

**BOLTON PLANNING & ZONING COMMISSION**  
**Regular Meeting**  
**7:30 p.m., Wednesday, May 12, 2021**  
**Virtual Meeting utilizing Zoom**  
**Minutes & Motions**

**Members Present:** Chairman Adam Teller, Vice Chairman James Cropley, Christopher Davey, Benjamin Davies, Arlene Fiano, Thomas Manning, Thomas Robbins and Alternates Rodney Fournier and Marilee Manning

**Members Excused:** Alternate Jeremy Flick

**Staff Present:** Patrice Carson, AICP, Consulting Director of Community Development, Jim Rupert, Interim Administrative Officer and Zoning Enforcement Officer, and Yvonne Filip, Recording Secretary

**Others Present:** Town Engineering Consultant Joe Dillon, George Koutouzis, Andrew Bushnell, Thomas Fiorentino, Sandy Pierog, Milton Hathaway, Sean Skorton, Ronald Beaudoin

**1. Call to Order:** Chairman A. Teller called the meeting to order at 7:30 p.m.

**2. Approval of Minutes: May 5, 2021 Special Meeting Minutes**

Correction: Page 2, paragraph after Vote: fourth sentence – add “by the owner” after “signed”.

**C. Davey moved** to approve the minutes of the May 5, 2021 special meeting as amended. **A. Fiano seconded.** Vote: 5-0-1 (Davies ((Cropley did not vote.)) Motion passed.

**3. Public Hearings (begin at 7:45 p.m.)**

**a. Continuation of Public Hearing: Special Permit Application Excavation Business, Equipment Storage & Material Processing Areas, 1 Notch Road, William Phillips (#PL-21-1)**

A. Teller opened the public hearing. P. Carson read the public notice into the record. Present for the applicant were: Engineer Andrew Bushnell, Attorney Tom Fiorentino and Bill Phillips.

Atty Fiorentino said a memo regarding this application was prepared and filed with the Town. Mr. Phillips’ business has outgrown the footprint of the Clark Road site. He had been looking for a location in Bolton and became aware of this old quarry location being available. B. Phillips has a contract to purchase the property contingent on the site plan approval and special permits needed. This industrial site will be used for the storage of raw materials and construction equipment, and the processing of some materials. These are all permitted uses in the Industrial Zone. The materials storage locations have been shown on one of the plans. B. Phillips has met with the neighbors and Town staff. He has been reasonable in addressing the neighbor’s concerns, most of which have been addressed in the memo.

A. Teller asked what materials will be processed and the nature of processing and if trees will be along the roadside for screening. Atty Fiorentino said debris concrete will be processed occasionally. B. Phillips will stockpile the material and then bring in a crusher to pulverize the concrete into dust. Asphalt will be processed into millings infrequently. The proposed landscaping is shown on the plan; the existing trees will remain and additional landscaping added

as buffering to the Residential Zone. A. Bushnell said there are tall arborvitae plantings along the road. The entrance gate to the property will be moved to the south to get the entrance farther away from the Notch Road intersection to make the area safer for traffic. Trees will be moved and replanted where the gate is now which is Plan A. Plan B is to plant new trees. A few trees will be taken out to establish the sight line up Notch Road. A. Teller said the regulations require buffering of the Residential Zone. The tree line that is there was established with difficulty and had to be planted twice. Atty Fiorentino said B. Phillips intends to have a buffer. A. Bushnell said there is a natural earth berm to the south that will remain in place. This has about a 10' rise to the street. A. Teller confirmed with A. Bushnell that residents will not be able to see into the site because of the berm. A. Teller asked about the noise generated by the rock crusher and where it would be located. Atty Fiorentino said the processing equipment is shown on the plan as set back and down behind the landscaping. The equipment that the owner will rent is belt driven so it will be quieter. Processing of material will be infrequent such as four times per year and no more than four days in a row. The processing will not take place in the evenings or on weekends. A. Bushnell said the proposal includes evergreen plantings on the upper level for buffering and noise control. A. Teller said 8:30 a.m. seems early to be crushing rock. Atty Fiorentino said the applicant is willing to listen to recommendations from the PZC.

R. Fournier asked if the debris concrete will be coming from crumbling foundations. Atty Fiorentino said there could be some but it would be more along the lines of coming from commercial buildings.

C. Davey said eleven stockpiles are shown. When is materials processing to take place – once all stockpiles are full? Are there any environmental concerns with material storage and being subjected to the elements? Atty Fiorentino said the stockpiles will be used for various materials such as top soil, gravel, sand, etc. When  $\frac{1}{2}$  to  $\frac{3}{4}$  of the storage areas are filled the processing equipment will be brought in. The pads have been designed to have minimal environmental impact. A. Bushnell added the debris material will be certified clean before being brought to this location. The property will be graded to the sediment basins on site for erosion control. The fill stockpile could be covered with grass seed. There will be no erosion or wash from the concrete pile. P. Carson said the IWA looked at the water quality controls. A water quality basin is shown. C. Davey asked how is it determined that clean material is brought to the site? Atty Fiorentino said each of the jobs is tested. B. Phillips is not licensed to remove asbestos or hazardous material. He is primarily in demolition. A. Teller asked if oil will seep from asphalt or millings. Atty Fiorentino said oil from the material itself does not travel when mixed with water. What travels off roadways is oil leaking from vehicles. A. Bushnell said petroleum is bound to the aggregate in the blacktop. An oil/water separator will be installed to separate the oil that comes from vehicles.

C. Davey asked if a traffic study was done for this application. Atty Fiorentino said the applicant did not have a traffic study done. The plan was submitted to the Highway Department and no objections were raised.

R. Fournier asked if the billboard will be removed. Atty Fiorentino said “yes” adding the State is not licensing new billboards for ones that have expired. And there is encroachment onto State property with this one.

A. Teller confirmed with Atty Fiorentino that the plan is to have construction vehicles turn right and go up the hill when leaving the property. The applicant was told by the Highway Department that a left turn should not be prohibited just in case. Joe Dillion said drivers will be encouraged to take right-hand turns up the hill.

J. Rupert said town staff have been reviewing the application. The applicant has been responsive to all staff concerns. For another site that was storing millings the PZC asked staff to check with DEEP about this being a hazardous material. The answer from DEEP was no, absolutely not. The applicant has addressed every concern brought back to him.

A. Teller said this is an industrial site backed up by rocks and pointed toward a residential zone. It is very difficult to enforce the DEEP noise regulations. DEEP, State Police, and most towns do not have the devices to measure noise levels. A. Teller is very concerned that even though there are formal state noise limitations it is hard to hold someone to those levels. A. Teller asked J. Rupert as ZEO and acting Town Administrative Officer if neighbors report noise issues to him what can he do. J. Rupert said a noise meter or an app on a phone could be used to measure noise levels. The two Resident Troopers would enforce a noise ordinance. J. Rupert's expectation from the applicant is that he would address noise concerns even when measured with an imprecise phone app. The town would be able to enforce noise levels allowable if that is a condition of approval by the PZC. This would be the noise that leaks off the site, not while standing near equipment. J. Dillion said it can be established what an acceptable standard will be and get a base line for the two highways that pass by the site. Atty Fiorentino said to establish a base line the site would have to be developed per the site plan before measuring could be done. The State went through and cut down the buffer along the highway; during peak times the highway noise is tremendous. Noise generated by the site would break through the ambient noise from the highway. And material processing may not happen or likely not more than one time per year. A. Teller said the DEEP regulations address a lot of these issues – background noise, measurement procedures, and class of facility making the noise and that which is receiving the noise. PZC can incorporate those as a condition of approval.

Public Comment:

Ronald Beaudoin, 2 Cook Drive – He lives within 500' of the quarry. R. Beaudoin has experience with acoustics by working at Pratt & Whitney. He submitted a letter that addresses his concerns. In addition, he said the equipment listed to be used at this site are all noisy. Someone said that highway noise would diminish the noise from this site but that is not true. R. Beaudoin complained to the DOT about the taking down of trees at the intersection of I-384 and Route 6 because noise is going to be an issue. CT DOT said there is no money to replace the trees. However, a rock crusher will create more noise. Who will monitor the noise and the dust? Would fines ever be collected from the owner? Is there a turnaround plan for trucks? What if the wetlands dry up or this operation creates problems in the wetlands? The taking down of the 15-year old trees that now create a buffer will cause a doubling effect of the noise echoing off the rock wall. A. Teller asked R. Beaudoin if he has anything new to present; everything he has said is in the letter he submitted. R. Beaudoin summed up his comments by saying there is a site plan calling for an enhanced wetlands sediment basin that empties out through two pipes directly into Railroad Brook. Why is there not a catch basin there? Was that ever permitted? Does the applicant have to receive a new IWA permit? A. Teller said the applicant has received an IWA permit.

Atty Fiorentino said all these concerns are addressed in the memo. As was said earlier this is not going to be an 8:30am–4:30pm operation. It will primarily be a storage site. A dust mitigation plan is included in the application file. A. Teller asked if the applicant will have a problem with a condition of not processing from 4:30pm to 9:00am. Attorney Fiorentino replied no.

J. Cropley said he agrees with conditioning any approval with something about the noise generation. The residents there hear nothing from that site now. Trucks will be going into the property and noise will be generated. PZC will want to know what the noise level is so the Town does not get calls all the time about the noise. It is going to be louder than hearing frogs. The operation the applicant is running will not have fifteen trucks running in there every day. Something about acceptable noise level should be part of any approval so there is not total chaos for the residents and the Town. The processing of material on site has to have some limitations. This operation will be stockpiling materials and storing equipment and the truck traffic to bring the material in and out. A commercial truck can drive on any highway in the state whenever they want to. We do not regulate those roads; we regulate the property itself. If a town road is overused Bolton has to address that.

Discussion ensued about how to measure the noise level to be expected. The noise level would be good to know before granting any approval. J. Dillion said an opinion can be made by using known values and tables of noise generation by equipment type. A study by an acoustical engineer would be another story. J. Cropley said the site is a mess and getting the actual equipment there is not possible. A. Teller said it would not be the same conditions once the site is graded. A. Teller said PZC could have experts review the plan to make recommendations and charge the applicant for the study. J. Cropley said we could ask for a study but noise travels in different directions. The applicant is suggesting material processing will be done one to two times per year. A wood chipper on someone's property exceeds noise levels; we do not regulate someone coming next to your house and using a chipper. A. Teller said industrial properties use industrial equipment. This site has been zoned industrial for many, many years. There is the right of the owner to use it as an industrial site. If a special permit approval mentions noise regulations then the Town should enforce it if there are complaints. P. Carson said a condition could state the maximum number of times per year processing could be done and notice to the Land Use Department must be given ahead of time. J. Cropley said PZC just approved an industrial use for processing in a mixed-use zone. This is the right use for the right location. A. Teller said PZC limited that approval to one small area of the property.

Atty Fiorentino brought Commissioner's attention to page 2, item 6 of the application narrative suggesting processing four times per year for four days and giving prior notice of 48 hours to the ZEO. Mr. Phillips is willing to change that to two times per year for up to four days and to consider processing only during the winter when windows are closed. However, there is the tradeoff of trees being bare. Or use a maximum of ten days per year and those can be spread out. T. Manning said he would prefer notice to ZEO of seven days; A. Teller said three business days for notice. J. Rupert said three business days is enough notice as ZEO.

R. Beaudoin said the State is specific with noise regulations. Noise can be detrimental to health. The Town can make the condition stricter than what the State's minimal levels are. T. Manning said PZC should incorporate the State limitations. PZC should not expect an industrial operation to be on the same level as ordinary conversation.

**T. Manning moved** to close the public hearing. **A. Fiano seconded.** Discussion: T. Manning said it looks like the PZC is not willing to do a noise study, otherwise the public hearing would need to be continued. Conditions of approval could include noise regulations, time limitation, and to provide notice to the town that processing will be taking place.

A. Teller said an acoustic engineer would not be able to tell us what level of noise will be generated without the site being prepared per the plan. PZC can limit the use and the narrative suggests limits. Is this industrial use less noxious than others to the neighbors? PZC could have rezoned the site. A. Teller sympathizes with the neighbors about the next person that may come onto the site and not be willing to work concerns out with the neighbors. We have enough information to make a rational decision.

C. Davey said he is getting the feeling that PZC is backing off for the need of an acoustic study. If the PZC did request a study and it shows the noise could not be abated would that be sufficient to deny the use? Could that open the PZC up to litigation? This is an industrial zoned site. There is no assurance ahead of time that the State noise laws are going to be met. He agrees there should be a condition as part of any approval. He will vote in favor of closing the hearing. Vote: 7-0-0. Motion passed.

**4. Residents' Forum (Public Comment for items not on the agenda):** There were none.

Commissioners were agreeable to moving to item 6.b. next as the applicant was present.

#### **5. Staff Reports:**

P. Carson had nothing to report on other than the work done on applications on the agenda. J. Rupert reported #PL-21-1 has been worked on for some time. This will be an improvement to the site and will have a lot more vegetation than when operating as a quarry. This is a good plan.

#### **6. Old Business:**

**a. Discussion/Possible Decision: Special Permit Application for Excavation Business, Equipment Storage & Material Processing Areas, 1 Notch Road, William Phillips (#PL-21-1)**

A. Teller said he is okay with continuing this item until the next meeting for the PZC to think about the plan and discussion. P. Carson noted the June meeting will already be a heavy one.

**T. Manning moved** to approve William Phillips' Special Permit for an excavation business, equipment storage and material processing areas at 1 Notch Road (aka 17 Wall Street), application #PL-21-1, in accordance with the application and plans submitted as "Plan Prepared For LANDIE CONSTRUCTION, 17 Wall Street, Bolton, CT" (3 sheets) dated: 2/20/2020 & 10/8/2020 & 9/2/2020, revised through 4/29/2021, which is conditioned on the following:

1. The approval letter shall be placed on the mylars to be recorded in the Office of the Town Clerk.
2. This approval is subject to compliance with any comments or requirements of the Health District, Fire Marshal, Town Engineer, and Inland Wetlands Commission.
3. All appropriate seals and signatures of the design professionals for this plan shall be placed on the plans before recording.

4. The drawing set shall include details for the proposed turf reinforcement mat, stone check dam, stormwater infiltration berm and grass buffer strip.
5. The traffic control sign(s) proposed along the east shoulder of Notch Road shall be specifically called out and shown on the Site Plan.
6. Continued implementation of the dust mitigation control that is included in the application.
7. Material processing operations shall be limited as to number of times and number of days as set forth in the application - 4 times per year at a maximum of 4 days each time with the following stipulations: No processing shall occur on weekends, or on weekdays between 4:00 p.m. and 9:00 a.m. Notice to the ZEO shall be given at least 3 business days prior to the beginning of processing. Noise from such operation shall be limited to that provided in the CT Regulations of State Agencies 22A-69-1 through 22A 69-7.4.
8. A Site Improvement Bond which includes Erosion & Sedimentation controls and a 20% contingency in the amount of \$98,251.73 (\$81,876.44 bond estimate plus \$16,375.29 contingency) shall be filed prior to the commencement of work on the site. Should items covered by this Bond not be constructed within a year from approval, an appropriate escalation factor shall be reviewed by the Town Engineer and applied if warranted.

The Planning and Zoning Commission finds with these conditions the plan meets the requirements of the Bolton Zoning Regulations.

**Change to the motion suggested by A. Teller and accepted by T. Manning:** Add to Condition 7 - The applicant shall comply with the State noise limitations. **J. Cropley seconded.**

Discussion: A. Teller said this is an industrial zoned site. Staff and Mr. Dillion have indicated that it meets the technical specifications our regulations would impose. It is a special permit application, therefore it is a use permitted on the site provided it does not reasonably interfere with other people's use of their property on abutting or neighboring sites. The conditions suggested seem to be sufficient to do that. A. Teller is not thrilled with this because inherent is the fact that this is a small industrial site historically plopped in the middle of an otherwise residential zone and off a state highway. Bolton does not have a lot of industrial land in town, this land was never rezoned, and the time to rezone, if there were true objections to this, should have been before this but it was not done. The application meets the requirements of the zone. To some extent we are constrained to grant approval. C. Davey acknowledges the comments from abutters. He sympathizes with those living near or abutting an industrial zoned site that has not been operated that way but he agrees with A. Teller's reasoning. The concerns raised are significant and worthy of consideration. C. Davey personally did not feel that any evidence was presented to lead him to disbelieve the findings of Town Staff, the applicant's engineer, or the applicant. Given how the parcel is zone and what is allowed the PZC is compelled to honor the town's zoning regulations. A. Teller said the story does not end with approval. The conditions are enforceable. People have to be the "squeaky wheel"; if issues arise, people have to complain about the operations and to document to complaints. They are entitled to do so as residents, taxpayers, and citizens. The history of working with Mr. Phillips is that he has been responsive to concerns and that has been corroborated by J. Rupert.

Vote: 7-0-0. Motion passed.

**b. Discussion/Possible Decision: Site Plan Modification to Expand Existing Outdoor Patio for Dining, 275 Boston Turnpike, George Koutouzis (#PL-21-2)**

Applicant and owner George Koutouzis was present.

P. Carson said there was a staff report issued for this application which is to expand an existing patio out to the parking lot and in front toward the street. The Town Engineer reviewed the plan. There are enough parking spaces to meet the requirements although the handicapped spaces will be moved. J. Dillion was satisfied with the engineered design of the columns and the sewer gravity line sleeve. The owner will have to get a BLRWPCA permit. The sewer line will be bonded through BLRWPCA. A lighting plan was submitted. An egress plan for fire and safety codes is pending. P. Carson said page 115 of the packet spells out how many tables and people can be accommodated on the patio. Parking availability more than meets the minimum required and is close to the maximum number. T. Manning asked if item 4 in the suggested motion is therefore not needed. P. Carson said that is up to the PZC if they are satisfied with what has been submitted. T. Manning asked if item 3 is needed. P. Carson said the existing underground grease traps should be on the plan. J. Dillion review the plan dated 4-8-2021.

A. Teller said Commissioners are familiar with this site and the parking lot is fairly large. However, losing a number of parking spaces to put in the patio is not an issue. He is not concerned in looking for a more formal parking analysis.

**T. Manning moved** to approve George Koutouzis’s Site Plan to expand the existing outdoor patio for dining at 275 Boston Turnpike (Georgina’s Restaurant), application #PL-21-2, in accordance with the application and plans submitted as “Plan Prepared For TSAMBIKA LLC, 275 Boston Turnpike, Bolton, CT” (1 sheet) dated: 2/25/2021, revised through 4/8/2021, which is conditioned on the following:

1. A copy of any required submission to the CTDOT shall be submitted to the Building Department.
2. This approval is subject to compliance with any comments or requirements of the Health District, Fire Marshal, Town Engineer, and the BLRWPCA.
3. The existing underground grease traps located at the southwestern corner of the building shall be shown on the Site Plan.
4. A plan for egress from the building onto the patio and into the parking lot shall be submitted to show Fire and Building Codes can be met.

The Planning and Zoning Commission finds with these conditions the plan meets the requirements of the Bolton Zoning Regulations.

**J. Cropley seconded.** A. Teller said the Commissioners are familiar with the site and the operation of it. This will not be a change in how it operates. Vote: 7-0-0. Motion passed.

**c. Other:** There was none.

**7. New Business**

**a. Other:** There was none.

**8. Correspondence:** There was none.

**9. Adjournment:**

A. Teller adjourned the meeting at 9:37 p.m.

Respectfully Submitted,

Yvonne B. Filip

Yvonne B. Filip, Planning & Zoning Commission Recording Secretary

*Please see minutes of subsequent meetings for approval of these minutes and any corrections hereto.*





# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

## BOLTON PLANNING AND ZONING COMMISSION

### APPLICATION FOR SPECIAL PERMIT, SITE PLAN REVIEW OR MODIFICATION OF A PREVIOUSLY APPROVED APPLICATION

1. Application Title: Proposed Retail Development

2. Check all that apply:

Special Permit Application       Modification of an Approved Special Permit Application\*

Site Plan Review Application       Modification of an Approved Site Plan Review Application\*

\* The Commission may require a new application if the proposed modification significantly alters the previously approved application.

3. Street Address of subject property 1100 Boston Turnpike Bolton, Connecticut

4. Deed Reference (Bolton Land Records) Volume 141 Page 790

5. Assessor's Records Reference: Map # 05; Block # 81 Parcel / Lot # 2180

6. Current zone(s) of subject property Rural Mixed Use Zone (RMUZ) Acreage: 1.85 AC

7. In Aquifer Protection District? Yes  No

8. In FEMA Flood Area? Yes  No

9. Wetlands Application Required? Yes  No

10. Applicant(s) Garrett Homes, LLC

Address 59 Field Street Torrington, CT Zip 06790

Phone # 860-307-5479 Fax # \_\_\_\_\_ E-mail eucalittogary@gmail.com

11. Owner(s) of subject property 1100 Boston Turnpike LLC, C/O Joel Rosenlicht

Address 483 Middle Turnpike West, Suite 102 Manchester, CT Zip 06040

Phone # 860 930-8588 Fax # \_\_\_\_\_ E-mail DRROSENLLCH@JANFIXERS.COM

12. Official Contact / Representative regarding this Application: Kimberly Masiuk

Address 100 Constitution Plaza, 10th Floor Hartford CT Zip 06103

Phone # 860-760-1908 Fax # 860-249-2400 E-mail kmasiuk@Blcompanies.com

13. Project Engineer: Kimberly Masiuk  
Address 100 Constitution Plaza, 10th Floor Hartford CT Zip 06103  
Phone # 860-760-1908 Fax # 860-249-2400 E-mail kmasiuk@Blcompanies.com

14. Project Architect: Doug Grunert  
Address 142 Crescent Street, Brockton, MA 02302 Zip \_\_\_\_\_  
Phone # 508-583-5603 Fax # \_\_\_\_\_ E-mail dgrunert@bkaarchs.com

15. Other Experts Retained by Applicant: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Briefly describe the proposed use of the subject property. Provide greater detail in Project Narrative.

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from "Parcel 2" to the north.

17. Square footage of new / expanded space: 10,640 SF # of new parking spaces 33 Spaces

18. List the Section(s) of the Zoning Regulations under which application is made: \_\_\_\_\_  
8C.2.b, 16B

19. Provide all the applicable items for a complete application including a completed Checklist for Site Plan Review and Special Permit Applications. A completed checklist must be provided to comprise a complete application.

20. Applicant's Endorsement:

I am a willful participant and fully familiar with the contents of this application.

Signature  Date \_\_\_\_\_

21. Owner's Endorsement:

I am a willful participant and fully familiar with the contents of this application.

Signature  Date 5/27/21

**NOTE: If there are any material changes to this application, the Applicant shall immediately notify the Town Staff in writing.**

**Applicants may be subject to Supplemental Review fees to defray the cost of Professional Review Services such as engineering or legal reviews.**

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**For Town Use Only**

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Base Fee Paid \_\_\_\_\_ Check # \_\_\_\_\_

Date application received by Inland Wetlands Commission (if applicable) \_\_\_\_\_

Date of Inland Wetlands Commission action (if applicable) \_\_\_\_\_

Date application received by Planning and Zoning Commission \_\_\_\_\_

Date of public hearing (if required) \_\_\_\_\_

Date of Planning and Zoning Commission action \_\_\_\_\_

Date of newspaper publication of Planning and Zoning Commission action \_\_\_\_\_

Summary of Planning and Zoning Commission action \_\_\_\_\_

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**Revised March 11, 2009**

**BOLTON PLANNING & ZONING COMMISSION  
CHECKLIST FOR SITE PLAN REVIEW (§ 16A)  
AND SPECIAL PERMIT (§ 16B) APPLICATIONS  
March 11, 2009**

THIS CHECKLIST MUST BE COMPLETED BY THE APPLICANT OR AN AUTHORIZED REPRESENTATIVE AND SUBMITTED WITH THE APPLICATION.

The Planning and Zoning Commission will use this checklist in determining the completeness or incompleteness of the application. The applicant is responsible for providing all the applicable information on this checklist. The applicant is encouraged to provide any additional information to clearly present a proposed activity and its potential effects on the community. The Commission may require additional information not included in this checklist to determine compliance with the regulations.

AN APPROVAL OF AN APPLICATION COULD BE DENIED IF AN APPLICATION LACKS SUFFICIENT INFORMATION.

Some of the items below are essential for any application while others may not be applicable for a particular proposal. The applicant is encouraged to ask the town staff to review the completed application with all supporting information and the completed checklist, prior to submitting the application to the Planning and Zoning Commission so that the staff can provide the applicant an opinion on the completeness of the application.

Pursuant to Section 16A.2.p, at time of application submission, the applicant may request in writing that the Commission determine that all or a part of the information required under Section 16A.2.c through o. (except subsections e., f., i., and j.) is NOT necessary in order to decide on an application.

Applicants may be subject to supplemental review fees to defray the costs of professional review services such as engineering or legal reviews. Please see attached information sheet.

Name of Development Proposed Retail Development

Applicant Garrett Homes, LLC Date 04/02/2021

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
1	Completed, signed application by applicant and owner	x			
2	Payment of required application fees	x			
2A	Statement of Use in accordance with § 16A.2.b	x			
3	All draft deeds for any roads, road widenings and easements for drainage, conservation, driveways, utilities		x		
4	Evidence of request for approval by the Health District and/or Sewer Authority for review, as appropriate		x		
5	Evidence of submission of application to the Inland Wetlands Commission if it is within that Commission's jurisdiction		x		
6	Evidence of submission of a request for review and approval by the Fire Marshal and Fire Chief of the water supply for fire protection		x		
7	Copies of any required applications to other local, state or federal regulatory approvals		x		
8	Written evidence of applicant's legal interest in the subject property (deed, lease option to purchase, bond for deed, etc.)	x			

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
9	List of mailing address of all current property owners within 500 feet of the subject property, from the Town Assessor records (for special permit only)	x			
10	List of all hazardous or potentially hazardous materials which will be present on the property with a full description of procedures that will be used to assure safety with the material safety data sheets		n/a		
12	Digital copy of plans in DXF or DGN format if available	x			
13	Paper and digital copies of all reports including hydrology, hydraulic and drainage computations and	x			
14	14 sets of complete stamped and signed site plans measuring 24" x 36	x			
	<b>THE FOLLOWING ITEMS 15 THROUGH 51 SHALL BE INCORPORATED IN PLANS</b>				
15	A-2 boundary survey of the subject property showing all existing and proposed boundary lines and markers, easements, adjoining property lines and the names of all current abutting property owners	x			
16	Names of abutting lot owners	x			
17	USDA Soils boundaries and types	x			
18	Plan title block in the extreme lower right corner (not sideways) to include the name of the town of Bolton	x			
19	All plan sheets numbered with the format "sheet x of y"	x			
20	Clear legible plans with all lines, symbols and features readily identifiable	x			
21	North arrow on each plan including the reference meridian	x			
22	Graphic bar scale on each plan sheet, not smaller than 1"= 40' unless otherwise approved by the Commission	x			
23	Overall plan of site at a smaller scale, with sheet index, if the site does not fit on one sheet at a scale of 1"=40'		n/a		
24	Key map at a scale of 1"= 500' showing the relation of the site to abutting properties and streets, shown on plan and zoning district boundaries within 500' of site	x			
25	Original and revision plan dates and revision explanations shown on the affected plan sheets	x			
26	Existing and proposed grading with two foot contours to T-2 standards, for all ground surfaces, shown on plan	x			
27	Existing and proposed structures and features, their uses and those to be removed, shown on the plan	x			
28	HVAC equipment located outside the building(s)		n/a		
29	Existing and proposed driveway entrances to street, parking, loading areas, fire lanes, sidewalks and construction detail drawings, shown on plan	x			
30	Sight distances from property entrances along public roads shown on plan and on profile if grading is needed	x			
31	Soil test locations and soil test results shown on plan		x		
32	Existing and proposed sewage disposal systems and design information, shown on plan	x			
33	Outside Storage Areas		n/a		

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
34	Underground / overhead utilities, existing and proposed	x			
35	Existing and proposed water supply shown on plan	x			
36	Existing wells and sewage disposal systems on other properties that could conflict with proposed site improvements, shown on plan		x		
37	Existing and proposed footing drains, curtain drains and dry wells, shown on plan	x			
38	Existing and proposed drainage systems, any affected floodway or floodplain and construction detail drawings, shown on plan, including base flood elevation and floor elevation data.	x			
39	Existing and proposed bridges and culverts on or adjacent to the site, shown on plan		n/a		
40	Existing and proposed signs with dimensions and construction detail drawings, shown on plan		x		
41	Existing and proposed fences and walls with dimensions and construction detail drawings, shown on plan	x			
42	Zoning district boundaries affecting the site, shown on plan	x			
43	Table shown on plan of zoning dimensions required and provided for lot area, street frontage, lot width, yard setbacks, impervious area, building coverage and the height and floor area of each building	x			
44	Table on plan of parking / loading spaces required / provided	x			
45	Fire lanes		x		
46	Sidewalks and other pedestrian ways	x			
47	Off-site traffic improvements		x		
41	Limits of wetlands as delineated by a certified soil scientist with the soil scientist's signed certification, shown on plan or a certification signed by a soil scientist that no wetlands are within 100 feet		x		
42	Natural features including 100 year flood plain areas, ponds, vernal pools, aquifers, slopes steeper than 25% and potential areas of endangered species, shown on plan	x			
43	Landscaping plan including the locations, numbers, installed sizes, anticipated mature sizes, species and common names of proposed plants plus cost estimate based on published Connecticut DOT unit prices	x			
44	Existing trees of 6" caliper or greater	x			
45	Significant archaeological sites		n/a		
46	Lighting plan including the location, size, height, light intensity coverage areas and manufacturer's product descriptions for each light type	x			
47	Erosion and Sedimentation Control Plan, with narrative and construction detail drawings, in accordance with the latest Connecticut Guidelines for Soil Erosion and Sediment Control	x			

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
48	Best management practices to remove contaminants, including sediments and oils, from runoff water, shown on plan, in construct detail drawings, and explained in a report by a qualified professional	x			
49	Architectural elevation drawings of proposed buildings	x			
50	Architectural floor plans of existing and proposed buildings	x			
51	Perspective color drawings or digital views of the site as seen from adjacent roads and from abutting property lines showing the proposed conditions including buildings, landscaping and appurtenant features		x		
52	Traffic Impact Report for applicable sites as described in Zoning Regulations Section 16A.2.k.	x			
53	Thorough, well organized drainage design report for before and after development conditions, that conforms to the latest Conn. Dept. of Transportation and Conn. Dept. of Environmental Protection guidelines and requirements with appropriate calculations, maps, graphics and narrative descriptions of hydrology, hydraulics, assumptions, erosion controls, drainage paths and systems for the 1, 2, 10, 50 and 100 year storm events	x			
54	Statement in drainage report that the after development flows for all storm events do not exceed the before development flows		x		
55	Sanitary Waste Disposal Plan (if community sewerage system)	x			
56	Evaluation of the impact of proposed development upon existing and potential public surface and ground drinking water supplies, pursuant to CGS, Section 8-2		x		
57	Certified copy of Certificate of Public Convenience and Necessity in connection with a "water company", in accordance with CGS, Section 8-25a		x		
58	Existing and proposed Covenants or Restrictions		x		
59	Engineer's itemized cost estimate for the installation of all erosion and sediment controls based on published Connecticut DOT unit prices		x		
60	Engineer's itemized cost estimate for site improvements based on published Connecticut DOT unit prices as basis for the establishment of a completion bond		x		

April 2, 2021

James V. Cropley, Planning and Zoning Commission Vice Chair  
Town of Bolton  
222 Bolton Center Road  
Bolton, CT 06043

RE: Project Statement of Use for Proposed Retail Development  
1100 Boston Turnpike – Bolton, Connecticut

Dear Mr. Cropley,

BL Companies, on behalf of the Applicant, Garrett Homes, LLC, is providing this narrative in conjunction with the proposed project being submitted to the Town of Bolton for the proposed development of a 10,640 square foot retail building. The parcel is proposed to be subdivided into two lots. The combined parcels total 5.439 acres and are located within the rural mixed use zone (RMUZ) with abutting residential properties to the west and south, and a dentist office on the previously subdivided parcel to the east that is also within the RMUZ zone. The proposed development will consist of a subdivided 1.853 acre lot (Lot #3), 10,640 SF retail building, driveway entrance, (33) parking spaces, loading area, dumpster pad, landscaping, site lighting, stormwater management system, and utilities.

Proposed utilities include electric, site lighting, telecommunications, gas, water, and sanitary sewer. The sanitary sewer will connect to the town sewer service via the existing lateral servicing the dentist office within the shared driveway. The types of waste generated from this development are municipal solid waste and sanitary discharge from restrooms. No industrial or commercial waste will be generated or discharged onsite or offsite. The municipal solid waste will be contained in a dumpster enclosure to be picked up by a hired vendor. Water service will be provided via a well. Gas service will be provided from a buried propane tank. The stormwater management system consists of a infiltration basin with grass filter strips, and energy dissipation trenches. Runoff generated will be retained and infiltrated on site for the water quality volume with an emergency overflow connected to the existing catch basins within the shared driveway.

There will be approximately 2-3 employees per shift with a total of 15 employees. The number of parking spaces provided is in accordance with the Town zoning regulations. The proposed development is



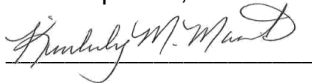
projected to generate approximately 59 trips in the PM peak hour (31 in/enter, 28 out/exit) and 89 trips in the Saturday mid-day peak hour (46 in/enter, 43 out/exit).

We look forward to working with the Town on this project. Please feel free to reach out if you have any questions.

Sincerely,

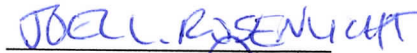
Project Contact/Representative

Kimberly M. Masiuk, P.E.  
Senior Project Manager  
BL Companies, Inc.

  
\_\_\_\_\_

Property Owner

1100 Boston Turnpike LLC

  
\_\_\_\_\_

Name

  
\_\_\_\_\_

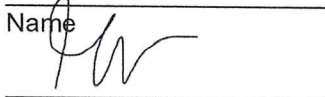
Signature

Applicant

Garrett Homes LLC

Gary Eucalitto  
\_\_\_\_\_

Name

  
\_\_\_\_\_

Signature

LEBRUN PATRICIA L  
KISS JOSEPH A & RACHAEL F  
UNITED METHODIST CHURCH OF  
UNITED METHODIST CHURCH OF  
ABBOTT JACQUELINE A  
HUSSEY BRETT  
ZHANG WANRU  
ZHANG WANRU  
AITNER LAURIE H & LYNN K  
JONAS PAUL E JR  
CHAMBERLAIN SARAH  
ROSE CHARLES N & MARIE L  
CONNECTICUT STATE OF  
GAGNON JESSICA L  
HD PROPERTY GROUP LLC  
BOSTON TURNPIKE ENTERPRISES LLC  
UNITED METHODIST CHURCH OF  
NIELSEN DONALD J & JOYCE M  
BAKANAS JEANETTE P (L/U) & LISA G & ERIN L  
KARPIEJ PAUL  
CHAMBERLAIN SARAH  
HOAR LORETTA GRACE  
RUNKIS ROGER A & KATHLEEN D  
FULLER JASON C & FULLER KERI A  
1638 TRUST & 1638S TRUST  
GARDNER VERONICA J  
IGER RUSSELL M  
BENITEZ RICARDO & SHARON  
SMITH MARK S & KATHLEEN A  
HUSSEY BRETT  
ROBERTS ROBERT E  
DOTY LESLIE S  
LARSON DOROTHY S  
ROBINSON NICHOLAS & JESSICA & SURV  
GALLIGAN TIMOTHY  
LANDRY GERALD JASON  
MCGUIRE EDWARD C & CORRADINA B  
MISSIONARY SOCIETY FOR THE  
DAVIS FREDERICK  
PALUSO JOSEPH J  
MAYA PROPERTIES LLC  
MAYA PROPERTIES LLC  
MELQUIST CAROL O  
HILTON CHARLES H & SHELLY D  
DUTTON CHRISTOPHER K  
HOAR ANDREW F  
HOAR ISABEL L EST & ANDREW F & HARRY L II

1100 BOSTON TURNPIKE LLC  
STEVENS JOHN B

30 TOLLAND RD	BOLTON, CT 06043
7 SOUTH ROAD	BOLTON, CT 06043
1041 BOSTON TPKE	BOLTON, CT 06043
1041 BOSTON TPKE	BOLTON, CT 06043
7 KEENEY DR	BOLTON, CT 06043
1074 BOSTON TPKE	BOLTON, CT 06043
195 SPENO RIDGE	ROCKY HILL, CT 06067
195 SPENO RIDGE	ROCKY HILL, CT 06067
14 NORTH RD	BOLTON, CT 06043
18 NORTH RD	BOLTON, CT 06043
17 NORTH RD	BOLTON, CT 06043
P O BOX 9214	BOLTON, CT 06043
79 ELM ST	HARTFORD, CT 06106
1173 BOSTON TPKE	BOLTON, CT 06043
3515 SOUTH ST	COVENTRY, CT 06238
530 SILAS DEANE HIGHWAY #209	WETHERSFIELD, CT 06109
1041 BOSTON TPKE	BOLTON, CT 06043
21 KEENEY DR	BOLTON, CT 06043
3 TIMOTHY DR	MIDDLETOWN, CT 06457
51 GLASTONBURY AVE	ROCKYHILL, CT 06067
17 NORTH RD	BOLTON, CT 06043
1084 BOSTON TPKE	BOLTON, CT 06043
P.O. BOX 9548	BOLTON, CT 06043
1055 BOSTON TPKE	BOLTON, CT 06043
540 EAST MAIN ST	BRANFORD, CT 06405
9 SOUTH RD	BOLTON, CT 06043
15 KEENEY DR	BOLTON, CT 06043
9 KEENEY DR	BOLTON, CT 06043
1040 BOSTON TPKE	BOLTON, CT 06043
1074 BOSTON TPKE	BOLTON, CT 06043
1066 BOSTON TPKE	BOLTON, CT 06043
16 NORTH RD	BOLTON, CT 06043
1071 BOSTON TPKE	BOLTON, CT 06043
1061 BOSTON TPKE	BOLTON, CT 06043
10 SOUTH RD	BOLTON, CT 06043
12 + 12A SOUTH RD	BOLTON, CT 06043
1130 BOSTON TPKE	BOLTON, CT 06043
PO BOX 9158	BOLTON, CT 06043
1079 BOSTON TPKE	BOLTON, CT 06043
27 RICHARDSON RD	HEBRON, CT 06248
83 LOOKOUT MT RD	MANCHESTER, CT 06040
83 LOOKOUT MT RD	MANCHESTER, CT 06040
19 KEENEY DR	BOLTON, CT 06043
17 KEENEY DR	BOLTON, CT 06043
20 NORTH RD	BOLTON, CT 06043
11 NORTH RD	BOLTON, CT 06043
11 NORTH RD	BOLTON, CT 06043

483 MIDDLE TURNPIKE WEST, SUITE 102  
1069 BOSTON TPKE

MANCHESTER, CT 06040  
BOLTON, CT 06043

May 14, 2021

Town of Bolton  
Planning and Zoning Commission  
Bolton Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

RE: Owner Authorization for Proposed Retail at 1100 Boston Turnpike

To Whom it May Concern:

I, Joel Rosenlicht, of 1100 Boston Turnpike, LLC, the property owner of 1100 Boston Turnpike, am writing this letter in conjunction with the Application to the Town of Bolton. I authorize Garrett Homes, LLC to act as the authorized applicant/agent for the proposed development located at 1100 Boston Turnpike, Bolton, Connecticut.

