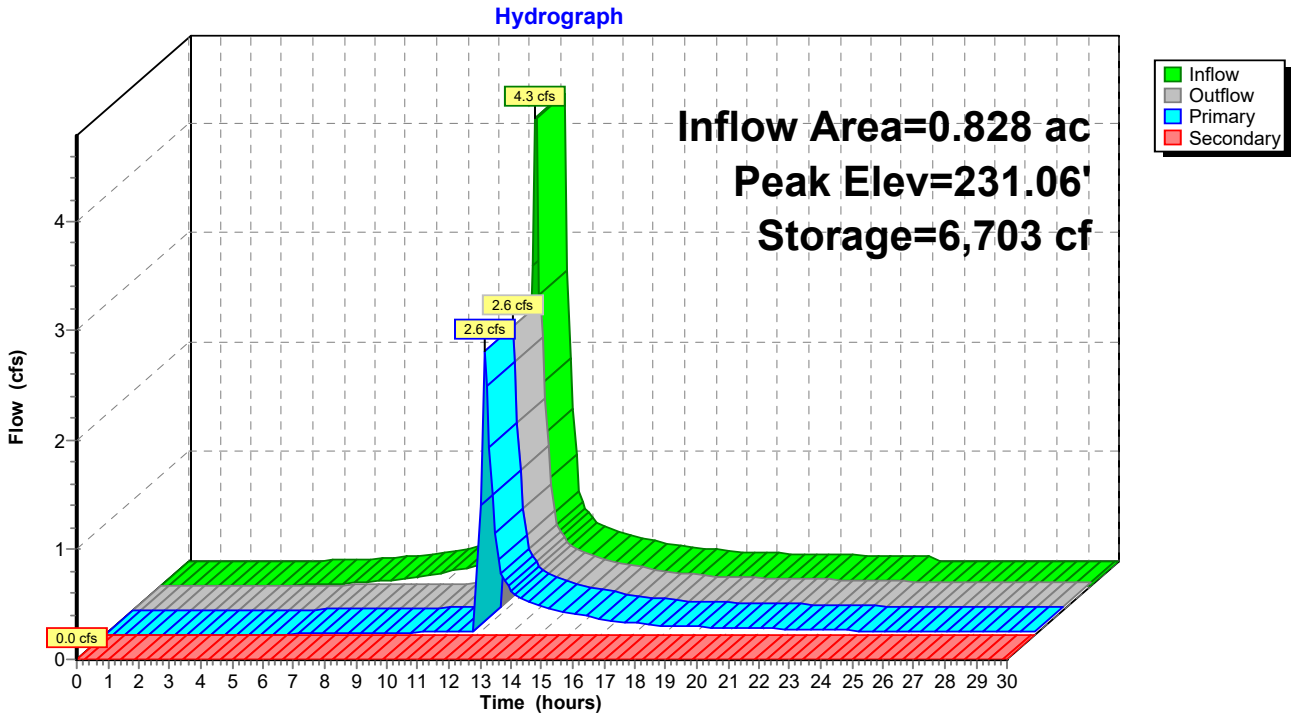
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
226.17	2,019	0	0
227.17	2,019	2,019	2,019

Device	Routing	Invert	Outlet Devices
#1	Secondary	231.30'	**20.0' long x 2.0' breadth Emergency Spillway** 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Device 4	230.80'	**24.0" Horiz. CB Overflow** C= 0.600 Limited to weir flow at low heads
#3	Device 4	226.00'	**0.8" Vert. Drawdown/Ball Valve** C= 0.600
#4	Primary	226.00'	**15.0" Round 15" SD** L= 64.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 226.00' / 225.80' S= 0.0031 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.25 hrs HW=231.03' (Free Discharge)
└**4=15" SD** (Passes 2.3 cfs of 11.8 cfs potential flow)
└**2=CB Overflow** (Weir Controls 2.3 cfs @ 1.57 fps)
└**3=Drawdown/Ball Valve** (Orifice Controls 0.0 cfs @ 10.76 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=226.17' (Free Discharge)
└**1=Emergency Spillway** (Controls 0.0 cfs)

Pond P-4.2: VUSF



Section P.4

Class A-High Intensity Soil Survey Report

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8228

Crocker Road and Belmont Avenue
Belfast, ME
WCAP

Soil Narrative Report

DATE:	Soil Profiles observed on April 17, 2025
BASE MAP:	Base plan prepared by Acorn Engineering. Scale 1-inch equals 100 feet and one-foot contours.
GROUND CONTROL:	Soil survey boundaries located by Mark Hampton Associates, Inc. for Class A Soil Survey

Class A-High Intensity Soil Survey (Minimum Standards)

Mapping units of 1/8 acre or larger.
Scale of 1"= 100 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located under direction of professional land surveyor or professional engineer.
Base Map –2 foot contour intervals

Provided:

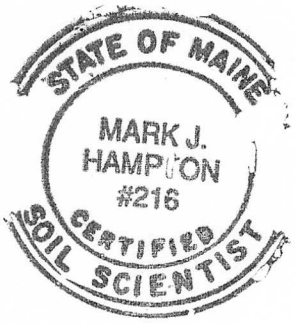
Mapping units of 1/8 acre or larger
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by pacing and taping from know survey control points.
Ground topographic survey with one-foot contours and ground control provided.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

C.S.S. #216, L.S.E. #263 May 13, 2025

Mark J. Hampton Date



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SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8228

Crocker Road & Belmont Avenue
Belfast, ME
WCAP

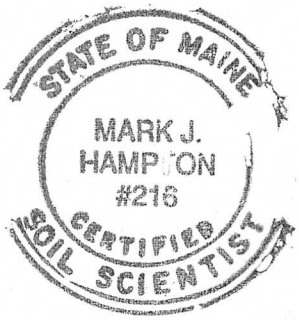
Peru
(Aquic Haplorthods)

SETTING

PARENT MATERIAL:	Derived from lodgment till
LANDFORM:	Glaciated uplands on hills and mountains
POSITION IN LANDSCAPE:	Mid-positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS:	Modertatley Well-Drained	
TYPICAL PROFILE:	Surface Layer:	Dark brown, fine sandy loam 0-8"
	Subsurface Layer:	Dark Yellow brown, fine sandy loam, 8-15"
	Subsoil Layer:	Olive Brown, fine sandy loam, 15-26"
	Substratum:	Olive gray fine sandy loam, 26-65"
HYDROLOGIC GROUP:	Group C	
SURFACE RUNOFF:	Medium to Rapid	
PERMEABILITY:	Slow or very Slow	
DEPTH TO BEDROCK:	Greater than 65 inches	
HAZARD TO FLOODING:	None	



INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Colonel, Brayton

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

8228

Crocker Road and Belmont Avenue
Belfast, ME
WCAP

Brayton
(Aeric Epiaquepts)

SETTING

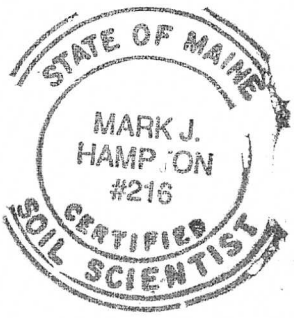
PARENT MATERIAL:	Derived from dense glacial till
LANDFORM:	Toeslopes and depressions in glaciated uplands
POSITION IN LANDSCAPE:	Lower positions on landform
SLOPE GRADIENT RANGES:	(A) 0-3%, (B) 3-8%, (C) 8-15%

COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:
Surface Layer: Dk gray, fine sandy loam 0-5",
Subsurface Layer: Gray fine sandy loam, 5-15",
Subsoil Layer: Grayish brown fine sandy loam, 15-24"
Substratum: Olive fine sandy loam, 24-65",

HYDROLOGIC GROUP:	Group C
SURFACE RUNOFF:	Moderate to moderately slow
PERMEABILITY:	Moderate and moderately slow
DEPTH TO BEDROCK:	Greater than 65 inches
HAZARD TO FLOODING:	None



INCLUSIONS
(Within Mapping Unit)

CONTRASTING: Peru, Colonel

USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of an extremely high watertable for a portion of the year. This soil is not suitable for development without alteration, which may require additional permitting.

8228

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Crocker Road & Belmont Avenue	WCAP	Belfast

Exploration Symbol # SS-1

☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
O/A	Black	F. Sandy Loam	Grand	Very Friable	
Bg	Gray	F. Sandy Loam	Weak Sub Ang Blocky	Friable	Common and Distinct
BC	Olive Brown	Fine Sandy Loam	Fine Grandu	Firm	
Cd	Olive Gray	Sandy Loam	Platy	Very Firm	

Soil Details

Soil Series/Phase Name: Brayton

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-2

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Weak Angular	Very Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grand	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grand	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 34 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-3

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Fine Grandul	Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grand	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grand	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 30 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 10 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

Exploration Symbol # SS-4

☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon (inches)

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Fine Grand	Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grandul	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grandul	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 29 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 12 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group:

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

Mark J. Hampton
Name Printed

05/13/2025
Date

216
SS License No.

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST
(affix professional seal)

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Crocker Road & Belmont Avenue	WCAP	Belfast

Exploration Symbol # SS-5 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Grand	Very Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grand	Friable	
BC	Yellowish Brown	Fine Sandy Loam	Weak Fine Grandu	Friable	
					Common and Distinct
Cd	Olive Brown	Sandy Loam	Weak Fine Grand	Firm	

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 30 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # SS-6 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/A	Black	F. Sandy Loam	Weak Angular	Very Friable	
Bg	Gray	F. Sandy Loam	Weak Fine Grand	Friable	Common and Distinct
BC	Olive Brown	F. Sandy Loam	Weak Fine Grand	Friable	
Cd	Olive Gray	F. Sandy Loam	Weak Fine Grand	Firm	

Soil Details

Soil Series/Phase Name: Brayton

Limiting Factor: 6 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☐ No ☒ Yes

Hydrologic Soil Group: ____

Exploration Symbol # SS-7 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Fine Grandul	Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grand	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grand	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 30 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 6 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

Exploration Symbol # SS-8 ☐ Test Pit ☒ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Fine Grand	Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grandul	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grandul	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name: Peru

Limiting Factor: 29 " Depth — ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock

Drainage Class: ☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD

Slope: 2 Percent

Hydric Soil: ☒ No ☐ Yes

Hydrologic Soil Group: ____

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

Mark J. Hampton
Name Printed

05/13/2025
Date

216
SS License No.

STATE OF MAINE
MARK J. HAMPTON #216
CERTIFIED SOIL SCIENTIST

affix professional seal

8228

FORM F (SS1) Rev. 7/21

SOIL PROFILE / CLASSIFICATION INFORMATION

SOIL SCIENTIST DESCRIPTION OF SOIL CONDITIONS AT PROJECT SITES

Project Name:	Applicant Name:	Project Location (municipality):
Crocker Road & Belmont Avenue	WCAP	Belfast

Exploration Symbol # SS-9 ☐ Test Pit ☒ Boring ☐ Probe

0 " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/A	Black	F. Sandy Loam	Grand	Very Friable	
Bg	Gray	F. Sandy Loam	Weak Fine Grand	Friable	Common and Distinct
BC	Olive Brown	Fine Sandy Loam	Weak Fine Grandu	Firm	
Cd	Olive Gray	Fine Sandy Loam	Weak Fine Grand	Firm	

Soil Details

Soil Series/Phase Name:	Limiting Factor	Drainage Class	Slope	Hydric Soil	Hydrologic
Brayton	6 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☒ PD ☐ VPD	12 Percent	☐ No ☒ Yes	_____ Soil Group

Exploration Symbol # SS-10 ☐ Test Pit ☒ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☒ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox
O/E	Dark Brown	F. Sandy Loam	Weak Angular	Very Friable	
Bs	Brown	F. Sandy Loam	Weak Fine Grand	Friable	
BC	Yellowish Brown	F. Sandy Loam	Weak Fine Grand	Friable	
Cd	Olive Brown	F. Sandy Loam	Weak Fine Grand	Firm	Common and Distinct

Soil Details

Soil Series/Phase Name:	Limiting Factor	Drainage Class	Slope	Hydric Soil	Hydrologic
Peru	32 " Depth ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☒ MWD ☐ SPD ☐ PD ☐ VPD	6 Percent	☒ No ☐ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor	Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

Exploration Symbol # _____ ☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness Ground surface elev. _____

_____ " Depth: ☐ of exploration, or ☐ to refusal

Depth below mineral soil horizon *(inches)*

Horizon	Color	Texture	Structure	Consistence	Redox

Soil Details

Soil Series/Phase Name:	Limiting Factor	Drainage Class	Slope	Hydric Soil	Hydrologic
	_____ " Depth ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock	☐ ED ☐ SED ☐ WD ☐ MWD ☐ SPD ☐ PD ☐ VPD	_____ Percent	☐ No ☐ Yes	_____ Soil Group

SOIL SCIENTIST INFORMATION AND SIGNATURE

Signature

05/13/2025
Date

Mark J. Hampton
Name Printed

216
SS License No.

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED
SOIL SCIENTIST

affix professional seal

GENERAL NOTES:

1. REFER TO STORMWATER REPORT FOR MORE INFORMATION.
2. THIS DATA HAS BEEN TRANSLATED FROM A PLAN MARKUP BY MARK HAMPTON ASSOCIATES USING GRAPHICAL MEANS.
3. EXPLORATIONS PERFORMED BY MARK HAMPTON ASSOCIATES. REFER TO CLASS A HIGH INTENSITY SOIL SURVEY FOR MORE INFORMATION. SOIL NARRATIVE REPORT FOR CROCKER ROAD AND BELMONT AVENUE, BELFAST, ME DATED APRIL 17, 2025.

EXPLORATION SYMBOL

HYDROLOGIC GROUP C SOIL

HYDROLOGIC GROUP C SOIL & WETLAND

CONCEPT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SOIL SCIENTIST REVIEW	SJL 5/16/25

DRAWING NAME: **CLASS A HIGH INTENSITY SOIL SURVEY MAP**

PROJECT NAME: **ROUTE 3 RESIDENTIAL SITE CONCEPTS**

CLIENT: WALDO COMMUNITY ACTION PARTNERS

THESE PLANS SHALL NOT BE MODIFIED, IN PART OR WHOLE, WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY UNAUTHORIZED USE OF THESE PLANS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
PO BOX 3377 PORTLAND, MAINE 04104
(207) 775-2655

FILE:	1287_SOILS
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

DRAWING NO.
EX SOILS

Section P.5

Developed & Impervious Area Exhibit

GENERAL NOTES:

1. TOPOGRAPHIC & BOUNDARY SURVEY PLAN SOURCED FROM SURVEY TITLED "TOPOGRAPHIC SURVEY" BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED 04/16/2025.
2. SOILS SOURCED FROM UNITED STATED DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES CONSERVATION SERVICE TITLED "CUSTOM SOIL RESOURCE REPORT FOR CUMBERLAND COUNTY AND PART OF WALDO COUNTY, MAINE."

NOTE:

REFER TO STORMWATER REPORT FOR MORE INFORMATION

DEVELOPED AREA TREATED

DEVELOPED AREA UNTREATED

30 0 30 60

SCALE: 1" = 30'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: DEVELOPMENT PLAN

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.
ENGINEERING & SURVEYING
PO BOX 347, ELIOT, MAINE 04104
(207) 775-2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT PERMISSION FROM ACORN ENGINEERING, INC. AND IF SO MODIFIED OR USED FOR OTHER PROJECTS, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

FILE:	1287_WQ
JN:	1287
SCALE:	
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
EX.1

Section Q

Site Plan & Nonresidential Development Standards Outline

Q. Site Plan & Nonresidential Standards Outline

The following outline is made in accordance with the City of Belfast Code of Ordinances, Chapter 90 Site Plan – Section 90-43, Subsection (b), Criteria for Review by Planning Board, and Chapter 102 Zoning – Division 3, Nonresidential Development Standards – Route 3 Commercial, Sections 102-1182 through 1213

OVERVIEW

The proposed 60-unit affordable residential development has been designed to conform to City standards as outlined below. This project conforms with the majority of the applicable standards of Belfast's Ordinance as demonstrated in the following narrative.

Chapter 90 Site Plan 90-43, Subsection (b)

(1.) Pollution:

a. The site is not constructed within a floodplain.

b. There is no proposed onsite waste disposal or stormwater infiltration, and the site will be served by public sewer. See **Attachment N** for a statement demonstrating the Belfast Wastewater Treatment Facility has capacity to serve the development.

c. No potentially hazardous effluents are proposed as part of this project. Stormwater runoff from the proposed project will be treated through a series of best management practices and structural outlets designed to provide contaminant removal, reduce peak rates of runoff, and reduce the energy state of the runoff. Erosion potential at steeper portions of the site will be minimized through erosion and sedimentation controls. **See Attachments K and P** for further information regarding erosion and sedimentation controls and stormwater treatment.

d. No direct discharges to streams are proposed as part of this project.

e. This project will be subject to a Maine Department of Environmental Protection Stormwater Management Law Application, a copy of which has been provided to the City. No air emissions in excess of those typical of a multi-unit residential development are proposed.

(2.) Sufficient Water:

The project will be served by public water and does not anticipate demand exceeding that typical of a multi-unit residential development of this scale. **See Attachment N** for a statement demonstrating the Belfast Water District has capacity to serve the development.

(3.) Municipal Water Supply:

See Attachment N for a statement demonstrating the Belfast Water District has capacity to serve the development.

(4.) Soil Erosion and Sediment Control:

The project does not anticipate causing unreasonable soil erosion. See **Attachment K** for further information on erosion and sedimentation control.

(5.) Highway or public road congestion:

The site will be accessed via an existing paved access drive off Belmont Avenue. This drive is located within an easement on the Applicant's property and was constructed during development of the neighboring Tractor Supply Company. The project is not anticipated to generate 100 vehicle trips per peak hour and a Maine DOT traffic movement permit is not

required. See **Attachment L** for further information.

(6.) Sewage Waste Disposal

See **Attachment N** for a statement demonstrating the Belfast Wastewater Treatment Facility has capacity to serve the development.

(7.) Municipal Solid Waste and Sewage Waste Disposal

See item 6 above regarding municipal wastewater. Solid waste generation rates will be typical of a multi-unit residential development and the Applicant will contract a private hauler to collect municipal solid waste and recycling on a regular basis. A screened solid waste area is provided at the northwest portion of the site, see **Sheet C-10 - Site Plan** of the civil plan set.

(8.) Aesthetic, cultural, and natural values:

The site had been previously developed and is currently a mixture of meadow and wooded areas. The site is not located near the shoreline and no mapped significant wildlife exists onsite. The project has been designed to conform to the existing topography and no impacts to natural resources are proposed. Additionally, a 200-foot buffer area will be preserved from Belmont Avenue. See **Sheet L-02 Landscape Plan** of the civil plan set for proposed landscaping.

(9.) Conformity with City Ordinance and plans:

The proposed residential project confirms with applicable zoning regulations and technical standards as given in Chapters 102 and 98, as addressed in this document.

(10.) Financial and Technical Capacity:

The financial capacity letter can be viewed in **Attachment F**. The Technical Capacity Letter can be viewed in **Attachment G**.

(11.) Surface Waters; Outstanding River Segments:

There is an existing stream located at the west of the site, approximately 250-feet from the proposed project extent. The project is located within the watershed of Belfast Reservoir #2. No outstanding river segments, wetlands of special significance, significant vernal pools, or great ponds are located adjacent to or within the site. The project is not located in the Shoreland Zone and stormwater runoff will be managed and treated in accordance with Maine Department of Environmental Protection standards. Please **see Attachment P** for more information.

(12.) Groundwater:

The project will not adversely affect the quality or quantity of groundwater. No stormwater infiltration or subsurface wastewater disposal is proposed.

(13.) Flood Areas:

No portion of the project is within a floodplain or flood prone area. See **Attachment J** for more information.

(14.) Freshwater Wetlands:

Existing wetlands on site have been identified by a professional natural resources consultant. Freshwater wetlands are depicted within the attached Civil Plan Set, and are further described in **Attachment I**. No impacts to freshwater wetlands are proposed.

(15.) Rivers or streams:

An existing stream on site has been identified by a professional natural resources consultant. The stream is depicted within the attached Civil Plan Set. No impacts to the stream or within the 75-foot stream setback are proposed.

(16.) Stormwater:

See **Attachment P** for the stormwater management report.

(17.) Access to direct sunlight for abutting property owner for solar energy system:

The project site will not affect or limit the solar exposure of neighboring properties.

(18.) Solid Waste Management:

Solid waste generation rates will be typical of a multi-unit residential development and the Applicant will contract a private hauler to collect municipal solid waste and recycling on a regular basis. Waste will be disposed of at a licensed disposal facility.

(19.) Exterior Lighting:

Lighting has been designed by Reflex Lighting to provide adequate and appropriate lighting for residential use, and to avoid trespass beyond the WaldoCAP's property. Lighting will be a mixture of pole-mounted, building-mounted, and bollard lighting, and all lighting will be downcast. A photometric plan and cut sheets can be seen in **Attachment M**. Please see **Attachment D** for a waiver technically required for light pole installation along the proposed building's driveway.

(20.) Buffering of adjacent uses:

The parcel requires a 25' side setback and a 200' front yard buffer. The project has been placed and designed to fit within these requirements. A topographic buffer shields a portion of the site from the adjacent retail use, and landscape tree and shrub plantings will be provided. See the Civil Plan Set for buffer locations and landscape provisions.

(21.) Noise:

Noise generated by the proposed site will be typical of multi-unit residential and is not anticipated to conflict with neighboring uses.

(22.) Storage of materials:

a. Not applicable.
b. The proposed solid waste location will be fully screened as required by Sec. 102-940 and located on a concrete pad.
c. Not applicable.

(23.) Landscaping:

See the Landscaping notes, plan, and details **(L-01,02,03)** in the civil plan set, which demonstrate use of native species plantings to provide attractive, resilient, and natural buffers throughout and surrounding the site.

(24.) Buffering of Residential Uses:

a. The parcel contains an abutting commercial facility to the east, undeveloped meadow and forest to the north, residential to the west, and Belmont Avenue to the south, with commercial/institutional across (to the south of) Belmont Ave. Residential abutters to the west will adequately be screened from the proposed use by existing vegetation to remain.
b. Existing vegetative buffers to the west of the proposed development are greater than 25-feet in width and will be retained. These buffers will adequately screen the proposed development from abutting residential abutters. Additionally, the proposed landscaping package supplements these existing vegetative buffers.

(25.) Location of off-street parking:

The project proposes to provide a total of 63 parking spaces for the 60 unit building, as allowed by LD 2003. The 63 parking spaces will contain (50) standard 9'x18' spaces, (7) compact 8.5'x18' spaces, and (6) ADA spaces with associated access aisles. A waiver for the (7) compact spaces is included in **Attachment D**. In addition, we are proposing a drive aisle width of 24', which is standard practice for low-turnover residential uses nationwide. A waiver request to reduce the drive aisle width to 24' from the standard of 26' is provided in **Attachment D**.

(26.) Hazardous waste:

The project does not intend to produce any hazardous waste. Any small quantities of hazardous materials typical of the maintenance of a multi-unit facility of this scale will be

stored within the building and properly contained.

(27.) Prevention or control of air pollution:

During construction, potential pollutants such as dust and debris will be monitored and managed as provided in Attachment K. Once operational, no air emissions in excess of those typical of a multi-unit residential development are proposed..

(28.) Protection of public health and safety:

The proposed multifamily residential use does not anticipate posing a risk to the public health or welfare.

(29.) Adequacy of waste disposal:

See responses to items #18, #22, and #26.

(30.) Additional Standards for development that may substantially affect the environment

There are no known additional standards which may substantially affect the environment.

Chapter 102 Zoning – Division 3, Nonresidential Development Standards – Route 3 Commercial, Sections 102-1182 through 1213

- Section 102-1182
  a) The proposed 4.01-acre parcel with 200' of frontage along Belmont Avenue meets the standard for traffic generation of <100 vtpph (vehicle trips per peak hour). See Attachment L for traffic generation estimates.
  b) through e): N/A
- Section 102-1183
  a) The proposed residential building footprint is approximately 19,175 sf. Additionally, although the standard as written is applicable to nonresidential uses, the proposed building exceeds the setback and buffer yard standards of 40-feet. Additionally, contract zoning regulations for the subject parcel require a 200-foot buffer yard along Belmont Avenue. The proposed project does not propose structures or parking within the 200-foot buffer yard and meets this more stringent contract zone standard.
  b) N/A
  c) The 200-foot buffer yard provided is measured from the property line with the Belmont Ave. ROW.
  d) The 200-foot front buffer yard is contained entirely on property owned by the Applicant.
- Section 102-1184
  a) The required side setback and buffer for the site are 25 feet, both of which are being met. See Sheet C-10 Site Plan for Space and Bulk standards and depiction.
  b) N/A
  c) N/A
  d) The 25-foot side buffer yard is contained entirely on property owned by the Applicant.
- Section 102-1185
  a) The required rear setback and buffer for the site are 25 feet, both of which are being met. See Sheet C-10 Site Plan for Space and Bulk standards and depiction.
  b) N/A
  c) N/A
  d) The 25-foot rear buffer yard is contained entirely on property owned by the Applicant.
- Section 102-1186
  a) The proposed project is a residential use. All side and rear buffer yards abutting residential uses to the west and northwest are proposed to remain in their natural states. A portion of the side buffer yard abutting the Tractor Supply Company commercial use

to the east will remain, and a portion will be graded as part of site development, with tree, shrub, and perennial plantings provided as depicted on sheet L-02 of the Civil Plan Set.

b) See subsection d)

c) See subsection d)

d) Although the proposed structure is a residential use and not explicitly subject to nonresidential standards, the proposed landscape plantings will be provided as shown on L-02 and existing vegetation beyond the Development Parcel will be preserved. Existing and proposed vegetation meets the buffer standards of at least 70 points/100 LF for the front buffer, 30 points/100 LF for the side buffer, and 40 points/100 LF for the rear buffer.

e) N/A

f) N/A

g) The Applicant intends to contract with an established landscape contractor capable of properly installing and maintaining proposed landscaping.

- Section 102-1187

  Although the standards given in Section 102-1187 are not applicable to this project's proposed residential use, the following architectural considerations have been made when designing and siting the building. Elevation views of the proposed building by Callender + Delaney Architects are forthcoming.

  - The residential structure's "best face", and longest façade, will be oriented toward the existing access drive on the property, with a shorter façade oriented toward Belmont Avenue. Both of these facades will be an "attractive face".
  - Architectural form of the proposed residential structure will feature traditional New England styles, incorporating multi-pitch trusses resulting in a gable/hip roof form and will feature lap-style siding with color, texture, and material changes, in addition to changes in plane. Architectural design will be visually compatible with its surroundings.
  - See the Architectural First Floor Schematic Plan, demonstrating that the proposed façade incorporates wall plan projections and recesses to meet the standard.
  - The facades facing public streets and internal access drives will contain multiple windows and awnings at entry areas in keeping with residential fenestration requirements, and will provide an attractive façade.
  - The roof will complement the proposed building style and will incorporate multi-pitch trusses and overhanging eaves.

- Section 102-1188

  Although the standards given in Section 102-1188 are not applicable to this project's proposed residential use, the proposed site design features a robust landscaping package and significant setback from Route 3. Although the site design proposes parking at the front and side of the building, the design as presented to the Board greatly reduces the development area and impervious area which would be required of a design proposing parking behind the building. The design as proposed allows for a more attractive and private amenity space for residents at the rear of the building.

- Section 102-1189

  See Sheet L-02 and response to Section 102-1186 regarding continuous buffer yard plantings, a robust landscape package, and preservation of existing vegetation along the side and front setbacks. The standards given in Section 102-1189 are not applicable to nonresidential uses as written, due to the proposed residential use.

- Section 102-1190

  The project intends to only construct one (1) curb cut for the proposed residential project. The proposed curb cut will be two-way and will be constructed at the existing access

drive within the Applicant's property. The curb cut will provide save and unobstructed access to the site. This curb cut has adequate site distance at the intersection with the internal access drive and will be located greater than 150-feet from Belmont Ave.

- Section 102-1191
  Sidewalks, crosswalks, and signage have been designed within the parking lot to safely navigate pedestrians and motorists within the site. See Sheet C-10 of the civil plan set.
- Section 102-1192
  See **Attachment N** for utility coordination details.
- Section 102-1193
  Excess or undue noise is not anticipated to be generated by the proposed residential development. During construction, activity will occur between the hours of 7 AM and 8 PM.
- Section 102-1194
  See response to item #27 above.
- Section 102-1195
  No offensive or harmful odors are anticipated to be generated by the proposed residential development.
- Section 102-1196
  Lighting has been designed to meet the required footcandles. See response to item #19 above and **Attachment M** for the proposed photometric plan and cut sheets.
- Section 102-1197
  See **Attachment P** for the proposed stormwater management report, demonstrating no increase in peak rate of runoff and stormwater design meeting Maine DEP Basic, General, and Flooding standards.
- Section 102-1198
  The project does not propose impacts to the existing wetlands onsite. No work requiring NRPA permits is required. See **Attachment I** and **Sheet C-30 Grading Plan** for wetland characterization and depiction of the extent of soil disturbance.
- Section 102-1199
  No portion of the proposed work will be within a floodplain. See **Attachment J** for the FEMA Firmette of the project area.
- Section 102-1200
  See **Attachment P** for the high-intensity soil survey performed by Mark Hampton Associates. No stormwater infiltration or subsurface wastewater disposal are proposed.
- Section 102-1201
  See **Attachment K** for the Erosion Sedimentation & Control Report, which contains provisions for minimizing soil erosion and sedimentation of watercourses.
- Section 102-1202
  See responses to items #18, #22, #26, and #29 above.
- Section 102-1203
  See response to item #26 above. Chemical storage will be protected within a locked room within the structure, to be accessed by staff only.
- Section 102-1204
  See response to item #26 above, and the Housekeeping Plan provided as Attachment K of the Maine DEP Stormwater Law application.
- Section 102-1205
  Due to adequate onsite stormwater provisions and low traffic volumes anticipated, we do not anticipate that offsite improvements will be necessary.
- Section 102-1206
  We have received ability-to-serve determinations from Belfast Water District and Olver

Associates indicating that municipal sewer and water systems can adequately serve the site as designed. We do not anticipate any adverse impacts to existing City or state infrastructure.

- Section 102-1207

  The applicant is aware of performance guarantee requirements and requests that the City and Planning Board communicate performance guarantee amount and escrow requirements as soon as possible.
- Section 102-1208

  See **Attachment F & G** for financial and technical capacity letters.
- Section 102-1209

  The proposed design provides 6 ADA spaces and accessible routes from the proposed parking areas to the building. See civil plans for site and grading layout.
- Section 102-1210

  Not applicable.
- Section 102-1211

  Not applicable.
- Section 102-1212

  Not applicable.
- Section 102-1213

  Not applicable.

