



City of Bristol
Conservation Commission/ Inland Wetlands and Watercourses Agency

SPECIAL MEETING - MONDAY, AUGUST 12, 2024
CITY HALL COUNCIL CHAMBERS
111 NORTH MAIN STREET
6:30 P.M.

INFORMATION FOR THE PUBLIC TO ACCESS THIS MEETING

Zoom Meeting link:

<https://bristolct-gov.zoom.us/j/85845421060?pwd=dpwjuFoAMNffxHa7WbNbomaxb2sA6s.1>

Meeting ID:

858 4542 1060

Meeting Passcode:

123456

Join by phone

1-929-205-6099

AGENDA

1. Pledge of Allegiance
2. Introductions and Seating of Alternate Agency Members
3. Public Participation
4. Approval of Minutes
 - a. Regular Meeting - July 1, 2024
 - b. On-Site Meeting - June 26, 2024
5. Pending Applications
 - a. Application #2034 – Wetlands application to construct a wetlands crossing (access bridge) to rear of property and construction in the upland review area of two dwelling units as part of a greater Open Space Development consisting of 16 dwelling units at

260 Perkins Street and Rear Lot; Assessor's Map 60, Lots 12-5 & 11 (Rear Lot); P&B Properties LLC, applicant.

6. New Applications

- a. Application #2035 – Wetlands application to modify previous Wetlands Permit #1964 to install utilities to Lot 2 through a 20'x40' trench and restoration at 175 Southdown Drive & 1936 Perkins Street, Assessor's Map 58, Lots 16-1-2 & 16-11; LED, LLC, applicant.
- b. Application #2036 – Wetlands application for the construction of a detached two car garage at 236 Robertson Street; Assessor's Map 45, Lot 10; Kelly Soucie & Ed Morelli, applicant.

7. Old Business

8. New Business

9. Staff Reports

- a. IWWC Report – July 2024

10. Communications

- a. Report Update - City Storm Flooding 2023

11. Adjournment

REMINDER: The next Regular Meeting of the Inland Wetland Commission is Monday, September 9, 2024

**INLAND WETLANDS & WATERCOURSES AGENCY
OF THE CONSERVATION COMMISSION OF THE CITY OF BRISTOL
MINUTES
REGULAR MEETING OF MONDAY DATE, JULY 1, 2024**

AGENCY MEMBERS	NAME:	PRESENT	ABSENT
REGULAR AGENCY MEMBERS	Zachary Fisk (Chairman)	X	
	Michael Robinson (Vice Chairman)	X	
	David Rooks (Secretary)	X	
	James Carros	X	
	Daniel Massaro, Jr.	X	
	James Ritchie	X	
	Faye Duquette	X	
ALTERNAME AGENCY MEMBERS	Greg Klimek	X	
	Laura Valentino	X	
STAFF	Raymond Rogozinski, P.E., Director of Public Works	X	

Chairman Fisk designated regular Agency Members Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk to vote on the Public Participation.

Chairman Fisk reminded the Agency Members the next Meeting of the Inland Wetlands & Watercourses Agency of The Conservation Commission Monday, August 12, 2024 (Special Meeting.)

1. Pledge of Allegiance
2. Call to order
3. Public Participation

There was no public participation.

4. Approval of Minutes
 - a. Regular Meeting – June 3, 2024

MOTION: Move to approve the June 3, 2024, regular meeting minutes, as amended.

By: Robinson

Seconded: Rooks

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None. Abstained: None.

10 Communications

C. IWWC Meeting Date Change – August Regular Meeting

Chairman Fisk, stated we have been asked to move the August meeting due to scheduling conflicts.

Raymond Rogozinski, Director of Public Works, stated that there is early voting and this is why the meeting has to be rescheduled.

MOTION: to approve the August 12, 2024 rescheduled meeting date.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None. Abstained: None.

Chairman Fisk moved up application # 2033 on the agenda.

- a. Application #2033 – Wetlands application to add approximately 80 cubic yards of top soil on existing field to a depth of approximately 2 inches and re-seed at 1001 Stafford Avenue; Assessor's Map 53, Lot 148; St. Paul Catholic High School, applicant.

The Commission received the following items in their electronic packets:

- a. Assessor's Map with Inland Wetlands Watercourse Layers
- b. Application
- c. Plan (Electronic Copy Only)

MOTION: Move to receive Application #2033.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None. Abstained: None.

The application is received.

Bob Fioroto, 163 Hepworth St, St. Paul's football booster club, stated they are asking to place 80 square yards of top soil on the practice field at St. Paul's High School so the team can practice on a safer field.

Cary M. Dupont of St. Paul Catholic High School, 1001 Stafford Ave., Bristol, representing the applicant, explained this field is only used for practice drills. No games or scrimmages are held there.

Raymond Rogozinski, Director of Public Works, clarified that this is a practice field, adjacent to the main field and it is in the upland review area and looking to place 80 cubic yards of top soil over the field.

MOTION: Move to declare Application #2033 a non-significant activity.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None.
Abstained: None.

The application was declared a non-significant activity.

Raymond Rogozinski, Director of Public Works, stated that staff has reviewed the application and recommends approval with standard stipulations.

MOTION: Move to approve Application #2033 – Wetlands application to add approximately 80 cubic yards of top soil on existing field to a depth of approximately 2 inches and re-seed at 1001 Stafford Avenue; Assessor's Map 53, Lot 148; St. Paul Catholic High School, applicant, in accordance with the plot plan and information submitted with standard stipulations.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None. Abstained: None.

The application is approved.

6 Receipt of New Applications

- b. Application #2034 – Wetlands application to construct a wetland's crossing (access bridge) to rear of property and construction in the upland review area (two new single-family residential homes) as part of a greater 16 lot single-family residential subdivision at 260 Perkins Street and Rear Lot; Assessor's Map 60, Lots 12-5 & 11 (Rear Lot); P&B Properties LLC, applicant.

The Commission received the following items in their electronic packets:

- a. Assessor's Map with Inland Wetlands Watercourse Layers
- b. Application (revised)
- c. Narrative of Environmental Evaluation of the proposed project (25 Pgs.) that included Soil Scientist's Wetland Evaluation Report; Wetland Survey Photos; Maps; NDDDB Preliminary Site Assessment; Boboske Perkins St. Bristol Map
- d. Stormwater Management Report, dated June 17, 2024, prepared by LBM Engineering, LLC (13 Pgs.) e. Maps of proposed houses (4 Pgs.)
- f. Draft of Stormwater Management Plan (4 Pgs.)
- g. Stormwater Report, dated June 17, 2024 (21 Pgs.)
- h. Plan (Electronic Copy Only) (11 Pgs.)

MOTION: Move to receive Application #2034.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None. Abstained: None.

The application is received.

Chairman Fisk, stated that he doesn't feel that the application completely describes the proposed activities. He is asking for the application to be postponed until next month.

Attorney Timothy Furey, 43 Bellevue Ave., representing the applicant, explained that the application has been submitted with detailed plans, reviewed with staff and amended per their request. The application is complete.

Chairman Fisk, stated that in his mind it does not completely describe the proposed activities and has some concerns.

Attorney Timothy Furey, 43 Bellevue Ave, stated it includes detailed plans and phasing. It is ready to be accepted. I am asking to schedule a public hearing.

Chairman Fisk, stated that he is not scheduling a public hearing until the activity proposed is understood.

Greg Klimek, Alternate commissioner asked Ray Rogozinski if he has reviewed the application and his opinion.

Raymond Rogozinski, Director of Public Works, stated yes, he has reviewed the application and materials. Ultimately, the question from the Chairman is whether the application form accurately depicts the actual work.

Chairman Fisk, stated that on the application it appears there is a bridge and that it does not impact the wetlands, there is also no mention of a road to access two homes which would be in the upland area and it does not state how it would not impact the wetlands.

Attorney Furey, 43 Bellevue Ave, stated that is the purpose of the public hearing and review the plans with the staff. Attached to the application are detailed plans that include phasing.

Chairman Fisk, stated that the importance of the application form is to understand the activity and this is the place to come to and it doesn't show the activities that could be better summarized on the application.

Attorney Furey, 43 Bellevue Ave. stated that there are 66 pages included with this application and he wants to remind the members of the commission if they have a personal interest or predetermined this application you need to disqualify yourself. You have 65 days to schedule a public hearing and that starts today. If the staff want additional information, we are happy to provide it. I disagree with your evaluation and if the staff wanted additional information and, in this case, they did and we amended the application to accommodate their request.

Raymond Rogozinski, Director of Public Works, spoke, to clarify from staff perspective that the concern as chairman is that the application form doesn't really depict the proposed work. This will be the same next month unless the applicant revises it. The chairman recommend that the commission not schedule a public hearing and ask the applicant to update the form.

Chairman Fisk, stated yes that is what I recommend.

Attorney Furey, 43 Bellevue Ave, stated that this puts the commission at risk for what you are trying to achieve to have this vetted properly because we submitted the application that complies with the requirements of the regulations and the clock to hold the public hearing. If thru the chairman, you reach out to public works director and he asks for additional information we are happy to supplement the record with whatever is appropriate. I encourage you as a commission to schedule it.

Commissioner Rooks stated that he just received the documents this weekend and has not been able to go thru the whole plan. He stated that he is not ready to decide if it's a significant activity and he agrees with Chairman Fisk that it needs to be postponed. The application can return in August or can be scheduled a special meeting.

Chairman Fisk stated that there also appears that you are doing work in the wetlands and beyond 100 feet there is work happening. There are two boxes in 5C that should be checked off so its confusing to me as a commissioner on here for over 20 years.

Attorney Fury, stated that you are creating an appealable issue. If it is not scheduled within 65 days of tonight it is an automatic appealable issue.

MOTION: Move to postpone Application #2034 – Wetlands application to construct a wetlands crossing (access bridge) to rear of property and construction in the upland review area (two new single-family residential homes) as part of a greater 16 lot single-family residential subdivision at 260 Perkins Street and Rear Lot; Assessor's Map 60, Lots 12-5 & 11 (Rear Lot); P&B Properties LLC, applicant, in accordance with the plot plan and information submitted with standard stipulations.

By: Rook

Seconded: Robinson

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None.

Abstained: Ritchie

The application is postponed.

Raymond Rogozinski, Director of Public Works, advised the public to monitor the cities website as there may be a need for a special meeting due the possibly being 4 days short of August 12th.

5 Public Hearings

- a. Application #2032 - Wetlands application for the reconstruction of Minor Street including drainage at the intersection of Minor Street and Hill Street extending approximately 475 feet west and within City of Bristol Right-of-Way; City of Bristol, Department of Public Works, applicant.
 - a. Assessor's Map with Inland Wetlands Watercourse Layers
 - b. Application
 - c. Plan (Electronic Copy Only)
 - d. Sign Posting Map

Chairman Fisk reviewed the onsite minutes and read into the record.

Greg Klimek, stated he was onsite on Tuesday, and knows he cannot vote but wants it on the record.

MOTION: To file the onsite minutes for application # 2032.

By: Rooks

Seconded: Robinson

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None.

Abstained: None

MOTION: Move to receive Application #2032.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None.
Abstained: None.

The application is received.

MOTION: Move open a public hearing

By: Robinson

Seconded: Rooks

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None. Abstained: None.

The hearing is open.

William Stango, Civil Engineer, City of Bristol, Dept. of Public Works, 111 North Main St., representing the applicant, explained that the purpose of the project is to install drainage and construct a roadway from Minor Street and Hill Street. The project is being done due to the serious erosion of the roadway and at completion to accept as city road.

Raymond Rogozinski, Director of Public Works, clarified that the Department of Public Works plans to improve the road, but is not accepting the road as a city roadway. It is only to reduce the ongoing maintenance of the road itself.

Katie Kearney, 43 Minor Street, spoke of her concern of the poor drainage and her eroding driveway over the past three years. She has filed a claim back then and has never heard a response regarding it. She is also asking where the water will be draining to.

Raymond Rogozinski, Director of Public Works, stated that this was not the forum for the inland wetland commission, but she can call him tomorrow for information on the claim.

Wally Frechette, 355 Hill Street, asked what will happen with the water in the channel as it is already overflowing there.

William Stango, Civil Engineer, stated that there is no change to the water flow, that it is only changing the drainage and erosion issue. Its not the scope of the project to change the conditions of the channel. The proposal is no net impact.

MOTION: to close the public hearing

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None. Abstained: None.

The public hearing is closed.

MOTION: Move to approve Application #2032 - Wetlands application for the reconstruction of Minor Street including drainage at the intersection of Minor Street and Hill Street extending approximately 475 feet

west and within City of Bristol Right-of-Way; City of Bristol, Department of Public Works, applicant, in accordance with the plot plan and information submitted with standard stipulations.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None. Abstained: None.

The application is approved.

6 Old Business

Doug Towne, 42 Paul Street, presented a letter from an engineering firm he is looking to hire and is asking if this is the right thing, he should be doing regarding the direction he was given from the board regarding his property.

Raymond Rogozinski, Director of Public Works, read into the record the letter presented to the board. He stated that if the board recommended him to hire an engineer, then he can do so. He can get the records from public works department.

Raymond Rogozinski, Director of Public Works, introduced Anthony Laurenzetti to the commission. He stated that Tony has worked the past year in the engineering department filling in and he will be the new liaison attending the wetlands meeting starting next month.

Anthony Laurenzetti, engineer liaison with City of Bristol, introduced himself to the commission and gave a summary of his experience.

Chairman Fisk, stated he was contacted by a resident on Royal Drive and was asking about an issue happening there.

Raymond Rogozinski, Director of Public Works, stated that a house on the corner was submitted an application thru the building department to build a roof over an existing impervious concrete patio. An adjacent property owner was concerned that the city did not have a public hearing. Ray told them that is not a wetland requirement for this issue. It is an existing impervious area and no permit is required from wetlands.

8. New Business

Chairman Fisk, asked about how to handle public participation and timing especially at these large applications.

Raymond Rogozinski, Director of Public Works, recommended that the commission adapt the policy and procedure that the zoning commission has. It limits the speaking to three minutes and have a prepared document that is available. HE does recommend that it be posted so people have it and know the expectations.

MOTION: to adapt the Zoning Commission policy with respect to public comment during public hearings and notify the public ahead of time.

By: Rooks

Seconded: Robinson

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.
Against: None.
Abstained: None.

7 Staff-Reports

a. IWWC Report – June 2024

The Commission received the following items in their electronic packets:

a. Inland Wetlands Enforcement Officers report dated June 25, 2024.

MOTION: Move to file the report from the Inland Wetlands Zoning Enforcement Officer.

By: Robinson

Seconded: Carros

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None. Abstained: None.

The report is filed.

10. Communications

a. City Council Appointment Letter – Laura Valentino

The Commission received the following item in their electronic packets:

a. Letter dated June 12, 2024, from Erica Cabiya, CCTC, Town and City Clerk, regarding the appointment of Laura Valentino as an alternate member of the Agency.

b. CACIWC 50th Anniversary

The Commission received the following item in their electronic packets:

1. Membership Renewal Form undated, from CT Association of Conservation and Inland Wetlands Commissions, Inc. (CACIWC), regarding the membership renewal for the Agency.

11. Adjournment

MOTION: Move to adjourn at 7:30 P.M.

By: Robinson

Seconded: Rooks

For: Duquette, Robinson, Carros, Massaro, Ritchie, Rooks and Fisk.

Against: None. Abstained: None.

This meeting was taped.

Zachary Fisk, Chairman
Inland Wetlands and Watercourses Agency of the
Conservation Commission of the City of Bristol

David Rooks, Secretary

Application #2032 – Wetlands application for the reconstruction of Minor Street including drainage at the intersection of Minor Street and Hill Street extending approximately 475 feet west and within City of Bristol Right-of-Way; City of Bristol, Department of Public Works, applicant.

Wednesday, June 26, 2024 5:30 PM

Attendees

- Zachary Fisk, Chairman
- Michael Robinson, Vice Chairman
- David Rooks, Secretary
- James Ritchie, Commissioner
- Faye Duquette, Commissioner
- James Carros
- Greg Klimek
- Bill Stango, Civil Engineer – City of Bristol

The City of Bristol gave a general overview of the proposed project. Approximate project and wetland limits were identified in the field. Site conditions including the erosion along the existing roadway were observed.

A resident made comment to note the existence of a sanitary cleanout located at the west end of the project corridor.

Meeting ended at approximately 5:45 PM

**BRISTOL CONSERVATION COMMISSION
INLAND WETLANDS AGENCY
FORM IW-1 (Application for a Wetlands Permit)**

For Office Use Only
APPLICATION NO. 2034
DATE FILED: June 20, 24
DECISION DATE: _____
DECISION: _____

1. APPLICANT:

Name: P & B Poperties LLC Signature: [Signature]
Address: 65 Burritt St City: New Britain State: _____ Zip: _____
Telephone No.: 860-224-2244 ☐ home ☐ work Email: jimpryor1@gmailcom

2. PROPERTY OWNER(S):

Name: Same Signature: [Signature]
Address: _____ City: _____ State: _____ Zip: _____
Telephone No.: _____ ☐ home ☐ work Email: _____

3. DESCRIBE THE SUBJECT PROPERTY:

Address or Location: 260 Perkins Street
Assessor's Map No.: 60 Assessor's Lot No.(s): Lots 12-5 & 11 rear

Description of wetlands (location, approximate area to be disturbed, vegetation, etc.):

Unnamed brook runs through portion of property. No area of wetlands to be disturbed. Portion of upland review area to be disturbed. See plans and reports provided.

4. DESCRIBE THE PROPOSED ACTIVITY AND ITS PURPOSE:

Activity to construct access bridge to rear of property. The point of access is the only available means of access. To construct two houses in upland review area

5. CHECK THE STATEMENT WHICH APPLIES TO THE PROPOSED ACTIVITY:

- ☐ a. The proposed activity is either a use permitted as of right or a non-regulated use, under subsection of Section 4 of the Inland Wetlands Regulations. *See instructions for submission requirements.*
- ☐ b. The proposed activity is not regulated because it is greater than 100 feet from a wetlands or watercourse or will not adversely affect the wetlands or watercourse. *See instructions for submission requirements.*
- ☒ c. The proposed activity is a regulated activity and will occur:
- | | |
|---|---|
| ☐ in a wetlands or watercourse; | area of impact: _____ SF _____ acres) |
| ☒ within 100 feet of a wetlands or watercourse; | area of impact: <u>**</u> SF _____ acres) |
| ☐ beyond 100 feet of a wetlands or watercourse; | area of impact: _____ SF _____ acres) |

**** See reports attached**

6. FLOW CALCULATIONS:

Does a watercourse flow through the subject property?

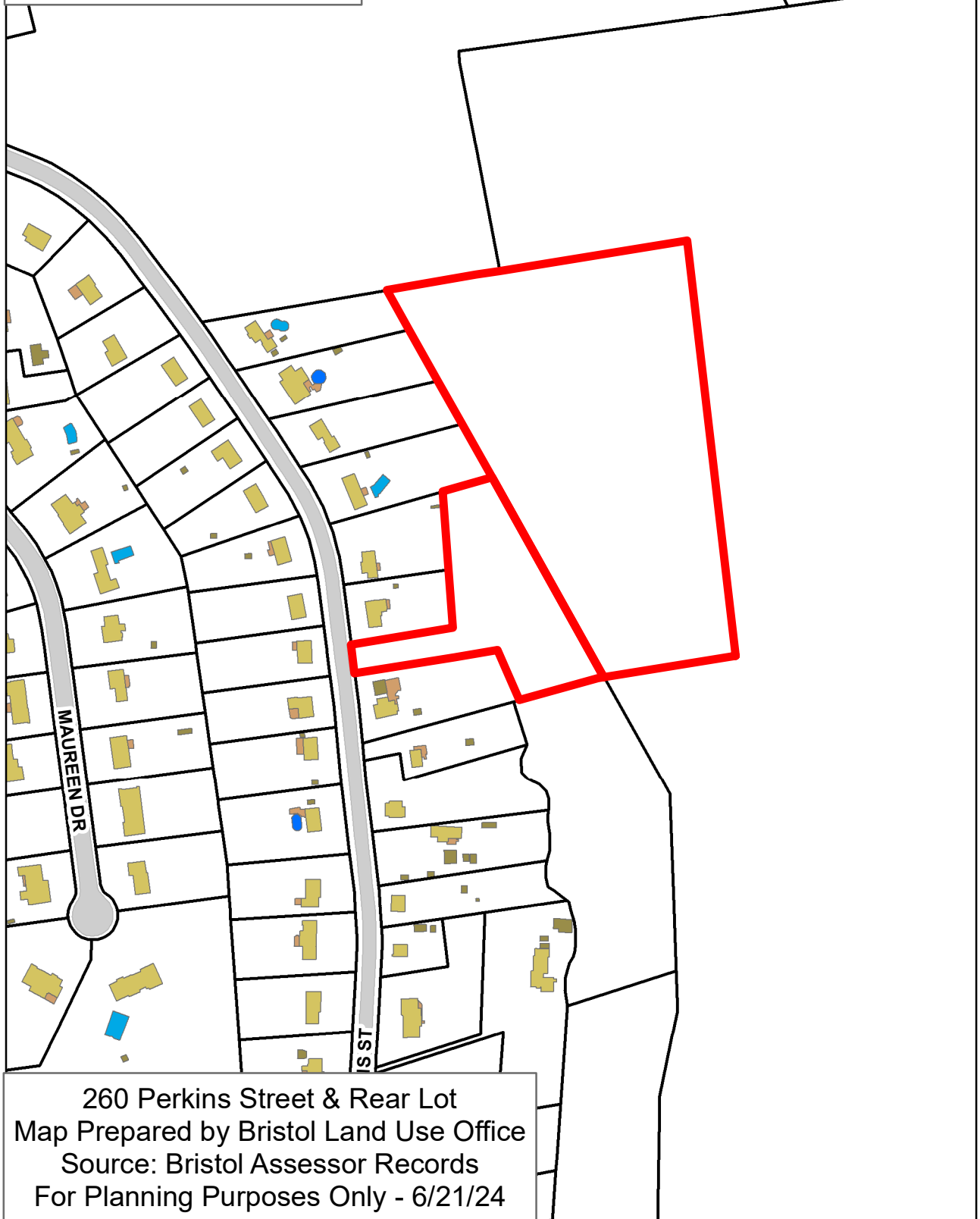
☒ yes ☐ no

If "yes", see instructions for submission requirements.

CC: Timothy W. Furey
Furey, Donovan, Cooney & Dyer P.C
43 Bellexue Ave
Bristol Ct 06010
tfurey@furey donovan.com

Application #2034
Location

Legend
 SITE



Application #2034
Aerial

Legend
 SITE

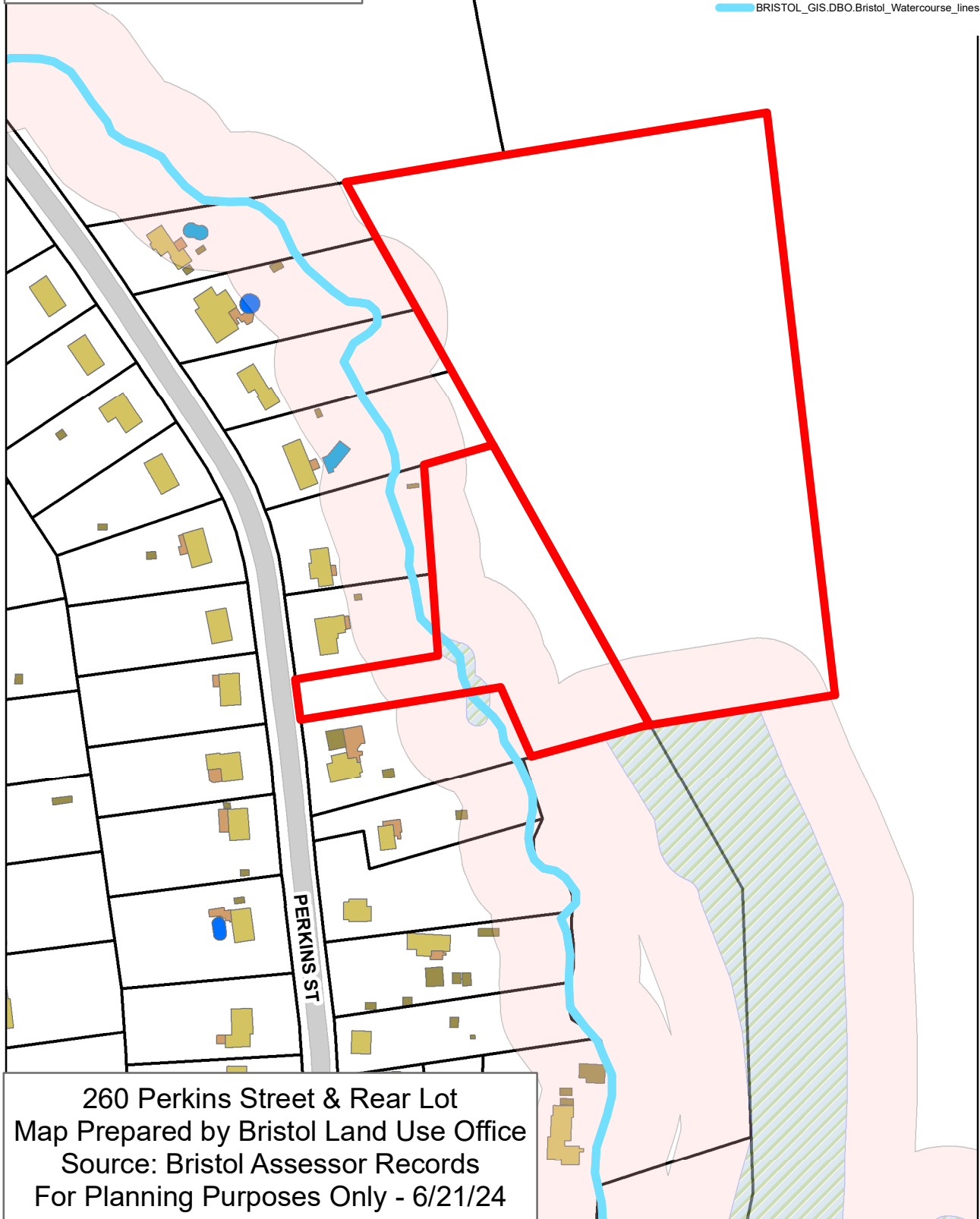


260 Perkins Street & Rear Lot
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 6/21/24

Application #2034
IWWC

Legend

-  SITE
-  WETLANDS
-  UplandReviewArea
-  BRISTOL_GIS.DBO.Bristol_Waterbodies
-  BRISTOL_GIS.DBO.Bristol_Watercourse_Polygons
-  BRISTOL_GIS.DBO.Bristol_Watercourse_lines



260 Perkins Street & Rear Lot
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 6/21/24

LAW OFFICES

FUREY, DONOVAN, COONEY & DYER P. C.

Project Narrative

Project Title: Bristol Village

General Information

Project Name: Bristol Village Project Location: Perkins Street Zone: R-25 Project Type: Open Space Development Date Submitted: Wetlands Application #2034 June 20 2024 Wetlands Approval Required: Yes	Developer: P & B Properties, LLC Site Engineer: Zirolli Engineering & Surveying Surveyor: Clark Land Surveying Environmental Scientist/Wetland Ecologist: Clinton L. Webb, Jr. Soil Scientist: Ian T. Cole Legal Representative: Attorney Timothy W. Furey
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Project Overview

The proposed development calls for the construction of 16 residential housing units on a proposed open space subdivision located on Perkins Street. The present proposal provides 25% of the property along the City of Bristol owned adjacent property would be placed in a permanent conservation easement. At present, the site consists of two parcels one being a parcel with frontage on Perkins Street known as 260 Perkins Street and the other being an adjacent parcel without any street frontage. The two properties together contain 10.693 acres of land and would be merged as part of the completion of the application process.

The wetlands on the property encompasses 1,367 square feet and consist of a watercourse that flows through the property approximately 137 feet in length. There are additional wetlands shown along the easterly boundary of the property but the applicants predecessor in title had a similar area on the western boundary removed from a wetlands designation in November 1999 application #1089. The area shown on the eastern boundary as wetlands is substantially higher in elevation from the watercourse and is not believed to have any wetlands values.

The site is being designed to be compliant with both the updated State of Connecticut Stormwater Management regulations and the State of Connecticut Soil and Erosion Control Guidelines.

The Project will require the construction of a bridge to cross the brook on the property and work within the upland review area for that purpose. The applicants have reviewed several types of construction scenarios for the brook crossing and have proposed a much more expensive method which does not require the applicant to construct any portion of the bridge within the designated wetlands resource.

The applicant has proposed a detailed phasing plan to assure the protection of the wetlands resource. Four phases are proposed for the wetlands regulated areas and are detailed on the plans submitted with the application.

The applicant has provided an environmental evaluation from C. Webb & Associates, LLC. Clinton L. Webb is an experienced environmental consultant and has worked extensively with Eversource to design bridges for wetlands crossings which meet all state and federal requirements. Mr. Webb was instrumental in providing advice for both the bridge design and phasing plan.

The applicant has provided a Storm Water Management Report and is providing additional information to the City of Bristol Engineering Department as it is requested. The applicants met with the City Engineering Staff on July 17, 2024 to review the initial data and plans.

LAW OFFICES • FUREY, DONOVAN, COONEY & DYER P.C.

43 BELLEVUE AVENUE • P. O. BOX 670 • BRISTOL, CT 06011-0670 • (860)589-4343 • JURIS NO. 21150



Department of Public Works | 860.584.6125

MEMORANDUM

DATE: August 7, 2024

TO: Zachary Fisk, Chairman
Inland Wetlands Commission
Timothy Furey, Esq (applicant's attorney)
FROM: Raymond A. Rogozinski, P.E., Director of Public Works

RE: **Application 2034 (DPW Engineering -Application Form Review):
Wetland application to construct a wetland crossing (access bridge) to
rear of property and construction in the upland review area (two new
residential units) as part of 16 unit Open Space Development at 260
Perkins Street and rear lot; Assessor's map 60, lot 12-5 & 11 (rear lot);
P&B Properties LLC, applicant**

The Inland Wetland Commission received application 2024 at its July 1, 2024 meeting. On July 18, 2024 the applicant provided the attached Project Narrative. The Department of Public Works Engineering Division is currently reviewing the plans and reports submitted with the application, however the following shall be noted for record purposes with respect to the attached application form submitted by the applicant.

A. Application Item 3. "Description of Wetlands"

Applicant Completed Form: Unnamed Brook runs through portion of property. No area of wetlands disturbed. Portion of upland review area to be disturbed. See plans and report provided.

DPW Engineering Comments:

- i. Proposed bridge crosses a brook/watercourse (approx. area of wetlands/water course 10 ft. x 72 ft. = 720 SF). Approximately area of upland review (proposed grading) associated with watercourse crossing (14,400 SF).
- ii. Excavation within upland review area - City designated wetlands located on adjacent property to the north (approx. 19,800)

B. Application Item 5. "Check the Statement which Applies to the Proposed Activity"

Applicant Completed 5.c. Proposed activity is a regulated activity and will occur – within 100 ft. of a wetland or watercourse (area of impact – see reports attached).

DPW Engineering Comments

- i. Proposed activity is a regulated activity and will occur – in a wetland or watercourse; Proposed bridge crossing of brook/watercourse (approx. area of wetlands/water course 10 ft. x 72 ft. = 720 SF)
- ii. Proposed activity is a regulated activity and will occur – within 100 feet of a wetland or watercourse (area of impact approx. 34,200).

It should also be noted that the proposed activity will require an earth removal permit issued by the City's Zoning Commission. The potential of soil erosion into to the wetland/upland review area will be evaluated by DPW Engineering as part of the detailed review of the application. In addition, please note the proposed residential units, indicated on the application are classified as an open space development. Sixteen (16) units are proposed. Two (2) units are within the upland review area (City designated wetland on adjacent property to the north). The agenda for the July 1, 2024 meeting indicated a 16 lot residential subdivision.

DPW Engineering application review based on plans dated 6/17/24 submittal to the City by the application at the time of permit application (June 2024).

Please feel free to contact me with any questions / concerns at 860-584-6113.

LAW OFFICES

FUREY, DONOVAN, COONEY & DYER P. C.

Project Narrative

Project Title: Bristol Village

General Information

Project Name: Bristol Village Project Location: Perkins Street Zone: R-25 Project Type: Open Space Development Date Submitted: Wetlands Application #2034 June 20 2024 Wetlands Approval Required: Yes	Developer: P & B Properties, LLC Site Engineer: Zirolli Engineering & Surveying Surveyor: Clark Land Surveying Environmental Scientist/Wetland Ecologist: Clinton L. Webb, Jr. Soil Scientist: Ian T. Cole Legal Representative: Attorney Timothy W. Furey
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Project Overview

The proposed development calls for the construction of 16 residential housing units on a proposed open space subdivision located on Perkins Street. The present proposal provides 25% of the property along the City of Bristol owned adjacent property would be placed in a permanent conservation easement. At present, the site consists of two parcels one being a parcel with frontage on Perkins Street known as 260 Perkins Street and the other being an adjacent parcel without any street frontage. The two properties together contain 10.693 acres of land and would be merged as part of the completion of the application process.

The wetlands on the property encompasses 1,367 square feet and consist of a watercourse that flows through the property approximately 137 feet in length. There are additional wetlands shown along the easterly boundary of the property but the applicants predecessor in title had a similar area on the western boundary removed from a wetlands designation in November 1999 application #1089. The area shown on the eastern boundary as wetlands is substantially higher in elevation from the watercourse and is not believed to have any wetlands values.

The site is being designed to be compliant with both the updated State of Connecticut Stormwater Management regulations and the State of Connecticut Soil and Erosion Control Guidelines.

The Project will require the construction of a bridge to cross the brook on the property and work within the upland review area for that purpose. The applicants have reviewed several types of construction scenarios for the brook crossing and have proposed a much more expensive method which does not require the applicant to construct any portion of the bridge within the designated wetlands resource.

The applicant has proposed a detailed phasing plan to assure the protection of the wetlands resource. Four phases are proposed for the wetlands regulated areas and are detailed on the plans submitted with the application.

The applicant has provided an environmental evaluation from C. Webb & Associates, LLC. Clinton L. Webb is an experienced environmental consultant and has worked extensively with Eversource to design bridges for wetlands crossings which meet all state and federal requirements. Mr. Webb was instrumental in providing advice for both the bridge design and phasing plan.

The applicant has provided a Storm Water Management Report and is providing additional information to the City of Bristol Engineering Department as it is requested. The applicants met with the City Engineering Staff on July 17, 2024 to review the initial data and plans.

**BRISTOL CONSERVATION COMMISSION
INLAND WETLANDS AGENCY
FORM IW-1 (Application for a Wetlands Permit)**

For Office Use Only

APPLICATION NO. 2034

DATE FILED: June 20, 24

DECISION DATE: _____

DECISION: _____

1. APPLICANT:

Name: P & B Properties LLC Signature: [Signature]
Address: 65 Burritt St City: New Britain State: _____ Zip: _____
Telephone No.: 860-224-2244 ☐ home ☐ work Email: jlmpryor1@gmail.com

2. PROPERTY OWNER(S):

Name: Same Signature: [Signature]
Address: _____ City: _____ State: _____ Zip: _____
Telephone No.: _____ ☐ home ☐ work Email: _____

3. DESCRIBE THE SUBJECT PROPERTY:

Address or Location: 260 Perkins Street
Assessor's Map No.: 60 Assessor's Lot No.(s): Lots 12-5 & 11 rear

Description of wetlands (location, approximate area to be disturbed, vegetation, etc.):

Unnamed brook runs through portion of property. No area of wetlands to be disturbed. Portion of upland review area to be disturbed. See plans and reports provided.

4. DESCRIBE THE PROPOSED ACTIVITY AND ITS PURPOSE:

Activity to construct access bridge to rear of property. The point of access is the only available means of access. To construct two houses in upland review area

5. CHECK THE STATEMENT WHICH APPLIES TO THE PROPOSED ACTIVITY:

- ☐ a. The proposed activity is either a use permitted as of right or a non-regulated use, under subsection of Section 4 of the Inland Wetlands Regulations. *See instructions for submission requirements.*
- ☐ b. The proposed activity is not regulated because it is greater than 100 feet from a wetlands or watercourse or will not adversely affect the wetlands or watercourse. *See instructions for submission requirements.*
- ☒ c. The proposed activity is a regulated activity and will occur:
- | | |
|---|---|
| ☐ in a wetlands or watercourse; | area of impact: <u>_____</u> SF <u>_____</u> acres) |
| ☒ within 100 feet of a wetlands or watercourse; | area of impact: <u>**</u> SF <u>_____</u> acres) |
| ☐ beyond 100 feet of a wetlands or watercourse; | area of impact: <u>_____</u> SF <u>_____</u> acres) |

**** See reports attached**

6. FLOW CALCULATIONS:

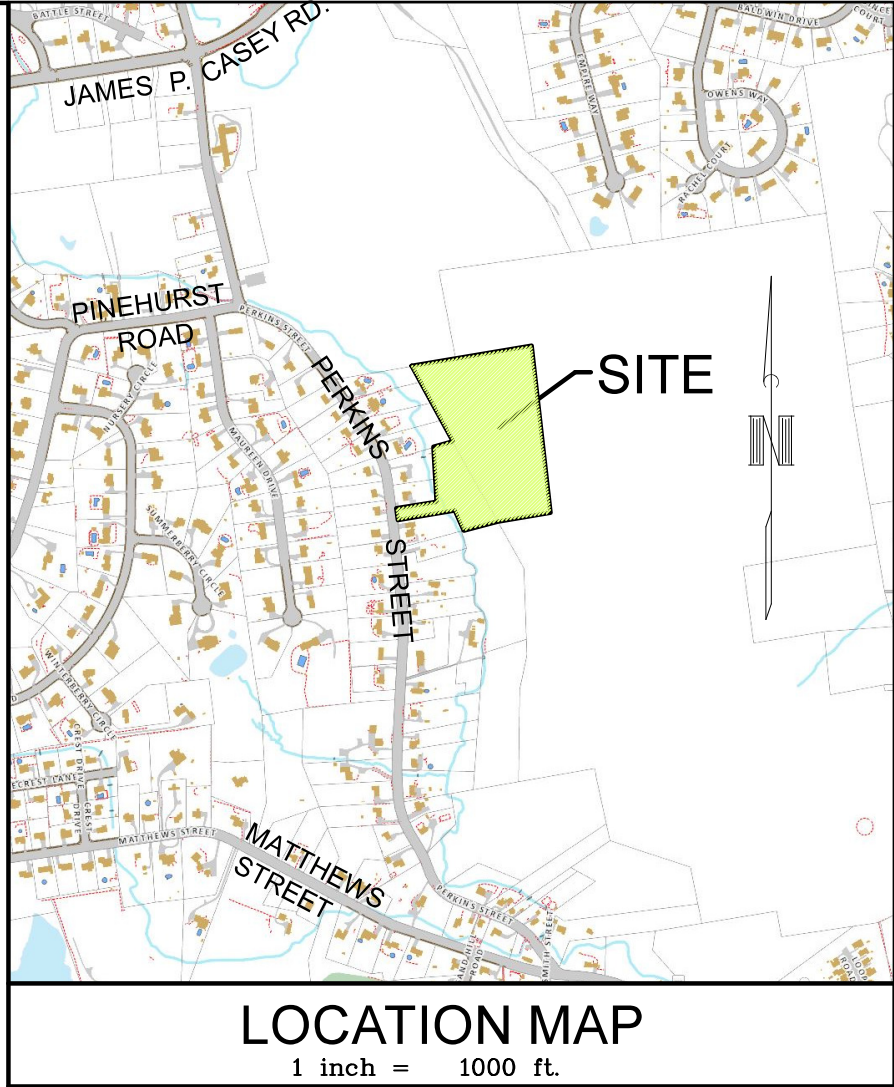
Does a watercourse flow through the subject property?

☒ yes ☐ no

If "yes", see instructions for submission requirements.

CC: Timothy W. Furey
Furey, Donovan, Cooney & Dyer P.C
43 Bellevue Ave
Bristol Ct 06010
tfurey@furey donovan.com

BRISTOL VILLAGE
OPEN SPACE DEVELOPMENT
#260 PERKINS STREET
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT



LIST OF DRAWINGS

- C COVER SHEET
- EC EXISTING CONDITIONS
- SD SITE DEVELOPMENT (1"=30')
- ES E & S CONTROL PLAN (1"=40')
- EN E & S CONTROL NOTES & DETAILS
- S-1 thru S-4 CONSTRUCTION STAGING
- PP PLAN & PROFILE - ROADWAY
- D DETAILS - SITE CONSTRUCTION
- X WATERCOURSE PROFILE & X-ING SECTION

OWNER:
P&B PROPERTIES LLC
65 BURRITT STREET
NEW BRITAIN, CT 06053
VOL. 2281, PG. 517

M/B/L:
60-12-5 & 60-11 REAR

UNDERLYING ZONE:
R-25

PROPOSED ZONE:
OPEN SPACE DEVELOPMENT ZONE
(SECTION 9.1 BRISTOL ZONING REGULATIONS)

TOTAL AREA:
10.693 ACRES

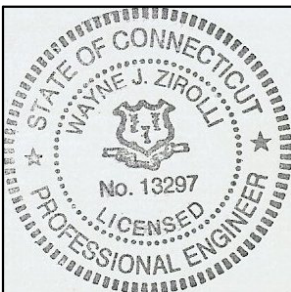
MAXIMUM NUMBER OF LOTS:
10.693 x BDF of 1.5 = 16
PROPOSED DWELLINGS UNITS = 16

ZONING CHART

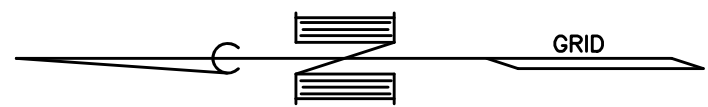
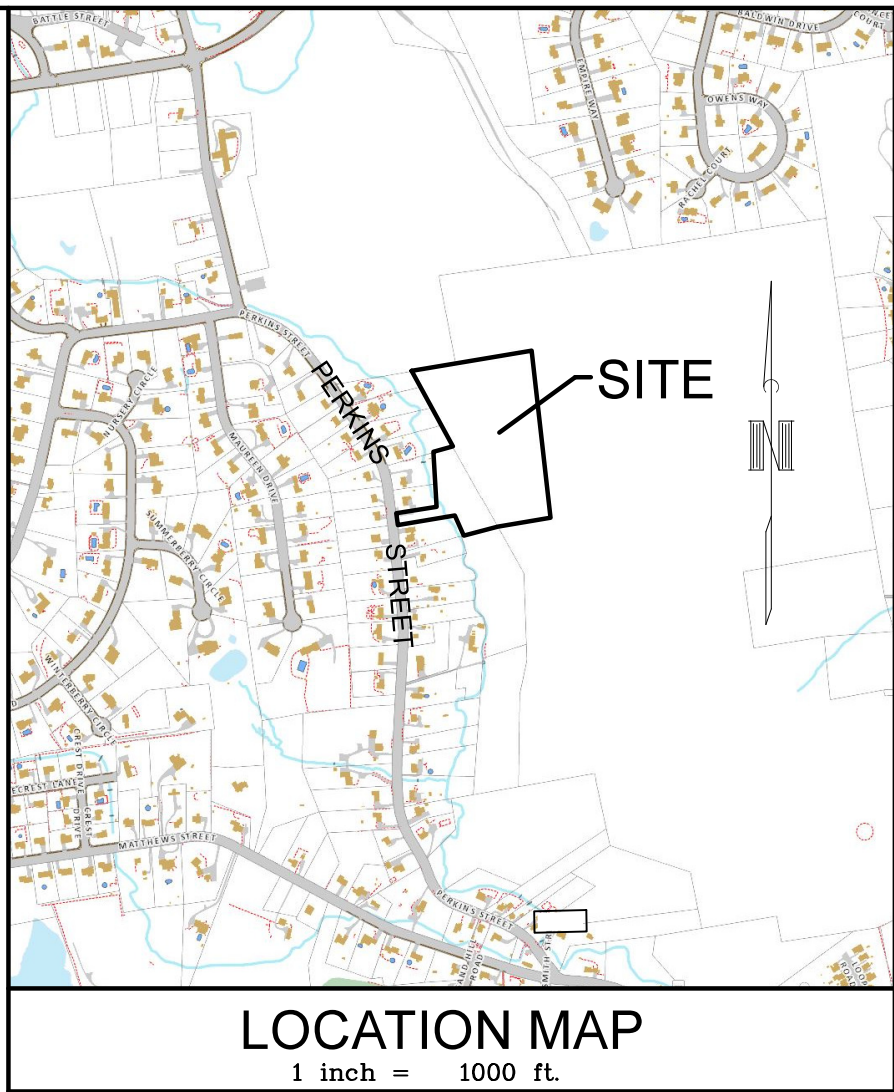
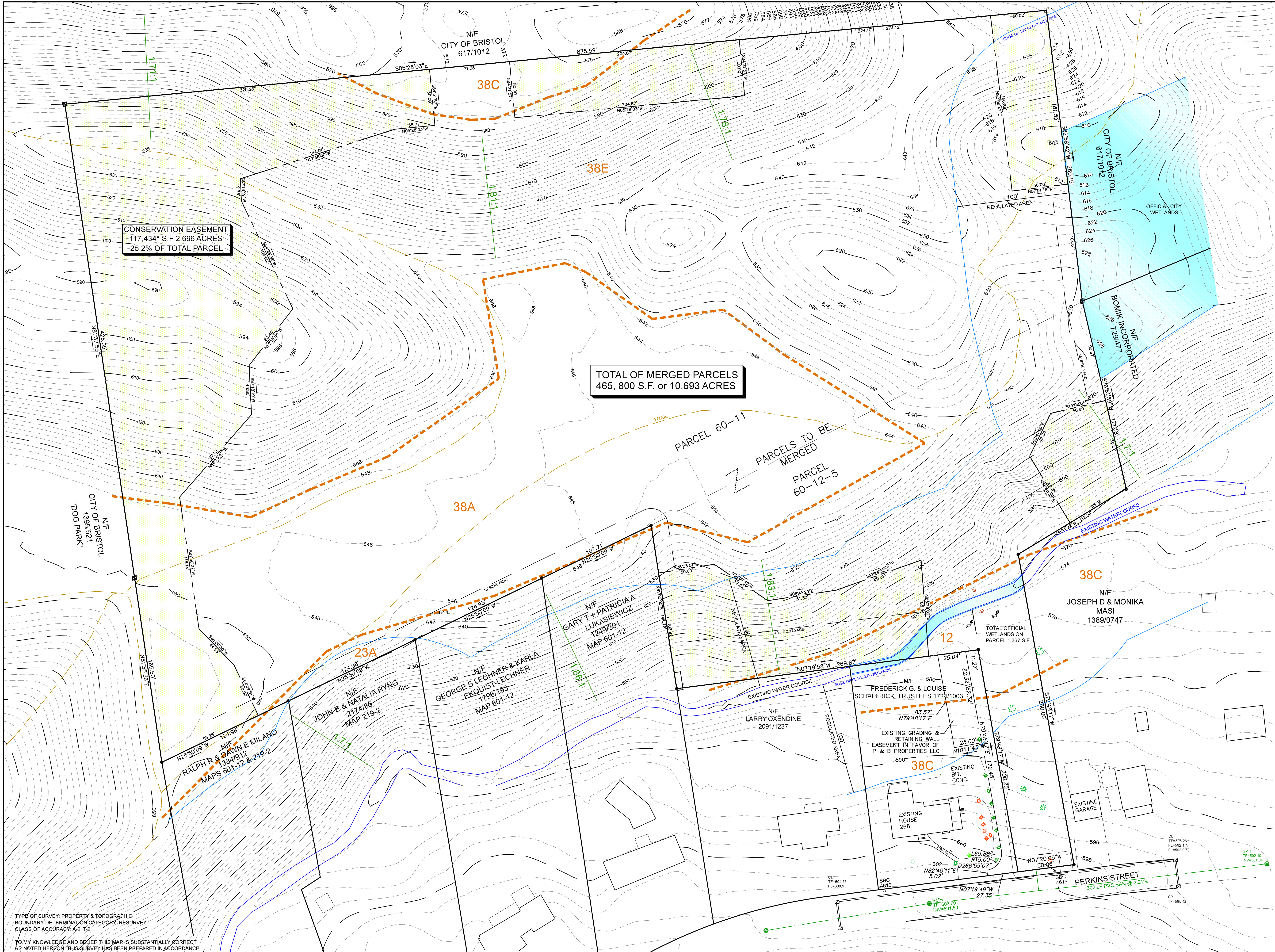
REQUIRED		PROVIDED
MINIMUM ACREAGE:	10.0	10.693
MINIMUM FRONTAGE:	50'	50.0'
FRONT YARD:	40'	>40'
SIDE YARD:	15'	>15'
REAR YARD:	40'	N/A (CONSERVED)
BUILDING SEPARATION	30' MIN.	>30'

SUBJECT TO CITY OF BRISTOL INLAND WETLAND AND WATERCOURSES COMMISSION APPROVAL AND SUBDIVISION APPROVAL FROM THE PLANNING COMMISSION.

