RPEx Consulting, LLC

Research. Plan. Execute.

28 June 2024

Planning Board
Town of Lisbon, Maine

Re: Duplexes at 223 Lisbon St. Project – Site Plan & Subdivision Application

RPEx Consulting, LLC is pleased to present this application for Site Plan and Subdivision Review to the Board on behalf of Gervais Homes, LLC. Within this application packet you'll find a complete set of design documents and supporting documentation for a 10-dwelling residential development at 223 Lisbon Street. The project has been carefully designed to serve the needs of its future tenants while blending into the landscape of the existing neighborhood. We look forward to working with you to bring this project to fruition.

Sincerely,



Ryan Sylvia, PE
Principal
RPEx Consulting, LLC

RPEx Consulting, LLC

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RPEx Consulting, LLC

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Section 1 – Applications

OFFICE USE ONLY – Subdivision Review (REFERENCE Chapter 66 Subdivisions, Lisbon Code of Ordinances)	
Application Number:	*Date Received:*
Project Name:	*Fee Paid (amount):*
Applicant:	

Town of Lisbon, Maine
SUBDIVISION REVIEW APPLICATION

Subdivision Name/Title: Duplexes At 223 Lisbon Street

This application must be received at the Town Office by close of business on the **2nd Thursday of the month** to be considered at the regular Planning Board meeting on the 4th Thursday of the month.

Applicant Information

2. Name of Applicant: Gervais Homes, LLC
   Address 52 Whites Bridge Road, Standish, ME 04084
   Telephone (207) 756-5520

1. Name of Property Owner (if different): _____
   Address _____
   Telephone ( )

3. Name of authorized agent (if different): RPEx Consulting, LLC
   Address 138 Lewiston Road, Gray, ME 04039
   Telephone (207) 245-8794

4. If applicant is a corporation, check if licensed in Maine: _____ No X Yes
   (if yes, attach a copy of State registration)

5. Person and address to which all correspondence regarding this application should be sent (if different):
   Name _____
   Address _____
   Telephone ( )

I have reviewed all submission requirements and completed the remaining pages of this application form.
☑ Attachments Checklist ☐ Waiver Request Form (*or N/A*) ☐ Dedication of Open Space form (*or N/A*)

To the best of my knowledge, all the information submitted in this application is complete and correct.

_____ _____
Signature of Applicant Date

OFFICE USE ONLY – Subdivision Review (REFERENCE Chapter 66 Subdivisions, Lisbon Code of Ordinances)	
Application Number:	*Project Name:*

Property Information

6. Location of Property (Street or Road) 223 Lisbon Street

   Register of Deeds Book 11475 ☐ Page 167

   Lisbon Tax Maps Map U-19 Lot 119A & 120

7. What legal interest does the applicant/owner have in the property to be developed (fee ownership, option, purchase and sale contract, etc.)? Attach evidence of interest.

   Deeded property owner.

8. What interest does the applicant/owner have in any property abutting the parcel to be developed?

   None.

9. Are there any easements or restrictive covenants on the property to be developed?

   ☐ Yes ☑ No If yes, please specify: _____

10. Current zoning of property: Village District

    Current use(s) of property: Vacant

11. Is any part of the project or property(s) in question part of an overlay zone?

    ☐ Aquifer Protection Overlay ☑ Wellhead Protection Overlay

12. Indicate if this property has previously been reviewed and/or permitted as part of a town-approved subdivision, site plan review, conditional use, floodplain development, or other planning board or appeals board review:

    No.

Project Information

13. Number of proposed lots: 1 Number of original lots: 2

    Indicate if a an Open Space Subdivision (required if 10+ acres in ROS-I and ROS-II zones): No

    Indicate if any uses are proposed other than residential: No

14. Are there any state or federal permits required for the proposed use? _____ Yes X_____ No

    If yes, please attach a list of all required permits and the status of any permitting activities.

15. List all professional surveyors, engineers, architects, or others preparing this Subdivision (if applicable):

    Firm or Licensed Individual: RPEx Consulting, LLC (Civil Engineer)

    Firm or Licensed Individual: Terradyn Consulting (Surveyor)

    If additional professionals, attach separate list.

16. Does this development propose the extension of public infrastructure? X_____ Yes _____ No

    If yes, what kind:

_____ streets/roads	_____ sewer lines
_____ sidewalks	_____ storm drains
_____ fire hydrants	X_____ water lines
_____ other: _____	

OFFICE USE ONLY – Subdivision Review (REFERENCE Chapter 66 Subdivisions, Lisbon Code of Ordinances)	
Application Number:	*Date Received:*
Project Name:	*Fee Paid (amount):*
Applicant:	

Subdivision Application
REQUIRED ATTACHMENTS CHECKLIST – Preliminary Plan

REFERENCE Chapter 66-52, Lisbon Code of Ordinances

✓or N/A	REQUIRED ATTACHMENT	*OFFICE USE ONLY*
	Ownership & Supporting Documentation	
X	Evidence of right, title or interest in the property;	
X	A statement of the subdivider's technical and financial capacity to carry out the project as proposed	
X	A copy of the most recently recorded deed for the parcel. A copy of all deed restrictions, easements, rights-of-way, or other encumbrances currently affecting the property	
N/A	A copy of any deed restrictions intended to cover all or part of the lots or dwellings in the subdivision	
	Plans/Drawings, Reports, Site Information	
X	***Location map.*** The location map shall be at a size adequate to show the relationship of the proposed subdivision to the adjacent properties, and to allow the planning board to locate the subdivision within the municipality. The location map shall show: a. Existing subdivisions within 500 feet of the proposed subdivision; Locations and names of existing and proposed streets within 500 feet of the subdivision; b. An outline of the proposed subdivision and any remaining portion of the owner's property if the preliminary plan submitted covers only a portion of the owner's entire contiguous holding; c. A copy of the Town of Lisbon tax map showing the subdivision may be used for the location map provided the information as indicated above is provided.	
X	***Preliminary plan.*** The preliminary plan and all application material shall be submitted in ten copies of one or more maps or drawings which may be printed or reproduced on paper, with all dimensions shown in feet or decimals of a foot. The preliminary plan shall be drawn to a scale of not more than 100 feet to the inch. Plans for subdivisions containing more than 100 acres may be drawn at a scale of not more than 200 feet to the inch provided all necessary detail can easily be read.	
X	***Application requirements.*** The application for preliminary plan approval shall include the following information. The planning board may require additional information to be submitted, where it finds necessary in order to determine whether the criteria of 30-A M.R.S.A., § 4404 as amended from time to time are met or the standards from Article III of this chapter:	

✓ or N/A	REQUIRED ATTACHMENT	*OFFICE USE ONLY*
X	a. Proposed name of the subdivision and the name of the municipality in which it is located, plus the assessor's map and lot numbers;	
X	b. The date the plan was prepared, north point, and graphic map scale;	
X	c. The names and addresses of the record owner, subdivider, and individual or company who prepared the plan and abutting property owners;	
X	d. A standard boundary survey of the parcel, giving complete descriptive data by bearings and distances, made and certified by a professional land surveyor. The type of monumentation to be set shall be indicated;	
X	e. The location of any zoning boundaries effecting the subdivision;	
X	f. The number of acres within the proposed subdivision, location of property lines, existing buildings, vegetative cover type, and other essential existing physical features;	
X	g. The proposed lot lines with approximate dimensions and lot areas;	
X	h. Contour lines at two foot intervals or as may be specified by the planning board, showing elevations in relation to mean sea level;	
N/A	i. Wetland areas shall be identified on the plan, regardless of size. Wetland delineation shall be in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual;	
N/A	j. All farmland shall be identified on the plan;	
X	k. The location of all rivers, streams, brooks and sand and gravel aquifers within or adjacent to the proposed subdivision;	
X	l. If any portion of the subdivision is in a flood-prone area, the boundaries of any flood hazard areas and the 100-year flood elevation, as depicted on the flood insurance rate map town of Lisbon, Maine, shall be delineated on the plan. In addition, the plan shall contain the notes required in section 66-122(14);	
X	m. The location and size of existing and proposed sewers, water mains, culverts, and drainage ways on or adjacent to the property to be subdivided;	
X	n. The location, names, and present right of way widths of existing streets, existing and proposed easements, building lines, parks and other open spaces on or adjacent to the subdivision. The plan shall contain sufficient data to allow the location, bearing and length of every street line, lot line, and boundary line to be readily determined and be reproduced upon the ground. These lines shall be tied to reference points previously established;	
N/A	o. All parcels of land proposed to be dedicated to public use and the conditions of such dedication;	

✓ or N/A	REQUIRED ATTACHMENT	*OFFICE USE ONLY*
N/A	p. The location of any open space to be preserved and a description of proposed ownership, improvement and management plan;	
X	q. The limits and location of any proposed sidewalks and curbing;	
N/A	r. Street and roadway plan and profile drawings drawn to a scale 1" = 50' horizontal and 1" = 5' vertical, prepared by a licensed professional engineer that complies with Article 3, Division 3, Streets, of this chapter;	
X	s. Typical cross-section views of all proposed streets and drainage systems as prepared by a licensed professional engineer;	
X	t. The location of all existing and proposed overhead and underground utilities;	
N/A	u. Areas within or adjacent to the proposed subdivision which have been identified significant wildlife habitat by the Maine Department of Inland Fisheries and Wildlife;	
N/A	v. The location known or potential archaeological resources;	
N/A	w. Identification of known rare and endangered species and measures to protect them;	
N/A	x. The location of documented historic buildings and sites on or adjacent to the subdivision and measures to minimize impacts on them;	
N/A	y. The location of scenic sites or views as identified in the Town of Lisbon comprehensive plan;	
N/A	z. A list of construction items including but not limited to streets, sidewalks, storm drainage, water supply and sewers, with cost estimates, that will be completed by the subdivider prior to the sale of lots or dwellings;	
X	aa. The type of sewage disposal to be used in the subdivision: 1. When sewage disposal is to be accomplished by connection to the public sewer, a letter from the Lisbon sewer department stating the department has the capacity to collect and treat the waste water shall be provided. 2. When sewage disposal is to be accomplished by subsurface waste water disposal systems, test pit analysis, prepared by a licensed site evaluator or certified soil scientist shall be provided. A map showing the location of all test pits dug on the site shall be submitted.	
X	ab. The type of water supply system(s) to be used in the subdivision: 1. When water is to be supplied by public water supply, a written statement from the Lisbon water department shall be submitted indicating that there is adequate supply and pressure for the subdivision and that the department approves the plans for extensions where necessary. 2. When water is to be supplied by private wells, evidence of adequate	

✓or N/A	REQUIRED ATTACHMENT	*OFFICE USE ONLY*
	ground water supply and quality shall be submitted by a well driller or a hydrogeologist familiar with the area.	
X	ac. An estimate of the amount and type of vehicular traffic to be generated on a daily basis and at peak hours;	
N/A	ad. A traffic impact analysis when required by the planning board prepared by a licensed professional engineer;	
N/A	ae. An approved driveway or entrance permit issued by the Maine Department of Transportation if a driveway or entrance is required by 23 M.R.S.A. § 704;	
X	af. A storm water management and drainage plan, prepared by a licensed professional engineer in accordance with the most recent edition of Stormwater Management for Maine: BMPS Technical Design Manual, published by the Maine Department of Environmental Protection (2006);	
X	ag. A soil erosion and sedimentation control plan;	
X	ah. A written statement indicating if the parcel to be subdivided has changed ownership within the past five years, if timber has been harvested within the past five years and if such harvesting resulted in a violation of the Liquidation Harvesting Rules adopted pursuant to Title 12, section 8869, subsection 14;	
N/A	ai. When required by the planning board a high intensity soil survey by a certified soil scientist;	
N/A	aj. When required by the planning board a hydrogeologic assessment prepared by a certified geologist or licensed professional engineer, experienced in hydrogeology, when the subdivision is not served by public sewer;	
N/A	ak. When required by the planning board a municipal service impact analysis based on the comments received from department heads as requested in section 66-51(d)(4). This list shall include but not be limited to: schools including busing; street reconstruction, maintenance, and snow removal; solid waste disposal; recreation facilities; police and fire protection. A municipal service impact analysis that includes a list of construction and maintenance items, with both capital and annual operating cost estimates, as would be incurred by the Town of Lisbon.	

OFFICE USE ONLY – Subdivision Review (REFERENCE Chapter 66 Subdivisions, Lisbon Code of Ordinances)	
Application Number:	*Date Received:*
Project Name:	*Fee Paid (amount):*
Applicant:	

Subdivision Application
FINAL PLAN REQUIREMENTS

REFERENCE Chapter 66-82, Lisbon Code of Ordinances

✓ or N/A	PLAN REQUIREMENTS	*OFFICE USE ONLY*
N/A	Prior to submittal of the final plan application, the following approvals shall be obtained in writing, where applicable: 1. Maine Department of Environmental Protection, under the Site Location of Development Act, Natural Resources Protection Act, stormwater law or if a waste water discharge license is needed; 2. Maine Department of Human Services, if the subdivider proposes to provide a public water system other than the Lisbon water department; 3. Maine Department of Human Services, if an engineered subsurface waste water disposal system(s) is to be utilized; 4. U.S. Army Corps of Engineers, if a permit under Section 404 of the Clean Water Act is required.	
	The Final Plan shall be provided in the form of **two (2) reproducible, stable-based transparencies**, one to be recorded at the registry of deeds, the other to be filed at the municipal office, and **ten (10) copies of the final plan** and all information accompanying the plan. The Final Plan shall meet the following requirements:	
X	a. The reproducible transparencies shall be embossed with the seal of the individual responsible for preparation of the plan.	☐
X	a. Plans shall be drawn to a scale of not more than 100 feet to the inch. Plans for subdivisions containing more than 100 acres may be drawn at a scale of not more than 200 feet to the inch provided all necessary detail can easily be read.	☐
X	b. Plans shall be no larger than 24 × 36 inches in size, and shall have a margin of two inches outside of the border lines on the left side for binding and a one-inch margin outside the border along the remaining sides.	☐
X	c. Each drawing or print shall provide space suitable to record final plan approval by the planning board, with conditions, if any, and the date of approval signed by the chairman and a majority of the planning board	

OFFICE USE ONLY – Subdivision Review (REFERENCE Chapter 66 Subdivisions, Lisbon Code of Ordinances)	
Application Number:	*Project Name:*

	The Final Plan shall also include or be accompanied by the following information:	☐
X	a. Proposed name of the subdivision and the name of the municipality in which it is located, plus the assessor's map and lot numbers;	☐
X	b. The number of acres within the proposed subdivision, location of property lines, existing buildings, watercourses, and other essential existing physical features;	☐
X	c. The date the plan was prepared, north point, graphic map scale;	
X	d. The names and addresses of the record owner, subdivider, and individual or company who prepared the plan;	☐
X	e. The location of any zoning boundaries affecting the subdivision;	☐
X	f. The location and size of existing and proposed sewers, water mains, culverts, stormwater management facilities and drainage ways on or adjacent to the property to be subdivided;	☐
X	g. The location, names, and widths of existing and proposed streets, highways, easements, buildings, parks, and other open spaces on or adjacent to the subdivision. The plan shall contain sufficient data to allow the location, bearing and length of every street line, lot line, and boundary line to be readily determined and reproduced upon the ground. These lines shall be tied to reference points previously established. The location, bearing and length of street lines, lot lines & parcel boundary lines shall be certified by a professional land surveyor;	
N/A	h. All parcels of land proposed to be dedicated to public use and the conditions of such dedication. Written offers to convey title to the municipality of all public ways and open spaces shown on the plan, and copies of agreements or other documents showing the manner in which open spaces to be retained by the developer or lot owners are to be maintained shall be submitted. If proposed streets and/or open spaces or other land is to be offered to the municipality, written evidence that the council are satisfied with the legal sufficiency of the written offer to convey title shall be included;	☐
X	i. If any portion of the subdivision is in a flood-prone area, the boundaries of any flood hazard areas and the 100-year flood elevation, as depicted on the flood insurance rate map town of Lisbon, Maine, shall be delineated on the plan. In addition, the plan shall contain the notes required by section 66-122(14);	☐
N/A	j. Wetland areas shall be identified on the plan, regardless of size;	☐
N/A	k. If different than those submitted with the preliminary plan, a copy of any proposed deed restrictions intended to cover all or part of the lots or dwellings in the subdivision;	☐
TBD	l. The type and amount of performance guarantee approved by the town manager.	

OFFICE USE ONLY – Site Plan Review (REFERENCE Chapter 62 Site Plans, Lisbon Code of Ordinances)	
Application Number:	*Date Received:*
Project Name:	*Fee Paid (amount):*
Applicant:	*Tier 1 _____ Tier 2 _____*

Town of Lisbon, Maine
SITE PLAN REVIEW APPLICATION

Site Plan Name/Title: Duplexes at 223 Lisbon Street

This application must be received at the Town Office by close of business on the **2nd Thursday of the month** to be considered at the regular Planning Board meeting on the 4th Thursday of the month.

Applicant Information

2. Name of Applicant: Gervais Homes, LLC
   Address 52 Whites Bridge Road, Standish, ME 04084
   Telephone (207) 756-5520

1. Name of Property Owner (if different): _____
   Address _____
   Telephone ( )

3. Name of authorized agent (if different): RPEx Consulting, LLC
   Address 138 Lewiston Road, Gray, ME 04039
   Telephone (207) 245-8794

4. If applicant is a corporation, check if licensed in Maine: _____ No X Yes
   (if yes, attach a copy of State registration)

5. Person and address to which all correspondence regarding this application should be sent (if different):
   Name _____
   Address _____
   Telephone ( )

I have reviewed all submission requirements and completed the remaining pages of this application form.

☑ Attachments Checklist ☐ Waiver Request Form

To the best of my knowledge, all the information submitted in this application is complete and correct.

_____ _____
Signature of Applicant Date

OFFICE USE ONLY – Site Plan Review (REFERENCE Chapter 62 Site Plans, Lisbon Code of Ordinances)	
Application Number:	*Project Name:*

Property Information

6. Location of Property (Street or Road) 223 Lisbon Street

   Register of Deeds Book 11475 ☐ Page 167

   Lisbon Tax Maps Map U-19 Lot 119A & 120

7. What legal interest does the applicant/owner have in the property to be developed (fee ownership, option, purchase and sale contract, etc.)? Attach evidence of interest.

   Deeded property owner.

8. What interest does the applicant/owner have in any property abutting the parcel to be developed?

   None.

9. Are there any easements or restrictive covenants on the property to be developed?

   ☐ Yes ☑ No. If yes, please specify:

10. Current zoning of property: Village District

    Current use(s) of property: Vacant

11. Is any part of the project or property(s) in question part of an overlay zone?

    ☐ Aquifer Protection Overlay ☑ Wellhead Protection Overlay

12. Indicate if this property has previously been reviewed and/or permitted as part of a town-approved subdivision, site plan review, conditional use, floodplain development, or planning board or appeals board review:

    No.

Project Information

13. Proposed use of property: Residential

14. Nature of the Project. Provide a brief description of the proposed project, including proposed businesses and/or use(s), proposed buildings and structures, proposed site work and other improvements to the property, or other information to familiarize the Planning Board with your application.

    Gervais Homes proposed to build (5) duplex buildings, for a total of 10 residential rental dwellings on the existing parcel. The project will be served by town water and sewer. On-site parking has been provided with access from Lisbon St (Rt. 196). Stormwater management includes mitigation of ponded runoff from abutting properties.

15. Total acreage of parcel: 0.690 Acreage to be developed: 0.338

16. Please indicate classification (per Chpt 62-31, Site Plan Ordinance): _____ Tier 1 X_____ Tier 2

All new construction or expansion of buildings or use of land for commercial, industrial or institutional use where the activity is greater than 1,000 square feet shall be subject to site plan review. This includes multifamily developments that are not considered a subdivision, and site improvements which involve filling, cutting and/or earth moving of greater than 500 cubic yards of soil (for other than new single-family residential construction and municipal roads).

A project is classified as Tier 1 if: (1) Less than 5,000 square feet of floor or land area, (2) a residential structure with fewer than 5,000 square feet of floor area converted to nonresidential use; (3) a change in use of a nonresidential structure, (4) a residential structure altered to create fewer than eight dwelling units and not considered to be a subdivision. All other projects are Tier 2.

17. Are there any state or federal permits required for the proposed use? _____ Yes X_____ No

If yes, please attach a list of all required permits and the status of any permitting activities.

18. Please list all professional surveyors, engineers, architects, or others preparing this Site Plan (if applicable):

Firm or Licensed Individual: RPEx Consulting, LLC (Ryan Sylvia, PE #15459)

Firm or Licensed Individual: Terradyn Consultants (Nicholas Racioppi, PLS #2621)

If additional professionals, attach separate list.

19. Does this development propose the extension of public infrastructure? X_____ Yes _____ No

If yes, what kind:

_____ streets/roads	_____ sewer lines
_____ sidewalks	_____ storm drains
_____ fire hydrants	X_____ water lines
_____ other: _____	

20. Proposed water supply:

_____ individual well(s)
_____ central well with distribution lines
X_____ connection to public water system
_____ other:_____

21. Proposed sewage disposal:

_____ individual subsurface disposal system(s)
_____ central on-site disposal with collection lines
X_____ connection to public sewer system
_____ other:_____

22. Does the applicant intend to request waivers of any requirements? _____ Yes X_____ No

(See attached Waiver Request Form if applicable)

OFFICE USE ONLY – Site Plan Review (REFERENCE Chapter 62 Site Plans, Lisbon Code of Ordinances)	
Application Number:	*Date Received:*
Project Name:	*Fee Paid (amount):*
Applicant:	*Tier 1 _____ Tier 2 _____*

Site Plan Application
REQUIRED ATTACHMENTS CHECKLIST

Tier 1 Applications: all attachments must be included with the completed application form.
Tier 2 Applications: for the Pre-application meeting, applicant must submit a draft Site Plan drawing and list of abutters along with a completed application form. The remaining required attachments shall be submitted with the full application prior to scheduling the planning board hearing.

REFERENCE Chapter 62-111 through 62-131, Lisbon Code of Ordinances

✓or N/A	REQUIRED ATTACHMENT	*OFFICE USE ONLY*
	For all Tier 1 & Tier 2 Applications:	
X	A copy of the deed to the property, option to purchase the property, or other documentation to demonstrate right, title or interest in the property on the part of the applicant	
N/A	Copies of existing covenants or deed restrictions	
X	Site plan (drawn to scale) and set of drawings as appropriate (see below), drawn at a scale sufficient to allow for review, but not more than 50 feet per 1 inch; Tier 1= 3 copies, Tier 2= 10 copies	
X	List of names and addresses of all abutting property owners including those across any streets	
N/A	A list of all required state and federal permits.	
	The Tier 1 and Tier 2 Site Plan (drawing or set of drawings) shall include:	
X	Property owner's name and address	
X	Name, registration #, and seal of land surveyor, architect, engineer and/or other professional(s) preparing the plan	
X	Tax map and lot number of the parcel(s)	
X	Location map, showing the general location within the town	
X	Boundaries of all contiguous properties under the control of the owner or applicant, regardless of whether all or part is being developed at this time	
N/A	Location and dimensions of any existing easements	
X	All existing and proposed setback dimensions as required by Chapter 70 of the Code of Ordinances (*see Dimensional Standards table*)	
X	Zoning classifications of the property, and the location of zoning district boundaries, including aquifer protection overlay zones, if the property is located in two or more zoning districts or abuts a different district	
X	Location, name, and present widths of existing streets and rights-of-way within or adjacent to the proposed development	

X	The location of any of the features below, with a description of how such features will be maintained or impacts upon them minimized: – open drainage courses – wetlands – significant wildlife habitat – known or potential archaeological resources – designated trails – historic buildings and site – significant scenic areas – mapped sand and gravel aquifers – rare and endangered species – other important natural features	
X	Location of the 100-year floodplain and its elevation, if applicable	
X	Location, type, size (dimensions) and layout of all existing and proposed curbs, sidewalks, driveways, fences, retaining walls, parking space areas	
X	Location and dimensions of all proposed water supply and wastewater disposal infrastructure	
X	The direction of existing surface water drainage across the site	
X	The direction of proposed surface water drainage across the site	
X	Methods of controlling erosion and sedimentation during and after construction	
X	Location, dimensions and ground floor elevations of all existing and proposed buildings on the site, using a convenient fixed point for a benchmark	
X	Design and exterior materials of all proposed buildings and structures	
X	A landscape plan indicating all landscaped areas, fencing and size, and type of plant material proposed to be retained or planted with emphasis on front setback areas	
N/A	Location, front view and dimensions of existing and proposed signs	
X	Location, type and direction of exterior lighting	
N/A	Type, size and location of incineration devices	
N/A	Type, size and location of all machinery or devices likely to generate appreciable noise at the lot lines	
N/A	Identification of the amount and type of any raw, finished or waste materials to be stored outside of roofed buildings, including their physical and chemical properties	
	Additional, specific requirements for Tier 2 Applications ONLY	
X	Existing and proposed topography of the site at 2-foot contour intervals	
X	Bearings and distances of all property lines of the property to be developed and the source of this information	

X	For projects that do not require permitting under the stormwater management law, a stormwater drainage plan showing: – existing and proposed method of handling stormwater runoff – direction of flow of the runoff through the use of arrows – location, elevation and size of all catch basins, dry wells, drainage ditches, swales retention basins, and storm sewers – engineering calculations used to determine drainage requirements based upon the 2, 10 and 25 year 24-hour storm frequency, if the project will significantly alter the existing drainage pattern due to such factors as the proposed new pervious surfaces (such as paving and building area)	
X	Location and size of any existing sewer and water infrastructure, culverts, and drains on the property to be developed, and any that will serve the development from abutting streets or land	
Waived	A high intensity soil survey by a certified soil scientist	
X	A utility plan showing, in addition to provisions for water supply and wastewater disposal, the location and nature or electrical, telephone and any other utility services to be installed on the site	
X	A planting schedule keyed to the site plan and indicating the general varieties and sizes of trees, shrubs and other plants to be planted on the site	
Estimate of Peak Hour Traffic Generation Only	Traffic data shall include: – estimated peak-hour traffic to be generated by the proposal – existing traffic counts and volumes – traffic accident data – the capacity of surrounding roads and any improvements which may be necessary on such roads to accommodate anticipated traffic generation – the need for traffic signals and signs or other directional markers to regulate anticipated traffic	
X	Location, width, typical cross-section, grades and profiles of all proposed streets and sidewalks	
X	Cost of the proposed development and evidence of financial capacity to complete it. This evidence should be in the form of a letter from a bank or other source of financing, indicating the name of the project, amount of financing proposed, and interest in financing the project.	
N/A	When required by the planning board, a municipal service impact analysis. This list shall include but not be limited to: – schools, including busing – street reconstruction – maintenance and snow removal – solid waste disposal – recreation facilities – police and fire protection. A municipal service impact analysis that includes a list of construction and maintenance items, with both capital and annual operating cost estimates, as would be incurred by the Town of Lisbon.	

	Other Site Plan application attachments that may be required: *These additional submission requirements may be required by the Planning Board if the Board deems the information necessary to review and make a decision. Applicants are encouraged to consult with the Code Enforcement Officer and discuss these additional submission requirements at a Planning Board pre-application meeting.*	
N/A	An on-site soils investigation report by a Maine Department of Human Services licensed evaluator. The report shall identify the types of soil, location of test pits, and proposed location and design for any subsurface wastewater disposal system(s).	
N/A	If required by 23 MRSA §§704 or 704A, a copy of the approved driveway, entrance or traffic movement permit issued by the Maine Department of Transportation.	
X	If the project includes new or existing driveway access onto Lisbon Street (Route 196), Main Street north of Huston Street (Route 125), Mill Street, Ridge Road (Route 9), or Upland Road, it shall be subject to the requirements of Chpt. 46-134 Access Management. The applicant is required to apply for review and permit for driveway access according to this ordinance.	
X	If sewage disposal is to be connected to the public sewer, a letter from the Lisbon Sewer Department stating the department has the capacity to collect and treat the waste water shall be provided.	
X	If water is to be supplied by public water supply, a written statement from the Lisbon Water Department shall be submitted indicating that there is adequate supply and pressure for the development and that the department approves the plans for extensions where necessary.	

RPEx Consulting, LLC

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Section 2 – Applicant's Interest in Property

CORRECTIVE
WARRANTY DEED

Scott W. Kelly of Lisbon, Androscoggin County, Maine, for consideration paid, grants to **Gervais Homes, LLC**, a Maine Limited Liability Company of Standish, Cumberland County, Maine (whose mailing address is 52 Whites Bridge Road, Standish, ME 04084) with Warranty Covenants, the following described real estate:

See "Exhibit A" Attached

For grantor's source of title, reference may be had to a deed from Jessica Barbay to the grantor herein, dated August 14, 2015, and recorded in the Androscoggin County Registry of Deeds in Book 9206, Page 24.

The purpose of this deed is to correct the Exhibit A in the previous deed from this grantor recorded in said Registry in Book 11475, Page 167. Said deed inadvertently erroneously omitted Parcel Two.

Any and all other rights, easements, privileges and appurtenance belonging to the granted estate are hereby conveyed.

This conveyance is made subject to the property taxes assessed against the premises, which said taxes are to be prorated between the parties hereto as of the date of delivery of this deed in accordance with 36 M.R.S.A., sec. 558.

Witness my hand and seal this 2 day of February, 2024.

WITNESS:

_____

Scott W. Kelly

STATE OF MAINE
Androscoggin, ss

February 2, 2024

Then personally appeared the above-named Scott W. Kelly and acknowledged the foregoing instrument to be his free act and deed.

Before me,

ALIZABETH J. DOWLING
Notary Public, State of Maine
My Commission Expires 01/03/2030

Notary Public/Attorney-at-Law
Commission Expiration:

File No.: 2023-5836

File No: 2023-5836

"Exhibit A"

Certain lots or parcels of land, with any buildings thereon, situated in the Town of Lisbon, in the County of Androscoggin and State of Maine, bounded and described as follows:

PARCEL ONE:
Beginning on the westerly side of Lewiston Street at the northeast corner of land now or formerly of George H. Smith;

Thence westerly by line of land of said Smith one hundred sixty-eight and one-half (168 1/2) feet to a stone set in the ground on line of land now or formerly of Joseph Boisvert;

Thence northerly by line of land of said Joseph Boisvert eighty-eight (88) feet;

Thence easterly by line of land formerly of Augustus (or Augustine) F. Douglas to said Lewiston Street;

Thence southerly by said Lewiston Street eighty-eight (88) feet to the point begun at.

Excepting from the above described premises that portion thereof conveyed by Philip Hartwell and Evelyn Hartwell to the Inhabitants of the Town of Lisbon by deed dated October 14, 1961 recorded in the Androscoggin County Registry of Deeds at Book 859, Page 433.

PARCEL TWO:
Situated on the westerly side of the County Road leading from Lewiston to Lisbon Falls beginning at a point in the westerly line of said Road which point is the northeasterly corner of land now or formerly of William J. Dinsmore and the southeasterly corner of land of Philip L. Hartwell and Evelyn L. Hartwell; thence in a general westerly direction a distance of one hundred sixty-eight (168) feet to the northwesterly corner of land now or formerly of William J. Dinsmore; thence in a general southerly direction a distance one hundred (100) feet to a point; thence in a general easterly direction a distance of one hundred sixty-eight (168) feet to the westerly line of said Road; thence in a general northerly direction along the westerly line of said road a distance of one hundred (100) feet to the point of beginning.

TINA M. CHOUINARD, REGISTER
ANDROSCOGGIN COUNTY MAINE E-RECORDED

RPEx Consulting, LLC

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Section 3 – Cost & Applicant's Financial Capacity

Norway Savings Bank

June 14, 2024

Town of Lisbon
300 Lisbon Street
Lisbon, ME 04250

RE: 223 Lisbon Street, Lisbon, ME.

Ladies and Gentlemen,

At the request of Andrew Gervais, I write this letter to provide to you my opinion on the financial capacity of Gervais Homes, LLC to undertake the project at 223 Lisbon Street, Lisbon, ME consisting of 10 units.

I spoke with Mr. Gervais about the plans and scope of the project in detail recently. Gervais Homes, LLC maintains his banking relationship with Norway Savings Bank so I am very familiar with the company and its finances.

Based on my banking relationship with Gervais Homes, LLC and the information discussed with Andrew about the proposal and plans for 223 Lisbon Street, it is my opinion that Gervais Homes, LLC has the financial capacity to successfully complete the project with an estimated cost of $2,100,000.

Sincerely,

Brian C. Desjardins
Regional Vice President
Commercial Lending

BCD/tbm

RPEx Consulting, LLC

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Section 4 – Utility Availability

TOWN OF LISBON

SEWER DEPARTMENT

744 Lisbon Street, Lisbon Falls, Maine, 04252
Telephone 207-353-3013 Fax 207-353-3014
www.Lisbonme.org

Town Council

Harry Moore Jr.
Chair
Fern Larochelle
Mark Lunt
Raymond Robishaw
Christine Cain
Jo Jean Keller
Norm Albert

Town Manager

Glenn Michalowski

June 12, 2024

To: Ryan Sylvia

From: Steve Aievoli

Subject: Capacity to serve

The Lisbon Sewer Department Collection System and Treatment Plant has adequate capacity to receive the flows from the proposed development to be located at 223 Lisbon Street as shown in the drawing received on June 8th, 2024.

Please send the final utility plan and site drawings once complete. We need to them for our files.

If you have any other questions please feel free to contact me.

Thank you,

Steve Aievoli

Lisbon Sewer Superintendent

LISBON WATER
DEPARTMENT

639 Lisbon Road
Lisbon Falls, Maine 04252
Tel. (207) 353-3020 Fax (207) 353-3004
Arthur McLean, Chair, Marie Hale and Alen Ward Commissioners
General Manager, Charles Harrison

June 25, 2024

To: Mr. Sylvia

Re: 223 Lisbon Street

This letter is to confirm that The Lisbon Water Department has the capacity to serve the above-referenced project. All work must be completed in accordance with the Maine Public Utilities Commission and Lisbon Water Department Rules and Regulations.

The service for this project must be taken from a public water main in the street on which the property fronts. You will utilize the existing 8-inch water main on Lisbon Street to meet this requirement.

At this time, there are no permit fees for establishing service with the Water Department. However, you will need to contact the water department to schedule an appointment for a job quote. Once the quote has been settled, a deposit equaling the full proposal amount would be required prior to any work being performed or material ordered by the water department.

Please keep us informed as this project progresses and if you have any questions or concerns, please don't hesitate to reach out.

Sincerely,

Charles Harrison

Lisbon Water Department

General Manager

RPEx Consulting, LLC

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Section 5 – List of Abutters

RPEx Consulting, LLC

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List of Abutters

Duplexes at 223 Lisbon Street

28 June 2024

N/F Owner	Map/Lot	Address
David Marcel Perron Faith Ann Perron	U-19/119	227 Lisbon Street
George J. Gendron Diane J. Gendron	U-19/137	19 Spring Street
Pamela Young	U-19/121	221 Lisbon Street
Robert A. Dewitt	U-19/111	220 Lisbon Street
Wai Ming Lam	U-19/112	222 Lisbon Street
Joseph Laroche	U-19/113	224 Lisbon Street
Frederick Reed II	U-19/114	226 Lisbon Street

RPEx Consulting, LLC

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Section 6 – Ability to Subdivide

RPEx Consulting, LLC

Research. Plan. Execute.

28 June 2024

Planning Board
Town of Lisbon, Maine

Re: Duplexes at 223 Lisbon St., Recent Subdivision

Please be advised that RPEx Consulting, LLC and Gervais Homes, LLC are not aware of any existing easements or covenants associated with the property at 223 Lisbon St. Nor are we aware of any previous subdivision in the last 5 years at 223 Lisbon St.

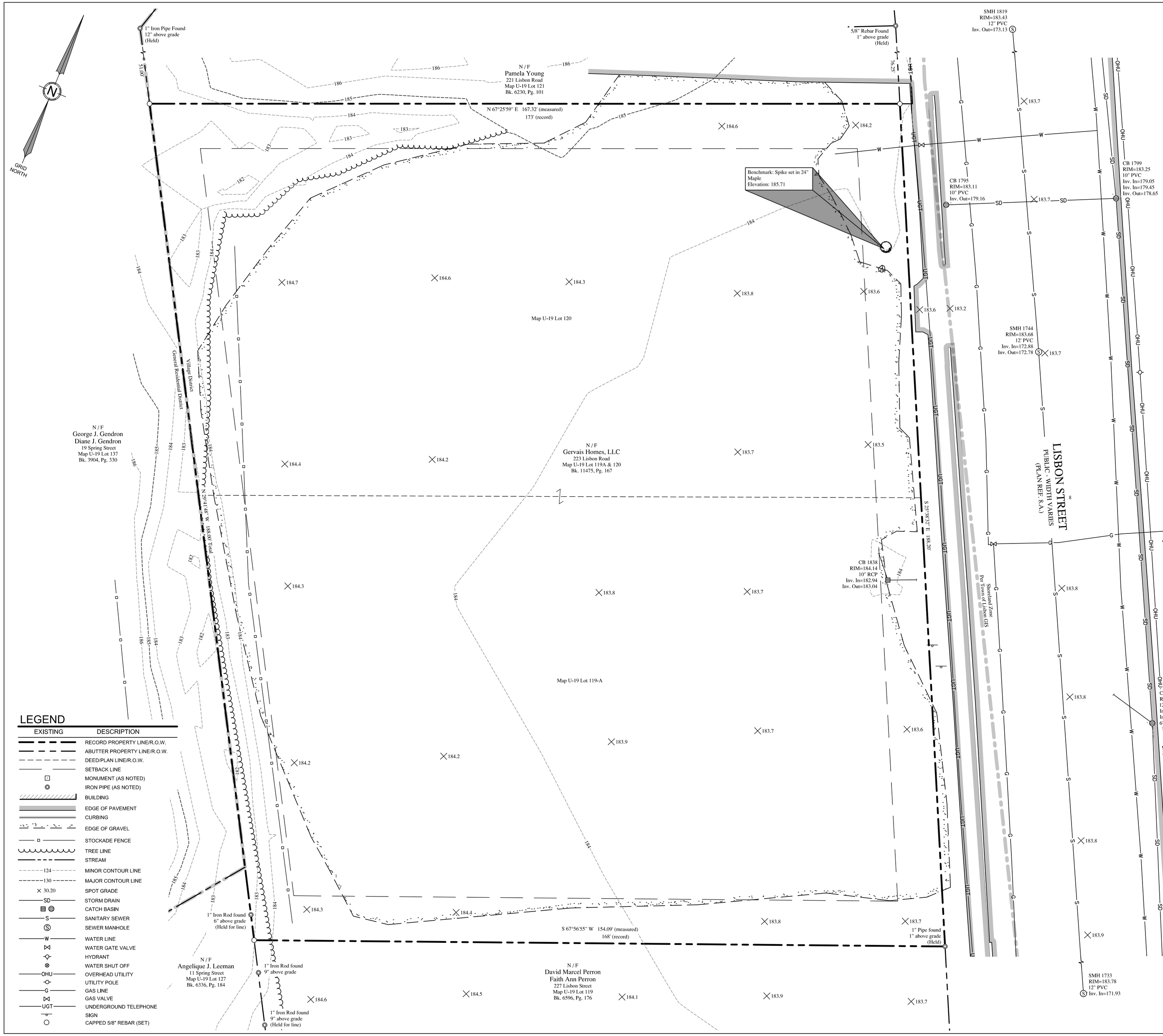
Sincerely,

Ryan Sylvia, PE
Principal
RPEx Consulting, LLC

RPEx Consulting, LLC

Research. Plan. Execute.

Section 7 – Pre-Development Survey Plan





GENERAL NOTES

1. The purpose of this plan is to depict the results of a Boundary Retracement Survey and an Existing Conditions/Topographic Survey of the subject parcels.
2. All Book and Page numbers refer to the Androscoggin County Registry of Deeds, unless otherwise noted.
3. The record owner of the subject parcels is Gervais Homes, LLC by a corrective deed dated February 2, 2024 and recorded in Book 11517, Page 21.
4. The subject parcels are shown on the Town of Lisbon Tax Map U-19 as Lot 119-A and Lot 120 and are located in the Village District (V) and the Village Character Design Overlay District.
5. Space and bulk standards for the Village District as of the date of this plan are as follows:

Min. Lot Size:	Single Family	5,000 s.f.
	Multi-Family	3,000 s.f.
Min. Frontage:	50 ft.	
Min. Front Setback:	10 ft.	
Min. Side Setback:	10 ft.	
Min. Rear Setback:	10 ft.	
Max. Building Coverage:	75%	

6. Total area of the subject parcel is 30,078 s.f.
7. Boundary and topographic information shown hereon is based on an on-the-ground survey performed by Terradyn Consultants, LLC in January of 2024.
8. Plan References:
   A. "Maine State Highway Commission Right of Way Map, State Highway "Z" Federal Aid Project No. F-017-1(2)" dated June 1950, S.H.C. File No. 1-39.
9. The location of Lisbon Street is based on existing local monuments found.
10. Plan orientation is Grid North, Maine State Plane Coordinate System, West Zone 1802-NAD83. Elevations depicted hereon are NAVD88, based on dual-frequency GPS observations.
11. The subject parcel is located within Zone X, Areas of Minimal Flood Hazard, as delineated on the Flood Insurance Rate Map for the Town of Lisbon, Androscoggin County, Community-Panel Number 23001C0361E, having an Effective Date of July 8, 2013.
12. Underground utilities depicted hereon were marked by ProMark Utility Locating, Inc. on January 1, 2024 and may not necessarily represent all existing utilities within the subject parcels. Owners, contractors, and/or designers need to contact Dig-Safe Systems, Inc. (CALL 811) and field verify existing utilities prior to digging or breaking ground.
13. Snow and ice conditions were present at the time of this survey. A field inspection in the spring may be needed to verify certain details.

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)
1 INCH = 10 FT.

LEGEND

EXISTING	DESCRIPTION
	RECORD PROPERTY LINE/R.O.W.
	ABUTTER PROPERTY LINE/R.O.W.
	DEED/PLAN LINE/R.O.W.
	SETBACK LINE
	MONUMENT (AS NOTED)
	IRON PIPE (AS NOTED)
	BUILDING
	EDGE OF PAVEMENT
	CURBING
	EDGE OF GRAVEL
	STOCKADE FENCE
	TREE LINE
	STREAM
124	MINOR CONTOUR LINE
130	MAJOR CONTOUR LINE
× 30.20	SPOT GRADE
SD	STORM DRAIN
	CATCH BASIN
S	SANITARY SEWER
	SEWER MANHOLE
W	WATER LINE
	WATER GATE VALVE
	HYDRANT
	WATER SHUT OFF
OHU	OVERHEAD UTILITY
	UTILITY POLE
G	GAS LINE
	GAS VALVE
UGT	UNDERGROUND TELEPHONE
	SIGN
	CAPPED 5/8" REBAR (SET)

SURVEYOR'S CERTIFICATION

To the best of my knowledge, I have used ordinary and prudent conduct expected of Professional Land Surveyors and the results shown here represent the licensee's responsibility to the public as required under the Standards of Practice as defined by the Board of Licensure for Professional Land Surveyors (M.R.S.A Title 32, Chapter 141, Dated April 2001).

Except as Follows:

1. Survey Report Limited to Notes on the Plan
2. No Deed Description to Date

Plan Prepared by: _____
Nicholas Racioppi PLS # 2621

STATE OF MAINE

Androscoggin County Registry of Deeds

Received _____, 20___

At ___h _____m _____M. and recorded in

Plan Book _____ Page _____

Attest _____
Registrar

STATE OF MAINE
NICHOLAS RACIOPPI
No. 2621
PROFESSIONAL LAND SURVEYOR

NO.	DATE	REVISIONS
2	02/19/2024	REVISED INVERT DATA
1	02/14/2024	ISSUED TO CLIENT FOR REVIEW

ADDRESS: 41 CAMPUS DRIVE, SUITE 301, NEW GLOUCESTER, ME 04260
PHONE: (207) 926-5111
WEB SITE: www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC
Civil Engineering | Land Surveying | Geomatics
Stormwater Design | Land Planning | Environmental Permitting

PROJECT: GERVAIS PARCEL
PROJECT ADDRESS: 52 WHITES BRIDGE ROAD STANDISH, MAINE 04071
SHEET TITLE: BOUNDARY RETRACEMENT SURVEY & EXISTING CONDITONS/TOPOGRAPHIC
CLIENT: ANDREW GERVAIS HOMES, LLC

DATE: 02/06/2024
SCALE: 1" = 10'
JOB NO: 24-2
SHEET: 1 OF 1

C:\OD\Terradyn Consultants\Project Folders - Documents\2024 Jobs\24-2 Gervais 223 Lisbon Road Lisbon\CAD\Survey\24-2 BD-EC.dwg

RPEx Consulting, LLC

Research. Plan. Execute.

Section 8 – Design Drawings

Duplexes At 223 Lisbon St.

Lisbon, ME

Project Directory

Owner — Gervais Homes, LLC
Andrew Gervais
207-756-5520
52 Whites Bridge Rd.
Standish, ME

Surveyor — Terradyn Consulting
Keith Morse
207-926-5111
41 Campus Drive, Suite 101
New Gloucester, ME

Site Engineer — RPEx Consulting, LLC
Ryan Sylvia, P.E.
207-245-8794
138 Lewiston Road
Gray, ME 04039

Locus Map



TABLE OF CONTENTS

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C1.1	EROSION & SEDMIMENTATION CONTROL PLAN & NOTES
C1.2	EROSION & SEDIMENTATION CONTROL NOTES & DETAILS
C1.3	DRAINAGE AREA PLANS
C2.0	SITE LAYOUT & GRADING PLANS
C2.1	UTILITY PLAN
C3.0	PROFILE & SECTIONS
C3.1	UTILITY DETAILS
C3.2	SECTIONS & DETAILS
L1.0	LANDSCAPE PLAN & DETAILS

NOT FOR CONSTRUCTION

STATE OF MAINE
RYAN RUSSELL SYLVIA
No. 15459
LICENSED PROFESSIONAL ENGINEER
6/28/24

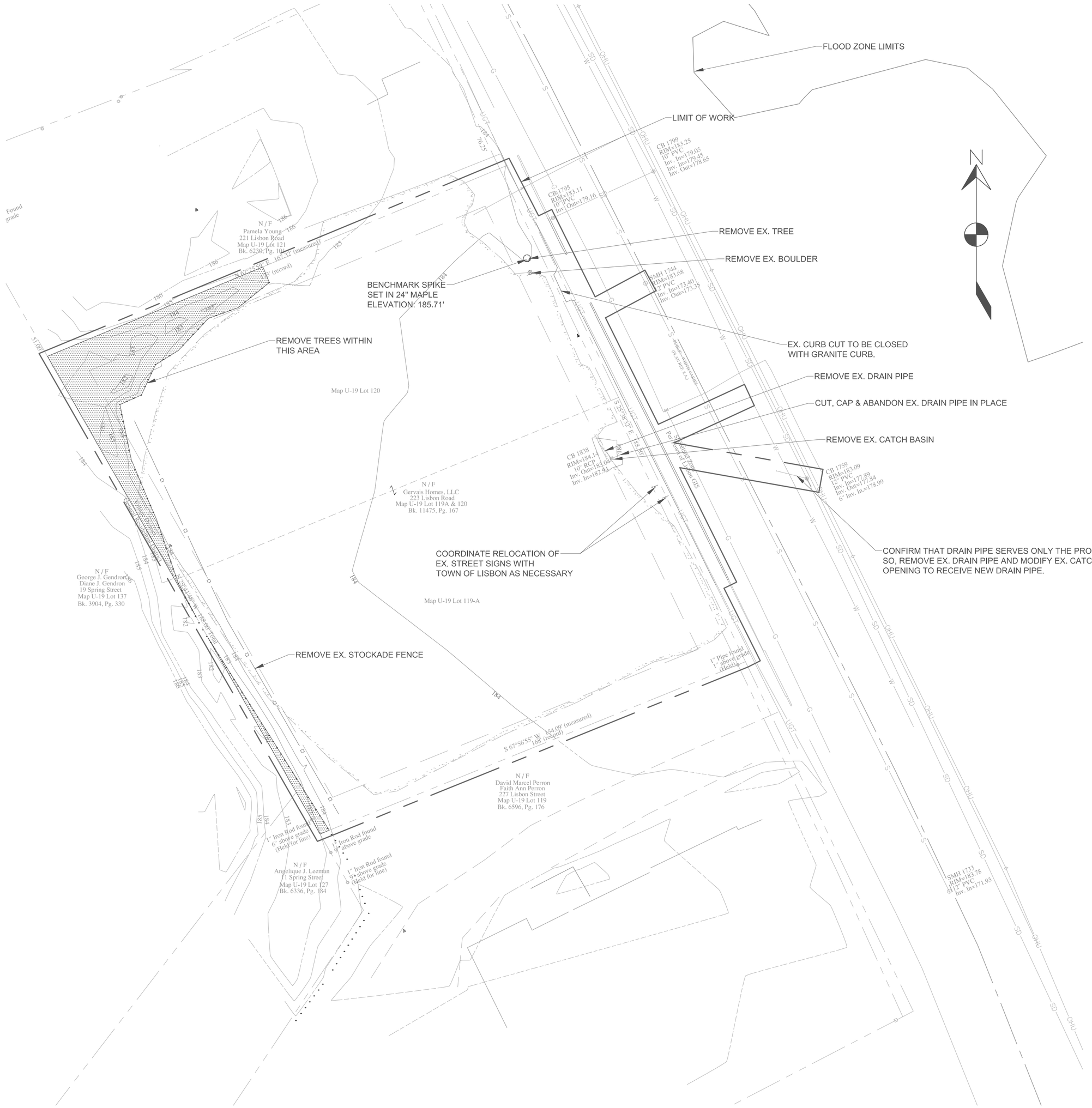
RPEx Consulting, LLC
Research. Plan. Execute.

RPEx Consulting, LLC
138 Lewiston Road
Gray, ME 04039
207-245-8794
ryan@rpexconsulting.com

Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

Revisions
1. 6/7/24 - Proof Set
2. 6/28/24 - Permit Set
3.
4.
5.
6.
7.
8.

Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: Not to Scale
Title: Project Title
Drawing No. C.01



General Notes

- Existing site conditions and property boundaries are based on survey plan dated 2/6/2024 for Gervais Parcel, produced by Terradyn Consultants, LLC.
- Contractor is responsible for carrying out all work in a safe manner, consistent with best industry practices, and compliant with all local, state, and federal laws, including but not limited to OSHA.
- Contractor is responsible for protection of the public and surrounding property as it relates to the work being performed.
- Contractor shall coordinate and permit all work within the public right of way with Lisbon Public Works (207) 353-3000 Ext. 117.
- Contractor is responsible for all traffic control planning and operations as required by local officials and/or necessitated by the work.
- All site features and utilities shall be laid out and dimensions shall be field verified prior to fabrication of custom materials and construction.
- All materials removed from the site, including but not limited to existing soils, shall be disposed of lawfully.
- Work on site may proceed only after appropriate erosion and sedimentation control measures have been put in place.
- Erosion and sedimentation control measures must be monitored throughout construction. If at any time, measures or devices are not functioning as designed or intended, they shall be remedied prior to work continuing.
- MDOT Standard Specifications - March 2020, is hereby incorporated as the standard specification for this project. Reference shall be referenced for all materials and workmanship.

Demolition & Removals Notes

- Only trees within the property lines shall be removed. If removal of trees on the property line is required or if trimming trees overhanging the property line is required, this must be coordinated with affected landowners prior to work be performed.
- Protect all existing survey monuments.

LEGEND

- Property Corner
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- UTILITY POLE
- VALVE
- BOLLARD
- SITE SIGN
- FENCE LINE
- STREAM
- TREE LINE
- OVERHEAD UTILITY
- U/G Electric / Telecom
- Property Line
- GAS PIPE
- SEWER PIPE
- STORM DRAIN PIPE
- UNDERDRAIN
- WATER PIPE

Graphic Scale

0 10 20 40 80

NOT FOR CONSTRUCTION

STATE OF MAINE
RYAN RUSSELL SYLVIA
No. 15459
LICENSED PROFESSIONAL ENGINEER
6/28/24

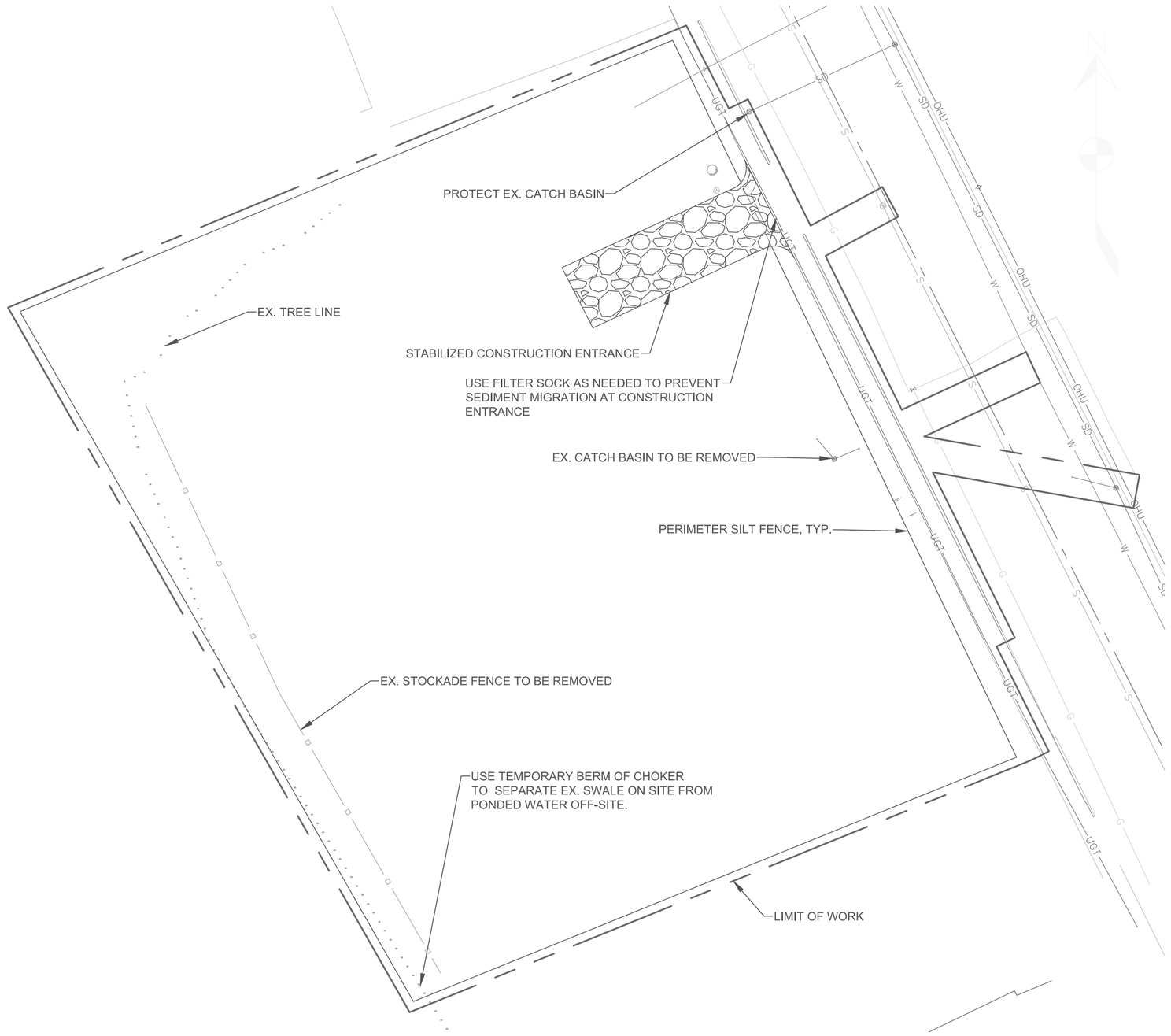
RPEx Consulting, LLC
Research. Plan. Execute.

RPEx Consulting, LLC
138 Lewiston Road
Gray, ME 04039
207-245-8794
ryan@rpexconsulting.com

Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

Revisions	
1.	6/7/2024 Proof Set
2.	6/28/2024 Permit Set
3.	
4.	
5.	
6.	
7.	
8.	

Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: 1" = 20'
Title: Ex. Cond. & Demolition Plan
Drawing No. C1.0



Existing Conditions

- The majority of the surface of the site is covered with a layer of base gravel, likely installed after a previous building was demolished. The soils of the site are approximately 75% Hartland (HfB) and 25% Swanton. Hartland soils consist largely of very fine loamy sands and some silts as depth increases. Swanton consists mostly of fine loamy sands with some clay and silts at deeper elevations. Hartland is a Type B soil capable of moderate infiltration. Swanton is a Type D soil with very limited infiltration potential. The Swanton soils exist on the westerly side of the site where significant water ponding is observed.
- The site's topography is mostly flat. The site slopes slightly toward the roadway. Small areas of the site are covered is a sparse grass. The westerly edge of the lot has some trees that provide screening of the property line. The site abuts multi-family properties on it's north and south property lines, while it abuts a trailer home park on it's westerly property line. An areas estimated at about 4.6 acres drains west to east toward the project site. That area is mixed residential consisting of single family homes, multi-family homes, trailer homes, lawns, and pavement. The runoff from this area is retained in a large swale along the westerly property line and extending into neighboring properties. The project site is located within a wellhead district.
- During construction, special care should be taken to ensure that sediment does not travel offsite via the continous swale that follows the westerly property line. This can be controlled by installation of a stone berm at the property line.

Proposed Conditions

- The proposed site will consist of 5 duplex residential buildings with bituminous parking, open lawn areas, and some landscaping. The site has been graded to control the flow of runoff to the public stormwater system. To the greatest extent, runoff has been routed through grassy swales and channels to provide some treatment prior to entering the storm system. The swale that previously ran along the westerly property line will be cleaned, de-brushed, and reshaped to provide for a grassy channel and limited pond storage.

Construction Schedule

- Construction is planned to begin in the Fall of 2024 and continue through Summer of 2025.
- It is anticipated that rough grading and foundation excavations will take place in the Fall with the site being stabilized for cold weather.
- Building construction will take place through the Winter.
- Finish sitework and lawn seeding will commence in Late Spring. Lawn areas are planned to be stabilized by Winter 2025.
- The winter construction period runs from November 1st through April 15th; however no vegetation growth should be anticipated past October 15th in southern Maine and even earlier in the northern areas. 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.
- If construction occurs after November 1st, all disturbed areas should be stabilized daily if the construction is active. Any erosion or discharges should be repaired immediately.
- No more than 1 acre should be actively worked on at any one time without regular inspection; or the exposed area should be limited to which can be mulched in one day. Any measures necessary to control erosion/sedimentation should be installed for the conditions at the site (soil erodibility, slope, groundwater, size, weather conditions, etc.).
- For over-winter protection, a double row of sediment barriers (silt fence backed with hay bales or erosion control mix, etc.) should be placed within 75 feet of a protected natural resource.
- All hay mulch should be anchored with netting, tracking or erosion control mix after November 1st. The ground surface should be invisible under the mulch.
- Loam or seed is not effective after October 15. Finished areas can be mulched without seeding or with dormant seeding applied at a 3 times the specified rate for permanent seeding. All areas seeded during the winter should be inspected in the spring and revegetated if the catch is less than 75 %.
- All vegetated areas with a slope of 15% or less should have 90% grass cover by November 1st or should be seeded with winter rye at a seeding rate of 3 pounds per 1000 square feet, mulched with hay at 75 pounds per 1000 square feet, and anchored with netting. Or, by November 15, the area should be protected with an erosion control blanket, erosion control mix, or with hay at a rate of at least 150 pounds per 1000 square feet.
- All vegetated slopes greater than 15% should be seeded and mulched by September 1. If a slope is not stabilized by October 15, the soil may be seeded with winter rye at a seeding rate of 3 pounds per 1000 square feet and protected with erosion control blankets. If the rye fails to grow three inches or fails to cover at least 75% of the slope by November 15, the slope should be protected with an erosion control blanket, erosion control mix, or riprap.
- All grass-lined ditches and channels should be constructed and stabilized by September 1. If a ditch or channel is not sufficiently grassed over (75% cover) by November 15th, the ditch should be lined with stone riprap. The ditch will need to be over-excavated to accommodate the thickness of the riprap.
- Soil stockpiles should be mulched for over winter protection with hay at twice the normal rate or with a four-inch layer of erosion control mix. Stockpiles should not be left overwinter (even mulched) if within 100 feet from a protected resource.

Inspections & Maintenance

- Any soil disturbance should be inspected regularly (a minimum of once a week, and before and after a storm event) until the site is fully stabilized with either 90% grass cover or a permanent impervious surface by a person who has the knowledge of ESC measures and the understanding of stormwater management. Any failing measure should be repaired or adequately modified to stabilize the site prior to the next storm event but no later than 7 calendar days.

Dust Control

Stabilize all laydown areas and all unpaved surfaces with a base gravel or coarse gravel as soon as possible. When possible, route site traffic around disturbed areas. Apply water during warm sunny days to 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. Calcium Chloride may be applied as a dust control alternative (30% calcium chloride is recommended for most gravel surfaces or follow the supplier's guidance). Asphalt or oil-based binders are not allowed.

Construction Entrances

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 consist of at least 6 inches of angular aggregate (2-3 inch diameter) or similarly graded reclaimed concrete. The aggregate should be placed over a geotextile filter to prevent the stones from pushing into the native soil. The wheels of construction equipment may be washed prior to exiting the site. Washing should be performed in an area that drains to a sediment trap or basin.

Excavation Dewatering

Divert upgradient clean runoff away from an excavated area. When excavation dewatering becomes necessary, a stable area should be chosen for an appropriately sized sediment treatment device (sediment trap or geotextile filter bag). Treated water may be discharged to public storm sewer or spread over established vegetated areas. Avoid discharging to an unstable area, newly vegetated or within 100 feet of a natural resource. Any channel dug for discharging water should be stabilized with ditch lining (riprap, geotextile fabric, plastic sheeting, etc.). Limit the length of a trench excavation to 500 feet at any one time (the excavated material should be placed upgradient of the trench).

If the collected runoff is contaminated with oil, grease, or other petroleum products, filtering through an oil/water separator or a filtration mechanism is recommended. The DEP should be contacted for any significant known spill or unknown source of contaminant.

Geotextile Filter Bag

- Install the filter bag prior to initiating any activities which will require dewatering.
- The type of fabric should be based on the size of soil particles to be trapped (i.e. a woven material for coarse particles and a nonwoven material for finer particles).
- A filter bag should be located in an area mostly level (with less than 5% slope). A pad of crushed gravel may be provided.
- Avoid discharging to an area that is bare of vegetation or newly vegetated. Any sign of erosion or channelization from the discharged water requires immediately correction.
- Filter bags have a finite capacity for sediment collection and may be prone to plugging. Avoid over-pressurizing the bag or it may burst.
- If a sediment discharge is observed, inspect the filter bag for tears or other malfunctions.

Concrete Washout

A concrete washout station should be sized to handle all the wash water, solids and rainfall without overflowing. Typically, 7 gallons of water are required to clean a truck chute and 50 gallons for the hopper of a concrete truck. Access to the washout pit should be stable and secure (i.e. base of gravel or crushed rock). A washout facility should not be placed within 50 feet of a storm drain or discharge point unless the pit is lined with anchored plastic sheeting (minimum 10-mil thickness) and is not allowed to overflow. Inspect the structure on a daily basis to assess usage and identify leaks and breaches. Dispose of the solids appropriately.

Stockpiling

When soil materials are stockpiled and not being worked, a fabric cover should be provided with 12 to 24-inch overlaps in the direction of runoff. Anchoring should be continuous along each side of the pile. On the windy side, additional anchors should be provided to maintain soil coverage and to prevent ballooning or blowouts. Topsoil from an agricultural source may be high in nitrogen and phosphorus. Special care should be taken with a secure cover if stockpiled upslope from a protected natural resource. Inspect regularly and before, during and after any major rain event and repair as necessary.

Material Laydown Areas And Temporary Roadways

- Laydown yards should be sited on flat or gently sloping convex areas that have moderately well drained soils or better to prevent a muddy working surface, rutting, soil erosion, sedimentation, and other environmental and operational problems.
- Construction mats may be placed perpendicular to the direction of travel. These should be removed within 30 days from the end of construction with the area restored to natural conditions (soil aerated, seeded and mulched).
- A layer of wood chips or erosion control mix can be used as a temporary road base if placed with a thickness of 3 to 4 inches. The material will need to be replenished as the layer decomposes and becomes less effective. The wood chips can absorb moisture and will eventually decompose sufficiently to support vegetation once usage of the road is terminated.
- Slash and wood debris can be used on construction projects that require extensive tree clearing/removal by laying slash or chips as the temporary access areas. The woody material will reduce rutting by displacing equipment ground pressure and acts as an erosion control measure by covering the exposed soil.

Sediment Barriers

Sediment barriers must be installed prior to soil disturbance. Significant runoff should be diverted from barriers and not allowed to accumulate behind them. At the bottom of slopes, a diversion ridge may be necessary to intercept runoff. Berms may be necessary to divert water around any exposed soil, and runoff should be directed to a sediment trap.

Silt Fence

Silt 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

Berms of erosion control mix (ECM) may be used effectively on frozen ground, outcrops of bedrock, and heavily rooted forested areas, or when other temporary erosion and sediment control measures are not practicable. 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 should be reshaped when necessary.

Filter Socks

A filter sock made of synthetic netting, and filled with erosion control mix or other finely shredded organic material may be used as a perimeter protection around a soil stockpile, as a sediment barrier in low flow drainage swales or around drainage outlets and catch basins. Full contact with the ground is critical to prevent short circuiting under the tube - the ground surface should be smooth and level. In wooded areas, protruding roots and debris may need to be removed. In grassed areas, the grass needs to be either mowed or compressed down. Staking may be necessary on steep slopes. Upon final stabilization, the tube can be cut open and the material spread out onto the ground. The mesh material should be removed.

Storm Drain Inlet Protection

Storm drain inlets should be protected from sediment-laden runoff entering untreated. Catch basin inserts or filter sacks made of woven geotextile fabrics may be used on structured entries. Use should follow the manufacturer's guidelines. They are suspended below the grate and have a built-in overflow for large storm flows. The insert should be removed and the catch basin cleaned at the end of the construction project.

Hay Bales

- Hay (or straw) bales should only be used as a sediment barrier for a small disturbance with a limited watershed. Their use may also be a simple and effective emergency measure for controlling unexpected sedimentation. Bales should be limited to small sites or short slopes. But, in an emergency, a row of hay bales may provide an immediate but temporary line of defense.
- Hay bales should be installed so that the bindings are oriented parallel to the ground to delay their deterioration (hay bales will not last through a construction season and will need to be replaced). The barrier should be entrenched a minimum depth of 4 inches. The gaps between bales should be chinked (filled by wedging) with hay to prevent the flow of water between the bales. For small areas or near a protected resource, trenching may not be necessary. At least two stakes per bale should be driven into the ground for anchoring. The first stake is driven toward the previous bale to force them together. After the bales are staked and chinked, the excavated soil should be backfilled and packed against the barrier to the ground level on the downhill side and 4 inches up the uphill side. Hay bales should be replaced with another sediment barrier if needed for a period that is longer than 2 months.

Mulching

- Hay, hydraulic mulch or erosion control blankets should be installed immediately over a new seeded bed, or if near a protected natural resource. Mulching is also recommended before any expected rain, and in the winter.
- A site will be considered permanently stabilized when supporting a ground cover of 90% vegetation. If the mulch needs to be removed for better vegetation growth (as in the spring time), it can be spread out.

Hay/Straw Mulch

- 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-biodegradableplastic 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 (or mat) is a machine-produced blanket of organic fiber, sewn into a biodegradable mesh (or geo-web cellular structure for more reinforcement). Organic mats are available as jute, excelsior wood fiber, coconut fiber, straw, and others.
- Blankets are designed to retain the soil moisture and maintain a constant temperature for seed germination; and they are most useful where hay cannot sustain wind or water disturbance or when the site is to overwinter. 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 is a dense, processed mixture of intertwining shredded wood fragments and grit that will stabilize a site immediately without vegetation. Erosion control mix will prevent erosion on a slope up to 1:1. Erosion control mix consists primarily of organic material manufactured on or off the project site and may include: shredded bark, stump grindings, or partially composted wood products.
- The mix must be well-graded with an organic component that is between 50 and 100% of dry weight, and that is composed of fibrous and elongated fragments. The mineral portion of the mix should be naturally included in the product with no larger rocks (>4") or large amounts of fines (silts and clays). In stump grinding, the mineral soil originates from the root ball and should not be removed before grinding. The mix should be free of refuse, material toxic to plant growth or unsuitable material (bark chips, ground construction debris or reprocessed wood products).
- 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.

RipRap

- Entrench the toe of the riprap for structural support and use larger rocks.
- If a drainage layer is necessary to control groundwater seepage, approximately 6 inches of granular fill should be spread uniformly over the native soils. A nonwoven geotextile filter fabric may be placed directly on the prepared slope in situations where groundwater is not an issue. For more protection, provide both the drainage layer and the geotextile. The permeability of the filter fabric should be higher than the native material for the seepage to pass freely.
- When large stones are used for surface armoring (12 inches or greater), provide a 3-4-inch layer of gravel (¾ inch washed stone) to distribute the load, protect the fabric from degradation and to provide interfacial contact.
- The riprap should never be layered nor dumped, as the various stone sizes may get segregated.

Topsoil

- Laboratory testing for nutrient and content of organic matter is recommended (University of Maine Soil Testing Laboratory or other). Topsoil should have 3-5% of organic matter, no more than 500 ppm soluble salts and a pH range that is between 6.0 and 7.5 (if less than 6.0, lime should be added in accordance with the test results and seed requirements).
- Topsoil should not be placed on frozen, muddy, or an extremely wet subgrade.
- Prior to spreading the topsoil, the subgrade should be loosened or scarified to a depth of at least 2 inches to ensure bonding.
- The topsoil should be 4 inch deep and uniform. Rototilling for a deeper rooting zone on poor subsoils (sloping wet sites or with sand and gravels) is recommended.
- Lightly compact the topsoil to ensure a uniform and firm seedbed (excessive compaction will increase runoff, and prevent seed rooting).

Vegetation

The seed bed should be scarified or roughened after topsoil is added to provide a deeper rooting depth for vegetation, traps moisture for the re-establishment of vegetation, and retains water for infiltration. To prevent compaction, rutting or erosion, the surface should be prepared for topsoil and seeding during a dry period and when the soil is not saturated.
PERMANENT VEGETATION should be established with a seed mixture that is appropriate for the site's soil type, moisture content, sun exposure, use (frequency of mowing), etc. The application should follow the supplier's guidelines for the seed type. Maine DOT or Soil and Water Conservation Districts seed mixtures are recommended.
DORMANT SEEDING should be applied at double the rate of normal seeding between the first killing frost and before snowfall because of their poor survival rate. To improve germination, cover the seedbed with mulch that is well anchored and fully covering the ground surface.
TEMPORARY VEGETATION should be established on an area that will not be worked for 30 days and until it can be permanently stabilized. Annual grasses and legumes are most effective; but they will not reproduce for a second growing season. Inoculate all legume seeds with the correct type and amount of inoculant.
Inspection of newly seeded beds should be occur regularly. Any sign of rill or gully erosion should be repaired as soon as possible.

- Long slopes steeper than 2:1 cannot support vegetation unless the soil has good structure and no upgradient watershed. All newly seeded areas should be mulched and anchored.
- Apply limestone and fertilizer only if necessary to prevent impact to surface water or groundwater.

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Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

Revisions	
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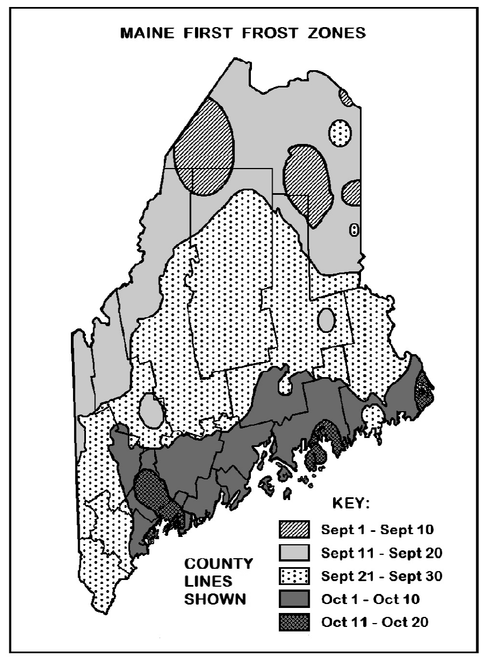
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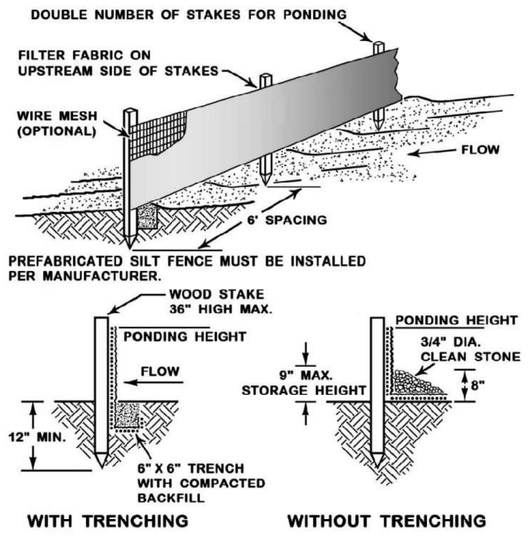
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Drawing No. C1.1

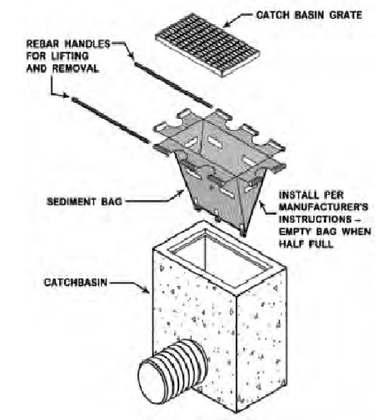
Cutting & Filling

- 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.
- Any fill material should be well graded and should be compacted to a density approximating that of the undisturbed material nearby, or to 95% Standard Proctor density compaction.
- 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.

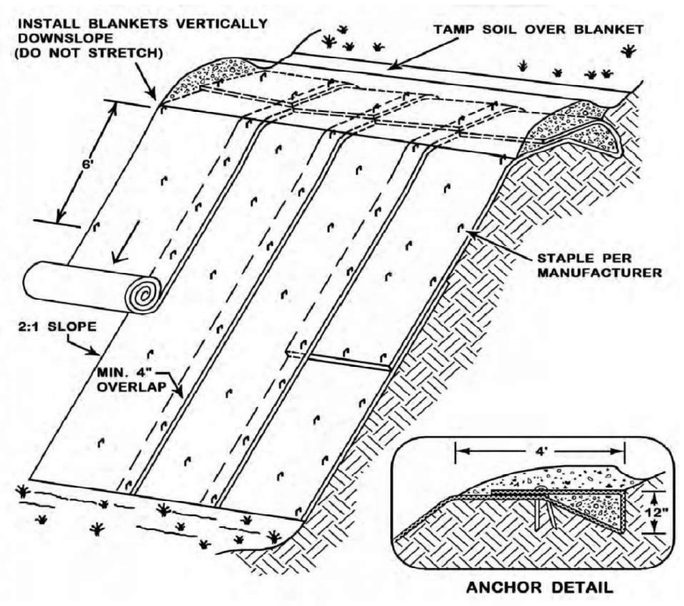




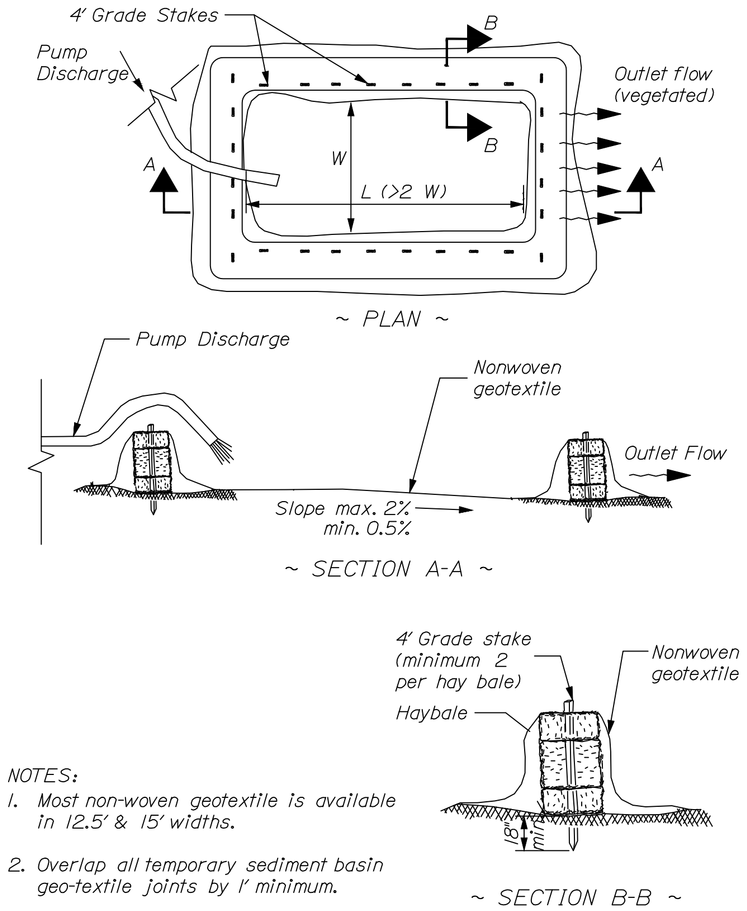
Silt Fence Installation Detail
(MESC Manual 2016)
NTS



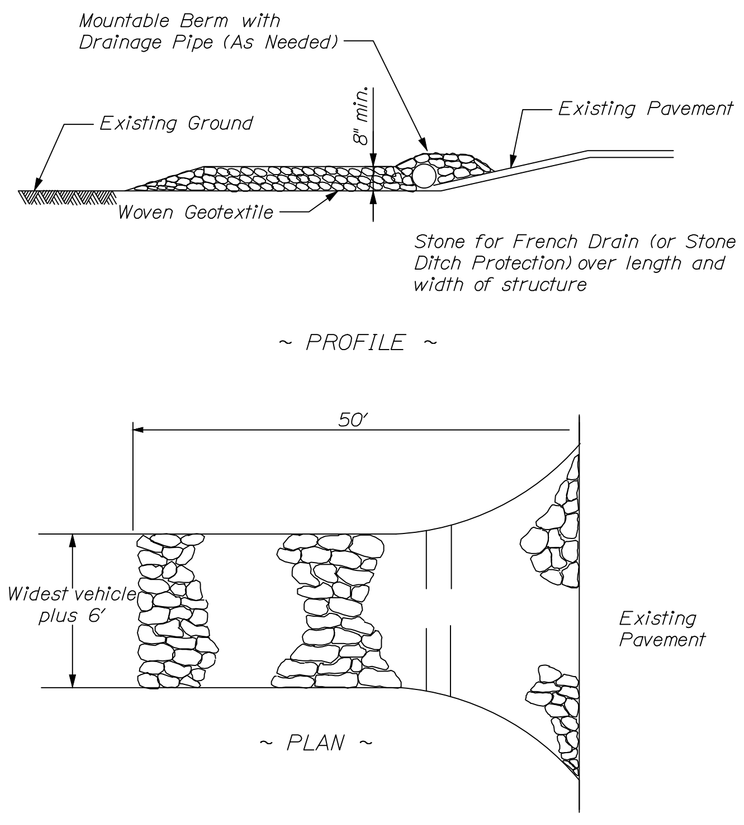
Typical Catch Basin Protection Detail
NTS



Slope Stabilization Detail
(MESC Manual 2016)
NTS



Temporary Sediment Basin Detail
MDOT 802(16) - 2020
NTS



Stabilized Construction Entrance
MDOT 802(17) - 2020
NTS

TEMPORARY SEED APPLICATION GUIDELINES				
SEED	Lb / Acre	Lb / 1,000 SF	Seeding Dates	Notes
Winter Rye	112	2.6	8/15 - 10/1	Select hardy species such as Aroostook Rye.
Oats	80	1.8	4/1 - 7/1 8/15 - 9/15	Best for spring seeding. Fall seeding will die over the winter.
Annual Rye Grass	40	0.9	4/1 - 7/1	Grows quickly but is of short duration. With mulch, seeding may be done throughout growing season.
Sudangrass	40	0.9	5/15 – 8/15	Good growth during periods of hot weather.
Perennial Rye Grass	40	0.9	8/15 – 9/15	Good cover, longer lasting than annual rye grass. Mulching will allow seeding throughout growing season.

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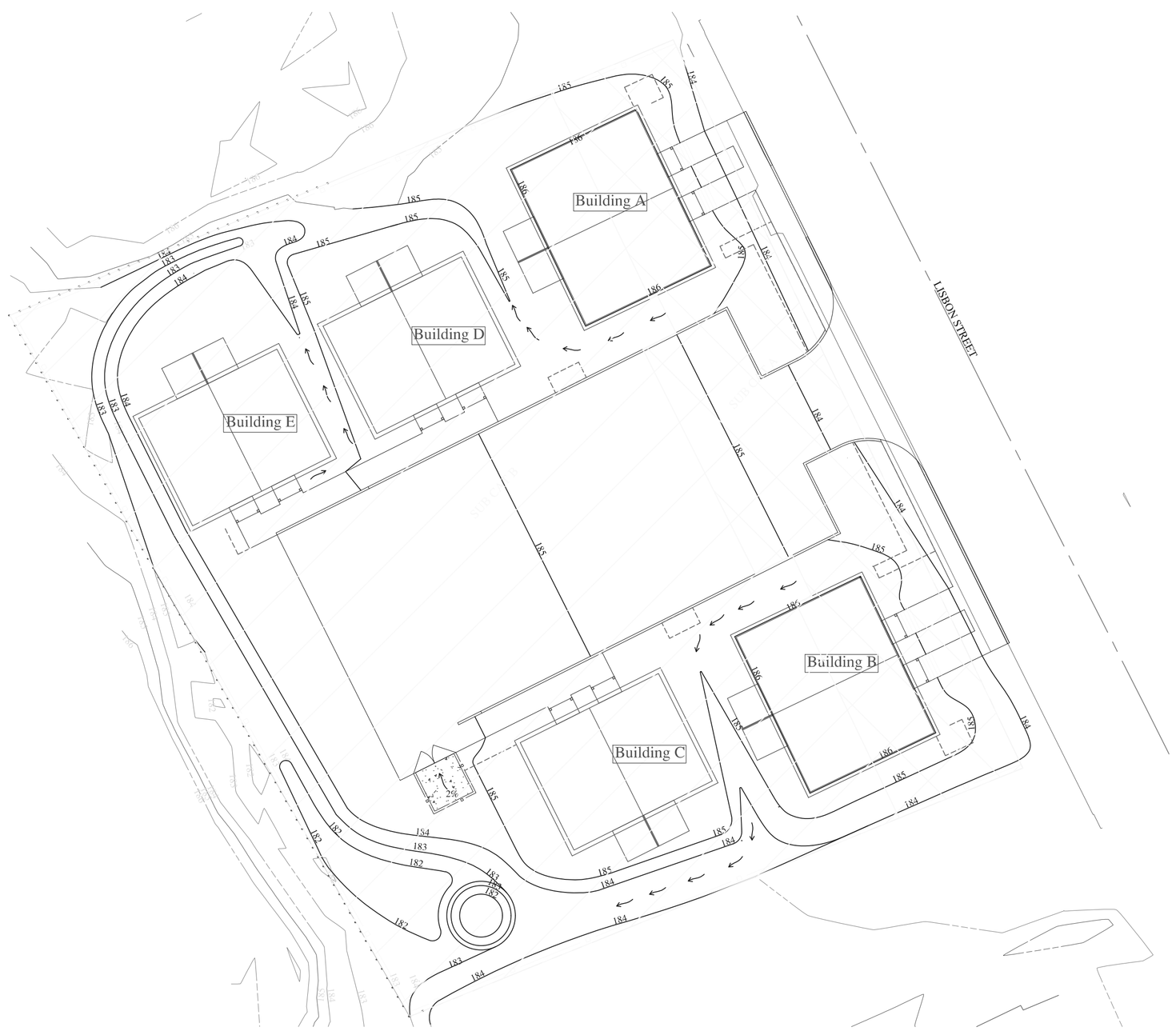
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ryan@rpexconsulting.com

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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: As Noted
Title: Erosion & Sedimentation Notes & Details
Drawing No. C1.2







Existing Drainage Areas

PRE–DEVELOPMENT DRAINAGE AREAS		
AREA NAME	AREA (SF)	SURFACE CONDITION
SUB CAT 1 – AREA 1	2194	FOREST / STREAM BED
SUB CAT 1 – AREA 2	139	GRASS
SUB CAT 2 – AREA 1	24760	COMPACTED GRAVEL
SUB CAT 2 – AREA 2	1571	GRASS
SUB CAT 2 – AREA 3	908	GRASS
SUB CAT 2 – AREA 4	506	GRASS
TOTAL SITE AREA:	30078	
% IMPERVIOUS:	82.3%	
POST–DEVELOPMENT DRAINAGE AREAS		
AREA NAME	AREA (SF)	SURFACE CONDITION
SUB CAT A	1500	SHINGLE ROOF
SUB CAT A	1827	BIT. ASPHALT & CONCRETE
SUB CAT A	2795	LAWN & DRAINAGE BMP
SUB CAT B	4956	SHINGLE ROOF
SUB CAT B	6433	BIT. ASPHALT & CONCRETE
SUB CAT B	12567	LAWN & DRAINAGE BMP
TOTAL SITE AREA:	30078	
% IMPERVIOUS:	48.9%	

Proposed Drainage Areas

LEGEND

- Property Corner
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- UTILITY POLE
- VALVE
- BOLLARD
- SITE SIGN
- FENCE LINE
- STREAM
- TREE LINE
- OVERHEAD UTILITY
- U/G Electric / Telecom
- Property Line
- GAS PIPE
- SEWER PIPE
- STORM DRAIN PIPE
- UNDERDRAIN
- WATER PIPE

Graphic Scale

0 10 20 40 80

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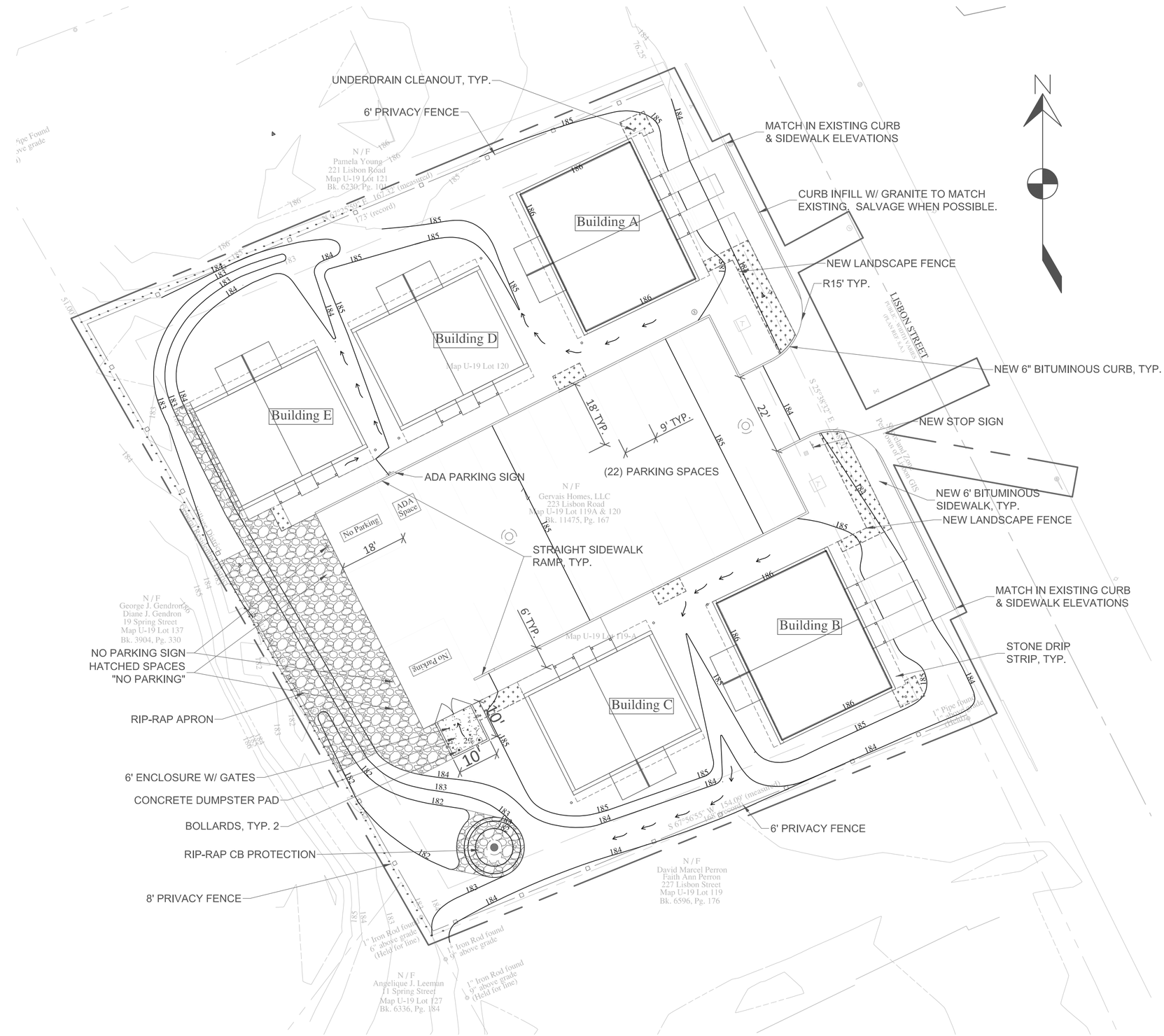
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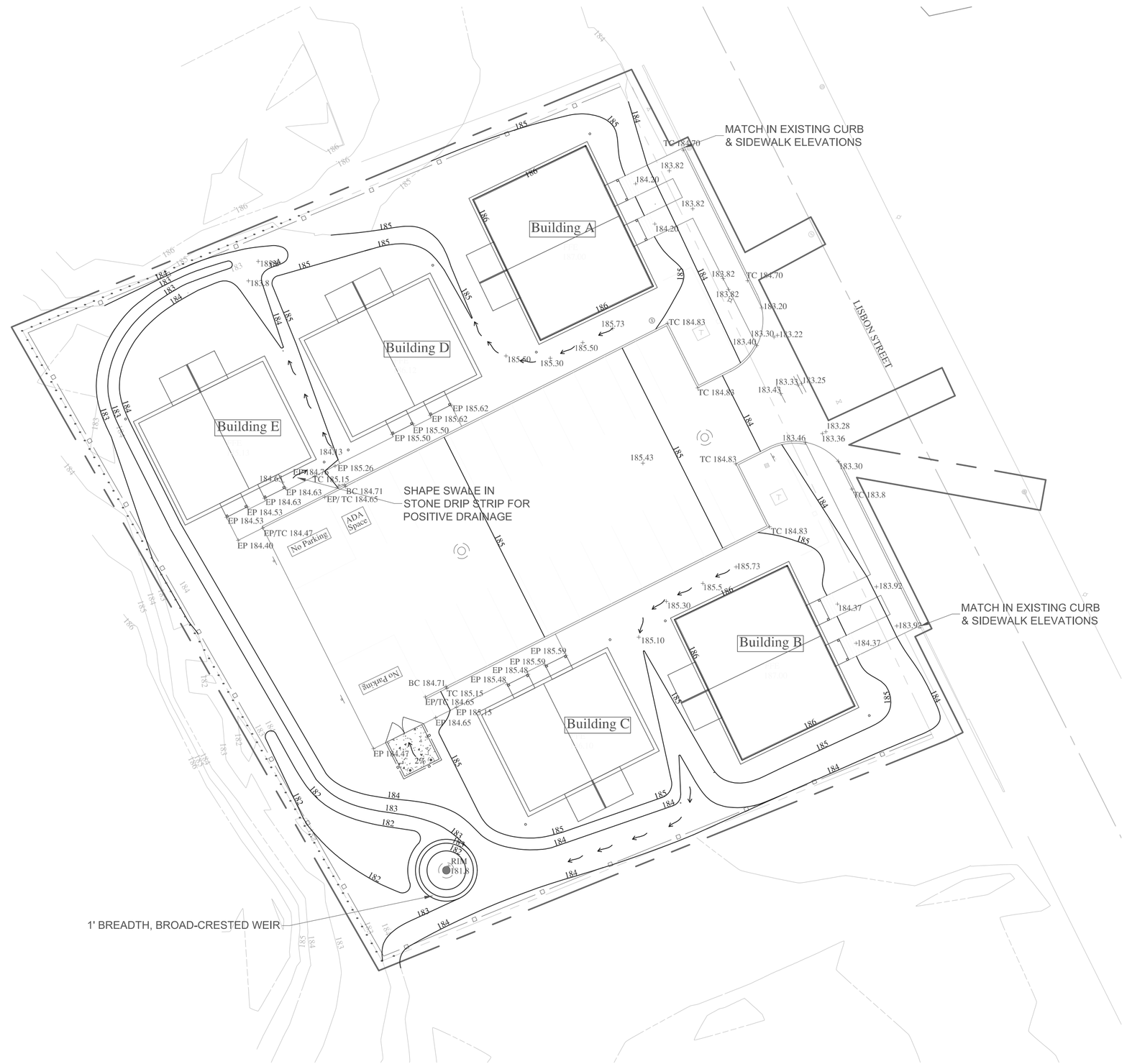
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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: 1" = 20'
Title: Drainage Areas Plan
Drawing No. C1.3

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Proposed Site Layout Plan



Proposed Grading Plan

LEGEND

- Property Corner
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- UTILITY POLE
- VALVE
- BOLLARD
- SITE SIGN
- FENCE LINE
- STREAM
- TREE LINE
- OVERHEAD UTILITY
- U/G Electric / Telecom
- Property Line
- GAS PIPE
- SEWER PIPE
- STORM DRAIN PIPE
- UNDERDRAIN
- WATER PIPE

LOT COVERAGE CALCULATION		
DEVELOPED AREAS	AREA (SF)	DESCRIPTION
BUILDINGS	6456	BUILDING ROOF + PORCHES
PAVED AREAS	8260	PARKING LOT, DRIVE, CURB & SIDEWALK
OPEN SPACE	15362	
TOTAL SITE AREA	30078	
MAX LOT COVERAGE	50%	
ACTUAL LOT COVERAGE	48.9%	

LAND USE – DENSITY CALCULATION		
USEABLE LAND	30078	SF
ALLOWED DENSITY	3000	SF/Dwelling
MAX DWELLING UNITS	10.026	
PROPOSED	10	5 x DUPLEX

General Notes

- Existing site conditions and property boundaries are based on survey plan dated 2/6/2024 for Gervais Parcel, produced by Terradyn Consultants, LLC.
- Contractor is responsible for carrying out all work in a safe manner, consistent with best industry practices, and compliant with all local, state, and federal laws, including but not limited to OSHA.
- Contractor is responsible for protection of the public and surrounding property as it relates to the work being performed.
- Contractor shall coordinate and permit all work within the public right of way with Lisbon Public Works (207) 353-3000 Ext. 117.
- Contractor is responsible for all traffic control planning and operations as required by local officials and/or necessitated by the work.
- All site features and utilities shall be laid out and dimensions shall be field verified prior to fabrication of custom materials and construction.
- All materials removed from the site, including but not limited to existing soils, shall be disposed of lawfully.
- Work on site may proceed only after appropriate erosion and sedimentation control measures have been put in place.
- Erosion and sedimentation control measures must be monitored throughout construction. If at any time, measures or devices are not functioning as designed or intended, they shall be remedied prior to work continuing.
- MDOT Standard Specifications - March 2020, is hereby incorporated as the standard specification for this project. Reference shall be referenced for all materials and workmanship.

Graphic Scale

0 10 20 40 80

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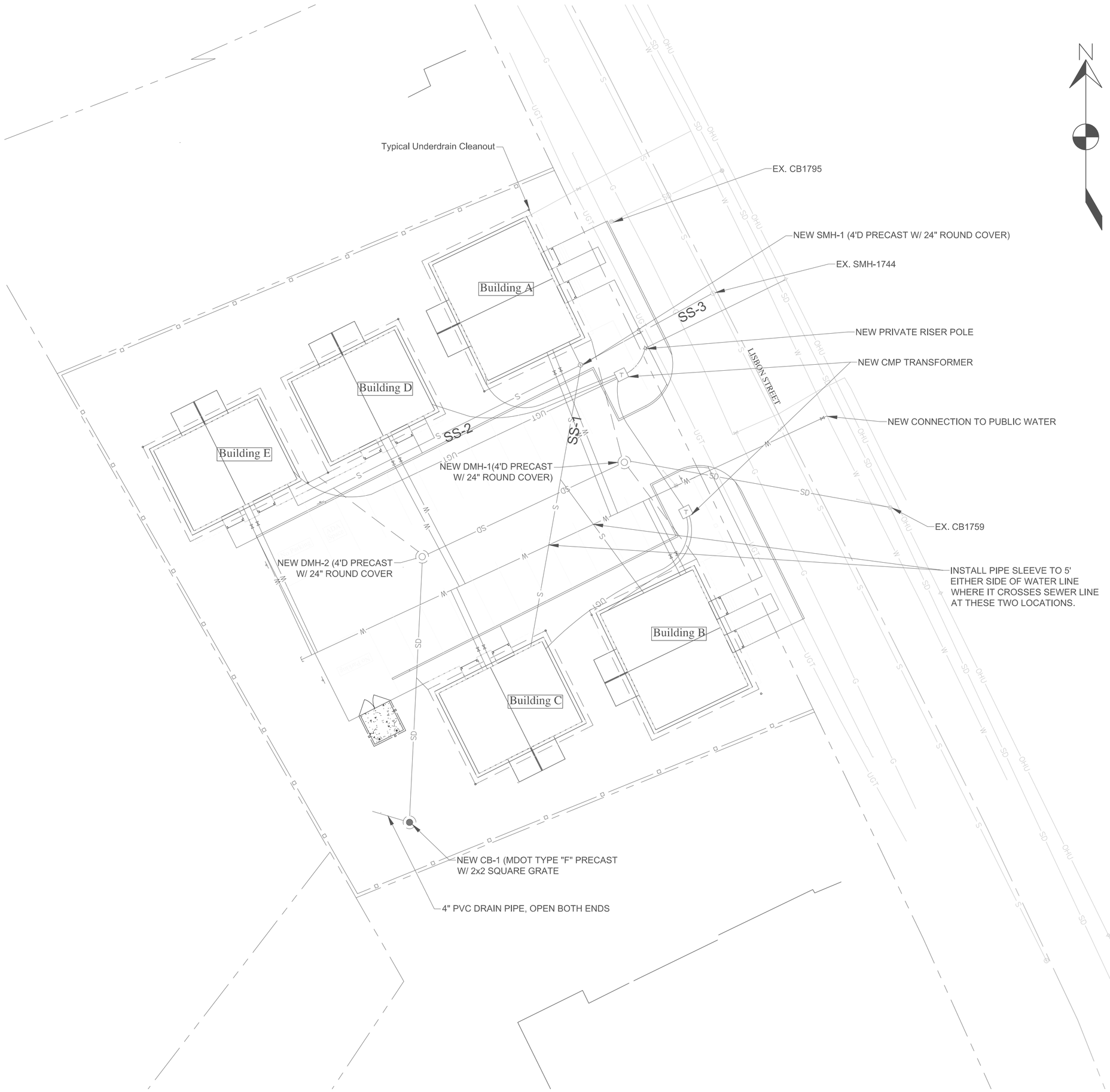
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Title: Site Layout Plan
Drawing No. C2.0

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Utility Notes

- Water service installation details must conform with requirements of Lisbon Water Department (207) 353-3020. Notify the District prior to installation and confirm installation requirements prior to construction.
- Connection to Town of Lisbon sanitary sewer must be coordinated with Lisbon Sewer Department (207) 353-3000 Ext. 601.
- Connection to Town of Lisbon stormwater sewer must be coordinated with Lisbon Public Works (207) 353-3000 Ext. 117.
- Prior to construction, confirm power service layout and installation requirements with Central Maine Power.
- This project includes installation of a private utility pole. All details to be coordinated between Central Maine Power, Electrician, and pole installer.

