

ITEM 1

**Town of Kittery
Planning Board Meeting
April 27, 2023**

ITEM 1 – 22 Shapleigh Road– Site Plan - Final Plan Review

Action: approve final plan or continue review Owner/applicant Fair Tide and acting agent Geoffrey R Aleva, PE of Civil Consultants propose to redevelop an existing commercial building with additions creating a footprint of 5,669sf, and to add a 6-unit residential building consisting of a 2,058sf building footprint, at real property located at 22 Shapleigh Road (Tax Map 15, Lot 64) in the Business-Local (B-LI) and Residential-Urban (R-U) Zones respectively.

PROJECT TRACKING

REQ'D	ACTION	COMMENTS	STATUS
NO	Sketch Plan Review	Reviewed by Planning Board during December 8, 2022 meeting	Accepted 12/8/22
YES	Preliminary Plan Review	Application submitted to KDPD 1.6.23	Approved
YES	Determination of Completeness/Acceptance	Preliminary site plan application accepted as complete during 1/26/23 meeting.	Complete
NO	Site Visit	Held February 6, 2023 and continued to February 21, 2023. Abutter notices sent by staff on January 30, 2023 and February 13, 2023.	Held
YES	Public Hearing	Opened during February 9, 2023 meeting and continued to February 23, 2023 meeting.	Held
YES	Final Plan Review and Decision	Submitted via online portal 4/6/23	Under review

Plan Review Notes reflect comments and recommendations regarding applicability of Town Land Use Development Code, and standard planning and development practices. Only the PB makes final decisions on code compliance and approves, approves with conditions or denies final plans. Prior to the signing of the approved Plan any **Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS.** As per Section 16.4.4.L - Grading/Construction Final Plan Required. - Grading or construction of roads, grading of land or lots, or construction of buildings is prohibited until the original copy of the approved final plan endorsed has been duly recorded in the York County registry of deeds when applicable.

Summary

The project is located at the intersection of Shapleigh Road and Manson Avenue, the total lot area is 84,831sf (1.95-acres), and the property is divided into two zones the Business-Local (B-L1) Zone and the Residential Urban (R-U) Zone. The parcel is crossed by a wetland that is approximately 24,000sf (or less than 1 acre) and was delineated in 2021 and determined to be a forested wetland related to stormwater directed to the location from several culverts in the vicinity. An important note is that this proposal is subject to the recently approved (10/2022) revision in the (B-L1) zone for affordable housing. See: [Microsoft Word - 2022.03.14 Title 16 Affordable Housing BL-1 \(ecode360.com\)](#) The project is

ITEM 1

24 proposing to utilize the 50ft zone extension provision indicated in §16.1.8.B.5. The proposed extension
25 would place all building footprint area in the (B-L1) zone.

26
27 The proposed use of the renovated existing building to the north has the allowed uses of retail sales, a
28 neighborhood grocery store as well as business and professional offices. This will be comprised of a
29 collective of social service agencies known as “Mainspring”; which will be home to Fair Tide’s thrift
30 store and administrative offices, Footprints Food Pantry, York Community Action and other programs
31 that service the community.

32
33 The southern portion of the property is the location of the proposed new 6-unit residential building owned
34 by Fair Tide and managed by York Housing. The required land area for each available unit will be 1500sf
35 per unit, the available lot can easily support the density of the 6 multifamily units based on the land area
36 (6 x 1500sf (9,000sf) < 54,000sf).

37
38 The Planning Board voted 7-0 to approve the preliminary site plan application for this project during the
39 February 23, 2023 meeting. Several additional details or plan notes were outstanding at that time,
40 including stormwater facilities design and monitoring details, on-site traffic signage details, snow storage,
41 and exterior lighting hours. The applicant provided updated plans and supporting information that
42 addresses these items and satisfies the comments provided by the Town’s peer review engineer.

43
44
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46 Staff Review: Draft/ Preliminary Findings

47
48

49 **Process (§16.7.10):**
50 Any mixed-use project that contains residential and non-residential uses is classified as a **major site plan**
51 per §16.7.5-A.2.c. Section 4402-6 of Maine Revised Statutes exempts division of structures from
52 subdivision requirements where a project is subject to municipal site plan review (applicable to the 6-unit
53 residential component of this project). Since Title 16 of Kittery’s Town Code (KTC) classifies this project
54 as a major site plan, subdivision review is not required and the provisions of KTC Chapter 16.7 General
55 Development Requirements apply.

56 Major site plan applicants may choose to submit a **sketch plan** for a proposal but are not required to do
57 so. The applicants submitted a sketch plan application for this project that was reviewed and accepted by
58 the Planning Board on December 8, 2022. The packet for that meeting can be reviewed at: [Planning
59 Board Meeting December 8th, 2022 | Kittery ME.](#)

60
61 Submittal and approval of a **preliminary site plan application is required** per §16.7.10-C. The applicant
62 submitted a preliminary site plan application and supporting plans and materials via the Town’s online
63 portal on January 6, 2023. Staff reviewed the documents and the submittal checklists provided by the
64 applicant and found the application to be generally complete. The Planning Board reviewed this
65 application during the January 26, 2023 meeting and voted 7-0 to accept the application and find it
66 complete. The January 26 meeting packet includes site plans, building elevations and renderings, a
67 photometric lighting plan, a stormwater management plan, a warranty deed, and verification of water and
68 sewer service availability, which can be reviewed at [item 1 22 shapleigh rd.pdf \(kitteryme.gov\)](#).

69
70 The Board held a **site walk** at the subject property on February 6, 2023 and voted to continue it on
71 February 21, 2023. The Board opened a **public hearing** during the February 9, 2023 meeting and voted to
72 continue the hearing to the February 23, 2023 meeting. Third party peer review of plans for compliance

ITEM 1

73 with stormwater and engineering requirements was requested from CMA Engineers; comments were
74 received by Town staff on February 13, 2023. Their review memo is included in the packet for this
75 meeting.

76 Following Planning Board approval of a preliminary site plan application, submittal and approval
77 of a separate Final Site Plan application is required prior to construction.

78
79 Other permit(s) needed:

- 80 • Final site plan approval
- 81 • Road Excavation Permit/ Driveway Entrance Permit (Kittery Public Works)
- 82 • Building Permit
- 83 • Sewer Connection Permit; other utility permits?
- 84 • Sign permit

85
86 Land Use Zone Regulations Chapter 16.4

87 Multifamily Dwellings are permitted in B-L1 zoning district per 16.4.18- B. A variety of office and retail
88 uses are also permitted.

89
90 16.4.18-D.1 Standards:

- 91 • a.3: one nonresidential use must be located on the first floor facing Shapleigh Rd. Staff and the Board
92 determined this requirement to be met via the commercial uses proposed for the existing building.
- 93 • a.4.a unit density: 1,500 square feet of land area per dwelling unit required (complies)
- 94 • a.4.b-g: dimensional standards (setbacks, building height, lot coverage): complies
- 95 • a.4.h: stormwater: LID and BMPs required for all stormwater generated onsite. Stormwater
96 Management Plan submitted by applicant. Applicant proposes to reduce impervious surfaces on the
97 northern portion of the property while adding approx. 7,700 square feet of impervious surfaces on the
98 southern portion of the property. Most stormwater runoff is proposed to flow to the on-site wetland,
99 which drains southwest to public facilities located in the Shapleigh Rd right-of-way and south via a
100 culvert which underlies abutting property.

101 Revised drainage plans were reviewed on the Board's behalf by a qualified peer review
102 consultant (Jodie Bray Strickland, CMA Engineers), who determined that stormwater-related
103 comments have been addressed by the updated plans.

- 104 • a.4.j: **hours of operation and hours of exterior lighting** are required to be limited. Final plans
105 should be noted accordingly. *Hours of operation were added to plans. Hours of exterior lighting are*
106 *not specified.*
- 107 • a.4.l: setback from streams & wetlands: 50 feet for buildings, 40 feet for 1-5 stall parking areas:
108 commercial building and parking area existing. Reduction in nonconformity for parking/ driveway
109 setback proposed. Proposed residential building and parking facilities comply with standard.

110
111 D.2 Parking:

- 112 • must be located in rear of building: new parking complies
- 113 • access: provided via existing sidewalk. Further connectivity infeasible due to wetland location
- 114 • screening required: provided – see landscape plans. Trees, shrubs, and groundcovers provided per
115 requirements.

116
117 D.3 Building Design:

- 118 • materials and details consistent in all facades
- 119 • peaked roof form proposed

120

ITEM 1

- 121 D.4 Landscaping:
- 122 • 15% of property to be landscaped or in natural condition per landscape plan and existing wetland
- 123 • outdoor spaces required. Garden beds proposed near commercial building. **Usable outdoor space**
- 124 limited near residential building. *Discussion item?*
- 125
- 126 D.7 Affordable Housing: **16.5.4** must be met. Recording of covenants required.
- 127
- 128 **General Development Requirements Chapter 16.7 (Site Plans)**
- 129 16.7.8 Waivers: *Waiver request for residential parking submitted.*
- 130
- 131 16.7.11 Standards and approval criteria:
- 132 A. Water and B. Sewer
- 133 • Utilities are available to serve this development. Review by Town and District staff and peer review
- 134 engineers pending. Verification of availability has been provided.
- 135
- 136 C & D. Stormwater:
- 137 • See above. Waiver request submitted for minimal increase in peak stormwater flows. Post-
- 138 construction stormwater plan provided.
- 139
- 140 E. Traffic:
- 141 • Vehicular access to the existing/ proposed commercial building is from Manson Ave and Shapleigh
- 142 Rd via existing driveways. Access to the proposed residential building will be from Shapleigh Rd via
- 143 a new driveway. Vehicular connectivity between the commercial and residential portions of the site is
- 144 infeasible due to the location of the on-site wetland. Driveway and paving plans were reviewed by
- 145 CMA Engineers and by Kittery's **Technical Review Committee** members. Provision of sight
- 146 distance information, vehicle turning diagrams, on-site signage, and updated drainage plans addressed
- 147 remaining comments, which included:
- 148 ○ Sidewalk improvements must be concrete (no asphalt in ROW)
- 149 ○ Traffic and parking controls are needed within the site, including fire lane/ no parking
- 150 markings in the residential driveway and one-way & do not enter signage for the angled-
- 151 parking portion of the commercial driveway.
- 152 • Number and spacing of driveways comply with E.3 and E.4. Internal vehicular circulation complies
- 153 with E.5.
- 154
- 155 F. Parking:
- 156 • 35 parking stalls proposed for commercial building, 6 parking stalls proposed for residential building.
- 157 Waiver requested for reduction in residential parking requirements.
- 158 • A note was added to the site plan for snow storage but **Snow storage** areas are not shown on plans.
- 159 Applicant should provide snow storage information during the meeting for planning board review.
- 160 Compatibility with landscape plans should be assessed.
- 161
- 162 H. Lighting
- 163 • Lighting plans provided showing pole-mounted exterior lighting in parking/ driveway areas and
- 164 canopy lighting near building entries. All fixtures are cut-off and not more than 20 feet above ground.
- 165 Maximum illumination levels on-site and at property lines comply with standards.
- 166
- 167 I. Erosion Control:

ITEM 1

- 168 • Erosion control plan provided. Erosion control measures required to be implemented and inspected
169 during construction.
170
- 171 J. Water quality and Wastewater Pollution.
- 172 • Town standards for sewer facility design and construction apply and to be inspected by PW and CEO.
173 Surface water impacts to be reviewed and minimized via stormwater plans.
174
- 175 P. Technical and Financial Capacity.
- 176 • The applicant and all contractors and consultants must demonstrate to the board's satisfaction the
177 financial and technical capacity to construct the project in adherence to applicable standards.
178
- 179 16.7.12 Post-Approval
- 180 • Construction required to begin within 1 year of planning board approval. **Pre-construction meeting**
181 with staff required prior to start of construction. Stormwater and erosion control inspection by
182 qualified professional required during construction. Annual inspection of stormwater facilities
183 required following project completion.
184

Discussion Items (Italicized above):

- 185
- 186 • time restrictions of exterior lighting
- 187 • Snow storage
- 188

Recommendation

189 Staff find that, with provision of additional information as noted above, this proposal complies with
190 applicable standards and is likely to improve conditions related to existing paving and stormwater runoff
191 while having minimal impacts on infrastructure, traffic, or nearby properties. Outstanding items may be
192 resolved during final review of plans prior to recording. Staff recommend approval of this application
193 with conditions requiring resolution of specific items. The Board may also choose to continue review to a
194 future meeting and advise the applicant and staff of items requiring resolution.
195

Recommended Motions

Move to approve/ deny/ continue review of final site plan.

201 *Owner/applicant Fair Tide and acting agent Geoffrey R Aleva, PE of Civil Consultants propose to*
202 *redevelop an existing commercial building with proposed additions creating a footprint of 5,669sf, and to*
203 *add a 6-unit residential building consisting of a 2,058sf building footprint, at real property located at 22*
204 *Shapleigh Road (Tax Map 15, Lot 64) in the Business-Local (B-LI) and Residential-Urban (R-U) Zoning*
205 *Districts. Based on the plans and supporting information submitted to the Town through April 27, 2023, I*
206 *move to approve/ deny/ continue review of the preliminary site plan application for this project.*
207

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**Kittery Planning Board
Findings of Fact
For 22 Shapleigh Rd
Site Plan Review**

**DRAFT
M 15 L 64**

Note: This approval by the Planning Board constitutes an agreement between the Town and the Developer incorporating the Development plan and supporting documentation, the Findings of Fact, and all waivers and/or conditions approved and required by the Planning Board.

WHEREAS: Owner and applicant Fair Tide, and agent Geoffrey Aleva of Civil Consultants request final approval to redevelop an existing commercial building with additions creating a footprint of 5,669sf, and to construct a new 6-unit residential building consisting of a 2,058sf building footprint, at real property located at 22 Shapleigh Road (Tax Map 15, Lot 64) in the Business-Local (B-LI) and Residential-Urban (R-U) Zones

Hereinafter the “Development”.

Pursuant to the Plan Review meetings conducted by the Planning Board as noted in the Plan Review Notes dated 4/27/23;

REQ'D	ACTION	COMMENTS	STATUS
NO	Sketch Plan	Reviewed by Planning Board during December 8, 2022 meeting	Accepted 12/8/22
YES	Site Visit	February 6 and February 21, 2023	HELD
YES	Completeness/Acceptance	January 26, 2023	ACCEPTED
YES	Public Hearing	February 9 and 23, 2023	HELD
YES	Preliminary Plan Approval	Approved February 23, 2023	APPROVED
YES	Final Plan Review and Decision	Final Site Plan Application submitted April 6, 2023	Pending

and pursuant to the Project Application and Plan and other documents considered to be a part of the approval by the Planning Board in this finding consist of the following and as noted in the Plan Review Notes dated 4/27/2023 (Hereinafter the “Plan”).

1. 22 Shapleigh Rd site plans revised 4/5/23

NOW THEREFORE, based on the entire record before the Planning Board as and pursuant to the applicable standards in the Land Use and Development Code, the Planning Board makes the following factual findings as required by Section §16.7.10(5)(b) and as recorded below:

FINDINGS OF FACT

Action by the Board shall be based upon findings of fact which certify or waive compliance with all the required standards of this title, and which certify that the development satisfies the following requirements:

[1] Development Conforms to Local Ordinances.

Standard: *The proposed development conforms to a duly adopted comprehensive plan as per adopted provisions in the Town Code, zoning ordinance, subdivision regulation or ordinance, development plan or land use plan, if any. In making this determination, the municipal reviewing authority may interpret these ordinances and plans.*

Finding: The proposed development conforms to the applicable provisions of Kittery’s town code, as summarized in the Planner’s Review Notes that accompany these findings. The applicant requested waivers from applicable parking standards. Staff conclude that the parking requirements for affordable housing developments in the B-L1 zoning district are published incorrectly, the project complies with the adopted standards, and the planning board should approve the requested parking waiver accordingly.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

[2] Water Supply Sufficient.

Standard: *The proposed development has sufficient water available for the reasonably foreseeable needs of the development.*

Finding: The proposed use plans to connect to public water and has received a capacity letter from the Water District stating water supply is sufficient.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

[3] Sewage Disposal Adequate.

Standard: *The proposed development will provide for adequate sewage waste disposal and will not cause an unreasonable burden on municipal services if they are utilized.*

Finding: The proposed use plans to tie into existing sewer infrastructure and has received a capacity letter from the Sewer Department.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

[4] Stormwater Managed.

Standard: *The proposed development will provide for adequate stormwater management.*

Finding: Applicant proposes to reduce impervious surfaces on the northern portion of the property while adding approx. 7,700 square feet of impervious surfaces on the southern portion of the property. Most stormwater runoff is proposed to flow to the on-site wetland, which drains southwest to public facilities located in the Shapleigh Rd right-of-way and south via a culvert which underlies abutting property. The applicant requests a waiver from the board to authorize a minimal increase in stormwater runoff from the residential portion of the project into the wetland and buffer areas. The proposed increase in stormwater flows is not anticipated to significantly impact wetland or buffer areas or neighboring properties. Staff and the Town’s peer review engineer recommend approving this waiver accordingly. The applicant has prepared a Post Construction Stormwater Management Plan.

Conclusion: This standard appears to be met.

Vote of in favor against abstaining

[5] Traffic Managed.

Standard: *The proposed development will:*

[a] Not cause unreasonable highway or public road congestion or unsafe conditions with respect to the use of the highways or public roads existing or proposed; and

<i>[b] Provide adequate traffic circulation, both on-site and off-site.</i>
Finding: The proposed development will not cause unreasonable congestion and unsafe conditions onto public ways and provides for adequate on-and off-site traffic circulation.
Conclusion: This standard appears to be met.
Vote of __in favor __against __ abstaining
[6] Parking and Loading.
Standard: <i>Provisions have been made for safe internal vehicular circulation, loading and service areas, and parking associated with the proposed development.</i>
Finding: The proposed development shows that internal vehicular circulation will be safe, with adequate loading and service areas are provided, and the number of parking spaces is sufficient based on the proposed regulated uses.
Conclusion: This standard appears to be met.
Vote of __in favor __against __ abstaining
[7] Utilities.
Standard: <i>The size, type, and locations of all public utilities and private utilities to serve the proposed development will be installed per accepted engineering practices</i>
Finding: The proposed development will utilize existing public utilities for the proposed use and will install lighting for the building and parking areas in accordance with Town regulations.
Conclusion: This standard appears to be met.
Vote of __in favor __against __ abstaining
[8] Erosion controlled.
Standard: <i>The proposed development will not cause unreasonable soil erosion or a reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results.</i>
Finding: The proposed development will be required to provide erosion and sedimentation controls during construction. Maintenance of stormwater facilities and monitoring of sedimentation is also required in accordance with the Stormwater Management Plan.
Conclusion: This standard appears to be met.
Vote of __in favor __against __ abstaining
[9] Groundwater protected.
Standard: <i>The proposed development will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of groundwater.</i>
Finding: This proposal is not anticipated to adversely affect the quality or quantity of groundwater.
Conclusion: This standard appears to be met.
Vote of __in favor __against __ abstaining

[10] Freshwater wetlands identified.
Standard: <i>All freshwater wetlands within the project area have been identified on any maps submitted as part of the application, regardless of the size of these wetlands.</i>
Finding: The plan identifies wetlands in the middle of the property. Improvements to the developed portion of the site are proposed to improve the runoff that flows into the wetland. New construction is located and designed to minimize disturbance to wetland and setback areas.
Conclusion: This standard appears to be met.
Vote of __ in favor __ against __ abstaining
[11] River, stream or brook identified.
Standard: <i>Any river, stream or brook within or abutting the proposed project area has been identified on any maps submitted as part of the application. For purposes of this section, “river, stream or brook” has the same meaning as in 38 M.R.S. § 480-B, subsection 9. Municipal solid waste disposal available. The proposed development will not cause an unreasonable burden on the municipality’s ability to dispose of solid waste, if municipal services are to be used.</i>
Finding: It appears that a stream does not exist in or abutting the property within 75 feet.
Conclusion: This standard appears to be met.
Vote of __ in favor __ against __ abstaining
[12] Water body quality and shoreline protected.
Standard: <i>Whenever situated entirely or partially within 250 feet of any wetland, the proposed development will not adversely affect the quality of that body of water or unreasonably affect the shoreline of that body of water. Flood areas identified and development conditioned. All flood-prone areas within the project area have been identified on maps submitted as part of the application. Water and air pollution minimized. The proposed development will not result in undue water or air pollution. In making this determination, the following must be considered:</i>
<i>[a] Elevation of the land above sea level and its relation to the floodplains;</i>
<i>[b] Nature of soils and subsoils and their ability to adequately support waste disposal;</i>
<i>[c] Slope of the land and its effect on effluents;</i>
<i>[d] Availability of streams for disposal of effluents;</i>
<i>[e] Applicable state and local health and water resource rules and regulations; and</i>
<i>[f] Safe transportation, disposal and storage of hazardous materials.</i>
Finding: It appears that the proposed development will not adversely affect the quality of any water or wetland body.
Conclusion: This standard appears to be met.
Vote of __ in favor __ against __ abstaining
[13] Aesthetic, cultural and natural values protected.

<p>Standard: <i>The proposed development will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, significant wildlife habitat identified by the Department of Inland Fisheries and Wildlife or the municipality, or rare and irreplaceable natural areas, or any public rights for physical or visual access to the shoreline.</i></p>
<p>Finding: The proposed development is not anticipated to have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, known historic sites, or significant wildlife habitat.</p> <p>Conclusion: This standard appears to be met.</p>
<p>Vote of _in favor _against _ abstaining</p>
<p>[14] Environmental considerations.</p>
<p>Standard: <i>The proposed development will not result in undue levels of lighting, noise, vibrations, smoke, heat, glare, fumes, dust, toxic matter, odors, or electromagnetic interference.</i></p>
<p>Finding: The proposed development is not anticipated to result in any undue levels of lighting, noise, vibrations, or other nuisance impacts on nearby areas.</p> <p>Conclusion: This standard appears to be met.</p>
<p>Vote of _in favor _against _ abstaining</p>
<p>[15] Utilization of the site.</p>
<p>Standard: <i>The proposed development does reflect the natural capabilities of the site to support development.</i></p>
<p>Finding: The proposed development is designed in a manner that respects the natural capabilities of the lot.</p> <p>Conclusion: This standard appears to be met.</p>
<p>Vote of _in favor _against _ abstaining</p>
<p>[16] Developer financially and technically capable.</p>
<p>Standard: <i>Developer is financially and technically capable to meet the standards of this section.</i></p>
<p>Finding: It appears the developer is financially and technically capable to effectuate the project. Provision of a performance guarantee and escrow funds for development inspections are required prior to start of construction.</p> <p>Conclusion: This standard appears to be met.</p>
<p>Vote of _in favor _against _ abstaining</p>

NOW THEREFORE the Kittery Planning Board adopts each of the foregoing Findings of Fact and based on these Findings determines the proposed Development will have no significant detrimental impact, and the Kittery Planning Board hereby grants final approval for the Development at the above referenced property, including any waivers granted or conditions as noted.

Waivers:

1. Waiver from 16.7.11.F.4.d – Parking standards. Amendments were adopted for B-L and B-L1 zoning standards to encourage affordable housing. Reduced off-street parking requirements (1 stall per unit) for affordable housing were published for B-L but omitted for B-L1. Staff believe

this omission was in error. The applicant requests a waiver from parking standards which would authorize the project to comply with the requirements applicable to affordable housing projects in B-L zoning districts.

2. Waiver from 16.7.11.C.4.a. – Stormwater and surface drainage Standards: Applicant requests waiver from the requirement to limit peak stormwater runoff discharge to predevelopment levels which would authorize the project to minimally exceed pre-development runoff flows.

Conditions of Approval (to be included as notes on the final plan in addition to the existing notes):

1. No changes, erasures, modifications or revisions may be made to any Planning Board approved final plan. (Title §16.7.12.C).
2. Applicant/contractor will follow Maine DEP *Best Management Practices* for all work associated with site and building construction to ensure adequate erosion control and slope stabilization.
3. Prior to the commencement of grading and/or construction within a building envelope, as shown on the Plan, the owner and/or developer must stake all corners of the envelope. These markers must remain in place until the Code Enforcement Officer determines construction is completed and there is no danger of damage to areas that are, per Planning Board approval, to remain undisturbed.
4. All Notices to Applicant contained in the Findings of Fact (dated: 4/27/2023).

Conditions of Approval (Not to be included as notes on the final plan):

1. Incorporate any plan revisions on the site plan as recommended by Staff, Planning Board, or Peer Review Engineer, and submit for Staff review prior to endorsement and recording of the plan.

Notices to Applicant:

1. Prior to the release of the signed plans, the applicant must pay all outstanding fees associated with review, including, but not limited to, Town Attorney fees, peer review, newspaper advertisements and abutter notification.
2. State law requires all subdivision and shoreland development plans, and any plans receiving waivers or variances, be recorded at the York County Registry of Deeds within 90 days of the final approval.
3. Three (3) paper copies of the final recorded plan and any and all related state/federal permits or legal documents that may be required, must be submitted to the Town Planning Department. Date of Planning Board approval shall be included on the final plan in the Signature Block.
4. This approval by the Town Planning Board constitutes an agreement between the Town and the Developer, incorporating the Plan and supporting documentation, the Findings of Fact, and any Conditions of Approval.

The Planning Board authorizes the Planning Board Chair, or Vice Chair, to sign the Final Plan and the Findings of Fact upon confirmation of compliance with any conditions of approval.

Vote of in favor against abstaining

APPROVED BY THE KITTERY PLANNING BOARD ON _____

Dutch Dunkelberger, Planning Board Chair

Appeal:

Per Title 16.2.12.B(1) - An aggrieved party with legal standing may appeal a final decision of the Planning Board to the York County Superior Court in accordance with Maine Rules of Civil Procedures Section 80B, within forty-five (45) days from the date the decision by the Planning Board was rendered.



TOWN OF KITTERY ~ MAINE

PLANNING OFFICE

200 Rogers Road, Kittery, Maine 03904
 PHONE: (207) 475-1323
 Fax: (207) 439-6806
www.kittery.org

APPLICATION: REQUEST FOR WAIVER

THIS REVIEW PROCESS REQUIRES APPROVAL FROM BOTH THE TOWN PLANNER AND THE CODE ENFORCEMENT OFFICER

PROPERTY DESCRIPTION	Parcel ID	Map	15	Lot	64	Zone Base Overlay	B-L1, R-U	Total Land Area	1.9475 acres
	Physical Address	22 SHAPLEIGH ROAD							

PROPERTY OWNER'S INFORMATION	Name	FAIR TIDE, INC.			Mailing Address	15 STATE ROAD KITTERY, ME 03904			
	Phone								
	Fax								
	Email								

APPLICANT'S AGENT INFORMATION	Name	GEOFFREY R. ALEVA, PE			Name of Business	CIVIL CONSULTANTS			
	Phone	(207) -384-2550				Mailing Address	293 MAIN STREET SOUTH BERWICK, ME 03908		
	Fax	(207) -384-2112							
	Email	geoff@civcon.com							

DESCRIPTION	Ordinance Section	Describe why this request is being made.
	EXAMPLE 16.32.560 (B)- OFFSTREET PARKING.	***EXAMPLE*** Requesting a waiver of this ordinance since the proposed professional offices have a written agreement with the abutting Church owned property to share parking.
	16.3.2.9.D(1)(b) - Minimum parking requirement of 1.5 spaces per dwelling unit in B-L1 zone	Requesting a waiver for the requirement for 1.5 parking spaces for the affordable housing residential use. The proposed 1 bedroom and studio units will not demand 1.5 spaces per unit. Information from the property managers indicate that the perspective tenants will not necessarily have a vehicle. The previously reviewed affordable housing zoning revision allowed for a reduction in parking for affordable housing projects to one space per unit. The one parking stall per one-bedroom unit fits well for this small affordable housing building.

I certify that, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.

Applicant's Signature:		Owner's Signature:	
Date:	3-15-23	Date:	

ARTICLE IV. WAIVERS

16.28.180 Waiver authorized.

Where the planning board finds that, due to special circumstances of a particular plan, the provision of certain required improvements is not requisite in the interest of public health, safety and general welfare, or is inappropriate because of inadequacy or lack of connecting facilities adjacent or in proximity to the proposed development, upon written request, it may waive or modify such requirements, subject to appropriate conditions. (Land use and dev. code § 7.4.1, 1994)

16.28.190 Objectives secured.

In granting modifications or waivers, the planning board must require such conditions as will, in its judgment, secure substantially the objectives of the requirements so waived or modified. (Land use and dev. code § 7.4.2, 1994)



TOWN OF KITTERY ~ MAINE

PLANNING OFFICE

200 Rogers Road, Kittery, Maine 03904

PHONE: (207) 475-1323

Fax: (207) 439-6806

www.kittery.org

APPLICATION: REQUEST FOR WAIVER

THIS REVIEW PROCESS REQUIRES APPROVAL FROM BOTH THE TOWN PLANNER AND THE CODE ENFORCEMENT OFFICER

PROPERTY DESCRIPTION	Parcel ID	Map	15	Lot	64	Zone Base Overlay	B-L1, R-U	Total Land Area	1.9475 acres
	Physical Address: 22 SHAPLEIGH ROAD								

PROPERTY OWNER'S INFORMATION	Name	FAIR TIDE, INC.			Mailing Address	15 STATE ROAD KITTERY, ME 03904			
	Phone								
	Fax								
	Email								

APPLICANT'S AGENT INFORMATION	Name	GEOFFREY R. ALEVA, PE			Name of Business	CIVIL CONSULTANTS			
	Phone	(207) -384-2550			Mailing Address	293 MAIN STREET SOUTH BERWICK, ME 03908			
	Fax	(207) -384-2112							
	Email	geoff@civcon.com							

	Ordinance Section	Describe why this request is being made.
DESCRIPTION	***EXAMPLE*** 16.32.560 (B)- OFFSTREET PARKING.	***EXAMPLE*** Requesting a waiver of this ordinance since the proposed professional offices have a written agreement with the abutting Church owned property to share parking.
	16.8.10 (4) (a) - Limit peak discharge to pre-development levels for 2-yr and 25-yr storms	Requesting a waiver for limiting the discharge to pre-development levels, as the existing and proposed stormwater flows are very similar with no increases over 0.1 cfs. The runoff will be mitigated through the use of minimal footprint detention areas, as well as reducing existing impervious area where possible. Implementing additional stormwater control devices will create unnecessary disturbance of area adjacent to the receiving wetland.

I certify that, to the best of my knowledge, the information provided in this application is true and correct and will not deviate from the plans submitted without notifying the Kittery Planning Department of any changes.

Applicant's Signature:		Owner's Signature:	_____
Date:	3-15-23	Date:	_____

ARTICLE IV. WAIVERS

16.28.180 Waiver authorized.

Where the planning board finds that, due to special circumstances of a particular plan, the provision of certain required improvements is not requisite in the interest of public health, safety and general welfare, or is inappropriate because of inadequacy or lack of connecting facilities adjacent or in proximity to the proposed development, upon written request, it may waive or modify such requirements, subject to appropriate conditions. (Land use and dev. code § 7.4.1, 1994)

16.28.190 Objectives secured.

In granting modifications or waivers, the planning board must require such conditions as will, in its judgment, secure substantially the objectives of the requirements so waived or modified. (Land use and dev. code § 7.4.2, 1994)



March 28, 2023

Jason Garnham, Director of Planning and Development
Town of Kittery
200 Rogers Road
Kittery, Maine 03904

**RE: Town of Kittery, Planning Board Services
Fair Tide, Inc. Development Review #2
Tax Map 15, Lot 64
CMA #591.152**

Dear Jason:

CMA Engineers has received the following information for Assignment #152, review #2 of the Fair Tide preliminary plan for the proposed project at 22 Shapleigh Road (Tax Map 15, Lot 64).

- 1) Review of the Fair Tide Preliminary Plan Memorandum by Civil Consultants, Inc. dated March 15, 2023.
- 2) Stormwater waiver request.

We have reviewed the information submitted for conformance with the Kittery Land Use and Development Code (LUDC) and general engineering practices and offer the comments below that correspond directly to the Town's Ordinances.

16.7 General Development Requirements

16.7.11 Performance Standards and Approval Criteria

16.7.11.C. Stormwater and Surface Drainage

16.7.11.C.(4)(a). There are increased flows for the 2-year storm event at both outfall locations and at outfall 1 for the 25-year storm. We note that these increases are small (0.1 cfs) and that the proposed design has decreased the impervious area of the site and uses small detention areas for stormwater. The small increase in stormwater post construction is not likely to be a concern. The applicant has applied for a waiver of this standard. In addition, the post-construction O&M plan incorporates practices that ensure proper functioning of the on-site system in the future.

16.7.11.E. Vehicular Traffic

16.7.11.E.(5)(b). The fire lane for the northern building should be shown on the plan. We note that the fire lane for the southern (residential) building is indicated but none is shown for the northern building.

16.7.11.H. Exterior Lighting

16.7.11.H.(2)(a). The uniformity ratio for the access drive (s) should be shown on the plan. It appears that the uniformity ratio of the parking lots does not meet the standard.

General Comments

We have the following comments on the plans that remain unaddressed:

1. The plans should contain details of the wetland delineation (including the date) and be stamped by a wetland scientist.
2. The plans should contain a cover page with a sheet index.

Should you have any questions, please do not hesitate to call.

Very truly yours,

CMA ENGINEERS, INC.

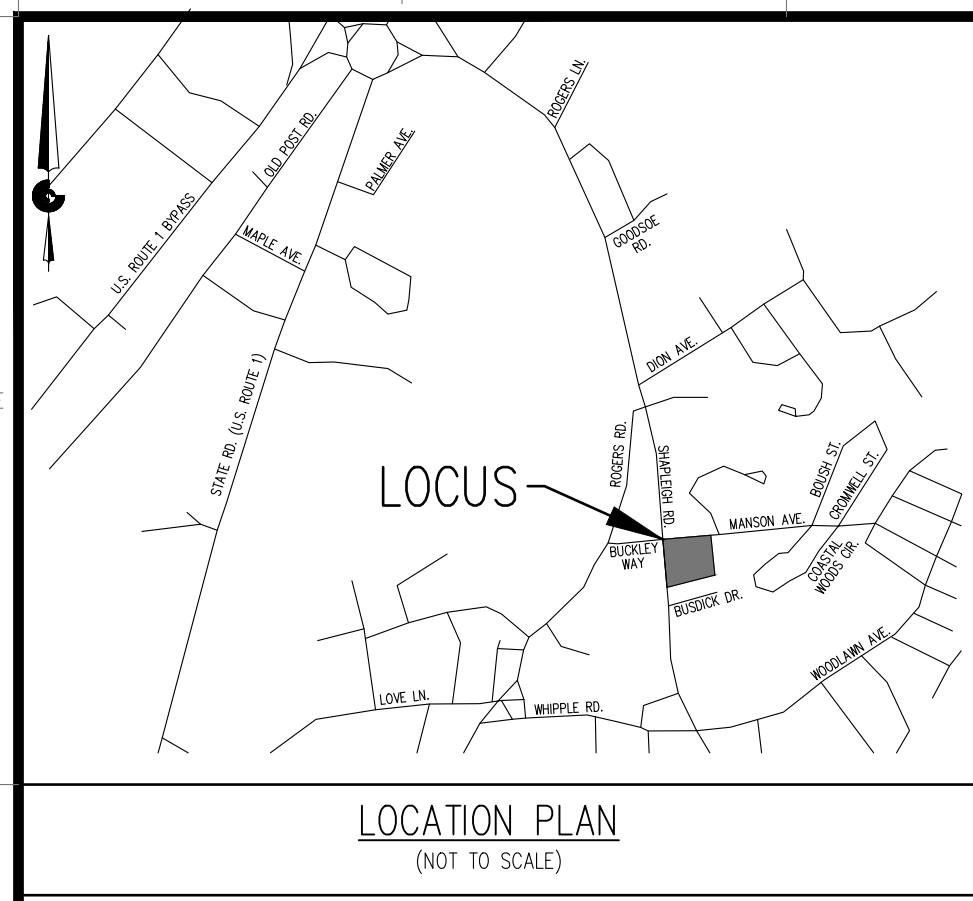


Jodie Bray Strickland, P.E.

Senior Project Engineer

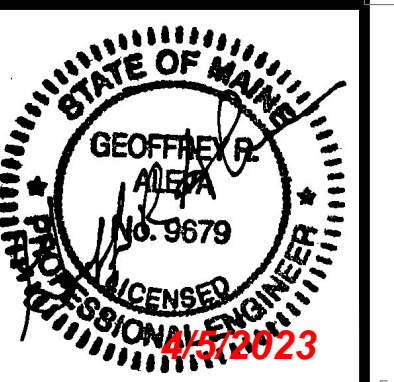
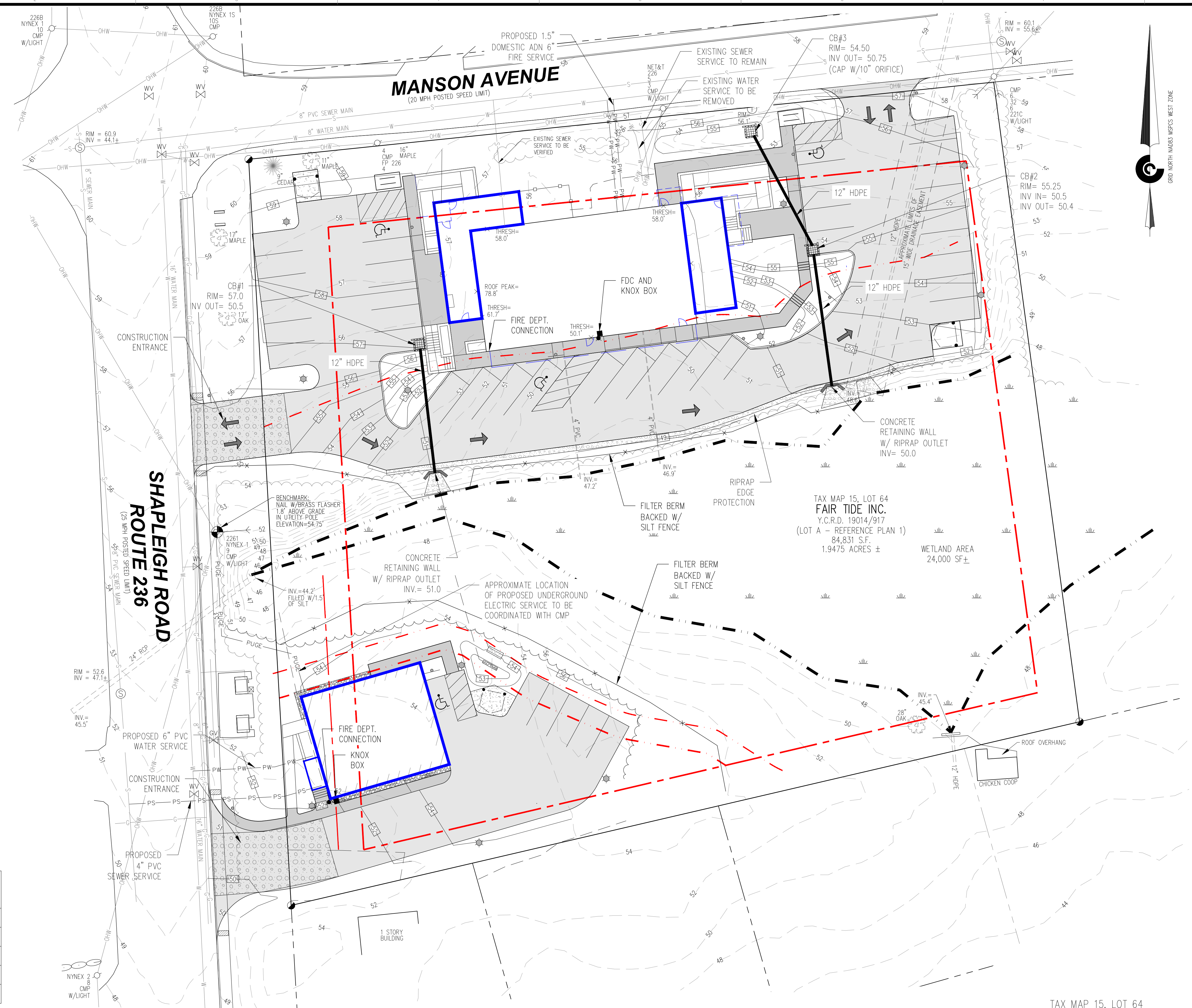
JBS/kao

cc: Geoffrey Aleva, P.E., Civil Consultants



LEGEND:

16808/436	DEED BOOK/PAGE NUMBER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
AP	ACCESS PANEL
CLF	CHAIN LINK FENCE
CONC.	CONCRETE
CS	CRUSHED STONE
HDPE	HIGH DENSITY POLYETHYLENE
INV.	INVERT
LPG	LIQUEFIED PETROLEUM GAS
MISC.	MISCELLANEOUS
N/F	NOW OR FORMERLY
PVC	POLYVINYL CHLORIDE
RETWALL	RETAINING WALL
RCP	REINFORCED CONCRETE PIPE
S.F.	SQUARE FEET
Y.C.R.D.	YORK COUNTY REGISTRY OF DEEDS
UTILITY POLE	UTILITY POLE
GUY WIRE	GUY WIRE
OVERHEAD WIRES	OVERHEAD WIRES
LIGHT POLE	LIGHT POLE
TELEPHONE MANHOLE	TELEPHONE MANHOLE
CATCH BASIN	CATCH BASIN
SANITARY SEWER MANHOLE	SANITARY SEWER MANHOLE
APPROXIMATE UNDERGROUND SANITARY SEWER LINE	APPROXIMATE UNDERGROUND SANITARY SEWER LINE
WATER VALVE	WATER VALVE
APPROXIMATE UNDERGROUND WATER LINE	APPROXIMATE UNDERGROUND WATER LINE
GAS VALVE	GAS VALVE
BUSH OR SHRUB	BUSH OR SHRUB
CONIFEROUS TREE	CONIFEROUS TREE
DECIDUOUS TREE	DECIDUOUS TREE
STUMP	STUMP
SIGN	SIGN
CONTIGUOUS OWNERSHIP	CONTIGUOUS OWNERSHIP
EXISTING IRON PIPE (AS NOTED)	EXISTING IRON PIPE (AS NOTED)
EXISTING IRON ROD/REBAR (AS NOTED)	EXISTING IRON ROD/REBAR (AS NOTED)
EXISTING DRILL HOLE	EXISTING DRILL HOLE
5/8" REBAR W/CAP "CIVIL CONSULT PLS 2362" TO BE SET	5/8" REBAR W/CAP "CIVIL CONSULT PLS 2362" TO BE SET
WETLAND	WETLAND
STONE WALL	STONE WALL
LOCUS PARCEL BOUNDARY LINE	LOCUS PARCEL BOUNDARY LINE
APPROXIMATE ABUTTING PARCEL BOUNDARY LINE	APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
EASEMENT BOUNDARY LINE	EASEMENT BOUNDARY LINE
BEARING AS SHOWN ON REFERENCE PLAN 1	BEARING AS SHOWN ON REFERENCE PLAN 1
SURVEY BENCHMARK (AS NOTED)	SURVEY BENCHMARK (AS NOTED)
THRESHOLD ELEVATION	THRESHOLD ELEVATION
SPOT ELEVATION	SPOT ELEVATION
PROPOSED CONTOUR	PROPOSED CONTOUR
PROPOSED SPOT GRADE	PROPOSED SPOT GRADE
PROPOSED WATER SERVICE	PROPOSED WATER SERVICE
PROPOSED SEWER SERVICE	PROPOSED SEWER SERVICE
PROPOSED ELECTRIC SERVICE	PROPOSED ELECTRIC SERVICE
PROPOSED DRAIN LINE	PROPOSED DRAIN LINE
PROPOSED LIGHT POLE	PROPOSED LIGHT POLE
PROPOSED SIGN (AS NOTED)	PROPOSED SIGN (AS NOTED)
PROPOSED SOLID FENCE	PROPOSED SOLID FENCE
TOP/BOTTOM STEP ELEVATIONS	TOP/BOTTOM STEP ELEVATIONS
VERTICAL GRANITE CURB	VERTICAL GRANITE CURB
FILTER BERM BACKED W/ SILT FENCE	FILTER BERM BACKED W/ SILT FENCE
HAYBALE BARRIER	HAYBALE BARRIER
PROPOSED RIPRAP EDGE PROTECTION	PROPOSED RIPRAP EDGE PROTECTION
PROPOSED UNDERDRAINED STONE TRENCH	PROPOSED UNDERDRAINED STONE TRENCH



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 South Berwick
 Maine
 03908
 207-384-2550
 www.civcon.com

NO.	REVISIONS	DATE
1	REVISE FOR FINAL REVIEW	4/5/23

RECORD OWNER:
 FAIR TIDE, INC.
 OWNER ADDRESS:
 15 STATE ROAD
 KITTERY, ME 03904

PROPOSED BUILDING LAYOUT
 TAX MAP 15, LOT 64
 22 SHAPLEIGH ROAD
 KITTERY, MAINE

PREPARED FOR:
 FAIR TIDE, INC.
 15 STATE ROAD, KITTERY, MAINE 03904

DATE: 01/05/2023
 DRAWN BY: JAA/JAA
 CHECKED BY: JAA/JAA
 APPROVED BY:

UTILITY & EROSION CONTROL PLAN

PROJECT NO: 21-335.00

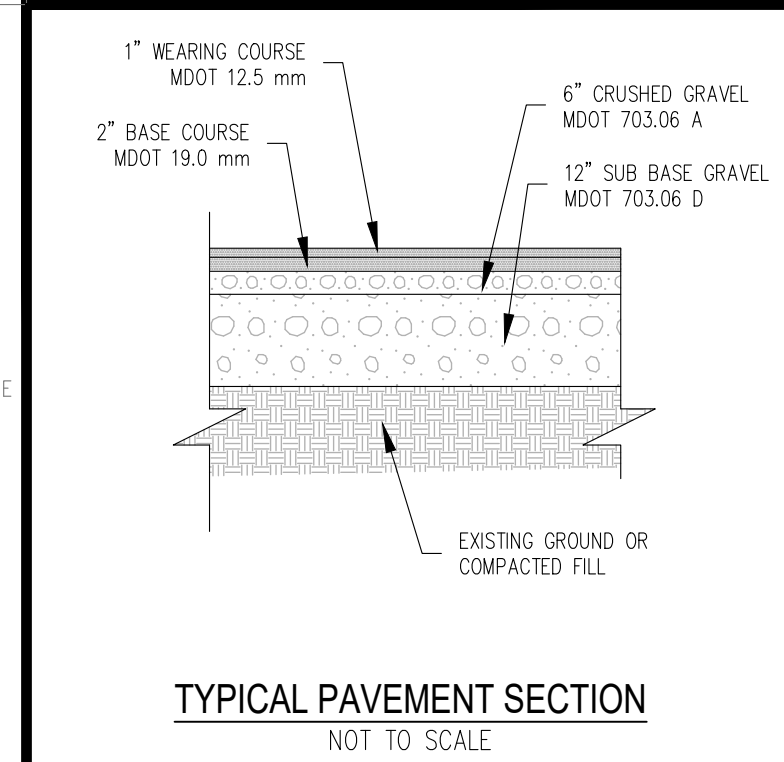
L2

SHEET: 2 OF 4

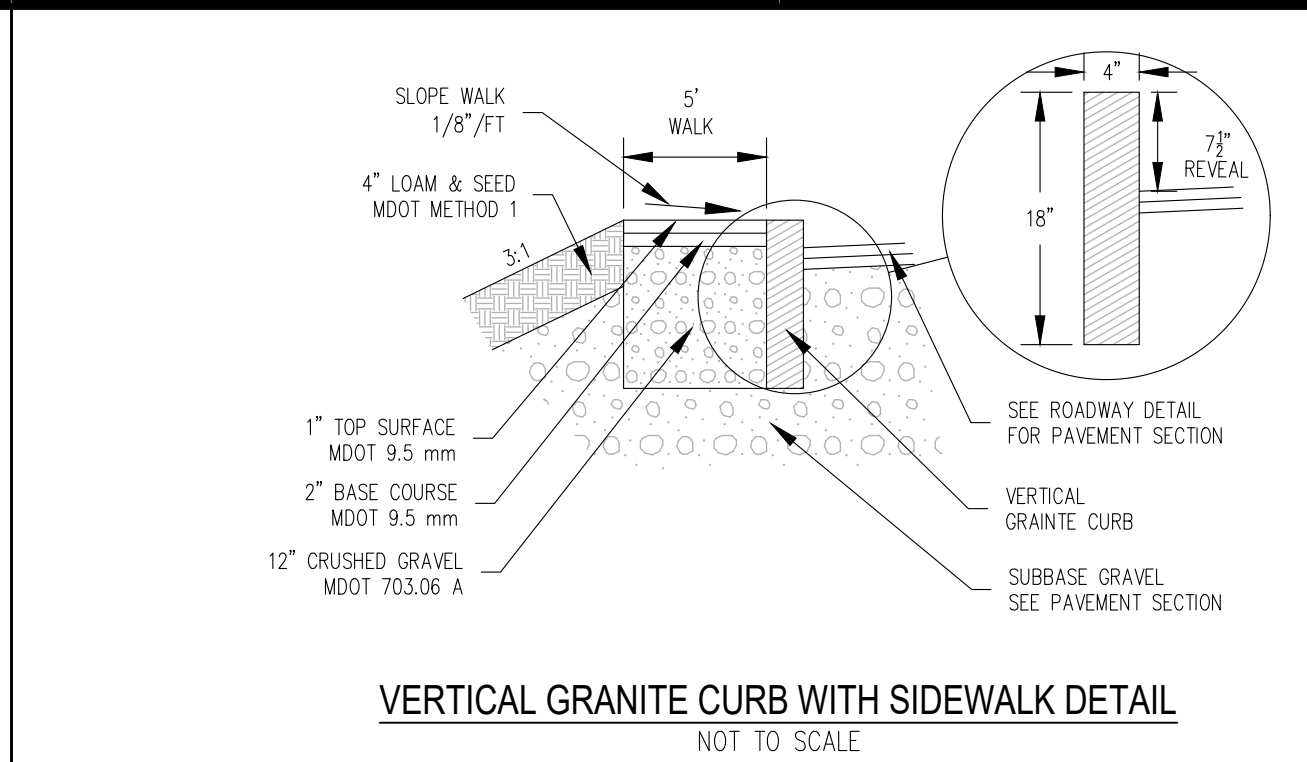
PLAN APPROVED BY TOWN OF KITTERY PLANNING BOARD