Plans

Civil/Site Plans & Details (dated 06/30/25)

45 BELMONT AVENUE AFFORDABLE HOUSING

WALDO COMMUNITY ACTION PARTNERS
BELFAST, MAINE

LEGEND

EXISTING

REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION

PROPOSED

- UNDERDRAIN
- ROOF OVERHANG
- WETLAND
- UTILITY PAVEMENT CUTS
- GRASS PAVERS
- BITUMINOUS PAVEMENT
- CONCRETE
- STRIPING
- GUARDRAIL
- FENCE
- SEDIMENTATION BARRIER
- EDGE OF EX. PAVEMENT
- VERTICAL CURB
- FLUSH GRANITE CURB
- TYPE 5 SLOPED CURB
- SIGN
- LAMP OR LIGHT POLE
- UTILITY POLE
- FOUNDATION DRAIN
- WATER VALVE
- FIRE HYDRANT
- SEWER MANHOLE
- CATCH BASIN
- DRAIN MANHOLE
- CATCH BASIN WITH HEADSTONE
- ELECTRIC MANHOLE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND WATER LINE
- MINOR CONTOURS (1 FT)
- MAJOR CONTOURS (5 FT)
- GAS LINE
- STORM DRAIN LINE
- SEWER LINE
- EXISTING/PROPOSED BUILDING
- OVERHEAD ELECTRICAL/TELEPHONE/CABLE
- UNDERGROUND ELECTRIC
- UNDERGROUND TELECOM
- UNDERGROUND ELECTRIC AND TELECOM
- SPLICE BOX
- TRANSFORMER PAD
- BOLLARD
- PROPERTY LINE
- SETBACKS
- FLOW DIRECTION ARROW

INDEX

C-01	COVER SHEET & LEGEND
C-02	GENERAL NOTES
EX	EXISTING CONDITIONS PLAN – BY E.S. COFFIN ENGINEERING & SURVEYING. INC.
C-09	OVERALL SITE PLAN
C-10	SITE PLAN
L-02	LANDSCAPE PLAN
C-20	UTILITY PLAN
C-30	GRADING & DRAINAGE PLAN
C-40	SITE DETAILS – 1
C-41	SITE DETAILS – 2
C-42	UTILITY DETAILS – 1
C-43	UTILITY DETAILS – 2
C-44	DRAINAGE DETAILS – 1
C-45	DRAINAGE DETAILS – 2
C-46	EROSION CONTROL NOTES
C-47	EROSION CONTROL DETAILS
L-01	LANDSCAPE NOTES
L-03	LANDSCAPE DETAILS

CALL BEFORE YOU DIG
1-888-DIG-SAFE
1-888-344-7233

PROJECT TEAM

DEVELOPER

WALDO COMMUNITY ACTION PARTNERS
9 FIELDS STREET
P.O. BOX 130
BELFAST, MAINE 04915
CONTACT: DONNA M. KELLY
(207) 338-6809

CIVIL ENGINEER:

ACORN ENGINEERING, INC.
16 MIDDLE STREET, SUITE 302
PORTLAND, MAINE
CONTACT: SAM LEBEL, P.E.
(207) 775-2655

LANDSCAPE ARCHITECT

ACORN ENGINEERING, INC.
16 MIDDLE STREET, SUITE 302
PORTLAND, MAINE
CONTACT: ALEXIS DEL VECCHIO, R.L.A.
(207) 775-2655

ARCHITECT

CALLENDER & DELANEY ARCHITECTS
136 PLEASANT AVENUE
PORTLAND, MAINE
CONTACT: JOE DELANEY, LEED AP
(207) 775-2696

SURVEYOR

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 CONY ROAD
CHELSEA, MAINE 04330
CONTACT: CALEB COFFIN P.L.S.
(207) 623-9475

WETLAND & SOIL SCIENTIST

MARK HAMPTON ASSOCIATES, INC.
90 RIVERSIDE STREET
WESTBROOK, MAINE
CONTACT: MARK HAMPTON, C.S.S, L.S.E
(207) 756-2900

UTILITIES

SEWER

BELFAST WASTEWATER TREATMENT FACILITY
50 FRONT STREET
BELFAST, MAINE 04915
CONTACT: TRAVIS JONES, OLVER ASSOCIATES, ASSISTANT OPERATIONS MANAGER
(207) 479-3330

WATER

BELFAST WATER DISTRICT
41 WIGHT STREET
PO BOX 506
BELFAST, MAINE 04915
ATTN: FRANK SHORT
(207) 338-1200

ELECTRIC

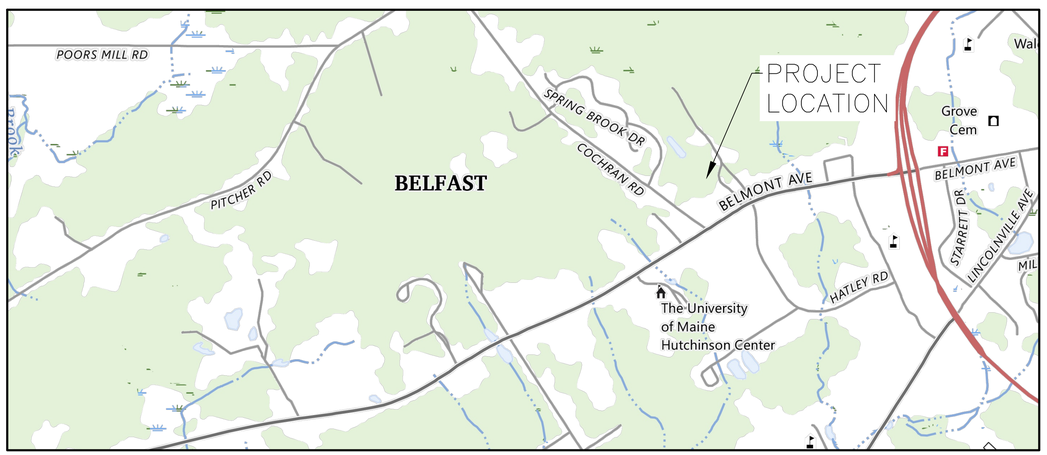
CENTRAL MAINE POWER COMPANY (CMP)
57 SEARSPORT AVENUE
BELFAST, ME 04915
CONTACT: SABRINA NOBLE
(207) 828-2882

TELEPHONE

CONSOLIDATED COMMUNICATIONS
(FORMERLY FAIRPOINT)
45 FOREST AVENUE
PORTLAND, MAINE 04101
CONTACT: PAT MORRISON
(207) 745-9363

CABLE

SPECTRUM CABLE
118 JOHNSON ROAD
PORTLAND, MAINE, 04102
CONTACT: STEVEN HOLMES
(207) 631-1618



VICINITY MAP
SCALE: 1:1000

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ABBREVIATIONS

PARTIAL LIST OF ABBREVIATIONS AND THEIR CORRESPONDING MEANING. PLEASE CONTACT THE ENGINEER FOR ANY CLARIFICATION

APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BG	BEEHIVE GRATE
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
BWD	BELFAST WATER DISTRICT
CAD	COMPUTER AIDED DESIGN
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
CL	CENTERLINE
CM	CONSTRUCTION MANAGER
CMP	CENTRAL MAINE POWER
CONC.	CONCRETE
CPP	CORRUGATED PLASTIC PIPE
CY	CUBIC YARD
DI	DUCTILE IRON PIPE
DIA.	DIAMETER
DIM.	DIMENSION
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EQUIV.	EQUIVALENT
EST.	ESTIMATE
EX.	EXISTING
FFE	FINISH FLOOR ELEVATION
FI	FIELD INLET
FT.	FEET
HDPE	HIGH DENSITY POLY ETHYLENE
ID	INNER DIAMETER
IN.	INCH
INV.	INVERT
L	LENGTH
MAX.	MAXIMUM
MDEP	MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
MDOT	MAINE DEPARTMENT OF TRANSPORTATION
M.E.P	MECHANICAL, ELECTRICAL, PLUMBING DESIGNER
MFG.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OHE/T/C	OVERHEAD ELECTRIC/TELEPHONE/CABLE
PC	PRECAST
PE	PROFESSIONAL ENGINEER
PL	PROPERTY LINE
PLS	PROFESSIONAL LAND SURVEYOR
PROP.	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RD	ROOF DRAIN
RET.	RETAINING
ROW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SMH	SEWER MANHOLE
SPEC.	SPECIFICATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
UD	UNDERDRAIN
UGE	UNDERGROUND ELECTRIC
VIF	VERIFY IN FIELD

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: COVER SHEET & LEGEND
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

THESE PLANS, IN PART OR IN WHOLE, ARE NOT TO BE USED IN ANY WAY, NOR ALTERED OR MODIFIED IN ANY FORM OR MANNER WHATSOEVER, EXCEPT BY WRITTEN AUTHORIZATION FROM ACORN ENGINEERING, INC. ANY UNAUTHORIZED USE OF THESE PLANS, IN PART OR IN WHOLE, OR ANY ALTERATION OR MODIFICATION THEREOF, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC
PO BOX 4337, PORTLAND, MAINE 04104
(207) 775-2655

FILE: 1287 DETAILS
JN: 1287
SCALE: AS NOTED
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
PROFESSIONAL ENGINEER
LICENSED
6/30/25

DRAWING NO.
C-01

GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANIES AND DIG SAFE AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION FOR UTILITIES. OTHERWISE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF UNDERGROUND UTILITIES AND LOCATE ANY POTENTIAL CONFLICTS WITH THE APPROVED PLANS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES SHOWN ON THE PLAN. IF DEEMED NECESSARY BY THE OWNER OR OWNER'S REPRESENTATIVE (IF APPLICABLE), ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULE BASED ON THE PLANS AND FIELD VERIFICATION BY THE CONTRACTOR. ALL MATERIAL SCHEDULES SHOWN WITHIN THE PLAN SET ARE FOR GENERAL INFORMATION ONLY.
4. ALL CONSTRUCTION METHODS, TESTING AND MATERIALS SHALL CONFORM TO THE MAINE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, THE CITY OF BELFAST AND SERVICING UTILITY REQUIREMENTS, IF ANY. IN CASES WHERE THESE CONFLICT THE MOST STRINGENT SPECIFICATION SHALL APPLY AT NO ADDITIONAL COST TO THE OWNER.
5. THE SITE CONTRACTOR SHALL MAINTAIN A SET OF PAPER AND CAD DRAWINGS WHICH SHALL RECORD THE ACTUAL LOCATION, DIMENSIONS, ELEVATIONS, MATERIALS OF THEIR WORK, INDICATING THEREON ALL VARIATIONS FROM THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE COMPLETE SET OF REPRODUCIBLE RECORD DRAWINGS, IN .DWG FORMAT AND PAPER, STAMPED ''AS-BUILT''. IF AUTOCAD CAPABILITY IS NOT AVAILABLE, EXCLUDE FROM BID IN WRITING.
6. THE CONTRACTOR WILL REMAIN SOLELY AND COMPLETELY RESPONSIBLE FOR ENFORCEMENT OF AND COMPLIANCE WITH 1) ALL CONTRACT PLANS AND SPECIFICATIONS, 2) APPLICABLE INTERNATIONAL BUILDING CODE REQUIREMENTS, AND 3) ALL SITE WORKING CONDITIONS AND SAFETY REQUIREMENTS, DAY AND NIGHT, FOR BOTH PERSONS AND PROPERTY, IN EACH CASE BOTH BY THE CONTRACTOR AND ITS SUBCONTRACTORS. THESE INCLUDE ALL OSHA, NIOSH, U.S. EPA AND ANY OTHER APPLICABLE GOVERNMENTAL REGULATIONS.
7. EXISTING CONDITIONS, BOUNDARY SURVEY, AND TOPOGRAPHY FROM THE PLAN TITLED TOPOGRAPHIC SURVEY BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED APRIL 16, 2025.
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY MARKINGS, SIGNAGE AND INCIDENTALS TO MAINTAIN A SAFE VEHICLE AND PEDESTRIAN ACCESS THOUGH THE LIFE OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE BELFAST PUBLIC SAFETY DIVISION ROUTINELY REGARDING TEMPORARY IMPACTS OR CHANGES TO SITE ACCESS CONDITIONS.
9. CONSTRUCTION MANAGEMENT PLAN AND SITE LOGISTICS NARRATIVE DATED SEPTEMBER 11TH, 2015 BY THE PC CONSTRUCTION SHALL BE REFERRED TO FOR ANTICIPATED PROJECT SCHEDULE AND CLOSURES. TRAFFIC CONTROL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR TO DETERMINE SOIL CLASSIFICATION INDEPENDENTLY FOR TRENCH, SHORING, AND OTHER SIMILAR CONSTRUCTION MEANS AND METHODS APPLICATIONS.
11. NO HOLES, TRENCHES, OR STRUCTURES SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT IN ANY AREA ACCESSIBLE TO THE PUBLIC OR WITHIN THE PUBLIC RIGHT-OF-WAY.
12. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION SURVEY OF INTERIOR SUBGRADE AND ABOVE GRADE ACCESSIBLE WALLS, CEILINGS, FLOORS, ROOF AND VISIBLE EXTERIOR AS VIEWED FROM THE GRADE LEVEL. THIS SHALL BE COMPLETED AT A MINIMUM ADJACENT STRUCTURES. PROVIDE A COPY OF THE SURVEY TO THE OWNER. DOCUMENT WITH PICTURES AT A MINIMUM.
13. THE CONTRACTOR SHALL SURVEY ROCK SURFACE PRIOR TO EXCAVATION AND DEVELOP VOLUME CALCULATIONS TO SHARE WITH THE ENGINEER, ACORN ENGINEERING INC. (ACORN), IF ANY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY TRENCH PAVEMENT THAT HAS EXPERIENCED EXCESSIVE SETTLEMENT, CRACKING, OR OPENING OF JOINTS. REPAIRS MAY INCLUDE OVERLAY. REMOVAL OF WORK MAY BE NECESSARY AFTER THE FINAL ACCEPTANCE OF WORK OR PRIOR TO THE END OF THE WARRANTY PERIOD. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.

CIVIL SITE NOTES:

1. THE CONTRACTOR SHALL SUBMIT IN WRITING ANY REQUESTS TO ACORN TO MODIFY THE CONTRACT DOCUMENTS.
2. ALL SHOP, ERECTION, AND CONSTRUCTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR ACORN'S REVIEW. ANY UNCHECKED OR NON-STAMPED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURES AND SITE TO VERIFY CONDITIONS THAT AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR TO NOTIFY ACORN OF ANY DISCREPANCIES PRIOR TO PROCEEDING.
4. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED.
5. ALTHOUGH ALL DUE DILIGENCE HAS BEEN APPLIED TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT ALL DETAILS ARE ILLUSTRATED, NOR IS EVERY EXCEPTION CONDITION ADDRESSED WITHIN THE CONTRACT DOCUMENTS.
6. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL WORK, INCLUDING DIMENSION AND LAYOUT VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF ANY SUBCONTRACTORS.
8. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE OR DIRECT MEANS OR METHODS OF CONSTRUCTION.
9. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED STRUCTURE, AND TO PROTECT THE STRUCTURE, WORKMEN, AND OTHERS DURING THE CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING FOR CRANES AND OTHER ERECTION EQUIPMENT.
10. DO NOT BACKFILL AGAINST RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. PRIOR TO BACKFILLING, CONCRETE SHALL BE CURED PER STRUCTURAL ENGINEER'S SPECIFICATIONS.
11. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND OTHER SUPPORTING ELEMENTS ARE IN PLACE, IF APPLICABLE.
12. ALL PAVEMENT JOINTS SHALL BE SAWCUT AND APPLIED WITH TACK COAT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
13. ACORN BEARS NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND SITE OBSERVATION VISITS DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.
14. EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUBPART P OF 29 CRF PART 1926.650-.652 (CONSTRUCTION STANDARD FOR EXCAVATIONS).
15. ALL TRENCH PAVEMENT REPAIR SHALL BE COMPLETED WITH THE USE OF A STREET PAVER WITH A SCREED WIDTH CAPABLE OF SPANNING THE FULL WIDTH OF THE TRENCH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

SPECIAL INSPECTION NOTES

1. ALL SITE SOILS-RELATED WORK AND FOOTING EXCAVATIONS PRIOR TO PLACING FORMS SHALL BE REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER.
2. ALL SITE DRAINAGE-RELATED WORK SHALL BE REVIEWED BY ACORN.
3. NORMAL REVIEWS BY LOCAL BUILDING DEPARTMENT. NOTIFY 48 HOURS PRIOR TO REQUIRED REVIEW.
4. REQUIRED SPECIAL INSPECTIONS PER I.B.C. SECTION 1705.6 BY AN APPROVED SPECIAL INSPECTOR RETAINED BY OWNER. CONTRACTOR TO COORDINATE SPECIAL INSPECTIONS.
5. SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
   5.1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR SHALL BE TO OBSERVE AND/OR TEST THE WORK ASSIGNED AND OUTLINE ABOVE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
   5.2. THE SPECIAL INSPECTOR SHALL FURNISH REGULAR REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT AND ENGINEER OF RECORD, AND OTHER DESIGNATED PERSONS. PROGRESS REPORTS FOR CONTINUOUS INSPECTION SHALL BE FURNISHED WEEKLY. INDIVIDUAL REPORTS OF PERIODIC INSPECTIONS SHALL BE FURNISHED WITHIN ONE WEEK OF INSPECTION DATES. THE REPORTS SHALL NOTE UNCORRECTED DEFICIENCIES, AND NET CHANGES TO THE APPROVED CONSTRUCTION DOCUMENTS AUTHORIZED BY THE ENGINEER OF RECORD.
   5.3. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT WITHIN TEN DAYS OF THE FINAL INSPECTION STATING WHETHER THE WORK REQUIRING A SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE AND BELIEF, IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE INTERNATIONAL BUILDING CODE. WORK NOT IN COMPLIANCE SHALL BE NOTED IN THE REPORT.
   5.4. SPECIAL INSPECTOR SHALL BE EMPLOYED BY OWNER AND COORDINATED BY THE CONTRACTOR.

LAYOUT NOTES:

1. MONUMENTS DELINEATING PROPERTY LINES OR RIGHT OF WAYS SHALL NOT BE DISTURBED DURING CONSTRUCTION OPERATIONS. IN THE CASE A MONUMENT IS DISTURBED, AT THE CONTRACTOR'S EXPENSE, THE MONUMENT SHALL BE RESET TO ITS ORIGINAL LOCATION AND ELEVATION BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2. ALL DIMENSIONS ON THE FOLLOWING SHEETS TAKE PRECEDENT OVER SCALED DIMENSIONS. EACH DRAWING WITH A BAR SCALE MEANS THAT THE DRAWING/DETAIL HAS BEEN SCALED AS ACCURATELY AS POSSIBLE, AND THE BAR SCALE IS FOR GENERAL REFERENCE ONLY. IF NO BAR SCALE IS PRESENT, THEN THERE IS NO SCALE TO THAT DRAWING/DETAIL. AT NO TIME SHOULD DRAWINGS BE SCALED FROM. ANY DISCREPANCIES BETWEEN DRAWINGS, DETAILS, SPECIFICATIONS AND THE FIELD CONDITION SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
3. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL TRAFFIC CONTROL SIGNS INDICATED ON THE SITE LAYOUT PLAN ARE TO MEET ALL REQUIREMENTS & CONDITIONS OF THE CITY OF BELFAST, MAINE DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL LAND SURVEYOR TO PROVIDE A MINIMUM OF TWO TEMPORARY BENCHMARKS WITHIN THE SITE AND TO LOCATE PROPOSED STRUCTURE CORNERS.
6. CONTRACTOR TO ENSURE THAT ACCESS, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVEWAYS, AND MAILBOXES ADJACENT TO THE PROJECT REMAIN FUNCTIONAL AND AVAILABLE FOR USE AT ALL TIMES.

PERMITTING NOTES

1. THIS PROJECT IS SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS
   - CITY OF BELFAST: MINOR DEVELOPMENT
   - MDEP: STORMWATER MANAGEMENT LAW PERMIT
2. THE CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED PERMITS PRIOR TO SUBMITTING A BID FOR THIS PROJECT, AND INCLUDE COSTS AS NECESSARY TO COMPLY WITH THE CONDITIONS OF THESE PERMITS.
3. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES A STREET OPENING PERMIT FROM THE CITY OF BELFAST. ADDITIONALLY, COORDINATE WITH THE DEPARTMENT OF PUBLIC WORKS.

GRADING AND DRAINAGE NOTES:

1. TOPSOIL STRIPPED FROM THE SITE THAT IS SUITABLE FOR REUSE AS LOAM (MEETS THE REQUIREMENTS WITHIN SECTION 615 OF THE MDOT STANDARD SPECIFICATIONS, MOST RECENT VERSION AND IS FREE OF TRACEABLE AMOUNTS OF CONTAMINANTS) SHALL BE STOCKPILED WITHIN THE PROPOSED LIMIT OF WORK AREA. THE CONTRACTOR SHALL NOT ASSUME THAT ANY STRIPPED TOPSOIL WILL BE ACCEPTABLE FOR REUSE WITH THEIR ESTIMATE.
2. THE CONTRACTOR SHALL ANTICIPATE THAT GROUNDWATER WILL BE ENCOUNTERED DURING CONSTRUCTION AND SHALL INCLUDE SUFFICIENT COSTS WITHIN THEIR BID TO PROVIDE DEWATERING AS NECESSARY; NO SEPARATE PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR DEWATERING. DEWATERING SHALL INCLUDE TREATMENT OF SILT THROUGH THE USE OF A DIRTBAG BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT. FLOWS FROM DEWATERING ACTIVITIES SHALL NOT BE DISCHARGED INTO SANITARY SEWERS. SEE BORING LOGS FOR ADDITIONAL INFORMATION.
3. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY EASEMENT OR TEMPORARY CONSTRUCTION RIGHTS AS NECESSARY BY PRIVATE ADJACENT LAND OWNERS. THE CONTRACTOR SHALL NOT DISTURB ANY SOIL BEYOND THE PROPERTY LINE WITHOUT NOTIFYING AND OBTAINING SUCH EASEMENT OR TEMPORARY CONSTRUCTION RIGHT FROM THE ADJACENT LAND OWNERS. PRIOR TO THE CONTRACTOR PRICING THE WORK, THEY SHALL PROVIDE ACORN WITH PROOF OF SUCH EASEMENT OR TEMPORARY RIGHTS. SHOULD EASEMENTS OR TEMPORARY RIGHTS NOT BE AVAILABLE, THE CONTRACTOR SHALL INCLUDE COST FOR BRACING AND SHORING AS NECESSARY.
4. THE MINIMUM SLOPE SHALL MEET OR EXCEED 0.5% IN ALL CASES WHERE NOT NOTED ON THE GRADING PLAN. SLOPES IDENTIFIED ON THE GRADING PLAN TAKE PRECEDENT. ALL SLOPES SHALL BE AWAY FROM BUILDINGS AND TOP OF PAVEMENT SHALL BE AT OR BELOW EXISTING FINISH FLOOR ELEVATIONS.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST GEOTECHNICAL REPORT PREPARED BY THE PROJECT GEOTECHNICAL ENGINEER.
6. CONTRACTOR TO REVIEW EXISTING SOIL CONDITIONS, TEST PITS, AND BORINGS. THERE WILL BE NO ADDITIONAL PAYMENT FOR UNSUITABLE SOILS.
7. ALL STORM DRAIN PIPE SHALL BE SMOOTH BORE INTERIOR PROVIDING A MANNINGS ROUGHNESS COEFFICIENT OF N=0.012 OR LESS.
8. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
9. NATIVE SOILS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LIMIT THE DISTURBANCE TO SUBGRADE SOILS. SHOULD THE SUBGRADE BECOME YIELDING OR DIFFICULT TO WORK, CONTACT ACORN. THE DISTURBED AREAS SHALL BE EXCAVATED AND BACKFILLED WITH COMPACTED SELECT FILL OR CRUSHED STONE AT NO ADDITIONAL EXPENSE TO THE OWNER.
10. ALL SUBGRADE PREPARATION IS SUBJECT TO THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER.

EROSION CONTROL NOTES:

1. DISTURBED AREAS ARE DEFINED AS THOSE SURFACES WHERE EXISTING VEGETATION OR STRUCTURES HAVE BEEN REMOVED, EXPOSING NATIVE SOIL TO THE ELEMENTS.
2. ALL ROUTINE WORK ACTIVITIES SHALL BE CONDUCTED IN SUCH A WAY TO LIMIT THE AMOUNT OF DISTURBED AREA AT ONE TIME TO THE EXTENT PRACTICABLE.
3. PRIOR TO THE START OF ANY CLEARING/LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL APPLICABLE EROSION CONTROL DEVICES SUCH AS PERIMETER SILT FENCE, AND OTHER APPLICABLE MEASURES. IN THE EVENT THE CONTRACTOR IS NOT SURE A EROSION CONTROL MEASURE SHOULD BE IMPLEMENTED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD TO CONFIRM IMPLEMENTATION OF ANY EROSION CONTROL DEVICES.
4. ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED, SEEDED AND MULCH SHALL BE APPLIED AS SOON AS POSSIBLE WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY SOIL DISTURBANCE, AND PRIOR TO ANY STORM EVENT.
5. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY. THE CONTRACTOR SHALL REFERENCE THE APPROVED EROSION AND SEDIMENTATION CONTROL REPORT FOR TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES IN ADDITION TO THE PLAN SET. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE D.E.P.'S PERMIT CONDITIONS, FINDINGS OF FACT AND ORDER (IF ANY), AND THE CURRENT MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.
6. PRIOR TO PAVING, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT FROM STORM DRAINS, CATCH BASINS, AND APPURTENANCES.
7. REFER TO THE EROSION CONTROL DETAILS & NOTES FOR ADDITIONAL INFORMATION.

UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION OF UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
2. CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONDUCT EXPLORATORY EXCAVATIONS AT LOCATIONS WHERE PROPOSED EXCAVATION WILL INTERSECT WITH EXISTING UTILITIES, PRIOR TO THE ORDERING OF STRUCTURES.
3. ALL NEW SANITARY MANHOLES SHALL BE VACUUM TESTED AND SHOWN TO PASS PRIOR TO BACKFILLING. TESTING SHALL BE COMPLETED IN ACCORDANCE WITH TECHNICAL REPORT #16 (TR-16): GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS, PREPARED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION.
4. SEWER MANHOLES SHALL BE 4' ID UNLESS OTHERWISE STATED ON THE PLANS.
5. CONTRACTOR TO PROVIDE 5.5' OF COVER FROM TOP OF PIPE TO FINISH GRADE FOR WATER MAINS.
6. THRUST BLOCKS SHALL BE USED FOR THRUST RESTRAINT ON WATER MAINS. DETAIL AND LIMITS FOR THRUST BLOCKS ARE SHOWN WITHIN THE PLAN SET.
7. WATER INFRASTRUCTURE SHALL BE TESTED IN ACCORDANCE WITH THE BELFAST WATER DISTRICT DOCUMENT ''WATER AND SEWER CONSTRUCTION SPECIFICATIONS AND PROCEDURE'', MOST RECENT REVISION.
8. ALL REQUIRED FITTINGS FOR THE WATER MAIN ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY FITTINGS REQUIRED TO CONSTRUCT THE WATER MAIN IN ACCORDANCE WITH CITY OF BELFAST STATE OF MAINE, AND AMERICAN WATER WORKS ASSOCIATION STANDARDS AND REGULATIONS.
9. CONTRACTOR SHALL COORDINATE WORK REGARDING ANY WATER MAIN CONNECTION AND WATER MAIN SHUTDOWN WITH THE BELFAST WATER DISTRICT AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION.
10. ALL WATER PIPE INSTALLATION SHALL CONFORM WITH THE BELFAST WATER DISTRICT SPECIFICATIONS AND PROCEDURES, MOST RECENT EDITION.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
12. SEWER, GAS, TELEPHONE, ELECTRICITY, CABLE, WATER AND ANY OTHER UTILITY CONNECTIONS SHALL BE REVIEWED BY PLUMBING, ELECTRICAL, AND MECHANICAL DESIGNER FOR CONSISTENCY WITH THEIR PLANS PRIOR TO CONSTRUCTION.
13. COORDINATE EXIT POINT FOR SECONDARY UTILITY SERVICES WITH THE ARCHITECT/ELECTRICAL ENGINEER. SECONDARY LINE LOCATIONS NOT PROVIDED BY ACORN WITHIN THE UTILITY PLAN.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL THE NECESSARY PERMITS FOR THE INSTALLATION OF THE UTILITIES AND STORMDRAINS WITHIN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE CITY IN ACCORDANCE WITH THE CITY OF BELFAST PRIOR TO ANY WORK.
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
16. ALL UTILITY PIPES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS OR SAGS IN THE PIPING WILL BE PERMITTED. ALL HORIZONTAL AND VERTICAL BENDS IN PRESSURIZED PIPE LINES SHALL BE SUITABLY RESTRAINED WITH THRUST BLOCKS OR RETAINER GLANDS. RETAINER GLANDS ALLOWED FOR DUCTILE IRON PIPE ONLY. PROVIDE ALL BENDS, HORIZONTAL AND VERTICAL, AS REQUIRED TO MEET THE GRADES AND ALIGNMENTS INDICATED ON THE DRAWINGS.
17. ALL WASTEWATER PIPING, EXCLUDING BUILDING DRAINS, AND ALL PRESSURIZED PIPING, TO INCLUDE WATER MAINS, INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE.
18. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS AND ADDITIONAL PIPE AS REQUIRED TO ENSURE A COMPLETE AND PROPERLY FUNCTIONING CONNECTION. CONTRACTOR TO VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. ADAPTERS AND FITTINGS ARE INCIDENTAL TO THE PIPE INSTALLATION.
19. WHENEVER POSSIBLE, WATER LINES SHOULD BE INSTALLED OVER WASTEWATER LINES. A MINIMUM SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER LINE SHALL BE MAINTAINED WHERE POSSIBLE. WHERE A WATER LINE CROSSES UNDER THE WASTEWATER LINE, A FULL LENGTH OF WASTEWATER PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE,
20. THE CONTRACTOR SHALL BE ANTICIPATE THAT THE NATIVE SILT AND CLAY SOILS WILL NOT BE SUITABLE FOR PIPE TRENCH BACKFILL IN PAVED AREAS.
21. GROUNDWATER SHALL BE CONTROLLED TO A LEVEL OF AT LEAST ONE FOOT BELOW SUBGRADE OF THE PIPE OR STRUCTURE. THE CONTRACTOR SHALL MAINTAIN THE LOWERED GROUNDWATER LEVEL UNTIL CONSTRUCTION HAS BEEN COMPLETED TO SUCH AN EXTENT THAT THE STRUCTURES OR PIPES WILL NOT BE FLOATED OR OTHERWISE DAMAGED.
22. EXCAVATION TO SUBRADE IN NATIVE SILT AND CLAY SHALL BE COMPLETED WITH A SMOOTH EDGE BUCKET TO MINIMIZE SUBGRADE DISTURBANCE.
23. ALL ADJUSTMENTS TO FINISHED GRADE ARE TO BE COMPLETED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM STRUCTURES THAT REQUIRE ADJUSTMENT WITH THE ENGINEER OR OWNERS REPRESENTATIVE PRIOR TO ADJUSTING FRAMES.