PUBLIC SANITARY SEWER			
FIXTURE TYPE	FIXTURE UNIT VALUE (IPC 2015)	FIXTURE COUNT	TOTAL BY TYPE
RESIDENTIAL CLOTHES WASHER	2	10	20
BATHROOM GROUPS (1.6GPM WATER CLOSET)	5	24	120
DOMESTIC DISHWASHER	2	10	20
DOMESTIC KITCHEN SINK	2	10	20
TOTAL FIXTURE UNITS:			180
5" SDR35 PVC @ 1/8"/FT SLOPE			<390
PUBLIC WATER DEMAND			
FIXTURE TYPE	FV (GPM)	FIXTURE COUNT	TOTAL BY TYPE
RESIDENTIAL CLOTHES WASHER	6	10	60.0
PRIVATE LAVATORY	1.5	24	36.0
PRIVATE WATER CLOSET	6	24	144.0
PRIVATE BATHTUB/SHOWER	8	14	112.0
DOMESTIC DISHWASHER	1.3	10	13.0
DOMESTIC KITCHEN SINK	1.8	10	18.0
TOTAL WATER SUPPLY FIXTURE UNITS:			383.0
TOTAL DOMESTIC DEMAND (GPM):			35
DEMAND FROM (5) HOSE BIBS (GPM):			60
PEAK DOMESTIC DEMAND (GPM):			95
*Based on AWWA M22 Table 4-2			

STORMWATER STRUCTURE TABLE				
STRUCTURE	RIM ELEV.	PIPE	ELEV. IN	ELEV. OUT
EX. CB 1759	183.09	EX. 12" PVC	177.89'	
		EX. OUT		177.84'
		12" PVC	177.94'	
DMH-1	184.56'	12" PVC	178.19'	
		4" U/D	180.00'	
		4" U/D	180.00'	
		12" PVC		178.14'
DMH-2	184.91'	12" PVC	178.88'	
		4" U/D	178.88'	
		12" PVC		178.35'
CB-1	181.8'	12" PVC		178.55'
STORMWATER PIPE RUN TABLE				
PIPE	SLOPE (FT/FT)	LENGTH	FROM	TO
12" PVC	0.0025	81' +/-	DMH-1	EX. CB1759
12" PVC	0.0025	65' +/-	DMH-2	DMH-1
12" PVC	0.0025	79' +/-	CB-1	DMH-2

SANITARY SEWER STRUCTURE TABLE						
STRUCTURE	RIM ELEV.	PIPE RUN	PIPE	ELEV. IN	ELEV. OUT	
EX. SMH 1744	183.68'	EX. MAIN	12" PVC	173.40'		
		EX. MAIN	12" PVC		173.35'	
		SS-3	6" PVC	173.40'		
SMH-1	185.20'	SS-1	6" PVC	177.88'		
		SS-2	6" PVC	177.88'		
		SS-3	6" PVC		177.78'	
SANITARY SEWER PIPE RUN TABLE						
FROM	TO	PIPE TYPE	SLOPE (FT/FT)	LENGTH	INV. OUT	INV. IN
BLDG. A SERVICE	SMH-1	4" PVC	0.0208	7' +/-	178.03'	177.88'
BLDG. B SERVICE	SS-1	4" PVC	0.0208	44' +/-	179.53'	178.61'
BLDG. C SERVICE	SS-1	4" PVC	0.0208	53' +/-	179.71'	178.61'
BLDG. D SERVICE	SS-2	4" PVC	0.0208	7' +/-	178.53'	178.38'
BLDG. E SERIVCE	SS-2	4" PVC	0.0208	7' +/-	179.00'	178.85'
SS-1	SMH-1	6" PVC	0.0208	35' +/-		177.88'
SS-2	SMH-1	6" PVC	0.01	97' +/-		177.88'
SS-3	EX. SMH 1744	6" PVC	0.01	46' +/-		To Drop Pipe

LEGEND

- Property Corner
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- UTILITY POLE
- VALVE
- BOLLARD
- SITE SIGN
- FENCE LINE
- STREAM
- TREE LINE
- OVERHEAD UTILITY
- U/G Electric / Telecom
- Property Line
- GAS PIPE
- SEWER PIPE
- STORM DRAIN PIPE
- UNDERDRAIN
- WATER PIPE

Graphic Scale

0 10 20 40 80

NOT FOR CONSTRUCTION

STATE OF MAINE
RYAN RUSSELL SYLVIA
No. 15459
LICENSED PROFESSIONAL ENGINEER
6/28/24

RPEx Consulting, LLC
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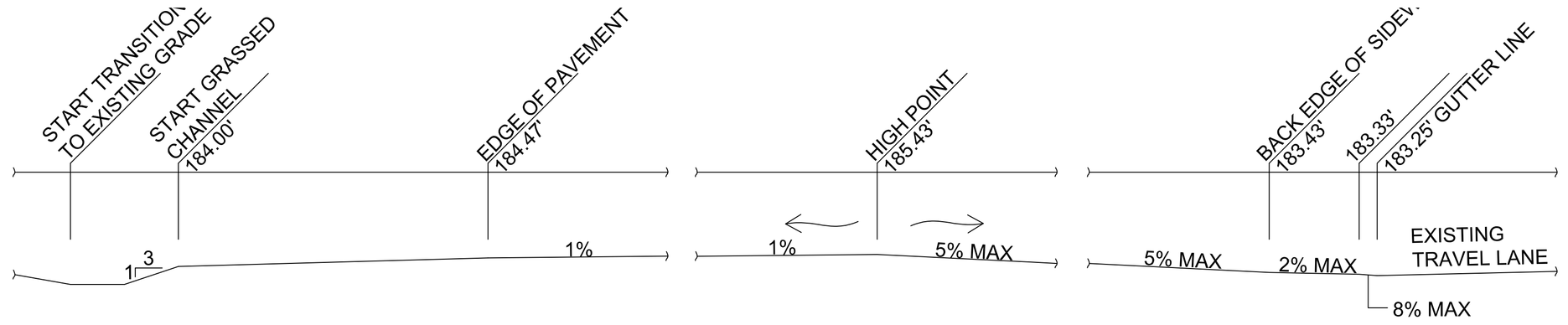
Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

Revisions	
1.	6/7/2024 PROOF SET
2.	6/28/2024 PERMIT SET
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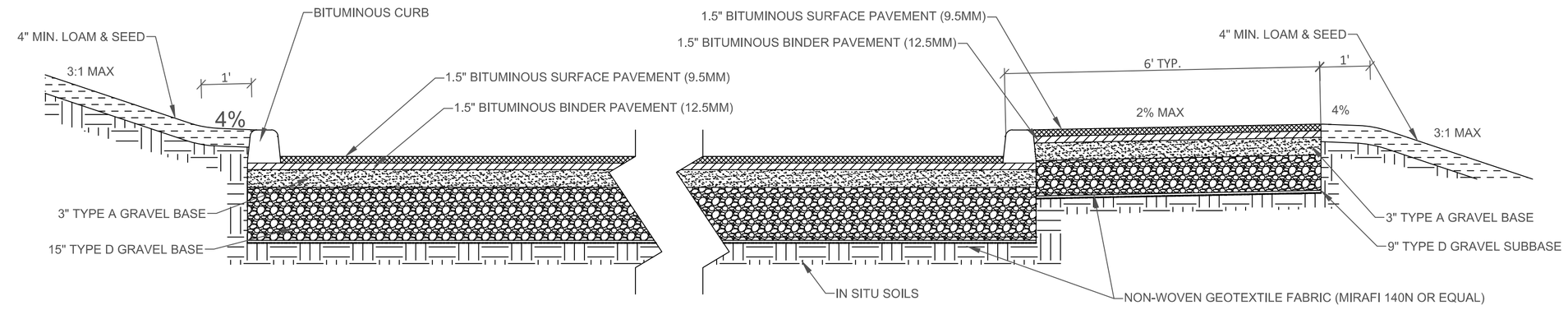
Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: 1" = 20'
Title: Utility Plan

Drawing No. C2.1

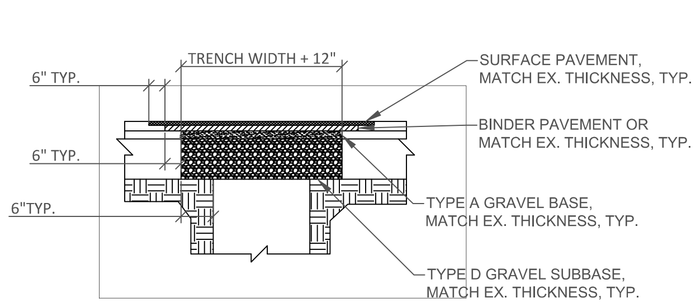
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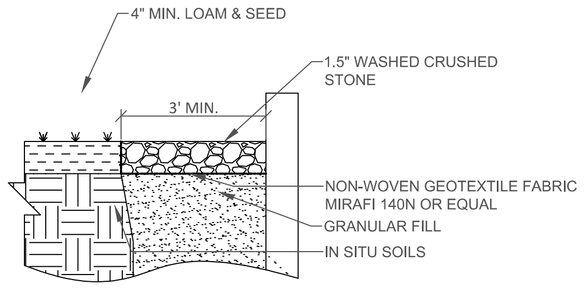
Parking Lot Profile
NTS



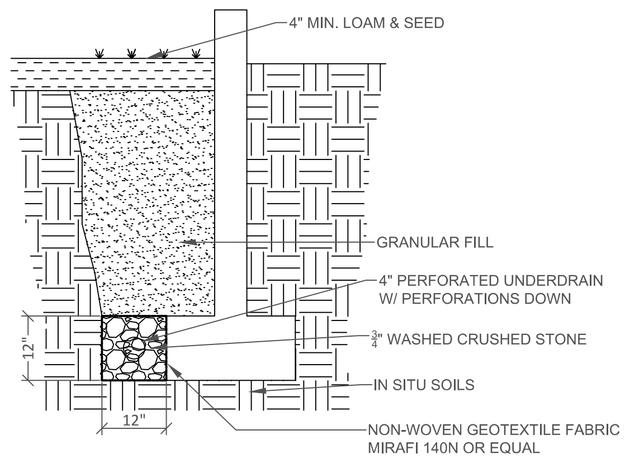
Typical Parking Lot Section
NTS



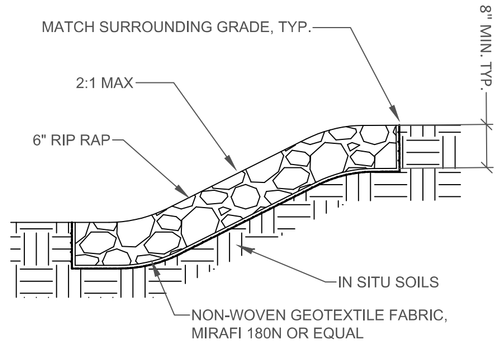
Typical Pavement Trench Patch
NTS



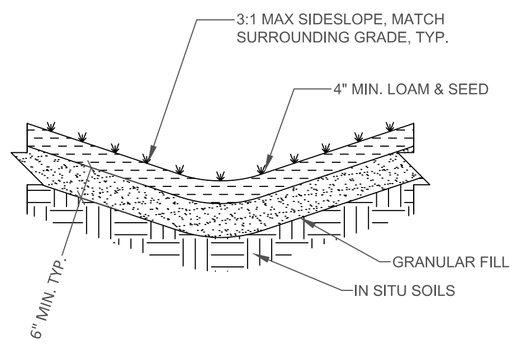
Typical Stone Drip Strip
NTS



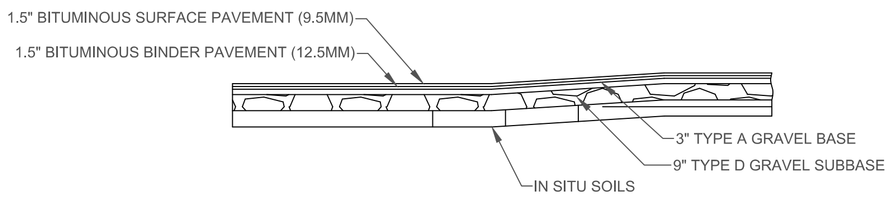
Typical Foundation Drain
NTS

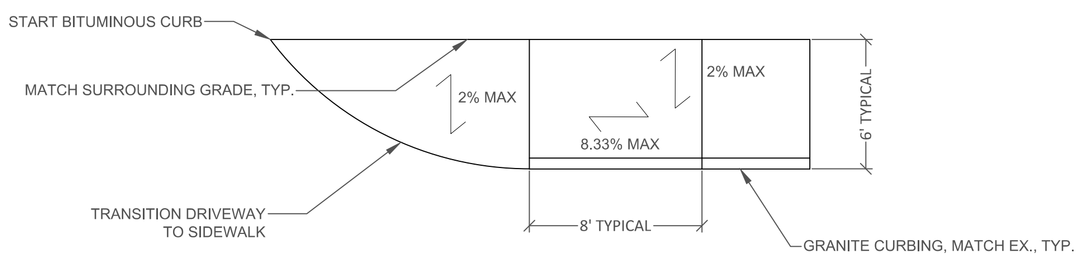


Typical Rip Rap Slope
NTS

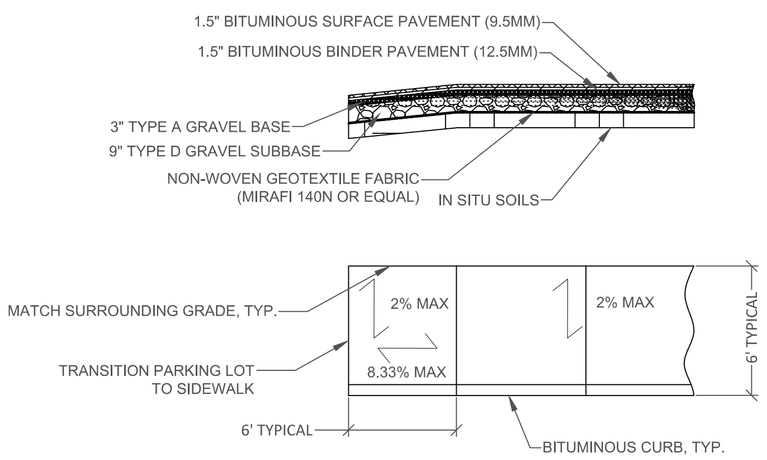


Typical Drainage Swale
NTS

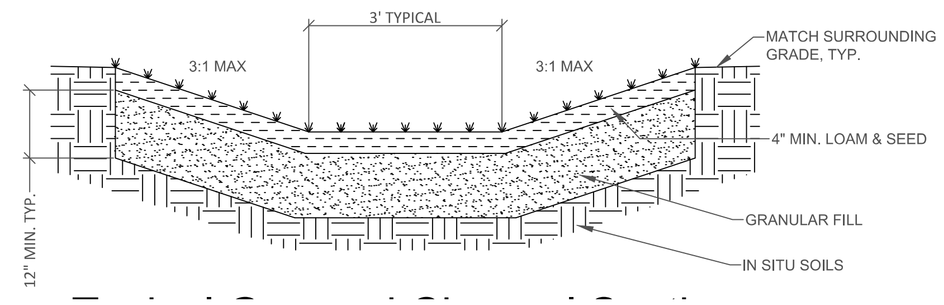




Typical Sidewalk Ramp @ Radius Corners
NTS



Typical Straight Parking Lot / Sidewalk Ramp
NTS



Typical Grassed Channel
NTS

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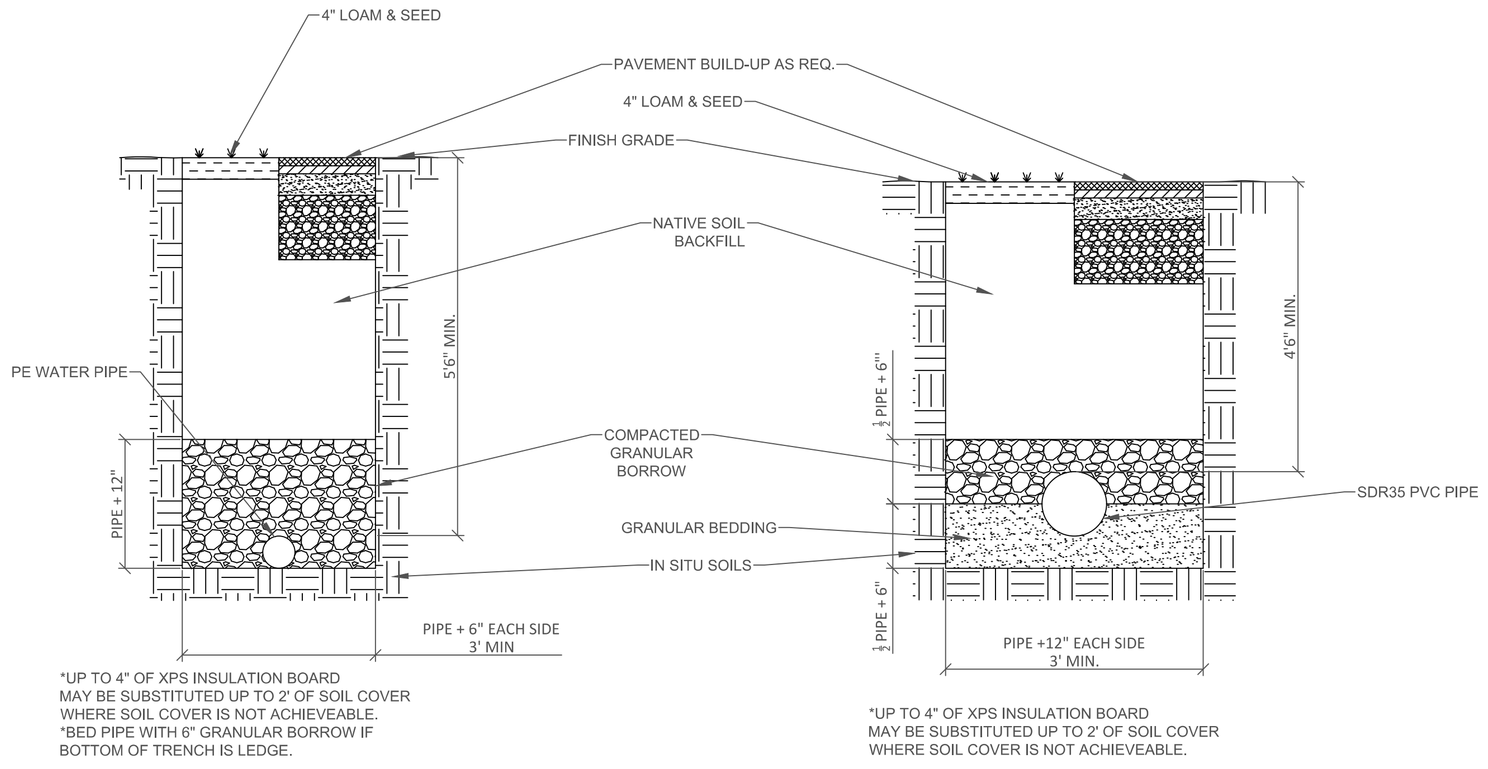
Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: As Noted
Title: Profiles

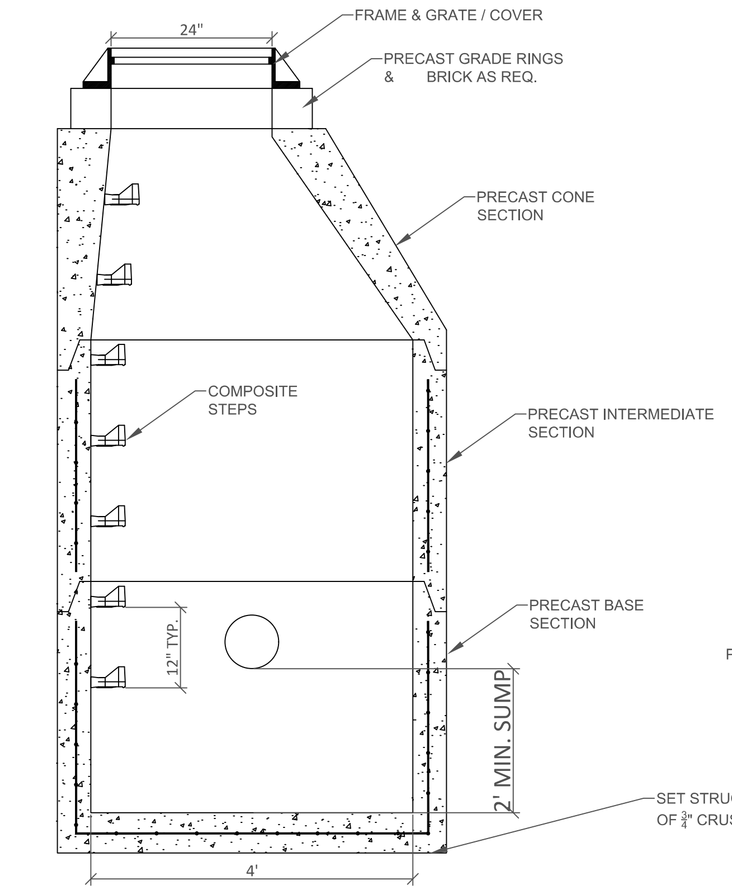
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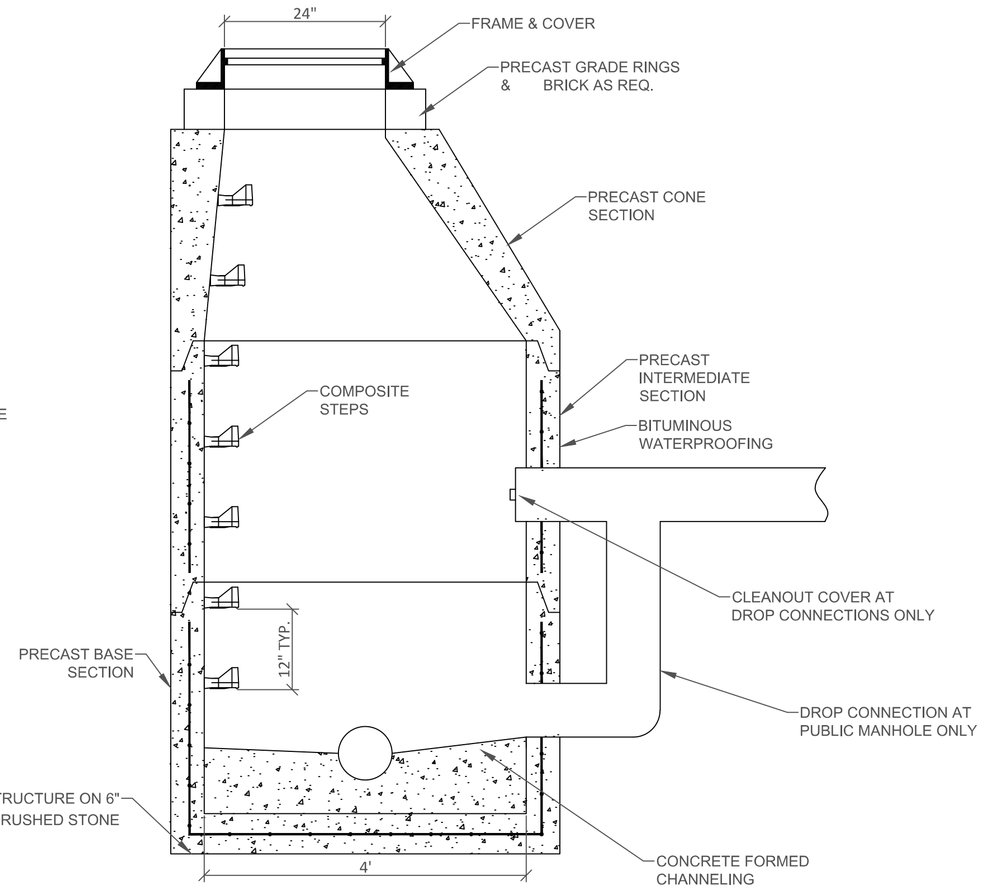


Typical Water Line Trench
NTS

Typical Storm/Sanitary Sewer Trench
NTS



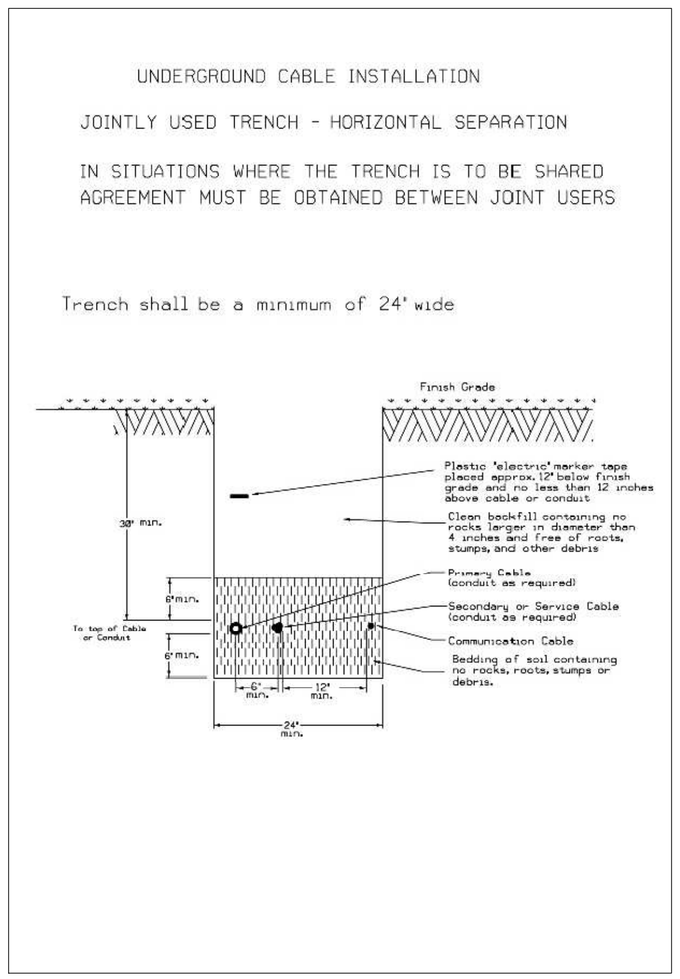
Typical Stormwater Catch Basin / Manhole
NTS



Typical Sanitary Sewer Manhole
NTS

XII. Illustration No. 19

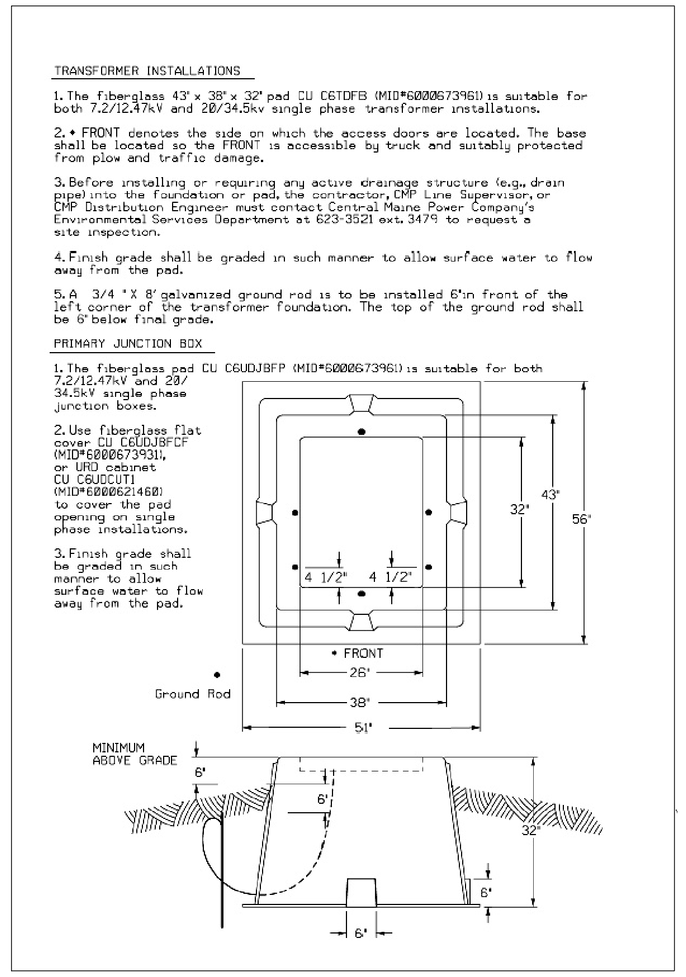
363-4 / UNDERGROUND CABLE INSTALLATION JOINTLY USED TRENCH HORIZONTAL SEPARATION



Typical Power / Telecom Trench
NTS

XII.Illustration No. 26

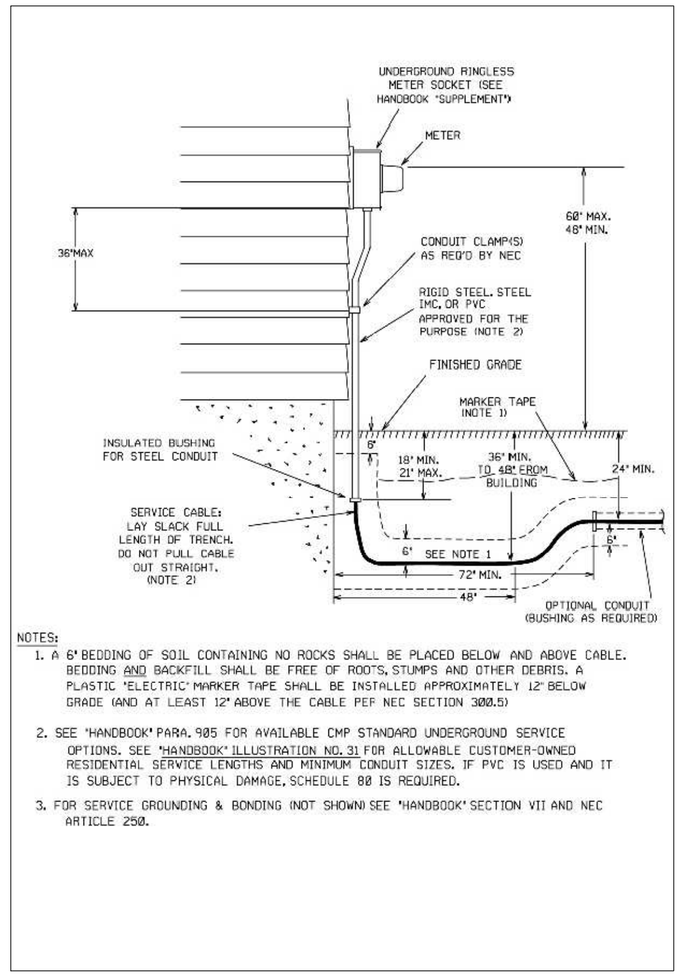
364-3 / FIBERGLASS BOX PAD



Typical CMP Transformer Pad
NTS

XII. Illustration No. 8

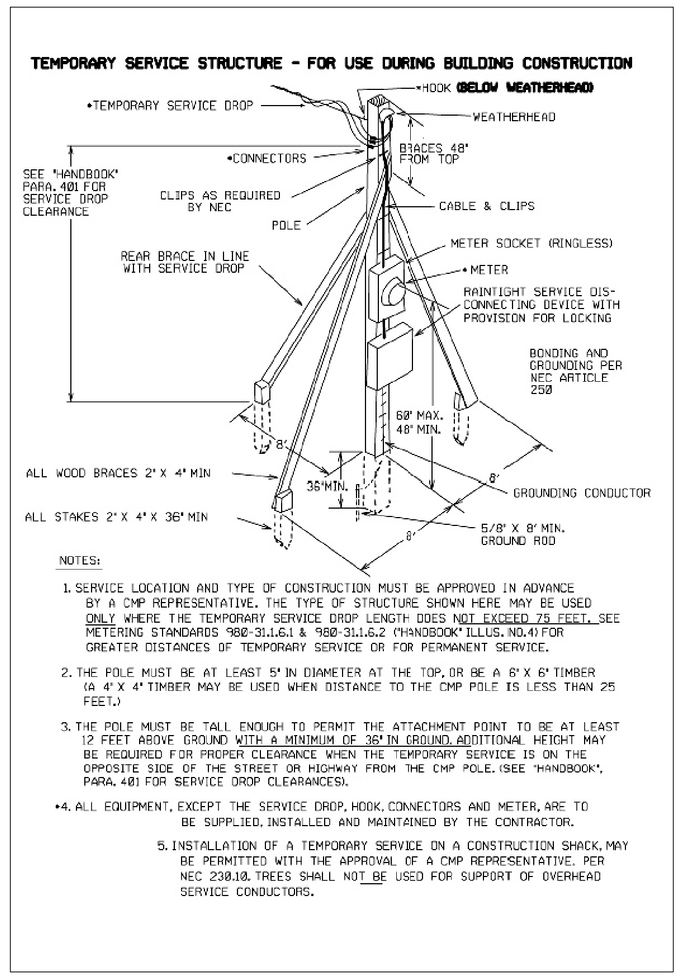
980-31.3.1 / UNDERGROUND SERVICE 400 AMPERES MAX



Typical Power Service @ Building
NTS

XII. Illustration No. 7

980-31.1.4 / TEMPORARY SERVICE STRUCTURE 200 AMP MAX



Temporary Power Service
NTS

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STATE OF MAINE
RYAN RUSSELL SYLVIA
No. 15459
LICENSED PROFESSIONAL ENGINEER
6/28/24

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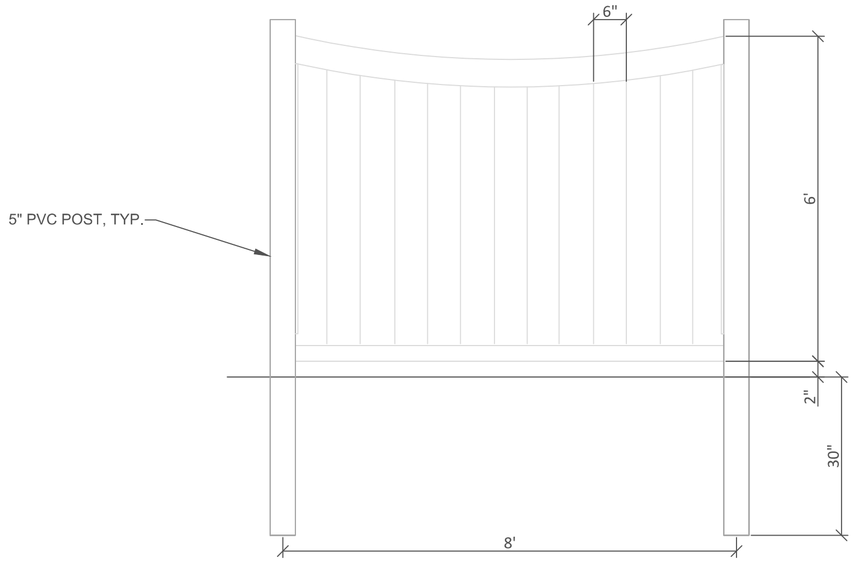
Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

Revisions
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2. 6/28/2024 PERMIT SET
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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: As Noted
Title: Utility Details

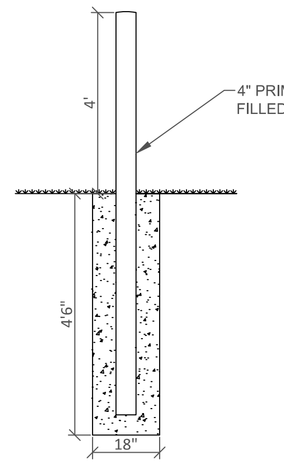
Drawing No. C3.1

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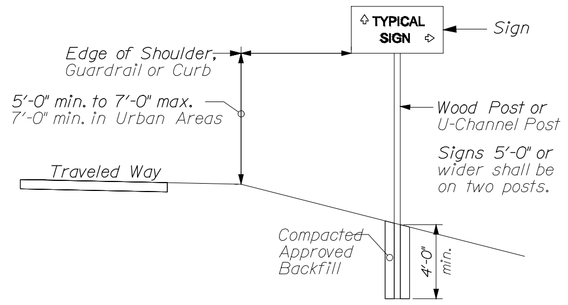


* CERTAINTEED BUFFTECH OR SIMILAR
* DRIVEN STEEL POSTS UNLESS NOTED OTHERWISE

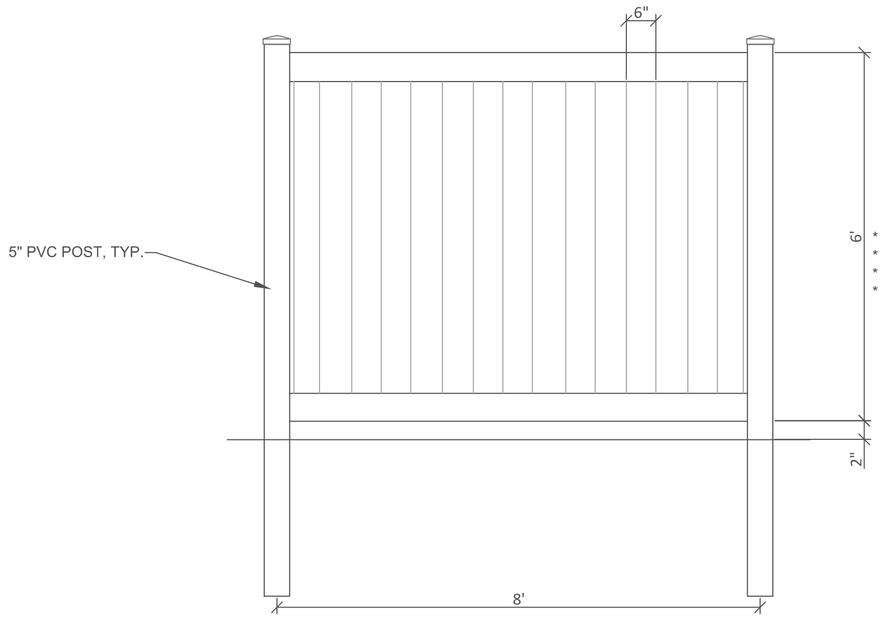
Typical Landscape Fence
NTS



Typical Bollard
NTS

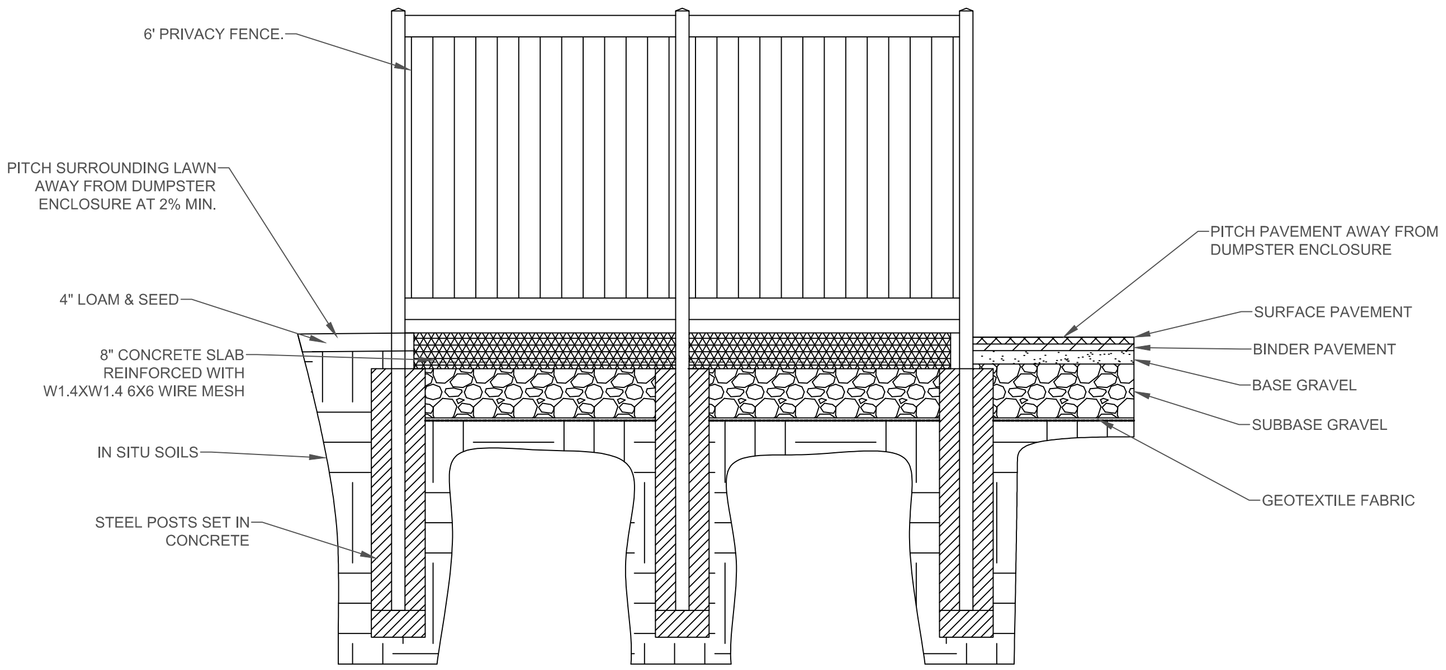


Typical Sign Post
NTS

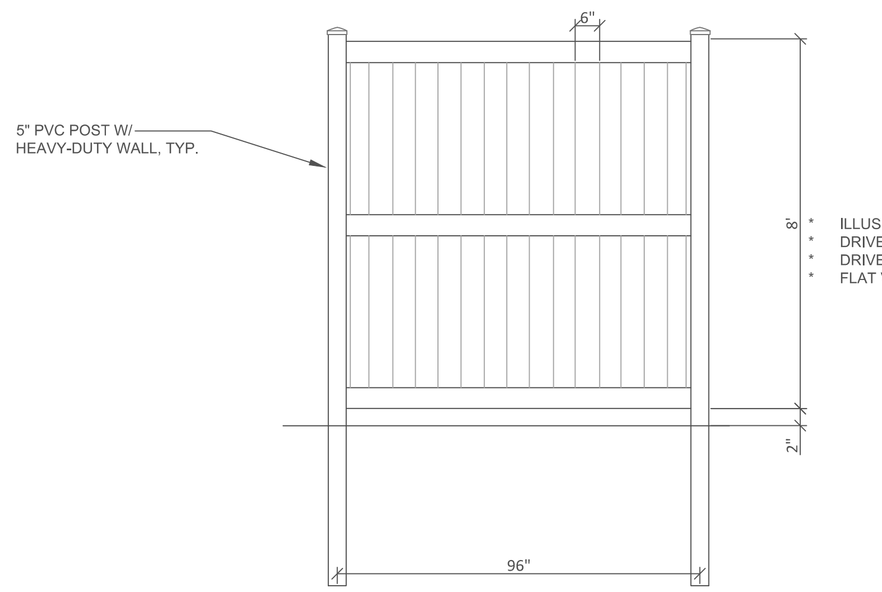


* ILLUSIONS V300 OR SIMILAR
* DRIVEN STEEL POSTS UNLESS NOTED OTHERWISE
* DRIVE POSTS TO MANUFACTURER'S SPECIFIED DEPTH
* FLAT V55-FO CAPS

Typical 6' Privacy Fence
NTS



Dumpster Enclosure
NTS



* ILLUSIONS V300 OR SIMILAR
* DRIVEN STEEL POSTS UNLESS NOTED OTHERWISE
* DRIVE POSTS TO MANUFACTURER'S SPECIFIED DEPTH
* FLAT V55-FO CAPS

Typical 8' Privacy Fence
NTS

NOT FOR CONSTRUCTION

STATE OF MAINE
RYAN RUSSELL SYLVIA
No. 15459
LICENSED PROFESSIONAL ENGINEER
6/28/24

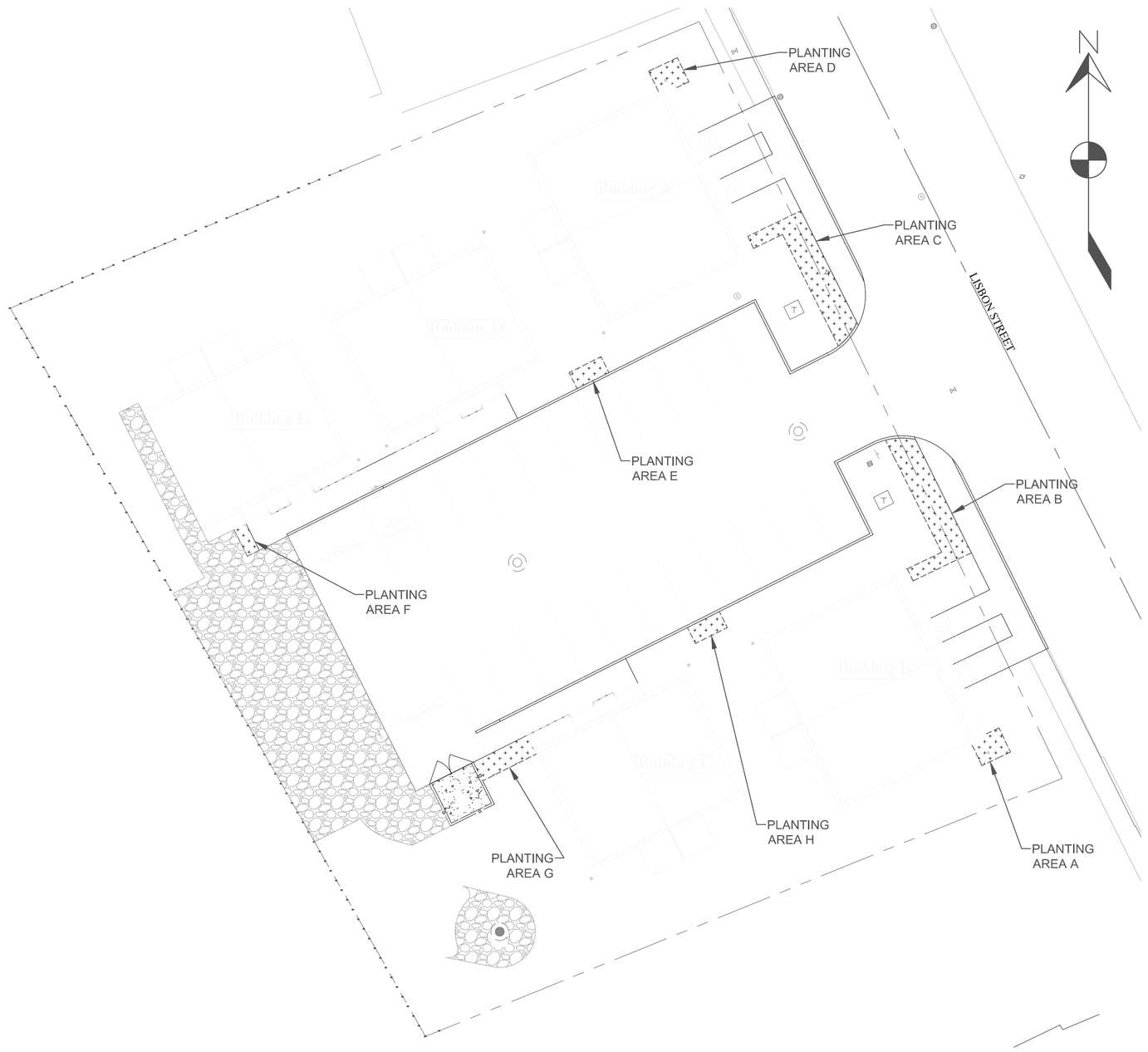
RPEx Consulting, LLC
Research. Plan. Execute.

RPEx Consulting, LLC
138 Lewiston Road
Gray, ME 04039
207-245-8794
ryan@rpexconsulting.com

Project: Duplexes At 223 Lisbon Street
Location: 223 Lisbon Street, Lisbon, ME
Client: Gervais Homes, LLC

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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: As Noted
Title: Sections & Details
Drawing No. C3.2



Landscaping Plan
(1" = 20')

PLANTING LIST				
PLANTING AREA	SPECIES	SIZE	SPACING	QTY.
A	THUJA ARBOVIATE	1 GAL.	60"	1
	WINTER CREEPER	1 QT.	24"	3
B	BABY GEM BOXWOOD	2 GAL.	36"	9
	GOLD PILLAR BARBERRY	2 GAL.	36"	11
C	BABY GEM BOXWOOD	2 GAL.	36"	9
	GOLD PILLAR BARBERRY	2 GAL.	36"	11
D	THUJA ARBOVIATE	1 GAL.	60"	1
	WINTER CREEPER	1 QT.	24"	3
E	DWARF FOUNTAIN GRASS	1 GAL.	12"	5
	VARIEGATED RED TWIG DOGWOOD	1 GAL.	72"	1
	GOLD PILLAR BARBERRY	2 GAL.	36"	2
F	DWARF FOUNTAIN GRASS	1 GAL.	12"	5
	VARIEGATED RED TWIG DOGWOOD	1 GAL.	72"	1
G	DWARF FOUNTAIN GRASS	1 GAL.	12"	9
	VARIEGATED RED TWIG DOGWOOD	1 GAL.	72"	2
H	DWARF FOUNTAIN GRASS	1 GAL.	12"	5
	VARIEGATED RED TWIG DOGWOOD	1 GAL.	72"	1
	GOLD PILLAR BARBERRY	2 GAL.	36"	2

General Notes

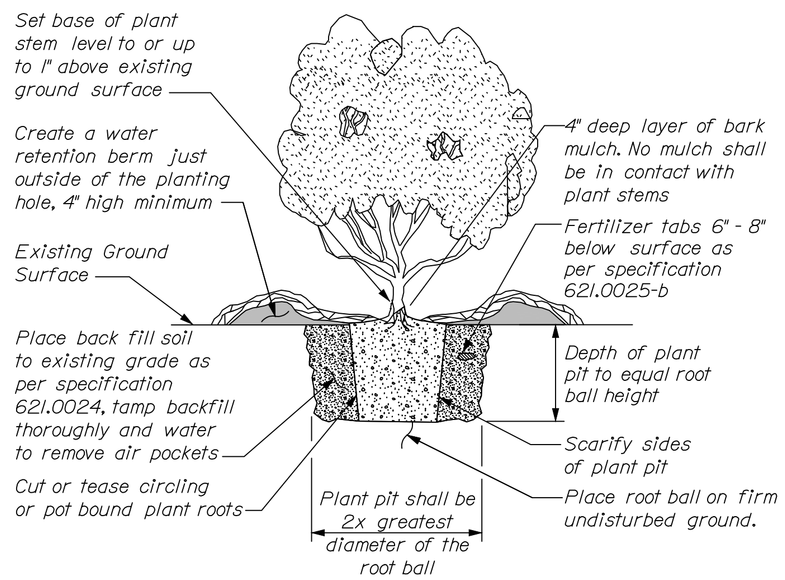
- Existing site conditions and property boundaries are based on survey plan dated 2/6/2024 for Gervais Parcel, produced by Terradyn Consultants, LLC.
- Contractor is responsible for carrying out all work in a safe manner, consistent with best industry practices, and compliant with all local, state, and federal laws, including but not limited to OSHA.
- Contractor is responsible for protection of the public and surrounding property as it relates to the work being performed.
- Contractor shall coordinate and permit all work within the public right of way with Lisbon Public Works (207) 353-3000 Ext. 117.
- Contractor is responsible for all traffic control planning and operations as required by local officials and/or necessitated by the work.
- All materials removed from the site, including but not limited to existing soils, shall be disposed of lawfully.
- Work on site may proceed only after appropriate erosion and sedimentation control measures have been put in place.
- Erosion and sedimentation control measures must be monitored throughout construction. If at any time, measures or devices are not functioning as designed or intended, they shall be remedied prior to work continuing.
- MDOT Standard Specifications - March 2020, is hereby incorporated as the standard specification for this project. Reference shall be referenced for all materials and workmanship.