CERTIFIED SUBSTANTIALLY CORRECT:
Wayne J. Zirolli
WAYNE J. ZIROLLI, P.E. & L.S. #13297
SIGNING AS ENGINEER ONLY



REV. 7-30-2024		SHEET
WAYNE J. ZIROLLI, P.E. & L.S. Engineering & Surveying 404 Beach Street Litchfield, Connecticut 06759-2314 Phone 203-525-4473	CLARK LAND SURVEYING, LLC 126 TUNXIS ROAD BRISTOL, CONN. 06010 (860)-967-8590 TODD@CLARKLS.BIZ	C
DATE: 6-17-2024	MAP NO. 2022-64	



LEGEND

- EXISTING MONUMENT
- EXISTING IRON PIPE OR PIN
- EXISTING CONTOUR
- EXISTING ELEVATION
- EXISTING SANITARY SEWER
- EXISTING CATCH BASIN/PIPE
- EXIST. WATER MAIN
- EXISTING TREE
- EXISTING UTILITY POLE/LIGHT
- EXISTING BORING LOCATION
- SOIL BOUNDARY (USDA - NRCS)
- NATURAL SLOPE RATIO*

*NATURAL SLOPE RATIO IS THE GRADE OF THE EXISTING UNDISTURBED EARTH AS SETTLED SINCE THE RECESSION OF THE LAST GLACIER APPROXIMATELY 12,000 YEARS AGO.

TOTAL SITE

WETLANDS 1,367± S.F.
WATERCOURSE - 137 LF

*OFFICIAL CITY OF BRISTOL WETLANDS SHOWN AS AMENDED BY APPLICATION OF AND APPROVAL BY THE INLAND WETLAND COMMISSION OF THE CITY OF BRISTOL (APPLICATION #1089 - APPROVED 11-15-1999)

SOIL TYPES -
38A - HINCKLEY LOAMY SAND 0-3% SLOPES
38C - HINCKLEY LOAMY SAND 3-15% SLOPES
38E - HINCKLEY LOAMY SAND 15-45% SLOPES
12 - RAYPOL SILT LOAM
23A - SUDBURY SANDY LOAM 0-5% SLOPES

AREA 465,800 S.F. or 10.693 ACRES

REQUIRED CONSERVATION EASEMENT - 25%
CONSERVATION EASEMENT PROPOSED - 25.2%

EXISTING CONDITIONS MAP
& CONSERVATION EASMENT PLAN
260 PERKINS STREET
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

REV. 7-30-2024

WAYNE J. ZIROLLO, P.E. & L.S.
Engineering & Surveying
404 Beach Street
Litchfield, Connecticut
06759-2314
Phone 203-525-4473

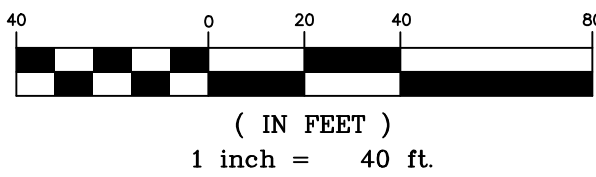
CLARK LAND SURVEYING, LLC
126 TUNXIS ROAD
BRISTOL, CONN. 06010
(860)-967-8590
TODD@CLARKLS.BIZ

DATE: 6-17-2024 SCALE: 1" = 40' MAP NO. 2022-64

SHEET

EC

GRAPHIC SCALE

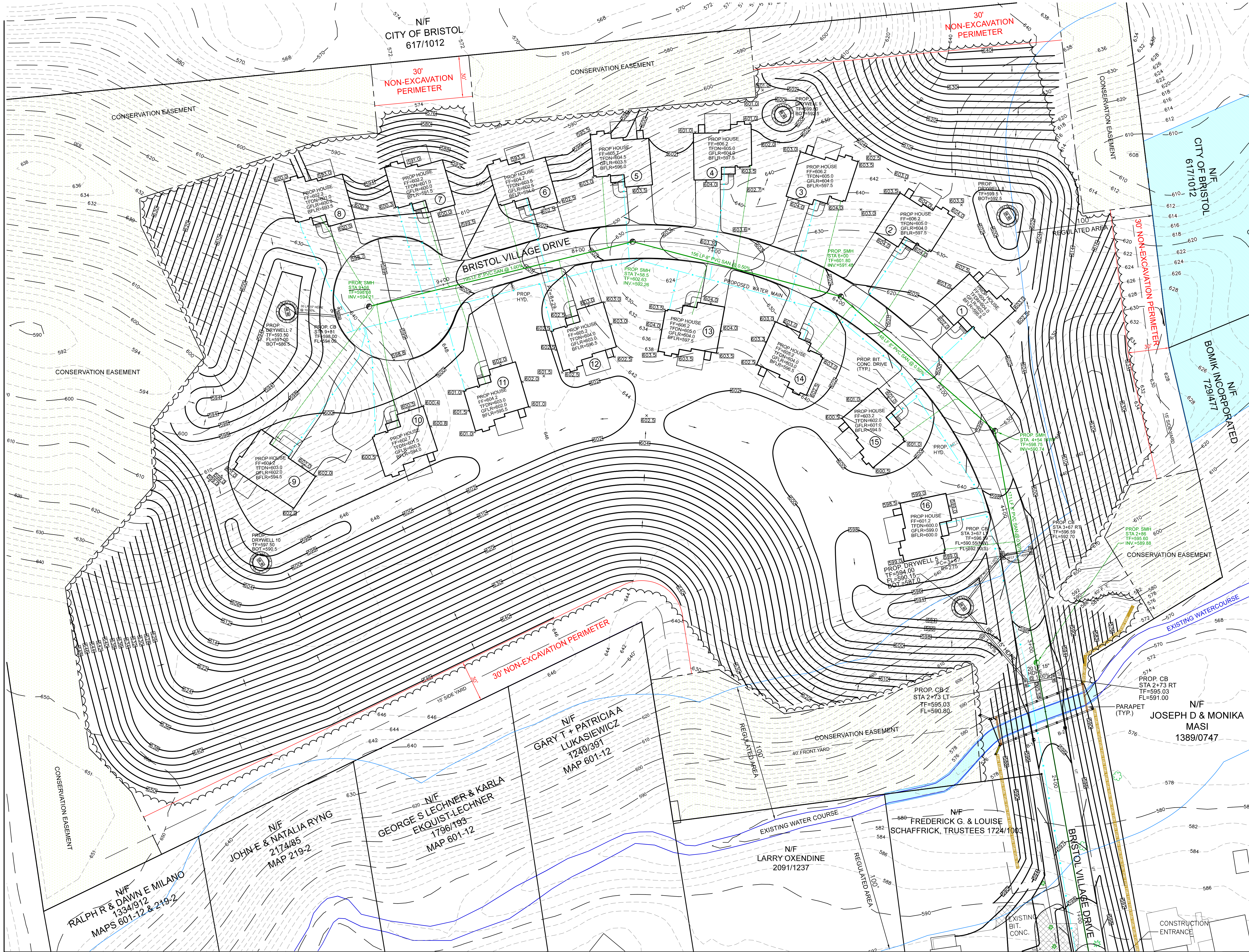


TYPE OF SURVEY: PROPERTY & TOPOGRAPHIC
BOUNDARY DETERMINATION CATEGORY: RESURVEY
CLASS OF ACCURACY: A-2, T-2

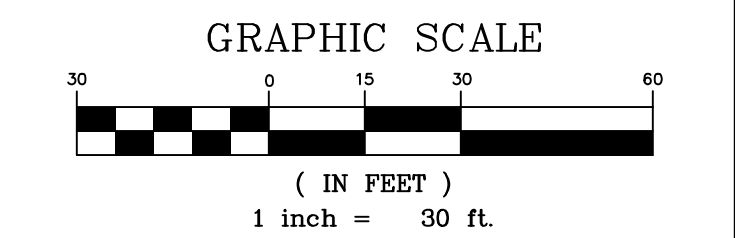
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT
AS NOTED HEREON. THIS SURVEY HAS BEEN PREPARED IN ACCORDANCE
WITH THE STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR
THE STATE OF CONNECTICUT, PREPARED AND ADOPTED BY THE
CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., ON AUGUST 29, 2019.

WILLIAM T. CLARK L.S. #70080

NOT VALID WITHOUT EMBOSSED SEAL



- LEGEND**
- EXISTING MONUMENT
 - EXISTING IRON PIPE OR PIN
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EXISTING ELEVATION
 - PROPOSED ELEVATION
 - EXISTING SANITARY SEWER
 - PROPOSED SANITARY MANHOLE
 - EXISTING CATCH BASIN/PIPE
 - PROPOSED CATCH BASIN/PIPE
 - EXIST. WATER MAIN
 - EXISTING TREE
 - EXISTING UTILITY POLE/LIGHT
 - PROPOSED SURFACE FLOW
 - "TO BE REMOVED"
 - PROPOSED SILT FENCE
 - PROPOSED CLEARING LIMIT
 - PROPOSED UNDERGROUND UTILITIES



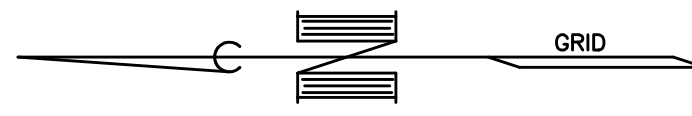
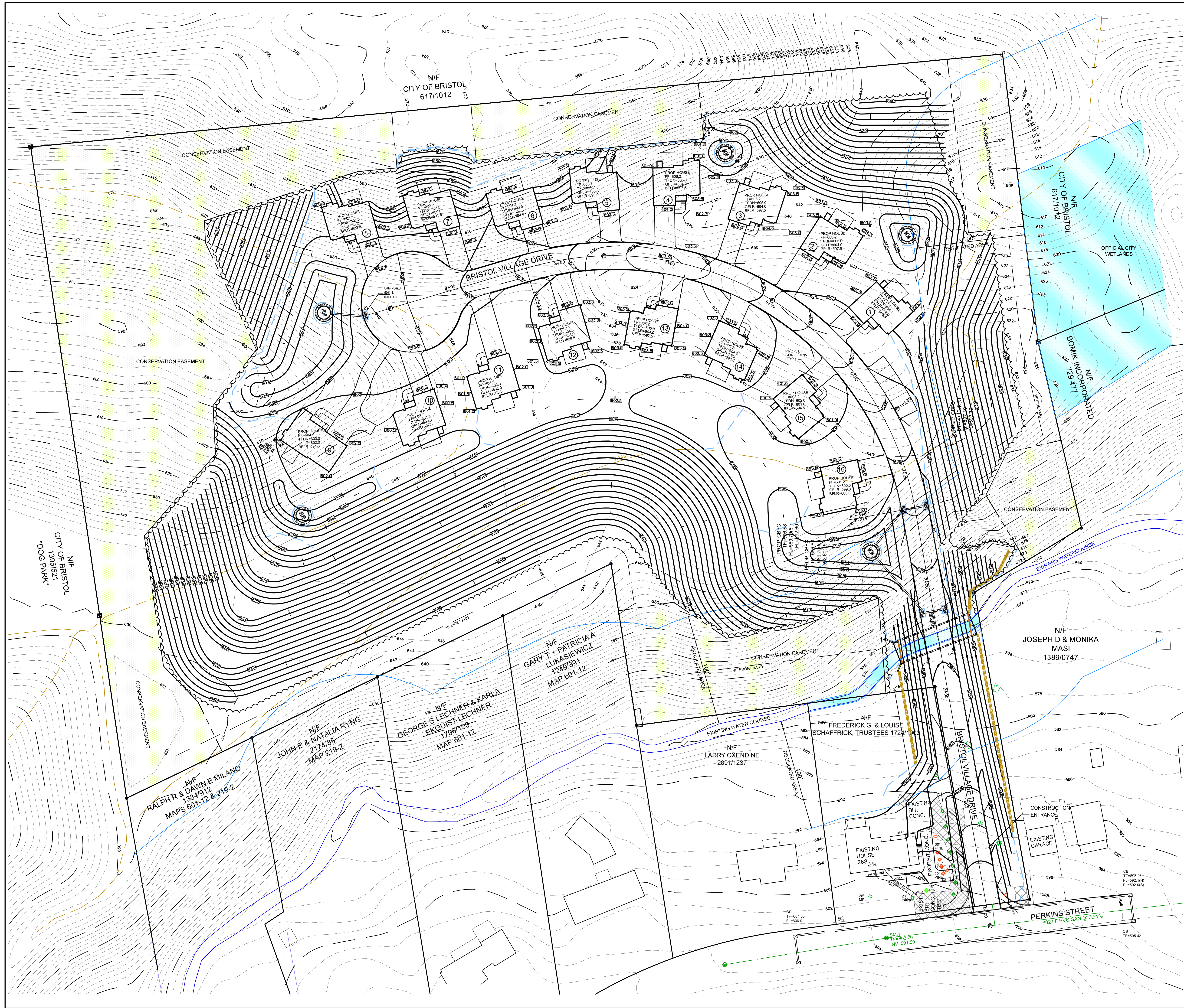
**SITE DEVELOPMENT PLAN
BRISTOL VILLAGE**
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

WAYNE J. ZIROLI, P.E. & L.S.
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404 Beach Street
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Phone 203-525-4473

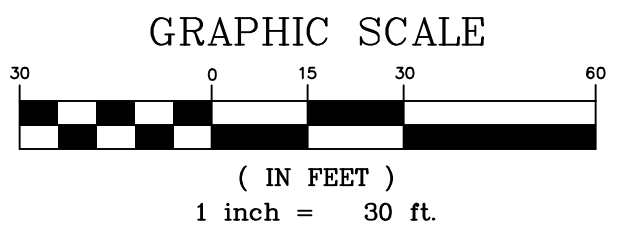
CLARK LAND SURVEYING, LLC
126 TUNXIS ROAD
BRISTOL, CONN. 06010
(860)-967-8590
TODD@CLARKLS.BIZ

REVISIONS
REV. 7-30-2024
DATE: 6-17-2024
SCALE: 1" = 30'

SD



- LEGEND**
- EXISTING MONUMENT
 - EXISTING IRON PIPE OR PIN
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EXISTING ELEVATION
 - PROPOSED ELEVATION
 - EXISTING SANITARY SEWER
 - PROPOSED SANITARY SEWER
 - EXISTING SANITARY MANHOLE
 - PROPOSED SANITARY MANHOLE
 - EXISTING CATCH BASIN/PIPE
 - PROPOSED CATCH BASIN/PIPE
 - EXIST WATER MAIN
 - EXISTING TREE
 - EXISTING UTILITY POLE/LIGHT
 - PROPOSED SURFACE FLOW
 - "TO BE REMOVED"
 - PROPOSED SILT FENCE
 - PROPOSED STREET TREE



NOTE: SEE STAGING PLANS FOR INTERMEDIATE EROSION & SEDIMENTATION CONTROL PLACEMENT. SEE SHEET "EN" FOR EROSION & SEDIMENTATION CONTROL NOTES AND DETAILS.

SOIL EROSION & SEDIMENT CONTROL PLAN
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

WAYNE J. ZIROLI, P.E. & L.S.
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REV. 7-30-2024
DATE: 6-17-2024
SCALE: 1" = 40'

SHEET
ES

GENERAL EROSION CONTROL NOTES:

- 1) EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL," DATED JANUARY, 2002
- 2) THE CONTRACTOR SHALL LOAM AND SEED ALL DISTURBED AREAS AS SOON AS PRACTICAL DURING CONSTRUCTION.
- 3) ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL ADEQUATE GROUND COVER IS ESTABLISHED IN ALL DISTURBED AREAS.
- 4) SILT FENCING SHALL BE PLACED DOWN SLOPE OF ALL STOCKPILED MATERIALS.
- 5) ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS NECESSARY AND AS REQUIRED BY APPROPRIATE TOWN REPRESENTATIVE.
- 6) ALL EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL. ANY DAMAGE NOTED DURING INSPECTION SHALL BE REPAIRED IMMEDIATELY.
- 7) ALL TEMPORARY AND PERMANENT VEGETATIVE COVER SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL," JANUARY, 2002
- 8) WHERE POSSIBLE, SILT FENCES AND HAYBALES WILL BE INSTALLED A MINIMUM OF 6 FEET FROM THE TOE OF SLOPES.
- 9) ALL SLOPES GREATER THAN 1 FOOT VERTICAL TO 4 FEET HORIZONTAL SHALL BE STABILIZED WITH SEED AND VEGETATIVE COVER UPON FINAL GRADING.
- 10) ALL SITE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BRISTOL SPECIFICATIONS AS OUTLINED IN THE ZONING REGULATIONS.

LAND GRADING

GENERAL:

1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING BASIC CRITERIA:
 - A) THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 - B) THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
 - C) THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO FOUR VERTICAL (1:4).
 - D) NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE, OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS, WATERCOURSE OR WATERBODY.
 - E) INSTALLATION OF SEDIMENT AND EROSION CONTROLS SUCH AS HAY BALES AND SILT FENCES SHALL BE ESTABLISHED PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITIES. ALL SEDIMENT AND EROSION CONTROL STRUCTURES MUST BE MONITORED AND MAINTAINED BY THE CONTRACTOR UNTIL THE SOIL SURFACE IS STABILIZED.
 - F) IF NECESSARY, LATERAL WATER DIVERSIONS SHALL BE INSTALLED ACROSS THE GRADED ROADWAY TO PREVENT DOWNSLOPE OUTFLOW AND EROSION.
 - G) HAY BALES SHALL BE STAKED AND SILT FENCES SHALL BE PROPERLY SECURED. SEDIMENT WILL BE REMOVED FROM ALL CATCHMENTS AS NECESSARY.
 - H) PRIOR TO ANY REGRADEING, STONE APRON SHALL BE PLACED BY THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING

GENERAL:

1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH AND MAINTENANCE OF VEGETATION.
 2. REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS, AND CONSTRUCTION DEBRIS.
 3. APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.
- MATERIAL:
1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
 2. TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
 3. AN ORGANIC MATTER CONTENT OF OVER TWO (2%) PERCENT IS HIGHLY DESIRABLE. AVOID LIGHT COLORED LOWER SUBSOIL MATERIAL.

APPLICATION:

1. AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
2. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR (4") INCHES.

EROSION CHECKS

GENERAL:

1. TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND, OR SEDIMENT FILTER FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

CONSTRUCTION:

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. FILTER FABRIC SHALL BE SECURELY FASTENED AT THE TOP OF A THREE (3') FOOT HIGH FENCE AND BURIED A MINIMUM OF FOUR (4") INCHES INTO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO (2') FEET.

INSTALLATION AND MAINTENANCE:

1. BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
2. BALED HAY EROSION BARRIERS AND SEDIMENT FILTER FENCES SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING EARTH REMOVAL ACTIVITIES.
3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
4. INSPECTION SHALL BE FREQUENT (AT MINIMUM MONTHLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.

WINDBLOWN SEDIMENT

GENERAL:

1. ALL WINDBLOWN SEDIMENTS SHALL BE CONTROLLED AT ALL TIMES. THE SITE CONTRACTOR IS RESPONSIBLE FOR APPLYING DUST CONTROL AS OFTEN AS NEEDED TO PREVENT ANY WINDBLOWN SEDIMENTS FROM LEAVING THE SITE. PREDETERMINED TRAFFIC ROUTES FOR ALL TRAFFIC SHALL BE ESTABLISHED BY THE SITE CONTRACTOR TO STABILIZED ROUTES. TEMPORARY AND PERMANENT MULCHING AND TEMPORARY AND PERMANENT VEGETATIVE COVER SHALL BE USED TO MINIMIZE THE NEED FOR DUST CONTROL. MECHANICAL SWEEPERS SHALL BE USED ON ALL PAVED SURFACES TO PREVENT DUST BUILD UP DURING THE COURSE OF SITE WORK.

METHODS:

1. SPRAY ON ADHESIVES ARE ACCEPTABLE AND SHOULD BE APPLIED ACCORDING TO MANUFACTURER'S GUIDELINES.
2. WATER IS ACCEPTABLE BUT MUST BE APPLIED OFTEN IN HOT, DRY WEATHER.
3. CALCIUM CHLORIDE IS ACCEPTABLE BUT MUST BE APPLIED AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.
4. CRUSHED STONE OR COARSE GRAVEL CAN ALSO BE USED.

GENERAL

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION AS MAY BE REQUIRED, DURING THE EARTH REMOVAL OPERATION.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INsofar AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS, AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS AND WATERCOURSE, AND TO PREVENT, INsofar AS POSSIBLE, EROSION ON THE SITE.

SILT FENCE, HAYBALES AND STONE SHALL BE KEPT ON-SITE FOR IMMEDIATE USE AT ALL TIME DURING EARTH MOVING ACTIVITIES.

TEMPORARY VEGETATIVE COVER

GENERAL:

1. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF ONE (1) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQUARE FEET).
4. APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQUARE FEET.)
5. UNLESS HYDROSEEDING, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.
6. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM, LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

ESTABLISHMENT:

1. USE ANNUAL RYEGRASS AT A RATE OF 40 LBS./AC. OR SUITABLE EQUIVALENT AS SPECIFIED IN THE "GUIDELINES".
2. SEEDING TO BE DONE FROM APRIL 1ST TO JUNE 15 OR AUGUST 1ST TO OCTOBER 1ST. WINTER STABILIZATION PLANTINGS TO BE NO LATER THAN OCTOBER 1ST. THIS INCLUDES STOCKPILE AREAS.
3. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
4. UNLESS HYDROSEEDING, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT. COVER SUDAGRASS AND SMALL GRAINS WITH 1/2 INCH SOIL.
5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO THE GUIDELINES IN THE "GUIDELINES".

PERMANENT VEGETATIVE COVER

GENERAL:

1. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE AND CONSTRUCTION DEBRIS FROM AREA.
3. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
4. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
5. APPLY FERTILIZER ACCORDING TO SOIL TEST OR:

— SPRING SEEDING:
WORK DEEPLY IN SOIL, BEFORE SEEDING, 300 LBS OF 10-10-10 FERTILIZER PER ACRE (7 LBS PER 1,000 SQUARE FEET); THEN SIX (6) TO EIGHT (8) WEEKS LATER APPLY ON THE SURFACE AN ADDITIONAL 300 LBS OF 10-10-10 FERTILIZER PER ACRE.

— FALL SEEDING:
WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS OF 10-10-10 FERTILIZER PER ACRE (14 LBS PER 1,000 SQUARE FEET).

ESTABLISHMENT:

1. SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
2. SELECT ADAPTED SEED MIXTURE AS FOLLOWS. NOTE RATES AND THE SEEDING DATES.

SUNNY TO PARTIALLY SUNNY SITES

	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	20	0.50
CREeping RED FESCUE	20	0.50
PERENNIAL RYEGRASS	05	0.10
TOTAL	45	1.10

SHADY SITES

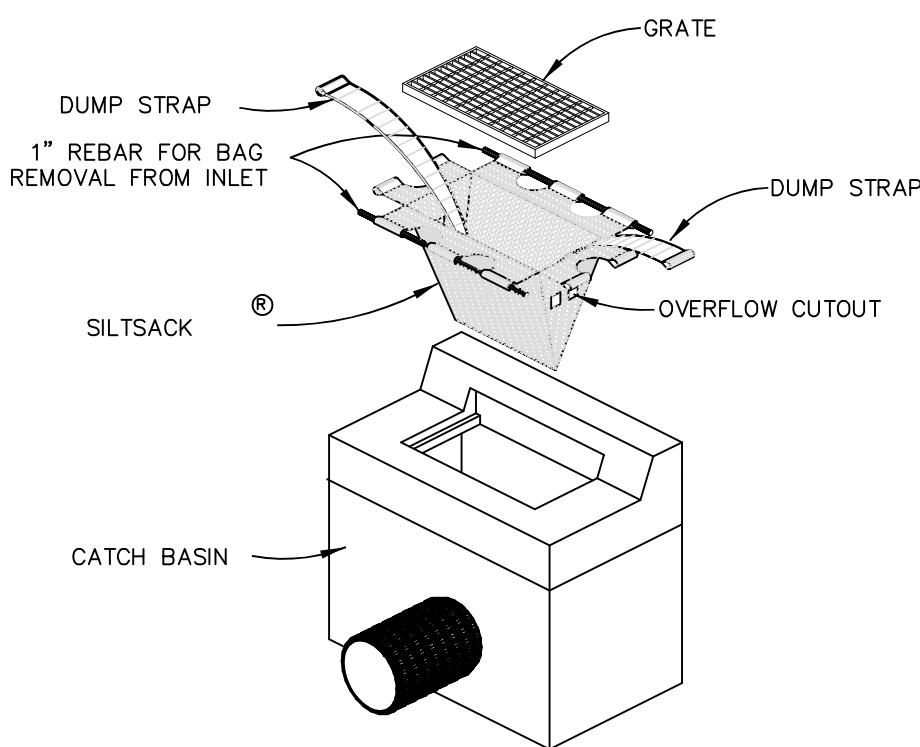
CREeping RED FESCUE	50	1.00
PERENNIAL RYEGRASS	05	0.10
TOTAL	55	1.10

DROUGHTY SITES

CREeping RED FESCUE	40	1.00
TALL FESCUE	20	0.50
TOTAL	60	1.50

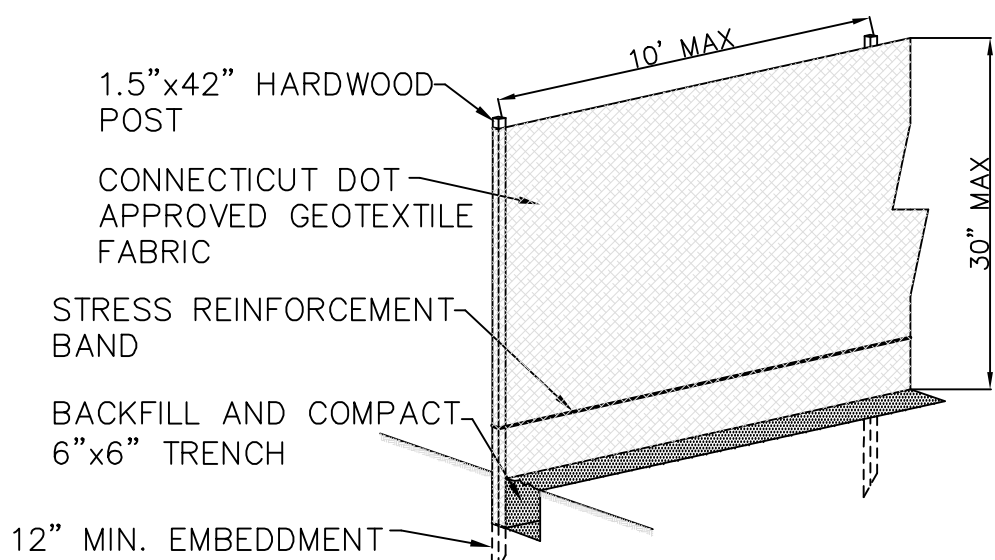
EROSION AND SEDIMENTATION CONTROL NARRATIVE:

1. DISTURBANCE OF SOIL SURFACE IS REGULATED BY STATE LAW. ALL WORK SHALL COMPLY WITH THE APPROVED "GRADING AND EROSION CONTROL PLAN" TO PREVENT OR MINIMIZE SOIL EROSION.
2. THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE LAND OWNER AND THE EXCAVATION CONTRACTOR. TOWN OFFICIALS MAY CONTACT TIM BOBROSKE (860-589-3266) TO REPORT ANY FAULTY CONDITIONS. A PRE-CONSTRUCTION CONFERENCE WITH TOWN STAFF IS REQUIRED, PRIOR TO COMMENCEMENT OF ANY SITE WORK OR DISTURBANCE.
3. THE CONTRACTOR SHALL OBTAIN A COPY OF THE "SOIL EROSION & SEDIMENT CONTROL BY THE COUNCIL ON SOIL AND WATER CONSERVATION IN COLLABORATION WITH CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION PUBLICATION DATE: SEPTEMBER 30, 2023 EFFECTIVE DATE: MARCH 30, 2024" AS AMENDED, FOR USE AS A GUIDE IN IMPLEMENTING THE EROSION AND SEDIMENT CONTROLS INDICATED ON THESE PLANS. A FIELD COPY OF THE MANUAL SHALL BE AVAILABLE ON-SITE DURING ACTIVE CONSTRUCTION. THE GUIDELINES MAY BE OBTAINED FROM THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION, CT D.E.P. 79 ELM STREET, HARTFORD, CT 06106-5127, AND ON-LINE THROUGH DEEP.
4. THE CONTRACTOR SHALL INFORM ALL CONSTRUCTION SITE WORKERS ABOUT THE MAJOR PROVISIONS OF THE EROSION AND SEDIMENT CONTROL PLANS AND REQUIRE THEIR COOPERATION IN AVOIDING THE DISTURBANCE OF THESE CONTROL MEASURES.
5. THE CONTRACTOR SHALL SCHEDULE ALL OPERATIONS TO LIMIT DISTURBANCE TO THE SMALLEST PRACTICAL AREA FOR THE SHORTEST POSSIBLE TIME.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE TIMELY INSTALLATION, INSPECTION, REPAIR OR REPLACEMENT OF EROSION CONTROL DEVICES TO ENSURE PROPER OPERATION.
7. THE CONTRACTOR SHALL INSPECT AND REPAIR EROSION AND SEDIMENT CONTROL DEVICES AT THE END OF EACH WORKING DAY AND AFTER EACH STORM.
8. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF UNSATISFACTORY EROSION CONDITIONS NOT CONSIDERED BY THIS EROSION AND SEDIMENT CONTROL PLAN AND SHALL INSTALL ADDITIONAL MEASURES AS DIRECTED BY TOWN OFFICIALS AND/OR ENGINEER. ADDITIONAL EROSION AND SEDIMENT CONTROL DETAILS FROM THE 2024 CT GUIDELINES SHALL BE USED FOR APPLICATIONS THAT ARE NOT INCLUDED IN THESE PLANS.
9. ACCUMULATED SEDIMENT REMOVED FROM EROSION CONTROL DEVICES IS TO BE SPREAD AND STABILIZED IN LEVEL, EROSION RESISTANT LOCATIONS AS GENERAL FILL WITHIN THE LIMITS OF DISTURBANCE AS SHOWN ON THE SITE DEVELOPMENT PLAN.
10. ALL DISTURBED AREAS SHALL BE PLANTED WITH GRASS ON 4" THICK TOPSOIL.
11. SEEDING: BETWEEN APRIL 1 TO JUNE 15, AND AUGUST 15 TO SEPTEMBER 30, FOLLOWING SEEDING AND SLOPE STABILIZATION DIRECTIVES.
 - A. FINE GRADE SEED BED TOGETHER WITH LIMESTONE AT A RATE OF 100 LBS PER 1000 SF AND 10-10-10 FERTILIZER AT A RATE OF 15 LBS PER 1000 SF.
 - B. APPLY THE FOLLOWING SEED MIXTURE PER 100 SF: KENTUCKY BLUE GRASS AT 2 LBS, CREEPING RED FESCUE AT 1 LB AND PERENNIAL RYEGRASS AT A RATE OF 2 LBS.
 - C. IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, SEED WITH ANNUAL RYEGRASS AT A RATE OF 1 LB/1000 SF AS A TEMPORARY MEASURE (LATER RESEEDING REQUIRED) OR SEED AS SPECIFIED AND PROVIDE MULCHING AND/OR PERIODIC WATERING FOR SUMMER MONTHS.
12. MULCHING: IMMEDIATELY FOLLOWING SEEDING, MULCH THE SEEDBED SURFACE WITH STRAW OR HAY AT A RATE OF 1 TON/ACRE. SPREAD MULCH BY HAND OR MULCH BLOWER.



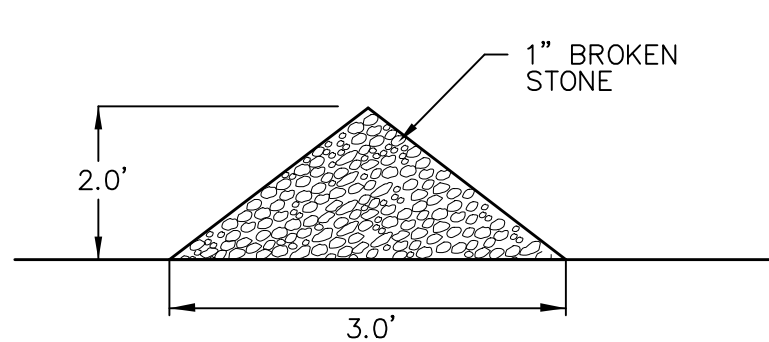
INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE



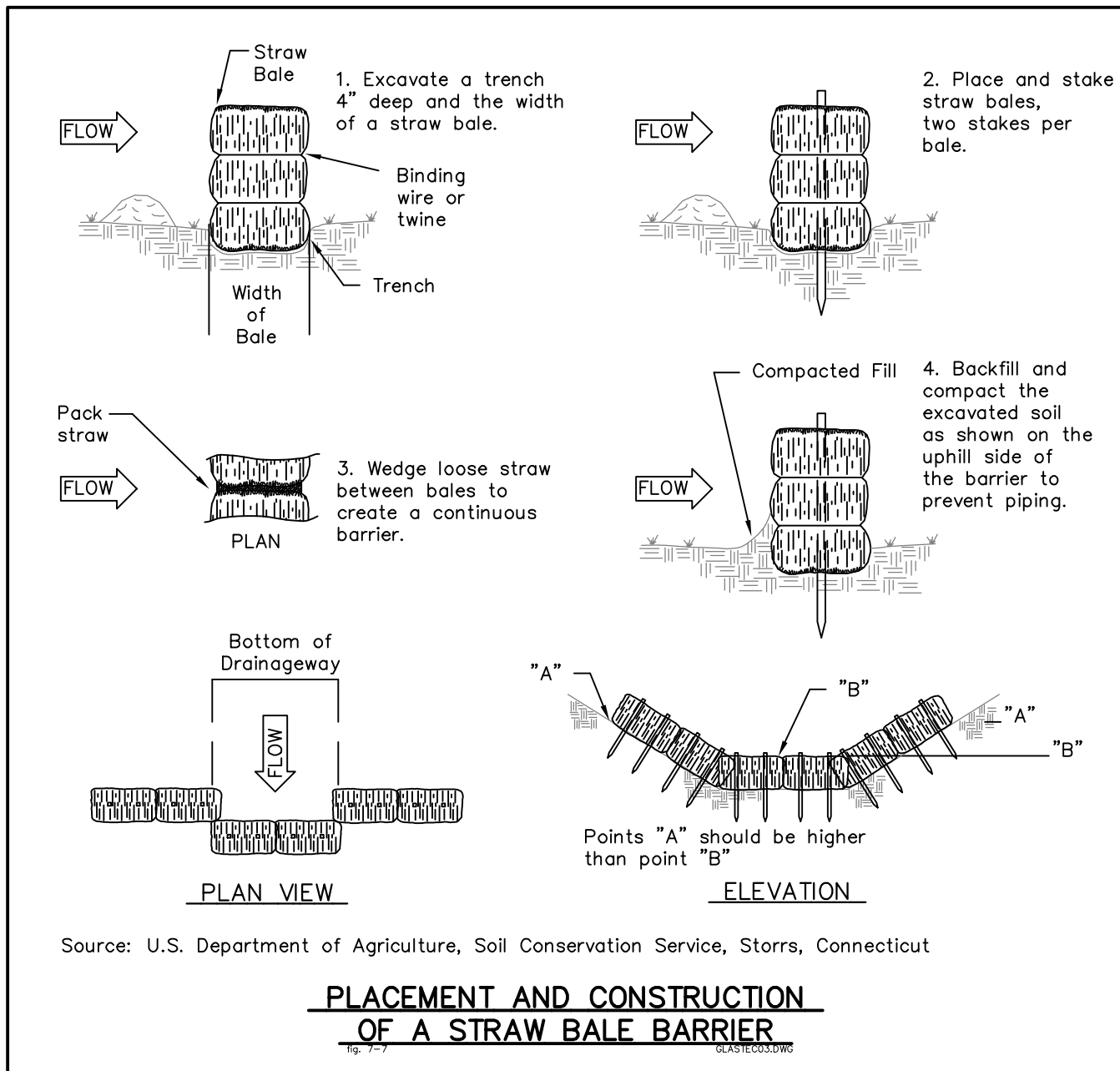
SILT FENCE DETAIL

N.T.S



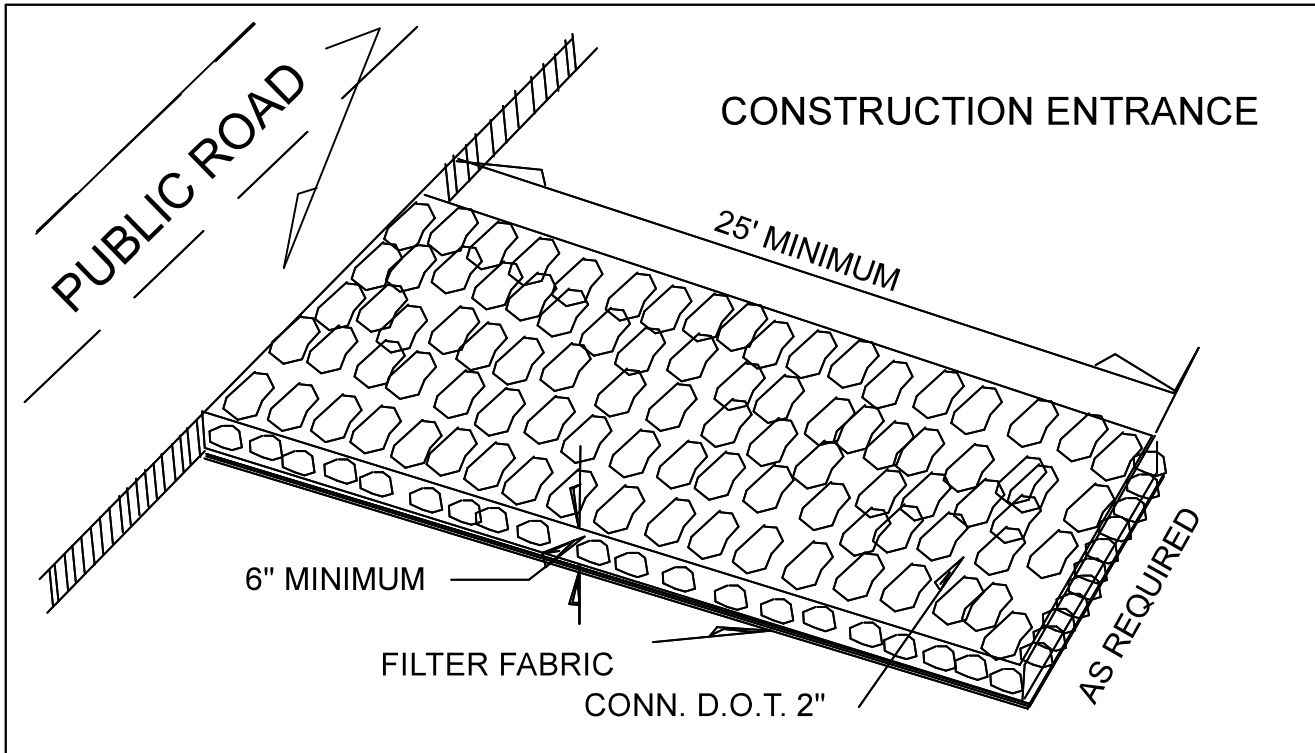
FILTER BERM DETAIL

NOT TO SCALE



Source: U.S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut

PLACEMENT AND CONSTRUCTION OF A STRAW BALE BARRIER



EROSION & SEDIMENTATION CONTROL DETAILS

BRISTOL VILLAGE

PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

REV. 7-30-2024

WAYNE J. ZIROLLI, P.E. & L.S.
Engineering & Surveying
404 Beach Street
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06759-2314
Phone 203-525-4473

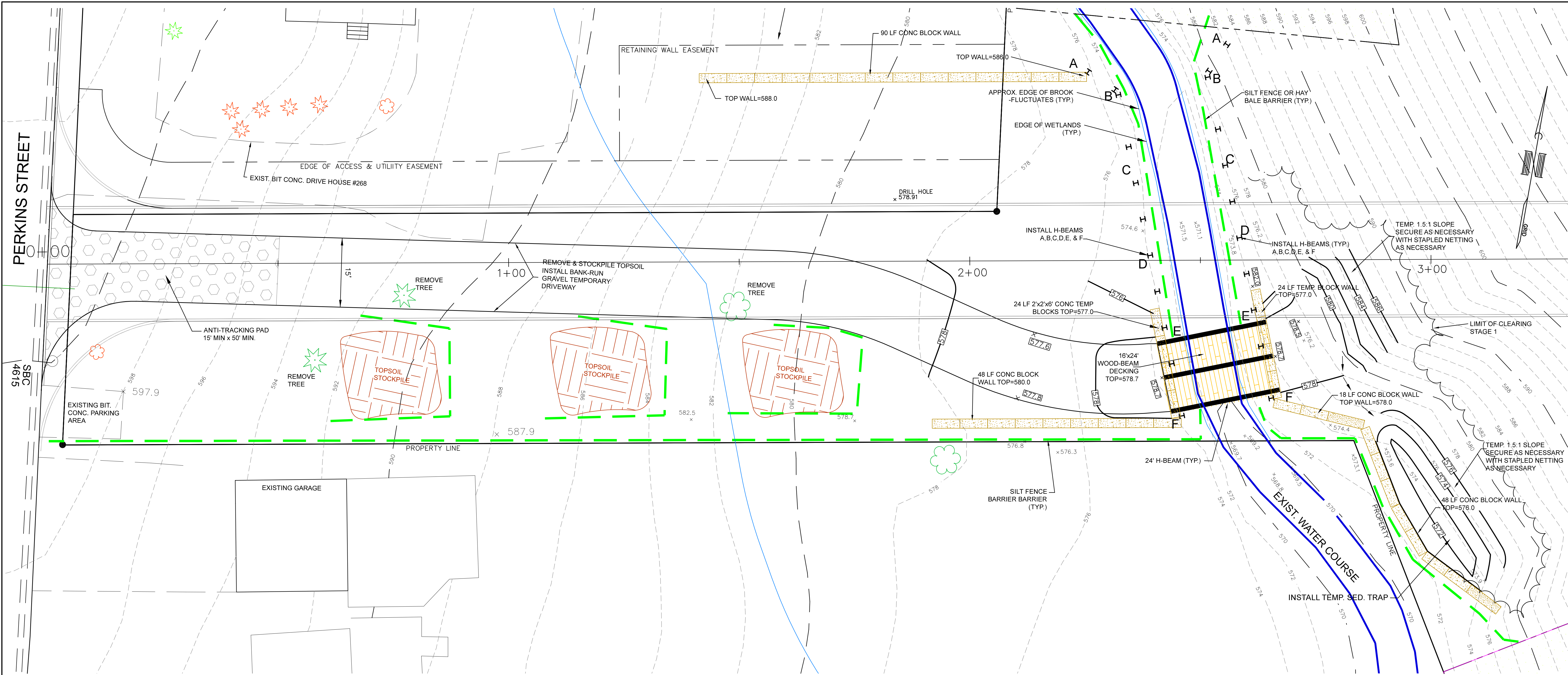
CLARK LAND SURVEYING, LLC
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DATE: 6-17-2024

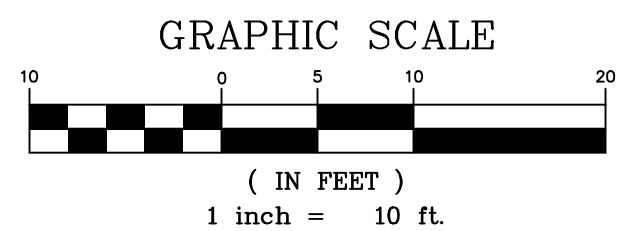
MAP NO. 2022-64

SHEET

EN



STAGE 1



LEGEND

EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING ELEVATION	598.0
PROPOSED ELEVATION	598.0
PROPOSED SILT FENCE	---
PROPOSED CLEARING LIMIT	---

CONSTRUCTION SEQUENCE

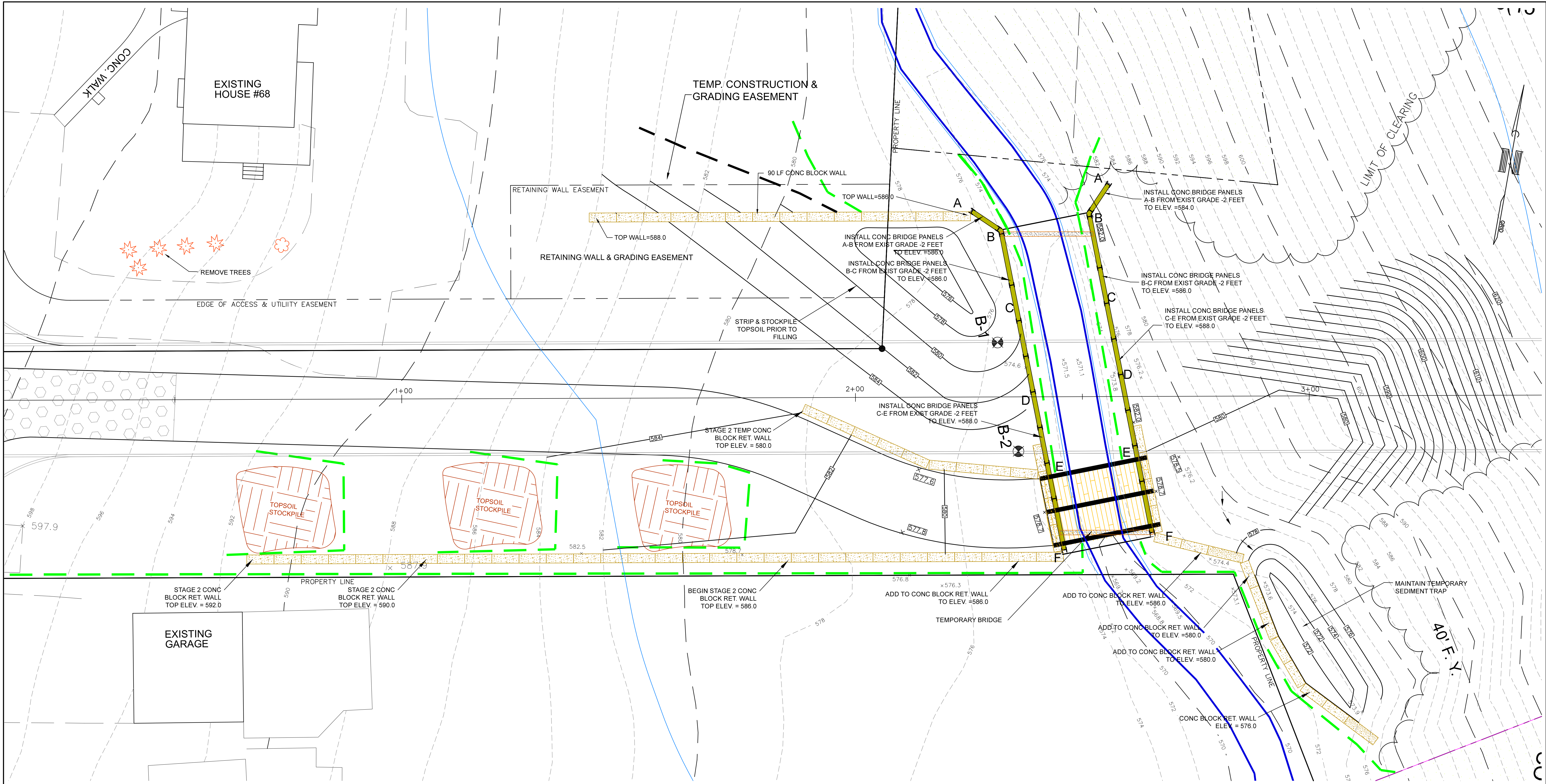
- STAGE 1
1. INSTALL ANTI-TRACKING PAD.
 2. REMOVE TREES FROM 50' ACCESS STRIP.
 3. INSTALL EROSION & SEDIMENTATION CONTROL BARRIERS.
 4. STRIP & STOCKPILE TOPSOIL FROM 15' ACCESS DRIVE.
 5. INSTALL CONCRETE BLOCK WALLS & TEMPORARY BRIDGE SUPPORT.
 6. LAY 24' BEAMS & TEMPORARY WOOD BRIDGE.
 7. REMOVE TREES TO LIMITS OF PHASE 1 CLEARING.
 8. EXCAVATE SEDIMENTATION POND AND STAGING AREA EAST OF WATERCOURSE, USE MATERIAL FOR ACCESS DRIVE.
 9. DRILL & DRIVE H-BEAM BRIDGE PILES.