CHAIR

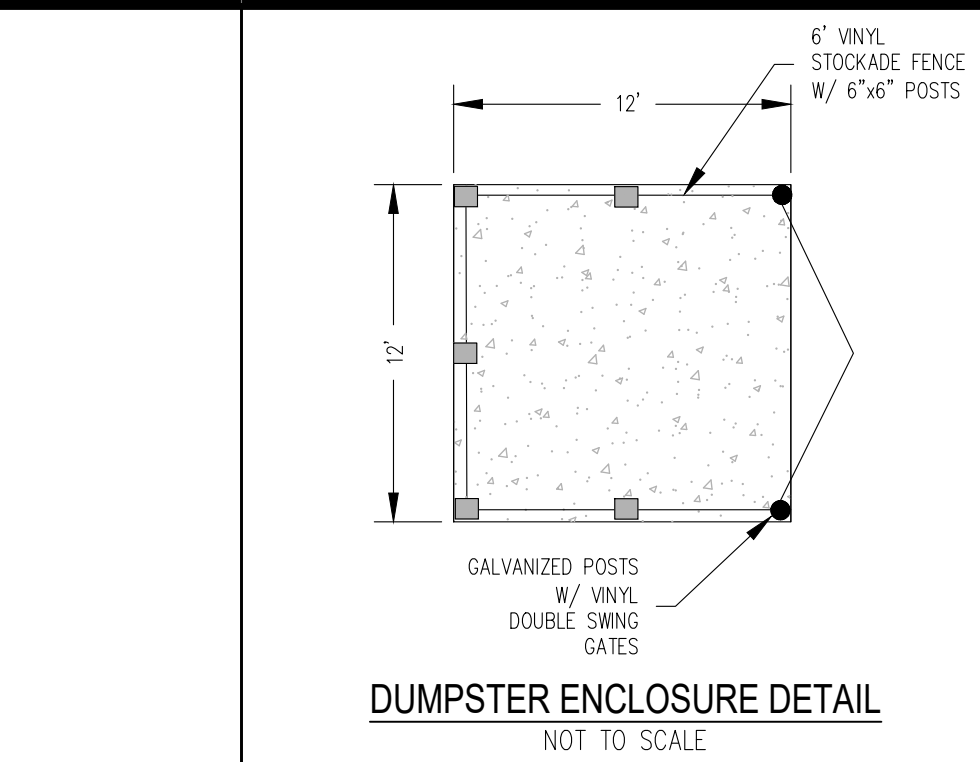
DATE: _____



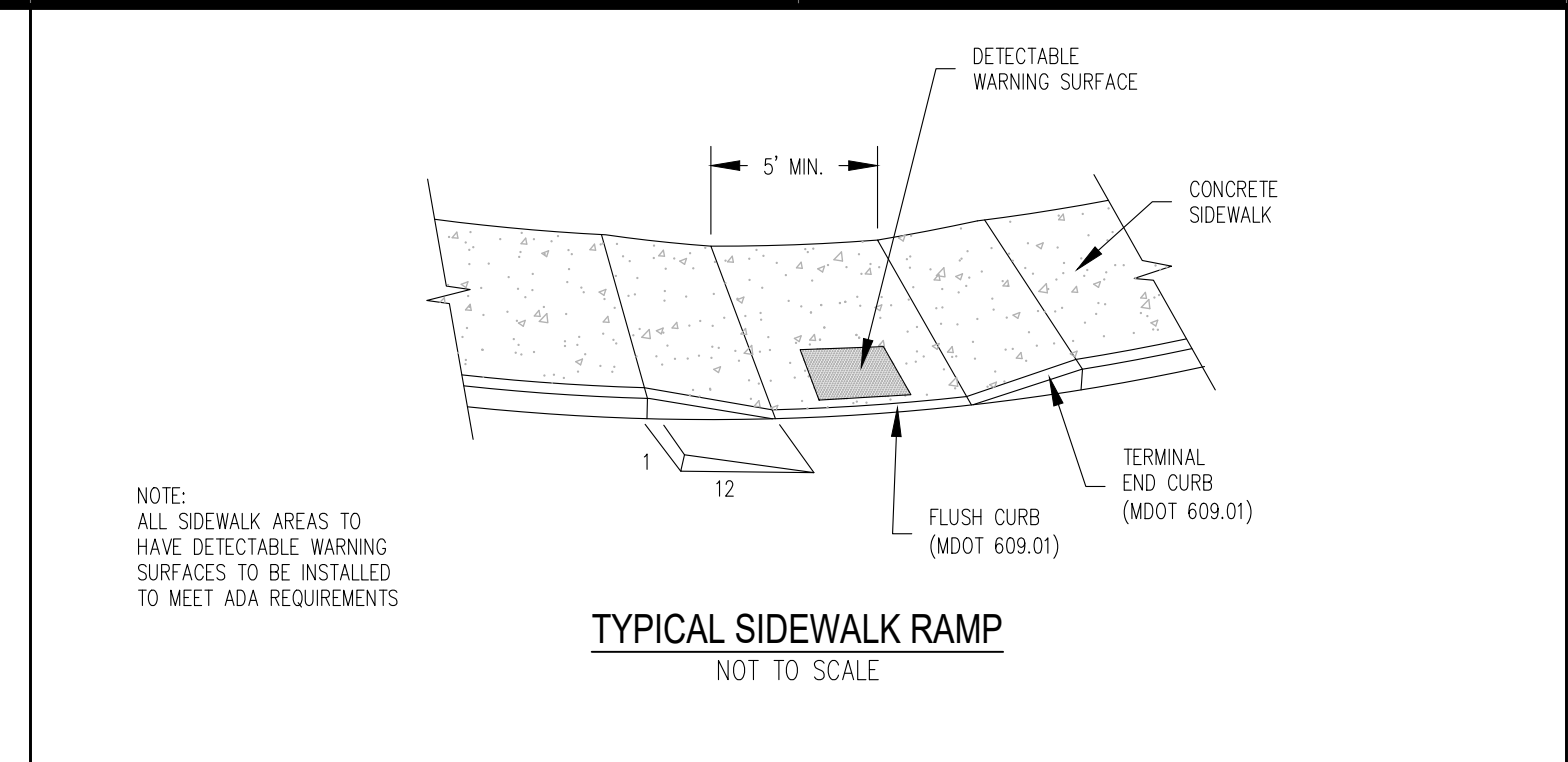
TYPICAL PAVEMENT SECTION
NOT TO SCALE



VERTICAL GRANITE CURB WITH SIDEWALK DETAIL
NOT TO SCALE



DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

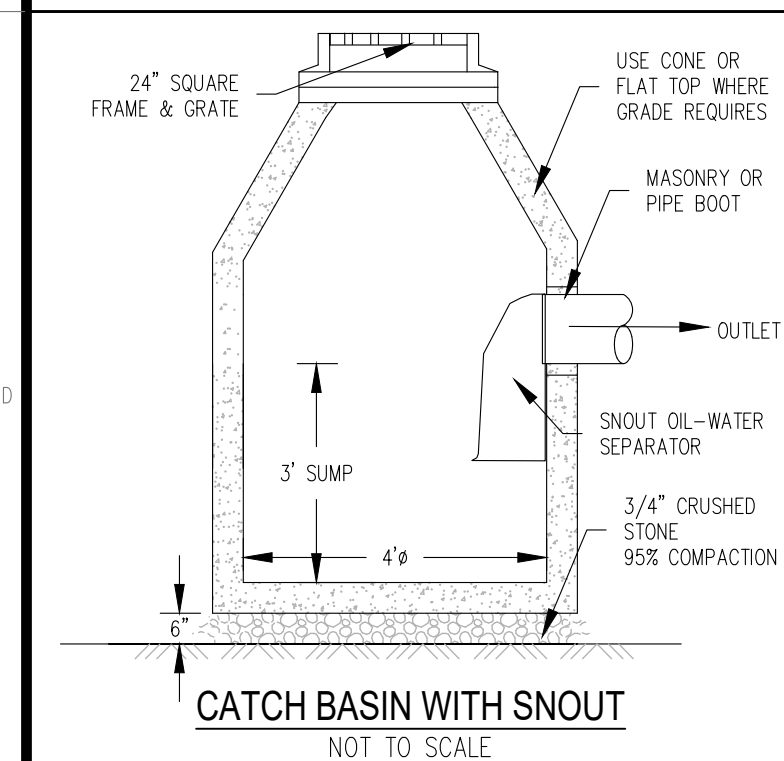


TYPICAL SIDEWALK RAMP
NOT TO SCALE

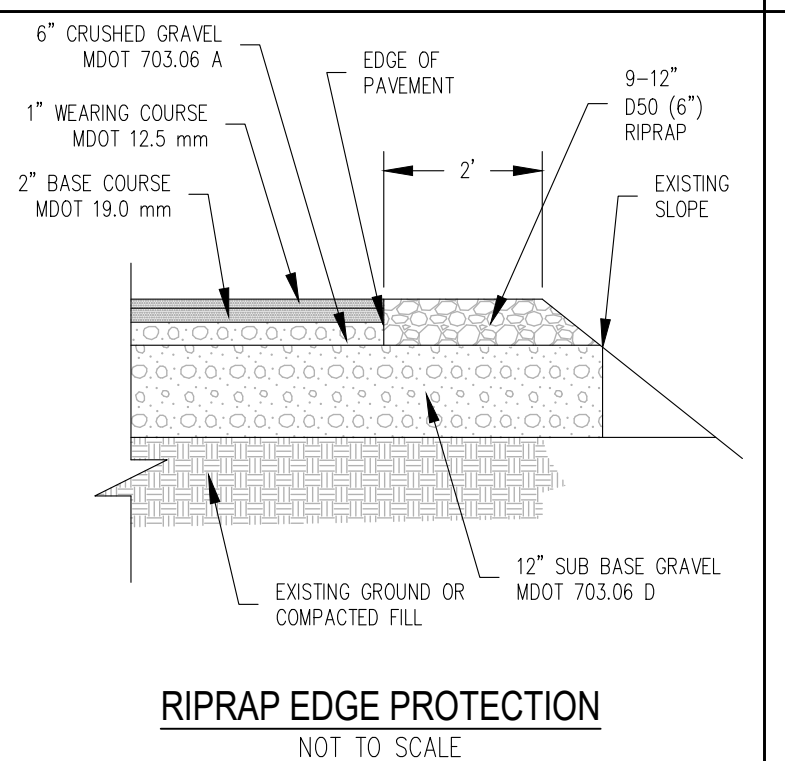
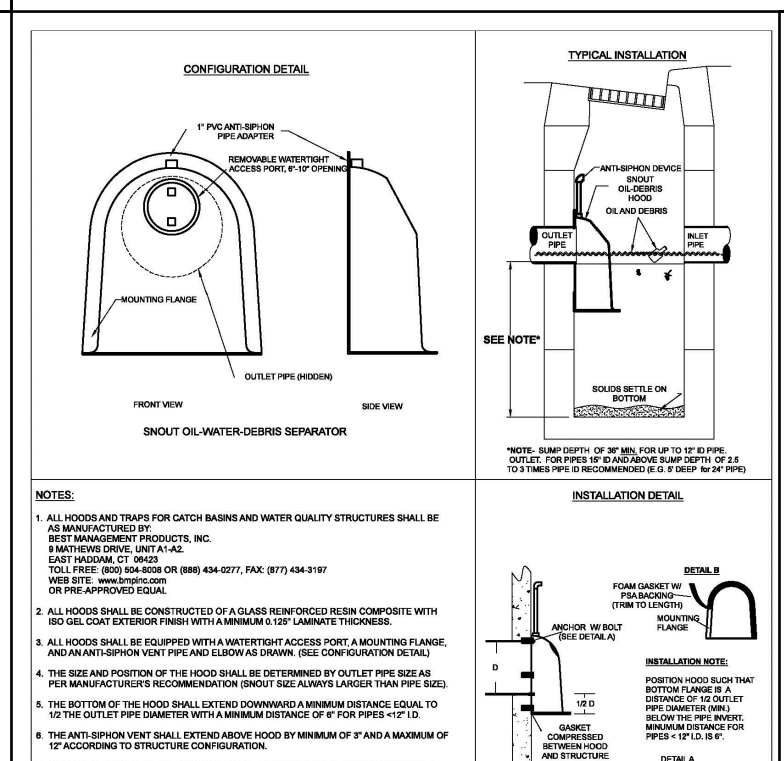
EROSION AND SEDIMENT CONTROL PRACTICES

- NO SOIL SHALL BE DISTURBED DURING THE PERIOD OF MARCH 1 THROUGH APRIL 15, NOR DURING ANY OTHER PERIOD WHEN SOILS ARE SATURATED DUE TO RAIN OR SNOW MELT.
- DISTURBED SOILS SHALL BE STABILIZED WITHIN ONE (1) WEEK FROM THE TIME IT WAS LAST ACTIVELY WORKED USING TEMPORARY OR PERMANENT MEASURES SUCH AS PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKET, OR OTHER COMPARABLE MEASURES.
- HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF AT LEAST ONE (1) BALE PER 500 SQUARE FEET (1-2 TONS PER ACRE).
- IF MULCH IS LIKELY TO BE REMOVED DUE TO TO STEEP SLOPES OR WIND, IT SHALL BE ANCHORED UNTIL A CATCH OF VEGETATION IS ESTABLISHED OVER THE ENTIRE DISTURBED AREA.
- IN ADDITION TO PLACEMENT OF RIPRAP, MULCH OR EROSION CONTROL BLANKETS, ADDITIONAL STEPS SHALL BE TAKEN WHERE NECESSARY IN ORDER TO PREVENT SEDIMENTATION OF THE WATER. EVIDENCE OF SEDIMENTATION INCLUDES VISIBLE GULLY EROSION, DISCOLORATION OF WATER BY SUSPENDED PARTICLES AND SLUMPING OF BANKS, SOIL FENCES, STAKED HAY BALES AND OTHER SEDIMENTATION CONTROL MEASURES, WHERE PLANNED FOR, SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WORK, BUT SHALL ALSO BE INSTALLED WHEREVER NECESSARY DUE TO SEDIMENTATION.
- MULCH OR OTHER TEMPORARY MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS PERMANENTLY STABILIZED WITH VEGETATION OR OTHER PERMANENT CONTROL MEASURES AFTER WHICH TEMPORARY MEASURES WILL BE REMOVED.
- PERMANENT RE-VEGETATION OF ALL DISTURBED AREAS, USING NATIVE PLANT MATERIAL WHEN POSSIBLE, SHALL OCCUR WITHIN 30 DAYS FROM THE TIME THE AREAS WERE LAST ACTIVELY WORKED, OR FOR FALL AND WINTER ACTIVITIES, BY JUNE 15, EXCEPT WHERE PRECLUDED BY THE TYPE OF ACTIVITY (E.G. RIPRAP, ROAD SURFACES, ETC.). THE VEGETATIVE COVER SHALL BE MAINTAINED.
- DISPOSAL OF COLLECTED DEBRIS MUST BE IN CONFORMANCE WITH MAINE SOLID WASTE LAW, TITLE 38 MRSA SECTION 1301 ET. SEQ.
- LIME AND FERTILIZER APPLICATION RATES SHALL NOT EXCEED THE FOLLOWING:
GROUND LIMESTONE: 3 TONS/ACRE (130 LBS./1000 S.F.)
FERTILIZER, 10-10-10 OR EQUIVALENT: 600 LBS./ACRE (14 LBS./1000 S.F.)
FERTILIZER SHALL NOT BE APPLIED BEFORE START OF THE GROWING SEASON NOR AFTER SEPTEMBER 30. FERTILIZED AREAS SHALL BE MULCHED TO REDUCE OFF-SITE TRANSPORT OF NUTRIENTS UNTIL USED BY VEGETATIVE GROWTH.

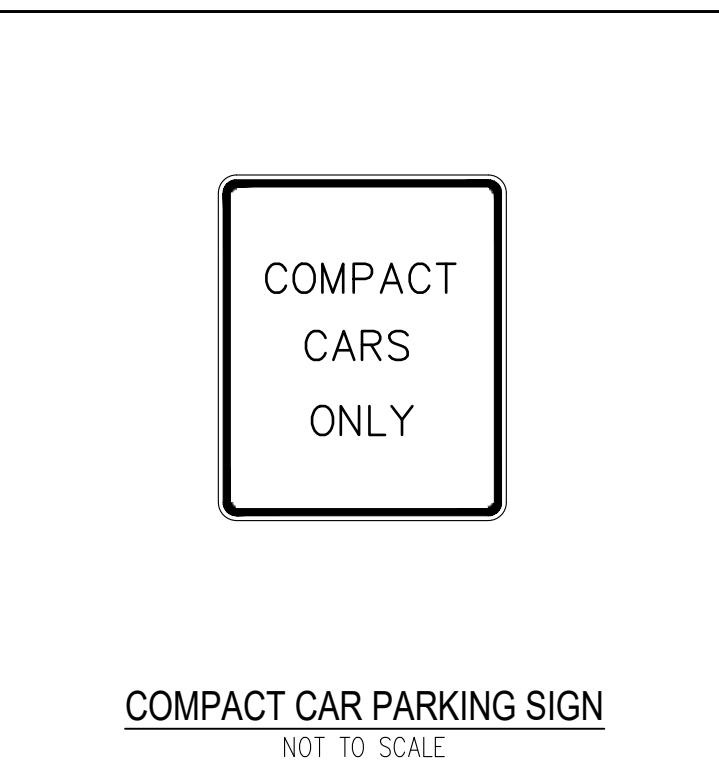
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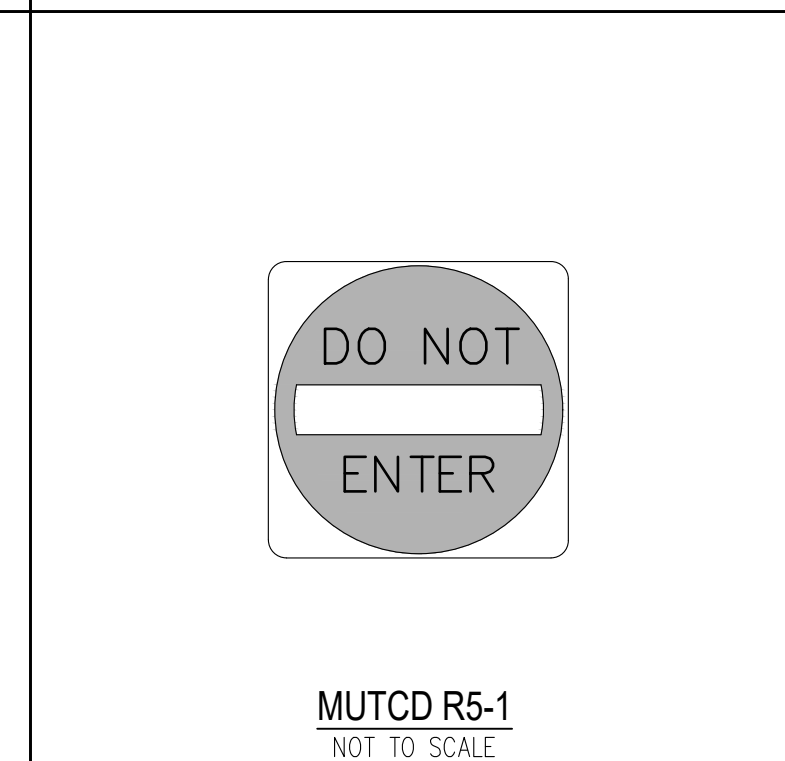
CATCH BASIN WITH SNOUT
NOT TO SCALE



RIPRAP EDGE PROTECTION
NOT TO SCALE



COMPACT CAR PARKING SIGN
NOT TO SCALE



MUTCD R5-1
NOT TO SCALE



MUTCD R8-31
NOT TO SCALE

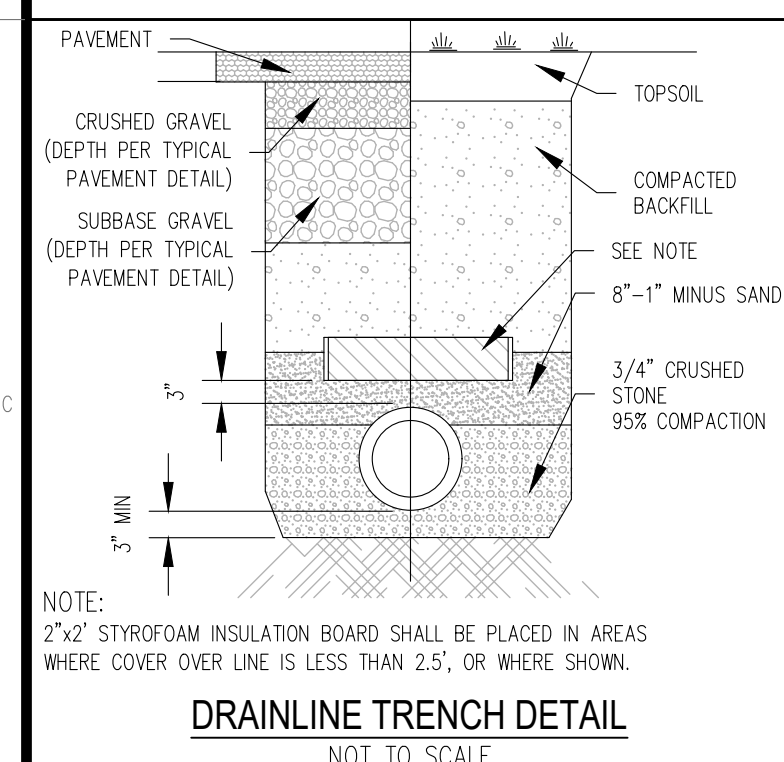
SEEDING MIXTURE AND SCHEDULE:

SPREAD TOPSOIL UNIFORMLY 6" DEEP OVER AREAS TO BE RECLAIMED. THE FOLLOWING SEED MIXTURE SHALL BE USED:

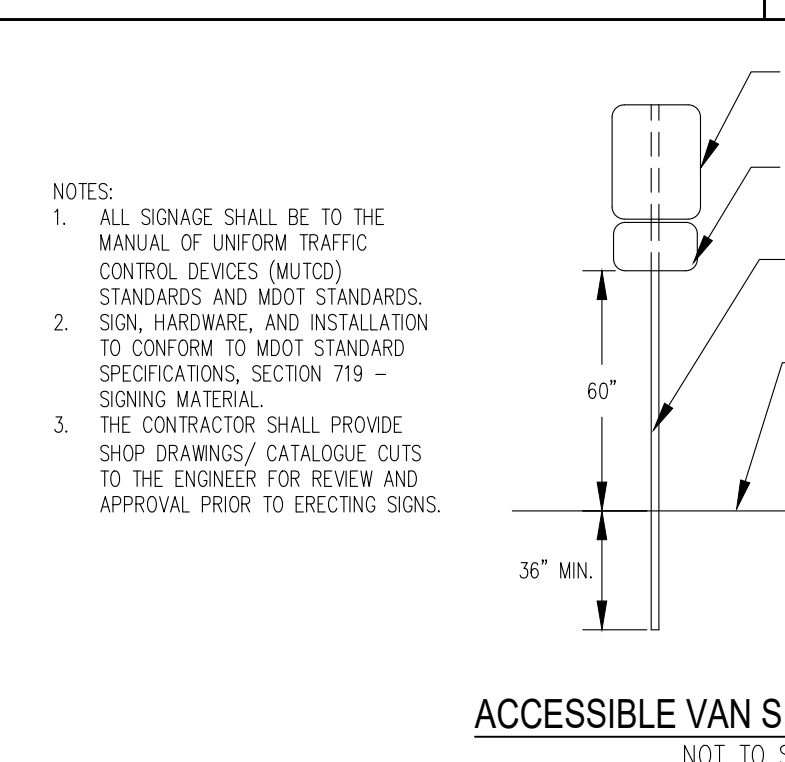
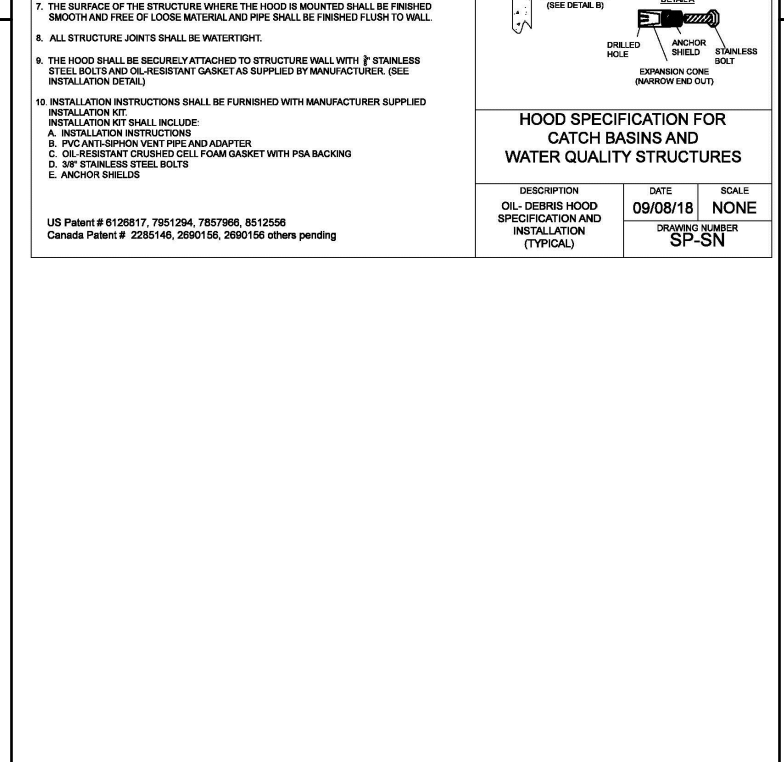
LAWNS:
KENTUCKY BLUEGRASS 1.60 LBS./1000 S.F.
PERENNIAL RYE GRASS 0.40 LBS./1000 S.F.
TOTAL 2.00 LBS./1000 S.F.

APPLY LIME AND FERTILIZER AS SPECIFIED UNDER THE EROSION AND SEDIMENTATION CONTROL NOTES. WORK INTO THE TOP (4) INCHES OF SOIL PRIOR TO SEEDING. AFTER SEEDING, APPLY MULCH HAY AS SPECIFIED. ON FLAT AREAS AND NOT EXPOSED TO WIND, THE MULCH WILL BE ANCHORED BY NETTING DOWN. IN OTHER AREAS, JUTE NETTING SHALL BE USED FOR ANCHORAGE. THE ABOVE SEEDING SCHEDULE IS APPLICABLE IF SEEDING DURING THE GROWING SEASON (APRIL 15 TO JUNE 15 AND AUGUST 30 TO SEPTEMBER 30). BETWEEN JUNE 15 AND AUGUST 30, SEEDING WILL BE DELAYED UNTIL AUGUST 30. IF SOIL IS DISTURBED BETWEEN OCTOBER 1 AND NOVEMBER 1, DELAY SEEDING UNTIL NOVEMBER 1. AFTER NOVEMBER 1 AND BEFORE A SNOW COVER FORMS, THE SAME PROCEDURE WILL BE FOLLOWED EXCEPT THE SEED RATE WILL BE DOUBLED. AFTER SNOW COVER AND BEFORE APRIL 15, SEEDING WILL BE DELAYED UNTIL APRIL 15. HAY MULCH WILL BE APPLIED AT A RATE OF 150 LBS./1000 SQUARE FEET. THIS WILL BE ANCHORED BY NON-ASPHALTIC TACKIFIER SPRAYED ON LAWNS AND JUTE NETTING IN DRAINAGE WAYS AND OTHER AREAS.

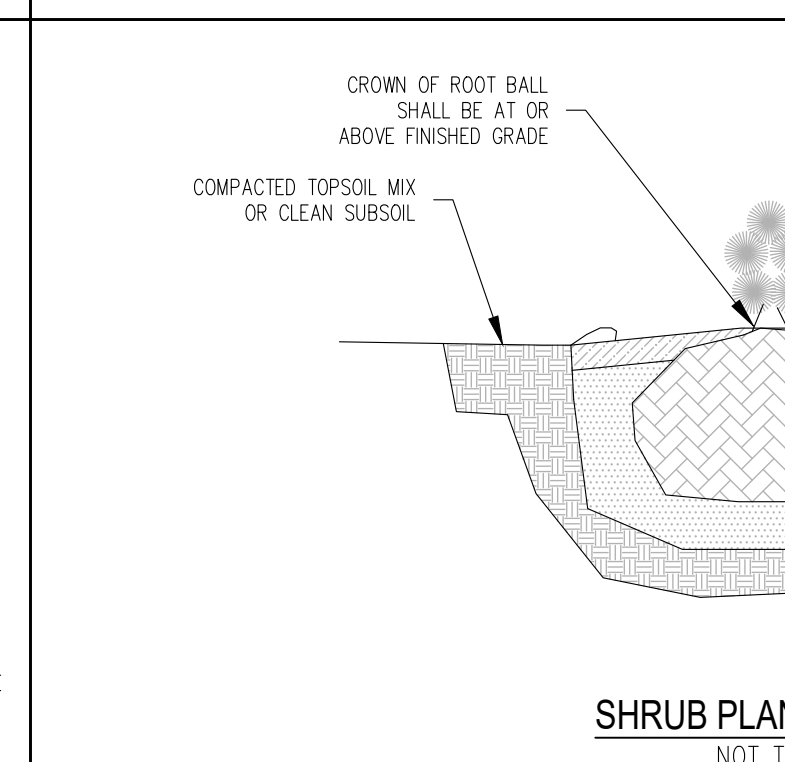
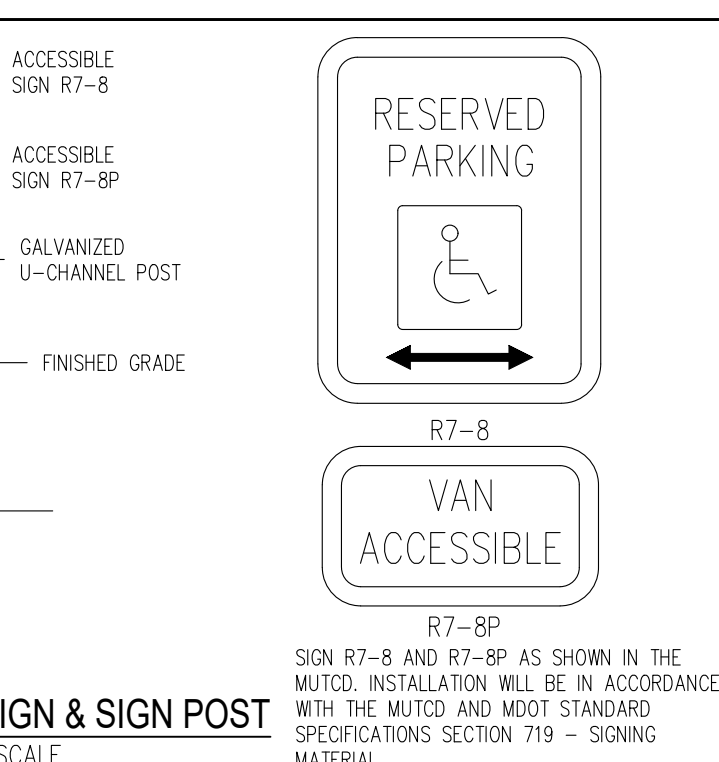
NO.	REVISIONS	DATE
1	REVISE FOR FINAL REVIEW	4/5/23



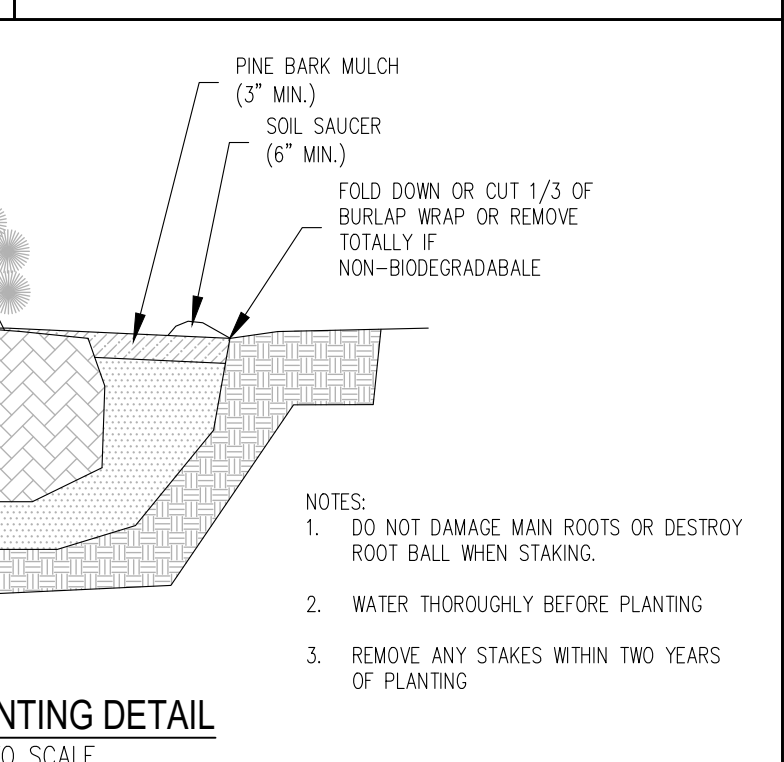
DRAINLINE TRENCH DETAIL
NOT TO SCALE



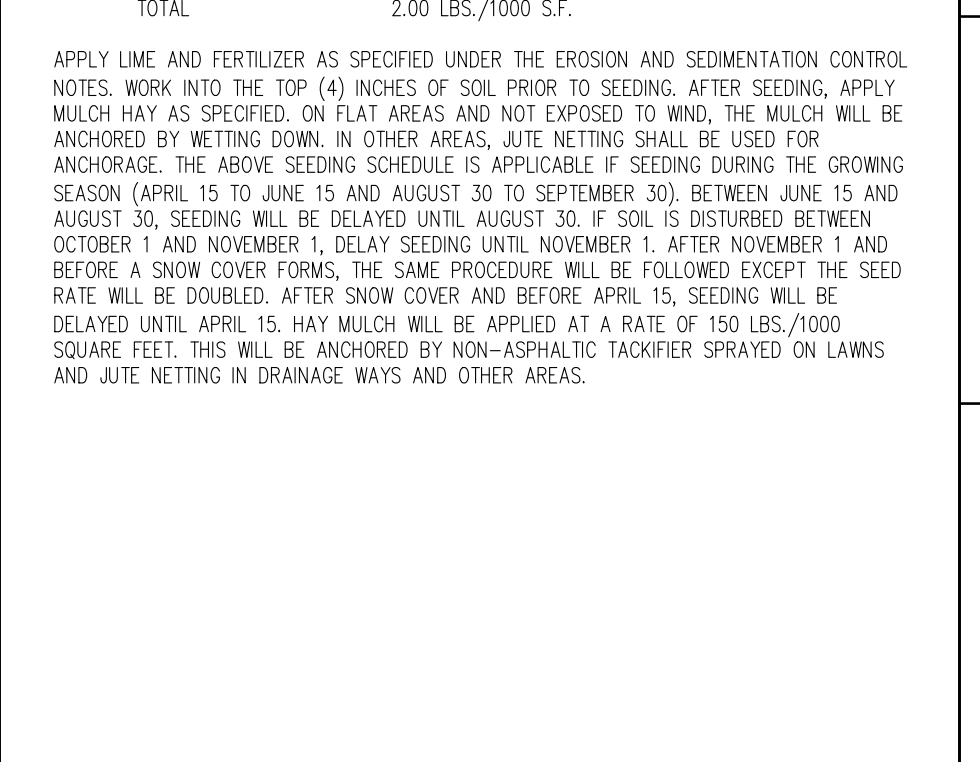
ACCESSIBLE VAN SIGN & SIGN POST
NOT TO SCALE



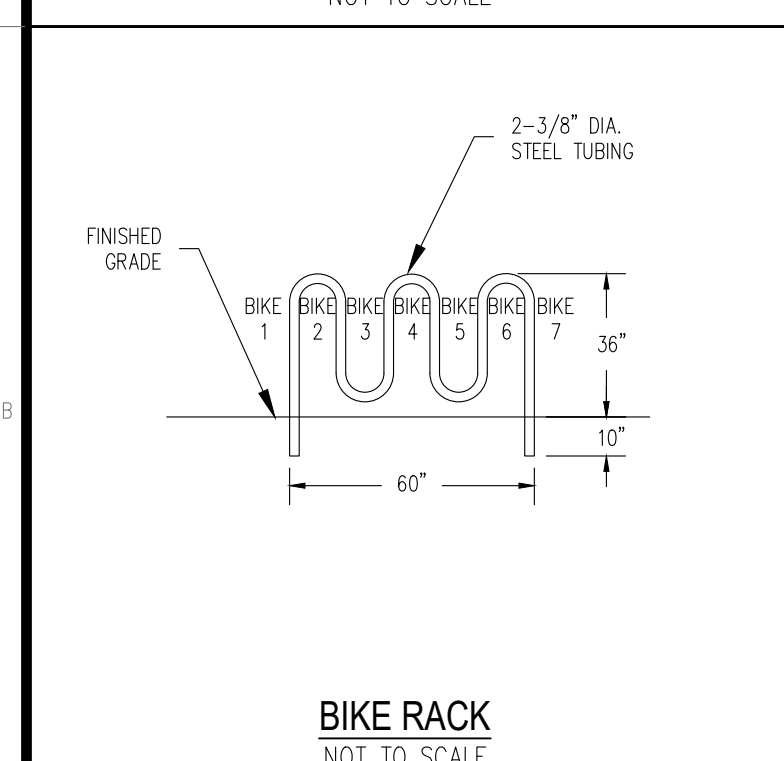
SHRUB PLANTING DETAIL
NOT TO SCALE



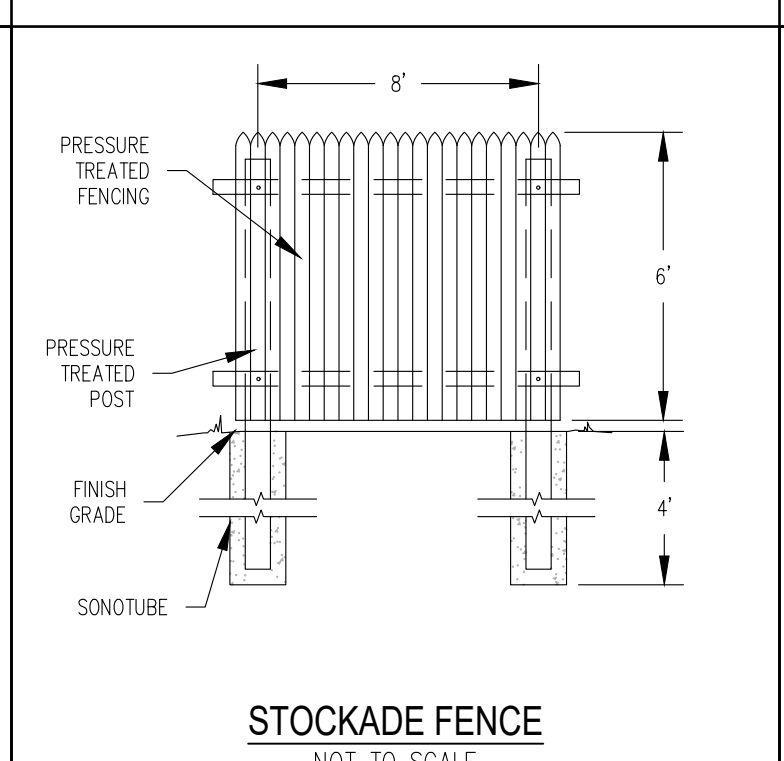
TREE PLANTING DETAIL
NOT TO SCALE



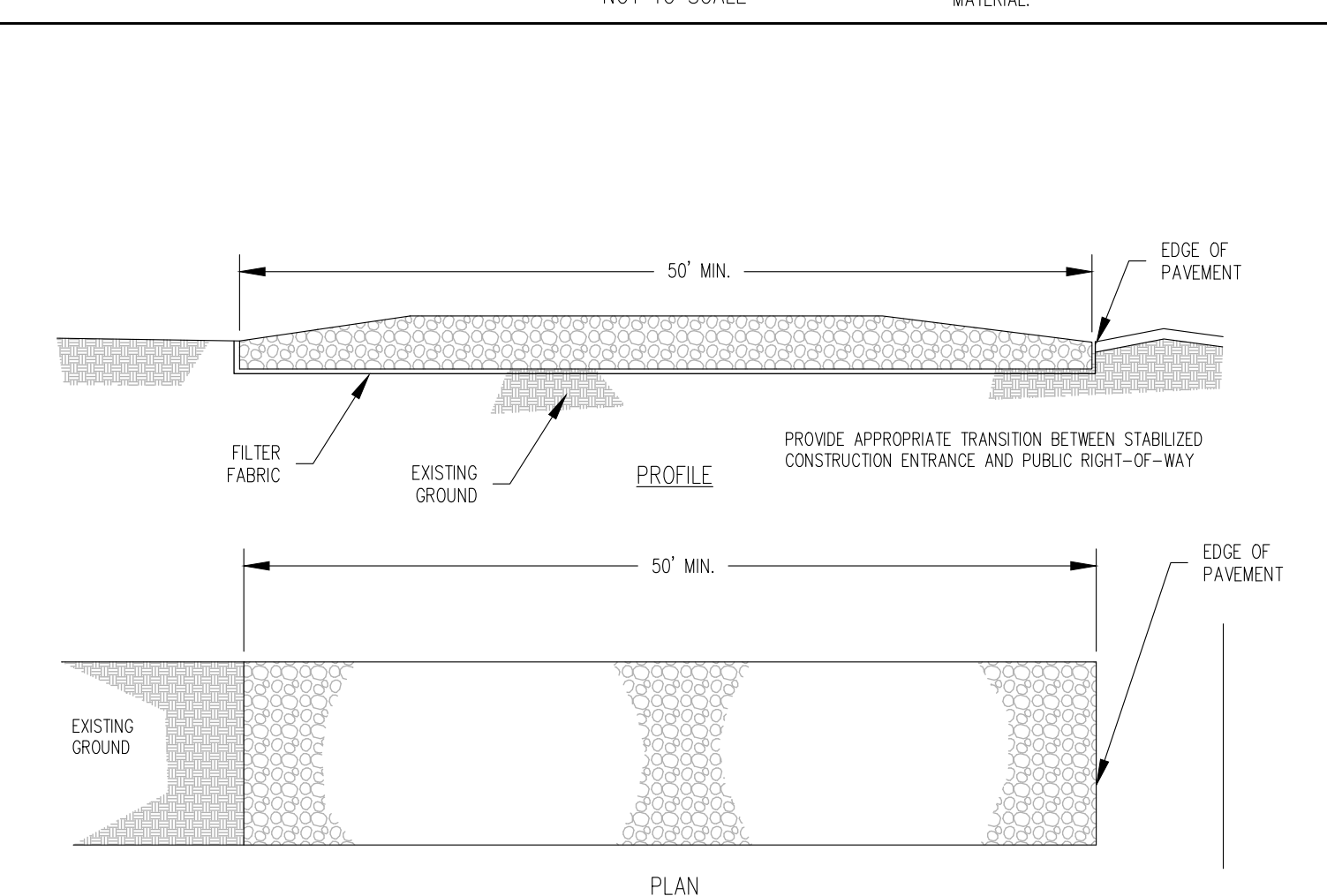
ROOF DRIP EDGE DETAIL
NOT TO SCALE



BIKE RACK
NOT TO SCALE



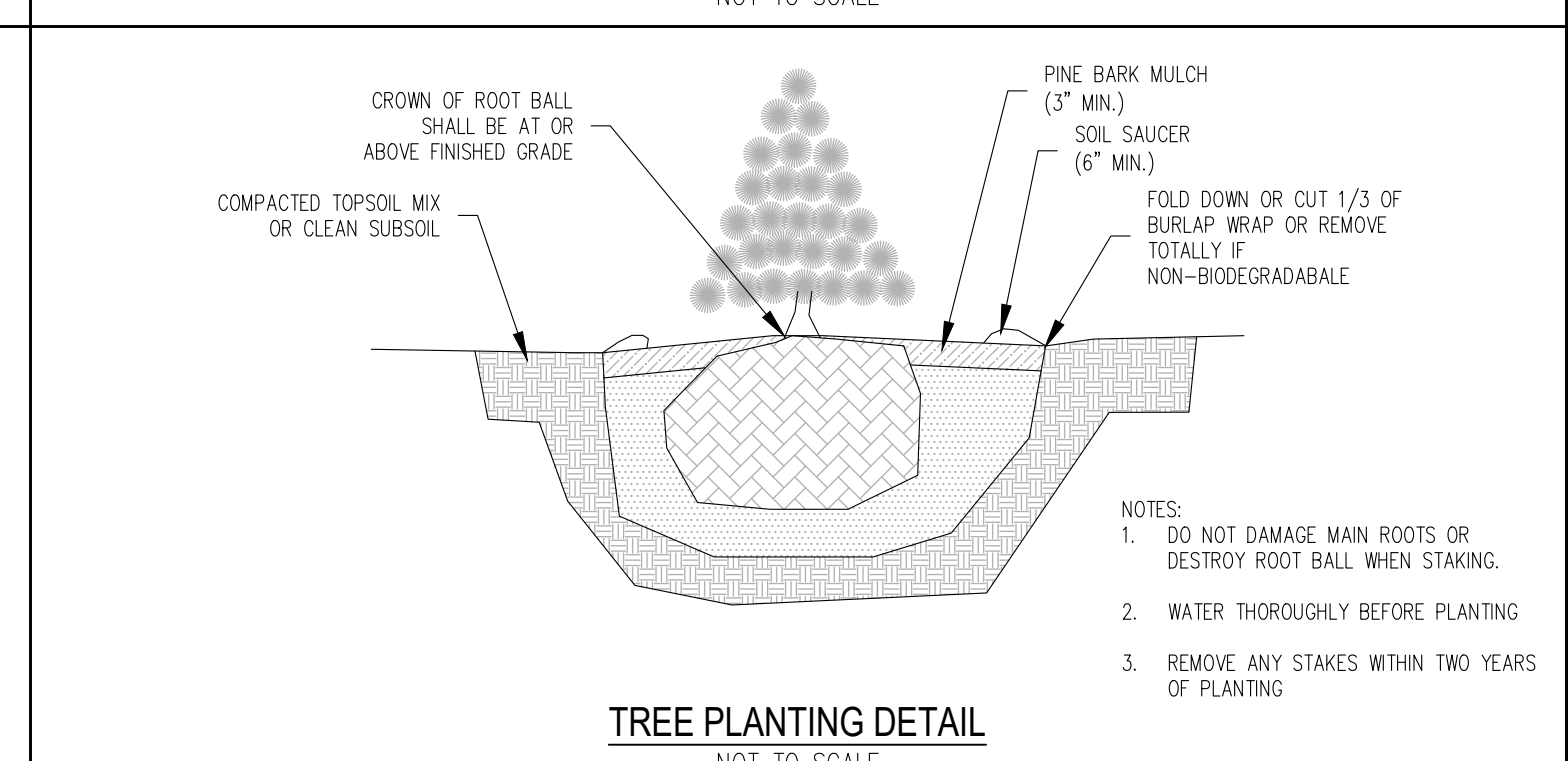
STOCKADE FENCE
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

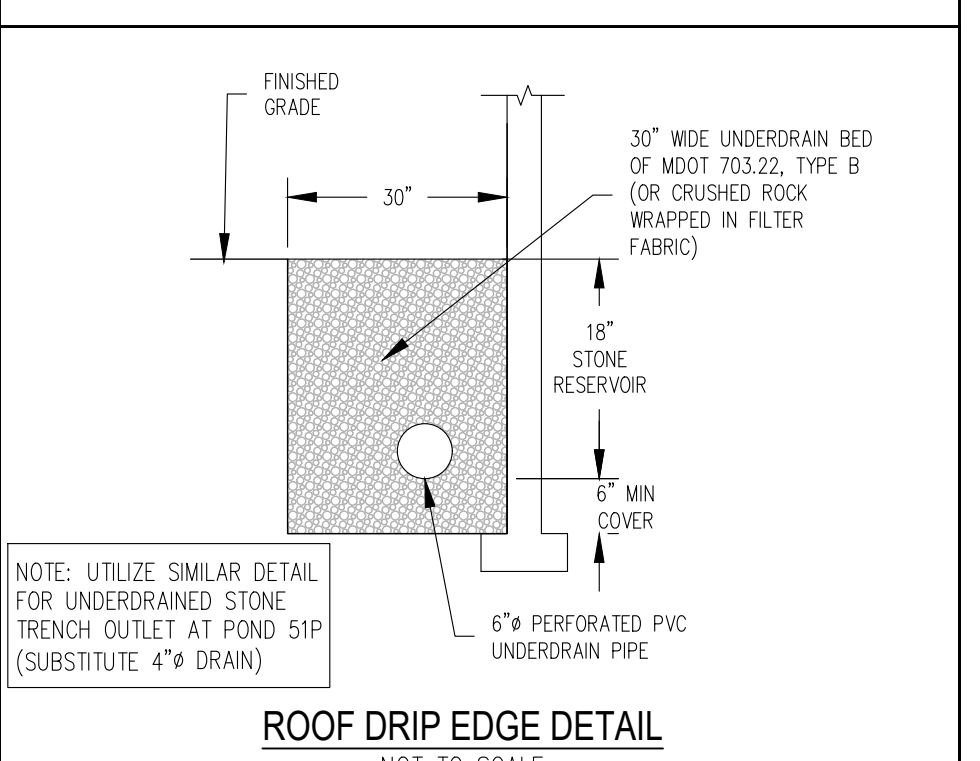
CONSTRUCTION SPECIFICATIONS

- STONE SIZE - AASHTO DESIGNATION HAS, SIZE NO 2 (2-1/2" TO 1-1/2"). USE CRUSHED STONE.
- LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
- THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
- WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
- WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATER COURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAROUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED, ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.