Landscape Notes

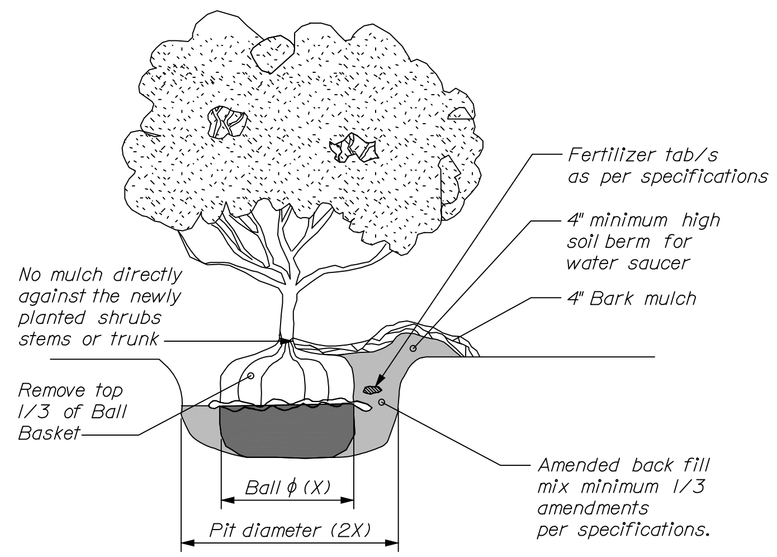
- All plantings and plant materials shall be sourced from nurseries local to the project site.
- All plantings shall be healthy upon installation and bear warranty from the suppling nursery of no less than 1 year for full replacement.
- Upon installation contractor shall be responsible for watering and fertilizing of plants until fully established, but not less than 60 days.
- Planting shall be carried out when seasons allow and using best practices.

NOTES:

1. *All plantings shall comply with current Maine Department of Transportation Standard Specifications.*
2. *Remove and properly dispose of containers, tags, labels, and flagging tape, unless otherwise directed by an Authorized MaineDOT employee.*
3. *Prune broken and dead branches at time of planting.*



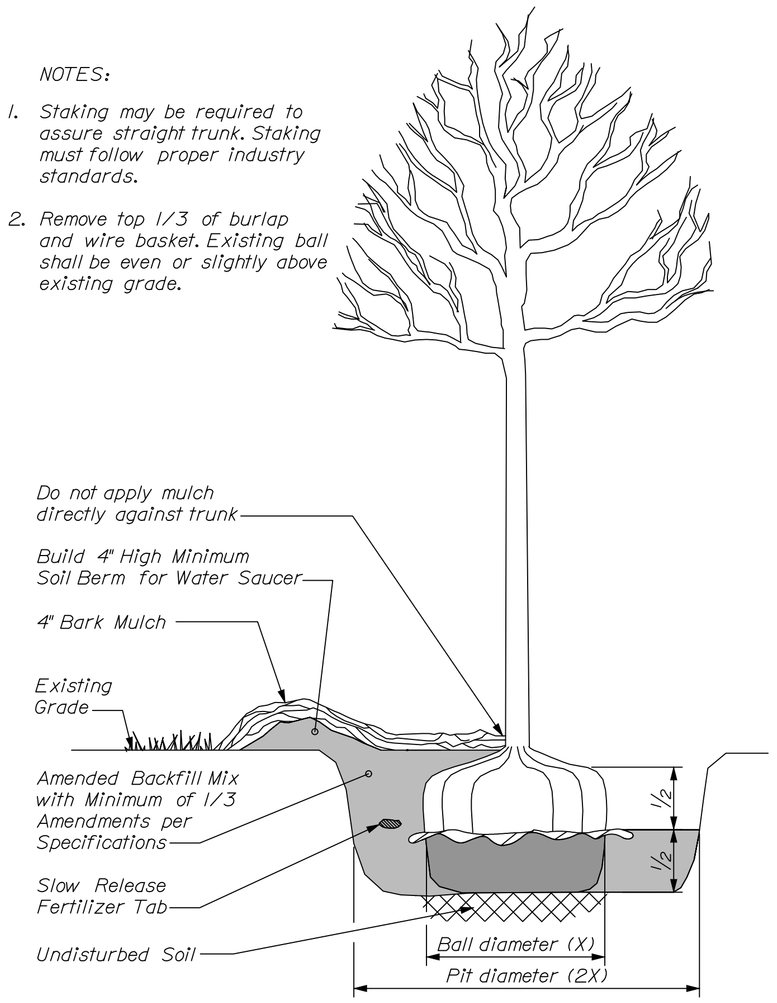
Shrub Planting (Container) Detail
NTS



Shrub Planting (B&B) Detail
NTS

NOTES:

1. *Staking may be required to assure straight trunk. Staking must follow proper industry standards.*
2. *Remove top 1/3 of burlap and wire basket. Existing ball shall be even or slightly above existing grade.*



Tree Planting Detail
NTS

LEGEND

- Property Corner
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- UTILITY POLE
- VALVE
- BOLLARD
- SITE SIGN
- FENCE LINE
- STREAM
- TREE LINE
- OVERHEAD UTILITY
- U/G Electric / Telecom
- Property Line
- GAS PIPE
- SEWER PIPE
- STORM DRAIN PIPE
- UNDERDRAIN
- WATER PIPE

Graphic Scale

0 10 20 40 80

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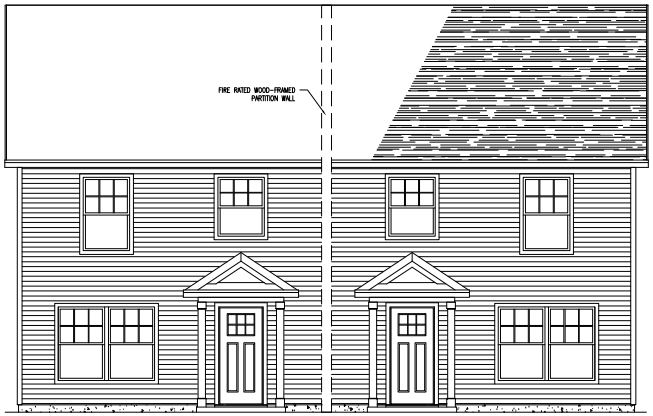
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Drawn: R. Sylvia
Checked:
Date: 6/28/2024
Scale: As Noted
Title: Landscape Plan & Details
Drawing No. L1.0

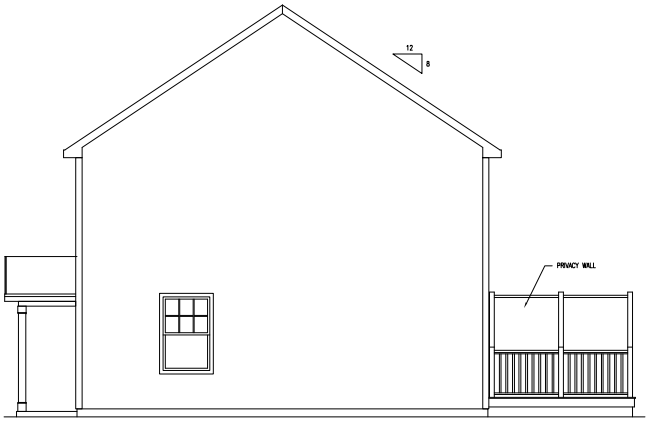
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FRONT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:

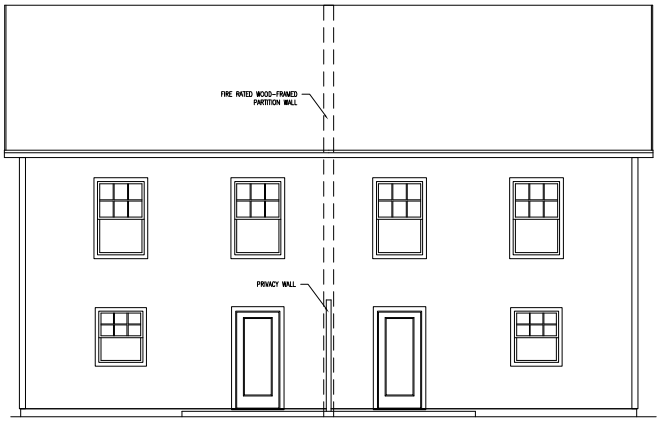
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



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

CONSTRUCTION NOTE:

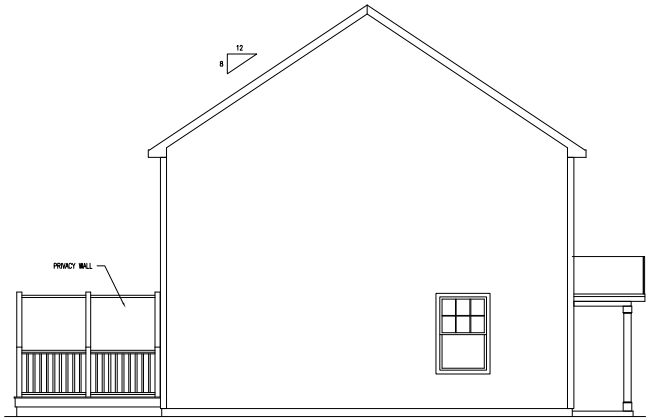
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



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

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



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

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.

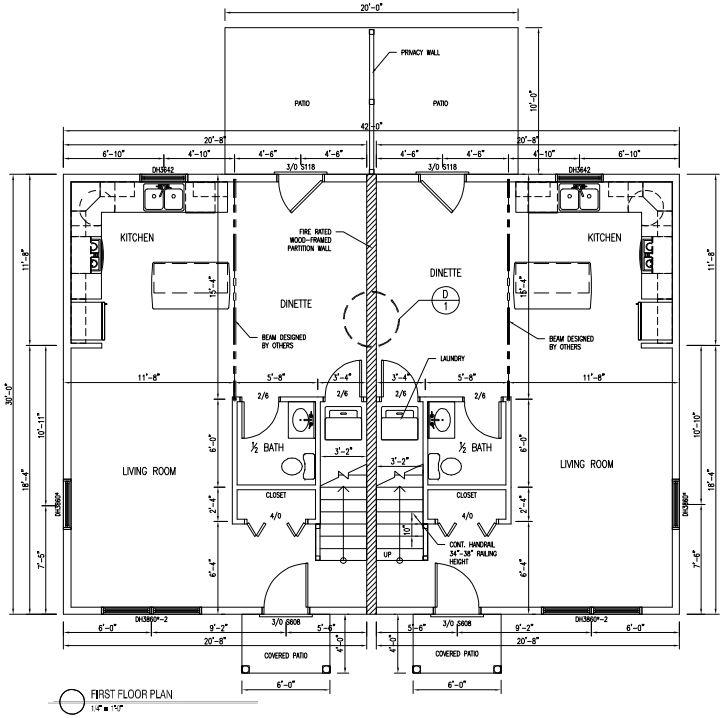


Merril Rd Duplex
Elevations
Lisbon, ME

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Revisions:	
05/05/20	*

Date : 04/22/2021
Scale : 1/4"=1'-0"
Drawn By: JTM
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FIRST FLOOR PLAN
1/4" = 1'-0"

SMOKE ALARMS

SHALL BE INTERCONNECTED & INSTALLED IN THE FOLLOWING LOCATIONS

1. EACH SLEEPING AREA
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
3. ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENTS
4. FIRE BLOCKING, FIRE RATED FIXTURES & CAULKING BETWEEN FLOORS WHEN/WHERE REQUIRED. ⅝ TYPE-'x' FIRE RATED SHEETROCK ON ALL WALLS & CEILINGS SEPARATING FLOORS WHEN/WHERE REQUIRED. PER TOWN AND LOCAL CODE

* DENOTES EGRESS WINDOW
DH DENOTES WINDOW TYPE & ROUGH OPENINGS
SG TEMPERED/SAFETY GLASS; AT ALL HAZARDOUS LOCATIONS, INCLUDING BUT NOT LIMITED TO BATHROOMS ENTRY DOORS AND STAIRS

CARBON MONOXIDE ALARMS:

SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS

1. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
2. IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES

CONSTRUCTION NOTE:

CONTRACTOR TO VERIFY GRADE IN FIELD, AND ALL DIMENSIONS ON PLANS BEFORE STARTING NEW CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.



D-1
N.T.S.

1HR FIRE RATED WALL:

ONE LAYER ⅝" TYPE X GYPSUM WALLBOARD OR VENEER BASE APPLIED TO EACH SIDE OF 2x6 IN. WOOD STUDS 16 IN. O.C. ON 2x6 IN. WOOD PLATE. USE 6d COATED NAILS 7 IN. O.C. STAGGER JOINTS 24 IN. EACH SIDE



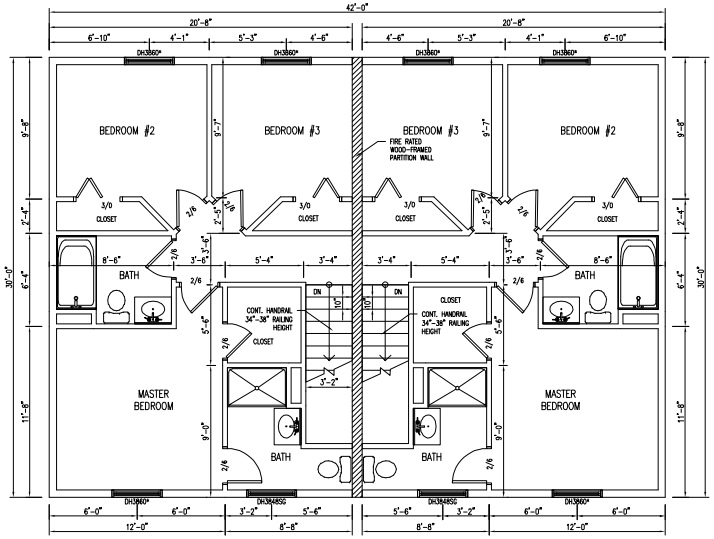
D-1
N.T.S.

2HR FIRE RATED WALL:

TWO LAYERS ⅝" TYPE X GYPSUM WALLBOARD OR VENEER BASE APPLIED TO EACH SIDE OF 2x6 IN. WOOD STUDS 24 IN. O.C. ON 2x6 IN. WOOD PLATE. USE 6d COATED NAILS 24 IN. O.C. FOR BASE LAYER AND 8d COATED NAILS 8 IN. O.C. FOR FACE LAYER. STAGGER JOINTS 16 IN. O.C. EACH LAYER AND SIDE

FIRE RATED WALL:

COMMON WALLS SEPARATING TOWNHOUSES SHALL BE ASSIGNED A FIRE RESISTANCE RATING IN ACCORDANCE WITH SECTION [R302.2 ITEM 1 OR 2]. A ONE-HOUR COMMON WALL FOR TOWNHOUSES WITH & TWO-HOUR COMMON WALL FOR TOWNHOUSES WITHOUT AUTOMATIC SPRINKLER SYSTEM



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

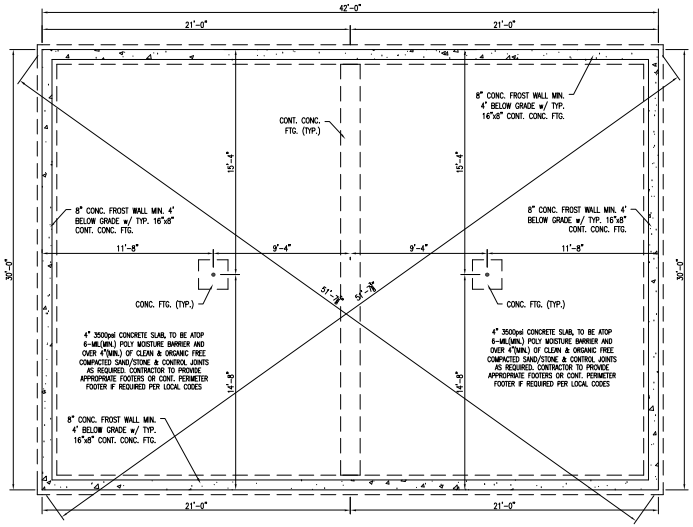


Merril Rd Duplex
1st & 2nd Floor Plans
Lisbon, ME

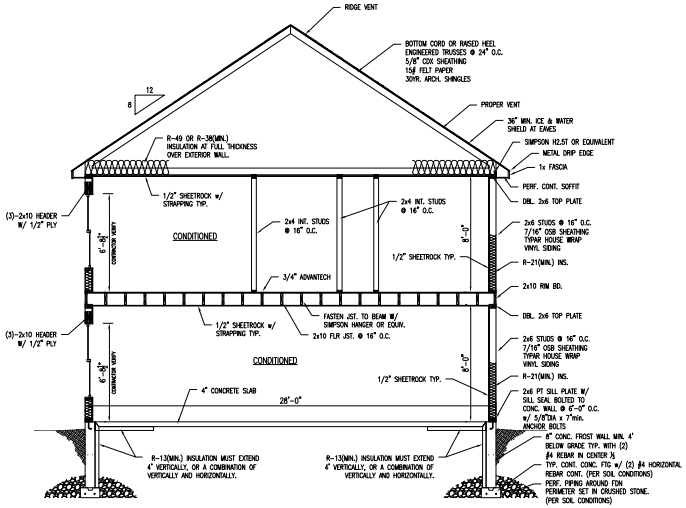
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Revisions:	
00/00/00	-

Date : 04/22/2021
Scale : 1/4"=1'-0"
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FOUNDATION PLAN
1/4" = 1'-0"



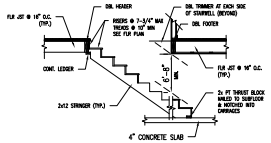
S-1
1/4" = 1'-0"

CONSTRUCTION NOTE:

CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.

FOUNDATION/CONSTRUCTION NOTES:

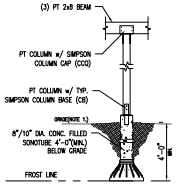
1. DIA. CONTINUOUS PERF. PERIMETER DRAIN WITH HOLES ORIENTED DOWN. SLOPED TO DAYLIGHT OR TO STORM SEWER OR DRYWELL.
2. RADON MITIGATION SYSTEM INSTALLED THRU CONCRETE FLR & TIED INTO PERIMETER DRAIN
3. ALL LALLY COLUMNS THIS SHEET ASSUMED TO BE TYP.
4. ALL INTERIOR FOOTINGS TO BE DESIGNED PER SOIL CONDITIONS. CONTRACTOR TO VERIFY.
5. FROST WALLS ASSUMED; 8" CONC. MIN. 4'-0" BELOW GRADE, w/ TYP. CONT. CONC. FTG.
6. OPTIONAL CRAWL FLOOR SPACE 1"MIN. CONC. SLAB, OVER 6-MIL POLY MOISTURE BARRIER, OVER 4"MIN. OF CLEAN AND ORGANIC FREE GRAVEL.
7. CONTRACTOR TO VERIFY THAT PROPER CLEARANCES, VENTILATION, AND ACCESS OPENINGS HAVE BEEN PROVIDED PER TOWN OR LOCAL CODE.
8. DECK SUPPORTS ASSUMED TO BE 10" DIA. SONOTUBES. SOIL CONDITIONS TO DETERMINE FOOTING DESIGN. CONTRACTOR TO VERIFY.
9. FOR PLUMBING LOCATION/LAYOUT, SEE FLOOR PLANS.
10. CONTRACTOR TO VERIFY CONDITIONS IN FIELD AND STEP FND./FTGS AS REQUIRED PER GRADE. AND SOIL CONDITIONS
11. BASEMENT FINISHES PER OWNER/CONT. (TO BE DETERMINED)
12. CONTRACTOR TO VERIFY GRADE IN FIELD BEFORE CONSTRUCTION OF TYPICAL FOUNDATION WALLS OR DAYLIGHT BASEMENT. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. AND LOCAL CODES.



NOTE:

1. SUBSTITUTE RAFTER, CL JSTS & STUD WALL SIZES WITH PLAN CALL OUT

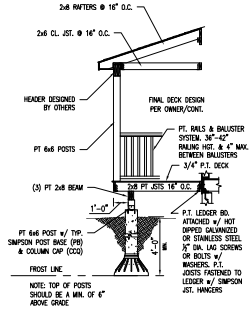
TYPICAL STAIR FRAMING
N.T.S.



NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. SUBSTITUTE FLR JOISTS AND STUD WALL SIZES WITH PLAN CALL OUT

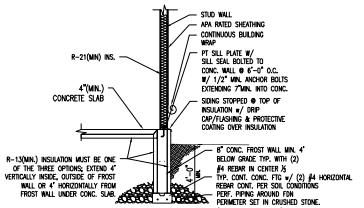
CONC. SNOTUBES AT DECKING
N.T.S.



NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. SUBSTITUTE FLR JOISTS AND STUD WALL SIZES WITH PLAN CALL OUT

CONC. SNOTUBES AT COVERED PORCH
N.T.S.



NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. WHEN CONNECTED TO A RESIDENTIAL USE, THE GARAGE FLR SHALL BE AT LEAST 4" LOWER THAN THE ENTRANCE TO THE RESIDENCE. THE 4" SHALL BE POURED IN PLACE WITH CONCRETE

TYPICAL HEATED FROST WALL DETAIL
N.T.S.



Merril Rd Duplex
Foundation & Section Plans
Lisbon, ME

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Revisions:	
02/09/00	*

Date : 04/22/2021
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D030821
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TABLE R602.7(1)
GIRDER SPANS[a] AND HEADER SPANS[a] FOR EXTERIOR BEARING WALLS
(Maximum spans for Douglas fir-larch, hem-fir,southern pine and spruce-pine-fir[h] and required number of jack studs)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf)[e] 70 Building Width[c] (feet) 20 Span	NJ[d]	28 Span	NJ[d]	36 Span	NJ[d]
Roof and ceiling	2-2x4	2-10	1	2-6	1	2-3	1
	2-2x6	4-2	1	3-8	2	3-3	2
	2-2x8	5-4	2	4-7	2	4-1	2
	2-2x10	6-6	2	5-7	2	5-0	2
	2-2x12	7-6	2	6-6	2	5-10	3
	3-2x8	6-8	1	5-9	2	5-2	2
	3-2x10	8-2	2	7-2	2	6-4	2
	3-2x12	9-5	2	8-2	2	7-4	2
	4-2x8	7-8	1	6-8	1	5-11	2
	4-2x10	9-5	2	8-2	2	7-3	2
	4-2x12	10-11	2	9-5	2	8-5	2
Roof, ceiling and over center-bearing floor	2-2x4	2-7	1	2-3	1	2-0	1
	2-2x6	3-9	2	3-3	2	2-11	2
	2-2x8	4-9	2	4-2	2	3-8	2
	2-2x10	5-9	2	5-1	2	4-7	3
	2-2x12	6-8	2	5-10	3	5-3	3
	3-2x8	5-11	2	5-2	2	4-8	2
	3-2x10	7-3	2	6-4	2	5-8	2
	3-2x12	8-5	2	7-4	2	6-7	2
	4-2x8	6-10	2	6-0	2	5-3	2
	4-2x10	8-4	2	7-4	2	6-7	2
	4-2x12	9-8	2	8-6	2	7-7	2
Roof, ceiling and one clear span floor	2-2x4	2-5	1	2-1	1	1-10	1
	2-2x6	3-6	2	3-1	2	2-9	2
	2-2x8	4-6	2	3-11	2	3-6	2
	2-2x10	5-6	2	4-9	2	4-3	3
	2-2x12	6-4	2	5-6	3	5-0	3
	3-2x8	5-7	2	4-11	2	4-5	2
	3-2x10	6-10	2	6-0	2	5-4	2
	3-2x12	7-11	2	6-11	2	6-3	3
	4-2x8	6-5	1	5-8	2	5-1	2
	4-2x10	7-11	2	6-11	2	6-2	2
	4-2x12	9-2	2	8-0	2	7-2	2
Roof, ceiling and two center-bearing floor	2-2x4	2-4	1	2-0	1	1-9	1
	2-2x6	3-5	2	3-0	2	2-8	2
	2-2x8	4-4	2	3-9	2	3-5	3
	2-2x10	5-3	2	4-7	3	4-2	3
	2-2x12	6-1	3	5-4	3	4-10	3
	3-2x8	5-5	2	4-9	2	4-3	2
	3-2x10	6-7	2	5-9	2	5-3	2
	3-2x12	7-8	2	6-9	2	6-1	3
	4-2x8	6-3	2	5-6	2	4-11	2
	4-2x10	7-7	2	6-8	2	6-0	2
	4-2x12	8-10	2	7-9	2	7-0	2
Roof, ceiling and two clear span floor	2-2x4	2-0	1	1-8	1	1-5	2
	2-2x6	2-11	2	2-7	2	2-3	2
	2-2x8	3-9	2	3-3	2	2-11	3
	2-2x10	4-7	3	4-0	3	3-8	3
	2-2x12	5-4	3	4-7	3	4-1	4
	3-2x8	4-8	2	4-1	2	3-8	3
	3-2x10	5-9	2	4-11	2	4-5	3
	3-2x12	6-8	2	5-9	3	5-2	3
	4-2x8	5-5	2	4-8	2	4-2	2
	4-2x10	6-7	2	5-9	2	5-1	2
	4-2x12	7-8	2	6-8	2	5-10	3

[REF.TABLE R602.7(1)]

For SI: 1 inch=25.4mm, 1 pound per square foot=0.0479kN/m

a. Spans are given in feet and inches.

b. Tabulated values assume #2 grade lumber.

c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.

d. NJ=Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.

e. Use 30psf ground snow load for cases in which ground snow load is less than 30psf and the roof live load is equal to or less than 20psf

TABLE R602.7(2)
GIRDER SPANS[a] AND HEADER SPANS[a] FOR INTERIOR BEARING WALLS
(Maximum spans for Douglas fir-larch, hem-fir, southern pine[g] and spruce-pine-fir and required number of jack studs)

WIDTH OF STRUCTURE (FEET)	GIRDER SIZE (FEET)	ONE STORY MINIMUM SPAN (NJ=NONE)	ONE STORY FOOTING SIZE (INCHES)	TWO STORY MINIMUM SPAN (NJ=NONE)	TWO STORY FOOTING SIZE (INCHES)	THREE STORY MINIMUM SPAN (NJ=NONE)	THREE STORY FOOTING SIZE (INCHES)
24	3-2x8	6-7	17x7	4-11	20x10	4-1	20x10
	4-2x8	7-8	19x9	6-6	21x11	6-0	21x11
	3-2x10	8-9	20x10	6-1	23x13	5-7	23x13
	4-2x10	9-9	21x11	7-3	24x14	6-1	24x14
	3-2x12	10-3	22x12	7-6	25x15	6-4	25x15
	4-2x12	11-10	23x13	8-10	27x17	7-4	27x17
26	3-2x8	6-4	17x7	4-8	20x10	3-11	20x10
	4-2x8	7-4	19x9	6-6	21x11	6-7	21x11
	3-2x10	8-1	19x9	6-1	23x13	5-6	23x13
	4-2x10	9-4	21x11	7-0	24x14	6-10	24x14
	3-2x12	9-10	21x11	7-4	25x15	6-1	25x15
	4-2x12	11-5	23x13	8-6	27x17	7-1	27x17
28	3-2x8	6-2	17x7	4-7	21x11	3-10	21x11
	4-2x8	7-1	19x9	6-3	23x13	6-6	23x13
	3-2x10	7-10	19x9	6-10	23x13	6-10	23x13
	4-2x10	9-0	21x11	6-9	25x15	6-7	25x15
	3-2x12	9-6	21x11	7-1	26x16	5-11	26x16
	4-2x12	11-0	23x13	8-2	28x18	6-10	28x18
32	3-2x8	5-9	16x16	4-3	21x11	3-7	21x11
	4-2x8	6-7	17x17	6-11	23x13	6-1	23x13
	3-2x10	7-2	18x18	5-5	24x24	6-8	24x24
	4-2x10	8-6	20x20	8-3	26x26	8-3	26x26
	3-2x12	8-11	20x20	6-8	27x27	5-8	27x27
	4-2x12	10-3	22x22	7-9	28x28	6-11	28x28

[REF.TABLE R602.7(2)]

TABLE R602.3(1)
SEE TABLE R602.3(3) FOR WOOD STRUCTURAL PANEL* EXTERIOR WALL* SHEATHING TO WALL FRAMING

DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER [b,c,d,e]	SPACING OF FASTENERS: Edges (inches) [i]	SPACING OF FASTENERS: Intermediate support [c,e] (inches)
wood structural panels, subfloor, roof and wall sheathing to framing, and particleboard wall sheathing to framing			
3/8" - 1/2"	6d common nail (subfloor, wall) 8d common nail (roof)[f]	6	12 [g]
19/32" - 1"	8d common nail	6	12 [g]
1-1/8" - 1-1/4"	10d common nail or 8d deformed nail	6	12
Other wall sheathing [a]			
1/2" regular cellulosic fiberboard sheathing	1-1/2"galvanized roofing nail, 7/16"head diameter, or 1"crown staple 16ga., 1-1/4" long	3	6
25/32" regular cellulosic fiberboard sheathing	1-3/4" galvanized roofing nail 7/16" head diameter	3	6
1/2" gypsum sheathing [d]	or 1" crown staple 16ga., 1-1/14" long 1-1/2" galvanized roofing nail; staple galvanized, 1-1/2" long; 1-1/4"screws, type W or S 1-3/4" galvanized roofing nail; staple galvanized	3 4	6 8
5/8" gypsum sheathing	1-5/8" long; 1-5/8"screws, type W or S	4	8
wood structural panels, combination subfloor underlayment to framing			
3/4" and less	6d deformed (2" 0.120"nail; or 8d common (2-1/2"x0.131") nail	6	12
7/8" - 1"	8d common (2-1/2"x 0.131"nail; or 8d deformed (2-1/2"x0.120") nail	6	12
1-1/8" - 1-1/4"	10d common (3" 0.148"nail; or 8d deformed (2-1/2"x0.120") nail	6	12

[REF.TABLE R602..3(1)]
For SI: 1 inch=25.4mm, 1 foot=304.8mm, 1 mile per hour=0.447 m/s; 1 ksi=6.895MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80ksi (551 MPa) for shank diameter of .192inch (20d common nail), 90ksi (620 MPa) for shank diameters larger than 0.142inch but not larger than 1.177inch, and 100ksi (689 MPa)for shank diameters of 0.142inch less.

b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.

c. Nails shall be spaced at not more than 6inches on center at all supports where spans are 48inches or greater.

d. Four-foot- by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on table R602.3(2).

f. For regions having basic wind speed of 110mph or greater, 8d deformed nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25feet, up to 30feet maximum.

g. For regions having basic wind speed of 100mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6inches on center. When basic wind speed is greater than 100mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6inches on center for minimum 48-inch distance from ridges, eves and gable end walls; and 4inches on center to gable end wall framing.

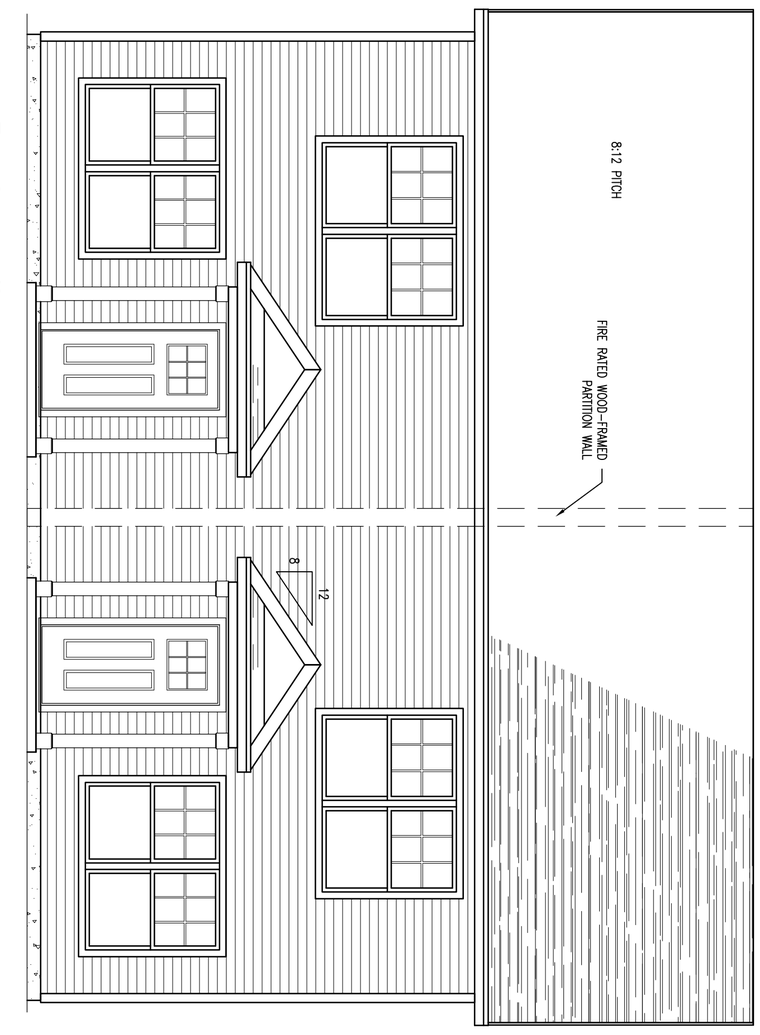
h. Gypsum sheathing shall conform to ASTM C79 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to either AHA 194.1 or ASTM C 208.

i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and at all roof plane perimeters. Blocking of roof or floor sheathing panel edges perpendicular to the framing members shall not be required except at intersection of adjacent roof planes. Floor and roof perimeter shall be supported by framing members or solid blocking.



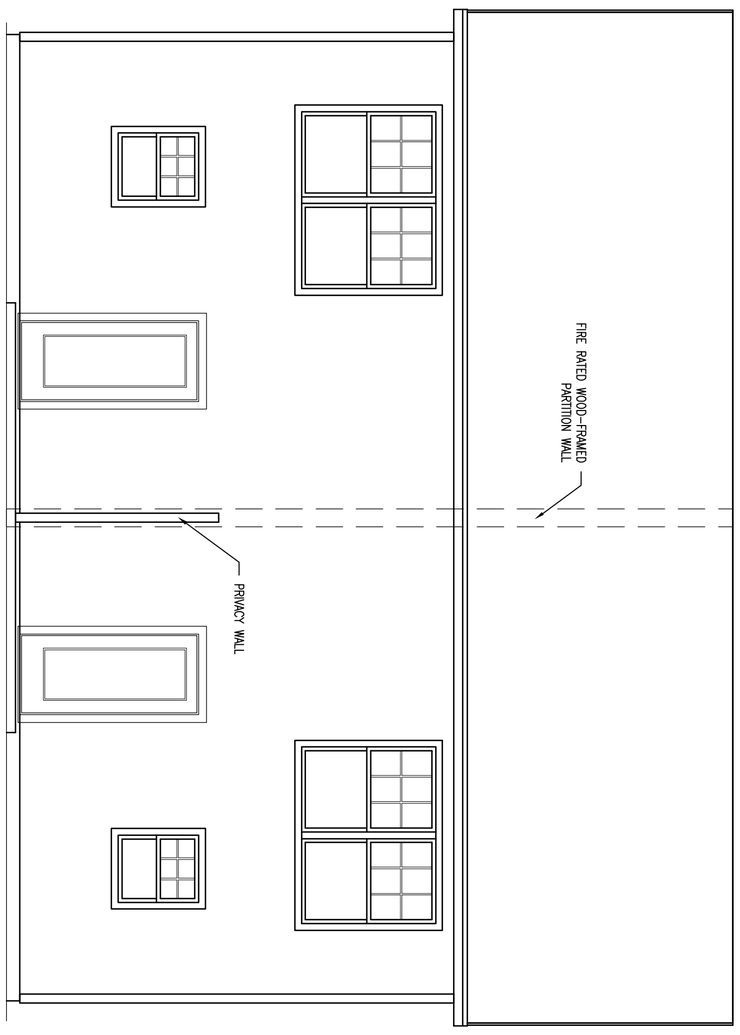
Merril Rd Duplex
Schedules
Lisbon, ME

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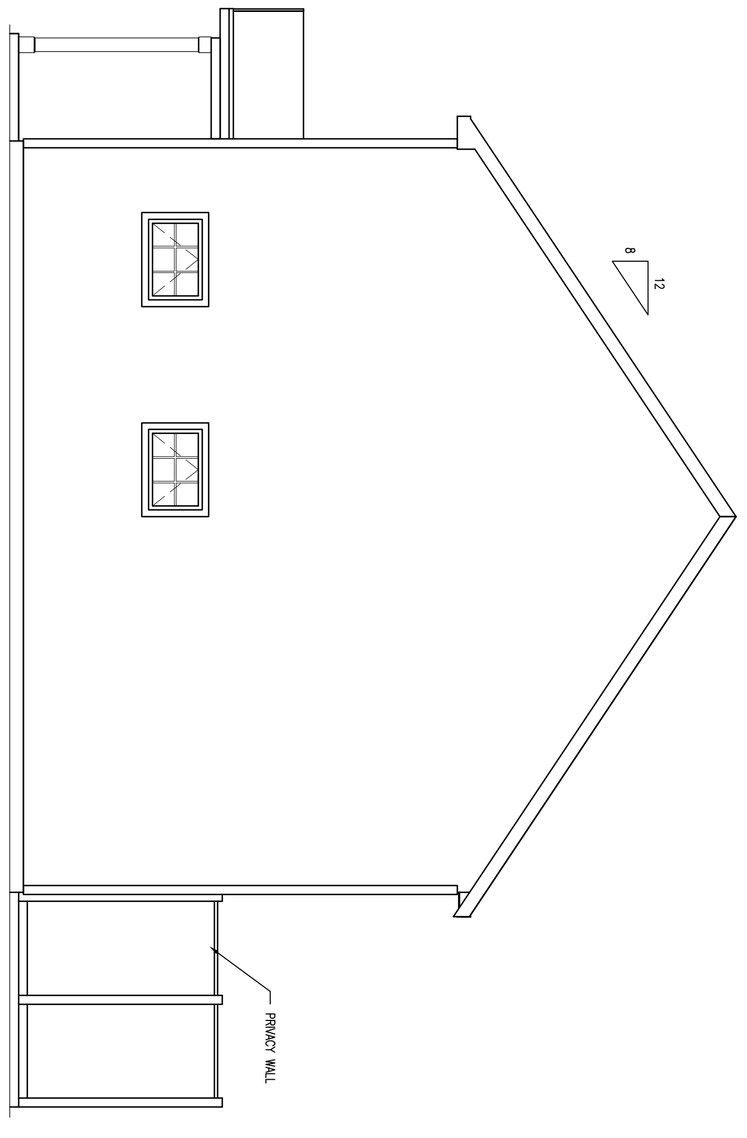
FRONT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



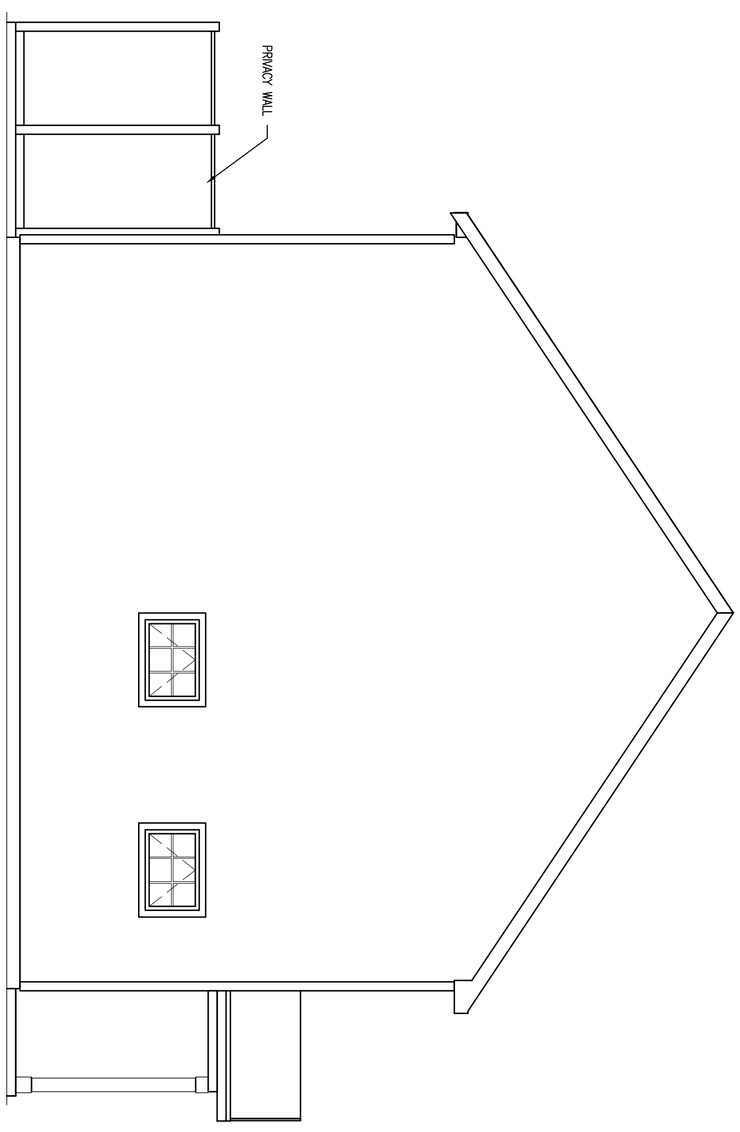
REAR ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



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

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.



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

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS; AND OR LOCAL CODES.

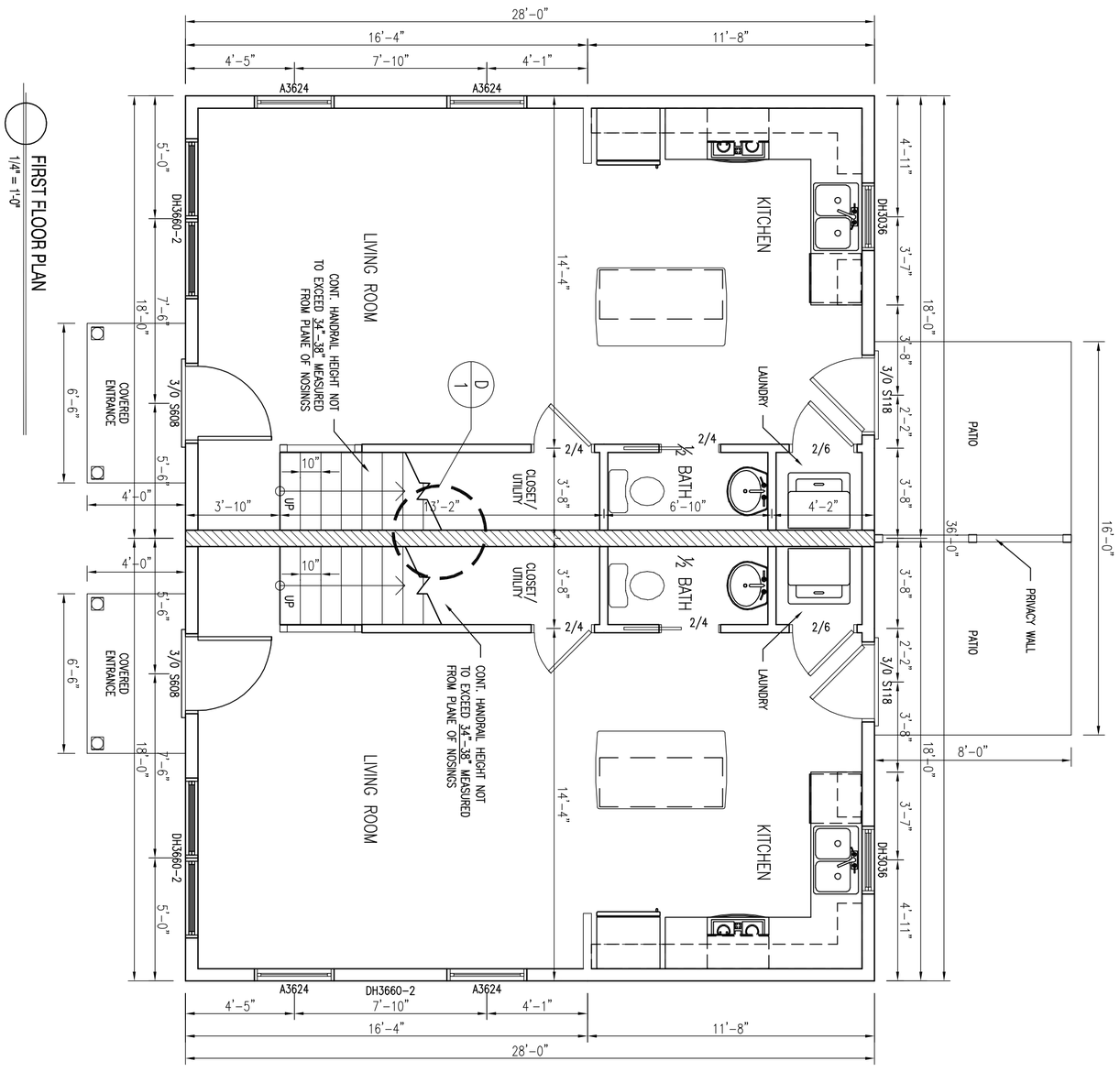
Revisions:
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Date : 07/18/2023
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D070923
Sheet Number:
1 of 4

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Merrill, Duplex
Elevations
Lisbon, ME

Drafting & Design ME LLC
824 Roosevelt Trail #114
Windham, ME 04062
(207)-420-7411



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

SMOKE ALARMS

SHALL BE INTERCONNECTED & INSTALLED IN THE FOLLOWING LOCATIONS

1. EACH SLEEPING AREA
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
3. ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENTS
4. FIRE BLOCKING, FIRE RATED FIXTURES & CAULKING BETWEEN FLOORS WHEN/WHERE REQUIRED. ⅝ TYPE-X FIRE RATED SHEETROCK ON ALL WALLS & CEILINGS SEPARATING FLOORS WHEN/WHERE REQUIRED. PER TOWN AND LOCAL CODE

* DENOTES EGRESS WINDOW
DH DENOTES WINDOW TYPE & ROUGH OPENINGS
SG TEMPERED/SAFETY GLASS; AT ALL HAZARDOUS LOCATIONS, INCLUDING BUT NOT LIMITED TO TUB/SHOWERS, ENTRY DOORS AND STAIRS

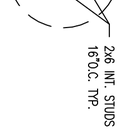
CARBON MONOXIDE ALARMS:

SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS

1. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
2. IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES

CONSTRUCTION NOTE:

CONTRACTOR TO VERIFY GRADE IN FIELD, AND ALL DIMENSIONS ON PLANS BEFORE STARTING NEW CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.



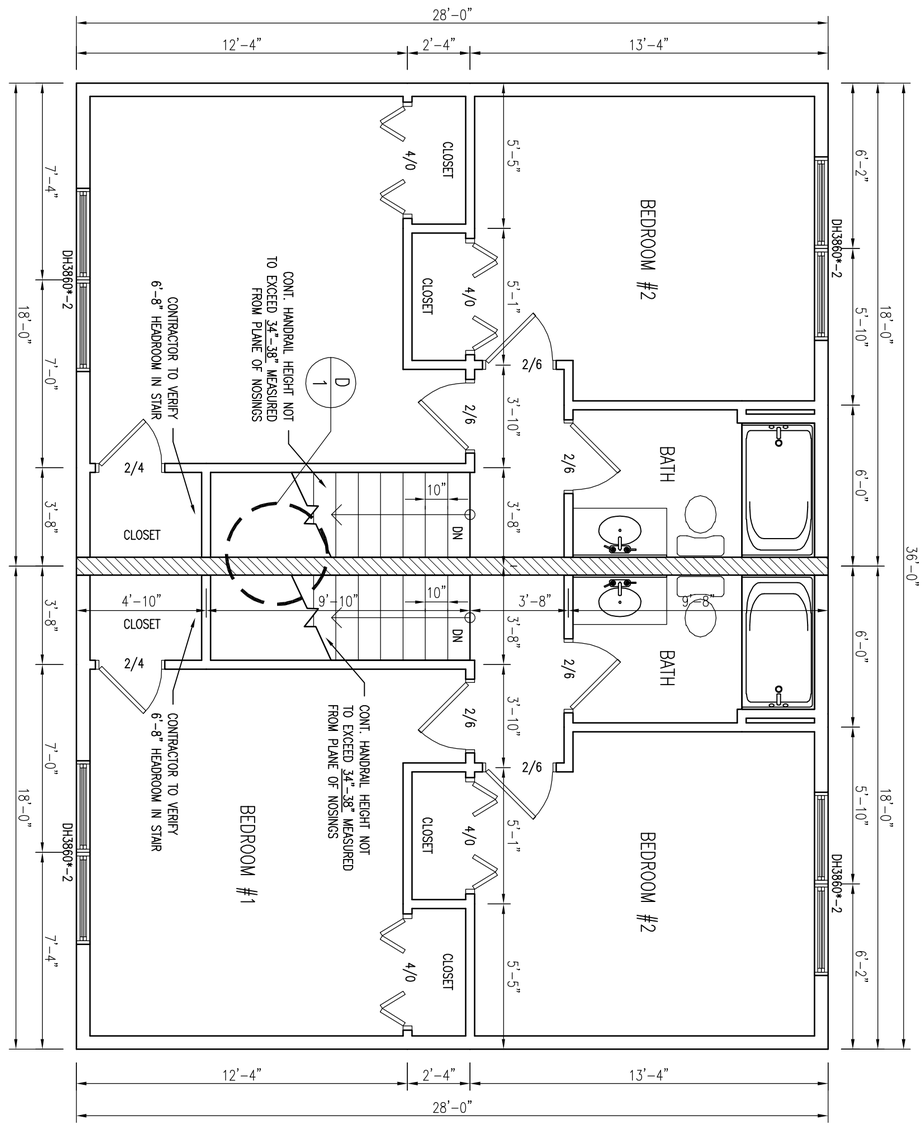
D-1
N.T.S.