DEMOLITION NOTES:

1. THE CONTRACTOR IS ADVISED TO VISIT THE SITE TO CONFIRM DEMOLITION ITEMS SINCE THE LIST IS NOT INCLUSIVE OF THE SITE CONDITIONS WHICH MAY BE ENCOUNTERED
2. ALL DISPOSAL OF DEMOLITION DEBRIS OR WASTE SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL REGULATIONS. CONTRACTORS SHALL PROVIDE OWNER WITH APPROPRIATE "BILLS OF LADING" DEMONSTRATING PROPER DISPOSAL OF ALL MATERIALS.
3. THE CLIENT HAS NOT REQUESTED NOR HAS ACORN COMPLETED A PHASE I – ENVIRONMENTAL SITE ASSESSMENT FOR THE PROPERTY.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: GENERAL NOTES
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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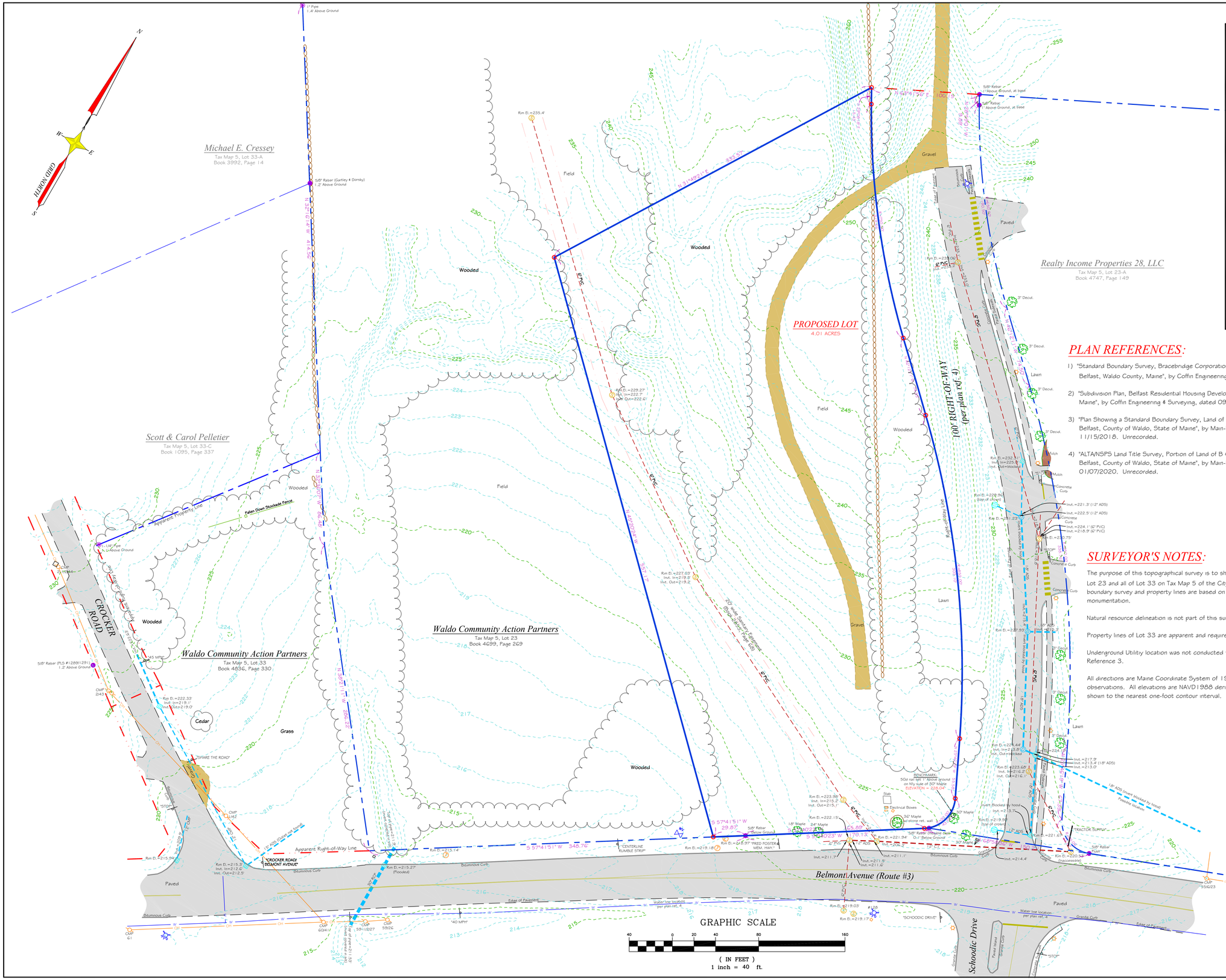
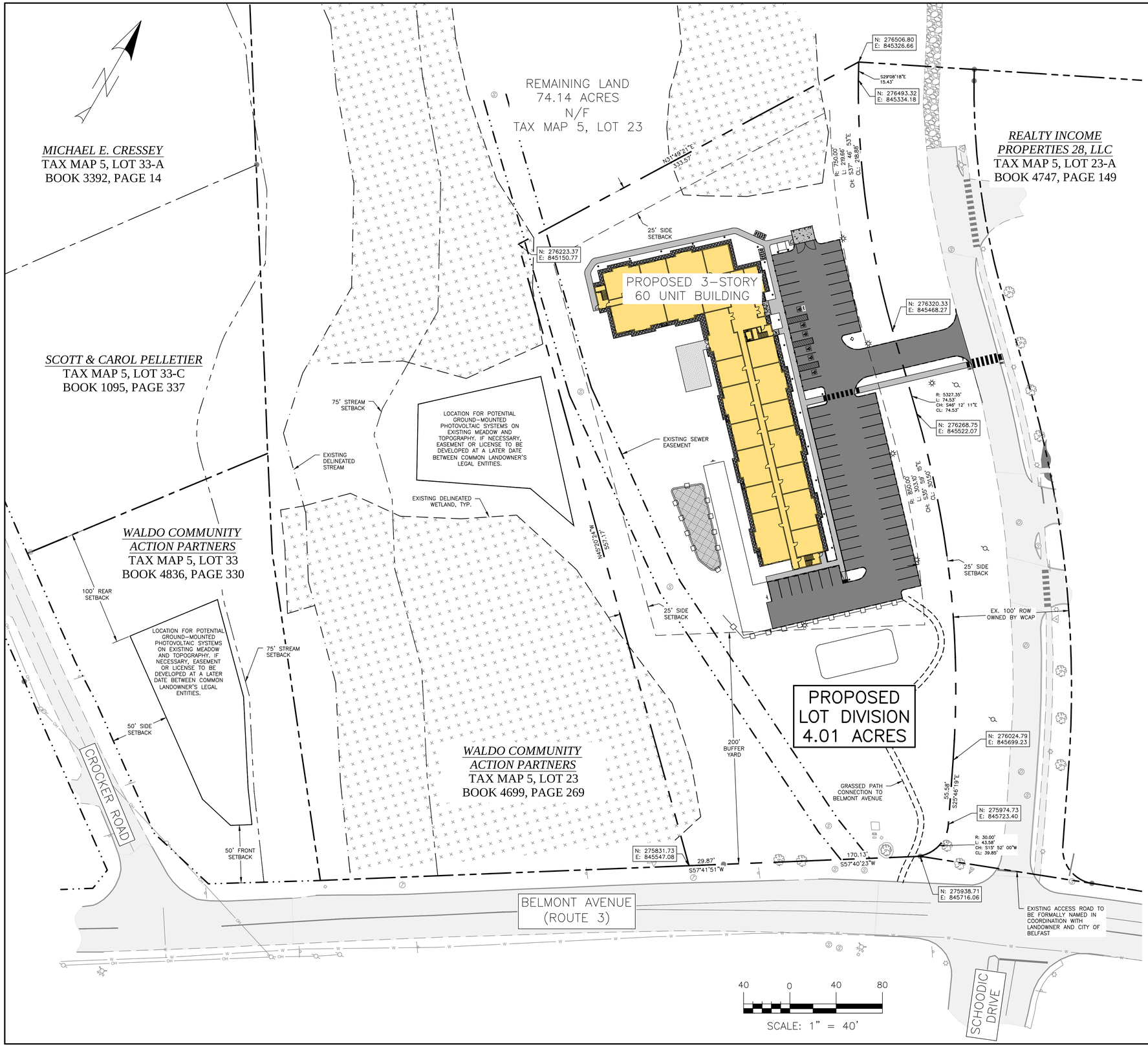
ACORN ENGINEERING, INC.
70 ALDEN ROAD, ORONO, MAINE 04104
PO BOX 349 ORONO, ME 04473 (207) 775-2655

FILE:	1287 DETAILS
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-02


Michael E. Cressey
Tax Map 5, Lot 33-A
Book 3992, Page 14
Scott & Carol Pelletier
Tax Map 5, Lot 33-C
Book 1095, Page 337
Waldo Community Action Partners
Tax Map 5, Lot 33
Book 4836, Page 330
Waldo Community Action Partners
Tax Map 5, Lot 23
Book 4699, Page 269
Realty Income Properties 28, LLC
Tax Map 5, Lot 23-A
Book 4747, Page 149
PROPOSED LOT
4.01 ACRES
100' RIGHT-OF-WAY
(per plan ref. 4)
CROCKER ROAD
Belmont Avenue (Route #3)
Schoodic Drive
Apparent Right-of-Way Line
Apparent Property Line
Fallen Down Stockade Fence
Edge of Pavement
Bituminous Curb
Concrete Curb
Granite Curb
Gravel
Paved
Lawn
Wooded
Field
Grass
Cedar
Mulch
Flared Island
Granite Curb
"SHARE THE ROAD"
"STOP"
"CROCKER ROAD/ BELMONT AVENUE"
"SCHOODIC DRIVE"
"40 MPH"
RENCHMARK:
50d nail set 1' Above ground on My side of 30" Maple
ELEVATION = 228.04'
"50' Rebar w/aluminum cap Set Below Ground"
5/8" Rebar (PLS #1269/1291) 1.2' Above Ground
5/8" Rebar (Gartley & Dorsky) 1.2' Above Ground
1" Pipe 1.4' Above Ground
1" Pipe 1.4' Above Ground
5/8" Rebar 1' Above Ground, at base
5/8" Rebar 1' Above Ground, at base
N 21°49'21" E 322.57'
N 21°49'21" E 322.57'
N 21°49'21" E 322.57'
N 21°49'21" E 322.57'
N 68°16'39" W 414.55'
N 68°16'39" W 100.13'
N 68°16'39" W 314.42'
N 68°16'39" W 314.42'
S 57°41'51" W 345.76'
S 57°41'51" W 29.87'
S 57°41'51" W 65.89'
S 57°41'51" W 170.13'
S 57°41'51" W 30.23'
N 21°49'21" E 322.57'
N 21°49'21" E 322.57'
N 21°49'21" E 322.57



GENERAL NOTES:

1. THIS PLAN IS FOR THE PROPOSAL OF A 60-UNIT MULTI-FAMILY APPLICATION.
2. THE PROPERTY IS LOCATED IN THE ROUTE 3 COMMERCIAL DISTRICT.
3. EXISTING CONDITIONS, TOPOGRAPHIC DATA, AND BOUNDARY SURVEY SHOWN HEREON IS FROM THE PLAN REFERENCE A.
4. EXISTING WETLAND AND STREAMS DELINEATED BY MARK HAMPTON ASSOCIATES, INC. DATED 5/13/25.
5. PROPERTY LOTS INCLUDE:
   A. TAX MAP 5 LOT 23 (±78.15 ACRES)
6. PROPERTY OWNER OF RECORD:
   MAPLE GROVE ELDERLY HOUSING CORPORATION
   TAX MAP 5 LOT 23
   W.C.R.D. BOOK 4699 PAGE 269
7. PLAN REFERENCE:
   A. "TOPOGRAPHIC SURVEY" BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED APRIL 16, 2025.
8. BEARING SHOWN HEREON ARE IN REFERENCE TO GRID NORTH, MAINE STATE PLAN COORDINATE SYSTEM, EAST ZONE 1802-NAD83.
9. ELEVATIONS DEPICTED HEREON ARE IN REFERENCE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS.
10. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THAT THE LOCATION AND ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED UPON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST PIT TO DETERMINE THE EXACT LOCATION AND ELEVATION T THE UTILITIES TO COORDINATE WITH THE PROPOSED CONNECTIONS OR CROSSING. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO ACORN FOR FURTHER DIRECTIONS BEFORE ANY ADDITIONAL WORK PROCEEDS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL TREES AND SHRUBS ON THE PROJECT WHICH ARE NOT TO BE REMOVED.
12. ALL PAVEMENT STRIPING, MARKINGS, AND SITE SIGNAGE SHALL COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
13. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
14. CONTRACTOR SHALL VERIFY BOTTOM AND TOP OF CURB ELEVATIONS ALONG BUILDING FRONTAGES PRIOR TO CONSTRUCTION OF THE FOUNDATIONS. CONTACT ENGINEER PRIOR TO CONSTRUCTION IF DISCREPANCIES ARE FOUND.

CONDITIONS OF APPROVAL: TBD

NET LAND AREA							
	PROPERTY AREA	DEDUCTED AREA	NET LAND AREA	WETLAND AREA	SLOPES > 20%	ALLOWABLE UNIT COUNT	PROPOSED UNIT COUNT
SF	174,913	53,315	121,598	11,571	41,744	72	60
ACRES	4.01	1.22	2.79	0.26	0.96		

[1] DERIVED BY TAKING THE AREA OF THE SUBJECT PARCELS AND DEDUCTING AREAS AS DEFINED IN SECTION 7.2 OF CITY LAND USE CODE. NOTE THERE ARE AREAS OF OVERLAP BETWEEN WETLANDS, STREAMS, AND SLOPES EXCEEDING 20% WHERE THERE ARE AREAS OF OVERLAP THE TOTAL AREA OF EACH FEATURE IS NOT DOUBLE COUNTED TOWARDS THE NET LAND AREA. THE AREA CONTAINING WETLANDS, STREAMS, SLOPES EXCEEDING 20%, OR ANY OVERLAP OF THESE FEATURES IS REPRESENTED IN THE "DEDUCTED AREA" COLUMN.

[2] DERIVED BY TAKING THE AREA OF THE SUBJECT PARCEL AND SUBTRACTING THE FIRST HALF ACRE OF NET LAND AREA TO EQUATE TO 6 UNITS. THE REMAINING NET LAND AREA WILL THEN BE DIVIDED BY 1,500 SF TO GET THE MAXIMUM ALLOWABLE UNIT COUNT.

STATE OF MAINE, WALDO, ss
REGISTRY OF DEEDS

RECEIVED _____

AT ____ hr. ____ min. ____ m AND RECORDED

IN PLAN BOOK _____, PAGE _____

ATTEST: _____
REGISTER

CLIENT/DEVELOPER:

WALDO COMMUNITY ACTION PARTNERS
P.O. BOX 130
BELFAST, ME 04915
CONTACT: DONNA KELLEY

CIVIL/SITE ENGINEER:

ACORN ENGINEERING, INC.
P.O. BOX 3372
PORTLAND, MAINE
CONTACT: SAM LEBEL, P.E.

SURVEYOR:

E.S. COFFIN ENGINEERING & SURVEYING, INC.
432 CONY ROAD
CHELSEA, MAINE 04330
CONTACT: CALEB COFFIN, P.L.S.

BELFAST PLANNING BOARD

SIGNATURE	DATE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: OVERALL SITE PLAN
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.
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ACORN ENGINEERING, INC.
PO BOX 3372 PORTLAND, MAINE 04104
(207) 775-2655

FILE: 1287_OVERALL
JN: 1287
SCALE: 1" = 40'
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-09

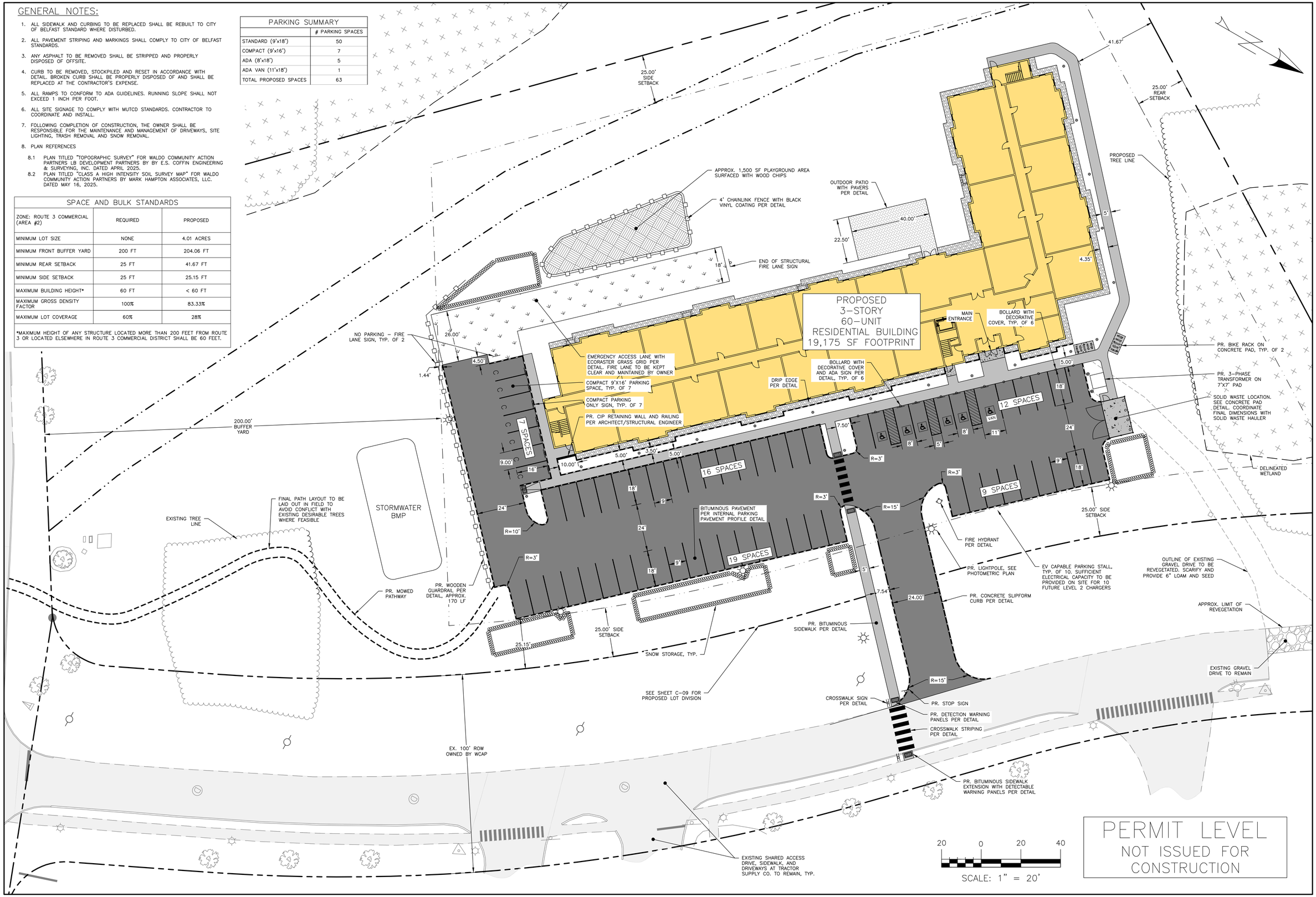
GENERAL NOTES:

1. ALL SIDEWALK AND CURBING TO BE REPLACED SHALL BE REBUILT TO CITY OF BELFAST STANDARD WHERE DISTURBED.
2. ALL PAVEMENT STRIPING AND MARKINGS SHALL COMPLY TO CITY OF BELFAST STANDARDS.
3. ANY ASPHALT TO BE REMOVED SHALL BE STRIPPED AND PROPERLY DISPOSED OF OFFSITE.
4. CURB TO BE REMOVED, STOCKPILED AND RESET IN ACCORDANCE WITH DETAIL. BROKEN CURB SHALL BE PROPERLY DISPOSED OF AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ALL RAMPS TO CONFORM TO ADA GUIDELINES. RUNNING SLOPE SHALL NOT EXCEED 1 INCH PER FOOT.
6. ALL SITE SIGNAGE TO COMPLY WITH MUTCD STANDARDS. CONTRACTOR TO COORDINATE AND INSTALL.
7. FOLLOWING COMPLETION OF CONSTRUCTION, THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND MANAGEMENT OF DRIVEWAYS, SITE LIGHTING, TRASH REMOVAL AND SNOW REMOVAL.
8. PLAN REFERENCES
   - 8.1 PLAN TITLED "TOPOGRAPHIC SURVEY" FOR WALDO COMMUNITY ACTION PARTNERS LB DEVELOPMENT PARTNERS BY BY E.S. COFFIN ENGINEERING & SURVEYING, INC. DATED APRIL 2025.
   - 8.2 PLAN TITLED "CLASS A HIGH INTENSITY SOIL SURVEY MAP" FOR WALDO COMMUNITY ACTION PARTNERS BY MARK HAMPTON ASSOCIATES, LLC. DATED MAY 16, 2025.

PARKING SUMMARY	
	# PARKING SPACES
STANDARD (9'x18')	50
COMPACT (9'x16')	7
ADA (8'x18')	5
ADA VAN (11'x18')	1
TOTAL PROPOSED SPACES	63

SPACE AND BULK STANDARDS		
ZONE: ROUTE 3 COMMERCIAL (AREA #2)	REQUIRED	PROPOSED
MINIMUM LOT SIZE	NONE	4.01 ACRES
MINIMUM FRONT BUFFER YARD	200 FT	204.06 FT
MINIMUM REAR SETBACK	25 FT	41.67 FT
MINIMUM SIDE SETBACK	25 FT	25.15 FT
MAXIMUM BUILDING HEIGHT*	60 FT	< 60 FT
MAXIMUM GROSS DENSITY FACTOR	100%	83.33%
MAXIMUM LOT COVERAGE	60%	28%

*MAXIMUM HEIGHT OF ANY STRUCTURE LOCATED MORE THAN 200 FEET FROM ROUTE 3 OR LOCATED ELSEWHERE IN ROUTE 3 COMMERCIAL DISTRICT SHALL BE 60 FEET.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: SITE & LANDSCAPING PLAN

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

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ACORN ENGINEERING, INC.
PO BOX 472 ROCKLAND, MAINE 04841
(207) 775-2655

FILE: 1287_SITE
JN: 1287
SCALE: 1" = 20'
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
6/30/25

DRAWING NO.
C-10

PLANTING SCHEDULE

TREES

SYMBOL	KEY	SCIENTIFIC NAME	COMMON NAME	SPACING	SIZE	QTY	NOTES
	AC	AMELANCHIER CANADENSIS	SERVICEBERRY	PER PLAN	1.5" CAL.	3	NATIVE; MULTI-STEM
	AR	ACER RUBRUM	RED MAPLE	PER PLAN	1.5" CAL.	2	NATIVE
	AS	ACER SACCHARUM	SUGAR MAPLE	PER PLAN	2.0" CAL.	1	NATIVE
	QR-A	QUERCUS RUBRA	NORTHERN RED OAK	PER PLAN	1.5" CAL.	3	NATIVE
	QR-B	QUERCUS RUBRA	NORTHERN RED OAK	PER PLAN	2.5" CAL.	1	NATIVE
	TC	TILIA CORDATA	LITTLE-LEAF LINDEN	PER PLAN	2.5" CAL.	3	NATIVE
	PS	PINUS STROBIS	WHITE PINE	PER PLAN	7-8' HT.	2	NATIVE

SHRUB/ PERENNIAL PLANTING PALETTE

TOTAL AREA: 8,880 SF; PALETTE IS COMPOSED OF THE FOLLOWING SPECIES; TOTAL SPECIES COUNTS ARE NOT PROVIDED

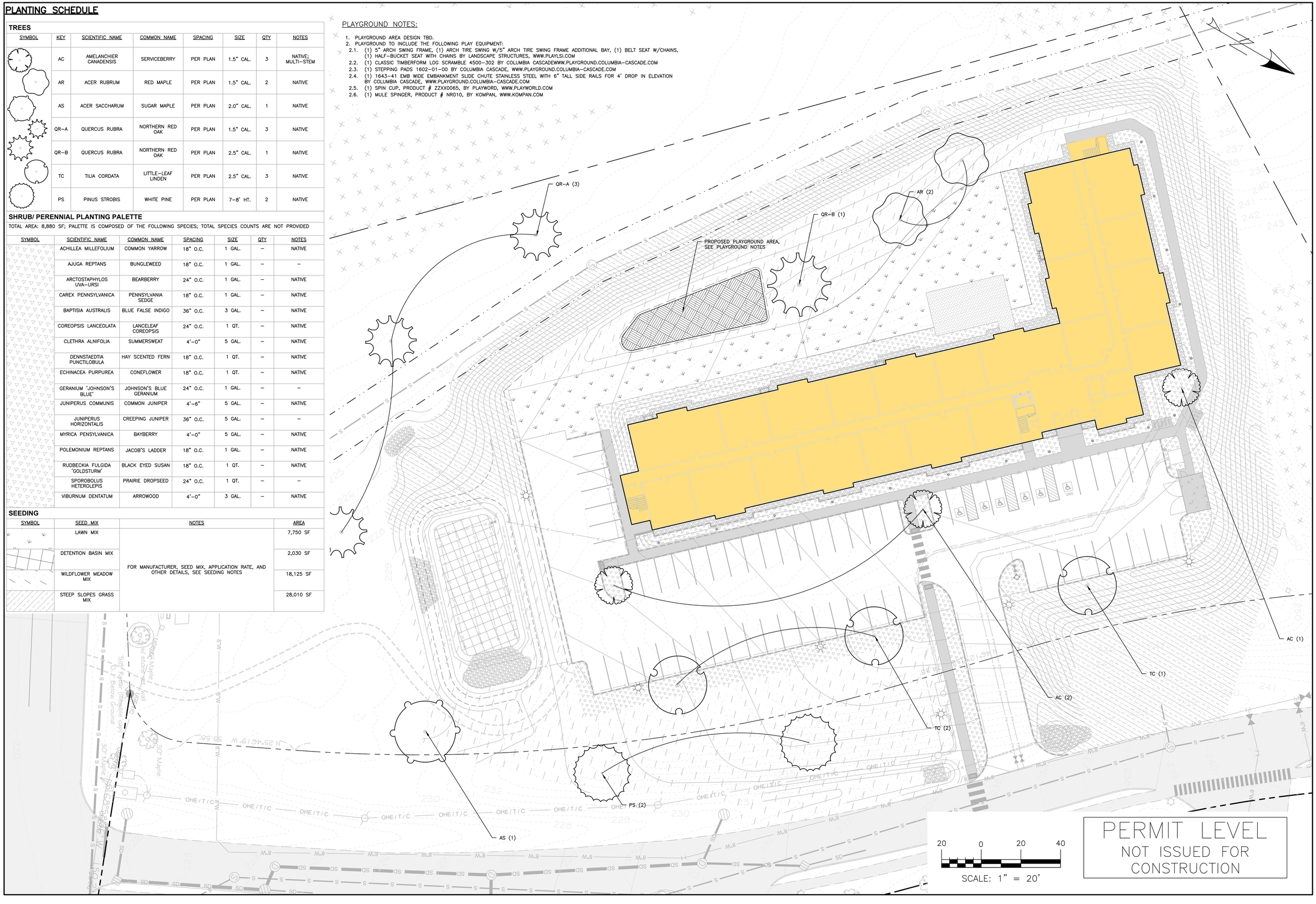
SYMBOL	SCIENTIFIC NAME	COMMON NAME	SPACING	SIZE	QTY	NOTES
	ACHILLEA MILLEFOLIUM	COMMON YARROW	18" O.C.	1 GAL.	–	NATIVE
	AJUGA REPTANS	BUNGLEWEED	18" O.C.	1 GAL.	–	–
	ARCTOSTAPHYLOS UVA-URSI	BEARBERRY	24" O.C.	1 GAL.	–	NATIVE
	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	18" O.C.	1 GAL.	–	NATIVE
	BAPTISIA AUSTRALIS	BLUE FALSE INDIGO	36" O.C.	3 GAL.	–	NATIVE
	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS	24" O.C.	1 QT.	–	NATIVE
	CLETHRA ALNIFOLIA	SUMMERSWEAT	4'-0"	5 GAL.	–	NATIVE
	DENNSTAEDTIA PUNCTILOBULA	HAY SCENTED FERN	18" O.C.	1 QT.	–	NATIVE
	ECHINACEA PURPUREA	CONEFLOWER	18" O.C.	1 QT.	–	NATIVE
	GERANIUM 'JOHNSON'S BLUE'	JOHNSON'S BLUE GERANIUM	24" O.C.	1 GAL.	–	–
	JUNIPERUS COMMUNIS	COMMON JUNIPER	4'-6"	5 GAL.	–	NATIVE
	JUNIPERUS HORIZONTALIS	CREEPING JUNIPER	36" O.C.	5 GAL.	–	–
	MYRICA PENSYLVANICA	BAYBERRY	4'-0"	5 GAL.	–	NATIVE
	POLEMONIUM REPTANS	JACOB'S LADDER	18" O.C.	1 GAL.	–	NATIVE
	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYED SUSAN	18" O.C.	1 QT.	–	NATIVE
	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	24" O.C.	1 QT.	–	–
	VIBURNUM DENTATUM	ARROWOOD	4'-0"	3 GAL.	–	NATIVE

SEEDING

SYMBOL	SEED MIX	NOTES	AREA
	LAWN MIX	FOR MANUFACTURER, SEED MIX, APPLICATION RATE, AND OTHER DETAILS, SEE SEEDING NOTES	7,750 SF
	DETENTION BASIN MIX		2,030 SF
	WILDFLOWER MEADOW MIX		18,125 SF
	STEEP SLOPES GRASS MIX		28,010 SF

PLAYGROUND NOTES:

1. PLAYGROUND AREA DESIGN TBD.
2. PLAYGROUND TO INCLUDE THE FOLLOWING PLAY EQUIPMENT:
   - 2.1. (1) 5" ARCH SWING FRAME, (1) ARCH TIRE SWING W/5" ARCH TIRE SWING FRAME ADDITIONAL BAY, (1) BELT SEAT W/CHAINS, (1) HALF-BUCKET SEAT WITH CHAINS BY LANDSCAPE STRUCTURES, WWW.PLAYLSI.COM
   - 2.2. (1) CLASSIC TIMBERFORM LOG SCRAMBLE 4500-302 BY COLUMBIA CASCADEWWW.PLAYGROUND.COLUMBIA-CASCADE.COM
   - 2.3. (1) STEPPING PADS 1602-01-00 BY COLUMBIA CASCADE, WWW.PLAYGROUND.COLUMBIA-CASCADE.COM
   - 2.4. (1) 1643-41 EMB WIDE EMBANKMENT SLIDE CHUTE STAINLESS STEEL WITH 6" TALL SIDE RAILS FOR 4' DROP IN ELEVATION BY COLUMBIA CASCADE, WWW.PLAYGROUND.COLUMBIA-CASCADE.COM
   - 2.5. (1) SPIN CUP, PRODUCT # ZZXX0065, BY PLAYWORD, WWW.PLAYWORLD.COM
   - 2.6. (1) MULE SPINGER, PRODUCT # NR010, BY KOMPAN, WWW.KOMPAN.COM



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	8/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: LANDSCAPE PLAN
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.
ACORN ENGINEERING, INC.
PO BOX 320 ALFRED, MAINE 04104
(207) 775-2655

THESE PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND ANY UNAUTHORIZED USE OF OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