RIPRAP APRON PIPE OUTLET DETAIL
NOT TO SCALE

OULVERT	RIPRAP		APRON	
	Ø (IN)	THICKNESS (IN)	LENGTH L (FT)	WIDTH W (FT)
12" OR LESS	5"	12"	8'	3.0'
18"	8"	16"	8'	4.5'
24"	10"	20"	10'	6.0'
30"	12"	24"	12'	8.0'
36"	14"	30"	14'	10.0'



UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT ODSAFE (1-888-344-7233) FOR LOCATION OF ALL EXISTING UTILITIES.

DATE: 01/05/2023
DRAWN BY: JAA/GRA
CHECKED BY:
APPROVED BY:

CONSTRUCTION DETAILS

PROJECT NO: 21-335.00

L3

SHEET: 3 OF 4

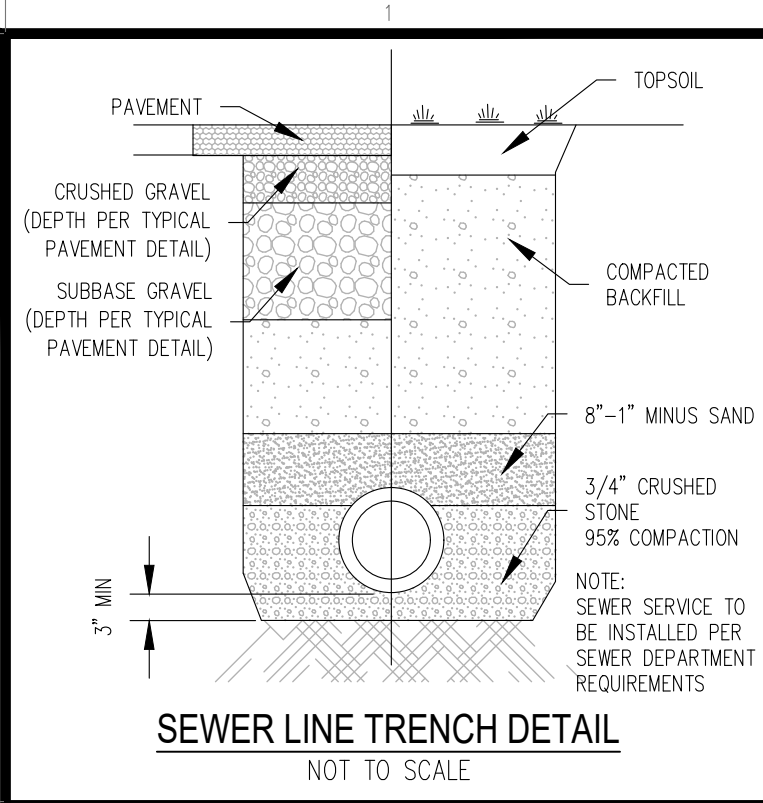
RECORD OWNER:
FAIR TIDE, INC.

OWNER ADDRESS:
15 STATE ROAD
KITTEERY, ME 03904

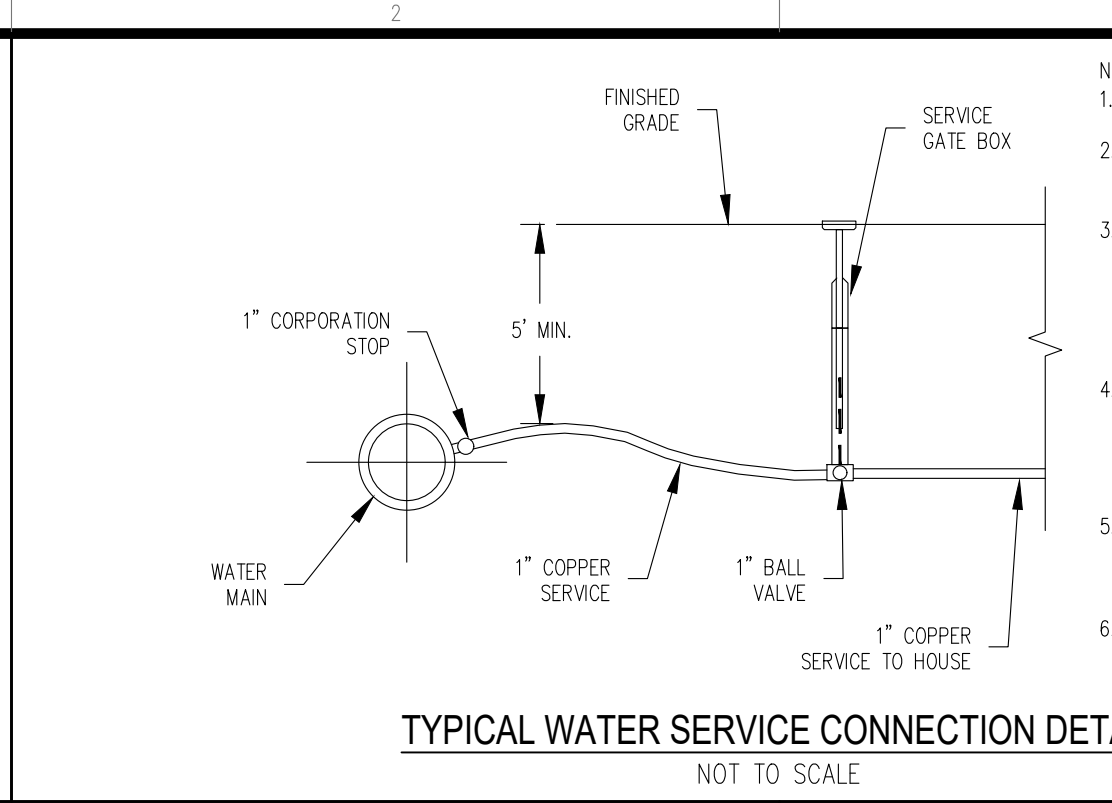
PROPOSED BUILDING LAYOUT
TAX MAP 15, LOT 64
22 SHAPLEIGH ROAD
KITTEERY, MAINE

PREPARED FOR:
FAIR TIDE, INC.
125 STATE ROAD KITTEERY, MAINE 03904

CLIENT ADDRESS:

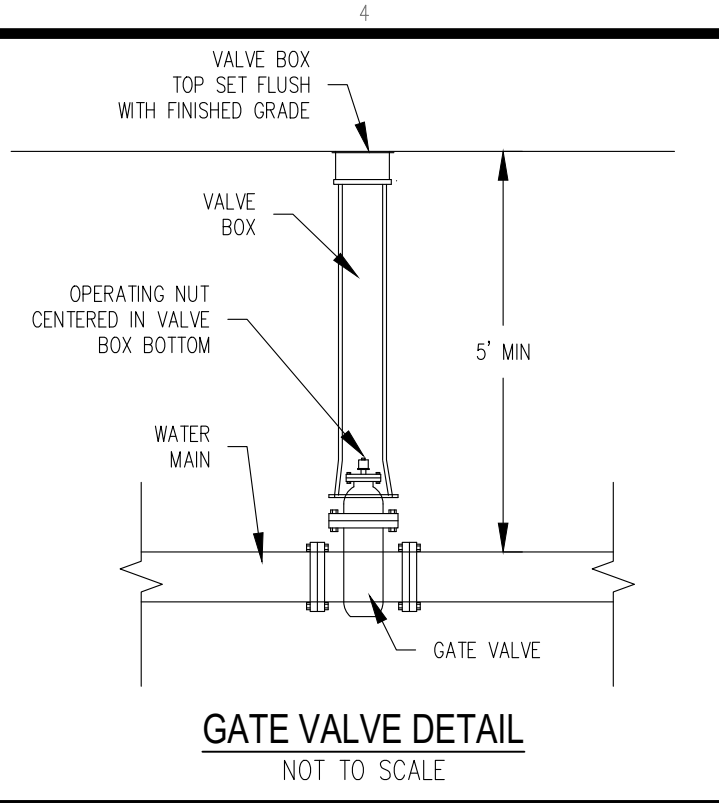


SEWER LINE TRENCH DETAIL
NOT TO SCALE



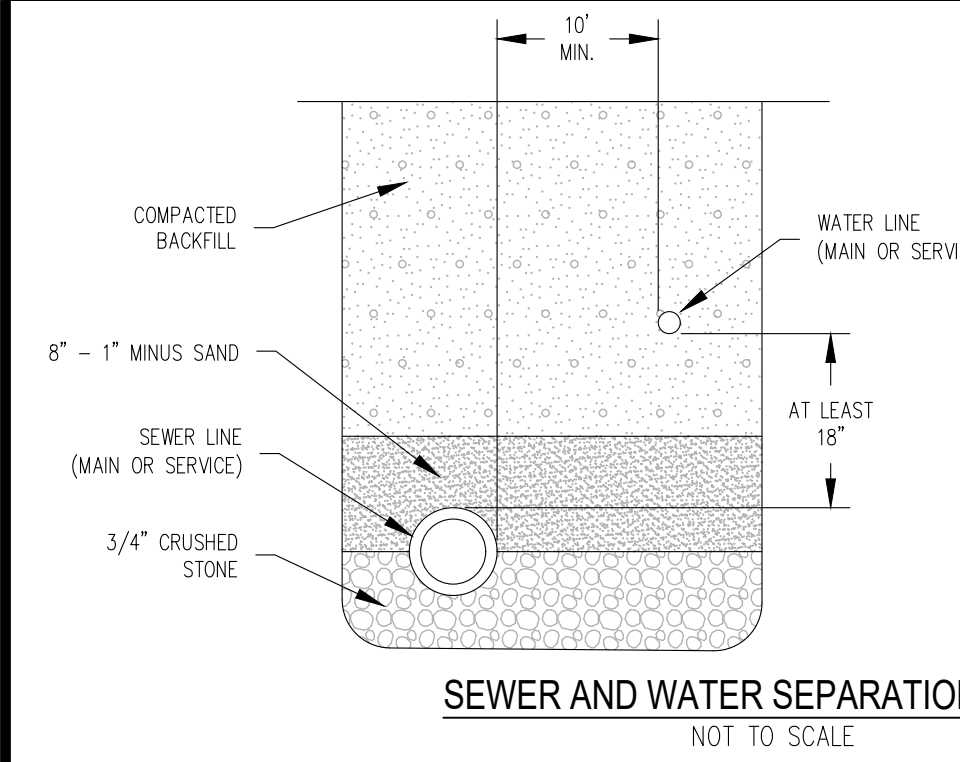
TYPICAL WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

NOTES:
 1. THE MINIMUM SERVICE SIZE SHALL BE 1".
 2. ALL MATERIAL SHALL CONFORM TO WATER DISTRICT SPECIFICATIONS.
 3. 1" DIRECT TAPS TO BE ALLOWED ON DUCTILE IRON WATER MAINS. 1-1/2" TAPS AND ABOVE SHALL USE AN APPROVED SADDLE BY THE WATER DISTRICT.
 4. A 1/2" STAINLESS STEEL ROD SHALL BE USED ON 1" AND 1-1/2" BALL VALVES. A 5/8" STAINLESS STEEL ROD SHALL BE USED ON 2" BALL VALVES.
 5. SHIPPING RINGS SHALL BE REMOVED FROM THE SERVICE GATE BOX PRIOR TO INSTALLATION.
 6. WATER SERVICE LINE TO BE INSTALLED PER WATER DEPARTMENT REQUIREMENTS



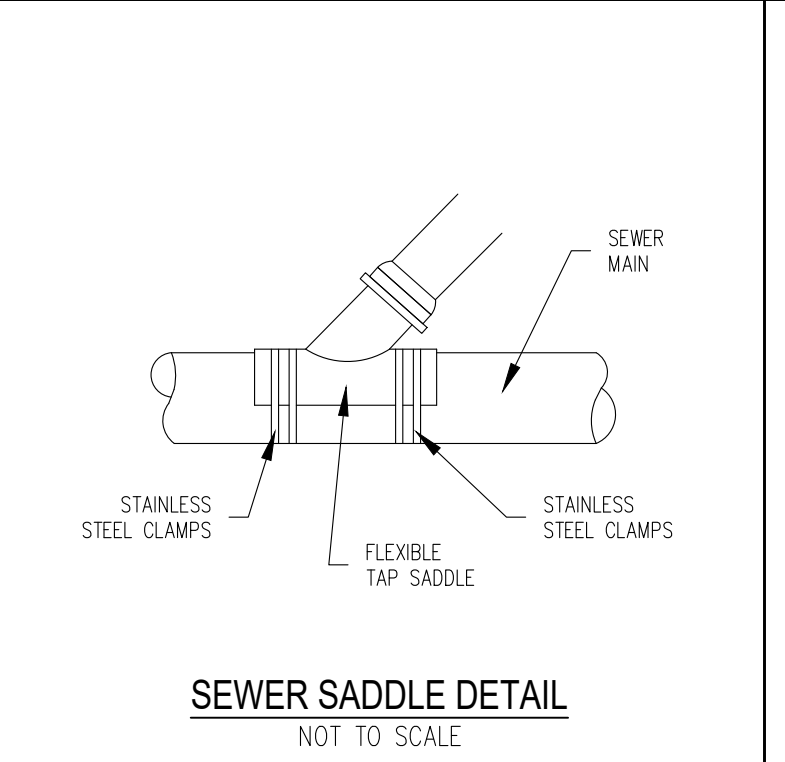
GATE VALVE DETAIL
NOT TO SCALE

NOTES:
 1. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SANITARY SEWER, OR SEWER MANHOLE, WHENEVER POSSIBLE; THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE (PIPE WALL TO PIPE WALL).
 2. WHEN LOCAL CONDITIONS (SUCH AS LEDGE, BRIDGES, UTILITY CONGESTION, ETC.) PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER TO A SANITARY SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER IN A SEPARATE TRENCH OR UNDISTURBED EARTH SHELF AND A MINIMUM OF 5 FEET EDGE-TO-EDGE (PIPE WALL TO PIPE WALL) HORIZONTALLY IS PROVIDED.
 3. WATER MAINS CROSSING SANITARY SEWERS SHALL BE LAID TO PROVIDE A SEPARATION OF AT LEAST 18 INCHES OF FREE EARTH BETWEEN THE WATER MAIN AND SEWER MAIN, WITH THE PREFERENCE FOR WATER MAINS CROSSING ABOVE SEWER MAINS WHENEVER POSSIBLE.

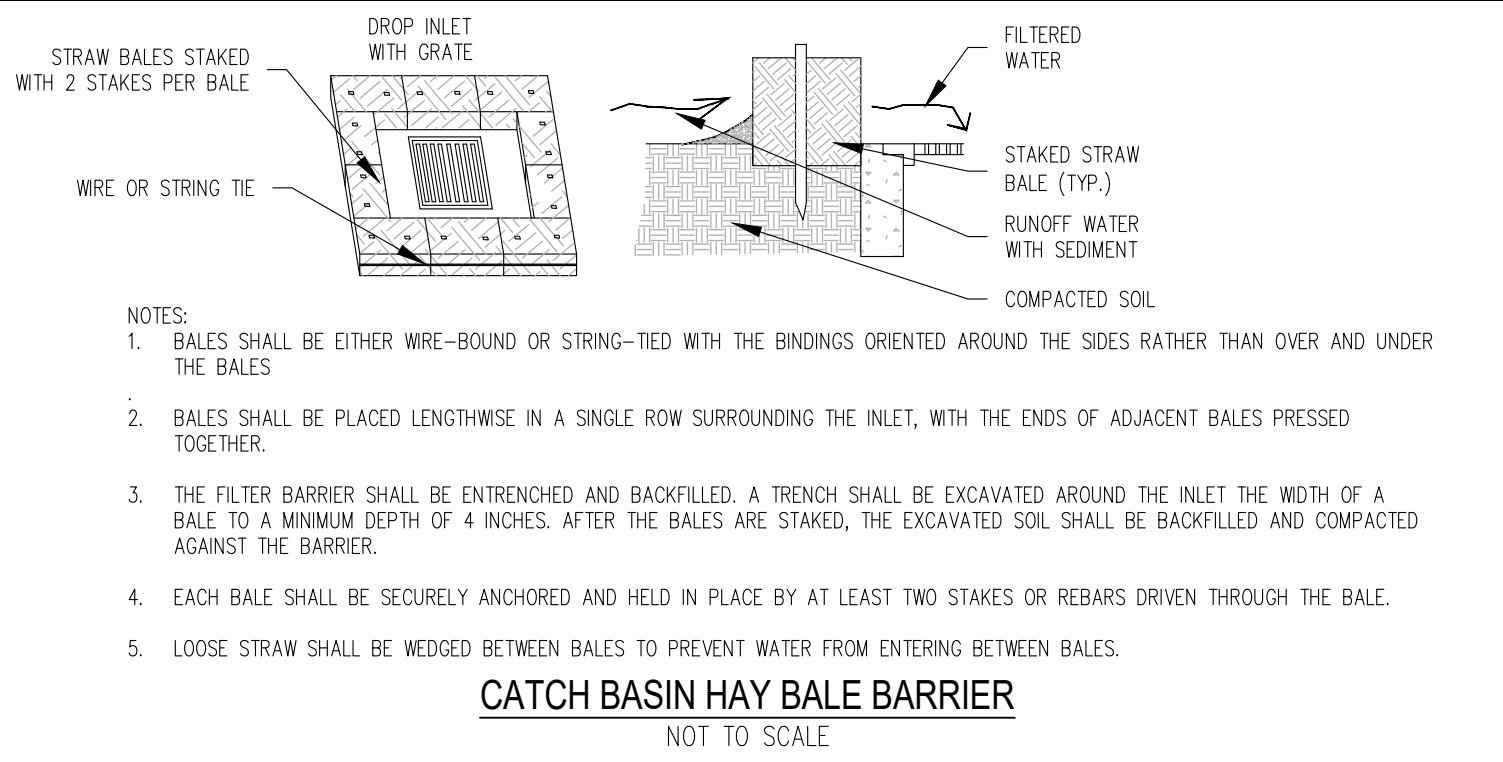


SEWER AND WATER SEPARATION DETAIL
NOT TO SCALE

NOTES:
 1. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SANITARY SEWER, OR SEWER MANHOLE, WHENEVER POSSIBLE; THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE (PIPE WALL TO PIPE WALL).
 2. WHEN LOCAL CONDITIONS (SUCH AS LEDGE, BRIDGES, UTILITY CONGESTION, ETC.) PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER TO A SANITARY SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER IN A SEPARATE TRENCH OR UNDISTURBED EARTH SHELF AND A MINIMUM OF 5 FEET EDGE-TO-EDGE (PIPE WALL TO PIPE WALL) HORIZONTALLY IS PROVIDED.
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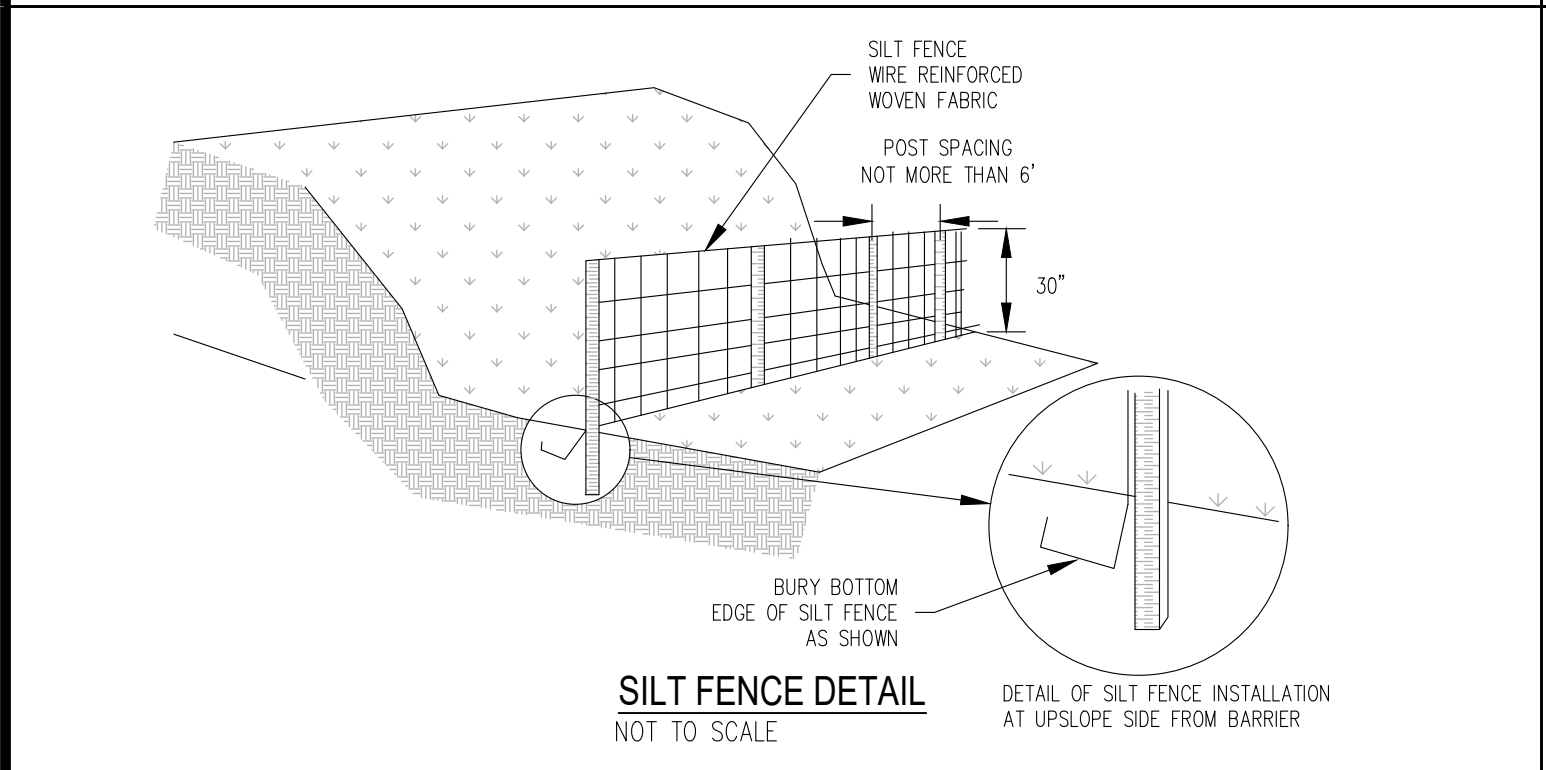


SEWER SADDLE DETAIL
NOT TO SCALE



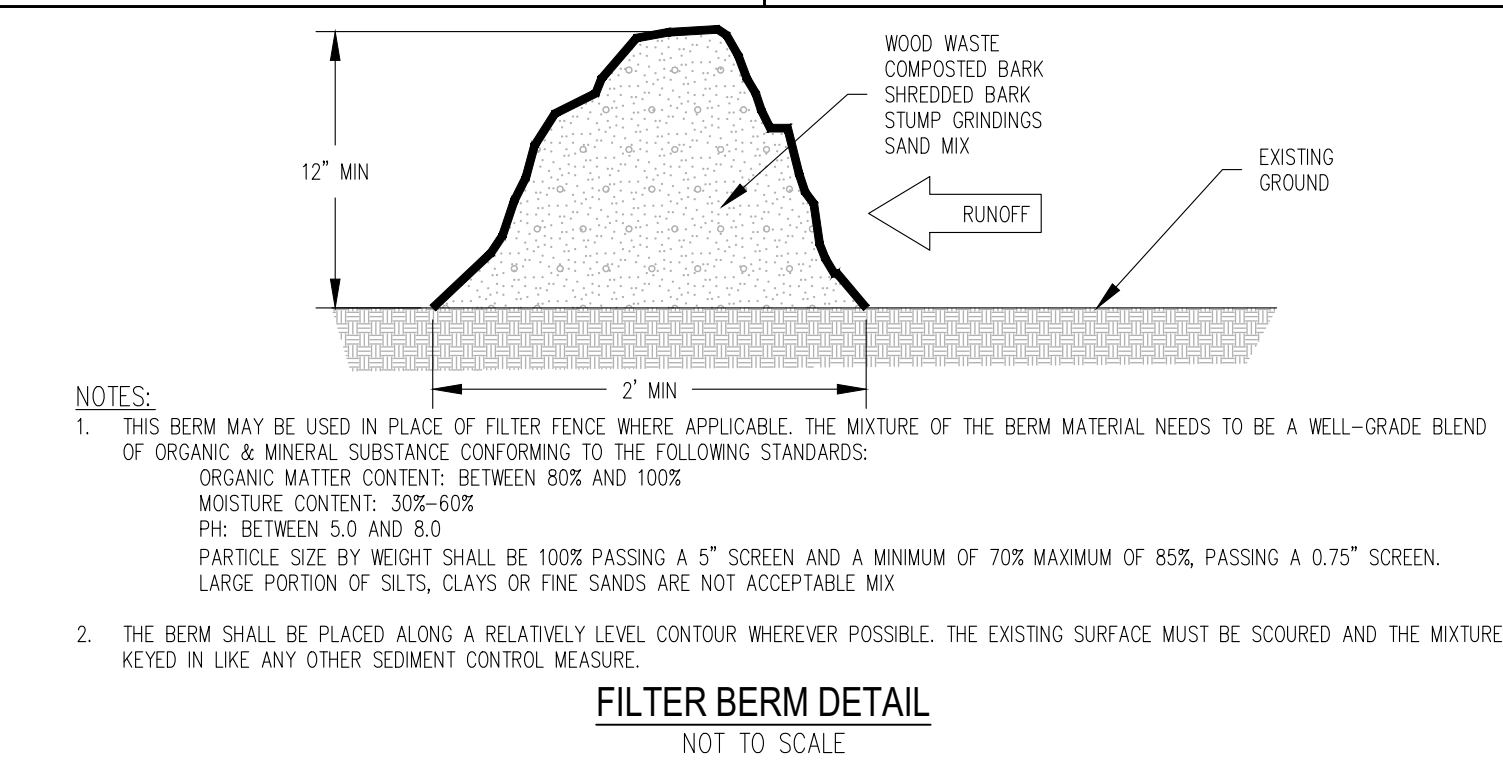
CATCH BASIN HAY BALE BARRIER
NOT TO SCALE

NOTES:
 1. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
 2. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
 3. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED AROUND THE INLET THE WIDTH OF A BALE TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE BARRIER.
 4. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
 5. LOOSE STRAW SHALL BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.



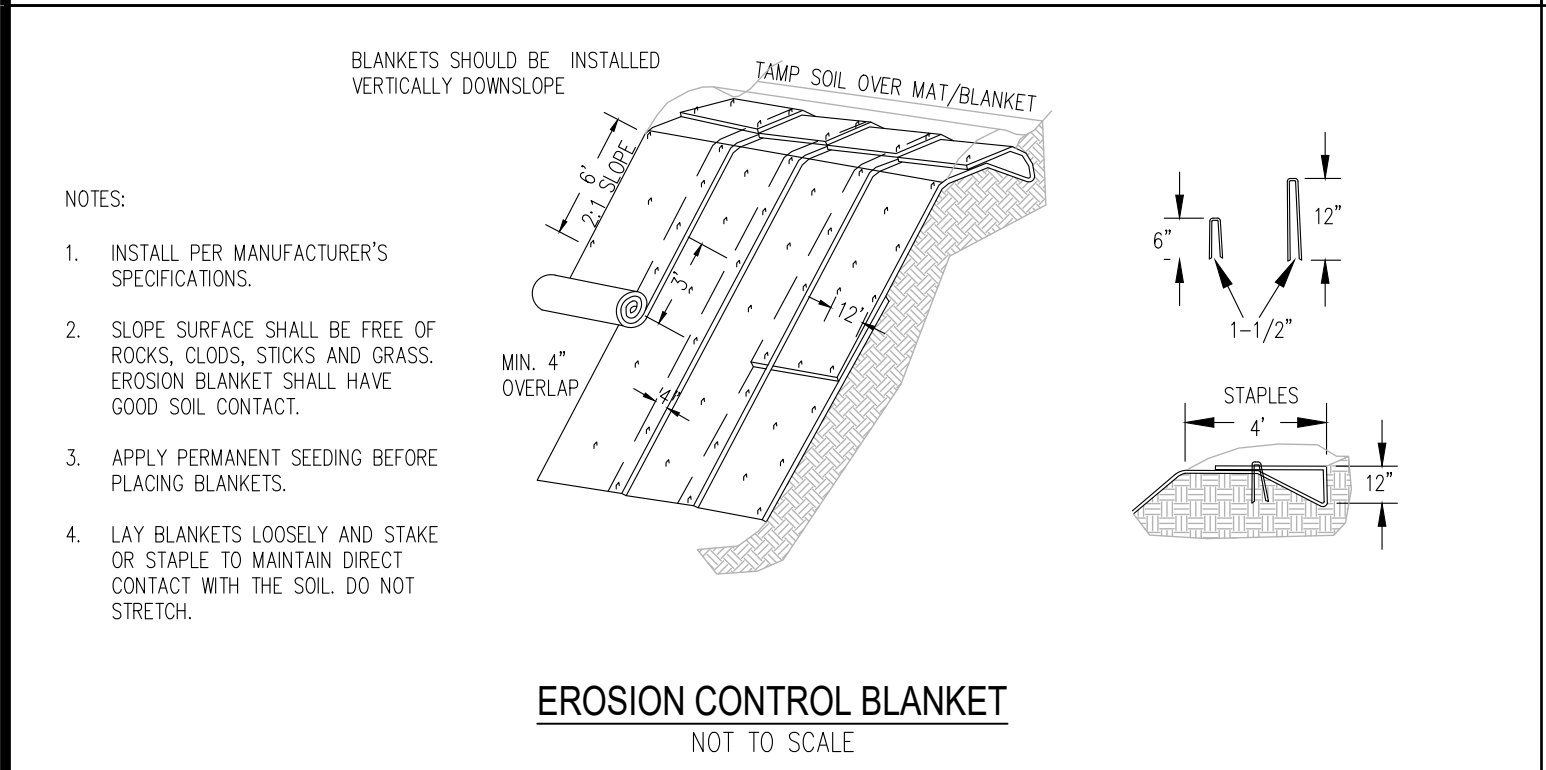
SILT FENCE DETAIL
NOT TO SCALE

DETAIL OF SILT FENCE INSTALLATION AT UPSLOPE SIDE FROM BARRIER



FILTER BERM DETAIL
NOT TO SCALE

NOTES:
 1. THIS BERM MAY BE USED IN PLACE OF FILTER FENCE WHERE APPLICABLE. THE MIXTURE OF THE BERM MATERIAL NEEDS TO BE A WELL-GRADE BLEND OF ORGANIC & MINERAL SUBSTANCE CONFORMING TO THE FOLLOWING STANDARDS:
 ORGANIC MATTER CONTENT: BETWEEN 80% AND 100%
 MOISTURE CONTENT: 30%-60%
 PH: BETWEEN 5.0 AND 8.0
 PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 5" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85%, PASSING A 0.75" SCREEN. LARGE PORTION OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE MIX.
 2. THE BERM SHALL BE PLACED ALONG A RELATIVELY LEVEL CONTOUR WHEREVER POSSIBLE. THE EXISTING SURFACE MUST BE SCOURED AND THE MIXTURE KEPT IN LIKE ANY OTHER SEDIMENT CONTROL MEASURE.



EROSION CONTROL BLANKET
NOT TO SCALE

NOTES:
 1. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
 2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. EROSION BLANKET SHALL HAVE GOOD SOIL CONTACT.
 3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
 4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-344-7233) FOR LOCATION OF ALL EXISTING UTILITIES.

DATE: 01/05/2023
 DRAWN BY: JAA/JAA
 CHECKED BY: JAA/JAA
 APPROVED BY:

CONSTRUCTION DETAILS

PROJECT NO: 21-335.00

L4

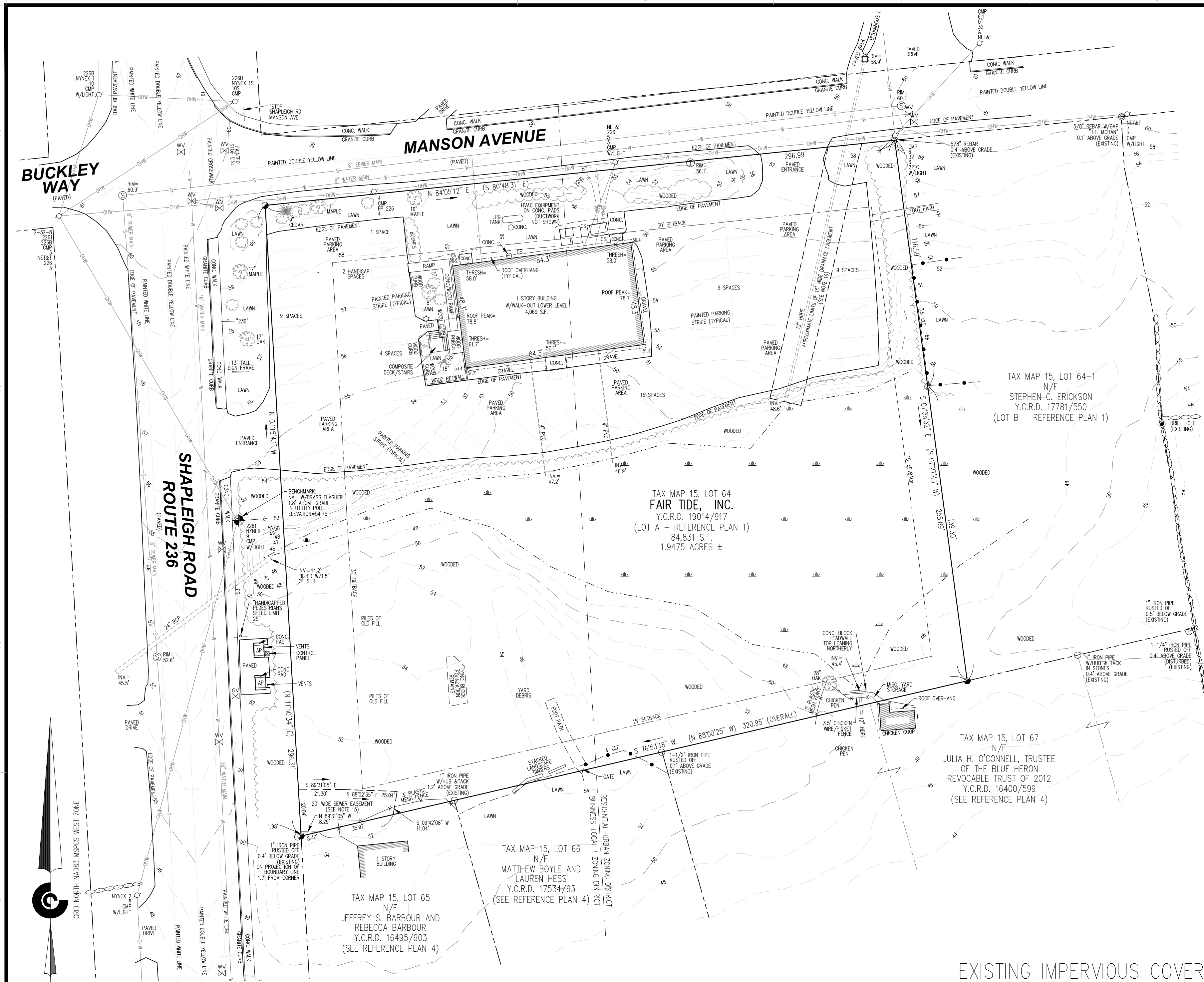
SHEET: 4 OF 4

CIVIL CONSULTANTS
CIVIL CONSULTANTS
 Engineers
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 P.O. Box 100
 South Berwick
 Maine
 03908
 207-384-2550
 www.civcon.com

NO.	REVISIONS	DATE
1	REVISE FOR FINAL REVIEW	4/5/23

RECORD OWNER:
 FAIR TIDE, INC.
 OWNER ADDRESS:
 125 STATE ROAD
 KITTEERY, ME 03904

PROPOSED BUILDING LAYOUT
 TAX MAP 15, LOT 64
 22 SHAPLEIGH ROAD
 KITTEERY, MAINE
 PREPARED FOR:
 FAIR TIDE, INC.
 CLIENT ADDRESS:
 125 STATE ROAD KITTEERY, MAINE 03904



NOTES:

1. PLANIMETRIC DETAIL DEPICTED HEREON IS THE RESULT OF AN ON-THE-GROUND FIELD SURVEY BY CIVIL CONSULTANTS ON MARCH 18-30, 2022.
2. NORTH AS DEPICTED HEREON IS REFERENCED TO GRID NORTH, NAD83, MAINE STATE PLANE COORDINATE SYSTEM WEST ZONE. COORDINATE VALUES AND ORIENTATION ARE DERIVED FROM A GPS SURVEY COMPUTED UTILIZING THE NGS OPUS ON-LINE PROCESSING SERVICE. REFERENCE FRAME IS NAD83 CORSB9 EPOCH 2002.0000. THE SURVEY IS TIED TO CORN STATIONS GUNSTONMNH2008 CORN ARP (P778), GORHAM CORN ARP (M60) AND WINDY CONCORD CORN ARP (NHCO). DISTANCES DEPICTED HEREON ARE GRID. TO CONVERT GRID DISTANCES TO GROUND DISTANCES, MULTIPLY THE GRID DISTANCE BY 1.000007480 (AVERAGE COMBINED SCALE FACTOR FOR THE SITE).
3. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO NAVD88, DERIVED FROM THE ABOVE REFERENCED GPS SURVEY. [TO CONVERT NAVD88 ELEVATIONS TO NGVD29 ELEVATIONS ADD 0.76']
4. THE 1-FOOT CONTOUR INTERVAL TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED ON THE ABOVE REFERENCED ON-THE-GROUND SURVEY. THE 2-FOOT CONTOUR INTERVAL TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED ON LIDAR DATA OBTAINED FROM THE MAINE OFFICE OF GIS.
5. ASSESSOR'S INFORMATION: TOWN OF KITTEERY ASSESSOR'S MAP 15, LOT 64
6. RECORD OWNER: FAIR TIDE, INC.
7. DEED REFERENCE: Y.C.R.D. 19014/917
8. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. THE UNDERGROUND WATER AND SANITARY SEWER LINES DEPICTED HEREON ARE COMPILED FROM REFERENCE PLAN 2. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS NEED TO CONTACT DIGSAFE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. A PORTION OF THE LOCUS PROPERTY, LOCATED WITHIN APPROXIMATELY 190' OF THE CENTERLINE OF SHAPLEIGH ROAD, IS IN THE BUSINESS-LOCAL 1 (B-1) ZONING DISTRICT. DIMENSIONAL REQUIREMENTS ARE AS FOLLOWS: MINIMUM LAND AREA PER DWELLING UNIT (WHEN ALL FLOORS ARE RESIDENTIAL)=8,000 S.F., MINIMUM LAND AREA PER DWELLING UNIT (WHEN THE ENTIRE FIRST FLOOR IS IN NONRESIDENTIAL USE)=3,500 S.F., MINIMUM PARKING SPACES PER DWELLING UNIT=1.5, MINIMUM LOT SIZE=20,000 S.F., MINIMUM STREET FRONTAGE PER BUILDING=50', MAXIMUM FRONT YARD=30' (THIS AREA MUST BE DESIGNED TO PROMOTE A PEDESTRIAN PUBLIC SPACE, WHICH INCLUDES, BUT IS NOT LIMITED TO, LANDSCAPING, SIDEWALKS AND SITTING AREAS. PARKING AND OUTDOOR STORAGE ARE PROHIBITED ANYWHERE IN THE FRONT YARD OF THE STRUCTURE, EXCEPT FOR SEASONAL SALES ITEMS), MINIMUM REAR AND SIDE YARDS=10' (EXCEPT AS OTHERWISE REQUIRED BY THE BUFFER PROVISIONS OF THIS TITLE, AND EXCEPT WHERE THE SIDE AND/OR REAR YARDS ABUT A RESIDENTIAL ZONE OR USE; IN WHICH CASE A MINIMUM OF 15' OR 50% OF THE BUILDING HEIGHT, WHICHEVER IS GREATER, IS REQUIRED), MAXIMUM BUILDING HEIGHT=40', MAXIMUM BUILDING AND OUTDOOR STORED MATERIAL COVERAGE=50%, MINIMUM AREA DEDICATED TO LANDSCAPED AREA=15%, MINIMUM SETBACK FROM STREAMS, WATER BODIES AND WETLANDS=IN ACCORDANCE WITH TABLE 16.9, SECTION 16.3.2.17 AND APPENDIX A, FEE SCHEDULES.
THE REMAINDER OF THE LOCUS PROPERTY IS IN THE RESIDENTIAL-URBAN (R-U) ZONING DISTRICT. DIMENSIONAL REQUIREMENTS ARE AS FOLLOWS: MINIMUM LAND AREA PER DWELLING UNIT=20,000 S.F., MINIMUM LOT SIZE=20,000 S.F., MINIMUM STREET FRONTAGE=100', MINIMUM FRONT YARD, ALL BUILDINGS=30', MINIMUM REAR AND SIDE YARDS, ALL BUILDINGS=15' (BUILDINGS HIGHER THAN 40 ACTUAL FEET MUST HAVE SIDE AND REAR YARDS NOT LESS THAN 50% OF BUILDING HEIGHT), MAXIMUM BUILDING HEIGHT=35' (MINIMUM DISTANCE BETWEEN PRINCIPAL BUILDINGS ON THE SAME LOT IS THE HEIGHT EQUIVALENT TO THE TALLER BUILDING), MAXIMUM BUILDING COVERAGE=20%, MINIMUM SETBACK FROM STREAMS, WATER BODIES AND WETLANDS=IN ACCORDANCE WITH TABLE 16.9, SECTION 16.3.2.17 AND APPENDIX A, FEE SCHEDULES.
THE TOWN OF KITTEERY ZONING ORDINANCE CONTAINS VARIABLE WETLAND SETBACKS DEPENDING ON THE SIZE OF THE WETLAND AND THE SPECIFIC USE ON THE PROPERTY. PRIOR TO CONTEMPLATING DEVELOPMENT ON THE SITE DESIGNERS SHALL CONSULT THE TOWN OF KITTEERY ZONING ORDINANCE. FOR COMPLETE ZONING INFORMATION REFER TO THE TOWN OF KITTEERY ZONING ORDINANCE.
10. MANSON AVENUE IN THE VICINITY OF THE LOCUS PARCEL IS A 33'-WIDE PUBLIC WAY MAINTAINED BY THE TOWN OF KITTEERY.
11. SHAPLEIGH ROAD IN THE VICINITY OF THE LOCUS PARCEL IS A 100'-WIDE PUBLIC WAY MAINTAINED BY THE STATE OF MAINE. (SEE REFERENCE PLAN 3 AND CONDEMNATION AT Y.C.R.D. 975/545).
12. THE LOCUS PARCEL IS LOCATED IN "ZONE C", ON THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF KITTEERY, MAINE, YORK COUNTY, COMMUNITY PANEL NUMBER 230171 0005 0, EFFECTIVE DATE JULY 3, 1986. ZONE C IS DEFINED AS "AREAS OF MINIMAL FLOODING".
13. THE WETLAND DEPICTED HEREON IS BASED ON FIELD LOCATION BY INSTRUMENT SURVEY OF WETLAND DELINEATION FLAGS SET BY MARK HAMPTON ASSOCIATES, INC. (MARK J. HAMPTON, CERTIFIED SOILS SCIENTIST #216).
14. THERE ARE 47 PAINTED REGULAR PARKING SPACES ON THE SITE AND 2 HANDICAP PARKING SPACES. EXISTING STRIPING IN SOME AREAS IS EXTREMELY FADED.
15. THE LOCUS PARCEL IS SUBJECT TO A 20' WIDE SEWER EASEMENT APPURTENANT TO LAND NOW OR FORMERLY OF JEFFREY S. BARBOUR AND REBECCA BARBOUR (TAX MAP 15, LOT 65) AS SET FORTH IN Y.C.R.D. 11844/304. FOR SPECIFIC EASEMENT INFORMATION REFER TO SAID DEED.
16. THE LOCUS PARCEL IS SUBJECT TO A 15' WIDE DRAINAGE EASEMENT APPURTENANT TO LAND ON THE OPPOSITE SIDE OF MANSON AVENUE. REFERENCE PLAN 1 DEPICTS A "15' WIDE DRAINAGE EASEMENT - 7.5' ON EITHER SIDE OF 12" CULVERT AS CONSTRUCTED". THE ORIGINAL DEED FOR LOT "A" ON REFERENCE PLAN 1, RECORDED AT Y.C.R.D. 3550/72, DESCRIBES LOT A AS "SUBJECT TO A 15-FOOT WIDE DRAINAGE EASEMENT AS SHOWN ON SAID PLAN AND AS SET FORTH IN DEED OF H & M DEVELOPMENT CORPORATION TO FOXWELL AT KITTEERY ASSOCIATES, DATED JUNE 24, 1980". THE EASEMENT DEED APPEARS TO BE UNRECORDED, NO DEED WAS FOUND ON RECORD AT THE YORK COUNTY REGISTRY OF DEEDS.
17. NO CEMETERIES OR EVIDENCE OF BURIAL GROUNDS WERE OBSERVED ON THE SUBJECT PARCEL.