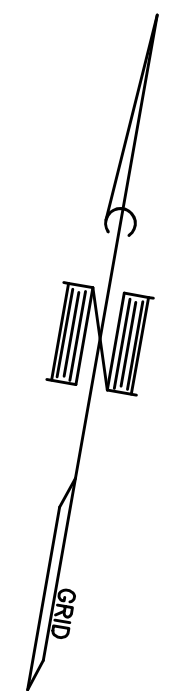
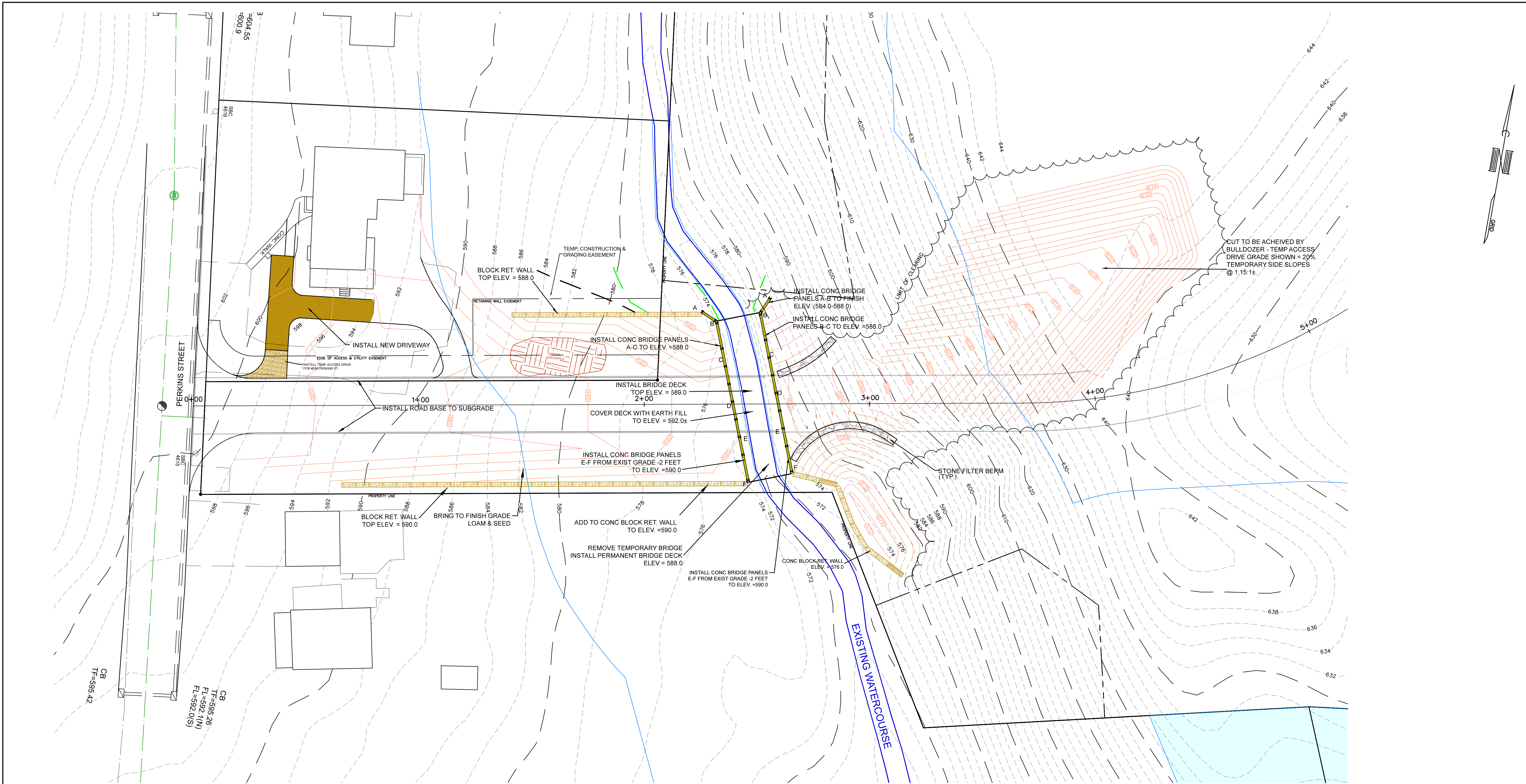
STAGE 1

WETLANDS DISTURBED - 0 S.F.
WATERCOURSE DISTURBED - 0 LF
REGULATED AREA DISTURBED - 4340± S.F.
CUT EAST OF WATERCOURSE - 500± C.Y.
FILL EAST OF WATERCOURSE - 500± C.Y.

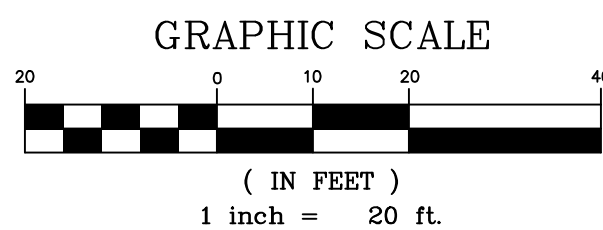
STAGE 1 - CONSTRUCTION PLAN
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

WAYNE J. ZIROLLI, P.E. & L.S. Engineering & Surveying 404 Beach Street Litchfield, Connecticut 06759-2314 Phone 203-525-4473	CLARK LAND SURVEYING, LLC 126 TUNXIS ROAD BRISTOL, CONN. 06010 (860)-967-8590 TODD@CLARKLS.BIZ	SHEET S1
	DATE: 6-17-2024 SCALE: 1" = 10' MAP NO. 2022-64	





STAGE 3



LEGEND

EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING ELEVATION	598.0 x
PROPOSED ELEVATION	603.5 x
PROPOSED SILT FENCE	---
PROPOSED CLEARING LIMIT	---

CONSTRUCTION SEQUENCE

STAGE 3

1. INSTALL ADDITIONAL CONCRETE BLOCKS TO ELEVATIONS SHOWN.
2. STRIP & STOCKPILE TOPSOIL FROM EAST SIDE OF ACCESS DRIVE.
3. EXCAVATE FROM EAST SIDE OF THE WATERCOURSE TO FILL THE WEST SIDE. PROVIDE FINISH GRADE EAST SIDE OF ACCESS ROAD, LOAM AND SEED.
4. RAISE BRIDGE ABUTMENT PANELS TO ELEVATIONS AS SHOWN.
5. INSTALL PERMANENT BRIDGE DECK, REMOVE TEMPORARY BRIDGE.
6. INSTALL BRIDGE ABUTMENT PANELS FROM PILES E-D.
7. EXCAVATE FROM EAST SIDE OF WATER COURSE FILL ON WEST SIDE.

STAGE 3

WETLANDS DISTURBED - 0 S.F.
WATERCOURSE DISTURBED - 0 LF
REGULATED AREA DISTURBED - 15,407± S.F.

CUT/FILL EAST OF WATERCOURSE - 5,000 C.Y./400 C.Y. NET CUT 4,600± CY
FILL WEST OF WATERCOURSE - 4,600± C.Y.

STAGE 3 - CONSTRUCTION PLAN
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

REV. 7-30-2024

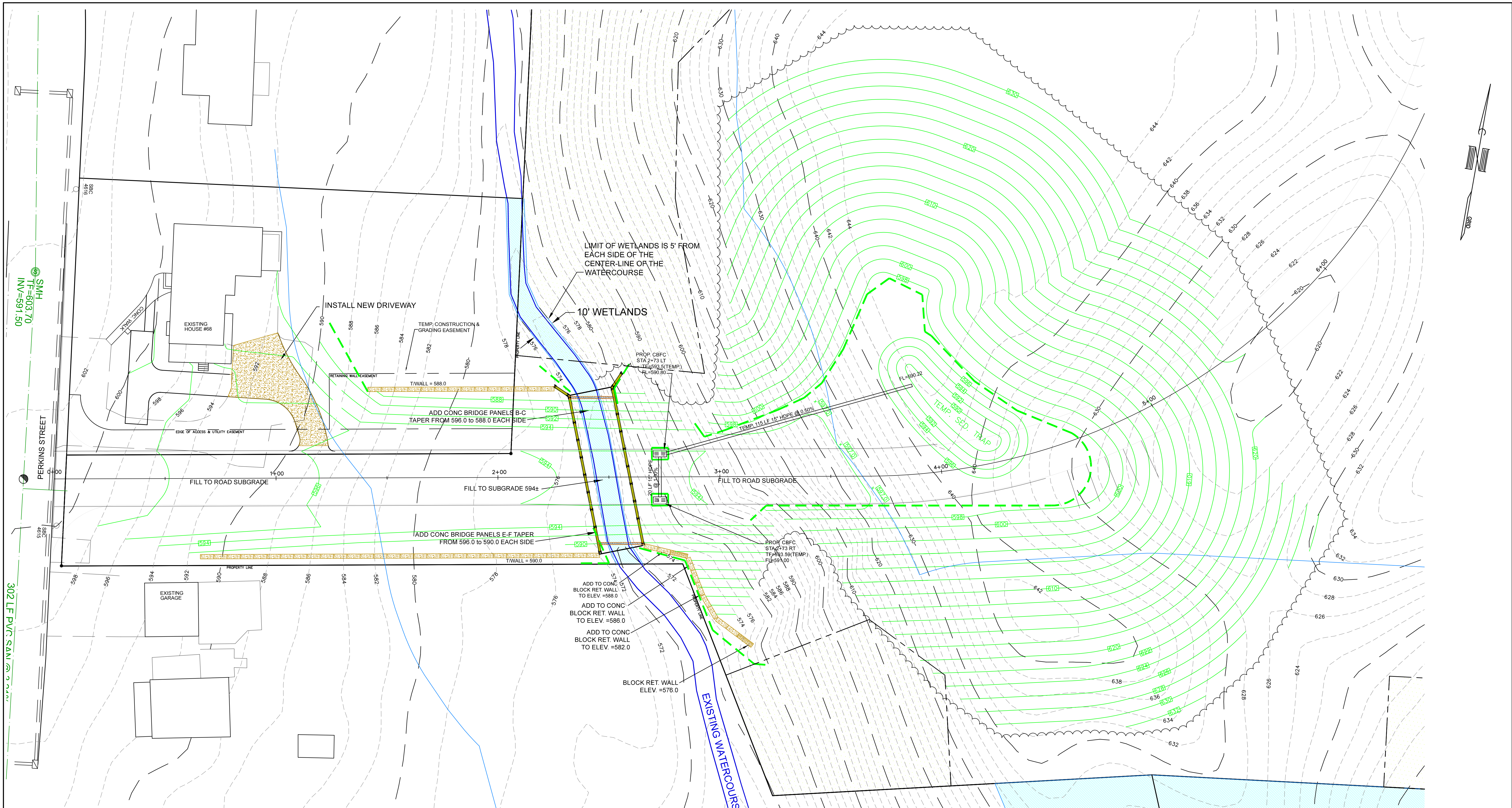
WAYNE J. ZIROLLI, P.E. & L.S.
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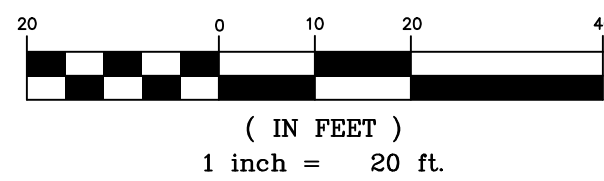
S3

DATE: 6-17-2024 SCALE: 1" = 20' MAP NO. 2022-64



STAGE 4

GRAPHIC SCALE



LEGEND

EXISTING CONTOUR	---
PROPOSED CONTOUR	---
EXISTING ELEVATION	598.0 x
PROPOSED ELEVATION	603.5 x
PROPOSED SILT FENCE	---
PROPOSED CLEARING LIMIT	---

CONSTRUCTION SEQUENCE

STAGE 4

1. BRING WEST SIDE OF ACCESS STRIP TO FINISHED GRADE, LOAM & SEED.
2. FINISH RE-CONSTRUCTED DRIVEWAY AT HOUSE #268.
3. BRING ROADWAY TO SUB-GRADE.
4. INSTALL SEDIMENTATION TRAP EAST OF WATERCOURSE.

STAGE 4

WETLANDS DISTURBED - 0 S.F.
WATERCOURSE DISTURBED - 0 LF
REGULATED AREA DISTURBED - 29,600± S.F.*
19,000± S.F. ASSOCIATED WITH WATERCOURSE WETLANDS
10,600± S.F. ASSOCIATED WITH OFF-SITE CITY WETLANDS ON PLATEAU.

CUT/FILL EAST OF WATERCOURSE - 5,000 C.Y./400 C.Y. NET CUT 4,600± CY
FILL WEST OF WATERCOURSE - 4,600± C.Y.

STAGE 4 - CONSTRUCTION PLAN
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

REV. 7-30-2024

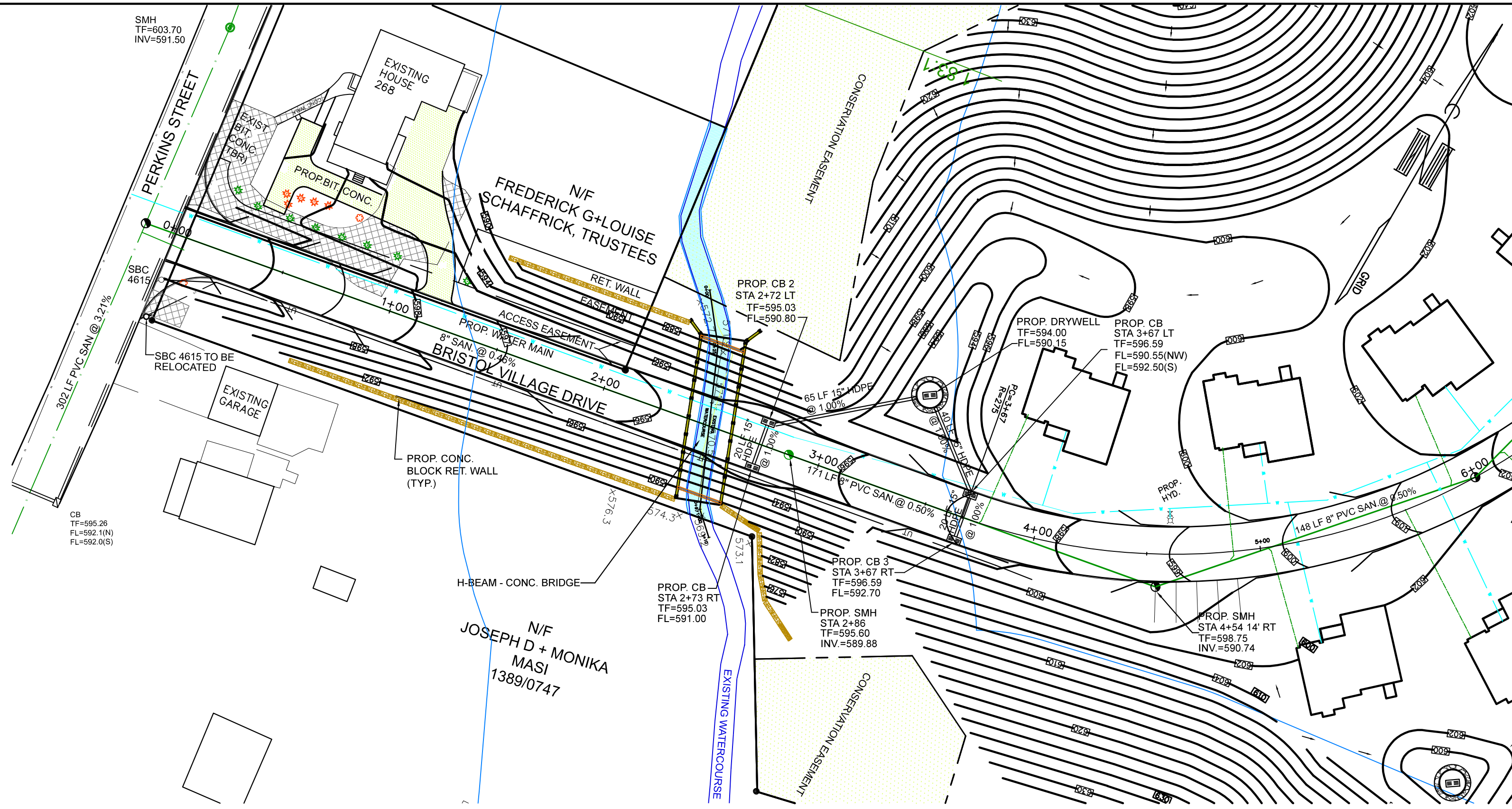
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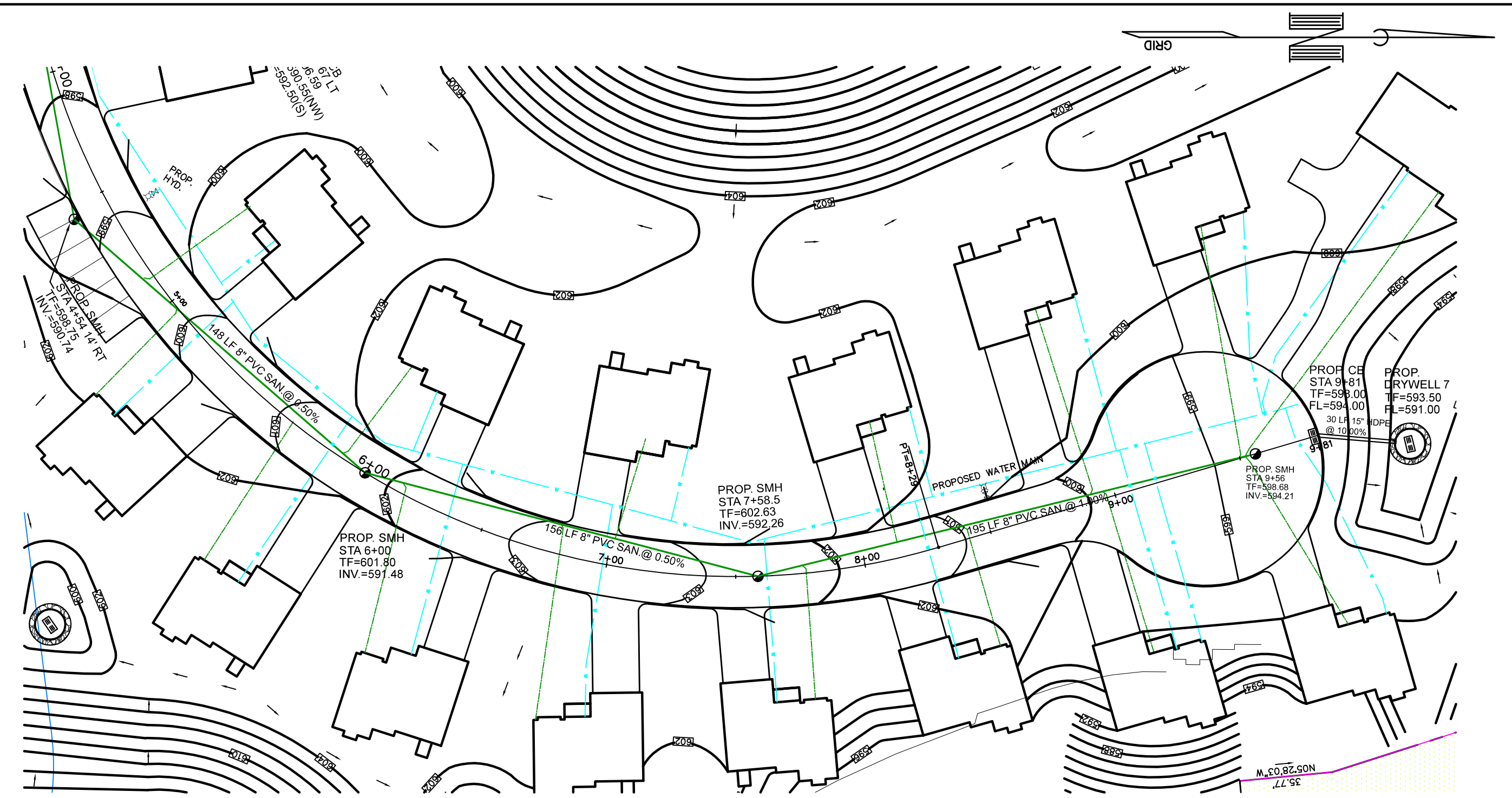
DATE: 6-17-2024 SCALE: 1" = 20' MAP NO. 2022-64

SHEET

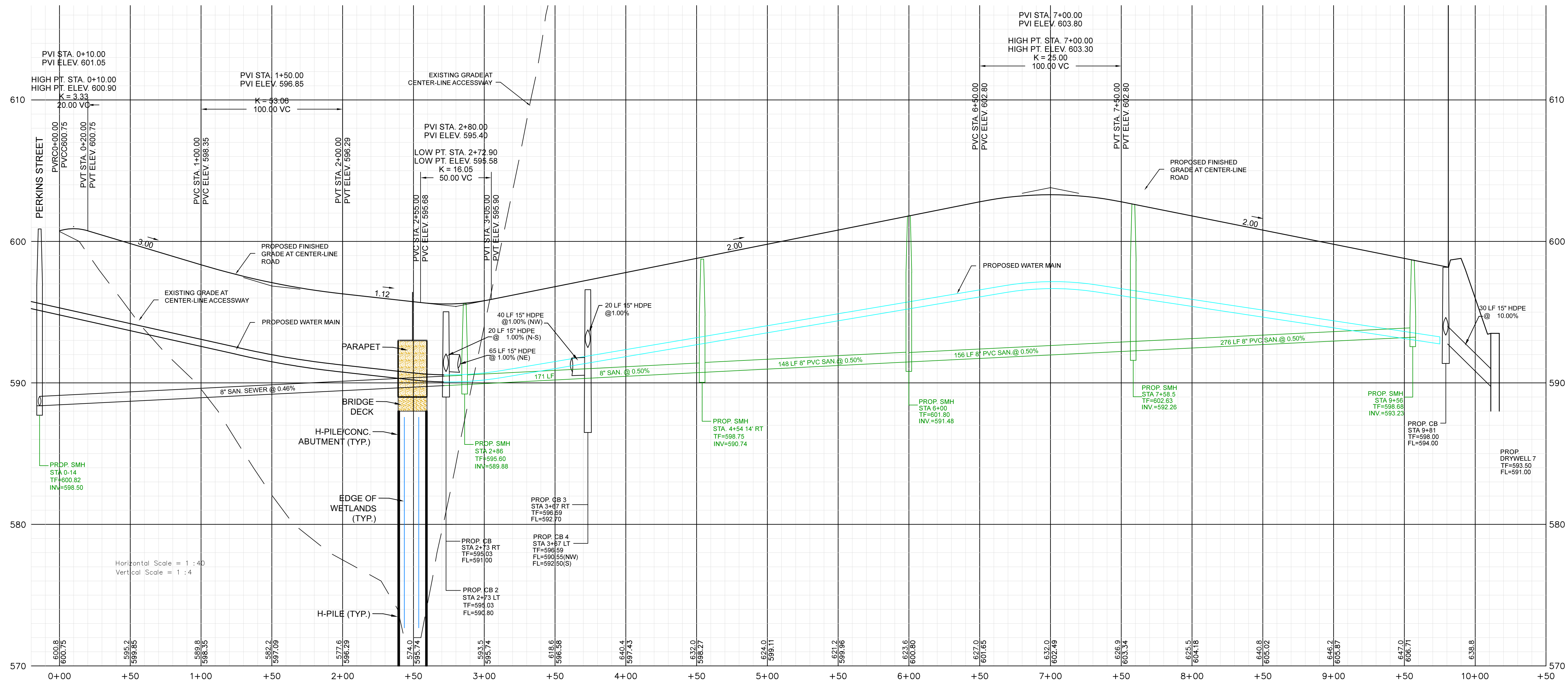
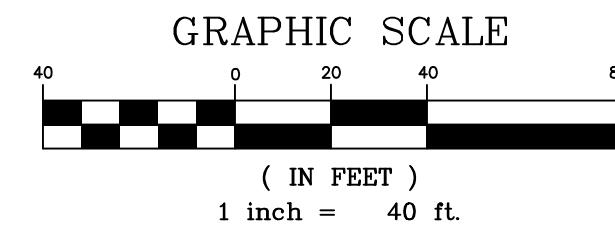
S4



BRISTOL VILLAGE DRIVE PLAN
STA. 0+00 - 6+00
1 inch = 40 ft.



BRISTOL VILLAGE DRIVE PLAN
STA. 6+00 - 10+30
1 inch = 40 ft.



BRISTOL VILLAGE DRIVE PROFILE

PLAN & PROFILE
BRISTOL VILLAGE DRIVE
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

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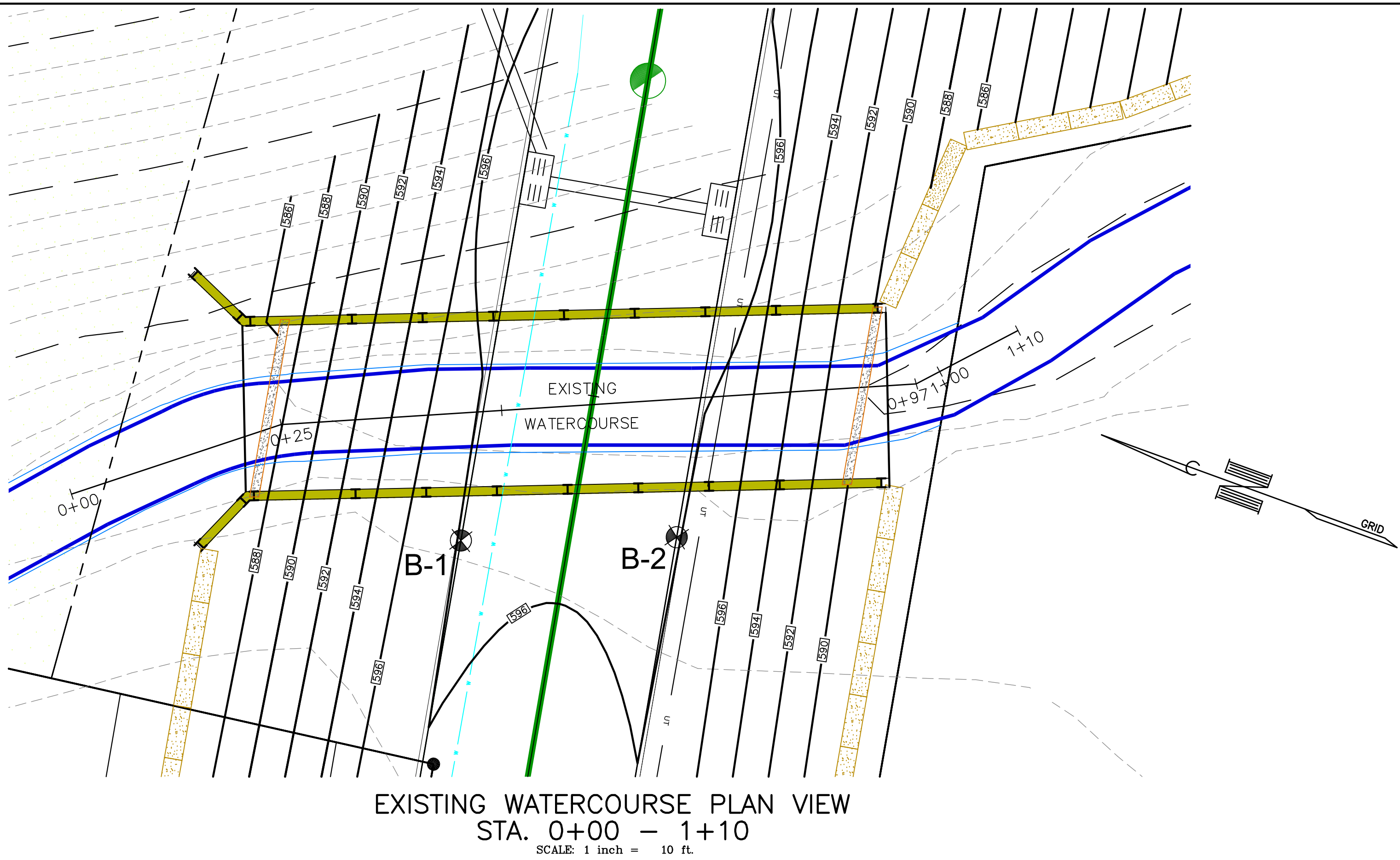
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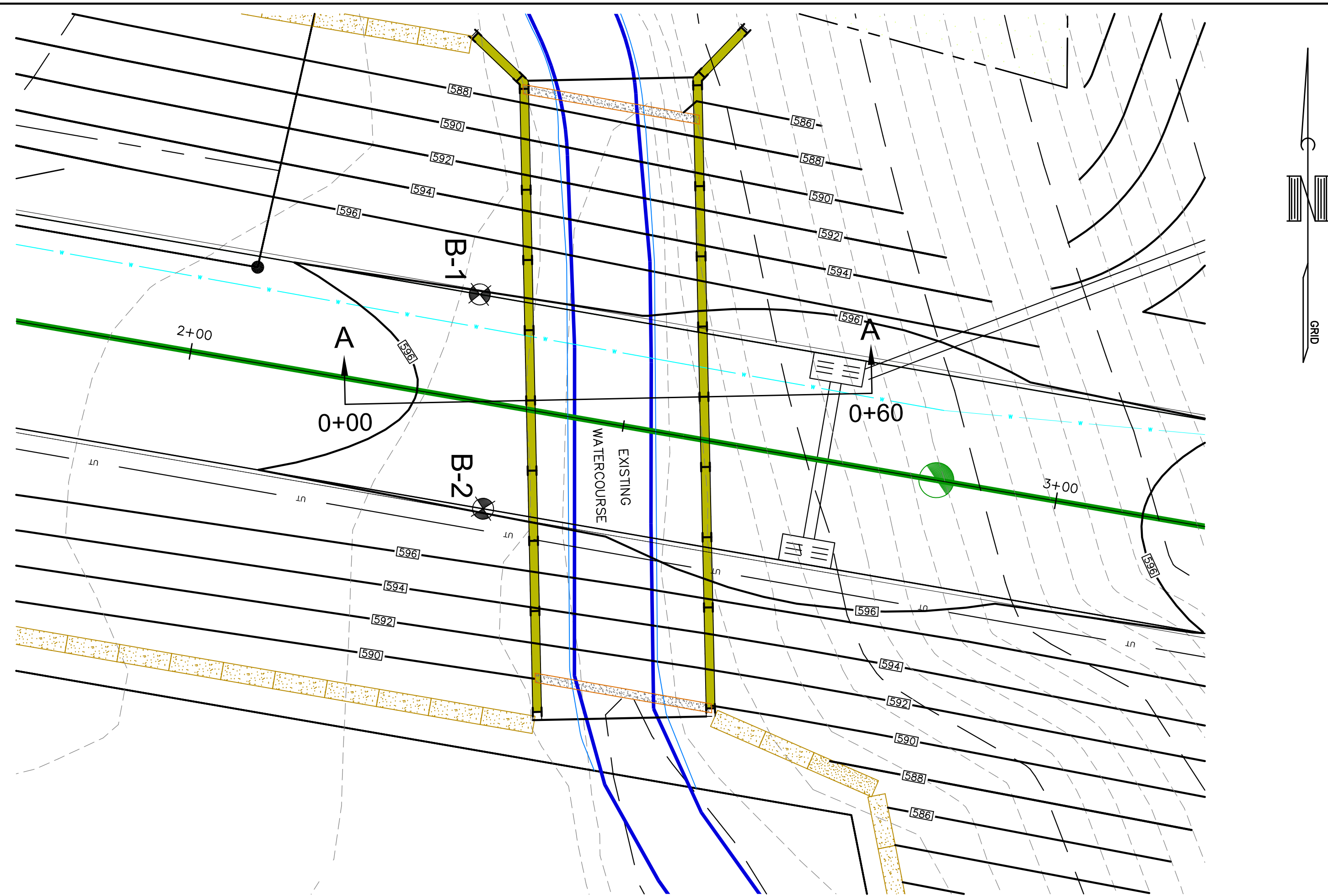
DATE: 6-17-2024 SCALE: SHOWN

SHEET

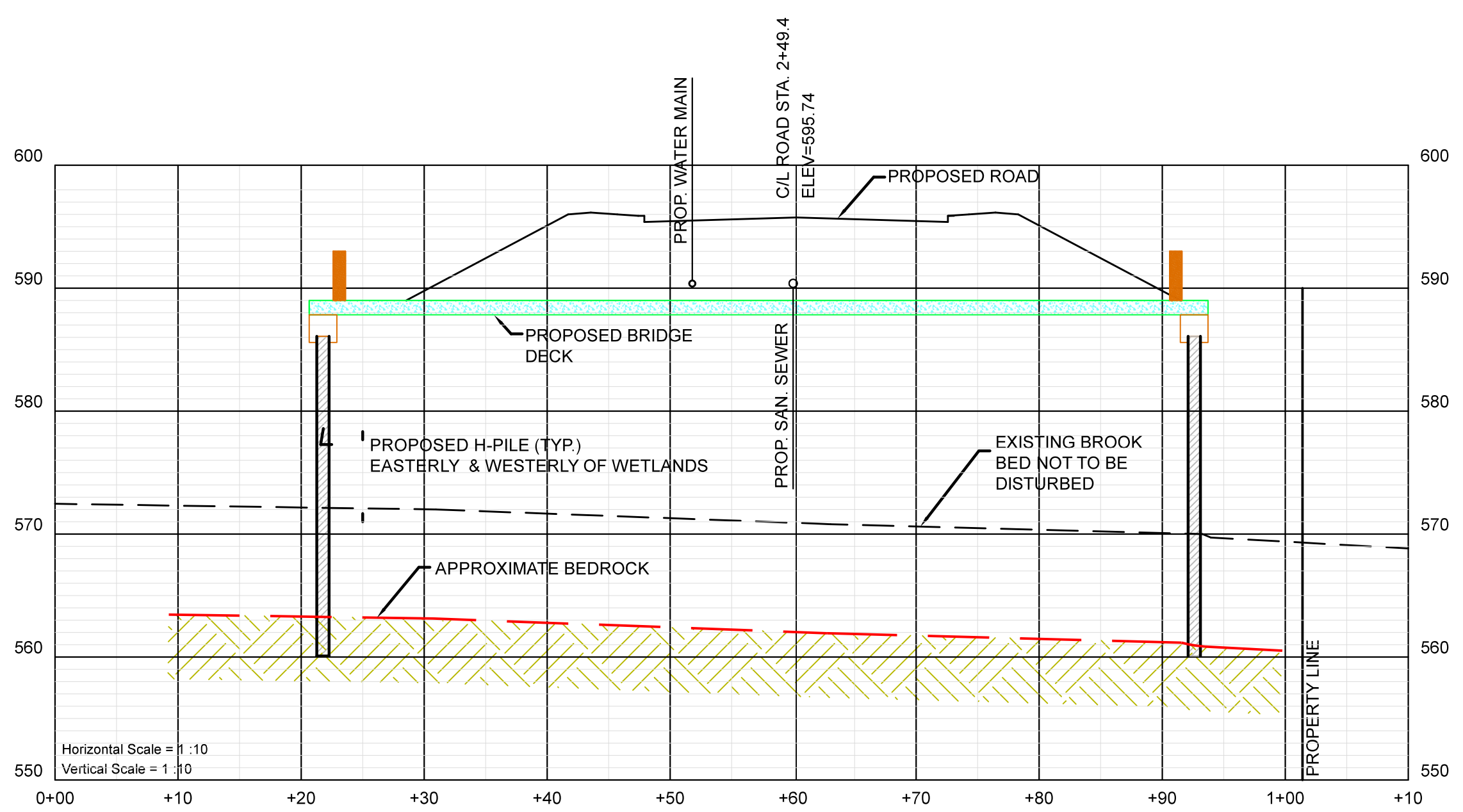
PP



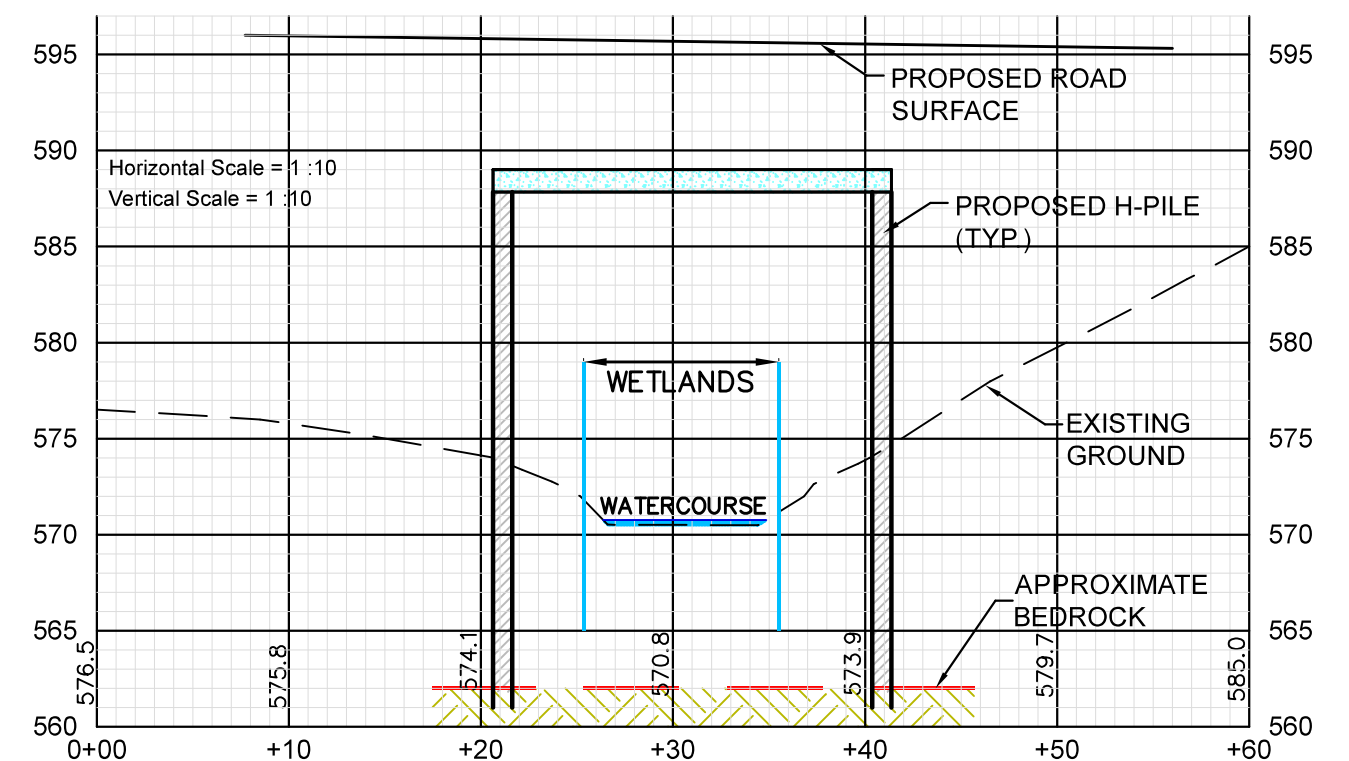
EXISTING WATERCOURSE PLAN VIEW
STA. 0+00 - 1+10
SCALE: 1 inch = 10 ft.



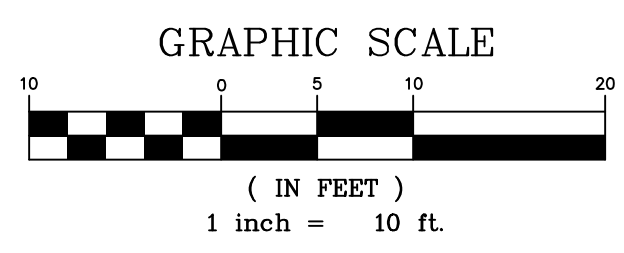
CROSS-SECTION "A" - "A" WATERCOURSE PLAN VIEW



C/L WATERCOURSE PROFILE



CROSS-SECTION "A"-"A"



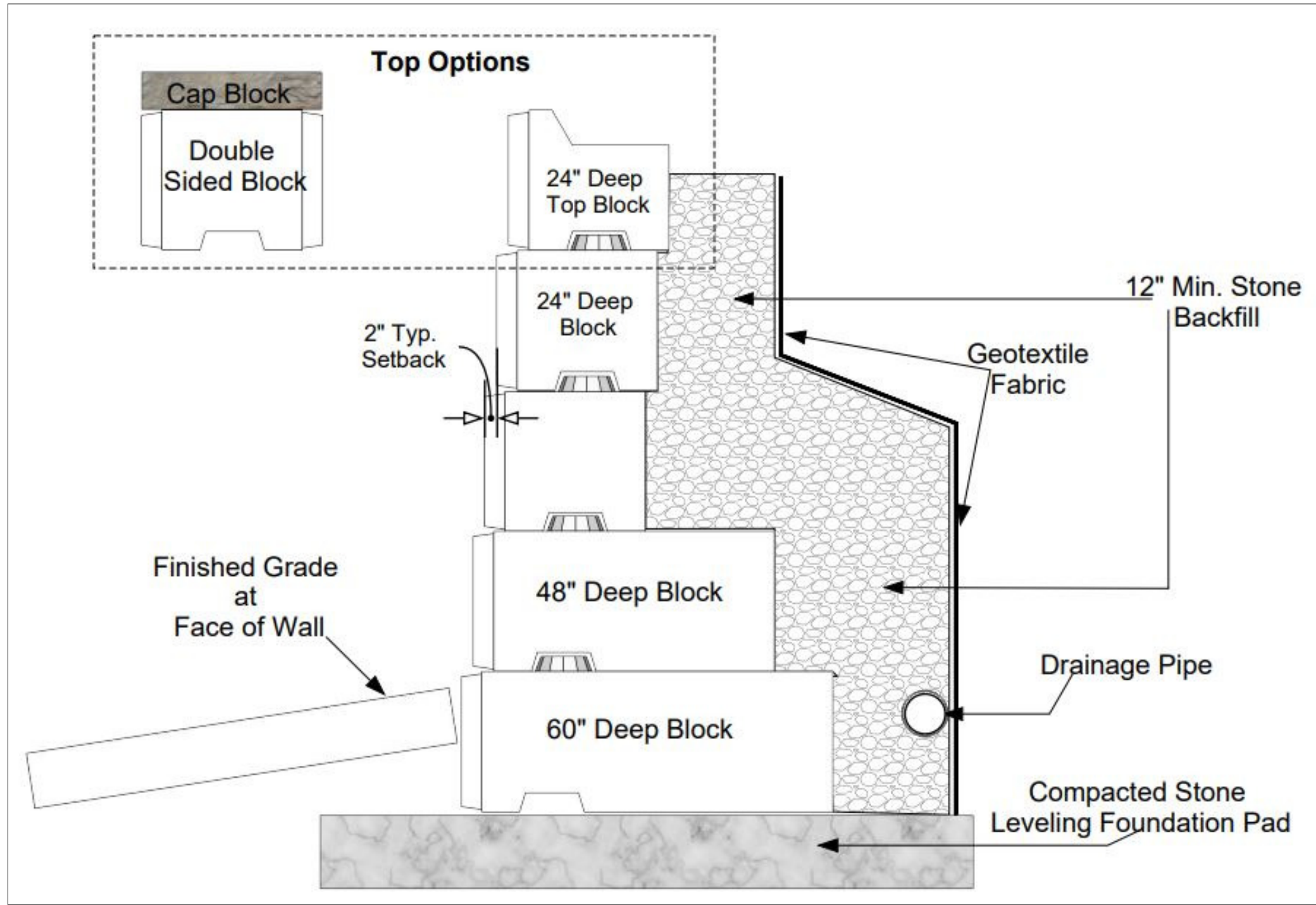
CROSSING PROFILES - SECTIONS
BRISTOL VILLAGE DRIVE
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

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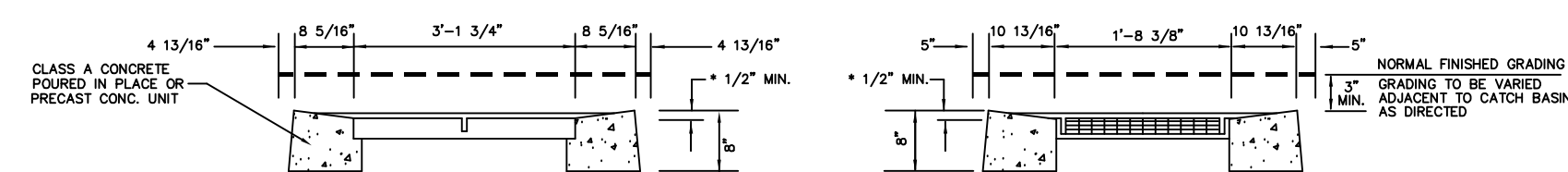
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DATE: 7-30-2024 SCALE: SHOWN

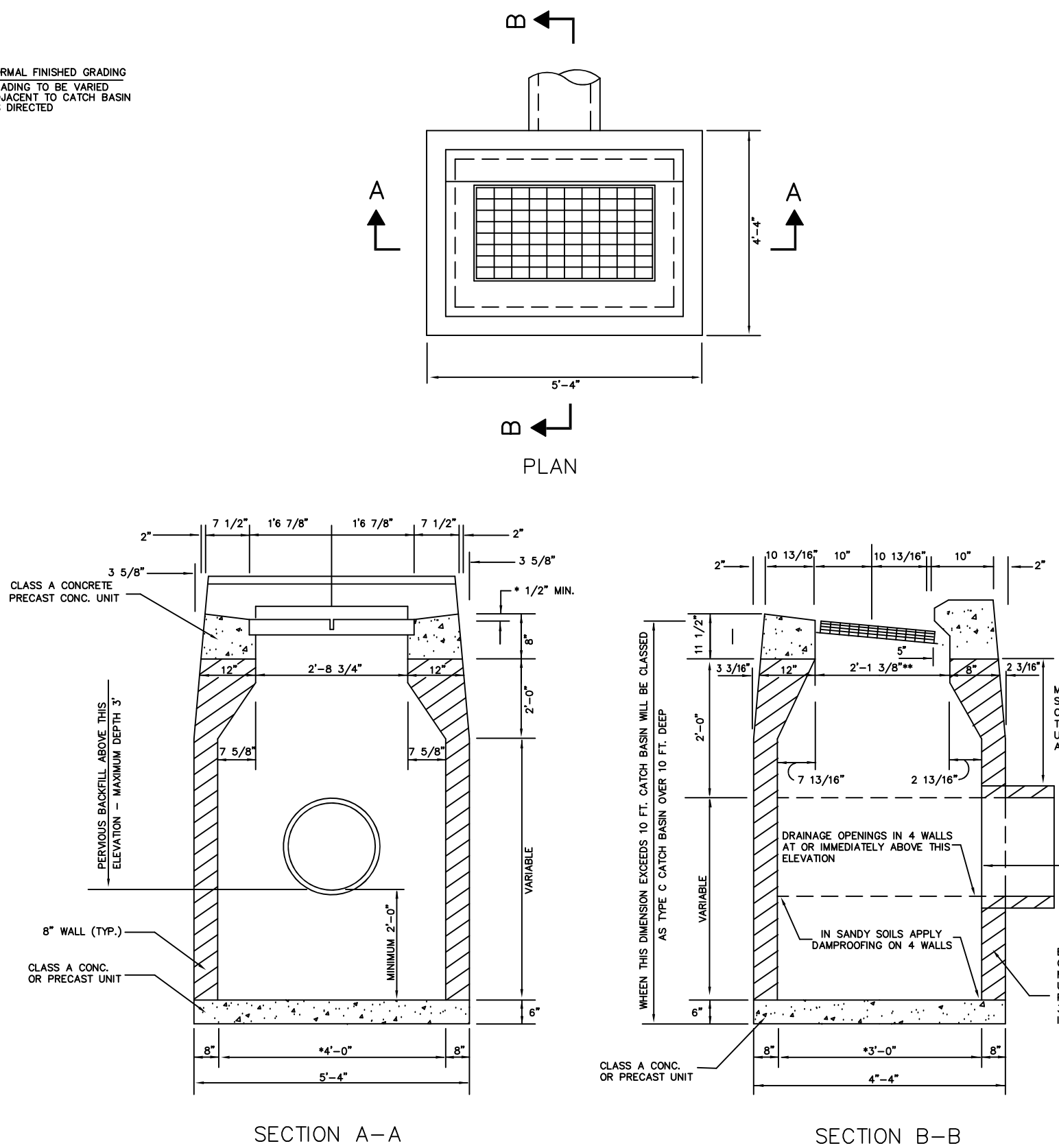
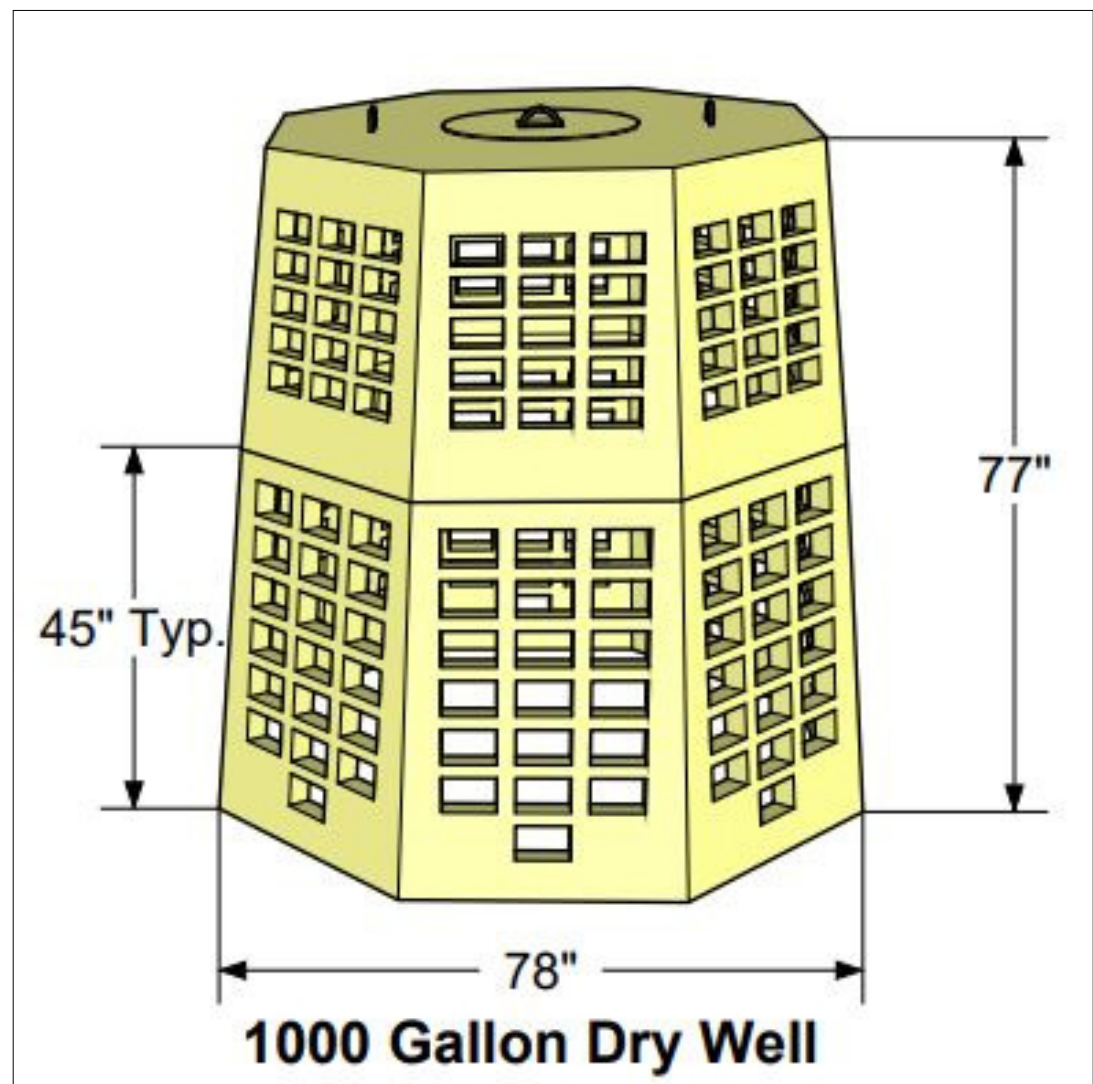
SHEET
X