Please feel free to contact me if you have any further questions.

Sincerely,



Joel Rosenlicht  
Boston Turnpike, LLC

## PURCHASE AND SALE AGREEMENT

This PURCHASE AND SALE AGREEMENT (this "**Agreement**") is made and entered into as of the 24<sup>th</sup> day of November, 2020 (the "**Effective Date**"), by and between GARRETT HOMES LLC, a Connecticut limited liability company having a mailing address of 59 Field Street, Suite 108, Torrington, Connecticut 06790, or its nominee ("**Purchaser**") and 1100 BOSTON TURNPIKE LLC, a Connecticut limited liability company having an address of 483 Middle Turnpike West, Suite 102, Manchester, Connecticut 06040 ("**Seller**").

### WITNESSETH:

In consideration of the premises herein contained, Seller agrees to sell and Purchaser agrees to purchase the land and improvements thereon and appurtenances thereto located at 1100 Boston Turnpike (Lot 3), Bolton, Connecticut, and being more particularly described on the plan attached hereto as Exhibit A and made a part hereof (the "**Property**"), all in accordance with and subject to the terms and conditions set forth herein.

1. Purchase Price.

The TOTAL purchase price for the Property is  
(the "**Purchase Price**"), payable as follows:

(i) within five (5) business days following the Effective Date, a deposit in the amount of FIVE THOUSAND AND NO/100 DOLLARS (\$5,000.00) (the "**Deposit**"), shall be delivered to Juliano & Marks, LLC, 9C Pasco Drive, East Windsor, Connecticut 06088 (the "**Escrow Agent**") to be held in accordance with the terms of this Agreement;

(ii) The Purchase Price, less the Deposit, subject to further adjustment as contemplated in this Agreement, shall be payable at Closing, by wire transfer, bank cashier's or treasurer's check, or certified check.

Seller and Purchaser recognize that Escrow Agent will hold the Deposit in Escrow Agent's non-interest bearing IOLTA account. The parties agree that Escrow Agent is not bound by any agreement between Seller and Purchaser other than this Agreement and that the only duties and responsibilities of Escrow Agent are to receive and hold the Deposit and to dispose of the Deposit, all in accordance with the terms of this Agreement. In respect to all matters, Escrow Agent shall be entitled to rely on the advice of counsel of its choosing without liability therefor. In no event shall Escrow Agent be liable or responsible to Seller or Purchaser except for its willful misconduct. Seller and Purchaser shall, jointly and severally, indemnify and hold Escrow Agent harmless from and against any and all liabilities, obligations, damages, penalties, claims, losses, costs and expenses whatsoever (including, without limitation, reasonable attorneys fees) in any way connected with Escrow Agent's carrying out of its responsibilities under this Agreement. Escrow Agent may resign as escrow agent at any time upon fifteen (15) days written notice to Seller and Purchaser. Seller and Purchaser may remove Escrow Agent as escrow agent at any time upon fifteen (15) days written notice to Escrow Agent, signed by both Seller and Purchaser. In the event of Escrow Agent's resignation or removal, Escrow Agent's only duty until a successor escrow agent is appointed shall be to hold and dispose of the Deposit in accordance with the provisions of this Agreement existing at the time of such resignation or removal and Escrow Agent shall not be bound by any notices, requests, instructions, or

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals as of the day and year first above written.

**PURCHASER**

GARRETT HOMES LLC

By:   
Name: Gary W. Eucalitto  
Title: Member

**SELLER**

1100 BOSTON TURNPIKE LLC

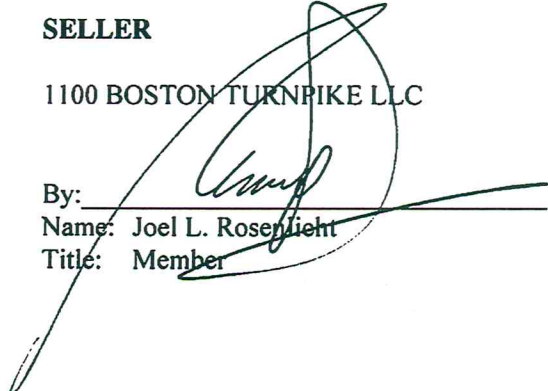
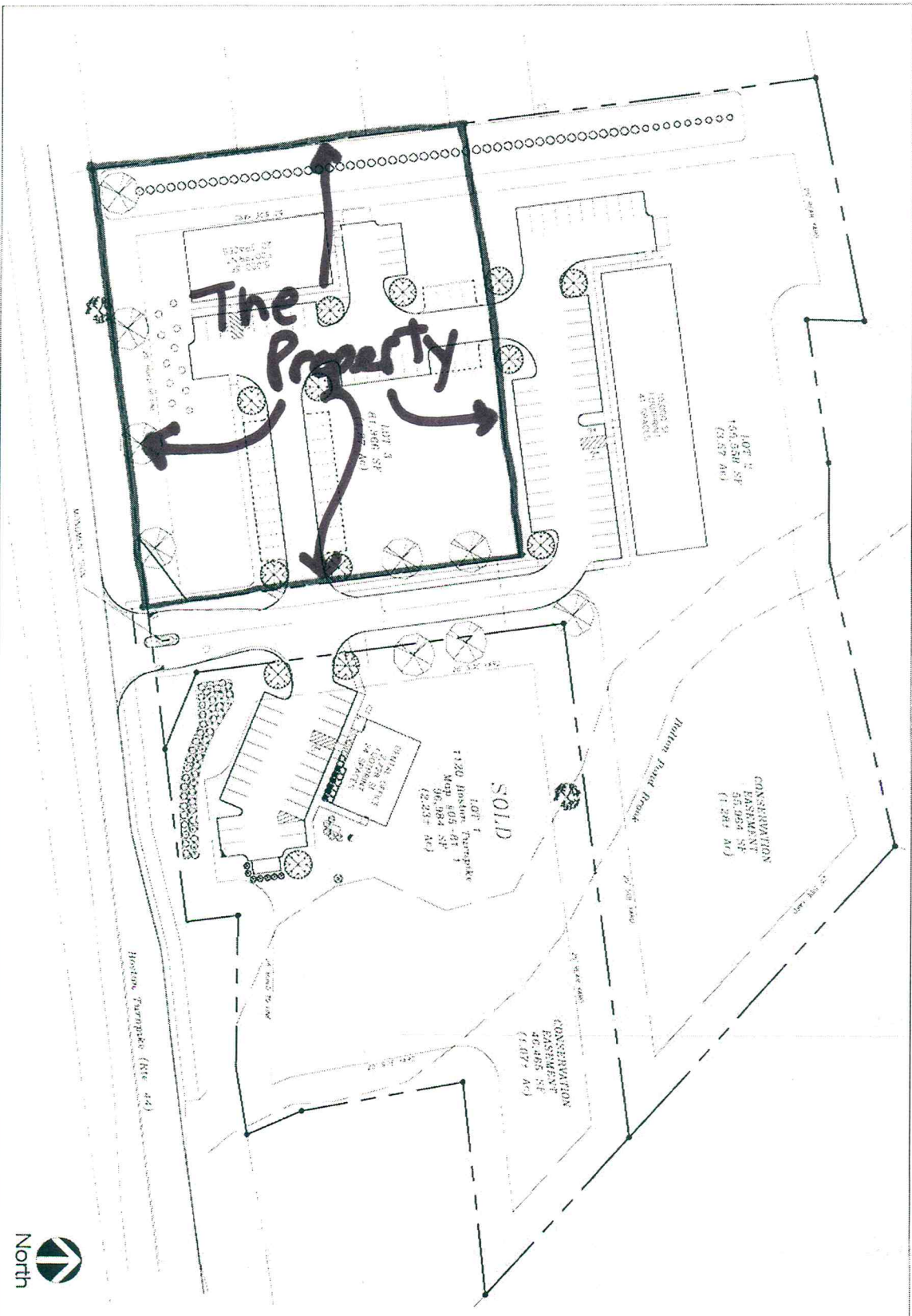
By:   
Name: Joel L. Rosenlicht  
Title: Member



EXHIBIT A  
The Property

See Plan Attached



**SP-1**

Scale 1" = 30'-0"  
 DATE: 04/03/14

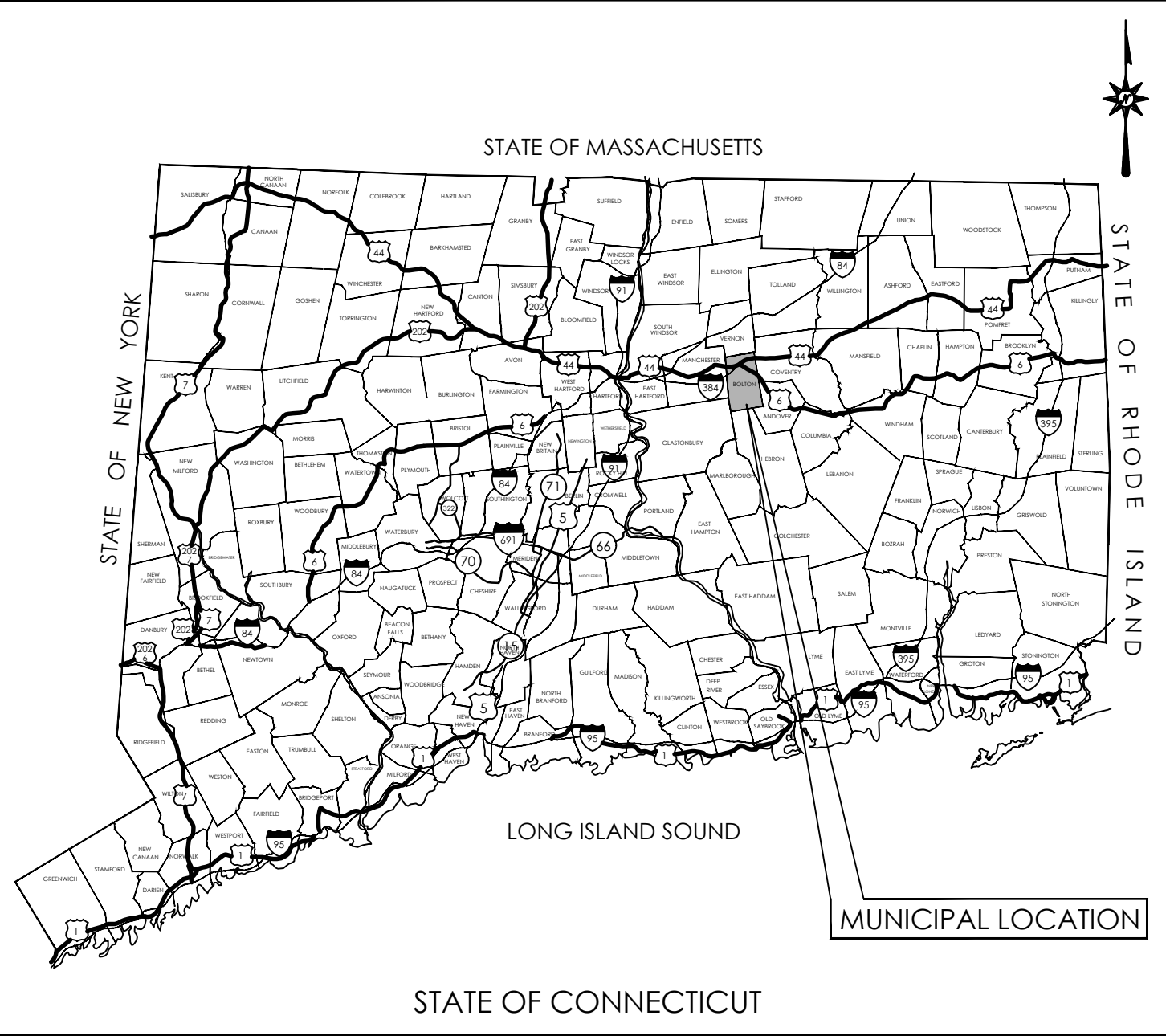
**Concept Site Plan**  
**Option "A" (Lots 2 And 3 Separate)**

1100 Boston Turnpike  
 Bolton, Connecticut 06043

**Aldrich Construction**  
 Company Inc.

1395 Tolland Turnpike  
 Manchester Connecticut 06042-1632  
 660 647.7544

#	DATE	REVISION



LOCATION MAP  
N.T.S.

# LAND DEVELOPMENT PLANS FOR PLANNING AND ZONING SPECIAL PERMIT APPLICATION

## PROPOSED RETAIL DEVELOPMENT

1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

PREPARED FOR:  
GARRETT HOMES, LLC  
59 FIELD STREET  
TORRINGTON, CT 06790



VICINITY MAP  
SCALE: 1"=800'

**CONTENTS**

	TITLE SHEET
	ALTA/NSPS LAND TITLE SURVEY (BY OTHERS)
	2-LOT SUBDIVISION PLAN (BY OTHERS)
MP-1	MASTER PLAN
GN-1	GENERAL NOTES
DM-1	DEMOLITION PLAN
SP-1	SITE PLAN
TT-1	TRUCK TURNING PLAN - WB-67
GD-1	GRADING AND DRAINAGE PLAN
SU-1	SITE UTILITIES PLAN
EC-1	SEDIMENT AND EROSION CONTROL PLAN
EC-2	SEDIMENT AND EROSION CONTROL NOTES
LL-1	LANDSCAPING PLAN
LL-2	LANDSCAPING DETAILS AND NOTES
SD-1	INTERSECTION SITE DISTANCE PLAN
DN-1 TO DN-8	DETAILS SHEET
	SITE LIGHTING PHOTOMETRICS PLAN (BY OTHERS)
	ARCHITECTURAL CONCEPTUAL ELEVATIONS (BY OTHERS)
	ARCHITECTURAL CONCEPTUAL FLOOR PLAN (BY OTHERS)

PREPARED BY:



100 CONSTITUTION PLAZA, 10TH FLOOR  
HARTFORD, CONNECTICUT 06103  
(860) 249-2200  
(860) 249-2400 Fax

FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_  
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

<p>DEVELOPER:</p> <p>GARRETT HOMES, LLC 59 FIELD STREET TORRINGTON, CT 06790</p>	<p>OWNER:</p> <p>1100 BOSTON TRUNPIKE LLC C/O JOEL ROSENLICHT 483 MIDDLE TURNPIKE WEST, SUITE 102 MANCHESTER, CT 06040</p>
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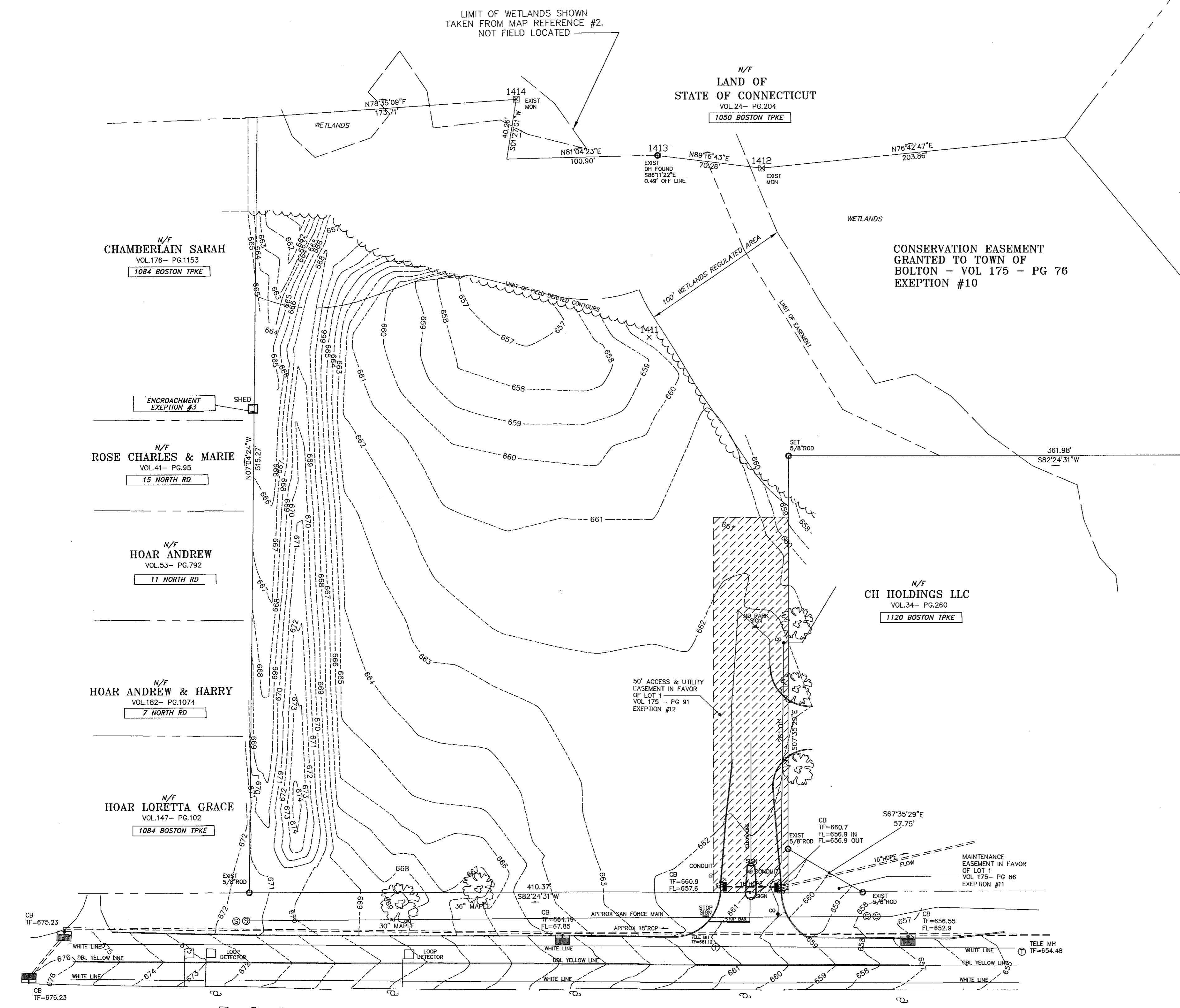
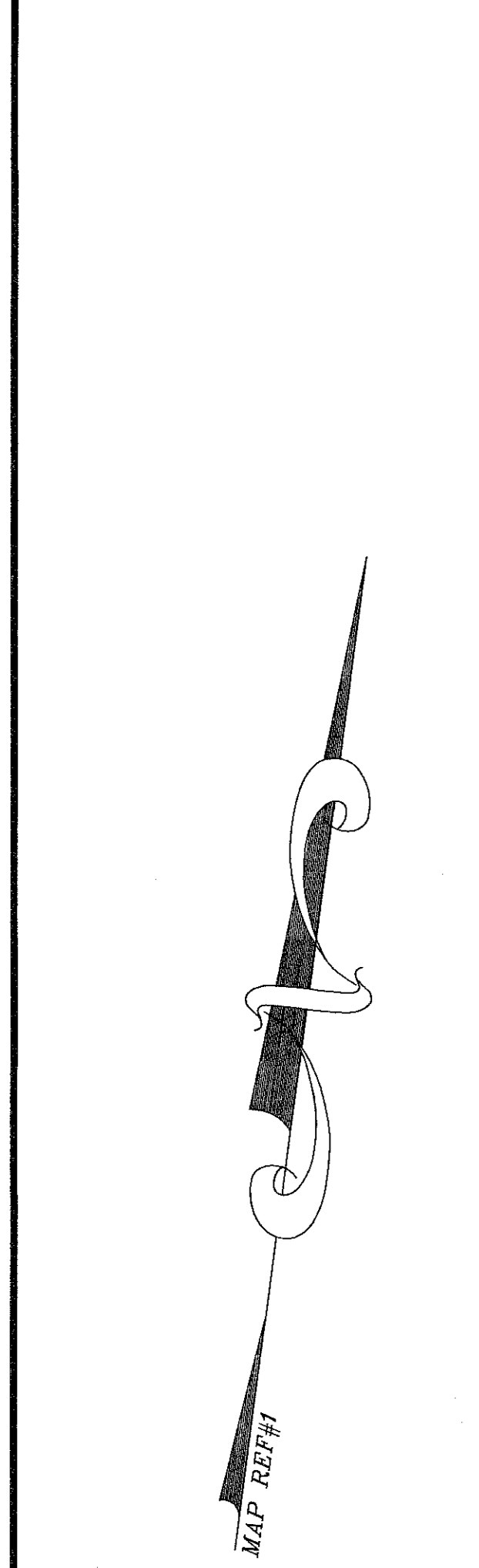


**DATES**

ISSUE DATE:	APRIL 2, 2021	
REVISION:	MAY 20, 2021	(REVISED PER TOWN COMMENTS)
	JUNE 7, 2021	(REVISED PER TOWN COMMENTS)

LEGEND

- STORM SEWER
- CONTOUR LINE
- FOLIAGE LINE
- FENCE
- IRON PIN
- CURB CATCHBASIN
- UTILITY POLE
- TELEPHONE MANHOLE
- SANITARY MANHOLE
- CONDUIT
- SIGN



**LEGAL DESCRIPTION - 1100 BOSTON TURNPIKE:**  
 COMMENCING AT AN EXISTING 5/8" ROD IN THE NORTHERLY HIGHWAY LINE OF RT 44 ALSO KNOWN AS BOSTON TURNPIKE, MARKING THE SOUTHEAST CORNER OF THE PROPERTY BEING DESCRIBED HEREIN AND THE SOUTHWEST CORNER OF LAND NOW OR FORMALLY OF CH HOLDINGS LLC; THENCE ALONG THE NORTHERLY HIGHWAY LINE OF SAID BOSTON TURNPIKE S82°24'31"W, 410.30' TO AN EXISTING 5/8" ROD MARKING THE SOUTHEASTERN CORNER OF LAND NOW OR FORMERLY OF LORETTA GRACE HOAR AND THE SOUTHWESTERLY CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG LANDS OF HARRY AND ANDREW HOAR, ANDREW HOAR, MARIE AND CHARLES ROSE, AND SARAH CHAMBERLIN PARTLY BY EACH N07°04'24"W, 515.27' TO A POINT MARKING NORTHEAST CORNER OF LAND NOW OR FORMERLY OF SARAH CHAMBERLAIN AND THE NORTHWEST CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG THE SOUTHERLY LINE OF LAND NOW OR FORMERLY OF STATE OF CONNECTICUT THE FOLLOWING FIVE COURSES:  
 N78°35'09"E, 173.71, S01°27'01"W, 40.26', N81°04'23"E, 100.90', N89°16'43"E, 70.26', N76°42'47"E, 203.86, TO A POINT MARKING THE NORTHWEST CORNER OF LAND NOW OR FORMERLY OF MISSIONARY SOCIETY FOR THE DIOCESE AND THE NORTHEAST CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG LAND OF SAID MISSIONARY SOCIETY FOR THE DIOCESE OF CONNECTICUT S47°34'01"E, 275.82', TO A POINT MARKING THE NORTHEAST CORNER OF SAID CH HOLDING LLC; THENCE ALONG SAID CH HOLDINGS LLC S82°24'31"W, 361.98', TO A POINT MARKING THE NORTHWEST CORNER OF SAID CH HOLDING LLC, THENCE ALONG SAID CH HOLDING LLC S07°35'29"E, 261.01', TO AN EXISTING 5/8" ROD; THENCE CONTINUING ALONG CH HOLDING LLC S67°35'29"E, 57.75', TO THE POINT AND PLACE OF BEGINNING CONTAINING 236,912.34 OR 5.44 ACRES.

N/F  
 THE MISSIONARY SOCIETY FOR THE  
 DIOCESE OF CONNECTICUT  
 VOL.34 - PG.260  
 1150 BOSTON TPKE

N/F  
 CH HOLDINGS LLC  
 VOL.34 - PG.260  
 1120 BOSTON TPKE

N/F  
 CHAMBERLAIN SARAH  
 VOL.176 - PG.1153  
 1084 BOSTON TPKE

N/F  
 ROSE CHARLES & MARIE  
 VOL.41 - PG.95  
 15 NORTH RD

N/F  
 HOAR ANDREW  
 VOL.53 - PG.792  
 11 NORTH RD

N/F  
 HOAR ANDREW & HARRY  
 VOL.182 - PG.1074  
 7 NORTH RD

N/F  
 HOAR LORETTA GRACE  
 VOL.147 - PG.102  
 1084 BOSTON TPKE

NOTES:

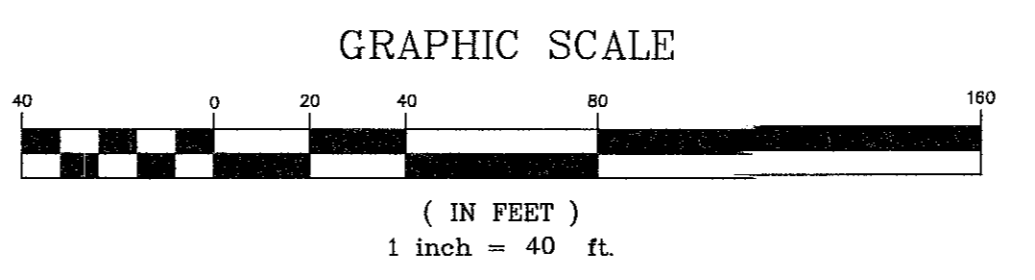
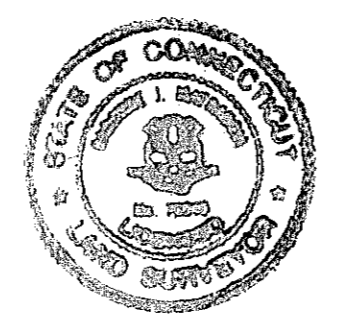
1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED ON SEPTEMBER 26, 1996.
2. TYPE OF SURVEY = PROPERTY SURVEY
3. BOUNDARY DETERMINATION CATEGORY = DEPENDENT RE-SURVEY
4. OWNERS OF RECORD - 1100 BOSTON TURNPIKE LLC (Vol. 141- Pg 790)
5. TOTAL AREA - 236912 S.F. OR 5.439 AC.
6. ZONE - RMUZ
7. ELEVATIONS BASED ON NAVD 88 DATUM (MAP REFERENCE #2)
8. NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED.
9. NO INFORMATION OF PROPOSED CHANGES IN STREET RIGHT OF WAY LINES HAS BEEN MADE AVAILABLE TO SURVEYOR, NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED.
10. NO WETLAND DELINEATION OBSERVED
11. PROPERTY LIES WITHIN FLOOD ZONE X - AREA OF MINIMAL FLOOD HAZARD, AS SHOWN ON MAP ENTITLED "FIRM - FLOOD INSURANCE RATE MAP - TOWN OF BOLTON, CONNECTICUT- TOLLAND COUNTY - PANEL 1 OF 3 COMMUNITY PANEL NUMBER 090109 0001 B WITH AN EFFECTIVE DATE OF JUNE 1 1981 AND PREPARED BY FEDERAL EMERGENCY MANAGEMENT AGENCY.
12. REFER TO VOL 72 - PG 443 FOR POSSIBLE EFFECTS OF SPECIAL PERMIT GRANTED ON APRIL 4, 1990 - EXEPTION #9
13. UNDERGROUND UTILITIES, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS ARE APPROXIMATE AND OTHER SUCH FEATURES MAY EXIST UNKNOWN TO DUFOUR SURVEYING AND OTHER SUCH FEATURES LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455

FIRST AMERICAN TITLE INSURANCE COMPANY - COMMITMENT FOR TITLE INSURANCE : COMMITMENT No. CT5142976 - DATED JANUARY 8, 2021 CERTIFIED TO: CALITO DEVELOPMENT LLC FIRST AMERICAN TITLE INSURANCE COMPANY  
 THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES TABLE A ITEMS 2,3,4,5,8,11,13,16,17,18 AND 19.  
 SCHEDULE B, PART II, EXCEPTIONS:  
 1. NON-SURVEY ISSUE  
 2. NON SURVEY ISSUE  
 3. PLOTTED  
 4. NON SURVEY ISSUE  
 5. NON SURVEY ISSUE  
 6. NON SURVEY ISSUE  
 7. NON SURVEY ISSUE  
 8. NON SURVEY ISSUE  
 9. PLOTTED - NOTE 12  
 10. PLOTTED  
 11. PLOTTED  
 12. PLOTTED  
 FIELD WORK WAS COMPLETED ON FEBRUARY 17, 2021  
 DATE: 3/31/2021  
 CARMINE J. MATRASCIA - LS#70219

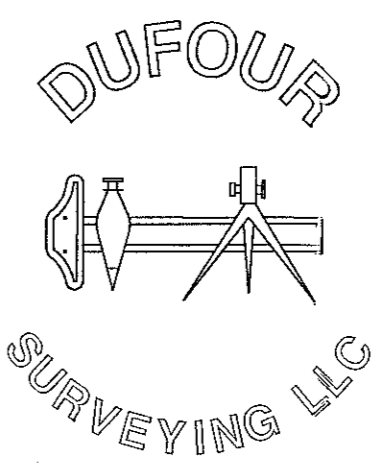
MAP REFERENCES :

1. "LOT SPLIT PLAN & EASEMENT PLAN - PREPARED FOR - 1100 BOSTON TURNPIKE, LLC - 1100 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81 - ZONE: RMUZ", scale 1" = 40', dated 7-18-17, revised to 9-28-17 and prepared by J R Russo & Associates LLC, Surveyors - Engineers.
2. "AS-BUILT PLAN - BOLTON COMETIC & FAMILY DENTISTRY - 1120 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81-1 ZONE: RMUZ", scale 1" = 20', dated 7-24-18 and prepared by JR Russo & Associates, LLD Surveyors - Engineers
3. "CONNECTICUT - STATE HIGHWAY DEPARTMENT - RIGHT OF WAY MAP - TOWN OF BOLTON - HARTFORD-WILLMANTIC ROAD - FROM THE COVENTRY TOWN LINE - WESTERLY ABOUT 6,300 FEET - ROUTES U.S. 6 & U.S. 44", scale 1" = 40', dated Oct. 31, 1935 and prepared by Connecticut State Highway Department
4. "SOME LAND - OF THE ESTATE OF - ALBERT N. SKINNER - TOWN OF BOLTON CONN." - scale 1"=50', dated Nov. 20, 1968 and prepared by Everett O. Gardner L.S 4349

BOSTON TURNPIKE (RTE. 44)



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-2 & T-2 SURVEY AS DEFINED IN THE CODE OF PRACTICE FOR STANDARDS OF ACCURACY OF SURVEYS AND MAPS, ADOPTED SEPT. 26, 1996 AS AMENDED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED.  
 CARMINE J. MATRASCIA - L.S. #70219  
 NOT VALID WITHOUT EMBOSSED SEAL



ALTA/NSPS LAND TITLE SURVEY		
PREPARED FOR: CALITO DEVELOPMENT, LLC		
1100 BOSTON TPKE, RTE 44, BOLTON, CT		
SCALE: 1" = 40'	APPROVED: CARMINE J. MATRASCIA - L.S. #70219	
DATE: 02-18-2021	JOB NO.: 21-05	FILE NO.: 21-05
DUFOR SURVEYING LLC 575 NORTH MAIN STREET BRISTOL, CONNECTICUT 860-314-0502 860-738-0222		

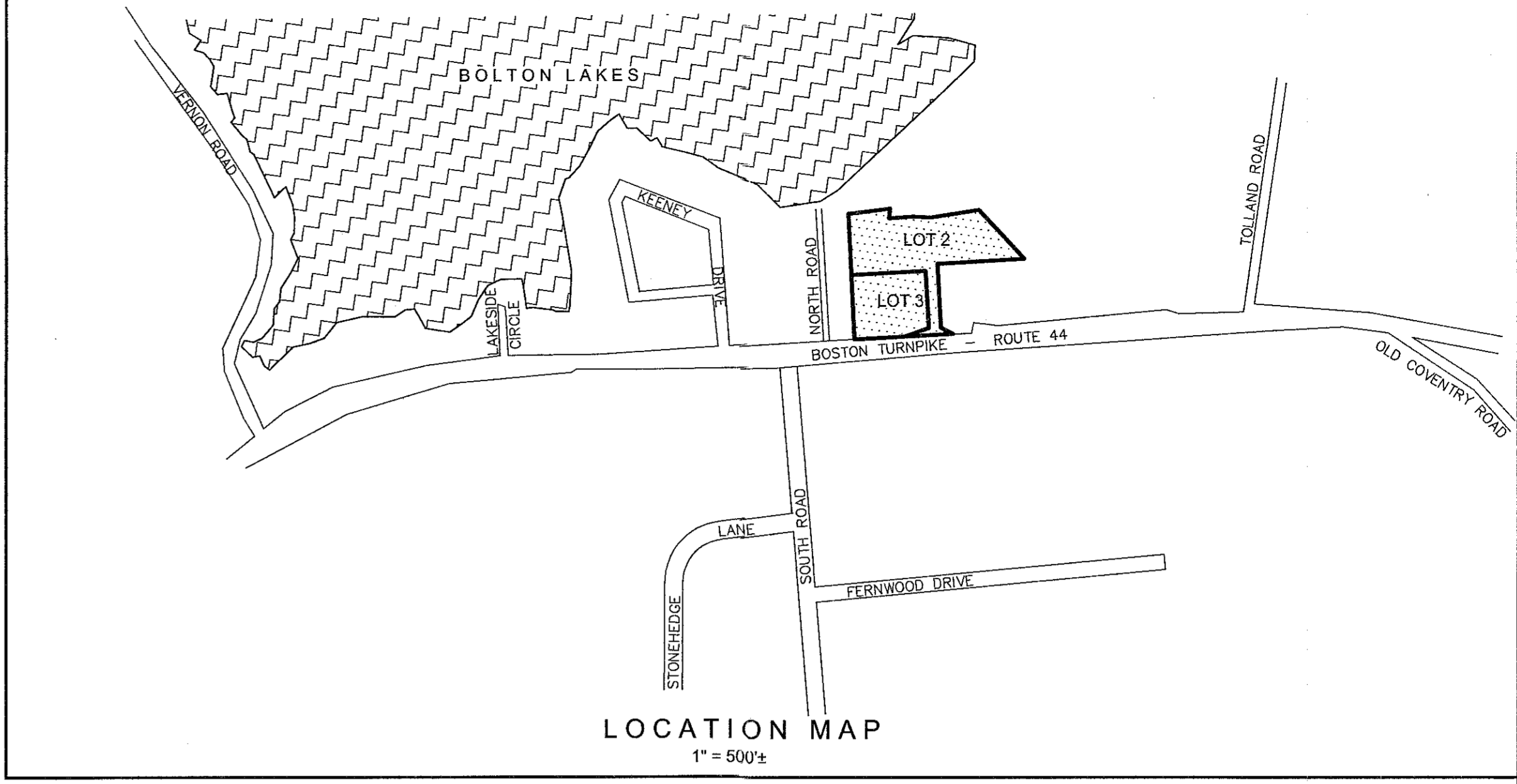
REVISED 3/31/2021 : ADD WETLANDS LIMITS  
 REVISED 3/22/2021 : CORRECTED ZONE RMUZ

**LEGEND**

- STONE WALL
- SANITARY SEWER
- ELECTRIC LINE
- PROPANE LINE
- FENCE
- STORM SEWER
- CONTOUR LINE
- FOLIAGE LINE
- IRON PIN
- SURVEY MONUMENT
- DRILL HOLE
- CURB CATCHBASIN
- CURBLESS CATCHBASIN
- UTILITY POLE
- UTILITY POLE WITH GUY
- WATER GATE VALVE
- GAS GATE VALVE
- HYDRANT

**ZONING REQUIREMENTS**

ZONE - RMUZ
MINIMUM LOT AREA = 80,000 S.F.
MINIMUM LOT WIDTH = 150'
MINIMUM SETBACKS -
FRONT = 25'
SIDE = 25' (50' WHEN ABUTTING RESIDENTIAL ZONE)
REAR = 25' (50' WHEN ABUTTING RESIDENTIAL ZONE)
MINIMUM LANDSCAPE AREA = 30%
MAXIMUM BUILDING HEIGHT = 35' or 2.5 STORIES
MINIMUM FLOOR AREA - 600 S.F.(GROUND FLOOR)
MAXIMUM LOT COVERAGE = 25%
MAXIMUM IMPERVIOUS SURFACE = 50%



**THE MISSINOARY SOCIETY FOR THE DIOCESE OF CONNECTICUT**  
VOL.34- PG.260  
1150 BOSTON TPKE

- MAP REFERENCES :**
- "LOT SPLIT PLAN & EASEMENT PLAN - PREPARED FOR - 1100 BOSTON TURNPIKE, LLC - 1100 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81 - ZONE: RMUZ", scale 1" = 40', dated 7-18-17, revised to 9-28-17 and prepared by J R Russo & Associates LLC, Surveyors - Engineers.
  - "AS-BUILT PLAN - BOLTON COMETIC & FAMILY DENTISTRY - 1120 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81-1 ZONE: RMUZ", scale 1" = 20', dated 7-24-18 and prepared by J R Russo & Associates, LLD Surveyors - Engineers
  - "CONNECTICUT - STATE HIGHWAY DEPARTMENT - RIGHT OF WAY MAP - TOWN OF BOLTON - HARTFORD-WILLIMANTIC ROAD - FROM THE COVENTRY TOWN LINE - WESTERLY ABOUT 6,300 FEET - ROUTES U.S. 6 & U.S. 44", scale 1" = 40', dated Oct. 31, 1935 and prepared by Connecticut State Highway Department
  - "SOME LAND - OF THE ESTATE OF - ALBERT N. SKINNER - TOWN OF BOLTON CONN." - scale 1"=50', dated Nov. 20, 1968 and prepared by Everett O. Gardner L.S 4349

- NOTES:**
- THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED ON SEPTEMBER 26, 1996.
  - TYPE OF SURVEY = PROPERTY SURVEY
  - BOUNDARY DETERMINATION CATEGORY = DEPENDENT RE-SURVEY
  - OWNERS OF RECORD - 1100 BOSTON TURNPIKE LLC (Vol. 141- Pg 790)
  - TOTAL AREA - 236912 S.F. or 5.439 Ac.
  - ZONE - RMUZ
  - PROPERTY LIES WITHIN FLOOD ZONE X - AREA OF MINIMAL FLOOD HAZARD, AS SHOWN ON MAP ENTITLED "FIRM - FLOOD INSURANCE RATE MAP - TOWN OF BOLTON, CONNECTICUT- TOLLAND COUNTY - PANEL 1 OF 3 COMMUNITY PANEL NUMBER 090109 0001 B WITH AN EFFECTIVE DATE OF JUNE 1 1981 AND PREPARED BY FEDERAL EMERGENCY MANAGEMENT AGENCY.
  - UNDERGROUND UTILITIES, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS ARE APPROXIMATE AND OTHER SUCH FEATURES MAY EXIST UNKNOWN TO DUFOR SURVEYING ASSOCIATES. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-1455



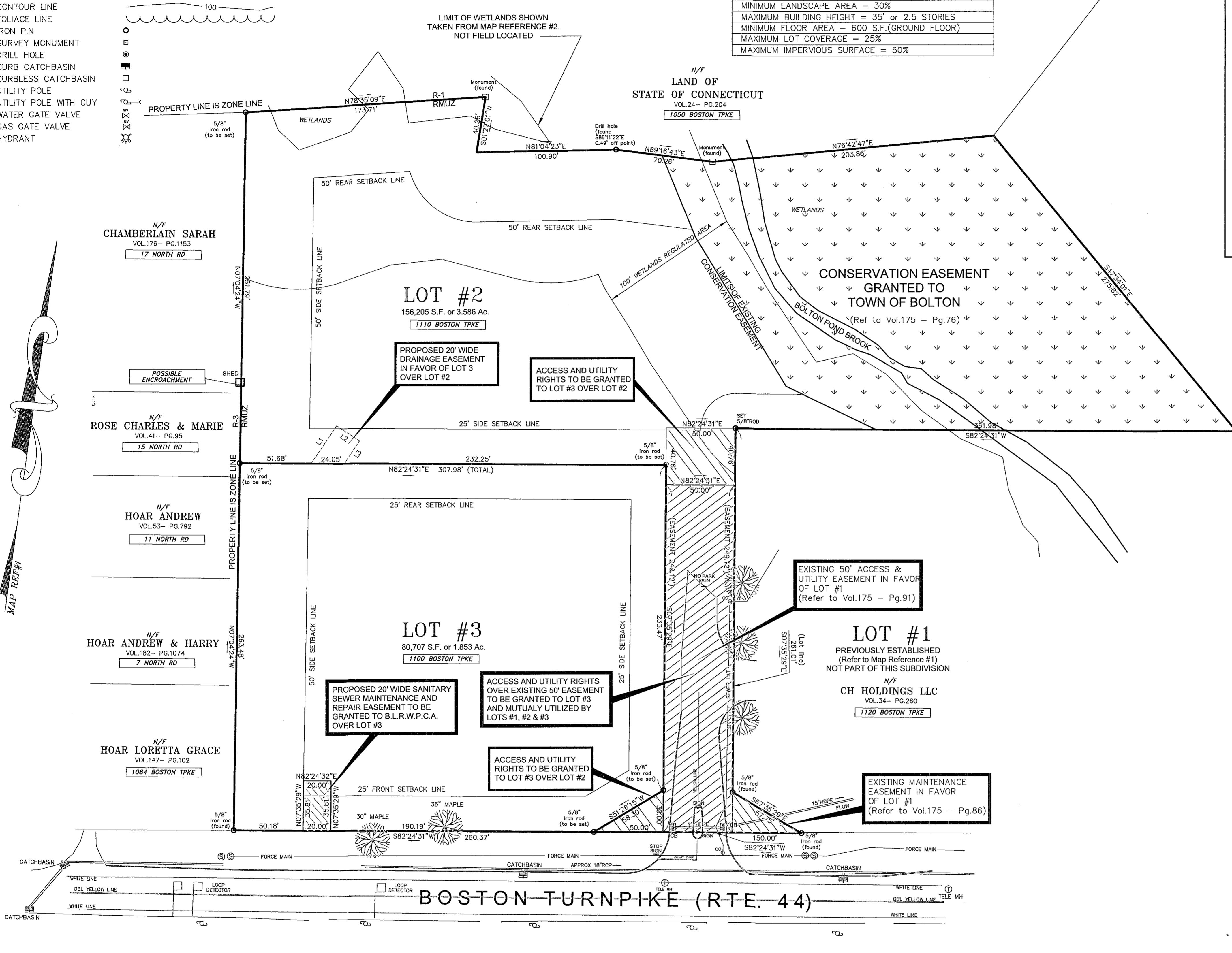
REVISED 6/4/2021 : PER STAFF COMMENTS  
REVISED 5/13/2021 : ADD PROPOSED SANITARY SEWER EASEMENT  
REVISED 3/31/2021 : PER STAFF COMMENTS

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-2 SURVEY AS DEFINED IN THE CODE OF PRACTICE FOR STANDARDS OF ACCURACY OF SURVEYS AND MAPS, ADOPTED SEPT. 26, 1996 AS AMENDED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED.