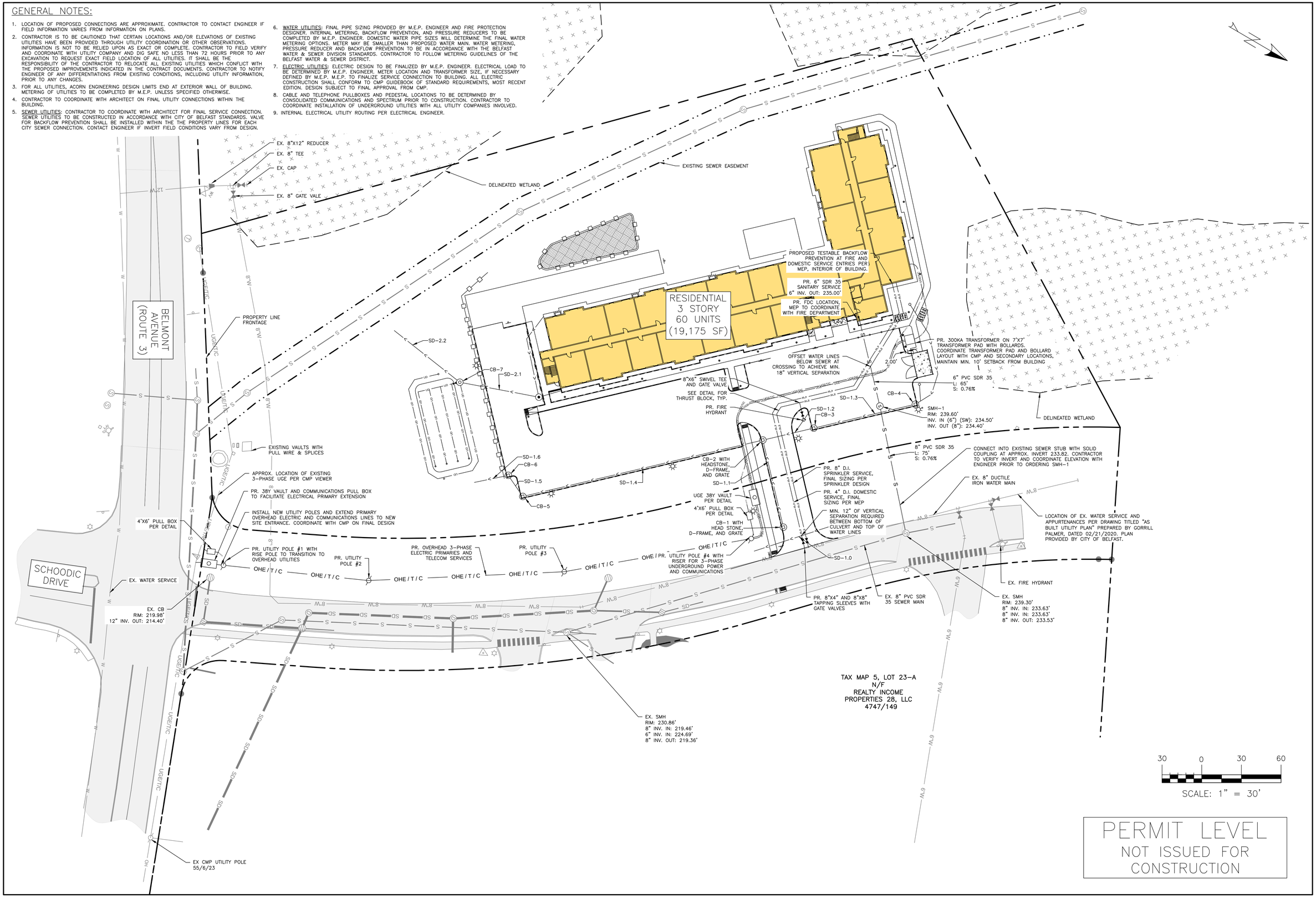
FILE: 1287_LANDSCAPE
JN: 1287
SCALE: 1" = 20'
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

LICENSED LANDSCAPE ARCHITECT
ALEXIS LOPEZ DELVECCHIO
LAR5303
6/30/25
STATE OF MAINE

DRAWING NO.
L-02

GENERAL NOTES:

1. LOCATION OF PROPOSED CONNECTIONS ARE APPROXIMATE, CONTRACTOR TO CONTACT ENGINEER IF FIELD INFORMATION VARIES FROM INFORMATION ON PLANS.
2. CONTRACTOR IS TO BE CAUTIONED THAT CERTAIN LOCATIONS AND/OR ELEVATIONS OF EXISTING UTILITIES HAVE BEEN PROVIDED THROUGH UTILITY COORDINATION OR OTHER OBSERVATIONS. INFORMATION IS NOT TO BE RELIED UPON AS EXACT OR COMPLETE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH UTILITY COMPANY AND DIG SAFE NO LESS THAN 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DIFFERENTIATIONS FROM EXISTING CONDITIONS, INCLUDING UTILITY INFORMATION, PRIOR TO ANY CHANGES.
3. FOR ALL UTILITIES, ACORN ENGINEERING DESIGN LIMITS END AT EXTERIOR WALL OF BUILDING. METERING OF UTILITIES TO BE COMPLETED BY M.E.P. UNLESS SPECIFIED OTHERWISE.
4. CONTRACTOR TO COORDINATE WITH ARCHITECT ON FINAL UTILITY CONNECTIONS WITHIN THE BUILDING.
5. SEWER UTILITIES: CONTRACTOR TO COORDINATE WITH ARCHITECT FOR FINAL SERVICE CONNECTION. SEWER UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH CITY OF BELFAST STANDARDS. VALVE FOR BACKFLOW PREVENTION SHALL BE INSTALLED WITHIN THE THE PROPERTY LINES FOR EACH CITY SEWER CONNECTION. CONTACT ENGINEER IF INVERT FIELD CONDITIONS VARY FROM DESIGN.
6. WATER UTILITIES: FINAL PIPE SIZING PROVIDED BY M.E.P. ENGINEER AND FIRE PROTECTION DESIGNER. INTERNAL METERING, BACKFLOW PREVENTION, AND PRESSURE REDUCERS TO BE COMPLETED BY M.E.P. ENGINEER. DOMESTIC WATER PIPE SIZES WILL DETERMINE THE FINAL WATER METERING OPTIONS. METER MAY BE SMALLER THAN PROPOSED WATER MAIN. WATER METERING, PRESSURE REDUCER AND BACKFLOW PREVENTION TO BE IN ACCORDANCE WITH THE BELFAST WATER & SEWER DIVISION STANDARDS. CONTRACTOR TO FOLLOW METERING GUIDELINES OF THE BELFAST WATER & SEWER DISTRICT.
7. ELECTRIC UTILITIES: ELECTRIC DESIGN TO BE FINALIZED BY M.E.P. ENGINEER. ELECTRICAL LOAD TO BE DETERMINED BY M.E.P. ENGINEER. METER LOCATION AND TRANSFORMER SIZE, IF NECESSARY DEFINED BY M.E.P. M.E.P. TO FINALIZE SERVICE CONNECTION TO BUILDING. ALL ELECTRIC CONSTRUCTION SHALL CONFORM TO CMP GUIDEBOOK OF STANDARD REQUIREMENTS, MOST RECENT EDITION. DESIGN SUBJECT TO FINAL APPROVAL FROM CMP.
8. CABLE AND TELEPHONE PULLBOXES AND PEDESTAL LOCATIONS TO BE DETERMINED BY CONSOLIDATED COMMUNICATIONS AND SPECTRUM PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND UTILITIES WITH ALL UTILITY COMPANIES INVOLVED.
9. INTERNAL ELECTRICAL UTILITY ROUTING PER ELECTRICAL ENGINEER.



PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: UTILITY PLAN

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

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ACORN ENGINEERING, INC.
PO BOX 347, FREEDOM, MAINE 04104
(207) 775-2655

FILE:	1287_UTILITY
JN:	1287
SCALE:	1" = 30'
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-20

GENERAL NOTES:

1. ALL WORK WITHIN THE CITY STREET RIGHT OF WAY SHALL MEET THE CITY OF BELFAST'S STANDARDS.
2. DESIGN OF TEMPORARY SOIL RESTRAINT MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IF NECESSARY FOR CONSTRUCTION.
3. CONTRACTOR SHALL ENSURE THAT UNDERDRAINS ARE CONSTRUCTED WITH POSITIVE OUTLET TO PROPOSED CONNECTIONS.
4. CATCH BASIN INLET PROTECTION TO BE INSTALLED WITHIN ANY STRUCTURES DOWNGRADIENT OF ACTIVE CONSTRUCTION.
5. SEDIMENTATION BARRIERS ARE TO BE INSTALLED DOWNGRADIENT OF ALL ACTIVE CONSTRUCTION WORK PER DETAIL. BARRIERS TO NOT EXTEND PAST PROPERTY LINES; BARRIERS SHOWN OFFSET FROM PROPERTY LINES ON PLANS FOR VISUAL PURPOSES ONLY.
6. ALL ROOF DRAINS TO BE 6" PVC SDR 35 UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR TO VERIFY EXISTING FFE PRIOR TO BEGINNING CONSTRUCTION, CONTACT ENGINEER IF THERE IS A DEVIATION FROM GRADING PLAN.
8. ALL STORM DRAIN TO BE HDPE ADS N-12, PVC SDR 35 OR EQUIRVALENT. ANY PIPE THAT DAYLIGHTS OR IS EXPOSED SHALL BE HDPE.
9. ANY STORMDRAIN 8" OR SMALLER WITH DAYLIGHT OUTLET SHALL CONTAIN A STAINLESS STEEL ANIMAL GUARD WITH 1/8" OPENINGS.

STRUCTURE TABLE

NAME	RIM	INV. IN (SIZE)	INV. OUT (SIZE)
CB-1	235.00'		232.00' (12")
CB-2	239.25'	231.70' (12") 234.85' (12")	231.60' (15")
CB-3	239.60'	235.35' (12")	235.25' (12")
CB-4	239.50'	236.25' (8")	236.15' (12")
CB-5	233.25'	230.45' (15")	230.35' (18")
CB-6	233.50'	230.25' (18")	230.15' (18")
CB-7	230.80'	228.00' (8") 226.10' (4")	226.00' (15")
DMH-1	235.95'	230.50' (4") 230.50' (4")	230.40' (8")
FI-1	240.50'		238.50' (8")
FI-2	239.68'		236.50' (8")

STORM DRAIN SCHEDULE

NAME	SIZE	LENGTH	SLOPE
SD-1.0	18"	60'	0.008
SD-1.1	12"	68'	0.004
SD-1.2	12"	39'	0.010
SD-1.3	12"	79'	0.010
SD-1.4	15"	187'	0.006
SD-1.5	18"	19'	0.005
SD-1.6	18"	26'	0.006
SD-2.1	8"	61'	0.039
SD-2.2	15"	63'	0.003

SLOPES FLATTER THAN 2:1, BUT GRADED AT 3:1 OR STEEPER SHALL BE STABILIZED WITH EROSION CONTROL BLANKET. SLOPES GRADED AT 2:1 SHALL BE STABILIZED WITH TRM. SEE DETAILS AND FINAL GEOTECHNICAL REPORT

ANY EXISTING SEWER MANHOLE THAT IS PARTIALLY EXPOSED SHALL BE BACKFILLED SUCH THAT THE RIM IS FLUSH WITH FINISHED GRADE. BACKFILL SHOULD CONSIST OF COMPACTED GRANULAR BORROW BLENDED IN WITH SURROUNDING GRADES AND TOP DRESSED WITH 6" OF LOAM AND SEED IN ACCORDANCE WITH LANDSCAPE PLAN

FFE: 241.00'

241.00'

240.60'

240.40'

240.50'

DRIP EDGE ELEVATION: 240.50' AT FOUNDATION WALL

DRIP EDGE ELEVATION: 240.50' AT FOUNDATION WALL

FLUSH CURB EAST AT THIS POINT. TOP OF CURB SHALL BE CONSISTENT AT 240.40' WITH VARYING REVEAL FROM THIS POINT WEST

BC: 240.50' (DRIP EDGE) TC: 240.90' (SIDEWALK)

FI-1 WITH BEEHIVE GRATE

UD-1.0 PER DETAIL WITH PERFORATIONS ORIENTED UP

240.50'

GRASSED SWALE WITH EROSION CONTROL BLANKET, TYP.

SLAB: 240.00'

FI-2 WITH BEEHIVE GRATE

DELINEATED WETLAND

249.95'

226.80'

INV. OUT: 225.80'

PR. LEVEL LIP SPREADER PER DETAIL

PR. CAP AND CLEANOUT, TYP. OF 1 ON THE EXTERIOR UNDERDRAIN PIPES

TIPDOWN TO 236.25'

2:1 SLOPE PLANTED WITH SHRUBS

BC: 236.30' TC: 236.80'

DMH-1 SOLID COVER, DRIP EDGE OUTLET WITH 2" BALL VALVE PER DETAIL (2) 4" INV. IN: 230.50' 8" INV. OUT: 230.40'

PR. BALL VALVE PER DETAIL

CB-7

BC: 236.00' TC: 236.50'

SD-2.1

TRANSITION FROM CIP WALL TO GRANITE CURB WITH DOWELS - SEE STRUCTURAL DRAWINGS

236.00'

BW: 236.00' TW: 240.00'

BC: 239.40' TC: 240.40'

TIPDOWN TO 238.55'

BC: 237.55' TC: 238.55'

GRANITE CURB WITH VARYING REVEAL

BC: 239.40' TC: 240.40'

BC: 239.60' TC: 240.10'

TIPDOWN TO 240.25'

TIPDOWN TO 240.00'

TIPDOWN TO 239.90'

239.70'

240.80'

240.40'

239.90'

240.30'

240.20'

VAN

240.50'

240.60'

240.30'

SD-1.3

CB-4

SD-1.2

CB-3

240.30'

BC: 239.90' TC: 240.40'

239.50'

BC: 239.50' TC: 240.00'

BC: 235.40' TC: 235.90'

235.23'

235.20'

BC: 235.30' TC: 235.80'

BC: 239.40' TC: 240.40'

BC: 236.57' TC: 237.57'

BC: 237.00' TC: 237.50'

BC: 236.00' TC: 236.50'

BC: 235.20' TC: 235.70'

BOTTOM OF FILTER: 229.00'

MIN. 20' WIDE OVERFLOW SPILLWAY SET LEVEL AT ELEV.=231.30, PER DETAIL

PR. VUSF PER DETAIL

3:1 SLOPE

18" CULVERT OUTLET: 230.00'

CB-6

SD-1.5

CB-5

EROSION CONTROL BERM MIX, PER DETAIL INSTALLED DOWN GRADIENT OF ANY GROUND DISTURBANCE

PR. CO, TYP. OF 4 ON INTERIOR UNDERDRAIN PIPES

PR. SEDIMENT FOREBAY PER DETAIL

CB-2 WITH HEADSTONE, D-FRAME, AND GRATE

SD-1.4

SD-1.1

235.61'

235.05'

BC: 235.50' TC: 236.00'

CB-1 WITH HEAD STONE, D-FRAME, AND GRATE

18" INV. IN: 232.25'

235.80'

RIDGE

SD-1.0

235.30'

18" INV. OUT: 231.75'

INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE PER DETAIL

231.25'

MODIFY DITCHLINE TO MAINTAIN MINIMUM 1% POSITIVE DRAINAGE. INSTALL EROSION CONTROL BLANKET WITHIN CHANNEL BOTTOM

EX. CATCH BASIN RIM: 229.96'

20 0 20 40

SCALE: 1" = 20'

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: **GRADING & DRAINAGE PLAN**

PROJECT NAME: **45 BELMONT AVENUE AFFORDABLE HOUSING**

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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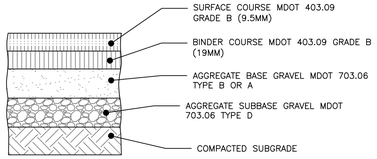
ACORN ENGINEERING, INC.
70 CENTER STREET, SUITE 04104
PO BOX 792 (207) 775-2655

FILE:	1287_GRADING
JN:	1287
SCALE:	
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

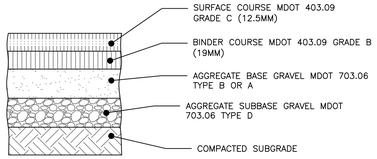
DRAWING NO.
C-30



NOTE:
COMPACT AGGREGATES TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

	THICKNESS OF LAYERS
STANDARD	LAYERS
1.5"	SURFACE COURSE MDOT 403.09 GRADE B (9.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
15"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

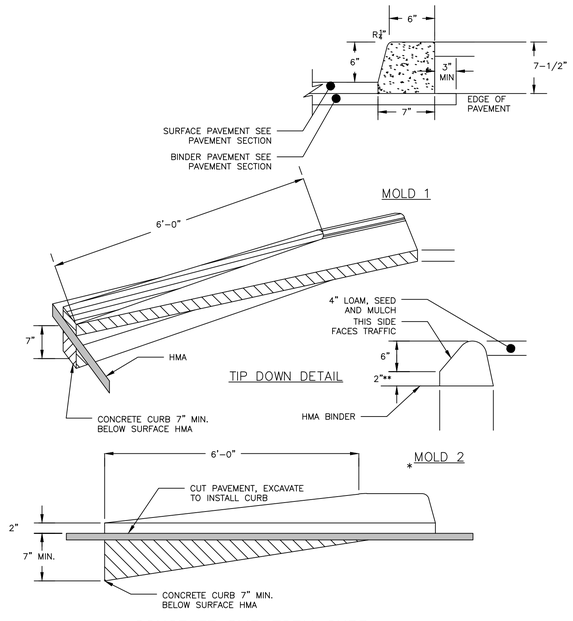
INTERNAL BITUMINOUS PAVEMENT PROFILE
NOT TO SCALE



NOTE:
COMPACT AGGREGATES TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557

	THICKNESS OF LAYERS
STANDARD	LAYERS
1.5"	SURFACE COURSE MDOT 403.09 GRADE C (12.5mm)
2"	BINDER COURSE MDOT 403.09 GRADE B (19mm)
3"	AGGREGATE BASE GRAVEL MDOT 703.06 TYPE B OR A
18"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

PRIVATE ROAD PAVEMENT PROFILE
NOT TO SCALE

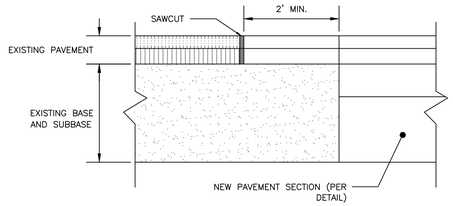


CONCRETE SLIP FORM CURB
NOT TO SCALE

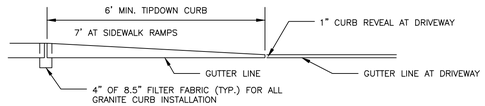
*USE MOLD 1 FOR AREAS WHERE SIDEWALK DIRECTLY ABUTS CURB.
**SEE TYPICAL SECTION

NOTES:

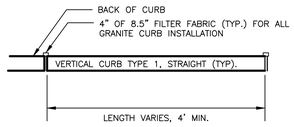
1. SAWCUT EXISTING PAVEMENT AND REMOVE 2' STRIP OF EXISTING PAVEMENT. APPLY BITUMINOUS TACK COAT PRIOR TO PLACEMENT OF NEW BITUMINOUS PAVEMENT.
2. THE NEW PAVEMENT SECTION SHALL MEET THE LITTLE DOLPHIN DRIVE AND ACCESS ROAD BITUMINOUS PAVEMENT SECTION DETAIL AT A MINIMUM OR THE THE EXISTING PAVEMENT AND AGGREGATE BASE AND SUBBASE DEPTH WHICHEVER IS GREATER.



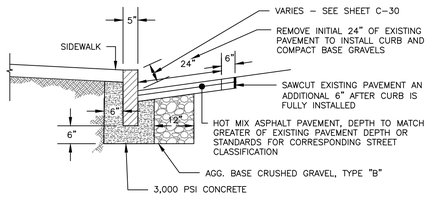
PAVEMENT SAWCUT DETAIL
NOT TO SCALE



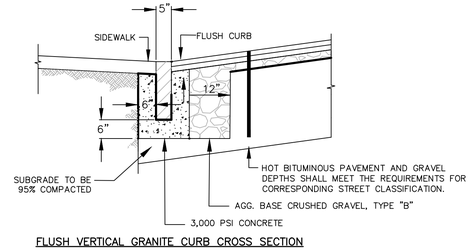
TIPDOWN CURB PROFILE



VERTICAL GRANITE CURB PLAN VIEW



VERTICAL GRANITE CURB WITH REVEAL CROSS SECTION

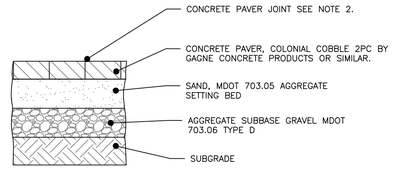


FLUSH VERTICAL GRANITE CURB CROSS SECTION

NOTES:

1. CURB SHALL BE RESET IN ACCORDANCE WITH MDOT 609.08 WITH THE EXCEPTION OF CURB SPACING TO BE INSTALLED PER DETAIL.
2. INDIVIDUAL PIECES OF CURB SHORTER THAN 4 L.F. ARE NOT ALLOWED, WITH THE EXCEPTION OF RADIAL CURB.
3. THE MINIMUM HEIGHT OF THE CONCRETE BACKING SHALL BE 10 INCHES OR TO THE BOTTOM OF THE HOT MIX ASPHALT PAVEMENT, WHICHEVER IS GREATER, MEASURED FROM THE BOTTOM OF THE CURB.
4. CURBING SHALL BE SET IN A 6-INCH BED OF POURED IN PLACE 3,000 PSI CONCRETE MIX.
5. WOODEN SHIMS MAY BE USED TO SET CURB.

VERTICAL GRANITE CURB AND TIPDOWN INSTALLATION DETAIL
NOT TO SCALE

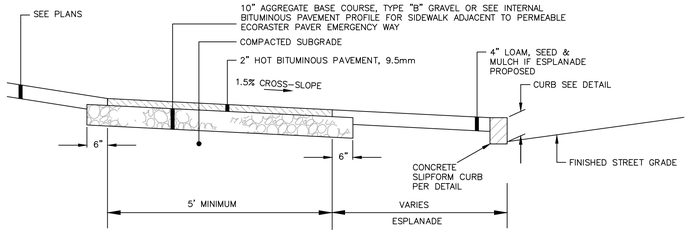


NOTE:
1. COMPACT AGGREGATE MATERIALS TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557
2. CONCRETE PAVER JOINTS SHALL BE FILLED WITH ALLIANCE GATOR XP POLY – SAND OR APPROVED EQUAL.

	THICKNESS OF LAYERS
STANDARD	LAYERS
2-3/8"	CONCRETE PAVER TO BE APPROVED BY ENGINEER AND OWNER
3"	SAND MDOT 703.05 AGGREGATE
10"	AGGREGATE SUBBASE GRAVEL MDOT 703.06 TYPE D

PATIO PROFILE DETAIL
NOT TO SCALE

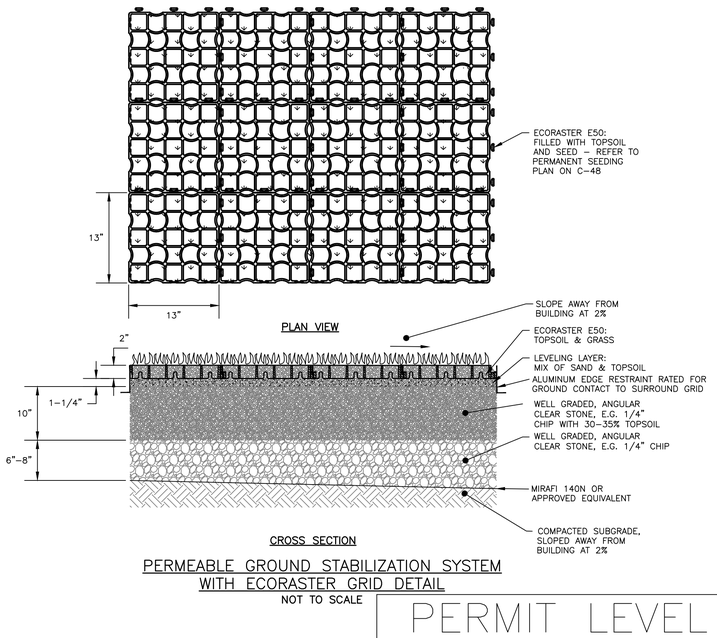
NOTE:
COMPACT AGGREGATES TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557



BITUMINOUS SIDEWALK
NOT TO SCALE

NOTES:

1. 3/4" CHIP CLEAR OR OTHER SUITABLE CLEAR STONE CAN BE USED FOR DRAINAGE LAYER.



PERMEABLE GROUND STABILIZATION SYSTEM WITH ECORASTER GRID DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: SITE DETAILS – 1
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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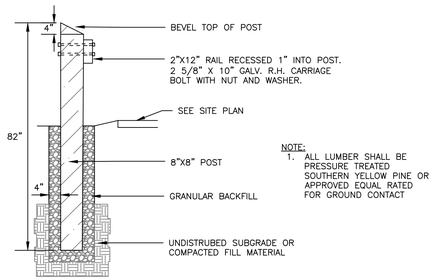
FILE:	1287 DETAILS
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

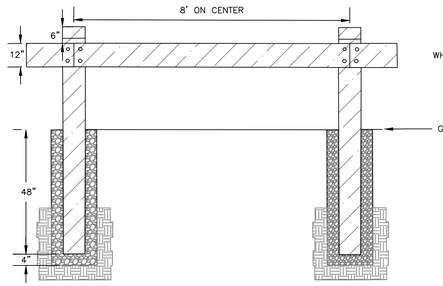
STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-40



NOTE:
1. ALL LUMBER SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE OR APPROVED EQUAL RATED FOR GROUND CONTACT

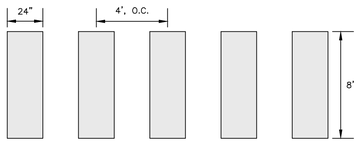
SIDE ELEVATION



FRONT ELEVATION

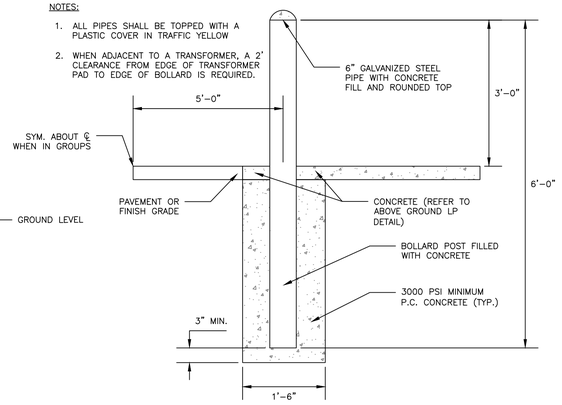
WOODEN GUARDRAIL DETAIL
NOT TO SCALE

NOTE:
1. CROSSWALKS TO BE BUILT IN CONFORMANCE WITH MUTCD STANDARDS, LATEST EDITION.
2. CROSSWALKS ARE TO BE PAINTED WHITE MEETING MAINE DOT SPECIFICATIONS.
3. 8' LENGTH OF BLOCKS TO BE PARALLEL TO THE DIRECTION OF CAR TRAFFIC.



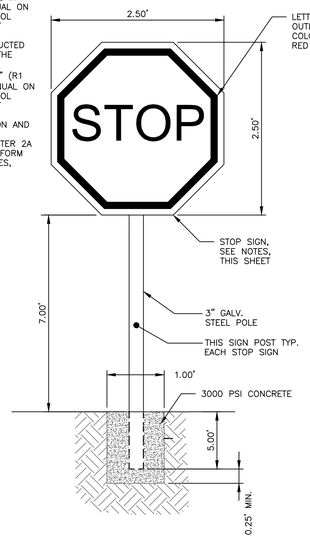
BLOCK CROSSWALK
NOT TO SCALE

NOTES:
1. ALL PIPES SHALL BE TOPPED WITH A PLASTIC COVER IN TRAFFIC YELLOW
2. WHEN ADJACENT TO A TRANSFORMER, A 2' CLEARANCE FROM EDGE OF TRANSFORMER PAD TO EDGE OF BOLLARD IS REQUIRED.



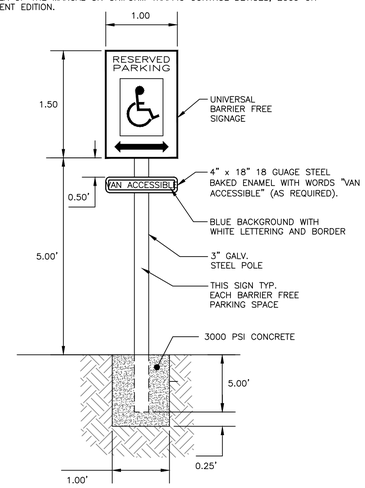
PIPE BOLLARD
NOT TO SCALE

NOTES:
1. ALL ASPECTS OF STOP SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
2. SIGN SHALL BE CONSTRUCTED AS SIGN R1-1 UNDER THE "REGULATORY SIGNS, BARRICADES, AND GATES" (R1 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.



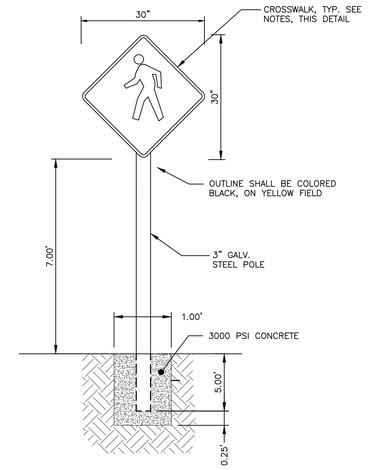
STOP SIGN DETAIL
NOT TO SCALE

NOTES:
1. ALL ASPECTS OF RESERVED PARKING SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION
2. SIGN SHALL BE CONSTRUCTED AS SIGN R7-8 UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES" (R7 SERIES) WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION. VAN ACCESSIBILITY SHALL BE CONSTRUCTED AS SIGN R7-8a OR R7-8b.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.

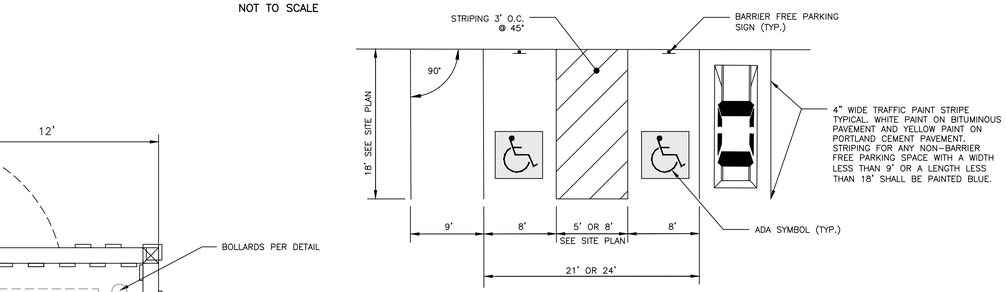


BARRIER FREE PARKING SIGN
NOT TO SCALE

NOTES:
1. ALL ASPECTS OF CROSSWALK SIGN CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION
2. SIGN SHALL BE CONSTRUCTED AS SIGN W11-2 UNDER THE "PARKING AND STANDING SIGNS AND PLAQUES"WITHIN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.
3. SIGN POST CONSTRUCTION AND MOUNTING SHALL BE IN ACCORDANCE WITH CHAPTER 2A OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2009 OR MOST RECENT EDITION.



CROSSWALK SIGN DETAIL
NOT TO SCALE

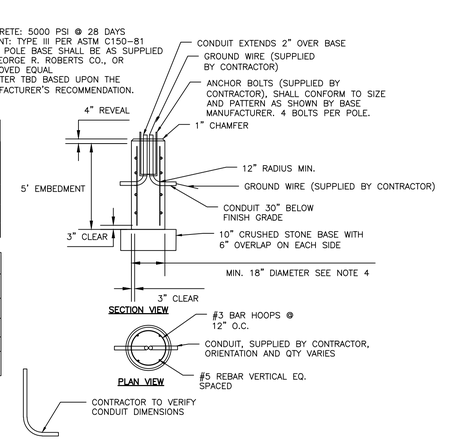


PARKING SPACE DIMENSIONS
NOT TO SCALE

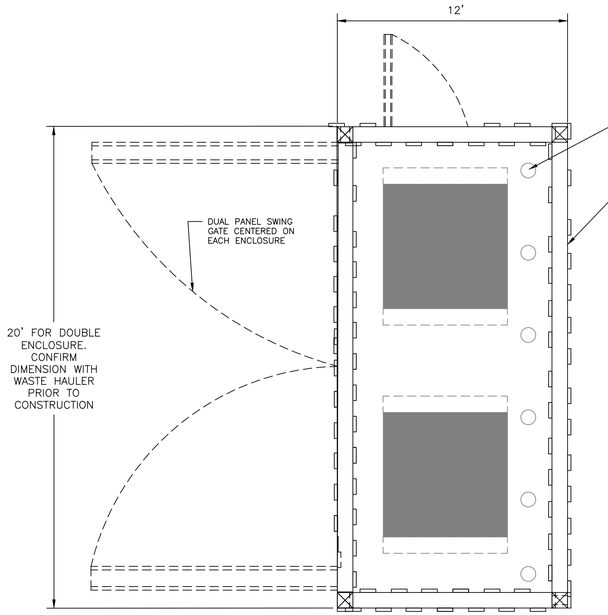
NOTES:
1. CONCRETE: 5000 PSI @ 28 DAYS
2. CEMENT: TYPE III PER ASTM C150-81
3. LIGHT POLE BASE SHALL BE AS SUPPLIED BY GEORGE R. ROBERTS CO., OR APPROVED EQUAL
4. DIAMETER TBD BASED UPON THE MANUFACTURER'S RECOMMENDATION.