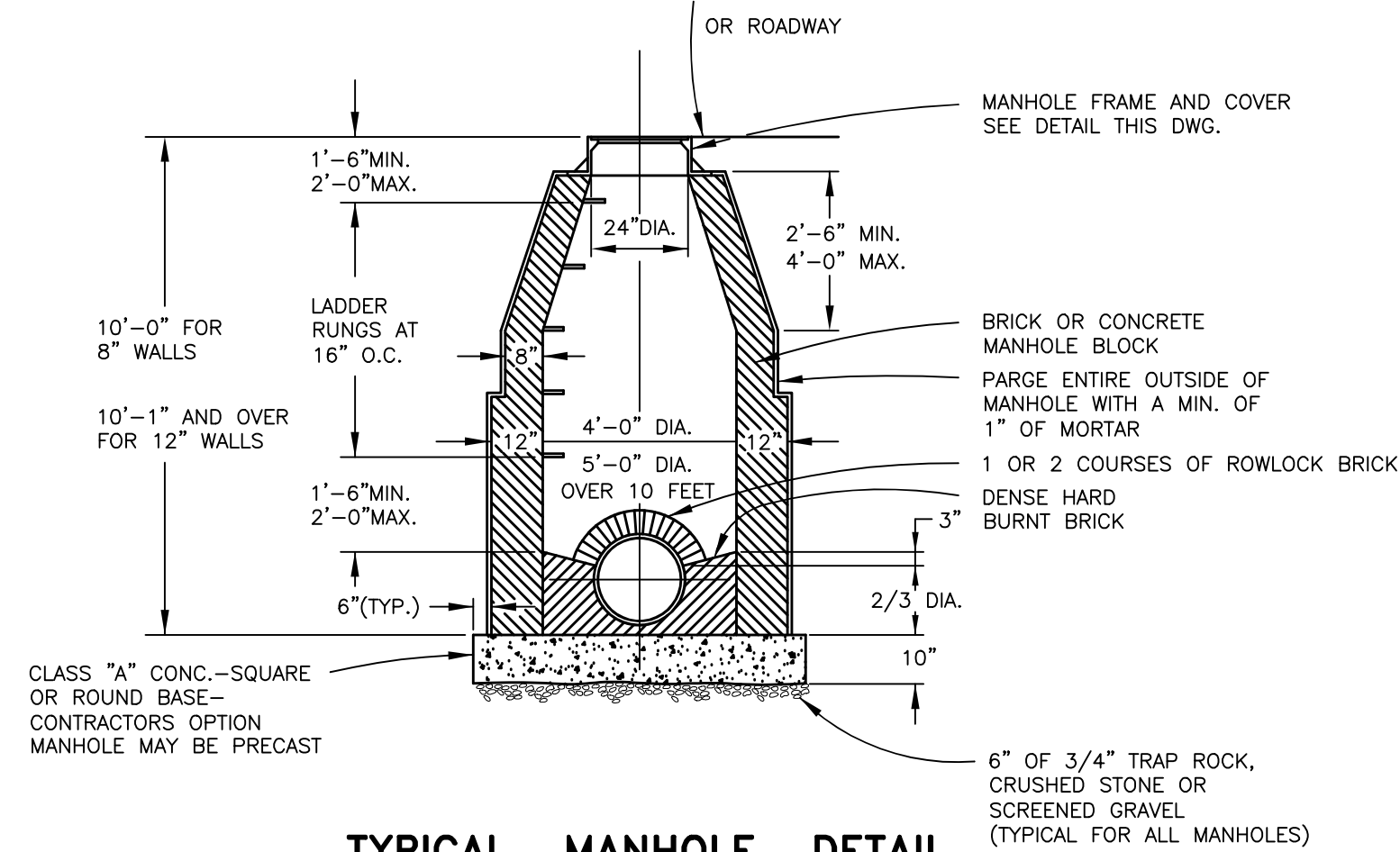
RETAINING WALL SECTION



CB C-L TOP FOR DRYWELLS



TYPE C CATCH BASIN

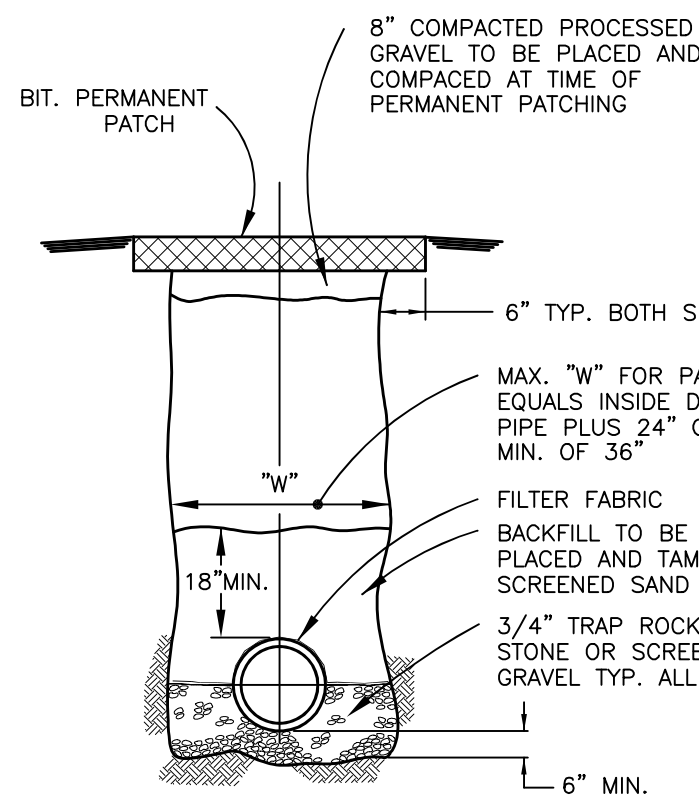


TYPICAL MANHOLE DETAIL

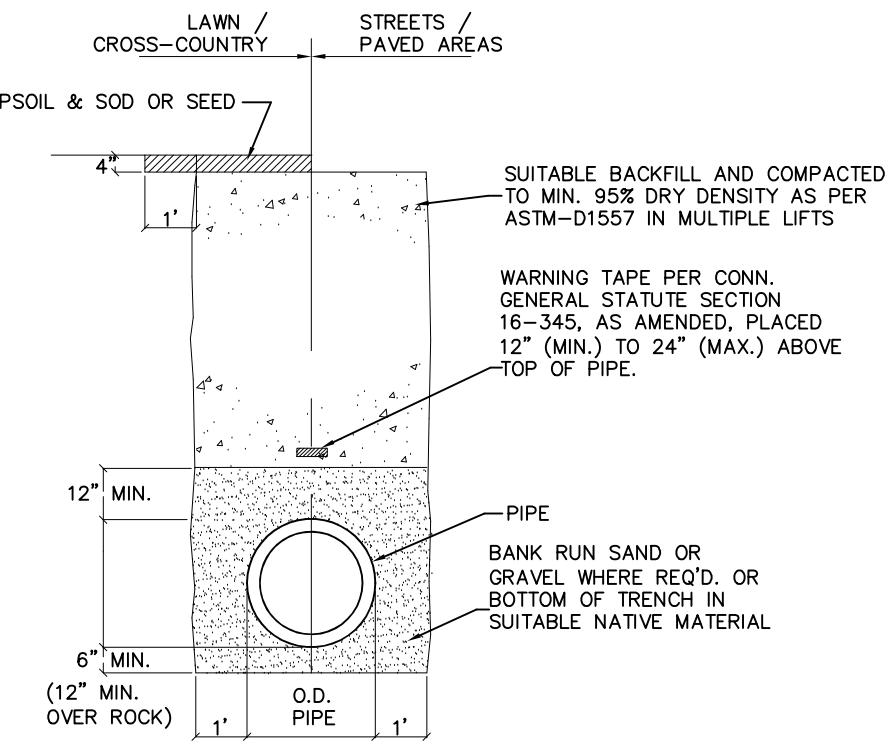
NOTE: DIMENSION REQUIREMENTS FOR OVER 10' DEEP.

GENERAL NOTES FOR MANHOLES

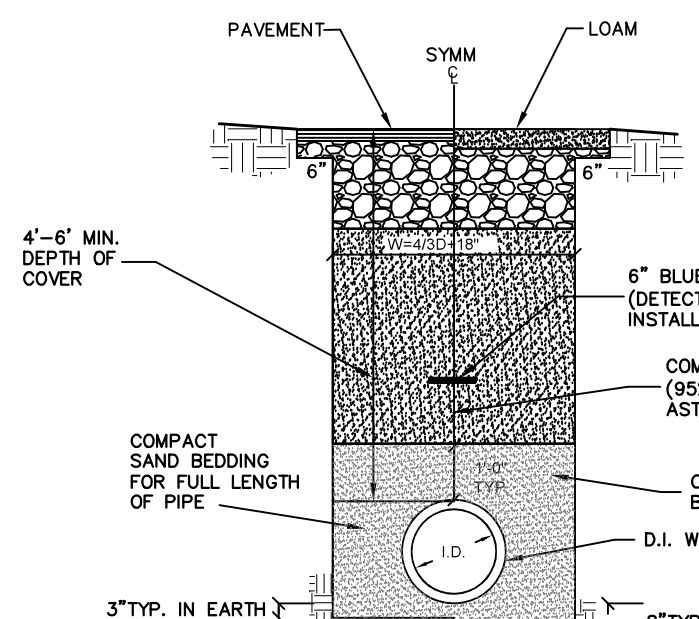
- MANHOLE SHALL BE WATERTIGHT. IN LIEU OF PARING, TWO COATS OF BITUMINOUS WATERPROOFING MAY BE BRUSHED ON OR SPRAYED ON. INERTOL, TREMCO OR APPROVED EQUAL MAY BE USED TO OBTAIN DESIRED RESULTS. DO NOT BACKFILL UNTIL LAST COAT IS DRY.
- BACKFILL ALL MANHOLES WITH BANK-RUN GRAVEL.
- MANHOLE BASES ARE TO BE CLASS "A" CONCRETE.
- ALL PIPE, CHIMNEY, AND DROP ENCASUREMENT TO BE CLASS "A" CONCRETE.
- CLASS "A" SHALL BE 3,000 P.S.I. STRENGTH AT 28 DAYS.
- TYPICAL JOINT DETAIL TO BE USED WHEN JOINING DIFFERENT ACCEPTABLE PIPE TYPES WITH A COMMON I.D.
- MANHOLES WHICH ARE LLOCATED IN RIGHTS-OF-WAY OFF CITY STREETS OR DEDICATED CITY STREETS SHALL HAVE BOLT DOWN MANHOLE COVER.



TYPICAL SAN. TRENCH

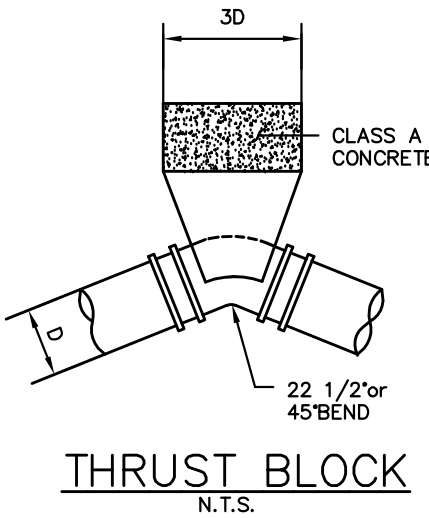


TYPICAL STORM SEWER TRENCH SECTION



WATER MAIN TRENCH DETAIL

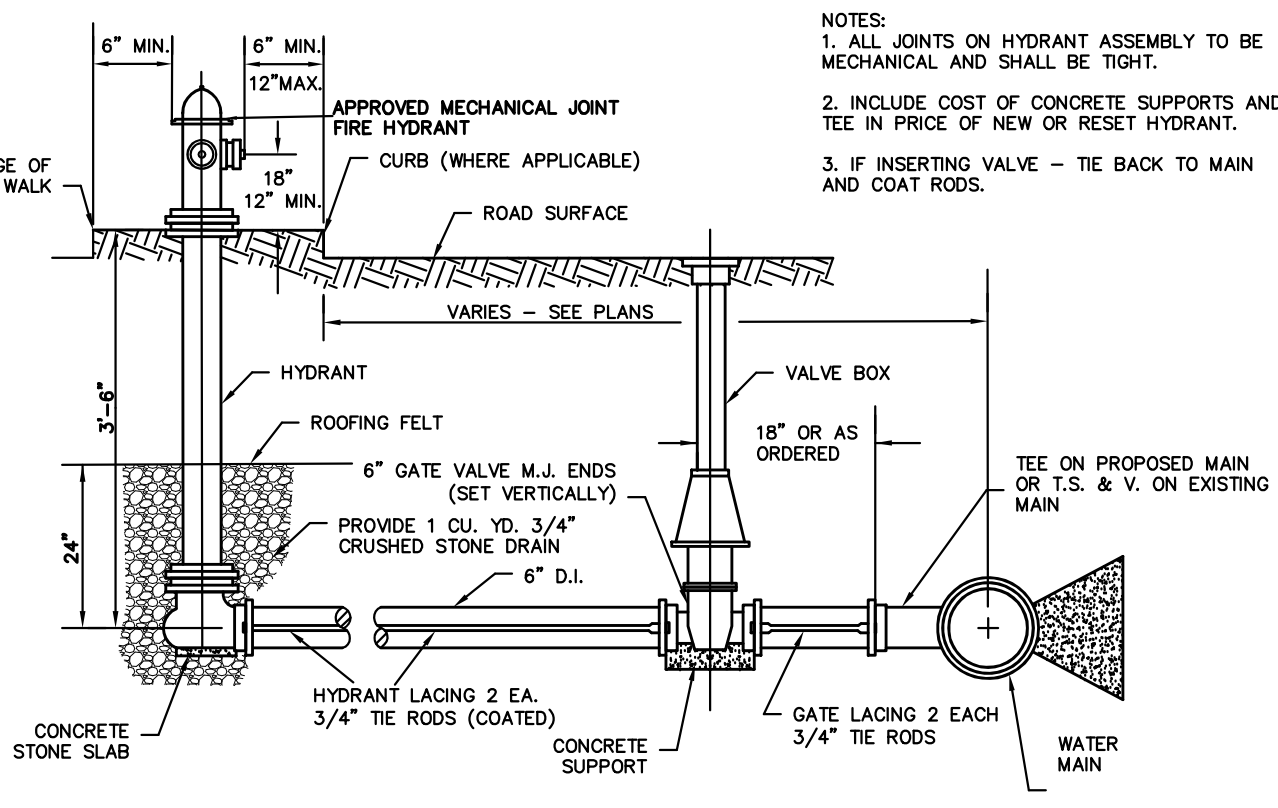
BRIDGE NOTES AND DETAILS TO BE PROVIDED BY STRUCTURAL ENGINEER PENDING COMPLETION OF DRAWINGS.



PIPE SIZE	REQUIRED VOLUME (CUBIC YARDS)
6	1.25
8	2.25
10	4.00
12	5.00

- NOTES:
- THRUST BLOCK DESIGN CRITERIA: MAX. TEST PRESSURE 250 PSI. MIN. ALLOWABLE BEARING CAPACITY 2500 PSI.
 - THRUST BLOCKS NOT REQUIRED FOR 11 1/4" BENDS.

WATER SYSTEM NOTE:
DUE TO ANTICIPATED SERVICE PRESSURES AT THE DISTRIBUTION MAIN, ALL HOMES SHALL BE EQUIPPED WITH A PRESSURE REDUCTION VALVE AT THE WATER SERVICE ENTRANCE TO THE HOME. PRESSURE REDUCTION VALVE SHALL BE WATTS LPRC105 OR APPROVED EQUAL. WATER DEPARTMENT SHALL APPROVE PRESSURE REDUCTION VALVE PRIOR TO COMMENCEMENT OF WORK.



HYDRANT ASSEMBLY

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SHEET
D

DATE: 6-17-2024 MAP NO. 2022-64

DETAIL SHEET
BRISTOL VILLAGE
PREPARED FOR
P & B PROPERTIES LLC
BRISTOL, CONNECTICUT

C. Webb & Associates, LLC
Environmental Consulting Services

**Environmental Evaluation of the Proposed Bristol Village Project
at 260 Perkins Street for P & B Properties, LLC in Bristol, CT (06-
18-2024)**

C. Webb & Associates, LLC conducted an environmental evaluation of the proposed Bristol Village residential development project on the property located at 260 Perkins Street in Bristol, CT.

Documents reviewed for this evaluation include the following:

- The Site Development Plan and Construction Plans for 260 Perkins Street, Prepared for P & B Properties, LLC, Bristol, CT, dated 06-17-2024.
- Wetland Evaluation Report by C. Webb & Associates, LLC, dated 05-17-2023 (see Attachment A in this report).
- NDDB Preliminary Site Assessment dated 05-14-2023 (see Attachment B in this report).

In addition, we conducted multiple site visits to the project area at various times over the past 2 years to review the wetland and natural resources and to evaluate the area where the proposed project would locate a bridge over an existing watercourse to access the approximately 8.7 acres at the rear of the 10.6-acre parcel.

The objective of this evaluation was to determine if the proposed activity would be sensitive to the ecology of the existing wetland resources. Based on the findings of this evaluation, we offer the following observations.

1.0 PROPOSED PROJECT ACTIVITY

The proposed project is to construct 16 residential structures in the rear parcel of the property with access from 260 Perkins Street using a concrete open bottom bridge to cross an existing unnamed watercourse (the proposed crossing location as shown on the site plan). The access road would be located on an existing parcel that extends from Perkins Street to the rear parcel. Due to the increase in elevation between Perkins Road and the rear parcel, fill will be required to

gradually raise the access road up to the proposed watercourse crossing. From the east side of the bridge crossing, the proposed project will require a cut into the slope to construct the road into the residential development (see site plan).

The proposed road surface of the bridge would be 24 feet wide and will span the watercourse, and it's associated Ordinary High Water (OHW) line, on both sides of the watercourse. The bridge opening under the roadway will be 22 feet wide and 14 feet high which will require no construction within wetland/watercourse resource. Construction of the bridge would be scheduled during the dryer time of the year, typically during the months of July, August, or September.

2.0 EXISTING SITE CONDITIONS DESCRIPTION

Site Description

The combined 10.6-acre parcel is vacant and undeveloped. The parcel is situated between Perkins Street and the City of Bristol's Dog Park/Birge Pond & Hoppers Area.

The site is accessed via the 1.9-acre parcel off Perkins Street. The larger rear parcel has no frontage on an established road. The access from Perkins Street is at elevation 600 feet and descends slightly to a low elevation of approximately 575 feet, where a watercourse bisects the site. The property rises to an elevation of 644 feet on the eastern edge of the parcel and on a large area of the 8.7-acre rear parcel.

The site is forested, except for a small clearing at the entrance off Perkins Street which is maintained as mowed lawn. The forest cover on the site is dominated by Oak, Maple, Beech and Pines in the tree layer. Witch-Hazel, Mountain Laurel, Lowbush Blueberry and Maple-leaved Viburnum characterize the rather sparse shrub layer. At the northern edge of the forest, which occurs along the border of the site, the forest grades into a shrubland vegetated with Black Locust and Black Birch saplings, along with invasive plants, Winged Euonymus and Norway Maple.

The previous landowner's family, since the 1970's, harvested trees on a regular basis for their own use, and maintained an open forest floor so that trees would not be crowded out by samplings and shrubs.

Wetland Resource Area Description

A wetland evaluation conducted 2023 by C. Webb & Associates, LLC, led by Mr. Ian Cole, a Professional Soil Scientist, to validate the current boundaries of the wetlands and watercourses on this property as described in the City of Bristol's wetland boundary change permit issued on November 15, 1999, by the Inland Wetlands Commission. As noted on the official town map, the only wetland resource identified on the project site is an unnamed watercourse that bisects the property into east and west parcels. This wetland resource is described as "5 feet wide to either side of the centerline of the brook as wetlands" and its location within the site is shown on the attached site plan.

Behind (east of) the existing residences along Perkins Street is a stream channel associated with an unnamed watercourse that originates at Chippanee Golf Course. The watercourse flows north to south. The western banks of the watercourse, behind the homes on Perkins Street, have been embedded with various construction debris like concrete, bricks, asphalt, wooden poles, etc. The stream channel is approximately ten (10) feet in width and is very rocky with large boulders and cobbles. A more detailed description with photos and graphics of the wetland resource is presented in the attached Wetland Evaluation Report.

Natural Diversity Data Base (NDDDB) Review

The current NDDDB map for the City of Bristol shows part of a state and federal listed species bubble that overlayed on a portion of the rear lot. A CTDEEP NDDDB Preliminary Site Assessment request was submitted into the database for this location. CTDEEP responded that "current data maintained by the NDDDB and housed in the DEEP ezFile portal, indicates that no populations of State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306), and no Critical Habitats have been documented within or in close proximity to the area delineated". A copy of the CTDEEP response is in Attachment B of this report.

3.0 PROPOSED PROJECT ACTIVITIES IN WETLANDS & REGULATED UPLAND REVIEW AREAS

Wetland & Watercourse Impacts

The proposed project will have no temporary or permanent wetland impacts associated with the construction of this project.

Upland Review Area (URA) Impacts

Upland Review Area (URA) impacts are associated with site grading to either side of the proposed bridge and within the residential development.

There will be approximately 29,600 square feet of disturbance within the URA associated with grading and construction of the proposed access road. The City's wetland map shows a wetland area at the southern property boundary line with City owned property adjacent to the proposed residential area. However, based on the 1999 wetland map amendment, which eliminated that wetland on top of the hill on the project property, but not on the City, the proposed project site plan identifies the disturbance area including that area as an upland review area.

Stormwater Management

The project design approach to treatment of stormwater runoff before it leaves the site and flows into the unnamed watercourse includes a network of catch basins and culverts that will direct stormwater into a large infiltration basin. The stormwater management system was designed to infiltrate the stormwater as well as the recharge groundwater. This approach to treatment of stormwater runoff, before it leaves the site and flows into the unnamed watercourse, has the added benefit of improving water quality and reducing water temperature before it discharges to the unnamed watercourse. See the engineer's Stormwater Management Report for additional details.

Mitigation Measures

We propose the following mitigation measures for this project:

- Phase the construction of the project so that the entire area of the site is not cleared all at once, which will limit the area of disturbed soils exposed to stormwater erosion at any one time. The thorough Phasing Plan will eliminate potential temporary/short-term impacts related to the proposed construction activities. Project staging maps are presented in the plan set.
- A thorough and pro-active erosion and sedimentation (E&S) control plan consistent with state standards has been designed for this project. The plan includes phasing site work, construction stormwater control measures, temporary and permanent stabilization methods, erosion control barriers, and limiting work within the upland review areas. Details

of the E&S controls and the on-site E&S control stockpile areas are presented in site plan set.

- A regularly scheduled environmental and construction inspection program is provided to regularly monitor the work and submit regular reports to the developer and the town. An example of the reporting program is presented in the engineer's Stormwater Management Plan.
- The construction and E&S control phasing details are shown in the site set.

4.0 SUMMARY

The issues normally associated with a project of this type include potential increases in storm water runoff, direct impacts to wetland resources, potential reductions in surface and groundwater quality and volume, and secondary impacts to wetland resources. These potential concerns have all been addressed in the very detailed design and development of this project plan.

The proposed project design is the culmination of the project team's refinement of the alternatives to the proposed plan that were considered to protect the unnamed watercourse. The design process also developed and evaluated reasonable alternatives for treating storm water runoff before it is discharged to the off-site wetland resources.

While some of these alternatives evaluated are feasible for developing this site, the current design of the proposed development represents the most prudent alternative because: the project has been designed to balance the need to develop only a portion of the site; this plan avoids temporary and permanent direct impacts to the wetland resources; it maintains much of the upland review areas as a buffer between the development and the wetlands; it maintains surface water inputs to the wetlands and eventually the unnamed watercourse; and, this plan addresses any potential impacts to surface water quality with the inclusion of stormwater treatment facilities to handle runoff from all developed and impervious areas.

ATTACHMENT A

Soil Scientist's Wetland Evaluation Report

ATTACHMENT "A"

C. Webb & Associates, LLC
Environmental Consulting Services

May 17, 2023

Mr. Todd Clark P.L.S.
Clark Land Surveying, LLC
126 Tunxis Road
Bristol, Connecticut 06010

RE: Wetland Evaluation Report prepared for: 2 Parcels of Land at 260 Perkins Street,
MBL:60-12-5 (1.9 acres) & 60-11 Rear (8.7 acres), Bristol, Connecticut.

Dear Mr. Clark:

C. Webb and Associates, LLC completed a field evaluation of the jurisdictional freshwater inland wetlands and watercourses on the above referenced properties totaling 10.6-acres to verify that the wetland resources identified on the City of Bristol's wetlands map. The field survey verified that the existing site conditions match the City's map which was amended on November 18, 1999.

WETLAND SURVEY METHODOLOGY

The on-site regulated wetlands were evaluated in accordance with the standards of the Natural Resources Conservation Services (NRCS) National Cooperative Soil Survey and the definitions of inland wetlands and watercourses as found in the Connecticut General Statutes, Chapter 440, Sections 22a-36 through 22a-45 as amended. Wetlands, as defined by the Statute, are those soil types designated as poorly drained, very poorly drained, floodplain or alluvial in accordance with the NRCS National Cooperative Soil Survey. Such areas may also include disturbed areas that have been filled, graded, or excavated and which possess an aquic (saturated) soil moisture regime.

Watercourses means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, vernal, or intermittent, public, or private, which are contained within, flow through or border upon the City of Bristol or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes. Intermittent watercourses are defined permanent channel and bank and the occurrence of two or more of the following characteristics: (a) evidence of scour or deposits of recent alluvium or detritus, (b) the presence of standing or flowing water for duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation.

WETLAND SURVEY RESULTS

A wetland field survey was completed on May 8, 2023, to verify that the on-site wetland and watercourse resources match the City's wetland map. The combined 10.6-acre parcel is vacant and undeveloped. The parcel is situated between Perkins Street and the City of Bristol Perkins Street dog park / Birge Pond & Hoppers Area Trail. Behind (east) the

existing residences along Perkins Street is a stream channel associated with an unnamed watercourse that originates at Chippanee Golf Course. The watercourse flows north to south following along the base of an escarpment that rises to a level outwash plateau that defines the interior of the rear lot. The western banks of the stream behind the homes on Perkins Street has been embedded with various construction debris like concrete, bricks, asphalt, wooden poles, etc. The stream channel is approximately 10' in width and is very rocky with large boulders and cobbles. There is limited floodplain or wetland development outside of the stream channel. Representative site photos are provided below.

SOIL SURVEY

The soils identified along the wetland boundary are a refinement of the Natural Resources Conservation Service (NRCS) Websoil survey. Soils on the site have formed from outwash, glaciofluvial and eolian parent material.

Wetland Soils

The regulated wetland soils are mapped and classified as belonging to the Raypol soil series. These very poorly drained hydric soils have accumulated organic layers and are found on tributaries. Additionally, within the channel of the watercourse are alluvial wetlands soils associated frequently flooded deposits consisting of coarse-silty alluvium and coarse sands and gravel.

Upland Soils

The bulk of the uplands are mapped as excessively well drained – Hinckley loamy sands. These stratified, water sorted sands and gravels are well suited for development and are generally unrestricted. These deep sands and gravels have rapid permeability and high infiltration rates. Surrounding the property are notable bands of mapped Udorthent soils. These mapping units occur in areas where material was previously mined, evidence of how useful the sandy soil material at the site is for building purposes.

Please feel free to contact Clint Webb at 860-680-5598 if you have any questions or comments.

Regards,



Ian T. Cole
Registered Professional Soil Scientist
Professional Wetland Scientist #2006



Clinton L. Webb, Jr.
Senior Wetland Ecologist

WETLAND SURVEY PHOTOS

MAY 8, 2023

260 PERKINS STREET

BRISTOL

CONNECTICUT



Photo 1: Stream that bisects the entrance of the property coming off Perkins Street heading east to the rear lot.



Photo 2: Standing on the west bank of watercourse at the access point off Perkins Street looking east uphill.



Photo 3: Access from Perkins Street



Photo 4: Entrance to site at Perkins Street



Photo 5: Example of the flat level landscape that defines the bulk of the property.

WETLAND SKETCH - 260 PERKINS STREET

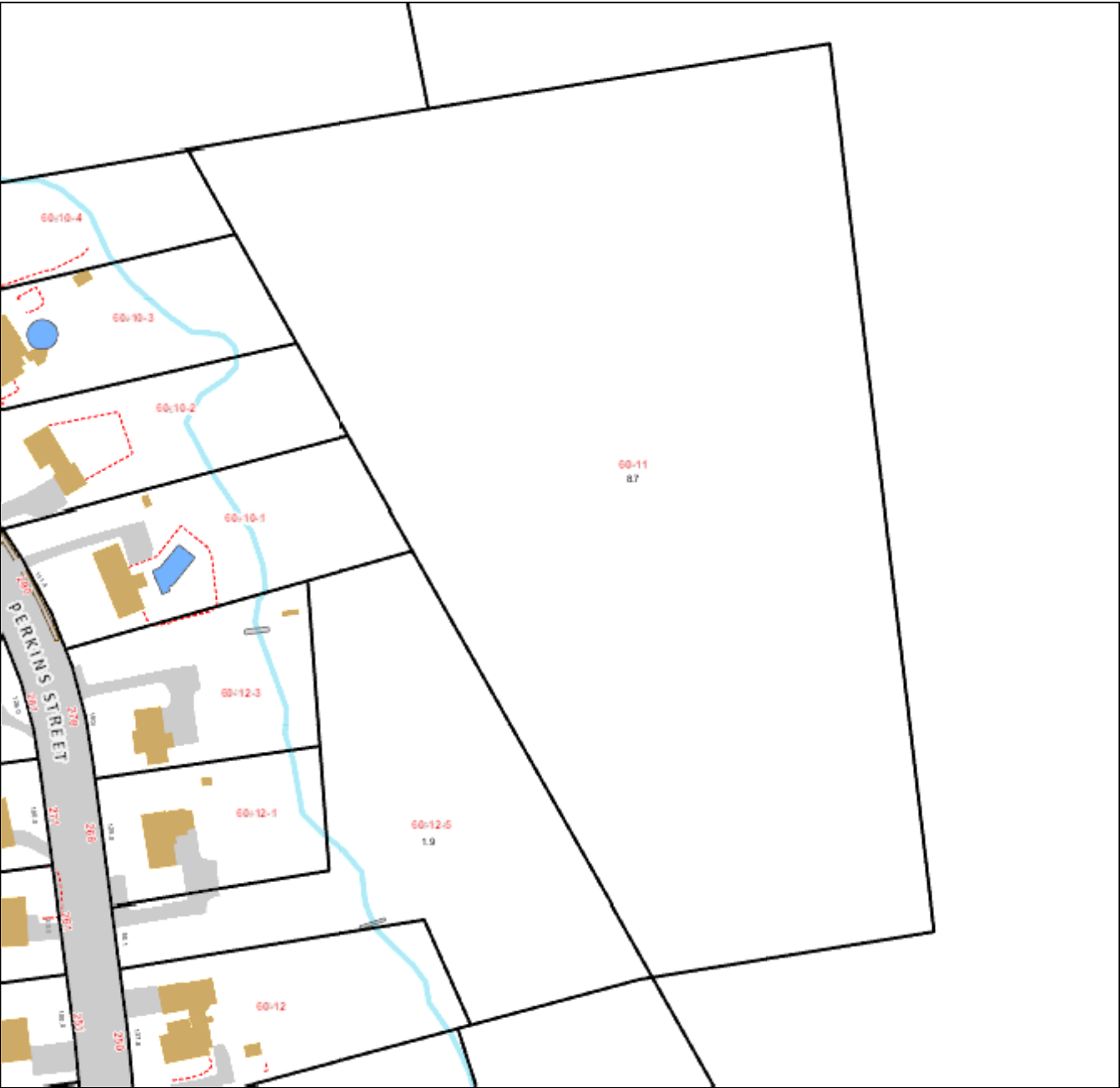


Disclaimer: This map is for planning purposes only. Verification of its accuracy, currency and completeness is the responsibility of the reader's own independent research. All inland wetland and watercourse boundaries are subject to refinement once traditionally field located by a Licensed Land Surveyor and formally adopted by the Town. C. Webb and Associates shall not be held liable for any loss, damages or claims made in relation to anyone referring to this map.

City of Bristol
Geographic Information System (GIS)



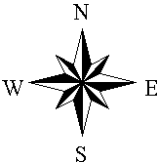
Date Printed: 5/4/2023



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The City of Bristol and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 150 feet

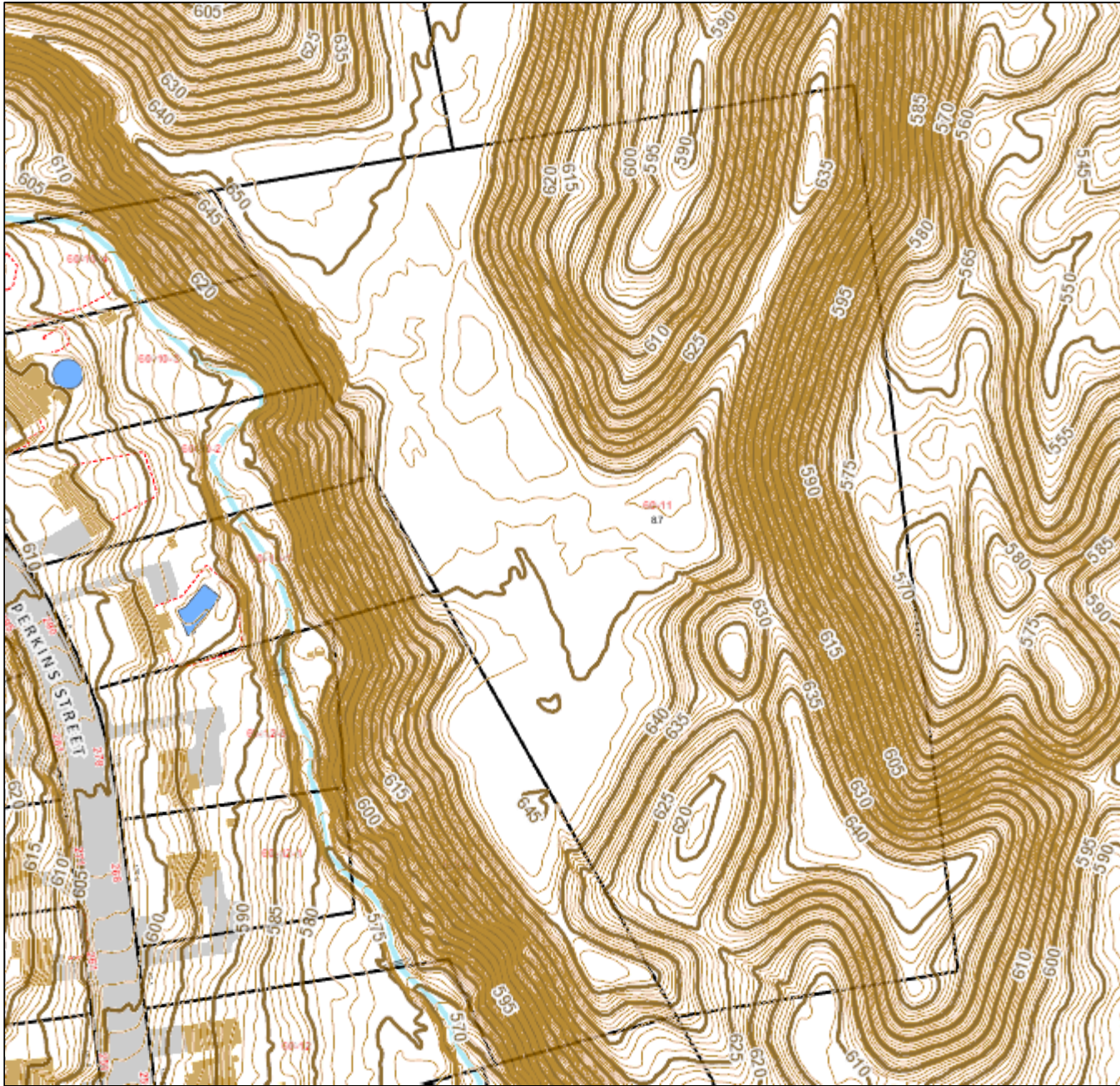


City of Bristol

Geographic Information System (GIS)



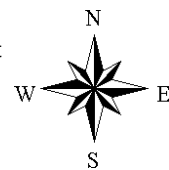
Date Printed: 5/4/2023



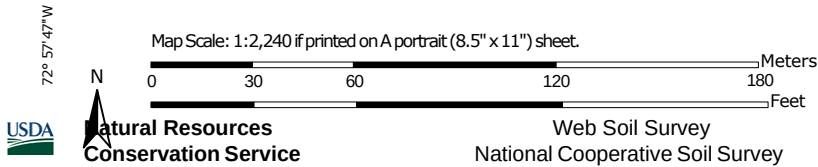
MAP DISCLAIMER - NOTICE OF LIABILITY

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Approximate Scale: 1 inch = 150 feet



Soil Map—State of Connecticut (BOBOSKE)



4617660

4617610

4617560

4617510

4617460

4617410

4617660

4617610

4617560

4617510

4617460

4617410

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut

Survey Area Data: Version 22, Sep 12, 2022

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Raypol silt loam	0.8	5.4%
23A	Sudbury sandy loam, 0 to 5 percent slopes	0.6	4.2%
38A	Hinckley loamy sand, 0 to 3 percent slopes	2.4	16.7%
38C	Hinckley loamy sand, 3 to 15 percent slopes	1.0	6.8%
38E	Hinckley loamy sand, 15 to 45 percent slopes	9.5	67.0%
Totals for Area of Interest		14.1	100.0%

ATTACHMENT B

NDDB Preliminary Site Assessment

Generated by eNDDb on:
5/22/2023

Clint Webb
Towns: Bristol
Preliminary Site Assessment: 320106937

Subject: Bobroske - Perkins St. Bristol

Current data maintained by the Natural Diversity Database (NDDb) and housed in the DEEP ezFile portal, indicates that no populations of State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306), and no Critical Habitats have been documented within or in close proximity to the area delineated.

Please be advised that this is a preliminary assessment and not a Natural Diversity Database determination. The purpose of this information is to provide a general planning tool which identifies those species that have been reported and may occur on or near the mapped area. A more detailed application and review will be necessary to move forward with any environmental authorization, permit, license, or registration applications submitted to DEEP. If such review is required, please return to the DEEP's ezFile Portal and select [Natural Diversity Database Review](#) to begin the review process.

This Preliminary Site Assessment does not preclude the possibility that species not previously reported to the Natural Diversity Database may be encountered on the site. You are encouraged to report incidental observations to the Natural Diversity Database using the [appropriate survey form](#) and follow the instructions for submittal. We recommend field surveys be conducted in order to evaluate potential habitat and species presence. Field surveys should be performed by a qualified biologist with the appropriate scientific collecting permits at a time when these target species are identifiable. A report summarizing the results of such surveys should include:

1. Survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant and animal species within the survey area (including scientific binomials)
4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State listed species
6. Statement/résumé indicating the biologist's qualifications

The site surveys report should be sent to the CT DEEP-NDDb Program (deep.nddbrequest@ct.gov) for further review by program biologists.

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units

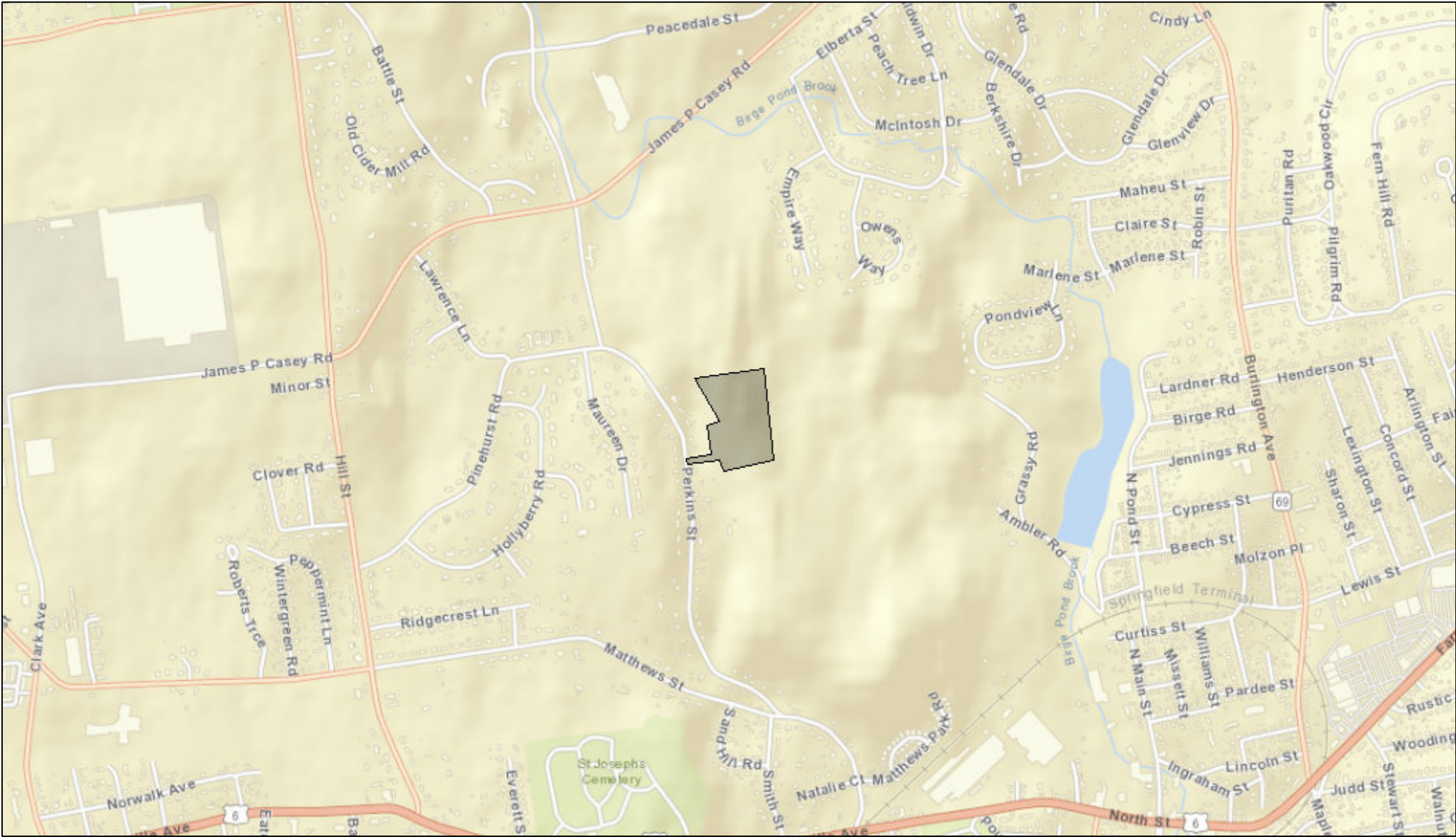
of DEEP, land owners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Database and accessed through the ezFile portal as it becomes available.

This letter is computer generated from our existing records and carries no signature. If however, any clarification/error is noted, or, if you have further questions, please contact the following:

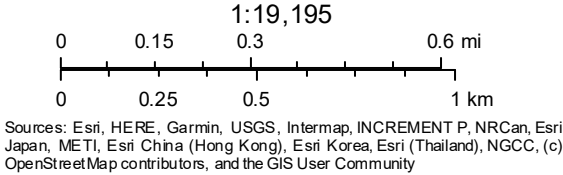
CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Database
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

Please include a snapshot of the map, your last name, and the subject area town when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

Boboske Perkins St. Bristol Map



May 14, 2023



**Stormwater Management Report
For Land Use Commissions Submittals
Bristol Village for P & B Properties, LLC,
#260 Perkins Street, Bristol, Connecticut**

June 17, 2024
Rev. 07/30/2024

EXISTING CONDITIONS: Reference is made to the following Plan Set: "Bristol Village, Open Space Development #260 Perkin Street Prepared for P & B Properties LLC, Bristol, Connecticut" Scales as Shown, Date: 6-17-2024, Revised 7-30-2024, By Clark Land Surveying, LLC, Bristol, Connecticut. The property is located on the east side of Perkins Street approximately one-half mile south of the intersection of Pinehurst Road and Perkins Street. The property is wooded. The property drains to the east and west.

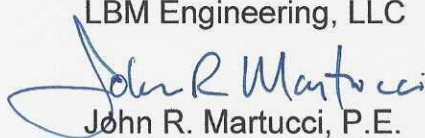
STORMWATER MANAGEMENT: The Rational Method was used to calculate the peak rate of stormwater runoff. The roadway drainage system was designed in accordance with the State of Connecticut Department of Transportation Drainage Manual.

The subsoil throughout the property consists of sands and gravels classified as: Hydrologic Soil Group: A, excessively drained, with no evidence of seasonally high ground water. The soil conditions are excellent for infiltrating storm water. Therefore, each of the proposed homes will have an infiltration area, sized to hold and infiltrate the roof runoff.