*C. Matrascia*  
CARMINE J. MATRASCIA - L.S. #70219  
NOT VALID WITHOUT EMBOSSED SEAL



2 - LOT SUBDIVISION PLAN			
PREPARED FOR: CALITTO DEVELOPMENT LLC			
1100 BOSTON TURNPIKE, ROUTE 44, BOLTON, CONNECTICUT			
SCALE: 1" = 40'	APPROVED: CARMINE J. MATRASCIA - L.S. #70219		
DATE: 03-18-2021	JOB NO.: 21-05	FILE NO.: 121-05	
DUFOR SURVEYING LLC 575 NORTH MAIN STREET BRISTOL, CONNECTICUT 860-314-0502 860-738-0222			



- N/F JASON C. & KERI A. FULLER  
1055 BOSTON TURNPIKE
- N/F NICHOLAS & JESSICA ROBINSON  
1061 BOSTON TURNPIKE
- N/F ROGER A. & KATHLEEN D. RUNKIS  
1065 BOSTON TURNPIKE
- N/F JOHN B. STEVENS  
1069 BOSTON TURNPIKE
- N/F DOROTHY S. LARSON  
1071 BOSTON TURNPIKE
- N/F FREDERICK DAVIS  
1079 BOSTON TURNPIKE

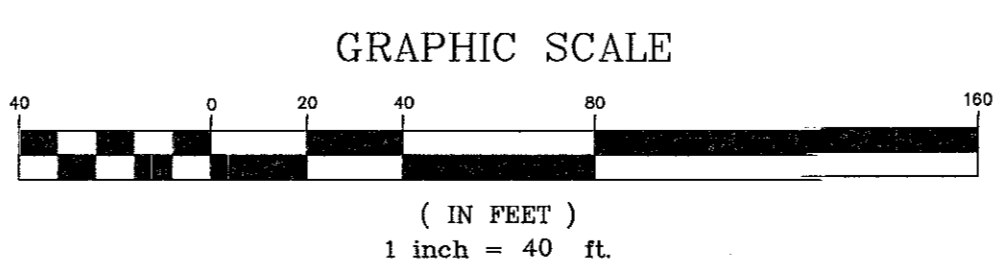
ALL CONSTRUCTION OF PUBLIC FACILITIES REQUIRED FOR THIS SUBDIVISION SHALL BE COMPLETED WITHIN FIVE YEARS AFTER THE APPROVAL OF THIS SUBDIVISION PLAN AND THIS FIVE YEAR PERIOD EXPIRES ON:

APPROVED BY THE BOLTON PLANNING COMMISSION

CHAIRMAN / SECRETARY \_\_\_\_\_ DATE: \_\_\_\_\_

**LINE DATA**

LINE	BEARING	DISTANCE
L1	N 26°09'29" E	32.60'
L2	N 63°50'31" W	20.00'
L3	N 26°09'29" E	19.23'



### ZONING INFORMATION

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT					
ZONE: RURAL MIXED USE ZONE (RMUZ)					
USE: RETAIL (PERMITTED BY SPECIAL PERMIT)					
ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	MINIMUM LOT AREA	80,000 S.F.	80,707 S.F. (1.85 AC.)	82,061 S.F. (1.88 AC.) [2]	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	308 FEET	560 FEET	NO
3	MINIMUM LOT FRONTAGE	150 FEET	260.4 FEET	150 FEET	NO
4	MINIMUM FRONT SETBACK	NONE REQUIRED	71.9 FEET	343 FEET	NO
5	MINIMUM SIDE SETBACK	25 FEET (50 FEET) [1]	72.8 FEET	118.6 FEET	NO
6	MINIMUM REAR SETBACK	25 FEET (50 FEET) [1]	51.4 FEET	89.3 FEET	NO
7	MAXIMUM BUILDING HEIGHT	35 FEET/2.5 STORIES	25.6 FEET	<35 FEET/2.5 STORIES	NO
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	13.2 PERCENT	12.2 PERCENT	NO
9	MAXIMUM IMPERVIOUS COVERAGE	50 PERCENT	39.9 PERCENT	33.5 PERCENT	NO

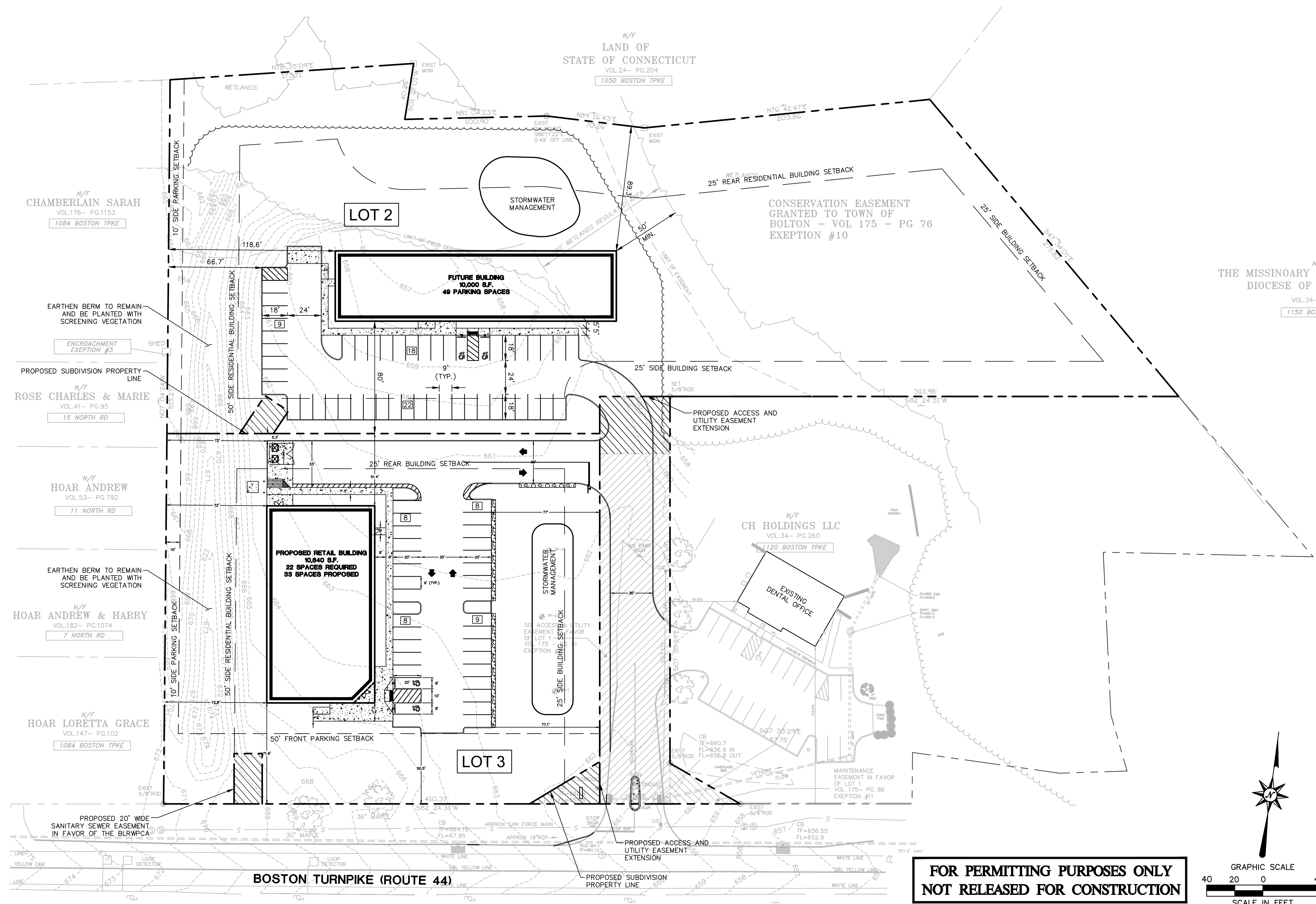
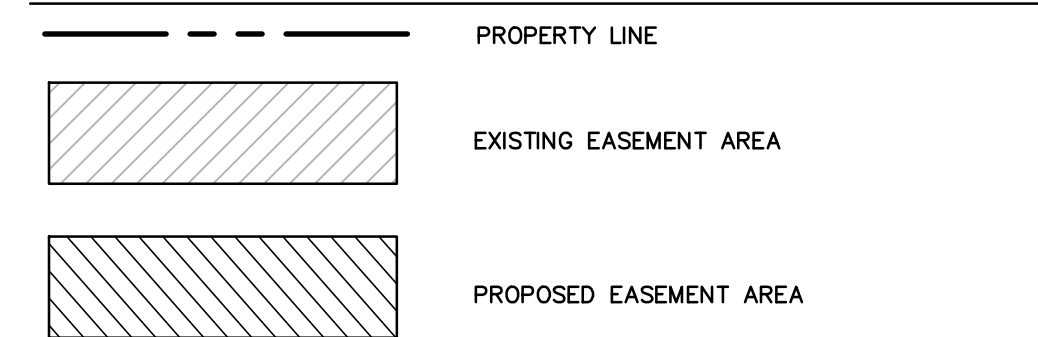
[1] MINIMUM SIDE AND REAR SETBACKS - 50 FEET WHEN ABUTTING A RESIDENTIAL DISTRICT  
 [2] LOT AREA FOR LOT 2 DOES NOT INCLUDE ACCESS STRIP, CONSERVATION EASEMENT, OR WETLAND AREAS.

### PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	BUILDING SIZE	600 S.F.	10,640 S.F.	10,000 S.F.	NO
2	PARKING REQUIRED	RETAIL: MINIMUM - 2 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MINIMUM REQUIRED = 22 / 20 SPACES  MAXIMUM - 5 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MAXIMUM ALLOWED = 54 / 50 SPACES	33 SPACES	49 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	2 SPACES	2 SPACES	2 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 20 FEET	9 FEET X 18 FEET	NO
5	MINIMUM LOADING DIMENSIONS	10 FEET X 25 FEET X 14 FEET	33 FEET X 71 FEET X > 14 FEET	10 FEET X 25 FEET X > 14 FEET	NO
6	MINIMUM AISLE WIDTH	22 FEET - 2-WAY FEET - 1-WAY	30 FEET - 2-WAY	24 FEET - 2-WAY	NO
7	MINIMUM FRONT SETBACK	50 FEET [3]	50.5 FEET	273.4 FEET	NO
8	MINIMUM SIDE SETBACK	NONE REQUIRED [3]	77.1 FEET	66.7 FEET	NO
9	MINIMUM REAR SETBACK	NONE REQUIRED [3]	5.3 FEET	124 FEET	NO
10	BICYCLE PARKING REQUIRED	1 BICYCLE PARKING SPACE PER 25 PARKING STALLS (2 REQUIRED)	2 BICYCLE PARKING SPACES	2 BICYCLE PARKING SPACES	NO

[3] 10 FEET LANDSCAPED BUFFER STRIP REQUIRED WHERE ABUTTING A RESIDENCE DISTRICT

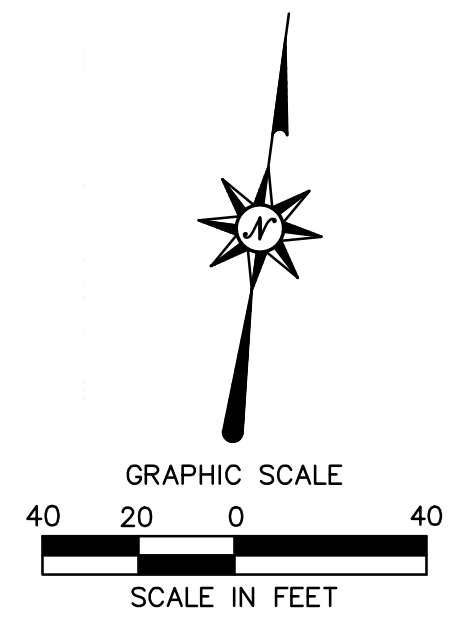
### SITE PLAN LEGEND



BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT	
DATE APPROVED _____	DATE OF EXPIRATION _____
CHAIRMAN	

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

REVISIONS

No.	Date	DESCRIPTION
1	03/20/2021	REVISED PER TOWN COMMENTS
2	03/07/2021	REVISED PER TOWN COMMENTS

Designed: C.J.L.  
 Drawn: C.J.L.  
 Reviewed: C.J.L.  
 Scale: 1"=40'  
 Project No.: 2002032  
 Date: 04/02/2021  
 CAD File: MP200203201

Title: **MASTER PLAN**

Sheet No. \_\_\_\_\_

**MP-1**

**SITE WORK GENERAL NOTES**

- THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
- ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE PROJECT SPECIFICATION MANUAL, CLIENT CORPORATION STANDARDS, MUNICIPALITY STANDARDS AND SPECIFICATIONS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS FORM 818, 2010 ADA STANDARDS, AND STATE BUILDING CODE IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- REFER TO OTHER PLANS BY OTHER DISCIPLINES, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE AND BUILDING CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER AND ARCHITECT IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS. THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO BIDDING.
- DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES AND STORMWATER SYSTEM) TO THE OWNER AT THE END OF CONSTRUCTION.
- THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL, THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH PROTECTION REQUIREMENTS.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL OR COUNTY OR STATE RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT [CT CALL BEFORE YOU DIG (CBYD)] [CT (800) 922-4455] OR AT 811 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSISTING UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
- IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST COSTLY SHALL APPLY.
- ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS OR PLAN SET ELECTRONIC POSTINGS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTORS' AND SUBCONTRACTORS' RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS OR COMPLETE PLAN SET ELECTRONIC POSTINGS FOR USE IN BIDDING AND CONSTRUCTION.
- ALL NOTES AND DIMENSIONS DESIGNATED 'TYPICAL' APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
- CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
- BL COMPANIES WILL PREPARE FINAL CONSTRUCTION DOCUMENTS SUITABLE FOR BIDDING AND CONSTRUCTION. PROGRESS SETS OF THESE DOCUMENTS ARE NOT SUITABLE FOR THOSE PURPOSES. IF CLIENT ELECTS TO SOLICIT BIDS OR ENTER INTO CONSTRUCTION CONTRACTS UTILIZING CONSTRUCTION DOCUMENTS THAT ARE NOT YET FINAL, CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY COSTS OR DELAY ARISING AS A RESULT.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT AND OBTAIN FROM CONSTRUCTION PERMITS, INCLUDING ANY STATE DOT PERMITS, SEWER AND WATER CONNECTION PERMITS, AND ROADWAY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK EXCEPT CTDOT ENCROACHMENT PERMIT BOND.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND CIVIL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE SEDIMENT AND EROSION CONTROL PLAN.
- THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING, AND THE RAISED CONCRETE SIDEWALKS, LANDINGS, RAMPS, AND STAIRS.
- SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPE OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING AS APPLICABLE UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TEMPORARY WALKWAYS, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY UTILITY GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT SITUATIONS OR AS REQUIRED BY THE OWNER. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANE AND PEDESTRIAN WALKWAYS FOR USE AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY IS GRANTED.
- TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
- REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- PAVEMENT MARKING KEY:  
4" SYDL 4" SOLID YELLOW DOUBLE LINE  
4" SYL 4" SOLID YELLOW LINE  
4" SWL 4" SOLID WHITE LINE  
12" SWB 12" SOLID WHITE STOP BAR  
4" SWL 4" BROKEN WHITE LINE 10' STRIPE 30' SPACE
- PARKING SPACES SHALL BE STRIPED WITH 4" SWL; HATCHED AREA SHALL BE STRIPED WITH 4" SWL AT A 45° ANGLE, 2' ON CENTER. HATCHING, SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED WHITE AND BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
- ALL PARKING SPACES AND HATCHED AREAS SHALL HAVE TWO COATS OF PAVEMENT MARKINGS APPLIED TO STRIPING.
- PAVEMENT MARKINGS SHALL BE HOT APPLIED TYPE IN ACCORDANCE WITH STATE DOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS, SWALE, PAVEMENT MARKINGS, OR SIGNAGE DISTURBED DURING DEMOLITION AND/OR CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER, AND TO THE SATISFACTION OF THE OWNER AND COUNTY.
- EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "ATA/NSPS LAND TITLE SURVEY" SCALE 1"=40', DATED 02/02/18, BY DUFOR SURVEYING LLC.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, CIVIL ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
- CTDOT ENCROACHMENT PERMIT SHALL BE OBTAINED BY CONTRACTOR WHO SHALL PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THE WORK. THE OWNER SHALL POST CTDOT ENCROACHMENT PERMIT BOND.
- AN EROSION CONTROL BOND IS REQUIRED TO BE POSTED BY THE CONTRACTOR BEFORE THE START OF ANY ACTIVITY ON OR OFF SITE. THE AMOUNT OF THE EROSION CONTROL BOND WILL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
- NO PART OF THE PROJECT PARCEL IS LOCATED WITHIN ANY FEMA DESIGNATED FLOOD HAZARD AREAS.
- THERE ARE NO WETLANDS LOCATED ON THE SITE AS INDICATED BY INLAND WETLANDS PERMIT #2017-00 AND J.R. RUSSO & ASSOCIATES MAPPING AND VISUAL OBSERVATIONS.
- 12" SWB (STOP BAR) AND 4" SYDL AND SWL PAVEMENT MARKINGS LOCATED IN DRIVEWAYS AND IN STATE HIGHWAY SHALL BE EPOXY RESIN TYPE ACCORDING TO CONDOT SPECIFICATIONS.
- FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL.
- THE CONTRACTOR SHALL REMOVE CONFLICTING PAVEMENT MARKINGS IN THE ROADWAY BY METHOD APPROVED BY THE AUTHORITY HAVING JURISDICTION OR DOT AS APPLICABLE FOR THE LOCATION OF THE WORK.
- ALL ADA DESIGNATED PARKING STALLS, ACCESSIBLE ISLES AND PEDESTRIAN WALKWAYS SHALL CONFORM TO THE CURRENT VERSION OF THE AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN AND ANSI STANDARDS AND AS MAY BE SUPERCEDED BY THE STATE BUILDING CODE.
- CONSTRUCTION OCCURRING ON THIS SITE SHALL COMPLY WITH NFPA 241 STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF NFPA 1 UNIFORM FIRE CODE.
- ALL BUILDINGS, INCLUDING FOUNDATION WALLS AND FOOTINGS AND BASEMENT SLABS INDICATED ON THE DEMOLITION PLAN ARE TO BE REMOVED FROM THE SITE. CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
- SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND/OR DEMOLITION PLAN SHALL BE INSTALLED BY THE DEMOLITION CONTRACTOR PRIOR TO START OF DEMOLITION AND CLEARING AND GRUBBING OPERATIONS.

- REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL, BY AN APPROVED HAULER. HAULER SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS.
- THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING-DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF ALL BUILDING DEMOLITION DEBRIS IN AN APPROVED OFF-SITE LANDFILL.
- ASBESTOS OR HAZARDOUS MATERIAL, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIAL ABATEMENT CONTRACTOR.
- THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF DEMOLITION.
- THE CONTRACTOR SHALL CUT AND PLUG, OR ARRANGE FOR THE APPROPRIATE UTILITY PROVIDER TO CUT AND PLUG ALL SERVICE PIPING AT THE STREET LINE OR AT THE MAIN, AS REQUIRED BY THE UTILITY PROVIDER, OR AS OTHERWISE NOTED OR SHOWN ON THE CONTRACT DRAWINGS. ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL INVESTIGATE THE SITE PRIOR TO BIDDING TO DETERMINE THE EXTENT OF SERVICE PIPING TO BE REMOVED OR PLUGGED. THE CONTRACTOR SHALL PAY ALL UTILITY PROVIDER FEES FOR ABANDONMENTS AND REMOVALS.
- THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, AND OR PROPERTY CORNERS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- THE DEMOLITION CONTRACTOR SHALL STABILIZE THE SITE AND KEEP EROSION CONTROL MEASURES IN PLACE UNTIL THE COMPLETION OF HIS WORK OR UNTIL THE COMMENCEMENT OF WORK BY THE SITE CONTRACTOR, WHICHEVER OCCURS FIRST, AS REQUIRED OR DEEMED NECESSARY BY THE ENGINEER OR OWNER'S REPRESENTATIVE. THE SITE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE MAINTENANCE OF EXISTING EROSION AND SEDIMENTATION CONTROLS AND FOR INSTALLATION OF ANY NEW SEDIMENT AND EROSION CONTROLS AS PER THE SEDIMENT AND EROSION CONTROL PLAN, AT THAT TIME.
- THE CONTRACTOR SHALL PUMP OUT BUILDING FUEL AND WASTE OIL TANKS (IF ANY ARE ENCOUNTERED) AND REMOVE FUEL TO AN APPROVED DISPOSAL AREA BY A LICENSED WASTE OIL HANDLING CONTRACTOR IN STRICT ACCORDANCE WITH STATE REQUIREMENTS.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
- EXISTING WATER SERVICES SHALL BE DISCONNECTED AND CAPPED AT MAIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE POTABLE WELL AUTHORITY. REMOVE EXISTING ONSITE WATER PIPING TO BE ABANDONED TO RIGHT OF WAY LINE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE POTABLE WELL AUTHORITY TO BE REMOVED TO MAIN.
- EXISTING SANITARY LATERAL SHALL BE PLUGGED WITH NON-SHRINK GROUT AT CURB LINE OR AT MAIN CONNECTION IN ACCORDANCE WITH THE SANITARY UTILITY PROVIDER REQUIREMENTS. REMOVE EXISTING LATERAL PIPING FROM SITE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE SANITARY UTILITY PROVIDER.
- DOMESTIC GAS SERVICES SHALL BE CAPPED AND SERVICE LINES PURGED OF RESIDUAL GAS IN ACCORDANCE WITH THE GAS UTILITY PROVIDER REQUIREMENTS. WORK TO BE COORDINATED BY AND PAID FOR BY THE CONTRACTOR. REMOVE EXISTING SERVICE PIPING ON SITE. ANY PROPANE TANKS SHALL BE PURGED OF RESIDUAL GAS BY PROPANE SUPPLIER. CONTRACTOR SHALL COORDINATE THIS WORK AND PAY NECESSARY FEES.
- THE CONTRACTOR SHALL PROVIDE DISCONNECT NOTIFICATION TO THE MUNICIPALITY ENGINEERING DEPARTMENT, TELECOMMUNICATIONS UTILITY PROVIDER, GAS UTILITY PROVIDER, ELECTRIC UTILITY PROVIDER, SANITARY UTILITY PROVIDER, AND POTABLE WELL AUTHORITY AT LEAST THREE WEEKS PRIOR TO BEGINNING DEMOLITION.
- THE CONTRACTOR IS RESPONSIBLE FOR SECURING A DEMOLITION PERMIT FROM THE MUNICIPALITY BUILDING DEPARTMENT AND MUST FURNISH THE REQUIRED APPLICATION MATERIAL AND PAY ALL FEES.
- BACK FILL DEPRESSIONS, FOUNDATION HOLES AND REMOVED DRIVEWAY AREAS IN LOCATIONS NOT SUBJECT TO FURTHER EXCAVATION WITH SOIL MATERIAL APPROVED BY THE OWNER'S GEOTECHNICAL ENGINEER AND COMPACT, FERTILIZE, SEED AND SUELO DISTURBED AREAS NOT SUBJECT TO FURTHER SITE CONSTRUCTION, DEMOLISHED BUILDING FOUNDATION AREA AND BASEMENT IF PRESENT TO BE BACKFILLED WITH GRAVEL FILL OR MATERIAL SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT IN LIFT THICKNESS SPECIFIED IN THE GEOTECHNICAL REPORT. COMPACT TO 95% MAX. DRY DENSITY PER ASTM D1557 AT MOISTURE CONTENT SPECIFIED IN GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATION. EMPLOY WATERING EQUIPMENT FOR DUST CONTROL.
- THE CONTRACTOR SHALL REPAIR PAVEMENTS BY INSTALLING TEMPORARY AND PERMANENT PAVEMENTS IN PUBLIC RIGHTS OF WAYS AS REQUIRED BY LOCAL GOVERNING AUTHORITIES AND THE MUNICIPALITY AND PER PERMIT REQUIREMENTS DUE TO DEMOLITION AND PIPE REMOVAL ACTIVITIES.
- THE CONTRACTOR SHALL CUT AND REMOVE AT LUMINAIRE AND SIGN LOCATIONS ANY PROTRUDING CONDUITS TO 24" BELOW GRADE. THE CONTRACTOR SHALL REMOVE ALL CABLE AND CONDUCTORS FROM REMAINING LIGHTING AND SIGNING CONDUITS TO BE ABANDONED. ANY REMAINING LIGHTING TO REMAIN IN PLACE SHALL BE REROUTED OR REMOVED AS NECESSARY TO REMAIN IN OPERATION.
- NO WORK ON THIS SITE SHALL BE INITIATED BY THE CONTRACTOR UNTIL A PRE-CONSTRUCTION MEETING WITH OWNER AND THE CIVIL ENGINEER IS PERFORMED. THE CONTRACTOR SHOULD BE AWARE OF ANY SITE INFORMATION AVAILABLE SUCH AS GEOTECHNICAL AND ENVIRONMENTAL REPORTS. THE CONTRACTOR SHALL HAVE CBYD MARK OUTS OF EXISTING UTILITIES COMPLETED PRIOR TO MEETING.
- THE CONTRACTOR SHALL ARRANGE FOR AND INSTALL TEMPORARY OR PERMANENT UTILITY CONNECTIONS WHERE INDICATED ON PLAN OR AS REQUIRED. MAINTAIN UTILITY SERVICES TO BUILDINGS OR TO SERVICES TO REMAIN. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS FOR INSTALLATION AND PAY UTILITY PROVIDER FEES.
- THE CONTRACTOR SHALL NOT COMMENCE DEMOLITION OR UTILITY DISCONNECTIONS UNTIL AUTHORIZED TO DO SO BY THE OWNER.
- THE CONTRACTOR OR DEMOLITION CONTRACTOR SHALL INSTALL TEMPORARY SHEETING OR SHORING AS NECESSARY TO PROTECT EXISTING AND NEW BUILDINGS, STRUCTURES AND UTILITIES DURING CONSTRUCTION AND DEMOLITION. SHEETING OR SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THIS STATE AND EVIDENCE OF SUCH SUBMITTED TO THE OWNER PRIOR TO INSTALLATION.
- NO SALVAGE SHALL BE PERMITTED UNLESS PAID TO THE OWNER AS A CREDIT.
- ANY EXISTING POTABLE WELL AND ANY EXISTING SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE DEEP AND HEALTH CODE REQUIREMENTS.
- THE EXISTING DRIVEWAYS SHALL REMAIN OPEN FOR NORMAL BUSINESS OPERATIONS UNTIL COMPLETION AND OCCUPATION OF THE NEW BUILDING.
- THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO SEDIMENT AND EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
- SUBGRADE SHALL BE FORMED WITH REMOVAL AND REPLACEMENT OF FILL AND REMOVAL AND REPLACEMENT OF UNSUITABLE AND SOFT SUBGRADE MATERIAL AS REQUIRED BY THE GEOTECHNICAL ENGINEER. SEE GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATIONS FOR FURTHER DESCRIPTION.
- THE CONTRACTOR SHALL COMPACT FILL IN LIFT THICKNESS PER THE GEOTECHNICAL REPORT UNDER ALL PARKING, BUILDING, DRIVE, AND STRUCTURE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
- UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
- VERTICAL DATUM IS NAVD 88.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE MUNICIPALITY'S AGENT PRIOR TO THE START OF WORK ON THE SITE.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE CT DEEP AND THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE SEDIMENT AND EROSION CONTROL PLAN CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES, OR SOIL CONSERVATION DISTRICT WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL, OTHERWISE THIS WORK SHALL CONFORM TO THE STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN LIFT THICKNESSES PER THE PROJECT GEOTECHNICAL REPORT TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT MOISTURE CONTENT INDICATED IN PROJECT GEOTECHNICAL REPORT.
- ALL DISTURBANCE INCURRED TO MUNICIPAL AND STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE MUNICIPALITY AND STATE AS APPLICABLE FOR THE LOCATION OF THE WORK.
- ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
- THE UTILITY PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY ARCHITECT FOR BUILDING CONNECTIONS. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST FITS SHALL BE DUE AT ALL LOCATIONS WHERE PROPOSED SANITARY SEWERS AND WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE CIVIL ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL

- PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED, WHICH SHALL INCLUDE CONCRETE ENCASUREMENT OF PIPING UNLESS OTHERWISE DIRECTED BY THE UTILITY PROVIDERS AND CIVIL ENGINEER.
- RELOCATION OF UTILITY PROVIDER FACILITIES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
  - THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
  - CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
  - BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP, STRUCTURAL, AND ARCHITECTURAL DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
  - ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
  - A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER WITH A CONCRETE ENCASUREMENT, AN 18-INCH TO 6-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASUREMENT OF THE PROPOSED PIPING.
  - GRAVITY SANITARY SEWER PIPING AND PRESSURIZED WATERLINES SHALL BE LOCATED IN SEPARATE TRENCHES AT LEAST 10 FEET APART WHENEVER POSSIBLE. WHEN INSTALLED IN THE SAME TRENCH, THE WATER PIPE SHALL BE LAID ON A TRENCH BENCH AT LEAST 18 INCHES ABOVE THE TOP OF THE SANITARY SEWER PIPE AND AT LEAST 12 INCHES (PREFERABLY 18 INCHES) FROM THE SIDE OF THE SANITARY SEWER PIPE TRENCH.
  - SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/ DRAINING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
  - MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
  - SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
  - CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO PYLON SIGNS AND SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
  - THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
  - ELECTRIC AND TELECOMMUNICATIONS SERVICES SHALL BE INSTALLED UNDERGROUND FROM THE SERVICE POLE INDICATED ON THE SITE UTILITIES PLAN. THE CONTRACTOR SHALL PROVIDE AND INSTALL AND BACKFILL (2) 4" PVC CONDUITS FOR TELECOMMUNICATIONS SERVICE, (2) 4" PVC CONDUITS FOR ELECTRIC SERVICE PRIMARY, PVC CONDUITS FOR ELECTRICAL SECONDARY PER BUILDING ELECTRICAL PLANS, (SCHEDULE 80 UNDER PAVEMENT, SCHEDULE 40 IN NON PAVEMENT AREAS). SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 12" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS, AND 24" ON TELECOMMUNICATIONS CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC UTILITY PROVIDER, AND TELECOMMUNICATIONS COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED TO FACILITATE INSTALLATION AND AS REQUIRED BY UTILITY PROVIDER. INSTALL TRAFFIC LOAD QUALIFIED HANDHOLES IN VEHICULAR AREAS. INSTALL CONCRETE ENCASUREMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC UTILITY PROVIDER.
  - ALL WATER LINES TO HAVE A MINIMUM COVER OF 3'-6". ALL LINES SHALL BE BEDDED IN 6" SAND AND INITIALLY BACKFILLED WITH 12" SAND.
  - ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERALS SHALL CONFORM TO THE APPLICABLE POTABLE WELL AUTHORITY SPECIFICATIONS, AND TO THE APPLICABLE SANITARY SEWER PROVIDER SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE INDUSTRY CODES (AWWA), CTRPH, AND PROJECT SPECIFICATIONS FOR POTABLE WATER SYSTEMS, AND FOR SANITARY SEWER SYSTEMS.
  - THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.
  - CONTRACTOR MAY SUBSTITUTE MASONRY STRUCTURES FOR PRECAST STRUCTURES IF APPROVED BY THE CIVIL ENGINEER AND ALLOWED BY THE GOVERNING AUTHORITY ENGINEER OR OTHER GOVERNING AUTHORITY.
  - PIPING SHALL BE LAID FROM DOWNGRADIENT END OF PIPE RUN IN AN UPGRADIENT DIRECTION WITH BELL END FACING UPGRADIE IN THE DIRECTION OF PIPE LAYING.
  - ALL RCP SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76; ALL RCP SHALL BE CLASS IV UNLESS OTHERWISE SHOWN. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
  - MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
  - HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE HI-Q SURE-LOK 10.8 PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M234, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH BELL-AND-SPIGOT JOINT MEETING THE REQUIREMENTS OF AASHTO M234. THE BELL SHALL BE AN INTEGRAL PART OF THE PIPE AND PROVIDE A MINIMUM FULL-APART STRENGTH OF 400 POUNDS. THE JOINT SHALL BE WATERIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE MADE OF POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
  - ALTERNATIVE POLYETHYLENE (HDPE) STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE HI-Q PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO 252, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH COUPLING BANDS OR EXTERNAL SNAP COUPLERS COVERING AT LEAST 2 FULL CORRUGATIONS ON EACH END OF THE PIPE. SILT-TIGHT (GASKET) CONNECTIONS SHALL INCORPORATE A CLOSED SYNTHETIC EXPANDED RUBBER GASKET. MEETING THE REQUIREMENTS OF AASHTO D1056 GRADE 2A2. GASKETS SHALL BE INSTALLED ON THE CONNECTION BY THE PIPE MANUFACTURER. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
  - COPPER PIPE SHALL BE TYPE K TUBING WITH COMPRESSION FITTINGS.
  - GAS PIPE MATERIAL SHALL BE PER GAS COMPANY REQUIREMENTS.
  - POLYVINYL CHLORIDE PIPE (PVCP) FOR SANITARY PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVCP SHALL CONFORM TO ASTM D3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVCP SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS, ASTM D2321 AND MANUFACTURER'S RECOMMENDED PROCEDURE.
  - PVC WATER MAIN PIPING SHALL CONFORM TO AWWA C900.
  - WORK WITHIN ROUTE 44 SHALL OCCUR BETWEEN 8AM AND 1PM. HOURS MAY BE ADJUSTED AS NEEDED.

**DEFINITIONS**  
MUNICIPALITY SHALL MEAN TOWN OF BOLTON  
COUNTY SHALL MEAN WINDLAND COUNTY  
STATE SHALL MEAN CONNECTICUT  
POTABLE WELL AUTHORITY SHALL MEAN EASTERN HIGHLANDS HEALTH DISTRICT  
SANITARY UTILITY PROVIDER SHALL MEAN BOLTON LAKES REGIONAL WATER POLLUTION CONTROL AUTHORITY  
GAS UTILITY PROVIDER SHALL MEAN PROPANE TANK PROVIDER  
TELECOMMUNICATIONS UTILITY PROVIDER SHALL MEAN FRONTIER COMMUNICATIONS OF CONNECTICUT  
ELECTRIC UTILITY PROVIDER SHALL MEAN EVERSOURCE ENERGY - ELECTRIC DISTRIBUTION

Architecture  
Engineering  
Environmental  
Land Surveying



100 Constitution Plaza  
10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

REVISIONS

No.	Date	Description
1	03/20/2021	REVISED PER TOWN COMMENTS
2	06/07/2021	REVISED PER TOWN COMMENTS

Designed S.E.L.  
Drawn S.E.L.  
Reviewed  
Scale NONE  
Project No. 2002032  
Date 04/02/2021  
CAD File: GN200203201  
Title  
**GENERAL NOTES**  
Sheet No.