2HR FIRE RATED WALL:

TWO LAYERS ⅝" TYPE X GYPSUM WALLBOARD OR VENEER BASE APPLIED TO EACH SIDE OF 2x6 IN. WOOD STUDS 24 IN. O.C. ON 2x6 IN. WOOD PLATE. USE 6d COATED NAILS 24 IN. O.C. FOR BASE LAYER AND 8d COATED NAILS 8 IN. O.C. FOR FACE LAYER. STAGGER JOINTS 16 IN. O.C. EACH LAYER AND SIDE

FIRE RATED WALL:

COMMON WALLS SEPARATING TOWNHOUSES SHALL BE ASSIGNED A FIRE RESISTANCE RATING IN ACCORDANCE WITH SECTION [R302.2 ITEM 1 OR 2] A ONE-HOUR COMMON WALL FOR TOWNHOUSES WITH & TWO-HOUR COMMON WALL FOR TOWNHOUSES WITHOUT AUTOMATIC SPRINKLER SYSTEM



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

Revisions:	
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Date : 07/18/2023
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D070923
Sheet Number: 3 of 4

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Merrill, Duplex
1st & 2nd Floor Plans
Lisbon, ME

Drafting & Design ME LLC
824 Roosevelt Trail #114
Windham, ME 04062
(207)-420-7411

TABLE R602.7(1)
GIRDER SPANS[a] AND HEADER SPANS[a] FOR EXTERIOR BEARING WALLS
(Maximum spans for Douglas fir–larch, hem–fir,southern pine and spruce–pine–fir[e] and required number of jack studs)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf)[e] 70 — Building Width[c] (feet) 20 Span	20 NJ[d]	28 Span	28 NJ[d]	36 Span	36 NJ[d]
Roof and ceiling	2–2x4	2–10	1	2–6	1	2–3	1
	2–2x6	4–2	1	3–8	2	3–3	2
	2–2x8	5–4	2	4–7	2	4–1	2
	2–2x10	6–6	2	5–7	2	5–0	2
	2–2x12	7–6	2	6–6	2	5–10	3
	3–2x8	6–8	1	5–9	2	5–2	2
	3–2x10	8–2	2	7–0	2	6–4	2
	3–2x12	9–5	2	8–2	2	7–4	2
	4–2x8	7–8	1	6–8	1	5–11	2
	4–2x10	9–5	2	8–2	2	7–3	2
	4–2x12	10–11	2	9–5	2	8–5	2
Roof, ceiling and over center–bearing floor	2–2x4	2–7	1	2–3	1	2–0	1
	2–2x6	3–9	2	3–3	2	2–11	2
	2–2x8	4–9	2	4–2	2	3–9	2
	2–2x10	5–9	2	5–1	2	4–7	3
	2–2x12	6–8	2	5–10	3	5–3	3
	3–2x8	5–11	2	5–2	2	4–8	2
	3–2x10	7–3	2	6–4	2	5–8	2
	3–2x12	8–5	2	7–4	2	6–7	2
	4–2x8	6–10	1	6–0	2	5–5	2
	4–2x10	8–4	2	7–4	2	6–7	2
	4–2x12	9–8	2	8–6	2	7–7	2
Roof, ceiling and one clear span floor	2–2x4	2–5	1	2–1	1	1–10	1
	2–2x6	3–6	2	3–1	2	2–9	2
	2–2x8	4–6	2	3–11	2	3–5	2
	2–2x10	5–6	2	4–9	2	4–3	3
	2–2x12	6–4	2	5–6	3	5–0	3
	3–2x8	5–7	2	4–11	2	4–5	2
	3–2x10	6–10	2	6–0	2	5–4	2
	3–2x12	7–11	2	6–11	2	6–3	2
	4–2x8	6–6	1	5–8	2	5–1	2
	4–2x10	7–11	2	6–11	2	6–2	2
	4–2x12	9–2	2	8–0	2	7–2	2
Roof, ceiling and two center–bearing floor	2–2x4	2–4	1	2–0	1	1–9	1
	2–2x6	3–5	2	3–0	2	2–8	2
	2–2x8	4–4	2	3–9	2	3–5	2
	2–2x10	5–3	2	4–7	3	4–2	3
	2–2x12	6–1	3	5–4	3	4–10	3
	3–2x8	5–5	2	4–9	2	4–3	2
	3–2x10	6–7	2	5–9	2	5–3	2
	3–2x12	7–8	2	6–9	2	6–1	3
	4–2x8	6–3	2	5–6	2	4–11	2
	4–2x10	7–7	2	6–8	2	6–0	2
	4–2x12	8–10	2	7–9	2	7–0	2
Roof, ceiling and two clear span floor	2–2x4	2–0	1	1–8	1	1–5	2
	2–2x6	2–11	2	2–7	2	2–3	2
	2–2x8	3–9	2	3–3	2	2–11	3
	2–2x10	4–7	3	4–0	3	3–6	3
	2–2x12	5–4	3	4–7	3	4–1	4
	3–2x8	4–8	2	4–1	2	3–8	2
	3–2x10	5–9	2	4–11	2	4–5	3
	3–2x12	6–8	2	5–9	3	5–2	3
	4–2x8	5–5	2	4–8	2	4–2	2
	4–2x10	6–7	2	5–9	2	5–1	2
	4–2x12	7–8	2	6–8	2	5–11	3

[REF.TABLE R602.7(1)]

For SI: 1 inch=25.4mm, 1 pound per square foot=0.0479kN/m

a. Spans are given in feet and inches.

b. Tabulated values assume #2 grade lumber.

c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.

d. NJ–Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full–height wall stud and to the header.

e. Use 30psf ground snow load for cases in which ground snow load is less than 30psf and the roof live load is equal to or less. than 20psf

TABLE R602.7(2)
GIRDER SPANS[a] AND HEADER SPANS[a] FOR INTERIOR BEARING WALLS
(Maximum spans for Douglas fir–larch, hem–fir, southern pine[e] and spruce–pine–fir and required number of jack studs)

WIDTH OF STRUCTURE (FEET)	GIRDER SIZE (FEET)	ONE STORY — MAXIMUM SPAN (FEET–INCHES)	ONE STORY — FOOTING SIZE (INCHES)	TWO STORY — MAXIMUM SPAN (FEET–INCHES)	TWO STORY — FOOTING SIZE (INCHES)	THREE STORY — MAXIMUM SPAN (FEET–INCHES)	THREE STORY — FOOTING SIZE (INCHES)
24	3–2x8	6–7	17x17	4–11	20x20	4–1	20x20
	4–2x8	7–8	19x19	5–8	21x21	4–9	21x21
	3–2x10	8–5	20x20	6–3	23x23	5–3	23x23
	4–2x10	9–8	21x21	7–3	24x24	6–1	24x24
	3–2x12	10–3	22x22	7–8	25x25	6–4	25x25
	4–2x12	11–10	23x23	8–10	27x27	7–4	27x27
26	3–2x8	6–4	17x17	4–9	20x20	3–11	20x20
	4–2x8	7–4	18x18	5–6	22x22	4–7	22x22
	3–2x10	8–1	19x19	6–1	23x23	5–0	23x23
	4–2x10	9–4	21x21	7–0	24x24	5–10	24x24
	3–2x12	9–10	21x21	7–4	25x25	6–1	25x25
	4–2x12	11–5	23x23	8–6	27x27	7–1	27x27
28	3–2x8	6–2	17x17	4–7	21x21	3–10	21x21
	4–2x8	7–1	18x18	5–3	22x22	4–5	22x22
	3–2x10	7–10	19x19	5–10	23x23	4–10	23x23
	4–2x10	9–0	20x20	6–9	25x25	5–7	25x25
	3–2x12	9–6	21x21	7–1	26x26	5–11	26x26
	4–2x12	11–0	22x22	8–2	28x28	6–10	28x28
32	3–2x8	5–8	18x18	4–3	21x21	3–7	21x21
	4–2x8	6–7	17x17	4–11	23x23	4–1	23x23
	3–2x10	7–4	18x18	5–5	24x24	4–8	24x24
	4–2x10	8–5	20x20	6–3	26x26	5–3	26x26
	3–2x12	8–11	20x20	6–8	27x27	5–8	27x27
	4–2x12	10–3	22x22	7–8	29x29	6–4	29x29

[REF.TABLE R602.7(2)]

TABLE R602.3(1)
SEE TABLE R602.3(3) FOR WOOD STRUCTURAL PANEL[e] EXTERIOR WALL[e] SHEATHING TO WALL FRAMING

DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER[b,c,d,e]	SPACING OF FASTENERS — Edges (inches)[i]	SPACING OF FASTENERS — Intermediate support[c,e] (inches)
wood structural panels, subfloor, roof and wall sheathing to framing, and particleboard wall sheathing to framing			
3/8" – 1/2"	6d common nail (subfloor, wall) 8d common nail (roof)[f]	6	12[g]
19/32" – 1"	8d common nail	6	12[g]
1–1/8" – 1–1/4"	10d common nail or 8d deformed nail	6	12
Other wall sheathing[h]			
1/2" regular cellulosic fiberboard sheathing	1–1/2"galvanized roofing nail, 7/16"head diameter, or 1"crown staple 16ga., 1–1/4" long	3	6
25/32" regular cellulosic fiberboard sheathing	1–3/4" galvanized roofing nail 7/16" head diameter	3	6
1/2" gypsum sheathing[f]	or 1" crown staple 16ga., 1–1/14" long 1–1/2" galvanized roofing nail; staple galvanized, 1–1/2" long; 1–1/4"screws, type W or S 1–3/4" galvanized roofing nail; staple galvanized	3 4	6 8
5/8" gypsum sheathing	1–5/8" long; 1–5/8"screws, type W or S	4	8
wood structural panels, combination subfloor underlayment to framing			
3/4" and less	6d deformed (2"x 0.120")nail; or 8d common (2–1/2"x0.131") nail	6	12
7/8" – 1"	8d common (2–1/2"x 0.131")nail; or 8d deformed (2–1/2"x0.120") nail	6	12
1–1/8" – 1–1/4"	10d common (3"x 0.148")nail; or 8d deformed (2–1/2"x0.120") nail	6	12

[REF.TABLE R602...3(1)]
For SI: 1 inch=25.4mm, 1 foot=304.8mm, 1 mile per hour=0.447 m/s; 1 ksi=6.895MPa.

a. All nails are smooth–common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80ksi (551 MPa) for shank diameter of .192inch (20d common nail), 90ksi (620 MPa) for shank diameters larger than 0.142inch but not larger than 1.177inch, and 100ksi (689 MPa)for shank diameters of 0.142inch less.

b. Staples are 16 gage wire and have a minimum 7/16–inch on diameter crown width.

c. Nails shall be spaced at not more than 6inches on center at all supports where spans are 48inches or greater.

d. Four–foot– by–8–foot or 4–foot–by–9–foot panels shall be applied vertically.

e. Spacing of fasteners not included in this table shall be based on table R602.3(2).

f. For regions having basic wind speed of 110mph or greater, 8d deformed nails shall be used for attaching plywood and wood structural panel roof sheathing to
framing within minimum 48–inch distance from gable end walls, if mean roof height is more than 25feet, up to 35feet maximum.

g. For regions having basic wind speed of 100mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6inches on center. When basic wind speed is greater than 100mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6inches on center for minimum 48–inch distance from ridges, eves and gable end walls; and 4inches on center to gable end wall framing.

h. Gypsum sheathing shall conform to ASTM C79 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to either AHA 194.1 or ASTM C 208.

i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and at all roof plane perimeters. Blocking of roof or floor sheathing panel edges perpendicular to the framing members shall not be required except at intersection of adjacent roof planes. Floor and roof perimeter shall be supported by framing members or solid blocking.

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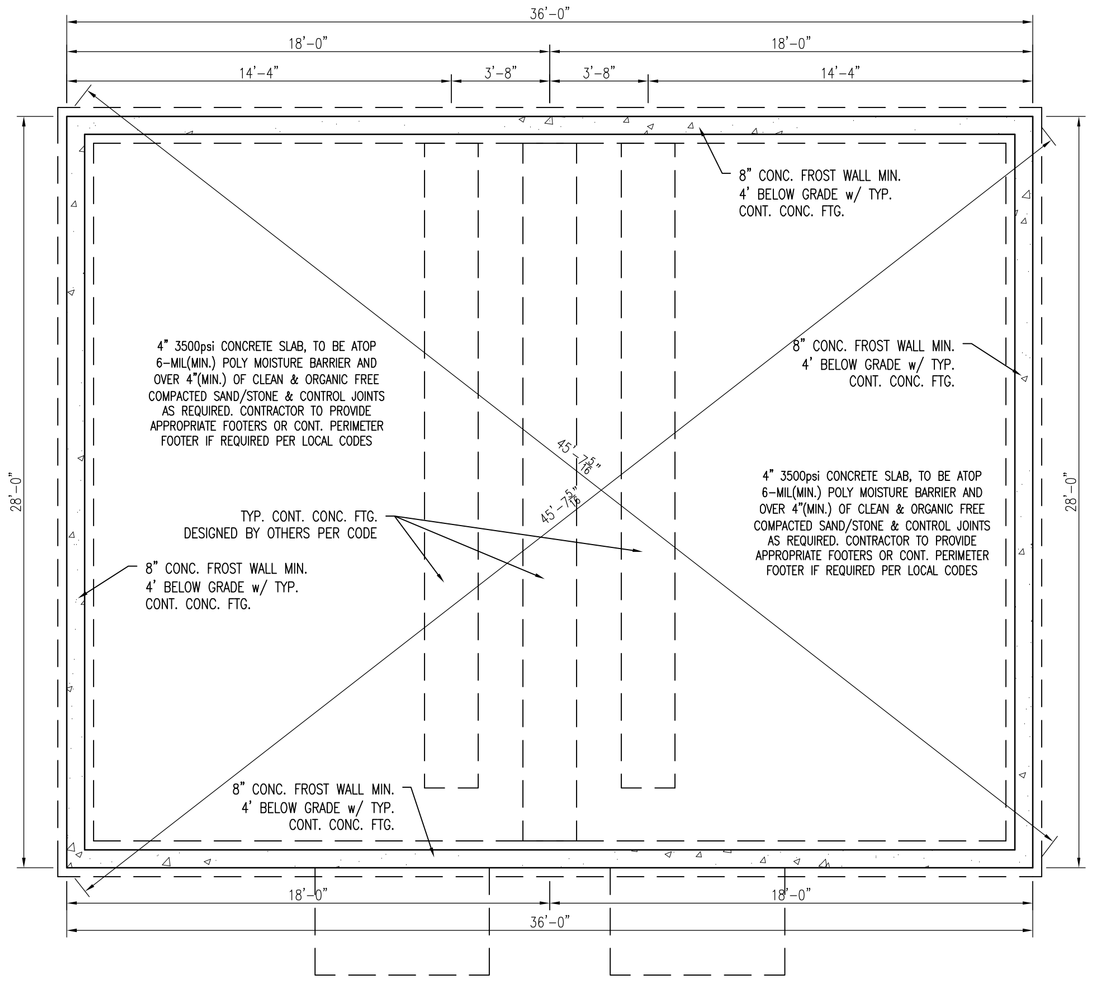
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Schedules
Lisbon, ME

DRAWINGS ARE PROVIDED FOR INFORMATIONAL/PERMITING PURPOSES ONLY- IF USED FOR CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE CODE COMPLIANCE. ALL DIMENSIONS, SKETCHES ETC. ARE PROVIDED TO OUR CLIENTS BASED UPON INFORMATION PROVIDED BY THE CLIENT AND DRAWN IN ACCORDANCE WITH INDUSTRY STANDARDS. DRAFTING & DESIGN ME, LLC IS NOT LICENSED BY THE STATE OF MAINE TO PRACTICE ARCHITECTURE OR ENGINEERING. DRAFTING & DESIGN ME, LLC ARE REGISTERED ARCHITECTS, ENGINEERS OR LAND SURVEYORS. ALL DRAWINGS SHALL BE REVIEWED AND APPROVED BY A LICENSED CONTRACTOR, ARCHITECT AND/OR CODE OFFICER BEFORE ACTUAL CONSTRUCTION BEGINS. DRAFTING & DESIGN ME, LLC IS NOT RESPONSIBLE FOR ANY CONSTRUCTION CONTRACTOR BEFORE ACTUAL CONSTRUCTION BEGINS DRAFTING & DESIGN ME, LLC WILL NOT BE RESPONSIBLE FOR ANY CONSTRUCTION BASED ON PLANS NOT APPROVED FOR CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL PLANS AND NOTIFY DRAFTING & DESIGN ME, LLC OF ANY CHANGES AND/OR REVISIONS MADE TO PLAN BY CLIENT AND/OR CONTRACTOR

Revisions:

00/00/00	-

Date : 07/18/2023
Scale : 1/4"=1'–0"
Drawn By: JTM
Project: D070923
Sheet Number:
4 of 4

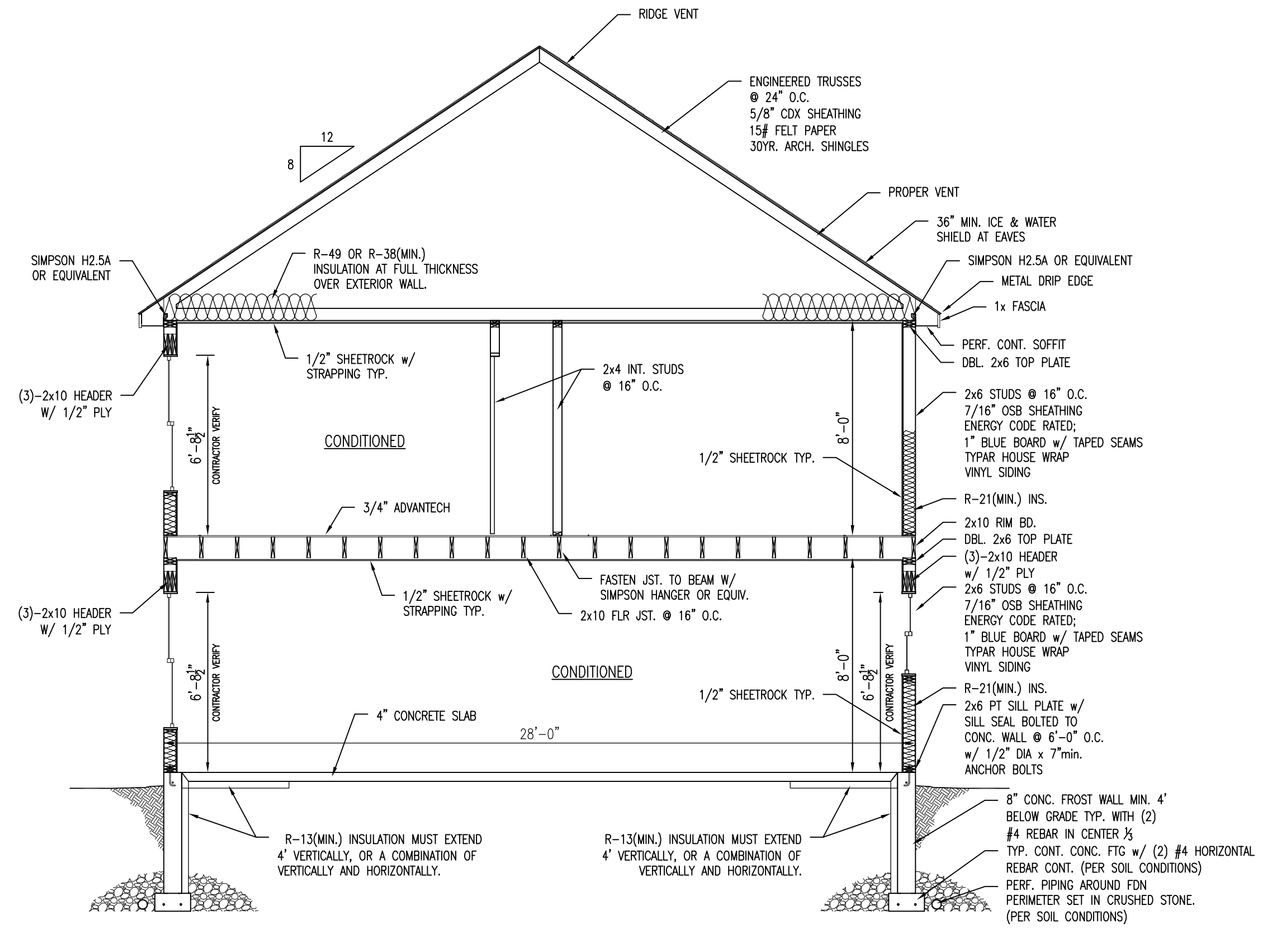


FOUNDATION PLAN
1/4" = 1'-0"

FOUNDATION/CONSTRUCTION NOTES:

1. 4" DIA. CONTINUOUS PERF. PERIMETER DRAIN WITH HOLES ORIENTED DOWN. SLOPED TO DAYLIGHT OR TO STORM SEWER OR DRYWELL.
2. RADON MITIGATION SYSTEM INSTALLED THRU CONCRETE FLR & TIED INTO PERIMETER DRAIN
3. ALL LALLY COLUMNS THIS SHEET ASSUMED TO BE TYP.
4. ALL INTERIOR FOOTINGS TO BE DESIGNED PER SOIL CONDITIONS. CONTRACTOR TO VERIFY.
5. FROST WALLS ASSUMED; 8" CONC. MIN. 4'-0" BELOW GRADE, w/ TYP. CONT. CONC. FTG.
6. OPTIONAL CRAWL FLOOR SPACE 1"MIN. CONC. SLAB, OVER 6-MIL POLY MOISTURE BARRIER, OVER 4"MIN. OF CLEAN AND ORGANIC FREE GRAVEL.
7. CONTRACTOR TO VERIFY THAT PROPER CLEARANCES, VENTILATION, AND ACCESS OPENINGS HAVE BEEN PROVIDED PER TOWN OR LOCAL CODE
8. 4"MIN CONCRETE SLAB ASSUMED OVER 6-MIL POLY MOISTURE BARRIER, OVER 4"MIN OF CLEAN AND ORGANIC FREE GRAVEL
9. DECK SUPPORTS ASSUMED TO BE 10" DIA. SONOTUBES. SOIL CONDITIONS TO DETERMINE FOOTING DESIGN. CONTRACTOR TO VERIFY.
10. FOR PLUMBING LOCATION/LAYOUT, SEE FLOOR PLANS.
11. CONTRACTOR TO VERIFY CONDITIONS IN FIELD AND STEP FND./FTGS AS REQUIRED PER GRADE. AND SOIL CONDITIONS
12. BASEMENT FINISHES PER OWNER/CONT. (TO BE DETERMINED)

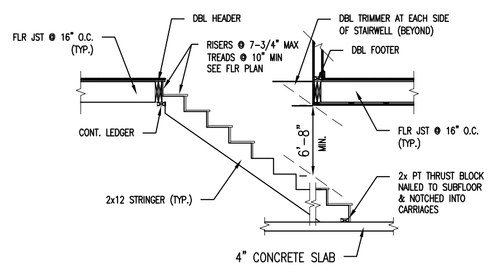
CONTRACTOR TO VERIFY GRADE IN FIELD BEFORE CONSTRUCTION OF TYPICAL FOUNDATION WALLS OR DAYLIGHT BASEMENT. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. AND LOCAL CODES.



S-1
1/4" = 1'-0"

CONSTRUCTION NOTE:

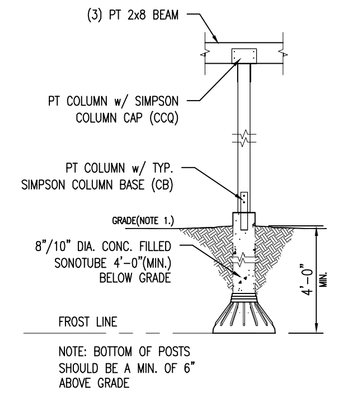
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. OR LOCAL CODES.



NOTE:

1. SUBSTITUTE RAFTER, CL JSTS & STUD WALL SIZES WITH PLAN CALL OUT

TYPICAL STAIR FRAMING
N.T.S.

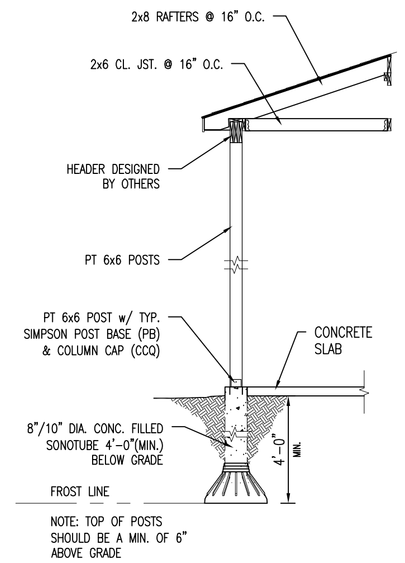


NOTE: BOTTOM OF POSTS SHOULD BE A MIN. OF 6" ABOVE GRADE

NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. SUBSTITUTE FLR JOISTS AND STUD WALL SIZES WITH PLAN CALL OUT

CONC. SNOTUBES AT DECKING
N.T.S.

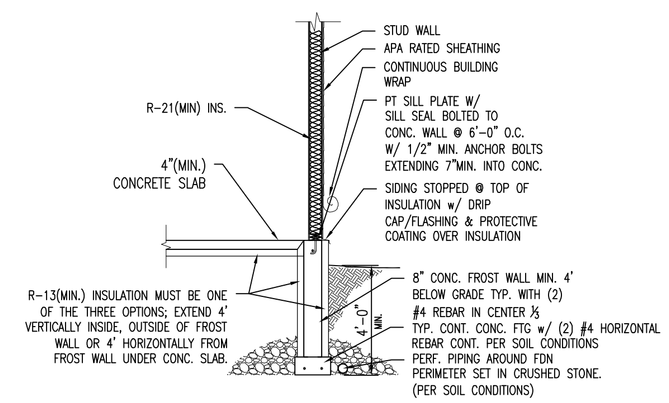


NOTE: TOP OF POSTS SHOULD BE A MIN. OF 6" ABOVE GRADE

NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. SUBSTITUTE FLR JOISTS AND STUD WALL SIZES WITH PLAN CALL OUT

CONC. SNOTUBES AT COVERED PORCH
N.T.S.



NOTE:

1. THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF 1/2" VERTICAL TO 12" HORIZONTAL FOR A MINIMUM DISTANCE OF 8'-0". THIS CONDITION SHALL EXIST AFTER SETTLEMENT OF BACKFILL HAS OCCURRED.
2. WHEN CONNECTED TO A RESIDENTIAL USE, THE GARAGE FLR SHALL BE AT LEAST 4" LOWER THAN THE ENTRANCE TO THE RESIDENCE. THE 4" SHALL BE POURED IN PLACE WITH CONCRETE

TYPICAL HEATED FROST WALL DETAIL
N.T.S.

Drafting & Design ME LLC
224 Prospect Trail #14
Minot, ME 04252
(207)-920-7484

Merrill, Duplex
Foundation & Section Plans
Lisbon, ME

DRAWINGS ARE PROVIDED FOR INFORMATIONAL/PERMITTING PURPOSES ONLY. IF USED FOR CONSTRUCTION PURPOSES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE. ALL DIMENSIONS, PLANS, SKETCHES CHT. ARE PROVIDED TO OUR CLIENTS BASED UPON INFORMATION PROVIDED BY THE CLIENT AND DRAWN IN ACCORDANCE WITH THE 2015 IRC AND/OR 2015 IBC. DRAFTING & DESIGN ME, LLC ARE NOT REGISTERED ARCHITECTS, ENGINEERS OR LAND SURVEYORS. DRAFTING & DESIGN ME, LLC ASSUMES NO RESPONSIBILITY FOR THE CONTRACTOR, ARCHITECT AND/OR CODE OFFICER BEFORE ACTUAL CONSTRUCTION BEGINS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND VERIFY ALL WORK. CONTRACTOR BEFORE ACTUAL CONSTRUCTION BEGINS. DRAFTING & DESIGN ME, LLC WILL NOT BE RESPONSIBLE FOR ANY CHANGES AND/OR REVISIONS MADE TO PLAN BY CLIENT AND/OR CONTRACTOR

Revisions:

00/00/00	-

Date : 07/18/2023
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: D070923
Sheet Number:
2 of 4

RPEx Consulting, LLC

Research. Plan. Execute.

Section 9 – Exterior Lighting

RPEx Consulting, LLC

Research. Plan. Execute.

28 June 2024

Planning Board
Town of Lisbon, Maine

Re: Duplexes at 223 Lisbon St., Exterior Lighting

Exterior lighting installed will consist of down-lights located near building entry doors and patio doors.

Sincerely,

Ryan Sylvia, PE
Principal
RPEx Consulting, LLC

RPEx Consulting, LLC

Research. Plan. Execute.

Section 10 – Vehicle Trip Generation Calculations

RPEx Consulting, LLC

Research. Plan. Execute.

28 June 2024

Planning Board
Town of Lisbon, Maine

Re: Duplexes at 223 Lisbon St., Trip Generation

Please be advised that the proposed development of the Duplexes at 223 Lisbon Street is estimated to generate 80 trips per day. This has been calculated with guidance from Table 1 off 2003 Trip Generation Manual published by the City of San Diego, CA. A summary of the calculation is provided for here for your review.

Land Use:	Residential – Multiple Dwelling Units – Under 20 DU/Acre.
Vehicle Trip Rate:	8 Trips / DU / Day
# Dwellings:	10

10 DU x 8 trips/DU = **80 Trips / Day**

Sincerely,



Ryan Sylvia, PE
Principal
RPEx Consulting, LLC

RPEx Consulting, LLC

Research. Plan. Execute.

Section 11 – Stormwater Management

RPEx Consulting, LLC

Research. Plan. Execute.

Stormwater Management Report

Duplexes at 223 Lisbon Street

Date: 6/28/24

Project Description

Gervais Homes, LLC proposed to construct 5 duplex residential buildings for a total of 10 market-rate dwellings on the existing land at Map U-19, Lots 119a & 120. The land is currently vacant and is within a Wellhead District and the Village District.

Project Schedule

Construction is planned to begin in the Fall of 2024 and continue through Summer of 2025. It is anticipated that rough grading and foundation excavations will take place in the Fall with the site being stabilized for cold weather. Building construction will take place through the Winter. Finish sitework and lawn seeding will commence in Late Spring. Lawn areas are planned to be stabilized by Winter 2025.

Current Land Cover, Grading, Drainage Patterns

The majority of the surface of the site is covered with a layer of base gravel, likely installed after a previous building was demolished. The soils of the site are approximately 75% Hartland (HfB) and 25% Swanton. Hartland soils consist largely of very fine loamy sands and some silts as depth increases. Swanton consists mostly of fine loamy sands with some clay and silts at deeper elevations. Hartland is a Type B soil capable of moderate infiltration. Swanton is a Type D soil with very limited infiltration potential. The Swanton soils exist on the westerly side of the site where significant water ponding is observed.

The site's topography slopes slightly toward the roadway. Small areas of the site are covered in a sparse grass. The westerly edge of the lot has some trees along the property line. The site abuts multi-family properties on its north and south property lines, while it abuts a trailer home park on its westerly property line. An area estimated at about 4.6 acres drains west to east toward the project site. That area is mixed residential consisting of single family homes, multi-family homes, trailer homes, lawns, and pavement. The runoff from this area is retained in a large swale along the westerly property line and extending into neighboring properties.

Proposed Land Cover, Grading & Drainage Alterations

The proposed site will consist of 5 duplex residential buildings with bituminous parking, open lawn areas, and some landscaping. The site has been graded to control the flow of runoff to

RPEx Consulting, LLC
Research. Plan. Execute.

the public stormwater system. To the greatest extent, runoff has been routed through grassy swales and channels to provide a level of treatment prior to entering the storm system.

The swale that previously ran along the westerly property line will be cleaned, de-brushed, and reshaped to provide for a grassy channel and stormwater storage. From the grassy channel, stormwater from off-site runoff and most of the site will be routed through private stormwater structures (CB-1, MH-1, MH-2) to existing catch basin #1759 owned by the Town of Lisbon. A small portion at the front of the lot will continue to drain to existing catch basins owned by the Town of Lisbon via sheet flow and shallow-concentrated flow at the curb gutter.

In addition to management of stormwater runoff produced by the site, a primary objective of this project was to abate the standing water that accumulates along the property line. About 4.6 acres of land outside the boundaries of the site contributes to this accumulation of water. The flow of this runoff to the Town's stormwater infrastructure will be attenuated using a broad-crested weir to retain the storm flow within the grassy channel. The weir will be bypassed by a 4" drain pipe allowing the channel to drain dry. The peak rate of flow at the entrance to the Town's stormwater system is estimated at 0.34 CFS in a 25 year storm.

Applicable Standards, Ordinances & Regulations

Best management practices for stormwater management and erosion control published by Maine DEP have been used in the design of this project. However, this project does not require permitting with DEP due to the development area being less than 1 acre.

Methodology & Modeling

HydroCAD Stormwater Modeling (Version 10.20-5a) has been used to model pre-development and post-development stormwater routing. Both models include analysis of 2, 10, and 25 year rainfall events.

Attachments:

NRCS Soil Survey Map, 6/7/2024
Stormwater Modeling & Calculations
Inspection & Maintenance Plan

Report Prepared By:

Ryan Sylvia, PE
Principal
RPEx Consulting, LLC



Soil Map—Androscoggin and Sagadahoc Counties, Maine
(223 Lisbon Street)



Map Scale: 1:696 if printed on A portrait (8.5" x 11") sheet.

N

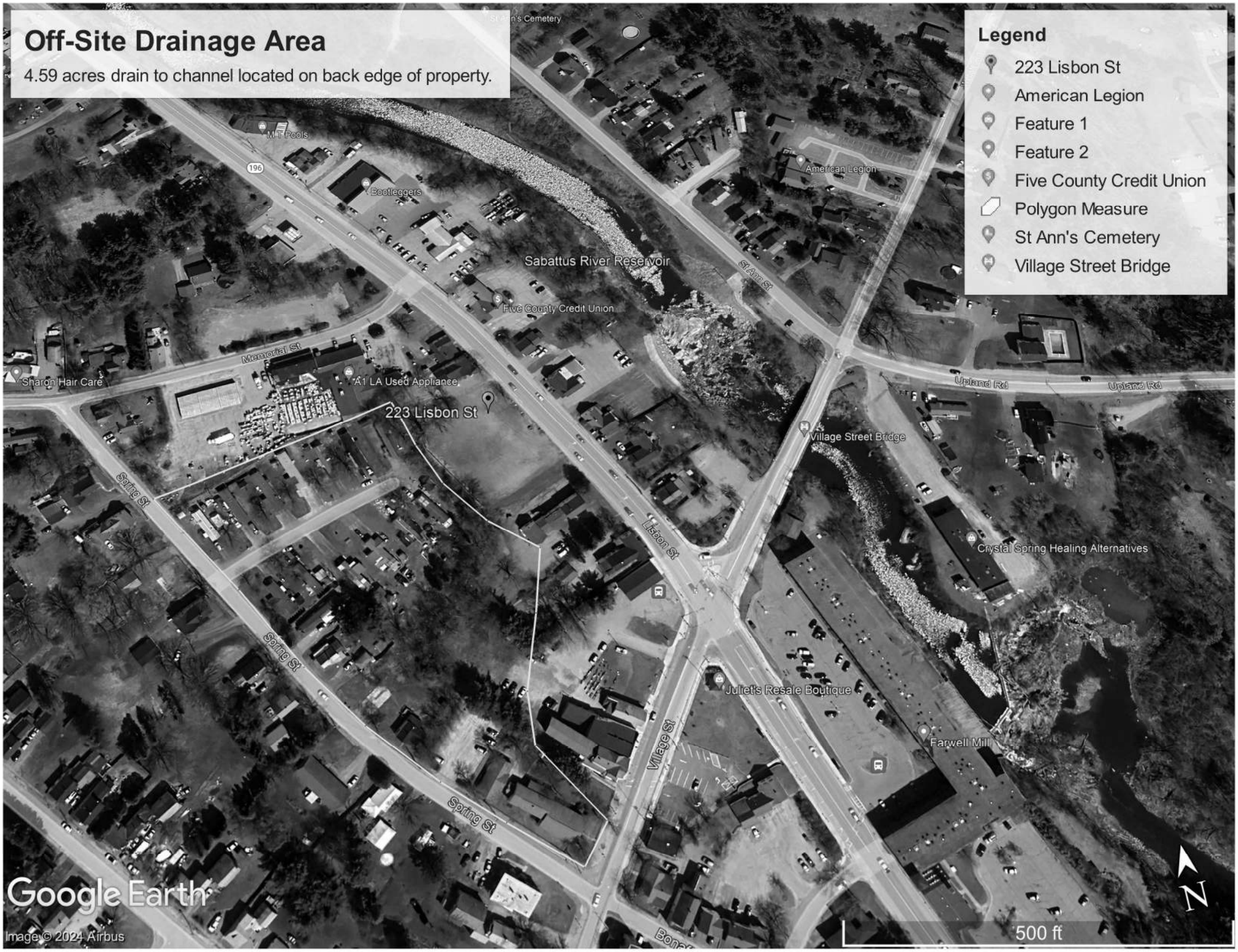
Meters: 0 10 20 40 60

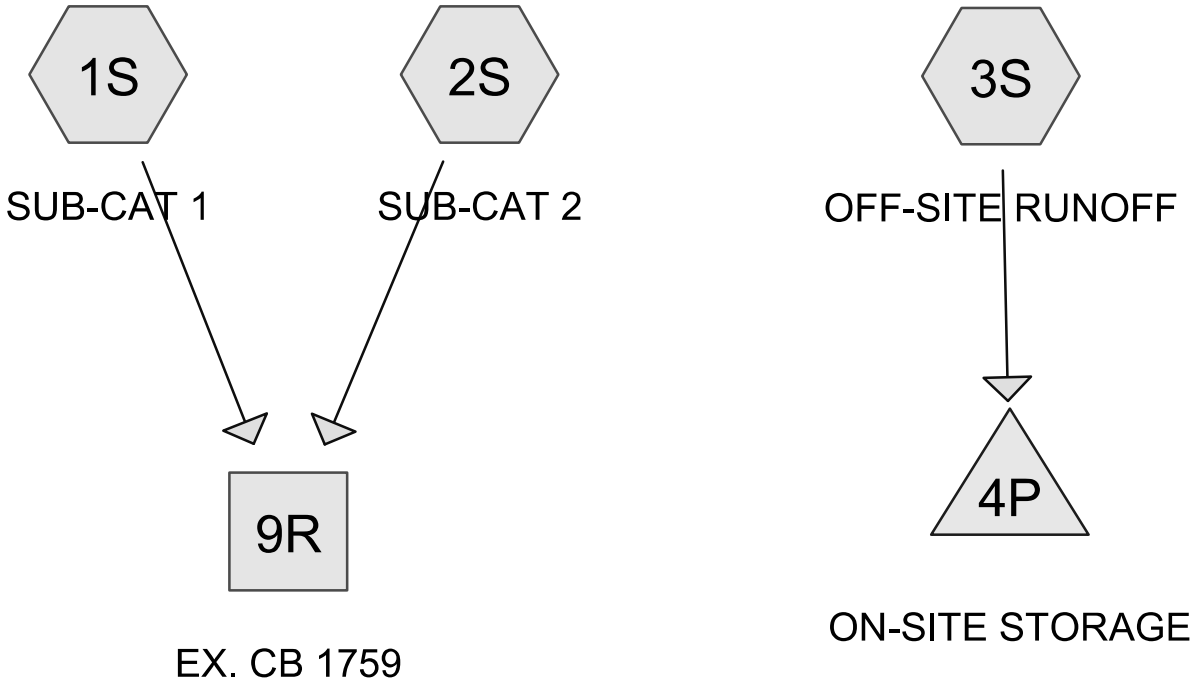
Feet: 0 30 60 120 180

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HfB	Hartland very fine sandy loam, 2 to 8 percent slopes	0.9	75.6%
SzA	Swanton fine sandy loam, 0 to 3 percent slopes	0.3	24.4%
Totals for Area of Interest		**1.2**	**100.0%**


Off-Site Drainage Area
4.59 acres drain to channel located on back edge of property.
Legend
223 Lisbon St
American Legion
Feature 1
Feature 2
Five County Credit Union
Polygon Measure
St Ann's Cemetery
Village Street Bridge
St Ann's Cemetery
M-T Pools
196
Bootleggers
American Legion
Sabattus River Reservoir
St Ann St
Five County Credit Union
Memorial St
Sharon Hair Care
A1 LA Used Appliance
223 Lisbon St
Upland Rd
Upland Rd
Village Street Bridge
Spring St
Lisbon St
Crystal Spring Healing Alternatives
Spring St
Juliet's Resale Boutique
Village St
Farwell Mill
Spring St
Google Earth
Image © 2024 Airbus
N
500 ft



Subcat Reach Pond Link

Routing Diagram for 223 Lisbon - Pre-Development
Prepared by RPEX Consulting, LLC, Printed 6/28/2024
HydroCAD® 10.20-5a s/n 13452 © 2023 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "223 Lisbon - Post-Development.hcp"
Rainfall events imported from "223 Lisbon - Post-Development.hcp"
Rainfall events imported from "223 Lisbon - Post-Development.hcp"
Rainfall events imported from "223 Lisbon - Post-Development.hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.06	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	4.59	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	5.55	2

Summary for Subcatchment 1S: SUB-CAT 1

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 0.008 af, Depth= 1.71"
Routed to Reach 9R : EX. CB 1759

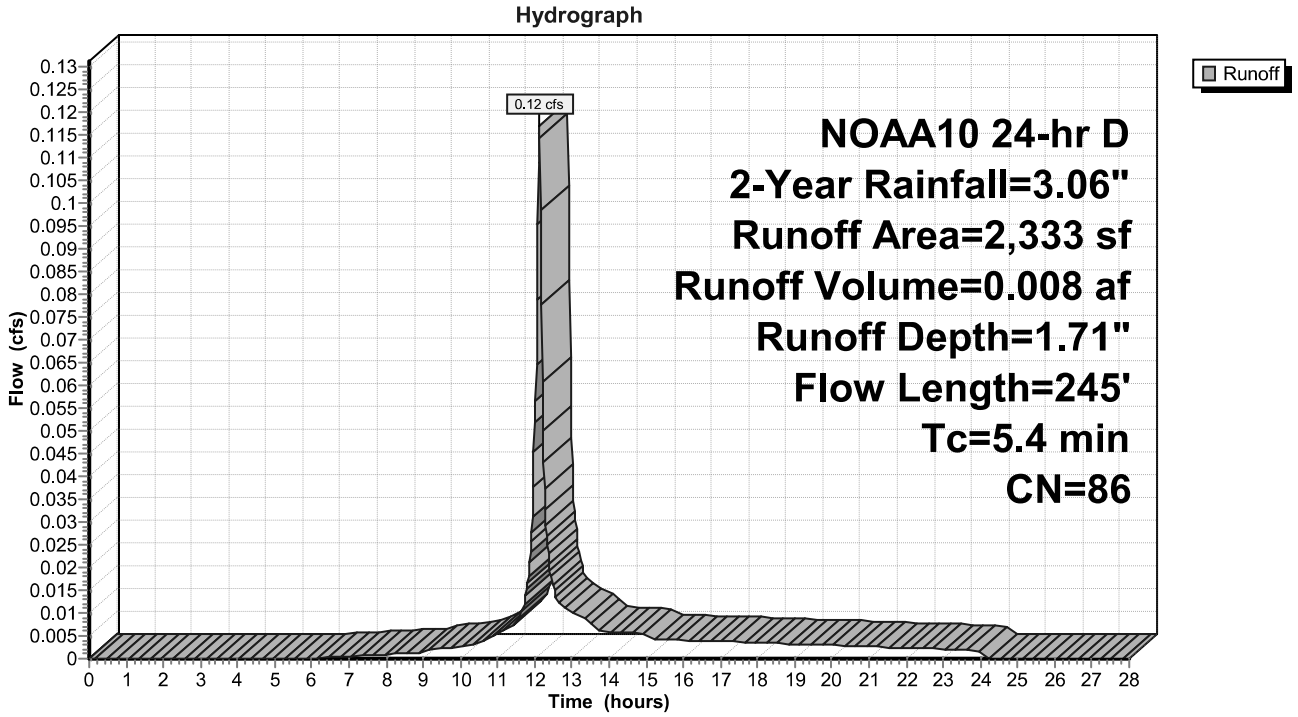
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

Area (sf)	CN	Description
2,194	86	1/3 acre lots, 30% imp, HSG D
139	79	<50% Grass cover, Poor, HSG B
2,333	86	Weighted Average
1,675		71.79% Pervious Area
658		28.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	192	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.4	245	Total			



Subcatchment 1S: SUB-CAT 1



Summary for Subcatchment 2S: SUB-CAT 2

Runoff = 1.90 cfs @ 12.12 hrs, Volume= 0.133 af, Depth= 2.51"
Routed to Reach 9R : EX. CB 1759

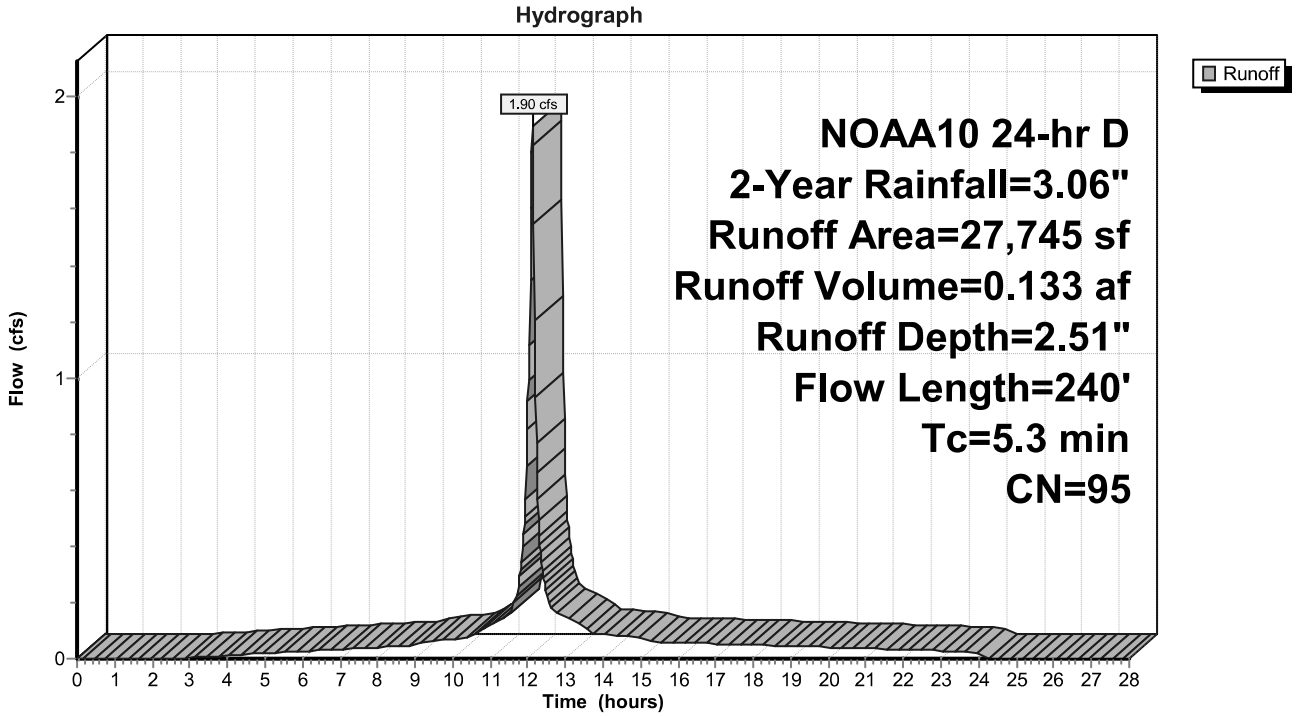
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

	Area (sf)	CN	Description
	24,760	96	Gravel surface, HSG B
*	1,571	84	GRASS
	908	79	<50% Grass cover, Poor, HSG B
	506	89	<50% Grass cover, Poor, HSG D
	27,745	95	Weighted Average
	27,745		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	187	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.3	240	Total			



Subcatchment 2S: SUB-CAT 2



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 2.79 cfs @ 12.28 hrs, Volume= 0.324 af, Depth= 0.84"
Routed to Pond 4P : ON-SITE STORAGE

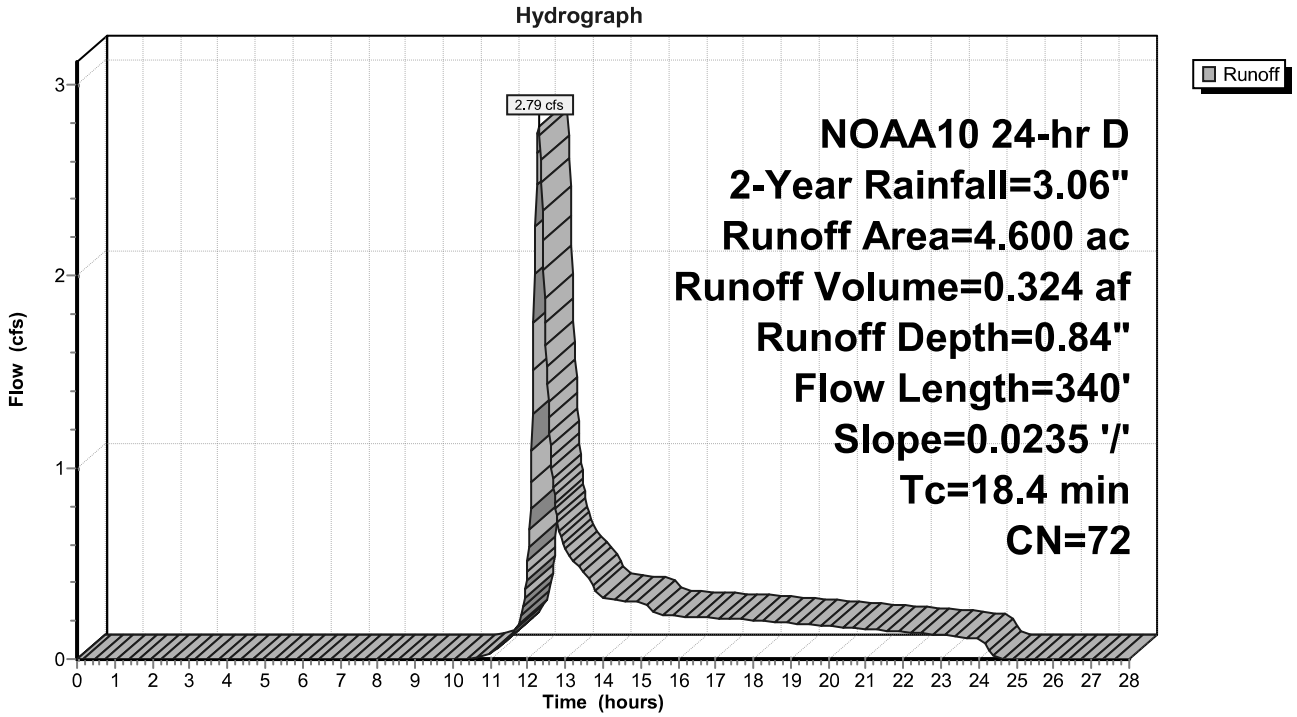
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, RUNOFF** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, SWALE** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF



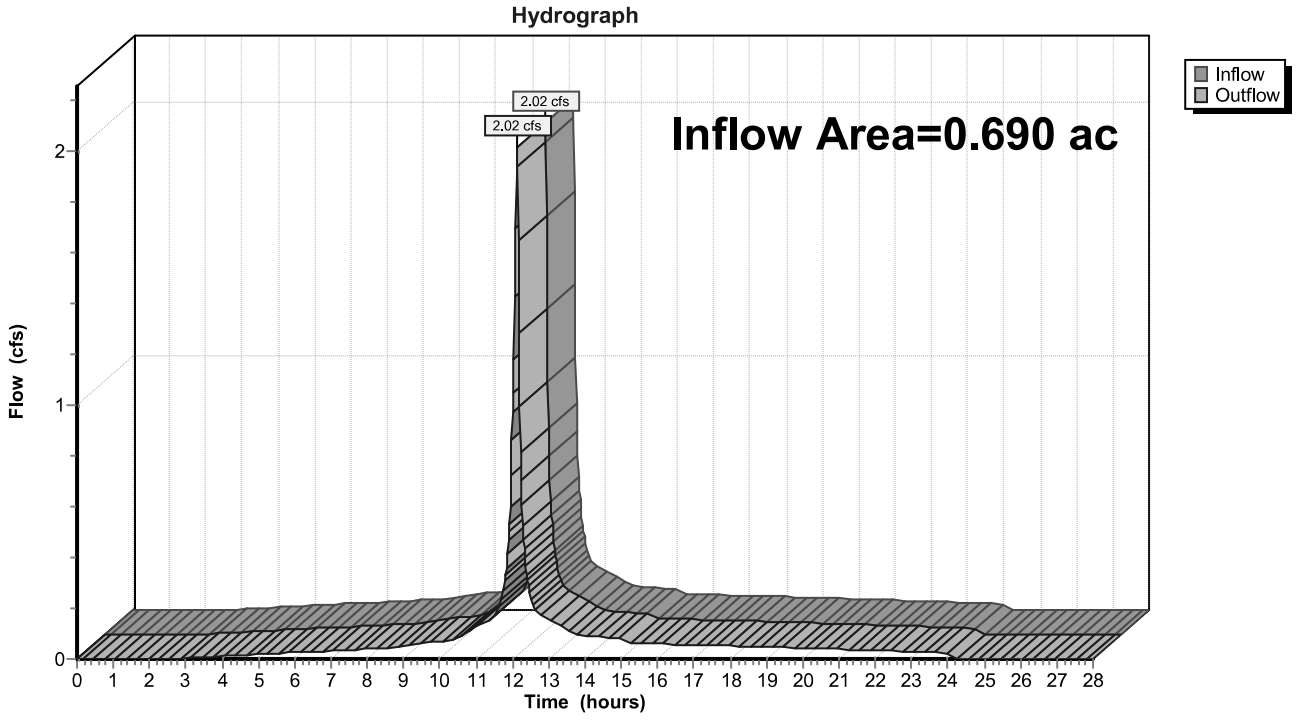
Summary for Reach 9R: EX. CB 1759

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

Inflow Area = 0.690 ac, 2.19% Impervious, Inflow Depth = 2.45" for 2-Year event
Inflow = 2.02 cfs @ 12.12 hrs, Volume= 0.141 af
Outflow = 2.02 cfs @ 12.12 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 9R: EX. CB 1759



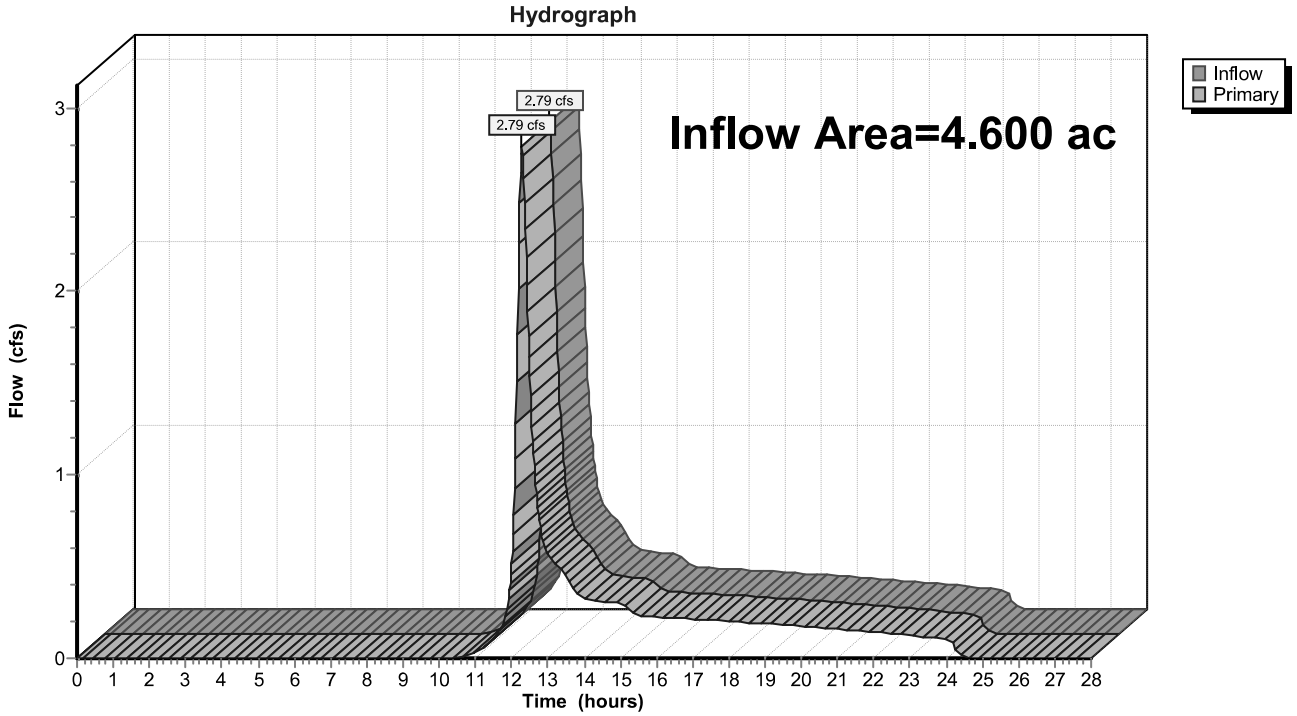
Summary for Pond 4P: ON-SITE STORAGE

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

Inflow Area = 4.600 ac, 30.00% Impervious, Inflow Depth = 0.84" for 2-Year event
Inflow = 2.79 cfs @ 12.28 hrs, Volume= 0.324 af
Primary = 2.79 cfs @ 12.28 hrs, Volume= 0.324 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Pond 4P: ON-SITE STORAGE



Summary for Subcatchment 1S: SUB-CAT 1

Runoff = 0.21 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 3.09"
Routed to Reach 9R : EX. CB 1759

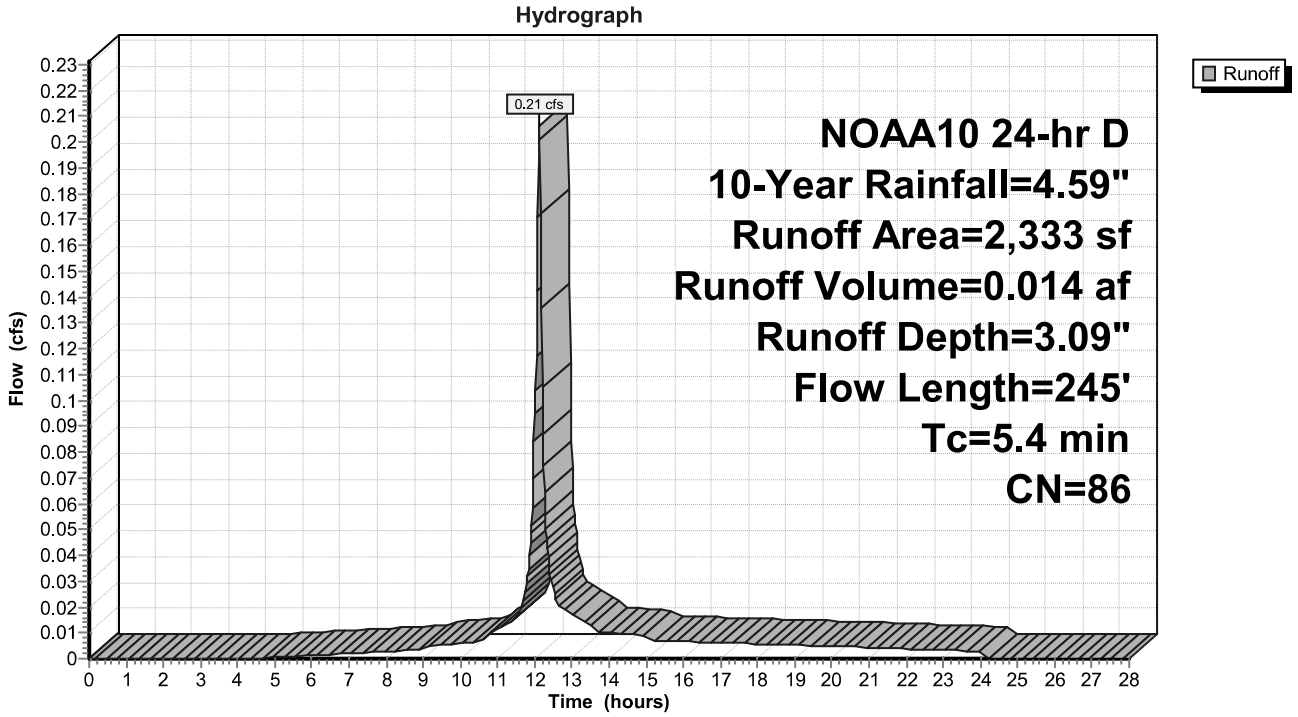
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

Area (sf)	CN	Description
2,194	86	1/3 acre lots, 30% imp, HSG D
139	79	<50% Grass cover, Poor, HSG B
2,333	86	Weighted Average
1,675		71.79% Pervious Area
658		28.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	192	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.4	245	Total			



Subcatchment 1S: SUB-CAT 1



Summary for Subcatchment 2S: SUB-CAT 2

Runoff = 2.95 cfs @ 12.12 hrs, Volume= 0.213 af, Depth= 4.01"
Routed to Reach 9R : EX. CB 1759

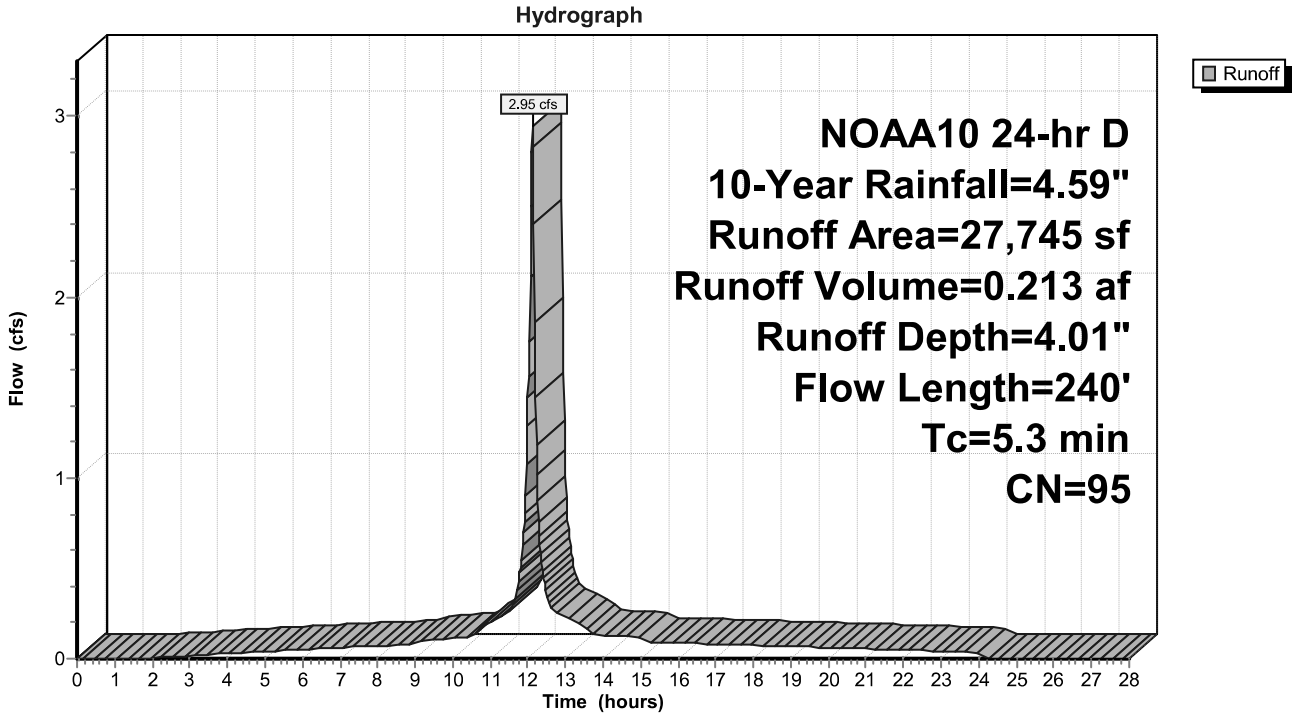
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

	Area (sf)	CN	Description
	24,760	96	Gravel surface, HSG B
*	1,571	84	GRASS
	908	79	<50% Grass cover, Poor, HSG B
	506	89	<50% Grass cover, Poor, HSG D
	27,745	95	Weighted Average
	27,745		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	187	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.3	240	Total			



Subcatchment 2S: SUB-CAT 2



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 6.71 cfs @ 12.28 hrs, Volume= 0.723 af, Depth= 1.89"
Routed to Pond 4P : ON-SITE STORAGE

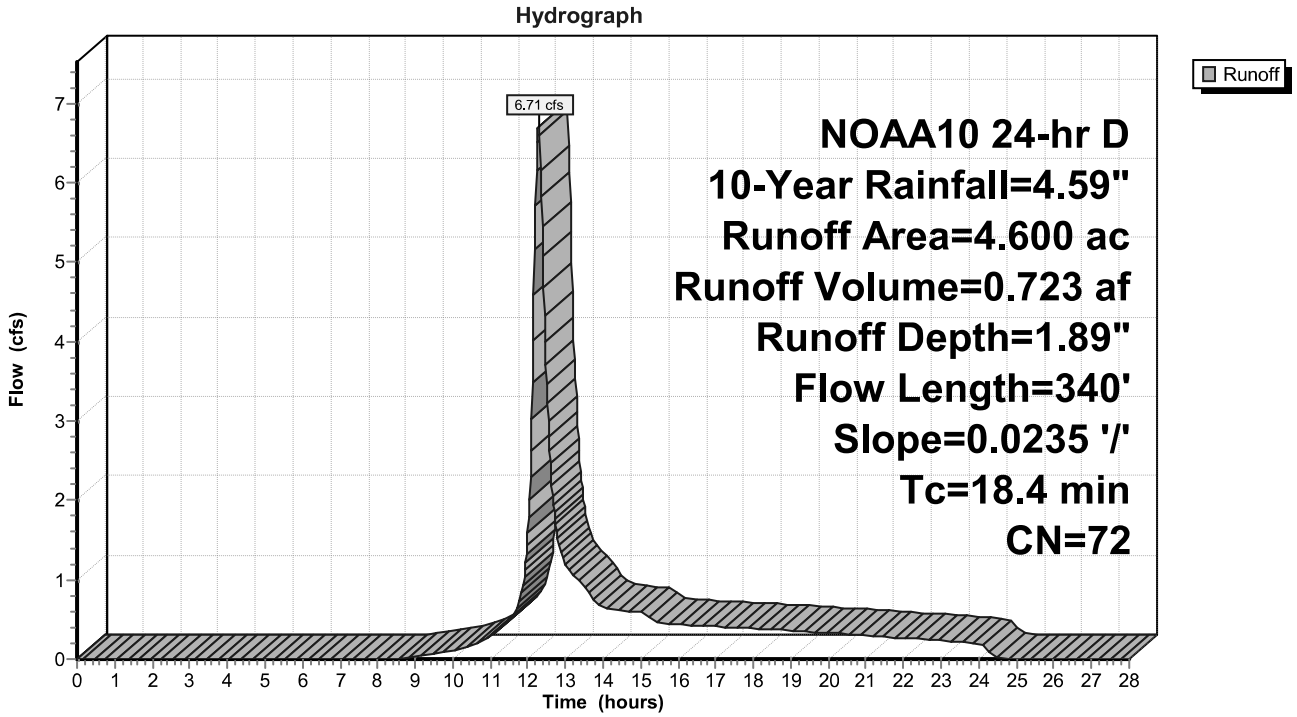
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, RUNOFF** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, SWALE** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF



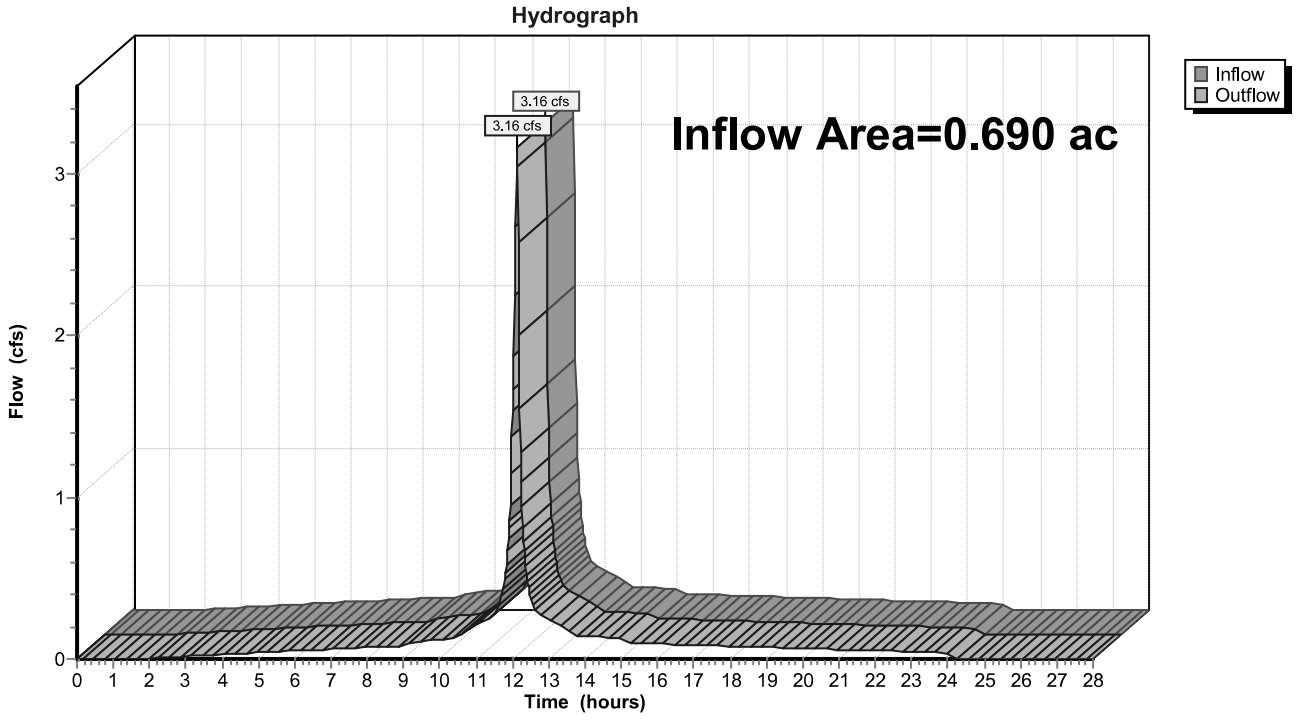
Summary for Reach 9R: EX. CB 1759

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

Inflow Area = 0.690 ac, 2.19% Impervious, Inflow Depth = 3.94" for 10-Year event
Inflow = 3.16 cfs @ 12.12 hrs, Volume= 0.227 af
Outflow = 3.16 cfs @ 12.12 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 9R: EX. CB 1759



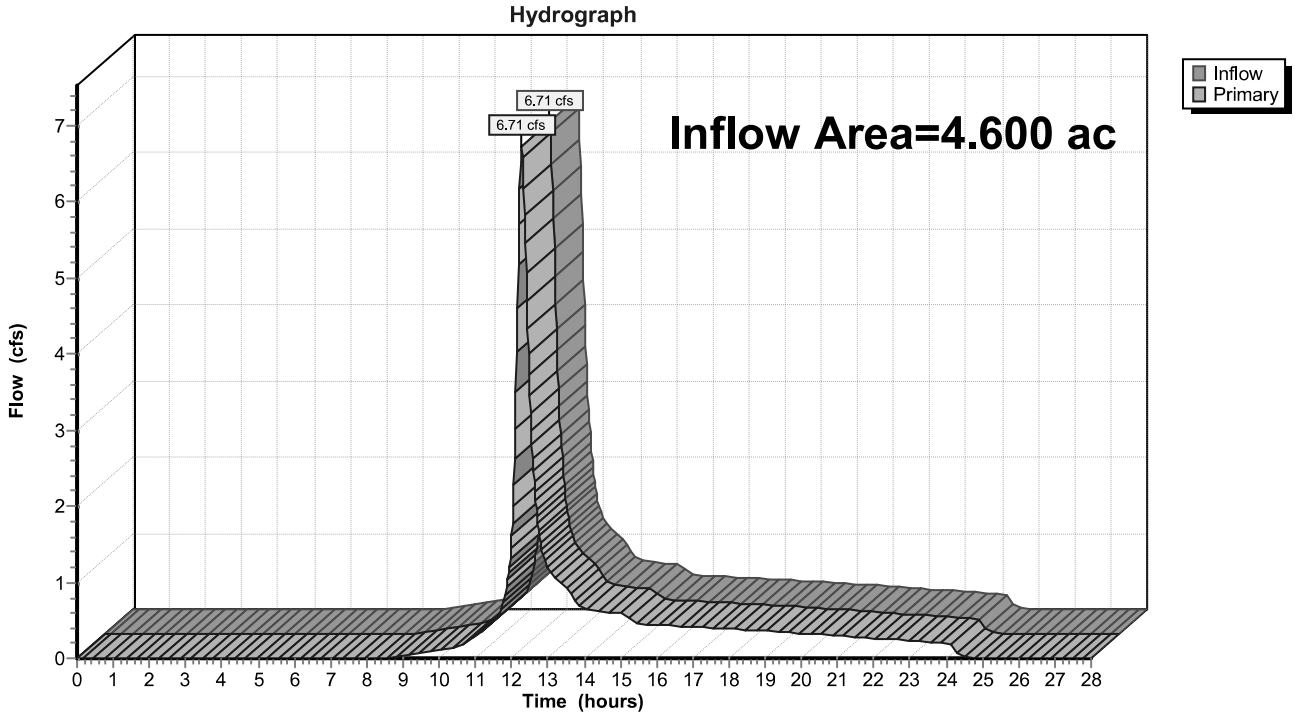
Summary for Pond 4P: ON-SITE STORAGE

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

Inflow Area = 4.600 ac, 30.00% Impervious, Inflow Depth = 1.89" for 10-Year event
Inflow = 6.71 cfs @ 12.28 hrs, Volume= 0.723 af
Primary = 6.71 cfs @ 12.28 hrs, Volume= 0.723 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Pond 4P: ON-SITE STORAGE



Summary for Subcatchment 1S: SUB-CAT 1

Runoff = 0.26 cfs @ 12.12 hrs, Volume= 0.018 af, Depth= 3.98"
Routed to Reach 9R : EX. CB 1759

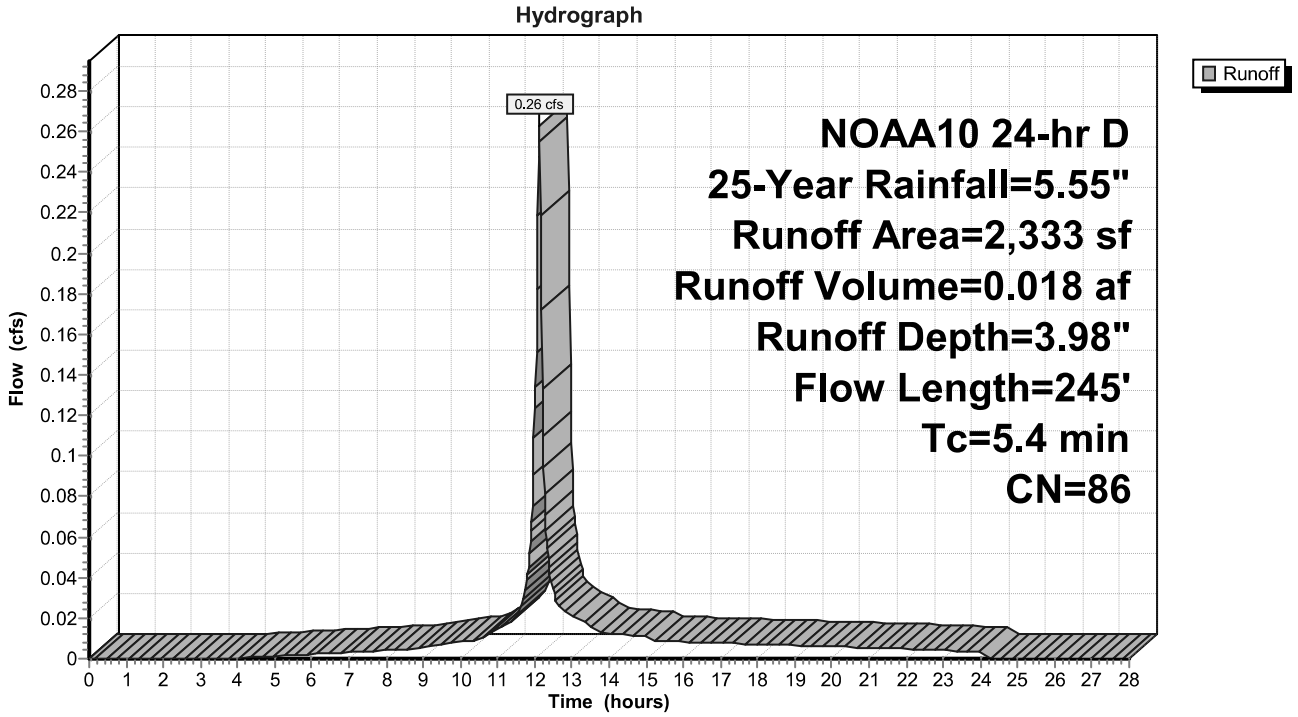
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

Area (sf)	CN	Description
2,194	86	1/3 acre lots, 30% imp, HSG D
139	79	<50% Grass cover, Poor, HSG B
2,333	86	Weighted Average
1,675		71.79% Pervious Area
658		28.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	192	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.4	245	Total			



Subcatchment 1S: SUB-CAT 1



Summary for Subcatchment 2S: SUB-CAT 2

Runoff = 3.60 cfs @ 12.12 hrs, Volume= 0.264 af, Depth= 4.96"
Routed to Reach 9R : EX. CB 1759

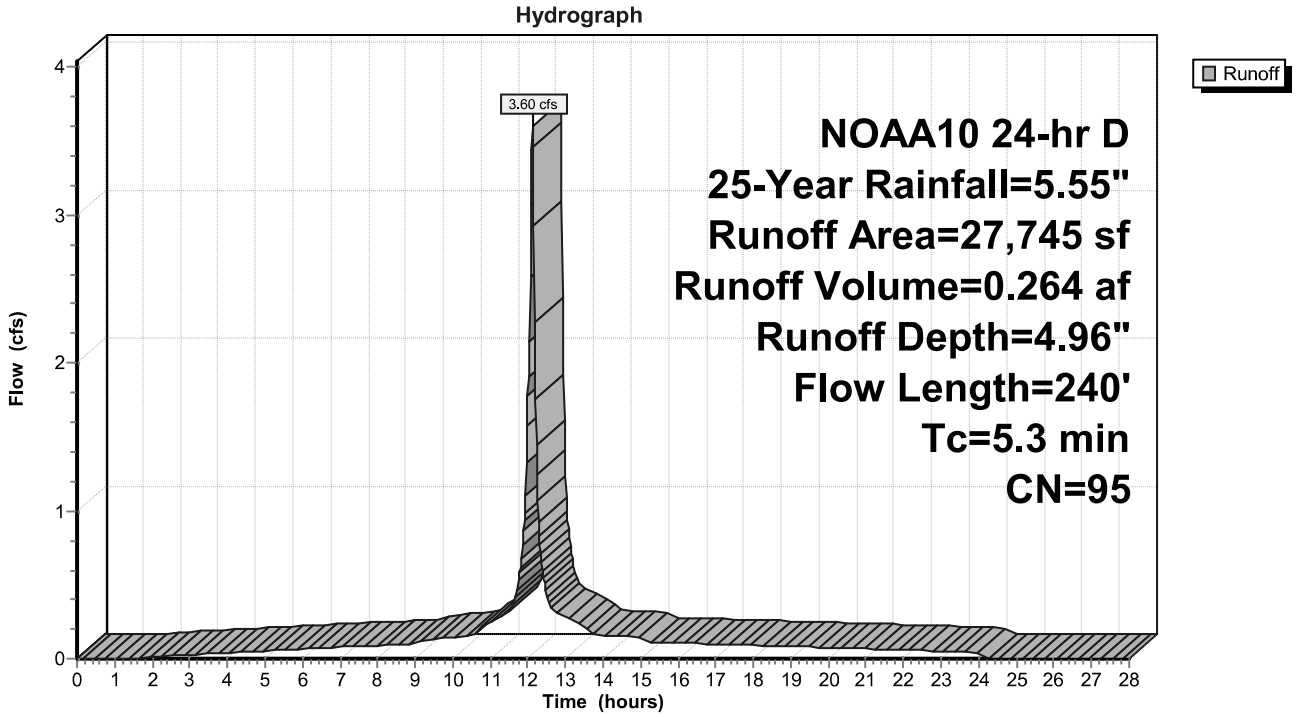
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

	Area (sf)	CN	Description
	24,760	96	Gravel surface, HSG B
*	1,571	84	GRASS
	908	79	<50% Grass cover, Poor, HSG B
	506	89	<50% Grass cover, Poor, HSG D
	27,745	95	Weighted Average
	27,745		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	187	0.0050	0.80		**Sheet Flow, RUNOFF** Smooth surfaces n= 0.011 P2= 2.54"
1.4	53	0.0010	0.64		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
5.3	240	Total			



Subcatchment 2S: SUB-CAT 2



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 9.47 cfs @ 12.27 hrs, Volume= 1.008 af, Depth= 2.63"
Routed to Pond 4P : ON-SITE STORAGE

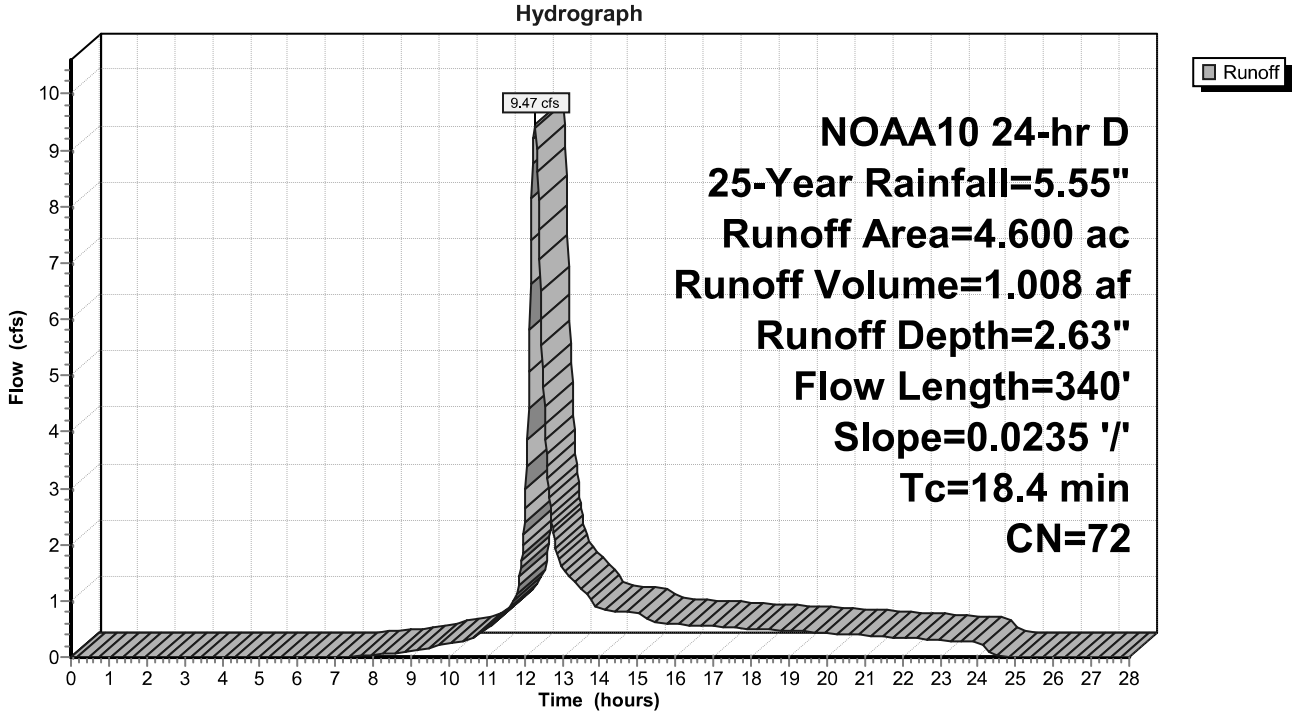
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, RUNOFF** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, SWALE** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF



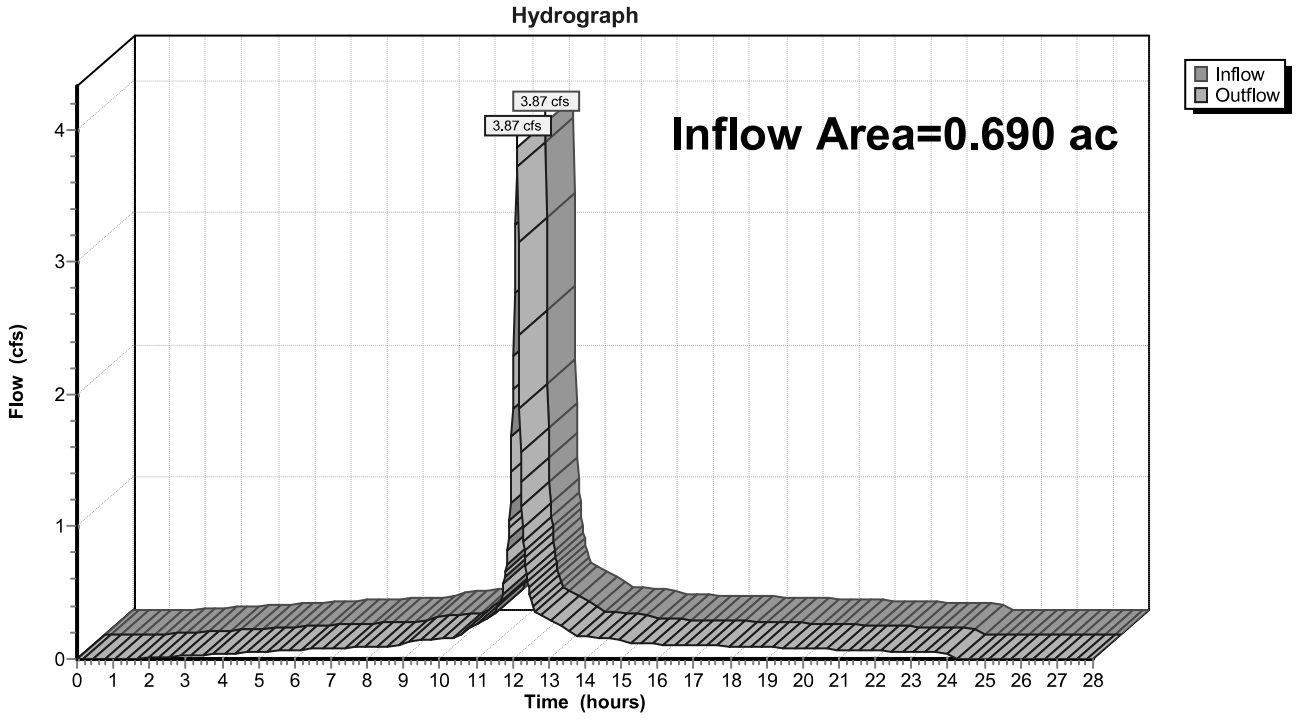
Summary for Reach 9R: EX. CB 1759

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

Inflow Area = 0.690 ac, 2.19% Impervious, Inflow Depth = 4.89" for 25-Year event
Inflow = 3.87 cfs @ 12.12 hrs, Volume= 0.281 af
Outflow = 3.87 cfs @ 12.12 hrs, Volume= 0.281 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Reach 9R: EX. CB 1759



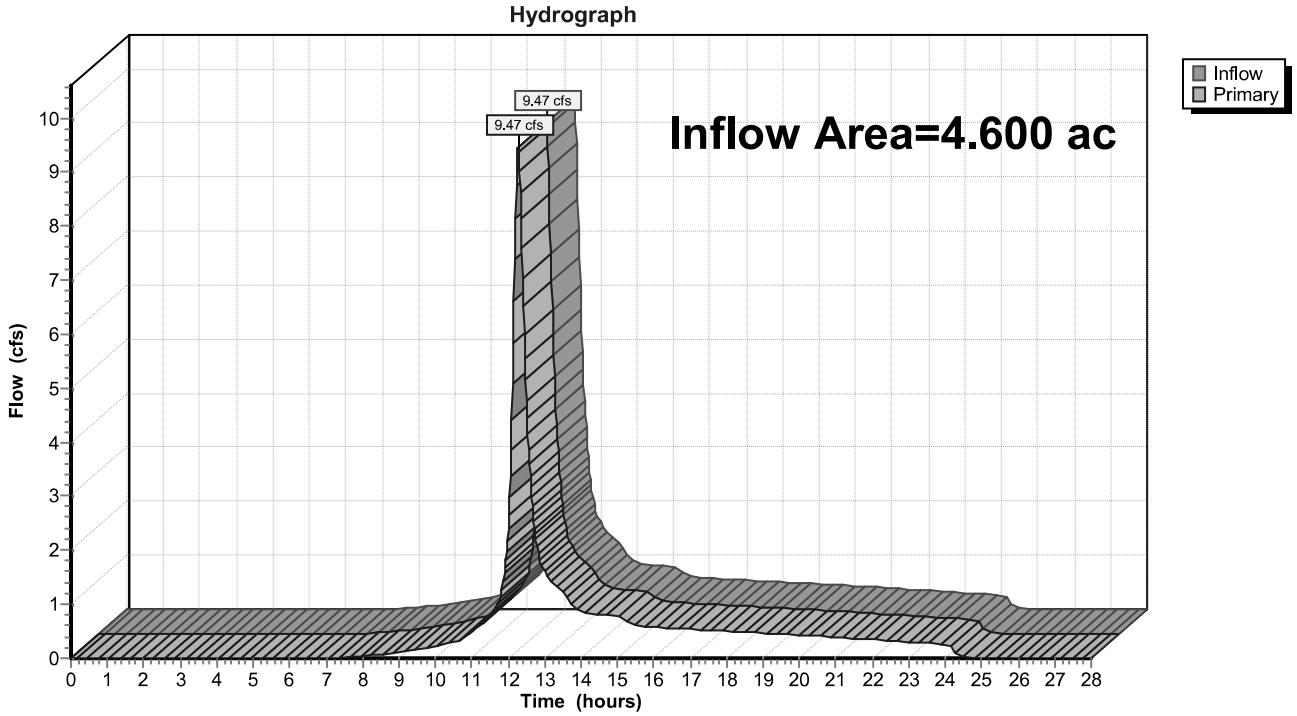
Summary for Pond 4P: ON-SITE STORAGE

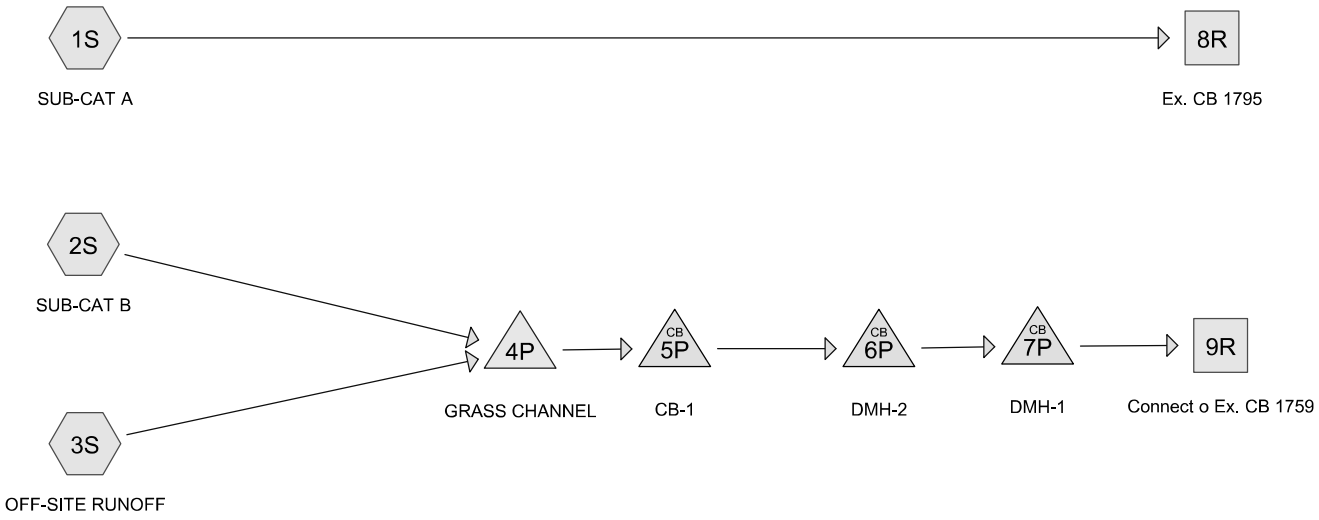
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.600 ac, 30.00% Impervious, Inflow Depth = 2.63" for 25-Year event
Inflow = 9.47 cfs @ 12.27 hrs, Volume= 1.008 af
Primary = 9.47 cfs @ 12.27 hrs, Volume= 1.008 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-28.00 hrs, dt= 0.02 hrs

Pond 4P: ON-SITE STORAGE





Subcat Reach Pond Link

Routing Diagram for 223 Lisbon - Post-Development
Prepared by RPEX Consulting, LLC, Printed 6/28/2024
HydroCAD® 10.20-5a s/n 13452 © 2023 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS2-Rain.txt" for 1360 ME Androscoggin
Rainfall events imported from "NRCS2-Rain.txt" for 1360 ME Androscoggin
Rainfall events imported from "NRCS2-Rain.txt" for 1360 ME Androscoggin

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.06	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	4.59	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	5.55	2

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	4P	182.00	181.80	5.0	0.0400	0.010	0.0	4.0	0.0	
2	5P	178.55	178.35	79.0	0.0025	0.010	0.0	12.0	0.0	
3	6P	178.35	178.19	65.0	0.0025	0.010	0.0	12.0	0.0	
4	7P	178.14	177.94	81.0	0.0025	0.010	0.0	12.0	0.0	

Summary for Subcatchment 1S: SUB-CAT A

Runoff = 0.25 cfs @ 12.12 hrs, Volume= 0.016 af, Depth= 1.36"
Routed to Reach 8R : Ex. CB 1795

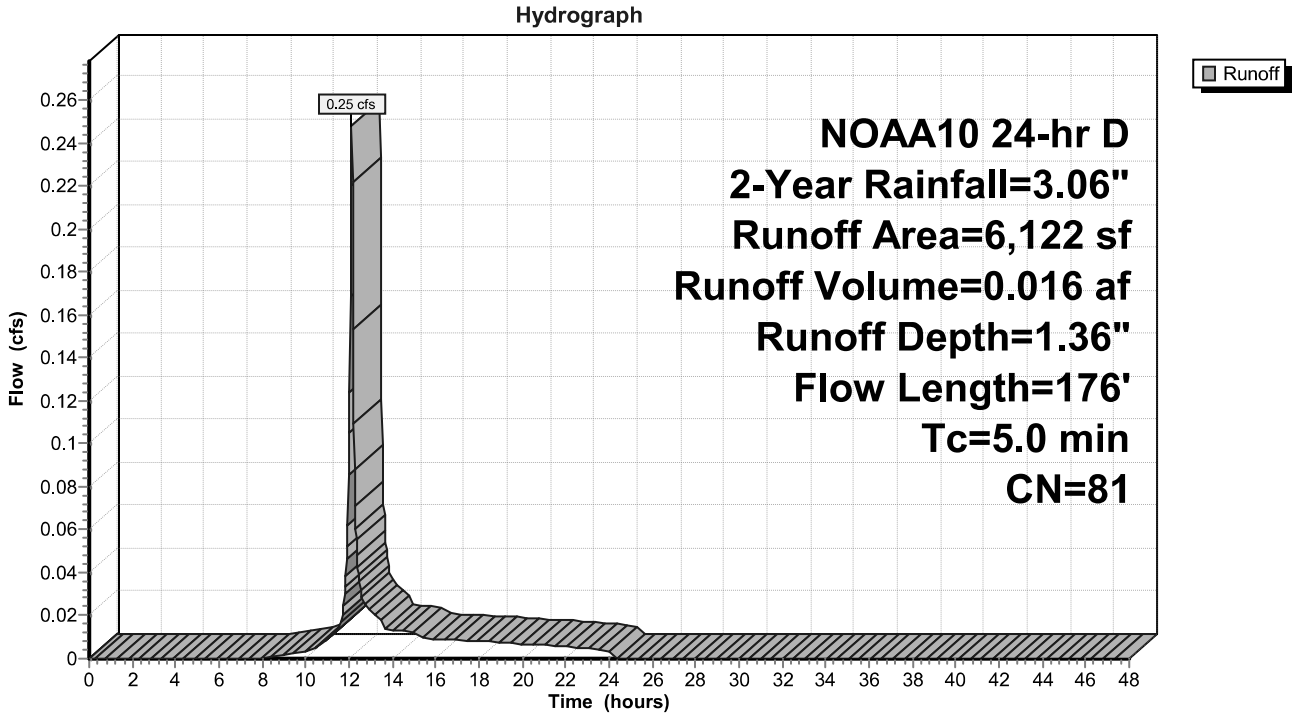
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

Area (sf)	CN	Description
1,500	98	Unconnected roofs, HSG B
1,827	98	Paved parking, HSG B
2,795	61	>75% Grass cover, Good, HSG B
6,122	81	Weighted Average
2,795		45.66% Pervious Area
3,327		54.34% Impervious Area
1,500		45.09% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	15	0.1330	0.22		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.54"
0.1	6	0.0200	0.70		**Sheet Flow, Sidewalk** Smooth surfaces n= 0.011 P2= 2.54"
3.3	155	0.0015	0.79		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
4.5	176	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 1S: SUB-CAT A



Summary for Subcatchment 2S: SUB-CAT B

Runoff = 1.17 cfs @ 12.12 hrs, Volume= 0.075 af, Depth= 1.64"
Routed to Pond 4P : GRASS CHANNEL

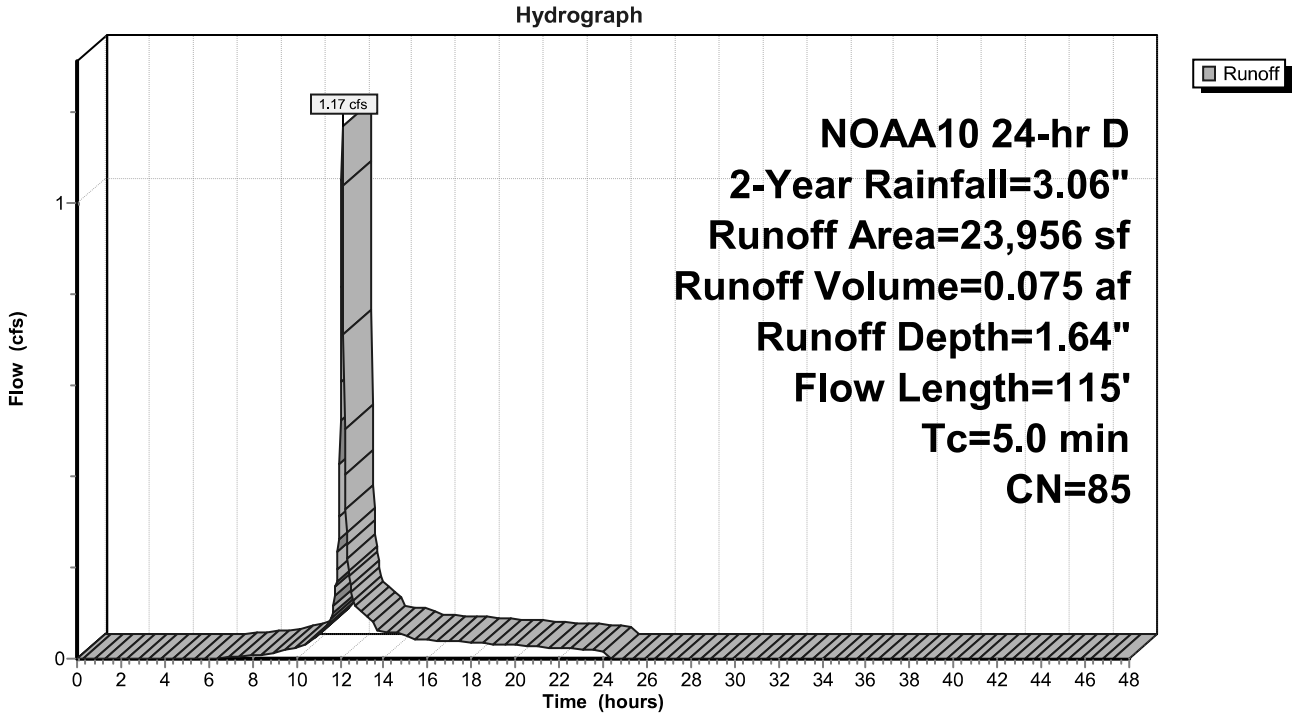
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

	Area (sf)	CN	Description
*	4,956	98	Shingle Roof
*	6,433	98	Bituminous & Asphalt Paving
	12,567	74	>75% Grass cover, Good, HSG C
	23,956	85	Weighted Average
	12,567		52.46% Pervious Area
	11,389		47.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	17	0.6670	3.50		**Sheet Flow, Roof - Bldg A** Smooth surfaces n= 0.011 P2= 2.54"
1.2	10	0.0500	0.14		**Sheet Flow, Lawn** Grass: Short n= 0.150 P2= 2.54"
0.6	88	0.0284	2.53		**Shallow Concentrated Flow, Swale** Grassed Waterway Kv= 15.0 fps
1.9	115	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 2S: SUB-CAT B