The drainage system of catch basins and culverts directs stormwater runoff from roads and bordering vegetated surfaces to drywells and infiltration basins that will reduce runoff from the property to nearly zero. This proposal will not increase the peak rate of runoff from the property, nor will it increase the potential for downstream flooding.

CONCLUSION: The proposed development meets the requirements of the Connecticut D.E.E.P. 2024 Connecticut Stormwater Quality Manual and will not have adverse effects on down-gradient properties. This proposal will not increase the peak rate of runoff from the property and is in keeping with the policies and goals of the Bristol Planning and Zoning Commission.

Submitted by:
LBM Engineering, LLC


John R. Martucci, P.E.



PREPARED BY J Martucci	DATE PREPARED 6/2024	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER 1
CHECKED BY	DATE CHECKED REVISED 7/2024		CLIENT NAME	TOTAL PAGES 6

STORM WATER CALCS.

RATIONAL METHOD: $Q = C \times I \times A$

Q = FLOW RATE IN CUBIC FEET / SECOND (CFS)

A = AREA IN ACRES

C = IMPERVIOUS COEFFICIENT

I = RAINFALL INTENSITY INCHES / HOUR

CB1 HYDROLOGIC SOIL GROUP A, STEEP SLOPES

4 $\frac{1}{2}$ INCHES = 3.0 INCHES

USE $C = 0.20$ FOR OVERLAND FLOW

USE $C = 0.95$ FOR PAVEMENT

$T_c = 10$ MINUTES - SMALL AREAS WITH MIXED
OVERLAND & PAVEMENT

ROOF RUNOFF FROM HOUSES WILL BE INFILTRATED.
(0.04 AC EACH ROOF)

DRAINAGE AREAS:

CB1 STA 2+73 RT

$$\text{PAVT } 365' \times 12' = 0.10 \text{ AC} \times 0.95 = 0.096$$

$$\text{O'LAND } 365 \times 11 = 0.09 \text{ AC} \times 0.20 = 0.018$$

$$\hline 0.19 \qquad \qquad \qquad 0.114$$

$$\text{WEIGHTED } C = 0.114 / 0.19 = 0.600$$

CB2 STA 2+73 LT

SAME AS CB1

0.114

0.579

PREPARED BY JRM	DATE PREPARED 7/2024	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER 2
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES 6

CB 3 STA 3+67 RT

			A x C
PAV'T	333' x 12' = 0.092 AC	x 0.95	= 0.087
DRIVEWAY	4 x 0.015 AC = 0.060 AC	x 0.95	= 0.057
O'LAND	0.57 AC (MEASURED w/CAD)	x 0.20	= 0.114
	<u>0.722 AC</u>		<u>0.258</u>
	WEIGHTED		0.258 / 0.722 = 0.357

CB 4 STA 3+67 LT

PAV'T	333 x 12' = 0.092 AC	x 0.95	= 0.087
DRIVEWAY	3 x 0.015 AC = 0.045 AC	x 0.95	= 0.043
O'LAND (CAD)	0.183 AC	x 0.20	= 0.037
	<u>0.32 AC</u>		<u>0.167</u>
	WEIGHTED		0.167 / 0.32 = 0.522

CB 6 STA 9+81 $\frac{1}{2}$

PAV'T	0.35 AC (CAD)	x 0.95	= 0.333
O'LAND	0.14 AC (")	x 0.20	= 0.028
	<u>0.49 AC</u>		<u>0.361</u>
	WEIGHTED		0.361 / 0.49 = 0.737

PREPARED BY JRM	DATE PREPARED 7/2024	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER 3
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES 6

CB1 STA 2+73, RT
TF 595.03
FL 591.00

20'-15" HDPE
S = 0.01'/FT

CB2 STA 2+73, LT
TF 595.03
FL 590.8
TO DW5

CB3 STA 3+67 RT
TF 596.59
FL 592.70

20'-15" HDPE
S = 0.01'/

CB4 STA 3+67 LT
TF 596.59
FL 590.55 (NW)
FL 592.50 (S)

40'-15" HDPE
S = 0.01'/

DW5 STA 3+40 LT
TF 594.00
FL 590.15
FROM CB2

65'-15" HDPE
S = 0.01'/FT

CB6 STA 9+81
TF 598.00
FL 594.00
TO DW7

30'-15" HDPE
S = 0.10'/

DW7 STA 10+15
TF 593.50
FL 591.00

DW8 STA 540 RT
TF 599.50

DW9 STA 6+75 RT
TF 599.50

DW10 STA 10+85 LT
TF 597.50

PREPARED BY JRM	DATE PREPARED 1/2024	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER 4
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES 6

DW5 (DRY WELL) STA 3+40 LT

AxC

O'LAND 1.03 AC x 0.20 =

0.206

DW 7 STA 10+15 RT

O'LAND 0.58 AC x 0.20 =

0.116

DW8 STA 5+40 FAR RT.

O'LAND 0.41 AC x 0.20 =

0.082

DW9 STA 6+15 FAR RT.

O'LAND 0.31 AC x 0.20 =

0.062

DW 10 STA 10+85 LT

O'LAND 1.755 x 0.20

0.351

PROJECT: 260 PERKINS STREET
 PROJECT NO.:
 CITY: BRISTOL
 ROUTE:
 LOCATION: N/A

DESIGNED BY: JRM DATE: 06/10/24
 CHECKED BY: REV: 07/29/24
 DATE:

GUTTER FLOW ANALYSIS - 25 YR STORM																
Inlet ID	Inlet Station and Offset	Area in Acres (A)	Runoff Coeff. (C)	Time to Inlet (min.)	Rainfall Intensity (in/hr)	AC	Total AC	Q to Inlet (cfs)	Grade of Gutter ft/ft (SL)	Cross Slope Of Shoulder ft/ft (Sx)	Depth of Flow of Gutter (ft)	Gutter Flow Width (ft)	Q Bypassing Inlet (cfs)	AC Bypassing Inlet	AC Entering Catch Basin	Inlet Type
KETTLE VILLAGE DRIVE RIGHT GUTTER																
CB 3	3+67,RT	0.722	0.357	10	6.05	0.258	0.258	1.559	0.040	0.045	0.179	3.971	0.214	0.035	0.222	"C"
CB 1	2+73,RT	0.190	0.6	10	6.05	0.114	0.149	0.904	LOW PT	0.045	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.149	"C"
KETTLE VILLAGE DRIVE LEFT GUTTER																
CB 4	3+67,LT	0.320	0.522	10	6.05	0.167	0.167	1.011	0.040	0.045	0.152	3.375	0.068	0.011	0.156	"C"
CB 2	2+73,LT	0.190	0.579	10	6.05	0.114	0.125	0.758	LOW PT	0.045	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	"C"
CB 6	9+81	0.490	0.737	10	6.05	0.361	0.361	2.185	LOW PT	0.045	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	"C"

Notes:

- 1.) Manning's n = 0.016 (asphalt).
- 2.) Tc = 5 minutes minimum for areas with all pavement.
- 3.) Tc = 10 minutes minimum for small areas with pavement and grass.
- 4.) All low points operate as a wier. Depth (d) over grate is less than 0.4 feet.

GRATES	PERIM	AREA
C	5.02	3.13
C DOUB	7.33	6.26
CL	7.33	3.13
CL DOUB	11.96	6.26

STORM SEWER SYSTEM DESIGN DRAINAGE SYSTEM

Client:
Project: 260 PERKINS STREET BRISTOL
Proj. No.:
Return Period for Design: 25-YR

Prepared By: JRM
Checked By:

Sheet No. 1 of 1
Date: 06/07/24 Revised: 07/29/24
Date:

Line Segment From To		Time to Inlet (min.)	Time in Pipe (min.)	Accumul. Time (min.)	A x C Entering System	Sum of A x C in System	Rainfall Intensity, R (in./hr.)	Q in System (c.f.s.)	Pipe Data						
									Size (in.)	Length (ft.)	Slope (ft./ft.)	Avg. Vel. (f.p.s.)	Full Cap. (c.f.s.)	Headwater (ft.)	Manning "n"
CB 1 2+73.RT	CB 2 2+73.LT	10	0.11	10.0	0.149	0.149	6.1	0.91	15	20	0.010	3.0	6.99	0.40	0.012
CB 2 2+73.LT	DW5 3+40.LT	10	0.27	10.1	0.125	0.274	6.1	1.67	15	65	0.010	4.0	6.99	0.60	0.012
CB3 3+67.RT	CB4 3+67.LT	10	0.11	10.0	0.222	0.222	6.1	1.35	15	20	0.010	3.0	6.99	0.50	0.012
CB4 3+67.LT	DW5 3+40.LT	10	0.12	10.1	0.156	0.378	6.1	2.31	15	40	0.010	5.5	6.99	1.00	0.012
CB6 9+81	DW7 10+15	10	0.05	10.2	0.361	0.361	6.1	2.20	15	30	0.100	11.0	22.12	1.00	0.012

Manning's "n" for, HDPE and RC pipe = 0.012

NOTE: ALL PIPES ARE BELOW FULL CAPACITY.

The final element to be factored into the determination of runoff coefficients is the land slope. As the slope of the drainage basin increases, the selected C value should also increase. This is caused by the fact that as the slope of the drainage area increases, the velocity of overland and channel flow will increase allowing less opportunity for water to infiltrate the ground surface. Thus, more of the rainfall will become runoff from the drainage area.

In summary, it should be reiterated that in assigning a value to the runoff coefficient for use in the rational method, the engineer must rely heavily on experience and judgement.

Table 6-3 Recommended Coefficient Of Runoff For Pervious Surfaces By Selected Hydrologic Soil Groupings And Slope Ranges

<u>Slope</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Flat (0 - 1%)	0.04-0.09	0.07-0.12	0.11-0.16	0.15-0.20
Average (2 - 6%)	0.09-0.14	0.12-0.17	0.16-0.21	0.20-0.25
Steep (Over 6%) *	0.13-0.18	0.18-0.24	0.23-0.31	0.28-0.38
USE 0.20 DUE TO STEEP SLOPES				

Source: Storm Drainage Design Manual, Erie and Niagara Counties Regional Planning Board.

Table 6-4 Recommended Coefficient Of Runoff Values For Various Selected Land Uses

<u>Description of Area</u>	<u>Runoff Coefficients</u>
Business: Downtown areas	0.70-0.95
Neighborhood areas	0.50-0.70
Residential: Single-family areas	0.30-0.50
Multi units, detached	0.40-0.60
Multi units, attached	0.60-0.75
Suburban	0.25-0.40
Residential (0.5 ha (1.2 ac) lots or more)	0.30-0.45
Apartment dwelling areas	0.50-0.70
Industrial: Light areas	0.50-0.80
Heavy areas	0.60-0.90
Parks, cemeteries	0.10-0.25
Playgrounds	0.20-0.40
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30

SMALL DRAINAGE AREAS W/ OVERLAND
& PAVEMENT, MIXED - USE 10 MINUTE T_c

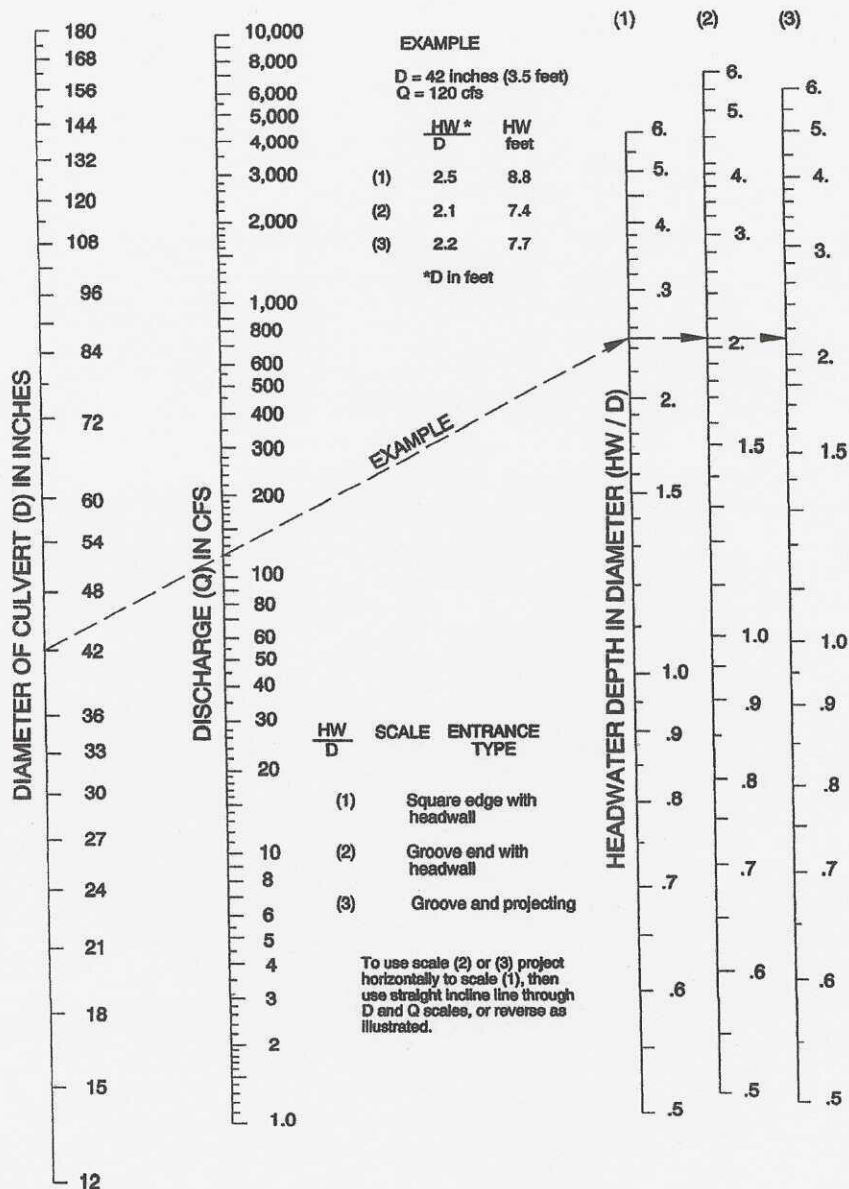
DURATION (min)	DURATION (hr)	RAINFALL INTENSITY (in/hr)					
		2 Yr	5 Yr	10 Yr	25 Yr	50 Yr	100 Yr
5	0.08	4.6	5.5	6.0	6.7	7.3	7.8
6	0.10	4.4	5.2	5.8	6.5	7.0	7.5
7	0.12	4.2	5.0	5.5	6.2	6.8	7.2
8	0.13	4.0	4.8	5.3	6.0	6.5	7.0
9	0.15	3.8	4.6	5.1	5.7	6.2	6.7
10	0.17	3.6	4.3	4.8	5.5	6.0	6.5
11	0.18	3.4	4.2	4.7	5.3	5.8	6.3
12	0.20	3.3	4.0	4.5	5.1	5.6	6.1
13	0.22	3.1	3.8	4.3	5.0	5.4	5.9
14	0.23	3.0	3.7	4.2	4.8	5.3	5.7
15	0.25	2.8	3.5	4.0	4.6	5.1	5.5
16	0.27	2.8	3.5	3.9	4.5	5.0	5.4
17	0.28	2.7	3.4	3.8	4.4	4.9	5.4
18	0.30	2.7	3.3	3.8	4.4	4.8	5.3
19	0.32	2.6	3.2	3.7	4.3	4.7	5.2
20	0.33	2.5	3.2	3.6	4.2	4.6	5.1
21	0.35	2.5	3.1	3.5	4.1	4.5	5.0
22	0.37	2.4	3.0	3.4	4.0	4.4	4.9
23	0.38	2.3	2.9	3.4	3.9	4.3	4.8
24	0.40	2.3	2.9	3.3	3.8	4.2	4.7
25	0.42	2.2	2.8	3.2	3.7	4.2	4.6
26	0.43	2.2	2.7	3.1	3.7	4.1	4.5
27	0.45	2.1	2.7	3.0	3.6	4.0	4.4
28	0.47	2.0	2.6	3.0	3.5	3.9	4.3
29	0.48	2.0	2.5	2.9	3.4	3.8	4.2
30	0.50	1.9	2.4	2.8	3.3	3.7	4.1

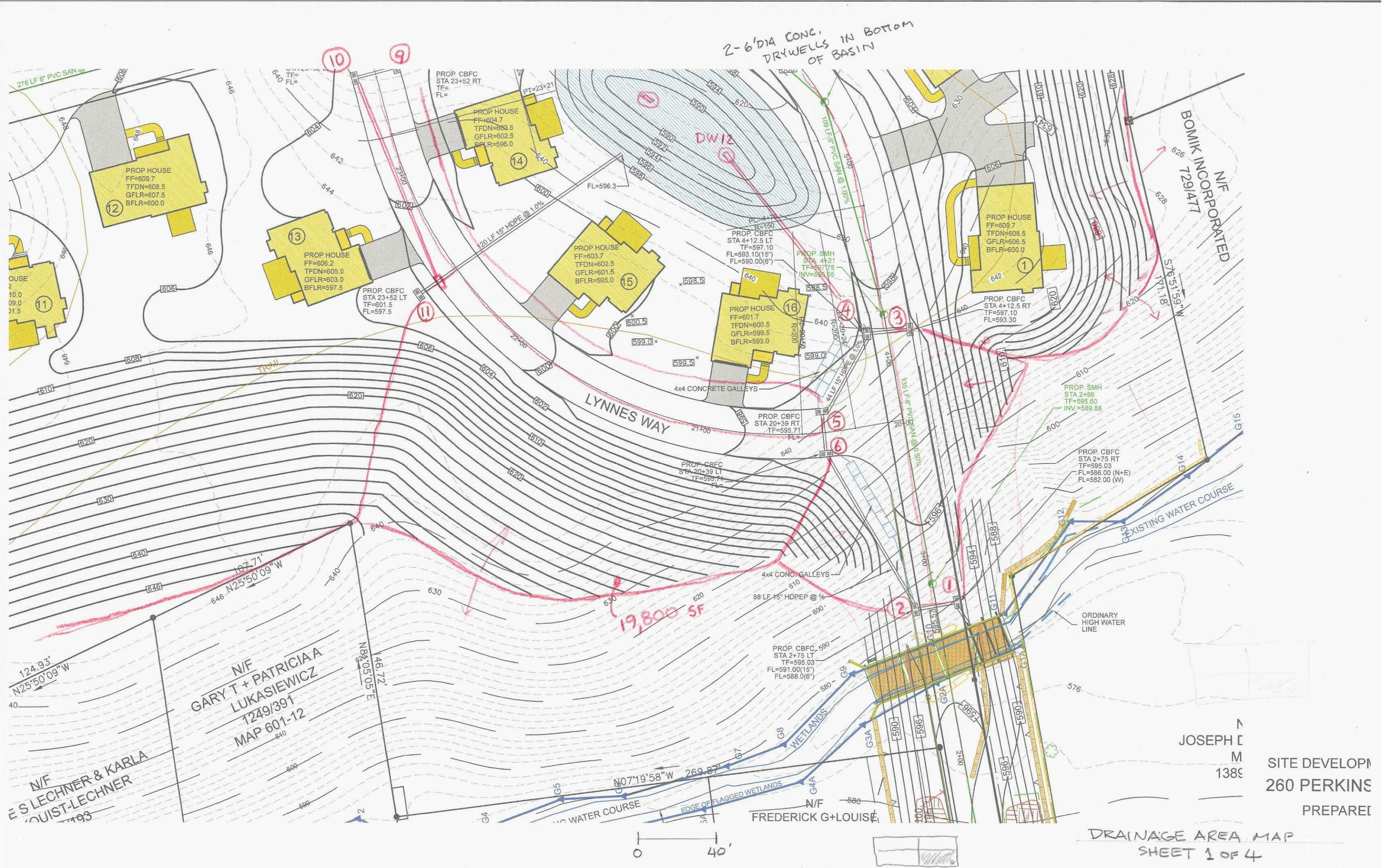
←
25 YR
MULTIPLY
by 1.1
6.05"/hr

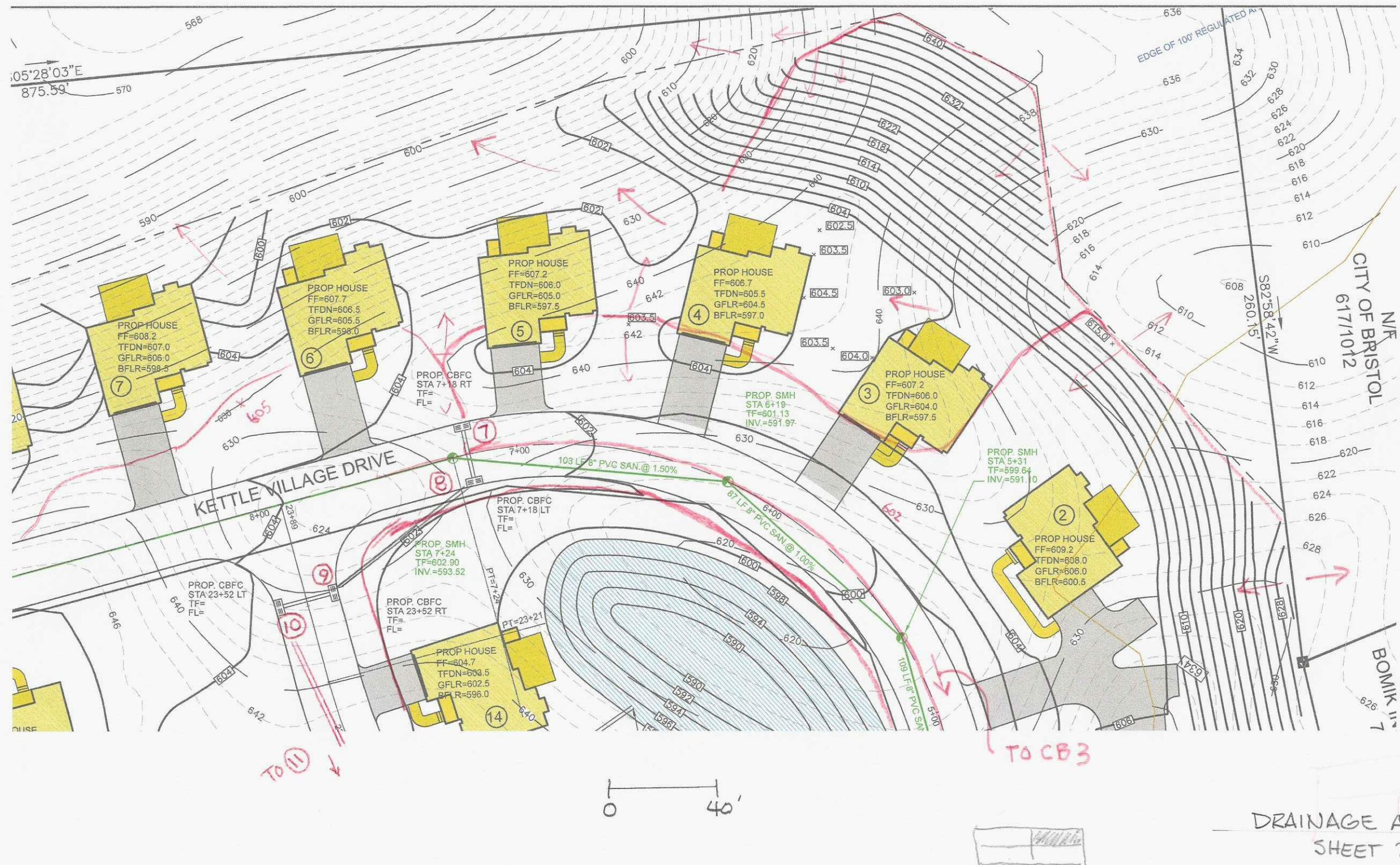
Rainfall Intensity/Duration/Frequency Relationship for Connecticut (English Units)
Table B-2.1

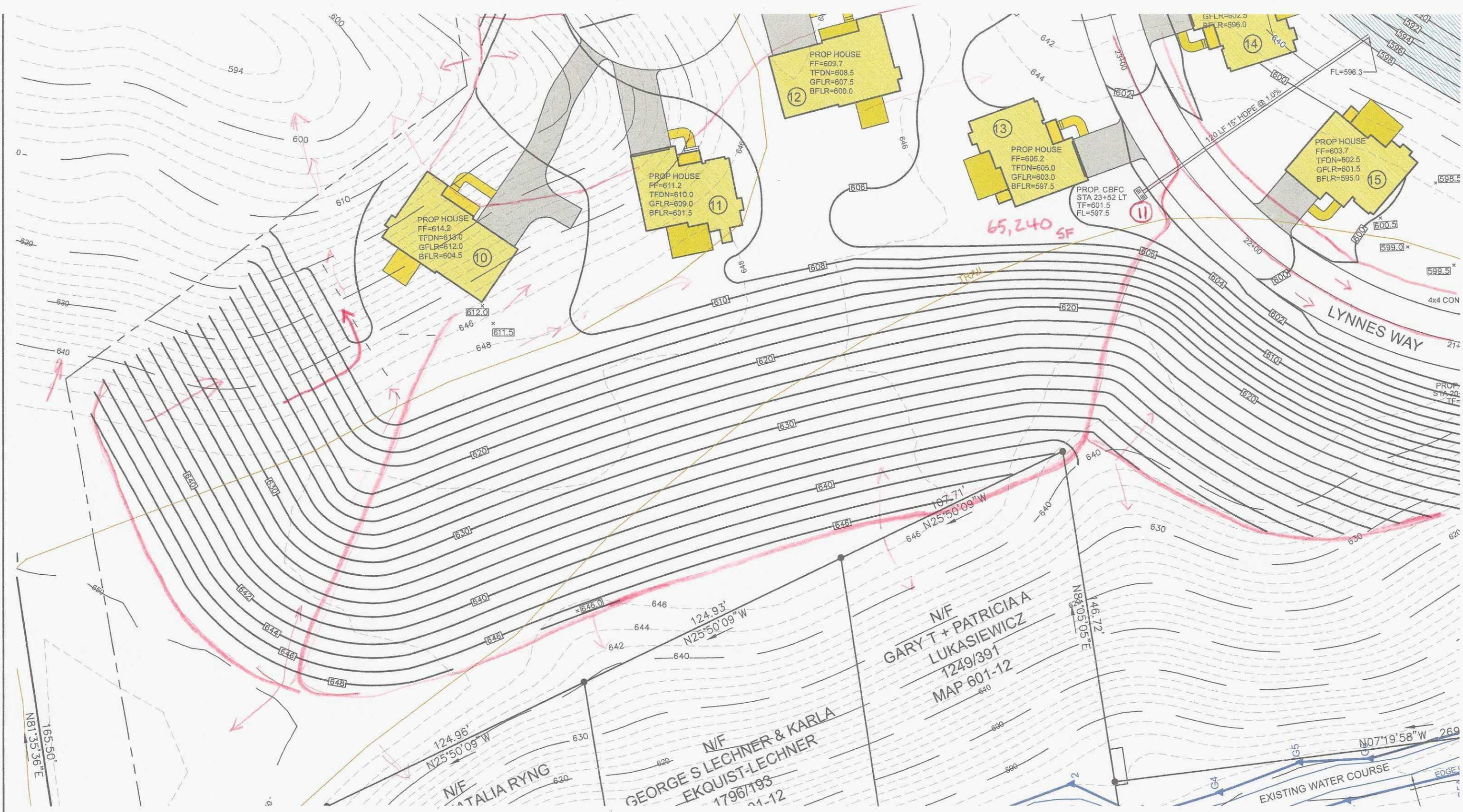
CHART 1

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL









- LIST OF DRAWINGS
1. SITE DEVELOPMENT PLAN - TOPOGRAPHIC



DRAINAGE AREA MAP
SHEET 3 OF 4



Page 70

July 23, 2024

**Bristol Village for P & B Properties, LLC,
#260 Perkins Street, Bristol, Connecticut
Watercourse Analysis 1% Annual Exceedance Probability (AEP) Flood**

The purpose of this report is to estimate the peak depth of flow in the subject watercourse during a 1% AEP flood and to determine if the flood will impact the proposed bridge over the watercourse.

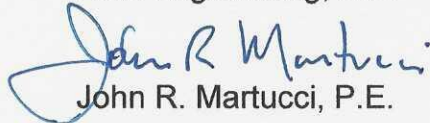
The 1% AEP flow rate was obtained from the USGS (U.S. Geological Survey) www.usgs.gov StreamStats on-line analytical tool. The most conservative 1% AEP flow rate was 334 CFS.

The existing channel cross section was measured from the project topographic survey. Offsets and elevations from the survey were entered into HydroCAD Stormwater Modeling Program which calculated the depth of flow and water surface elevation in the channel using Manning's Equation.

Printouts from StreamStats, HydroCAD and cross section data are attached.

CONCLUSION: The 1% AEP Flood will be able to pass under the proposed roadway bridge without impacting the structure.

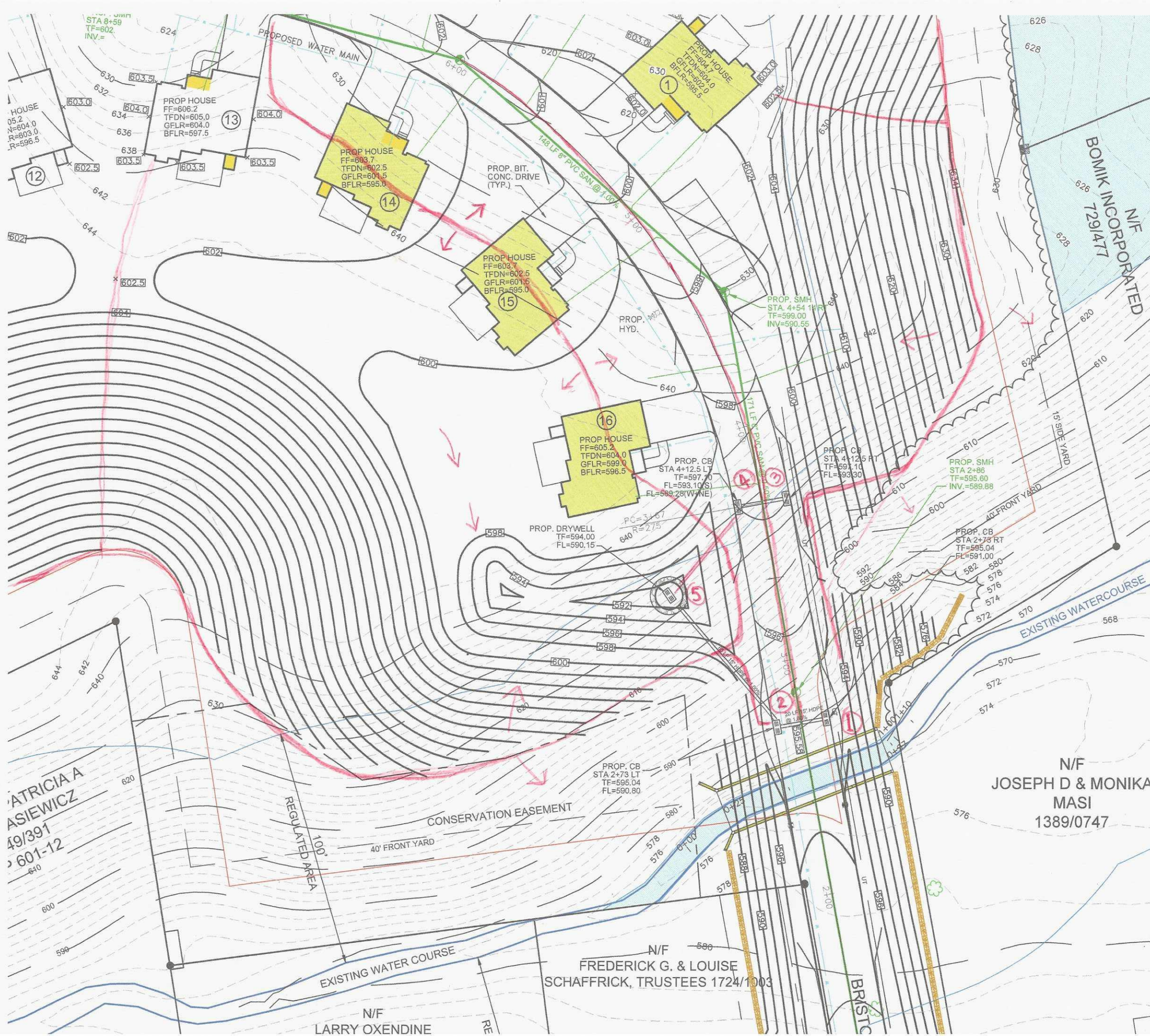
Submitted by:
LBM Engineering, LLC


John R. Martucci, P.E.



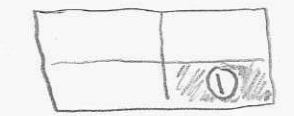
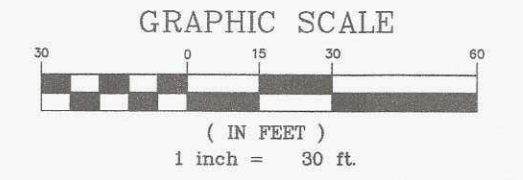
Link to 1 % AEP Backup:

<https://www.bristolct.gov/DocumentCenter/View/47223/ENG-1-PERCENT-AEP-BACKUP-7-23-24>



EXISTING TREE
 EXISTING UTILITY POLE/LIGHT
 PROPOSED SURFACE FLOW
 "TO BE REMOVED"
 PROPOSED SILT FENCE
 PROPOSED CLEARING LIMIT
 PROPOSED UNDERGROUND UTILITIES

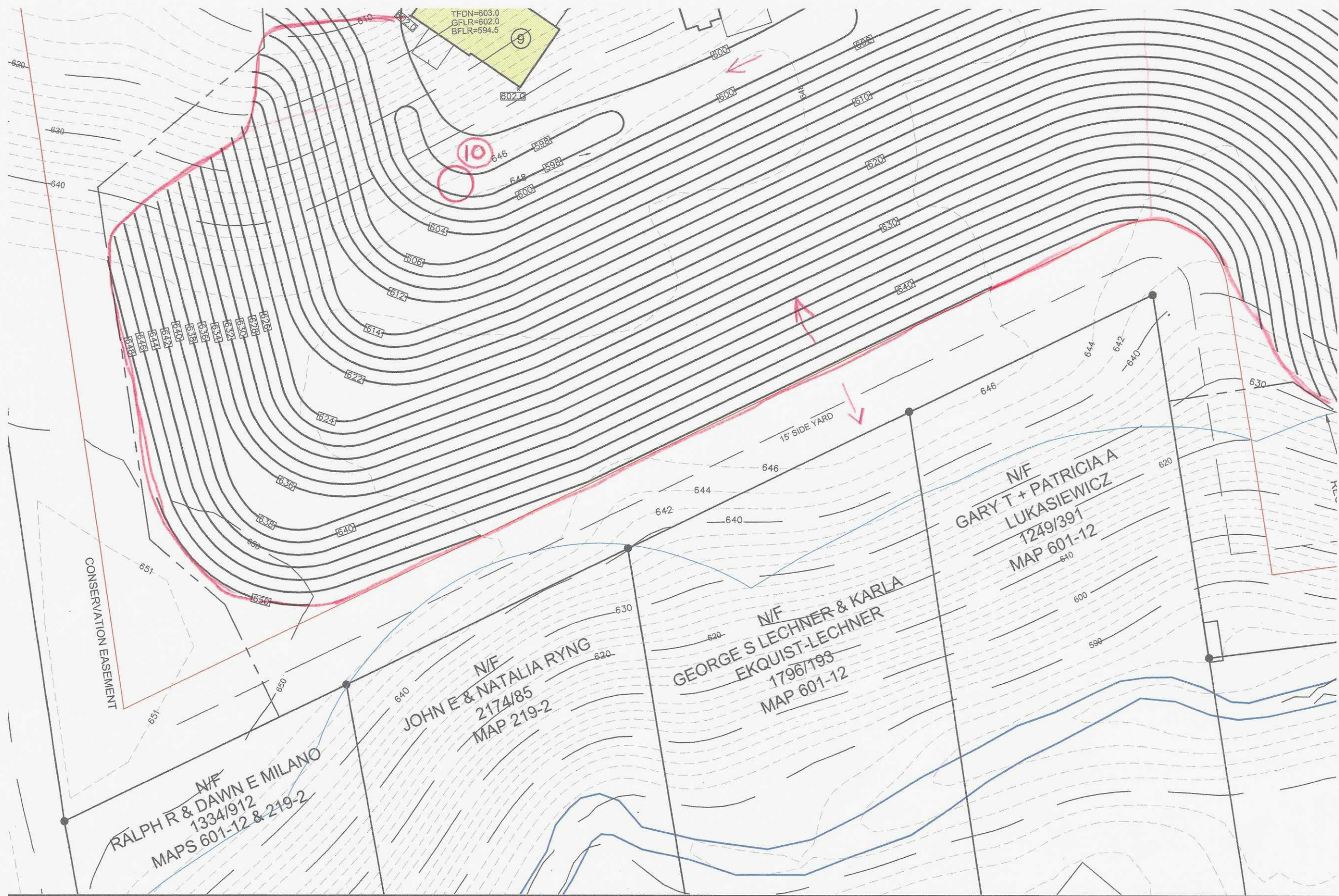
TBR
 UT



DRAINAGE
 AREA
 MAP #1
 1"=40'

SITE DEVELOPMENT PLAN
 BRISTOL VILLAGE
 PREPARED FOR
 P & B PROPERTIES LLC
 BRISTOL, CONNECTICUT

WAYNE J. ZIROLI, P.E. & L.S.
 Engineering & Surveying
 404 Beach Street
 Litchfield, Connecticut
 06759-2314
 Phone 203-525-4473

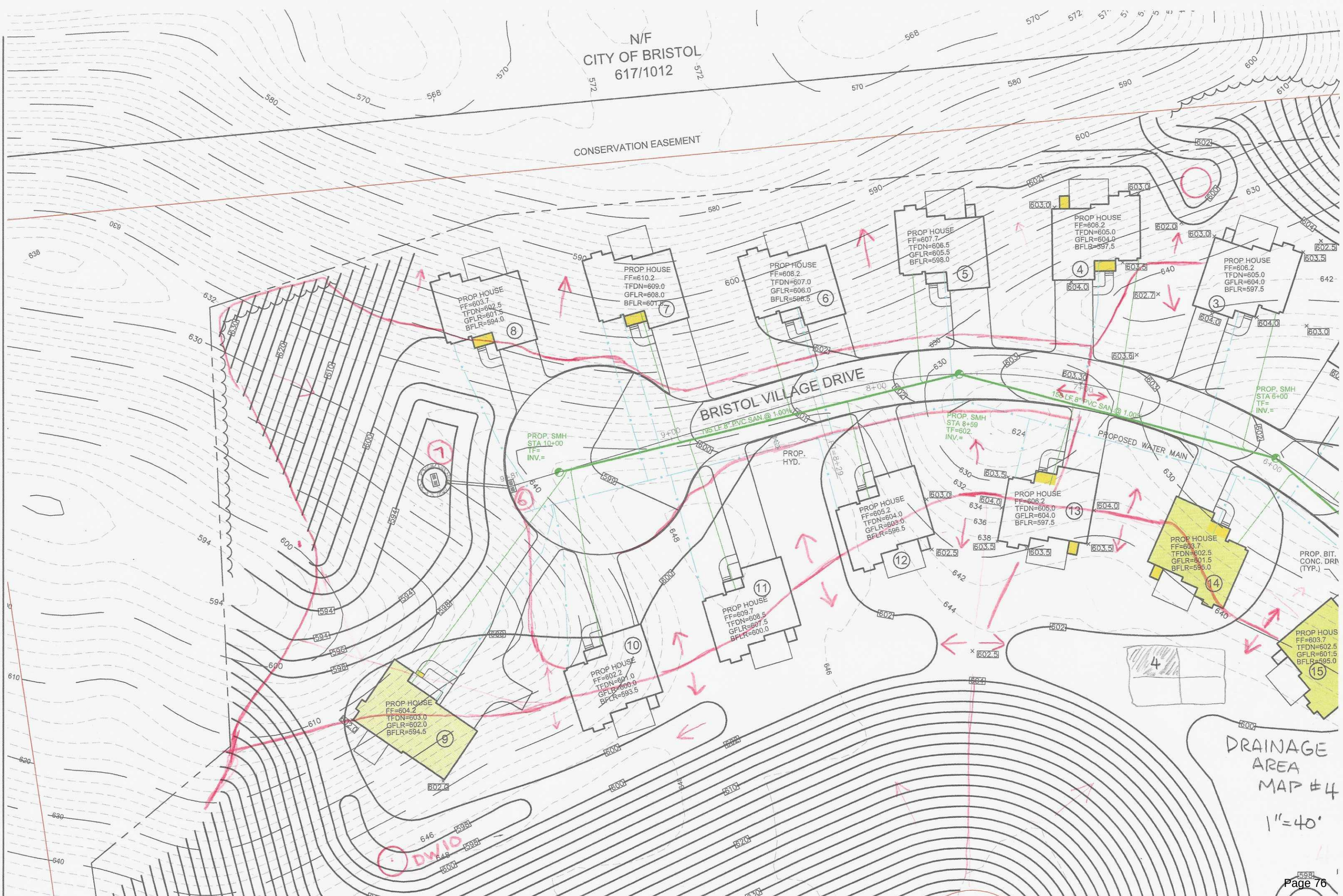


1" = 40'

DRAINAGE AREA
MAP # 3

N/F
CITY OF BRISTOL
617/1012

CONSERVATION EASEMENT



Link to Geotechnical Report:

(June 20, 2024)

[https://www.bristolct.gov/DocumentCenter/
View/47224/Geotechnical-Report-260-
Perkins-St-Bristol-CT](https://www.bristolct.gov/DocumentCenter/View/47224/Geotechnical-Report-260-Perkins-St-Bristol-CT)

Stormwater Management Plan
Bristol Village
#260 Perkins Street, Bristol CT 06010

Stormwater Management Plan

Facility Name: **Bristol Village, #260 Perkins Street, Bristol, CT 06010**

The Stormwater Management Plan (The Plan) is in accordance with 2024 Connecticut Stormwater Quality Manual and Connecticut Department of Energy and Environmental Protection Guidelines.

This completed Stormwater Management Plan shall be kept on file by the property owner (Owner) as part of the maintenance operation of this facility. This Plan shall be made available to state / municipal inspectors upon request.

Pollution Prevention Team: The Owner will be responsible for implementing the Plan. The Owner will designate a person(s) responsible for site inspection, maintenance of records and be familiar with all drainage structures and their intended function.

This list will be updated as necessary.

Responsible Person: _____

Phone Number: _____

Responsibilities: Coordinate all aspects of the Plan, conduct inspections per the Inspection Schedule, conduct comprehensive Annual Stormwater Evaluation and Inspection, keep records.

The following tables shall be completed after each inspection.

A. Sweeping Schedule:

All roadways, sidewalks and driveways shall be swept clean of sand, litter and other possible pollutants at least twice a year, Spring (During April after snow melt) and Late Fall (Between November 15 and December 15, after leaf fall) and at other times as may be necessary.

Date	Company / Area Swept	Comments / Action to be Taken / To be Completed by Date

B. Drainage Inspection:

The catch basins in the roads shall be cleaned once a year after the Spring (April) sweeping has been completed as noted in Section A above and at other times as necessary. The drywells shall be inspected at the same times. Any debris shall be removed from the drywells.

Date	Company / Structure	Comments / Action to be Taken / To be Completed by Date

C. Erosion Inspection:

Lawn and landscaping ground cover prevent soil erosion. Lawn, landscaping and flowerbeds, including downspouts from roof gutters shall be inspected monthly from April to December. Dead plants shall be replaced. Bare soil shall be replanted.

Date	Area Inspected	Comments / Action to be Taken / To be Completed by Date

Permit Modification #1964

BRISTOL CONSERVATION COMMISSION
INLAND WETLANDS AGENCY
FORM IW-1 (Application for a Wetlands Permit)

For Office Use Only
APPLICATION NO. 2035
DATE FILED: 07-24-2024
DECISION DATE: _____
DECISION: _____

1. APPLICANT:

Name: LED, LLC

Signature: [Signature]

Address: 10 MAIN STREET

City: BRISTOL, CT

State: _____ Zip: _____

Telephone No.: 860 250 4264

☐ home

☐ work

Email: EDDAMATO@DAMAMTOCONSTRUCTION.COM

2. PROPERTY OWNER(S):

Name: SAME

Signature: [Signature]

Address: [Redacted]

City: [Redacted]

State: [Redacted]

Zip: [Redacted]

Telephone No.: [Redacted]

☐ home

☐ work

Email: [Redacted]

3. DESCRIBE THE SUBJECT PROPERTY:

Address or Location: 175 Southdown Dr. Lot 9 a/ka 59-16-1 & 1936 Perkins St Lot 2 a/ka 58-16-1-2

Assessor's Map No.: 58

Assessor's Lot No.(s): 58-61-1 & 58-16-1-2

Description of wetlands (location, approximate area to be disturbed, vegetation, etc.):

This is a modification of permit #1964 to allow a temporary 20X40 trench for installation of utilities. work on this project should last 1 work day and restoration is immediate

4. DESCRIBE THE PROPOSED ACTIVITY AND ITS PURPOSE:

install utilities to Lot 2 as described above and shown on the submitted map.

5. CHECK THE STATEMENT WHICH APPLIES TO THE PROPOSED ACTIVITY:

☐ a. The proposed activity is either a use permitted as of right or a non-regulated use, under subsection of Section 4 of the Inland Wetlands Regulations. See instructions for submission requirements.

☐ b. The proposed activity is not regulated because it is greater than 100 feet from a wetlands or watercourse or will not adversely affect the wetlands or watercourse. See instructions for submission requirements.

☐ c. The proposed activity is a regulated activity and will occur:

☐ in a wetlands or watercourse;

☐ within 100 feet of a wetlands or watercourse;

☐ beyond 100 feet of a wetlands or watercourse;

area of impact: 740 SF () acres)

area of impact: () SF () acres)

area of impact: () SF () acres)

6. FLOW CALCULATIONS:

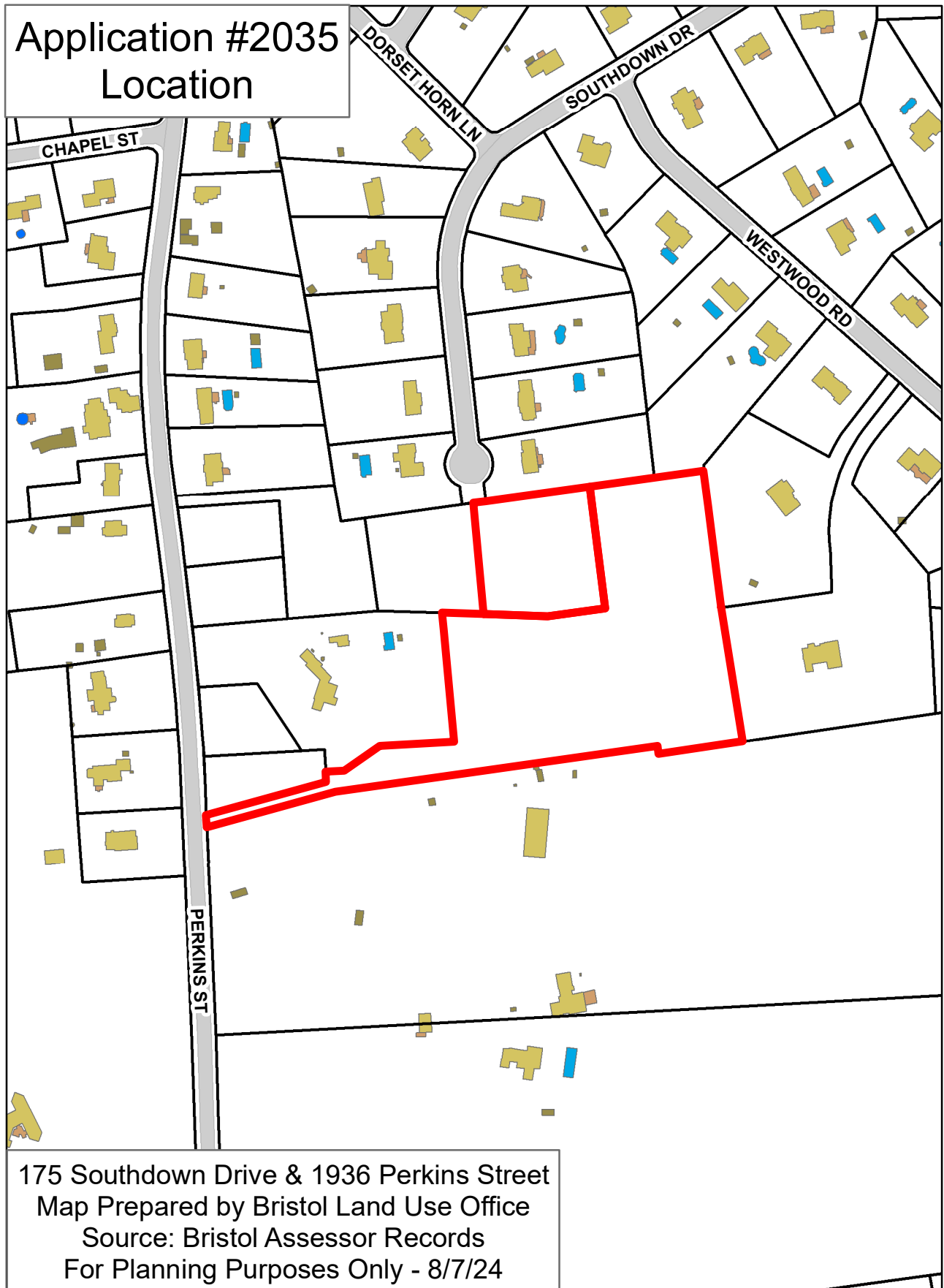
Does a watercourse flow through the subject property?