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_ CHAIRMAN





**ZONING INFORMATION**

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT				
ZONE: RURAL MIXED USE ZONE (RMUZ)				
USE: RETAIL (PERMITTED BY SPECIAL PERMIT)				
ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	MINIMUM LOT AREA	80,000 S.F.	80,707 S.F. (1.85 AC.)	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	308 FEET	NO
3	MINIMUM LOT FRONTAGE	150 FEET	260.4 FEET	NO
4	MINIMUM FRONT SETBACK	NONE REQUIRED	71.9 FEET	NO
5	MINIMUM SIDE SETBACK	25 FEET (50 FEET) [1]	72.8 FEET	NO
6	MINIMUM REAR SETBACK	25 FEET [1]	51.4 FEET	NO
7	MAXIMUM BUILDING HEIGHT	35 FEET/2.5 STORIES	25.6 FEET	NO
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	13.2 PERCENT	NO
9	MAXIMUM IMPERVIOUS COVERAGE	50 PERCENT	39.9 PERCENT	NO

[1] MINIMUM SIDE AND REAR SETBACKS - 50 FEET WHEN ABUTTING A RESIDENTIAL DISTRICT

**PARKING INFORMATION**

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	BUILDING SIZE	600 S.F.	10,640 S.F.	NO
2	PARKING REQUIRED	RETAIL - MINIMUM - 2 SPACES PER 1,000 S.F. OF GFA (10,640 S.F.) MINIMUM REQUIRED = 22 SPACES MAXIMUM - 5 SPACES PER 1,000 S.F. OF GFA (10,640 S.F.) MAXIMUM ALLOWED = 54 SPACES	33 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	2 SPACES	2 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 20 FEET	NO
5	MINIMUM LOADING DIMENSIONS	10 FEET X 25 FEET X 14 FEET	33 FEET X 71 FEET X > 14 FEET	NO
6	MINIMUM AISLE WIDTH	22 FEET - 2-WAY 11 FEET - 1-WAY	30 FEET - 2-WAY	NO
7	MINIMUM FRONT SETBACK	50 FEET [2]	50.5 FEET	NO
8	MINIMUM SIDE SETBACK	NONE REQUIRED [2]	77.1 FEET	NO
9	MINIMUM REAR SETBACK	NONE REQUIRED [2]	5.3 FEET	NO
10	BICYCLE PARKING REQUIRED	1 BICYCLE PARKING SPACE PER 25 PARKING SPACES (2 REQUIRED)	2 BICYCLE PARKING SPACES	NO

[2] 10 FEET LANDSCAPED BUFFER STRIP REQUIRED WHERE ABUTTING A RESIDENCE DISTRICT

**SITE PLAN LEGEND**

- PROPERTY LINE
- LIMIT OF DISTURBANCE AND SITWORK CONTRACT LIMIT LINE
- SAWCUT LINE
- PROVIDE AND INSTALL CONCRETE PAVEMENT STRUCTURE, REINFORCED CONCRETE SIDEWALK, OR MONOLITHIC CONCRETE CURB AND SIDEWALK
- PROVIDE AND INSTALL FULL DEPTH HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE
- PROVIDE AND INSTALL FULL DEPTH STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE
- PROVIDE AND INSTALL SIGN

**SIGN LEGEND**

SIGN NO.	C-DOT NO.	LEGEND
A	31-0552Z	STOP 30"
B	31-0629	[Handicap Symbol]
C	31-0648	VAN ACCESSIBLE

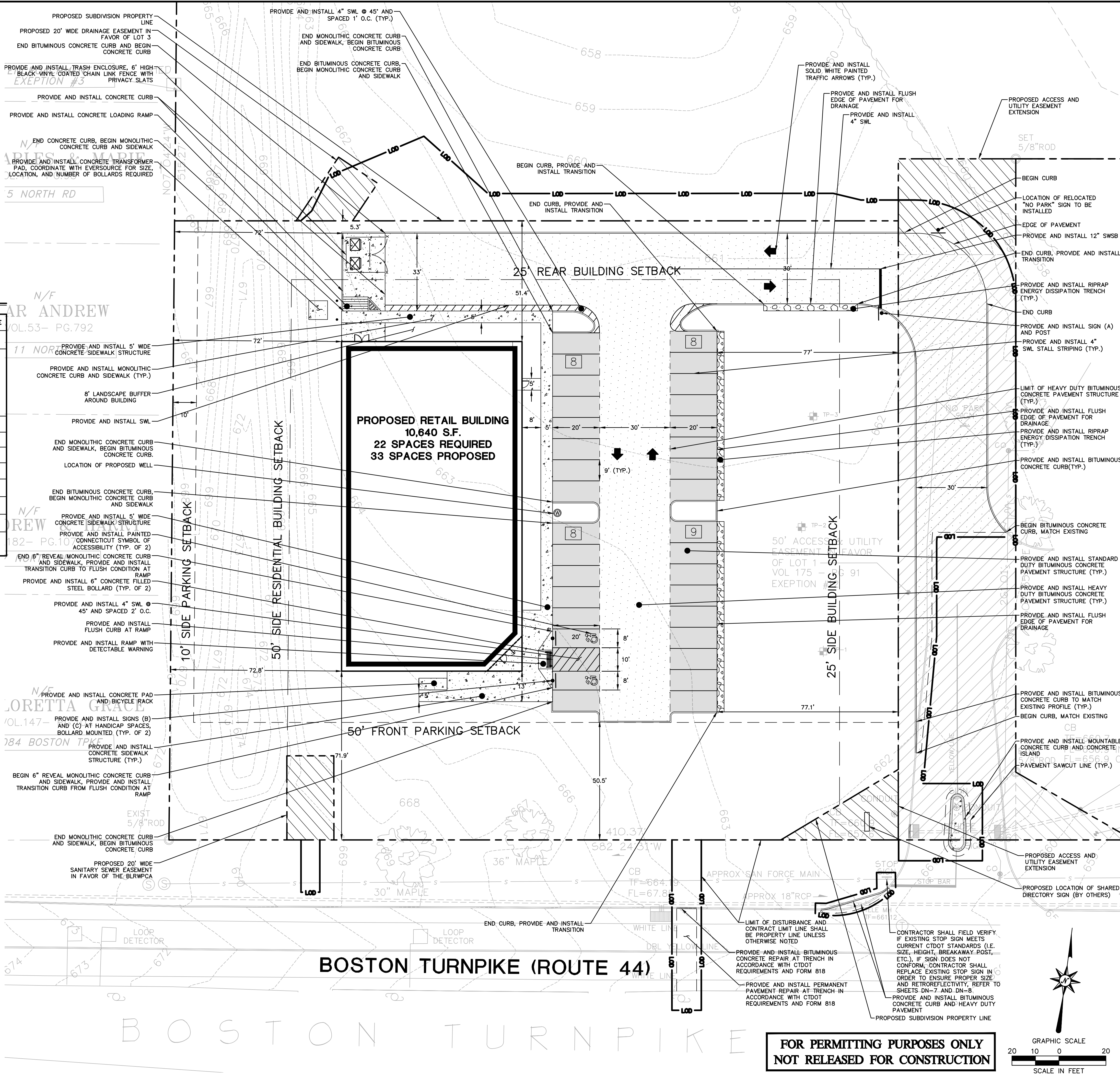
NOTE:  
1. HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL). ALL HANDICAP SIGNAGE TO CONFORM TO LATEST BUILDING CODE.  
2. SIGNS INSTALLED IN THE STATE RIGHT-OF-WAY MUST BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT'S TYPICAL DETAIL SHEETS (I.E. HEIGHT, BREAKAWAY POSTS, ETC.)

BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN \_\_\_\_\_

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_



**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

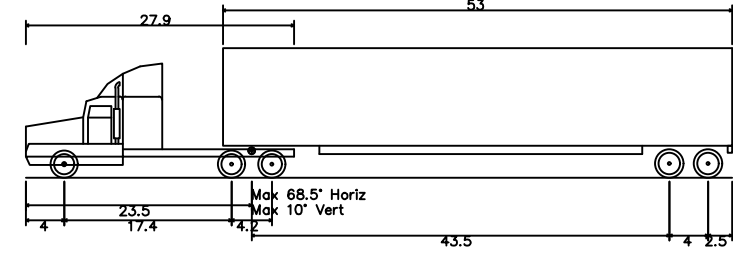
REVISIONS

No.	Date	Description
1	03/20/2021	REVISED PER TOWN COMMENTS
2	06/07/2021	REVISED PER TOWN COMMENTS

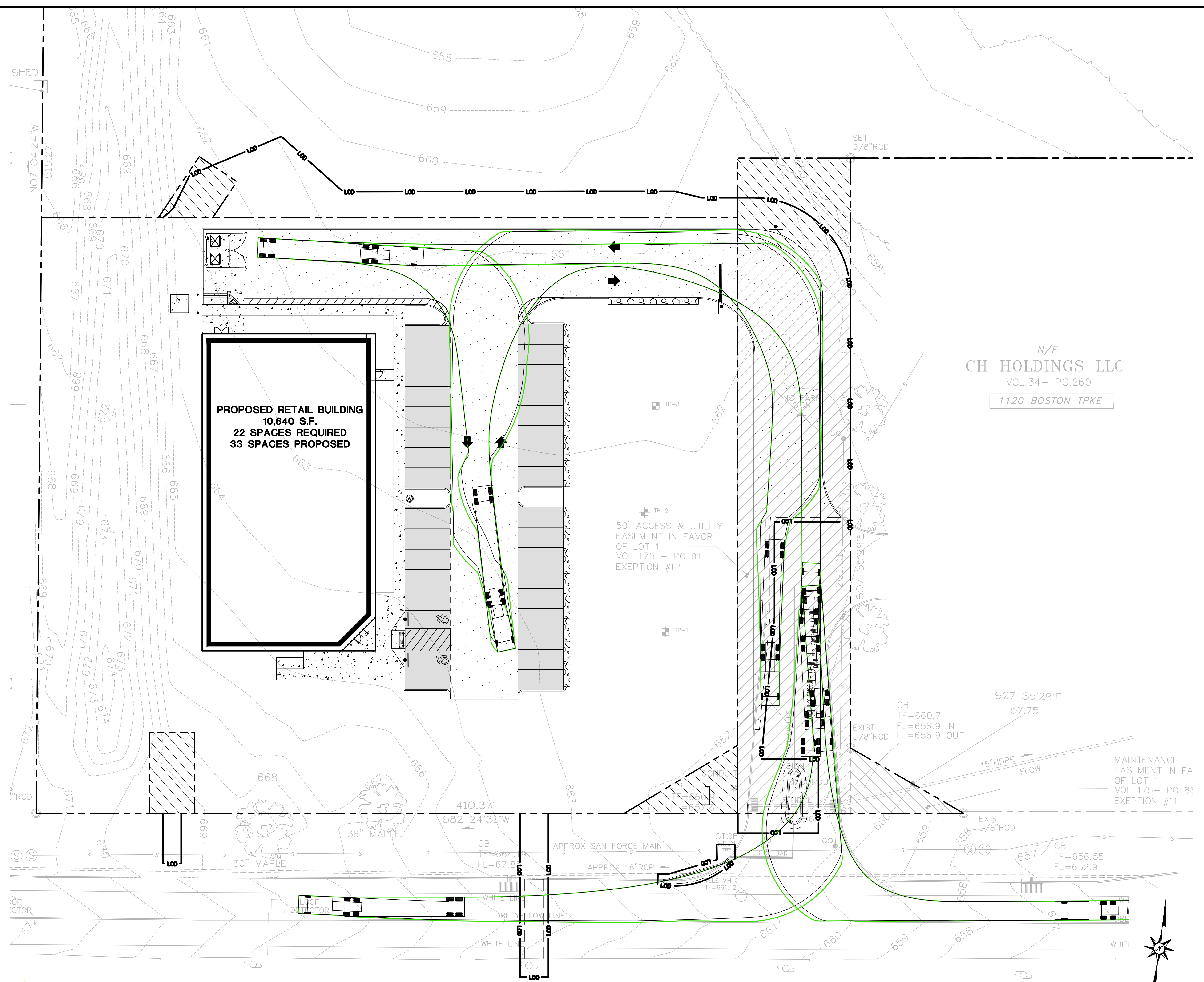
Designed: S.E.L.  
Drawn: S.E.L.  
Reviewed: S.E.L.  
Scale: 1"=20'  
Project No.: 2002032  
Date: 04/02/2021  
CAD File: SP200203201

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Sheet No.: SP-1



WB-67 - Interstate Semi-Trailer  
 Overall Length 73.50ft  
 Overall Width 8.50ft  
 Overall Body Height 13.50ft  
 Min. Body Ground Clearance 13.34ft  
 Max. Track Width 8.20ft  
 Lock-to-lock time 6.00s  
 Max Steering Angle (Virtual) 28.40



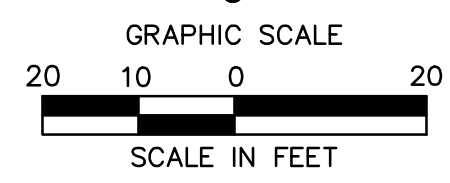
N/F  
 CH HOLDINGS LLC  
 VOL.34- PG.260  
 1120 BOSTON TPKE

TP-2  
 50' ACCESS & UTILITY  
 EASEMENT IN FAVOR  
 OF LOT 1  
 VOL 175 - PG 91  
 EXEPTION #12

MAINTENANCE  
 EASEMENT IN FA  
 OF LOT 1  
 VOL 175- PG 80  
 EXEPTION #11

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**  
 DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
 \_\_\_\_\_ CHAIRMAN  
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 NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

REVISIONS

No.	Date	DESC.
1	03/22/2021	REVISED PER TOWN COMMENTS
2	03/27/2021	REVISED PER TOWN COMMENTS

Designed	SEL
Drawn	SEL
Reviewed	
Scale	1"=20'
Project No.	2002032
Date	04/02/2021
CAD File:	TT200203201

Title  
**TRUCK TURNING PLAN - WB-67**

Sheet No.

**TT-1**

**GRADING AND DRAINAGE LEGEND**

- PROPERTY LINE
  - LOD
  - LIMIT OF DISTURBANCE AND SITEWORK CONTRACT LIMIT LINE
  - SAWCUT LINE
  - STORM LINE
  - MANHOLE
  - CATCH BASIN
  - PROPOSED CONTOUR LINE
  - ×(100.00) PROPOSED SPOT GRADE
- SPOT GRADE ABBREVIATIONS**
- BC BOTTOM OF CURB
  - TC TOP OF CURB
  - BW BOTTOM OF WALL
  - TW TOP OF WALL
  - MEX MEET EXISTING CONDITION

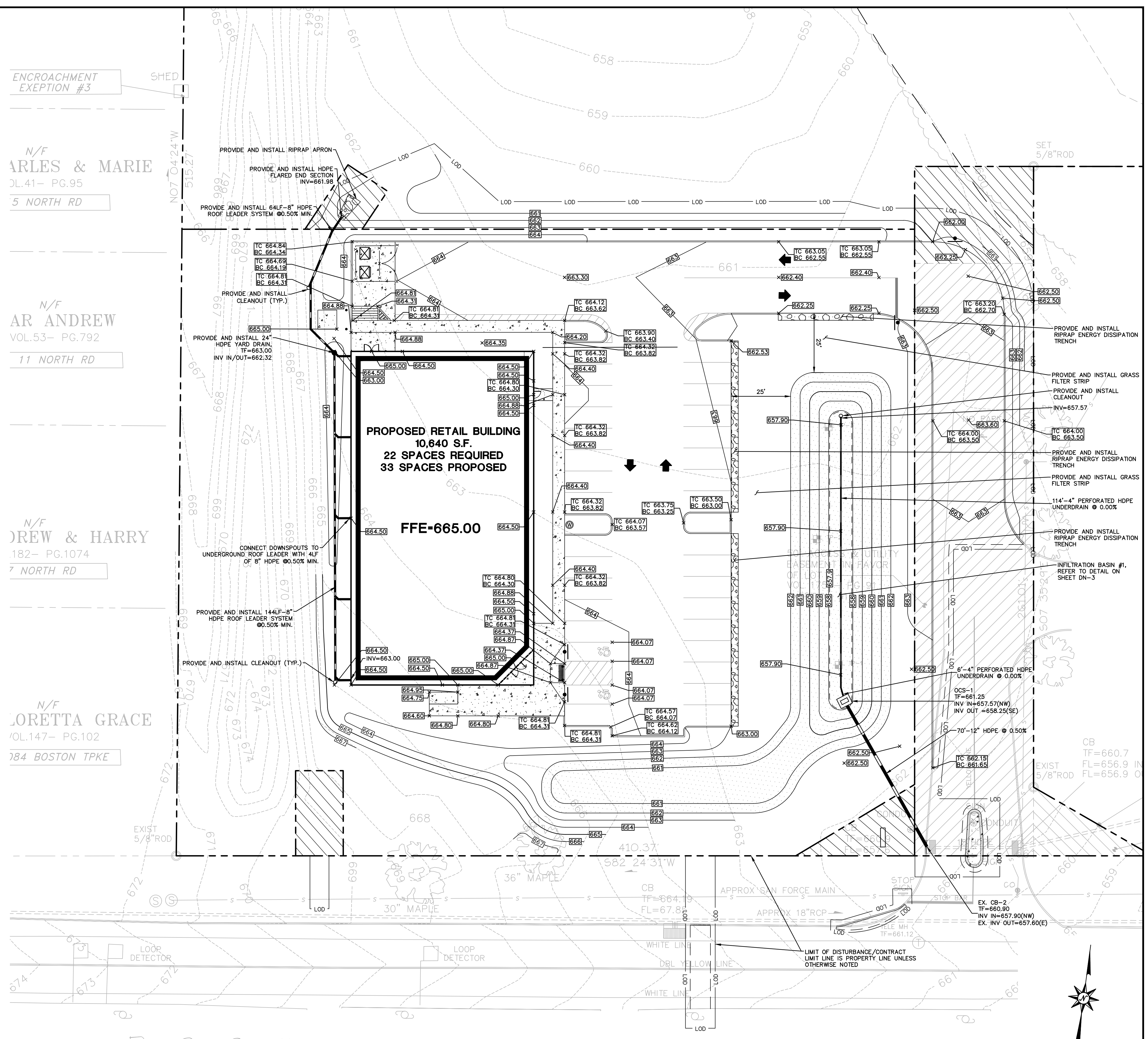
ENCROACHMENT EXEPTION #3

N/F ARLES & MARIE  
DL.41- PG.95  
5 NORTH RD

N/F AR ANDREW  
VOL.53- PG.792  
11 NORTH RD

N/F DREW & HARRY  
182- PG.1074  
7 NORTH RD

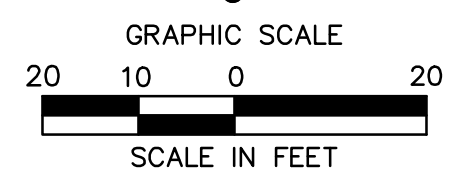
N/F LORETTA GRACE  
VOL.147- PG.102  
184 BOSTON TPKE



**PROPOSED RETAIL BUILDING**  
10,640 S.F.  
22 SPACES REQUIRED  
33 SPACES PROPOSED

FFE-665.00

**FOR PERMITTING PURPOSES ONLY**  
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**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

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CHAIRMAN \_\_\_\_\_

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10th Floor  
Hartford, CT 06103  
(860) 249-2200  
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Designed	SEL
Drawn	SEL
Reviewed	
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Project No.	2002032
Date	04/02/2021
CAD File:	GD200203201

**GRADING AND DRAINAGE PLAN**

Sheet No.

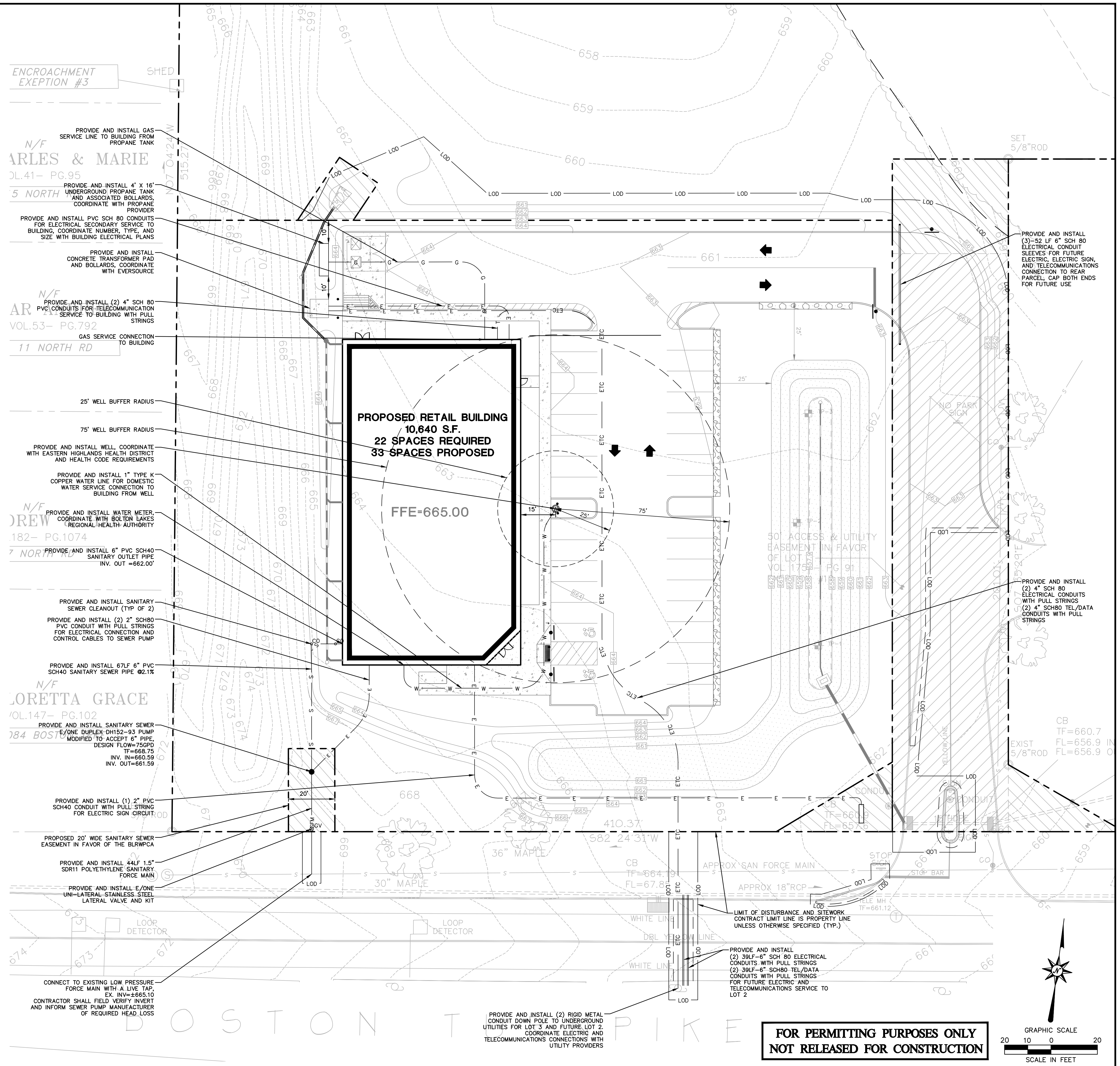
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**SITE UTILITIES LEGEND**

---	PROPERTY LINE
---	LIMIT OF DISTURBANCE AND SITEWORK CONTRACT LIMIT LINE
---	SAWCUT LINE
E	ELECTRIC LINE
G	GAS LINE
W	WATER LINE
S	SANITARY SEWER LINE
SFM	SANITARY SEWER FORCE MAIN
T	TELECOMMUNICATIONS LINE
ETC	ELECTRIC AND TELECOMMUNICATIONS LINE
---	STORM LINE



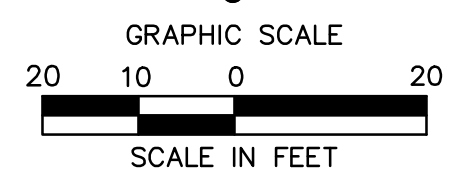
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

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**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
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Designed	SEL
Drawn	SEL
Reviewed	
Scale	1"=20'
Project No.	2002032
Date	04/02/2021
CAD File	SU200203201

**SITE UTILITIES PLAN**

Sheet No.

**SU-1**

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# SEDIMENT AND EROSION CONTROL NOTES

## SEDIMENT & EROSION CONTROL NARRATIVE

THE SEDIMENT AND EROSION CONTROL PLAN WAS DEVELOPED TO PROTECT THE EXISTING ROADWAY AND STORM DRAINAGE SYSTEMS, ADJACENT PROPERTIES, AND ANY ADJACENT WETLAND AREA AND ANY ADJACENT WATER COURSE FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION. A CONSTRUCTION SEQUENCE IS PROVIDED TO PROVIDE SURFACE RUNOFF EROSION CONTROLS PRIOR TO THE BEGINNING OF PROJECT DEMOLITION AND/OR CONSTRUCTION.

## CONSTRUCTION SCHEDULE

THE ANTICIPATED STARTING DATE FOR CONSTRUCTION IS SPRING 2021 WITH COMPLETION ANTICIPATED FALL 2021. APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES AS DESCRIBED HEREIN SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL DEMOLITION OR CONSTRUCTION ACTIVITY. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED.

## CONTINGENCY EROSION PLAN

THE CONTRACTOR SHALL INSTALL ALL SPECIFIED SEDIMENT AND EROSION CONTROL MEASURES AND WILL BE REQUIRED TO MAINTAIN THEM IN THEIR INTENDED FUNCTIONING CONDITION. THE AGENTS OF THE MUNICIPALITY OR INLAND WETLANDS COMMISSION AND/OR CIVIL ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

## CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

- CONTACT MUNICIPALITY OR INLAND WETLANDS COMMISSION AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE MUNICIPALITY OR INLAND WETLANDS COMMISSION AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL TREE PROTECTION AND PERIMETER SILT FENCE.
- CONSTRUCT STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS AT CONSTRUCTION ENTRANCES/EXITS AND INSTALL FILTER FABRIC AROUND GRATES OF CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS ON OFF SITE ROADS. INSTALL SILT FENCE AND OTHER EROSION CONTROL DEVICES INDICATED ON THESE PLANS AT PERIMETER OF PROPOSED SITE. DISTURBANCE AND INSTALL ALL EROSION CONTROL MEASURES AND TREE PROTECTION INDICATED ON THESE PLANS. INSTALL SEDIMENT BASINS AND SEDIMENT TRAPS IF REQUIRED AT LOW AREAS OF SITE OR AS ORDERED BY THE ENGINEER OR AS SHOWN ON THESE PLANS.
- CLEAR AND GRUB SITE. STOCKPILE CHIPS. STOCKPILE TOPSOIL. INSTALL SEDIMENT AND EROSION CONTROLS AT STOCKPILES.
- ANY BUILDING AND SITE DEMOLITION AND REMOVAL. PAVEMENT REMOVAL.
- INSTALL SILT FENCE, CONSTRUCT ANY DIVERSION SWALES AND SEDIMENT BASINS AND SEDIMENT TRAPS. COMMENCE INSTALLATION OF STORM DRAINAGE SYSTEM.
- COMMENCE EARTHWORK. INSTALL ADDITIONAL SEDIMENT AND EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.
- CONSTRUCTION STAKING OF ALL BUILDING CORNERS, UTILITIES, ACCESS DRIVES, AND PARKING AREAS.
- ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST PROVIDE EVIDENCE THAT EACH SPILL OR BORROW AREA HAS A SEDIMENT AND EROSION CONTROL PLAN APPROVED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION IN WRITING OF ALL RECEIVING SPILL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.
- CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.
- BUILDING FOUNDATION SUBGRADE AND PAD SUBGRADE PREPARATION.
- BUILDING FOUNDATION CONSTRUCTION. BEGIN BUILDING SUPERSTRUCTURE.
- THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND ANY SILT FENCES, HAY BALES AND OTHER EROSION CONTROL DEVICES, AND FROM SEDIMENT BASINS AND SEDIMENT TRAPS AS REQUIRED. REMOVAL SHALL BE ON A PERIODIC BASIS (EVERY SIGNIFICANT RAINFALL OF 0.25 INCH OR GREATER). INSPECTION OF SEDIMENT AND EROSION CONTROL MEASURES SHALL BE ON A WEEKLY BASIS AND AFTER EACH RAINFALL OF 0.25 INCHES OR GREATER. SEDIMENT COLLECTED SHALL BE DEPOSITED AND SPREAD EVENLY UPLAND ON SLOPES DURING CONSTRUCTION.
- INSTALL SANITARY LATERAL AND UTILITIES. COMPLETE STORM DRAINAGE SYSTEM.
- INSTALL SITE LIGHTING AND TRASH ENCLOSURE.
- COMPLETE GRADING TO SUBGRADES AND CONSTRUCT PARKING AREA SUBGRADE.
- CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS.
- CONDUCT FINE GRADING.
- PAVING OF PARKING AREAS AND DRIVEWAYS
- FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.
- PLACE 4" TOPSOIL ON SLOPES AFTER FINAL GRADING IS COMPLETED. FERTILIZE SEED AND MULCH. SEED MIXTURE TO BE INSTALLED APRIL 15 - JUNE 1 OR AUGUST 15 - OCTOBER 1. USE EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED FOR SLOPES GREATER THAN 3:1 AND AS SHOWN ON LANDSCAPE PLANS OR EROSION CONTROL PLANS. FOR TEMPORARY STABILIZATION BEYOND SEEDING DATES USE ANNUAL RYE AT 4.0 LBS/1,000 S.F. FERTILIZE WITH 10-10-10 AT 1.0 LBS. OF NITROGEN PER 1,000 S.F. AND LIME AT 100 LBS/1,000 S.F. (MAX.).
- LANDSCAPE ISLANDS, INTERIOR NON-PAVED AREAS, AND PERIMETER AREAS.
- INSTALL SIGNING AND PAVEMENT MARKINGS
- CLEAN STORM DRAINAGE PIPE STRUCTURES, DETENTION SYSTEMS AND WATER QUALITY DEVICES OF DEBRIS AND SEDIMENT.
- UPON DIRECTION OF THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION AGENT, SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.

## OPERATION REQUIREMENTS

### CLEARING AND GRUBBING OPERATIONS

- ALL SEDIMENT AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION BASINS AND STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS, WILL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- FOLLOWING INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL MEASURES, THE CONTRACTOR SHALL NOT PROCEED WITH GRADING, FILLING OR OTHER CONSTRUCTION OPERATIONS UNTIL THE ENGINEER HAS INSPECTED AND APPROVED ALL INSTALLATIONS.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CLEARING AND GRUBBING OPERATIONS SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENT AND EROSION CONTROL DEVICES.
- FOLLOWING THE COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ALL AREAS SHALL BE STABILIZED WITH TOPSOIL AND SEEDING OR CRUSHED STONE AS SOON AS PRACTICAL.

### ROUGH GRADING OPERATIONS

- DURING THE REMOVAL AND/OR PLACEMENT OF EARTH AS INDICATED ON THE GRADING PLAN, TOPSOIL SHALL BE STRIPPED AND APPROPRIATELY STOCKPILED FOR REUSE.
- ALL STOCKPILED TOPSOIL SHALL BE SEED, MULCHED WITH HAY, AND ENCLOSED BY A SILTATION FENCE.

### FILLING OPERATIONS

- PRIOR TO FILLING, ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PROPERLY IMPLEMENTED, MAINTAINED AND FULLY INSTALLED, AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THIS PLAN.
- ALL FILL MATERIAL ADJACENT TO ANY WETLAND AREAS, IF APPLICABLE TO THIS PROJECT, SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN). SHALL BE PLACED IN LIFT THICKNESSES NOT GREATER THAN THAT SPECIFIED IN PROJECT SPECIFICATIONS AND/OR THE PROJECT GEOTECHNICAL REPORT. LIFTS SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS OR IN THE GEOTECHNICAL REPORT.
- AS GENERAL GRADING OPERATIONS PROGRESS, ANY TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED, AS NECESSARY, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT BASINS OR SEDIMENT TRAPS.

### PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND BUILDING CONSTRUCTION OPERATIONS.

- SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. HAY BALES/STRAW BALES MAY BE USED IF SHOWN ON THE SEDIMENT AND EROSION CONTROL PLANS OR IF DIRECTED BY THE CIVIL ENGINEER.

### FINAL GRADING AND PAVING OPERATIONS

- ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON SEDIMENT AND EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, OR JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.
- AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE IS STABLE AND HAS BEEN INSPECTED AND APPROVED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION.

### INSTALLATION OF SEDIMENTATION AND EROSION CONTROL MEASURES

- SILTATION FENCE
  - DIG A SIX INCH TRENCH ON THE UPHILL SIDE OF THE DESIGNATED FENCE LINE LOCATION.
  - POSITION THE POST AT THE BACK OF THE TRENCH (DOWNHILL SIDE), AND HAMMER THE POST AT LEAST 1.5 FEET INTO THE GROUND.
  - LAY THE BOTTOM SIX INCHES OF THE FABRIC INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUN-OFF.
  - BACKFILL THE TRENCH AND COMPACT.
- HAY BALES/STRAW BALES
  - BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PARALLEL TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
  - BALES SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER.
  - EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES.
  - THE GAPS BETWEEN BALES SHALL BE WEDGED WITH STRAW TO PREVENT WATER LEAKAGE.
  - THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE, TO ENSURE THAT RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER, BUT NOT AROUND IT.

### OPERATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES

- SILTATION FENCE
  - ALL SILTATION FENCES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.
  - SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT.
- HAY BALES/STRAW BALES
  - ALL HAY BALE/STRAW BALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.
  - DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.
- SEDIMENT BASINS/SEDIMENT TRAPS
  - CONTRACTOR TO KEEP WEEKLY CHECKLIST LOSS FOR INSPECTIONS OF ALL SEDIMENT AND EROSION CONTROL DEVICES AND HAVE THEM READILY AVAILABLE ON-SITE AT ALL TIMES FOR INSPECTION BY DEEP, LOCAL AUTHORITIES OR ENGINEER.
  - ALL SEDIMENT BASINS AND/OR SEDIMENT TRAPS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OF SLOPES SHALL BE PROMPTLY MADE AS NEEDED.
  - SEDIMENT DEPOSITS SHALL BE REMOVED FROM SEDIMENT BASINS AND/OR SEDIMENT TRAPS WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT UNLESS OTHERWISE INDICATED ON THE EROSION CONTROL PLANS AND DETAILS TO BE AT A SPECIFIC ELEVATION PER CLEAN OUT MARKERS.
  - SEDIMENT SHALL BE DISPOSED OF ON-SITE OR AS DIRECTED BY THE ENGINEER AND LOCAL GOVERNING OFFICIALS. SEE SEDIMENT AND EROSION CONTROL NOTES HEREIN REGARDING DISPOSAL REQUIREMENTS FOR OFF SITE SPOIL DISPOSAL.

### SEDIMENT AND EROSION CONTROL PLAN

- HAY BALE/STRAW BALE FILTERS WILL BE INSTALLED AT ALL CULVERT OUTLETS IF CULVERT OUTLETS ARE APPLICABLE TO THIS PROJECT AND SILTATION FENCE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
- CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIP RAP CHANNELS. EROSION DISSIPATORS WILL BE INSTALLED AS SHOWN ON THESE PLANS AND AS NECESSARY.
- CATCH BASINS WILL BE PROTECTED WITH HAY BALE/STRAW BALE FILTERS, SILT SACKS, SILTATION FENCE, OR OTHER INLET PROTECTION DEVICES PER DETAILS, THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
- ALL SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.
- SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED PRIOR TO DEMOLITION AND/OR CONSTRUCTION WHENEVER POSSIBLE.
- ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE DEMOLITION AND CONSTRUCTION PERIOD UNTIL THE SITE IS DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION.
- ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED OR AS DIRECTED BY THE CIVIL ENGINEER OR BY THE AUTHORITY HAVING JURISDICTION.
- SEDIMENT REMOVED FROM EROSION CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLANS, NOTES, AND DETAILS.
- THE CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFICATION OF THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION OFFICE OR AUTHORITY HAVING JURISDICTION OF ANY TRANSFER OF THIS RESPONSIBILITY AND FOR CONVEYING A COPY OF THE SEDIMENT AND EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

### SEDIMENT AND EROSION CONTROL NOTES

- THE SEDIMENT AND EROSION CONTROL PLAN IS ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL TREATMENT FOR THIS SITE. SEE SEDIMENT AND EROSION CONTROL DETAILS AND CONSTRUCTION SEQUENCE. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE AUTHORITY HAVING JURISDICTION OR COUNTY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
- AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED WITH THE MUNICIPALITY TO ENSURE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF THIS BOND AND FOR INQUIRIES TO THE MUNICIPALITY FOR INFORMATION ON THE METHOD, TYPE AND AMOUNT OF THE BOND POSTING UNLESS OTHERWISE DIRECTED BY THE OWNER.
- VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT OF 0.25 INCHES OR GREATER BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN SEDIMENT AND EROSION CONTROL, TO ASCERTAIN THAT THE SEDIMENT AND EROSION CONTROL (E&S) BMPs ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
  - A) SUMMARY OF THE SITE CONDITIONS, E&S BMPs, AND COMPLIANCE; AND
  - B) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION
- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION. THE CONTRACTOR SHALL KEEP A COPY OF THE GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION.
- ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION, OR GOVERNING AGENCIES. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED.
- THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS BEFORE AND AFTER EACH STORM (0.25 INCHES OR GREATER RAINFALL), OR AT LEAST WEEKLY, TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF SEDIMENT AND EROSION CONTROL MATERIAL (ANY HAY BALES, SILT FENCE,

JUTE MESH, RIP RAP, ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.

- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE OR AS SHOWN WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- INSTALL PERIMETER SEDIMENT AND EROSION CONTROLS PRIOR TO CLEARING OR CONSTRUCTION. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, OR EQUIVALENT FENCING. ALL CONSTRUCTION SHALL BE MAINTAINED WITHIN THE UPHILL SIDE OF THE SILT FENCE UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE FENCE.
- ANY STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED AT START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN ONE (1) MONTH.
- ANY SEDIMENT BASINS AND SEDIMENT TRAPS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE CONTRIBUTING TO THE BASIN. PROVIDE BASIN VOLUMES FOR ALL DISTURBANCE ON SITE.
- COMPLY WITH REQUIREMENTS OF CGS SECTION 22A 430B, FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.
- ANY STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY ON SITE EXCAVATION AND SHALL BE MAINTAINED DURING ALL DEMOLITION, EXCAVATION AND CONSTRUCTION ACTIVITIES.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (ONE WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
- MAINTAIN EXISTING PAVED AREAS FOR CONSTRUCTION STAGING FOR AS LONG AS POSSIBLE.
- SILT FENCE AND OTHER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS PRIOR TO WORK IN ANY UPLAND AREAS.
- EXCAVATED MATERIAL FROM TEMPORARY SILT TRAPS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.
- INSTALL SILT FENCE ACCORDING TO MANUFACTURER'S INSTRUCTION, PARTICULARLY, BURY LOWER EDGE OF FABRIC INTO GROUND. SILT FENCE SHALL BE TENCATE ENVIOFENCE, PROPEX GETOX OR EQUIVALENT APPROVED BY THE CIVIL ENGINEER. FILTER FABRIC USED SHALL BE TENCATE 140N OR 170N, OR APPROVED EQUIVALENT. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
- WHERE INDICATED ON SEDIMENT AND EROSION CONTROL PLANS USE NEW HAY/STRAW BALES AND REPLACE THEM WHENEVER THEIR CONDITION DEGRADES BEYOND USABILITY. STAKE BALES SECURELY INTO GROUND AND BUTT TIGHTLY TOGETHER TO PREVENT UNDERCUTTING AND BYPASSING.
- INSTALL ANY TEMPORARY DIVERSION DITCHES, PLUNGE POOLS, SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH PITS AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION. LOCATION OF TEMPORARY SEDIMENT BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE CIVIL ENGINEER AND AUTHORITY HAVING JURISDICTION.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY PITS, SEDIMENT TRAP, SEDIMENT BASINS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINAGE SYSTEM OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR.
- BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENTATION BASIN OUTLET CONTROL ORIFICE UNTIL SITE IS STABILIZED. BLOCK END OF STORM SEWERS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. OTHER DUST CONTROL MEASURES TO BE USED AS NECESSARY INCLUDE WATERING DOWN DISTURBED AREAS, USING CALCIUM CHLORIDE, AND COVERING LOADS ON DUMP TRUCKS.
- PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN ANY SEDIMENT BASINS AND SEDIMENT TRAPS DURING CONSTRUCTION AND CLEAN AS NEEDED. SIFT WHEN NECESSARY OR WHEN ONE FOOT OF SEDIMENT HAS ACCUMULATED OR PER SPECIFIC CLEANOUT MARKER ELEVATION. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY AND AS DIRECTED BY THE CIVIL ENGINEER OR OWNER'S CONSTRUCTION REPRESENTATIVE. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY/STRAW BALES AND SILT FENCE WHEN LEVEL REACHES HALF THE HEIGHT OF THE BALE OR ONE FOOT AT SILT FENCE. DISPOSE OF SEDIMENT LEGALLY EITHER ON OR OFF SITE.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
- ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF UTILITY AND STORM PIPE TRENCHES SO AS TO ALLOW THE TRENCH TO INTERCEPT ALL SILT LADEN RUNOFF.
- CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING.
- ANY STOCKPILES OF STRIPPED MATERIALS ARE TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL. HAUL ROADS BOTH INTO AND AROUND THE SITE ARE TO BE SPRAYED AS NEEDED TO SUPPRESS DUST. TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARPED TO AID IN THE CONTROL OF AIRBORNE DUST. DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS UNLESS OTHERWISE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
- MAINTAIN ALL PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS WHEN AUTHORIZED BY AUTHORITY HAVING JURISDICTION. FILE NOT (NOTICE OF TERMINATION) WITH AUTHORITY HAVING JURISDICTION RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

### STATE SPECIAL CONCERN SPECIES

- CONTRACTOR IS RESPONSIBLE FOR HIRING A QUALIFIED HERPETOLOGIST TO WORK WITH CONSTRUCTION CREW TO ENSURE THAT TURTLES WILL NOT BE UNINTENTIONALLY KILLED DURING THE MOVING OF HEAVY EQUIPMENT, ESPECIALLY IN THE MONTH OF JUNE.
- THE LIMIT OF DISTURBANCE SHALL BE FENCED WITH EXCLUSIONARY FENCING THAT IS SECURED AND IN CONTACT WITH THE GROUND AND AT LEAST 30INCHES HIGH. THE FENCE SHALL BE MAINTAINED BI-WEEKLY AND AFTER MAJOR WEATHER EVENTS. DO NOT USE PLASTIC NETTED OR NETTED SILT FENCE.
- ALL STAGING AND STORAGE AREAS, OUTSIDE OF PREVIOUSLY PAVED LOCATIONS, REGARDLESS OF THE DURATION OF TIME THEY WILL BE UTILIZED, MUST BE REVIEWED TO REMOVE INDIVIDUALS AND EXCLUDE THEM FROM RE-ENTRY.
- ALL CONSTRUCTION PERSONNEL WORKING WITHIN THE TURTLE HABITAT MUST BE APPRISED OF THE SPECIES DESCRIPTION AND THE POSSIBLE PRESENCE OF A LISTED SPECIES, AND INSTRUCTED TO RELOCATE TURTLES FOUND INSIDE WORK AREAS OR NOTIFY THE APPROPRIATE AUTHORITIES TO RELOCATE INDIVIDUALS.
- ANY TURTLES ENCOUNTERED WITHIN THE IMMEDIATE WORK AREA SHALL BE CAREFULLY MOVED TO AN ADJACENT AREA OUTSIDE OF THE EXCLUDED AREA AND FENCING SHOULD BE INSPECTED TO IDENTIFY AND REMOVE ACCESS POINT.
- IN AREAS WHERE SILT FENCE IS USED FOR EXCLUSION, IT SHALL BE REMOVED AS SOON AS THE AREA IS STABLE TO ALLOW FOR REPTILE AND AMPHIBIAN PASSAGE TO RESUME.
- NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT.
- SPECIAL PRECAUTIONS MUST BE TAKEN TO AVOID DEGRADATION OF WETLAND HABITATS INCLUDING ANY WET MEADOWS AND SEASONAL POOLS.
- THE CONTRACTOR AND CONSULTING HERPETOLOGIST MUST SEARCH THE WORK AREA EACH MORNING PRIOR TO ANY WORK BEING DONE.
- WHEN FELLING TREES ADJACENT TO BROOKS AND STREAMS PLEASE CUT THEM TO FALL AWAY FROM THE WATERWAY AND DO NOT DRAG TREES ACROSS THE WATERWAY OR REMOVE STUMPS FROM BANKS.
- AVOID AND LIMIT ANY EQUIPMENT USE WITHIN 50 FEET OF STREAMS AND BROOKS.
- ANY CONFIRMED TURTLE SIGHTINGS SHOULD BE REPORTED TO THE NATURAL DIVERSITY DATA BASE AT (nddbrequestdep@ct.gov) USING REPORTING FORMS FOUND ON THE NDDB WEBSITE



100 Constitution Plaza  
10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax



PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Desc. REVISED PER TOWN COMMENTS  
REVISIONS

No. 2  
Date 03/22/2021  
06/07/2021

Designed S.E.L.  
Drawn S.E.L.  
Reviewed  
Scale NONE  
Project No. 2002032  
Date 04/02/2021  
CAD File: EC200203201

Title  
**SEDIMENT AND EROSION CONTROL NOTES**

Sheet No.

EC-2

FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_ CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**LANDSCAPE ZONING INFORMATION**

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT  
 ZONE: RURAL MIXED USE ZONE (RMUZ)  
 USE: RETAIL (PERMITTED BY SPECIAL PERMIT)

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	LANDSCAPE AREA (SEC.11.J)	NO LESS THAN 30% OF AN RMUZ ZONE SHALL BE LANDSCAPED. SIDEWALKS ARE EXCLUDED FROM LANDSCAPE AREA	GREATER THAN 30% LANDSCAPED	NO
2	LANDSCAPE PARKING (SEC.15.H)	INTERIOR LANDSCAPING SHALL BE PROVIDED AT A RATE OF 20 SF PER PARKING SPACE. LANDSCAPING SHALL BE WITHIN RAISED, CURBED ISLANDS. (20 SF X 33 SPACES = 660 SF)	730 SF PROPOSED	NO
3	LANDSCAPE PARKING (SEC.15.H)	PARKING AREAS ABUTTING A RESIDENTIAL ZONE SHALL BE SCREENED BY A 10' WIDTH EVERGREEN ROW. PLANTS TO BE 4' HT AND 4' O.C. AT TIME OF PLANTING.	COMPLIES	NO
4	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	INTERIOR LANDSCAPE AREAS SHALL BE 100 SF MIN AND 8' WIDTH MIN.	COMPLIES	NO
5	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	INTERIOR AREAS SHALL HAVE 1 TREE PER 20 PARKING SPACES	COMPLIES	NO
6	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	PARKING PERIMETER LANDSCAPE AREA SHALL BE 5' WIDTH MIN. WITH 1 TREE PER 50 LF	COMPLIES	NO
7	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	TREES TO BE 3" CAL. AND 10' HT. MIN. AT TIME OF PLANTING	COMPLIES	NO
8	STREET PLANTINGS (SEC.16A.3.q.4)	LANDSCAPE ADJACENT TO STREET TO BE 30' WIDTH WITH 1 TREE PER 40' LOT LINE FRONTAGE (260 LF FRONTAGE ÷ 40 = 6.5 TREES)	5 TREES PROPOSED, 2 TREES TO REMAIN	NO
9	LANDSCAPE DESIGN (SEC.16A.3.x.3.g.10)	FOR EVERY 5 PARKING SPACES, 1 TREE SHALL BE PROVIDED (33 PARKING SPACES ÷ 5 = 6.6 TREES)	GREATER THAN 7 TREES PROVIDED	NO
10	LANDSCAPE DESIGN GUIDELINES (CH.8.1.3)	PLANT MATERIAL TO BE INDIGENOUS TO THE AREA, OR IF NOT NATIVE, THAN HARDY AND NON-INVASIVE	COMPLIES	NO
11	LANDSCAPE DESIGN GUIDELINES (CH.8.1.20&21)	ALL PLANTINGS SHALL BE GUARANTEED FOR 2 YEARS MINIMUM. A COPY OF THE GUARANTEE CONTRACT SHALL BE SUBMITTED TO THE TOWN.	SEE LANDSCAPE NOTE #4 ON SHEET LL-2	NO
12	LANDSCAPE DESIGN GUIDELINES (CH.8.1.22)	FLOWERING TREES TO BE 2"-2.5" CAL./DECIDUOUS TREES 3"-3.5" CAL./EVERGREEN TREES TO BE 5"-7" HT. MIN./DECIDUOUS SHRUBS 24" HT./EVERGREEN SHRUBS 18" HT./PERENNIALS 1 GAL. CONT.	COMPLIES	NO

**LANDSCAPE PLANT SCHEDULE**

KEY	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE AT INSTALL	SIZE AT MATURITY	COMMENTS
AR	3	<i>Acer rubrum</i> 'Franksred'	RED SUNSET RED MAPLE	B&B	3" CAL. MIN.	45' x 35'	7' BRANCH HT. MIN.
AS	3	<i>Acer saccharum</i>	SUGAR MAPLE	B&B	3" CAL. MIN.	45' x 40'	7' BRANCH HT. MIN.
BN	3	<i>Betula nigra</i> 'Cully'	HERITAGE RIVER BIRCH	B&B	10' HT. MIN.	40' x 30'	MULTI-STEM
CO	4	<i>Celtis occidentalis</i> 'Prairie Pride'	PRAIRIE PRIDE HACKBERRY	B&B	3" CAL. MIN.	45' x 35'	7' BRANCH HT. MIN.
PG	3	<i>Picea glauca</i>	WHITE SPRUCE	B&B	6' HT. MIN.	50' x 15'	FULL BRANCHING TO GROUND
PS	8	<i>Pinus strobus</i>	EASTERN WHITE PINE	B&B	6' HT. MIN.	60' x 30'	FULL BRANCHING TO GROUND
PA	4	<i>Platanus x acerifolia</i> 'Morton's Circle'	EXCLAMATION! PLANETREE	B&B	3" CAL. MIN.	55' x 35'	7' BRANCH HT. MIN.
QR	3	<i>Quercus rubra</i>	RED OAK	B&B	3" CAL. MIN.	50' x 45'	7' BRANCH HT. MIN.
QP	3	<i>Quercus palustris</i>	PIN OAK	B&B	3" CAL. MIN.	55' x 40'	7' BRANCH HT. MIN.
TG	20	<i>Thuja</i> 'Green Giant'	GREEN GIANT ARBORVITAE	B&B	6' HT. MIN.	50' x 15'	FULL BRANCHING TO GROUND
<b>SHRUBS</b>							
CS	7	<i>Cornus sericea</i> 'Arctic Fire'	ARCTIC FIRE REDTWIG DOGWOOD	CONT.	24" HT. MIN.	3.5' x 3.5'	PLANT 4' O.C.
IG	17	<i>Ilex glabra</i>	INKBERRY	CONT.	4' HT. MIN.	7' x 6'	PLANT 4' O.C.
IGC	27	<i>Ilex glabra</i> 'Compacta'	COMPACT INKBERRY	CONT.	24" HT. MIN.	4' x 5'	PLANT 4' O.C.
MP	7	<i>Myrica pensylvanica</i>	BAYBERRY	CONT.	30" HT. MIN.	8' x 8'	PLANT 5' O.C.
RC	8	<i>Rhododendron</i> 'Cunningham's White'	CUNNINGHAM'S WHITE RHODODENDRON	CONT.	24" HT. MIN.	3' x 4'	PLANT 4' O.C.
RH	6	<i>Rhododendron</i> 'Lavender Princess'	LAVENDER PRINCESS RHODODENDRON	CONT.	24" HT. MIN.	4' x 5'	PLANT 4' O.C.
<b>ORNAMENTAL GRASSES</b>							
PV	24	<i>Panicum virgatum</i> 'Shenandoah'	SHENANDOAH SWITCHGRASS	CONT.	24" HT. MIN.	4' x 2'	PLANT 30" O.C.
SH	27	<i>Sporobolus heterolepis</i>	PRARIE DROPSEED	CONT.	12" HT. MIN.	2.5' x 2.5'	PLANT 30" O.C.
<b>PERENNIALS AND GROUNDCOVERS</b>							
AM	15	<i>Aronia melanocarpa</i> 'CONNAM165'	LOW SCAPE MOUND CHOKEBERRY	CONT.	12" HT. MIN.	2' x 3'	PLANT 30" O.C.
CV	10	<i>Coreopsis verticillata</i> 'Grandiflora'	GRANDIFLORA COREOPSIS	CONT.	8" HT. MIN./1 GAL. CONT.	2.5' x 2.5'	PLANT 30" O.C.
RF	16	<i>Rudbeckia fulgida</i> 'Goldstrum'	BLACK-EYED SUSAN	CONT.	8" HT. MIN./1 GAL. CONT.	2.5' x 2.5'	PLANT 30" O.C.

- NOTES:**
- ALL SUBSTITUTIONS MUST RECEIVE APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO SITE.
  - PROVIDE AND INSTALL ALL PLANTS SHOWN ON THE PLANTING PLAN DRAWINGS; THE QUANTITIES IN THE PLANT LIST ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. IF DISCREPANCIES OCCUR, THE LARGER QUANTITY SHALL APPLY.
  - IF THERE IS A DISCREPANCY BETWEEN BOTANICAL AND COMMON NAME, BOTANICAL NAME PREVAILS.

**SEE SHEET LL-2 FOR LANDSCAPE NOTES AND DETAILS**

BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

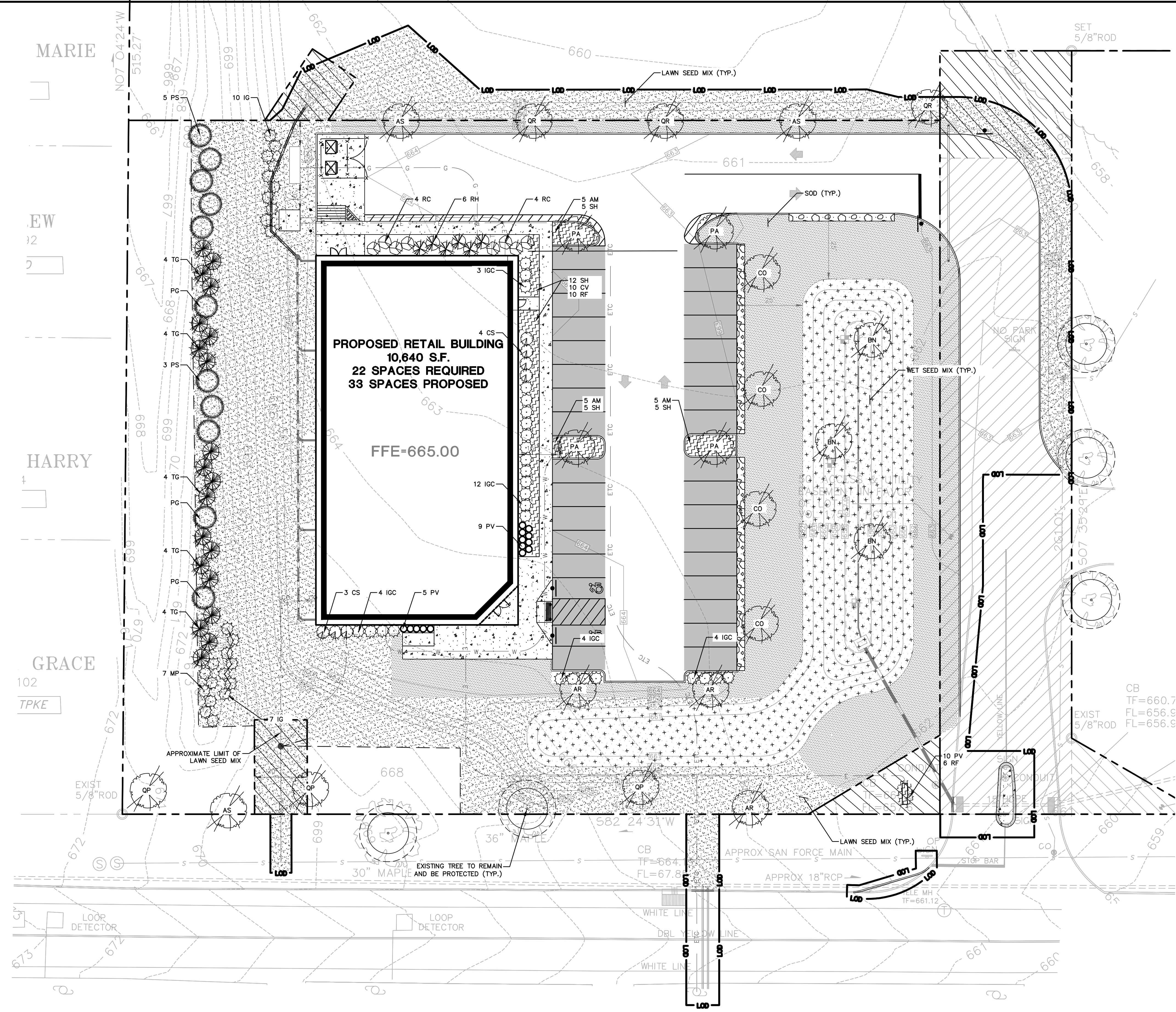
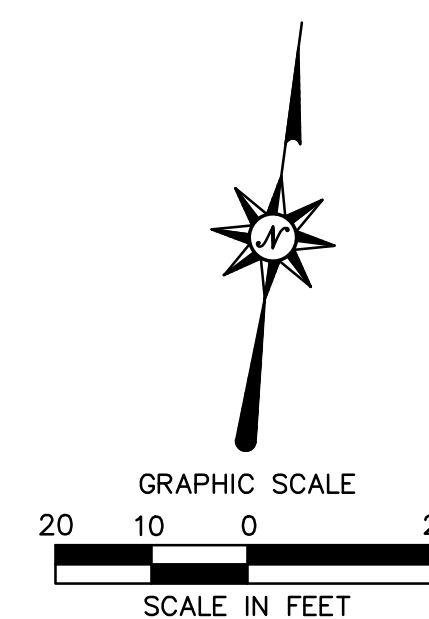
CHAIRMAN \_\_\_\_\_

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**LEGEND**

PATTERN	DESCRIPTION	PATTERN	DESCRIPTION	PATTERN	DESCRIPTION
[Pattern]	SOD (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	PERENNIALS/GROUNDCOVERS (REFER TO PLANT SCHEDULE THIS PAGE)	[Pattern]	EXISTING TREE TO REMAIN AND BE PROTECTED
[Pattern]	LAWN SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	WET SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	APPROXIMATE LIMIT OF LAWN SEED MIX WITHIN PROPERTY INTERIOR

**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**



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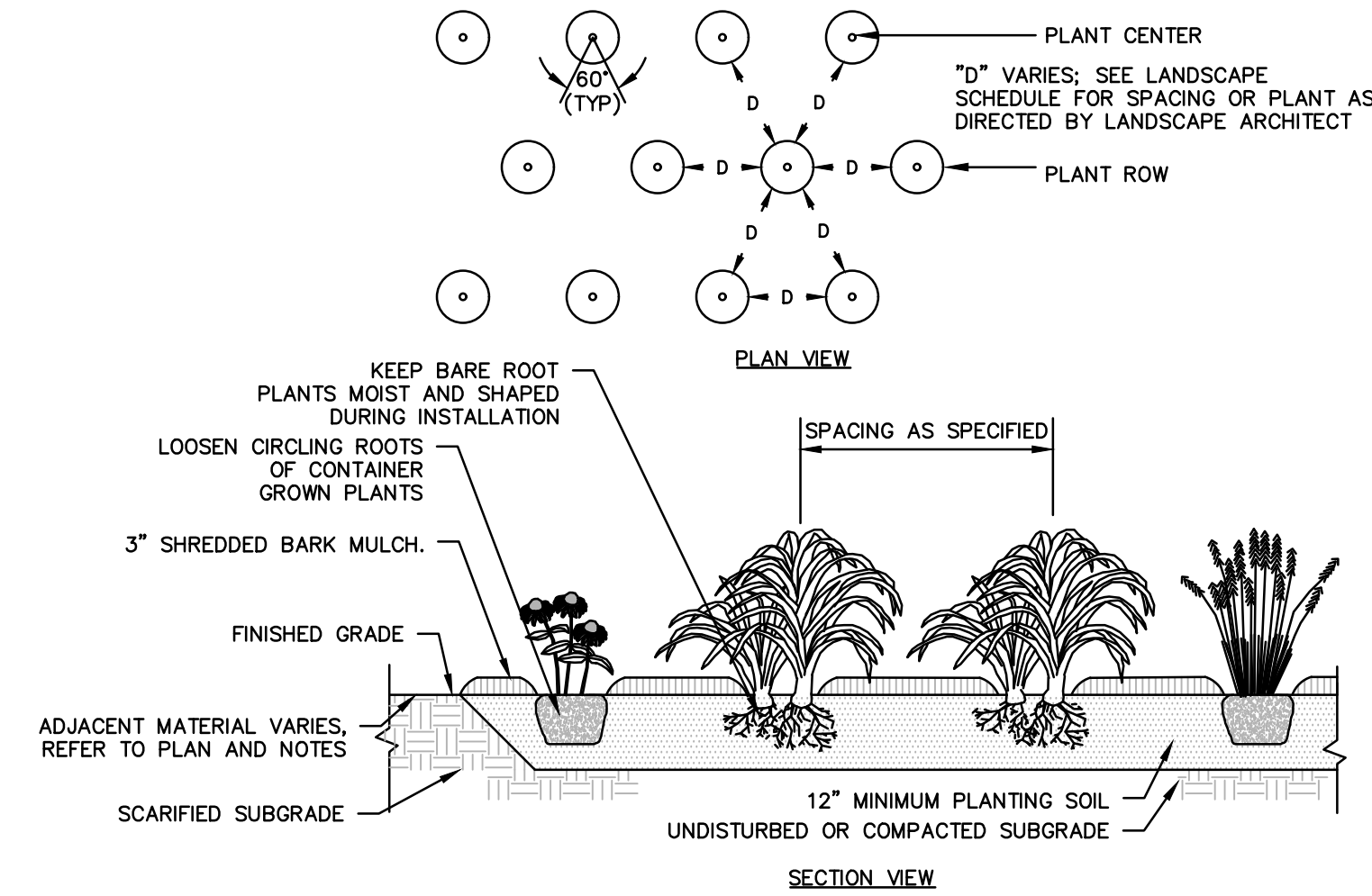
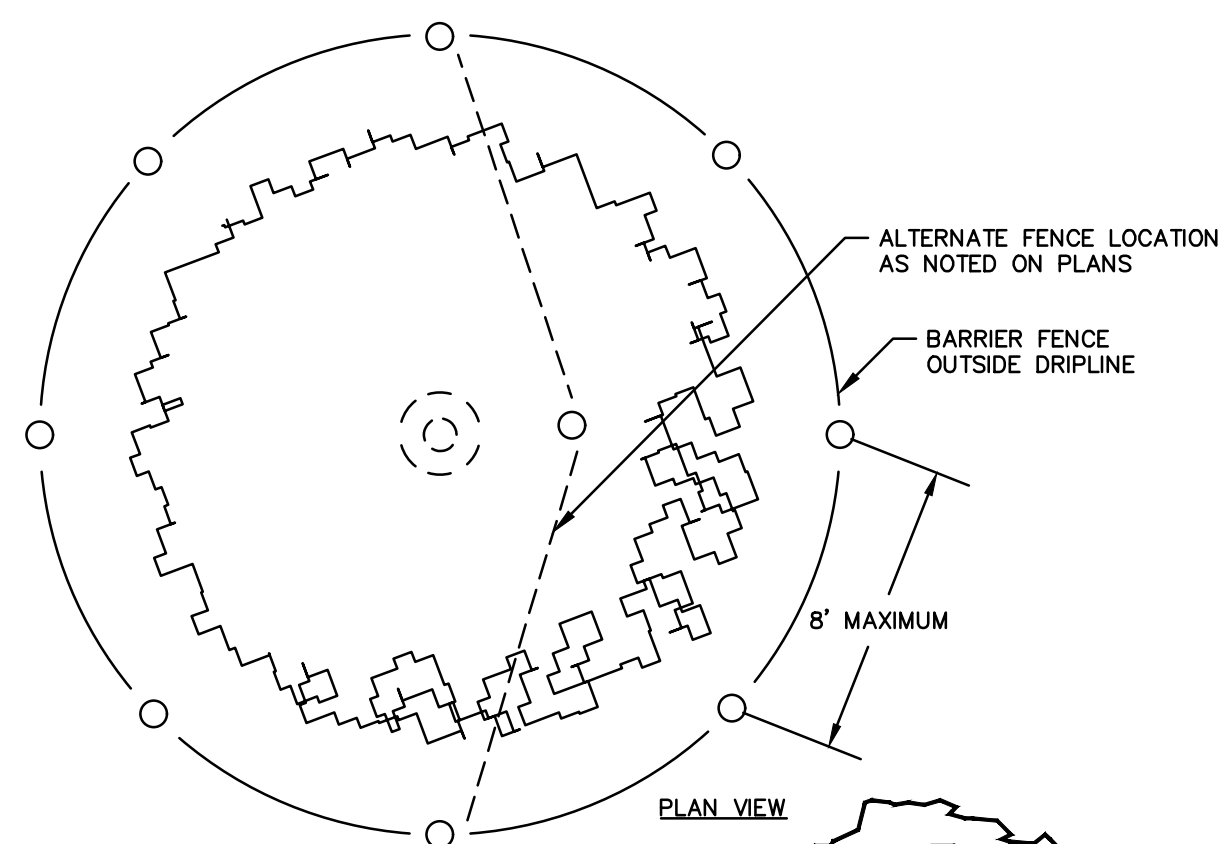


**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

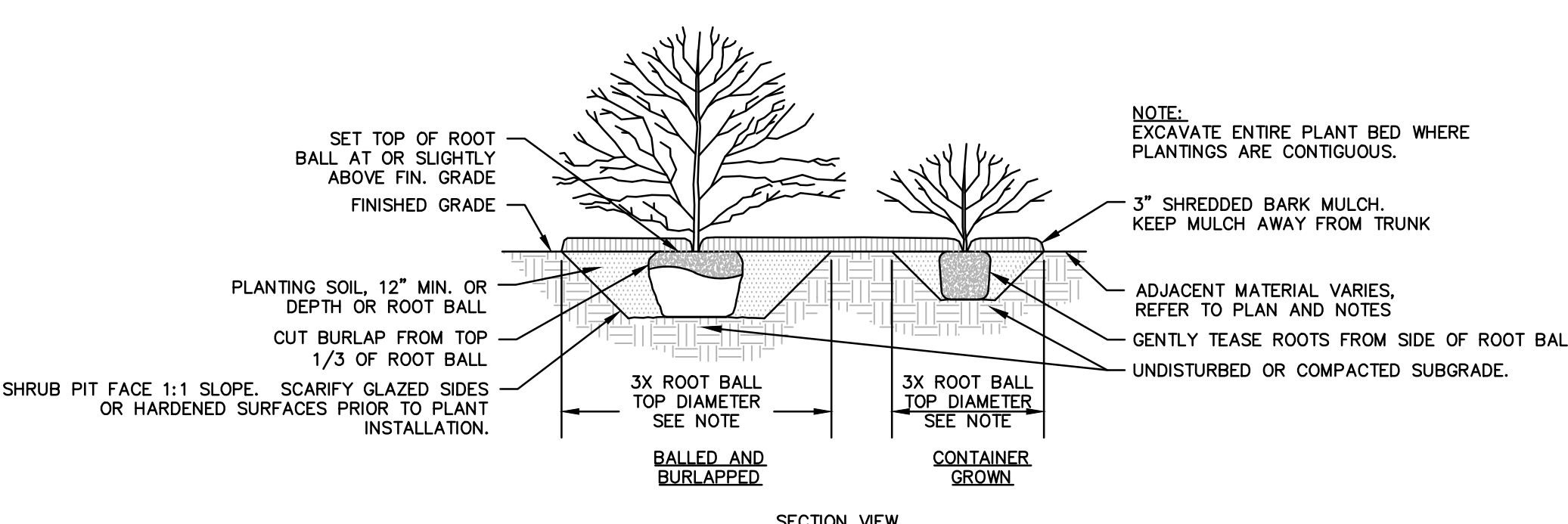
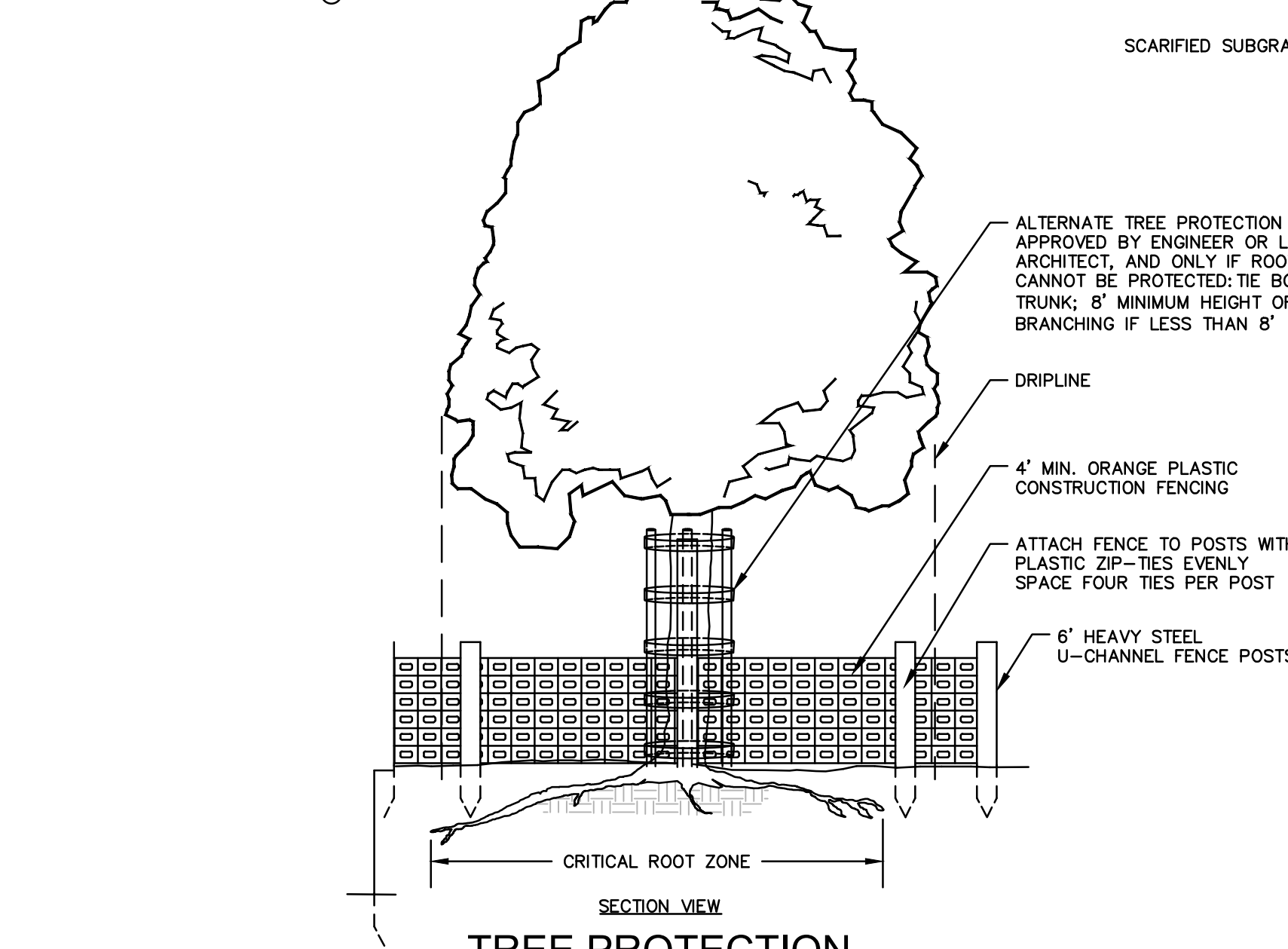
REVISIONS

No.	Date	REVISION
1	03/20/2021	REVISED PER TOWN COMMENTS
2	06/07/2021	REVISED PER TOWN COMMENTS

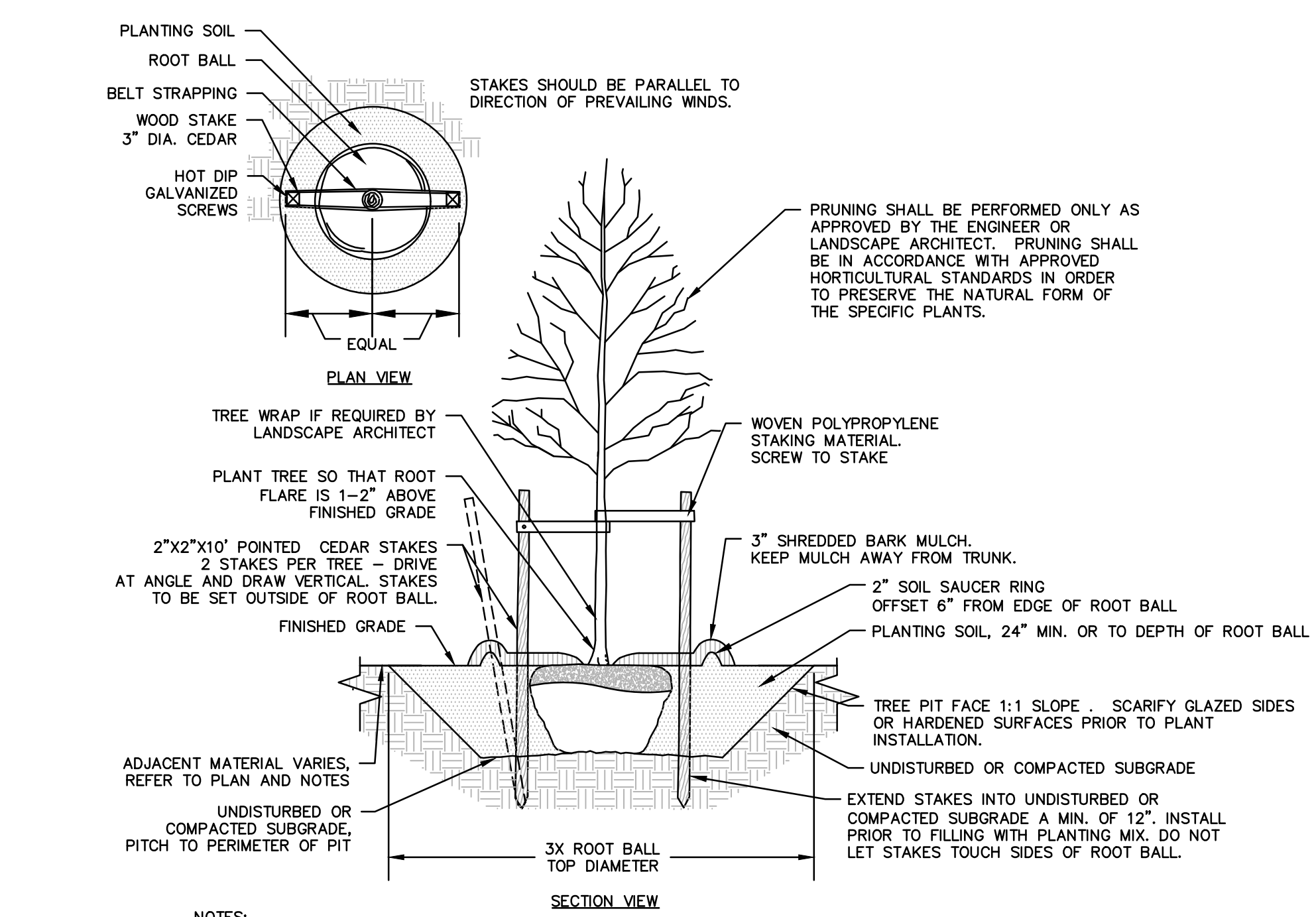
Designed	L.M.W.
Drawn	L.M.W.
Reviewed	W.E.V.
Scale	1"=20'
Project No.	2002032
Date	04/02/2021
CAD File:	LL200203201
Title	LANDSCAPE PLAN
Sheet No.	LL-1



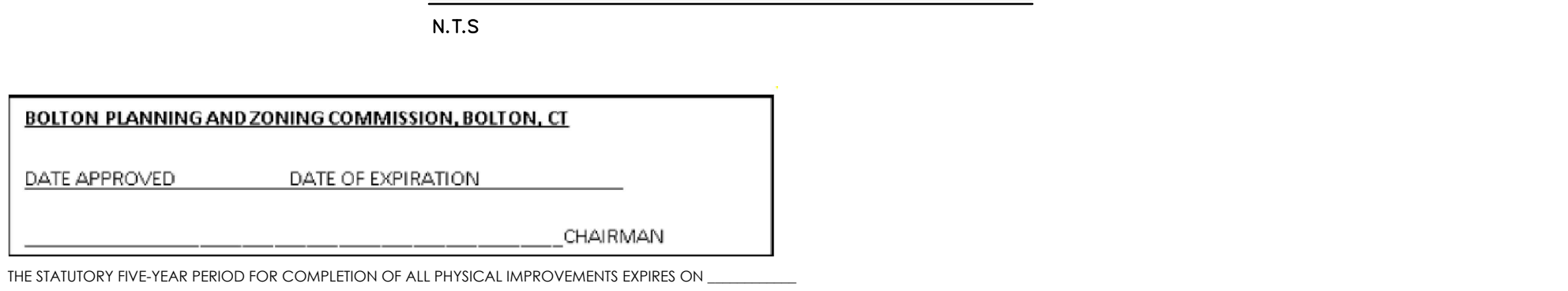
**GROUNDCOVER PLANTING**  
N.T.S.



**SHRUB PLANTING**  
N.T.S.



**DECIDUOUS TREE PLANTING**  
N.T.S.



**EVERGREEN TREE PLANTING**  
N.T.S.

**SEED MIX NOTES**

- A. LAWN SEEDING MIX:  
15 % PERENNIAL RYEGRASS (BLEND OF 3 IMPROVED HYBRIDS)  
25 % FINE LEAF OR CREEPING FESCUE (BLEND OF 3 IMPROVED HYBRIDS)  
60 % KENTUCKY BLUEGRASS (BLEND OF 3 IMPROVED HYBRIDS)  
SEEDING RATE: 5 LBS/1,000 S.F.  
SEEDING DATES: AUGUST 15 - OCTOBER 1 AND APRIL 15 - JUNE 30 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
- B. SOD - TUCKAHOE FESCUE TURF BY TUCKAHOE FARMS OR APPROVED EQUAL  
45% REBEL EXEDA TURF TYPE TALL FESCUE, 45% REBEL SENTRY TURF TYPE FALL FESCUE, 10% TUCKAHOE TURF BLUEGRASS BLEND  
FERTILIZATION: PER SOIL TEST AND SOD MANUFACTURERS RECOMMENDATIONS
- C. WETLAND SEED MIX -  
NEW ENGLAND WETMIX (WETLAND SEED MIX)  
NEW ENGLAND WETLAND PLANTS INC. OR APPROVED EQUAL
- SPECIES: FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRIS), HOP SEDGE (CAREX LUPULINA), GREEN BULRUSH (SCIRPUS ATROVIRENS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEJAIL (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), MONKEY FLOWER (MIMULUS RINGENS).
- APPLICATION RATE: 20 LBS/ACRE AT STORMWATER PONDS  
SEEDING DATES: AUGUST 15 - OCTOBER 1 AND APRIL 15 - JUNE 30 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.