SCHEDULE		
HEIGHT OF POLE	MIN DIAMETER	MIN EMBEDMENT
<20'	1.5'	5'
20'-40'	2'	6'
>40'	3'	8'

REVEALS	
APPLICATIONS	REVEAL
STREET/SIDEWALK	4"
OTHER PED HARDSCAPE	FLUSH
PEDESTRIAN LAWN/MULCH	4"
PARKING AREAS (OPEN TRAFFIC)	24-36"

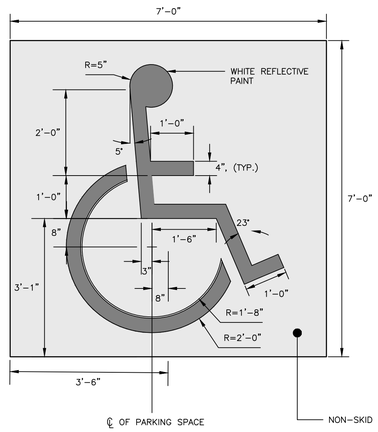


LIGHT POLE BASE
NOT TO SCALE



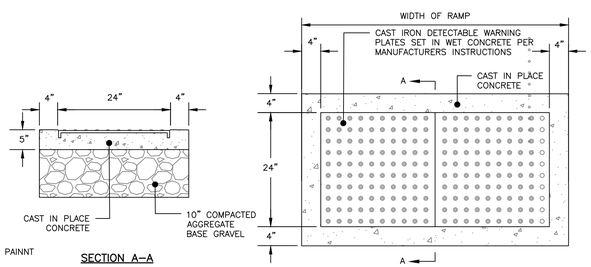
PLAN VIEW

TRASH ENCLOSURE DETAIL
NOT TO SCALE



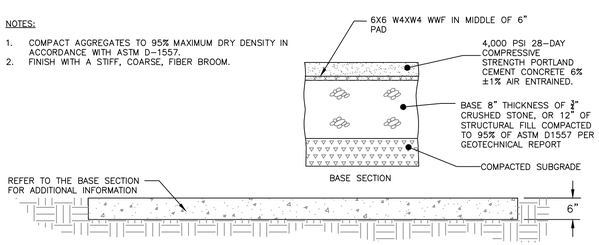
INTERNATIONAL BARRIER FREE SYMBOL
NOT TO SCALE

NOTES:
1. ALL DETECTABLE WARNING PLATES SHALL BE UNCOATED CAST IRON. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MDOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. SIZE: THE DETECTABLE WARNING PLATES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION TO THE STREET.
5. ORIENTATION: THE DETECTABLE WARNING PANEL SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 INCHES MINIMUM AND 8 INCHES MAXIMUM FORM THE CURB LINE. THE PANEL SHALL BE ORIENTED TO THE DIRECTION OF TRAVEL AS IDENTIFIED BY THE POINT OF EGRESS.



SIDEWALK RAMP DETECTABLE WARNING PANEL
NOT TO SCALE

NOTES:
1. COMPACT AGGREGATES TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557.
2. FINISH WITH A STIFF, COARSE, FIBER BROOM.



CONCRETE PAD DETAIL
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN APPLICATION	SJL 6/17/25
PRELIMINARY REVIEW	SJL 6/30/25

DRAWING NAME: SITE DETAILS - 2

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

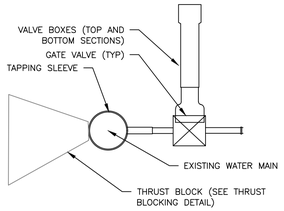
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND IF ALTERED IN ANY WAY, OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
70 MAIN STREET, SANFORD, MAINE 04104
PO BOX 787 (207) 775-2655

FILE:	1287 DETAILS
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-41



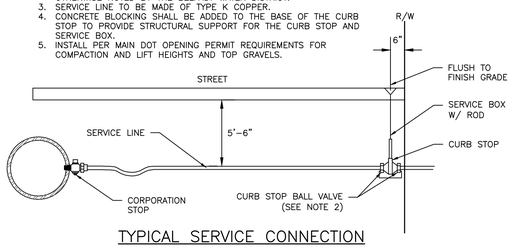
SIDE VIEW

TAPPING SLEEVE AND VALVE

NOT TO SCALE

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES MUST COMPLY WITH THE CITY OF BELFAST WATER DISTRICT (BWD) SPECIFICATIONS.
2. CURB STOP BALL VALVE TO BE MADE OF COPPER OR BRASS UNLESS OTHERWISE NOTED BY THE BELFAST WATER DISTRICT.
3. SERVICE LINE TO BE MADE OF TYPE K COPPER.
4. CONCRETE BLOCKING SHALL BE ADDED TO THE BASE OF THE CURB STOP TO PROVIDE STRUCTURAL SUPPORT FOR THE CURB STOP AND SERVICE BOX.
5. INSTALL PER MAIN DOT OPENING PERMIT REQUIREMENTS FOR COMPACTION AND LIFT HEIGHTS AND TOP GRAVELS.

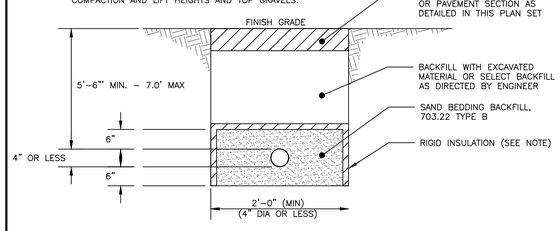


TYPICAL SERVICE CONNECTION

NOT TO SCALE

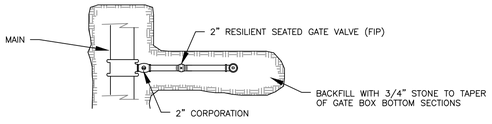
NOTES:

1. THE WATER TRENCH SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE BELFAST WATER DISTRICT STANDARD DETAILS & SPECIFICATIONS.
2. IF LESS THAN 5'-6" OF COVER IS POSSIBLE ADD TWO LAYERS OF 2-INCH "BLUE DOW" RIGID INSULATION.
3. INSTALL PER MAINE DOT OPENING PERMIT REQUIREMENTS FOR COMPACTION AND LIFT HEIGHTS AND TOP GRAVELS.

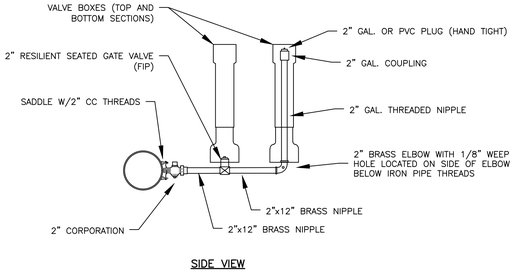


WATER SERVICE TRENCH SECTION DETAIL

NOT TO SCALE



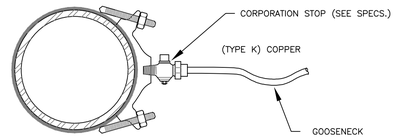
TOP VIEW



SIDE VIEW

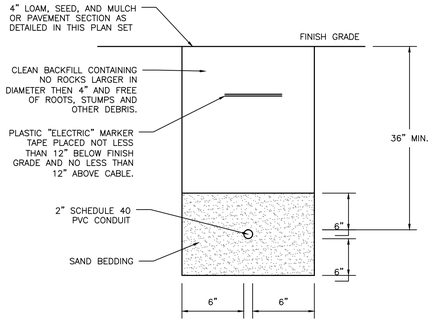
SIDE-ARM BLOW-OFF

NOT TO SCALE



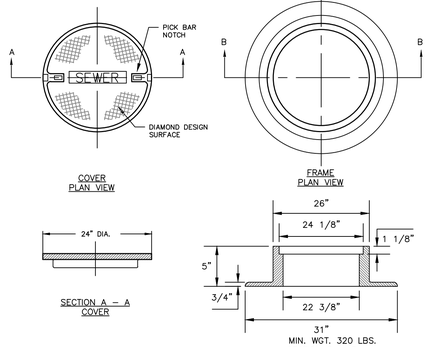
SERVICE SADDLE: C.C. THREAD

NOT TO SCALE



SECONDARY ELECTRICAL TRENCH

NOT TO SCALE

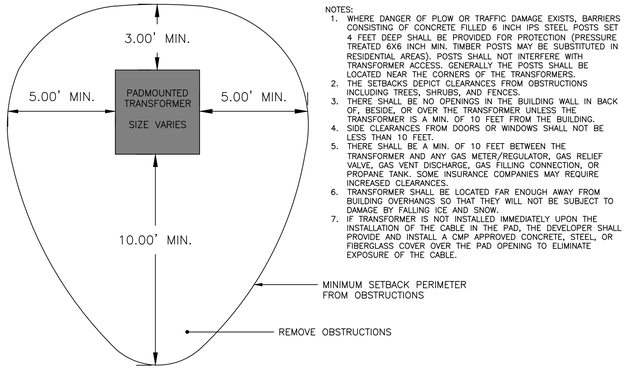


NOTES:

1. ALL SANITARY AND STORMWATER/DRAIN MANHOLE COVERS SHALL BE 24" x 5".
2. ALL SANITARY MANHOLE COVERS AND SHALL HAVE "SEWER" CAST INTO THE COVER.
3. ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLD AND SHALL HAVE A 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
4. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
5. APPROVED MANHOLE FRAMES: EAST JORDAN = 1690Z OR APPROVED EQUAL
6. APPROVED MANHOLE COVER: EAST JORDAN = 2160A OR APPROVED EQUAL
7. FRAME AND COVER CONSTRUCTION SHALL BE COMPATIBLE WITH STANDARD PRECAST SEWER MANHOLE DETAIL
8. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF BELFAST.

CAST IRON MANHOLE COVER AND FRAME

NOT TO SCALE



NOTES:

1. WHERE DANGER OF PLOW OR TRAFFIC DAMAGE EXISTS, BARRIERS CONSISTING OF CONCRETE FILLED 6 INCH IPS STEEL POSTS SET 4 FEET DEEP SHALL BE PROVIDED FOR PROTECTION (PRESSURE TREATED 6X6 INCH MIN. TIMBER POSTS MAY BE SUBSTITUTED IN RESIDENTIAL AREAS). POSTS SHALL NOT INTERFERE WITH TRANSFORMER ACCESS. GENERALLY THE POSTS SHALL BE LOCATED NEAR THE CORNERS OF THE TRANSFORMERS.
2. THE SETBACKS DEPICT CLEARANCES FROM OBSTRUCTIONS INCLUDING TREES, SHRUBS, AND FENCES.
3. THERE SHALL BE NO OPENINGS IN THE BUILDING WALL IN BACK OF, BESIDE, OR OVER THE TRANSFORMER UNLESS THE TRANSFORMER IS A MIN. OF 10 FEET FROM THE BUILDING.
4. SIDE CLEARANCES FROM DOORS OR WINDOWS SHALL NOT BE LESS THAN 10 FEET.
5. THERE SHALL BE A MIN. OF 10 FEET BETWEEN THE TRANSFORMER AND ANY GAS METER/REGULATOR, GAS RELIEF VALVE, GAS VENT DISCHARGE, GAS FILLING CONNECTION, OR PROPANE TANK. SOME INSURANCE COMPANIES MAY REQUIRE INCREASED CLEARANCES.
6. TRANSFORMER SHALL BE LOCATED FAR ENOUGH AWAY FROM BUILDING OVERHANGS SO THAT THEY WILL NOT BE SUBJECT TO DAMAGE BY FALLING ICE AND SNOW.
7. IF TRANSFORMER IS NOT INSTALLED IMMEDIATELY UPON THE INSTALLATION OF THE CABLE IN THE PAD, THE DEVELOPER SHALL PROVIDE AND INSTALL A CMP APPROVED CONCRETE, STEEL, OR FIBERGLASS COVER OVER THE PAD OPENING TO ELIMINATE EXPOSURE OF THE CABLE.

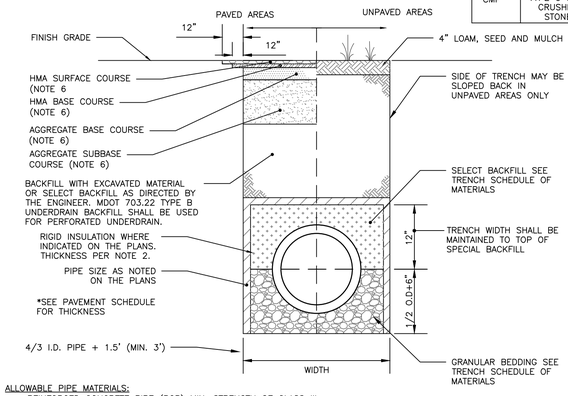
CMP TRANSFORMER SETBACKS

NOT TO SCALE

NOTES:

1. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. STORM DRAIN COVER BETWEEN 2' AND 3' SHALL INCLUDE 4" OF RIGID INSULATION. COVER BETWEEN 3' AND 4' SHALL INCLUDE 2" RIGID INSULATION. OTHER UTILITIES: ADD 2" OF RIGID INSULATION FOR EACH FOOT ABOVE MINIMUM DEPTH.
3. INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES AT THE TOP OF SUBGRADE.
4. MINIMUM COVER
   4.1. 2'-0" - STORM DRAIN
   4.2. 5'-0" - SEWER
5. NO TREES SHALL BE PLANTED WITHIN 5' OF A SEWER PIPE OR SERVICE
6. THICKNESS AS NOTED BY SURFACE DETAILS

SCHEDULE OF MATERIALS		
TYPE OF PIPE	GRANULAR BEDDING	SELECT BACKFILL
CMP DUCTILE IRON RCP	MDOT 703.22 TYPE B UD BACKFILL	MDOT 703.22 TYPE B UD BACKFILL
PVC/HDPE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE B UD BACKFILL
CMP	MDOT 703.22 TYPE C 3/4" CRUSHED STONE	MDOT 703.22 TYPE C 3/4" CRUSHED STONE



ALLOWABLE PIPE MATERIALS:

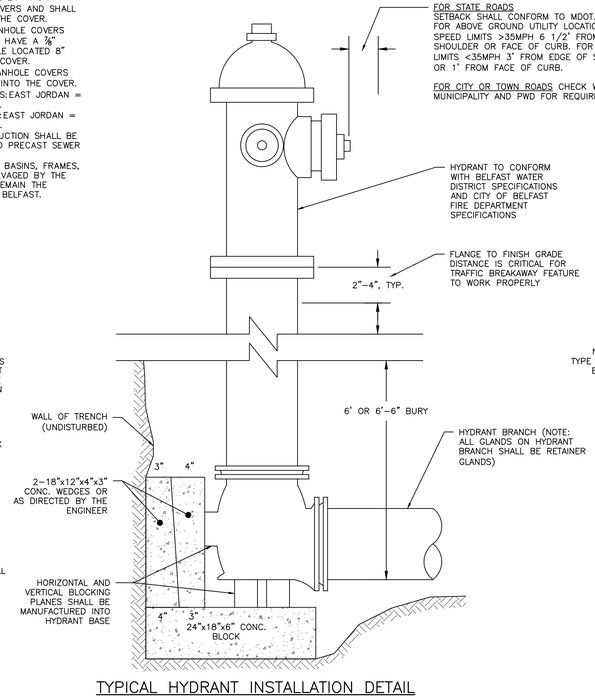
- REINFORCED CONCRETE PIPE (RCP) MIN. STRENGTH OF CLASS III
- PVC RING TYPE SEWER (SDR 35) OR EQUIVALENT, MIN PS-46 RATING
- PVC RING TYPE SEWER PIPE MEETING ASTM F 789
- DUCTILE IRON PIPE (DIP)
- ADS N-12 HP DOUBLE WALL MIN PS-46 RATING
- ADS SANITITE HP MIN. PS-46

STORM DRAIN AND SEWER TYPICAL TRENCH SECTION

NOT TO SCALE

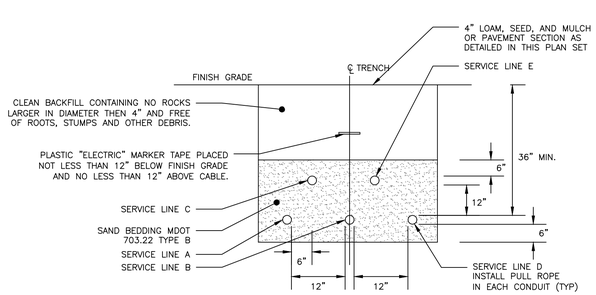
NOTE:

1. HYDRANTS TO BE CONNECTED TO WATER MAIN VIA SWIVEL TEE AND GATE VALVE



TYPICAL HYDRANT INSTALLATION DETAIL

NOT TO SCALE



CONDUIT TYPE				
SERVICE	CONDUIT SIZE	GRASS AND PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
B	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE 1
C	2-4"	SCHEDULE 40 PVC	COMMUNICATION	-
D	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	SPARE	SEE NOTE 1
E	2-4"	SCHEDULE 40 PVC	CABLE	-

NOTES:

1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10" ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
2. MINIMUM SEPARATION OF 24 INCHES BETWEEN PRIMARY CABLE/CONDUIT AND GAS LINES SHALL BE MAINTAINED.
3. CONDUITS WITHIN THE RIGHT-OF-WAY SHALL BE ENCASED IN CONCRETE.
4. FINAL SIZE OF CONDUITS TO BE SPECIFIED BY MEP, ELECTRICIAN, OR DESIGN/BUILD ELECTRICAL CONTRACTOR.

UTILITY TRENCH - PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE

NOT TO SCALE

VALVE BOX & COVER

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN APPLICATION	SJL 6/17/25
PRELIMINARY REVIEW	SJL 6/30/25

DRAWING NAME: UTILITY DETAILS - 1

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS, 9 FIELD STREET, BELFAST, MAINE 04915

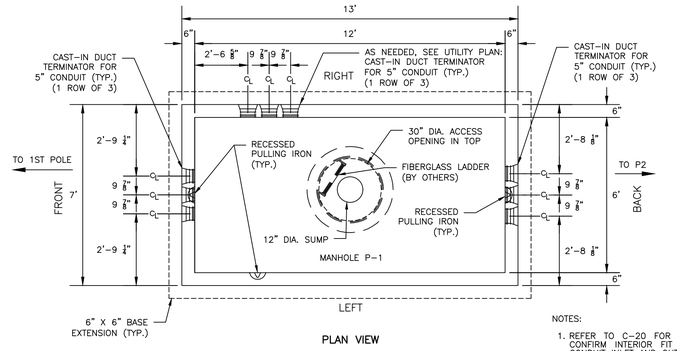
ACORN ENGINEERING, INC. FIRST PLANS SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION OF ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
ENGINEERING, PLANNING, SURVEYING
PO BOX 347, ELIOT, MAINE 04104
(207) 775-2655

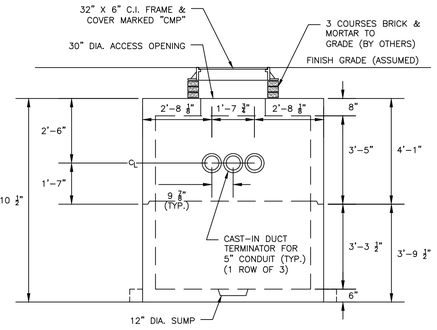
FILE:	1287 DETAILS
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-42



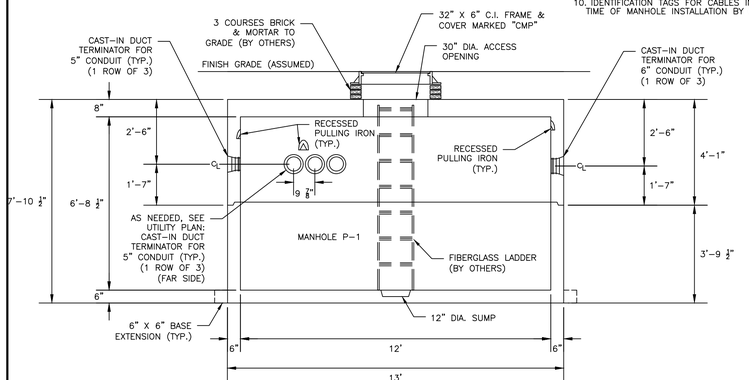
PLAN VIEW



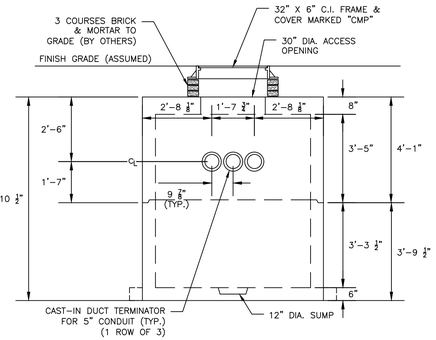
FRONT ELEVATION VIEW

NOTES:

1. REFER TO C-20 FOR SPECIFIC LAYOUT AND INFORMATION. MEP TO CONFIRM INTERIOR FIT UP CONFIGURATION AND DETERMINE PROPER CONDUIT INLET AND OUTLET OF STRUCTURE, INCLUDING SIZE, QUANTITY AND LOCATIONS. CONTRACTOR SHALL PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURE.
2. CONCRETE: 5,000 PSI @ 28 DAYS.
3. CEMENT: TYPE III PER ASTM C150-81.
4. REINFORCING: GRADE 60 PER ASTM A615.
5. DESIGN LOADING: H-20 PER ASTM C-478.
6. JOINTS TO BE SEALED WATER TIGHT WITH "CON-SEAL".
7. EXTERIOR OF TANK TO BE "AQUA-SAFE" COATED.
8. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OF THE MANUFACTURER MARKED ON THE INSIDE WALL.
9. LADDER PROVIDED AND INSTALLED BY OTHERS.
10. IDENTIFICATION TAGS FOR CABLES IN MANHOLE SHALL BE SET AT THE TIME OF MANHOLE INSTALLATION BY OTHERS.

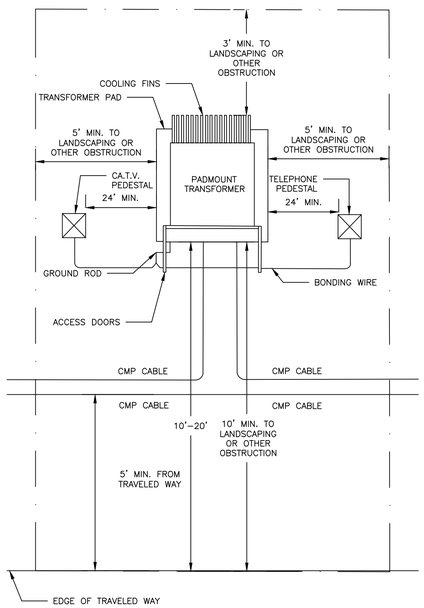


SECTION VIEW

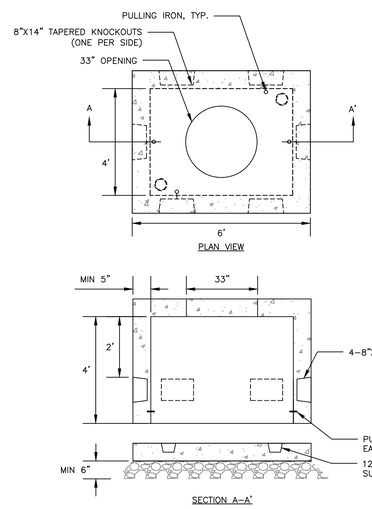


BACK ELEVATION VIEW

PRECAST CONCRETE 38Y MANHOLE DETAIL
NOT TO SCALE



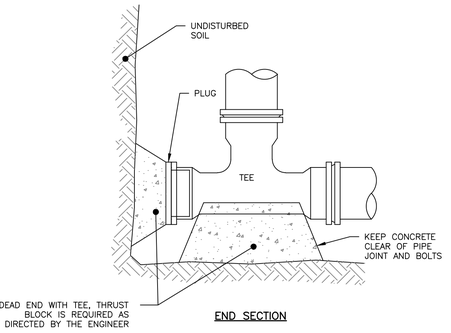
7'X7' PAD MOUNTED TRANSFORMER
NOT TO SCALE



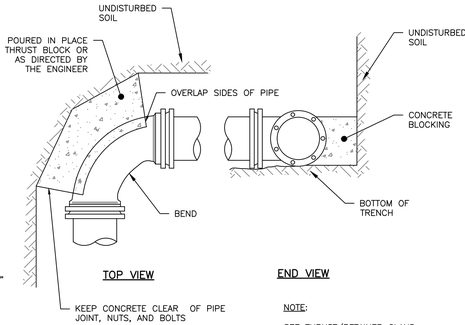
NOTES:

1. JUNCTION BOX TO COMPLY WITH NATIONAL ELECTRICAL SAFETY CODE SECTION 323A.
2. BOX TO BE DESIGNED TO WITHSTAND H20 WHEEL LOADING WITH 6" OVERBURDEN.
2. FOR USE WITH 32" COVER MARKED PER UTILITY COMPANY REQUIREMENTS (MIN. ONE COURSE OF BRICK TO GRADE.)
3. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
4. JUNCTION BOX AND SLAB TO BE SET ON MIN 6" COMPACTED 3/4" CRUSHED STONE.

4' X 6' JUNCTION BOX (PULL BOX)
NOT TO SCALE



END SECTION



TOP VIEW

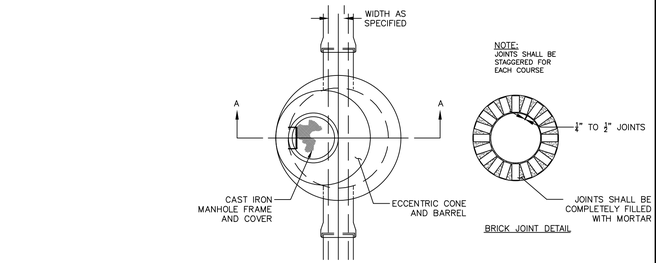
END VIEW

NOTE:

SEE THRUST/RETAINER GLAND SCHEDULE FOR TYPE OF BLOCKING TO BE USED ON BENDS

REGULAR BEND

THRUST BLOCKING
NOT TO SCALE

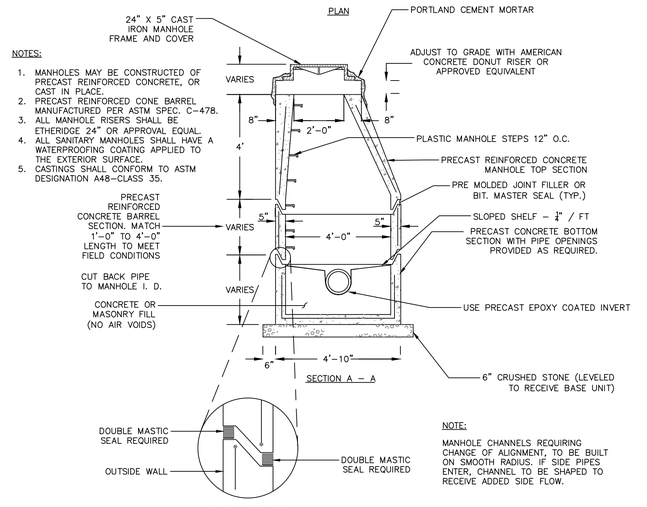


BRICK JOINT DETAIL

PLAN

NOTES:

1. MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
3. ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVAL EQUAL.
4. ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
5. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.

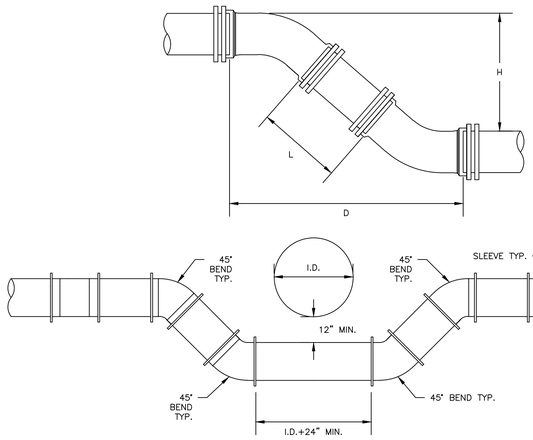


JOINT/MASTIC DETAIL

NOTE:

MANHOLE CHANNELS REQUIRING CHANGE OF ALIGNMENT, TO BE BUILT ON SMOOTH RADIUS. IF SIDE PIPES ENTER, CHANNEL TO BE SHAPED TO RECEIVE ADDED SIDE FLOW.

PRECAST CONCRETE MANHOLE
NOT TO SCALE



NOTE: DIMENSIONS APPLICABLE FOR SIGMA COMPACT BENDS. FOR TYLER COMPACT BENDS, ADD 1/2" TO "D" DIMENSION AND SUBTRACT 1/2" FROM "L" DIMENSION. FOR OTHER FITTINGS REFER TO MANUFACTURER'S RECOMMENDATIONS.