☐ yes

☒ no

If "yes", see instructions for submission requirements.

Application #2035
Location



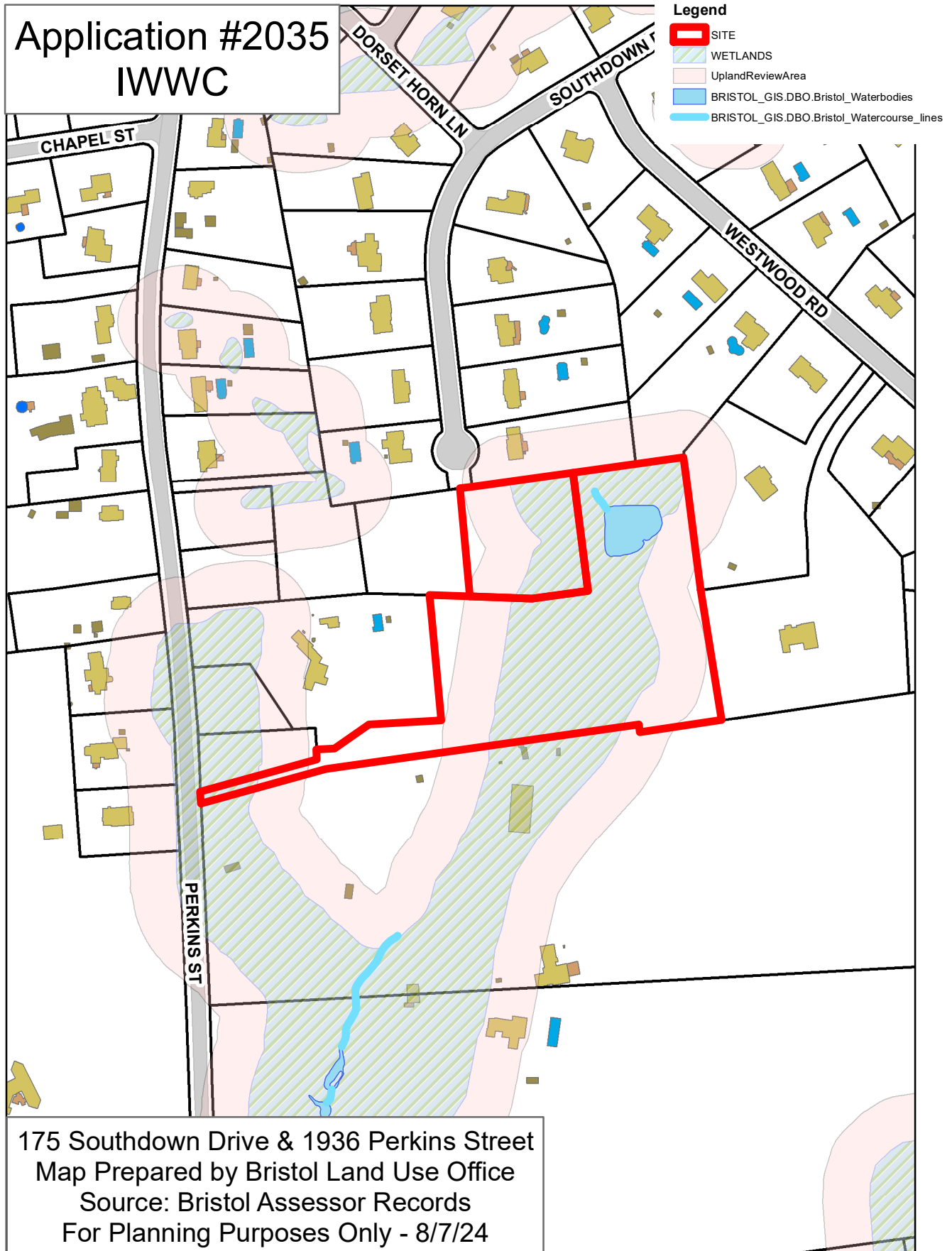
175 Southdown Drive & 1936 Perkins Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/7/24

Application #2035
Aerial



175 Southdown Drive & 1936 Perkins Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/7/24

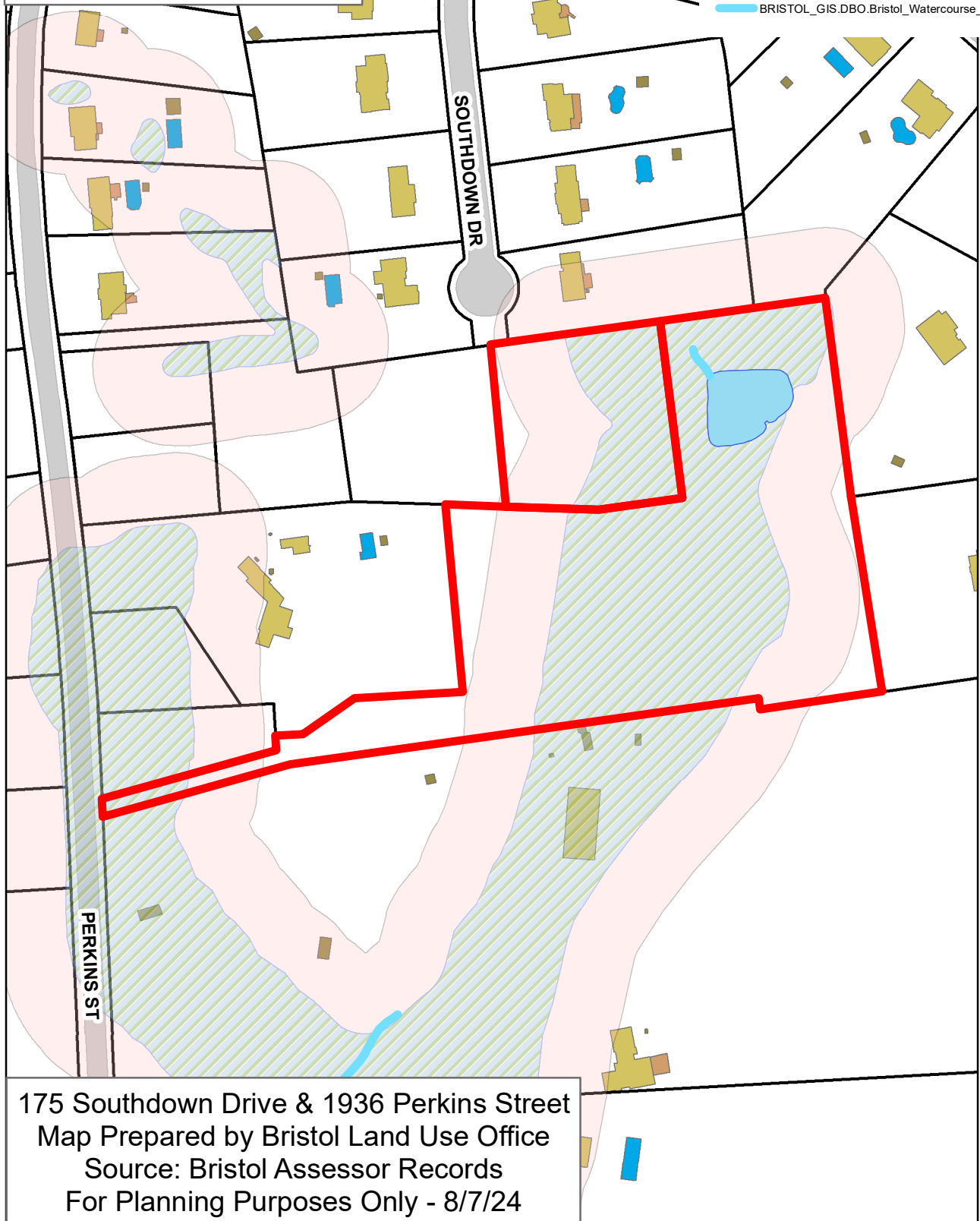
Application #2035
IWWC



Application #2035
IWWC

Legend

-  SITE
-  WETLANDS
-  UplandReviewArea
-  BRISTOL_GIS.DBO.Bristol_Waterbodies
-  BRISTOL_GIS.DBO.Bristol_Watercourse_lines



175 Southdown Drive & 1936 Perkins Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/7/24

Link to Previous Application:

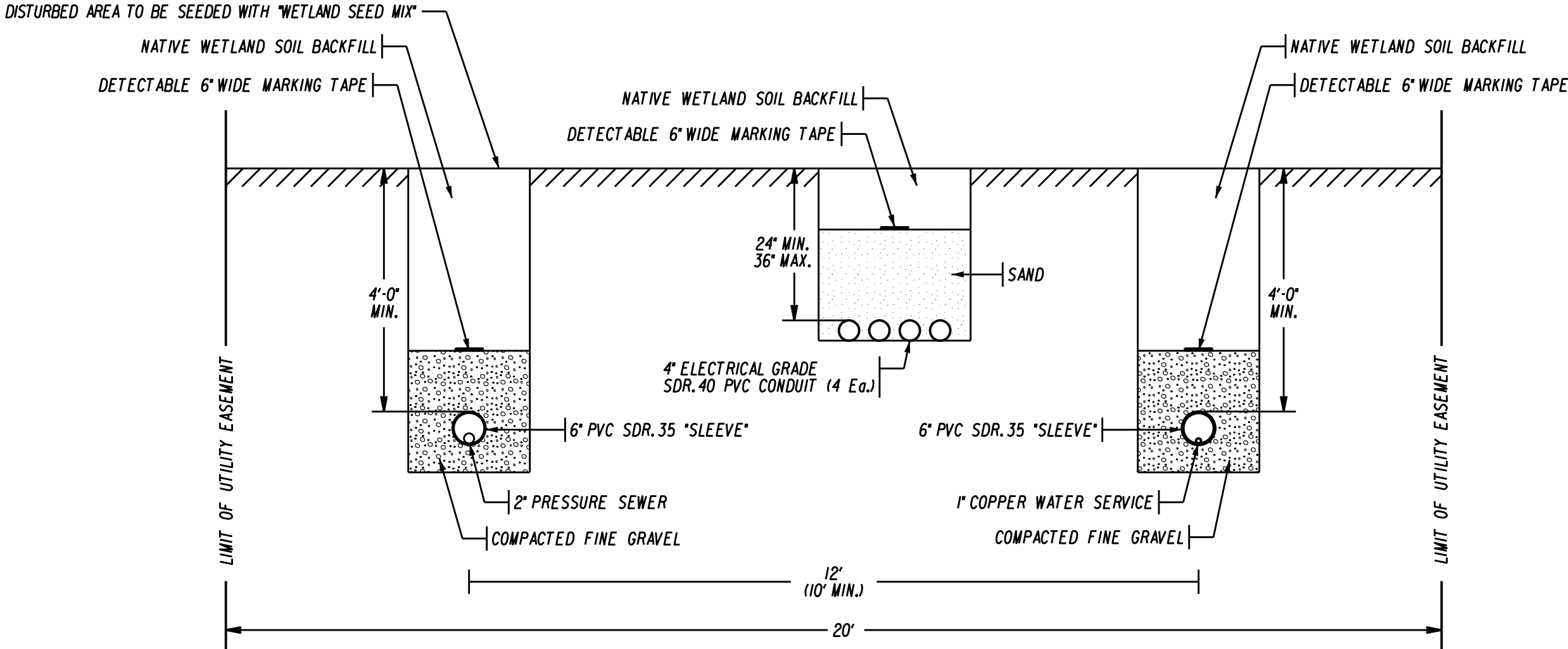
Application #1964

**[https://www.bristolct.gov/DocumentCenter/
View/47241/2--1964--For_Agenda---1960-
Perkins-Street---reordered](https://www.bristolct.gov/DocumentCenter/View/47241/2--1964--For_Agenda---1960-Perkins-Street---reordered)**

New England Wetmix (Wetland Seed Mix) (or similar)

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons. The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

APPLICATION RATE: 1 LB/2500 sq. ft
18 lbs/acre
PRICE: \$135/bulk pound



TYPICAL UTILITY TRENCH AT WETLAND
(NOT TO SCALE)

GENERAL NOTES

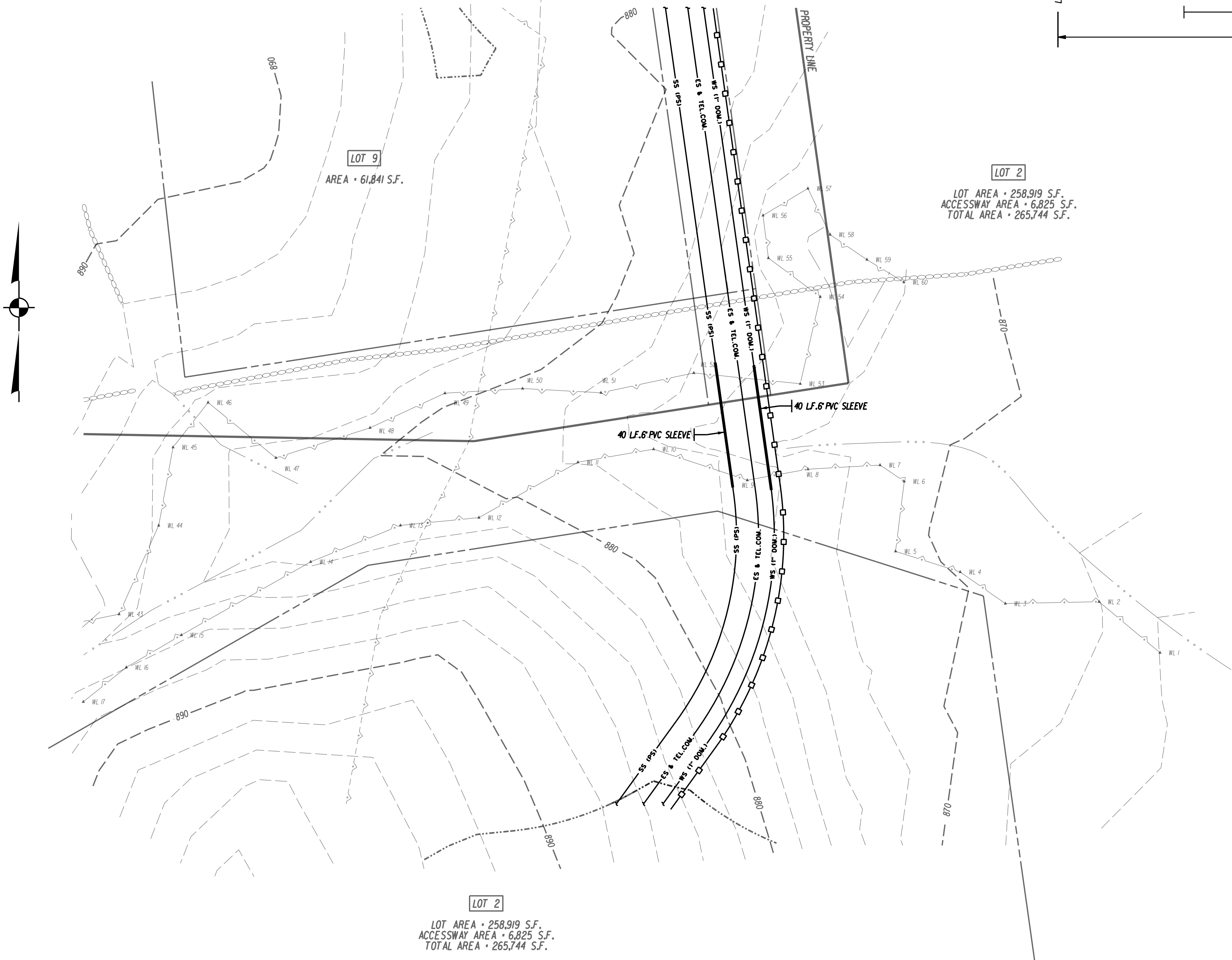
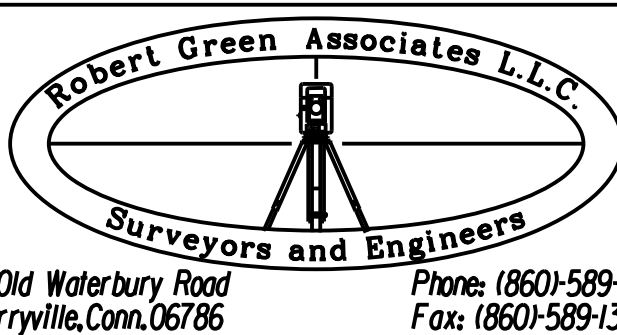
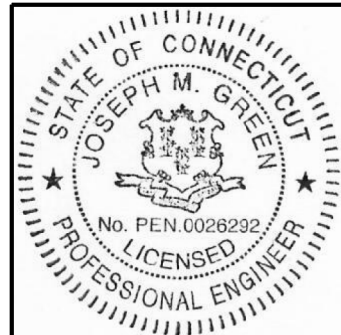
WETLANDS IDENTIFIED IN THE FIELD BY JMM WETLAND CONSULTING SERVICES, LLC
23 HORSESHOE RIDGE ROAD, NEWTOWN, CONNECTICUT 06482
AREA OF WETLANDS DISTURBED: 0.017 ACRES (740 S.F.)

CONSTRUCTION SEQUENCE AND WETLAND RESTORATION

- 1.) ALL WORK WITHIN THE WETLAND SHALL BE COMPLETED BY THE END OF SEPTEMBER 2024.
- 2.) INSTALL SEDIMENTATION AND EROSION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION
- 3.) PRIOR TO ENTERING THE WETLAND, DIRT FROM TRACKS, TIRES, BUCKETS AND OTHER SOURCES OF WETLAND POLLUTANTS SHALL BE REMOVED.
- 4.) WETLAND SOILS EXCAVATED SHALL BE SEPARATED AND PLACED DIRECTLY ADJACENT TO THE TRENCH.
5. UPON COMPLETION OF UTILITY INSTALLATION, THE TRENCH SHALL BE BACKFILLED AND THE AREA RESTORED WITH THE WETLAND SOILS.
6. ONCE WORK WITHIN THE WETLAND IS COMPLETE AND THE WETLAND SOILS IN PLACE, THE CONTRACTOR SHALL SEED THE AREA WITH THE SPECIFIED WETLAND SEED MIX AND COVERED WITH STRAW MULCH.
7. ONCE THE AREA IS STABILIZED AND GROUND COVER ESTABLISHED, EROSION AND SEDIMENTATION CONTROL MEASURES CAN BE REMOVED.

SKETCH SHOWING
UTILITY INSTALLATION
FOR
LOT 2
MEADOW VIEW FARMS SUBDIVISION
PREPARED FOR
D'AMATO CONSTRUCTION CO.
1960 PERKINS STREET
BRISTOL, CONN.
SCALE 1" = 20' JUNE 12, 2024
Rev. JULY 24, 2024
Rev. JULY 29, 2024

JOSEPH M. GREEN P.E.
REG. NO. 0026292



**BRISTOL CONSERVATION COMMISSION
INLAND WETLANDS AGENCY
FORM IW-1 (Application for a Wetlands Permit)**

For Office Use Only
APPLICATION NO. 2036
DATE FILED: 08-08-2024
DECISION DATE: _____
DECISION: _____

1. APPLICANT:

Name: Kelly Soucie and Ed Morelli Signature: [Signature]
Address: 236 Robertson Street City: Bristol State: _____ Zip: _____
Telephone No.: (954) 816 - 6675 ☐ home ☐ work Email: ed_morelli@yahoo.com

2. PROPERTY OWNER(S):

Name: Same as Applicant Signature: _____
Address: _____ City: _____ State: _____ Zip: _____
Telephone No.: _____ ☐ home ☐ work Email: _____

3. DESCRIBE THE SUBJECT PROPERTY:

Address or Location: 236 Robertson Street Bristol Ct
Assessor's Map No.: 45 Assessor's Lot No.(s): 10

Description of wetlands (location, approximate area to be disturbed, vegetation, etc.):

Property is currently maned as wetlands which are not present

4. DESCRIBE THE PROPOSED ACTIVITY AND ITS PURPOSE:

Construction of a detached two car garage

5. CHECK THE STATEMENT WHICH APPLIES TO THE PROPOSED ACTIVITY:

- ☐ a. The proposed activity is either a use permitted as of right or a non-regulated use, under subsection of Section 4 of the Inland Wetlands Regulations. *See instructions for submission requirements.*
- ☐ b. The proposed activity is not regulated because it is greater than 100 feet from a wetlands or watercourse or will not adversely affect the wetlands or watercourse. *See instructions for submission requirements.*
- ☐ c. The proposed activity is a regulated activity and will occur:
- | | |
|--|--|
| ☒ in a wetlands or watercourse; | area of impact: <u>900</u> SF <u>02</u> acres) |
| ☐ within 100 feet of a wetlands or watercourse; | area of impact: _____ SF _____ acres) |
| ☐ beyond 100 feet of a wetlands or watercourse; | area of impact: _____ SF _____ acres) |

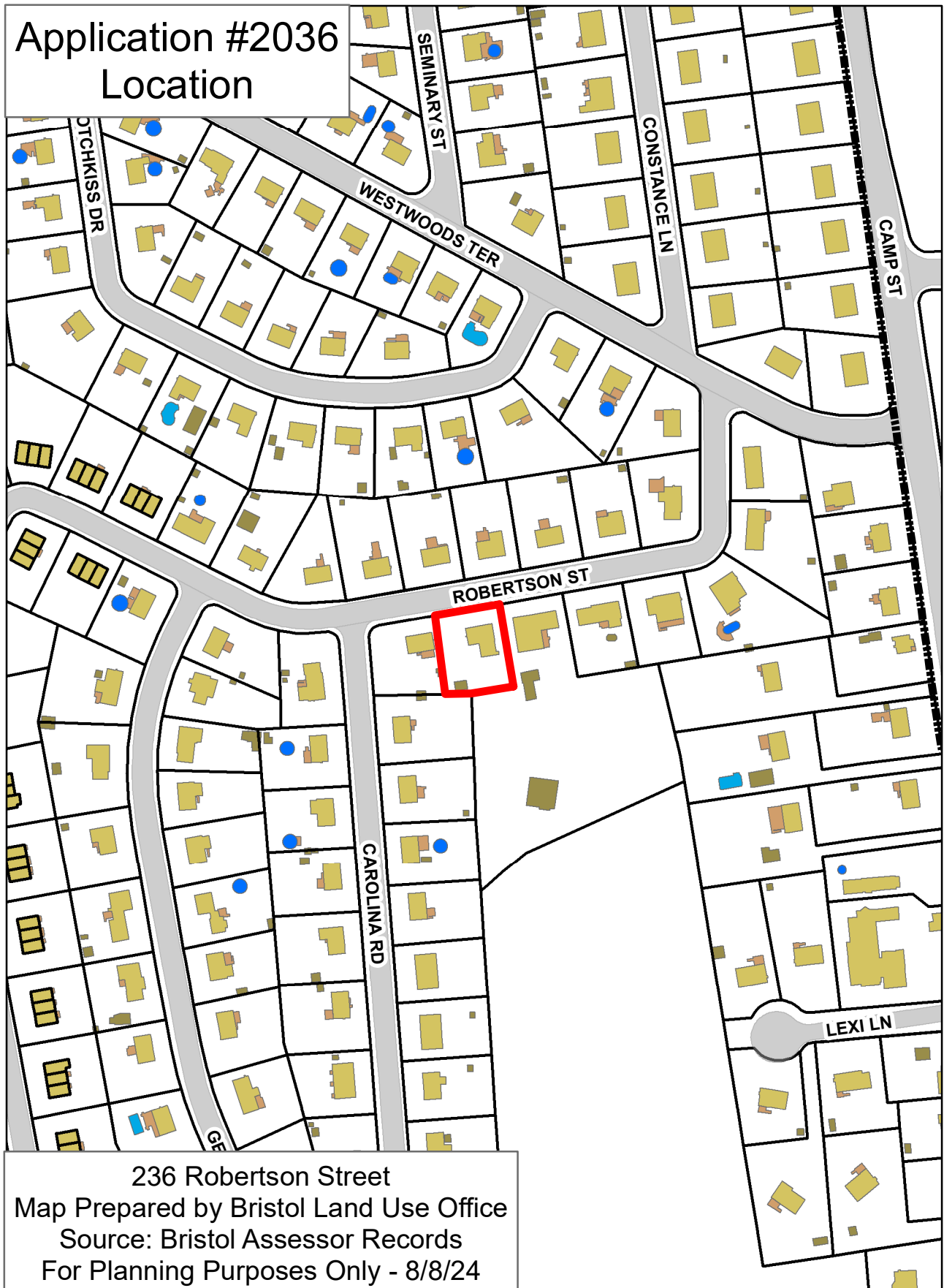
6. FLOW CALCULATIONS:

Does a watercourse flow through the subject property?

☐ yes ☐ no

If "yes", see instructions for submission requirements.

Application #2036
Location



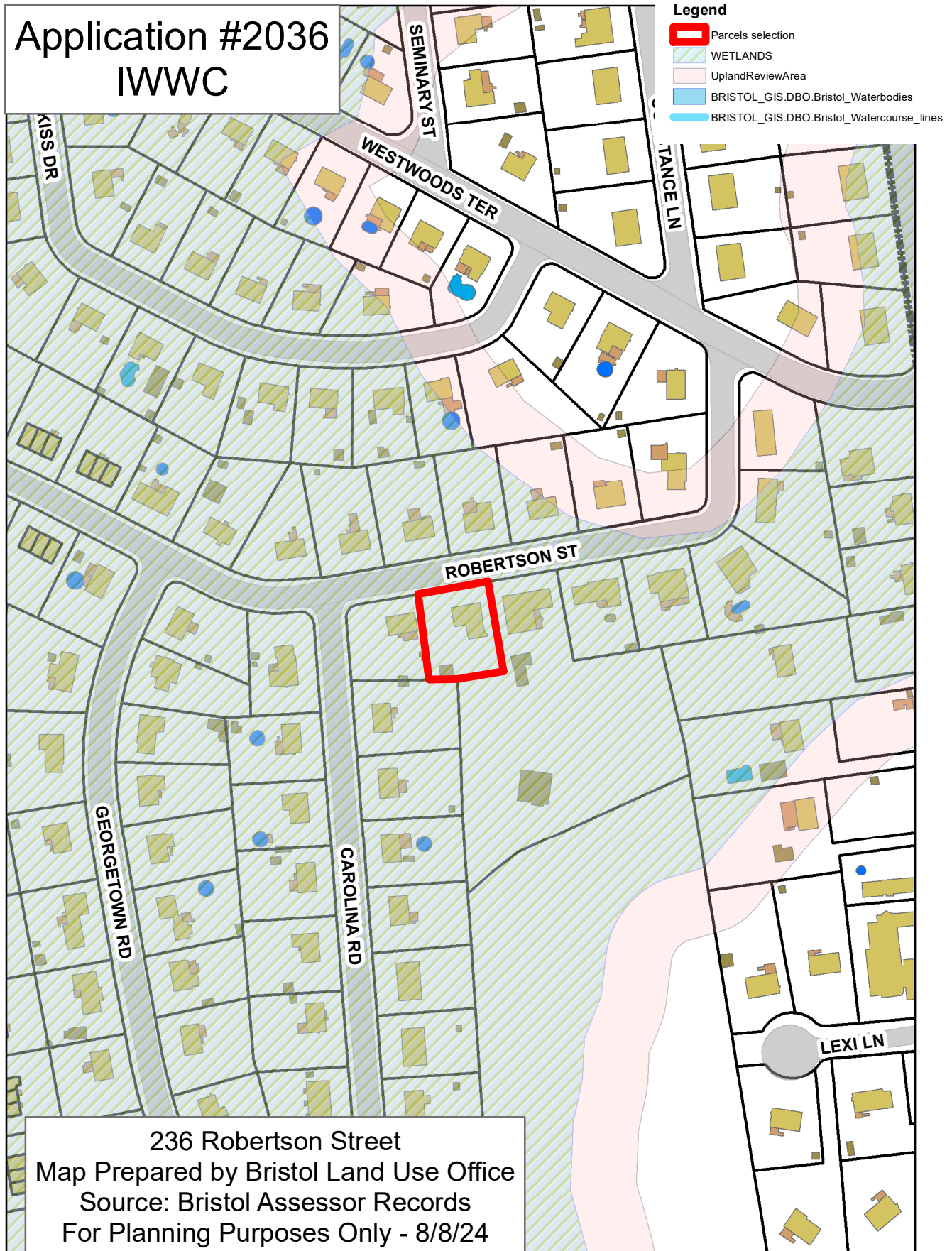
236 Robertson Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/8/24

Application #2036
Aerial



236 Robertson Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/8/24

Application #2036
IWWC



236 Robertson Street
Map Prepared by Bristol Land Use Office
Source: Bristol Assessor Records
For Planning Purposes Only - 8/8/24



Site Location Map

Legend

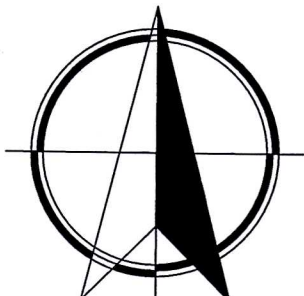
- Existing IP
- IP (to be set)
- Existing Monument
- Monument to be set
- ⊙ Drill Hole
- Utility Pole
- ⌘ Wire on Ground
- Water gate
- Gas gate
- Signs
- Wooden post
- ⊕ Hydrant
- ⋆ Existing light
- Proposed light
- Handhole
- Mailbox
- ⊕ Monitor well

- ⊙ Proposed Trees

- Stone Wall
- Chain link fence
- Guardrail
- Existing tree line

Zoning Analysis Table R-15

Minimum Lot Area	15,000 SQFT
Minimum Lot Frontage	100 Feet
Minimum Front Yard Setback	25 Feet
Minimum Side Yard Setback (each)	10 Feet
Minimum Rear Yard Setback	25 Feet
Maximum Building Height	35 Feet
Maximum Lot Coverage	30%
Maximum Impervious Coverage	70%



Graphic Scale

Prepared For
Kelly Soucie

Scale
1" = 10'-0"



Property and Features Location Map
236 Robertson Street
Bristol Connecticut
August 6, 2024

Development Planning Solutions LLC
225 North Main Street Suite 207
Bristol Ct 06010
(860) 506-4268

DPS_Soucie_Bristol_236 Robertson St



City of Bristol
DEPARTMENT OF PUBLIC WORKS
BRISTOL, CONNECTICUT 06010

Inland Wetlands
Environmental Protection Technician
Monthly Report

August 5, 2024

Approved Applications Inspections

No.	Location	Description	Inspection Dates	Status
#1593	Cedar Hill Lots 12-42	Open space subdivision - Residential building lots (Exp. 20270519)	7/12, 7/19, 7/26	Act
#1567	Allentown Road (Wood shire)	Wetland crossing with residential community (Exp. 20260919)	7/12, 7/19, 7/26	Inact
#1819	Allentown Road (Saddlebrook)	Grading and water lateral installation (Exp. 20270417)	7/12, 7/19, 7/26	Inact
#1827	894 Middle Street	Environmental remediation (Exp. 20270717)	7/11, 7/18, 7/25	Inact
#1868	Lot 21 Waterbury Road	Maintenance to existing haul road (Exp. 20240610)	7/12, 7/19, 7/26	EXPIRED
#1878	134 Terryville Road	Regrade and establish parking area (20241002)	7/12, 7/19, 7/26	Inact
#1883	40 Janice Lane	Construct of 2 car garage (20240904)	7/12, 7/19, 7/26	Inact
#1889	35 Kory Lane	Remove and replace existing dock (20241106)	7/12, 7/19, 7/26	Inact
#1890	20 Beechwood Street	Construct addition, pool, and infiltration system (20250205)	7/12, 7/19, 7/26	Inact
#1891	Barnum Road	Clean detention ponds and existing debris piles (20250205)	7/12, 7/19, 7/26	Inact
#1893	150 Century Drive	Construct drainage area and parking (20250304)	7/11, 7/18, 7/25	Inact
#1894	315 Shrub Road	Reconstruct road for earth removal (20250304)	7/11, 7/18, 7/25	Inact

No.	Location	Description	Inspection Dates	Status
#1896	50 Terryville Avenue	Construct Gas Station (20250506)	7/12, 7/19, 7/26	Act
#1897	7 Royal Drive	Install shed, basketball court, above ground pool (20251007)	7/11, 7/18, 7/25	Inact
#1898	132 Marcia Drive	Grade, install patio, and fence (20250506)	7/11, 7/18, 7/25	Inact
#1901	105 Maxine Drive	Install pipe, fence, and bridge (20250902)	7/11, 7/18, 7/25	Inact
#1902	44 Nelson Farm Road	Addition 22x12 w/ Bioswale (20250805)	7/11, 7/18, 7/25	Inact
#1903	16 Great Pyrenees Way	Construct in ground pool (20250805)	7/11, 7/18, 7/25	Inact
#1904	Huntington Woods	Replace 60" CMP with HDPE (20250805)	7/12, 7/19, 7/26	Inact
#1907	115 Lakewood Circle	Construct 20x40 addition (20251007)	7/12, 7/19, 7/26	Inact
#1908	351 Minor Street	Construct Oil/Propane facility (20251202)	7/12, 7/19, 7/26	Act
#1909	21 Sonstrom Road	Construct Garage (20251202)	7/11, 7/18, 7/25	Inact
#1915	505-545 Redstone Hill Road	18 Lot Subdivision (20260505)	7/11, 7/18, 7/25	Inact
#1919	258 Brook Street	Demo existing garage, replace with 3 car garage (20260407)	7/11, 7/18, 7/25	Inact
#1922	71 Horizon Drive	Parking lot construction. Modification of #1848 (20260505)	7/11, 7/18, 7/25	Inact
#1925	66 Vermont Avenue	Removal of smaller trees and grading (20260505)	7/11, 7/18, 7/25	Inact
#1933	Lot 2 Business Park Drive	Filling & grading for parking area to new building (20260707)	7/11, 7/18, 7/25	Act
#1934	Glenn Street	Harding a section to allow passage of woodland machinery (20260707)	7/11, 7/18, 7/25	Inact
#1936	52 Shelia Court	Construct 20 new spaces with related storm water management (20260707)	7/11, 7/18, 7/25	Inact
#1937	Lot 18 Donovan Court	Construct new house (20260901)	7/12, 7/19, 7/26	Inact

No.	Location	Description	Inspection Dates	Status
#1945	Lake Avenue Bridge 017005	Bridge replacement (20261006)	7/11, 7/18, 7/25	Inact
#1946	175 Century Drive	28,875 SF addition to existing facility (20261006)	7/11, 7/18, 7/25	Inact
#1949	23 Columbus Avenue	Install in-ground pool (20261103)	7/11, 7/18, 7/25	Inact
#1950	801 Burlington Avenue	Construct single family home (20261103)	7/11, 7/18, 7/25	Inact
#1951	Lot 7B 1-2 Marsh	Construct single family home (20261103)	7/12, 7/19, 7/26	Act
#1966	183 Foxden Road	Extend sanitary sewer to service two lots (20270202)	7/11, 7/18, 7/25	Act
#1968	175 Shrub Road	One mile Hiking Trail elevated boardwalks (20270202)	7/11, 7/18, 7/25	Act
#1970	16 Andrews Street	paved parking lot and area of grading (20270406)	7/11, 7/18, 7/25	Inact
#1972	34 Climbing Street	New deck and in-ground swimming pool (20270406)	7/11, 7/18, 7/25	Act
#1974	Memorial Blvd	Removal of tennis courts and planting of a new urban garden(20270406)	7/11, 7/18, 7/25	Inact
#1977	Wolcott Street	installation of temporary bypass pipe in culvert for repairs (20270406)	7/12, 7/19, 7/26	Inact
#1983	243 Jacobs Street	Regrade River at Rockwell Park (20270801)	7/12, 7/19, 7/26	Inact
#1984	Jerome Ave Bridge	Replace Pedestrian Bridge (20270711)	7/11, 7/18, 7/25	Act
#1986	85 Buckley Ave	Construct Garage Addition (20270711)	7/12, 7/19, 7/26	Inact
#1988	Lot# 7-1 Terryville Road	Commercial Building (20270801)	7/12, 7/19, 7/26	Act
#1989	177 Corbin Ridge	Retaining Wall, Above Ground Pool, And Deck (20270711)	7/12, 7/19, 7/26	Inact
#1990	29 Woodside Way	Inground Pool (20270711)	7/11, 7/18, 7/25	Inact
#1991	62 Litchfield Lane	Inground Pool (20270711)	7/11, 7/18, 7/25	Inact
#1993	21 Royal Drive	Grading and Drainage in Rear Yard (20270801)	7/11, 7/18, 7/25	Inact
#1998	76 Mountain View Ave	Inground Pool (20270912)	7/11, 7/18, 7/25	Inact

No.	Location	Description	Inspection Dates	Status
#2000	Shrub Rd/ Jerome Ave	Sidewalk Improvement, and pedestrian Bridge (20280109)	7/11, 7/18, 7/25	Inact
#2002	1261 & 1265 Farmington Ave	Construct Medical Office, Restaurant, and Car Wash (20280109)	7/11, 7/18, 7/25	Act
#2003	50 Terryville Rd	Pond Maintenance (20280109)	7/12, 7/19, 7/26	Act
#2004	Mellen Street Bridge	Bridge replacement (20280206)	7/11, 7/18, 7/25	Inact
#2005	71 Minnesota Lane	Construct a 20x30 Garage (20280306)	7/12, 7/19, 7/26	Inact
#2007	109 Moody Street	Construction Of A Plate Arch Spanning The Watercourse (20280501)	7/11, 7/18, 7/25	Inact
#2008	205 Pennwood Place	Install 20x40 Inground Pool (20280501)	7/12, 7/19, 7/26	Inact
#2010	Clark Ave Lot 271-1A	Mixed use development (20280710)	7/12, 7/19, 7/26	Inact
#2012	812 Redstone Hill Road	New In-Ground Pool (20280710)	7/11, 7/18, 7/25	Inact
#2013	54 Merrill Court	Repair of Septic System (20280710)	7/12, 7/19, 7/26	Inact
#2015	Page Park	Park Renovations and Improvements (20281205)	7/11, 7/18, 7/25	Inact
#2016	Downs Street Bridge	Replacement of Bridge (20281205)	7/11, 7/18, 7/25	Inact
2033	1001 Stafford Ave	Top Soil And Seed Existing Field	7/11, 7/18, 7/25	Inact

SPECIAL INSPECTION:

Lot 13-1 Waterbury Road- 20220417 - During a drive by of the property, it was discovered that clearing of trees was being done in a regulated area, EPT called the current property owner and set up a meeting. 20220418 - EPT met with the property owners and explained that their property was in a regulated area, P/O agreed to install temporary silt fence at the bottom of the slope, and then immediately stop all work until they obtain a wetlands permit- **Pending**

C. O. INSPECTIONS:

102 Gino Drive

61 Field Rock Road

230 Silo Road

115 South Street Ext.

477 Marsh Road

NOTICE AND NOTICE OF VIOLATION LETTERS:



Department of Public Works | 860.584.6125

MEMORANDUM

DATE: July 8, 2024

TO: Mayor Jeffrey Caggiano
Board of Public Works

FROM: Raymond A. Rogozinski, P.E., and Director of Public Works

RE: DPW – Report Update - City Storm Flooding 2023

Please find the attached report, titled “Update to the Summary of Work Orders Following the Flooding of July 16th 2023.” The flooding occurred as a result of intense rain on July 16, 2023. The City of Bristol experienced a high intensity rain storm within a relatively short period of time (approximately 5.2 inches of rain in less than 2 hours). The storm caused localized flooding and property damage throughout the City.

The primary focus of the report is to update the Board of Public Works on the Department’s action to address damage that occurred by the July 2024 storm and mitigate the future impact of similar intense rain events. As indicated in the report, some of the items were classified as private, and no action was taken by the Department. However, DPW installed a number of catch basins, sections of storm drainage piping, and cleaned the South Street and Park Street culverts immediately following the storm. The Department has also completed the design of proposed storm drainage/culverts on Perkins St, Marlene St, Brace St, O’Sullivan Dr, and Divinity St. Storm drainage has been modified to reduce flow to Sharon St, and work is scheduled to start on Marlene St, Perkins St, and Brace Ave this fall. The Divinity St culvert requires an ACOE permit, with construction in 2026, and Collins Road construction is pending acquisition of easements and environmental permits.

To date, not including projects planned prior to the July 2023 flooding, DPW has expended approximately \$120,000 associated with the July rain event, and is estimated to expend an additional \$220,000, for a total of approximately \$340,000 to repair storm damage and mitigate flooding.

It is critical that DPW continues to monitor and take corrective action to mitigate flooding. Although previous comprehensive drainage studies of the Coppermine Brook and Pequabuck River did NOT identify projects to substantially reduce flooding during large storm events, it is

City of Bristol
Public Work Department
111 North Main Street
Bristol, CT 06010
www.bristolct.gov



Department of Public Works | 860.584.6125

imperative that the Department continues to address localized flooding, and flooding issues that can be mitigated. Given the increased frequency of intense short duration storms, if an area is impacted once during a storm, there is a high probability that another similar storm will result in flooding. As indicated in the attached “Point Precipitation Frequency Estimates,” a storm similar to the rain event of Sunday, June 30, 2024, which consisted of 1.4 inches of rain in 30 minutes, was over a 10-year storm, and resulted in the 4th highest water level of the year within the Pequabuck River (see attached Pequabuck River water level data).

It is also important to address flooding on a long-term basis, with revisions to land use drainage regulations. Although measures such as detention ponds, and more importantly, requirements to infiltrate storm water and install water quality measures, increase development costs, they reduce long-term flooding. In addition, currently proposed new FEMA flood plain mapping, once implemented, will improve the quality of flood plain designation, and provide an opportunity for the City to increase flood plan regulations. Similarly to FEMA flood plain mapping, the City is updating the official citywide wetlands map.

The Department is also proceeding with procuring the services of an engineering consult to assist with implementing a CT DEEP Climate Resilience Grant. The resiliency grant goal is to explore flood mitigation measures, including the evaluation of purchasing flood prone properties, and assessing the viability of dredging waterways. The grant also includes preparation of a flood emergency management plan, and provides public education outreach, such as flood insurance and elevation certificates for buildings. A copy of the grant and proposed scope of work is attached.

The Department has received the attached correspondence from the Inland Wetland Commission regarding residents flooding concerns in the area of New Britain Water’s Mix St facility, in particular Collins Road property owners. The concerns are associated with flooding in the rear of their property along the Coppermine Brook. As Director, I understand property owners frustration and DPW will contact each property owner that expressed concerns at the Wetland Commission to arrange a meeting, however it appeared the concerns are associated with flooding within an area defined as a FEMA flood plain and areas designated by FEMA as flood zones flood.

Please feel free to contact me at 860-584-6113 with any questions or concerns.