**LANDSCAPE NOTES**

- THE LANDSCAPE PLAN AND DETAIL SHEET ARE FOR LANDSCAPING INFORMATION ONLY. REFER TO THE OTHER PLANS FOR ALL OTHER INFORMATION.
- COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE. PRIOR TO DIGGING AND INSTALLATION OF PLANT MATERIAL, THE CONTRACTOR SHALL CONTACT CALL BEFORE YOU DIG 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY SYSTEM LOCATIONS.
- THE LOCATIONS FOR PLANT MATERIAL ARE APPROXIMATE AND ARE SUBJECT TO FIELD ADJUSTMENT DUE TO UTILITY LOCATIONS AND SITE CONDITIONS. THE CONTRACTOR SHALL ACCURATELY STAKE OUT THE LOCATIONS FOR ALL PLANTS FOR THE REVIEW, ADJUSTMENT, AND APPROVAL BY OWNER OR LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANTS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF TWO YEARS AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY OWNER OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. PLANT MATERIAL REPLACEMENTS SHALL BE GUARANTEED FOR TWO FULL YEARS FROM DATE OF REPLACEMENT. REPLACEMENT PLANTS SHALL BE THE SAME AS SPECIFIED FOR THE ORIGINAL PLANTING. REPLACEMENTS SHALL BE MADE AS MANY TIMES AS NECESSARY TO ENSURE HEALTHY PLANTS. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE CULTIVATING, SPRAYING, WEEDING, WATERING, TIGHTENING CUTS, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL THE END OF THE GUARANTEE PERIOD. DURING THE LANDSCAPE MAINTENANCE PERIOD (GUARANTEE) THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY SITE CONSTRAINTS (PHYSICAL, ENVIRONMENT, ETC.) OR MAINTENANCE DEFICIENCIES THAT MAY AFFECT LANDSCAPE VEGETATION ESTABLISHMENT.
- THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY. ALL PLANTS SHALL BE ACCLIMATED BY THE SUPPLY NURSERY TO THE LOCAL HARDINESS ZONE AND BE CERTIFIED THAT THE PLANTING MATERIAL HAS BEEN GROWN FOR A MINIMUM OF TWO YEARS AT THE SOURCE AND OBTAINED WITHIN 200 MILES OF PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT.
- PLANTS SHALL HAVE TAGS THAT IDENTIFY PLANT GENUS, SPECIES, CULTIVAR (IF APPLICABLE), PLANT COMMON NAME, NAME OF SOURCE NURSERY, AND SIZE OF PLANT FOR REVIEW OF OWNER OR LANDSCAPE ARCHITECT.
- NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT. STAKING THE LOCATION OF ALL TREES AND SHRUBS SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT.
- FINAL GRADES SHALL BLEND SMOOTHLY WITH EXISTING GRADES, AND TOP AND BOTTOM OF SLOPES SHALL BE ROUNDED.
- ALL TREE AND SHRUB MASSINGS SHALL BE MULCHED TO A DEPTH OF 3". ANNUAL AND PERENNIAL BEDS SHALL BE MULCHED TO A DEPTH OF 2". MULCH SHALL BE UNCOLORED TRIPLE-SHREDDED HARDWOOD BARK MULCH, AGED AT LEAST 6 MONTHS.
- IF TREE STAKING IS PROPOSED, TREE STAKING MUST BE COMPLETED THE SAME DAY AS THE TREE IS INSTALLED. ALL TREES SHALL BE STAKED OR GUYED PER DETAIL.
- LANDSCAPE PLANTING AREAS MUST BE FREE DRAINING. PAVEMENT, COMPACTED SUBGRADE, DEAD OR DYING PLANT MATERIAL, BLASTED ROCK, STONES GREATER THAN 1" IN DIAMETER, AND ANY OTHER MATERIAL HARMFUL TO PLANT GROWTH AND DEVELOPMENT SHALL BE REMOVED FROM AREAS TO BE LANDSCAPED AS REQUIRED BY PLANTING DETAILS OR SPECIFICATIONS.
- PLANTING SOIL:  
DEPTH: PLANTING SOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4" OR AS NOTED IN THE LANDSCAPE DETAILS. PLANTING SOIL SHALL BE UTILIZED IN ALL PLANTING AREAS INCLUDING SEEDED AREAS.  
TESTING: CONTRACTOR SHALL SUBMIT (2) SOIL SAMPLES PER SOIL STOCKPILE TO A CERTIFIED TESTING LABORATORY TO DETERMINE ACIDITY, ORGANIC CONTENT, MECHANICAL ANALYSIS, AVAILABLE NUTRIENTS (N,P,K,Ca,Mg,S,Fa,Mn,Zn,Cu,Ba,Al,Pb) AND NECESSARY AMENDMENTS TO SOIL. THE CONTRACTOR SHALL TEST RESULTS TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. TEST RESULTS SHALL RECOMMEND AMENDMENTS THAT WILL ALTER THE SOIL CHARACTERISTICS SUCH THAT THE CHARACTERISTICS DESCRIBED BELOW ARE ACHIEVED AND THE SPECIFIED PLANTS (CONTRACTOR TO PROVIDE LIST TO TESTING LABORATORY) WILL ACHIEVE PROPER GROWTH THAT IS NEITHER DEFICIENT NOR EXCESSIVE. THE CONTRACTOR SHALL INCORPORATE THESE AMENDMENTS AT NO INCREASE IN CONTRACT PRICE.  
CHARACTERISTICS: PLANTING SOIL MAY CONSIST OF EXISTING ON-SITE SOILS, AMENDED ON-SITE SOILS, OR IMPORTED SOILS MEETING THE FOLLOWING CRITERIA:  
A. NOT TO CONTAIN MATERIALS HARMFUL TO PLANT LIFE. TO BE CLEAN, FERTILE, FRIABLE, AND WELL DRAINING. ALL SHOOTS, STONES, GLASS, OR ANY SUBSON EARTH, CLODS, SODS, STONES OVER 1" IN ANY DIMENSION, STICKS, ROOTS, WEEDS, LITTER AND OTHER DELETERIOUS MATERIAL. PLANTING SOIL SHALL BE UNIFORM IN QUALITY AND TEXTURE.  
B. PLANTING SOIL SHALL HAVE THE FOLLOWING OPTIMUM RANGES UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.  
ORGANIC CONTENT 3% - 6% FOR LAWN OR GRASS AREAS.  
4% - 8% FOR TREE AND SHRUB PLANTERS.  
8% - 16% FOR RETENTION OR DETENTION BASINS.  
(BY LOSS OF IGNITION AT 375 C METHOD OF TESTING)  
PH 6.0 - 7.3  
C. NUTRIENT LEVELS SHALL BE ACHIEVED BY THE CONTRACTOR'S ADDITION OF AMENDMENTS TO THE PLANTING SOIL TO MEET THE OPTIMUM NUTRIENT LEVELS SPECIFIED IN THE TESTING LABORATORY REPORT FOR EACH OF PLANTS TO BE INSTALLED.  
D. SOIL SHALL BE COMPACTED TO A SURFACE PENETRATION RESISTANCE OF 75-125 LBS/50IN.  
E. SOIL MAY BE TREATED FOR WEEDS WITH PRE-EMERGENT HERBICIDE. POST-EMERGENT HERBICIDE IS NEEDED AND AS APPROPRIATE FOR THE APPLICATION SEASON OR LOCATION, OR ELIMINATE GROWTH OF UNWANTED PLANT MATERIAL. APPLY HERBICIDES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. HERBICIDE APPLICATOR MUST BE LICENSED IN THE STATE OF CONNECTICUT, AND PERFORM APPLICATIONS IN ACCORDANCE WITH LOCAL REQUIREMENTS, PERMITTING STIPULATIONS, AND ANY OTHER RESTRICTIONS INCLUDING AND IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.  
F. PROPOSED TOPSOIL SHALL MEET THE USDA SOILS TEXTURAL PERCENTAGES OF SAND, SILT, AND CLAY FOR FOLLOWING CLASSIFICATIONS:  
LOAM  
- SANDY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS NOT LESS THAN 5%.  
- SANDY CLAY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS LESS THAN 28%.  
G. BIORETENTION SOILS: SOIL TO BE INSTALLED IN RETENTION BASINS, PONDS, OR OTHER STORMWATER MANAGEMENT ENVIRONS SHALL MEET THE ABOVE DESCRIBED CHARACTERISTICS AND AS FOLLOWS:  
- SOIL SHALL NOT CONTAIN MORE THAN 20% CLAY AND LESS THAN 40% SILT.  
- SOIL SHALL HAVE AN INFILTRATION RATE BETWEEN 1/2" AND 3" PER HOUR.  
H. MODIFICATION TO ABOVE LANDSCAPE ARCHITECT CHARACTERISTICS DESCRIBED ABOVE MAY BE SUBMITTED FOR APPROVAL BY THE LANDSCAPE ARCHITECT. CONTRACTOR MUST DEMONSTRATE PROPOSED CHARACTERISTICS ARE EQUAL TO OR SUPERIOR TO THE SPECIFIED CHARACTERISTICS WITH RESPECT TO SUPPORTING PLANT GROWTH, AND STORMWATER MANAGEMENT.
- PLANTING AMENDMENTS:  
APPLY FERTILIZER AND OTHER AMENDMENTS AS RECOMMENDED FOR EACH PLANTING AREA BY SOIL ANALYSIS. APPLY AMENDMENTS IN A MANNER CONSISTENT WITH MANUFACTURER'S RECOMMENDATIONS. ANY ORGANIC AMENDMENTS SHALL HAVE A pH BETWEEN 4.5 AND 5.5 UNLESS OTHERWISE RECOMMENDED.
- PLANT REQUIREMENTS: ALL PLANTS SHALL CONFORM IN SIZE AND GRADE TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z601 (LATEST EDITION). ALL PLANTS SHALL MEET THE ADDITIONAL REQUIREMENTS SET FORTH BELOW AND IN WRITTEN SPECIFICATIONS AS APPLICABLE. ALL TREES AND SHRUBS SHALL HAVE BEEN GROWN AT A COMMERCIAL NURSERY WITHIN 200 MILES OF THE PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT. THEY SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. THEY SHALL BE HEALTHY, SYMMETRICAL, EVENLY AND DENSELY BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF BARK INJURY, DISEASE, AND INSECT PESTS. ALL TREES SHALL HAVE A STRAIGHT TRUNK WITH A SINGLE MAIN LEADER UNLESS OTHERWISE CHARACTERISTIC OF THE SPECIES OR VARIETY. THE OWNER OR LANDSCAPE ARCHITECT WILL ALLOW SUBSTITUTIONS ONLY UPON WRITTEN APPROVAL. SIZES SHALL CONFORM TO THE MEASUREMENT SPECIFIED ON THE DRAWINGS. PLANTS LARGER THAN SPECIFIED MAY BE USED IF APPROVED, BUT THE USE OF SUCH PLANTS SHALL NOT INCREASE THE CONTRACT PRICE. ALL OVERSTORY TREES PLANTED ALONG PARKING AREAS, SIDEWALKS AND PEDESTRIAN ACCESSES SHALL NOT BRANCH BELOW 7' FEET IF THE TREE CALIPER IS 3" INCHES OR GREATER. ALL PLANT MATERIALS ARE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE. THE CONTRACTOR SHALL COORDINATE SOURCE VISITS WITH THE LANDSCAPE ARCHITECT AND SHALL ACCOMPANY THE OWNER AND/OR LANDSCAPE ARCHITECT FOR ALL INSPECTIONS. CERTIFICATES OF COMPLIANCE WITH SPECIFICATIONS ARE REQUIRED FOR ALL PLANTS.
- INSPECTION AND REVIEW:  
ALL PLANT MATERIAL SHALL BE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE OR PLACE OF GROWTH. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT ON A SCHEDULE FOR SOURCE VISITS AND ACCOMPANY THE OWNER OR LANDSCAPE ARCHITECT FOR ALL SOURCE INSPECTIONS. CERTIFICATES OF COMPLIANCE ARE REQUIRED FOR ALL PLANT MATERIALS.  
PHOTOGRAPHIC REVIEW OF PLANT MATERIAL IS ACCEPTABLE IF APPROVED BY LANDSCAPE ARCHITECT. PHOTOGRAPHS MUST BE PROVIDED IN QUANTITY AND VARIETY TO ALLOW LANDSCAPE ARCHITECT SUFFICIENT INFORMATION TO MAKE A REASONABLE DETERMINATION AS TO THE PLANTS' QUALITY. OWNER AND LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT PLANT MATERIAL DELIVERED TO THE SITE BUT PREVIOUSLY ACCEPTED IF DAMAGED OR NOT PROPERLY MAINTAINED DURING THE DELIVERY PROCESS.
- PLANTING SEASONS (UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT)  
EVERGREEN TREES AND SHRUBS SPRING APRIL 1 TO JUNE 15 FALL SEPTEMBER 1 TO OCTOBER 15  
DECIDUOUS TREES AND SHRUBS APRIL 1 TO JUNE 15 SEPTEMBER 15 TO NOVEMBER 15  
GROUNDCOVERS APRIL 1 TO JUNE 15 SEPTEMBER 15 TO OCTOBER 15  
PERENNIALS MAY 15 TO JUNE 15 SEPTEMBER 1 TO OCTOBER 15  
SEED MIXES PER MANUFACTURERS RECOMMENDATIONS OR AS LISTED IN SEED MIX NOTES
- SEEDING MIXTURES: REFER TO SEED MIX NOTES. SEEDED AREA SHALL BE ACCEPTED WHEN SEED AREA ACHIEVES 90% COVERAGE.
- ALL SLOPES STEEPER THAN 3:1 RECEIVING A SEED MIX SHALL BE COVERED WITH AN EROSION CONTROL BLANKET OF STRAW FIBER AND BIODEGRADABLE OR PHOTODEGRADABLE NETTING.
- UNLESS OTHERWISE NOTED IN DRAWING SET, NEW TREELINES SHALL EQUAL CLEARING AND GRUBBING LIMIT FOR CONSTRUCTION.
- ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE SEEDED WITH THE LAWN SEED MIX.
- ALL SHADE TREE, BUFFER YARD AND OTHER LANDSCAPING REQUIRED BY LOCAL ORDINANCE OR ZONING SHALL BE PERPETUALLY MAINTAINED BY THE PROPERTY OWNER. ANY LANDSCAPING NEEDED TO MEET AN ORDINANCE OR ZONING REQUIREMENT THAT DIES, IS REMOVED, OR IS SEVERELY DAMAGED SHALL BE REPLACED BY THE CURRENT PROPERTY OWNER AS SOON AS IS PRACTICAL CONSIDERING GROWING SEASONS, WITH A MAXIMUM OF 150 DAYS.

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_  
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

Architecture  
Engineering  
Environmental  
Land Surveying

**LL-2**

100 Constitution Plaza  
10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

**PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT**

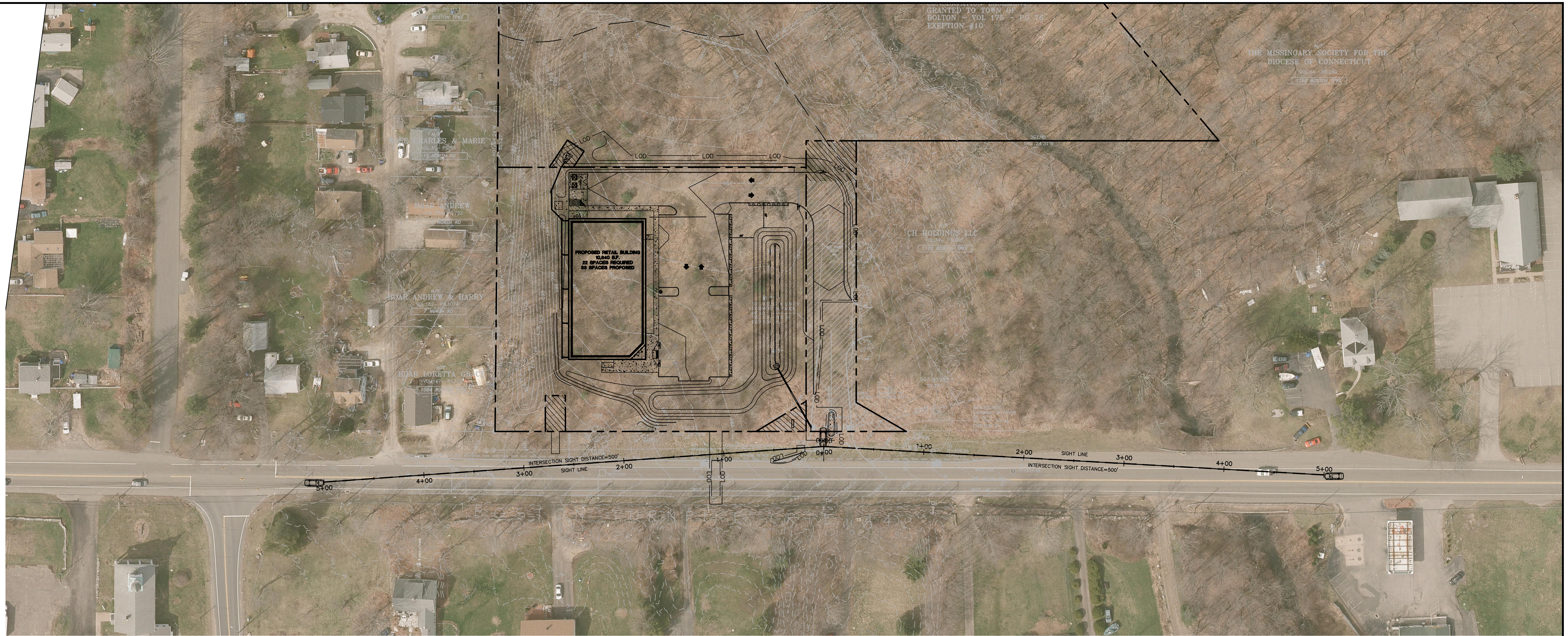
REVISIONS

No.	2
Date	03/20/2021
Disc.	REVISED PER TOWN COMMENTS
REVISED PER TOWN COMMENTS	06/07/2021

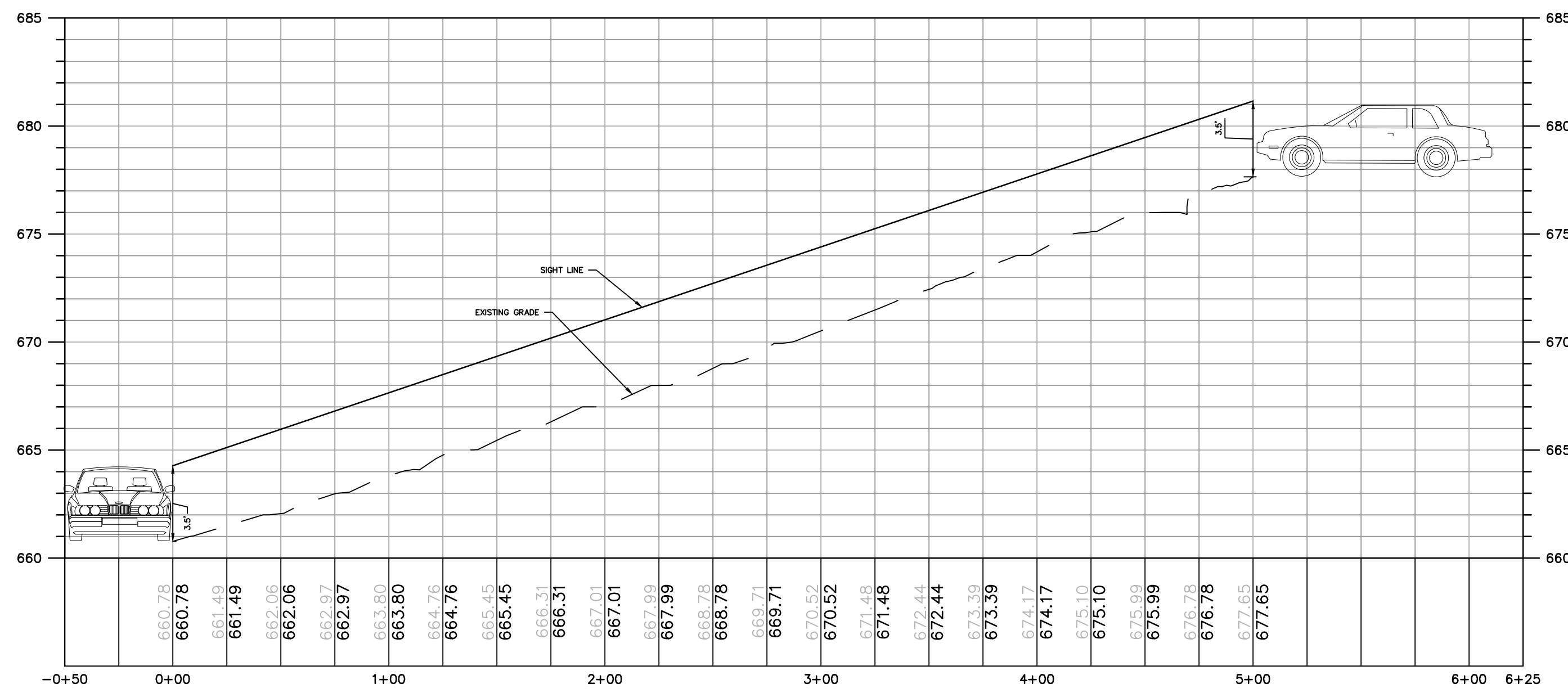
Designed L.M.W.  
Drawn L.M.W.  
Reviewed W.E.V.  
Scale N.T.S.  
Project No. 2002032  
Date 04/02/2021  
C4D File: LL200203201

Title  
**LANDSCAPE NOTES AND DETAILS**  
Sheet No.

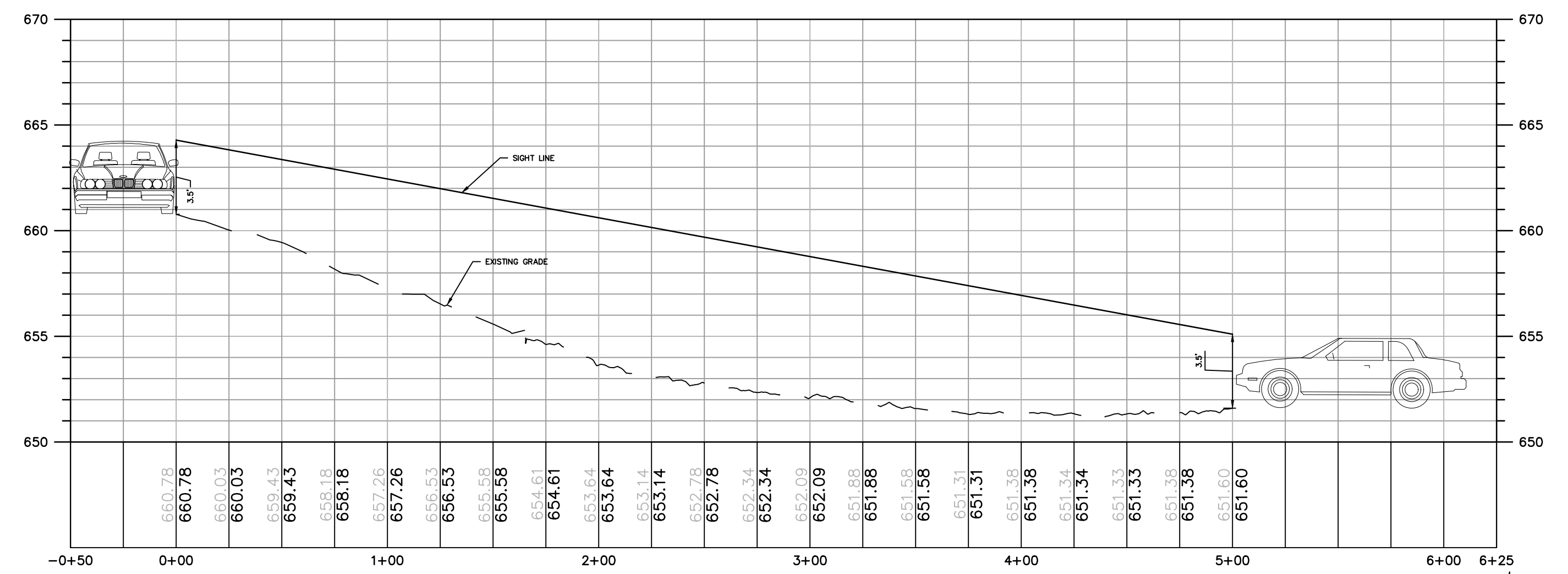




SIGHTLINE LOOKING RIGHT

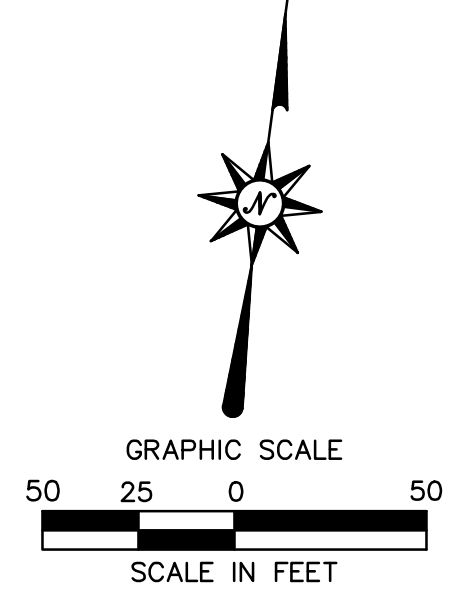


SIGHTLINE LOOKING LEFT



BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT	
DATE APPROVED	DATE OF EXPIRATION
CHAIRMAN	

FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

REVISIONS

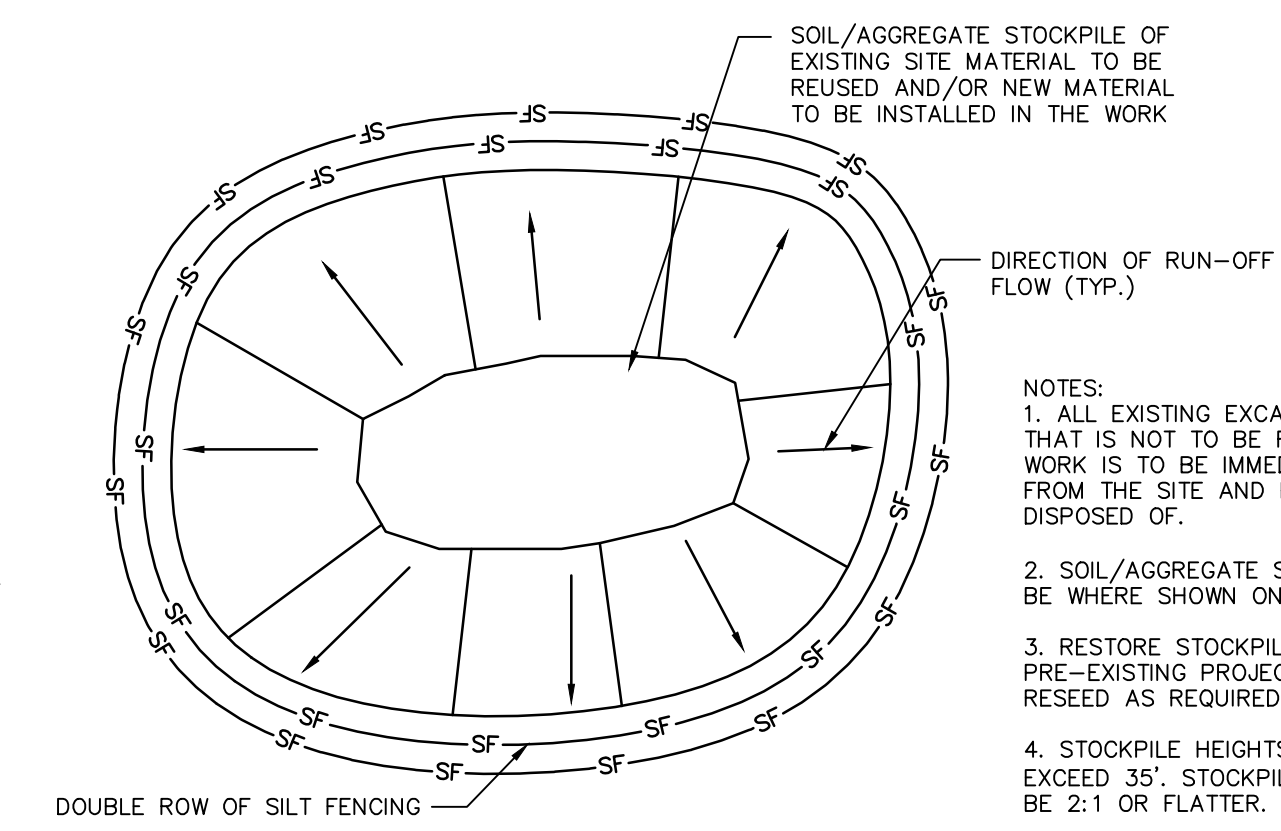
No.	Date	Desc.
1	03/20/2021	REVISED PER TOWN COMMENTS
2	08/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	1"=50'
Project No.	2002032
Date	04/02/2021
CAD File	SD200203201

Title  
**INTERSECTION  
SIGHT DISTANCE  
PLAN**

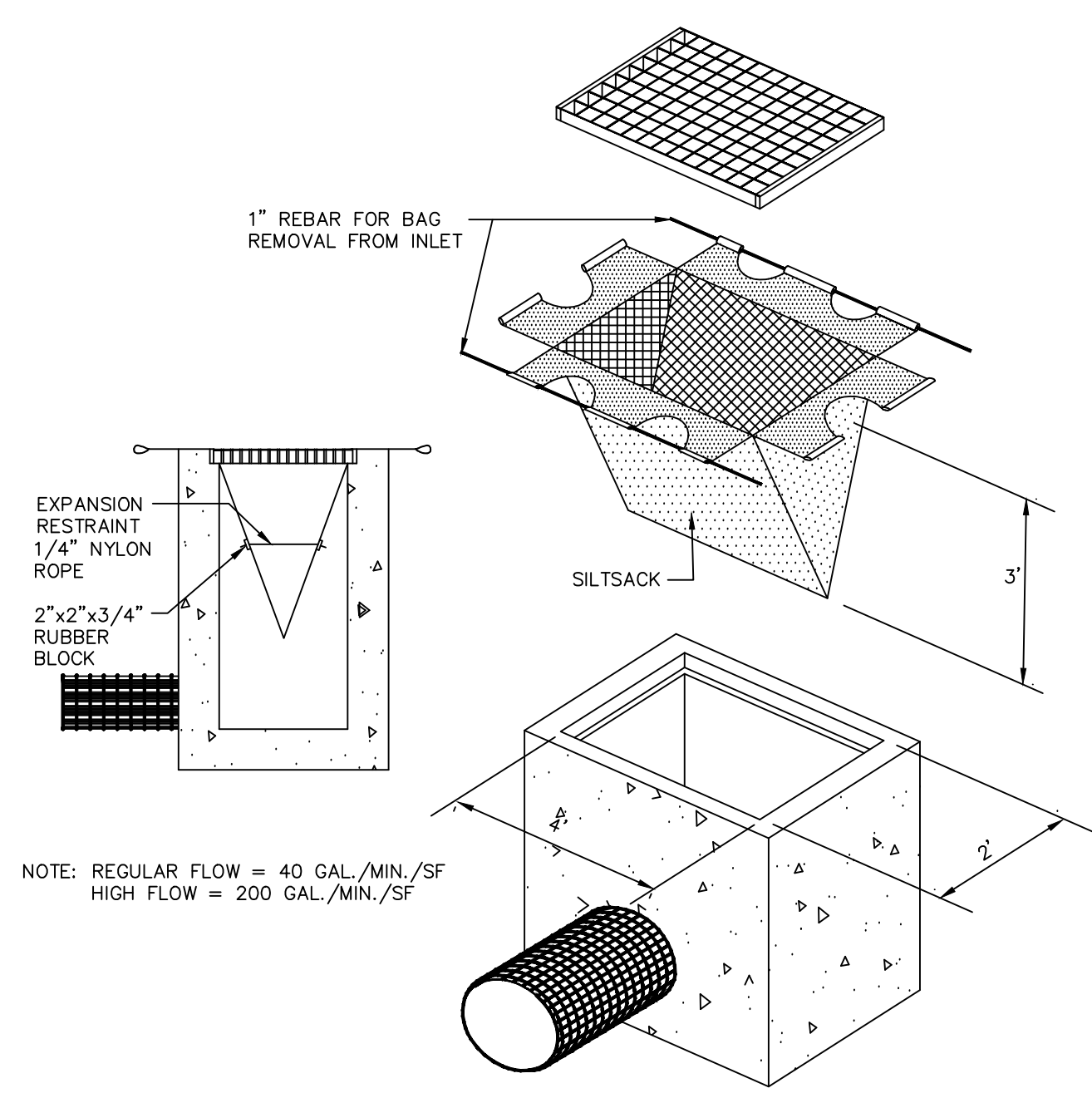
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**SD-1**



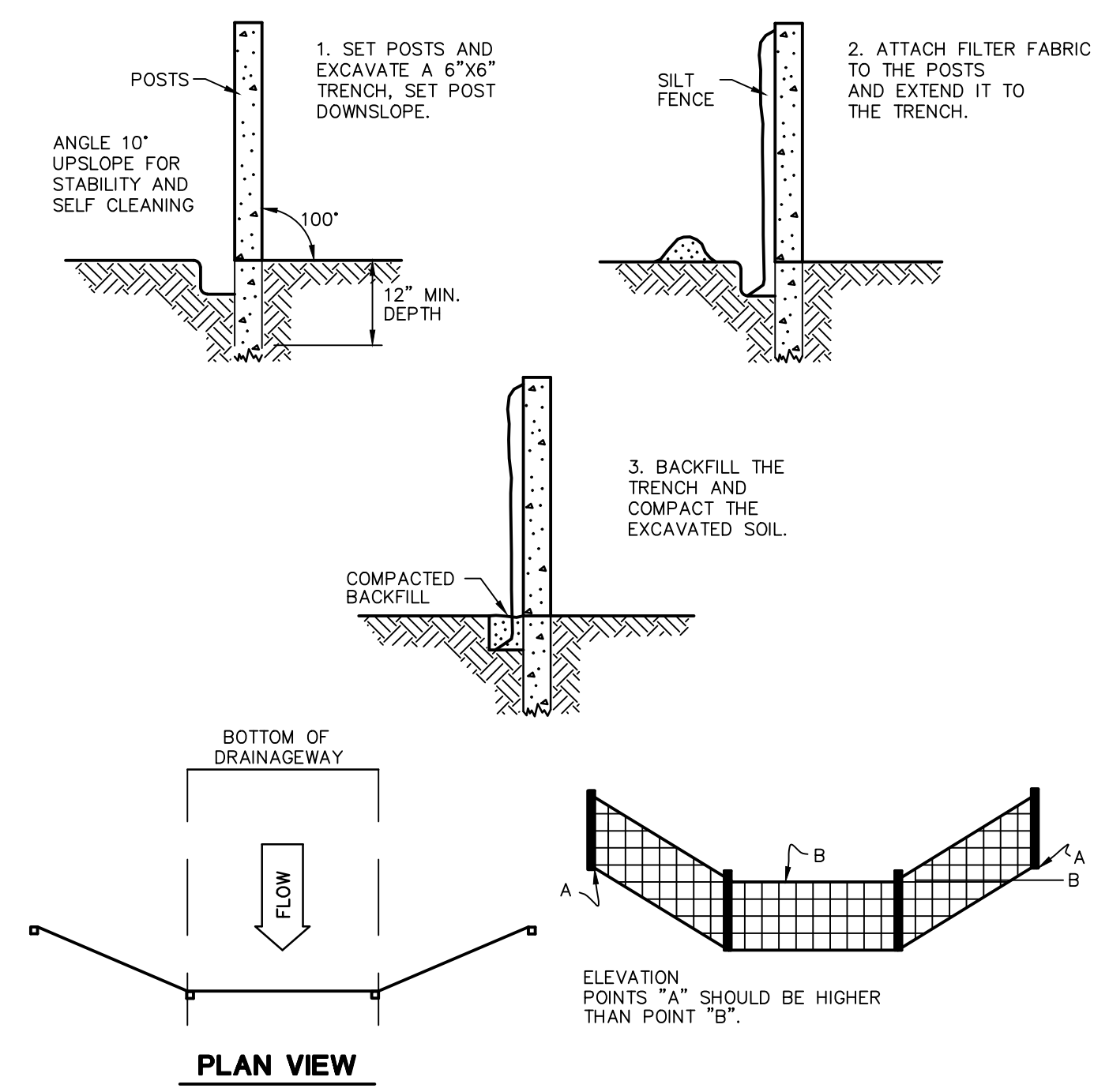
- NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
  2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
  3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
  4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