CIVIL CONSULTANTS
Engineers
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Surveyors
 P.O. Box 100
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 03908
 207-884-2550
 www.civcon.com

NO.	REVISIONS	DATE
1	REVISE FOR FINAL REVIEW	4/5/23

RECORD OWNER:
 OLD YORK HISTORICAL SOCIETY
 ADDRESS:
 P.O. BOX 312
 YORK, ME 03909

EXISTING CONDITIONS PLAN
FAIR TIDE
22 SHAPLEIGH ROAD - TAX MAP 15, LOT 64
KITTEERY, YORK COUNTY, MAINE
 PREPARED FOR:
 FAIR TIDE
 CLIENT ADDRESS:
 15 STATE ROAD, KITTEERY, ME 03904

DATE: 3/15/23
 DRAWN BY: MPP/GRA
 CHECKED BY:
 APPROVED BY: GRA

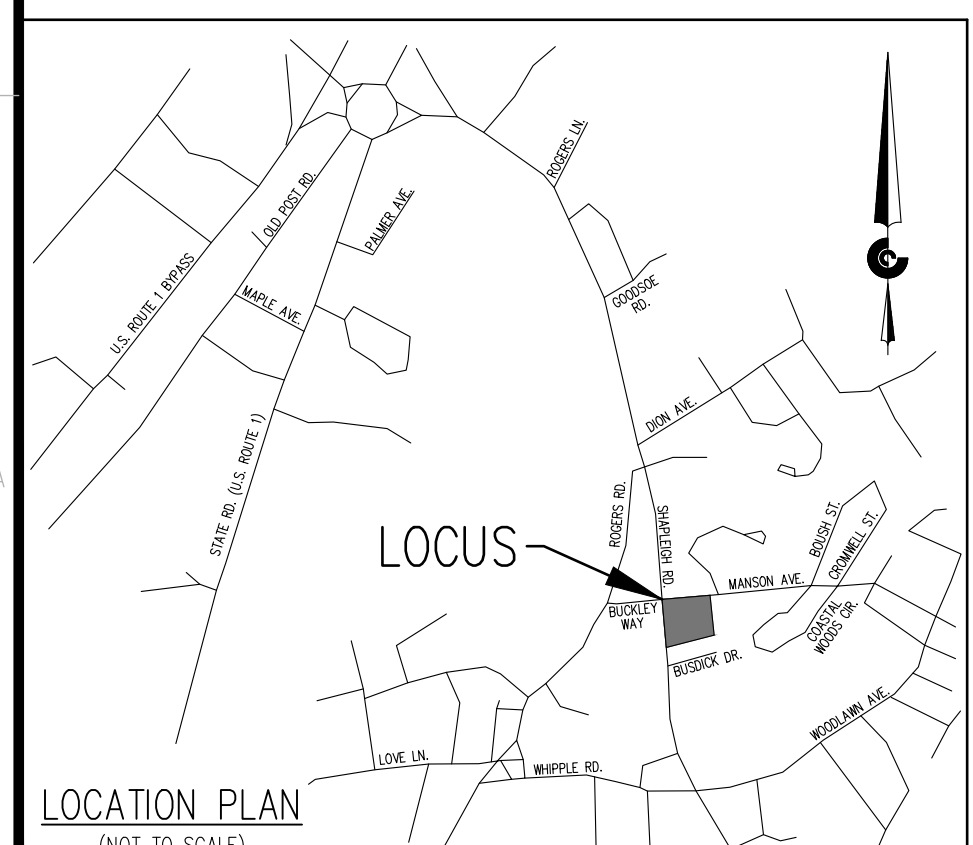
EXISTING SITE PLAN
 PROJECT NO: 2133500
EC
 SHEET: 1 OF 1

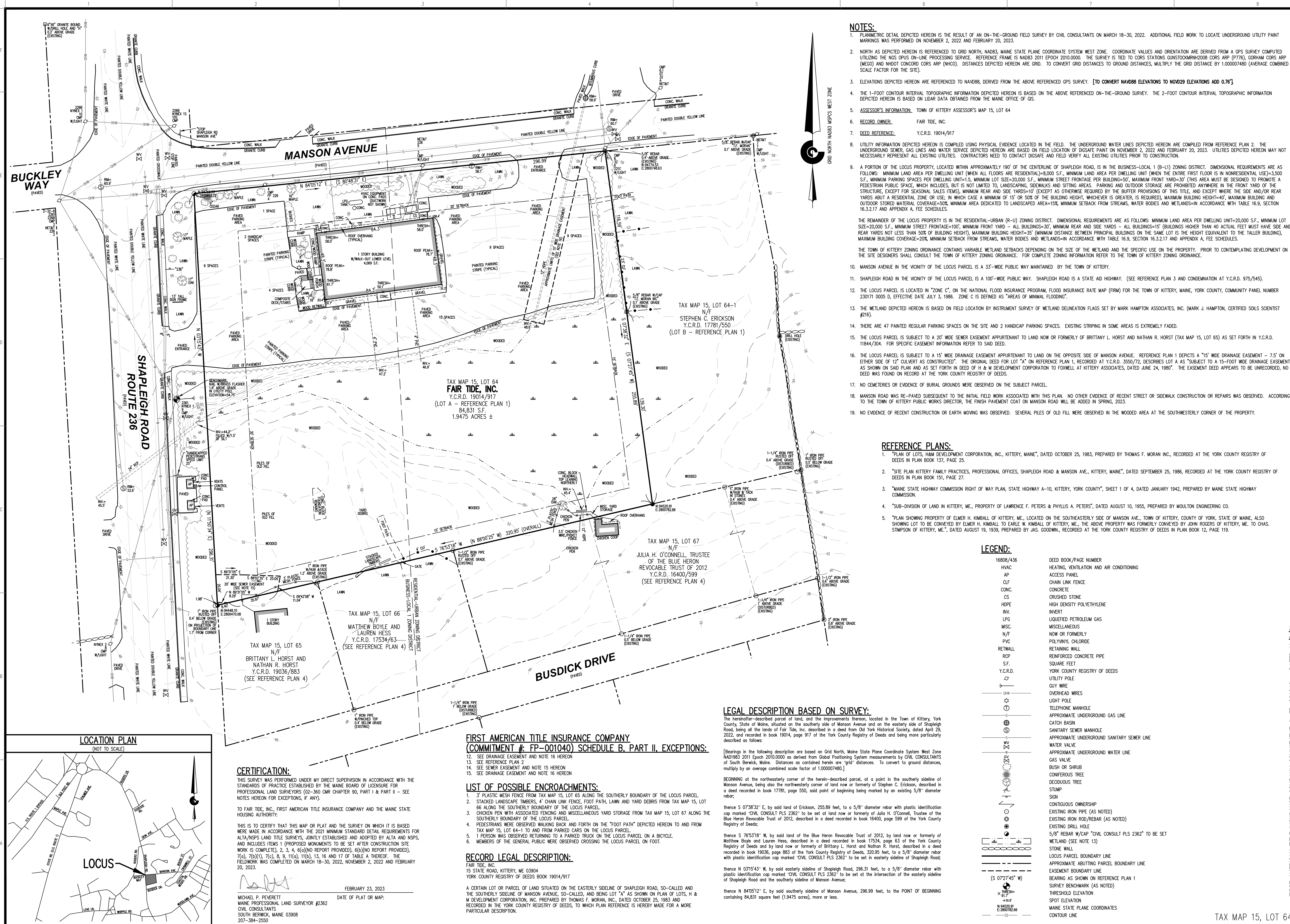
LEGEND:

- 16808/436 DEED BOOK/PAGE NUMBER
- HVAC HEATING, VENTILATION AND AIR CONDITIONING
- AP ACCESS PANEL
- CLF CHAIN LINK FENCE
- CONC. CONCRETE
- CS CRUSHED STONE
- HDPE HIGH DENSITY POLYETHYLENE
- INV. INVERT
- LPG LIQUEFIED PETROLEUM GAS
- MISC. MISCELLANEOUS
- N/F NOW OR FORMERLY
- PVC POLYVINYL CHLORIDE
- RET WALL RETAINING WALL
- RCP REINFORCED CONCRETE PIPE
- S.F. SQUARE FEET
- Y.C.R.D. YORK COUNTY REGISTRY OF DEEDS
- UTILITY POLE
- GUY WIRE
- OHV OVERHEAD WIRES
- LIGHT POLE
- TELEPHONE MANHOLE
- CATCH BASIN
- SANITARY SEWER MANHOLE
- APPROXIMATE UNDERGROUND SANITARY SEWER LINE
- WATER VALVE
- APPROXIMATE UNDERGROUND WATER LINE
- GAS VALVE
- BUSH OR SHRUB
- CONIFEROUS TREE
- DECIDUOUS TREE
- STUMP
- SIGN
- CONTIGUOUS OWNERSHIP
- EXISTING IRON PIPE (AS NOTED)
- EXISTING IRON ROD/REBAR (AS NOTED)
- EXISTING DRILL HOLE
- 5/8" REBAR W/CAP "CIVIL CONSULTANTS 2362" TO BE SET
- WETLAND (SEE NOTE 13)
- STONE WALL
- LOCUS PARCEL BOUNDARY LINE
- APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
- EASEMENT BOUNDARY LINE
- BEARING AS SHOWN ON REFERENCE PLAN 1
- SURVEY BENCHMARK (AS NOTED)
- THRESHOLD ELEVATION
- SPOT ELEVATION

EXISTING IMPERVIOUS COVERAGE INFO

TOTAL LOT	84,831 SF
PAVEMENT	22,456 SF
BUILDING FOOTPRINT W/ OVERHANG	4,589 SF
GRAVEL (SOUTH&EAST)	515 SF
GRAVEL (NORTH)	326 SF
CONCRETE UNDER UTILITIES (NORTH)	277 SF
CONCRETE/WOOD RAMP (WEST)	171 SF
WOOD CURB (WEST)	5 SF
DECK STAIRS (WEST)	69 SF
WOOD RETAINING WALL (WEST)	11 SF
TOTAL IMPERVIOUS COVERAGE	28,619 SF
IMPERVIOUS SURFACE RATIO	28,619 SF/84,831 SF X 100% = 33.74%





NOTES:

- PLANIMETRIC DETAIL DEPICTED HEREON IS THE RESULT OF AN ON-THE-GROUND SURVEY BY CIVIL CONSULTANTS ON MARCH 18-30, 2022. ADDITIONAL FIELD WORK TO LOCATE UNDERGROUND UTILITY PAINT MARKINGS WAS PERFORMED ON NOVEMBER 2, 2022 AND FEBRUARY 20, 2023.
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- DEED REFERENCE: Y.C.R.D. 19014/917
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- MANSON AVENUE IN THE VICINITY OF THE LOCUS PARCEL IS A 33'-WIDE PUBLIC WAY MAINTAINED BY THE TOWN OF KITTEERY.
- SHAPLEIGH ROAD IN THE VICINITY OF THE LOCUS PARCEL IS A 100'-WIDE PUBLIC WAY. SHAPLEIGH ROAD IS A STATE AID HIGHWAY. (SEE REFERENCE PLAN 3 AND CONDEMNATION AT Y.C.R.D. 975/545).
- THE LOCUS PARCEL IS LOCATED IN "ZONE C", ON THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF KITTEERY, MAINE, YORK COUNTY, COMMUNITY PANEL NUMBER 230171 0005 D, EFFECTIVE DATE JULY 3, 1986. ZONE C IS DEFINED AS "AREAS OF MINIMAL FLOODING".
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- THERE ARE 47 PAINTED REGULAR PARKING SPACES ON THE SITE AND 2 HANDICAP PARKING SPACES. EXISTING STRIPING IN SOME AREAS IS EXTREMELY FADED.
- THE LOCUS PARCEL IS SUBJECT TO A 20' WIDE SEWER EASEMENT APPURTENANT TO LAND NOW OR FORMERLY OF BRITTANY L. HORST AND NATHAN R. HORST (TAX MAP 15, LOT 65) AS SET FORTH IN Y.C.R.D. 11844/304. FOR SPECIFIC EASEMENT INFORMATION REFER TO SAID DEED.
- THE LOCUS PARCEL IS SUBJECT TO A 15' WIDE DRAINAGE EASEMENT APPURTENANT TO LAND ON THE OPPOSITE SIDE OF MANSON AVENUE. REFERENCE PLAN 1 DEPICTS A "15' WIDE DRAINAGE EASEMENT - 7.5' ON EITHER SIDE OF 12' CULVERT AS CONSTRUCTED". THE ORIGINAL DEED FOR LOT "A" ON REFERENCE PLAN 1, RECORDED AT Y.C.R.D. 3550/72, DESCRIBES LOT A AS "SUBJECT TO A 15-FOOT WIDE DRAINAGE EASEMENT AS SHOWN ON SAID PLAN AND AS SET FORTH IN DEED OF H & M DEVELOPMENT CORPORATION TO FOWELL AT KITTEERY ASSOCIATES, DATED JUNE 24, 1980". THE EASEMENT DEED APPEARS TO BE UNRECORDED, NO DEED WAS FOUND ON RECORD AT THE YORK COUNTY REGISTRY OF DEEDS.
- NO CEMETERIES OR EVIDENCE OF BURIAL GROUNDS WERE OBSERVED ON THE SUBJECT PARCEL.
- MANSON ROAD WAS RE-PAVED SUBSEQUENT TO THE INITIAL FIELD WORK ASSOCIATED WITH THIS PLAN. NO OTHER RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS WAS OBSERVED. ACCORDING TO THE TOWN OF KITTEERY PUBLIC WORKS DIRECTOR, THE FINISH PAVEMENT COAT ON MANSON ROAD WILL BE ADDED IN SPRING, 2023.
- NO EVIDENCE OF RECENT CONSTRUCTION OR EARTH MOVING WAS OBSERVED. SEVERAL PILES OF OLD FILL WERE OBSERVED IN THE WOODED AREA AT THE SOUTHWESTERLY CORNER OF THE PROPERTY.

REFERENCE PLANS:

- "PLAN OF LOTS, HAM DEVELOPMENT CORPORATION, INC., KITTEERY, MAINE", DATED OCTOBER 25, 1983, PREPARED BY THOMAS F. MORAN INC., RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 137, PAGE 25.
- "SITE PLAN KITTEERY FAMILY PRACTICES, PROFESSIONAL OFFICES, SHAPLEIGH ROAD & MANSON AVE., KITTEERY, MAINE", DATED SEPTEMBER 25, 1986, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 151, PAGE 27.
- "MAINE STATE HIGHWAY COMMISSION RIGHT OF WAY PLAN, STATE HIGHWAY A-10, KITTEERY, YORK COUNTY", SHEET 1 OF 4, DATED JANUARY 1942, PREPARED BY MAINE STATE HIGHWAY COMMISSION.
- "SUB-DIVISION OF LAND IN KITTEERY, ME., PROPERTY OF LAWRENCE F. PETERS & PHYLLIS A. PETERS", DATED AUGUST 10, 1955, PREPARED BY MOULTON ENGINEERING CO.
- "PLAN SHOWING PROPERTY OF ELMER H. KIMBALL OF KITTEERY, ME., LOCATED ON THE SOUTHEASTERLY SIDE OF MANSON AVE., TOWN OF KITTEERY, COUNTY OF YORK, STATE OF MAINE, ALSO SHOWING LOT TO BE CONVEYED BY ELMER H. KIMBALL TO EARLE W. KIMBALL OF KITTEERY, ME., THE ABOVE PROPERTY WAS FORMERLY CONVEYED BY JOHN ROGERS OF KITTEERY, ME. TO CHAS. STIMPSON OF KITTEERY, ME.", DATED AUGUST 19, 1939, PREPARED BY JAS. GODDARD, RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 12, PAGE 119.

LEGEND:

- 16808/436 DEED BOOK/PAGE NUMBER
- HVAC HEATING, VENTILATION AND AIR CONDITIONING
- AP ACCESS PANEL
- CLF CHAIN LINK FENCE
- CONC. CONCRETE
- CS CRUSHED STONE
- HOPE HIGH DENSITY POLYETHYLENE
- INV. INVERT
- LPG LIQUEFIED PETROLEUM GAS
- MISC. MISCELLANEOUS
- N/F NOW OR FORMERLY
- PVC POLYVINYL CHLORIDE
- RET WALL RETAINING WALL
- RECP REINFORCED CONCRETE PIPE
- S.F. SQUARE FEET
- Y.C.R.D. YORK COUNTY REGISTRY OF DEEDS
- UTL POLE UTILITY POLE
- GLY WIRE GLY WIRE
- OW OVERHEAD WIRES
- LP LIGHT POLE
- TM TELEPHONE MANHOLE
- AG APPROXIMATE UNDERGROUND GAS LINE
- CB CATCH BASIN
- SM SANITARY SEWER MANHOLE
- AS APPROXIMATE UNDERGROUND SANITARY SEWER LINE
- WV WATER VALVE
- AW APPROXIMATE UNDERGROUND WATER LINE
- GV GAS VALVE
- BUSH OR SHRUB BUSH OR SHRUB
- CT CONIFEROUS TREE
- DT DECIDUOUS TREE
- STUMP STUMP
- SG SIGN
- CO CONTIGUOUS OWNERSHIP
- EX EXISTING IRON PIPE (AS NOTED)
- ER EXISTING IRON ROD/REBAR (AS NOTED)
- EXH EXISTING DRILL HOLE
- 5/8" REBAR W/CAP CIVIL CONSULT PLS 2362' TO BE SET WETLAND (SEE NOTE 13)
- SW STONE WALL
- LP LOCUS PARCEL BOUNDARY LINE
- AP APPROXIMATE ABUTTING PARCEL BOUNDARY LINE
- EB EASEMENT BOUNDARY LINE
- BS BEARING AS SHOWN ON REFERENCE PLAN 1
- SB SURVEY BENCHMARK (AS NOTED)
- TE THRESHOLD ELEVATION
- SP SPOT ELEVATION
- MS MAINE STATE PLANE COORDINATES
- CL CONTOUR LINE

LEGAL DESCRIPTION BASED ON SURVEY:

The heretofore-described parcel of land, and the improvements thereon, located in the Town of Kittery, York County, State of Maine, situated on the southerly side of Manson Avenue and on the easterly side of Shapleigh Road, being all the lands of Fair Tide, Inc. described in a deed from Old York Historical Society, dated April 29, 2022, and recorded in book 19014, page 917 of the York County Registry of Deeds and being more particularly described as follows:

BEGINNING at the northeasterly corner of the heretofore-described parcel, at a point in the southerly sideline of Manson Avenue, being also the northeasterly corner of land now or formerly of Stephen C. Erickson, described in a deed recorded in book 17781, page 350, said point of beginning being marked by an existing 5/8" diameter rebar;

thence S 07°38'32" E, by said land of Erickson, 255.89 feet, to a 5/8" diameter rebar with plastic identification cap marked "CIVIL CONSULT PLS 2362" to be set on land now or formerly of Julia H. O'Connell, Trustee of the Blue Heron Revocable Trust of 2012, described in a deed recorded in book 16400, page 599 of the York County Registry of Deeds;

thence S 76°53'18" W, by said land of the Blue Heron Revocable Trust of 2012, by land now or formerly of Matthew Boyle and Lauren Hess, described in a deed recorded in book 17534, page 63 of the York County Registry of Deeds and by land now or formerly of Brittany L. Horst and Nathan R. Horst, described in a deed recorded in book 19036, page 863 of the York County Registry of Deeds, 320.95 feet, to a 5/8" diameter rebar with plastic identification cap marked "CIVIL CONSULT PLS 2362" to be set on the easterly sideline of Shapleigh Road;

thence N 07°27'45" W, by said easterly sideline of Shapleigh Road, 296.31 feet, to a 5/8" diameter rebar with plastic identification cap marked "CIVIL CONSULT PLS 2362" to be set at the intersection of the easterly sideline of Shapleigh Road and the southerly sideline of Manson Avenue;

thence N 84°05'12" E, by said southerly sideline of Manson Avenue, 296.99 feet, to the POINT OF BEGINNING containing 84,831 square feet (1.9475 acres), more or less.

STATE OF MAINE
MICHAEL P. PEVERETT
PROFESSIONAL LAND SURVEYOR
2362

CIVIL CONSULTANTS
Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
www.cyccon.com

NO.	DATE	REVISIONS
1		

RECORD OWNER:
FAIR TIDE, INC.

OWNER ADDRESS:
15 STATE ROAD
KITTEERY, ME 03904

PREPARED FOR:
FAIR TIDE, INC.
13 STATE ROAD, KITTEERY, ME 03904

ALTA/NSPS LAND TITLE SURVEY OF LAND OF
FAIR TIDE, INC.
22 SHAPLEIGH ROAD - TAX MAP 15, LOT 64
KITTEERY, YORK COUNTY, MAINE

DATE: FEBRUARY 23, 2023
DRAWN BY: MPP
CHECKED BY: CHM
APPROVED BY: MPP

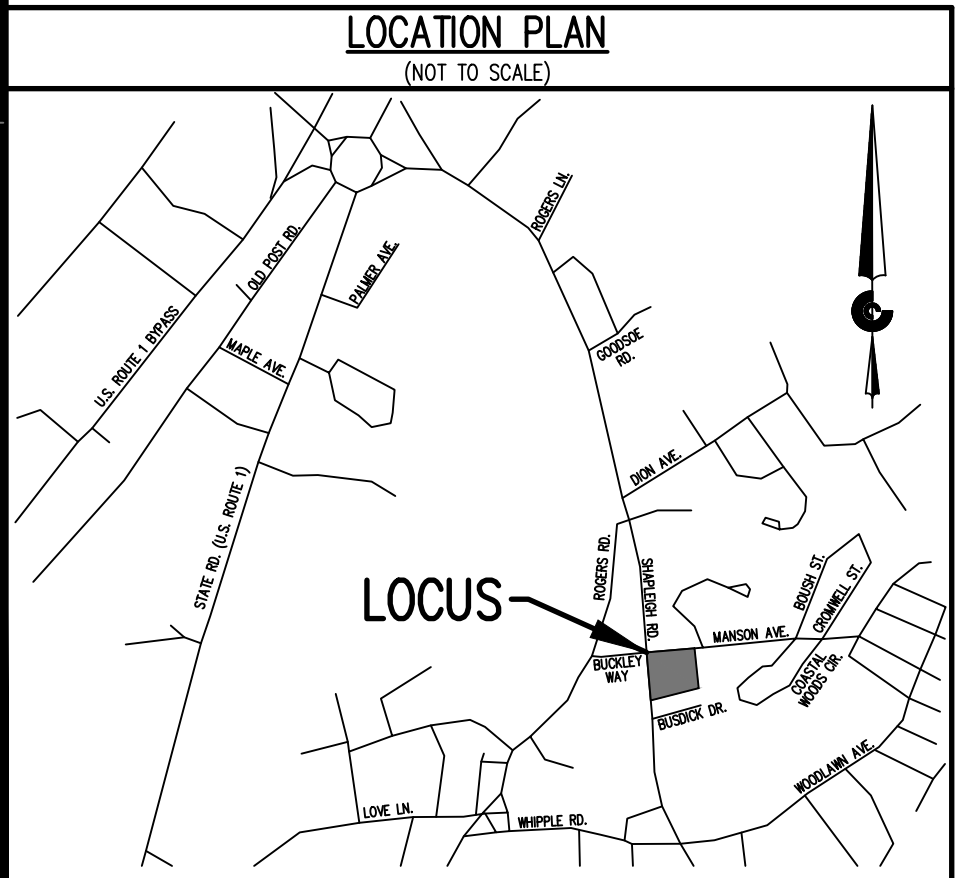
ALTA/NSPS LAND TITLE SURVEY PLAN

PROJECT NO: 2133500

EC1

TAX MAP 15, LOT 64
SHEET: 1 OF 1

COORDINATE FILE: J:\AAA\2021\2133500\CARLSON\SURVEY\POINTS\2133500.GRD
CADD FILE: J:\AAA\2021\2133500\CARLSON\SURVEY\DWG\2133500S-ALTA.DWG



CERTIFICATION:

THIS SURVEY WAS PERFORMED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE STANDARDS OF PRACTICE ESTABLISHED BY THE MAINE BOARD OF LICENSED PROFESSIONAL LAND SURVEYORS (02-360 CMR CHAPTER 90, PART I & PART II - SEE NOTES HEREON FOR EXCEPTIONS, IF ANY).

TO FAIR TIDE, INC., FIRST AMERICAN TITLE INSURANCE COMPANY AND THE MAINE STATE HOUSING AUTHORITY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAN AND THE SURVEY ON WHICH IT IS BASED WAS MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1 (PROPOSED MONUMENTS TO BE SET AFTER CONSTRUCTION SITE WORK IS COMPLETE), 2, 3, 4, 6(a)(NO REPORT PROVIDED), 6(b)(NO REPORT PROVIDED), 7(a), 7(b)(1), 7(c), 8, 9, 11(e), 11(f), 13, 16 AND 17 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MARCH 18-30, 2022, NOVEMBER 2, 2022 AND FEBRUARY 20, 2023.

MICHAEL P. PEVERETT
MAINE PROFESSIONAL LAND SURVEYOR #2262
CIVIL CONSULTANTS
SOUTH BERWICK, MAINE 03908
207-384-2550

FEBRUARY 23, 2023
DATE OF PLAT OR MAP:

FIRST AMERICAN TITLE INSURANCE COMPANY
(COMMITMENT #: FP-001040) SCHEDULE B, PART II, EXCEPTIONS:

- SEE DRAINAGE EASEMENT AND NOTE 15 HEREON
- SEE REFERENCE PLAN 2
- SEE SEWER EASEMENT AND NOTE 15 HEREON
- SEE DRAINAGE EASEMENT AND NOTE 16 HEREON

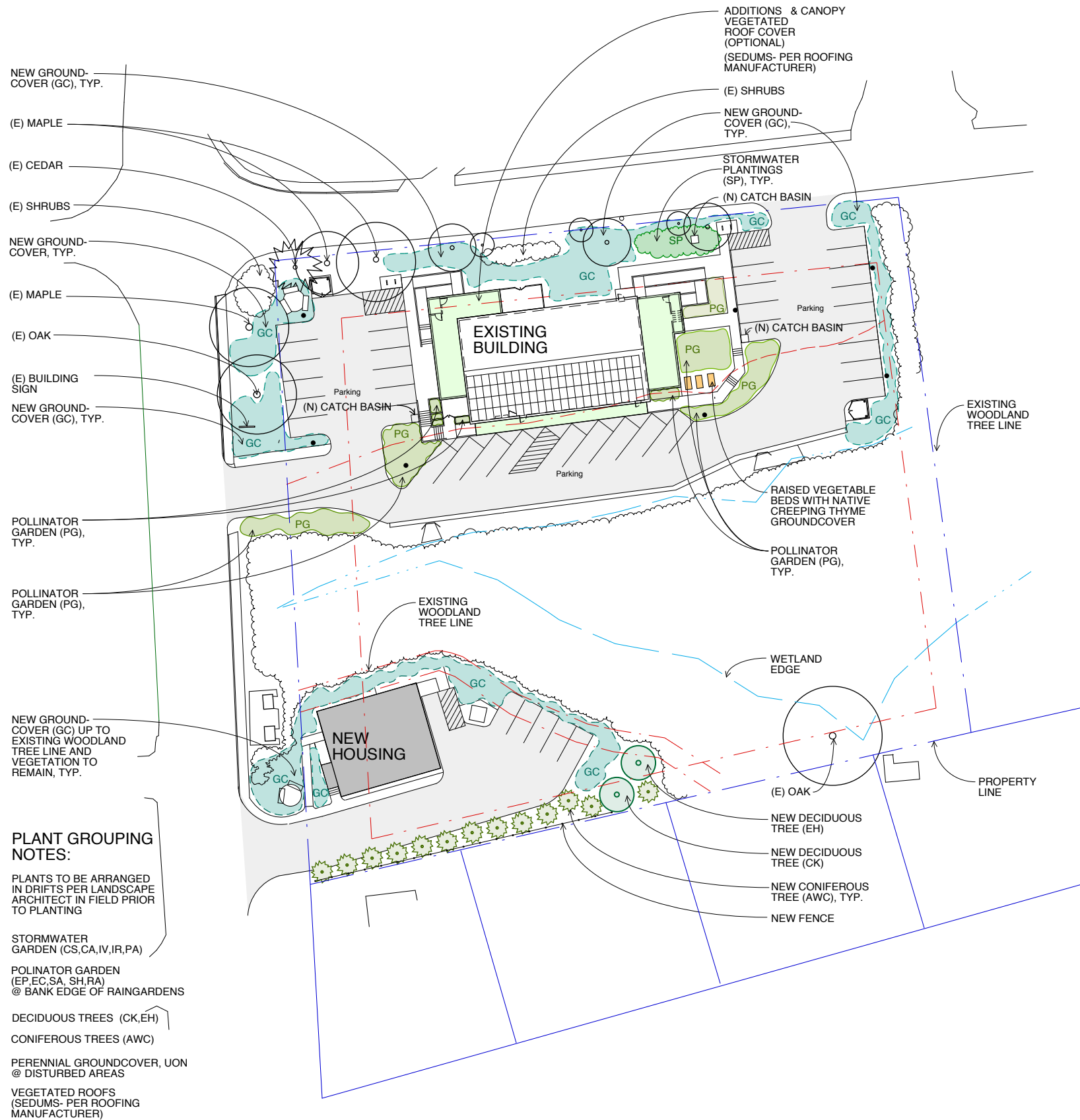
LIST OF POSSIBLE ENCROACHMENTS:

- 3" PLASTIC MESH FENCE FROM TAX MAP 15, LOT 65 ALONG THE SOUTHERLY BOUNDARY OF THE LOCUS PARCEL.
- STACKED LANDSCAPE TIMBERS, 4" CHAIN LINK FENCE, FOOT PATH, LAWN AND YARD DEBRIS FROM TAX MAP 15, LOT 66 ALONG THE SOUTHERLY BOUNDARY OF THE LOCUS PARCEL.
- CHICKEN FEW WITH ASSOCIATED FENCING AND MISCELLANEOUS YARD STORAGE FROM TAX MAP 15, LOT 67 ALONG THE SOUTHERLY BOUNDARY OF THE LOCUS PARCEL.
- PEDESTRIANS WERE OBSERVED WALKING BACK AND FORTH ON THE "FOOT PATH" DEPICTED HEREON TO AND FROM TAX MAP 15, LOT 64-1 TO AND FROM PARKED CARS ON THE LOCUS PARCEL.
- 1 PERSON WAS OBSERVED RETURNING TO A PARKED TRUCK ON THE LOCUS PARCEL ON A BICYCLE.
- MEMBERS OF THE GENERAL PUBLIC WERE OBSERVED CROSSING THE LOCUS PARCEL ON FOOT.

RECORD LEGAL DESCRIPTION:

FAIR TIDE, INC.
15 STATE ROAD, KITTEERY, ME 03904
YORK COUNTY REGISTRY OF DEEDS BOOK 19014/917

A CERTAIN LOT OR PARCEL OF LAND SITUATED ON THE EASTERLY SIDELINE OF SHAPLEIGH ROAD, SO-CALLED AND THE SOUTHERLY SIDELINE OF MANSON AVENUE, SO-CALLED, AND BEING LOT "A" AS SHOWN ON PLAN OF LOTS, H & M DEVELOPMENT CORPORATION, INC. PREPARED BY THOMAS F. MORAN, INC., DATED OCTOBER 25, 1983 AND RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS, TO WHICH PLAN REFERENCE IS HEREBY MADE FOR A MORE PARTICULAR DESCRIPTION.



PLANT SCHEDULE

ID	BOTANICAL NAME	COMMON NAME	SIZE
CONIFEROUS TREES			
AWC	CHAMAECYPARIS THYOIDES	ATLANTIC WHITE CEDAR 4' OC	4'-6'
DECIDUOUS TREES			
CK	CORNUS KOUSA	KOUSA DOGWOOD	10'-12'
EH	CARPINUS BETULUS	EUROPEAN HORNBEAM	10'-12'
STORM-WATER GARDEN (SG) Perennials/Grasses 24" OC, Shrubs 4' OC			
CS	CORNUS SERICEA	RED TWIGGED DOGWOOD	5 GAL.
CA	CLETHRA ALN.	SUMMER SWEET	5 GAL.
IV	ILEX VERTICILLATA	WINTERBERRY HOLLY	5 GAL.
IR	IRIS VERSICOLOR	BLUE FLAG IRIS	PLUG
PA	PANICUM	SWITCHGRASS	PLUG
POLLINATOR GARDEN (PG) Perennials/Grasses 24" OC, Shrubs 4' OC			
EP	EUTROCHIMUM PURPUREAUM	JOE PYE WEED	1 GAL.
EC	ECHINAEA PURPUREAUM	CONE FLOWER	1 GAL.
SA	SALVIA	MEADOW SAGE "May Night"	1 GAL.
SH	SPOROBOLUS HETEROLEPSIS	PRAIRIE DROP SEED	PLUG
RA	RHUS AROMAICA	LOW GROUND SUMAC	5 GAL.
PAC	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	1 GAL.
VEGETATED ROOF - SEDUM TELEPHIUM - AUTUMN JOY SEDUM (OPTIONAL)			
PERENNIAL GROUNDCOVER (GC)			
HA	HEMEROCALLIS SPECIES	DAYLILLIES (SUN)	1 GAL.
PAT	PEROVSKIA ATRIPLICIFOLA	RUSSIAN SAGE (SUN)	1 GAL.
AC	ASARUM CANADENSE	WILD GINGER (SHADE)	1 GAL.
GO	GALIUM ODORATUM	SWEET WOODRUF (SHADE)	1 GAL.
AM	ALCHEMILLA MOLLIS	LADY'S MANTLE (SHADE)	1 GAL.

SYMBOLS LEGEND

	EXISTING DECIDUOUS TREE		PROPOSED DECIDUOUS TREE (SHADED)
	EXISTING EVERGREEN TREE		PROPOSED EVERGREEN TREE

PLANTING NOTES:

1. THE CONTRACTOR SHALL PREPARE PLANTING ZONES TO THE GRADES AND DEPTHS AS INDICATED ON THE DRAWINGS.
2. IF THE CONTRACTOR DETERMINES THE SUB-GRADE SOIL CONDITIONS ARE DELETERIOUS TO PLANT GROWTH OR WILL INHIBIT DRAINAGE, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND PRIOR TO INSTALLATION OF PLANT MATERIAL.
3. 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.
4. ALL PLANTS TO BE SELECTED AND SEALED IN THE FIELD BY THE LANDSCAPE DESIGNER OR SELECTED BY THE LANDSCAPE CONTRACTOR, AND APPROVED BY LANDSCAPE DESIGNER.
5. THE PLANT LIST IS PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANT COUNT SHOWN IN THE SCHEDULE AND THE DRAWING, THE DRAWING SHALL TAKE PRECEDENCE.
6. ALL TRANSPLANTED SHRUBS SHALL BE "HEELED IN" OR HEAVILY MULCHED IN A SHADED AREA AND WATERED AS NECESSARY UNTIL THEY CAN BE PLANTED.
7. FINAL LOCATION OF ALL PLANTS TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECTS PRIOR TO INSTALLATION OF PLANT MATERIAL.
8. PLANTS SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS THE BORE TO THE EXISTING GRADE IN THE NURSERY.
9. CUT AND REMOVE BURLAP FROM TOP 1/3 OF BALL. CUT AND REMOVE AT LEAST 1/3-1/2 OF WIRE BASKET. NYLON ROPE AND / OR NYLON BALLING MATERIAL IS NOT ACCEPTABLE.
10. LOCATE GUY WIRES AROUND MAIN TRUNK OF TREE.
11. PLANT PERENNIALS AND GROUNDCOVER IN 12" DEEP TOPSOIL BED CONSISTING OF 2/3 TOPSOIL AND 1/3 HUMUS.
12. TOPSOIL AND SEED ALL AREAS DISTURBED AS A RESULT OF ANY AND ALL DISTURBANCES, CONSTRUCTION, OR STORAGE OF EQUIPMENT WHETHER SUCH AREAS ARE SHOWN ON THE PLANS OR NOT. (SEE GRADING PLAN)
13. ALL PLANTS AND ENTIRE SHRUB BEDS TO RECEIVE 12" OF CASSELLA'S ORGANICS OR EQUAL (40% COMPOST / 60% LOAM) AND A 3" LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH.
14. UPON COMPLETION OF THE ONE (1) YEAR PLANT GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING OR REMOVING ALL STAKES. THIS SHALL BE DONE IN CONSULTATION WITH THE LANDSCAPE ARCHITECT.
15. ALL TREE PLANTING AND REMOVAL TO COMPLY WITH LOCAL AND STATE TREE ORDINANCES.

PROJECT :

MAINSRING COLLECTIVE
 Fairtide + Footprints
 22 Shapleigh Road,
 Kittery, ME

ARQ Architects
 1 Government St, Suite 2
 Kittery, Maine 03904
 207.439.5286
 © 2023 ARQ architects

Summit Engineering, Structural Eng
 5 Greenleaf Woods Dr #302
 Portsmouth, NH 03801 603-319-1817

Sefco Solutions, Mechanical Eng
 408 Main Street, South Berwick, ME
 207-420-8760

Oakpoint Associates, Electrical Eng
 85 Middle St., Portsmouth, NH 03801
 603-431-4849

RyBak Engineering Inc Fire Protection
 132 Forest Avenue
 Warren, MA 01083-0709
 413-436-5500

Soren DeNoird, Landscape Architect
 43 Wellwood Road
 Portland, ME 04103 207-400-2450

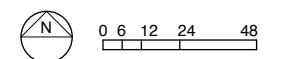
Civil Consultants
 PO BOX 100, South Berwick
 ME 03908 207-384-2550

NOTES :

REVISIONS :

NO	DATE	REVISION

LANDSCAPE PLAN



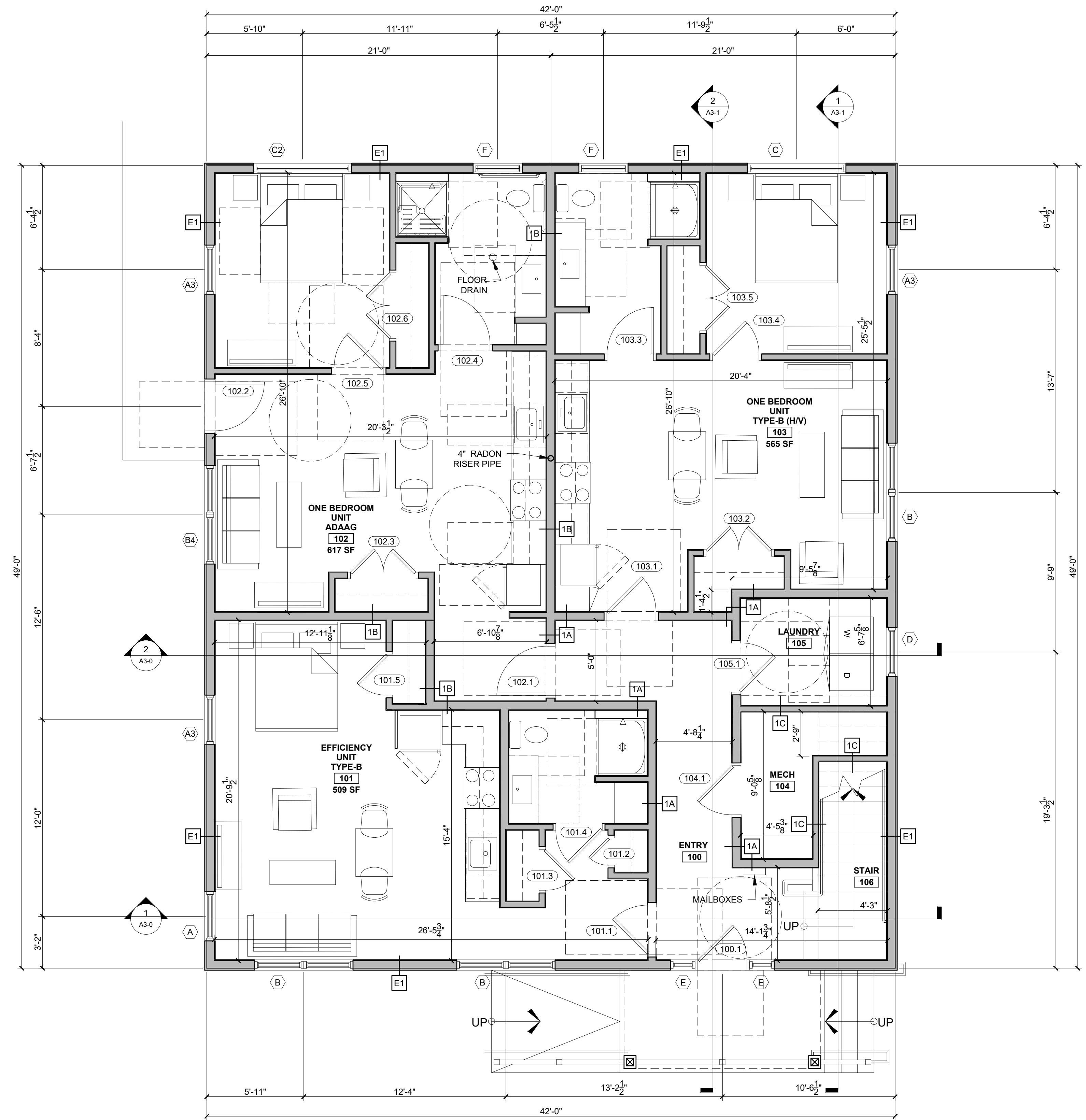
Schematic Design
 February 17, 2023
 Revised 4-4-23

SEAL & SIGNATURE:	DATE: 2-17-23
	PROJECT NO: 2022-10
	DRAWING BY: JO
	CHECK BY: LS
	DWG NO:
LA	
FILE No:	

UNIT ACCESSIBILITY SUMMARY		
REGULATION: HUD 504 AND ADA, STANDARD: ADAAG 2010		
SCOPING REQUIREMENT: 5% units accessible and additional 2% of units to be hearing and vision impaired	PROVIDED IN PROJECT	EXCESS UNITS
6 units within building X 5% = 0.30 or 1 units to meet ADAAG	1 ADAAG units	0 Excess
6 units within building X 2% = 0.12 or 1 units to be hearing and vision impaired	1 Hearing and Vision Impaired Units	0 Excess
REGULATION: MAINE HUMAN RIGHTS ACT (MHRA), STANDARD: ANSI A117.1-2009		
SCOPING REQUIREMENT: 10% of Ground Floor units to be Type A		
3 Ground Floor (First Floor total) Units X 10% = 0.30 or 1 units	1 Type-A units	0 Excess
SCOPING REQUIREMENT: 10% of Upper Floor units to be Type A (NOT REQUIRED)		
(THERE IS NO REQUIREMENT FOR AN ACCESSIBLE UNIT ON THE SECOND FLOOR OF A BUILDING THAT IS NOT SERVICED BY AN ELEVATOR)	0 Type-A units	0 Excess
	1 Type-A units total (INCLUDES ADAAG)	
All the rest to be Type B		
MHRA requires ALL units to either be Type A or B units	5 Type-B units (includes 1 HV)	
All units to meet Federal Fair Housing Act		

UNIT TYPES - 6 TOTAL UNITS				
FIRST FLOOR	1 STUDIO UNITS	2 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS
SECOND FLOOR	0 STUDIO UNITS	3 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS
TOTALS	1 STUDIO UNITS	5 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS

ACCESSIBLE UNIT TYPES									
FLOOR	TYPE - A STUDIO	TYPE - A ONE BED	TYPE - ADDAG ONE BED	HV IMPAIRED ONE BED	TYPE - A TWO BED	TYPE - ADDAG TWO BED	HV IMPAIRED TWO BED	TYPE - A THREE BED	TYPE - ADDAG THREE BED
FIRST FLOOR	0	0	1	1	0	0	0	0	0
SECOND FLOOR	0	0	0	0	0	0	0	0	0
TOTALS	0	0	1	1	0	0	0	0	0



1 FIRST FLOOR PLAN
1/4" = 1'-0"

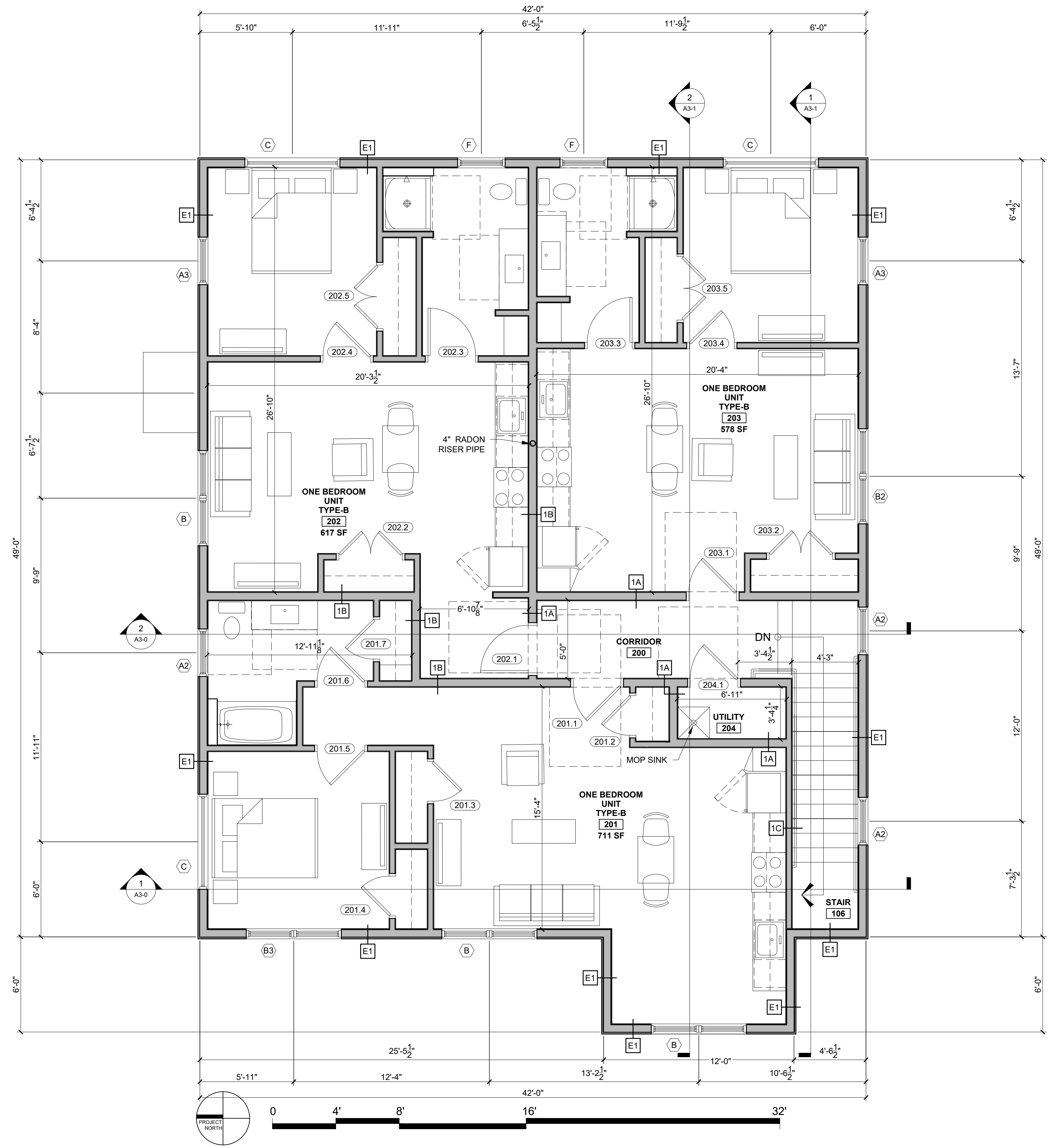


REVISIONS:
PROGRESS PRINT ONLY
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MARCH 07, 2023

UNIT ACCESSIBILITY SUMMARY		
REGULATION: HUD 504 AND ADA, STANDARD: ADAAG 2010	PROVIDED IN PROJECT	EXCESS UNITS
SCOPING REQUIREMENT: 5% units accessible and additional 2% of units to be hearing and vision impaired		
6 units within building X 5% = 0.30 or 1 units to meet ADAAG	1 ADAAG units	0 Excess
6 units within building X 2% = 0.12 or 1 units to be hearing and vision impaired	1 Hearing and Vision Impaired Units	0 Excess
REGULATION: MAINE HUMAN RIGHTS ACT (MHRA), STANDARD: ANSI A117.1-2009		
SCOPING REQUIREMENT: 10% of Ground Floor units to be Type A		
3 Ground Floor (First Floor total) Units X 10% = 0.30 or 1 units	1 Type-A units	0 Excess
SCOPING REQUIREMENT: 10% of Upper Floor units to be Type A (NOT REQUIRED)		
(THERE IS NO REQUIREMENT FOR AN ACCESSIBLE UNIT ON THE SECOND FLOOR OF A BUILDING THAT IS NOT SERVICED BY AN ELEVATOR)	0 Type-A units	0 Excess
All the rest to be Type B	1 Type-A units total (INCLUDES ADAAG)	
MHRA requires ALL units to either be Type A or B units	5 Type-B units (includes 1 HV)	
All units to meet Federal Fair Housing Act		

UNIT TYPES - 6 TOTAL UNITS				
FIRST FLOOR	1 STUDIO UNITS	2 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS
SECOND FLOOR	0 STUDIO UNITS	3 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS
TOTALS	1 STUDIO UNITS	5 ONE BEDROOM UNITS	0 TWO BEDROOM UNITS	0 THREE BEDROOM UNITS