NOAA Atlas 14, Volume 10, Version 3
Location name: Bristol, Connecticut, USA*
Latitude: 41.6995°, Longitude: -72.9012°
Elevation: 301.27 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.353 (0.270-0.459)	0.423 (0.323-0.550)	0.537 (0.410-0.701)	0.631 (0.478-0.829)	0.760 (0.559-1.04)	0.858 (0.620-1.20)	0.960 (0.674-1.39)	1.07 (0.718-1.60)	1.22 (0.792-1.89)	1.35 (0.852-2.13)
10-min	0.500 (0.383-0.650)	0.599 (0.458-0.779)	0.760 (0.579-0.992)	0.894 (0.677-1.17)	1.08 (0.792-1.48)	1.22 (0.878-1.70)	1.36 (0.954-1.97)	1.52 (1.02-2.26)	1.73 (1.12-2.68)	1.91 (1.21-3.01)
15-min	0.589 (0.451-0.765)	0.705 (0.539-0.917)	0.894 (0.681-1.17)	1.05 (0.797-1.38)	1.27 (0.932-1.74)	1.43 (1.03-2.00)	1.60 (1.12-2.32)	1.78 (1.20-2.66)	2.04 (1.32-3.15)	2.24 (1.42-3.54)
30-min	0.800 (0.612-1.04)	0.957 (0.732-1.25)	1.21 (0.924-1.58)	1.43 (1.08-1.87)	1.72 (1.26-2.36)	1.94 (1.40-2.72)	2.17 (1.52-3.15)	2.42 (1.62-3.61)	2.77 (1.79-4.28)	3.04 (1.93-4.81)
60-min	1.01 (0.774-1.32)	1.21 (0.924-1.57)	1.53 (1.17-2.00)	1.80 (1.37-2.36)	2.17 (1.60-2.97)	2.45 (1.77-3.43)	2.74 (1.92-3.97)	3.05 (2.05-4.55)	3.49 (2.26-5.40)	3.84 (2.43-6.07)
2-hr	1.32 (1.01-1.70)	1.56 (1.20-2.02)	1.97 (1.51-2.55)	2.30 (1.75-3.01)	2.76 (2.05-3.77)	3.11 (2.26-4.34)	3.47 (2.46-5.04)	3.88 (2.61-5.77)	4.47 (2.90-6.89)	4.95 (3.14-7.79)
3-hr	1.52 (1.18-1.96)	1.81 (1.40-2.33)	2.28 (1.75-2.95)	2.67 (2.04-3.47)	3.20 (2.38-4.37)	3.61 (2.63-5.03)	4.03 (2.87-5.85)	4.52 (3.04-6.70)	5.23 (3.40-8.05)	5.83 (3.71-9.15)
6-hr	1.92 (1.49-2.46)	2.31 (1.79-2.96)	2.94 (2.27-3.78)	3.46 (2.66-4.48)	4.18 (3.12-5.68)	4.71 (3.46-6.57)	5.29 (3.79-7.69)	5.97 (4.04-8.83)	7.01 (4.57-10.7)	7.89 (5.03-12.3)
12-hr	2.36 (1.84-3.00)	2.89 (2.25-3.67)	3.75 (2.91-4.79)	4.46 (3.45-5.74)	5.45 (4.10-7.39)	6.18 (4.57-8.60)	6.97 (5.05-10.2)	7.95 (5.39-11.7)	9.46 (6.18-14.4)	10.8 (6.89-16.8)
24-hr	2.75 (2.15-3.47)	3.44 (2.69-4.35)	4.57 (3.57-5.81)	5.51 (4.28-7.04)	6.80 (5.15-9.22)	7.75 (5.78-10.8)	8.79 (6.44-12.9)	10.1 (6.89-14.9)	12.3 (8.06-18.7)	14.2 (9.12-22.1)
2-day	3.07 (2.42-3.86)	3.92 (3.09-4.94)	5.32 (4.17-6.72)	6.47 (5.05-8.23)	8.06 (6.15-10.9)	9.22 (6.94-12.9)	10.5 (7.80-15.5)	12.3 (8.36-17.9)	15.2 (9.97-23.0)	17.8 (11.5-27.5)
3-day	3.34 (2.64-4.18)	4.28 (3.37-5.36)	5.81 (4.57-7.31)	7.09 (5.54-8.97)	8.84 (6.77-11.9)	10.1 (7.63-14.1)	11.5 (8.60-17.0)	13.5 (9.22-19.7)	16.8 (11.0-25.4)	19.8 (12.7-30.5)
4-day	3.58 (2.84-4.47)	4.58 (3.63-5.73)	6.22 (4.90-7.81)	7.58 (5.94-9.57)	9.45 (7.25-12.7)	10.8 (8.17-15.0)	12.3 (9.20-18.1)	14.4 (9.86-21.0)	17.9 (11.8-27.1)	21.1 (13.6-32.5)
7-day	4.28 (3.40-5.31)	5.40 (4.29-6.72)	7.23 (5.72-9.03)	8.75 (6.89-11.0)	10.8 (8.34-14.5)	12.4 (9.37-17.1)	14.1 (10.5-20.5)	16.4 (11.2-23.7)	20.2 (13.3-30.4)	23.6 (15.3-36.2)
10-day	4.98 (3.97-6.17)	6.16 (4.90-7.64)	8.09 (6.42-10.1)	9.69 (7.65-12.1)	11.9 (9.16-15.8)	13.5 (10.2-18.5)	15.3 (11.4-22.1)	17.6 (12.1-25.5)	21.5 (14.2-32.3)	24.9 (16.2-38.2)
20-day	7.20 (5.77-8.86)	8.43 (6.75-10.4)	10.4 (8.32-12.9)	12.1 (9.60-15.1)	14.4 (11.1-18.9)	16.1 (12.2-21.7)	17.9 (13.3-25.4)	20.2 (14.0-29.1)	23.8 (15.9-35.6)	27.0 (17.5-41.2)
30-day	9.05 (7.28-11.1)	10.3 (8.27-12.6)	12.3 (9.87-15.2)	14.0 (11.2-17.4)	16.3 (12.6-21.3)	18.1 (13.7-24.2)	19.9 (14.7-27.8)	22.1 (15.3-31.7)	25.4 (16.9-37.8)	28.1 (18.3-42.9)
45-day	11.3 (9.14-13.9)	12.6 (10.2-15.4)	14.7 (11.8-18.1)	16.4 (13.1-20.3)	18.8 (14.5-24.3)	20.6 (15.6-27.3)	22.5 (16.4-30.9)	24.5 (17.1-34.9)	27.3 (18.3-40.5)	29.5 (19.2-44.8)
60-day	13.2 (10.7-16.1)	14.5 (11.7-17.7)	16.7 (13.4-20.5)	18.5 (14.8-22.8)	20.9 (16.2-26.9)	22.9 (17.2-30.0)	24.7 (18.0-33.7)	26.6 (18.6-37.8)	29.0 (19.5-42.9)	30.7 (20.1-46.6)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical

IMPORTANT

[Legacy real-time page](#)



☐ 7 days
 ☐ 30 days
 ☒ 1 year

Scale

Linear

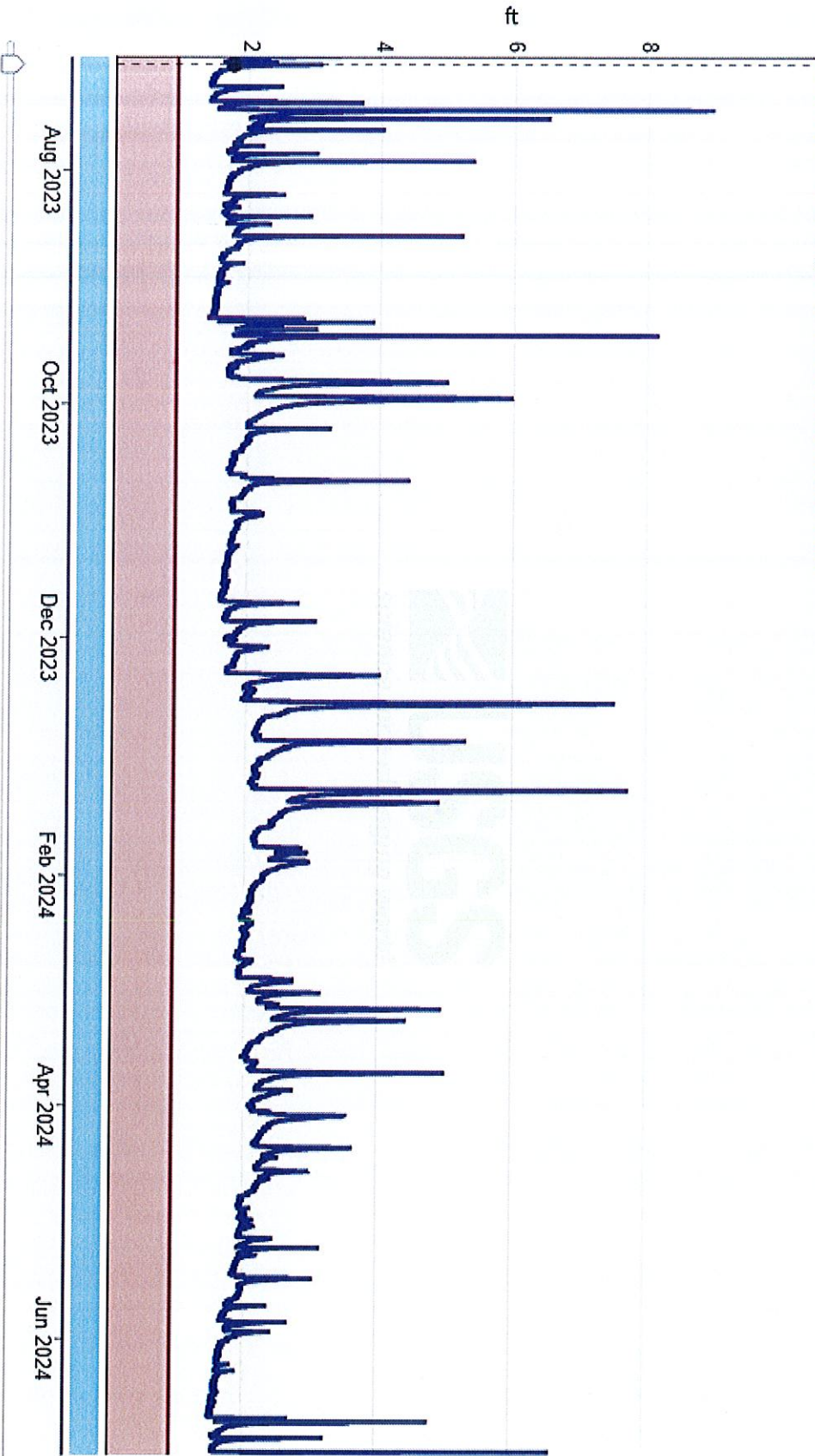
Log

Pequabuck R at Forestville, Ct. - 01189000

July 2, 2023 - July 1, 2024

Gage height, feet

1.74 ft - Jul 04, 2023 10:35:00 AM EDT



Questions or Comments

IMPORTANT

Data may be [provisional](#)

DEEP Climate Resilience Fund

TRACK 1: PLANNING APPLICATION

April 22, 2024

Section 1 – Applicant Details

1.	Applicant name:	City of Bristol
2.	Mailing Address:	111 North Main Street Bristol, CT 06010
3.	Primary Contact Name:	Raymond Rogozinski
	Primary Contact Email Address:	raymondrogzinski@bristolct.gov
	Primary Contact Phone Number:	860-584-6191
4.	Fiscal Agent name:	Diane Waldron
	Fiscal Agent contact email address:	dianewaldron@bristolct.gov
	Fiscal Agent contact phone number:	860-584-6128
5.	Organization EIN:	06-6001866
6.	Requested Amount:	\$250,000

Section 2 – Proposal Overview

1.	Which of the following relevant hazards will your plan or project address? (select all that apply)	☐ Extreme precipitation ☒ Flooding from riverine (including ice jams and dam failures), stormwater, tidal sources, or a combination. ☐ Sea level rise (including groundwater impacts) ☐ Extreme temperatures (heat and cold) ☐ Extreme weather (winter storms, nor'easters, severe thunderstorms, tornadoes) ☐ Tropical storm and hurricane impacts ☐ Windstorms ☐ Fire ☐ Drought
2.	☒ [CHECK BOX] I understand that all plans must examine climate change impacts to 2050 or beyond and that DEEP will provide technical assistance for support throughout the process.	
3.	☒ [CHECK BOX] I understand that a climate change vulnerability assessment is a required component of the resilience plan and that the assessment will examine how climate change and related extreme weather will affect community function and assets, including to identified critical facilities and <u>community lifelines</u> .	
4.	Is your planning team including a budgetary request for grant writing for federal resilience funding at the end of the planning process as part of this application? (Note: this is an allowable cost and is encouraged for planning teams that want to pursue federal resilience grant competition funding for next steps.)	☐ (a) Yes. ☒ (b) No. We have our own support for applying for federal resilience grant funding. ☐ (c) No. We do not intend to apply for federal resilience grant funding.

Section 3 – Community/Regional Overview

5.	What type of plan will this be?	☒ (A) Municipal scale (See question 6) ☐ (B) Regional scale (Go directly to Question 7) ☐ (C) Neighborhood/Hyper-Local scale (Go directly to Question 8)
6.	Which municipality/municipalities will this plan serve? Please include a map of the municipality (a screenshot of a Google map is fine).	Bristol
7.	(Only answer if you selected B in Question 5) If this is a regional plan, please note the boundaries and how these municipalities/entities have worked together on any previous planning. Please include a map of the plan area (a screenshot of a Google map is fine).	Click or tap here to enter text.
8.	(Only answer if you selected C in Question 5). If this is a hyper-local/neighborhood level plan, please describe the boundaries of this neighborhood Please include a map of the plan area (a screenshot of a Google map is fine).	Click or tap here to enter text.
9.	For all plans, please describe any partnership between municipalities and community-based organizations for this proposal and list specific partners that will be receiving any funding as subawards. The City will direct the consultant to contact the Foresville Village Association and the West End Association to engage their members as well as the general public in educational sessions and public hearings that solicit their views on flooding remediation opportunities.	

10. Please give a brief overview of current resilience-related issues and concerns. (Do not discuss any previous resilience planning in this section, just focus on any identified concerns and issues.)

The Pequabuck River flows west to east, bisecting the City of Bristol, and ultimately flowing into Farmington River. The Coppermine Brook runs through the center of the City from the north to join the Pequabuck River in the Forestville section of town. This smaller brook overflows its banks during storms and especially when snow melt is high, despite the City having invested in bridge and culvert reconstruction and maintenance. Most days these bodies of water form an unobtrusive element of the Bristol landscape. However, they have historically flooded their banks and impacted the surrounding landowners, which include residential as well as commercial entities. While much of the problem is considered “nuisance flooding” (below ground and impacting primarily basement areas), the impact still represents loss of property as well as threats to public health and utility service delivery.

Section 4 – Vulnerable Populations

Executive Order 21-3 states that at least 40 percent of the resources in this program MUST go to planning activities/project development that serves vulnerable populations. For example, if DEEP awards a total of \$10 million in planning grants, at least \$4 million of that amount must directly serve vulnerable populations as defined in Section 16-243y(7). The questions in this section will help DEEP evaluate whether your proposed plan will benefit vulnerable populations.

11.	Is your plan located in an Environmental Justice municipality or census tract identified on the DEEP Connecticut Environmental Justice Communities map ?	☒ Yes ☐ No
12.	Is your plan located in a community eligible for community reinvestment pursuant to section 36a-30 and the Community Reinvestment Act of 1977, 12 USC 2901 et seq., as amended from time to time?	☒ Yes ☐ No
13.	People who are considered vulnerable to climate change with limited capacity to adapt include: • Communities of color • Children and seniors • Low-income communities • People with disabilities • Pregnant people • People with Limited English Proficiency (LEP) • Other historically disadvantaged people • People impacted by the social determinants of health • Populations identified by the American Public Health Association.	

Tell us more about the vulnerable populations in the planning area? Be specific and include data if available.

The planning area includes the city's designated "Opportunity Zone" (census tract 4061), as well as census tracts 4057 and 4060.01 (very low income) and census tract 4052.02. These are areas through which the Pequabuck River and Coppermine Brook flow (and which have flooded in the past several years). The Opportunity Zone includes a section of the West End, which has a high concentration of low income households, elderly housing, and people with Limited English Proficiency (LEP).

A map of the City is attached that shows census tracts identified as "Moderate," "Low," and "Very Low" income.

14. How will your plan and planning process benefit the people you have identified as vulnerable? Be specific.

By partnering with community groups and local churches, as well as social service agencies that serve individuals in the target area, the City will host meetings to obtain input from groups identified as vulnerable. These include LEP population, clients of St. Vincent DePaul Shelter, Chrysalis House, Bristol Housing Authority, Human Resource Agency of New Britain, the Bristol Boys & Girls Club, Agape House, Brian's Angels Homeless Outreach, and the West End Association. The Commission on Persons with Disabilities, the "Bristol Cares" networking group, and the Task Force to End Homelessness are among the groups that will be called upon to facilitate this outreach activity. St. Joseph Church has a large Spanish-speaking congregation which will be contacted to establish date(s) for a community meeting, and other area congregations will be consulted through the "Bristol Cares" outreach.

15. ☒ [CHECK BOX] I understand that the vulnerability assessment portion of the planning process must examine social vulnerability.

Section 5 – Planning Process, Including Assessing Vulnerability

16. Please describe any prior resiliency planning efforts in the municipality(ies)/region you are working in, including natural hazard mitigation planning. If the municipality you are working in has conducted stand-alone resilience planning, make sure to note how this proposal expands upon previous efforts.

The City has participated in several mitigation measures that have included realignment of river channel reaches, expansion of floodways/ overflow channels, property acquisitions, and revisions to land use regulations and public outreach/education about FEMA regulations and resources. To date the measures have been isolated and associated with specific projects or the planning has consisted of a regional (multi-community) approach. The City is seeking this grant to expand past resiliency planning measures to include a comprehensive approach across flooding affected areas within the Pequabuck River and Coppermine Brook watershed/floodplain areas while focusing on activity within the City.

17. What are the expected goals and outcomes of this plan?

The primary goal of the application is to determine if there is an engineering solution to mitigate flooding in Bristol. It appears that one potential viable solution is to purchase a number of properties along both the Pequabuck River and the Coppermine Brook, and thus to create additional floodway/floodplain designations for these areas. Once complete, the floodplain areas can serve as a potential linear park/open space along the waterways. A critical part of the project would be community outreach to seek alternate solutions. The project would also include community-based meetings to define in detail level of flooding and provide public education as to the available FEMA, State, and local resources available to residents after flooding events.

The project will include the development of a community emergency plan to address roadway flooding that cuts off and isolates sections of the City during large storm events. Leaders of the City's Police, Fire, and Emergency Management Departments would participate in plan development along with input from the community. In addition to a City service emergency plan, public education will be provided to residents of the flood-prone areas to assist in the development of individual action plans. These plans would address evacuation routes, alternate housing, moving of vehicles, and plans for the retention of important papers and insurance policies/ bank records.

18. Describe how you will assess the planning area's vulnerability to the climate change impacts you identified at the beginning of the application. Please list the parameters you will use and how you will assess impacts to community assets, including critical facilities and community lifelines.

Areas of critical infrastructure that will be included in the resiliency planning consist of City/ State roadway, sanitary sewer collection systems, and potable water supply and pump stations (City of Bristol and New Britain). One of the focal points in resiliency planning is emergency management planning associated with road closures that occur during flooding. As a result of flooding, the northeast section of the City is often cut off/isolated from Police and Fire Headquarters along with hospital and ambulance services. In addition, during flooding events both Bristol Water and New Britain Water must take measures to safeguard and maintain the water supply.

19. Please describe the proposed processes for assessing vulnerability and developing a plan in a stakeholder-driven process and what, if any, resilience frameworks your team will use.

The objective of this planning study is to educate Bristol residents and policymakers about the nature and scope of the flooding problem along the Pequabuck River and Coppermine Brook. With the results of a deeper analysis of the problem, the consultants will present potential remediation options that may include the creation of a no-build flood plain (which would include the purchase and demolition of multiple affected properties; better understanding of the nature of "nuisance flooding" which is individually impactful but not sufficient to qualify for FEMA funded relief; the City's participation in the National Flood Insurance Program and the objectives of local ordinances regarding Flood Damage Prevention. The City will follow the steps outlined in the U.S. Climate Resilience Toolkit, "Steps to Resilience:"

The Steps to Resilience is a proven framework for reducing climate-related risk. Following the steps, groups compile a list of the things they care about and explore which climate hazards could harm them. They assess what is vulnerable, investigate possible solutions,

and set priorities among the options to address their highest risks. Built on foundational work by climate scientists and professional planners, the Steps to Resilience framework can help neighborhoods, cities, regions, and tribal or state governments quantify their vulnerability and risk and integrate considerations of people, ecosystems, and economics into their plans.

A critical issue for the Northeast is addressing its aging infrastructure: roads, bridges, railroad lines, water and wastewater pipelines, culverts, and electrical power networks. The region has the oldest industry and building inventory in the United States, much of which was built along the coast and in estuaries—both of which are highly vulnerable to flooding.

The region's climate is also changing. Recent State of the Climate reports point out the likely impacts of a changing climate on both human and natural resources, which are threatened by rising temperatures, changing precipitation patterns, and a warming ocean, especially in the Gulf of Maine. The stretch of coastline from the tip of the Delmarva Peninsula in Virginia to the elbow of Cape Cod in Massachusetts is experiencing the greatest increase in sea level rise rate globally: 2 to 3.7 mm per year—more than three times the global average.

20. **How will local government staff be incorporated in this planning process? Please detail any commitment for municipal staff time, including departments and positions of those that will participate, and a brief description of their roles/duties.**

The City's Public Works Engineering and planning staff will serve as the project coordinators, however the City is seeking an integrated solution therefore the project team will include represented of the Police, Fire, Emergency Management, and Economic Development departments.

The commitment in time is projected to be the following: Director of Public Works Department – 8%; City Engineer – 5%; DPW Project Manager – 3%; Project team members: Police, Fire, Emergency Management – 2%; and Economic Development (Grants Administration) – 3%.

21. **How will your planning team evaluate nature-based solutions as part of the process?**

Natural based solutions will be at the core of City planning. The City is seeking sustainable solutions and is not focused on piping and bridge reconstruction. The focus is re-establishing floodplain and wetland areas to potentially mitigate flooding and is looking to establish a public dialogue and education to reset resident's expectations with respect to flooding. Education will focus on living with "nuisance flooding" (flooding below building first floors).

22. **How will your planning team evaluate the inclusion of project ideas that have co-benefits (reduce emissions, solve multiple problems, serve as a community amenity, etc.)?**

Potential mitigation projects will be evaluated and ranked based on multi-benefits such as creating passive recreation/ park areas along the river (after purchase and demolition of frequently flooded homes), promoting pedestrian/ bike use, and addressing environmental justice concerns. The City is engaged in an ongoing project to upgrade high-volume traffic lights to reduce idle times and vehicular emissions in high density areas.

23. **Anything else you would like to share with DEEP regarding the community's commitments to improving resilience?**

One of the public educational components will be the impact of flood insurance on home purchases. In typically (non-flood plain) sections of the City home ownership is a function of house price, mortgage rates and local property taxes. However, within flood plain areas home ownership and the ability to sustain ownership is a function of flood plain insurance and can be a significant monthly expense. Part of the public education program will be education on FEMA flood insurance and potential ways to reduce insurance cost such as elevation certificates.

24. ☒ [CHECK BOX] I understand that the final plan must include a list of prioritized next steps, including identified potential projects that, if implemented, would reduce vulnerability and increase community resilience. This list shall also identify potential federal funding opportunities the applicant or partners intend to pursue for funding implementation.
25. ☒ [CHECK BOX] I understand the final plan must include an exercise for municipal government to assess capacity to raise locally derived match funding and other capital costs associated with implementing resilience measures. This includes examining the measures authorized in An Act Concerning Climate Change Adaptation (Public Act 21-115), including the opportunity to form stormwater authorities, explore special taxing districts, and form flood prevention, climate resilience, and erosion control boards.

Section 6 – Community and Stakeholder Engagement

26. **Describe how this team will engage residents and stakeholders. Be specific. Include details about the number of meetings, charettes, workshops, public feedback sessions, etc., and any other outreach and engagement strategies. Also include how much notice you will provide to the public regarding public meetings and how information collected during those sessions will be used to inform the project.**

Note: Planning teams must hold a minimum of three (3) public meetings, including one (1) to share results with residents. Meetings must provide adequate public notice.

The objective of this project is to educate Bristol residents about the nature and scope of the City's flooding concerns – which will undoubtedly worsen as the climate changes – and discuss the type of remediation activities that are possible. The consulting firm hired to perform the planning study will be responsible for organizing and facilitating public outreach, taking care to engage in particular those individuals living within the study area that are not typically engaged in municipal activities.

27. **Describe how your project team specifically will engage and collaborate with residents who are considered vulnerable populations.**

The consultants will be directed to collaborate with the Forestville Village Association and the West End Association to engage their membership along with residents of each area. These organizations have the ability to host informational sessions at the Manross Library in Forestville and the Bristol Public Library.

28. **How will you communicate the findings of the plan and get final input from residents and stakeholders?**

Note: Planning teams must hold at least 1 public meeting to disseminate results to residents.

The consulting firm will utilize the City's website and social media to convey information to residents and business owners. Additionally, the consultants will be obliged to report the results of their work at a public meeting AND at public meetings of various stakeholder groups, including but not limited to the DPW Board, the Inland-Wetlands Commission, the Zoning and Planning Commissions, and the City Council (a live televised monthly event).

Attachments:

Please attach this application document and the following documents in an email to DEEP.climate resilience@ct.gov as your application submission.

- **Milestone Chart** ([Please use template provided.](#))
- **Budget summary and justification** ([Please use template provided.](#))
- **Resumes for all principals** (please keep to no more than 2 pages and edit to include only relevant experience, including volunteer work)
- **Letters of support from project partners, municipalities, community-based organizations, etc.**
 - Letters must include how project partners or organizations will participate in the project.
 - If the applicant is not a municipality, i.e., a Council of Government or non-profit organization, letters of support should come from every municipality involved in the plan, and those letters must commit staff time to participating in the planning process and engagement efforts.
 - Letters of support can be sent as part of the package or emailed by the author directly to DEEP.climate resilience@ct.gov. Subject line must include the name of the primary applicant and must be received by the application deadline.
- **Optional: Map of planning area.** You may send your required map as an attachment if you are not able to embed the image file into the application.

Raymond Rogozinski

From: Zachary Fisk <zacharyfisk@gmail.com>
Sent: Tuesday, June 18, 2024 4:52 PM
To: Raymond Rogozinski
Subject: Re: FW: Reminder: Letter to City Council from Zachary Fisk

Hi Ray, I pasted it below.

Zachary Fisk
Chairman, Inland and Wetlands Agency, Conservation Commission, and Flood and Erosion Control Commission

Mayor Jeff Caggiano
Chairman, Flood and Erosion Board

Dear Mayor Caggiano,

I am writing to bring to your attention the significant concerns raised by residents during a recent application review before the Inland and Wetlands Agency. As you are aware, the role of our commissions is to ensure the protection and proper management of our natural resources, including addressing flood and erosion issues.

During the review process, numerous residents from the area surrounding the proposed project site shared compelling testimony about the frequent and severe flooding they have been experiencing. It is important to note that their concerns are not associated with the current project under review but reflect ongoing issues that merit your immediate attention.

The residents provided substantial accounts of how the flooding has impacted their properties, safety, and overall quality of life. These testimonies indicate a broader and persistent problem within the area that necessitates a thorough examination by the Flood and Erosion Board. It is crucial that we understand the root causes of these flooding events and implement effective measures to mitigate their impact on the community.

I strongly believe that the concerns of these residents should be heard and addressed comprehensively. Therefore, I urge the Flood and Erosion Board to prioritize an hearing to address the concerns of the residents.

Our collective goal is to safeguard our community from the adverse effects of flooding and erosion. By addressing these issues proactively, we can enhance the resilience of our infrastructure and protect the well-being of our residents.

Thank you for your attention to this critical matter. I look forward to collaborating with the Flood and Erosion Board to develop strategies that will effectively address the concerns raised by our community members.

Sincerely,

Zachary Fisk
Chairman, Inland and Wetlands Agency, Conservation Commission, and Flood and Erosion Control Commission

Update To The Summary of Workorders Following The Flooding of July 16th 2023



Prepared By:
William R. Stango, EIT

Bristol Public Works

July 27, 2023
Updated July 11, 2024

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Overview

On July 16, 2023 The City of Bristol experienced a high intensity rain storm within a relatively short period of time (approximately 5.2 inches of rain in less than 2 hrs). The storm caused localized flooding and property damage throughout the City. This report is a summary of the current flooding and drainage issues that have been brought to the attention of the Public Works Department.

Flooding is a function of the quantity (number of inches of rain) and the intensity / rate of rainfall. For example, a storm with short-duration and high-intensity results in flooding of localized areas where The City drainage did not have sufficient capacity to receive or convey storm flows. In contrast, a storm with a long-duration results in flooding around major rivers such as the Pequabuck River and Coppermine Brook exceeding their capacity which result in direct flooding and water backing up into The City's storm drainage system.

As engineers, often speak and describe storms in terms of year's frequency of an event. We refer to storms as 100, 50, 25 and 10 year storms, which in the State of Connecticut equates to 7.98, 7.05, 6.20, and 5.05 inches of rainfall. However, it is important to understand that storm event years equates to inches of rainfall over a 24-hour period. Since intensity of rainfall matters, we understand that high-intensity storms that occur in relatively short periods of time create more flooding than a 100-year storm defined as 7.98 inches of rainfall over a 24-hour period.

It is also important to understand what a 100, 50, 25 and 10 year storm actually means. A 100-year storm does not mean that it will only occur once every 100 years, rather it means that there is a 1 percent chance that Connecticut will experience 7.98 inches of rain during a 24-hour period EACH year. Likewise, a 50-year storm equates to a 2 percent chance each year, and a 25- & 10-year storm equates to a 4 & 10 percent chance respectively EACH year.

In accordance with City Ordinance 21-119, roadway storm drainage is sized for a 25-year storm event. A number of The City's existing drainage systems predate the ordinance and are much smaller. The DOT design drainage manual requires State storm drainage systems to be designed for 10-year storms with culverts sized for a 50- & 100-year storms depending on the size of the drainage area.

Many residents incorrectly believe that the City owns all the rivers, streams and wetlands located in the city. Through the City's network of roads, drainage easements and property, we do own a portion of them. However, they are generally owned by private property owners as defined by the property description delineated in their deed. If there is a stream in the back yard of a property in Bristol, it is generally on private property and the responsibility of the property owner to maintain. In addition, work in areas of streams and wetlands require a permit from the City's Inland Wetland Commission as designated by the CT DEEP.

When the DPW receives a drainage or flooding complaint, the standard procedure is to contact the property owner to obtain additional information, perform a field inspection, and review available mapping of the area. If the problem is associated with City storm drainage, our first step is to jet and clean the storm lines to ensure that the drainage system is operating as designed. If the problem persists, we video the storm drainage system to confirm there is no blockage and if there is a problem due to lack of catch basins on a road with existing storm drainage, we typically add catch basins or storm drainage piping. Resolving storm drainage issues becomes more problematic when there is either no existing storm drainage in the area, a drain pipe is undersized for a long length of roadway, or the receiving stream or

waterbody has insufficient capacity to accept the City discharge during storm events. In these cases, formulating a capital project and obtaining BOF appropriation is required. Between procuring funding, developing a design, obtaining environmental permits and bidding, a capital project typically takes 2-3 years prior to the start of construction.

One of the most common storm drainage complaints in the City is roadway storm water entering private property from driveway aprons. The City standard is to have a 1.5-inch lip where the driveway meets the edge of the road. In order to prevent road runoff from entering the driveways, DPW often replaces driveway aprons to establish a lip.

A summary of the identified flooding areas which have occurred in the July storm is provided below. The summaries are a preliminary assessment and not listed in order of priority or severity. DPW is still receiving reports, therefore the list may not be complete and may be updated as additional information is obtained and additional engineering analysis is performed.

The City does experience periodic flooding. The last significant flooding occurred in July of 2021. This report contains components of information contained within the report associated with the July 2021 storm. When comparing these two storms we can see similarity and difference as to the streets that experienced flooding. Areas such as Frederick St, George Street, Divinity Street, and King Street flooded in both the July 2021 storm and the recent July 2023 storm. Areas such as Park Street, Blakeslee Street, and Jeffrey Road flooded in July 2023 but did not flood in July 2021. Likewise, areas such as Vine Road, Trout Brook Road, Brace Ave., Duncan Street, Carolina Road, Clark Ave., Balsam Road, Hardwick Road, Sheffield Road, Litchfield Road, Hopmeadow Road, Gregory Place, Broad Street, Middle Street, Royal Drive, Chippannee Lane, Stone Crest Drive, Glenn Street, Battle Street, Mix Street, and Jerome Ave. experienced flooding in July 2021 but not in July 2023.

Pequabuck River Stream Gage

One metric Engineers consider when analyzing the severity of a flood is the water level of streams and rivers within a given watershed. The graph below has been provided to show comparison of the Pequabuck River during the Flooding of July 2023 to average and historic levels. The levels presented in this graph were observed in Forestville, CT and are measured against an arbitrary datum. The water level relative to this arbitrary datum is referred to as the “Stage”. The current stage of the Pequabuck River measured on August 8, 2023 is 2.53’. This number can be used to approximate water levels during average conditions. The highest stage of the Pequabuck River was recorded during the flood of 1955 which measured 13.22’. On July 16, 2023 the stage of the Pequabuck River measured to be 8.99’. The water levels during this storm event are approximately 3.5 times higher than the current conditions and 0.68 times (almost 70%) as high as the Flood of 1955.

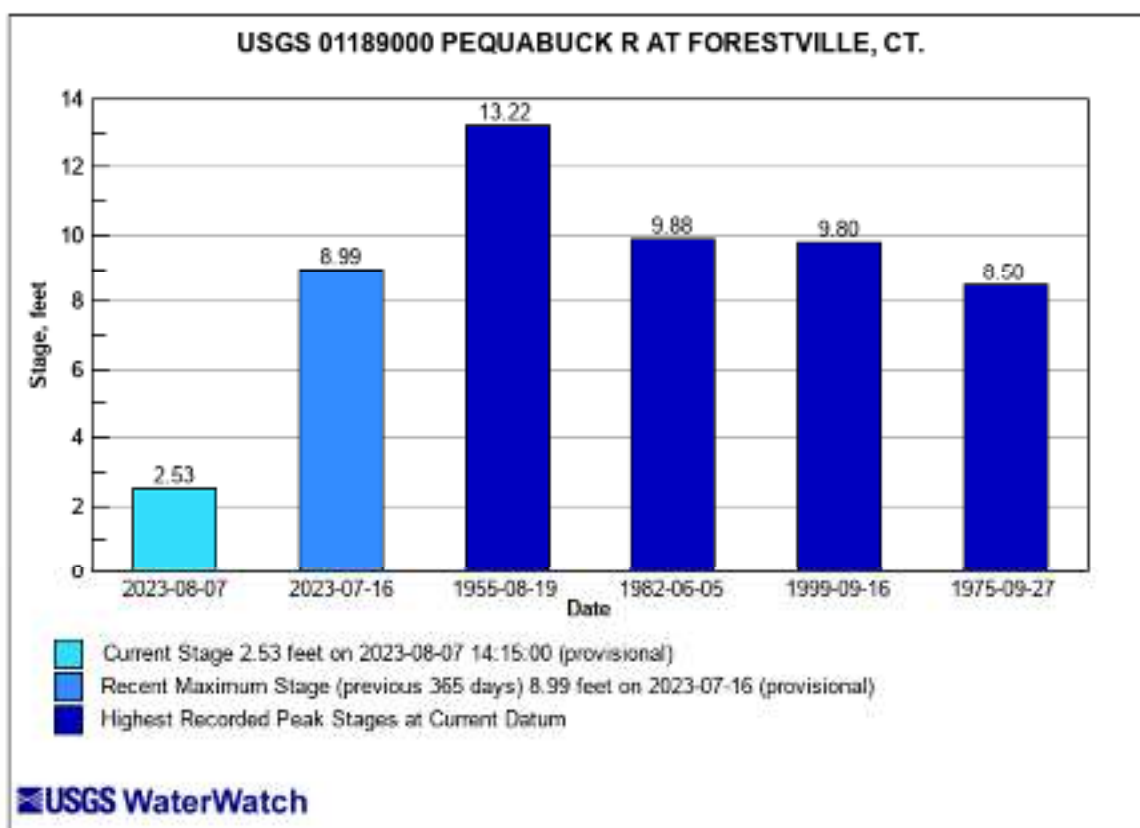


Figure 1: Stage of the Pequabuck River During Significant Storm Events

109 Marlene Street

Summary of Workorder:

High water levels and erosion of banks along Birge Pond Brook. Resident indicated that riprap along channel has washed away. While onsite the resident claimed that the slopes along the channel are hazardous and that something should be done.

Field Investigation:

The DPW investigated the claim and noted the following: An unnamed stream runs north to south along west side of 109 Marlene Street. Flows are facilitated under Marlene Street through an existing 72-inch CMP culvert. Each end of the culvert is embedded within a concrete headwall complete with flared wingwalls. The channel and culvert were both found to be located within a City owned easement. Due to thick overgrowth the Department was unable to determine the overall stability of the channel banks. The resident claims the channel armoring around the outlet had eroded away in years past.

Status Update August 2023:

The DPW crews are scheduled to clear overgrowth from the channel and perform a visual inspection of the existing channel slopes. Based on field conditions of the overall stability of the slopes DPW will install riprap and or regrade existing material to mitigate erosion (if any).

Status Update July 2024:

The Department of Public Works has inspected the slopes along the existing channel between Marlene St and sedimentation pond located in the rear of 109 Marlene St and no significant signs of erosion were noted. The sediment pond constructed in 1998 to prevent sand/sediment from entering Birge Pond is in need of sediment removal. DPW staff has cleared vegetation, survey staked out the area in accordance with the original plan and will excavate the sediment this winter 2024-25.



Figure 2: Location Map – 109 Marlene Street



Figure 3: Birge Pond Brook - Looking Downstream

108 Marlene Street

Summary of Workorder:

Water levels rose over the top of the channel bank causing flooding to several properties.

Field Investigation:

The DPW investigated the claim and noted the following: An unnamed stream runs north to south along west side of 108 Marlene Street. Flows are facilitated under Marlene Street through an existing 72-inch CMP culvert. Each end of the culvert is embedded within a concrete headwall complete with flared wingwalls. The channel and culvert were both found to be located within a City owned easement. During field investigation a large buildup of debris was found within the channel obstructing flows at the upstream end of the culvert. The inside of the culvert was also inspected and it appeared to be clear. While onsite the homeowner explained that due to the buildup of material headwater from the stream overtopped the channel banks and caused flooding around the property.

Current Action:

DPW crews cleared debris from the channel. The Department will continue to monitor the situation for any additional flooding.

Status Update August 2023:

During rain events following the storm of July 16, the channel adjacent to 108 Marlene Street has severely scoured along the east bank. High flood waters within the channel have washed out a large portion of the root system which stabilized the banks. The DPW has investigated this situation and is currently discussing potential solutions internally.

Status Update July 2024:

The DPW has completed a design to realign and restabilize the existing culvert channel. Wetlands Permits have been approved and a temporary construction easement has been obtained from the adjacent property owner at 48 Boivin Street. DPW crews have staked out the proposed channel geometry and construction is anticipated to begin mid-July.



Figure 4: Location Map - 96 Marlene Street



Figure 5: Birge Pond Brook - Looking Downstream



Figure 6: East Bank Prior to Erosion



Figure 7: Current Condition of East Bank

136 Dino Road

Summary of Workorder:

The home owner of 136 Dino Road indicated that water from the roadway is coming over top of the driveway apron and causing flooding in the backyard. They believe that the basin at the top of the driveway is undersized and that it can't handle flows from the street.

Field Investigation:

The DPW investigated the claim and noted the following: The existing storm drain adjacent to the driveway of 136 Dino Road currently outlets to an unnamed stream located along the southern property line. The outfall was determined to be located entirely within a City owned easement. A manhole located within the easement was inspected and determined to be a sanitary style manhole with significant scouring along the troughs. In addition, a section of pipe at the outlet has become disconnected and is impeding flows. The property owner informed the Department that stormwater on the street backs up into the roadway and flows down the driveway into the yard. Upon inspection, the lip of the existing driveway apron appears to be less than standard height.

Current Action:

The DPW is scheduled to reconstruct the driveway apron in front of 136 Dino Road. The new apron will be constructed with a standard sized lip to help prevent stormwater from the street from overtopping the driveway. In addition, the Department will replace the existing sanitary style manhole and outfall pipe as shown in the figure below. The existing manhole will be replaced with a standard curbless catch basin to help collect flows within the yard and the outfall will be replaced with a standard flared end section.

Status Update August 2024:

Following the July 16th storm, DPW has constructed a new driveway apron with a standard sized lip to help channelize stormwater and prevent it from spilling onto private property. DPW also performed a study of the existing storm sewer system. This study included a visual inspection of all existing inverts, basins, and manholes; and a videoed inspection of the existing piping from Cronin Street to the intersection of Lucien Road and Dino Road. During our inspection several basins were determined to be substandard and are in the process of being replaced. The new basins will have the capacity to catch significantly more runoff and should alleviate the amount of storm water that ponds around the basin at the bottom of the hill. From our video inspection, we found a separated joint in an existing storm lateral connecting to a single catch basin. Where the joint has separated the section of pipe has settled several inches below the flow line. This length of pipe will also need to be replaced to prevent any sink holes from forming in the roadway. In addition to these improvements the existing sanitary style manhole and existing outfall are still scheduled to be replaced as initially proposed.

Status Update July 2024:

Three substandard catch basins along Dino Road and the sanitary style manhole at 136 Dino Road have been replaced to current standard. In addition, the existing flared end section at 136 Dino has been reset. No future work is currently proposed.



Figure 8: Location Map - 136 Dino Road



Figure 9: Proposed Drainage Improvements



Figure 10: Substandard Catch Basin To be Replaced

114 Blakeslee Street

Summary of Workorder:

High floodwaters have caused significant property damage to the homeowner of 114 Blakeslee Street and to several adjacent property owners. The homeowner stated that recent flooding has been substantially worse than anything he has seen in the past 25 years of living at this address.

Email From Property Owner:

"I have lived at 114 Blakeslee Street for over 25 years. Over the last few years, the flooding in my backyard has increased due to the overflow from surrounding areas being diverted into the brook adjacent to my home. The flooding from the recent storm on July 16, 2023 caused roughly \$2,500 in damage to equipment stored in my backyard shed.

I understand Huntington Woods is in the process of repairing the sink hole located in their parking lot. I don't believe they truly understand the severity of the tunnel's poor condition. I took a video from the entrance of the brook all the way to the discharge into the Pequabuck River and three quarters of the galvanized tunnel is in disrepair and needs to be replaced. I noticed in some sections, due to the weight above, the tunnel has now changed to an oval shape and you can see gravel on the bottom due to missing rubber coating and completely rusted out bottoms. Also, in a couple of sections, the tunnel connections are beginning to separate.

My biggest concern is if this tunnel should collapse during a heavy rainstorm and water is unable to pass through, the flooding from it would severely impact roughly 6-12 homes in the Blakeslee Street area leaving us with no emergency plan in place.

I have attached photos to validate my concerns and am available should you need to reach out for more information."

Field Investigation:

An unnamed stream flows adjacent to 114 Blakeslee Street and into a CMP culvert located on the north side of the Huntington Woods facility. A recent sinkhole on the Huntington Woods property brought to light that the existing culvert is failing. It's likely that the failing culvert is contributing to the high headwaters shown in Figure 9. The DPW has been in contact with the property manager at Huntington Wood and they are currently in the process of receiving quotes from private contractors to have sections of the existing culvert replaced. The DPW informed the residents in adjacent properties that flooding is likely caused by the failed culvert and that Huntington Woods is in the process of making repairs.

Current Action:

The existing culvert shown in *Figure 10* is located entirely on private property and will be the responsibility of the owner to replace. The owner is currently in the process of receiving quotes from private contractors to make repairs to the culvert. The DPW is in contact with the owner (Huntington Woods) regularly to get updates on the project.

Status Update August 2023

Following the July 16th storm, DPW has been in contact with the property managers and owner's representatives of the Huntington Woods Facility. After researching land records and as-built drawings it was concluded that the existing culvert is located entirely on private property and will be the responsibility of the owner to replace. DPW met with the owner's representative on site to help explain the type of failure we are seeing and to impress upon them the severity of the culverts condition. During this conversation the owner's representative assured us that they are taking this matter very seriously and have approached several contractors and an engineer for a design of a new structure. Following this meeting the property owners upstream of the culvert were informed of the status of the replacement and were encouraged to continue documenting any future flooding and or damages.

Status Update July 2024

As indicated above the storm piping in question is private. The owner has arranged for replacement of the storm drain and work is ongoing. The DPW will be checking on progress. The piping discharges to a detention pond maintained by the storm water trust and a section of pipe replaced by DPW in 2023.



Figure: Location Map - 114 Blakeslee Street



Figure 11: Floodwaters at Blakeslee Street Culvert Located Upstream of Huntington Woods



Figure 12: Floodwaters at 114 Blakeslee Street



Figure 13: Downstream Culvert on Private Property



Figure 14: Sinkhole Located Overtop of Existing Culvert

72 South Street Extension

Summary of Workorder:

The homeowner of 72 South Street Ext. stated that insufficient drainage along the street has caused damage to the existing sidewalk, driveway, and retaining wall.

Email From Property Owner:

"I am writing in regards to improper water drainage on South St. Ext Bristol Connecticut. There is no water drainage coming down the hill of this road leading water right to the sidewalk, into my driveway, all the way down to my backyard creating several ditches as well as the cement wall and foundation of my garage to collapse. I have requested already the City to fix this problem and nothing has been done and this is now out of control. There are children and elderly living here. The City needs to fix this water system as well as the damages it caused my property. There are huge ditches in the sidewalk, there is a ditch in the side of the foundation of my house creating a stream every time it rains. This stream is coming down my driveway breaking the asphalt and causing the wall to collapse not only this but the foundation to the garage is also collapsing. This is an extreme hazard and a lawsuit on the City waiting to happen. I'm not sure if this needs to go to the news or not but something needs to be done ASAP"

Field Investigation:

The DPW has investigated the existing site conditions and claimed property damage. From visual inspection the Department believes stormwater from Melville Street and South Street Ext. is overtopping the sidewalk and flowing down the driveway at 72 South Street Extension.

Current Action:

The DPW is preparing a workorder with a private contractor to reconstruct the existing driveway apron, sidewalk, and curbing as shown in *figure 13*. The homeowner has filed a claim for the property damage.

Status Update August 2023:

Following the July 16th storm, DPW hired a private contractor to reconstruct the sidewalk and curbing in front of 72 South Street Extension. The new curbing will have a standard 6-inch reveal and the elevation at the back of walk will be set 6-inches higher than the gutter line. Increasing the reveal of the curb and raising the elevation of the back of walk will help keep storm water channelized in the gutter and prevent it from spilling onto private property.

Status Update July 2024:

As indicated above corrective work has been completed. No further action is proposed.



Figure 15: Location Map - South Street Extension



Figure 16: Driveway Apron Looking Toward Melville Street



Figure 17: Erosion Behind Existing Retaining Wall



Figure 18: Existing Conditions Before Reconstruction



Figure 19: Reconstruction of Sidewalk and Curbing

465 Redstone Hill

Summary of Workorder:

The homeowner of 465 Redstone Hill believes that an adjacent construction site has caused increased amounts of stormwater runoff to flow through her property.

Email From Property Owner:

"I fully understand that the amount of rain that we have experienced Sunday and today is exceptional. However, we have owned our home for 26 years and we have NEVER experienced this. These photos were just taken. I also sent a video to Cheryl. The first photo is proof once again that water is flowing through this area and is exposing the roots of my trees and pushing my rocks! The water is rushing across my property and into my neighbors newly renovated enclosed back porch. He had 8 inches of water on his patio on Sunday. Look at the color of the water, ITS FROM THE CONSTRUCTION SITE! Isn't the pond supposed to fix this problem? The last photo is where the trench begins closest to my house. The stake shows where it begins. The water is flowing over the straw bags that border the trench. Thank God these trenches were put in because MY HOUSE WOULD BE FLOODED, but they clearly are not enough. There is even ponding in my front yard. I am beyond frustrated. My insurance agent informed me yesterday that any property damage caused by this flooding most likely will not be covered. I have been documenting this journey with you since the first disaster last May. Where's the solution."

Field Investigation:

The DPW was on site and inspected the existing sediment and erosion control measures installed around the construction site which consisted of a 2-foot-wide drainage ditch lined with haybales.

Current Action:

The contractor working at the adjacent construction site has installed additional sedimentation and erosion control measures including a new drainage swale along the back side of 465 Redstone Hill. The existing swale was upgraded from a 2-foot-wide channel to a 6-foot-wide grass lined channel. The property owner has been notified and has informed the Department the swale seems to be operating as intended.

Status Update August 2023:

Following the reconstruction and improvements to the erosion control measures, there have been no new complaints regarding storm water runoff.

Status Update July 2024:

Private issue, area restored and no further update to report.



Figure 20: Location Map - 465 Redstone Hill Road



Figure 21: Stormwater Runoff

90 Field Street

Summary of Workorder:

Recent storms have caused erosion of an existing crushed stone driveway. The homeowner of 90 Field Street believes that the culvert adjacent to his property is undersized and has caused floodwaters to overtop the roadway.

Field Investigation:

An unnamed stream flows south to north along the east side of 90 Field Street. On the north side of the property the stream crosses under Field Street facilitated by an existing 6 ft x 4 ft concrete culvert. The DPW spoke with the homeowner during field investigations and the home owner claims that during a typical rain event water does not overtop the driveway apron. The homeowner also expressed to DWP his concern with the stability of the existing channel wall. Several sections of the dry stacked stone masonry wall have collapsed and it does not appear to be stable.

Current Action:

The homeowner was made aware that The City is in the process of securing funds to have the culvert adjacent to his property replaced and that construction is anticipated to begin in 2025. The proposed structure is an 11 ft x 4.5 ft precast concrete box culvert with flared concrete wingwalls. In addition, to replacing the existing culvert this project will involve realignment of the existing channel. The new channel alignment will improve the hydraulic conductivity and reduce the likelihood of water overtopping the roadway. For construction of the new culvert, temporary and permanent easements will be required for excavation but have not yet been granted by the property owners. Temporary reconstruction of the driveway and shoring of the existing wall is being considered as part of the negotiation for these easements.

Status Update August 2023:

The City will continue to move forward with trying to obtain easements from the adjacent property owners for the replacement of the proposed culvert.

Status Update July 2024:

City design to replace the culvert ongoing. The consulting firm of Cardinal Engineering has completed preliminary engineering plans including the proposed replacement of the sanitary sewer to Peck Lane. Approval of State/Local bridge program funding received. The City receives 50% funding of the \$1,373,665 project cost. Construction anticipated in 2026. Four easements required to complete the property, one of the properties is owned by Bristol Housing Authority.



Figure 23: Erosion of Unpaved Driveway



Figure 24: Channel Wall Adjacent to 90 Field Street

89 Field Street

Summary of Workorder:

The recent rain storm has caused erosion of an existing crushed stone driveway.

Field Investigation:

During field investigations it was observed that 89 Field Street is set well above the gutter line of the roadway and the existing driveway is pitched downward toward the road. It does not appear that the erosion was caused by improper roadway drainage.

Current Action:

Since the damages were not caused by improper roadway drainage the City would not typically take action in repairing the driveway. However, the City is in the process of securing funds to have an existing culvert adjacent to 89 Field Street replaced. The homeowner has thus far been unresponsive to The City's request for easements and temporary reconstruction of the driveway is being considered as part of the negotiations for the easements.

Status Update July 2024:

As indicated driveway damage is NOT due to runoff from the City road/ drainage system. Private matter no additional action proposed. It should be noted that an easement is required from the property owner to replace the Field Street culvert.



Figure 25: Location Map - 89 Field Street

22 Tuttle Street

Summary of Workorder:

The homeowner of 22 Tuttle Street indicated that stormwater from the road has been jumping the lip of the driveway and is causing flooding around the house.

Field Investigation:

During field investigations it was determined that the lip of the driveway apron is lower than standard size and that several sections of curb are missing along the front of the property.

Current Action:

The DPW is scheduled to repair missing sections of curbing and to construct a new driveway apron with a more substantial lip in order to keep storm water on the roadway.

Status Update:

Following the July 16th storm DPW reconstructed the existing driveway apron with a standard sized lip and replaced several sections of missing curbing. There have been no new complaints regarding storm water runoff.

Status Update July 2024:

Corrective work complete, no further update to report.



Figure 26: Location Map - 22 Street



Figure 27: Proposed Improvements

220 Sonstrom Road

Summary of Workorder:

Homeowner of 220 Sonstrom Road indicated that storm water from the roadway is jumping the driveway apron and causing flooding in the garage.

Field Investigations:

The City has recently installed a new catch basin at the top of the existing driveway to catch stormwater runoff before it reaches the apron. The DPW inspected the basins and there does not appear to be any buildup of sediment or debris. Field measurements confirmed that the gutter flow in front of 220 Sonstrom is one directional and that during a typical storm event gutter flow should not be jumping the catch basin. It is likely that flooding is due to runoff from the roof leader and from the back pitched driveway.

Current Action:

A City catch basin is currently located on the high side of the driveway. No additional City action is proposed.

Status Update July 2024:

No further update to report.



Figure 28: Location Map - 220 Sonstrom Road



Figure 29: Site Conditions at 220 Sonstrom Road

24 Jeffrey Road

Summary of Workorder:

Flooding on Jeffrey Road. Homeowner believes that the storm drains are undersized.