**MATERIALS STOCKPILE DETAIL**  
N.T.S. BLEC-006

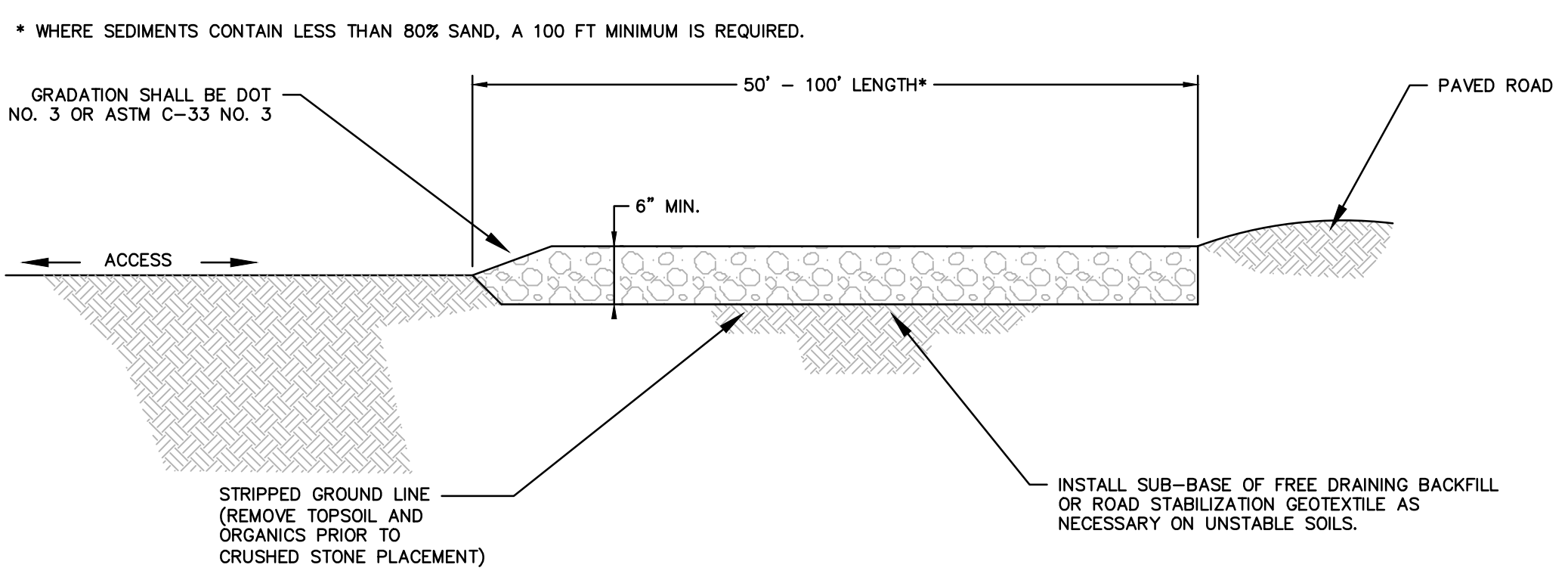


NOTE: REGULAR FLOW = 40 GAL./MIN./SF  
HIGH FLOW = 200 GAL./MIN./SF

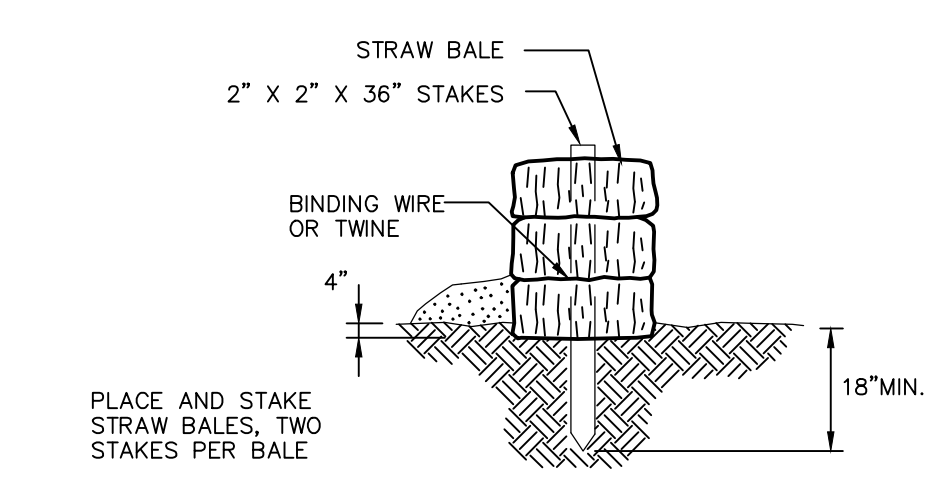
**SILTSACK DETAIL**  
N.T.S. BLEC-005



**SILT FENCE BARRIER**  
N.T.S. CTEC-003

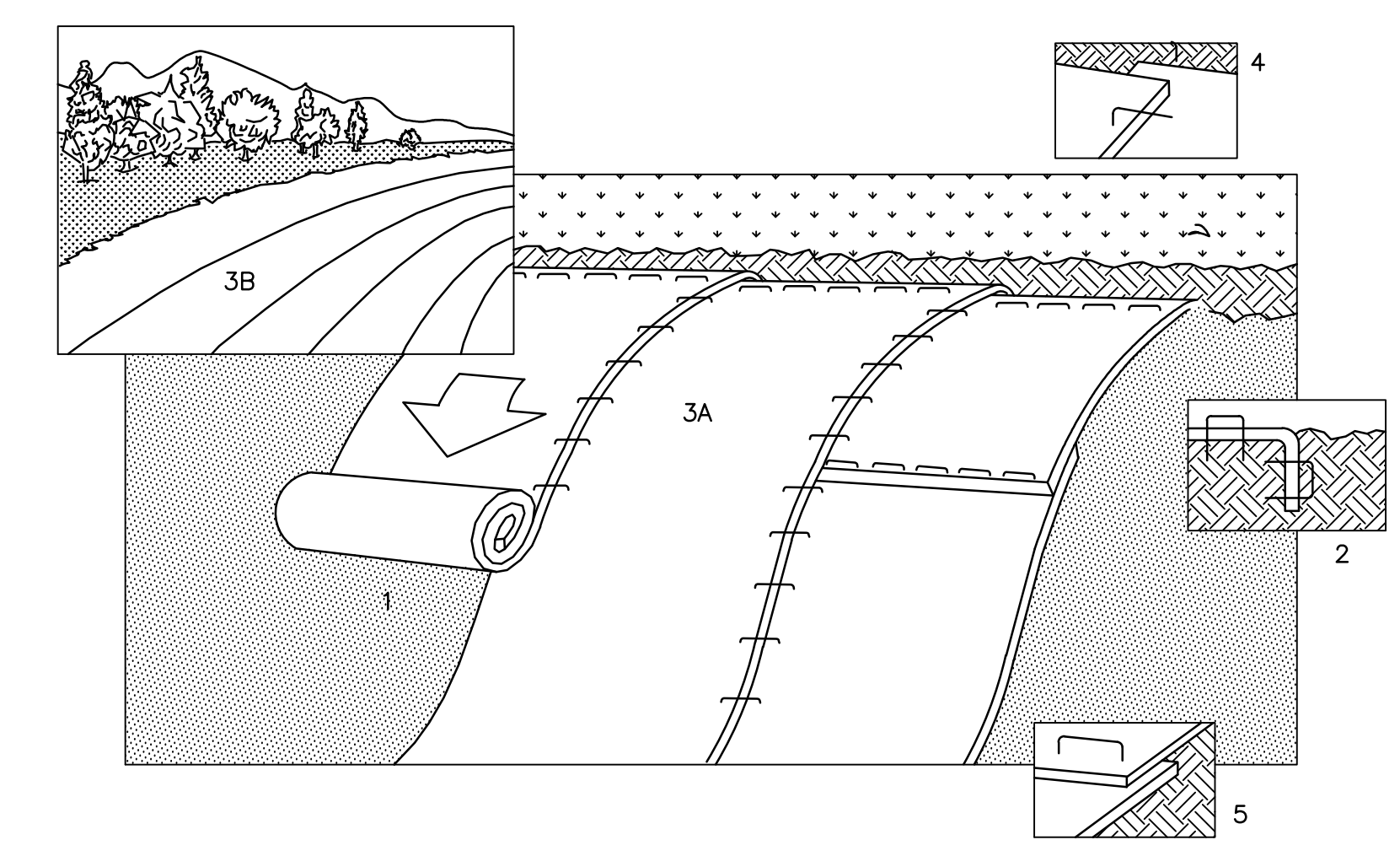


**TYPICAL CONSTRUCTION ENTRANCE**  
N.T.S. CT DEEP CE-2



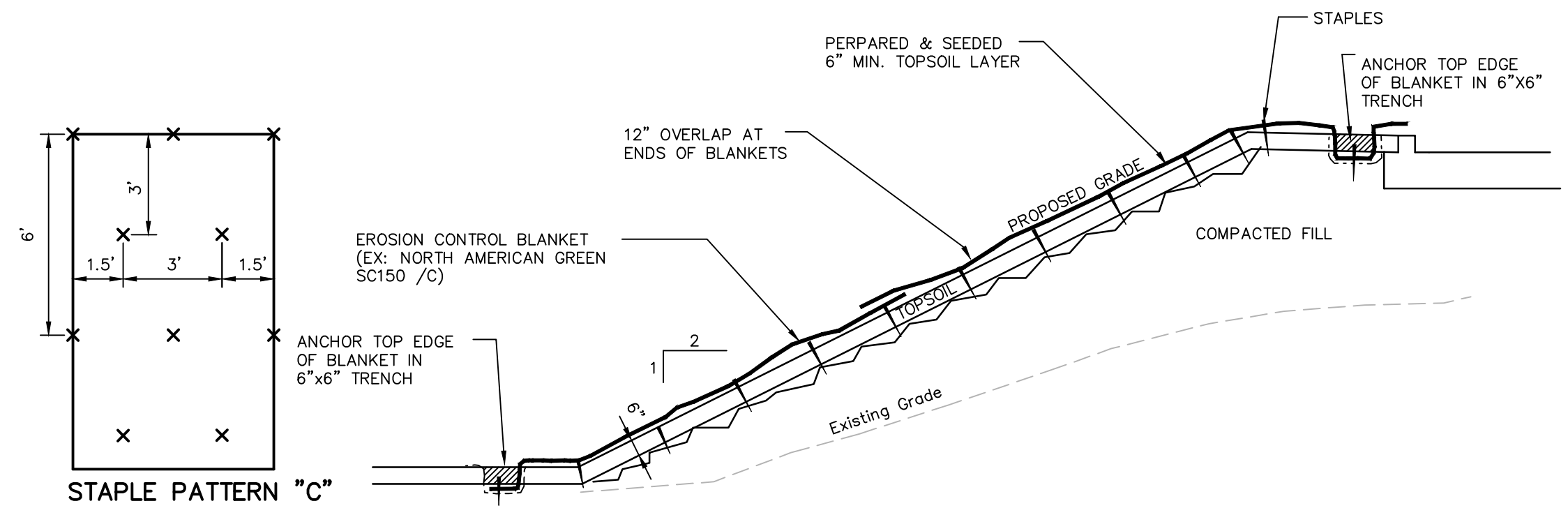
STRAW BALE BARRIERS SHOULD NOT BE USED FOR MORE THAN 3 MONTHS  
SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.  
ANY SECTION OF STRAW BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

**STRAW BALE DETAIL**  
N.T.S. BLEC-007

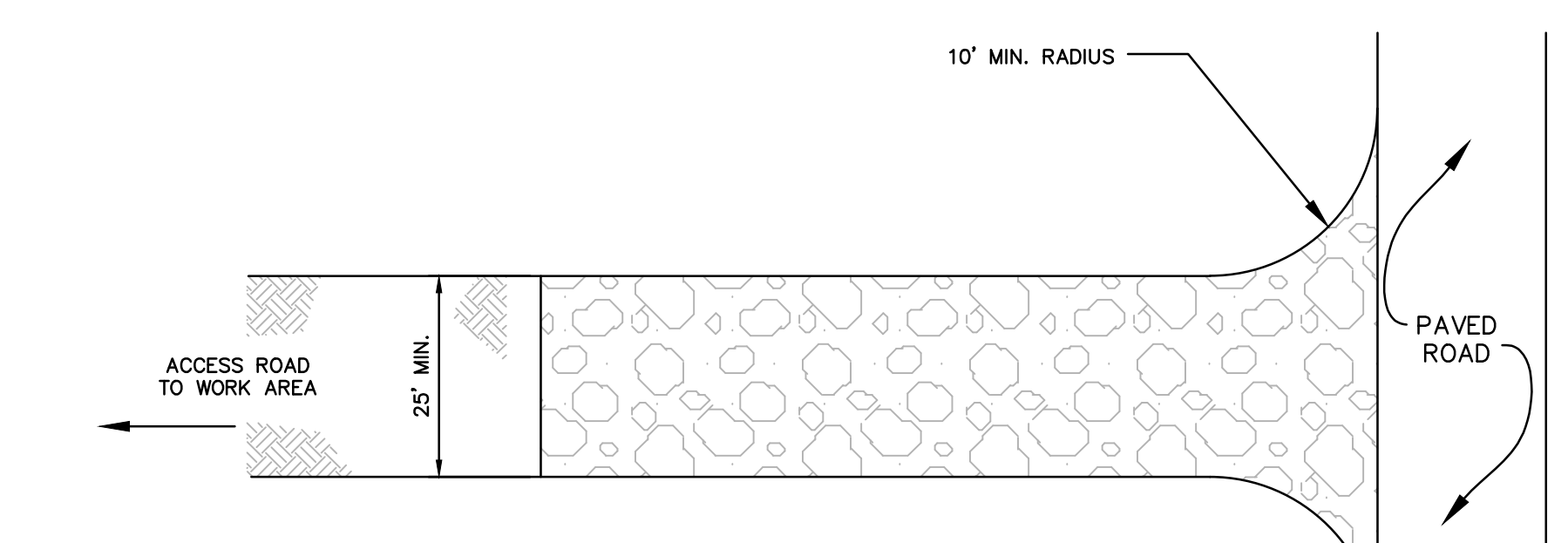


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

**SLOPE STABILIZATION DETAIL**  
N.T.S. BLEC-010



**BLANKET ON FILL SLOPE**  
N.T.S. BLEC-009



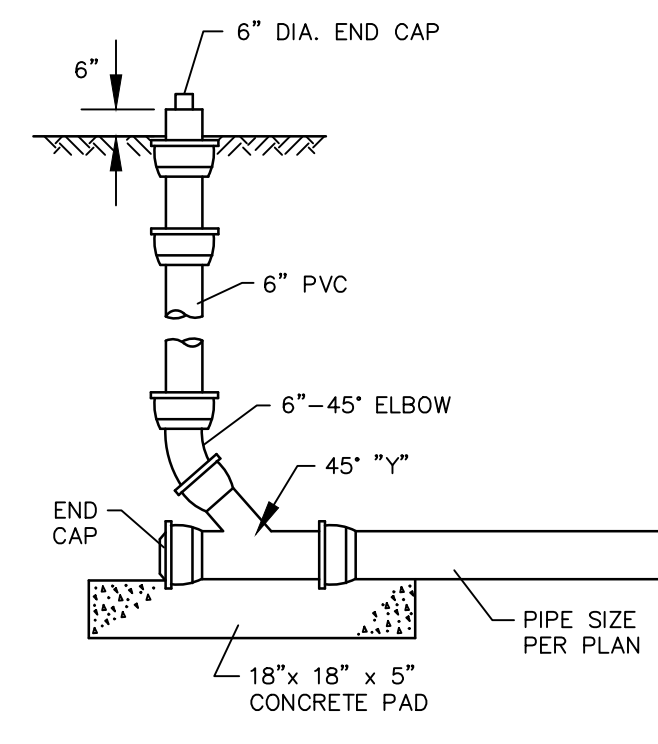
**NON-ENGINEERED TEMPORARY DIVERSION DITCH DETAIL**

BOLTON PLANNING AND ZONING COMMISSION PRESENTS

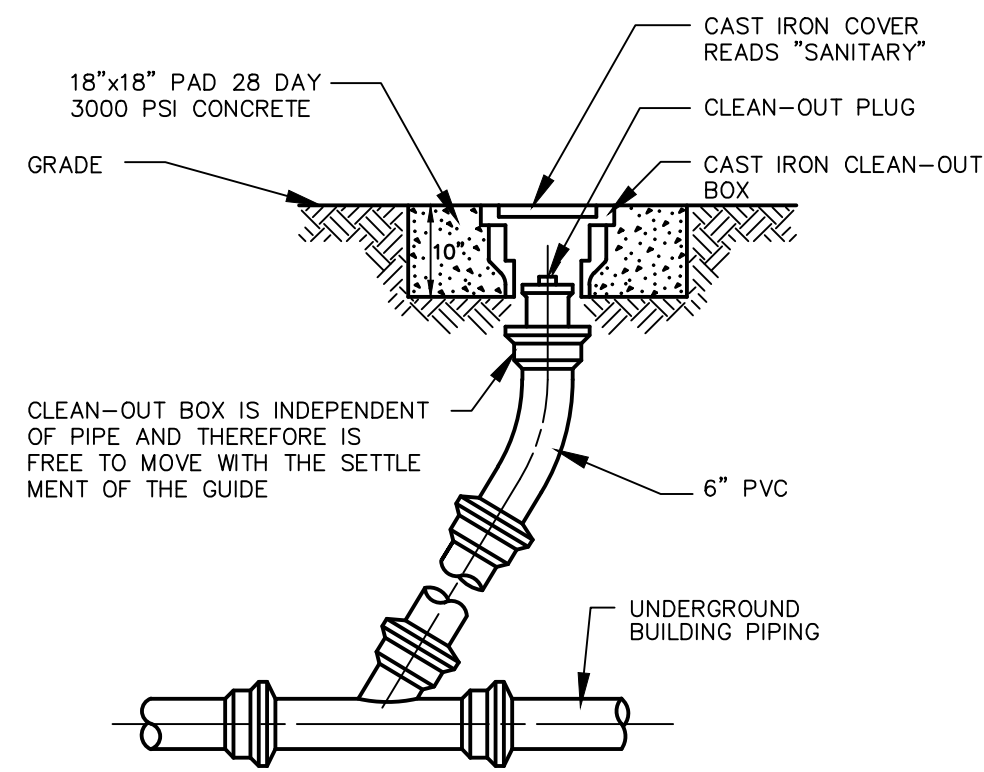
DATE APPROVED: \_\_\_\_\_ DATE OF EXPIRATION: \_\_\_\_\_

CHAIRMAN: \_\_\_\_\_

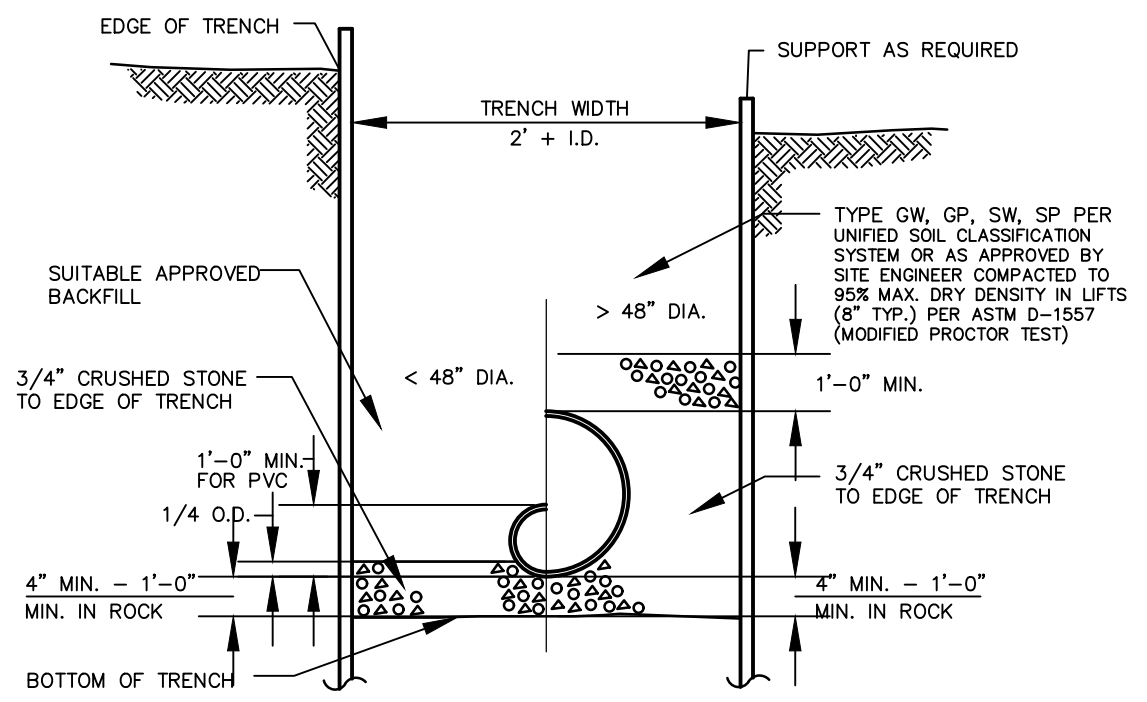
THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_



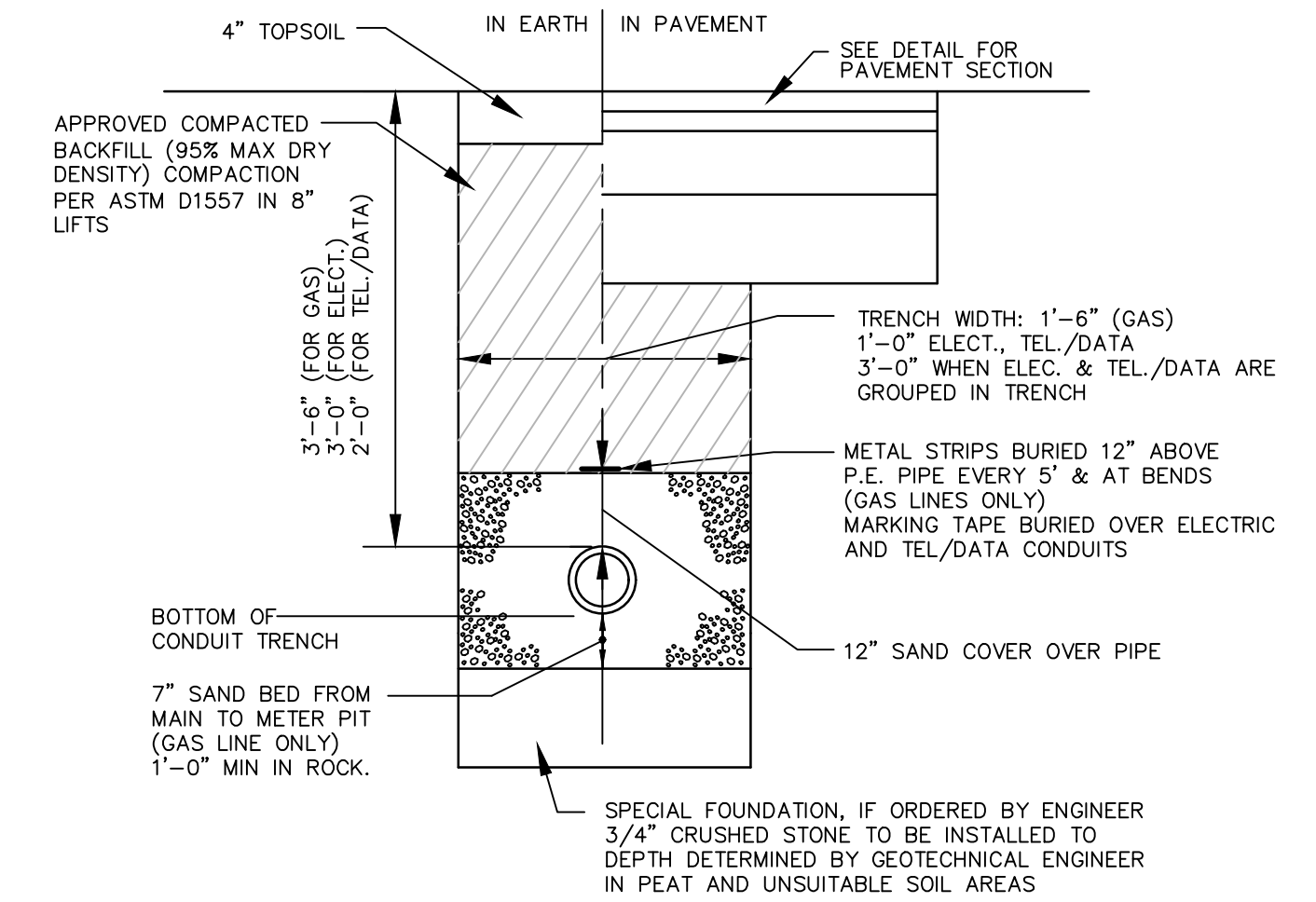
**CLEANOUT IN LANDSCAPED AREA**  
N.T.S. BLS-007



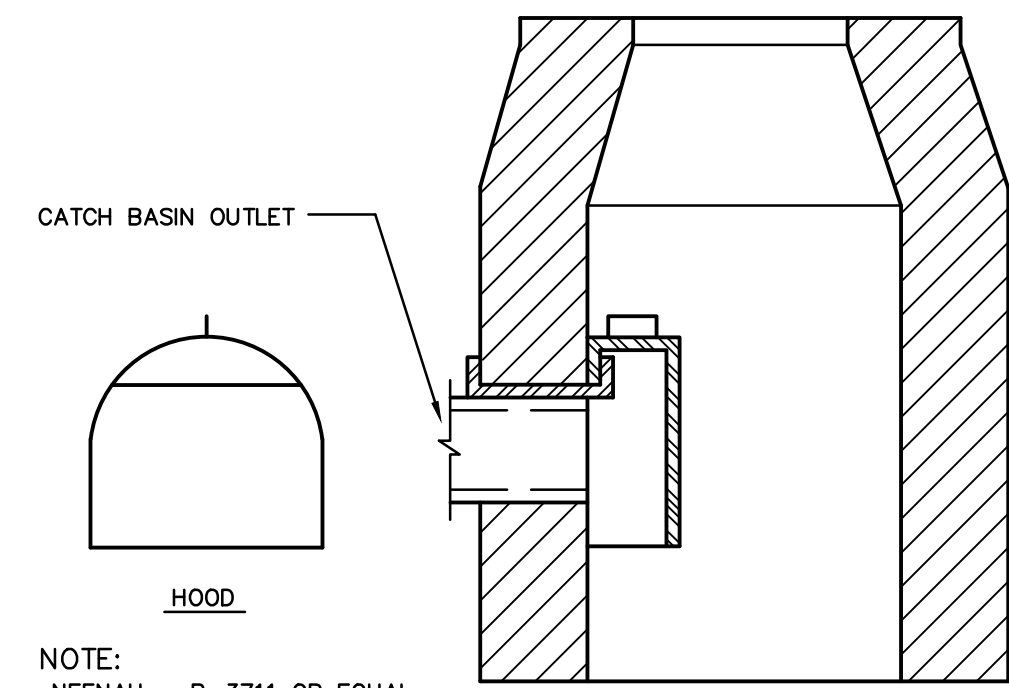
**CLEANOUT IN PAVED AREA**  
N.T.S. BLS-008



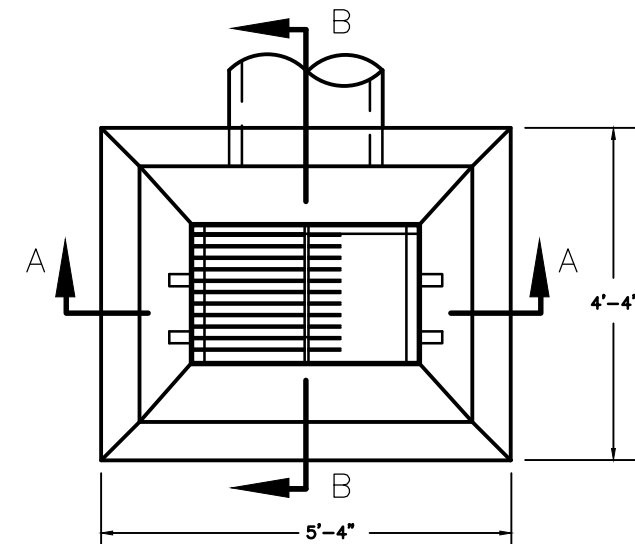
**TYPICAL STORM SEWER TRENCH SECTION**  
N.T.S. BLD-004



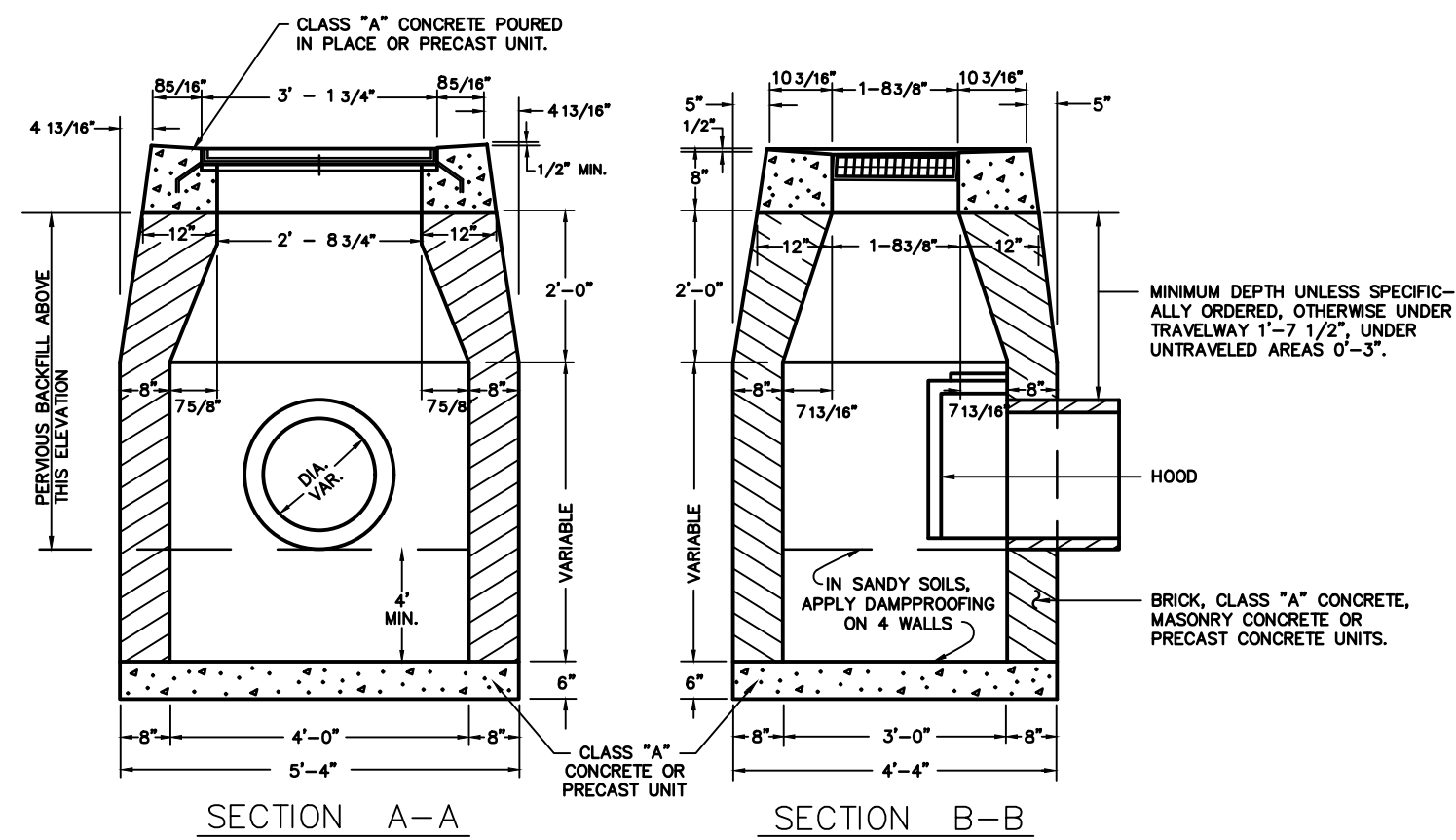
**ELECTRICAL, TELEPHONE AND GAS TRENCH DETAIL**  
N.T.S. BLD-001



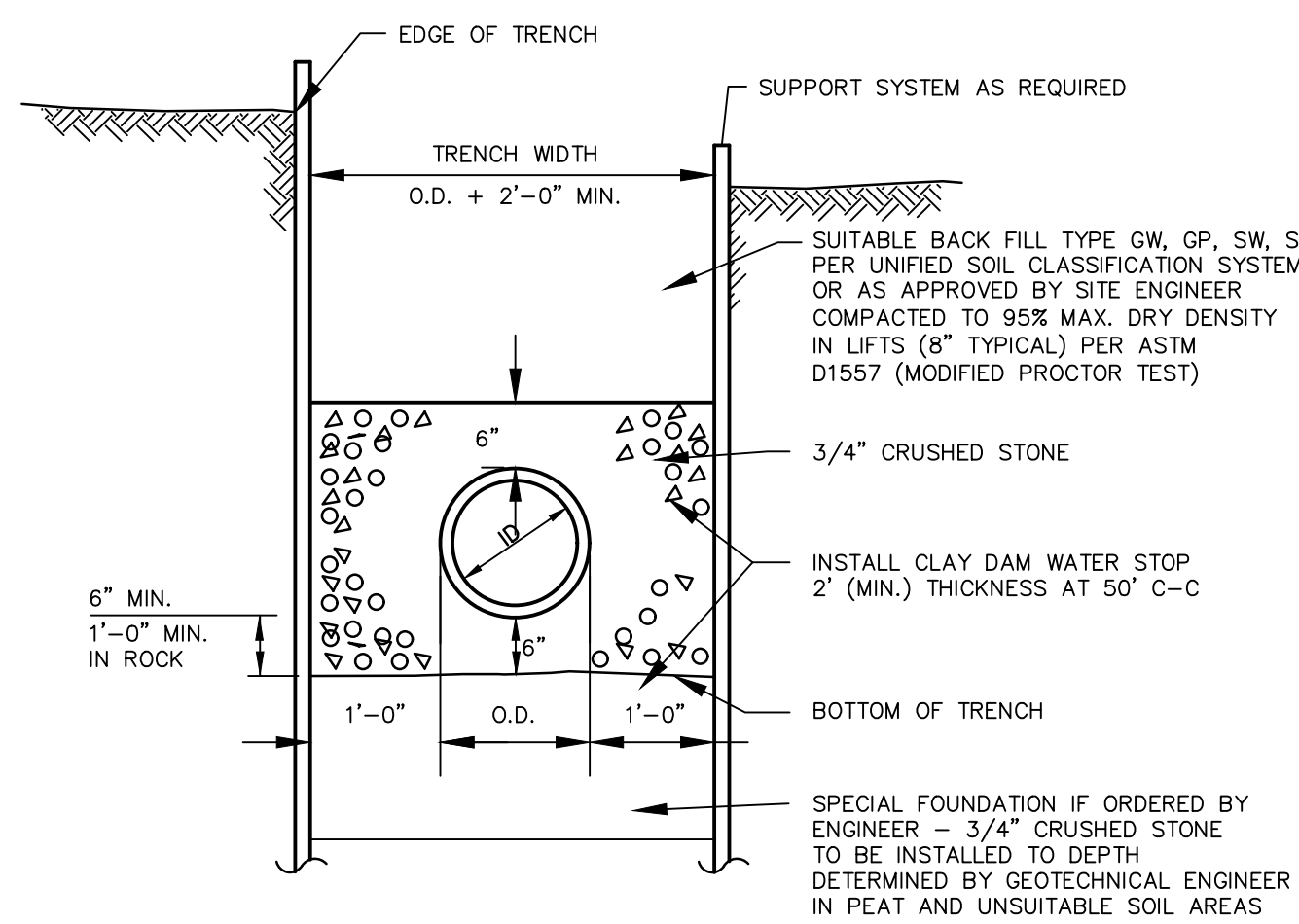
**HOODED OUTLET**  
N.T.S.



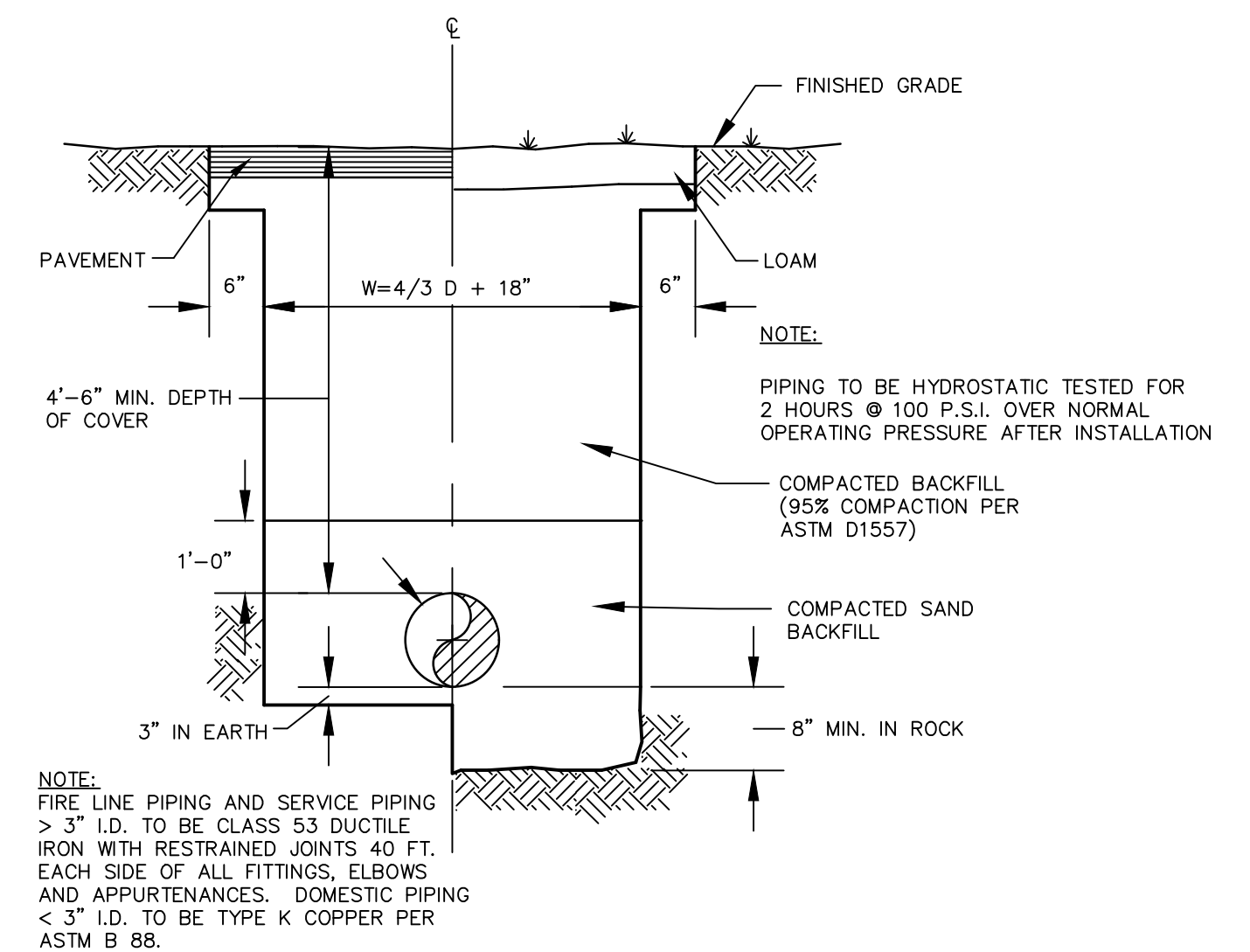
NOTE:  
DRAINAGE OPENINGS IN 4 WALLS AT  
OR IMMEDIATELY ABOVE THE BOTTOM  
OF THE PERVIOUS BACKFILL.



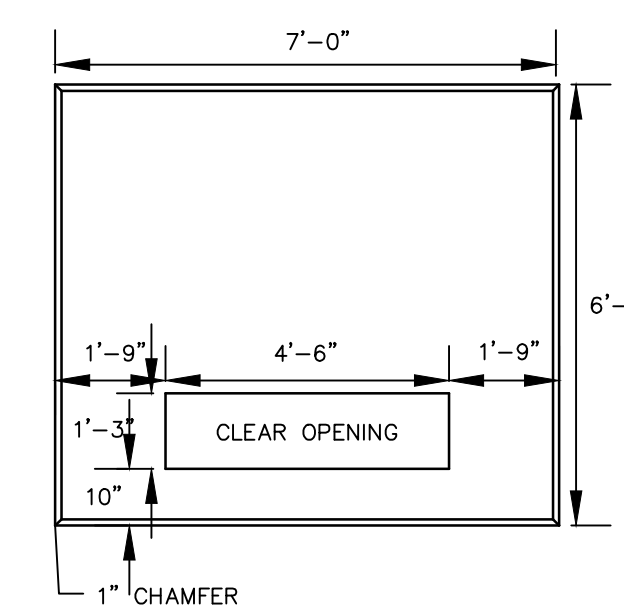
**TYPE "C-L" CATCH BASIN WITH HOOD**  
N.T.S.