ACCESSIBLE UNIT TYPES									
FLOOR	TYPE - A STUDIO	TYPE - A ONE BED	TYPE - ADDAG ONE BED	HV IMPAIRED ONE BED	TYPE - A TWO BED	TYPE - ADDAG TWO BED	HV IMPAIRED TWO BED	TYPE - A THREE BED	TYPE - ADDAG THREE BED
FIRST FLOOR	0	0	1	1	0	0	0	0	0
SECOND FLOOR	0	0	0	0	0	0	0	0	0
TOTALS	0	0	1	1	0	0	0	0	0



1 SECOND FLOOR PLAN
1/4" = 1'-0"

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APARTMENTS
22 SHAPLEIGH ROAD
KITTERY, MAINE



RYAN SENATORE ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
P: 207-747-5159
C: 207-650-6414
senatorearchitecture.com

CONSULTANTS:

REVISIONS:
PROGRESS PRINT ONLY
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MARCH 07, 2023

DATE:

PROJECT No. 2171

DRAWN BY: RRT, RJS

CHECKED BY: RJS

SCALE: AS NOTED

SHEET TITLE:
SECOND FLOOR PLAN

A1-2



CONSULTANTS:

REVISIONS:

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MARCH 07, 2023

DATE:

PROJECT No. 2171

DRAWN BY: RRT, RJS

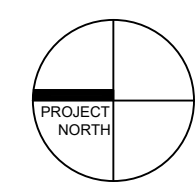
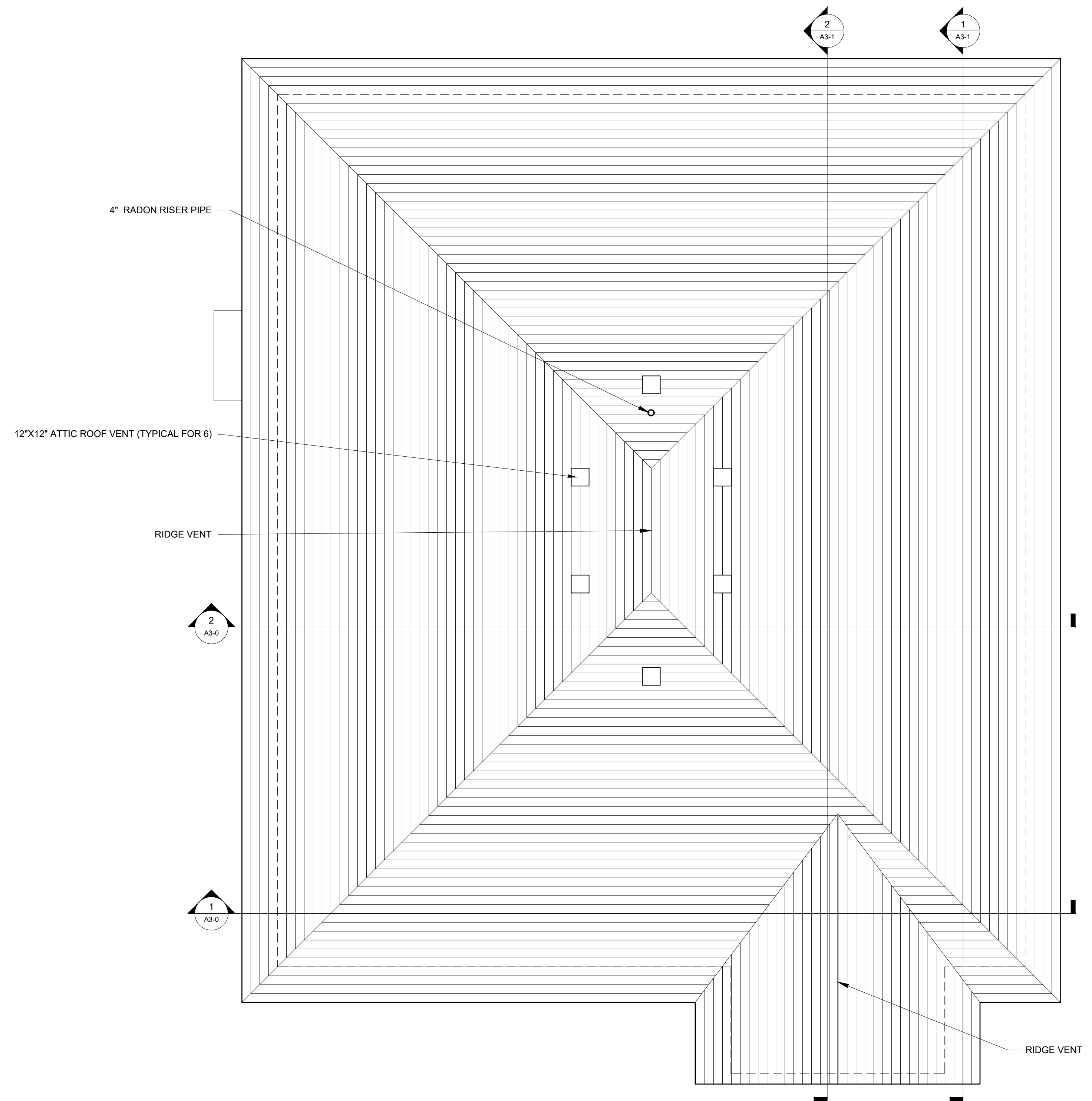
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SHEET TITLE:

ROOF PLAN

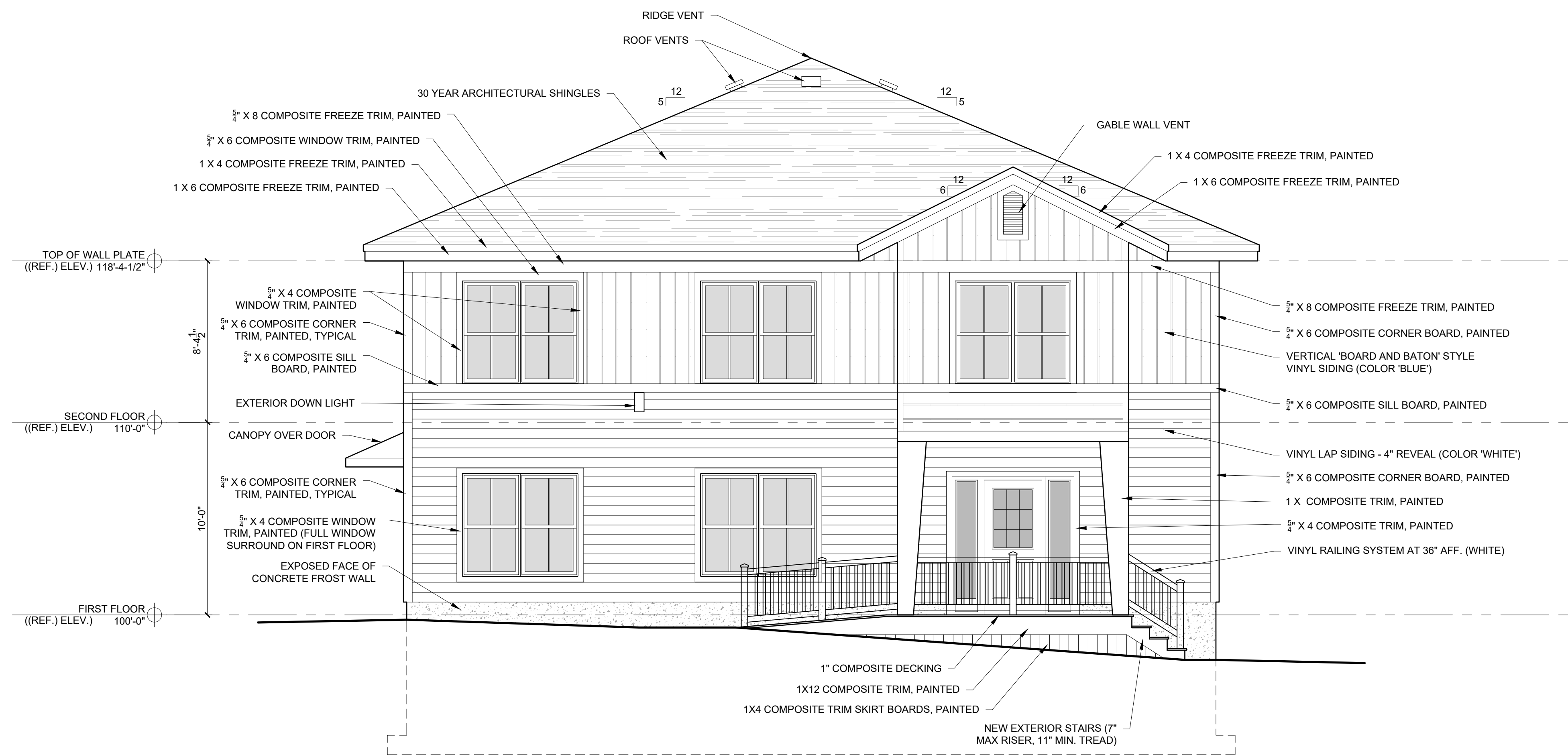
A1-3



1 ROOF PLAN
1/4" = 1'-0"



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



1 WEST ELEVATION
1/4" = 1'-0"



1B NORTH ELEVATION (COLOR KEY ELEVATION)
1/4" = 1'-0"



1 NORTH ELEVATION
1/4" = 1'-0"

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APARTMENTS
22 SHAPLEIGH ROAD
KITTERY, MAINE



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senatorearchitecture.com

CONSULTANTS:

REVISIONS:

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MARCH 07, 2023

DATE:

PROJECT No. 2171

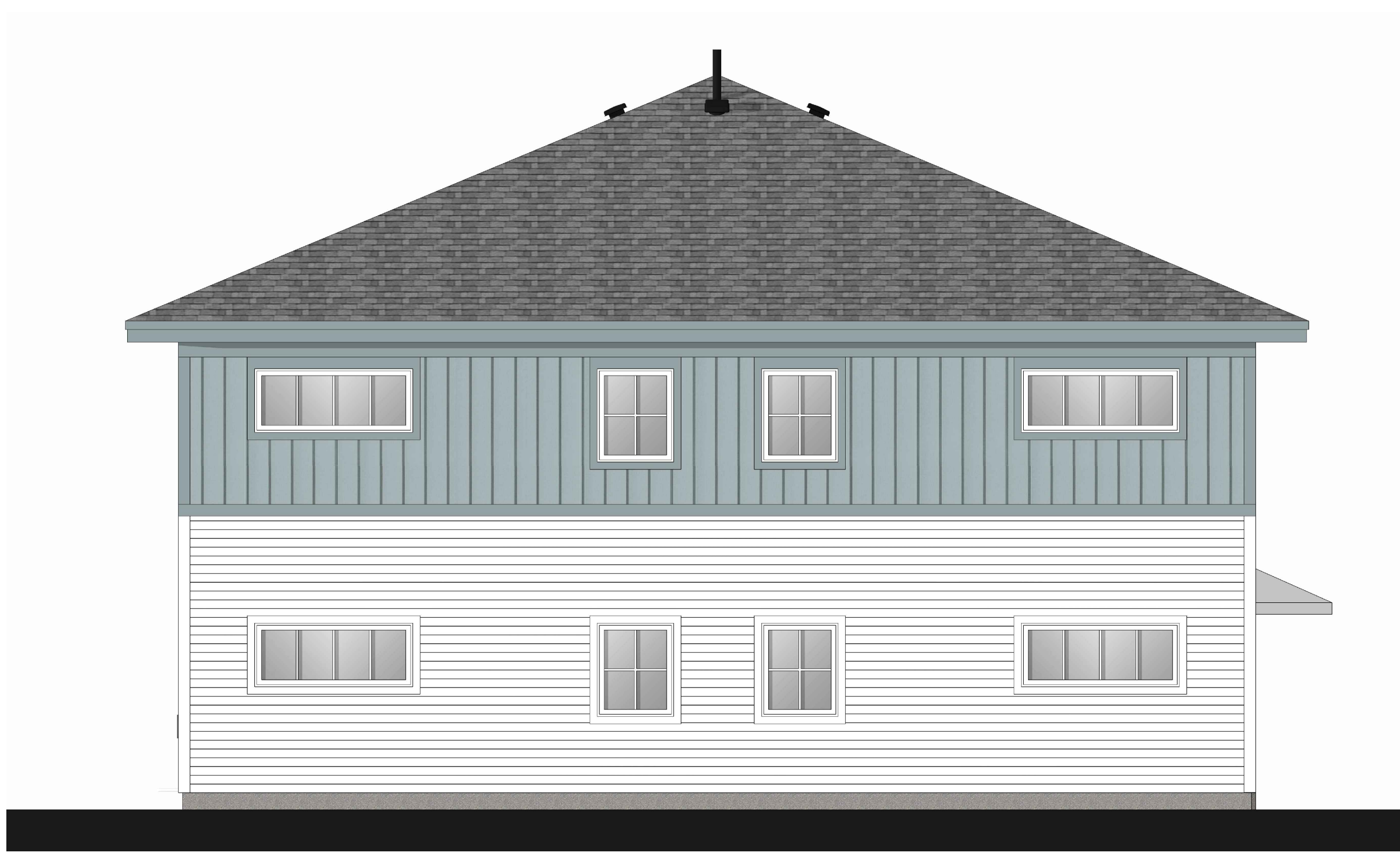
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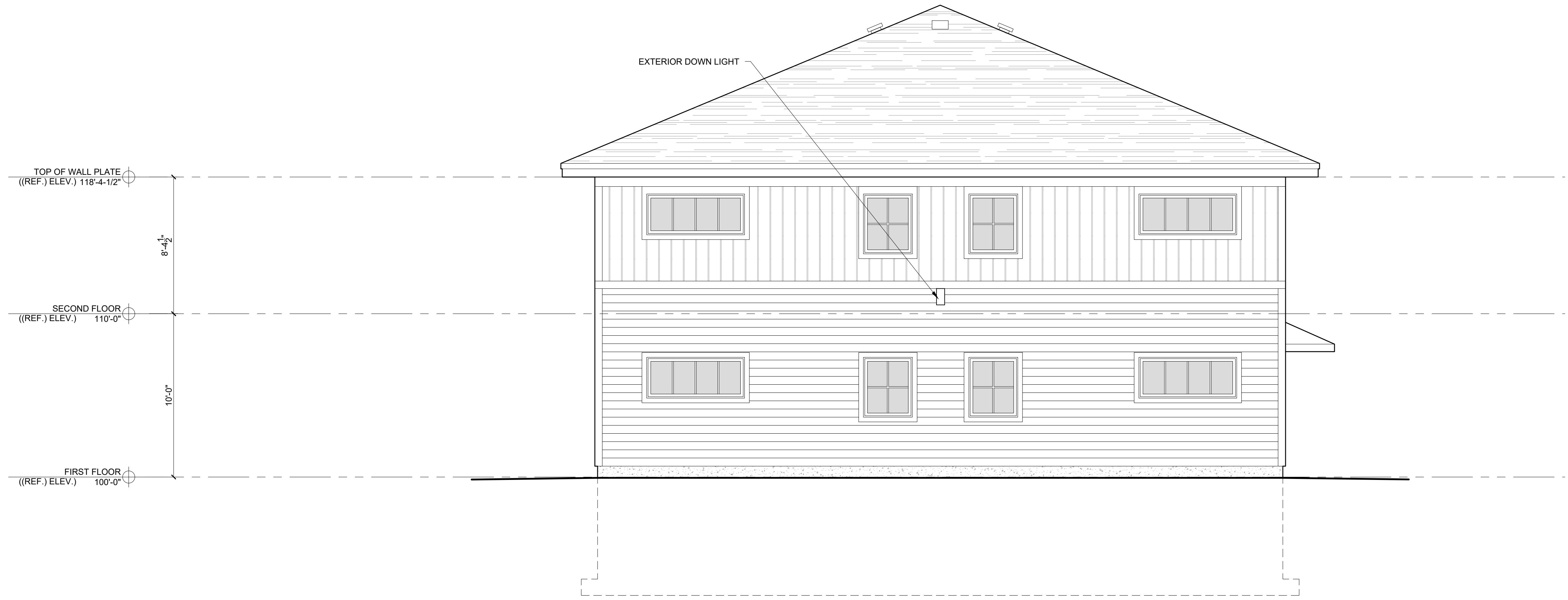
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SHEET TITLE:
NORTH
ELEVATION

A2-1



1B EAST ELEVATION (COLOR KEY ELEVATION)
1/4" = 1'-0"



1 EAST ELEVATION
1/4" = 1'-0"

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APARTMENTS
22 SHAPLEIGH ROAD
KITTERY, MAINE



RYAN SENATORE
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500 CONGRESS STREET, SUITE 2
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CONSULTANTS:

REVISIONS:
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CHECKED BY: RJS

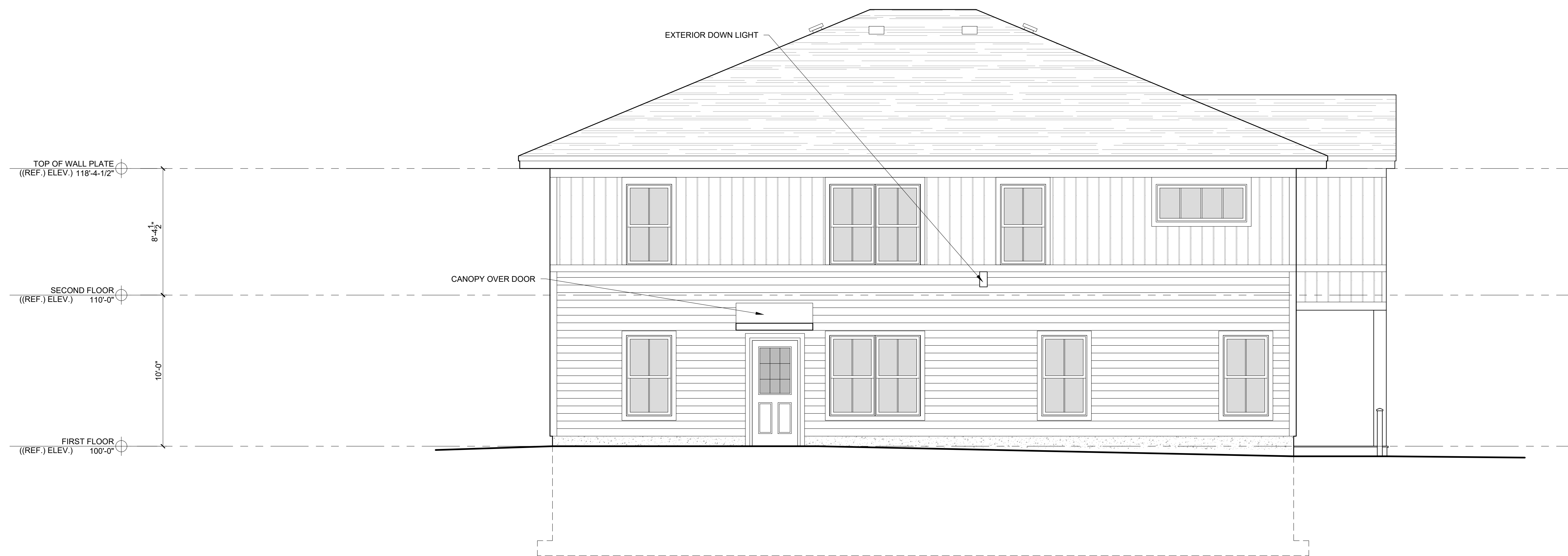
SCALE: AS NOTED

SHEET TITLE:
EAST
ELEVATION

A2-2



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



1 SOUTH ELEVATION
1/4" = 1'-0"

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APARTMENTS
22 SHAPLEIGH ROAD
KITTERY, MAINE



RYAN SENATORE ARCHITECTURE
500 CONGRESS STREET, SUITE 2
PORTLAND, MAINE 04101
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CONSULTANTS:

REVISIONS:

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MARCH 07, 2023

DATE:

PROJECT No. 2171

DRAWN BY: RRT, RJS

CHECKED BY: RJS

SCALE: AS NOTED

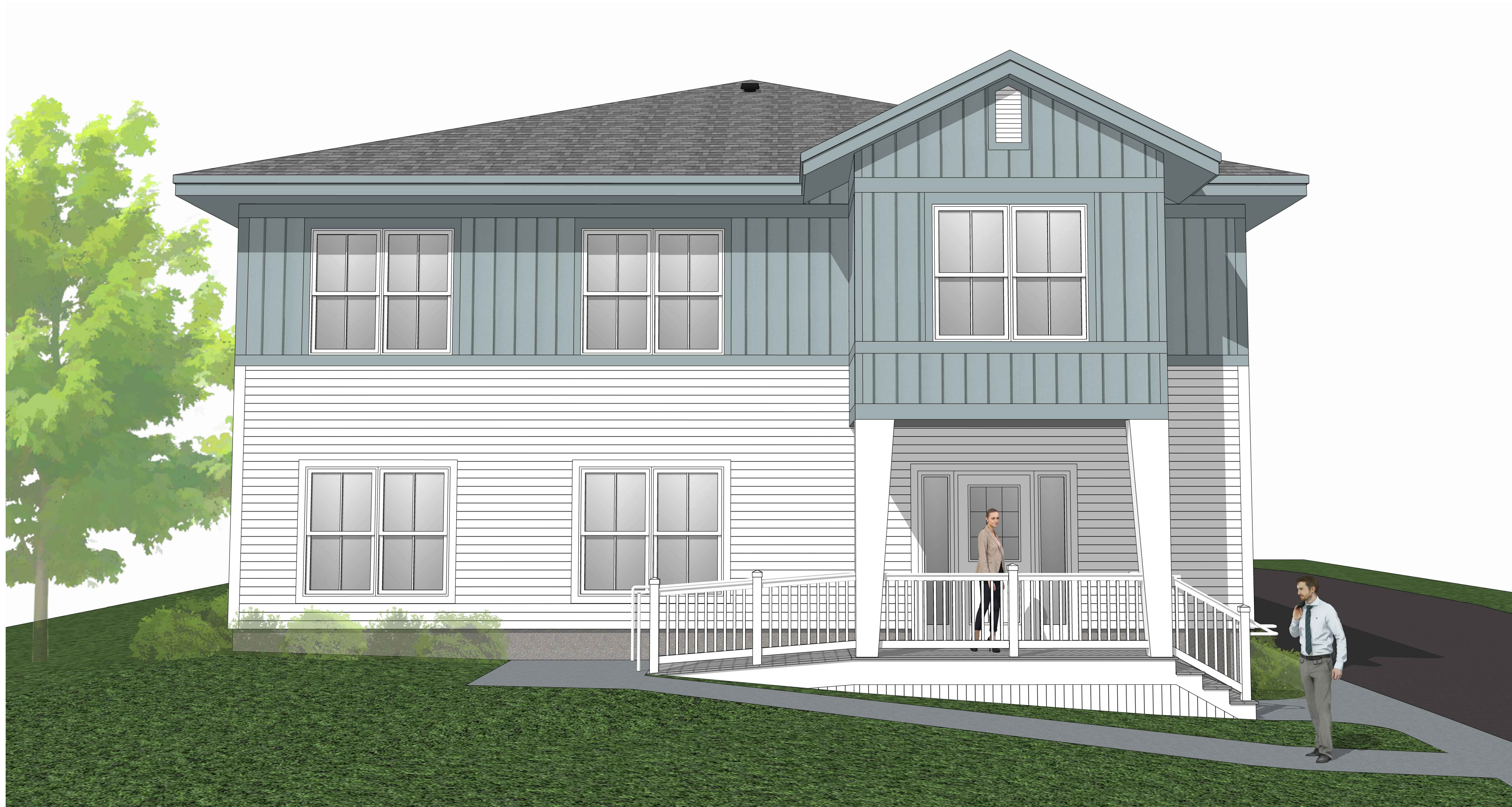
SHEET TITLE:
SOUTH ELEVATION

A2-3

RESIDENCES

22 SHAPLEIGH RD, KITTERY, MAINE

FEBRUARY 27, 2023



1 COLOR OPTION 1-1
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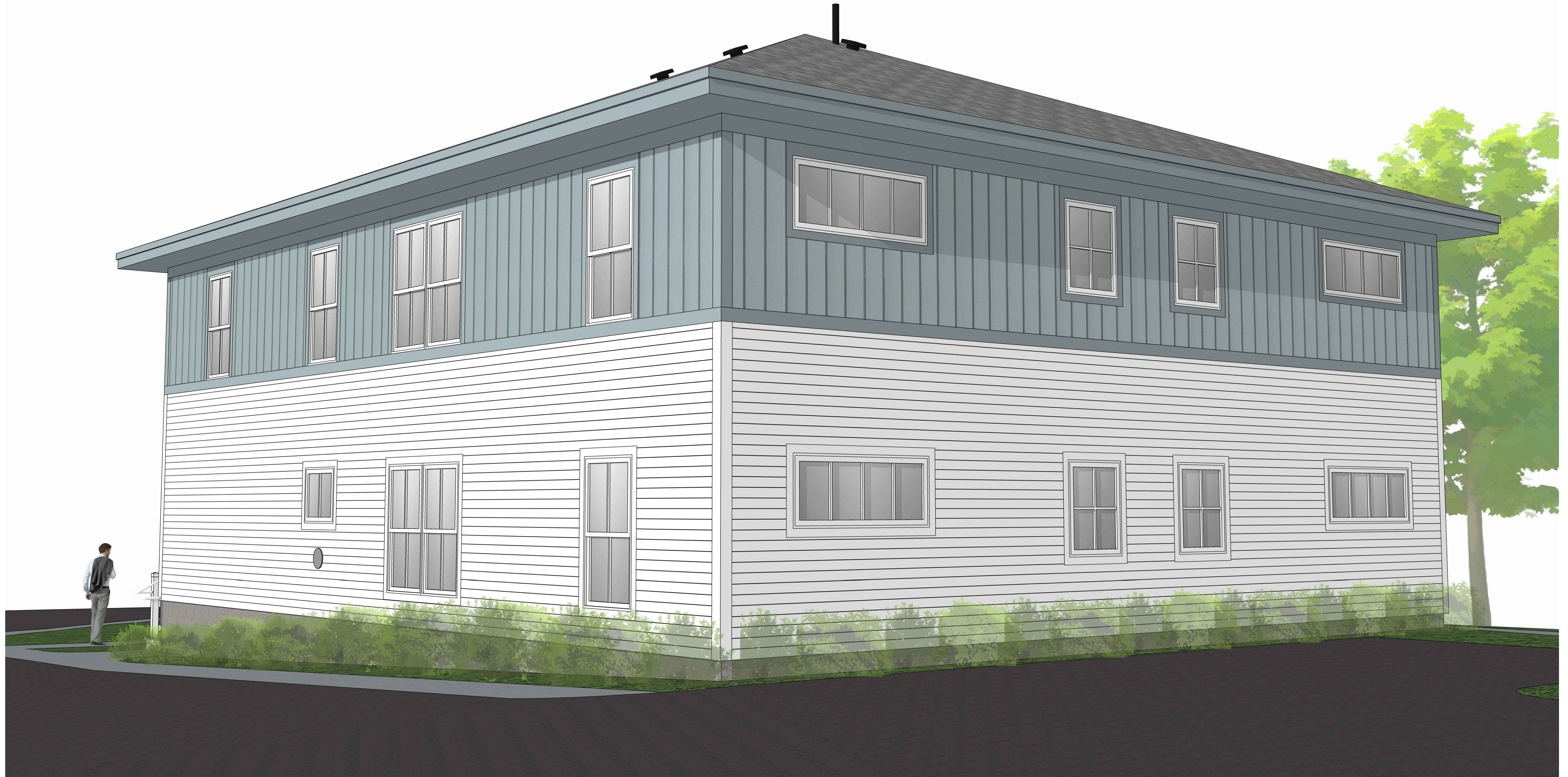
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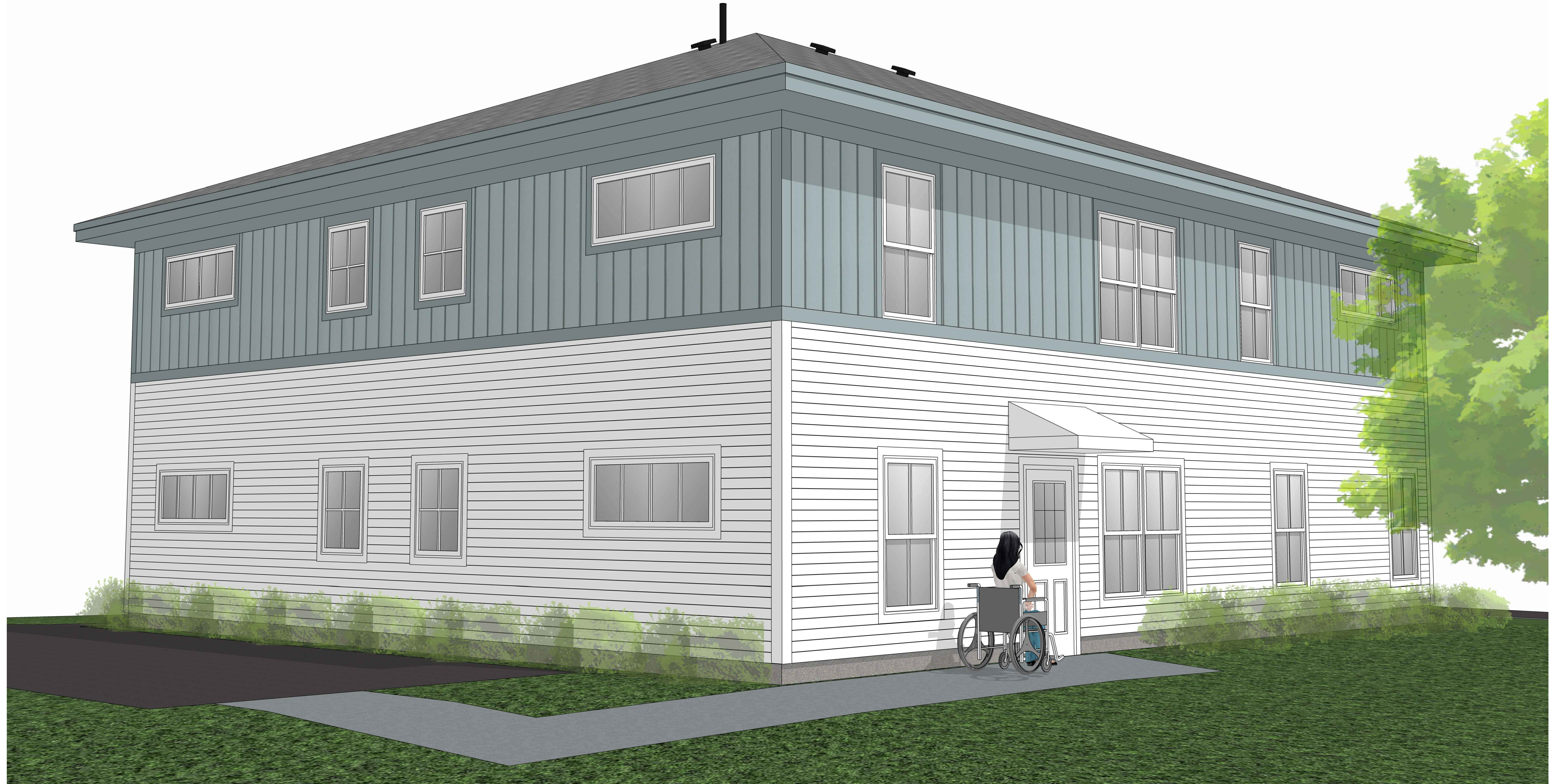
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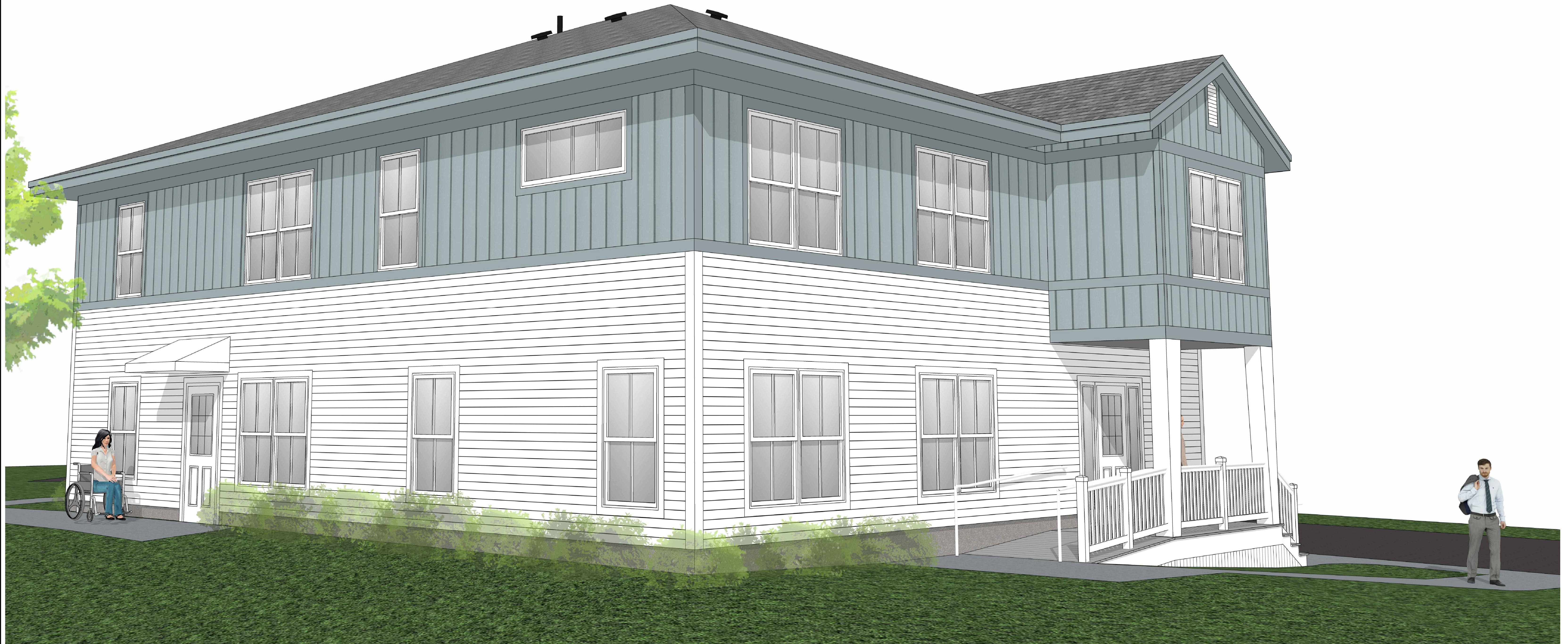
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PROJECT :
MAINSRING COLLECTIVE
 Fairtide + Footprints
 22 Shapleigh Road,
 Kittery, ME

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 © 2023 ARQ architects

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 43 Wellwood Road
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Civil Consultants
 PO BOX 100, South Berwick
 ME 03908 207-384-2550

NOTES :

REVISIONS :

NO	DATE	REVISION

Schematic Design
 February 17, 2023
 Revised April 4, 2023

SEAL & SIGNATURE:	DATE:	2-17-23
	PROJECT NO:	2022-10
	DRAWING BY:	JO
	CHECK BY:	LS
	DWG NO:	
	FILE No:	

PROJECT :
MAINSRING COLLECTIVE
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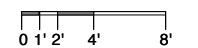
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2. Vegetative Plant Cover (Optional)
3. Solar Array (Optional)

REVISIONS :

NO	DATE	REVISION

WEST ELEVATION



Schematic Design
 February 17, 2023
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SCALE: **3/16" = 1'-0"**
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	DWG NO:
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FILE No:	



PROJECT :
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 Kittery, ME

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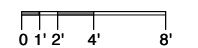
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3. Solar Array (Optional)

REVISIONS :

NO	DATE	REVISION

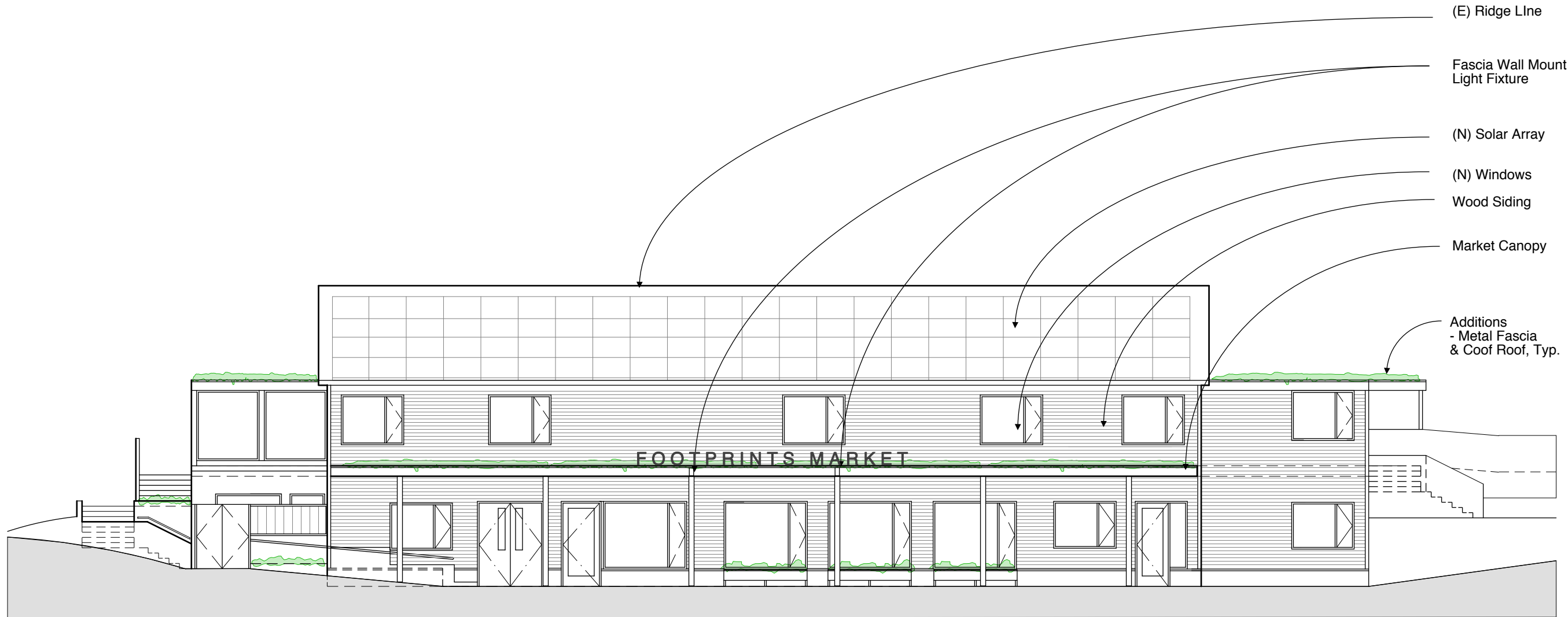
SOUTH ELEVATION



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 February 17, 2023
 Revised April 4, 2023

SCALE: 3/16" = 1'-0"
 © FULL SIZE - 24" x 36"

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FILE No:	



PROJECT :
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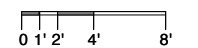
NOTES :

1. Color Palette similar- all elevations See A6 for notes.
2. Vegetative Plant Cover (Optional)

REVISIONS :

NO	DATE	REVISION

EAST ELEVATION



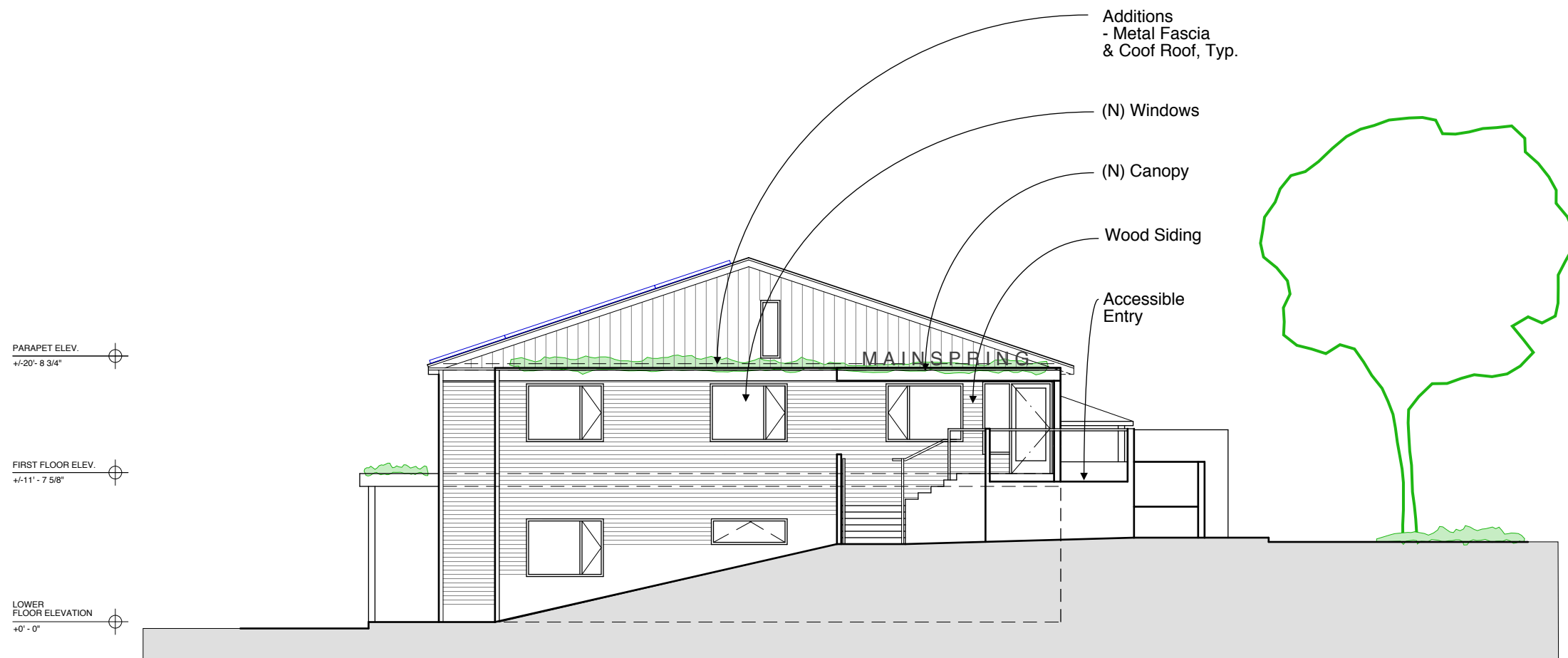
Schematic Design
 February 17, 2023
 Revised April 4, 2023

SCALE: **3/16" = 1'-0"**
 © FULL SIZE - 24" x 36"

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	PROJECT NO: 2022-10
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A 8

FILE No:



PROJECT :
MAINSRING COLLECTIVE
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 Kittery, ME

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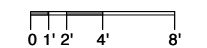
NOTES :

1. Color Palette similar- all elevations See A6 for notes.
2. Vegetative Plant Cover (Optional)

REVISIONS :

NO	DATE	REVISION

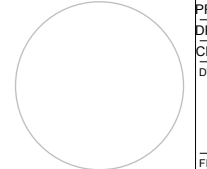
NORTH ELEVATION



Schematic Design
 February 17, 2023
 Revised April 4, 2023

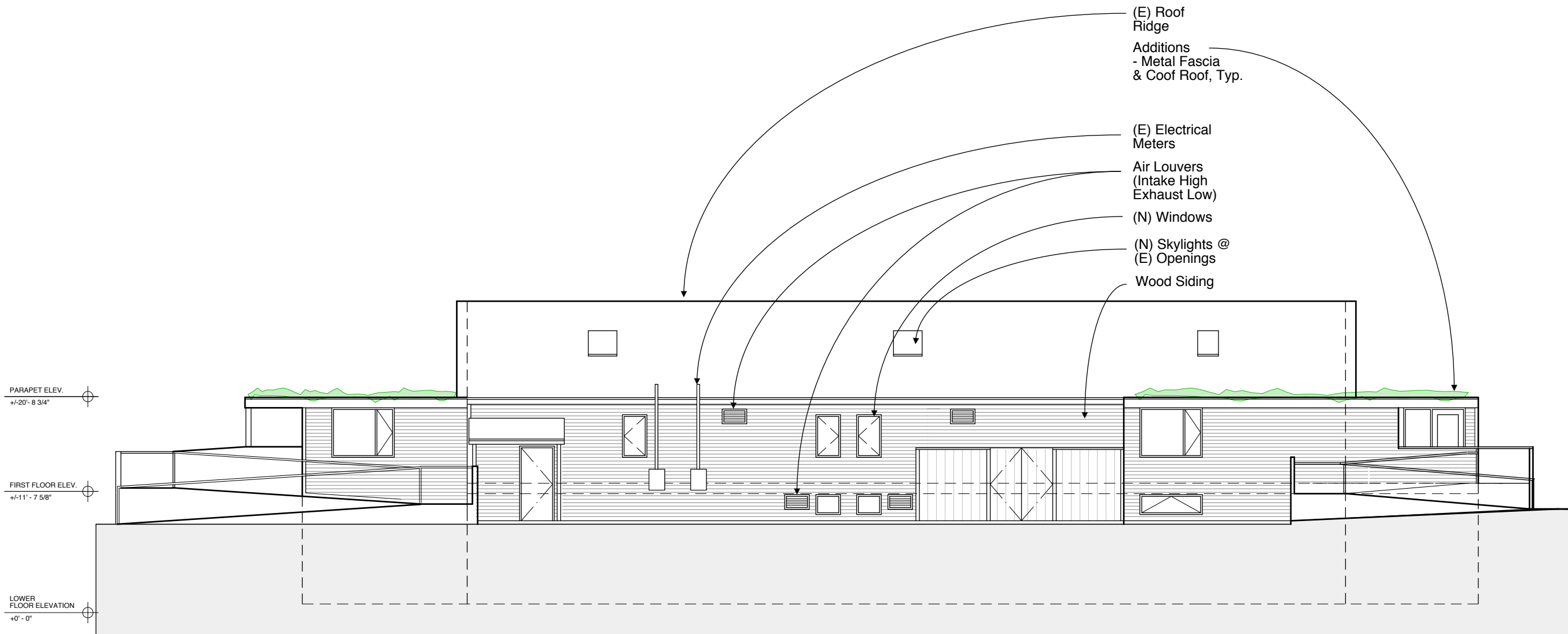
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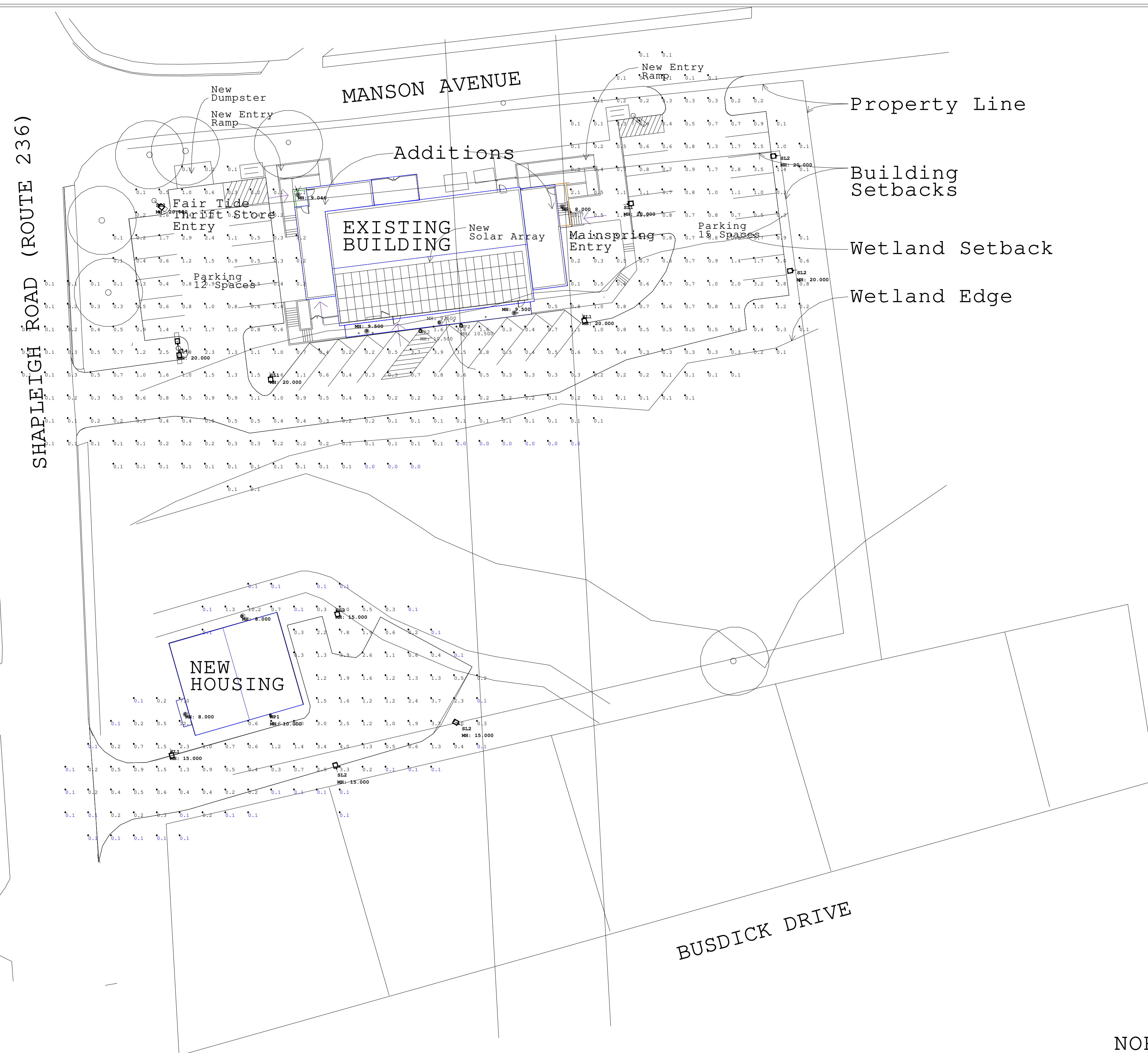
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 CHECK BY: --
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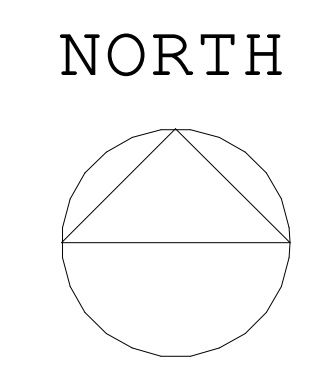
A 9