TYPICAL SERVICE OFFSET
NOT TO SCALE

	6" PIPE		8" PIPE		12" PIPE	
H	D	L	D	L	D	L
12"	1' 6-1/2"	0' 10-1/2"	1' 7-1/2"	0' 9-1/2"	1' 11-1/2"	0' 5-1/2"
13"	1' 7-1/2"	0' 11-7/8"	1' 8-1/2"	0' 10-7/8"	2' 0-1/2"	0' 6-7/8"
14"	1' 8-1/2"	1' 1-5/16"	1' 9-1/2"	1' 0-5/16"	2' 1-1/2"	0' 8-5/16"
15"	1' 9-1/2"	1' 2-11/16"	1' 10-1/2"	1' 1-11/16"	2' 2-1/2"	0' 9-11/16"
16"	1' 10-1/2"	1' 4-1/8"	1' 11-1/2"	1' 3-1/8"	2' 3-1/2"	0' 11-1/8"
17"	1' 11-1/2"	1' 5-9/16"	2' 0-1/2"	1' 4-9/16"	2' 4-1/2"	1' 0-9/16"
18"	2' 0-1/2"	1' 6-15/16"	2' 1-1/2"	1' 5-15/16"	2' 5-1/2"	1' 1-15/16"
19"	2' 1-1/2"	1' 8-3/8"	2' 2-1/2"	1' 7-3/8"	2' 6-1/2"	1' 3-3/8"
20"	2' 2-1/2"	1' 9-13/16"	2' 3-1/2"	1' 8-13/16"	2' 7-1/2"	1' 4-13/16"
21"	2' 3-1/2"	1' 11-3/16"	2' 4-1/2"	1' 10-3/16"	2' 8-1/2"	1' 6-3/16"
22"	2' 4-1/2"	2' 0-5/8"	2' 5-1/2"	1' 11-5/8"	2' 9-1/2"	1' 7-5/8"
23"	2' 5-1/2"	2' 2"	2' 6-1/2"	2' 1"	2' 10-1/2"	1' 9"
24"	2' 6-1/2"	2' 3-7/16"	2' 7-1/2"	2' 2-7/16"	2' 11-1/2"	1' 10-7/16"
25"	2' 7-1/2"	2' 4-7/8"	2' 8-1/2"	2' 3-7/8"	3' 0-1/2"	1' 11-7/8"
26"	2' 8-1/2"	2' 6-1/4"	2' 9-1/2"	2' 5-1/4"	3' 1-1/2"	2' 1-1/4"
27"	2' 9-1/2"	2' 7-11/16"	2' 10-1/2"	2' 6-11/16"	3' 2-1/2"	2' 2-11/16"
28"	2' 10-1/2"	2' 9-1/8"	2' 11-1/2"	2' 8-1/8"	3' 3-1/2"	2' 4-1/8"
29"	2' 11-1/2"	2' 10-1/2"	3' 0-1/2"	2' 9-1/2"	3' 4-1/2"	2' 5-1/2"
30"	3' 0-1/2"	2' 11-15/16"	3' 1-1/2"	2' 10-15/16"	3' 5-1/2"	2' 6-15/16"
31"	3' 1-1/2"	3' 1-5/16"	3' 2-1/2"	3' 0-5/16"	3' 6-1/2"	2' 8-5/16"
32"	3' 2-1/2"	3' 2-3/4"	3' 3-1/2"	3' 1-3/4"	3' 7-1/2"	2' 9-3/4"
33"	3' 3-1/2"	3' 4-3/16"	3' 4-1/2"	3' 3-3/16"	3' 8-1/2"	2' 11-3/16"
34"	3' 4-1/2"	3' 5-5/16"	3' 5-1/2"	3' 4-9/16"	3' 9-1/2"	3' 0-9/16"
35"	3' 5-1/2"	3' 7"	3' 6-1/2"	3' 6"	3' 10-1/2"	3' 2"
36"	3' 6-1/2"	3' 8-7/16"	3' 7-1/2"	3' 7-7/16"	3' 11-1/2"	3' 3-7/16"
37"	3' 7-1/2"	3' 9-13/16"	3' 8-1/2"	3' 8-13/16"	4' 0-1/2"	3' 4-13/16"
38"	3' 8-1/2"	3' 11-1/4"	3' 9-1/2"	3' 10-1/4"	4' 1-1/2"	3' 6-1/4"
39"	3' 9-1/2"	4' 0-11/16"	3' 10-1/2"	3' 11-11/16"	4' 2-1/2"	3' 7-11/16"
40"	3' 10-1/2"	4' 2-1/16"	3' 11-1/2"	4' 1-1/16"	4' 3-1/2"	3' 9-1/16"
41"	3' 11-1/2"	4' 3-1/2"	4' 0-1/2"	4' 2-1/2"	4' 4-1/2"	3' 10-1/2"
42"	4' 0-1/2"	4' 4-7/8"	4' 1-1/2"	4' 3-7/8"	4' 5-1/2"	3' 11-7/8"
43"	4' 1-1/2"	4' 6-5/16"	4' 2-1/2"	4' 5-5/16"	4' 6-1/2"	4' 1-5/16"
44"	4' 2-1/2"	4' 7-3/4"	4' 3-1/2"	4' 6-3/4"	4' 7-1/2"	4' 2-3/4"
45"	4' 3-1/2"	4' 9-1/8"	4' 4-1/2"	4' 8-1/8"	4' 8-1/2"	4' 4-1/8"
46"	4' 4-1/2"	4' 10-9/16"	4' 5-1/2"	4' 9-9/16"	4' 9-1/2"	4' 5-9/16"
47"	4' 5-1/2"	4' 11-15/16"	4' 6-1/2"	4' 10-15/16"	4' 10-1/2"	4' 6-15/16"
48"	4' 6-1/2"	5' 1-3/8"	4' 7-1/2"	5' 0-3/8"	4' 11-1/2"	4' 8-3/8"
49"	4' 7-1/2"	5' 2-13/16"	4' 8-1/2"	5' 1-13/16"	5' 0-1/2"	4' 9-13/16"
50"	4' 8-1/2"	5' 4-3/16"	4' 9-1/2"	5' 3-3/16"	5' 1-1/2"	4' 11-3/16"
51"	4' 9-1/2"	5' 5-5/8"	4' 10-1/2"	5' 4-5/8"	5' 2-1/2"	5' 0-5/8"
52"	4' 10-1/2"	5' 7-1/16"	4' 11-1/2"	5' 6-1/16"	5' 3-1/2"	5' 2-1/16"
53"	4' 11-1/2"	5' 8-7/16"	5' 0-1/2"	5' 7-7/16"	5' 4-1/2"	5' 3-7/16"
54"	5' 0-1/2"	5' 9-7/8"	5' 1-1/2"	5' 8-7/8"	5' 5-1/2"	5' 4-7/8"
55"	5' 1-1/2"	5' 11-5/16"	5' 2-1/2"	5' 10-5/16"	5' 6-1/2"	5' 6-5/16"

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: UTILITY DETAILS - 2

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS, 9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC. ENGINEERING, INC.

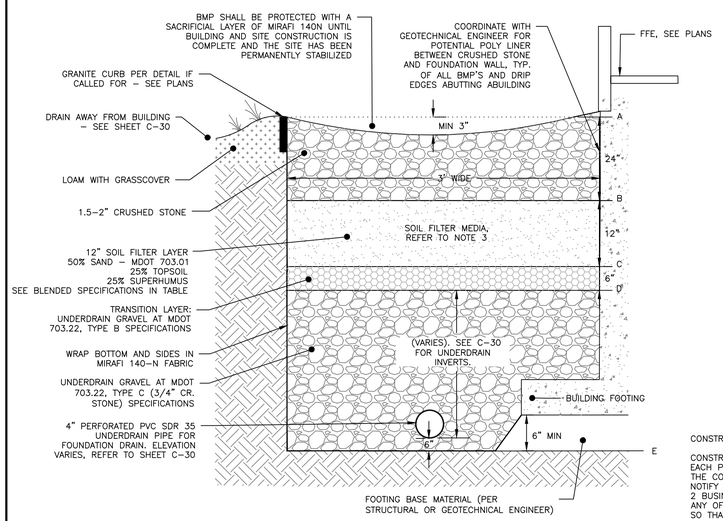
THESE PLANS SHALL NOT BE MODIFIED WITHOUT PERMISSION FROM ACORN ENGINEERING, INC. ANY MODIFICATIONS MADE TO THESE PLANS WITHOUT THE WRITTEN PERMISSION OF ACORN ENGINEERING, INC. SHALL BE DONE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

ACORN ENGINEERING, INC.
P.O. BOX 432, FREEPORT, MAINE 04104
(207) 775-2655

FILE: 1287 DETAILS
JN: 1287
SCALE: AS NOTED
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
REGISTERED PROFESSIONAL ENGINEER
LICENSED
6/30/25

DRAWING NO.
C-43



NOTES:

1. FINAL DESIGN MUST COMPLY WITH ALL APPROPRIATE SPECIFICATIONS FROM THE STORMWATER MANAGEMENT FOR MAINE BMP MANUAL, CHAPTER 7.
2. THE CRUSHED STONE RESERVOIR BED MUST CONSIST OF CRUSHED ROCK WITH A POROSITY OF 40%.
3. THE SOIL FILTER MEDIA SHALL NOT BE CONSTRUCTED UNTIL THE AREA DRAINING TO THE BASIN HAS BEEN PERMANENTLY STABILIZED.

ROOF DRIPLINE FILTRATION DETAIL:

NOT TO SCALE

SOIL FILTER BED –SUPERHUMUS OR EQUIV. SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#200	0 – 5
MINIMAL CLAY CONTENT, NO MORE THAN 3 – 5% PASSING #200 SIEVE	

12" SOIL FILTER BED – BLENDED SAND, LOAM, SUPERHUMUS SIEVE ANALYSIS	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85 – 100
#20	70 – 100
#60	15 – 40
#200	8 – 15
1. CLAY FRACTION <2% PASSING THE #200 SIEVE. 2. SUPERHUMUS OR EQUIV.	

BUILDING ELEVATIONS	
DRIP FILTER #1	
A	240.40'
B	238.40'
C	237.40'
D	236.90'
E	235.10' *
*BOTTOM OF STONE ELEVATION IS SUBJECT TO STRUCTURAL ENGINEER DESIGN AND COORDINATION AND VARIES WITH ADJACENT FO AND FOUNDATION DRAIN INVERT.	

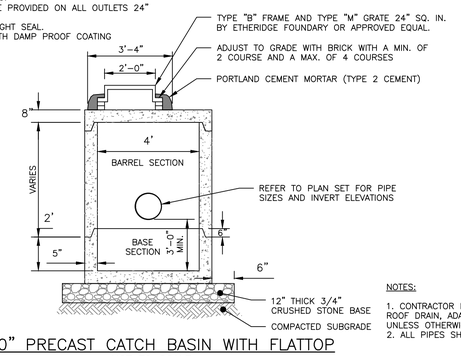
CONSTRUCTION OBSERVATION:

CONSTRUCTION OBSERVATION SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY ACORN ENGINEERING. THE CONTRACTOR OR OWNERS REPRESENTATIVE SHALL NOTIFY ACORN ENGINEERING A MINIMUM 48 HOURS OR 2 BUSINESS DAY WHICH EVER IS GREATER PRIOR TO ANY OF THE PHASES OF CONSTRUCTION LISTED BELOW SO THAT THE FOLLOWING SITE VISITS MAY BE SCHEDULED.

1. ONE SITE VISIT AFTER PRELIMINARY CONSTRUCTION OF THE BMP GRADES;
2. ONE SITE VISIT DURING THE INSTALLATION OF THE GEOTEXTILE;
3. ONE SITE VISIT AFTER THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
4. ONE SITE VISIT DURING THE CONSTRUCTION OF THE SOIL FILTER LAYER.

NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H–20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM–C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF.
5. JOINTS SEALED WITH BUTYL RUBBER.
6. POLYPROPYLENE STEPS 12" O.C.
7. CATCH BASIN HOODS SHALL BE PROVIDED ON ALL OUTLETS 24" OR LESS.
8. ALL PIPES TO HAVE A WATERTIGHT SEAL.
9. STRUCTURE TO BE APPLIED WITH DAMP PROOF COATING

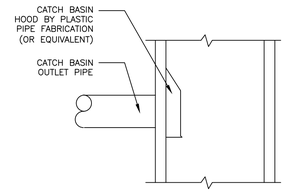


4'–0" PRECAST CATCH BASIN WITH FLATTOP

NOT TO SCALE

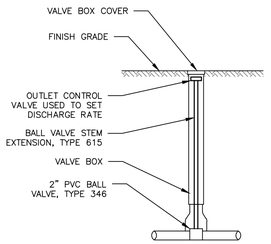
NOTES:

1. INSTALL CATCH BASIN HOODS IN CATCH BASINS OUTLETS NOTED ON C–30.
2. PREFERRED STYLE DESIGNED TO ELIMINATE CEMENTING OF THE TRAP.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS



CATCH BASIN HOOD DETAIL

NOT TO SCALE



NOTES:

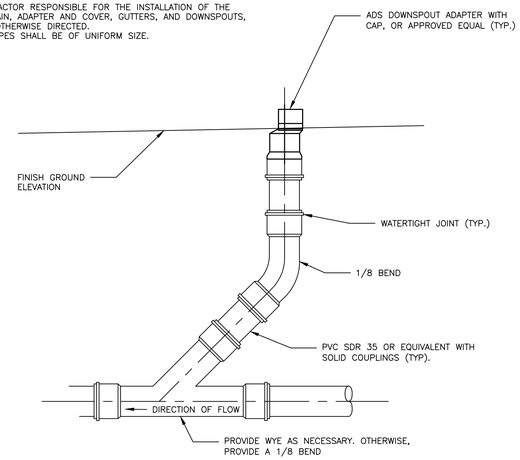
1. OUTLET VALVE ADJUSTMENT: UPON COMPLETION OF THE INSTALLATION OF THE STORMWATER PLANTER, CLOSE THE BALL VALVE, FLOOD THE PLANTER WITH CLEAN WATER UNTIL WATER ELEVATION IS AT THE RIM OF THE OVERFLOW RIM. ADJUST BALL VALVE SO THE STORED WATER IS RELEASED IN A MINIMUM OF 24 HOURS AND A MAXIMUM OF 48 HOURS.
2. IF A SECOND FAILING TEST IS ACHIEVED AS A RESULT OF THE WATER QUALITY VOLUME RELEASING AFTER THE MAXIMUM 48 HOUR TIME THEN THE TOP LAYER OF TOPSOIL SHALL BE REMOVED. A NEW LAYER OF TOPSOIL SHALL THEN BE INSTALLED MEETING THE CONSTRUCTION, SUBMITTAL AND TESTING REQUIREMENTS SET FORTH ABOVE.

OUTLET VALVE

NOT TO SCALE

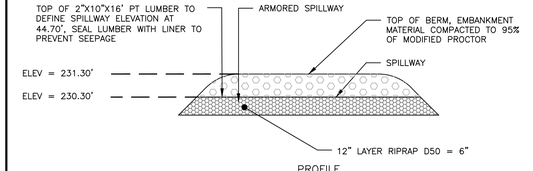
NOTES:

1. CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF THE ROOF DRAIN, ADAPTER AND COVER, GUTTERS, AND DOWNSPOUTS, UNLESS OTHERWISE DIRECTED.
2. ALL PIPES SHALL BE OF UNIFORM SIZE.



ROOF DRAIN DETAIL

NOT TO SCALE



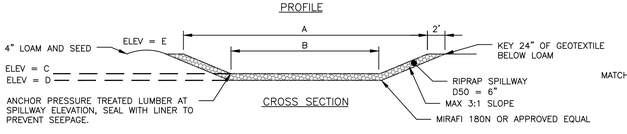
NOTES:

1. RIPRAP SHALL BE DESCRIBED BY M.D.O.T. 703.26; SIZE AS SHOWN.

SPILLWAY CROSS–SECTION

NOT TO SCALE

PROFILE

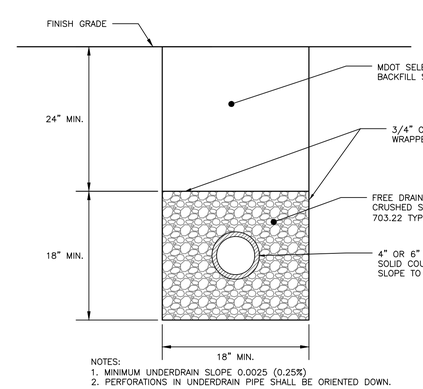


CROSS SECTION

SCHEDULE		
	ITEM	DIMENSION/ELEVATION
A	SPILLWAY WIDTH (TOP)	20'
B	SPILLWAY WIDTH (BOT)	16'
C	SPILLWAY ELEV.	231.30'
D	BOTTOM OF SPILLWAY ELEV.	230.00' [1]
E	TOP OF BERM ELEV.	231.80'
[1] TRANSITION TO 18" RIPRAP DEPTH ON SLOPED PORTION OF SPILLWAY		

OVERFLOW SPILLWAY DETAIL

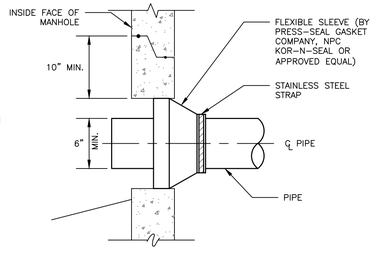
NOT TO SCALE



NOTES:
1. MINIMUM UNDERDRAIN SLOPE 0.0025 (0.25%)
2. PERFORATIONS IN UNDERDRAIN PIPE SHALL BE ORIENTED DOWN.

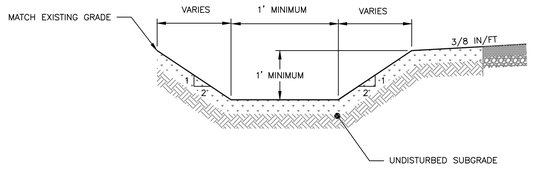
UNDERDRAIN DETAIL

NOT TO SCALE



NEW PIPE TO NEW STRUCTURE CONNECTION DETAIL

NOT TO SCALE

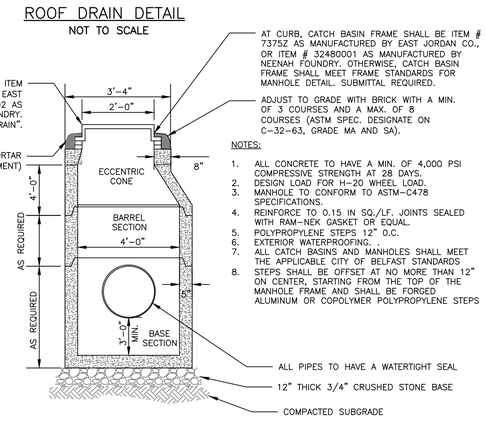


NOTES:

1. SLOPE OF DRAINAGE SWALE SHALL FOLLOW EXISTING GRADE WHILE CONFORMING WITH DETAIL; ALL SWALES SHALL HAVE POSITIVE OUTLETS.
2. ALL DISTURBED AREAS SHALL BE GRADED, LOAMED, SEEDED, MULCHED AS SOON AS POSSIBLE OR WITHIN 7 DAYS FOLLOWING THE COMPLETION OF ANY DISTURBANCE AND PRIOR TO ANY SIGNIFICANT STORM EVENT.
3. THE BOTTOM AND SIDESLOPES OF THE SWALE SHALL RECEIVE A MIN. 4" OF LOAM AND STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL. REFER TO THE EROSION CONTROL BLANKET CHANNEL INSTALLATION DETAIL.
4. INSTALL DITCHING PRIOR TO CHECK DAM INSTALLATION

TYPICAL DRAINAGE SWALE CROSS–SECTION

NOT TO SCALE



NOTES:

1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H–20 WHEEL LOAD.
3. MANHOLE TO CONFORM TO ASTM–C478 SPECIFICATIONS.
4. REINFORCE TO 0.15 IN SQ./LF. JOINTS SEALED WITH RAM–NEK GASKET OR EQUAL.
5. POLYPROPYLENE STEPS 12" O.C.
6. EXTERIOR WATERPROOFING.
7. ALL CATCH BASINS AND MANHOLES SHALL MEET THE APPLICABLE CITY OF BELFAST STANDARDS
8. STEPS SHALL BE OFFSET AT NO MORE THAN 12" ON CENTER, STARTING FROM THE TOP OF THE MANHOLE FRAME AND SHALL BE FORGED ALUMINUM OR COPOLYMER POLYPROPYLENE STEPS

4'–0" DIAMETER PRECAST DRAINAGE MANHOLE OR CATCH BASIN

NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN APPLICATION	SJL 6/17/25
PRELIMINARY REVIEW	SJL 6/30/25

DRAWING NAME: DRAINAGE DETAILS – 1

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

THESE PLANS SHALL NOT BE MODIFIED, IN PART OR WHOLE, UNLESS AUTHORIZED IN WRITING BY ACORN ENGINEERING, INC. OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

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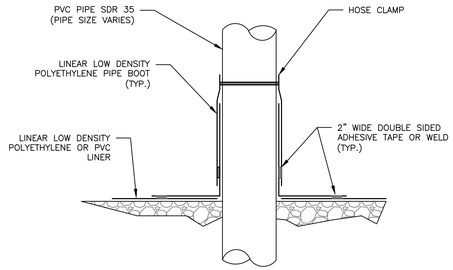
JN:	1287
SCALE:	AS NOTED
DESIGNED BY:	SJL/ALDV
DRAWN BY:	FAB/BJK
CHECKED BY:	SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-44



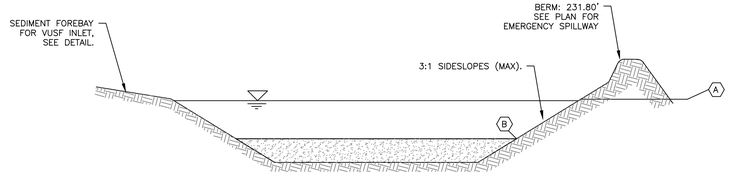
TYPICAL PIPE PENETRATION DETAIL

NOT TO SCALE

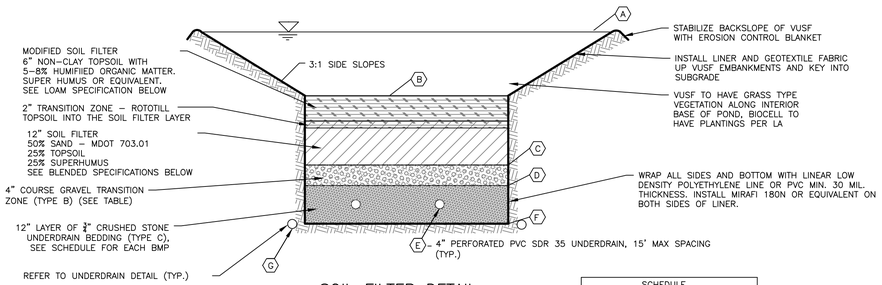
CONSTRUCTION OBSERVATION:

CONSTRUCTION OBSERVATION SHALL BE PROVIDED FOR EACH PHASE OF CONSTRUCTION BY ACORN ENGINEERING. THE CONTRACTOR OR OWNERS REPRESENTATIVE SHALL NOTIFY ACORN ENGINEERING A MINIMUM 48 HOURS OR 2 BUSINESS DAY WHICH EVER IS GREATER PRIOR TO ANY OF THE PHASES OF CONSTRUCTION LISTED BELOW SO THAT THE FOLLOWING SITE VISITS MAY BE SCHEDULED.

1. ONE SITE VISIT AFTER PRELIMINARY CONSTRUCTION OF THE BIORETENTION CELL/VUSF GRADES;
2. ONE SITE VISIT DURING THE INSTALLATION OR THE IMPERVIOUS LINER.
3. ONE SITE VISIT AFTER THE UNDER DRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED.
4. ONE SITE VISIT DURING THE CONSTRUCTION OF THE SOIL FILTER LAYER.
5. ONE SITE VISIT DURING THE CONSTRUCTION OF THE TOPSOIL LAYER.



CROSS SECTION



SOIL FILTER DETAIL

SCHEDULE	
ITEM	VUSF
(A) OVERFLOW RIM	230.80'
(B) TOP OF SOIL FILTER	229.00'
(C) TOP OF GRAVEL	227.50'
(D) TOP OF STONE	227.17'
(E) UNDERDRAIN INVERT	226.42'
(F) BOTTOM OF STONE	226.17'
(G) UNDERDRAIN INVERT (EXTERNAL)	225.92'

NOTES:

1. THE SIDESLOPES SHALL BE STABILIZED WITH A MIN. OF 4" LOAM, EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX. THE BOTTOM OF THE VEGETATED UNDERDRAIN SHALL BE STABILIZED WITH EROSION CONTROL BLANKETS SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL AND A CONSERVATION SEED MIX
2. LIGHT COMPACTION SOIL FILTER AND PIPE BEDDING MATERIAL. (90 TO 92% STANDARD PROCTOR). TESTING SHALL BE PERFORMED BY A QUALIFIED MATERIAL TESTING FIRM.
3. THE SOIL FILTER MEDIA SHALL NOT BE CONSTRUCTED UNTIL THE AREA DRAINING TO THE BASIN HAS BEEN PERMANENTLY STABILIZED.
4. THE SEDIMENT FOREBAY SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE SOIL FILTER AND INSPECTED AND MAINTAINED DURING CONSTRUCTION. MAINTENANCE SHALL INCLUDE REMOVAL OF ANY ACCUMULATED SEDIMENT.
5. A LANDSCAPE DESIGNER OR ARCHITECT SHOULD BE INVOLVED TO TO SELECT THE APPROPRIATE PLANTS FOR THE BIORETENTION CELL AND FOR THE SITE CONDITIONS. PLANTING PLAN BY OTHERS.
6. MINIMUM UNDERDRAIN SLOPE 0.0025 TOWARDS THE OUTLET.
7. TESTING: SIEVE ANALYSIS INCLUDING HYDROMETER TESTING FOR CLAY CONTENT FOR EACH LAYER SHALL BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY AND SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO CONSTRUCTION. ALL TESTING AND SUBMITTALS SHALL BE IN ACCORDANCE WITH THE MAINE DEP – TECHNICAL DESIGN MANUAL SECTION 7.2.5 TESTING AND SUBMITTALS.

6" SOIL FILTER BED – LOAM TOPSOIL SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
#4	75–95
#10	60–90
#40	35–85
#200	20–70
1. CLAY FRACTION <2% PASSING THE #200 SIEVE. 2. LOAM SHALL BE LOOSE AND FRIABLE AND SHALL BE FREE FROM ADMIXTURE OF SUBSOIL, REFUSE, LARGE STONES, CLODS OR ROOTS OR RHIZOMES OR "WITCH GRASS" OR OTHER UNDESIRABLE GRASSES.	

SOIL FILTER BED – SUPERHUMUS OR EQUIV. SPECIFICATION	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
#200	0–5
MINIMAL CLAY CONTENT, NO MORE THAN 3–5% PASSING #200 SIEVE	

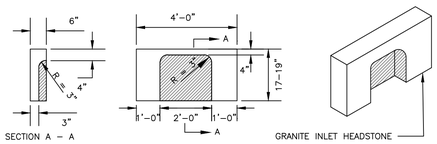
12" SOIL FILTER BED – BLENDED SAND, LOAM, SUPERHUMUS SIEVE ANALYSIS	
SIEVE SIZE	% PASSING BY WEIGHT
#10	85–100
#20	70–100
#60	15–40
#200	8–15
1. CLAY FRACTION <2% PASSING THE #200 SIEVE. 2. SUPERHUMUS OR EQUIVALENT	

SOIL FILTER BED – TRANSISTION ZONE (TYPE B)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	90–100
1/2"	75–100
#4	50–100
#20	15–80
#50	0–15
#200	0–5

SOIL FILTER BED – UNDERDRAIN BEDDING (TYPE C)	
SIEVE SIZE	% PASSING BY WEIGHT
1"	100
3/4"	90–100
3/8"	0–75
#4	0–25
#10	0–5

BIORETENTION CELL OR VEGETATED UNDERDRAINED SOIL FILTER DETAIL

NOT TO SCALE



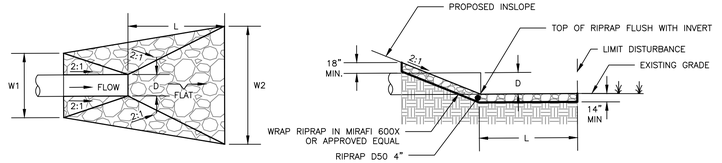
4' GRANITE HEADSTONE FOR CATCH BASIN INLET

NOT TO SCALE

SCHEDULE – SINGLE CULVERT			
CULVERT DIAMETER (D)	LENGTH (L)	WIDTH (W1)	WIDTH (W2)
D	4.5D	3D	D+L

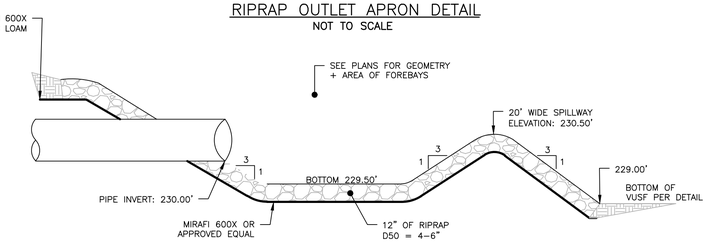
NOTES:

1. RIPRAP SHALL BE DESCRIBED BY M.D.O.T. 703.26 EXCEPT SIZE SHALL BE AS SHOWN.
2. REFERENCE FOR ADDITIONAL INFORMATION: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL – CULVERT INLET/OUTLET PROTECTION.



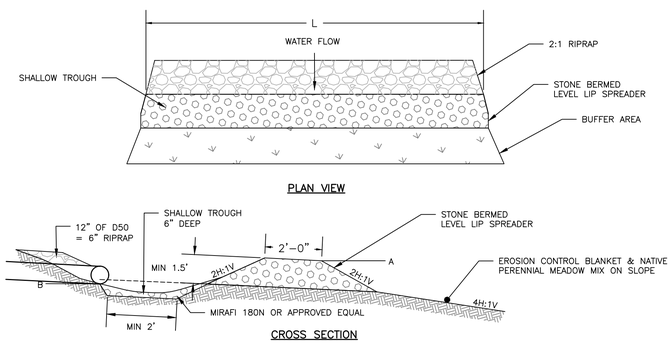
RIPRAP OUTLET APRON DETAIL

NOT TO SCALE



SEDIMENT FOREBAY DETAIL

NOT TO SCALE



BERM STONE SIZE	
SIEVE SIZE	% PASSING BY WEIGHT
12"	100
6"	84–100
3"	63–83
1"	42–55
#4	8–12

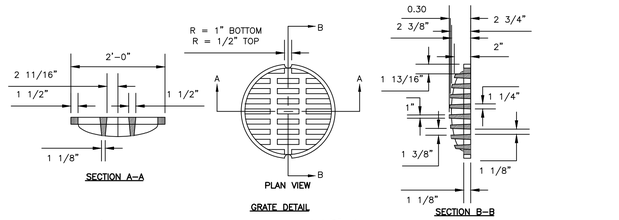
NOTES:

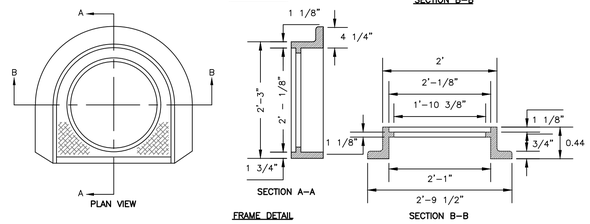
1. FIELDSTONE, ROUGH QUARRIED STONE, BLASTED LEDGE ROCK OR TAILINGS ARE ACCEPTABLE BERM MATERIALS.
2. MEDIAN STONE SIZE TO BE APPROX 3 INCHES AT A MAXIMUM SIZE OF 6 INCHES. SEE TABLE.

	LLS1
A	227.00'
B	225.50'
LENGTH	20.00'

LEVEL LIP SPREADER DETAIL

NOT TO SCALE





NOTES:

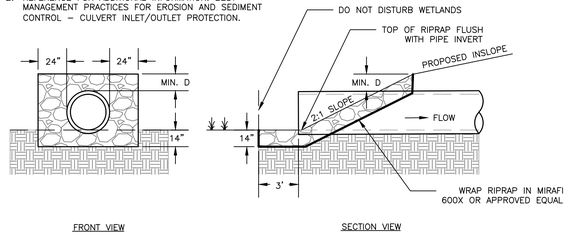
1. ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48–CLASS 35.
3. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF BELFAST.
4. ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP.
5. APPROVED CATCH BASIN FRAMES:
   - 5.1. EAST JORDAN = 7375Z
   - 5.2. NEENAH = R–3248
   - 5.3. OR APPROVED EQUAL
6. APPROVED CATCH BASIN GRATES
   - 6.1. EAST JORDAN = 2440M
   - 6.2. NEENAH = R–3248
   - 6.3. OR APPROVED EQUAL

CATCH BASIN COVER AND FRAME

NOT TO SCALE

NOTES:

1. RIPRAP SHALL BE DESCRIBED BY M.D.O.T. 703.26 EXCEPT SIZE SHALL BE AS SHOWN.
2. REFERENCE FOR ADDITIONAL INFORMATION: BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL – CULVERT INLET/OUTLET PROTECTION.