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 2.78 cfs @ 12.28 hrs, Volume= 0.324 af, Depth= 0.84"
Routed to Pond 4P : GRASS CHANNEL

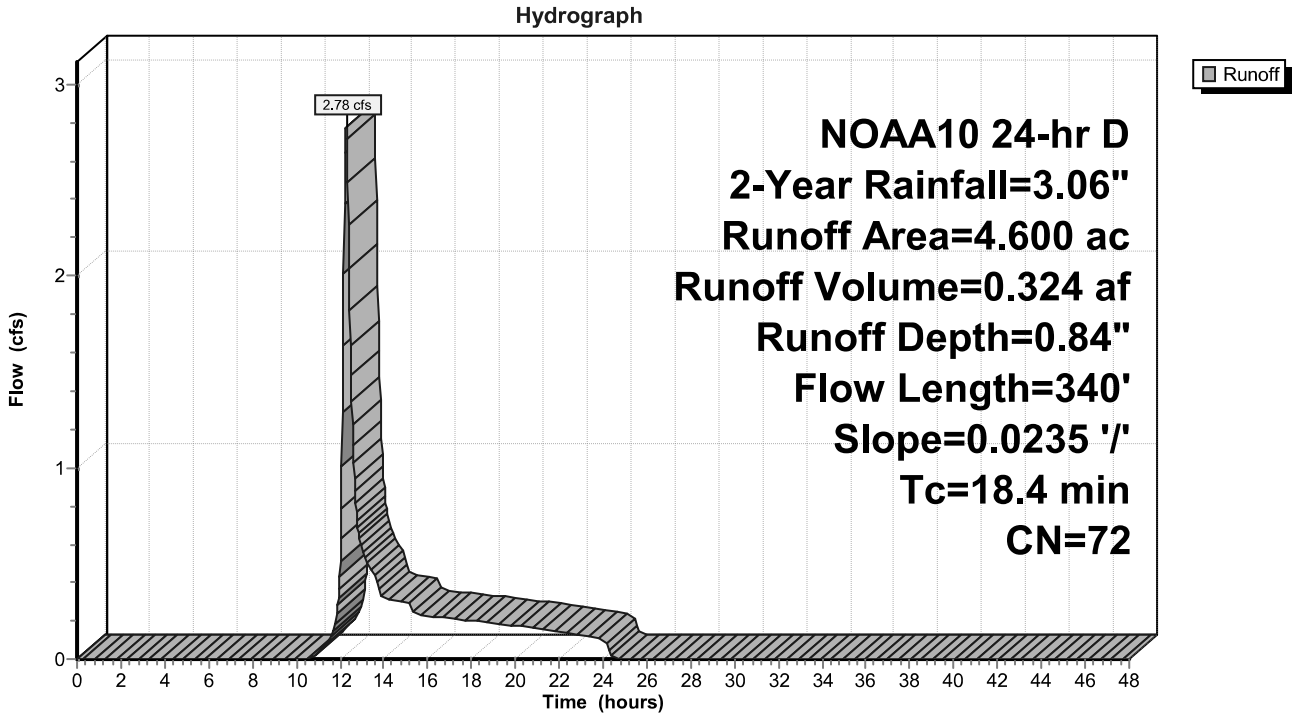
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 2-Year Rainfall=3.06"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, Lawn - Mobile Park** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, Swale** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF



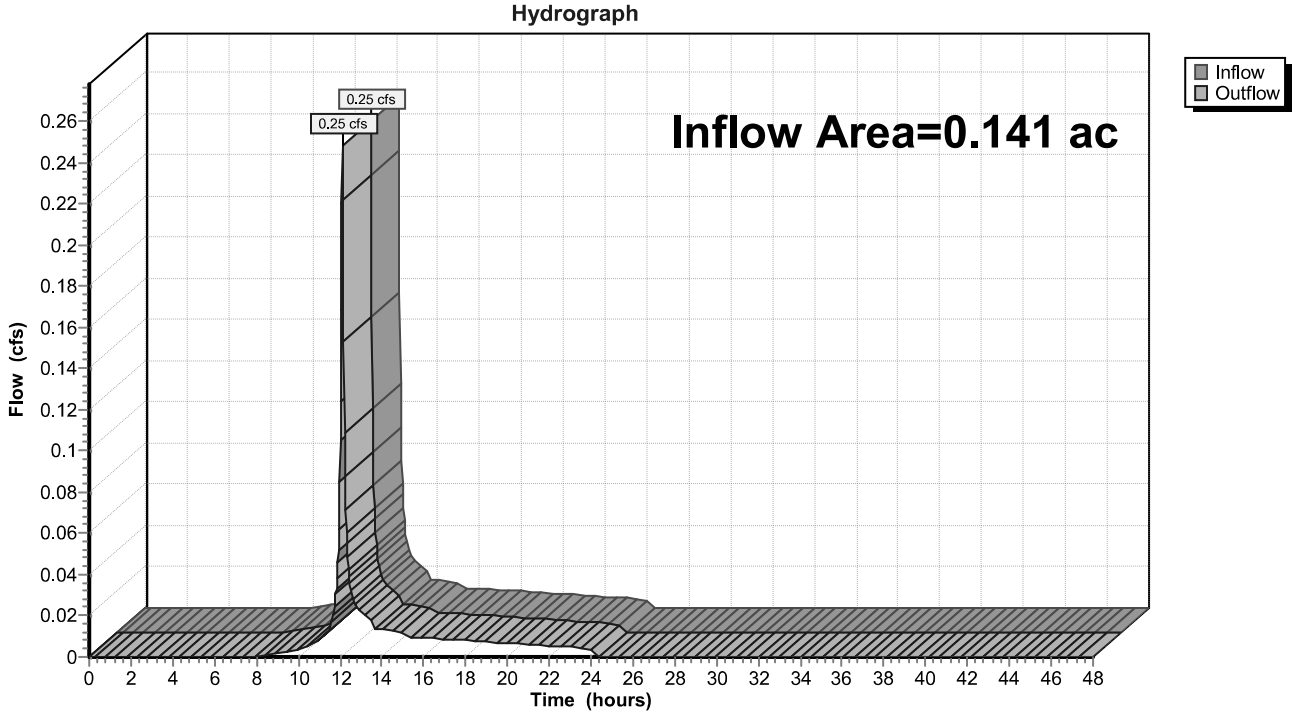
Summary for Reach 8R: Ex. CB 1795

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

Inflow Area = 0.141 ac, 54.34% Impervious, Inflow Depth = 1.36" for 2-Year event
Inflow = 0.25 cfs @ 12.12 hrs, Volume= 0.016 af
Outflow = 0.25 cfs @ 12.12 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs

Reach 8R: Ex. CB 1795



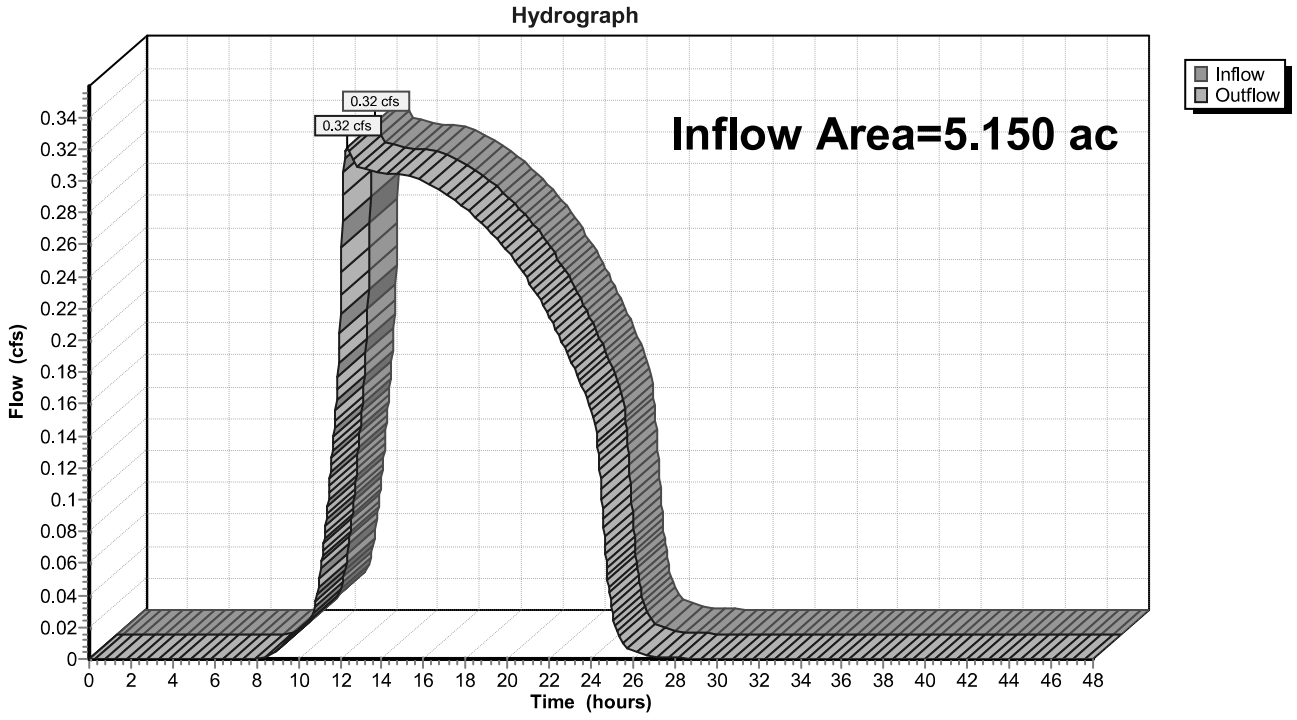
Summary for Reach 9R: Connect o Ex. CB 1759

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

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.67" for 2-Year event
Inflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Outflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs

Reach 9R: Connect o Ex. CB 1759



Summary for Pond 4P: GRASS CHANNEL

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.93" for 2-Year event
Inflow = 3.09 cfs @ 12.27 hrs, Volume= 0.399 af
Outflow = 3.03 cfs @ 12.31 hrs, Volume= 0.398 af, Atten= 2%, Lag= 2.3 min
Primary = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Routed to Pond 5P : CB-1
Secondary = 2.71 cfs @ 12.31 hrs, Volume= 0.112 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 183.10' @ 12.31 hrs Surf.Area= 3,762 sf Storage= 2,080 cf
Flood Elev= 184.00' Surf.Area= 7,284 sf Storage= 6,955 cf

Plug-Flow detention time= 54.3 min calculated for 0.398 af (100% of inflow)
Center-of-Mass det. time= 53.7 min (967.2 - 913.5)

Volume	Invert	Avail.Storage	Storage Description
#1	181.80'	6,955 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
181.80	0	0.0	0	0	0
182.00	420	144.5	28	28	1,662
183.00	3,436	644.0	1,686	1,714	33,006
184.00	7,284	844.5	5,241	6,955	56,767

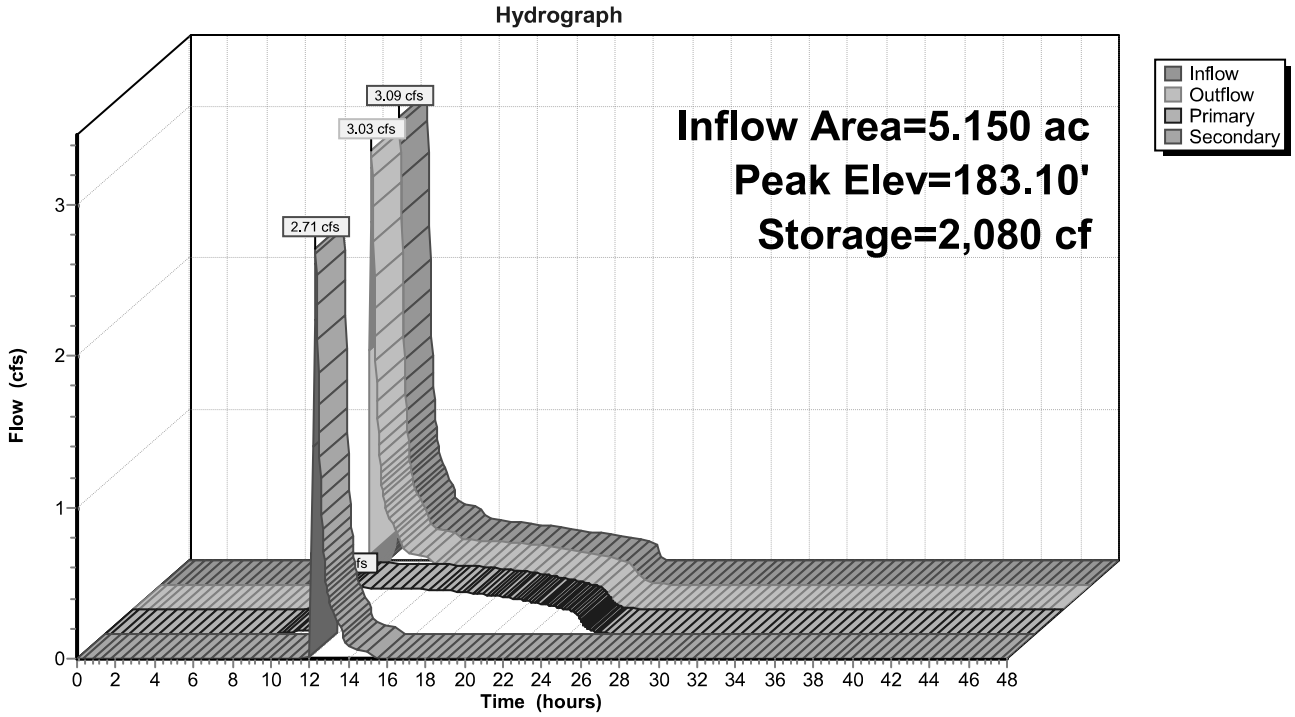
Device	Routing	Invert	Outlet Devices
#0	Secondary	184.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Secondary	183.00'	**31.0' long + 0.5 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Primary	182.00'	**4.0" Round Culvert** L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 182.00' / 181.80' S= 0.0400 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.32 cfs @ 12.31 hrs HW=183.10' TW=178.93' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 0.32 cfs @ 3.68 fps)

Secondary OutFlow Max=2.70 cfs @ 12.31 hrs HW=183.10' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.70 cfs @ 0.86 fps)



Pond 4P: GRASS CHANNEL



Summary for Pond 5P: CB-1

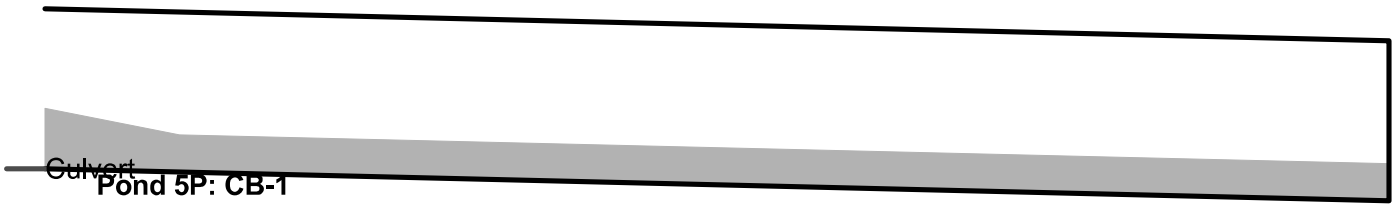
[57] Hint: Peaked at 178.93' (Flood elevation advised)

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.67" for 2-Year event
Inflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Outflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min
Primary = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Routed to Pond 6P : DMH-2

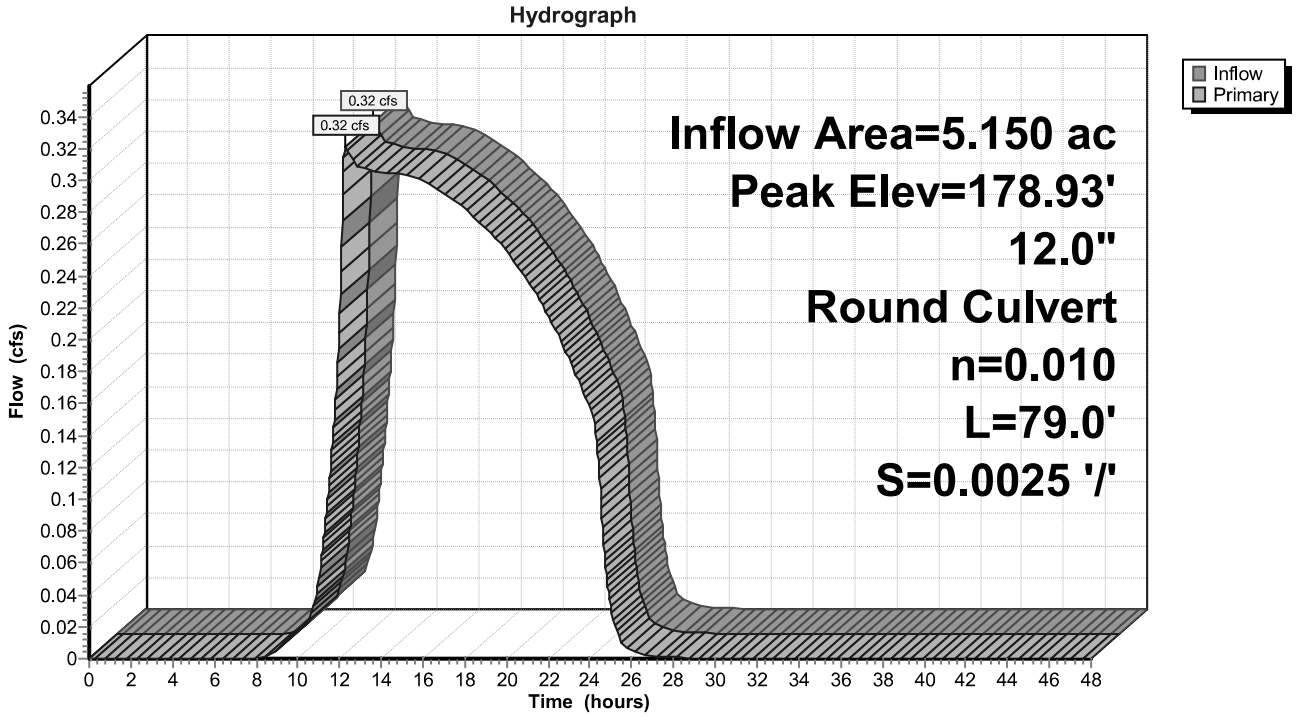
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 178.93' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	178.55'	**12.0" Round Culvert** L= 79.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.55' / 178.35' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.32 cfs @ 12.31 hrs HW=178.93' TW=178.71' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.32 cfs @ 1.76 fps)



Pond 5P: CB-1


Hydrograph
Inflow
Primary
0.32 cfs
0.32 cfs
Inflow Area=5.150 ac
Peak Elev=178.93'
12.0"
Round Culvert
n=0.010
L=79.0'
S=0.0025 '/'
Flow (cfs)
Time (hours)

Summary for Pond 6P: DMH-2

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.67" for 2-Year event
Inflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Outflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min
Primary = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Routed to Pond 7P : DMH-1
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= 0.03 hrs
Peak Elev= 178.71' @ 12.32 hrs
Flood Elev= 184.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.35'	**12.0" Round Culvert** L= 65.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.35' / 178.19' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.91'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

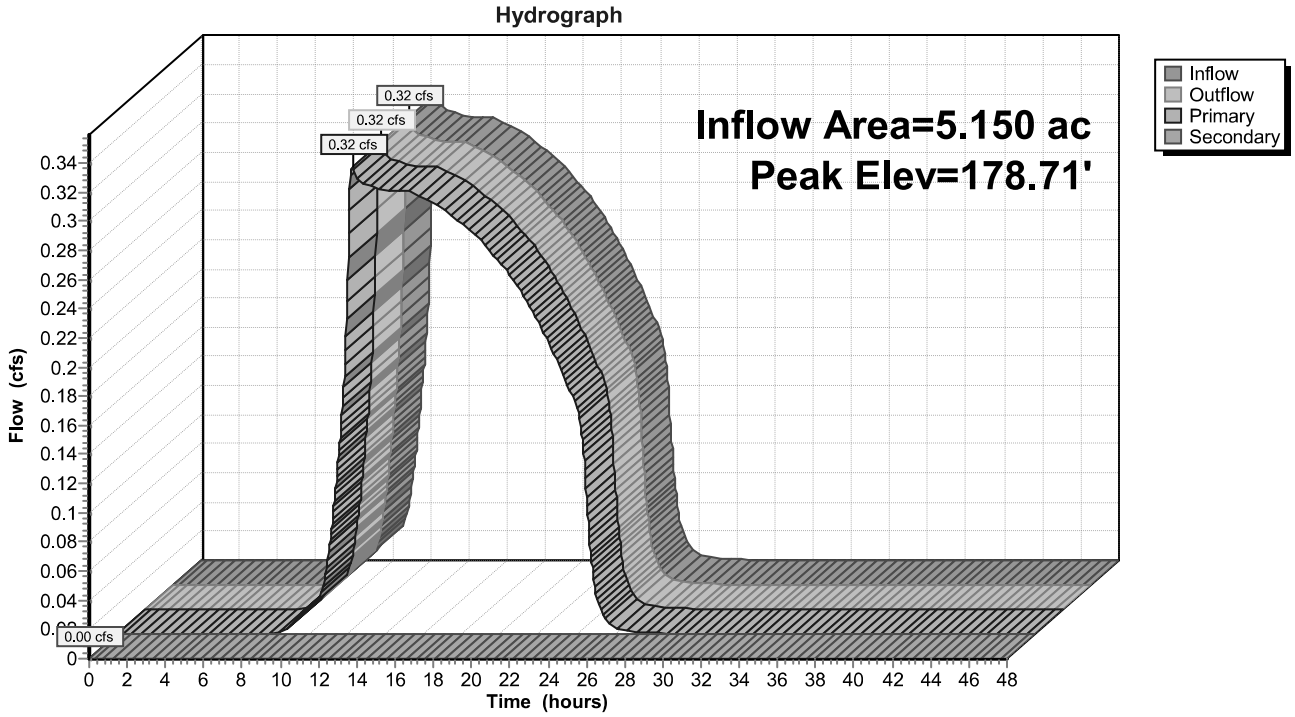
Primary OutFlow Max=0.32 cfs @ 12.31 hrs HW=178.71' TW=178.49' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.32 cfs @ 1.86 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.35' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Orifice/Grate

Culvert

Pond 6P: DMH-2


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.71'
0.32 cfs
0.32 cfs
0.32 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond 7P: DMH-1

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.67" for 2-Year event
Inflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Outflow = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min
Primary = 0.32 cfs @ 12.31 hrs, Volume= 0.286 af
Routed to Reach 9R : Connect o Ex. CB 1759
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= 0.03 hrs
Peak Elev= 178.49' @ 12.31 hrs
Flood Elev= 184.56'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.14'	**12.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.14' / 177.94' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.56'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

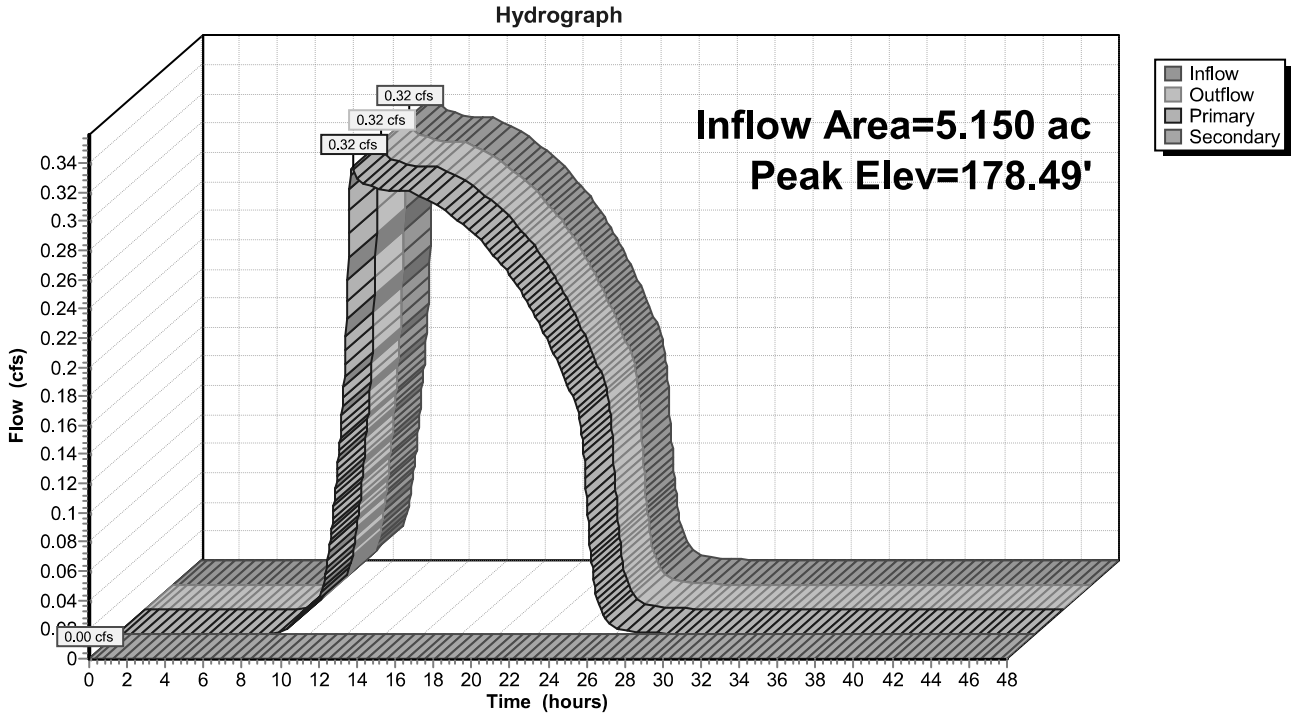
Primary OutFlow Max=0.32 cfs @ 12.31 hrs HW=178.49' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.32 cfs @ 1.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.14' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Orifice/Grate

Culvert

Pond 7P: DMH-1


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.49'
0.32 cfs
0.32 cfs
0.32 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Subcatchment 1S: SUB-CAT A

Runoff = 0.48 cfs @ 12.12 hrs, Volume= 0.031 af, Depth= 2.63"
Routed to Reach 8R : Ex. CB 1795

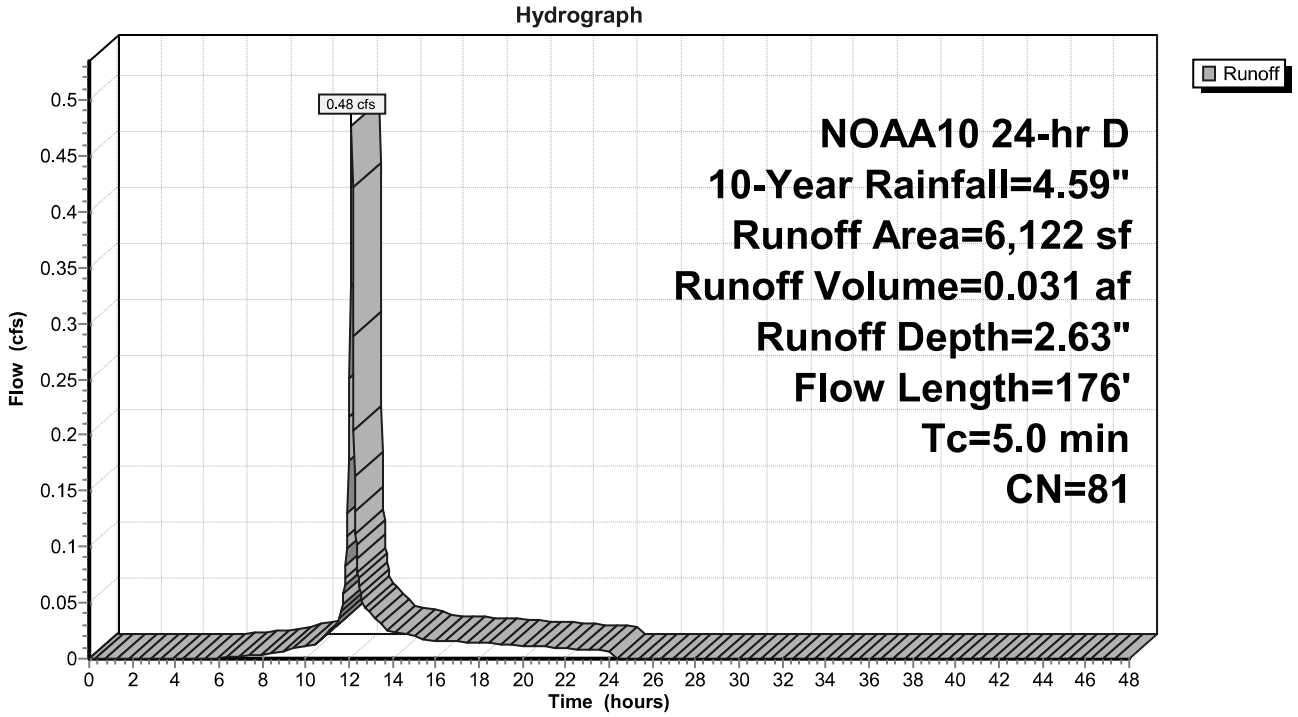
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

Area (sf)	CN	Description
1,500	98	Unconnected roofs, HSG B
1,827	98	Paved parking, HSG B
2,795	61	>75% Grass cover, Good, HSG B
6,122	81	Weighted Average
2,795		45.66% Pervious Area
3,327		54.34% Impervious Area
1,500		45.09% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	15	0.1330	0.22		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.54"
0.1	6	0.0200	0.70		**Sheet Flow, Sidewalk** Smooth surfaces n= 0.011 P2= 2.54"
3.3	155	0.0015	0.79		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
4.5	176	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 1S: SUB-CAT A



Summary for Subcatchment 2S: SUB-CAT B

Runoff = 2.10 cfs @ 12.12 hrs, Volume= 0.137 af, Depth= 2.99"
Routed to Pond 4P : GRASS CHANNEL

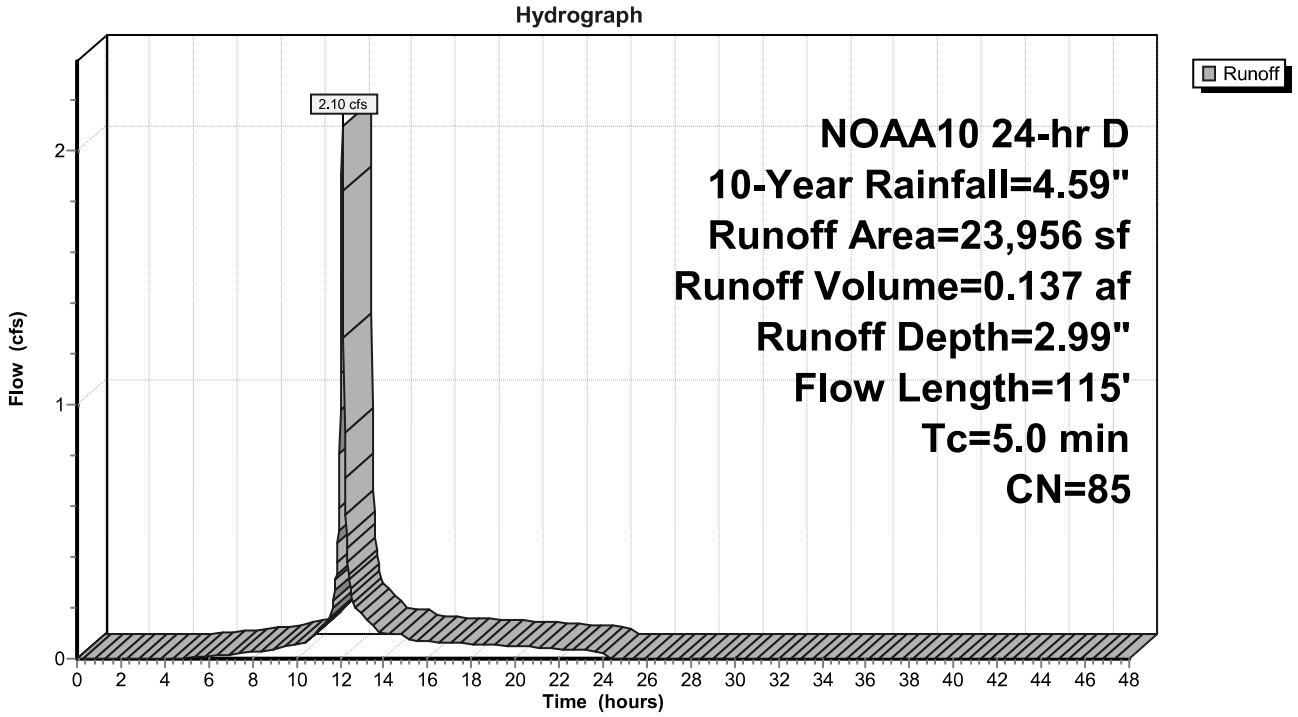
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

	Area (sf)	CN	Description
*	4,956	98	Shingle Roof
*	6,433	98	Bituminous & Asphalt Paving
	12,567	74	>75% Grass cover, Good, HSG C
	23,956	85	Weighted Average
	12,567		52.46% Pervious Area
	11,389		47.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	17	0.6670	3.50		**Sheet Flow, Roof - Bldg A** Smooth surfaces n= 0.011 P2= 2.54"
1.2	10	0.0500	0.14		**Sheet Flow, Lawn** Grass: Short n= 0.150 P2= 2.54"
0.6	88	0.0284	2.53		**Shallow Concentrated Flow, Swale** Grassed Waterway Kv= 15.0 fps
1.9	115	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 2S: SUB-CAT B



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 6.70 cfs @ 12.28 hrs, Volume= 0.723 af, Depth= 1.89"
Routed to Pond 4P : GRASS CHANNEL

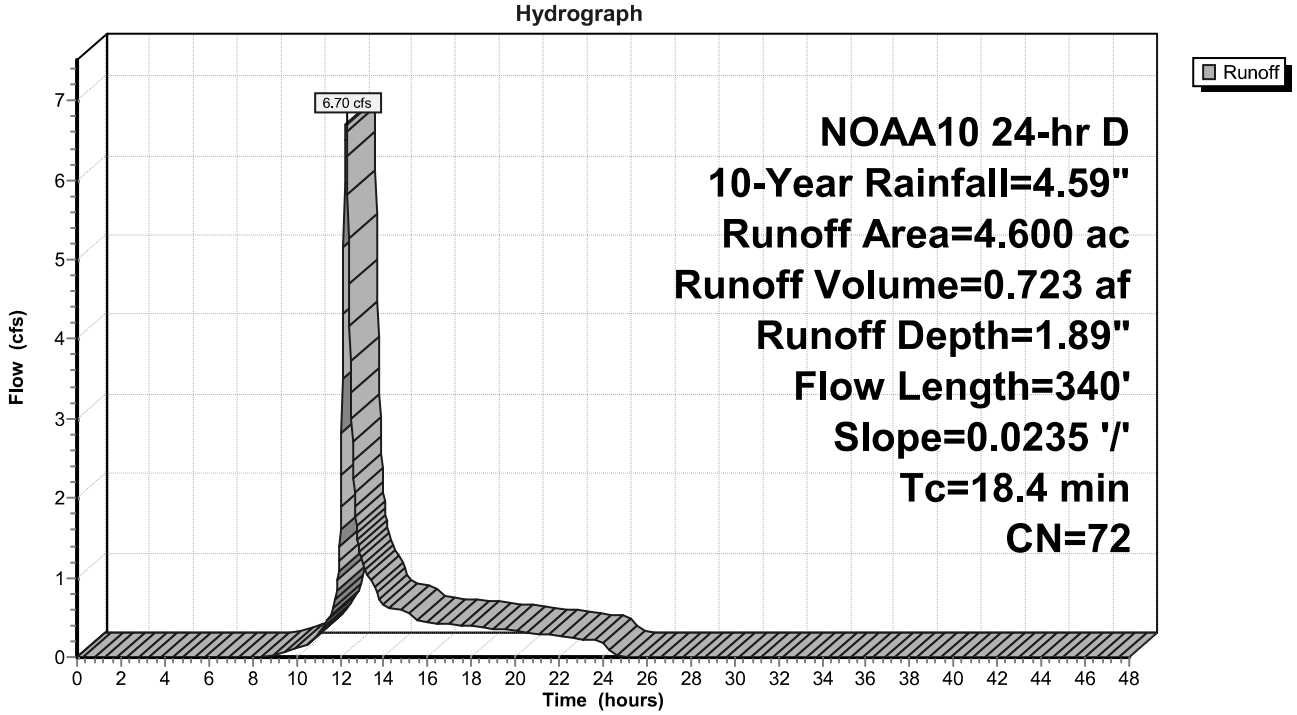
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 10-Year Rainfall=4.59"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, Lawn - Mobile Park** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, Swale** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF



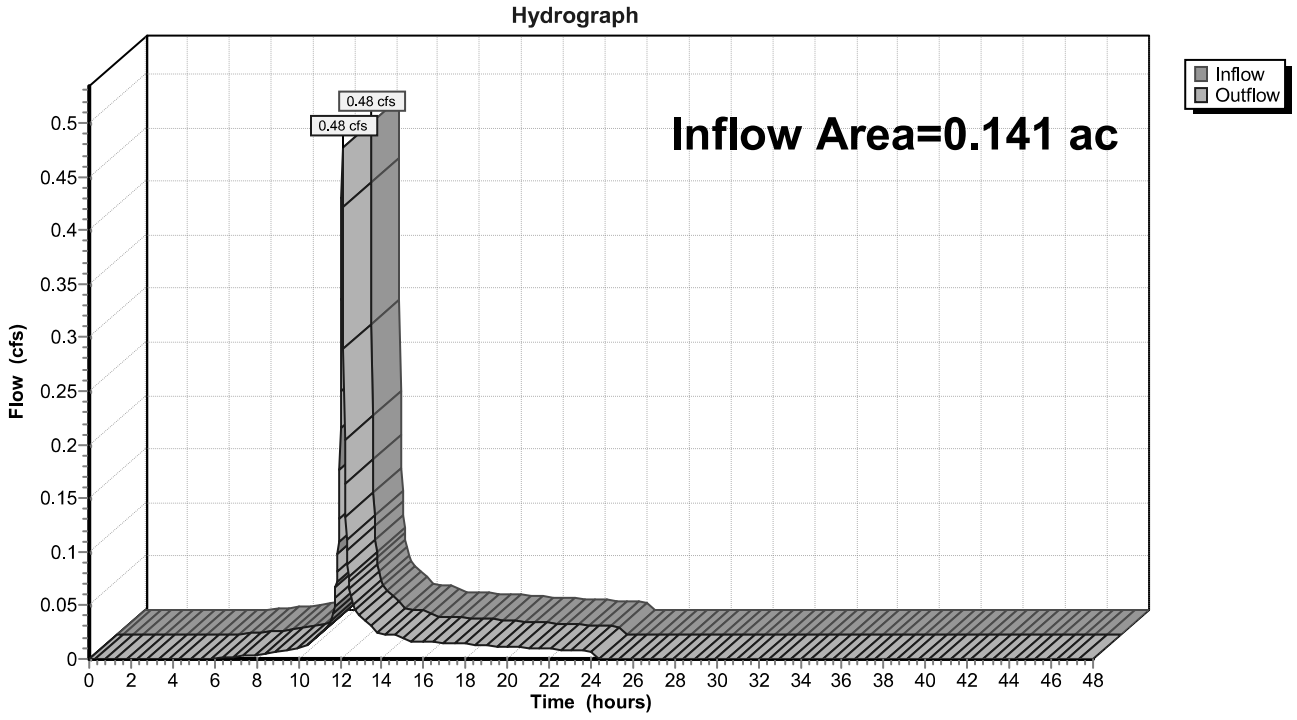
Summary for Reach 8R: Ex. CB 1795

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

Inflow Area = 0.141 ac, 54.34% Impervious, Inflow Depth = 2.63" for 10-Year event
Inflow = 0.48 cfs @ 12.12 hrs, Volume= 0.031 af
Outflow = 0.48 cfs @ 12.12 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs

Reach 8R: Ex. CB 1795



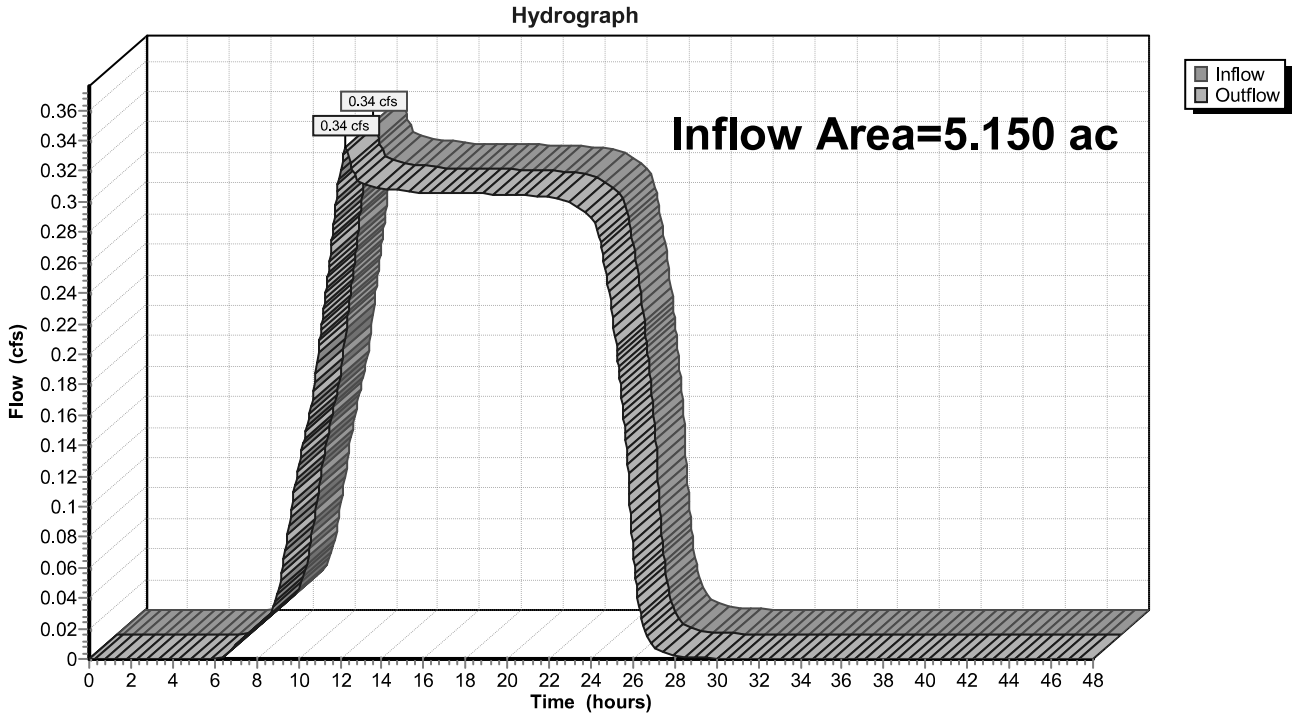
Summary for Reach 9R: Connect o Ex. CB 1759

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

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.90" for 10-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs

Reach 9R: Connect o Ex. CB 1759



Summary for Pond 4P: GRASS CHANNEL

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 2.01" for 10-Year event
Inflow = 7.27 cfs @ 12.26 hrs, Volume= 0.860 af
Outflow = 7.22 cfs @ 12.28 hrs, Volume= 0.860 af, Atten= 1%, Lag= 1.3 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Routed to Pond 5P : CB-1
Secondary = 6.88 cfs @ 12.28 hrs, Volume= 0.472 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 183.19' @ 12.28 hrs Surf.Area= 4,054 sf Storage= 2,422 cf
Flood Elev= 184.00' Surf.Area= 7,284 sf Storage= 6,955 cf

Plug-Flow detention time= 39.8 min calculated for 0.859 af (100% of inflow)
Center-of-Mass det. time= 39.5 min (923.8 - 884.2)

Volume	Invert	Avail.Storage	Storage Description
#1	181.80'	6,955 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
181.80	0	0.0	0	0	0
182.00	420	144.5	28	28	1,662
183.00	3,436	644.0	1,686	1,714	33,006
184.00	7,284	844.5	5,241	6,955	56,767

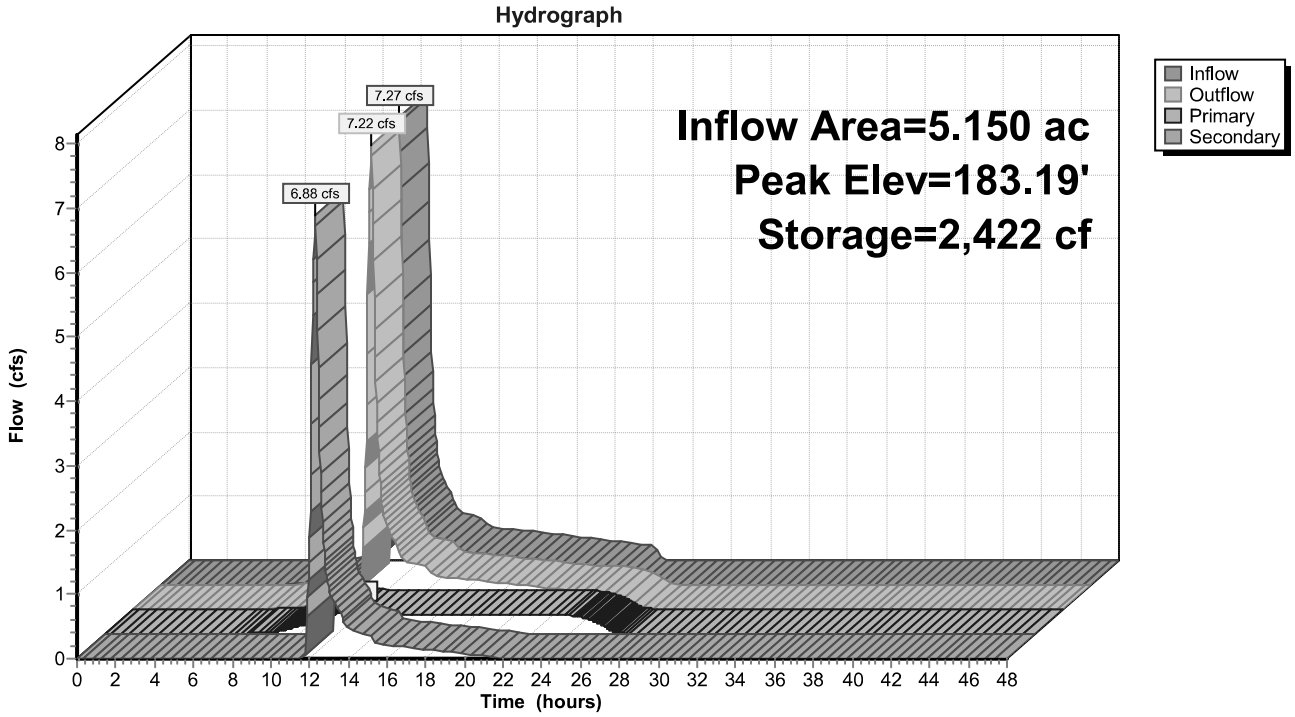
Device	Routing	Invert	Outlet Devices
#0	Secondary	184.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Secondary	183.00'	**31.0' long + 0.5 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Primary	182.00'	**4.0" Round Culvert** L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 182.00' / 181.80' S= 0.0400 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=183.19' TW=178.94' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 0.34 cfs @ 3.84 fps)

Secondary OutFlow Max=6.85 cfs @ 12.28 hrs HW=183.19' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.85 cfs @ 1.17 fps)



Pond 4P: GRASS CHANNEL



Summary for Pond 5P: CB-1

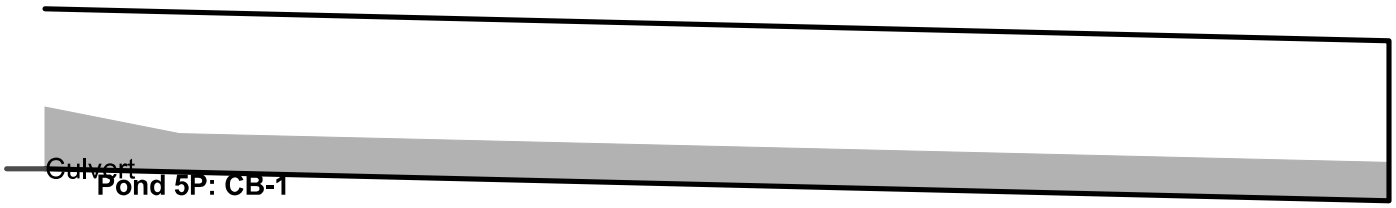
[57] Hint: Peaked at 178.94' (Flood elevation advised)

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.90" for 10-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Routed to Pond 6P : DMH-2

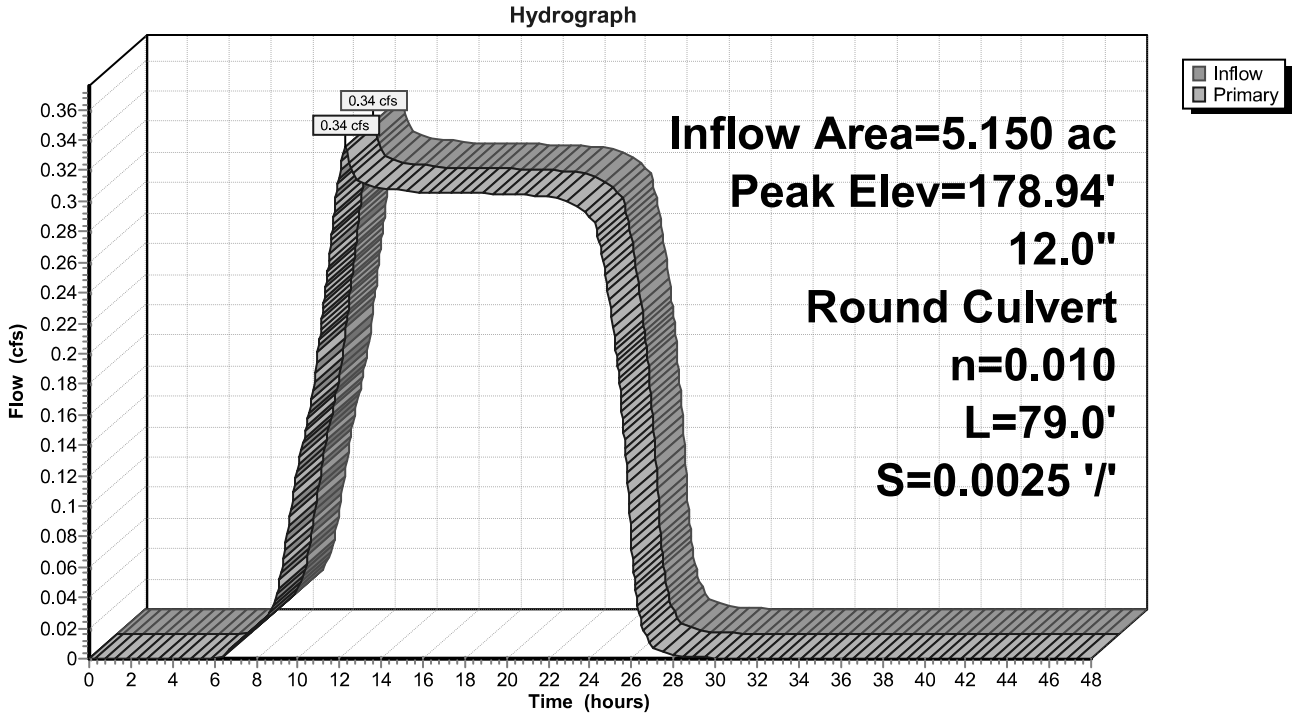
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 178.94' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	178.55'	**12.0" Round Culvert** L= 79.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.55' / 178.35' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.94' TW=178.72' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.34 cfs @ 1.77 fps)