FILE No:





SITE PLAN- OVERALL
 Exterior Lighting Review
 December 28, 2022



Symbol	Tag	Qty	Label	Arrangement	LLF	Description	Lum. Watts	Lum. Lumens
WP2	WP2	2	33817K3_BEGA_IES	Single	1.000	WALL LUMINAIRE	17	1389
WP1	WP1	1	33815K3	Single	1.000	WALL LUMINAIRE	11.1	618
SL1	SL1	7	24430K3	Single	1.000	SURFACE CYLINDER	20	2090
SL2	SL2	4	77025K3	Single	1.000	ASYMMETRIC WIDE SINGLE POLE TOP LUMINAIRE	20	2091
SL3	SL3	6	84247K3	Single	1.000	ASYMMETRIC SINGLE POLE TOP LUMINAIRE	26	3250
SL4	SL4	1	84254K3	Back-Back	1.000	ASYMMETRIC WIDE TWIN POLE TOP LUMINAIRE	20	2343

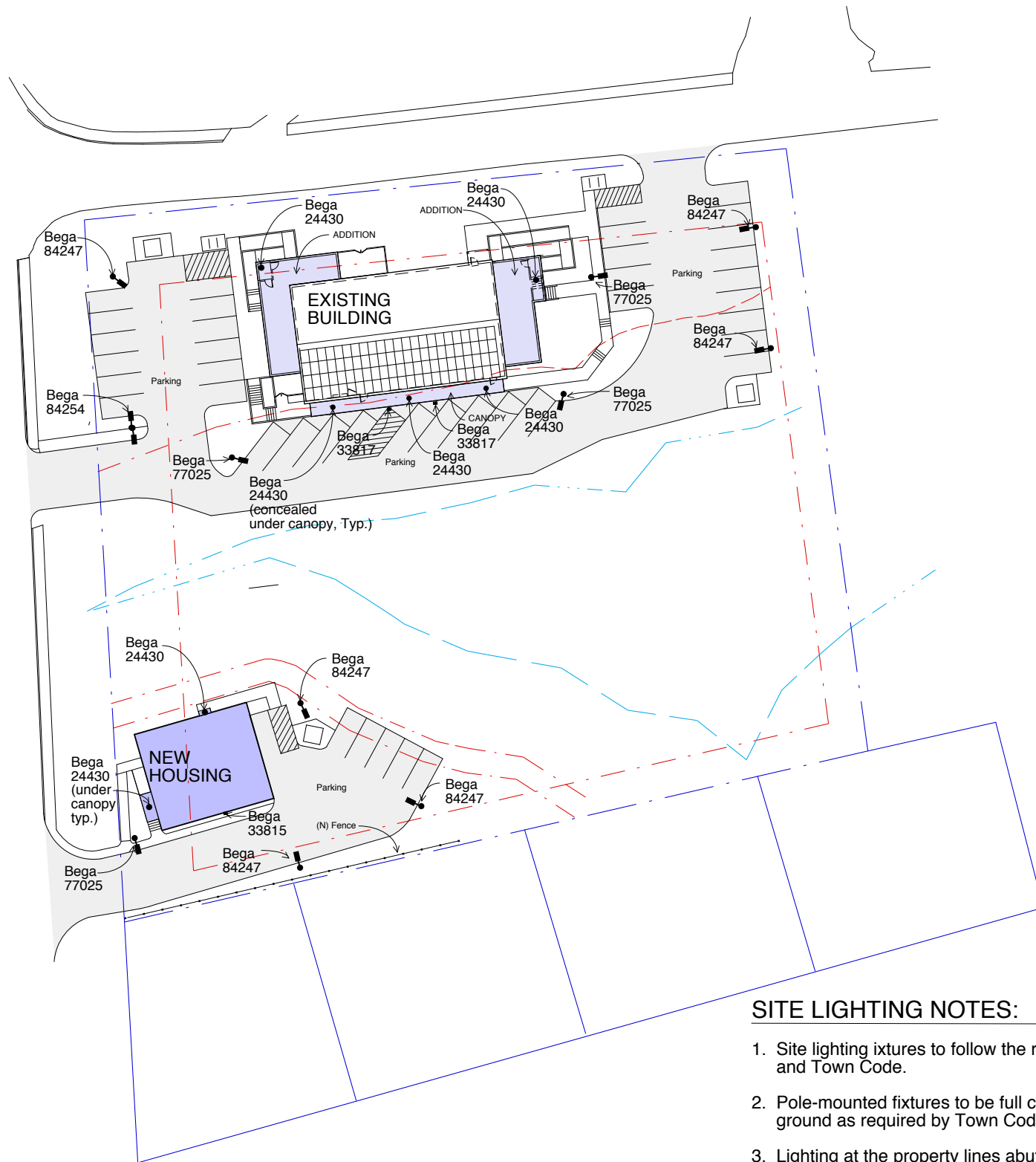
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
HOUSE AREA - ALL POINTS	Illuminance	Fc	1.19	12.3	0.1	11.90	123.00	0
MAIN BUILDING - ALL POINTS	Illuminance	Fc	0.65	10.7	0.0	N.A.	N.A.	0
NEW HOUSING - PARKING AREA	Illuminance	Fc	1.25	4.0	0.2	6.25	20.00	
STORE & MARKET - PARKING AREA	Illuminance	Fc	0.90	3.9	0.2	4.50	19.50	



#	Date	Comments
	4/3/23	Revised Pole Locations
	4/4/23	Revised Pole Locations

Drawn By:	Checked By:	Date:	Scale:
		4/4/2023	NTS

MAINSRING
22 SHAPLEIGH RD, KITTERY, ME
PROPOSED SITE LIGHTING



SITE LIGHTING NOTES:

1. Site lighting fixtures to follow the requirements of the Kittery Design Handbook and Town Code.
2. Pole-mounted fixtures to be full cut-off type mounted no higher than 20'-0" above ground as required by Town Code.
3. Lighting at the property lines abutting residential properties must not exceed 0.1 footcandles.
4. Unshielded light bulbs are not allowed.
5. Where commercial properties abut residential areas, lighting in parking lots should be reduced to an average of 0.2 footcandles within one hour after closing.
6. The illumination of access drives must provide for a uniformity ratio of not more than 4:1 (ratio of average to minimum luminance). The illumination of parking lots and outdoor sales and service areas must provide for a uniformity ratio of not more than 20:1 (ratio of maximum to minimum luminance).
7. The maximum illumination level within access drives, parking lots and sales and service areas may not exceed eight footcandles measured at the ground surface.

FIXTURE TYPE 1: BEGA 33817 K3

Wall Mount Tag WP2

Lamp: 17 W
 CCT/CRI: 3000 K 80 CRI
 Lumens: 1389 lumen
 Finish: Black (BLK)

Fascia Mount - Zero Uplight/Darksky-Mount 10' above grade



FIXTURE TYPE 2: BEGA 33815 K3

Wall Mount Tag WP1

Lamp: 11.1 W
 CCT/CRI: 3000 K 80 CRI
 Lumens: 618 lumen
 Finish: White (WHT)

Surface Wall Mount - Zero Uplight/Darksky-Mount 10' above grade



FIXTURE TYPE 3: BEGA 24430 K3
Single-Head

Lamp: 15.8 W
 CRI: 3000 K
 Lumens: 2,090 lumen
 Finish: Black

Ceiling-Mounted Under Canopy - Concealed by Fascia



FIXTURE TYPE 4: BEGA 77025 K3

Single Head Tag SL1

Lamp: 20 W
 CRI: 3000 K
 Lumens: 2,091 lumen
 Finish: Black
 BUG Rating: B1-U0-G1

Full Cut-Off, Pole-mounted Ht. as noted on Lumen Plan



FIXTURE TYPE 5: BEGA 84247 K3

Sgl Head Tag SL2

Lamp: 26 W
 CRI: 3000 K
 Lumens: 3250 lumen
 Finish: Black
 BUG Rating: B1-U0-G1

Full Cut-Off Pole-mounted Ht as Notes on Lumen Plan



FIXTURE TYPE 6: BEGA 84254 K3

Dual Head Tag SL4

Lamp: 20 W
 CRI: 3000 K
 Lumens: 2343 lumen
 Finish: Black
 BUG Rating: B1-U0-G1

Full Cut-Off Pole-mounted 20'-0" Above ground

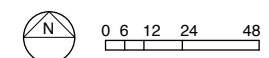


MAINSRING

22 SHAPLEIGH ROAD, KITTERY, MAINE

JANUARY 5, 2023- REVISED APRIL 4, 2023

Light Fixture Data



ARQ Architects

Jason Garnham

From: Jodie Bray Strickland <jstrickland@cmaengineers.com>
Sent: Wednesday, April 5, 2023 3:56 PM
To: geoff@civcon.com; Jason Garnham
Subject: RE: FAIR TIDE - WETLANDS (2133500)

Geoff-

My previous comments on the lighting plan appear to have been addressed.

Best,
Jodie

Jodie Bray Strickland, P.E.
Senior Project Engineer



[CIVIL/ENVIRONMENTAL/STRUCTURAL](#)

35 Bow St.
Portsmouth, NH 03801
CELL: 603-817-4716
jstrickland@cmaengineers.com

From: geoff@civcon.com <geoff@civcon.com>
Sent: Wednesday, April 5, 2023 3:47 PM
To: Jodie Bray Strickland <jstrickland@cmaengineers.com>; 'Jason Garnham' <JGarnham@kitteryme.org>
Subject: RE: FAIR TIDE - WETLANDS (2133500)

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Jodie,

That is great. Attached is the site lighting plans. Can you review this piecemeal. That was the last technical item I believe that was outstanding.

I am pushing to get the information submitted by tomorrow so we can be on the April agenda.

Thank you for your assistance with this.

Geoff

Geoff Aleva
CIVIL CONSULTANTS

From: Jodie Bray Strickland <jstrickland@cmaengineers.com>
Sent: Wednesday, April 5, 2023 3:03 PM

To: geoff@civcon.com; 'Jason Garnham' <JGarnham@kitteryme.org>

Subject: RE: FAIR TIDE - WETLANDS

Geoff-

I apologize for confusing the terminology.

This letter should be fine.

Best,

Jodie

Jodie Bray Strickland, P.E.

Senior Project Engineer



CIVIL/ENVIRONMENTAL/STRUCTURAL

35 Bow St.

Portsmouth, NH 03801

CELL: 603-817-4716

jstrickland@cmaengineers.com

From: geoff@civcon.com <geoff@civcon.com>

Sent: Saturday, April 1, 2023 9:02 AM

To: Jodie Bray Strickland <jstrickland@cmaengineers.com>; 'Jason Garnham' <JGarnham@kitteryme.org>

Subject: FAIR TIDE - WETLANDS

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Jodie,

As you know ME does not license wetland scientists. Does this letter suffice for the coordination information?

We will have the updated lighting plan for you to review on Monday. We are hoping to get a final submission package in early in the week to get on the next available planning board meeting.

Please let me know if you have any questions. Thank you for assisting us on the project review.

Geoff

Geoffrey R. Aleva, PE

President

Structural / Civil Engineer

CIVIL CONSULTANTS

PO Box 100 / 293 Main Street

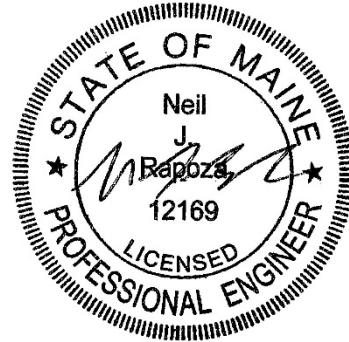
South Berwick, Maine 03908

ph: 207-384-2550

fx: 207-384-2112

mobile: 603-781-1402

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The seal affixed above applies to this report and all attachments including the HydroCAD calculations, Stormwater Plans D1, D2

***Site Plan Application
Stormwater Management Plan***

**“FAIR TIDE, INC.”
KITTERY, MAINE**

Prepared for

**Fair Tide, Inc.
15 State Road
Kittery, ME 03904**

January 2023

Site Plan Application

STORMWATER MANAGEMENT PLAN

“Fair Tide, Inc.”
22 Shapleigh Road
Kittery, Maine

Prepared for:

Fair Tide, Inc.
15 State Rd.
Kittery, ME 03904

January 2023
Revised March 2023

INTRODUCTION:

The proposed development is located at 22 Shapleigh Road in Kittery, Maine. The lot is known as Map 15, Lot 64 on the Town of Kittery tax map system. The existing lot contains approximately 1.95 acres of land, of which 0.61 acres is impervious coverage.

There is an existing ~~4,070~~ **4,069** SF commercial building on the property. This building and the associated parking will be redeveloped for use as described in the site plan application.

The developed portion of the site contains a large parking lot and surrounding grass cover. A wetland is located in the middle of the lot that has an approximate area of 24,000 SF. Culverts convey flow into the on-site wetland across Shapleigh Road and Manson Avenue, with a single culvert outlet draining to the south.

The new development will consist of the construction of a building housing ~~three~~ **six** units with a new associated parking lot. This portion of the development will gain access to the site via a new entrance from Shapleigh Road.

The project will disturb less than an acre and will not require DEP review. The impervious area of the site will increase by approximately 0.12 acres

DESIGN REQUIREMENTS:

Section 16.7.11.C(4) of the Town of Kittery Land Use and Development Code requires post-development peak discharges be limited to pre-development levels for a 2- year and 25-year, 24 hour storm (Portsmouth, NH storm intensities).

The analysis for this report includes the 2-year and 25-year events to predict the downstream effects of the proposed site coverage changes.

EXISTING DRAINAGE CONDITIONS:

The existing lot generally slopes from the perimeter inward to an on-site wetland. The wetland outlets to the south property line through a 12” culvert, modeled as OUT 1.

A small portion drains southwest to Shapleigh Road. The flows to this area are modeled as OUT 2.

The analysis of the existing drainage has been limited in extent to the property line. This is justified by the fact that all stormwater is directed away from the property due to natural grades.

Based on the Medium Intensity Soil Survey obtained from the NRCA Web Soil Survey website, soils in the watershed were found to be entirely hydrologic soil type D soils. See sheet D1 for the pre-development drainage conditions.

The area to be developed is not located in a flood zone. A copy of the applicable



FEMA map is included in the Town Site Plan Application.

PROPOSED DRAINAGE:

The proposed site has been designed to limit post-development flows off site to pre-development levels during 2-year and 25-year storms. This will ensure that there are minimal adverse downstream impacts as a result of the new development.

The redevelopment of the northern portion of the lot will result in a reduction of approximately 3,300 SF of impervious area, with some areas of existing pavement converted to grass and other areas of existing landscape planters becoming accessible walkways.

The portion of the development at the southwest corner will create approximately 7,700 SF of new impervious. The development as proposed will direct some of this subcatchment to the large on-site wetland, resulting in flows to Shapleigh Road that generally match those modeled in the pre-developed condition.

ANALYSIS:

The overall perimeter of the watershed remained the same for both Pre- and Post Development analyses. There were ~~three~~ **five** sub-catchments identified in the Pre-Development analysis and ~~eight~~ **seven** in the Post-Development analysis.

Two distinct discharge points were used to compare the pre- and post-development storm water flows to ensure the town standards were met.

For further details regarding subcatchment determination, refer to the

project drawings and D1 & D2 included with this report.

METHODOLOGY:

All runoff calculations were performed using methods based on USDA-SCS Technical Release No. 20 (also known as TR-20). The 2- and 25-year events for the city of Portsmouth, NH (Type III rainfall distribution) were used for the analysis to determine the pre- and post-development peak discharge rates per Town of Kittery requirements. Rainfall data was obtained from the Extreme Precipitation in New York & New England Web Tool by Cornell University.

Runoff curve numbers (CN) and times of concentration (Tc) were determined by the methods outlined in USDA-SCS Technical Release No. 55 (better known as TR-55). On site watershed areas were determined using two-foot contour data gathered from an on the ground field survey performed by Civil Consultants, with off-site topography obtained using available LIDAR data.

The detailed analysis for this project was performed by computer utilizing "HYDROCAD" stormwater modeling software. The computer printouts are attached.

The attached Pre- and Post Development plans (D1 & D2) show subcatchment boundaries, hydraulic flow lines, existing and development, and drainage features and facilities. Land cover type boundaries used in the model for on-site areas are also shown on the plan (i.e. tree lines, gravel, etc).



FLOW RATES:

TWO-YEAR EVENT -

Discharge Point Desig Pre/Post	Peak Runoff (in cfs)		Change (cfs)
	Pre	Post	
OUT 1	<u>3.48</u>	<u>3.55</u>	<u>+0.07</u>
OUT 2	<u>0.47</u>	<u>0.52</u>	<u>+0.05</u>

TWENTY-FIVE-YEAR EVENT -

Discharge Point Desig Pre/Post	Peak Runoff (in cfs)		Change (cfs)
	Pre	Post	
OUT 1	<u>4.67</u>	<u>4.73</u>	<u>+0.06</u>
OUT 2	<u>1.37</u>	<u>1.22</u>	<u>-0.15</u>

CONCLUSIONS:

It is our opinion that there will be no adverse downstream impacts as a result of this project, and the surrounding lots have been sufficiently protected by the proposed stormwater management plan.

J:\aaa\2021\2133500\DRAINAGE\20230303-2133500-DRAINAGE_NARRATIVE (Rev-1).docx

Although there are increases to individual analysis points OUT 1 and OUT 2, the proposed stormwater management design predicts essentially unchanged flows compared to the pre-development condition. This has been achieved by reducing impervious cover from land draining to OUT 1, and by directing new pavement to now drain to that outlet and away from OUT 2.

If additional BMP's were implemented to attempt to reduce the flows further, it would likely create more disturbance than would be reasonable for a development of this size. It is our opinion that the more prudent option is to allow the smallest footprint possible with the layout as proposed.

The slope and poor soils on site make it difficult to design and implement stormwater control. This includes a gravel drip edge around the revised parking area to lessen erosion of the adjacent slope and provide additional protection for the receiving wetland.

A stormwater maintenance and inspection plan has also been included as part of this submission.



Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.763 degrees West
Latitude	43.072 degrees North
Elevation	0 feet
Date/Time	Tue, 03 Jan 2023 14:15:46 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.04	1yr	0.70	0.98	1.21	1.56	2.03	2.66	2.92	1yr	2.35	2.81	3.22	3.94	4.55	1yr
2yr	0.32	0.50	0.62	0.81	1.02	1.30	2yr	0.88	1.18	1.52	1.94	2.49	3.21	3.57	2yr	2.84	3.43	3.94	4.68	5.33	2yr
5yr	0.37	0.58	0.73	0.98	1.25	1.61	5yr	1.08	1.47	1.89	2.43	3.14	4.07	4.58	5yr	3.60	4.40	5.04	5.94	6.70	5yr
10yr	0.41	0.65	0.82	1.12	1.45	1.89	10yr	1.25	1.73	2.23	2.89	3.75	4.87	5.53	10yr	4.31	5.32	6.09	7.11	7.98	10yr
25yr	0.48	0.76	0.97	1.34	1.77	2.34	25yr	1.53	2.14	2.78	3.63	4.74	6.17	7.10	25yr	5.46	6.83	7.80	9.03	10.05	25yr
50yr	0.54	0.86	1.10	1.54	2.07	2.76	50yr	1.79	2.53	3.29	4.32	5.66	7.39	8.58	50yr	6.54	8.25	9.42	10.81	11.98	50yr
100yr	0.60	0.97	1.25	1.77	2.42	3.26	100yr	2.09	2.98	3.90	5.16	6.77	8.85	10.38	100yr	7.83	9.98	11.38	12.96	14.27	100yr
200yr	0.67	1.10	1.43	2.05	2.82	3.83	200yr	2.44	3.52	4.62	6.13	8.08	10.61	12.55	200yr	9.39	12.07	13.76	15.55	17.02	200yr
500yr	0.80	1.31	1.71	2.48	3.48	4.76	500yr	3.00	4.38	5.76	7.70	10.22	13.48	16.14	500yr	11.93	15.52	17.67	19.78	21.49	500yr

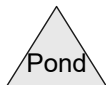
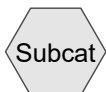
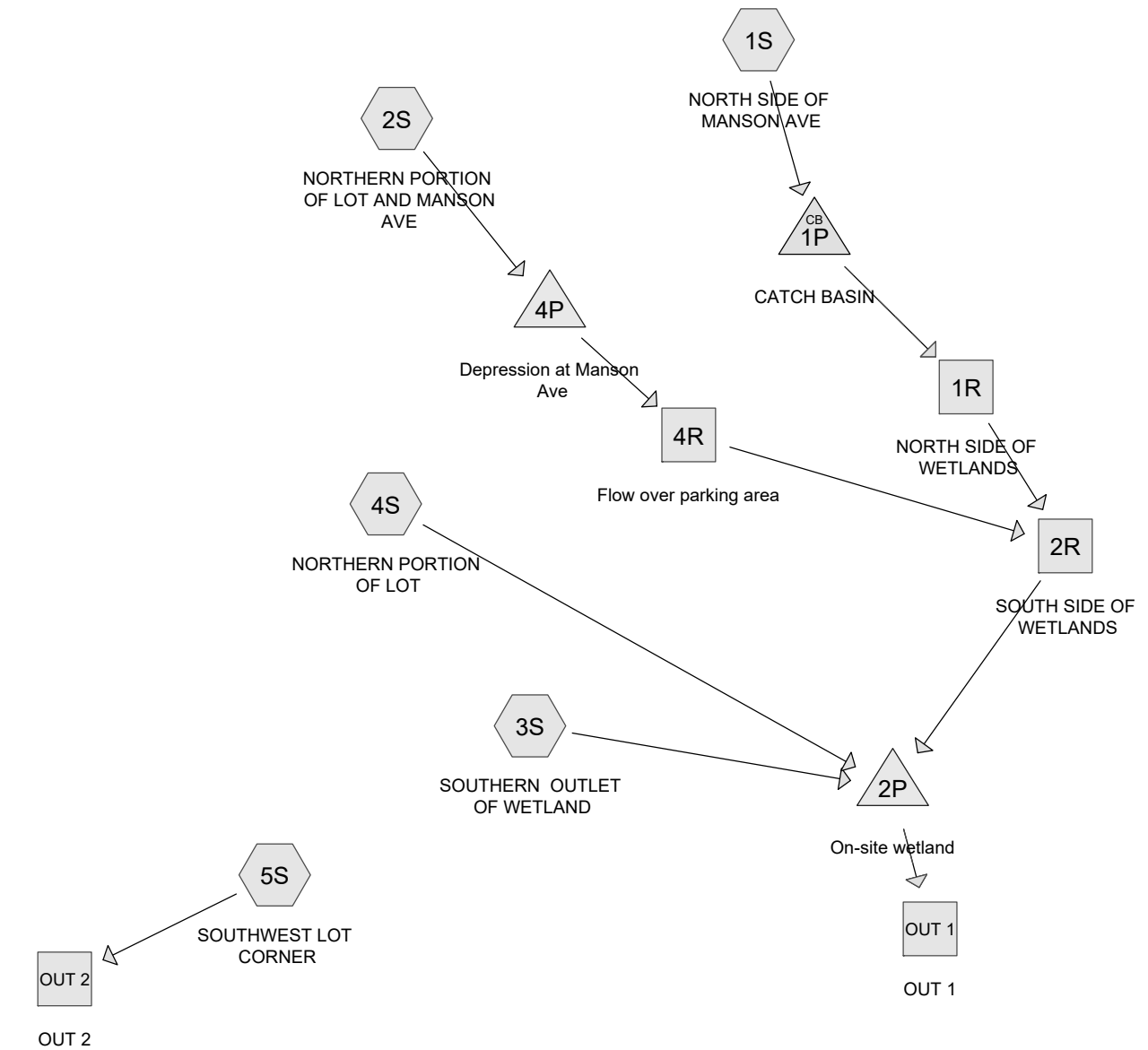
Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.88	1yr	0.63	0.86	0.92	1.33	1.68	2.24	2.49	1yr	1.98	2.40	2.87	3.18	3.90	1yr
2yr	0.31	0.49	0.60	0.81	1.00	1.19	2yr	0.86	1.16	1.37	1.82	2.34	3.06	3.45	2yr	2.71	3.32	3.82	4.55	5.08	2yr
5yr	0.35	0.54	0.67	0.92	1.17	1.40	5yr	1.01	1.37	1.61	2.12	2.73	3.79	4.19	5yr	3.35	4.03	4.72	5.53	6.24	5yr
10yr	0.39	0.59	0.73	1.03	1.33	1.60	10yr	1.14	1.56	1.80	2.39	3.06	4.37	4.86	10yr	3.87	4.67	5.44	6.41	7.20	10yr
25yr	0.44	0.67	0.83	1.19	1.56	1.90	25yr	1.35	1.86	2.10	2.75	3.53	4.72	5.89	25yr	4.18	5.66	6.65	7.79	8.68	25yr
50yr	0.48	0.73	0.91	1.31	1.76	2.17	50yr	1.52	2.12	2.35	3.07	3.93	5.33	6.80	50yr	4.72	6.54	7.72	9.04	10.02	50yr
100yr	0.54	0.81	1.01	1.47	2.01	2.47	100yr	1.73	2.41	2.63	3.41	4.35	6.00	7.85	100yr	5.31	7.55	8.98	10.51	11.56	100yr
200yr	0.59	0.89	1.13	1.63	2.28	2.81	200yr	1.96	2.75	2.93	3.78	4.79	6.72	9.06	200yr	5.95	8.71	10.42	12.22	13.37	200yr
500yr	0.68	1.02	1.31	1.90	2.71	3.36	500yr	2.34	3.29	3.41	4.31	5.45	7.82	10.94	500yr	6.92	10.52	12.69	14.96	16.19	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.54	0.72	0.89	1.08	1yr	0.77	1.06	1.26	1.74	2.21	2.98	3.16	1yr	2.64	3.04	3.58	4.37	5.04	1yr
2yr	0.34	0.52	0.64	0.86	1.07	1.27	2yr	0.92	1.24	1.48	1.96	2.51	3.42	3.70	2yr	3.03	3.56	4.09	4.84	5.63	2yr
5yr	0.40	0.62	0.77	1.05	1.34	1.62	5yr	1.15	1.58	1.88	2.53	3.25	4.34	4.96	5yr	3.84	4.77	5.38	6.37	7.16	5yr
10yr	0.47	0.72	0.89	1.25	1.61	1.98	10yr	1.39	1.93	2.28	3.11	3.95	5.34	6.20	10yr	4.72	5.96	6.82	7.84	8.75	10yr
25yr	0.58	0.88	1.09	1.56	2.05	2.57	25yr	1.77	2.51	2.95	4.07	5.15	7.78	8.34	25yr	6.88	8.02	9.15	10.34	11.41	25yr
50yr	0.67	1.02	1.27	1.83	2.46	3.13	50yr	2.12	3.06	3.60	5.00	6.32	9.74	10.46	50yr	8.62	10.06	11.44	12.72	13.96	50yr
100yr	0.79	1.19	1.49	2.16	2.96	3.81	100yr	2.55	3.72	4.37	6.16	7.76	12.18	13.10	100yr	10.78	12.60	14.31	15.69	17.09	100yr
200yr	0.92	1.39	1.76	2.55	3.56	4.65	200yr	3.07	4.55	5.34	7.58	9.54	15.28	16.44	200yr	13.53	15.81	17.92	19.35	20.92	200yr
500yr	1.15	1.71	2.19	3.19	4.53	6.04	500yr	3.91	5.90	6.93	10.02	12.56	20.65	22.20	500yr	18.27	21.34	24.13	25.51	27.34	500yr





Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.004	87	1/4 acre lots, 38% imp, HSG D (2S, 4S)
0.034	80	>75% Grass cover, Good, HSG D (3S, 5S)
0.022	96	Gravel surface, HSG D (2S)
0.855	98	Paved parking, HSG D (1S, 3S, 4S, 5S)
0.524	93	Paved roads w/open ditches, 50% imp, HSG D (1S, 2S, 4S)
0.248	98	Roofs, HSG D (1S, 2S, 4S, 5S)
1.085	77	Woods, Good, HSG D (3S, 4S, 5S)
0.878	79	Woods/grass comb., Good, HSG D (1S, 2S, 4S)
4.650	86	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
4.650	HSG D	1S, 2S, 3S, 4S, 5S
0.000	Other	
4.650		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	0.000	1.004	0.000	1.004	1/4 acre lots, 38% imp	
0.000	0.000	0.000	0.034	0.000	0.034	>75% Grass cover, Good	
0.000	0.000	0.000	0.022	0.000	0.022	Gravel surface	
0.000	0.000	0.000	0.855	0.000	0.855	Paved parking	
0.000	0.000	0.000	0.524	0.000	0.524	Paved roads w/open ditches, 50% imp	
0.000	0.000	0.000	0.248	0.000	0.248	Roofs	
0.000	0.000	0.000	1.085	0.000	1.085	Woods, Good	
0.000	0.000	0.000	0.878	0.000	0.878	Woods/grass comb., Good	
0.000	0.000	0.000	4.650	0.000	4.650	TOTAL AREA	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: NORTH SIDE OF Runoff Area=1.147 ac 38.49% Impervious Runoff Depth=1.92"
Flow Length=298' Tc=8.7 min CN=87 Runoff=2.35 cfs 0.184 af

Subcatchment 2S: NORTHERN PORTION Runoff Area=52,925 sf 40.16% Impervious Runoff Depth=2.01"
Flow Length=329' Tc=7.9 min CN=88 Runoff=2.67 cfs 0.203 af

Subcatchment 3S: SOUTHERN OUTLET OF Runoff Area=0.508 ac 1.77% Impervious Runoff Depth=1.22"
Flow Length=125' Tc=8.4 min CN=77 Runoff=0.65 cfs 0.052 af

Subcatchment 4S: NORTHERN PORTION Runoff Area=1.430 ac 54.90% Impervious Runoff Depth=2.18"
Flow Length=298' Tc=4.4 min CN=90 Runoff=3.83 cfs 0.260 af

Subcatchment 5S: SOUTHWEST LOT Runoff Area=0.350 ac 6.57% Impervious Runoff Depth=1.34"
Flow Length=138' Tc=10.0 min CN=79 Runoff=0.47 cfs 0.039 af

Reach 1R: NORTH SIDE OF WETLANDS Avg. Flow Depth=0.13' Max Vel=1.64 fps Inflow=2.35 cfs 0.184 af
n=0.030 L=51.3' S=0.0312 '/ Capacity=312.60 cfs Outflow=2.35 cfs 0.184 af

Reach 2R: SOUTH SIDE OF WETLANDS Avg. Flow Depth=0.19' Max Vel=1.73 fps Inflow=5.00 cfs 0.348 af
n=0.030 L=75.0' S=0.0213 '/ Capacity=258.53 cfs Outflow=4.98 cfs 0.348 af

Reach 4R: Flow over parking area Avg. Flow Depth=0.07' Max Vel=3.11 fps Inflow=2.66 cfs 0.164 af
n=0.016 L=95.0' S=0.0505 '/ Capacity=130.20 cfs Outflow=2.65 cfs 0.164 af

Reach OUT 1: OUT 1 Inflow=3.48 cfs 0.659 af
Outflow=3.48 cfs 0.659 af

Reach OUT 2: OUT 2 Inflow=0.47 cfs 0.039 af
Outflow=0.47 cfs 0.039 af

Pond 1P: CATCH BASIN Peak Elev=56.02' Inflow=2.35 cfs 0.184 af
Primary=2.35 cfs 0.184 af Secondary=0.00 cfs 0.000 af Outflow=2.35 cfs 0.184 af

Pond 2P: On-site wetland Peak Elev=46.75' Storage=5,219 cf Inflow=8.67 cfs 0.659 af
Primary=3.48 cfs 0.659 af Secondary=0.00 cfs 0.000 af Outflow=3.48 cfs 0.659 af

Pond 4P: Depression at Manson Ave Peak Elev=55.58' Storage=1,807 cf Inflow=2.67 cfs 0.203 af
Outflow=2.66 cfs 0.164 af

Total Runoff Area = 4.650 ac Runoff Volume = 0.737 af Average Runoff Depth = 1.90"
62.44% Pervious = 2.903 ac 37.56% Impervious = 1.747 ac

Summary for Subcatchment 1S: NORTH SIDE OF MANSON AVE

Runoff = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.223	93	Paved roads w/open ditches, 50% imp, HSG D
0.130	98	Roofs, HSG D
0.200	98	Paved parking, HSG D
0.594	79	Woods/grass comb., Good, HSG D
1.147	87	Weighted Average
0.705		61.51% Pervious Area
0.441		38.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 1.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	17	0.3529	2.97		Shallow Concentrated Flow, 1.2 Woodland Kv= 5.0 fps
1.1	74	0.0541	1.16		Shallow Concentrated Flow, 1.3 Woodland Kv= 5.0 fps
0.2	29	0.2069	2.27		Shallow Concentrated Flow, 1.4 Woodland Kv= 5.0 fps
0.2	128	0.0711	13.59	62.83	Trap/Vee/Rect Channel Flow, 1.5 Bot.W=3.00' D=0.50' Z= 10.0 & 15.0 ' Top.W=15.50' n= 0.013 Asphalt, smooth
8.7	298	Total			

Summary for Subcatchment 2S: NORTHERN PORTION OF LOT AND MANSON AVE

Runoff = 2.67 cfs @ 12.11 hrs, Volume= 0.203 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (sf)	CN	Description
42,863	87	1/4 acre lots, 38% imp, HSG D
4,269	93	Paved roads w/open ditches, 50% imp, HSG D
2,831	98	Roofs, HSG D
958	96	Gravel surface, HSG D
2,004	79	Woods/grass comb., Good, HSG D
52,925	88	Weighted Average
31,672		59.84% Pervious Area
21,253		40.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 2.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.2	38	0.1800	2.97		Shallow Concentrated Flow, 2.2 Short Grass Pasture Kv= 7.0 fps
0.2	101	0.0400	11.01	112.52	Trap/Vee/Rect Channel Flow, 2.3 Bot.W=5.00' D=0.75' Z= 3.0 & 20.0 ' Top.W=22.25' n= 0.016 Asphalt, rough
0.4	140	0.0210	5.94	18.93	Trap/Vee/Rect Channel Flow, 2.4 Bot.W=2.00' D=0.75' Z= 3.0 ' Top.W=6.50' n= 0.022 Earth, clean & straight
7.9	329	Total			

Summary for Subcatchment 3S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.052 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.353	77	Woods, Good, HSG D
0.009	98	Paved parking, HSG D
0.140	77	Woods, Good, HSG D
0.006	80	>75% Grass cover, Good, HSG D
0.508	77	Weighted Average
0.499		98.23% Pervious Area
0.009		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0600	0.10		Sheet Flow, 3.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	30	0.1333	1.83		Shallow Concentrated Flow, 3.2 Woodland Kv= 5.0 fps
0.1	45	0.0578	7.85	294.44	Trap/Vee/Rect Channel Flow, 3.3 Bot.W=5.00' D=1.00' Z= 50.0 & 15.0 ' Top.W=70.00' n= 0.030 Stream, clean & straight
8.4	125	Total			

Summary for Subcatchment 4S: NORTHERN PORTION OF LOT

Runoff = 3.83 cfs @ 12.06 hrs, Volume= 0.260 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.293	77	Woods, Good, HSG D
0.238	79	Woods/grass comb., Good, HSG D
0.020	87	1/4 acre lots, 38% imp, HSG D
0.203	93	Paved roads w/open ditches, 50% imp, HSG D
0.628	98	Paved parking, HSG D
0.048	98	Roofs, HSG D
1.430	90	Weighted Average
0.645		45.10% Pervious Area
0.785		54.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	25	0.0400	0.12		Sheet Flow, 4.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	25	0.3200	2.83		Shallow Concentrated Flow, 4.2 Woodland Kv= 5.0 fps
0.4	73	0.0200	2.87		Shallow Concentrated Flow, 4.3 Paved Kv= 20.3 fps
0.2	105	0.0600	9.80	22.06	Trap/Vee/Rect Channel Flow, 4.4 Bot.W=1.50' D=0.75' Z= 1.0 & 3.0 ' Top.W=4.50' n= 0.022 Earth, clean & straight
0.1	70	0.0570	12.00	229.54	Trap/Vee/Rect Channel Flow, 4.5 Bot.W=3.00' D=0.75' Z= 30.0 ' Top.W=48.00' n= 0.016 Asphalt, rough
4.4	298	Total			

Summary for Subcatchment 5S: SOUTHWEST LOT CORNER

Runoff = 0.47 cfs @ 12.14 hrs, Volume= 0.039 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.005	98	Roofs, HSG D
0.299	77	Woods, Good, HSG D
0.018	98	Paved parking, HSG D
0.028	80	>75% Grass cover, Good, HSG D
0.350	79	Weighted Average
0.327		93.43% Pervious Area
0.023		6.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0500	0.10		Sheet Flow, 5.1 Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	76	0.0350	0.94		Shallow Concentrated Flow, 5.2 Woodland Kv= 5.0 fps
0.0	12	0.0208	7.49	29.98	Trap/Vee/Rect Channel Flow, 5.3 Bot.W=3.00' D=0.50' Z= 10.0 ' Top.W=13.00' n= 0.013 Asphalt, smooth
10.0	138	Total			

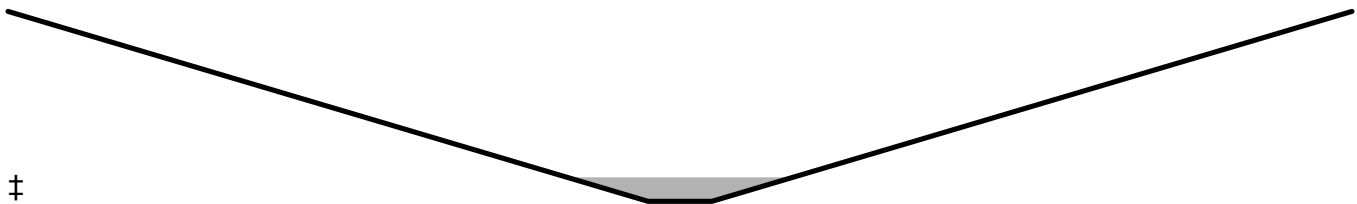
Summary for Reach 1R: NORTH SIDE OF WETLANDS

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 1.92" for 2 yr event
 Inflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
 Outflow = 2.35 cfs @ 12.13 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
 Max. Velocity= 1.64 fps, Min. Travel Time= 0.5 min
 Avg. Velocity = 0.60 fps, Avg. Travel Time= 1.4 min

Peak Storage= 73 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.13'
 Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 312.60 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
 Side Slope Z-value= 50.0 ' Top Width= 105.00'
 Length= 51.3' Slope= 0.0312 '
 Inlet Invert= 48.60', Outlet Invert= 47.00'



Summary for Reach 2R: SOUTH SIDE OF WETLANDS

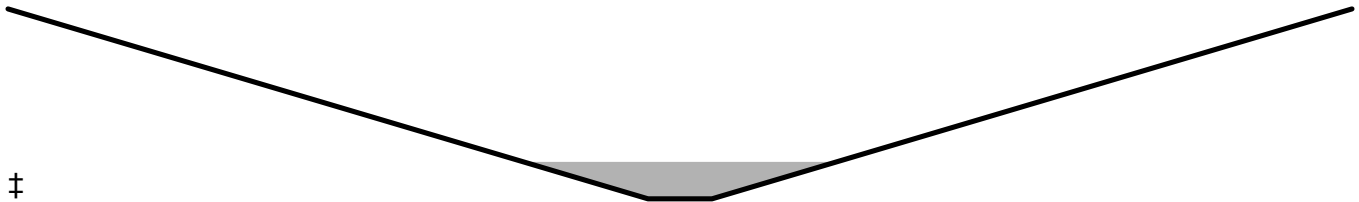
[62] Hint: Exceeded Reach 1R OUTLET depth by 0.07' @ 12.15 hrs

Inflow Area = 2.362 ac, 39.35% Impervious, Inflow Depth = 1.77" for 2 yr event
 Inflow = 5.00 cfs @ 12.13 hrs, Volume= 0.348 af
 Outflow = 4.98 cfs @ 12.14 hrs, Volume= 0.348 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
 Max. Velocity= 1.73 fps, Min. Travel Time= 0.7 min
 Avg. Velocity = 0.61 fps, Avg. Travel Time= 2.0 min

Peak Storage= 215 cf @ 12.14 hrs
 Average Depth at Peak Storage= 0.19'
 Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 258.53 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 50.0 '/' Top Width= 105.00'
Length= 75.0' Slope= 0.0213 '/'
Inlet Invert= 47.00', Outlet Invert= 45.40'



Summary for Reach 4R: Flow over parking area

Inflow Area = 1.215 ac, 40.16% Impervious, Inflow Depth = 1.62" for 2 yr event
Inflow = 2.66 cfs @ 12.12 hrs, Volume= 0.164 af
Outflow = 2.65 cfs @ 12.13 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
Max. Velocity= 3.11 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.94 fps, Avg. Travel Time= 1.7 min

Peak Storage= 81 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 0.50' Flow Area= 13.8 sf, Capacity= 130.20 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
Side Slope Z-value= 35.0 '/' Top Width= 45.00'
Length= 95.0' Slope= 0.0505 '/'
Inlet Invert= 55.30', Outlet Invert= 50.50'



Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.300 ac, 40.08% Impervious, Inflow Depth = 1.84" for 2 yr event
Inflow = 3.48 cfs @ 12.40 hrs, Volume= 0.659 af
Outflow = 3.48 cfs @ 12.40 hrs, Volume= 0.659 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.350 ac, 6.57% Impervious, Inflow Depth = 1.34" for 2 yr event
 Inflow = 0.47 cfs @ 12.14 hrs, Volume= 0.039 af
 Outflow = 0.47 cfs @ 12.14 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1P: CATCH BASIN

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 1.92" for 2 yr event
 Inflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
 Outflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 56.02' @ 12.12 hrs

Flood Elev= 60.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.90'	12.0" Round Culvert L= 163.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.90' / 48.60' S= 0.0386 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	59.50'	10.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.35 cfs @ 12.12 hrs HW=56.02' TW=48.73' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.35 cfs @ 2.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.90' TW=48.60' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 2P: On-site wetland

[62] Hint: Exceeded Reach 2R OUTLET depth by 1.22' @ 12.48 hrs

Inflow Area = 4.300 ac, 40.08% Impervious, Inflow Depth = 1.84" for 2 yr event
 Inflow = 8.67 cfs @ 12.10 hrs, Volume= 0.659 af
 Outflow = 3.48 cfs @ 12.40 hrs, Volume= 0.659 af, Atten= 60%, Lag= 17.8 min
 Primary = 3.48 cfs @ 12.40 hrs, Volume= 0.659 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 46.75' @ 12.40 hrs Surf.Area= 15,115 sf Storage= 5,219 cf

Plug-Flow detention time= 12.9 min calculated for 0.659 af (100% of inflow)

Center-of-Mass det. time= 13.0 min (840.2 - 827.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	45.40'	65,811 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
45.40	500	0	0	500	
46.00	800	386	386	805	
47.00	24,000	9,727	10,114	24,007	
48.00	28,151	26,048	36,162	28,197	
49.00	31,173	29,649	65,811	31,280	

Device	Routing	Invert	Outlet Devices							
#1	Primary	45.40'	12.0" Round Culvert L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.00' S= 0.0156 ' / S= 0.0156 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf							
#2	Secondary	48.50'	15.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63							

Primary OutFlow Max=3.48 cfs @ 12.40 hrs HW=46.75' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.48 cfs @ 4.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.40' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 4P: Depression at Manson Ave

Inflow Area = 1.215 ac, 40.16% Impervious, Inflow Depth = 2.01" for 2 yr event
 Inflow = 2.67 cfs @ 12.11 hrs, Volume= 0.203 af
 Outflow = 2.66 cfs @ 12.12 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.5 min
 Primary = 2.66 cfs @ 12.12 hrs, Volume= 0.164 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 55.58' @ 12.12 hrs Surf.Area= 1,451 sf Storage= 1,807 cf

Plug-Flow detention time= 112.7 min calculated for 0.164 af (81% of inflow)

Center-of-Mass det. time= 38.0 min (854.7 - 816.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	53.00'	2,506 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
53.00	256	0	0	256	
54.00	554	396	396	562	
55.00	917	728	1,123	937	
56.00	1,909	1,383	2,506	1,938	

Device	Routing	Invert	Outlet Devices
#1	Primary	55.50'	45.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.66 cfs @ 12.12 hrs HW=55.58' TW=55.37' (Dynamic Tailwater)
 ↳1=**Broad-Crested Rectangular Weir** (Weir Controls 2.66 cfs @ 0.72 fps)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: NORTH SIDE OF Runoff Area=1.147 ac 38.49% Impervious Runoff Depth=4.68"
Flow Length=298' Tc=8.7 min CN=87 Runoff=5.57 cfs 0.447 af

Subcatchment 2S: NORTHERN PORTION Runoff Area=52,925 sf 40.16% Impervious Runoff Depth=4.79"
Flow Length=329' Tc=7.9 min CN=88 Runoff=6.17 cfs 0.485 af

Subcatchment 3S: SOUTHERN OUTLET OF Runoff Area=0.508 ac 1.77% Impervious Runoff Depth=3.63"
Flow Length=125' Tc=8.4 min CN=77 Runoff=1.99 cfs 0.154 af

Subcatchment 4S: NORTHERN PORTION Runoff Area=1.430 ac 54.90% Impervious Runoff Depth=5.01"
Flow Length=298' Tc=4.4 min CN=90 Runoff=8.46 cfs 0.597 af

Subcatchment 5S: SOUTHWEST LOT Runoff Area=0.350 ac 6.57% Impervious Runoff Depth=3.83"
Flow Length=138' Tc=10.0 min CN=79 Runoff=1.37 cfs 0.112 af

Reach 1R: NORTH SIDE OF WETLANDS Avg. Flow Depth=0.19' Max Vel=2.05 fps Inflow=5.57 cfs 0.447 af
n=0.030 L=51.3' S=0.0312 '/ Capacity=312.60 cfs Outflow=5.56 cfs 0.447 af

Reach 2R: SOUTH SIDE OF WETLANDS Avg. Flow Depth=0.28' Max Vel=2.16 fps Inflow=11.71 cfs 0.893 af
n=0.030 L=75.0' S=0.0213 '/ Capacity=258.53 cfs Outflow=11.67 cfs 0.893 af

Reach 4R: Flow over parking area Avg. Flow Depth=0.11' Max Vel=4.06 fps Inflow=6.15 cfs 0.446 af
n=0.016 L=95.0' S=0.0505 '/ Capacity=130.20 cfs Outflow=6.14 cfs 0.446 af

Reach OUT 1: OUT 1 Inflow=4.67 cfs 1.644 af
Outflow=4.67 cfs 1.644 af

Reach OUT 2: OUT 2 Inflow=1.37 cfs 0.112 af
Outflow=1.37 cfs 0.112 af

Pond 1P: CATCH BASIN Peak Elev=58.88' Inflow=5.57 cfs 0.447 af
Primary=5.57 cfs 0.447 af Secondary=0.00 cfs 0.000 af Outflow=5.57 cfs 0.447 af