Email From Home Owner:

"Yesterday, I had a major flood on the side and the front of my house.

There is creek with a tunnel/easement behind the house that needs to be cleaned as well as city drains (one on the side of the property & one in front) which I have reached out to Public Works about.

My email is just to ask for assistance in getting additional drains added to the side of the house. There is one there now but I think there needs to be more.

I recently purchased this home and I love this neighborhood and did a 100k rehab on the house and water got into my basement yesterday because there aren't enough drains."

Field Investigations:

An unnamed stream runs east to west along the south side of 24 Jeffrey Road. Flows from this stream are facilitated through a 24" RCP within a City owned easement. The inlet structure was determined to be a dry stacked stone masonry catch basin. Flows from this basin are then piped to the storm sewer system along Jeffrey Road. It is likely that due to high volume flows and poor hydraulic conductivity within the basin the storm sewer was overwhelmed and overtopped. From videos it appeared that the stone basin behind the house began to overtop sending flows through the yard and into the street; at this point it appeared that stormwater began ponding along the street.

Current Action:

The DPW cleaned/cleared the basins and jetted the storm drainage lines along Jeffrey Road. In addition, the Department is currently drafting conceptual plans to improve flows from the unnamed stream. The current plan would be to remove the existing basin, several sections of pipe and realigning the channel so it flows more naturally into the storm drain.

Status Update August 2023:

Following the July 16th storm, DPW conducted a video analysis of the existing storm sewer system and found that the 90-foot length of pipe running parallel to the existing property line is filled with river rock. It is likely that during heavy rain events stones from the unnamed stream are picked up and deposited in the pipe severely reducing its capacity. Several methods were attempted to clear the blockage but with little success and it was determined that the pipe would need to be replaced. DPW is scheduled to replace approximately 90-foot of the existing 24-inch RCP with 24-inch ADS piping. In addition, DPW will be upgrading the substandard catch basin as initially proposed.

Status Update July 2024:

The DPW installed approximately 90-ft of ADS pipe from the southeast corner of the property to the existing catch basin in the roadway. In addition, a standard RCP flared end section was installed at the

inlet and the channel was armored with a more sufficient size riprap. The City continues to monitor this area and is in regular correspondence with the homeowner. No further action is proposed at this time.



Figure 30: Location map - 24 Jeffery Road



Figure 31: Flooding at 24 Jeffrey Road



Figure 32: Proposed Drainage Improvements

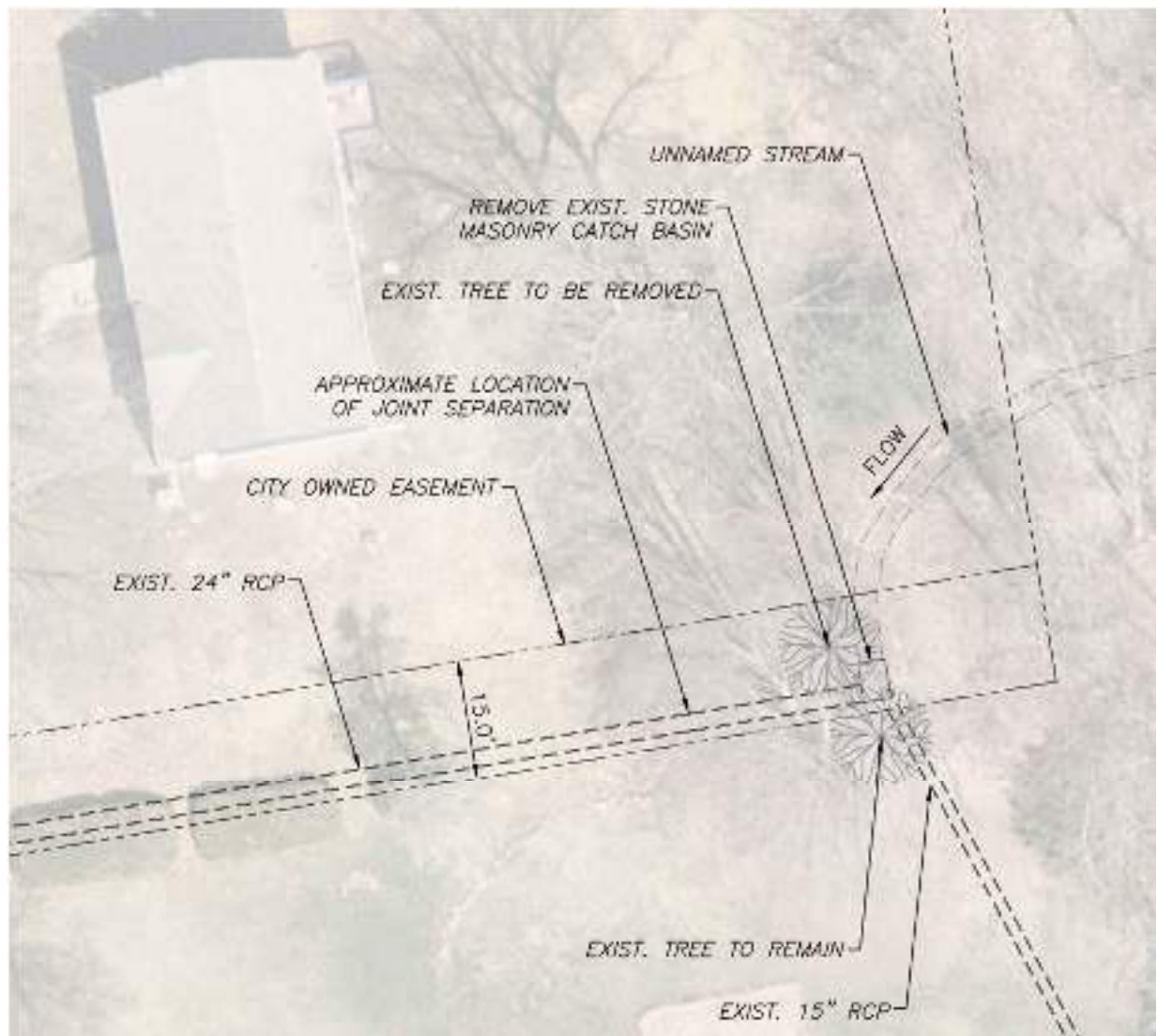


Figure 33: Existing Conditions

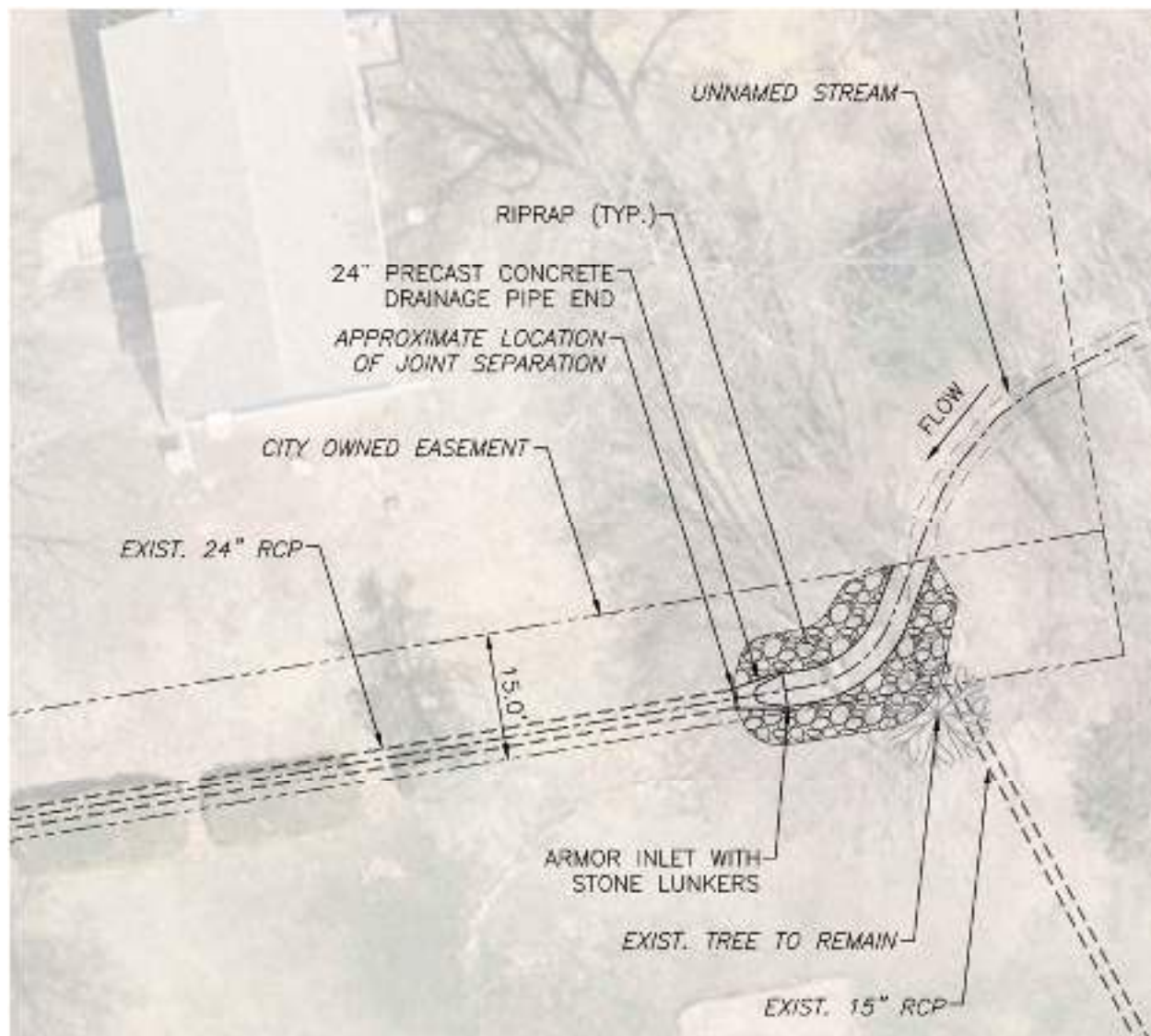


Figure 34: Proposed Improvements



Figure 35: Obstruction Within Existing Pipe

35 Bently Road

Summary of Workorder:

During the storm on July 16th rainwater from the roadway ponded in the cul-de-sac and the south end of Bently Road. It appears the existing system could not handle flows and was backing up on the street. Photos from the homeowner (not shown in this report) show floodwaters 6-inches high spilling over the curb and onto private property.

Field Investigations:

DPW inspected the storm sewer from Bently Road to Candy Lane but only observed a minor buildup of sediment within the existing catch basins.

Current Action:

The DPW cleaned/cleared the catch basins and jetted the storm drainage lines. The department will continue to monitor this system during future storm events.

Status Update July 2024:

No further update to report.



Figure 36: Location Map - 35 Bently Road



Figure 37: Maintenance of Bently Road Drainage System

48 Lawson Street

Summary of Workorder:

Homeowner believes a clogged catch basin has caused her driveway to flood.

Field Investigations:

During on site investigations the catch basin in question was determined to be a private driveway drain located at the bottom of the driveway at 48 Lawson Street (see the figure below).

Current Action:

The homeowner has been notified that the City will take no action as this is a private issue.

Status Update July 2024:

No further update to report.



Figure 38: Existing Conditions

120 Perkins Street

Summary of Workorder:

The resident believes that due to increased runoff from past roadway improvements projects, the stream on his property has significantly eroded and has become a hazard.

Field Investigations:

An unnamed stream originating at a detention pond south of the Summerberry Circle flows west to east and crosses Perkins Street. Flows are facilitated under the street through a 36" RCP and are discharged along the north side of 120 Perkins Street. During field investigations the DPW inspected the channel along the property and did see sever signs of erosion along the channel invert. An approximate property line was identified with the home owner and the stream does appear to be located entirely on private property.

Current Action:

The DPW is currently in the process of producing concept plans to stabilize and armor the outfall within The City's right-of-way. Stabilization will involve cutting back slopes and installing riprap along the channel banks. In addition, a detention pond located upstream will be investigated to ensure it is functioning as designed.

Status Update:

Following the July 16th storm, DPW continued to investigate the storm sewer system along Perkins Street. Our investigations included research of the existing system prior to the most recent roadway improvements project which occurred in 2005 and a delineation of the watershed which contributes to the outfall adjacent to 120 Perkins Street. Our findings show that the roadway improvements project in 2005 did not increase the drainage area which contributes to the outfall and we speculate that erosion of the channel is most likely a function of high velocity flows resulting from the steepness of grades along the channel. While the damages were not caused by the action of the City the DPW recognizes the erosion to be a serious concern and has voted to take corrective action. The DPW is currently pursuing a design to have the stream piped approximately 230-ft from the roadway to where the stream currently outlets into a major tributary. This project will be subject to approval by the wetlands commission and is construction is anticipated to begin in late spring 2024.

Status Update July 2024:

DPW has completed a design and obtained wetlands permit to pipe the existing channel from the street to the intersecting stream to the east and to restore the area with topsoil and seed. After receiving a quote from our on-call contractor the City will be issuing a public bid to perform work.



Figure 39: Location Map - 120 Perkins Street



Figure 40: Erosion at Invert of Channel



Figure 41: Delineation of Existing Drainage Area

302 Candlewood Drive

Summary of Workorder:

Resident indicated that the stream on his property has been eroded by the recent storm and has caused flooding in his yard. The resident also believes that the City has an easement for maintenance of the stream.

Field Investigations:

A 24" storm water outfall pipe located along the north side of 302 Candlewood Drive discharges to an unnamed stream along the east side of the property. The outfall pipe is located within a City owned easement and the stream itself appears to be entirely on private property. During field investigation the DPW noted that erosion within the channel appears to be minor. Small deposits of sediment were observed along the channel banks.

Current Action:

The DPW is in the process of producing concept plans to stabilize the outfall within the City's easement. The proposed work will likely involve removing sediment and installing riprap at the drainage outfall. The City will take no action in maintaining areas of the channel located on private property.

Status Update July 2024:

No further update to report.



Figure 42: Location Map - 302 Candlewood Drive



Figure 43: Stormwater Overtopping Channel Banks

68 Litchfield Lane

Summary of Workorder:

Storm water from the street has been jumping the driveway apron and has caused flooding around the house.

Field Investigations:

During field investigations there did not appear to be sediment build up in any of the basins. The outfall was located and did not appear to be obstructed by sediment or debris.

Current Action:

The DPW sent a crew on site to clean the basins and jet the lines. The Department has contacted the homeowner and will continue to monitor the situation.

Status Update July 2024:

No further update to report.



Figure 44: Location Map - Litchfield Lane

87 Collins Road

Summary or Workorder:

The resident claims that during the recent storm, water from the street has overtopped the basin in front of her house and has caused flooding in the yard.

Field Investigations:

A 12" drainage outfall located on the north side of the property discharges stormwater from the street to a wetlands area behind the house. The City is currently in the process of acquiring an easement from an adjacent property owner for a drainage improvements project that would involve upsizing the existing drainage pipe. Upsizing the existing pipe would require extending the outfall so it could drain to daylight.

Current Action:

The DPW has contacted the owner of 87 Collins Road and the adjacent property owner informing them that the City is requesting an easement for drainage improvements.

Status Update August 2023:

Following the July 16th storm, the Board of Public Works voted to hire a surveyor to perform an A-2 survey of the existing properties surrounding and including 87 Collins Road. The purpose of the survey would be to develop a plan to extend the existing drainage outfall onto what is now private property and for acquisition of the required easements. A surveyor has been approached and is scheduled to perform the work in the next two weeks. On October 10th, 2023, DPW met with the owner's representative for parcel 53-50 and is currently in the process of negotiating acquisition of an easement.

Status Update July 2024:

DPW has completed a design to upsize and extend the existing storm system from 87 Collins Road to the Coppermine Brook to the West. One of the three required easements for this project have been obtained and the City is in pursuit of the others. Once all easements have been obtained the City will apply for a wetlands permit. Completion of the proposed project will first require obtaining the remaining two easements and having the project approved by the wetlands commission.

DPW is scheduled to clear/excavate the drainage channel at the outfall of 87 Collins Road in August, 2024.



Figure 45: Location of Proposed Easement

215 Rockwell Avenue

Summary of Workorder:

During the recent storm a clogged drain pipe has caused flooding to several property owners.

Field Investigations:

An unnamed stream flows down a steep drop off located in the southern corner of the property. A private storm drain receives these flows and pipes them to the storm sewer along the street. During the storm on July 16th DPW forces unclogged the inlet of the private storm drain and cut a trench along the southwest side of the property. The trench helped to divert flows away from the house and direct them to a drain along the street. Within a few hours of doing so sediment had built up around the pipe and was again blocking flows.

Current Action:

The homeowner was informed that the inlet of the pipe is a part of their private drainage system and they should monitor and maintain sediment around the inlet.

Status Update July 2024:

No further update to report.



Figure 46: Location Map - 215 Rockwell Avenue

74 Peck Lane

Summary of Workorder:

Stormwater from the street has been jumping the curb and driveway apron and has caused erosion around the foundation of the house.

Email From Property Owner:

“Attached are photos showing the flash flood damage to our property, as well as the sidewalk above us and across the street affected by the same water flow. The photos progress in the direction the water flows. There are currently no storm drains on Peck Ln between our house and Maywood Ln. When flash flooding occurs, there are multiple inches of fast-moving water coming down Peck Ln and across our yard to hit our foundation. I think an additional storm drain above our house would help mitigate damage to our house as well as the sidewalk and street. I really appreciate your consideration.”

Field Investigations:

The DPW inspected the existing storm system and when doing so observed evidence of stormwater flowing from the street onto private property toward 74 Peck Lane. The department believes this problem is largely contributed by not having any catch basins along the west gutter line for a 1,300' stretch uphill of the property. It is likely that storm water is channelizing along the gutter and overtopping the curb in front of 74 Peck Lane.

Current Action:

The DPW is currently in the process of developing a conceptual plan aimed to reduce the amount of stormwater that contributes to the flooding at 74 Peck Lane. Improvements will include installing a new catch basin(s) on the uphill side of the driveway, constructing a more substantial curb, and reconstructing the driveway apron with a standard sized lip.

Status Update July 2024

No current update. The City plans to proceed with drainage upgrades as originally proposed.



Figure 47: Location Map - 74 Peck Lane



Figure 48: Erosion of Material Caused by Stormwater



Figure 49: Deposits of Eroded Material

George Street Culvert

Summary of Workorder:

During the storm on July 16th high water levels largely contributed to by a buildup of debris and intense rainfall caused severe flooding along South Street when water overtopped the George Street Culvert. The existing culvert is 6 ft x 8 ft in dimension and spans for approximately 900 ft.

Current Action:

A private contractor performed a visual inspection of the culvert and removed debris including a large obstruction at the outfall shown in the figure below.

Status Update August 2023:

Following the flooding of July 16th, the DPW has monitored the George Street Culvert and we are currently unaware of any additional blockages.

Status Update July 2024

DPW procured the services of a contractor to clear the culvert of debris and inspect for damage. No structural defects were observed. The inlet grate has been removed to prevent clogging of the culvert.



Figure 50: Location Map



Figure 51: Flooding Along South Street



Figure 52: Debris Blocking Flows at Culvert



Figure 53: Obstruction at Culvert Outfall

Memorial Blvd. Retaining Wall

Summary of Workorder:

During the storm on July 16th a portion of retaining wall supporting the sidewalk parallel to Memorial Blvd. had collapsed.

Field Investigations:

The Pequabuck River runs west to east parallel to Memorial Blvd. During the storm on July 16th the water level of the Pequabuck reached a stage of 8.99-feet which is approximately 70% of the recorded high which occurred during the flood of 1955. These water levels at high velocity were able to dislodge large chunks of concrete and stone which were being used as the end treatment of an existing cast-in-place concrete wall. The section of wall that collapsed was approximately 15' in length.

Current Action:

A private contractor was contacted and will be submitting a quote to make repairs.

Status Update August 2023:

The Memorial Blvd. retaining wall was repaired by a private contractor as directed by DPW. The newly repaired wall will continue to be monitored by DPW during future high intensity rain events.

Status Update July 2024:

No further update.

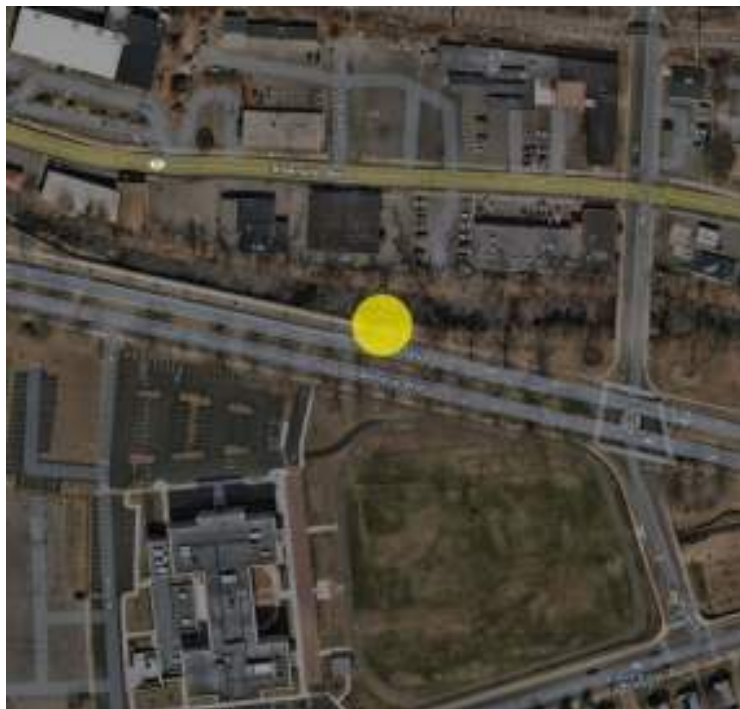


Figure 54: Location Map - Memorial Blvd. Retaining Wall



Figure 55: Collapse of Existing Dry Stack Stone Wall

James Street Culvert

Summary of Workorder:

Flooding overtopping the roadway and into several houses.

Current Action:

The existing culvert is currently owned and maintained by Laviero Contractors. Following the recent storms, Laviero was onsite to clear the culvert from brush and debris. The DPW also sent a crew to clean the existing basins and to sweep the street.

Status Update August 2023:

Laviero Contractors has removed blockage and made temporary repairs to the culvert. The condition of the culvert is still being monitored by DPW.

Status Update July 2024:

No further update.

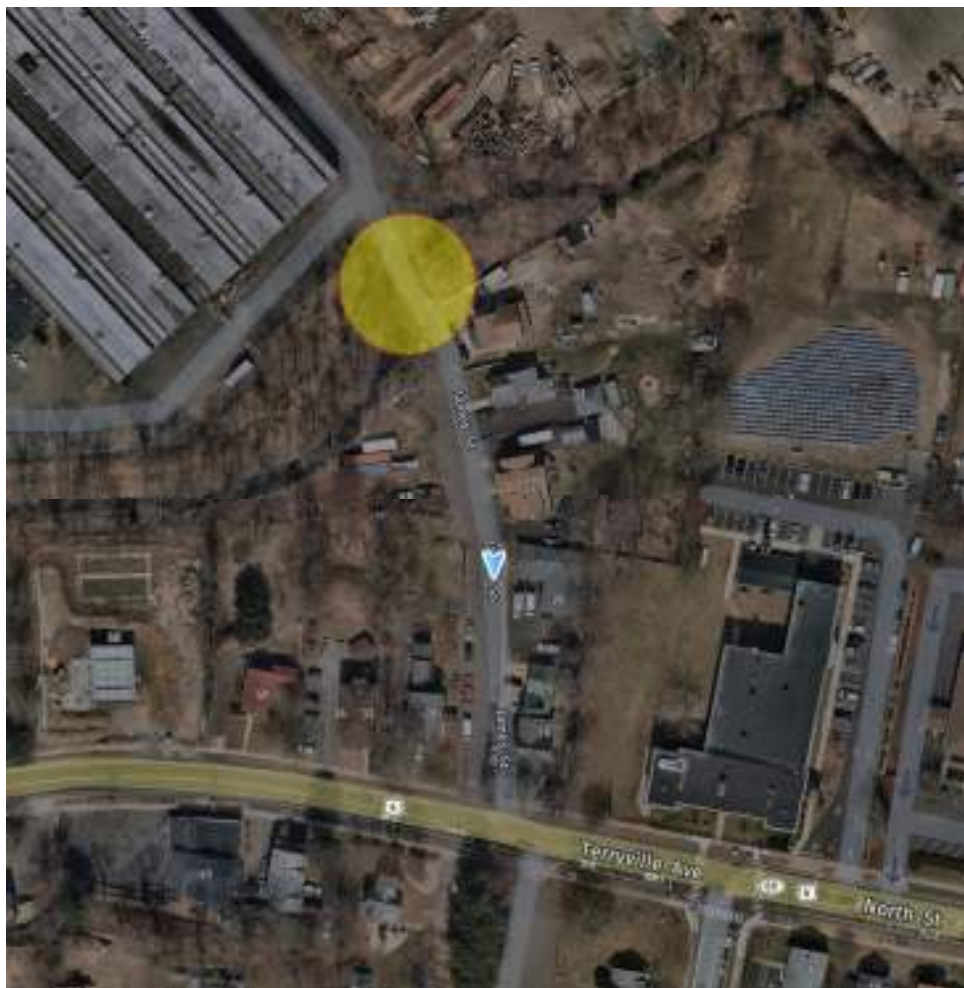


Figure 56: Location Map - James Street Culvert



Figure 57: James Street Culvert



Figure 58: Channel Looking Downstream



Figure 59: Debris Removed from Channel



Figure 60: Fish Washed On Shore From High Flood Water

Divinity Street Culvert

Summary of Workorder:

An unnamed stream flowing south to north crosses Divinity Street 250 ft east of the intersection of Peck Lane. Flows are facilitated by a 5 ft x 5 ft concrete box culvert which is hydraulically undersized. During the storm on July 16th floodwaters overtopped the culvert and caused significant damage do the adjacent properties as shown in the photos below.

Current Action:

The DPW sent a crew onsite to temporarily repair the damages to the adjacent properties. The Department is currently in the process of finalizing the design of a new culvert. The culvert size will increase from 5 ft high X 5 ft wide to 5 ft high by 8 ft wide. Work is scheduled to be completed after the completion of the CT DOT Route72/69 project. Culvert is currently on the West End intersection detour plan (2024).

Status Update August 2023:

Approval of LOTCIP funding through NVCOG regional planning is moving forward.

Status Update July 2024:

The City's engineering consultant WSP has submitted all required permits and is currently working toward final design for replacement of the Divinity Street Culvert. This past June a small sink hole opened up along the roadway adjacent to the culvert. The sinkhole was due to scouring of the existing culvert which washed out backfill material. The City approached a contractor to make temporary repairs as necessary. In addition, the damaged fence at 316 Divinity Street has been replaced and the condition of the culvert will continue to be monitored by DPW. Construction of the culvert requires an ACOE permit and work is scheduled for 2026. The \$1,400,000 project will be funded with LOTCIP funds.

DPW has been notified that that flooding caused by the current culvert results in flooding at 331 Park St.

DPW has replaced the fence at 316 Divinity St. Additional damage has occurred during **July 2024** storms.

The City received video report from a local resident adjacent to the Divinity Street culvert in early July 2024. The video showed floodwaters following a high intensity storm event overtopping the exiting channel bank upstream from the proposed culvert replacement. Following this report DPW made an onsite inspection of the culvert and shared the video with our engineering consultant, WSP. WSP revisited their hydraulic model and reported back the following:

"We looked over the videos you sent and discussed your concern about the overtopping stream on the 315 Divinity St Property. Our hydraulic model starts 45 ft upstream of the culvert and the following table shows the decrease in water surface elevations (WSE) at that limit. We expect the WSE to converge back

to existing further upstream which would be the case with any structure type/size replacement. Overall, improved conditions can be expected at the properties adjacent to the culvert.”

Divinity St Water Surface Elevations at Upstream Limit of Hydraulic Model			
Storm Event	Existing WSE (ft)	Proposed WSE (ft)	Change in WSE (ft)
10-yr	374.05	372.87	-1.18
25-yr	375.91	374.5	-1.41
50-yr	376.18	375.41	-0.77

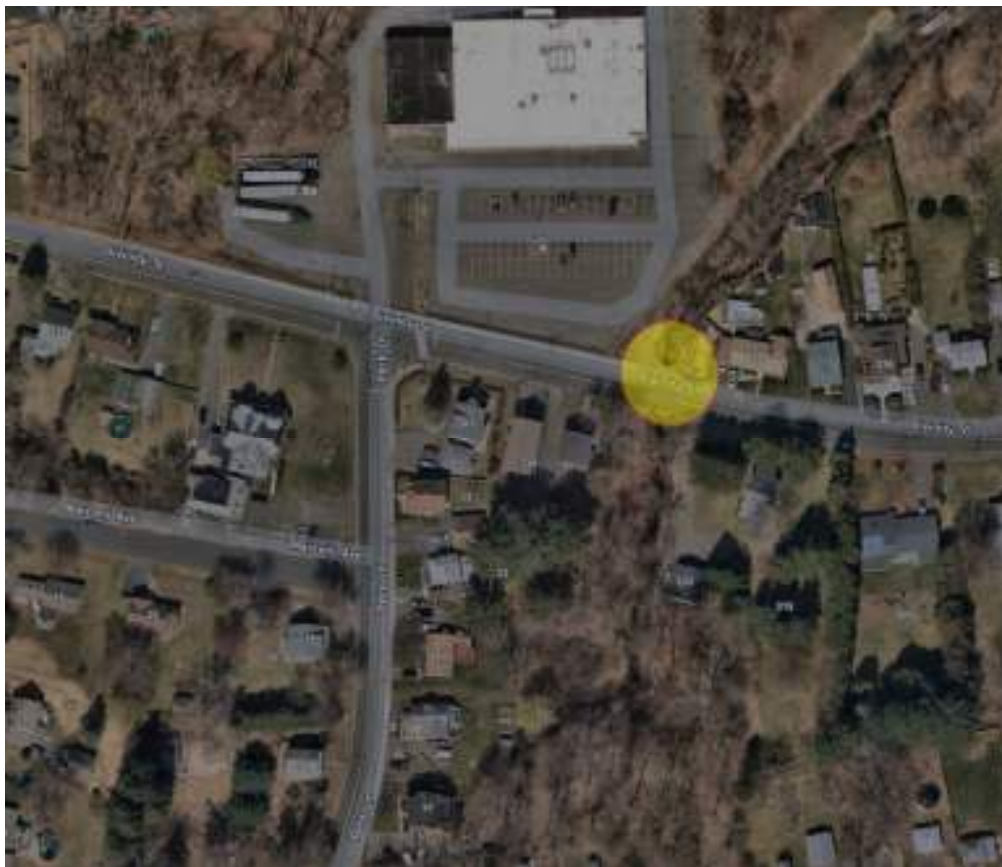


Figure 61: Location Map - Divinity Street Culvert



Figure 62: Damaged Driveway on Private Property



Figure 63: 316 Divinity Street Property Damage



Figure 64: 316 Divinity Street Property Damage



Figure 65: 316 Divinity Street Property Damage

West End / Park Street Flooding

Summary of Workorder:

An unnamed stream flowing west to east parallel to Park Street caused severe flooding when water overtopped the roadway during the storm on July 16th. A large contributor to the flooding was a private culvert clogged with 30'-40' of debris. The buildup of debris was partially caused by an exposed gas lateral penetrating through the culvert. Due to the blockage flows were forced out of the channel and over the roadway. Another large contributor to the flooding was a dumpster upstream that was washed into the watercourse and became lodge against a pedestrian bridge impeding flow. The flooding extended from the culvert along Park Street to the intersection of RT 69.

Current Action.

The culvert has been cleared by a private contractor as directed by the DPW. DPW has approached Eversource regarding relocation of the lateral as to help prevent the buildup of debris in the future.

Status Update August 2023:

Due to continued buildup of debris the DPW hired a private contractor to clear the culvert for a second time. While the existing culvert is privately owned, the DPW has been monitoring its condition in hopes of prevent further flooding of the West End.

Status Update July 2024:

DPW continues to monitor the private culvert. No buildup of debris currently in place, however DPW remains concerned due to exposed utilities within the culvert.

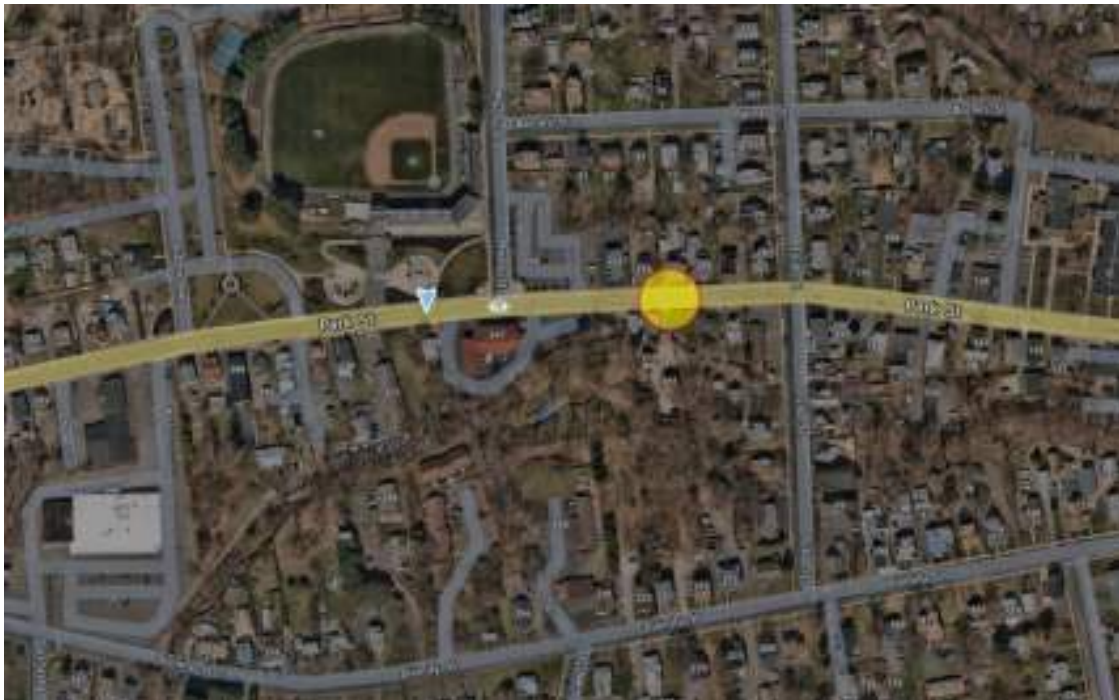


Figure 66: Location Map of Private Culvert



Figure 67: Flooding Along Park Street



Figure 68: Private Culvert Cleared of Debris



Figure 69: Buildup of Debris Within Private Culvert



Figure 70: Dumpster Obstructing Flows

King Street

Summary:

During the storm on July 16th Page Park Pond overflowed spilling water onto King Street. DPW cut a trench to divert floodwaters off of King Street as shown in the photos below. Page Park Pond is being pumped down. Page Park Revitalization project will be reviewed upon submission. The purpose of the project is to improve the control of floodwater and to mitigate future flooding.

Update:

DPW is coordinating with CT DOT to replace/upgrade a section of storm drainage piping on Page Park to contain runoff within piping to reduce King Street flooding.



Figure 71: Location Map



Figure 72: Ponding at Page Park



Figure 73: Swale Cut Along King Street

Frederick Street

Fredrick Street is carried over the Coppermine Brook south of the intersection of Curtiss Ave. During the flood of July 16th waters of the Coppermine reached near record highs. The area west of the Fredrick Street bridge is a low point of the roadway and experienced flooding. The bridge did not overtop. However, the road was closed due to flooding for approximately 3 hours after the storm.

DPW has provided regular maintenance of the area on the bridge to ensure flow during storm events. The existing debris will be removed along with the sediment under the bridge. Due to flooding the property owner pumped water out from behind the berm into the Coppermine Brook.

Email From Home Owner:

“Well as you know, we got hit with flooding on July 16, 2023. We should be getting help from the city to pump out our backyard. We have to pump out your open space in order for us to get dry and start our clean up.

Still waiting for our drain to be installed in our backyard.

I would appreciate the storm drains being cleaned thoroughly due to all the silt. I think this should be an automatic in the future after street flooding. Also road should have a sign to warn about potential water on the street. The street should also closed with a barricade not caution tape.

I cleared out the storm drains on the street and also the drain in Theis's parking lot. The parking lot was totalled blocked.

The owner of Black Bear finally removed the tree, blocking the Coppermine.

Please communicate at your earliest convenience on the progress moving forward.”

Update:

Area is within a FEMA flood zone. DPW has removed debris and cut vegetation to improve stream flow.



Figure 74: Location Map - Frederick Street Bridge

Sharon Road

Summary of Workorder:

Severe Flooding Along Sharon Road between Lexington St and Burlington Ave (CT Route 69). DPW completed installation of new storm drainage in 2018. The project consisted of increasing the old pipe size from Lexington to the property on Burlington Ave. The new pipe more than doubled the pipe area/capacity. The Department believes the reason Sharon Road is still experiencing flooding, even after the recent drainage improvements project, is due to the State-Owned system receiving flows from Sharon Road. This system is undersized and does not have enough capacity to handle the stormwater.

Email From Property Owner:

"I'm writing to you in hopes that we can once and for all resolve the drainage issue on Sharon St. Every time there is significant rain, the drains can not handle the volume of water causing the road to flood. This issue was apparently corrected when they put in new pipes however there is still an ongoing issue. We are supposed to be in a non flood zone area. We shouldn't have to worry about our street flooding and rising so high that it's 5 inches above the basement windows and entering our homes. When there is significant rain, the situation escalates rapidly and more severe. Not only does Sharon St. flood, but the water from behind us on Lexington St flood up and over into our yards completely surrounding and flooding out at least 4 homes (2 on Sharon St and 2 or 3 on Lexington St.) We are not by the Pequabuck River, nor have any local streams. This is purely a City of Bristol drainage issue, that needs to get addressed. The work that was recently done to repair the drainage issue failed and actually made it worse because neighbor's yards that didn't flood, are flooding now due to the grade put in the driveways and yards when the."

Current Action:

DPW jetted/cleaned the drainage piping to ensure that it clear and is scheduled to perform a video inspection of the pipe connecting into the Burlington Ave (CT Route 69) drainage system to ensure that there are no blockages. We are also modifying the down gradient manhole grate to increase flow. DPW will be contacting the State regarding increasing the capacity of the Burlington Ave (CT Route 69) drainage system.

Status Update August 2023:

Following the July 16th storm the DPW has conducted an extensive investigation of the existing system including collecting invert and top of frame elevations from the entire storm drainage system draining from Sharon Street. In addition, DPW is installing storm drainage on Concord Street to divert a portion of the area that drains to Sharon Street. In effect the new drainage system will divert approximately 10-15% of the water draining to Sharon Street. The DPW has also installed a catch basin along Burlington Avenue to allow water to pass during intense rain

events. Lastly, as previously indicated, the City will be contacting CTDOT regarding the apparent limited capacity of the CT Route 69 (Burlington Ave.) storm drainage system.



Figure 75: Location Map - Sharon Street Flooding



Figure 76: Sharon Street Flooding



Figure 77: Sharon Street Flooding



Figure 78: Sharon Street Flooding

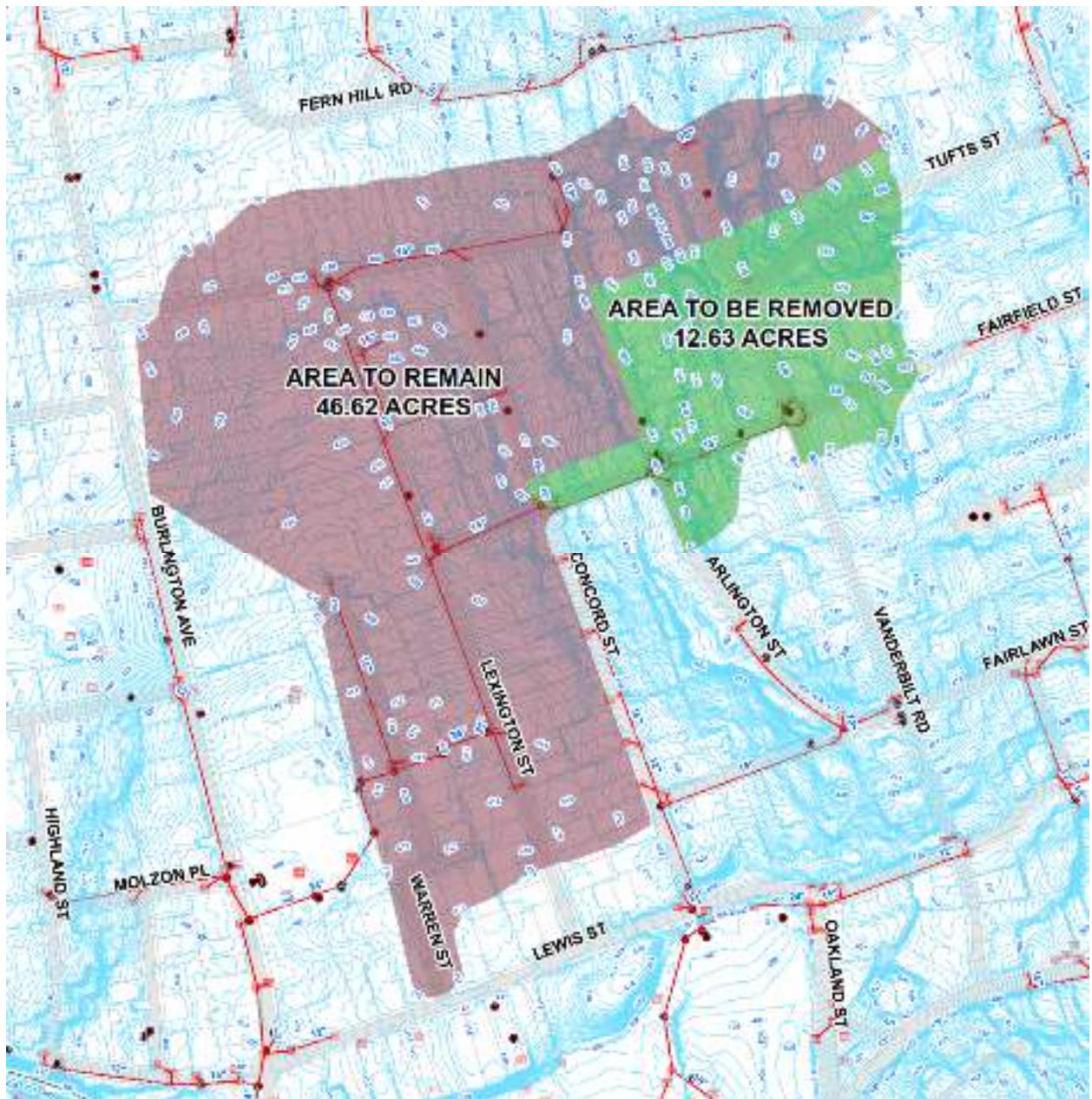


Figure 79: Drainage Area To Be Diverted From Sharron Street

63 Holt Street

Summary of Workorder:

The existing storm drainage system currently drains to an unnamed stream located behind 63 Holt Street. The existing outfall is a 15-inch RCP approximately 170-ft in length. During storm events water backs up out of the catch basins on the street and causes flooding on private property.

Field Visit:

During a field visit the City spoke with the home owner of 63 Holt Street regarding recent flooding. The Resident explained how flood waters from the roadway build up and flow from the roadway and across the driveway causing flooding in the backyard and in the basement of the house. It was also noted that even after the rain subsides it takes hours before ponding in the street drains. They also explained how during heavy rain events the brook will overtop contributing to the flooding.

Status Update August 2023:

The DPW performed a visual inspection of the outlet located behind 63 Holt Street. The line was jetted and cleaned however no substantial blockages were found. DPW also hired a private contractor to walk inspect the downstream channel for any blockages however none were found. The DPW suspects that the reason water is ponding on the street is because the outfall is controlled by the water level in the brook. During storm events when water levels are high, the storm drainage can't sufficiently flow and backs up the system.

Status Update July 2024:

No further update to report.

FIELD SKETCH

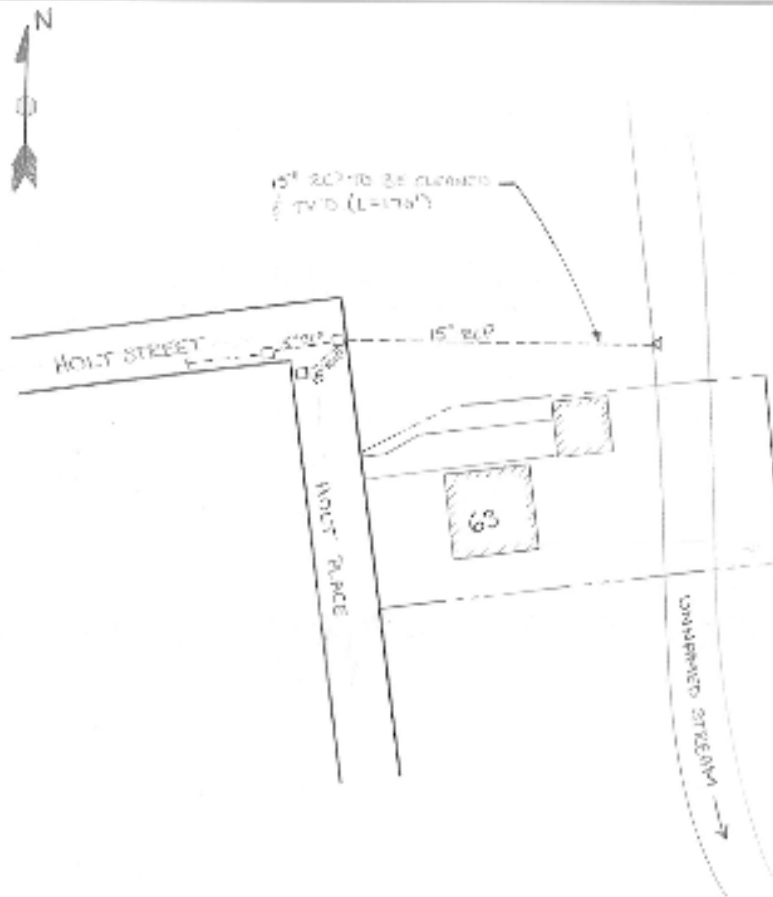


Figure 80: Existing Conditions Field Sketch

317 Fern Hill Road

Summary of Workorder:

During heavy rain events the existing storm drainage system is backing up causing flood waters from the street to spill onto private property. Flood waters have been overtopping the driveway in addition to the existing curbing.

Field Visit:

DPW conducted a field visit to assess the conditions of the site. Several sections of curbing were found to be missing and in general the existing curbing was observed to have a low reveal. DPW spoke with the homeowner and he explained that during intense rain events flood waters from the street will overtop the driveway apron along with the curbing along the street.

Current Action:

The DPW reconstructed approximately 200' of curbing along Fern Hill Road with new 6-inch-high bituminous curbing.

Status Update August 2023:

Following installation of the new curbing the resident of 317 Fern Hill Road contacted the DPW to report additional flooding due to water coming overtop the driveway apron. He also reported that the newly installed curbing did help keep water on the roadway. The DPW is currently scheduling to have the existing system videoed to look for any potential blockages or damaged sections of piping.

Status Update July 2024:

The existing storm drainage system was videoed from 317 Fern Hill Road to the outfall. During our investigation no major blockage or damage was found. No further action is proposed.

Rich Lane

Summary of Workorder:

During high intensity storm events several residents along Rich Lane are experiencing flooding of the stream which runs parallel to Rich Lane. Several of these homeowners have signed a petition for the issue to be resolved.

Status Update August 2023:

The DPW has ordered an inspection of the existing channel which runs parallel to Rich Lane. During the inspection a substantial blockage located on private property was identified. The DPW has informed the homeowner of the obstruction and that it is their responsibility to maintain the channel on their property and to remove the blockage.

Status Update July 2024:

No further update to report.



Figure 81: Location Map

O'sullivan Drive To Brace Avenue Drainage

Summary of Workorder:

In the Summer of 2023, there were reports from residents which indicated that during moderate rainfall events existing catch basins would overtopping and causing flooding to private property.

Current Action:

In response to the flooding concerns along O'sullivan Drive and Brace Avenue, DPW approached an engineering consultant, WMC, to prepare design documents for an upgraded drainage system. The proposed project will begin at the exiting outfall adjacent to Vine Road and will extend west to the intersection of Camp Street and O'Sullivan Drive. WMC is currently working toward final design, Inland Wetland approval has been received and the project is scheduled to go out to bid in the fall of 2024.



Figure 82: Limits of Proposed Drainage Improvements