Pond 5P: CB-1


Hydrograph
Inflow
Primary
0.34 cfs
0.34 cfs
Inflow Area=5.150 ac
Peak Elev=178.94'
12.0"
Round Culvert
n=0.010
L=79.0'
S=0.0025 '/'
Flow (cfs)
Time (hours)

Summary for Pond 6P: DMH-2

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.90" for 10-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Routed to Pond 7P : DMH-1
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= 0.03 hrs
Peak Elev= 178.72' @ 12.29 hrs
Flood Elev= 184.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.35'	**12.0" Round Culvert** L= 65.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.35' / 178.19' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.91'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

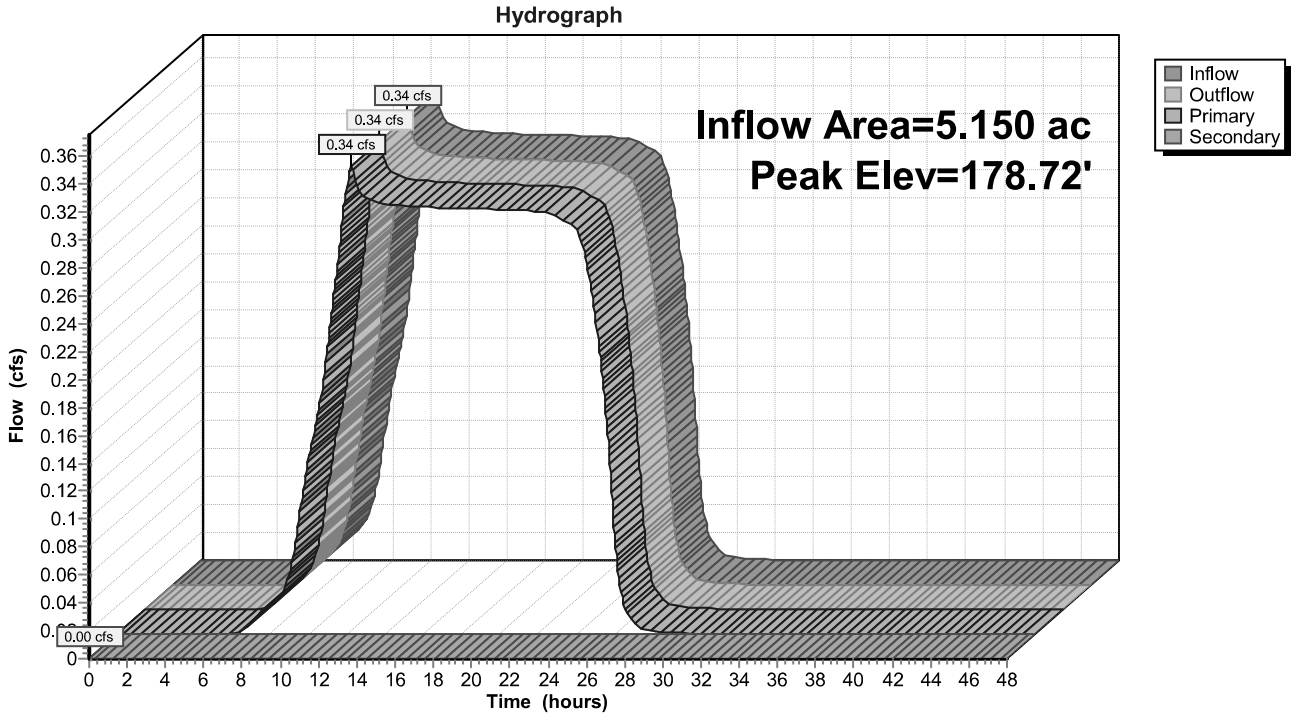
Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.72' TW=178.50' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.34 cfs @ 1.88 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.35' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Orifice/Grate

Culvert

Pond 6P: DMH-2


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.72'
0.34 cfs
0.34 cfs
0.34 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0.36
0.34
0.32
0.3
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond 7P: DMH-1

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.90" for 10-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.388 af
Routed to Reach 9R : Connect o Ex. CB 1759
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= 0.03 hrs
Peak Elev= 178.50' @ 12.28 hrs
Flood Elev= 184.56'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.14'	**12.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.14' / 177.94' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.56'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

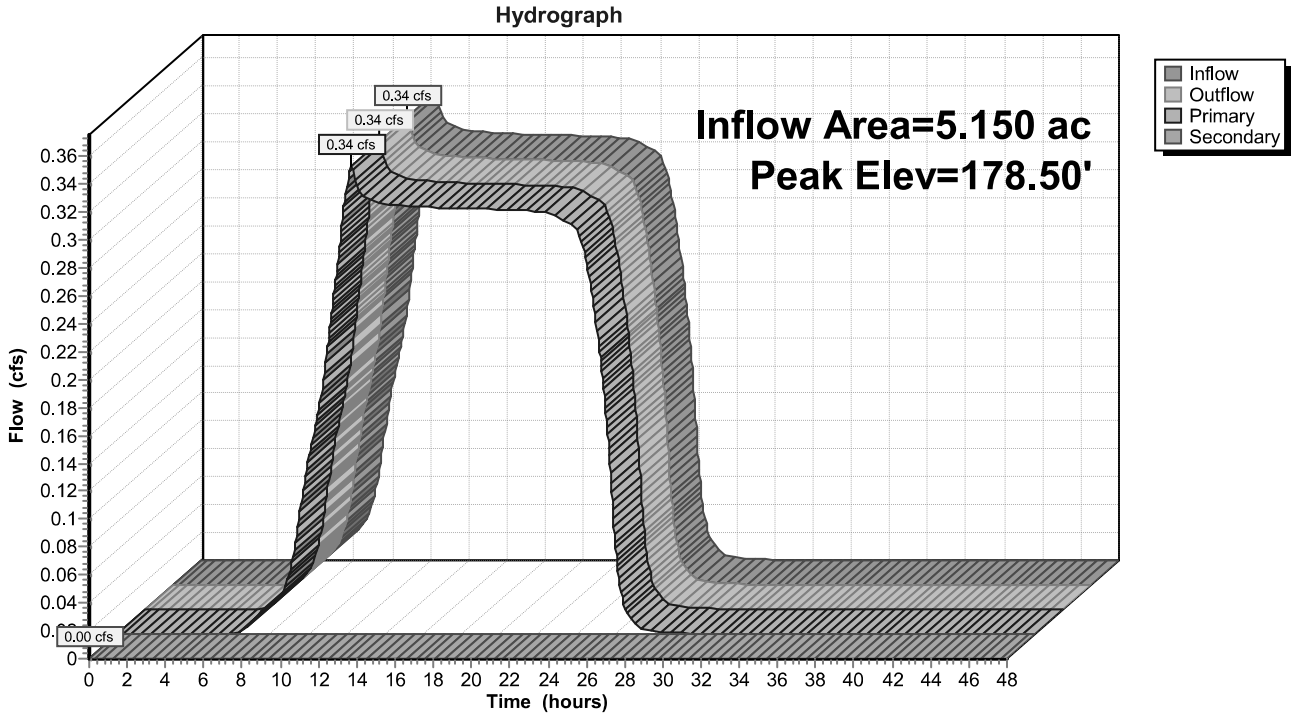
Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.34 cfs @ 1.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.14' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Orifice/Grate

Culvert

Pond 7P: DMH-1


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.50'
Inflow
Outflow
Primary
Secondary
0.34 cfs
0.34 cfs
0.34 cfs
0.00 cfs
Flow (cfs)
Time (hours)

Summary for Subcatchment 1S: SUB-CAT A

Runoff = 0.63 cfs @ 12.12 hrs, Volume= 0.041 af, Depth= 3.48"
Routed to Reach 8R : Ex. CB 1795

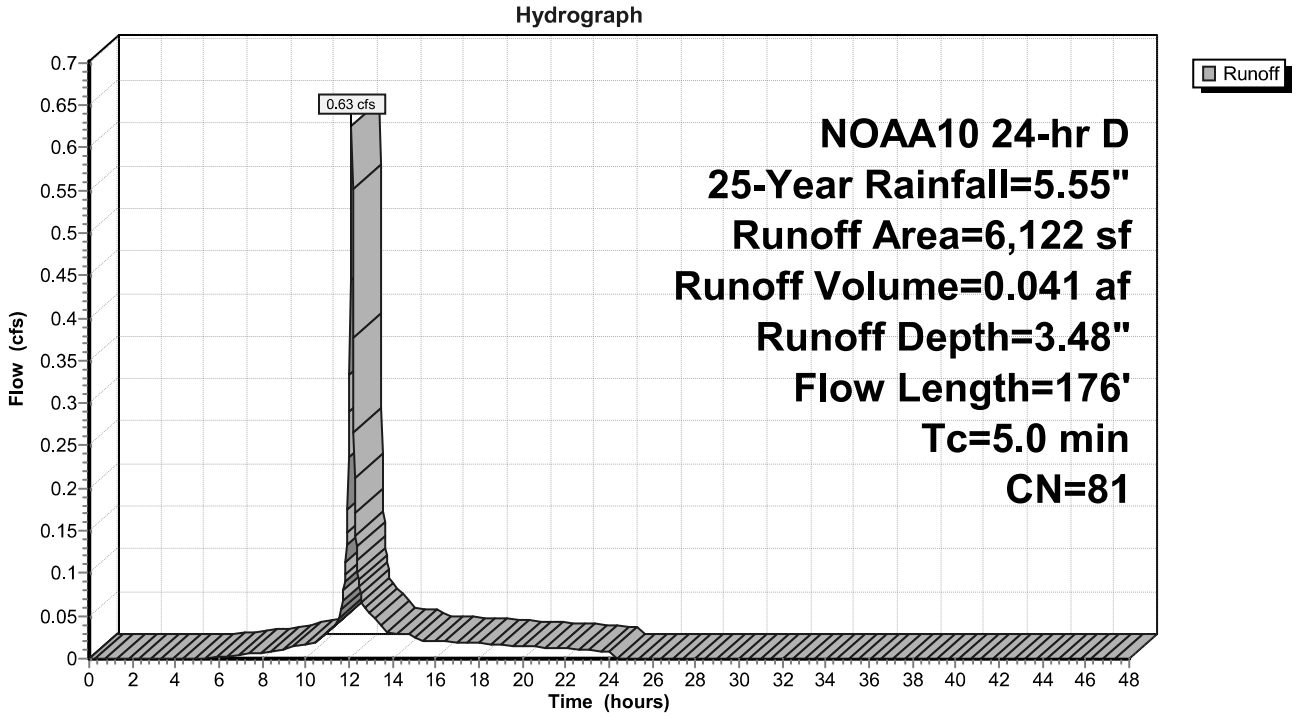
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

Area (sf)	CN	Description
1,500	98	Unconnected roofs, HSG B
1,827	98	Paved parking, HSG B
2,795	61	>75% Grass cover, Good, HSG B
6,122	81	Weighted Average
2,795		45.66% Pervious Area
3,327		54.34% Impervious Area
1,500		45.09% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	15	0.1330	0.22		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.54"
0.1	6	0.0200	0.70		**Sheet Flow, Sidewalk** Smooth surfaces n= 0.011 P2= 2.54"
3.3	155	0.0015	0.79		**Shallow Concentrated Flow, Gutter Flow** Paved Kv= 20.3 fps
4.5	176	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 1S: SUB-CAT A



Summary for Subcatchment 2S: SUB-CAT B

Runoff = 2.69 cfs @ 12.12 hrs, Volume= 0.178 af, Depth= 3.88"
Routed to Pond 4P : GRASS CHANNEL

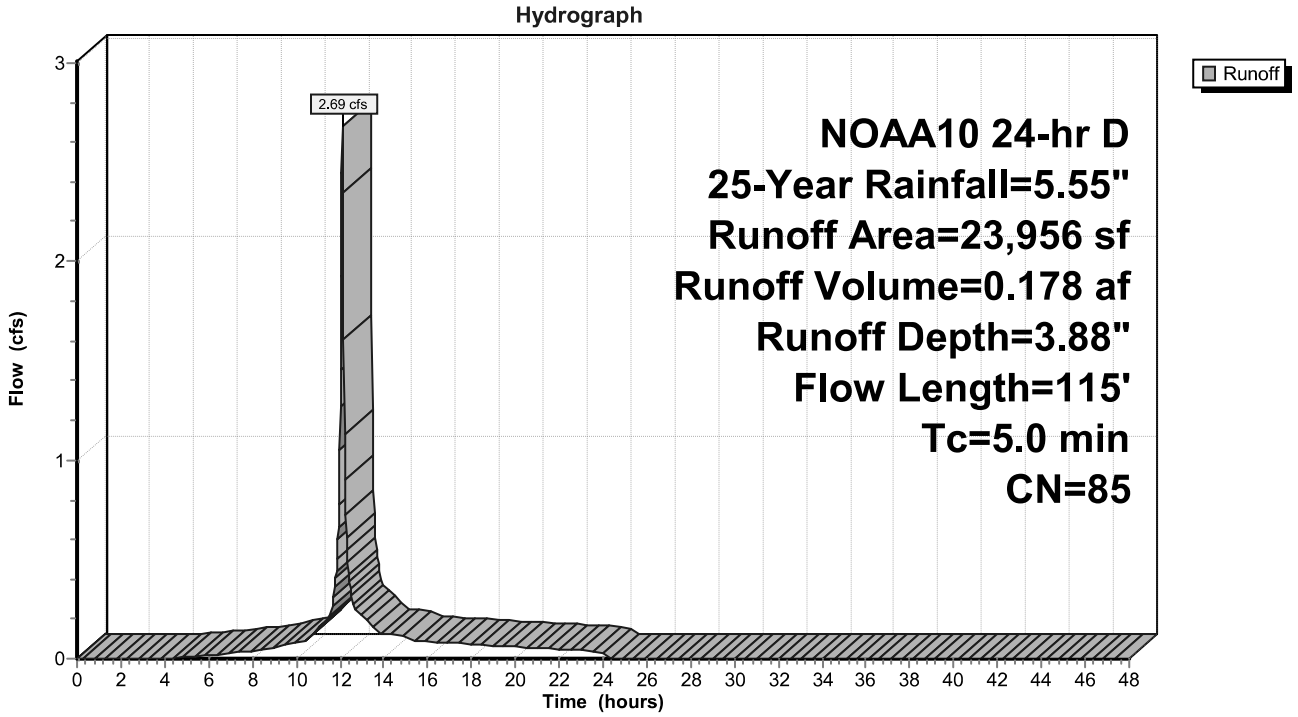
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

	Area (sf)	CN	Description
*	4,956	98	Shingle Roof
*	6,433	98	Bituminous & Asphalt Paving
	12,567	74	>75% Grass cover, Good, HSG C
	23,956	85	Weighted Average
	12,567		52.46% Pervious Area
	11,389		47.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	17	0.6670	3.50		**Sheet Flow, Roof - Bldg A** Smooth surfaces n= 0.011 P2= 2.54"
1.2	10	0.0500	0.14		**Sheet Flow, Lawn** Grass: Short n= 0.150 P2= 2.54"
0.6	88	0.0284	2.53		**Shallow Concentrated Flow, Swale** Grassed Waterway Kv= 15.0 fps
1.9	115	Total, Increased to minimum Tc = 5.0 min			



Subcatchment 2S: SUB-CAT B



Summary for Subcatchment 3S: OFF-SITE RUNOFF

Runoff = 9.45 cfs @ 12.27 hrs, Volume= 1.008 af, Depth= 2.63"
Routed to Pond 4P : GRASS CHANNEL

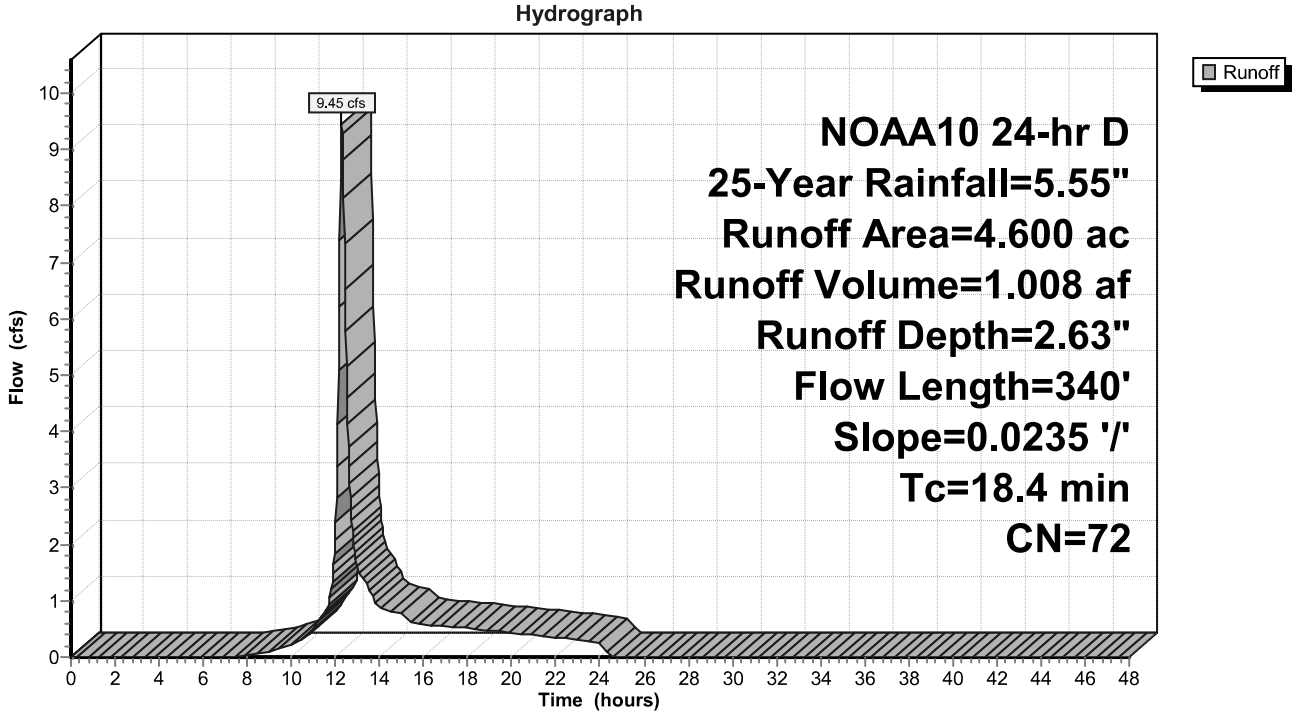
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
NOAA10 24-hr D 25-Year Rainfall=5.55"

Area (ac)	CN	Description
4.600	72	1/3 acre lots, 30% imp, HSG B
3.220		70.00% Pervious Area
1.380		30.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0235	0.18		**Sheet Flow, Lawn - Mobile Park** Grass: Short n= 0.150 P2= 2.54"
4.1	190	0.0235	0.77		**Shallow Concentrated Flow, Swale** Woodland Kv= 5.0 fps
18.4	340	Total			



Subcatchment 3S: OFF-SITE RUNOFF

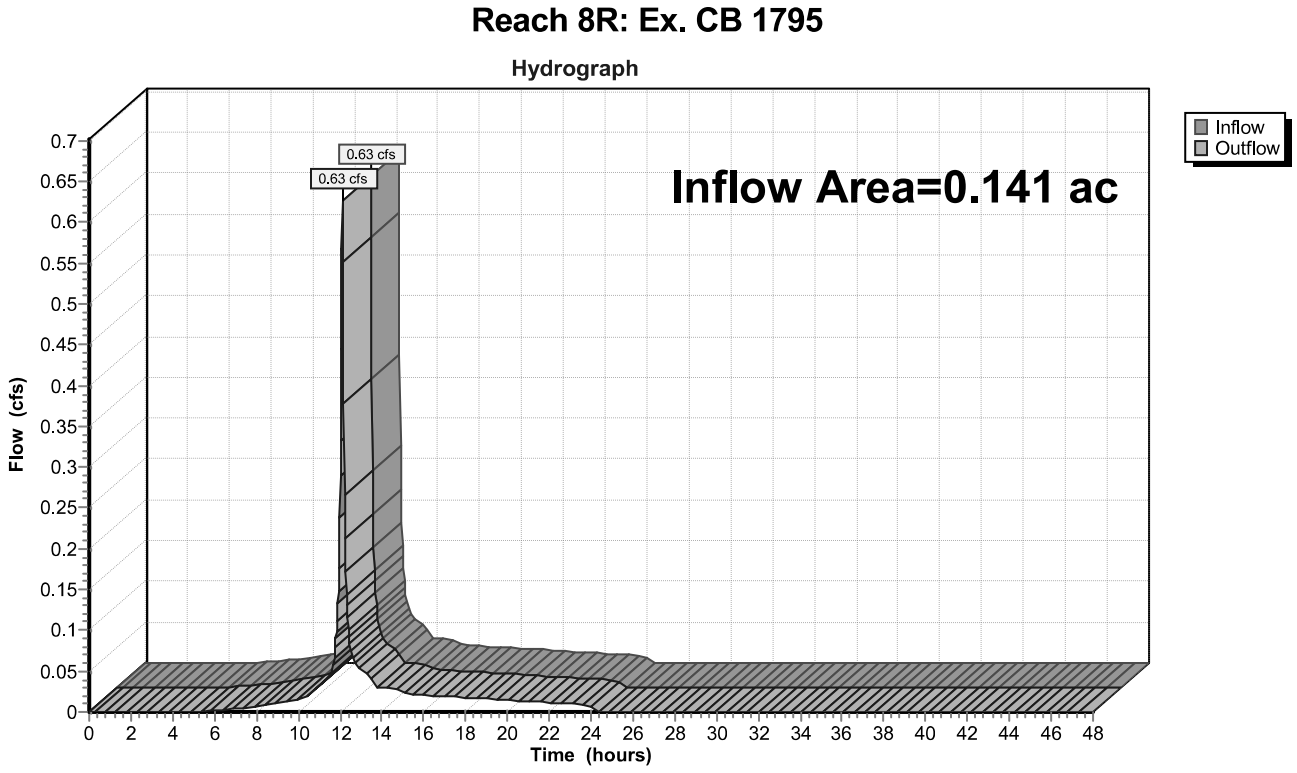


Summary for Reach 8R: Ex. CB 1795

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

Inflow Area = 0.141 ac, 54.34% Impervious, Inflow Depth = 3.48" for 25-Year event
Inflow = 0.63 cfs @ 12.12 hrs, Volume= 0.041 af
Outflow = 0.63 cfs @ 12.12 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs

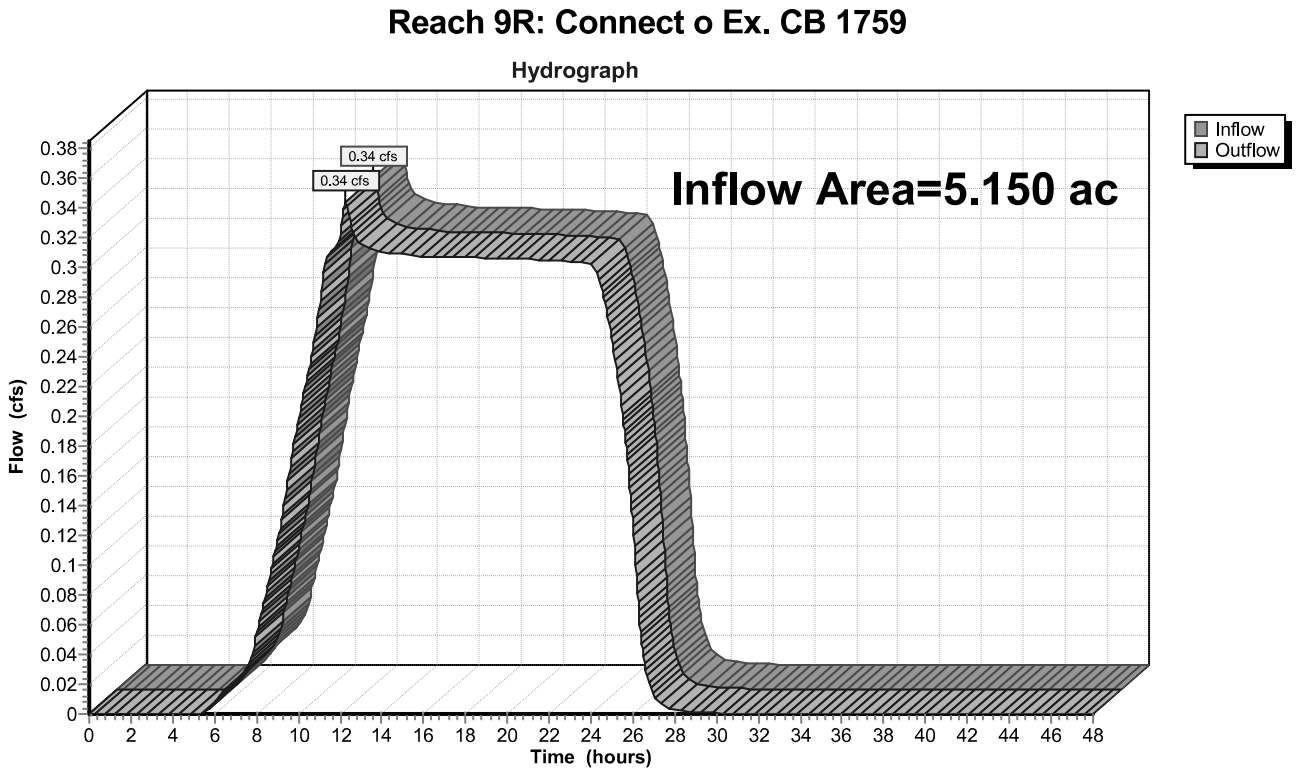


Summary for Reach 9R: Connect o Ex. CB 1759

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

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.98" for 25-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs



Summary for Pond 4P: GRASS CHANNEL

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 2.76" for 25-Year event
Inflow = 10.18 cfs @ 12.26 hrs, Volume= 1.186 af
Outflow = 10.12 cfs @ 12.28 hrs, Volume= 1.185 af, Atten= 1%, Lag= 1.2 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Routed to Pond 5P : CB-1
Secondary = 9.77 cfs @ 12.28 hrs, Volume= 0.766 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 183.24' @ 12.28 hrs Surf.Area= 4,225 sf Storage= 2,626 cf
Flood Elev= 184.00' Surf.Area= 7,284 sf Storage= 6,955 cf

Plug-Flow detention time= 31.6 min calculated for 1.184 af (100% of inflow)
Center-of-Mass det. time= 31.5 min (903.6 - 872.1)

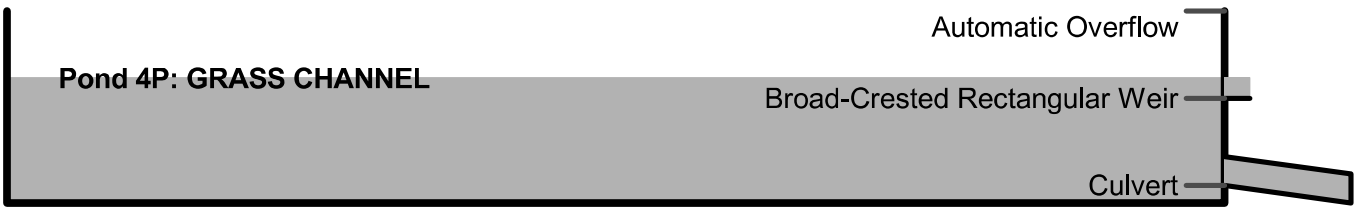
Volume	Invert	Avail.Storage	Storage Description
#1	181.80'	6,955 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
181.80	0	0.0	0	0	0
182.00	420	144.5	28	28	1,662
183.00	3,436	644.0	1,686	1,714	33,006
184.00	7,284	844.5	5,241	6,955	56,767

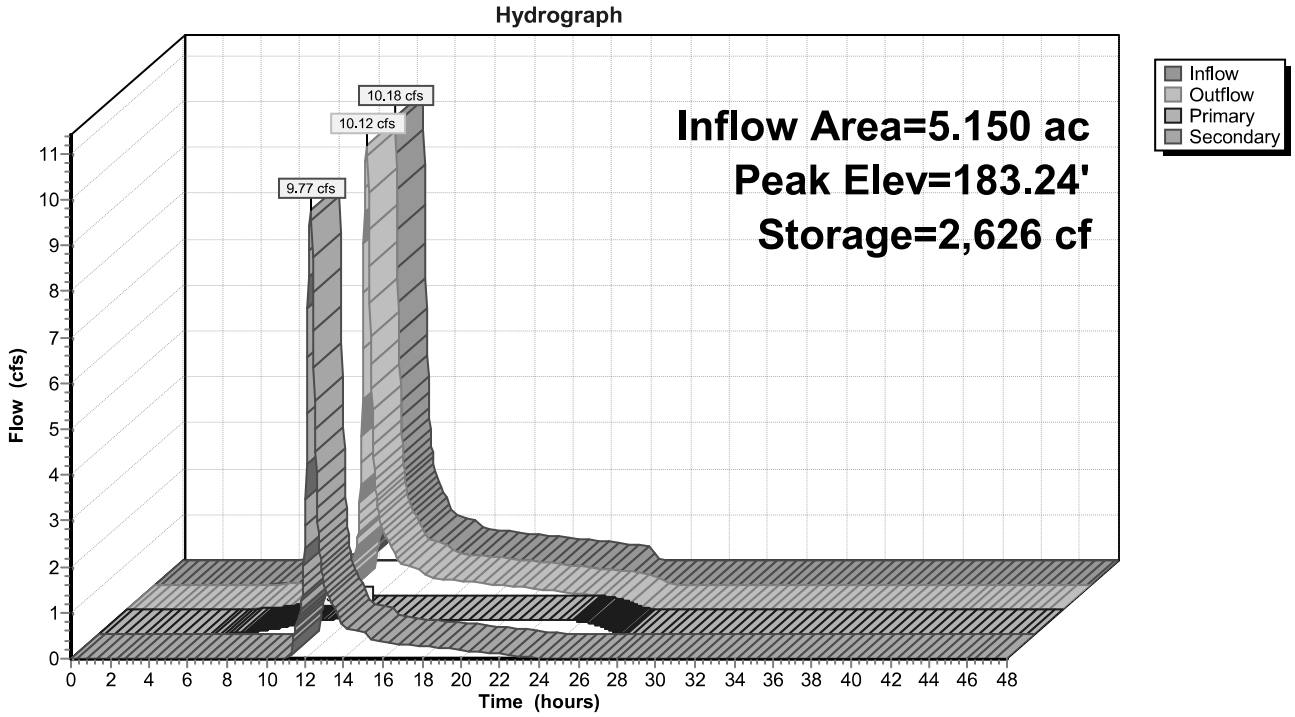
Device	Routing	Invert	Outlet Devices
#0	Secondary	184.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Secondary	183.00'	**31.0' long + 0.5 '/' SideZ x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Primary	182.00'	**4.0" Round Culvert** L= 5.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 182.00' / 181.80' S= 0.0400 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=183.24' TW=178.94' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 0.34 cfs @ 3.93 fps)

Secondary OutFlow Max=9.73 cfs @ 12.28 hrs HW=183.24' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 9.73 cfs @ 1.31 fps)



Pond 4P: GRASS CHANNEL



Summary for Pond 5P: CB-1

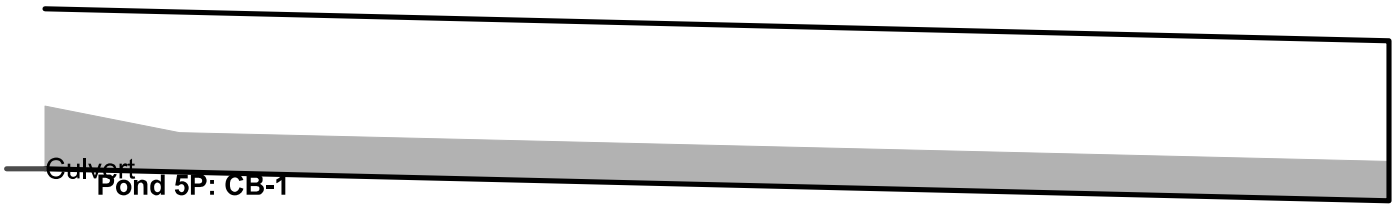
[57] Hint: Peaked at 178.94' (Flood elevation advised)

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.98" for 25-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Routed to Pond 6P : DMH-2

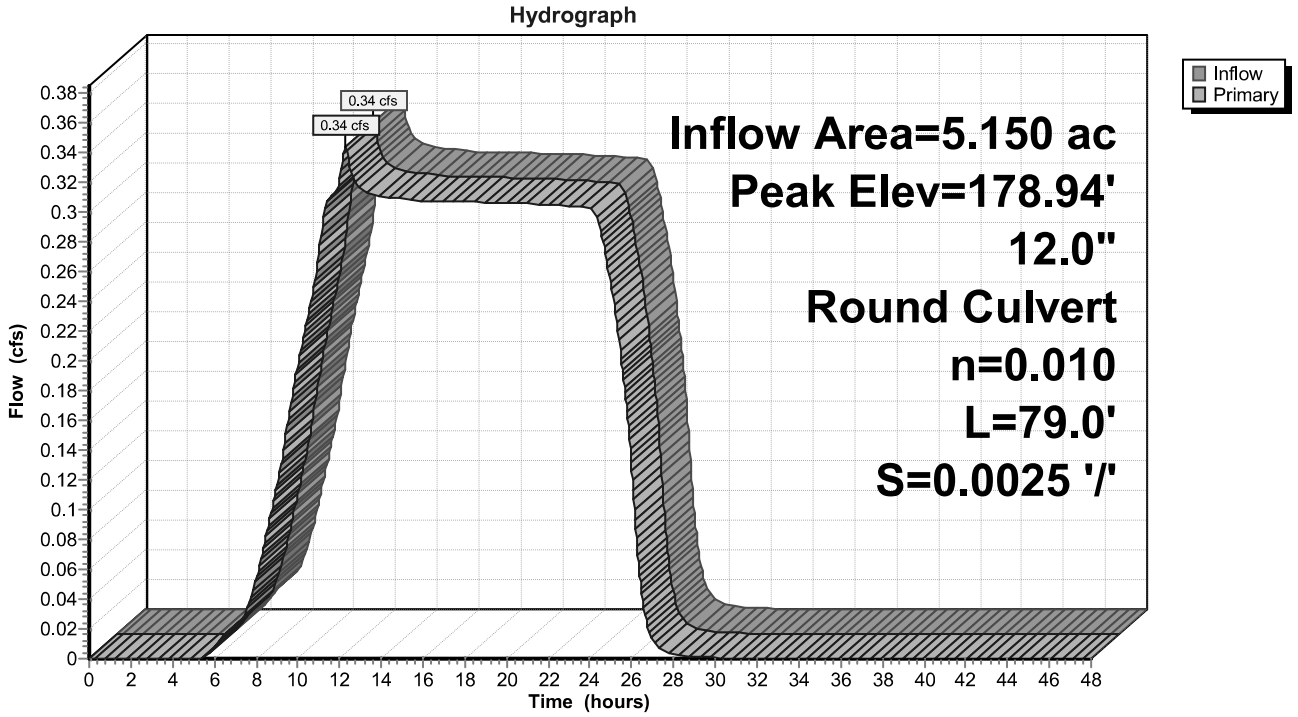
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.03 hrs
Peak Elev= 178.94' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	178.55'	**12.0" Round Culvert** L= 79.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.55' / 178.35' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.94' TW=178.73' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.34 cfs @ 1.78 fps)



Pond 5P: CB-1


Hydrograph
Inflow
Primary
0.34 cfs
0.34 cfs
Inflow Area=5.150 ac
Peak Elev=178.94'
12.0"
Round Culvert
n=0.010
L=79.0'
S=0.0025 '/'
Flow (cfs)
Time (hours)

Summary for Pond 6P: DMH-2

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.98" for 25-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Routed to Pond 7P : DMH-1
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= 0.03 hrs
Peak Elev= 178.73' @ 12.29 hrs
Flood Elev= 184.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.35'	**12.0" Round Culvert** L= 65.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.35' / 178.19' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.91'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

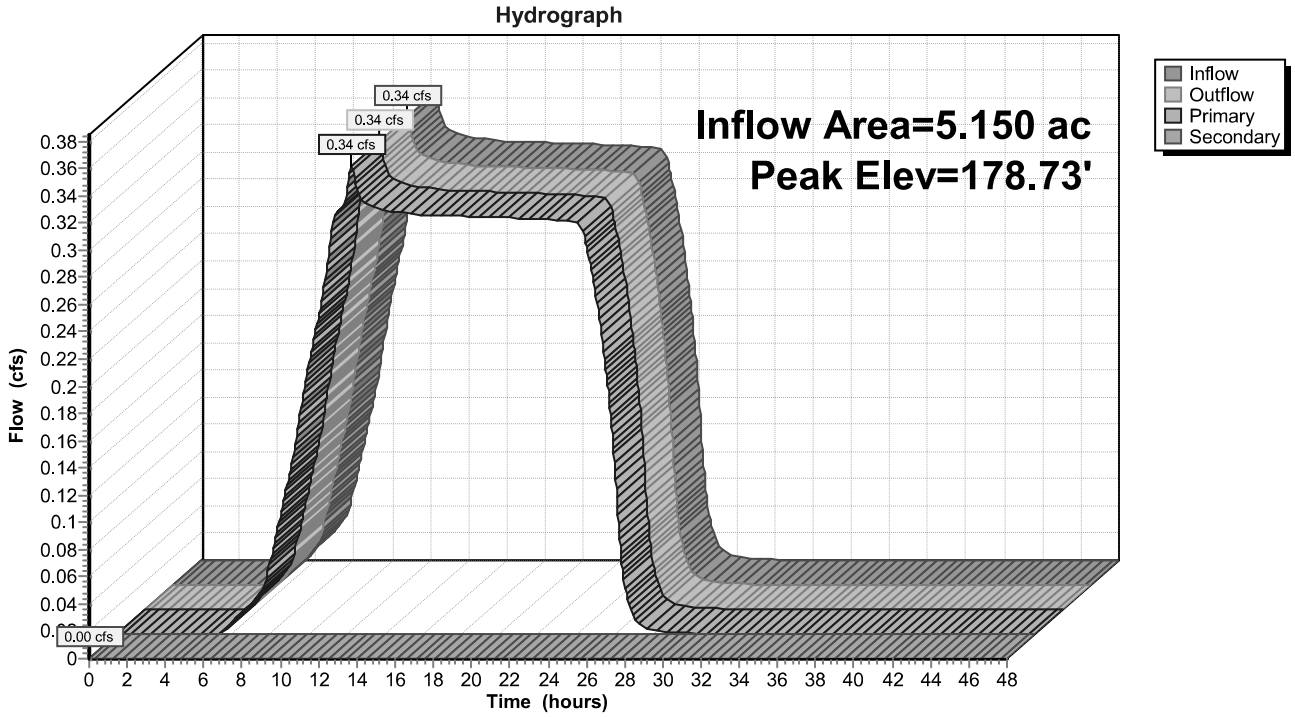
Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.73' TW=178.50' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 0.34 cfs @ 1.89 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.35' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

—Orifice/Grate

Culvert

Pond 6P: DMH-2


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.73'
0.34 cfs
0.34 cfs
0.34 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Summary for Pond 7P: DMH-1

Inflow Area = 5.150 ac, 31.87% Impervious, Inflow Depth = 0.98" for 25-Year event
Inflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Outflow = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min
Primary = 0.34 cfs @ 12.28 hrs, Volume= 0.419 af
Routed to Reach 9R : Connect o Ex. CB 1759
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= 0.03 hrs
Peak Elev= 178.50' @ 12.28 hrs
Flood Elev= 184.56'

Device	Routing	Invert	Outlet Devices
#1	Primary	178.14'	**12.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 178.14' / 177.94' S= 0.0025 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.79 sf
#2	Secondary	184.56'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

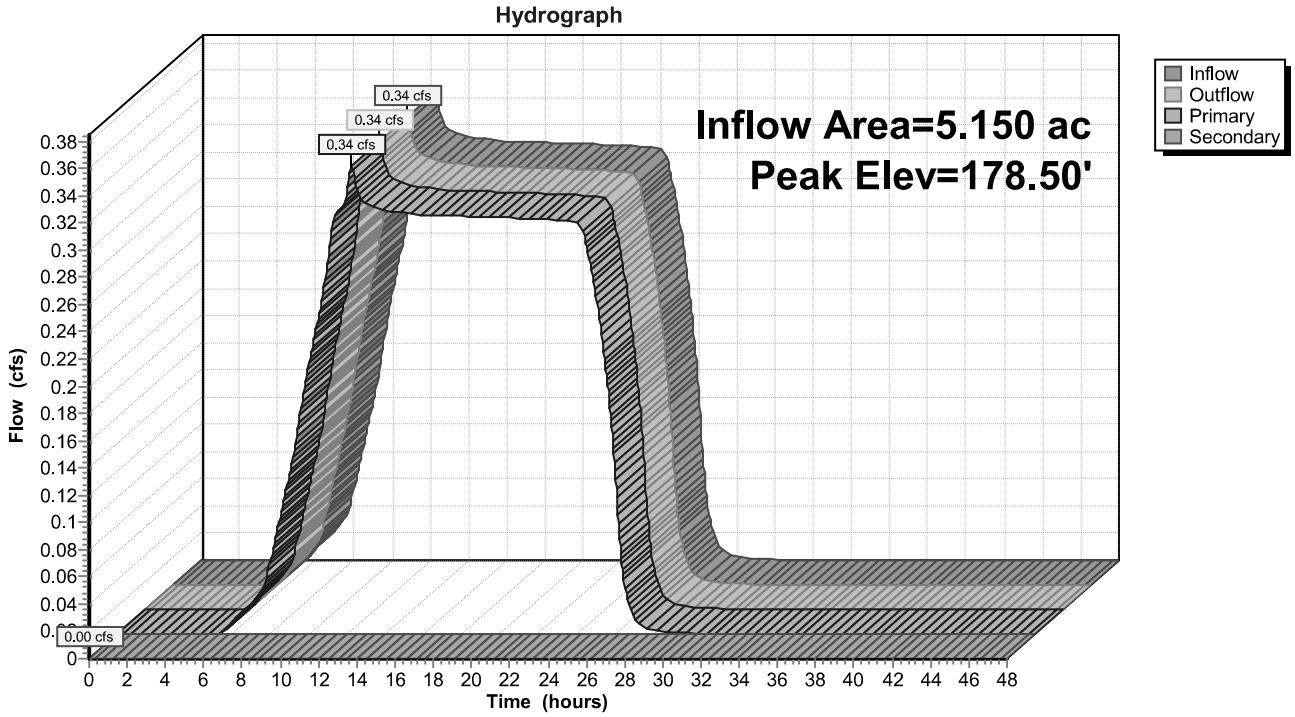
Primary OutFlow Max=0.34 cfs @ 12.28 hrs HW=178.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.34 cfs @ 2.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=178.14' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Orifice/Grate

Culvert

Pond 7P: DMH-1


Hydrograph
Inflow Area=5.150 ac
Peak Elev=178.50'
0.34 cfs
0.34 cfs
0.34 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

RPEx Consulting, LLC

Research. Plan. Execute.

Stormwater Management
Inspection & Maintenance Plan

Responsible Party: Gervais Homes, LLC

Construction Phase:

- Adhere to Erosion & Sedimentation Control Plan provided in project plans.
- All erosion and sedimentation devices should be installed as soon as practicable during the project.
- Erosion and sedimentation devices must be inspected and maintained at least once per week and within 24 hours after a storm event.
- Inspections must be performed by a person familiar with erosion and sedimentation control practices either by training, education or practical experience.
- Required maintenance and repairs must be performed immediately, but in no case later than 72 hours after being discovered.
- Erosion and sedimentation control measures must be maintained until permanent stabilization is completed.

Post-Construction:

Routine maintenance of stormwater management features will be required post-construction to ensure their proper function and to prevent undue flooding. The property owner and their designated maintenance staff should reference the attached "Long-Term Inspection And Maintenance Plan for Stormwater Management Practices" published by Maine DEP.

Additional References:

The Maine Erosion and Sedimentation Control BMP and Stormwater Management for Maine: Best Mana gement Practices Manuals published by the MDEP should be referenced for additional information.

LONG-TERM INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT PRACTICES

The long-term inspection and maintenance of a stormwater management system is as critical to its performance as its design and construction. Proper operation and maintenance ensures that the stormwater best management practice (BMP) will continue to remove pollutants effectively over the long-term and improving water quality. Without proper maintenance, BMPs are likely to fail and not provide the necessary stormwater treatment. Common maintenance issues that are encountered include:

- A single-family residential lot draining to a wooded stormwater treatment buffer that was eliminated because the owners were unaware of the function of the buffer;
- Maintenance that occurs too infrequently;
- Owners that don't understand, or fail to budget for, long-term maintenance of the approved stormwater system;
- Lack of a maintenance easement or proper access to the stormwater system for maintenance;
- Lack of the knowledge on the maintenance needs of the stormwater system; and
- Conflicts between municipalities and landowners on who is responsible for maintenance of the stormwater system.

Inspection and Maintenance Plan: The proper operation and maintenance of a stormwater treatment system must be laid out in an inspection and maintenance plan that clearly identifies required inspection activities, defines the maintenance schedule, and provides a method for determining when maintenance is necessary. The inspection and maintenance plan must also consider staffing and budget needs to perform maintenance.

Specific maintenance needs for each type of BMP are provided in their respective sections of the Stormwater BMP Manual. A summary table of the inspection and maintenance needs of each BMP type is included in the table on the next page.

Questions? Our environmental engineers are available to answer your questions about inspection and maintenance. Please contact staff based in your project's region:

Northern and Eastern Maine Regions	Ken Libbey	Ken.Libbey@maine.gov	(207) 299-4823
Central Maine Region	Ben Viola	Benedetto.Viola@maine.gov	(207) 446-2693
Southern Maine Region	Aubrey Strause	Aubrey.Strause@maine.gov	(207) 822-6365

INSPECTION AND MAINTENANCE PLAN FOR STORMWATER MANAGEMENT STRUCTURES (BMPS)

	INSPECTION SCHEDULE	CORRECTIVE ACTIONS
VEGETATED AREAS	Annually early spring and after heavy rains	Inspect all slopes and embankments and replant areas with bare soil or sparse growth.
		Armor erosion areas with riprap or divert the runoff to a stable area.
		Inspect and repair down-slope of all spreaders and turn-outs for erosion.
		Mow vegetation as specified for the area.
DITCHES, SWALES AND OPEN STORMWATER CHANNELS	Annually spring and late fall and after heavy rains	Remove obstructions, sediments & debris from ditches, swales and other open channels.
		Repair any erosion of the ditch lining.
		Mow vegetated ditches no shorter than six inches and no more than twice a year.
		Remove woody vegetation growing through riprap.
		Repair any slumping side slopes.
		Repair riprap where underlying filter fabric or gravel is showing or if stones have dislodged.
CULVERTS	Spring and late fall and after heavy rains	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit.
		Remove any obstruction to flow.
		Repair any erosion damage at the culvert's inlet and outlet.
		Remove sediments and debris from the bottom of the basin and inlet grates.
CATCH BASINS	Annually in the spring	Remove floating debris and hydrocarbons (using oil absorptive pads) from any structure.
		Clear and remove accumulated winter sand in parking lots and along roadways.
ROADWAYS AND PARKING AREAS	Annually in the spring or as needed	Sweep pavement to remove sediment and sand.
		Grade road shoulders and remove accumulated winter sand.
		Grade gravel roads and gravel shoulders.
		Ensure that stormwater runoff is not impeded by false ditches of sediment in the shoulder.
		Clean out the sediment within water bars or open-top culverts.
RESOURCE AND STORMWATER TREATMENT BUFFERS	Annually in the spring	Inspect buffers for evidence of erosion, concentrated flow, or encroachment by development.
		Manage the buffer's vegetation with the requirements in any deed restrictions.
		Repair any sign of erosion within a buffer.
		Inspect and repair down-slope of all spreaders and turn-outs for erosion.
		Install level spreaders or ditch turn-outs as needed for even distribution of flow.
		Clean out any accumulation of sediment within the spreader bays or turnout pools.
		Mow non-wooded buffers no shorter than six inches and no more than twice a year.
WETPONDS AND DETENTION BASINS	Annually in fall and after heavy rains	Inspect the embankments for settlement, slope erosion, piping, and slumping.
		Mow the embankment to control woody vegetation.
		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash racks.
		Remove and dispose of sediments and debris within the control structure.
		Repair any damage to trash racks or debris guards.
		Replace any dislodged stone in riprap spillways.
		Remove and dispose of accumulated sediments within the impoundment and forebay.
FILTRATION AND INFILTRATION BASINS	Annually in the spring and late fall	Clean the basin of debris, sediment, and hydrocarbons.
		Provide for the removal and disposal of accumulated sediments within the basin.
		Renew the basin media if it fails to drain within 72 hours after a one inch rainfall event.
		Till, seed, and mulch the basin if vegetation is sparse.
		Repair riprap where underlying filter fabric or gravel is showing, or where stones have dislodged.
PROPRIETARY DEVICES	As specified by manufacturer	Contract with a third-party approved by the manufacturer for inspection and maintenance.
		Follow the manufacturer's plan for cleaning of devices.
OTHER PRACTICES	As specified for devices	Contact the Department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.