Pond 2P: On-site wetland Peak Elev=47.43' Storage=20,761 cf Inflow=20.56 cfs 1.644 af
Primary=4.67 cfs 1.644 af Secondary=0.00 cfs 0.000 af Outflow=4.67 cfs 1.644 af

Pond 4P: Depression at Manson Ave Peak Elev=55.64' Storage=1,899 cf Inflow=6.17 cfs 0.485 af
Outflow=6.15 cfs 0.446 af

Total Runoff Area = 4.650 ac Runoff Volume = 1.795 af Average Runoff Depth = 4.63"
62.44% Pervious = 2.903 ac 37.56% Impervious = 1.747 ac

Summary for Subcatchment 1S: NORTH SIDE OF MANSON AVE

Runoff = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.223	93	Paved roads w/open ditches, 50% imp, HSG D
0.130	98	Roofs, HSG D
0.200	98	Paved parking, HSG D
0.594	79	Woods/grass comb., Good, HSG D
1.147	87	Weighted Average
0.705		61.51% Pervious Area
0.441		38.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 1.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	17	0.3529	2.97		Shallow Concentrated Flow, 1.2 Woodland Kv= 5.0 fps
1.1	74	0.0541	1.16		Shallow Concentrated Flow, 1.3 Woodland Kv= 5.0 fps
0.2	29	0.2069	2.27		Shallow Concentrated Flow, 1.4 Woodland Kv= 5.0 fps
0.2	128	0.0711	13.59	62.83	Trap/Vee/Rect Channel Flow, 1.5 Bot.W=3.00' D=0.50' Z= 10.0 & 15.0 ' Top.W=15.50' n= 0.013 Asphalt, smooth
8.7	298	Total			

Summary for Subcatchment 2S: NORTHERN PORTION OF LOT AND MANSON AVE

Runoff = 6.17 cfs @ 12.11 hrs, Volume= 0.485 af, Depth= 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (sf)	CN	Description
42,863	87	1/4 acre lots, 38% imp, HSG D
4,269	93	Paved roads w/open ditches, 50% imp, HSG D
2,831	98	Roofs, HSG D
958	96	Gravel surface, HSG D
2,004	79	Woods/grass comb., Good, HSG D
52,925	88	Weighted Average
31,672		59.84% Pervious Area
21,253		40.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 2.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.2	38	0.1800	2.97		Shallow Concentrated Flow, 2.2 Short Grass Pasture Kv= 7.0 fps
0.2	101	0.0400	11.01	112.52	Trap/Vee/Rect Channel Flow, 2.3 Bot.W=5.00' D=0.75' Z= 3.0 & 20.0 ' Top.W=22.25' n= 0.016 Asphalt, rough
0.4	140	0.0210	5.94	18.93	Trap/Vee/Rect Channel Flow, 2.4 Bot.W=2.00' D=0.75' Z= 3.0 ' Top.W=6.50' n= 0.022 Earth, clean & straight
7.9	329	Total			

Summary for Subcatchment 3S: SOUTHERN OUTLET OF WETLAND

Runoff = 1.99 cfs @ 12.12 hrs, Volume= 0.154 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.353	77	Woods, Good, HSG D
0.009	98	Paved parking, HSG D
0.140	77	Woods, Good, HSG D
0.006	80	>75% Grass cover, Good, HSG D
0.508	77	Weighted Average
0.499		98.23% Pervious Area
0.009		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0600	0.10		Sheet Flow, 3.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	30	0.1333	1.83		Shallow Concentrated Flow, 3.2 Woodland Kv= 5.0 fps
0.1	45	0.0578	7.85	294.44	Trap/Vee/Rect Channel Flow, 3.3 Bot.W=5.00' D=1.00' Z= 50.0 & 15.0 ' Top.W=70.00' n= 0.030 Stream, clean & straight
8.4	125	Total			

Summary for Subcatchment 4S: NORTHERN PORTION OF LOT

Runoff = 8.46 cfs @ 12.06 hrs, Volume= 0.597 af, Depth= 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.293	77	Woods, Good, HSG D
0.238	79	Woods/grass comb., Good, HSG D
0.020	87	1/4 acre lots, 38% imp, HSG D
0.203	93	Paved roads w/open ditches, 50% imp, HSG D
0.628	98	Paved parking, HSG D
0.048	98	Roofs, HSG D
1.430	90	Weighted Average
0.645		45.10% Pervious Area
0.785		54.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	25	0.0400	0.12		Sheet Flow, 4.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	25	0.3200	2.83		Shallow Concentrated Flow, 4.2 Woodland Kv= 5.0 fps
0.4	73	0.0200	2.87		Shallow Concentrated Flow, 4.3 Paved Kv= 20.3 fps
0.2	105	0.0600	9.80	22.06	Trap/Vee/Rect Channel Flow, 4.4 Bot.W=1.50' D=0.75' Z= 1.0 & 3.0 ' Top.W=4.50' n= 0.022 Earth, clean & straight
0.1	70	0.0570	12.00	229.54	Trap/Vee/Rect Channel Flow, 4.5 Bot.W=3.00' D=0.75' Z= 30.0 ' Top.W=48.00' n= 0.016 Asphalt, rough
4.4	298	Total			

Summary for Subcatchment 5S: SOUTHWEST LOT CORNER

Runoff = 1.37 cfs @ 12.14 hrs, Volume= 0.112 af, Depth= 3.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.005	98	Roofs, HSG D
0.299	77	Woods, Good, HSG D
0.018	98	Paved parking, HSG D
0.028	80	>75% Grass cover, Good, HSG D
0.350	79	Weighted Average
0.327		93.43% Pervious Area
0.023		6.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.0500	0.10		Sheet Flow, 5.1 Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	76	0.0350	0.94		Shallow Concentrated Flow, 5.2 Woodland Kv= 5.0 fps
0.0	12	0.0208	7.49	29.98	Trap/Vee/Rect Channel Flow, 5.3 Bot.W=3.00' D=0.50' Z= 10.0 ' /' Top.W=13.00' n= 0.013 Asphalt, smooth
10.0	138	Total			

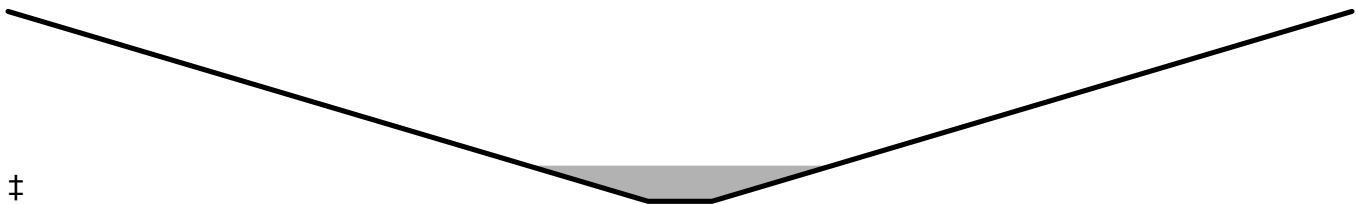
Summary for Reach 1R: NORTH SIDE OF WETLANDS

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 4.68" for 25 yr event
 Inflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
 Outflow = 5.56 cfs @ 12.12 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
 Max. Velocity= 2.05 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 0.74 fps, Avg. Travel Time= 1.2 min

Peak Storage= 139 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.19'
 Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 312.60 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
 Side Slope Z-value= 50.0 ' /' Top Width= 105.00'
 Length= 51.3' Slope= 0.0312 ' /'
 Inlet Invert= 48.60', Outlet Invert= 47.00'



Summary for Reach 2R: SOUTH SIDE OF WETLANDS

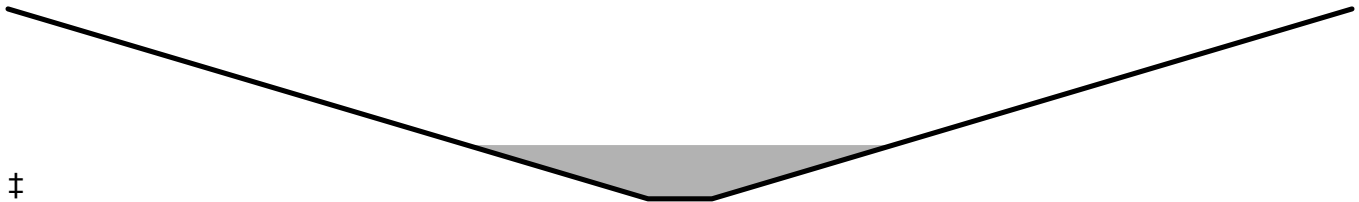
[62] Hint: Exceeded Reach 1R OUTLET depth by 0.10' @ 12.14 hrs

Inflow Area = 2.362 ac, 39.35% Impervious, Inflow Depth = 4.54" for 25 yr event
 Inflow = 11.71 cfs @ 12.12 hrs, Volume= 0.893 af
 Outflow = 11.67 cfs @ 12.13 hrs, Volume= 0.893 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
 Max. Velocity= 2.16 fps, Min. Travel Time= 0.6 min
 Avg. Velocity = 0.75 fps, Avg. Travel Time= 1.7 min

Peak Storage= 406 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.28'
 Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 258.53 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
 Side Slope Z-value= 50.0 '/ Top Width= 105.00'
 Length= 75.0' Slope= 0.0213 '/
 Inlet Invert= 47.00', Outlet Invert= 45.40'



Summary for Reach 4R: Flow over parking area

Inflow Area = 1.215 ac, 40.16% Impervious, Inflow Depth = 4.41" for 25 yr event
 Inflow = 6.15 cfs @ 12.12 hrs, Volume= 0.446 af
 Outflow = 6.14 cfs @ 12.12 hrs, Volume= 0.446 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3
 Max. Velocity= 4.06 fps, Min. Travel Time= 0.4 min
 Avg. Velocity = 1.28 fps, Avg. Travel Time= 1.2 min

Peak Storage= 144 cf @ 12.12 hrs
 Average Depth at Peak Storage= 0.11'
 Bank-Full Depth= 0.50' Flow Area= 13.8 sf, Capacity= 130.20 cfs

10.00' x 0.50' deep channel, n= 0.016 Asphalt, rough
 Side Slope Z-value= 35.0 '/ Top Width= 45.00'
 Length= 95.0' Slope= 0.0505 '/
 Inlet Invert= 55.30', Outlet Invert= 50.50'



Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.300 ac, 40.08% Impervious, Inflow Depth = 4.59" for 25 yr event
 Inflow = 4.67 cfs @ 12.54 hrs, Volume= 1.644 af
 Outflow = 4.67 cfs @ 12.54 hrs, Volume= 1.644 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.350 ac, 6.57% Impervious, Inflow Depth = 3.83" for 25 yr event
 Inflow = 1.37 cfs @ 12.14 hrs, Volume= 0.112 af
 Outflow = 1.37 cfs @ 12.14 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Summary for Pond 1P: CATCH BASIN

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 4.68" for 25 yr event
 Inflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
 Outflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 58.88' @ 12.12 hrs

Flood Elev= 60.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.90'	12.0" Round Culvert L= 163.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.90' / 48.60' S= 0.0386 ' / Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	59.50'	10.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.57 cfs @ 12.12 hrs HW=58.88' TW=48.79' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 5.57 cfs @ 7.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.90' TW=48.60' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 2P: On-site wetland

[63] Warning: Exceeded Reach 2R INLET depth by 0.29' @ 12.64 hrs

Inflow Area = 4.300 ac, 40.08% Impervious, Inflow Depth = 4.59" for 25 yr event
 Inflow = 20.56 cfs @ 12.10 hrs, Volume= 1.644 af
 Outflow = 4.67 cfs @ 12.54 hrs, Volume= 1.644 af, Atten= 77%, Lag= 26.4 min
 Primary = 4.67 cfs @ 12.54 hrs, Volume= 1.644 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 47.43' @ 12.54 hrs Surf.Area= 25,737 sf Storage= 20,761 cf

Plug-Flow detention time= 32.8 min calculated for 1.644 af (100% of inflow)

Center-of-Mass det. time= 32.8 min (833.0 - 800.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	45.40'	65,811 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
45.40	500	0	0	500
46.00	800	386	386	805
47.00	24,000	9,727	10,114	24,007
48.00	28,151	26,048	36,162	28,197
49.00	31,173	29,649	65,811	31,280

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.00' S= 0.0156 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	48.50'	15.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.67 cfs @ 12.54 hrs HW=47.43' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.67 cfs @ 5.95 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.40' TW=0.00' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 4P: Depression at Manson Ave

Inflow Area = 1.215 ac, 40.16% Impervious, Inflow Depth = 4.79" for 25 yr event
 Inflow = 6.17 cfs @ 12.11 hrs, Volume= 0.485 af
 Outflow = 6.15 cfs @ 12.12 hrs, Volume= 0.446 af, Atten= 0%, Lag= 0.4 min
 Primary = 6.15 cfs @ 12.12 hrs, Volume= 0.446 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 3

Peak Elev= 55.64' @ 12.12 hrs Surf.Area= 1,515 sf Storage= 1,899 cf

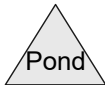
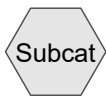
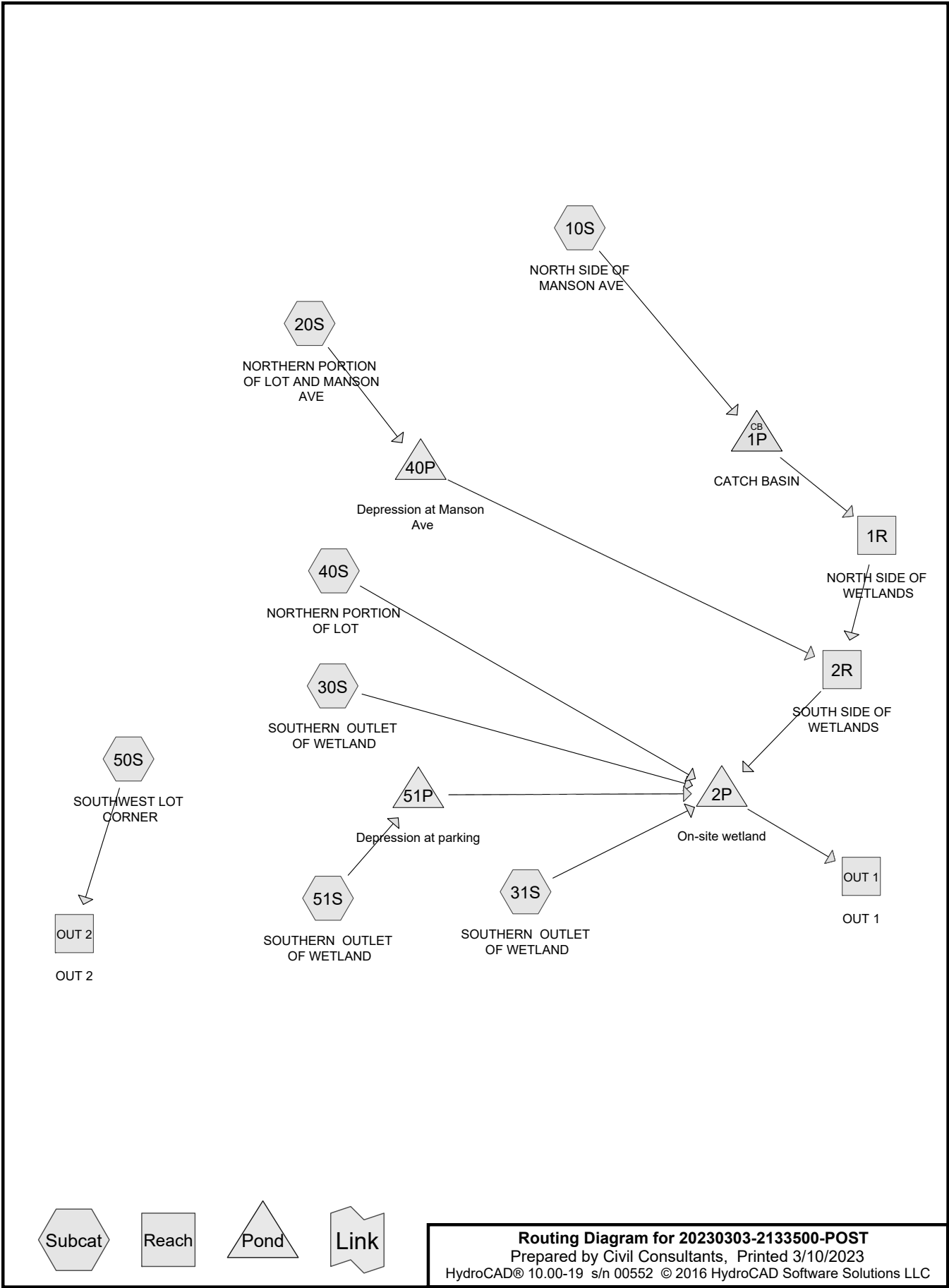
Plug-Flow detention time= 65.7 min calculated for 0.446 af (92% of inflow)

Center-of-Mass det. time= 24.5 min (816.8 - 792.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	53.00'	2,506 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
53.00	256	0	0	256
54.00	554	396	396	562
55.00	917	728	1,123	937
56.00	1,909	1,383	2,506	1,938

Device	Routing	Invert	Outlet Devices
#1	Primary	55.50'	45.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.14 cfs @ 12.12 hrs HW=55.64' TW=55.41' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 6.14 cfs @ 0.95 fps)



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.004	87	1/4 acre lots, 38% imp, HSG D (20S, 40S)
0.118	80	>75% Grass cover, Good, HSG D (30S, 40S, 50S, 51S)
0.005	96	Gravel surface, HSG D (20S)
0.976	98	Paved parking, HSG D (10S, 20S, 30S, 40S, 50S, 51S)
0.524	93	Paved roads w/open ditches, 50% imp, HSG D (10S, 20S, 40S)
0.295	98	Roofs, HSG D (10S, 20S, 30S, 40S, 50S, 51S)
0.757	77	Woods, Good, HSG D (30S, 31S, 40S)
0.972	79	Woods/grass comb., Good, HSG D (10S, 20S, 40S, 50S)
4.651	87	TOTAL AREA

20230303-2133500-POST

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
4.651	HSG D	10S, 20S, 30S, 31S, 40S, 50S, 51S
0.000	Other	
4.651		TOTAL AREA

20230303-2133500-POST

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Page 4

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatch Numbers
0.000	0.000	0.000	1.004	0.000	1.004	1/4 acre lots, 38% imp	
0.000	0.000	0.000	0.118	0.000	0.118	>75% Grass cover, Good	
0.000	0.000	0.000	0.005	0.000	0.005	Gravel surface	
0.000	0.000	0.000	0.976	0.000	0.976	Paved parking	
0.000	0.000	0.000	0.524	0.000	0.524	Paved roads w/open ditches, 50% imp	
0.000	0.000	0.000	0.295	0.000	0.295	Roofs	
0.000	0.000	0.000	0.757	0.000	0.757	Woods, Good	
0.000	0.000	0.000	0.972	0.000	0.972	Woods/grass comb., Good	
0.000	0.000	0.000	4.651	0.000	4.651	TOTAL AREA	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: NORTH SIDE OF Runoff Area=1.147 ac 38.49% Impervious Runoff Depth=1.92"
Flow Length=298' Tc=8.7 min CN=87 Runoff=2.35 cfs 0.184 af

Subcatchment 20S: NORTHERN PORTION Runoff Area=1.220 ac 41.80% Impervious Runoff Depth=2.01"
Flow Length=329' Tc=7.9 min CN=88 Runoff=2.68 cfs 0.204 af

Subcatchment 30S: SOUTHERN OUTLET Runoff Area=0.335 ac 13.43% Impervious Runoff Depth=1.41"
Flow Length=60' Tc=8.3 min CN=80 Runoff=0.51 cfs 0.039 af

Subcatchment 31S: SOUTHERN OUTLET Runoff Area=0.203 ac 0.00% Impervious Runoff Depth=1.22"
Flow Length=125' Tc=8.4 min CN=77 Runoff=0.26 cfs 0.021 af

Subcatchment 40S: NORTHERN PORTION Runoff Area=1.426 ac 53.09% Impervious Runoff Depth=2.09"
Flow Length=298' Tc=4.4 min CN=89 Runoff=3.68 cfs 0.248 af

Subcatchment 50S: SOUTHWEST LOT Runoff Area=0.232 ac 42.24% Impervious Runoff Depth=1.92"
Flow Length=98' Tc=6.3 min CN=87 Runoff=0.52 cfs 0.037 af

Subcatchment 51S: SOUTHERN OUTLET Runoff Area=0.088 ac 71.59% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=93 Runoff=0.25 cfs 0.018 af

Reach 1R: NORTH SIDE OF WETLANDS Avg. Flow Depth=0.13' Max Vel=1.64 fps Inflow=2.35 cfs 0.184 af
n=0.030 L=51.3' S=0.0312 '/ Capacity=312.60 cfs Outflow=2.35 cfs 0.184 af

Reach 2R: SOUTH SIDE OF WETLANDS Avg. Flow Depth=0.19' Max Vel=1.74 fps Inflow=5.01 cfs 0.388 af
n=0.030 L=75.0' S=0.0213 '/ Capacity=258.53 cfs Outflow=4.99 cfs 0.388 af

Reach OUT 1: OUT 1 Inflow=3.55 cfs 0.714 af
Outflow=3.55 cfs 0.714 af

Reach OUT 2: OUT 2 Inflow=0.52 cfs 0.037 af
Outflow=0.52 cfs 0.037 af

Pond 1P: CATCH BASIN Peak Elev=56.02' Inflow=2.35 cfs 0.184 af
Primary=2.35 cfs 0.184 af Secondary=0.00 cfs 0.000 af Outflow=2.35 cfs 0.184 af

Pond 2P: On-site wetland Peak Elev=46.78' Storage=5,726 cf Inflow=9.03 cfs 0.714 af
Primary=3.55 cfs 0.714 af Secondary=0.00 cfs 0.000 af Outflow=3.55 cfs 0.714 af

Pond 40P: Depression at Manson Ave Peak Elev=52.21' Storage=19 cf Inflow=2.68 cfs 0.204 af
Primary=2.68 cfs 0.204 af Secondary=0.00 cfs 0.000 af Outflow=2.68 cfs 0.204 af

Pond 51P: Depression at parking Peak Elev=53.00' Storage=0 cf Inflow=0.25 cfs 0.018 af
Primary=0.25 cfs 0.018 af Secondary=0.00 cfs 0.000 af Outflow=0.25 cfs 0.018 af

Total Runoff Area = 4.651 ac Runoff Volume = 0.751 af Average Runoff Depth = 1.94"
58.84% Pervious = 2.736 ac 41.16% Impervious = 1.915 ac

Summary for Subcatchment 10S: NORTH SIDE OF MANSON AVE

Runoff = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.223	93	Paved roads w/open ditches, 50% imp, HSG D
0.130	98	Roofs, HSG D
0.200	98	Paved parking, HSG D
0.594	79	Woods/grass comb., Good, HSG D
1.147	87	Weighted Average
0.705		61.51% Pervious Area
0.441		38.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 10.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	17	0.3529	2.97		Shallow Concentrated Flow, 10.2 Woodland Kv= 5.0 fps
1.1	74	0.0541	1.16		Shallow Concentrated Flow, 10.3 Woodland Kv= 5.0 fps
0.2	29	0.2069	2.27		Shallow Concentrated Flow, 10.4 Woodland Kv= 5.0 fps
0.2	128	0.0711	13.59	62.83	Trap/Vee/Rect Channel Flow, 10.5 Bot.W=3.00' D=0.50' Z= 10.0 & 15.0 ' Top.W=15.50' n= 0.013 Asphalt, smooth
8.7	298	Total			

Summary for Subcatchment 20S: NORTHERN PORTION OF LOT AND MANSON AVE

Runoff = 2.68 cfs @ 12.11 hrs, Volume= 0.204 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.984	87	1/4 acre lots, 38% imp, HSG D
0.098	93	Paved roads w/open ditches, 50% imp, HSG D
0.065	98	Roofs, HSG D
0.005	96	Gravel surface, HSG D
0.046	79	Woods/grass comb., Good, HSG D
0.022	98	Paved parking, HSG D
1.220	88	Weighted Average
0.710		58.20% Pervious Area
0.510		41.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 2.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.2	38	0.1800	2.97		Shallow Concentrated Flow, 2.2 Short Grass Pasture Kv= 7.0 fps
0.2	101	0.0400	11.01	112.52	Trap/Vee/Rect Channel Flow, 2.3 Bot.W=5.00' D=0.75' Z= 3.0 & 20.0 ' Top.W=22.25' n= 0.016 Asphalt, rough
0.4	140	0.0210	5.94	18.93	Trap/Vee/Rect Channel Flow, 2.4 Bot.W=2.00' D=0.75' Z= 3.0 ' Top.W=6.50' n= 0.022 Earth, clean & straight
7.9	329	Total			

Summary for Subcatchment 30S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.51 cfs @ 12.12 hrs, Volume= 0.039 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.261	77	Woods, Good, HSG D
0.009	98	Paved parking, HSG D
0.036	98	Roofs, HSG D
0.029	80	>75% Grass cover, Good, HSG D
0.335	80	Weighted Average
0.290		86.57% Pervious Area
0.045		13.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	25	0.0150	0.05		Sheet Flow, 30.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	35	0.1500	1.94		Shallow Concentrated Flow, 30.2 Woodland Kv= 5.0 fps
8.3	60	Total			

Summary for Subcatchment 31S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.26 cfs @ 12.13 hrs, Volume= 0.021 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.203	77	Woods, Good, HSG D
0.203		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0600	0.10		Sheet Flow, 31.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	30	0.1333	1.83		Shallow Concentrated Flow, 31.2 Woodland Kv= 5.0 fps
0.1	45	0.0578	7.85	294.44	Trap/Vee/Rect Channel Flow, 31.3 Bot.W=5.00' D=1.00' Z= 50.0 & 15.0 ' Top.W=70.00' n= 0.030 Stream, clean & straight
8.4	125	Total			

Summary for Subcatchment 40S: NORTHERN PORTION OF LOT

Runoff = 3.68 cfs @ 12.06 hrs, Volume= 0.248 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.293	77	Woods, Good, HSG D
0.236	79	Woods/grass comb., Good, HSG D
0.020	87	1/4 acre lots, 38% imp, HSG D
0.203	93	Paved roads w/open ditches, 50% imp, HSG D
0.601	98	Paved parking, HSG D
0.047	98	Roofs, HSG D
0.026	80	>75% Grass cover, Good, HSG D
1.426	89	Weighted Average
0.669		46.91% Pervious Area
0.757		53.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	25	0.0400	0.12		Sheet Flow, 4.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	25	0.3200	2.83		Shallow Concentrated Flow, 4.2 Woodland Kv= 5.0 fps
0.4	73	0.0200	2.87		Shallow Concentrated Flow, 4.3 Paved Kv= 20.3 fps
0.2	105	0.0600	9.80	22.06	Trap/Vee/Rect Channel Flow, 4.4 Bot.W=1.50' D=0.75' Z= 1.0 & 3.0 ' Top.W=4.50' n= 0.022 Earth, clean & straight
0.1	70	0.0570	12.00	229.54	Trap/Vee/Rect Channel Flow, 4.5 Bot.W=3.00' D=0.75' Z= 30.0 ' Top.W=48.00' n= 0.016 Asphalt, rough
4.4	298	Total			

Summary for Subcatchment 50S: SOUTHWEST LOT CORNER

Runoff = 0.52 cfs @ 12.09 hrs, Volume= 0.037 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.005	98	Roofs, HSG D
0.024	79	Woods/grass comb., Good, HSG D
0.093	98	Paved parking, HSG D
0.072	79	Woods/grass comb., Good, HSG D
0.038	80	>75% Grass cover, Good, HSG D
0.232	87	Weighted Average
0.134		57.76% Pervious Area
0.098		42.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.0400	0.13		Sheet Flow, 60.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	48	0.0310	8.84	46.41	Trap/Vee/Rect Channel Flow, 60.2 Bot.W=3.00' D=0.50' Z= 10.0 & 20.0 ' /' Top.W=18.00' n= 0.013 Asphalt, smooth
6.3	98	Total			

Summary for Subcatchment 51S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.21"

Area (ac)	CN	Description
0.051	98	Paved parking, HSG D
0.025	80	>75% Grass cover, Good, HSG D
0.012	98	Roofs, HSG D
0.088	93	Weighted Average
0.025		28.41% Pervious Area
0.063		71.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 51.1 Min Tc

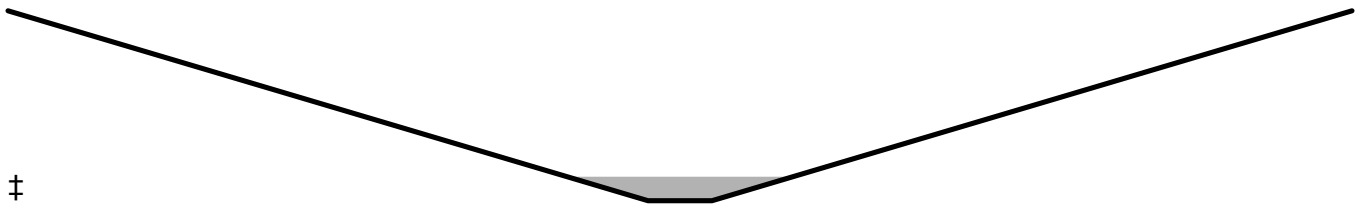
Summary for Reach 1R: NORTH SIDE OF WETLANDS

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 1.92" for 2 yr event
Inflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
Outflow = 2.35 cfs @ 12.13 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
Max. Velocity= 1.64 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 1.4 min

Peak Storage= 73 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 312.60 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 50.0 '/' Top Width= 105.00'
Length= 51.3' Slope= 0.0312 '/'
Inlet Invert= 48.60', Outlet Invert= 47.00'



Summary for Reach 2R: SOUTH SIDE OF WETLANDS

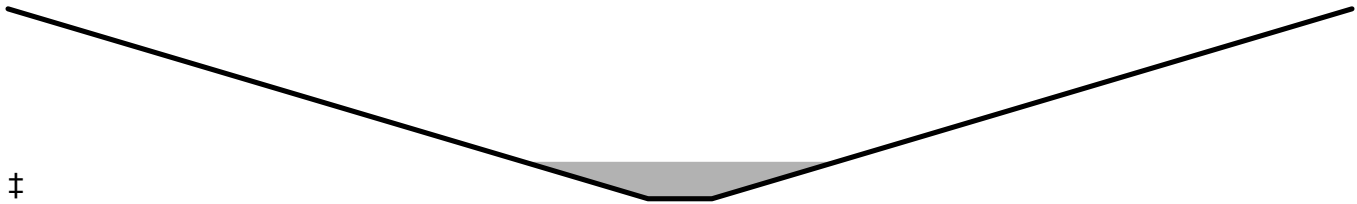
[62] Hint: Exceeded Reach 1R OUTLET depth by 0.07' @ 12.13 hrs

Inflow Area = 2.367 ac, 40.20% Impervious, Inflow Depth = 1.97" for 2 yr event
Inflow = 5.01 cfs @ 12.12 hrs, Volume= 0.388 af
Outflow = 4.99 cfs @ 12.13 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.5 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
Max. Velocity= 1.74 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.64 fps, Avg. Travel Time= 1.9 min

Peak Storage= 216 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 258.53 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 50.0 '/' Top Width= 105.00'
Length= 75.0' Slope= 0.0213 '/'
Inlet Invert= 47.00', Outlet Invert= 45.40'



Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.419 ac, 41.11% Impervious, Inflow Depth = 1.94" for 2 yr event
 Inflow = 3.55 cfs @ 12.40 hrs, Volume= 0.714 af
 Outflow = 3.55 cfs @ 12.40 hrs, Volume= 0.714 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 42.24% Impervious, Inflow Depth = 1.92" for 2 yr event
 Inflow = 0.52 cfs @ 12.09 hrs, Volume= 0.037 af
 Outflow = 0.52 cfs @ 12.09 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Summary for Pond 1P: CATCH BASIN

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 1.92" for 2 yr event
 Inflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
 Outflow = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.35 cfs @ 12.12 hrs, Volume= 0.184 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Peak Elev= 56.02' @ 12.12 hrs

Flood Elev= 60.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.90'	12.0" Round Culvert L= 163.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.90' / 48.60' S= 0.0386 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	59.50'	10.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.35 cfs @ 12.12 hrs HW=56.02' TW=48.73' (Dynamic Tailwater)

↳ **1=Culvert** (Inlet Controls 2.35 cfs @ 2.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.90' TW=48.60' (Dynamic Tailwater)

↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: On-site wetland

[62] Hint: Exceeded Reach 2R OUTLET depth by 1.26' @ 12.48 hrs

Inflow Area = 4.419 ac, 41.11% Impervious, Inflow Depth = 1.94" for 2 yr event
 Inflow = 9.03 cfs @ 12.10 hrs, Volume= 0.714 af
 Outflow = 3.55 cfs @ 12.40 hrs, Volume= 0.714 af, Atten= 61%, Lag= 17.8 min
 Primary = 3.55 cfs @ 12.40 hrs, Volume= 0.714 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
 Peak Elev= 46.78' @ 12.40 hrs Surf.Area= 16,144 sf Storage= 5,726 cf

Plug-Flow detention time= 13.5 min calculated for 0.714 af (100% of inflow)
 Center-of-Mass det. time= 13.4 min (831.8 - 818.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	45.40'	65,811 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
45.40	500	0	0	500	
46.00	800	386	386	805	
47.00	24,000	9,727	10,114	24,007	
48.00	28,151	26,048	36,162	28,197	
49.00	31,173	29,649	65,811	31,280	

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.00' S= 0.0156 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	48.50'	15.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.55 cfs @ 12.40 hrs HW=46.78' TW=0.00' (Dynamic Tailwater)

↳ **1=Culvert** (Inlet Controls 3.55 cfs @ 4.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.40' TW=0.00' (Dynamic Tailwater)

↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 40P: Depression at Manson Ave

Inflow Area = 1.220 ac, 41.80% Impervious, Inflow Depth = 2.01" for 2 yr event
 Inflow = 2.68 cfs @ 12.11 hrs, Volume= 0.204 af
 Outflow = 2.68 cfs @ 12.11 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.2 min
 Primary = 2.68 cfs @ 12.11 hrs, Volume= 0.204 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
 Peak Elev= 52.21' @ 12.11 hrs Surf.Area= 13 sf Storage= 19 cf

Plug-Flow detention time= 0.4 min calculated for 0.204 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (817.0 - 816.7)

Volume	Invert	Avail.Storage	Storage Description
#1	50.75'	1,156 cf	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
50.75	13	0	0 13
53.00	13	29	29 42
54.50	13	20	49 61
54.55	172	4	53 220
55.00	310	107	160 360
56.00	1,909	996	1,156 1,963

Device	Routing	Invert	Outlet Devices
#1	Secondary	55.50'	45.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	50.75'	12.0" Round Culvert L= 101.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.75' / 50.00' S= 0.0074 ' S= 0.0074 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	50.75'	10.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=2.67 cfs @ 12.11 hrs HW=52.20' TW=47.19' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 2.67 cfs of 2.91 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 2.67 cfs @ 4.90 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.75' TW=47.00' (Dynamic Tailwater)

↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 51P: Depression at parking

Inflow Area = 0.088 ac, 71.59% Impervious, Inflow Depth = 2.46" for 2 yr event
 Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af
 Outflow = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.25 cfs @ 12.09 hrs, Volume= 0.018 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

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Type III 24-hr 2 yr Rainfall=3.21"

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Page 14

Peak Elev= 53.00' @ 12.09 hrs Surf.Area= 106 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.0 min (792.6 - 792.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	53.00'	278 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
53.00	106	0	0	106
54.00	305	197	197	311
54.25	340	81	278	349

Device	Routing	Invert	Outlet Devices
#1	Secondary	54.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	51.50'	4.0" Round Culvert L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 51.50' / 51.25' S= 0.0071 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.38 cfs @ 12.09 hrs HW=53.00' TW=46.55' (Dynamic Tailwater)↑**2=Culvert** (Inlet Controls 0.38 cfs @ 4.39 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=45.40' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points x 5
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 10S: NORTH SIDE OF Runoff Area=1.147 ac 38.49% Impervious Runoff Depth=4.68"
Flow Length=298' Tc=8.7 min CN=87 Runoff=5.57 cfs 0.447 af

Subcatchment 20S: NORTHERN PORTION Runoff Area=1.220 ac 41.80% Impervious Runoff Depth=4.79"
Flow Length=329' Tc=7.9 min CN=88 Runoff=6.19 cfs 0.487 af

Subcatchment 30S: SOUTHERN OUTLET Runoff Area=0.335 ac 13.43% Impervious Runoff Depth=3.93"
Flow Length=60' Tc=8.3 min CN=80 Runoff=1.42 cfs 0.110 af

Subcatchment 31S: SOUTHERN OUTLET Runoff Area=0.203 ac 0.00% Impervious Runoff Depth=3.63"
Flow Length=125' Tc=8.4 min CN=77 Runoff=0.79 cfs 0.061 af

Subcatchment 40S: NORTHERN PORTION Runoff Area=1.426 ac 53.09% Impervious Runoff Depth=4.90"
Flow Length=298' Tc=4.4 min CN=89 Runoff=8.31 cfs 0.582 af

Subcatchment 50S: SOUTHWEST LOT Runoff Area=0.232 ac 42.24% Impervious Runoff Depth=4.68"
Flow Length=98' Tc=6.3 min CN=87 Runoff=1.22 cfs 0.090 af

Subcatchment 51S: SOUTHERN OUTLET Runoff Area=0.088 ac 71.59% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=93 Runoff=0.51 cfs 0.039 af

Reach 1R: NORTH SIDE OF WETLANDS Avg. Flow Depth=0.19' Max Vel=2.05 fps Inflow=5.57 cfs 0.447 af
n=0.030 L=51.3' S=0.0312 '/ Capacity=312.60 cfs Outflow=5.56 cfs 0.447 af

Reach 2R: SOUTH SIDE OF WETLANDS Avg. Flow Depth=0.27' Max Vel=2.12 fps Inflow=10.87 cfs 0.934 af
n=0.030 L=75.0' S=0.0213 '/ Capacity=258.53 cfs Outflow=10.85 cfs 0.934 af

Reach OUT 1: OUT 1 Inflow=4.73 cfs 1.727 af
Outflow=4.73 cfs 1.727 af

Reach OUT 2: OUT 2 Inflow=1.22 cfs 0.090 af
Outflow=1.22 cfs 0.090 af

Pond 1P: CATCH BASIN Peak Elev=58.88' Inflow=5.57 cfs 0.447 af
Primary=5.57 cfs 0.447 af Secondary=0.00 cfs 0.000 af Outflow=5.57 cfs 0.447 af

Pond 2P: On-site wetland Peak Elev=47.46' Storage=21,610 cf Inflow=20.38 cfs 1.727 af
Primary=4.73 cfs 1.727 af Secondary=0.00 cfs 0.000 af Outflow=4.73 cfs 1.727 af

Pond 40P: Depression at Manson Ave Peak Elev=55.33' Storage=318 cf Inflow=6.19 cfs 0.487 af
Primary=5.36 cfs 0.487 af Secondary=0.00 cfs 0.000 af Outflow=5.36 cfs 0.487 af

Pond 51P: Depression at parking Peak Elev=53.24' Storage=30 cf Inflow=0.51 cfs 0.039 af
Primary=0.42 cfs 0.039 af Secondary=0.00 cfs 0.000 af Outflow=0.42 cfs 0.039 af

Total Runoff Area = 4.651 ac Runoff Volume = 1.818 af Average Runoff Depth = 4.69"
58.84% Pervious = 2.736 ac 41.16% Impervious = 1.915 ac

Summary for Subcatchment 10S: NORTH SIDE OF MANSON AVE

Runoff = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.223	93	Paved roads w/open ditches, 50% imp, HSG D
0.130	98	Roofs, HSG D
0.200	98	Paved parking, HSG D
0.594	79	Woods/grass comb., Good, HSG D
1.147	87	Weighted Average
0.705		61.51% Pervious Area
0.441		38.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 10.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.1	17	0.3529	2.97		Shallow Concentrated Flow, 10.2 Woodland Kv= 5.0 fps
1.1	74	0.0541	1.16		Shallow Concentrated Flow, 10.3 Woodland Kv= 5.0 fps
0.2	29	0.2069	2.27		Shallow Concentrated Flow, 10.4 Woodland Kv= 5.0 fps
0.2	128	0.0711	13.59	62.83	Trap/Vee/Rect Channel Flow, 10.5 Bot.W=3.00' D=0.50' Z= 10.0 & 15.0 ' Top.W=15.50' n= 0.013 Asphalt, smooth
8.7	298	Total			

Summary for Subcatchment 20S: NORTHERN PORTION OF LOT AND MANSON AVE

Runoff = 6.19 cfs @ 12.11 hrs, Volume= 0.487 af, Depth= 4.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.984	87	1/4 acre lots, 38% imp, HSG D
0.098	93	Paved roads w/open ditches, 50% imp, HSG D
0.065	98	Roofs, HSG D
0.005	96	Gravel surface, HSG D
0.046	79	Woods/grass comb., Good, HSG D
0.022	98	Paved parking, HSG D
1.220	88	Weighted Average
0.710		58.20% Pervious Area
0.510		41.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.0800	0.12		Sheet Flow, 2.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.2	38	0.1800	2.97		Shallow Concentrated Flow, 2.2 Short Grass Pasture Kv= 7.0 fps
0.2	101	0.0400	11.01	112.52	Trap/Vee/Rect Channel Flow, 2.3 Bot.W=5.00' D=0.75' Z= 3.0 & 20.0 ' Top.W=22.25' n= 0.016 Asphalt, rough
0.4	140	0.0210	5.94	18.93	Trap/Vee/Rect Channel Flow, 2.4 Bot.W=2.00' D=0.75' Z= 3.0 ' Top.W=6.50' n= 0.022 Earth, clean & straight
7.9	329	Total			

Summary for Subcatchment 30S: SOUTHERN OUTLET OF WETLAND

Runoff = 1.42 cfs @ 12.12 hrs, Volume= 0.110 af, Depth= 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.261	77	Woods, Good, HSG D
0.009	98	Paved parking, HSG D
0.036	98	Roofs, HSG D
0.029	80	>75% Grass cover, Good, HSG D
0.335	80	Weighted Average
0.290		86.57% Pervious Area
0.045		13.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	25	0.0150	0.05		Sheet Flow, 30.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	35	0.1500	1.94		Shallow Concentrated Flow, 30.2 Woodland Kv= 5.0 fps
8.3	60	Total			

Summary for Subcatchment 31S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.79 cfs @ 12.12 hrs, Volume= 0.061 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.203	77	Woods, Good, HSG D
0.203		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0600	0.10		Sheet Flow, 31.1 Woods: Light underbrush n= 0.400 P2= 3.17"
0.3	30	0.1333	1.83		Shallow Concentrated Flow, 31.2 Woodland Kv= 5.0 fps
0.1	45	0.0578	7.85	294.44	Trap/Vee/Rect Channel Flow, 31.3 Bot.W=5.00' D=1.00' Z= 50.0 & 15.0 ' Top.W=70.00' n= 0.030 Stream, clean & straight
8.4	125	Total			

Summary for Subcatchment 40S: NORTHERN PORTION OF LOT

Runoff = 8.31 cfs @ 12.06 hrs, Volume= 0.582 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.293	77	Woods, Good, HSG D
0.236	79	Woods/grass comb., Good, HSG D
0.020	87	1/4 acre lots, 38% imp, HSG D
0.203	93	Paved roads w/open ditches, 50% imp, HSG D
0.601	98	Paved parking, HSG D
0.047	98	Roofs, HSG D
0.026	80	>75% Grass cover, Good, HSG D
1.426	89	Weighted Average
0.669		46.91% Pervious Area
0.757		53.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	25	0.0400	0.12		Sheet Flow, 4.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	25	0.3200	2.83		Shallow Concentrated Flow, 4.2 Woodland Kv= 5.0 fps
0.4	73	0.0200	2.87		Shallow Concentrated Flow, 4.3 Paved Kv= 20.3 fps
0.2	105	0.0600	9.80	22.06	Trap/Vee/Rect Channel Flow, 4.4 Bot.W=1.50' D=0.75' Z= 1.0 & 3.0 ' Top.W=4.50' n= 0.022 Earth, clean & straight
0.1	70	0.0570	12.00	229.54	Trap/Vee/Rect Channel Flow, 4.5 Bot.W=3.00' D=0.75' Z= 30.0 ' Top.W=48.00' n= 0.016 Asphalt, rough
4.4	298	Total			

Summary for Subcatchment 50S: SOUTHWEST LOT CORNER

Runoff = 1.22 cfs @ 12.09 hrs, Volume= 0.090 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.005	98	Roofs, HSG D
0.024	79	Woods/grass comb., Good, HSG D
0.093	98	Paved parking, HSG D
0.072	79	Woods/grass comb., Good, HSG D
0.038	80	>75% Grass cover, Good, HSG D
0.232	87	Weighted Average
0.134		57.76% Pervious Area
0.098		42.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.0400	0.13		Sheet Flow, 60.1 Grass: Dense n= 0.240 P2= 3.17"
0.1	48	0.0310	8.84	46.41	Trap/Vee/Rect Channel Flow, 60.2 Bot.W=3.00' D=0.50' Z= 10.0 & 20.0 ' Top.W=18.00' n= 0.013 Asphalt, smooth
6.3	98	Total			

Summary for Subcatchment 51S: SOUTHERN OUTLET OF WETLAND

Runoff = 0.51 cfs @ 12.08 hrs, Volume= 0.039 af, Depth= 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25 yr Rainfall=6.17"

Area (ac)	CN	Description
0.051	98	Paved parking, HSG D
0.025	80	>75% Grass cover, Good, HSG D
0.012	98	Roofs, HSG D
0.088	93	Weighted Average
0.025		28.41% Pervious Area
0.063		71.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 51.1 Min Tc

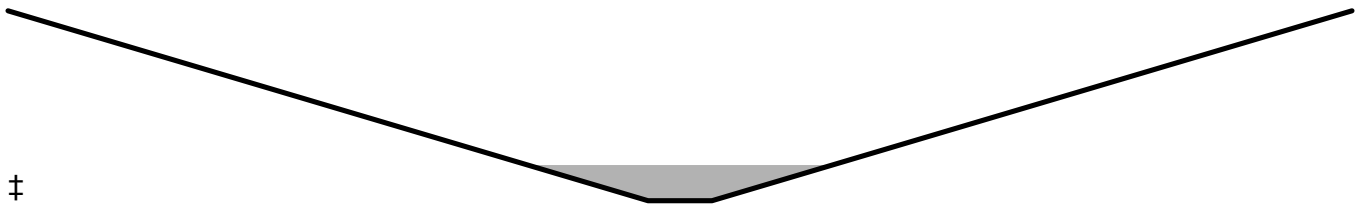
Summary for Reach 1R: NORTH SIDE OF WETLANDS

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 4.68" for 25 yr event
Inflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
Outflow = 5.56 cfs @ 12.12 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
Max. Velocity= 2.05 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 1.2 min

Peak Storage= 139 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 312.60 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 50.0 '/' Top Width= 105.00'
Length= 51.3' Slope= 0.0312 '/'
Inlet Invert= 48.60', Outlet Invert= 47.00'



Summary for Reach 2R: SOUTH SIDE OF WETLANDS

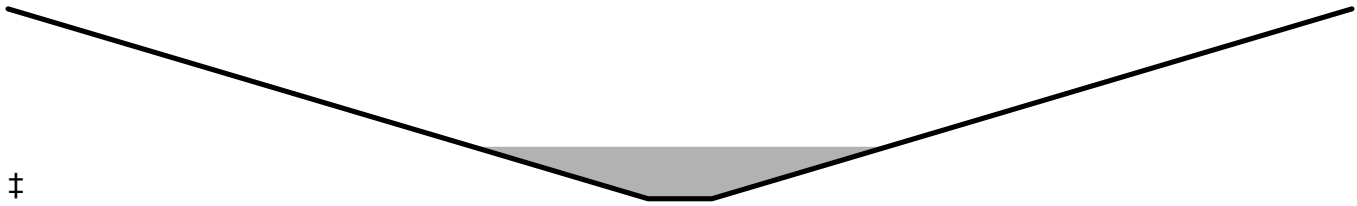
[62] Hint: Exceeded Reach 1R OUTLET depth by 0.10' @ 12.23 hrs

Inflow Area = 2.367 ac, 40.20% Impervious, Inflow Depth = 4.74" for 25 yr event
Inflow = 10.87 cfs @ 12.13 hrs, Volume= 0.934 af
Outflow = 10.85 cfs @ 12.14 hrs, Volume= 0.934 af, Atten= 0%, Lag= 0.4 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
Max. Velocity= 2.12 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 1.6 min