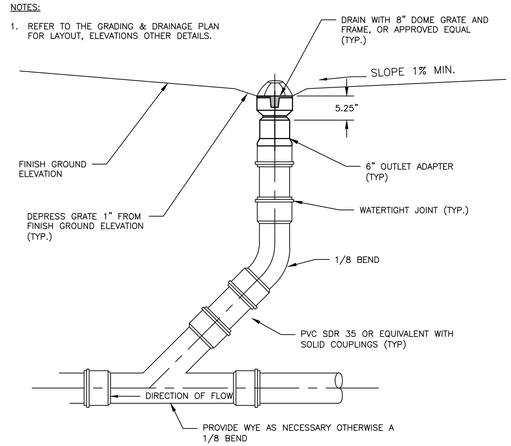


RIPRAP INLET APRON DETAIL

NOT TO SCALE

NOTES:

1. REFER TO THE GRADING & DRAINAGE PLAN FOR LAYOUT, ELEVATIONS OTHER DETAILS.



FIELD INLET WITH BEEHIVE GRATE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY DATE
SITE PLAN APPLICATION	SJL 6/17/25
PRELIMINARY REVIEW	SJL 6/30/25

DRAWING NAME: DRAINAGE DETAILS – 2

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.

THESE PLANS, IN PART OR WHOLE, ARE NOT TO BE USED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY, WITHOUT PRIOR WRITTEN PERMISSION AND APPROPRIATE COMPENSATION TO ACORN ENGINEERING, INC. ANY UNAUTHORIZED REUSE OF THESE PLANS WILL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

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FILE: 1287 DETAILS
JN: 1287
SCALE: AS NOTED
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
REGISTERED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-45

1.0 EROSION CONTROL MEASURES AND SITE STABILIZATION

AS PART OF THE SITE DEVELOPMENT, THE FOLLOWING TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE IMPLEMENTED. DEVICES SHALL BE INSTALLED AS DESCRIBED IN THIS REPORT OR WITHIN THE PLAN SET. SEE THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES FOR FURTHER REFERENCE.

1.1 TEMPORARY EROSION CONTROL MEASURES

THE FOLLOWING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE PLANNED FOR THE PROJECT'S CONSTRUCTION PERIOD:

1.1.1 CRUSHED STONE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ALL ACCESS POINTS TO THE PROJECT SITE WHERE THERE ARE DISTURBED AREAS. THE FOLLOWING SPECIFICATIONS SHALL BE FOLLOWED AT A MINIMUM:
- STONE SIZE SHALL BE 2–3 INCHES, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THE THICKNESS OF THE ENTRANCE STONE LAYER SHALL BE NO LESS THAN 6 INCHES.
- THE ENTRANCE SHALL NOT BE LESS THAN 20 FEET WIDE, HOWEVER NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS. THE LENGTH SHALL NOT BE LESS THAN 50 FEET IN LENGTH.
- GEOTEXTILE FABRIC (WOVEN OR NON–WOVEN) SHALL BE PLACED OVER THE ENTIRE ENTRANCE AREA.
- THE ENTRANCE/EXIT SHALL BE MAINTAINED TO THE EXTENT THAT IT WILL PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC ROAD WAYS.

1.1.2 SILTATION FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED DOWN GRADIENT OF ANY DISTURBED AREAS TO TRAP RUNOFF BORNE SEDIMENTS UNTIL PERMANENT STABILIZATION IS ACHIEVED. THE SILT FENCE OR EROSION CONTROL BERM SHALL BE INSTALLED PER THE DETAILS PROVIDED IN THE PLAN SET AND INSPECTED BEFORE AND IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE OR BERM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE OR BERM, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM.

1.1.3 HAY MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUDED OR SEEDED AREAS UNTIL REVEGETATION IS ESTABLISHED. MULCH PLACED BETWEEN APRIL 15TH AND NOVEMBER 1ST ON SLOPES OF LESS THAN 15 PERCENT SHALL BE COVERED BY FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. MULCH PLACED BETWEEN NOVEMBER 1ST AND APRIL 15TH ON SLOPES EQUAL TO OR STEEPER THAN 8 PERCENT AND EQUAL TO OR FLATTER THAN 2:1 SHALL USE MATS OR FABRIC NETTING AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

1.1.4 AT ANY TIME OF THE YEAR, ALL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH DOUBLE NET EROSION CONTROL BLANKET BIONET SC150BN BY NORTH AMERICAN GREEN OR APPROVED EQUAL, OR EROSION CONTROL MIX SLOPE PROTECTION AS DETAILED WITHIN THE PLANS.

1.1.5 BELMONT AVENUE SHALL BE SWEPT TO CONTROL MUD AND DUST FROM THE CONSTRUCTION SITE AS NECESSARY. ADD ADDITIONAL STONE TO THE STABILIZED CONSTRUCTION ENTRANCE TO MINIMIZE THE TRACKING OF MATERIAL OFF THE SITE AND ONTO THE SURROUNDING ROADWAYS.

1.1.6 DURING DEMOLITION, CLEARING AND GRUBBING OPERATIONS, STONE CHECK DAMS SHALL BE INSTALLED AT ANY AREAS OF CONCENTRATED FLOW. THE MAXIMUM HEIGHT OF THE CHECK DAM SHALL NOT EXCEED 2 FEET. THE CENTER OF THE CHECK DAM SHALL BE 6 INCHES BELOW THE OUTER EDGES OF THE DAM. THE CONTRACTOR SHALL MULCH THE SIDE SLOPES AND INSTALL STONE CHECK DAMS FOR ALL NEWLY EXCAVATED DITCH LINES WITHIN 24 HOURS OF THEIR CREATION.

1.1.7 SILT FENCE STAKE SPACING SHALL NOT EXCEED 6 FEET UNLESS THE FENCE IS SUPPORTED WITH 14 GAUGE WIRE IN WHICH CASE THE MAXIMUM SPACING SHALL NOT EXCEED 10 FEET. THE SILT FENCE SHALL BE "TOED" INTO THE GROUND.

1.1.8 STORMDRAIN INLET PROTECTION SHALL BE PROVIDED TO STORMDRAINS THROUGH THE USE OF ANY OF THE FOLLOWING: HAY BALE DROP INLET STRUCTURES, SILT FENCE DROP INLET SEDIMENT FILTER, GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER, OR CURB INLET SEDIMENT FILTER. BARRIERS SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT AND REPAIRED AS NECESSARY. SEDIMENTS SHALL BE REMOVED WHEN ACCUMULATION HAS REACHED ½ THE DESIGN HEIGHT.

1.1.9 DUST CONTROL SHALL BE ACCOMPLISHED BY THE USE OF ANY OF THE FOLLOWING: WATER, CALCIUM CHLORIDE, STONE, OR AN APPROVED MDEP PRODUCT. DUST CONTROL SHALL BE APPLIED AS NEEDED TO ACCOMPLISH DUST CONTROL.

1.1.10 TEMPORARY LOAM, SEED, AND MULCHING SHALL BE USED IN AREAS WHERE NO OTHER EROSION CONTROL MEASURE IS USED. APPLICATION RATES FOR SEEDING ARE PROVIDED AT THE END OF THIS REPORT.

1.1.11 STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF FORMATION UNLESS A SCHEDULED RAIN EVENT OCCURS PRIOR TO THE 7 DAY WINDOW, IN WHICH CASE THE STOCKPILE SHALL BE STABILIZED PRIOR TO THE RAIN EVENT. METHODS OF STABILIZATION SHALL BE MULCH, EROSION CONTROL MIX, OR EROSION CONTROL BLANKETS/MATS. SILT FENCE OR A WOOD WASTE COMPOST FILTER BERM SHALL BE PLACED DOWNHILL OF ANY SOIL STOCKPILE LOCATION.

1.1.12 FOR DISTURBANCE BETWEEN NOVEMBER 1 AND APRIL 15, PLEASE REFER TO WINTER STABILIZATION PLAN IN THIS REPORT AND THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR FURTHER INFORMATION.

1.1.13 IT IS OF THE UTMOST IMPORTANCE THAT STORMWATER RUNOFF AND POTENTIAL SEDIMENT FROM THE CONSTRUCTION SITE BE DIVERTED AROUND THE PROPOSED UNDERDRAINS UNTIL THE TRENCH IS BACKFILLED.

1.2 PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES ARE INTENDED FOR POST DISTURBANCE AREAS OF THE PROJECT.

1.2.1 ALL DISTURBED AREAS DURING CONSTRUCTION, NOT SUBJECT TO OTHER PROPOSED CONDITIONS, SHALL RECEIVE A MINIMUM 4" OF LOAM AND SHALL BE LIMED, AND MULCHED. EROSION CONTROL BLANKETS OR MATS SHALL BE PLACED OVER THE MULCH IN AREAS NOTED IN PARAGRAPH 4.2 OF THIS REPORT.

1.2.2 ALL STORMWATER DEVICES SHALL BE INSTALLED AND TRIBUTARY AREAS STABILIZED PRIOR RECEIVING STORMWATER.

1.2.3 REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

2.0 EROSION AND SEDIMENTATION CONTROL PLAN

2.1 THE EROSION AND SEDIMENTATION CONTROL PLAN IS INCLUDED WITHIN THE PLAN SET.

3.0 DETAILS AND SPECIFICATIONS

3.1 EROSION CONTROL DETAILS AND SPECIFICATIONS ARE INCLUDED IN THE PLAN SET.

4.0 STABILIZATION PLAN FOR WINTER CONSTRUCTION

WINTER CONSTRUCTION CONSISTS OF EARTHWORK DISTURBANCE BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15, THEN THE SITE SHALL BE PROTECTED WITH OVER–WINTER STABILIZATION. ANY AREA NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP, OR GRAVEL BASE ON A ROAD SHALL BE CONSIDERED OPEN.

THE CONTRACTOR SHALL LIMIT THE WORK AREA TO AREAS THAT WORK WILL OCCUR IN DURING THE SUBSEQUENT 15 DAYS AND SO THAT IT CAN BE MULCHED ONE DAY PRIOR TO A SNOW EVENT. THE CONTRACTOR SHALL STABILIZE WORK AREAS PRIOR TO OPENING ADDITIONAL WORK AREAS TO MINIMIZE AREAS WITHOUT EROSION CONTROL MEASURES.

THE FOLLOWING MEASURES SHALL BE IMPLEMENTED DURING WINTER CONSTRUCTION PERIODS:

4.1 SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

4.2 MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENUDED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 150 LB. PER 1,000 SQUARE FEET OR 3 TONS/ACRE (TWICE THE NORMAL ACCEPTED RATE OF 75–LBS./1,000 S.F. OR 1.5 TONS/ACRE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCH THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. THE SNOW SHALL BE REMOVED DOWN TO A ONE–INCH DEPTH OR LESS PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA SHALL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WHEN THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 1ST, MULCHING AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

4.3 SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL SHALL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR–INCH LAYER OF EROSION CONTROL MIX. THIS SHALL BE DONE WITHIN 24 HOURS OF STOCKING AND RE–ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL.

4.4 SEEDING

BETWEEN THE DATES OF OCTOBER 15TH AND APRIL 1ST, LOAM OR SEED SHALL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS NOT BEEN LOAMED, FINAL GRADING WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED.

DORMANT SEEDING MAY BE PLACED PRIOR TO THE PLACEMENT OF MULCH OR EROSION CONTROL BLANKETS. IF DORMANT SEEDING IS USED FOR THE SITE, ALL DISTURBED AREAS SHALL RECEIVE 4" OF LOAM AND SEED AT AN APPLICATION RATE OF 5 LBS/1,000 S.F. ALL AREAS SEEDED DURING THE WINTER SHALL BE INSPECTED IN THE SPRING FOR ADEQUATE CATCH. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75% CATCH) SHALL BE REVEGETATED BY REPLACING LOAM, SEED AND MULCH. IF DORMANT SEEDING IS NOT USED FOR THE SITE, ALL DISTURBED AREAS SHALL BE REVEGETATED IN THE SPRING.

4.5 OVER WINTER STABILIZATION OF DISTURBED SOILS

BY SEPTEMBER 15TH, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% SHALL BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN ONE OF THE FOLLOWING ACTIONS SHALL BE TAKEN TO STABILIZE THE SOIL FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION – BY OCTOBER 1ST, SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3LBS PER 1,000 S.F., LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 LBS PER 1000 S.F., AND ANCHOR THE MULCH WITH PLASTIC NETTING. MONITOR GROWTH OF THE RYE OVER THE NEXT 30 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 1ST, THEN MULCH THE AREA FOR OVER–WINTER PROTECTION.

- STABILIZE THE SOIL WITH SOD – STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

- STABILIZE THE SOIL WITH MULCH – BY NOVEMBER 15TH, MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 LBS PER 1,000 S.F. ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. IMMEDIATELY AFTER APPLYING THE MULCH, ANCHOR THE MULCH WITH NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

4.6 OVER WINTER STABILIZATION OF DISTURBED SLOPES

ALL STONE–COVERED SLOPES SHALL BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15TH. ALL SLOPES TO BE VEGETATED SHALL BE SEEDED AND MULCHED BY SEPTEMBER 1ST. A SLOPE IS CONSIDERED A GRADE GREATER THAN 15%. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1ST, THEN ONE OF THE FOLLOWING ACTION SHALL BE TAKEN TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS – BY OCTOBER 1ST THE DISTURBED SLOPE SHALL BE SEEDED WITH WINTER RYE AT A SEEDING RATE OF 3 LBS PER 1,000 S.F. AND THEN INSTALL EROSION CONTROL MATS OR ANCHORED MULCH OVER THE SEEDING. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE SLOPE BY NOVEMBER 1ST, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF EROSION CONTROL MIX OR WITH STONE RIPRAP.

- STABILIZE THE SOIL WITH SOD – THE DISTURBED SLOPE SHALL BE STABILIZED WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE–SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 3H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

- STABILIZE THE SOIL WITH EROSION CONTROL MIX – EROSION CONTROL MIX SHALL BE PROPERLY INSTALLED BY NOVEMBER 15TH. THE CONTRACTOR SHALL NOT USE EROSION CONTROL MIX TO STABILIZE SLOPES HAVING GRADES GREATER THAN 2H:1V OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

- STABILIZE THE SOIL WITH STONE RIPRAP – PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. A REGISTERED PROFESSIONAL ENGINEER SHALL BE HIRED TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY ON THE SLOPE AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

5.0 INSPECTION AND MAINTENANCE

A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT PERIODIC VISUAL INSPECTIONS OF INSTALLED EROSION CONTROL MEASURES. THE FREQUENCY OF INSPECTION SHALL OCCUR AT LEAST ONCE EVERY TWO WEEKS, AS WELL AS AFTER A "STORM EVENT". A "STORM EVENT" SHALL CONSIST 0.5 INCHES OF RAIN WITHIN A 24 HOUR PERIOD. THE FOLLOWING EROSION AND SEDIMENT CONTROL – BEST MANAGEMENT PRACTICES (BMP'S) SHALL INSPECTED IN THE MANNER AS DESCRIBED.

5.1 SEDIMENT BARRIERS

HAY BALE BARRIERS, SILT FENCES AND FILTER BERMS SHALL BE INSPECTED AND REPAIRED FOR THE FOLLOWING IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF THE HEIGHT OF THE BARRIER. FILTER BERMS SHOULD BE RESHAPED AS NEEDED. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHOULD BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

5.2 STABILIZED STONE CONSTRUCTION ENTRANCES

THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL AND REDISTRIBUTED ON SITE IN A STABLE MANNER. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EPD, WHICH HAVE EXPERIENCED MUD–TRACKING ON TO THE PAVEMENT OR TRAVELED WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

5.3 MULCHED AREAS

ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE–INSTALL THE NETS AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

5.4 DUST CONTROL

WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

5.5 STORMWATER APPURTENANCES

ALL UNDERDRAINS, STORM DRAINS, AND CATCH BASINS NEED TO BE OPERATING EFFECTIVELY AND FREE OF DEBRIS.

5.6 EROSION AND SEDIMENTATION CONTROL INSPECTIONS:

ACORN ENGINEERING HAS PERSONNEL QUALIFIED TO CONDUCT EROSION AND SEDIMENTATION CONTROL INSPECTIONS. FOR FURTHER INFORMATION CONTACT:

CONTACT: WILL SAVAGE, PE
TELEPHONE: (207) 775–2655

QUALIFICATIONS:

Ø MAINE PROFESSIONAL ENGINEERING LICENSE #11419
Ø MAINE DEP – CERTIFIED IN MAINTENANCE & INSPECTION OF STORMWATER BMP'S CERT #14
Ø CERTIFIED EROSION, SEDIMENT AND STORM WATER INSPECTOR (CESSWI) CERT #0293
Ø CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) CERT. #4620

THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION AND SEDIMENTATION REPORT/PLAN, INCLUDING CONTROL OF FUGITIVE DUST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

6.0 IMPLEMENTATION SCHEDULE

THE FOLLOWING IMPLEMENTATION SEQUENCE IS INTENDED TO MAXIMIZE THE EFFECTIVENESS OF THE ABOVE DESCRIBED EROSION CONTROL MEASURES. CONTRACTORS SHOULD AVOID OVEREXPOSING DISTURBED AREAS AND LIMIT THE AMOUNT OF STABILIZATION AREA.

1. INSTALL A STABILIZED CONSTRUCTION ENTRANCE IN ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC WILL ENTER AND EXIT THE SITE.
2. INSTALL PERIMETER SILT FENCE OR EROSION CONTROL BERM.
3. INSTALL ALL OTHER EROSION CONTROL DEVICES AS NECESSARY THROUGHOUT THE REMAINDER OF THIS SCHEDULE.
4. COMMENCE INSTALLATION OF DRAINAGE INFRASTRUCTURE.
5. PRIORITIZE THE DOWNHILL SIDE TO CONTAIN RUNOFF WITHIN THE SITE WHILE PROVIDING AN ENGINEERED OUTLET WITH SILTATION BARRIER.
6. COMMENCE EARTHWORK OPERATIONS, WALL AND FOUNDATION INSTALLATION.
7. COMMENCE INSTALLATION OF UTILITIES.
8. CONTINUE EARTHWORK AND GRADING TO SUBGRADE AS NECESSARY FOR CONSTRUCTION.
9. COMPLETE INSTALLATION OF DRAINAGE INFRASTRUCTURE, AS WELL AS OTHER UTILITY WORK.
10. COMPLETE REMAINING EARTHWORK OPERATIONS.
11. INSTALL SUB–BASE AND BASE GRAVELS IN PAVED AREAS.
12. INSTALL PAVING, CURBING AND BRICKWORK.
13. LOAM, LIME, FERTILIZE, SEED AND MULCH DISTURBED AREAS AND COMPLETE ALL LANDSCAPING.
14. ONCE THE SITE IS STABILIZED, 90% CATCH OF GRASS HAS BEEN OBTAINED, OR MULCHING OF LANDSCAPE AREAS IS COMPLETE REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
15. TOUCH UP AREAS WITHOUT A VIGOROUS CATCH OF GRASS WITH LOAM AND SEED.
16. COMPLETE SITE SIGNAGE AND STRIPING.
17. EXECUTE PROPER MAINTENANCE OF ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES THROUGHOUT THE PROJECT.

THE ABOVE IMPLEMENTATION SEQUENCE SHOULD BE GENERALLY FOLLOWED BY THE SITE CONTRACTOR. HOWEVER, THE CONTRACTOR MAY CONSTRUCT SEVERAL ITEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL SUBMIT TO THE OWNER A SCHEDULE OF THE COMPLETION OF THE WORK. IF THE CONTRACTOR IS TO COMMENCE THE CONSTRUCTION OF MORE THAN ONE ITEM ABOVE, THEY SHALL LIMIT THE AMOUNT OF EXPOSED AREAS TO THOSE AREAS IN WHICH WORK IS EXPECTED TO BE UNDERTAKEN DURING THE FOLLOWING 30 DAYS.

THE CONTRACTOR SHALL RE–VEGETATE DISTURBED AREAS AS RAPIDLY AS POSSIBLE. ALL AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR BEFORE A STORM EVENT. THE CONTRACTOR SHALL INCORPORATE PLANNED INLETS AND DRAINAGE SYSTEMS AS EARLY AS POSSIBLE INTO THE CONSTRUCTION PHASE.

7.0 SEEDING PLAN

7.1 SITE PREPARATION

THE SEEDED AREAS SHALL BE FEASIBLY GRADED OUT TO PROVIDE THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. IF NECESSARY, THE SITE MAY REQUIRE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES OUTLINED IN THE EROSION CONTROL REPORT.

7.2 SEEDBED PREPARATION

FERTILIZER SHALL BE APPLIED TO THE SITE AT A RATE OF 13.8 POUNDS PER 1,000 SQUARE FEET. THE COMPOSITION OF THE FERTILIZER SHALL BE 10–10–10 (N–P205–K20) OR EQUIVALENT.

LIMESTONE SHALL BE APPLIED TO THE SITE AT A RATE OF 138 POUNDS PER 1,000 SQUARE FEET.

7.3 SEEDING

THE COMPOSITION AND AMOUNT OF TEMPORARY SEED APPLIED TO A SITE SHALL BE DETERMINED BY THE FOLLOWING TABLE:

TEMPORARY SEED APPLICATION RATES		
SEED	LBS / ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	2.57	8/15 TO 10/1
OATS	1.84	4/1 TO 7/1 8/15 TO 9/15
ANNUAL RYGRASS	0.92	4/1 TO 7/1
SUDANGRASS	0.92	5/15 TO 8/15
PERENNIAL	0.92	8/15 TO 9/15
7.4 MULCHING	7.17 LBS/ACRE	

PERMANENT SEED APPLICATION RATES	
SEED	LBS / ACRE
KENTUCKY BLUEGRASS	20.00
CREEPING RED FESCUE	20.00
PERENNIAL RYEGRASS	4.80
TOTAL	44.8 LBS/ACRE

MULCH SHALL BE HARDWOOD AND APPLIED AT A RATE OF 70 LBS – 90 LBS PER 1,000 SQUARE FEET. THE MULCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. THE SEEDED AREA SHALL BE MULCHED IMMEDIATELY AFTER SEED IS APPLIED. MULCHING DURING THE WINTER SEASON SHALL BE DOUBLE THE NORMAL AMOUNT. REFER TO DETAIL FOR MORE INFORMATION.

8.0 CONCLUSION

THE ABOVE EROSION CONTROL NARRATIVE IS INTENDED TO MINIMIZE THE DEVELOPMENT IMPACT BY IMPLEMENTING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES. THE CONTRACTOR SHALL ALSO REFER TO THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL FOR ADDITIONAL INFORMATION.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: EROSION & SEDIMENTATION CONTROL NOTES
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

ACORN ENGINEERING, INC.
PO BOX 1237, ELIOT, MAINE 04104
(207) 775–2655

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM ACORN ENGINEERING, INC. AND SHALL NOT BE USED FOR OTHER PROJECTS OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO ACORN ENGINEERING, INC.

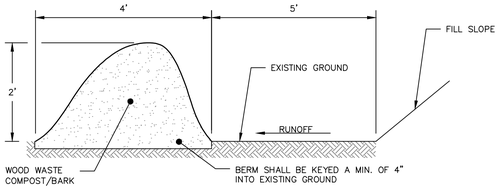
FILE: 1287 DETAILS
JN: 1287
SCALE: AS NOTED
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
REGISTERED PROFESSIONAL ENGINEER
LICENSED
6/30/25

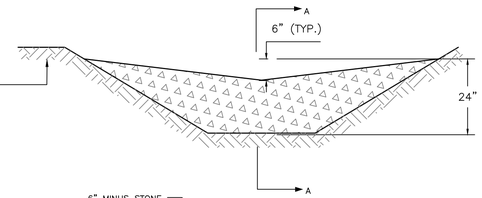
DRAWING NO.
C-46

NOTES:

1. THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS AND IN ACCORDANCE WITH THE MAINE DOT CHAPTER 700, SECTION 717.04(D):
   - 1.1. pH BETWEEN 5.0 – 8.0
   - 1.2. PARTICLE SIZE (BY WEIGHT):
     - 1.2.1. 100% PASSING A 150 MM (6 IN) SCREEN
     - 1.2.2. 75 TO 85% PASSING A 19 MM (0.75 IN) SCREEN
   - 1.3. SOLUBLE SALTS CONTENT < 4.0 MMHOS/CM
   - 1.4. ORGANIC MATTER 20 TO 100% , DRY WEIGHT BASIS
2. THE BERM SHOULD BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR, WHEN NECESSARY THE BERM MAY BE PLACED PERPENDICULAR TO THE SLOPE ALONG THE PROPERTY LINE TO CONTAIN THE SEDIMENT PROVIDED A BERM IS LOCATED AT THE BASE OF THE SLOPE.
3. THE BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
4. WHERE A BERM IS USED AT THE BASE OF A SLOPE GREATER THAN 8%, ANOTHER MEASURE SHALL BE USED IN CONJUNCTION WITH A BERM, SUCH AS A SILT FENCE.
5. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS STABILIZED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED OFFSITE OR BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



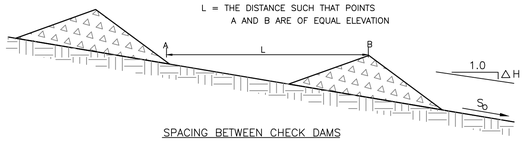
EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE



NOTES:

1. CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE.
2. THE AREA AROUND EACH CHECK DAM SHOULD BE FREE OF DEBRIS.
3. A STONE CHECK DAM SHOULD BE COMPRISED OF WELL-GRADED CRUSHED ROCK WITH A MAXIMUM SIZE OF 6 INCHES AND A MINIMUM STONE SIZE OF 1 INCH. LARGER STONES MAY BE USED ON STEEP SLOPES.
4. THE MAXIMUM HEIGHT OF A STONE CHECK DAM SHOULD BE 2 FEET WITH A 6-INCH DEPRESSION AT ITS CENTER FOR OVERFLOW. THE EDGES OF THE DAM SHOULD BE KEYED ONTO THE EMBANKMENTS TO PREVENT SIDE EROSION.
5. MECHANICAL PLACEMENT FOLLOWED BY HAND PLACEMENT WILL BE NECESSARY TO ACHIEVE A TIGHT MASS WITHIN THE CHANNEL AND TO ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
6. ANY EROSION DOWNGRADIENT OR AROUND THE EDGES OF STONE CHECK DAMS SHOULD BE CORRECTED IMMEDIATELY.
7. THE CHECK DAMS MAY BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE)

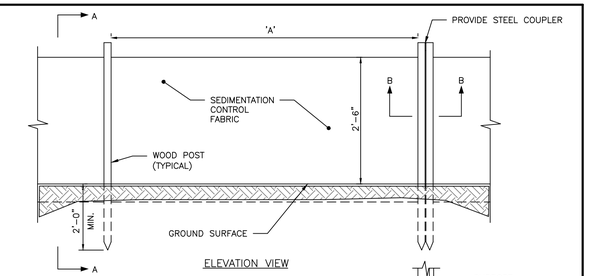
SECTION A–A



SPACING BETWEEN CHECK DAMS

S_0 (FT./FT.)	L (FT.)
0.020	75
0.030	50
0.040	40
0.050	30
0.080	20
0.100	10

STONE CHECK DAM
NOT TO SCALE

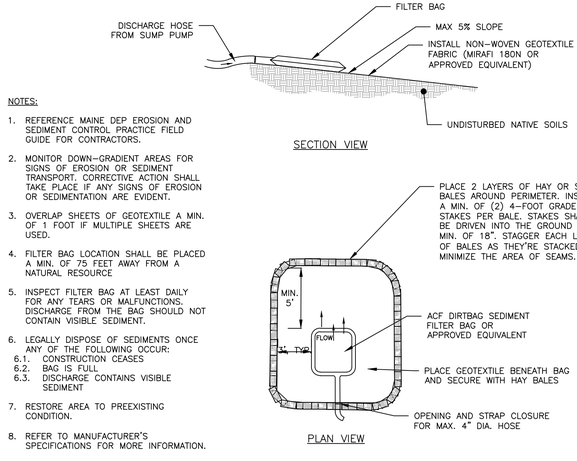


SILT FENCE REINFORCEMENT	MAX. SPACING "A"
NONE	6'
WIRE REINFORCEMENT 14 GAUGE, 6" MESH	10'

SILTATION FENCE DETAIL
NOT TO SCALE

NOTES:

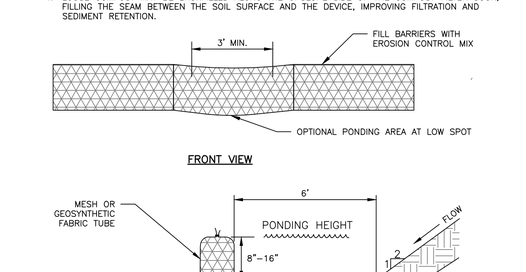
1. FULL CONTACT WITH THE GROUND IS CRITICAL TO PREVENT SHORT CIRCUITING UNDER THE TUBE – THE GROUND SURFACE SHOULD BE SMOOTH AND LEVEL. IN WOODED AREAS, PROTRUDING ROOTS AND DEBRIS MAY NEED TO BE REMOVED. IN GRASSED AREAS, THE GRASS NEEDS TO BE EITHER MOWED OR COMPRESSED DOWN.
2. STAKING MAY BE NECESSARY ON STEEP SLOPES.
3. UPON FINAL STABILIZATION, THE TUBE CAN BE CUT OPEN AND THE MATERIAL SPREAD OUT ONTO THE GROUND. THE MESH MATERIAL SHOULD BE REMOVE.
4. LOOSE COMPOST MAY BE BACKFILLED ALONG THE UPSLOPE SIDE OF THE COMPOST FILTER SOCK, FILLING THE SEAM BETWEEN THE SOIL SURFACE AND THE DEVICE, IMPROVING FILTRATION AND SEDIMENT RETENTION.



NOTES:

1. REFERENCE MAINE DEP EROSION AND SEDIMENT CONTROL PRACTICE FIELD GUIDE FOR CONTRACTORS.
2. MONITOR DOWN-GRADIENT AREAS FOR SIGNS OF EROSION OR SEDIMENT TRANSPORT. CORRECTIVE ACTION SHALL TAKE PLACE IF ANY SIGNS OF EROSION OR SEDIMENTATION ARE EVIDENT.
3. OVERLAP SHEETS OF GEOTEXTILE A MIN. OF 1 FOOT IF MULTIPLE SHEETS ARE USED.
4. FILTER BAG LOCATION SHALL BE PLACED A MIN. OF 75 FEET AWAY FROM A NATURAL RESOURCE
5. INSPECT FILTER BAG AT LEAST DAILY FOR ANY TEARS OR MALFUNCTIONS. DISCHARGE FROM THE BAG SHOULD NOT CONTAIN VISIBLE SEDIMENT.
6. LEGALLY DISPOSE OF SEDIMENTS ONCE ANY OF THE FOLLOWING OCCUR:
   - 6.1. CONSTRUCTION CEASES
   - 6.2. BAG IS FULL
   - 6.3. DISCHARGE CONTAINS VISIBLE SEDIMENT
7. RESTORE AREA TO PREEXISTING CONDITION.
8. REFER TO MANUFACTURER'S SPECIFICATIONS FOR MORE INFORMATION.