Peak Storage= 384 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 55.0 sf, Capacity= 258.53 cfs

5.00' x 1.00' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 50.0 '/' Top Width= 105.00'
Length= 75.0' Slope= 0.0213 '/'
Inlet Invert= 47.00', Outlet Invert= 45.40'



Summary for Reach OUT 1: OUT 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.419 ac, 41.11% Impervious, Inflow Depth = 4.69" for 25 yr event
 Inflow = 4.73 cfs @ 12.54 hrs, Volume= 1.727 af
 Outflow = 4.73 cfs @ 12.54 hrs, Volume= 1.727 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Summary for Reach OUT 2: OUT 2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.232 ac, 42.24% Impervious, Inflow Depth = 4.68" for 25 yr event
 Inflow = 1.22 cfs @ 12.09 hrs, Volume= 0.090 af
 Outflow = 1.22 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Summary for Pond 1P: CATCH BASIN

Inflow Area = 1.147 ac, 38.49% Impervious, Inflow Depth = 4.68" for 25 yr event
 Inflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
 Outflow = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.57 cfs @ 12.12 hrs, Volume= 0.447 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Peak Elev= 58.88' @ 12.12 hrs

Flood Elev= 60.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	54.90'	12.0" Round Culvert L= 163.3' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 54.90' / 48.60' S= 0.0386 '/ S= 0.0386 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	59.50'	10.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.57 cfs @ 12.12 hrs HW=58.88' TW=48.79' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 5.57 cfs @ 7.09 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=54.90' TW=48.60' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2P: On-site wetland

[63] Warning: Exceeded Reach 2R INLET depth by 0.32' @ 12.64 hrs

Inflow Area = 4.419 ac, 41.11% Impervious, Inflow Depth = 4.69" for 25 yr event
 Inflow = 20.38 cfs @ 12.09 hrs, Volume= 1.727 af
 Outflow = 4.73 cfs @ 12.54 hrs, Volume= 1.727 af, Atten= 77%, Lag= 26.8 min
 Primary = 4.73 cfs @ 12.54 hrs, Volume= 1.727 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
 Peak Elev= 47.46' @ 12.54 hrs Surf.Area= 25,873 sf Storage= 21,610 cf

Plug-Flow detention time= 33.4 min calculated for 1.727 af (100% of inflow)
 Center-of-Mass det. time= 33.3 min (827.3 - 794.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	45.40'	65,811 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
45.40	500	0	0	500	
46.00	800	386	386	805	
47.00	24,000	9,727	10,114	24,007	
48.00	28,151	26,048	36,162	28,197	
49.00	31,173	29,649	65,811	31,280	

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.00' S= 0.0156 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	48.50'	15.0' long x 40.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.72 cfs @ 12.54 hrs HW=47.46' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 4.72 cfs @ 6.02 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=45.40' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 40P: Depression at Manson Ave

Inflow Area = 1.220 ac, 41.80% Impervious, Inflow Depth = 4.79" for 25 yr event
 Inflow = 6.19 cfs @ 12.11 hrs, Volume= 0.487 af
 Outflow = 5.36 cfs @ 12.16 hrs, Volume= 0.487 af, Atten= 14%, Lag= 3.2 min
 Primary = 5.36 cfs @ 12.16 hrs, Volume= 0.487 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5
 Peak Elev= 55.33' @ 12.16 hrs Surf.Area= 682 sf Storage= 318 cf

Plug-Flow detention time= 0.4 min calculated for 0.487 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (792.6 - 792.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	50.75'	1,156 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
50.75	13	0	0	13	
53.00	13	29	29	42	
54.50	13	20	49	61	
54.55	172	4	53	220	
55.00	310	107	160	360	
56.00	1,909	996	1,156	1,963	

Device	Routing	Invert	Outlet Devices									
#1	Secondary	55.50'	45.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									
#2	Primary	50.75'	12.0" Round Culvert L= 101.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 50.75' / 50.00' S= 0.0074 ' S= 0.0074 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf									
#3	Device 2	50.75'	10.0" Vert. Orifice/Grate C= 0.600									

Primary OutFlow Max=5.36 cfs @ 12.16 hrs HW=55.33' TW=47.27' (Dynamic Tailwater)

↑**2=Culvert** (Passes 5.36 cfs of 5.82 cfs potential flow)
 ↑**3=Orifice/Grate** (Orifice Controls 5.36 cfs @ 9.82 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=50.75' TW=47.00' (Dynamic Tailwater)

↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 51P: Depression at parking

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=592)

Inflow Area = 0.088 ac, 71.59% Impervious, Inflow Depth = 5.35" for 25 yr event
 Inflow = 0.51 cfs @ 12.08 hrs, Volume= 0.039 af
 Outflow = 0.42 cfs @ 12.14 hrs, Volume= 0.039 af, Atten= 19%, Lag= 3.4 min
 Primary = 0.42 cfs @ 12.14 hrs, Volume= 0.039 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

20230303-2133500-POST

Prepared by Civil Consultants

HydroCAD® 10.00-19 s/n 00552 © 2016 HydroCAD Software Solutions LLC

Type III 24-hr 25 yr Rainfall=6.17"

Printed 3/10/2023

Page 24

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 5

Peak Elev= 53.24' @ 12.14 hrs Surf.Area= 144 sf Storage= 30 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 0.2 min (772.4 - 772.2)

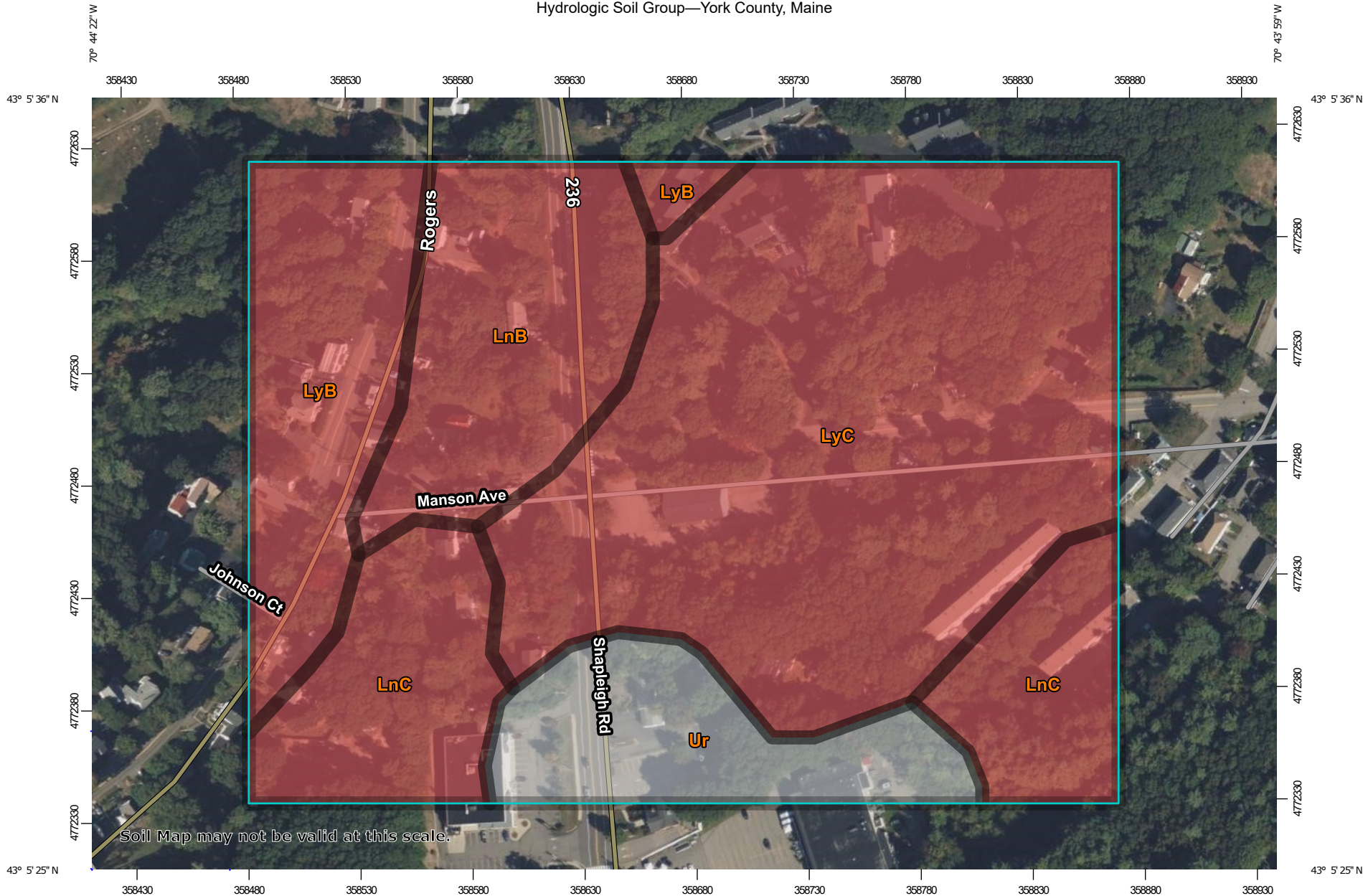
Volume	Invert	Avail.Storage	Storage Description
#1	53.00'	278 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
53.00	106	0	0	106
54.00	305	197	197	311
54.25	340	81	278	349

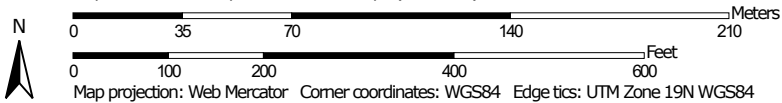
Device	Routing	Invert	Outlet Devices
#1	Secondary	54.00'	10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Primary	51.50'	4.0" Round Culvert L= 35.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 51.50' / 51.25' S= 0.0071 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.42 cfs @ 12.14 hrs HW=53.24' TW=47.13' (Dynamic Tailwater)↑**2=Culvert** (Barrel Controls 0.42 cfs @ 4.76 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=53.00' TW=45.40' (Dynamic Tailwater)↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Hydrologic Soil Group—York County, Maine




Map Scale: 1:2,420 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points




-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: York County, Maine
 Survey Area Data: Version 21, Aug 30, 2022

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

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
LnB	Lyman loam, 3 to 8 percent slopes, rocky	D	3.8	13.7%
LnC	Lyman loam, 8 to 15 percent slopes, rocky	D	4.4	16.0%
LyB	Lyman-Rock outcrop complex, 3 to 8 percent slopes	D	3.8	13.7%
LyC	Lyman-Rock outcrop complex, 8 to 15 percent slopes	D	12.8	46.6%
Ur	Urban land		2.7	9.9%
Totals for Area of Interest			27.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Stormwater Maintenance/Inspection Plan

During the construction of parking and drainage facilities, maintenance of all erosion, sedimentation, and stormwater flow control structures and devices will be the responsibility of the contractor performing the site work. The contractor will be notified of this prior to the start of work by Fair Tide, Inc.

Fair Tide, Inc. will be responsible for the continued maintenance of the stormwater systems after final stabilization.

During construction, all erosion control devices and structures shall be checked weekly and after each “significant rainfall”**. Necessary repairs will be made to correct undermining or deterioration of the devices and/or structures.

After construction, all stormwater BMPs shall be checked annually and after major storm events. Sediment in the catch basins will be removed annually or as needed to maintain functionality of the facility.

Fair Tide, Inc shall maintain inspection logs (attached) of all stormwater and erosion control measures. The log shall reflect the dates of the inspections and describe actions taken. The log shall be kept on file for a minimum of 5 years and be made available to the Town upon request.

If invasive species are observed in any of the stormwater facilities, they shall be removed immediately. Any damage to the surface of slope adjacent to wetlands shall be repaired and stabilized as soon as possible after disturbance.

The activities listed in the inspection log will be accomplished in early spring and in late fall.

A major storm event is classified as a rainfall exceeding 2.0 inches in a 24-hr storm event.

The inspections should be completed by a qualified stormwater inspector, and maintenance logs must be provided to the Kittery CEO annually by July 1st.

** Significant rainfall is 0.5” in 24 hr

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During Construction

During construction, maintenance shall be performed routinely on all erosion and sediment control BMPs. Refer to the following list of erosion and sediment control procedures.

Dust Control

Stabilize all laydown areas and all unpaved surfaces with a base gravel or coarse gravel as soon as possible. Use traffic control to restrict speed and route.

Water Application with frequent reapplication during warm sunny days will mitigate dust. The distribution of water should not cause turbid runoff.

Sweep and Vacuum paved road surface when dry. Sweep from the centerline to the edge of the travel way. Do not sweep into a waterbody or wetland. The public roadway may also require sweeping.

Construction Entrance

The entrance/exit pad should have a length of 50 feet or more and a 12-foot minimum width (or as appropriate to contain the wheel base of construction vehicles plus 3 feet on either side). The pad should be 6 inches or more thick with angular aggregate (2-3 inch diameter). Appropriate reclaimed concrete material may be used. The aggregate should be placed over a geotextile filter to prevent the stones from pushing into the native soil. At the bottom of slopes, a diversion ridge should be provided to intercept runoff. Berms may be necessary to divert water around any exposed soil, and runoff should be directed to a sediment trap. The pad should be inspected weekly, and before and after each storm. The pad may have to be replaced if the voids become filled with sediment. Street sweeping may be necessary.

Sediment Controls – All sediment controls shall be checked weekly and after significant rainfalls.

Silt Fence - The fence should be anchored to resist pull-out, and be stretched tightly between stakes to prevent sagging. A 6-inch wide and 6-inch deep trench should be excavated upgradient of the fence line to key the “flap” of the fabric. The trench is backfilled and compacted. When joints are necessary, filter cloth should be spliced by wrapping end stakes together. In areas where the flap cannot be keyed properly (due to frozen ground, bedrock, stony soil, roots, near a protected natural resource, etc.), the silt fence should be anchored with aggregate, crushed stone, erosion control mix, or other material.

Erosion Control Mix Berm - It may be necessary to cut, pack down or remove tall grasses, brush or woody vegetation to avoid voids and bridges that allow the washing away of fine soil particles. The ECM berm should be a minimum of 12” high and a minimum of two feet wide. On longer or steeper slopes, the berm will need to be wider and higher. Berms composed of ECM can be reshaped when necessary.

Storm Drain Inlet Protection - An inlet protection (storm drain drop inlet or curb inlet) captures sediment before runoff enters a catch basin. It is not effective for silts and clays. Various types of off-the-shelf devices are acceptable if installed, used, and maintained as specified by the manufacturer.

Overwinter Construction – The winter construction period runs from November 1st through April 15th; however no vegetation growth should be anticipated past October 15th in southern Maine. Additional stabilization measures should be provided by November 1st for winter and spring snowmelt if a construction site is not permanently stabilized with pavement, a gravel road base, 90% mature vegetation cover, erosion control mulch, or riprap. Ideally, permanent seeding should occur 45 days before the first killing frost (different dates for different Maine locations); otherwise, overwinter mulching is necessary.



Mulching – Mulching is the application of an organic cover over exposed soil to protect its structure from the impact of raindrops, to reduce the potential for erosion, and to maintain soil permeability and moisture for vegetation uptake. Erosion will occur where the soil does not have firm and continuous contact with an erosion control cover. Mulch must remain until the site is permanently stabilized or revegetated. Mulching shall be performed per weather prediction, soil erodibility, season, extent of disturbance, etc. within 7 days in sensitive areas (within 100 feet of a natural resource) or within 14 to 30 days in other areas.

Hay/Straw Mulch - Hay (straw will not import weeds) mulch prevents rain drop erosion, protects new seeding from sun exposure, and maintains moisture during germination. Loose mulch is not effective in windy areas, in areas of groundwater seepage or in channels with concentrated flows. Temporary mulch should be applied to areas that will not be actively worked for more than 14 days (7 days in sensitive areas). Application rate should be 2 bales (70-90 pounds) per 1000 square feet or 1.5 to 2 tons (90-100 bales) per acre and must be evenly distributed. Provide a mulch cover to soil stockpiles. Anchoring should be provided in areas with strong wind or on slopes greater than 5%. Hay mulch should be limited to slopes flatter than 2:1 unless short (less than 10 feet), and in non-seepage areas. Another measure should be used on steeper slopes with a high runoff potential. Anchoring can be accomplished by punching, crimping the mulch into the soil or tracking with a punch-roller or a knife blade roller. Walking and punching with a spade or shovel may be practicable on very small sites. Peg and twine or netting should be installed per the manufacturer's recommendations. Non-biodegradable plastic netting should be removed after the site is revegetated. Apply additional mulch if not revegetated with 90% grass uptake.

Erosion Control Blankets - An erosion control blanket could be used in the following conditions:

- Vegetated waterways and ditches; but not in areas of groundwater seepage
- Steep slopes (15% or greater and up to 2:1)
- In protected natural resource areas
- On areas that may be slow to revegetate
- For overwinter stabilization (November 1st - April 15th)

The soil surface should be finely graded and smooth for the blanket to have direct contact with the soil and to prevent undermining. Erosion control blankets perform best on loamy soils and should not be used on rocky sites or shallow soils. Seed should be sown before installing the erosion control blanket. Always unroll the blanket downhill without stretching and anchor the upslope edge in a 12 inch deep trench that is backfilled and tamped. Overlap shingle style a minimum of 12 inches at the top of each row and 4 inches at the edges of parallel rows. Anchor along the overlap with a maximum spacing of 3 feet or as required by the manufacturer.

Erosion Control Mix - Erosion control mix can be used on frozen ground, forested areas, on cut and fill slopes, and on roadside embankments. Apply a thickness of 2 inches on 3:1 slopes or less and add an additional 1/2 inch per 20 feet of slope or up to 4 inches for a 100 foot slope. On slopes greater than 3:1, 4 inches or more of material is recommended; and if slopes are greater than 60 feet long, 5 inches are needed. Erosion control mix is not recommended for slopes steeper than 1:1. The mix must be distributed evenly with a hydraulic bucket, pneumatic blower, or by hand. Other reinforcement BMPs (i.e. riprap) should be used on slopes with groundwater seepage, within drainage channels and their outlets, or in gullies.



Slopes – To be effective, slope stabilization and reinforcement should be adapted to the soil type, angle and length of the slope, presence of surface or groundwater, depth to bedrock, etc. Consultation with a civil engineer is advised for slopes that are over six feet, steeper than 1.5:1 grade, on unstable soils, with groundwater seeps, or where a structure is located near the top of the bank. A proper permit and design may be required for an embankment repair near a waterbody.

Cuts and Fills - Erosion potentials on fill slopes depend upon the depth of the fill, steepness, watershed size and presence of water. Fill slopes are more unstable than cut slopes from being disturbed or if lacking fines for proper compaction. In a wet area, gravel fill is preferred; but is at risk of being unstable. Terracing prevents surface runoff and promotes vegetation establishment by retaining moisture. The time between initial exposure and final stabilization should be minimized to prevent soil loss. Divert clean water away from the area and disperse to an undisturbed buffer or swale. For a fill slope, the native area should be cleared, grubbed, and scarified to a 3-inch depth. When working in below freezing temperatures, the ground should be scarified immediately before adding fill. The fill should be free of brush, rocks, or roots, and should not include frozen, soft or mucky material. The fill should be placed and compacted in 8-inch lifts to reduce lenses of loose soil. When filling or cutting a long slope (greater than 20 feet), benches (or terraces) should be provided to direct runoff away from the slope. The number of benches should be based upon the erodibility of the soil, steepness of the slope, and groundwater seeps. Mulch any soil exposed for longer than 7 days and with seed if ready for revegetation. Rill or gully erosion should be repaired immediately. Use winter stabilization practices if the construction is stopped for the winter months.

Geotextiles - Geotextiles should be placed with 12 inch overlaps and keyed 6 to 12 inches at the top and bottom of the area. Avoid using damaged cloth. **Woven Geotextiles** are mostly used for soil reinforcement beneath sharp, angular aggregates if dropped more than 5 feet; and where the cover will be more than 10 feet thick. It may be used for seepage management if the fabric's openings are smaller than the soil gradation. A woven filter fabric is usually used in a road base to provide bearing capacity and linear strength over soft subsoil. **Nonwoven Geotextiles** will retain more fine particles than woven geotextiles; and may allow water seepage without clogging. Nonwoven geotextiles have a rough surface that will bond soil layers and resists sliding along the planes of contact.

Riprap Protection - Riprap is used for structural support when a slope cannot be vegetated due to length or steepness of the slope, groundwater or surface water seepage, poor soil conditions, flowing water, etc. On a long slope, larger stones are used and placed at the bottom of the embankment and gradually grading down to smaller stones toward the top. A riprap stabilization project is composed of three sections:

- The surface armor layer of rough, angular rocks.
- The filter layer (a sand and gravel layer and/or a geotextile fabric) that supports the stones against settlement, allows groundwater to drain through the structure, and prevents the soil beneath from being washed through the riprap layer.
- The toe protection that reinforce the slope and prevents movement of the riprap. It is usually anchored in a trench at the toe of the slope.

Pipe Outlet Protection – Pipe outlet protection is the armor and/or plunge pool at the outlet of a culvert that prevents scour or turbulence, and will dissipate the flow energy from the pipe to the channel. For channels with a continuous flow, the culvert should be imbedded one quarter (1/4) its diameter to prevent a 'hanging' condition (drop from the pipe outlet to channel).



Post Construction

Sweeping

Paved surfaces shall be swept or vacuumed at least annually in the Spring to remove all Winter sand, and periodically during the year on an as-needed basis to minimize transportation of sediment during rainfall events. **Applicable to: All parking lots and travel ways on site.**

Roadways and Parking Surfaces				
	Spring	Fall or Yearly	After a Major Storm	Every 2- 5 Years
Clear accumulated winter sand in parking lots and along roadways	X			
Sweep pavement to remove sediment	X			
Ensure that stormwater is not impeded by accumulations of material or false ditches in the shoulder	X			

Vegetated Areas

All areas of maintained lawn are to be inspected regularly for signs of erosions and channelization. Areas where erosion is occurring or areas of sparse growth shall be replanted and stabilized. Channelized flows from the eroded land shall be diverted to buffers or other areas able to withstand the high sediment load in the erosive runoff. **Applicable to: Lawn areas receiving/conveying flows in any storm event.**

Vegetated Areas				
	Spring	Fall or Yearly	After a Major Storm	Every 2- 5 Years
Inspect all slopes and embankments	X		X	
Replant bare areas or areas with sparse growth	X		X	
Armor areas with fill erosions with an appropriate lining or divert the erosive flows to on-site areas able to withstand concentrated flows, such as areas of well-established vegetation or previously installed armoring materials	X		X	



Ditches, Swales and Culverts

Open swales and ditches need to be inspected on a monthly basis or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system. Debris needs to be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the structure and proper functioning.

Vegetated ditches should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated.

If sediment in culverts or piped drainage systems exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to not flush the sediments into the retention/detention pond as it will reduce the pond’s capacity and hasten the time when it must be cleaned. All pipes should be inspected on an annual basis.

Stormwater Channels				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Inspect ditches, swales and other open stormwater channels	X	X	X	
Remove any obstructions and accumulated sediments or debris	X	X		
Control vegetated growth and woody vegetation		X		
Repair any erosion of the ditch lining		X		
Mow vegetated ditches		X		
Remove woody vegetation growing through riprap		X		
Repair any slumping side slopes	X	X		
Replace riprap where underlying filter fabric or underdrain gravel is showing or where stones have dislodge	X			X

Catch Basins/Manholes

All catch basins, and any other field inlets throughout the collection system, need to be inspected on a monthly basis to assure that the inlet entry point is clear of debris and will allow the intended water entry. These will be cleared, if necessary on a yearly basis or when sediment reaches two thirds of total volume. Catch basins and manholes need to be vacuumed and cleaned of all accumulated sediment. This work must be done by a vacuum truck. The removed material must be disposed of in accordance with the Maine Solid Waste Disposal Rules.

Catch Basin/Manhole Systems				
	Spring	Fall or Yearly	After a Major Storm	Every 2– 5 Years
Remove and legally dispose of accumulated sediments and debris from the bottom of the basin, inlet grates, inflow channels to the basin, and pipes between basins.	X	X		
Remove floating debris and floating oils (using oil absorptive pads) from any trap designed for such	X	X		



Stormwater Maintenance
Fair Tide, Inc.

Post Construction Maintenance Checklist

This log is intended to accompany the Stormwater Management Facilities Maintenance Plan for Fair Tide, Inc’s Site Plan. The following items shall be checked, cleaned and maintained on regular basis as specified in the Maintenance Plan and as described in the table below. This log shall be kept on file for a minimum of five years and shall be available for review by the Town upon request. Qualified personnel familiar with drainage systems and soils shall perform all inspections.

Item	Maintenance Required & Frequency	Date Completed	Maintenance Personnel	Comments
Sweeping of Paved areas	Sweep annually in the Spring.			
Ditches, Swales and Culverts	Inspect after major rainfall event. Repair erosion or drainage immediately. Remove sediment if filtration times become greater than 12 hours. Clean culverts when sediment occupies more than 20% of pipe diameter.			
Vegetated Areas	Inspected regularly for signs of erosions and channelization. Areas where erosion is occurring or areas of sparse growth shall be replanted and stabilized.			
Catch Basins/ Manhole	Clean sumps with vacuum pump annually or when sediment occupies more than two thirds of the sump capacity.			



Stormwater Management System
Fair Tide, Inc.

Inspection & Maintenance Log

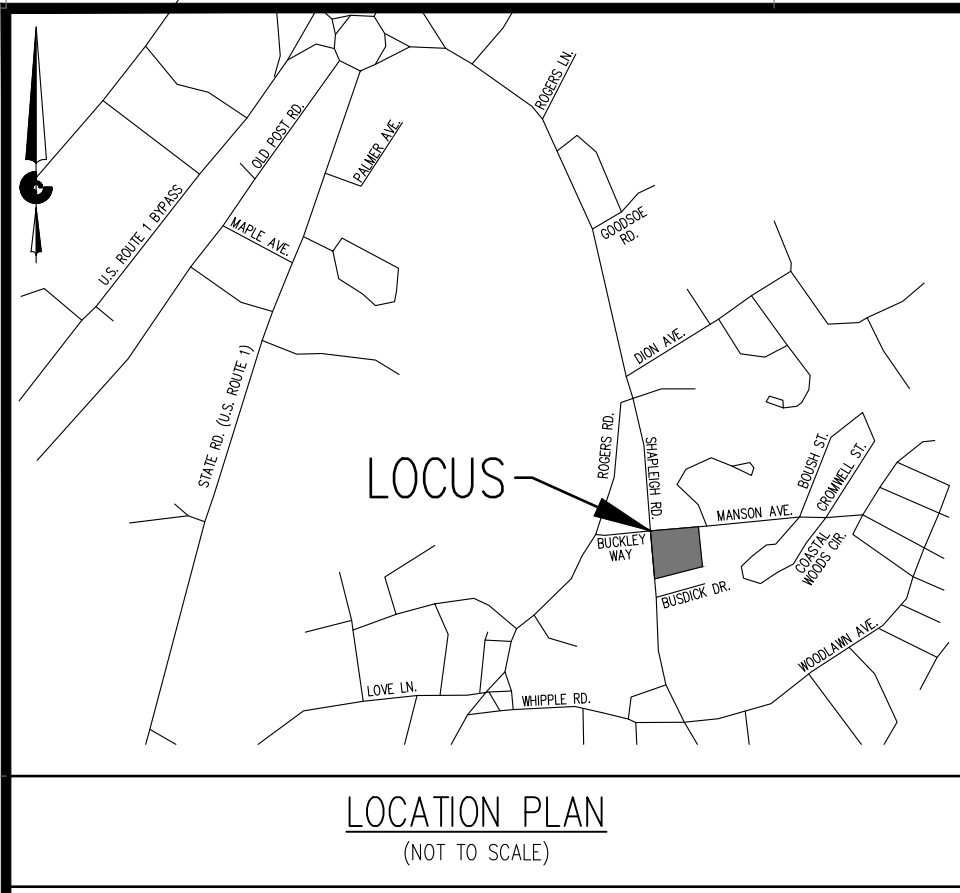
BMP/System Component	Date Inspected	Inspector	Cleaning/Repair Needed (List Items/Comments)	Date of Cleaning/Repair	Performed By

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**CIVIL
CONSULTANTS**

P.O. Box 100 South Berwick, Maine 03908 207-384-2550



DRAINAGE LEGEND

POND POND NUMBER

SUBCATCHMENT SUBCATCHMENT NUMBER
SUBCATCHMENT ACREAGE

REACH REACH NUMBER
REACH LENGTH

Tc COMPONENTS
S = Street
SC = Shallow Concentrated
C = Channel

ROUTING DIRECTION

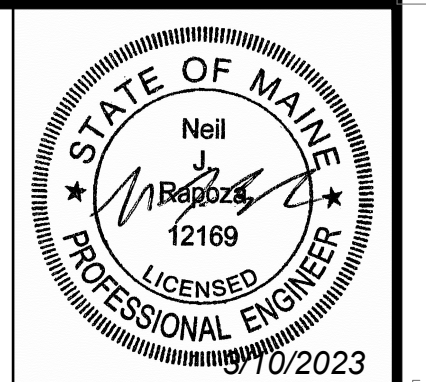
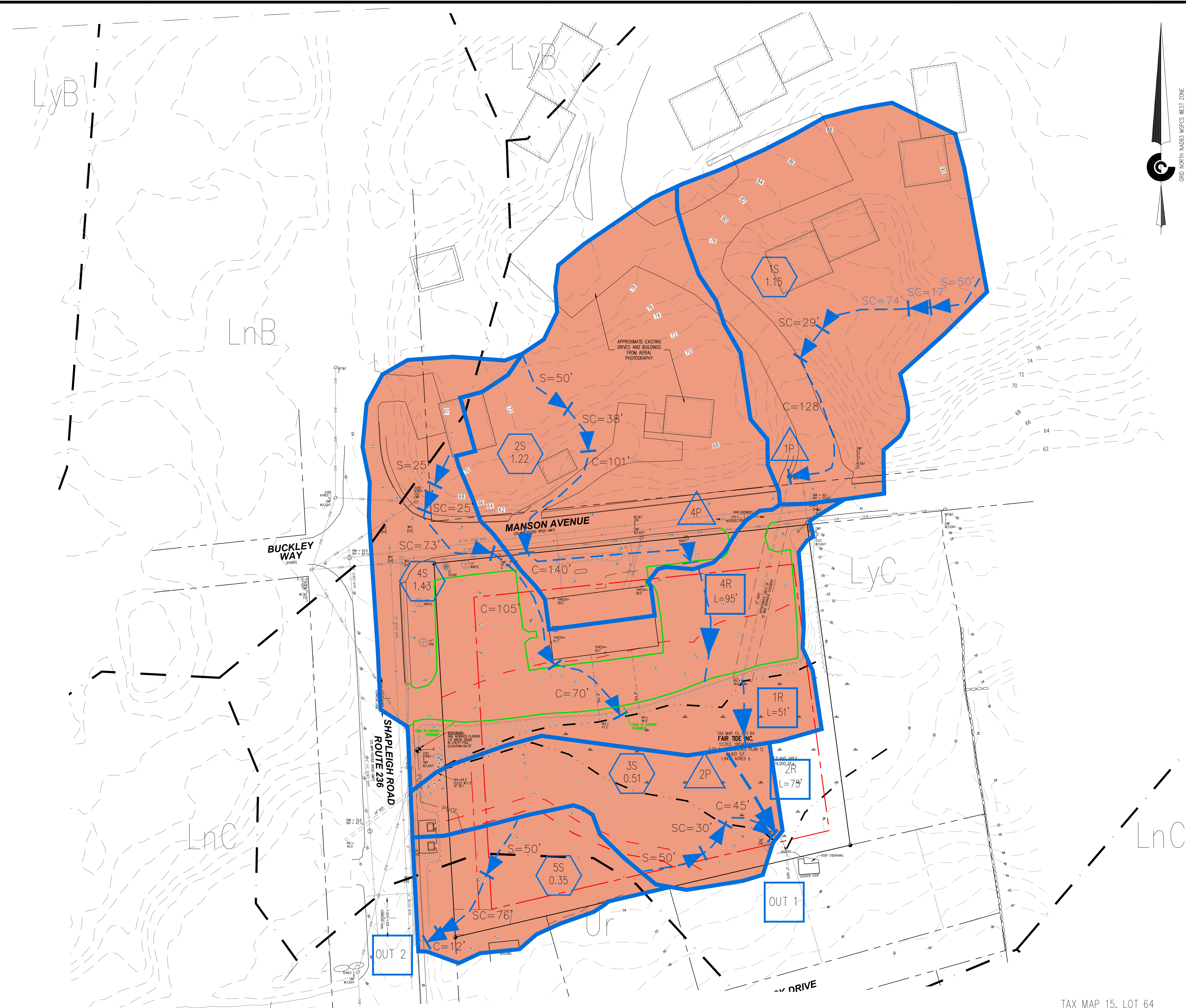
SOILS LEGEND

D Soils
SCS Soils: Lyman, Lyman-Rock
HSS Soils

Subcatchment Boundaries
Pre-Development

SCS Soil Line

Tc Flow Path & Direction
Pre-Development

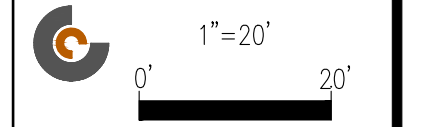


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Engineers
Planners
Surveyors
P.O. Box 100
South Berwick
Maine
03908
207-384-2550
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NO.	REVISIONS	INT.	DATE
1	REVISED PER TOWN ENGINEER REVIEW		3/6/23

RECORD OWNER:
FAIR TIDE, INC.
OWNER ADDRESS:
15 STATE ROAD
KITTERY, ME 03904

SITE MODIFICATIONS
TAX MAP 15, LOT 64
22 SHAPLEIGH ROAD
KITTERY, MAINE



DATE: 01/03/2023
DRAWN BY: NJR
CHECKED BY:
APPROVED BY:

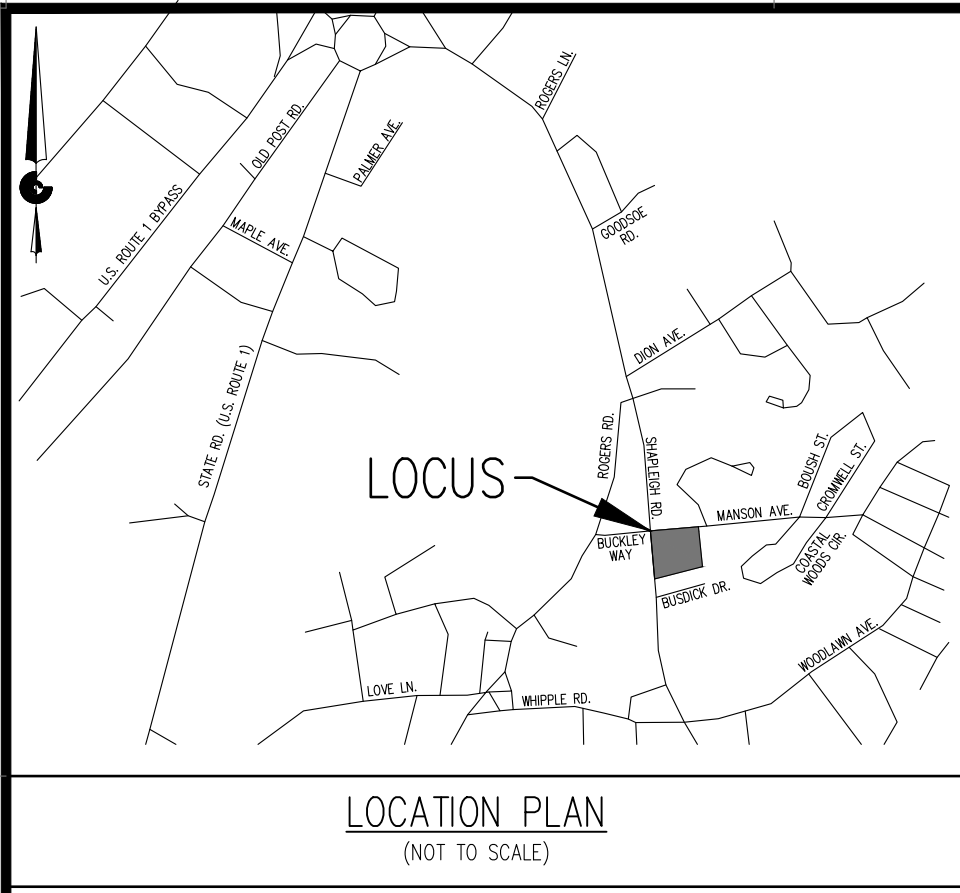
PRE-DEVELOPMENT
STORMWATER
MANAGEMENT PLAN

PROJECT NO: 21-335.00

D1

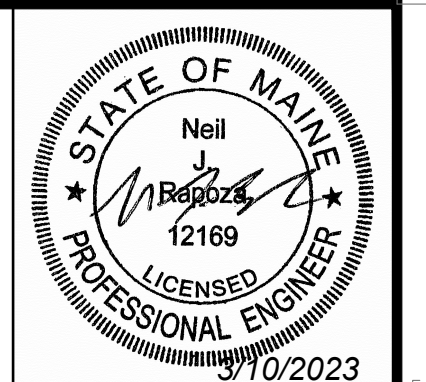
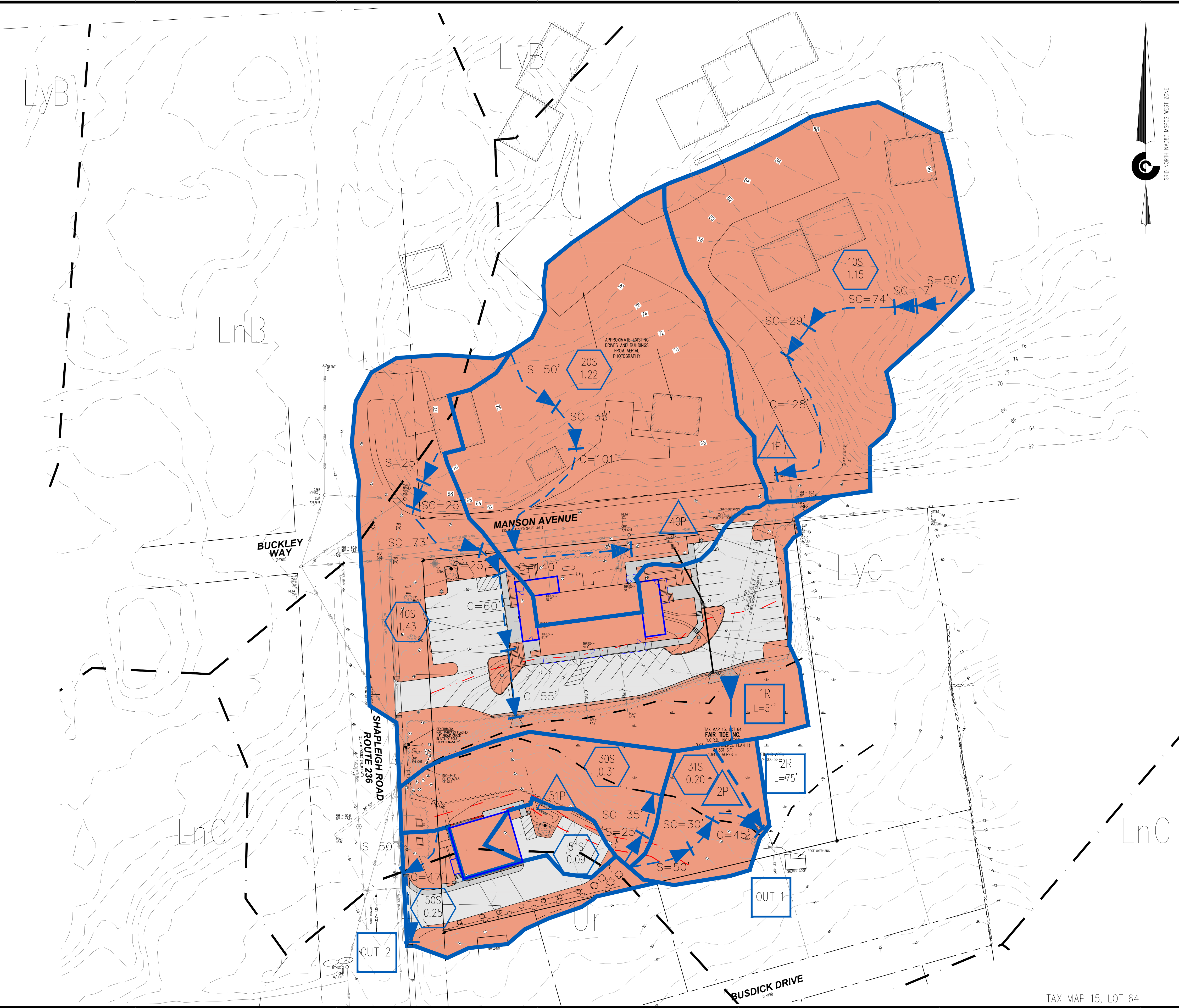
SHEET: 1 OF 2

TAX MAP 15, LOT 64



DRAINAGE LEGEND

- POND** POND NUMBER
- SUBCATCHMENT** SUBCATCHMENT NUMBER
SUBCATCHMENT ACREAGE
- REACH** REACH NUMBER
REACH LENGTH
- Tc COMPONENTS**
S = Sheet
SC = Shallow Concentrated
C = Channel
- ROUTING DIRECTION
- SOILS LEGEND**
 D Soils
 SCS Soils: Lyman, Lyman-Rock
 HSS Soils
- Subcatchment Boundaries Post-Development
- SCS Soil Line
- Tc Flow Path & Direction Post-Development
- WETLAND SETBACK
- DELINEATED WETLAND



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NO.	REVISIONS	DATE
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RECORD OWNER:
 FAIR TIDE, INC.
 OWNER ADDRESS:
 15 STATE ROAD
 KITTERY, ME 03904

SITE MODIFICATIONS
TAX MAP 15, LOT 64
22 SHAPLEIGH ROAD
KITTERY, MAINE

PREPARED FOR:
 FAIR TIDE, INC.
 15 STATE ROAD, KITTERY, MAINE 03904

CLIENT ADDRESS:

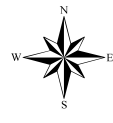
DATE: 11/01/2022
 DRAWN BY: NJR
 CHECKED BY:
 APPROVED BY:

POST-DEVELOPMENT STORMWATER MANAGEMENT PLAN

PROJECT NO: 21-335.00

D2

SHEET: 2 OF 2



22 Shapleigh Road - Vicinity Map

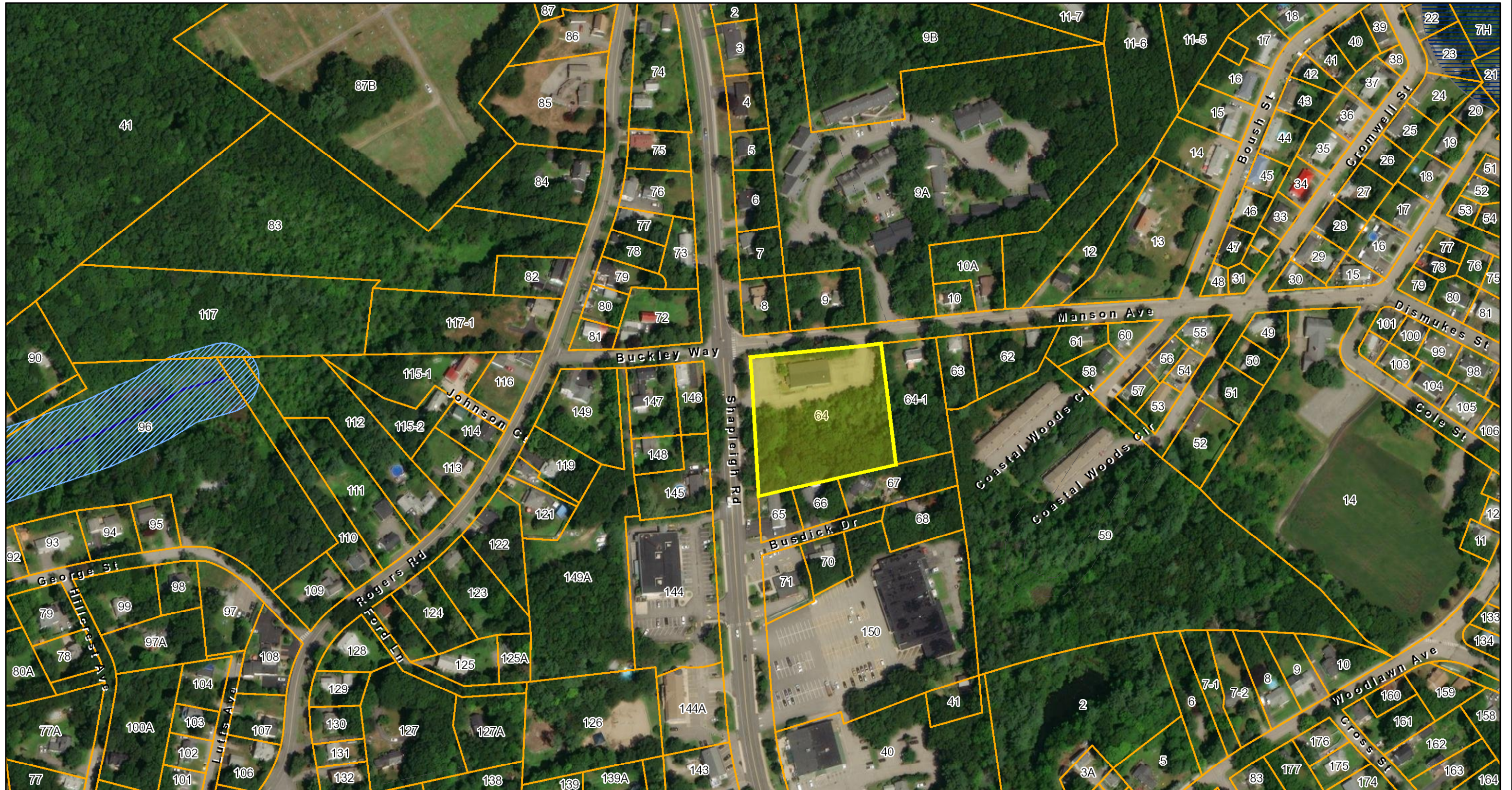
Kittery, ME



November 2, 2022

1 inch = 200 Feet

www.cai-tech.com



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

April 6, 2023

**RE: Final Site Plan Review Notification
22 Shapleigh Road
Kittery, ME 03904**

This letter is to inform you that a Final Site plan Review application will be filed with the Planning Department for a redevelopment project at 22 Shapleigh Road (Tax Map 15, Lot 64). Work is being done for Fair Tide Inc located at 15 State Road, Kittery, ME. Which proposes work abutting your property. This project was granted preliminary approval on February 28, 2023.

The project consists of the redevelopment of the existing site and building to create a community service space called Mainspring. You can find more information at the following website on the services to be provided. (<https://www.mainspringcollective.org/>). The project will also construct a residential building that will house 6 units of affordable housing.

The project will require a Major Site Plan review to redevelop the existing building, parking areas and new residential construction into what is proposed for the property.

Detailed information will be presented at the Planning Board meeting that indicates use and how this project will benefit the community. Information is available to review at the Town Hall or at Civil Consultants.

Should you have any questions or comments, please call at your convenience.

Respectfully yours,
CIVIL CONSULTANTS

A handwritten signature in blue ink, appearing to read 'G. Aleva', with a long horizontal flourish extending to the right.

Geoffrey R. Aleva, P.E.,
President

J:\aaa\2021\2133500\PLANNING BOARD\FINAL\20230406-Abutter Letter.docx

LIST OF ABUTTERS

22 Shapleigh Road
Kittery, ME
Map 15 Lot 64
April 2023

MAP	LOT	NAME & MAILING ADDRESS
15	64 (locus)	Fair Tide Inc 15 State Road Kittery Me 03904
15	65	Brittany Horst Nathan Horst 16 Shapleigh Road Kittery ME 03904
15	66	Matthew Boyle 5 Busdick Drive Kittery ME 03904
15	67	Julia O'Connell Trustee The Blue Heron Rev. Trust of 2012 9 Busdick Drive Kittery ME 03904
15	64-1	Stephen Erickson 616 E Devonhurst Lane Ponte Vedre, FL 32081
15	8	Gabrielle Bertrand Douglas Bertrand 24 Shapleigh Road Kittery ME 03904
15	9	Judith Durnin PO Box 833 Kittery ME 03904
15	9A	Berry Park Housing Corp C/O Avesta Housing Development Corp 307 Cumberland Avenue Portland, ME 04101
9	146	Jay Wilgus Emily Flinkstrom 12 Buckley Way Kittery ME 03904
9	145	Clifford Family IRR R.E. Trust Matthew Clifford TR 79 York Woods Road South Berwick, ME 03908