DEWATERING OUTLET & FILTRATION BASIN DETAIL
NOT TO SCALE



TURF REINFORCEMENT MAT DETAIL
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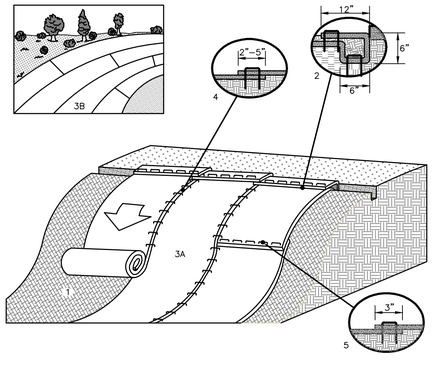
FILTER SOCK DETAIL
NOT TO SCALE

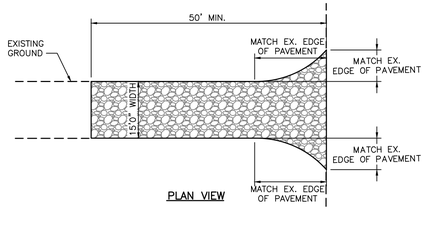


SLOPE INSTALLATION DETAIL

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (ECB), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE ECB IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF ECB EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE ECB WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF ECB BACK OVER THE SEED AND COMPACTED SOIL. SECURE ECB OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE ECB.
3. ROLL THE ECB (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. ECB WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ECB MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL ECB MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON THE ECB TYPE.
5. CONSECUTIVE ECB SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE ECB WIDTH.

NOTE:
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE ECB.

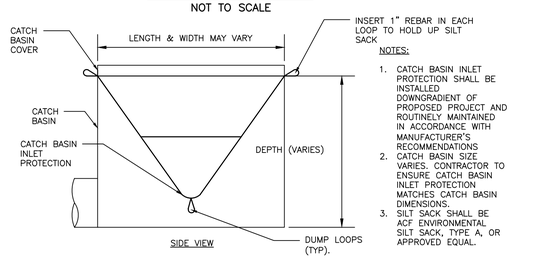
EROSION CONTROL BLANKET SLOPE INSTALLATION
NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES
2. STONE SHALL BE 2"–3" COARSE AGGREGATE
3. CONSTRUCTION ENTRANCE SHALL BE GRADED TO NOT ALLOW ANY STORMWATER TO BE CONVEYED OFF SITE. IN SITUATIONS WHERE THIS IS NOT POSSIBLE, ANY STORMWATER CONVEYED OFFSITE SHALL BE TREATED OR RETAINED IN A MANNER APPROVED BY ENGINEER.
4. WHEN NECESSARY, ON-SITE VEHICLES SHALL HAVE THEIR WHEELS CLEANED PRIOR TO LEAVING SITE.
5. CONSTRUCTION ENTRANCE SHALL BE GRADED IN A MANNER THAT PREVENTS TRACKING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAY

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



NOTES:

1. CATCH BASIN INLET PROTECTION SHALL BE INSTALLED DOWNGRADIENT OF PROPOSED PROJECT AND ROUTINELY MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
2. CATCH BASIN SIZE VARIES. CONTRACTOR TO ENSURE CATCH BASIN INLET PROTECTION MATCHES CATCH BASIN DIMENSIONS.
3. SILT SACK SHALL BE ACF ENVIRONMENTAL SILT SACK, TYPE A, OR APPROVED EQUAL.

CATCH BASIN INLET PROTECTION
NOT TO SCALE

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: EROSION & SEDIMENTATION CONTROL DETAILS
PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING
CLIENT: WALDO COMMUNITY ACTION PARTNERS, 9 FIELD STREET, BELFAST, MAINE 04915

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ACORN ENGINEERING, INC.
PO BOX 347, ROCKLAND, MAINE 04104
(207) 775-2655

FILE: 1287 DETAILS
JN: 1287
SCALE: AS NOTED
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

STATE OF MAINE
SAMUEL J. LEBEL
No. 16505
LICENSED PROFESSIONAL ENGINEER
6/30/25

DRAWING NO.
C-47

LANDSCAPE NOTES:

1. NO PLANTING TO BE INSTALLED UNTIL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
2. SUBSTITUTIONS TO THE PLANTING SCHEDULE ARE TO BE REVIEWED FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
3. ALL PROPOSED GREEN SPACES AND ASSOCIATED PLANT SPECIES ARE TO COMPLY WITH THE CITY OF BELFAST STANDARDS.
4. CONTRACTOR TO VERIFY UTILITIES ON PROPERTY AND TO PROTECT DURING EXCAVATION FOR PLANTS.
5. CONTRACTOR TO MAINTAIN A ONE YEAR WARRANTY ON ALL PLANTINGS FOLLOWING INSTALLATION.
6. CONTRACTOR TO BE RESPONSIBLE FOR THE WATERING AND MAINTENANCE OF ALL PLANT MATERIAL AND LANDSCAPING IMPROVEMENTS UNTIL START OF THE WARRANTY PERIOD.
7. THE PROPERTY OWNER IS RESPONSIBLE FOR THE CONTINUED CARE AND MAINTENANCE OF THE LANDSCAPED AREA. PLANTINGS THAT SHOW SIGNS OF CONSTRUCTION DAMAGE WITHIN A ONE YEAR PERIOD FOLLOWING CONSTRUCTION SHALL BE REPLACED PRIOR TO ANY DEFECT GUARANTEE AT NO ADDITIONAL COST TO THE OWNER.
8. PLANT QUANTITIES LISTED IN THE PLANTING SCHEDULE ARE PROVIDED TO THE CONTRACTOR AS A CONVENIENCE; CONTRACTORS ARE TO VERIFY ALL PLANT QUANTITIES ON THE PLANS. IN THE EVENT OF A DISCREPANCY BETWEEN THE SCHEDULE AND THE DRAWING, THE DRAWING SHALL TAKE PRECEDENCE.
9. TOPSOIL SHALL BE FREE FROM SUBSOIL, STONES LARGER THAN 1" OR ANY UNDESIRABLE MATERIAL, CONTAIN 5% ORGANIC MATTER AND HAVE A PH SUITABLE TO THE LOCAL GROWING CONDITIONS.
10. MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMAN.
11. THE CONTRACTOR SHALL SUBMIT NURSERY PHOTOGRAPHS OF ALL SHRUBS AND HERBACEOUS MATERIAL TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ACCEPTANCE.
12. THE CONTRACTOR SHALL SUBMIT NURSERY PHOTOGRAPHS OF ALL PROPOSED TREES TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ACCEPTANCE.
13. ALL PLANT MATERIAL DELIVERED TO THE SITE, INCLUDING TREES, SHRUBS, AND HERBACEOUS PERENNIALS, SHALL BE LOCATED IN A TEMPORARY "NURSERY" IN A SHADED AREA PROTECTED FROM WIND AND WATERED REGULARLY, ACCORDING TO THE SEASON AND PLANTS' REQUIREMENTS.
14. ALL TREE LOCATIONS ARE TO BE STAKED IN THE FIELD FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. FINAL LOCATIONS FOR ALL TREES ARE TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT.
15. ALL SHRUBS AND HERBS ARE TO BE LAID OUT IN THE FIELD, ACCORDING TO THE LAYOUT PROVIDED IN THE PLANS, FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
16. INSTALL ALL TREES, SHRUBS, AND HERBS PER PLANTING DETAILS.
17. ALL DISTURBED AREAS, INCLUDING THOSE NOT INDICATED ON THE PLANS, DUE TO CONSTRUCTION ACTIVITY OR THE STORAGE OF MATERIALS OR EQUIPMENT ARE TO BE REPAIRED. APPLY TOPSOIL AS NEEDED, TO MEET ADJACENT GRADES AND RE-SEED TO MATCH EXISTING OR PROPOSED LANDSCAPE. IF SITE CONDITIONS ARE UNCLEAR, CONTACT THE LANDSCAPE ARCHITECT TO VERIFY THE APPROPRIATE RE-SEEDING SPECIFICATION.
18. ALL PLANTING BEDS ARE TO RECEIVE 2" OF SHREDDED HARDWOOD MULCH; ALL TREE PLANTINGS ARE TO RECEIVE 3" SHREDDED HARDWOOD MULCH.
19. SEE PLANTING DETAILS.

SEEDING NOTES:

1. LAWN MIX IS TO BE COMPRISED OF THE FOLLOWING ELEMENTS:
   - 1.1. "CONSERVATION MIX" BY NORTH COUNTRY ORGANICS, OR APPROVED EQUAL
   - 1.2. APPLY PER THE MANUFACTURER'S RECOMMENDED RATE OF 5 LBS/1,000 SF.

2. LAWN MIX SEED IS TO BE PROVIDED BY NORTH COUNTRY ORGANICS, OR APPROVED EQ.
   NORTH COUNTRY ORGANICS
   P.O. Box 372, Bradford, VT 05033
   (802) 222-4277
   NORGANICS.COM

3. DETENTION BASIN MIX IS TO BE COMPRISED OF THE FOLLOWING:
   - 3.1. "RAIN GARDEN MIX- ERNMX-180," BY ERNST SEED.
   - 3.2. APPLY PER THE MANUFACTURER'S RECOMMENDED SEEDING RATE OF 20 LB/ACRE WITH A COVER CROP.
   - 3.3. INCLUDE COVER CROP, PER MANUFACTURER'S RECOMMENDATION: "OATS (1 JAN TO 31 JUL; 30 LBS/ACRE), JAPANESE MILLET (1 MAY TO 31 AUG;10 LBS/ACRE), OR GRAIN RYE (1 AUG TO 31 DEC; 30 LBS/ACRE)"

4. DETENTION BASIN MIX SEED IS TO BE PROVIDED BY:
   ERNST CONSERVATION SEEDS
   8884 MERCER PIKE, MEADVILLE, PA 16335
   (800) 873-3321

5. WILDFLOWER MEADOW MIX IS TO BE COMPRISED OF THE FOLLOWING:
   - 5.1. "NEW ENGLAND WILDFLOWER MIX," BY NEW ENGLAND WETLAND PLANTS.
   - 5.2. APPLY PER THE MANUFACTURER'S RECOMMENDED SEEDING RATE OF 1 LB/ 1900 SQ FT WITH A COVER CROP.
   - 5.2. INCLUDE COVER CROP: ANNUAL RYE, TO BE APPLIED AT A RATE OF 1 LB/ 1000 SF

6. STEEP SLOPES GRASS MIX IS TO BE COMPRISED OF THE FOLLOWING:
   - 6.1. "NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR DRY SITES"
   - 6.2. DUE TO EX. STEEP SLOPES, APPLY SEED 1.25 X THE MANUFACTURER'S RECOMMENDED SEEDING RATE OF 1 LB/ 1250 SQ FT
   - 6.3. INCLUDE COVER CROP: ANNUAL RYE, TO BE APPLIED AT A RATE OF 1 LB/ 1000 SF

7. WILDFLOWER MEADOW MIX AND STEEP SLOPES GRASS MIX IS TO BE PROVIDED BY:
   NEW ENGLAND WETLAND PLANTS
   P.O. Box 949, SOUTH HADLEY, MA 01075
   413-548-8000

8. SEEDING INSTRUCTIONS:
   - 8.2. PREPARE THE SEEDING AREA PER MANUFACTURER'S RECOMMENDATIONS; FINAL PLANTING BED IS TO BE WEED-FREE, SMOOTH, TILLED AND FINELY GRADED FOR FIRM SEED TO SOIL CONTACT. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR WEED REMOVAL WITHIN THE PLANTING AREA.
   - 8.3. SEED IN FALL (BETWEEN AUGUST 20TH AND BEFORE OCTOBER 20TH), OR IN SPRING (BETWEEN APRIL 1 AND JUNE 1ST).
   - 8.4. SEED PER THE RATE RECOMMENDED BY THE MANUFACTURER, UNLESS OTHERWISE SPECIFIED. MIX SEED WITH CARRIER AND IF HAND-BROADCASTING SEED, DISTRIBUTE IN A NORTH-SOUTH DIRECTION, THEN SUBSEQUENTLY IN AN EAST-WEST DIRECTION.
   - 8.5. GENTLY RAKE SEED INTO SOIL TO ENSURE GOOD SOIL TO SEED CONTACT.
   - 8.6. COVER SEED WITH A LAYER OF WEED-FREE STRAW MUCH, NO MORE THAN 1/4" THICK.
   - 8.3. PROVIDE TEMPORARY IRRIGATION FOR ALL SEEDING AREAS, AS WELL AS SHRUB AND PERENNIAL PLANTING AREAS, FOR ESTABLISHMENT (MINIMUM 2 MONTHS). ADJUST WATERING SCHEDULE PER WEATHER CONDITIONS; HOT, DRY TEMPERATURES MAY REQUIRE ADDITIONAL WATERING WHILE PERSISTENT RAIN WILL REQUIRE LESS. DURING PERIODS OF HOT, DRY WEATHER, LAWN SHOULD RECEIVE MIN. 2" OF WATER PER WEEK.

9. MOWING SCHEDULE FOR DETENTION, WILDFLOWER MEADOW, AND STEEP SLOPES GRASS MIXES:
   - 2.3. YEAR 1: TO CONTROL WEED GROWTH THE FIRST YEAR, WHEN THE OVERALL HEIGHT OF VEGETATION IN THE DETENTION BASIN MIX AND WILDFLOWER MIX REACHES 10-12 INCHES, CUT BACK THESE AREAS TO A HEIGHT OF 6-8 INCHES. DO NOT CUT LOWER THAN 6", EXCEPT WITHIN WINTER MONTHS. STOP CUTTING WITHIN 45 DAYS OF THE FIRST FROST DATE.
   - 2.4. AFTER YEAR 1: FOR DETENTION BASIN MIX, WILDFLOWER MIX, AND STEEP SLOPES GRASS MIX, MOW 1X PER YEAR IN EARLY SPRING OR FALL, 45 DAYS PRIOR TO THE FIRST FROST.

PERMIT LEVEL
NOT ISSUED FOR CONSTRUCTION

ISSUED FOR	BY	DATE
SITE PLAN APPLICATION	SJL	6/17/25
PRELIMINARY REVIEW	SJL	6/30/25

DRAWING NAME: **LANDSCAPE NOTES**

PROJECT NAME: **45 BELMONT AVENUE AFFORDABLE HOUSING**

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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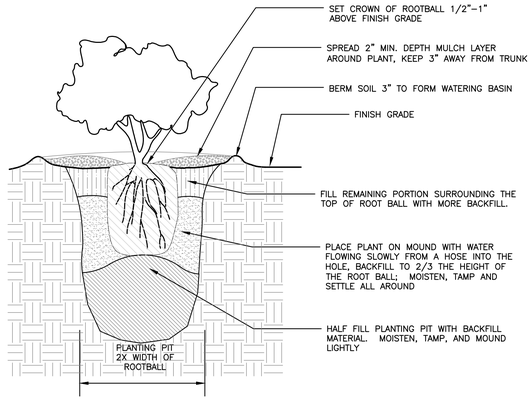
ACORN ENGINEERING, INC.
ROCKLAND, MAINE 04104
PO BOX 5271
(207) 775-2655

FILE: 1287_LANDSCAPE
JN: 1287
SCALE: 1" = 20'
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

LICENSED LANDSCAPE ARCHITECT
ALEXIS LOPEZ DELVECCHIO
LAR5303
6/30/25
STATE OF MAINE

DRAWING NO.
L-01



BACKFILL AMENDMENTS

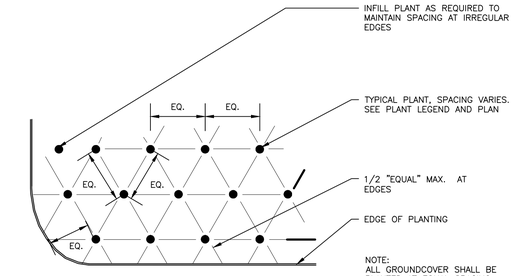
A) WHERE NATIVE TOP SOIL IS PRESENT IN PLANTING AREAS, NO SOIL AMENDMENT IS RECOMMENDED. THE NATIVE SOIL SHOULD BE SOFT AND FRIABLE. LARGE ROCKS AND CLODS ARE TO BE REMOVED FROM BACKFILL.

NOTES

A) PLANT PIT TO BE DUG TWICE AS DEEP AND TWICE AS WIDE AS PLANT CONTAINER.
B) PRIOR TO ANY BACKFILLING, FILL PLANTING PIT WITH WATER AND ALLOW TO PERCOLATE INTO SUBSOIL
C) FORM WATERING BASIN USING REMAINING BACKFILL AND NATIVE SOIL
D) WATER THOROUGHLY, FILLING THE BASIN WITH WATER AND SPRINKING AROUND TO SETTLE BACKFILL, MULCH AND BERM.
E) ALLOW TO SOAK IN AND REPEAT.

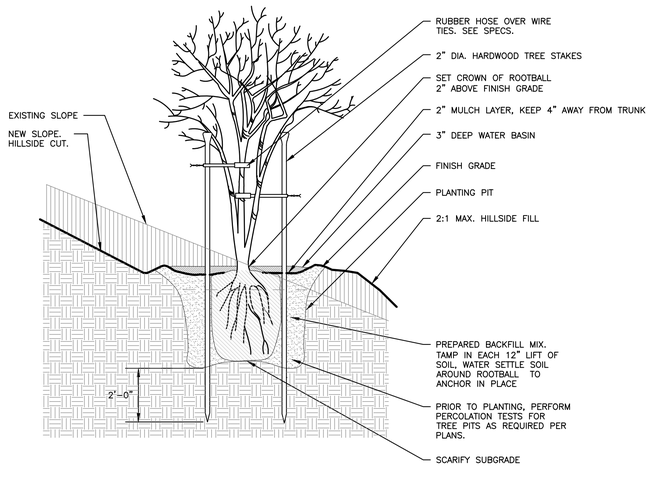
6 NATIVE SHRUB PLANTING DETAIL

N.T.S.



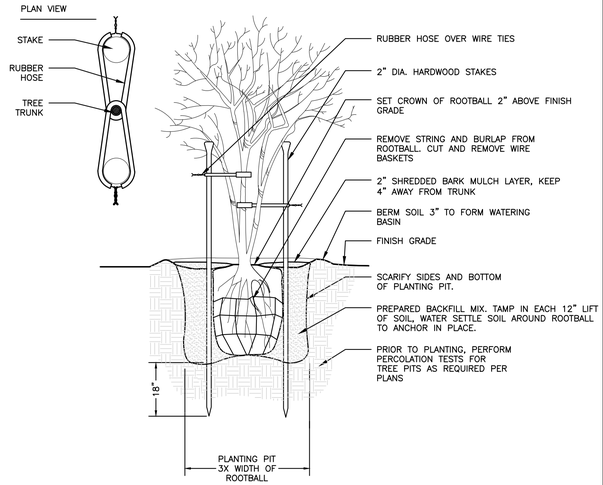
3 GROUNDCOVER SPACING

N.T.S.



5 TREE PLANTING ON SLOPE DETAIL

N.T.S.



2 TREE PLANTING DETAIL

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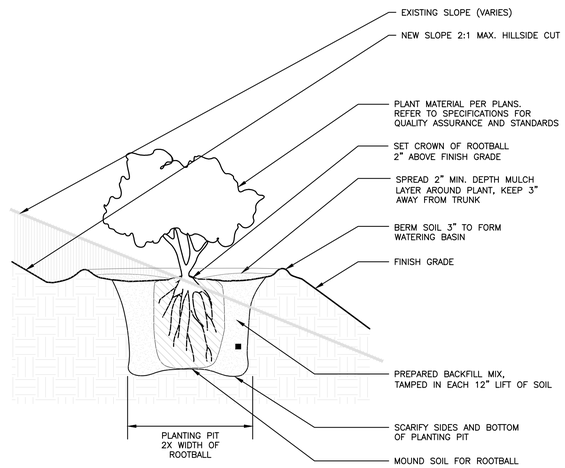

4 SHRUB PLANTING ON SLOPE DETAIL

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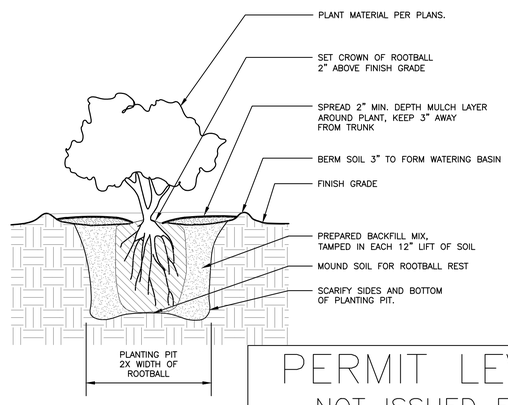

1 SHRUB PLANTING DETAIL

N.T.S.

PERMIT LEVEL
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ISSUED FOR	BY DATE
SITE PLAN APPLICATION	SJL 8/17/25
PRELIMINARY REVIEW	SJL 6/30/25

DRAWING NAME: PLANTING DETAILS

PROJECT NAME: 45 BELMONT AVENUE AFFORDABLE HOUSING

CLIENT: WALDO COMMUNITY ACTION PARTNERS
9 FIELD STREET, BELFAST, MAINE 04915

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FILE: 1287_LANDSCAPE
JN: 1287
SCALE: 1" = 20'
DESIGNED BY: SJL/ALDV
DRAWN BY: FAB/BJK
CHECKED BY: SJL

LICENSED LANDSCAPE ARCHITECT
ALEXIS LOPEZ DELVECCHIO
LAR5303
6/30/25
STATE OF MAINE

DRAWING NO.
L-03

Plans

Architectural Floor Plans and Façade Schematic

(dated 06/24/25, progress-level)

VIEW FROM DRIVEWAY

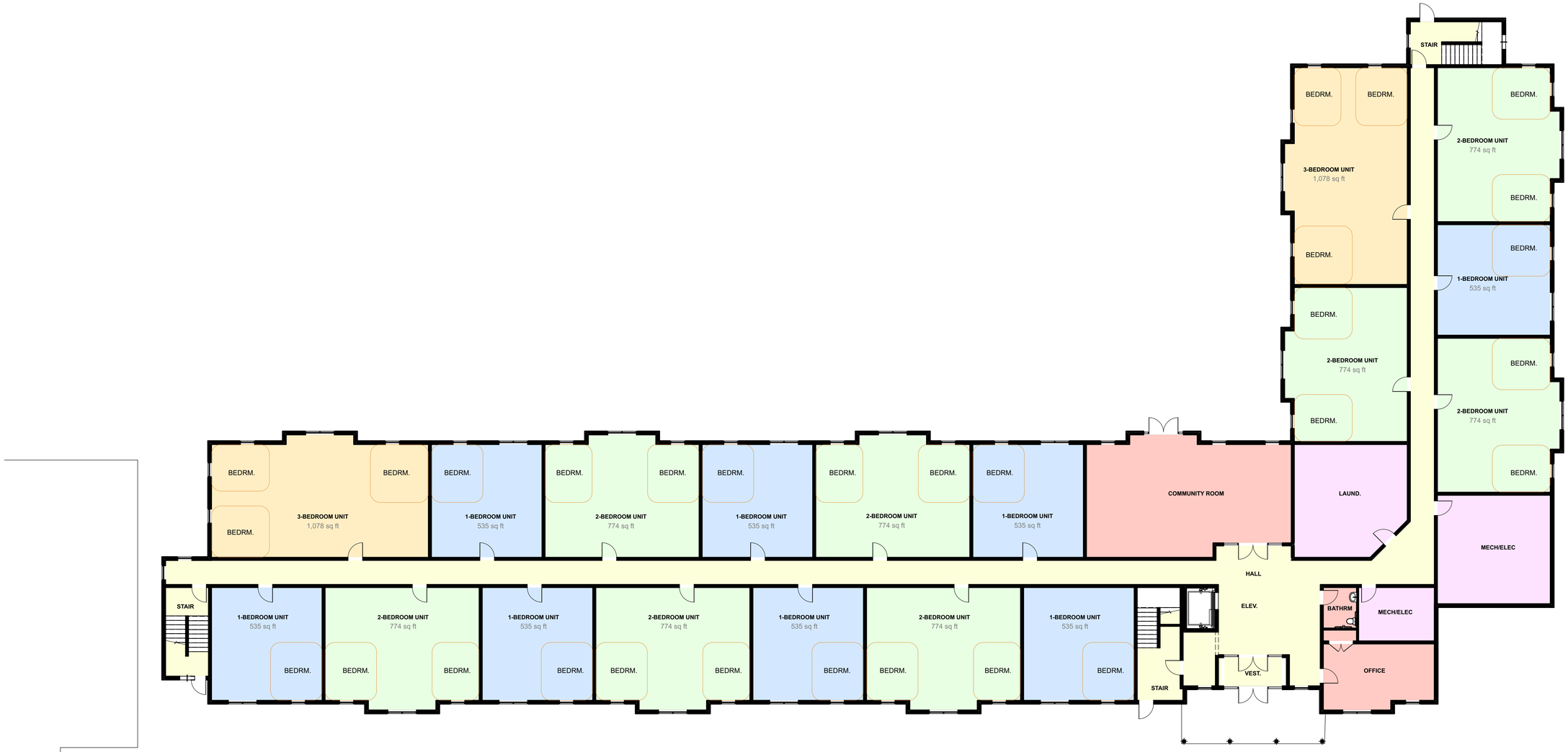
CALLENDER+DELANEY ARCHITECTS
136 PLEASANT AVE, PORTLAND, ME 04103

BELMONT AVENUE APARTMENTS

45 BELMONT AVENUE, BELFAST MAINE

THESE RENDERINGS ARE PROVIDED FOR REPRESENTATIVE PURPOSES ONLY. THEY SHOW THE PRELIMINARY DESIGN WITH THE INTENT OF COMMUNICATING THE INITIAL MATERIALS AND FENESTRATION. THE TOPOGRAPHY IS REPRESENTATIONAL OF THE SITE, BUT NO LANDSCAPING OR SITE ELEMENTS HAVE BEEN INCLUDED. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR CONTEXT.

7/1/25



FLOOR 1- (8) 1 BR
(8) 2 BR
(2) 3 BR

FLOOR 2- (9) 1 BR
(10) 2 BR
(2) 3 BR

FLOOR 2- (9) 1 BR
(10) 2 BR
(2) 3 BR

TOTAL- (60) UNITS (26) 1 BR, (28) 2 BR, (6) 3 BR

BELFAST MULTIFAMILY DEVELOPMENT

45 BELMONT AVENUE, BELFAST, MAINE

CALLENDER DELANEY ARCHITECTS
(207) 775 2696
136 PLEASANT AVE
PORTLAND, ME 04103
PO BOX 1276
PORTLAND, ME 04104
ARCHITECTSINMAINE.COM

MARK	DATE	DESCRIPTION

DATE: 6/24/25
CHECKED BY: JAD
DRAWN BY: NPC
JOB: BHP
SHEET TITLE: FIRST FLOOR PLAN

A1.1

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SECOND FLOOR PLAN

BELFAST MULTIFAMILY DEVELOPMENT

45 BELMONT AVENUE, BELFAST, MAINE

CALLENDER DELANEY ARCHITECTS

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136 PLEASANT AVE
PORTLAND, ME 04103
PO BOX 1276
PORTLAND, ME 04104
ARCHITECTSINMAINE.COM

MARK	DATE	DESCRIPTION

DATE: 6/24/25

CHECKED BY: JAD

DRAWN BY: NPC

JOB: BHP

SHEET TITLE: SECOND FLOOR PLAN

A1.2

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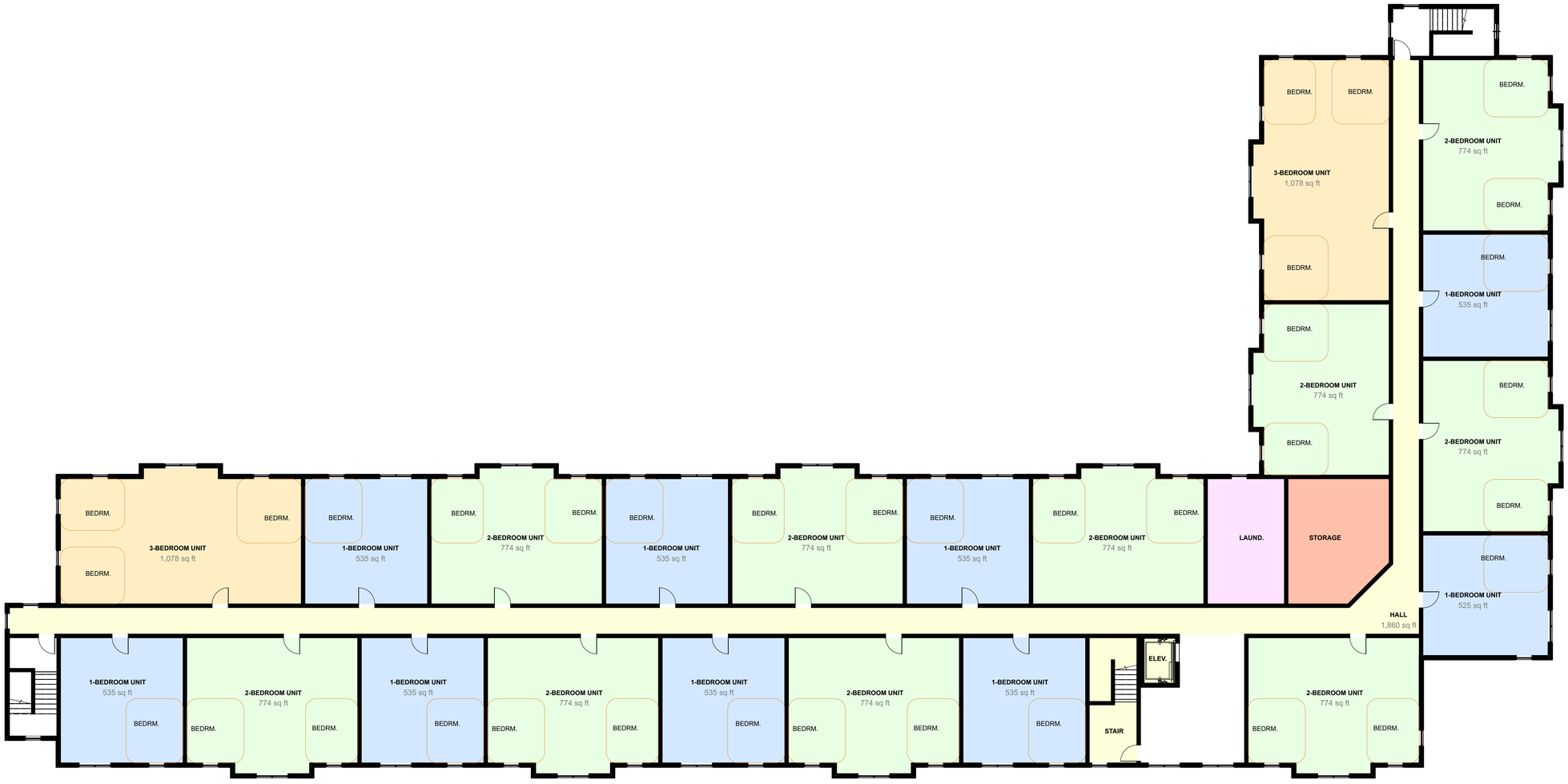
A1.2 SECOND FLOOR PLAN : Plotted on 6/24/25 at 9:47 AM by Nick Canedy. File Path: /Volumes/WCA Share/ WCA Projects/2025 Projects/BHP - Belfast Housing Project/BHP ArchiCAD Models/BHP Model v27.pln



THIRD FLOOR PLAN

BELFAST MULTIFAMILY DEVELOPMENT

45 BELMONT AVENUE, BELFAST, MAINE

CALLENDER DELANEY ARCHITECTS

(207) 775 2696
136 PLEASANT AVE
PORTLAND, ME 04103
PO BOX 1276
PORTLAND, ME 04104
ARCHITECTSINMAINE.COM

MARK	DATE	DESCRIPTION

DATE: 6/24/25
CHECKED BY: JAD
DRAWN BY: NPC
JOB: BHP
SHEET TITLE: THIRD FLOOR PLAN

A1.3

A1.3 THIRD FLOOR PLAN : Plotted on 6/24/25 at 9:47 AM by Nick Canedy. File Path: /Volumes/WCA Share/ WCA Projects/2025 Projects/BHP - Belfast Housing Project/BHP ArchiCAD Models/BHP Model v27.pln

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