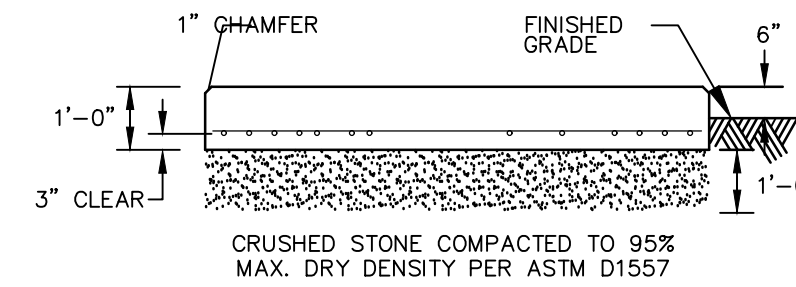
**TYPICAL SANITARY SEWER TRENCH SECTION**  
N.T.S. BLS-010



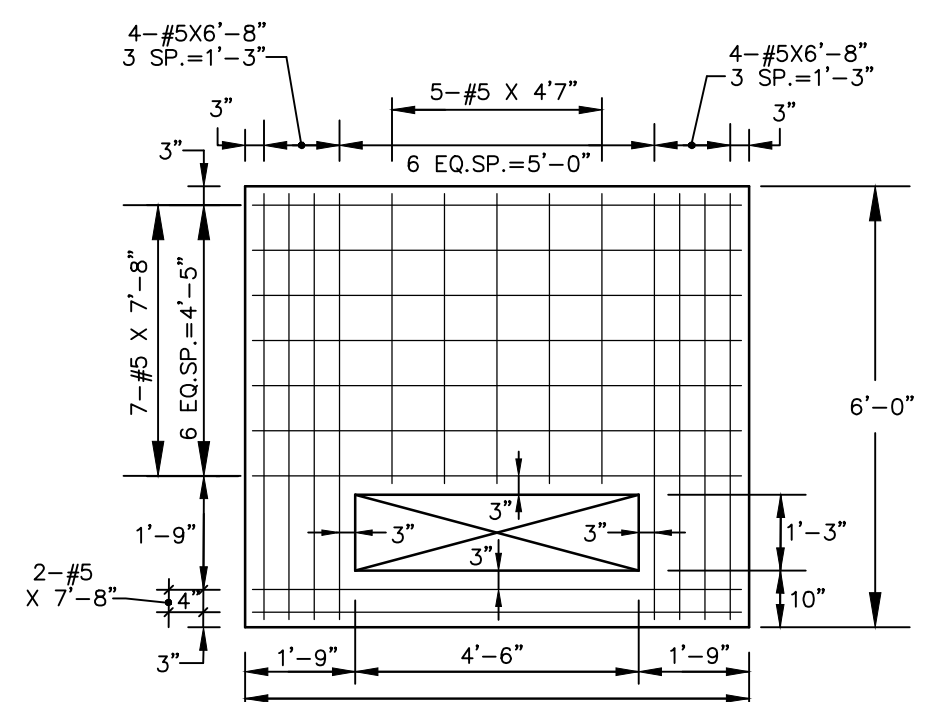
**TYPICAL WATER SERVICE TRENCH DETAIL**  
N.T.S. BLW-005



**PLAN VIEW**



**SECTION**



**PLAN OF REINFORCING**

**TRANSFORMER PAD**  
N.T.S. BLE-001

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

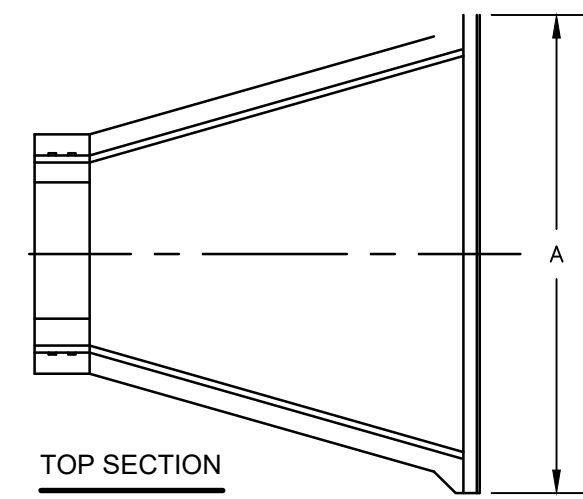
REVISIONS  
Date 03/20/2021  
Desc. REVISED PER TOWN COMMENTS  
No. 06/07/2021  
2

Designed S.E.L.  
Drawn S.E.L.  
Reviewed  
Scale NONE  
Project No. 2002032  
Date 04/02/2021  
CAD File: DN200203201

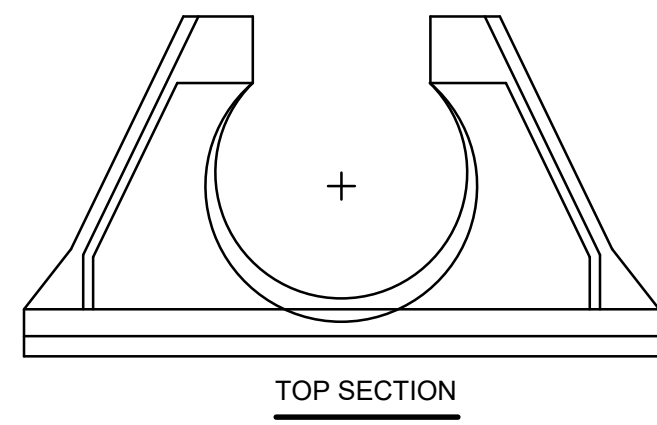
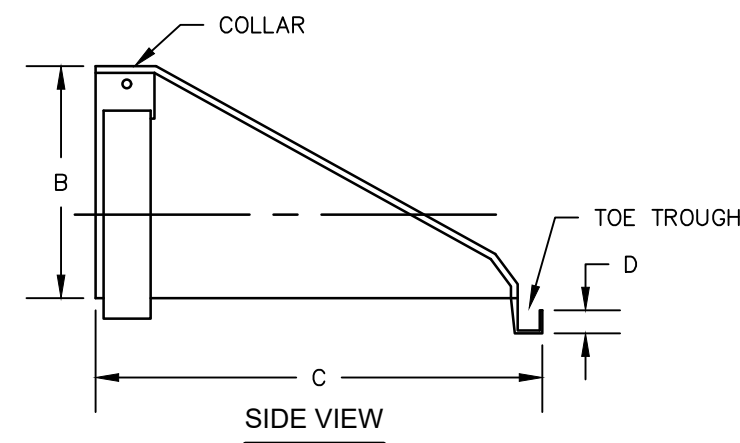
Title  
**DETAILS SHEET**

Sheet No.

**DN-2**

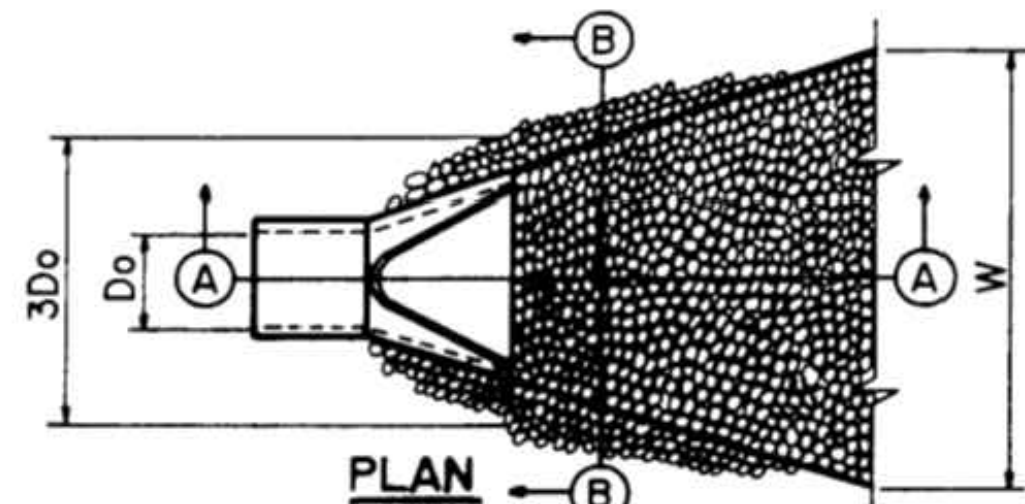


DIMENSION	PIPE DIAMETER					
	10"/12"	15"	18"	24"	30"	36"
A	42"	41"	49"	59.5"	88"	88"
B	14.5"	19"	22"	28"	36"	43"
C	33"	34"	43"	48"	63.5"	66.5"
D	6"	6"	6"	6"	6"	6"

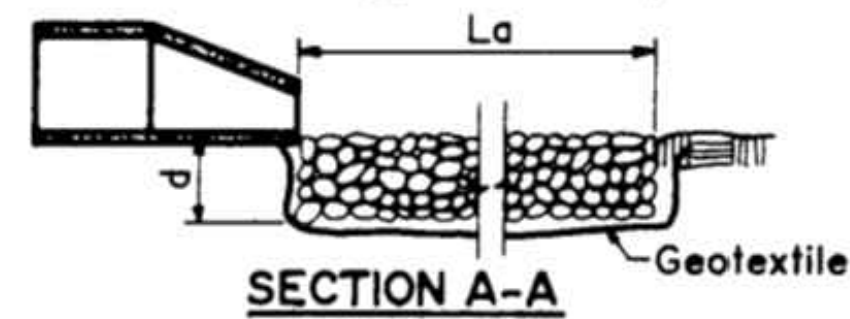


**HDPE FLARED END DETAIL**

N.T.S.



**SECTION B-B**



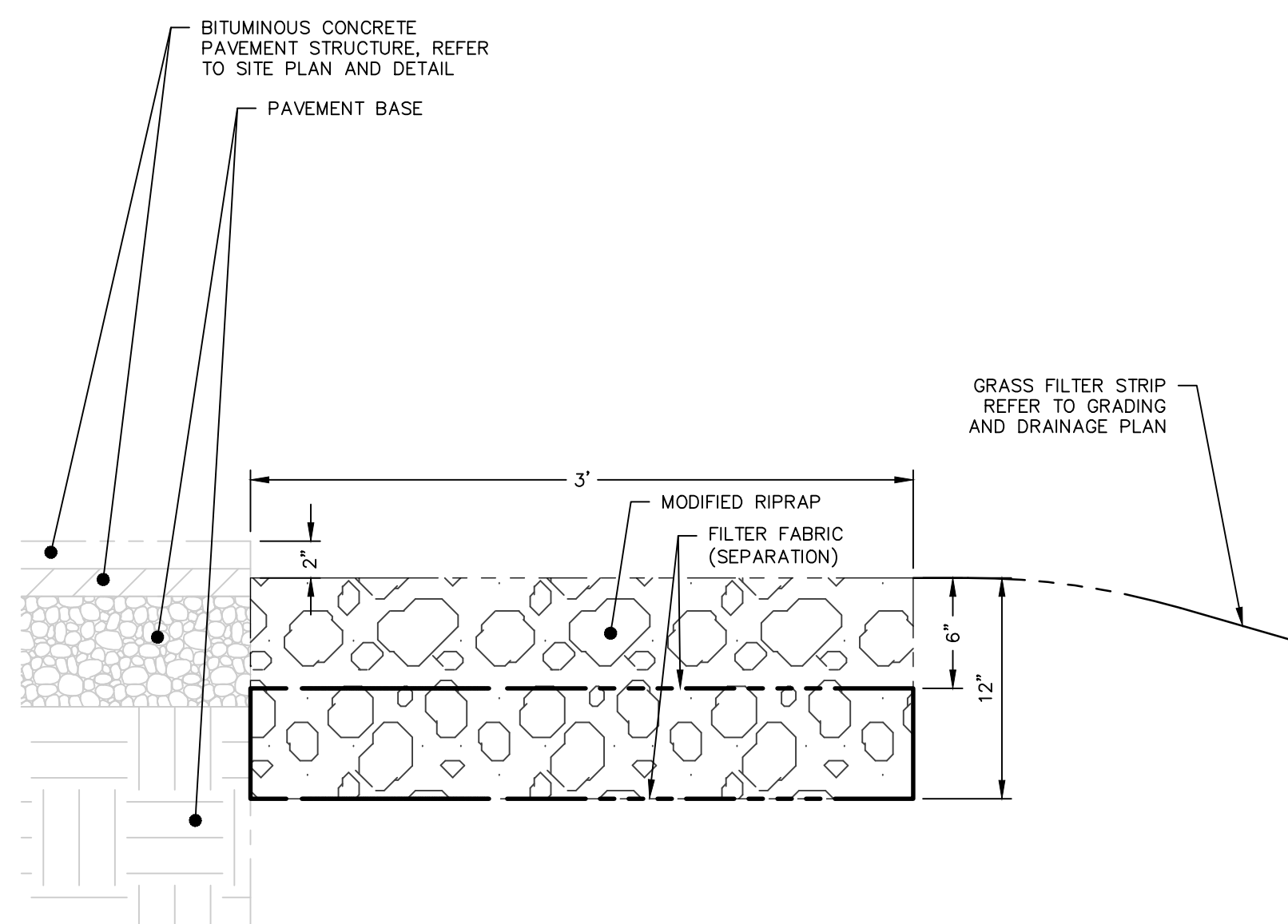
**SECTION A-A**

$d = 1.5$  times the maximum stone diameter but not less than 6 inches.

NOTE: REFER TO GRADING AND DRAINAGE PLAN FOR RIPRAP APRON DIMENSIONS

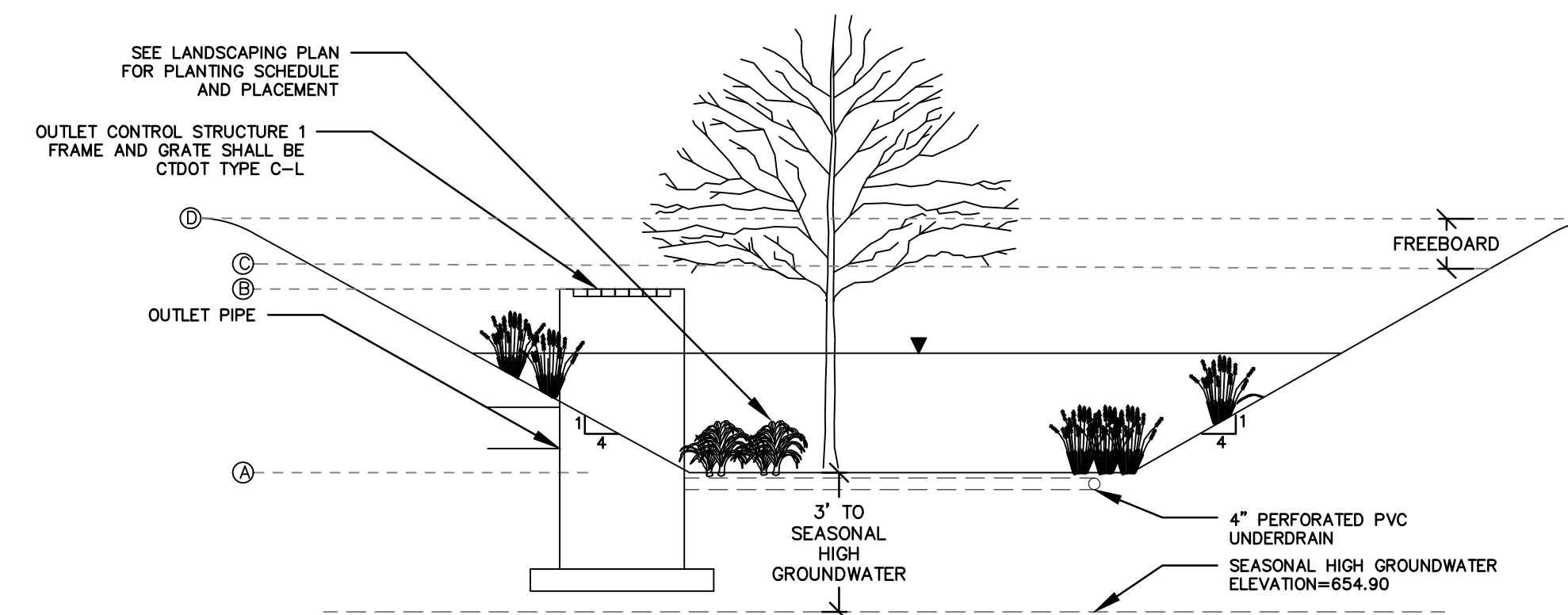
**RIPRAP APRON**

N.T.S.



**ENERGY DISSIPATION TRENCH**

N.T.S.



**TYPICAL INFILTRATION BASIN SECTION**

N.T.S.

	BOTTOM OF BASIN (A)	WATER QUALITY VOLUME REQUIRED	WATER QUALITY VOLUME PROVIDED (B)	100 YEAR STORM EVENT (C)	TOP OF BASIN (D)
INFILTRATION BASIN #1	657.90 FT	4,138 CF (PER CT GENERAL PERMIT)	661.25 FT (11,960 CF)	661.36 FT	662.00 FT

NOTES AND DESIGN REQUIREMENTS

- RECHARGE WILL BE PROVIDED BY INFILTRATION BASIN.
- THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF INFILTRATION BASIN.
- REFER TO LANDSCAPING PLAN FOR PLANT AND SEED SCHEDULE FOR INFILTRATION BASIN.

**TYPICAL INFILTRATION BASIN DETAIL**

N.T.S.

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_  
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

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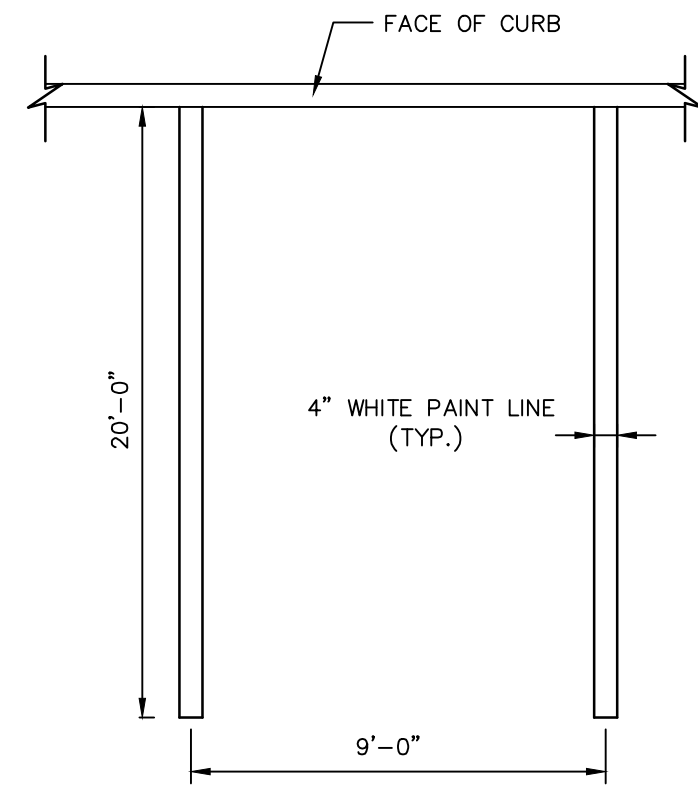
REVISIONS

No.	Date	Desc.
1	03/20/2021	REVISED PER TOWN COMMENTS
2	03/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	NONE
Project No.	2002032
Date	04/02/2021
CAD File:	DN200203201

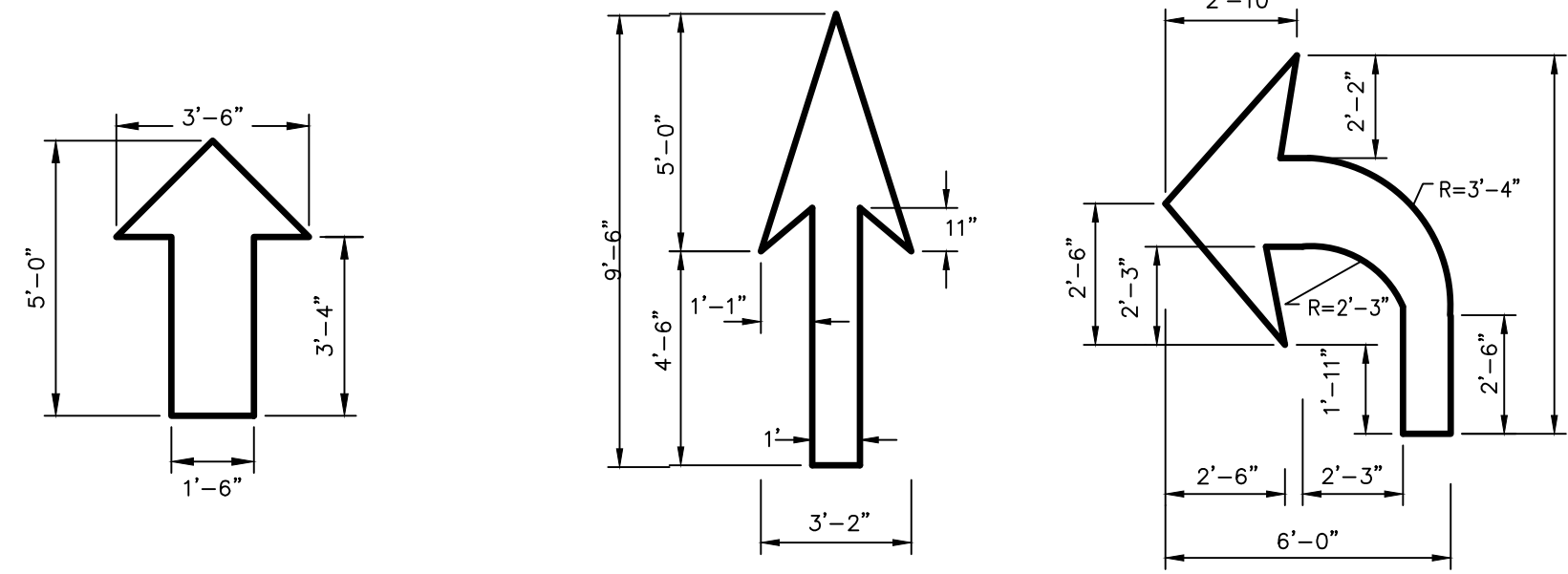
Title  
**DETAILS SHEET**

Sheet No.



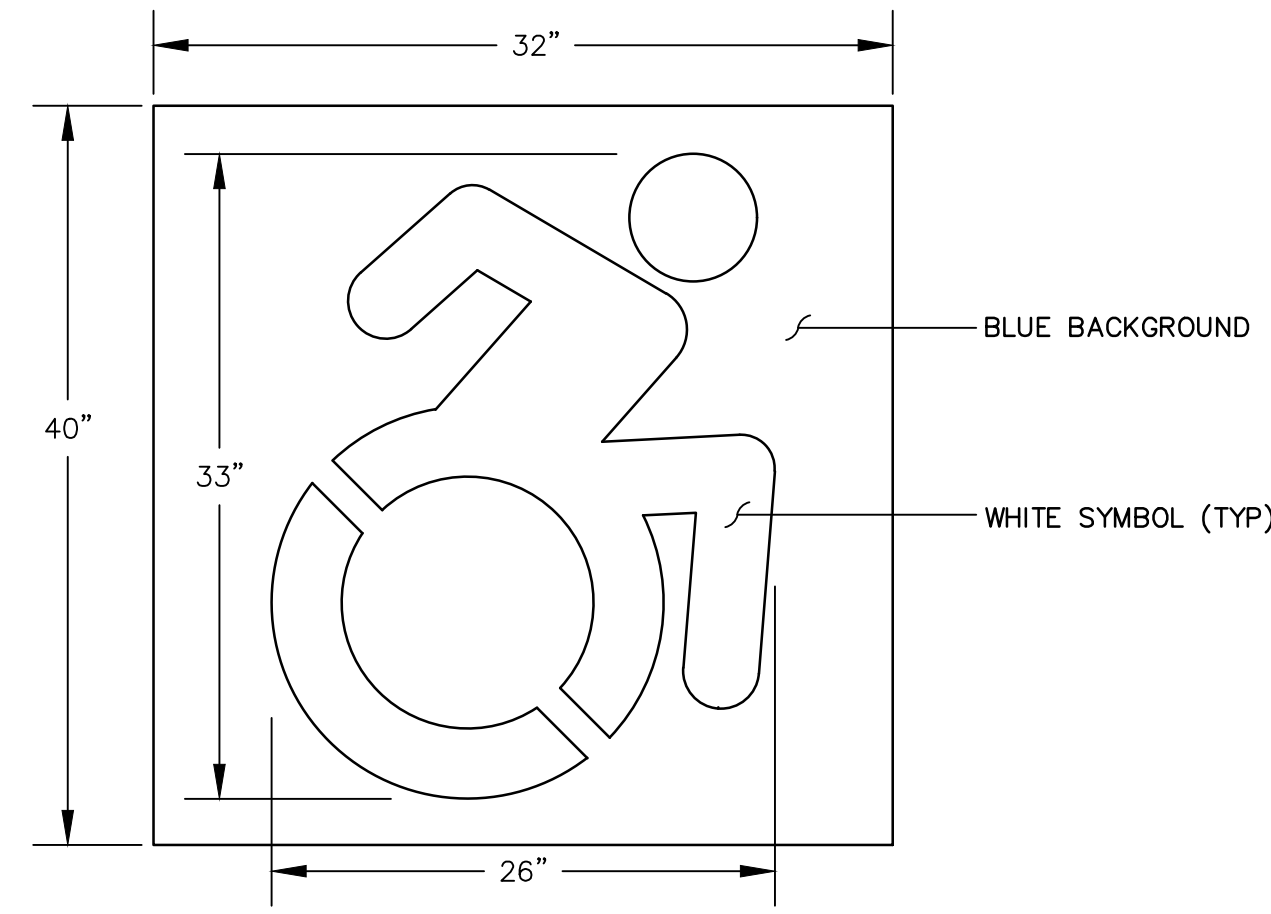
NOTE:  
1. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.  
2. SEE PLAN FOR ACTUAL SPACE LOCATION AND DIMENSIONS.

**TYPICAL PARKING SPACE DETAIL**  
N.T.S. BLPC-003



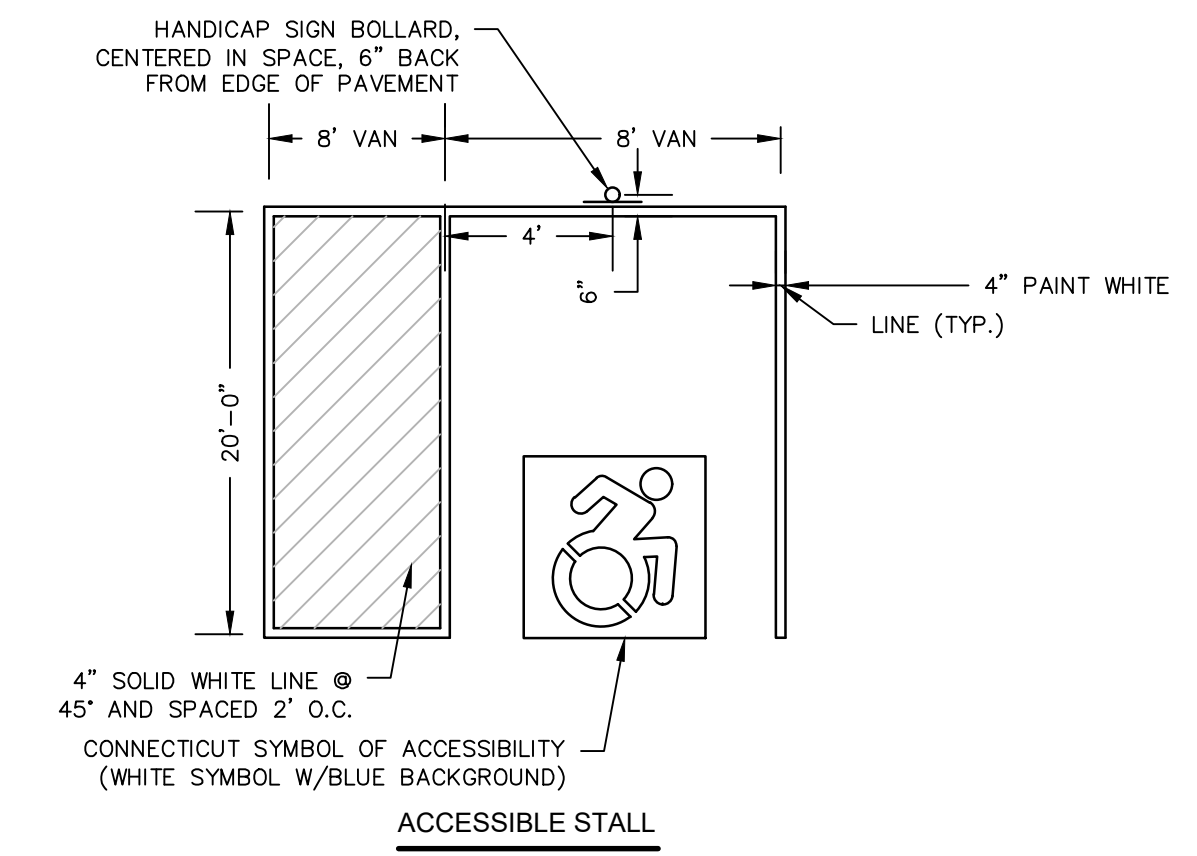
NOTES:  
1. WHITE (ARROWS TO BE CENTERED IN TRAVEL LANE)

**PAINTED TRAFFIC ARROW DETAILS**  
N.T.S. BLPC-006



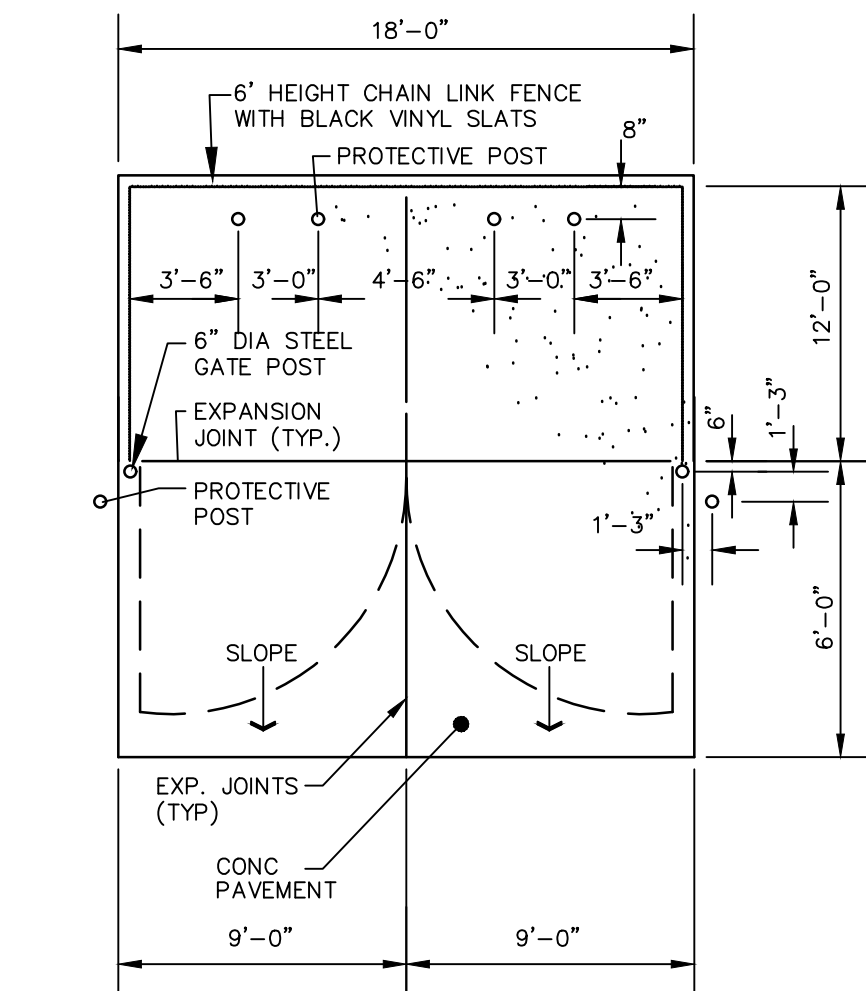
NOTE: HANDICAP SYMBOL TO ADHERE TO STATE BUILDING CODE, LATEST EDITION

**CONNECTICUT SYMBOL OF ACCESSIBILITY**  
N.T.S.

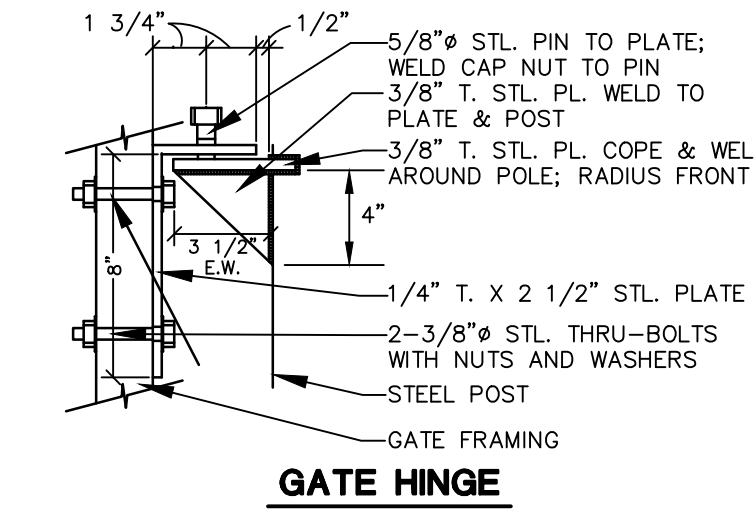


NOTE: UNIFORM FEDERAL ACCESSIBILITY STANDARDS, SECTION 4.30. & 2010 ADA

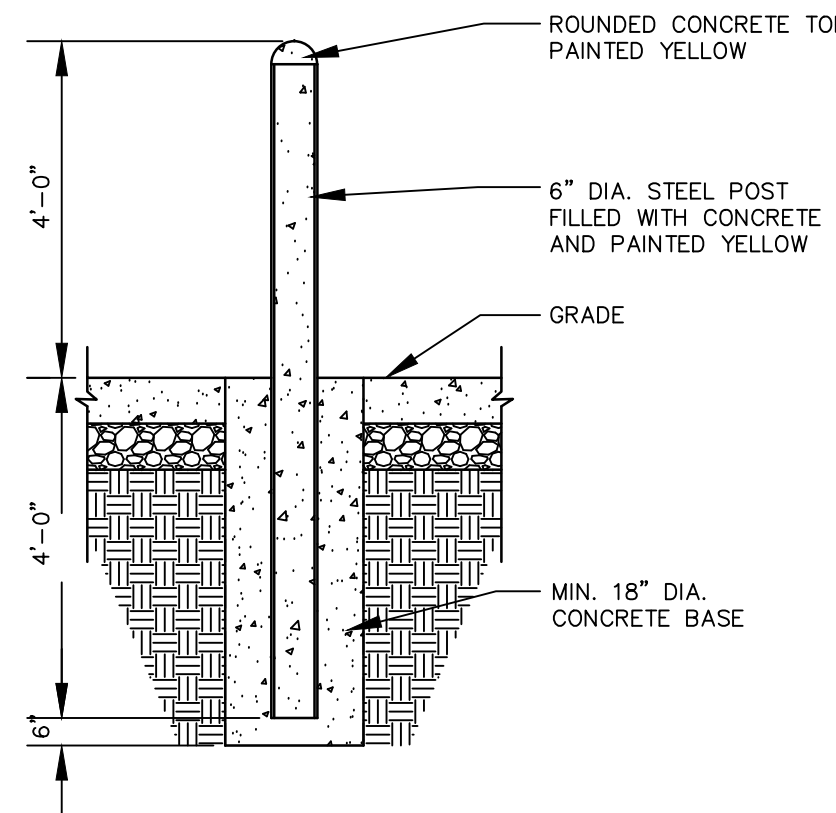
**TYPICAL HANDICAP PARKING STALL LAYOUT**  
N.T.S.



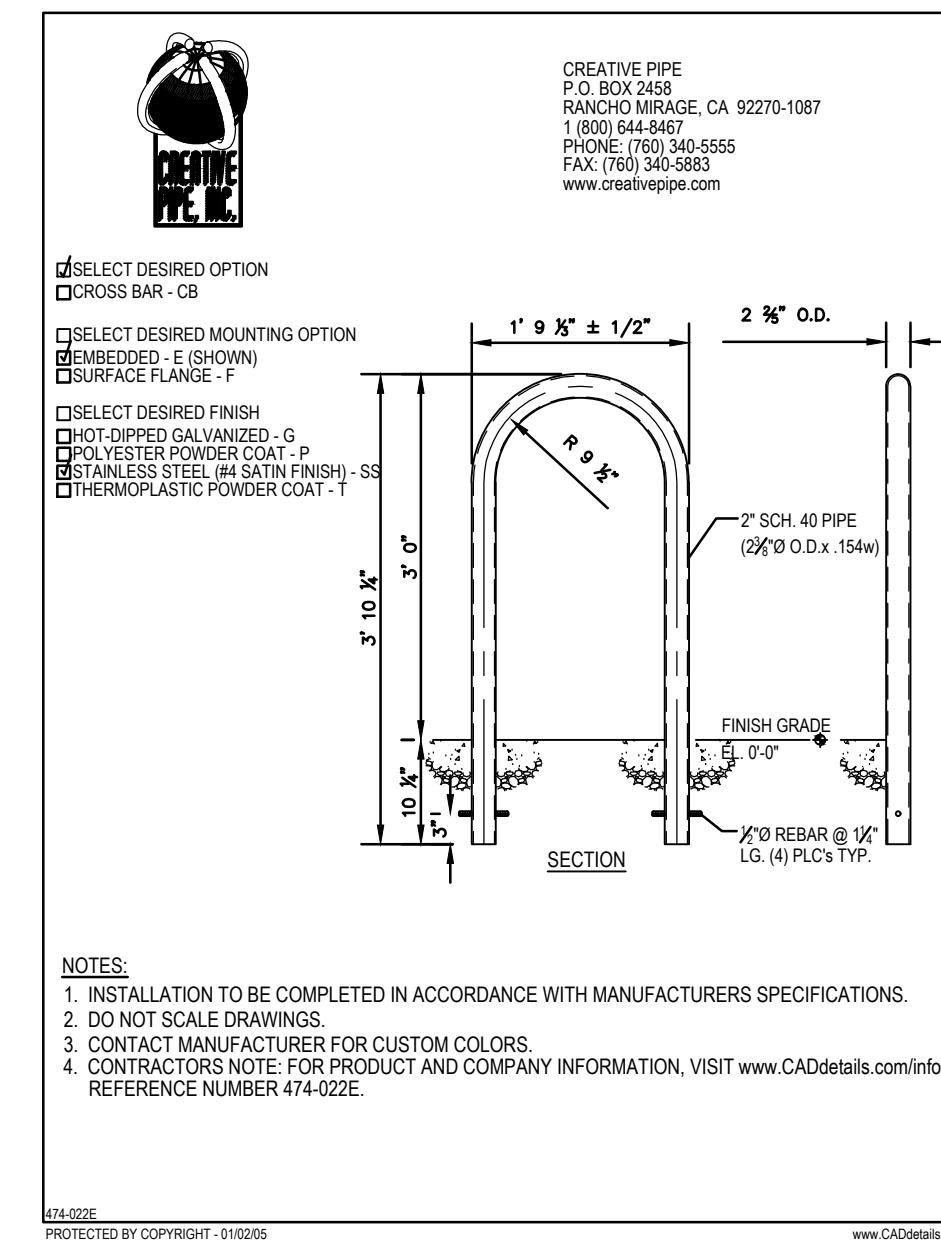
**TRASH ENCLOSURE PLAN**  
N.T.S. BLSE-004



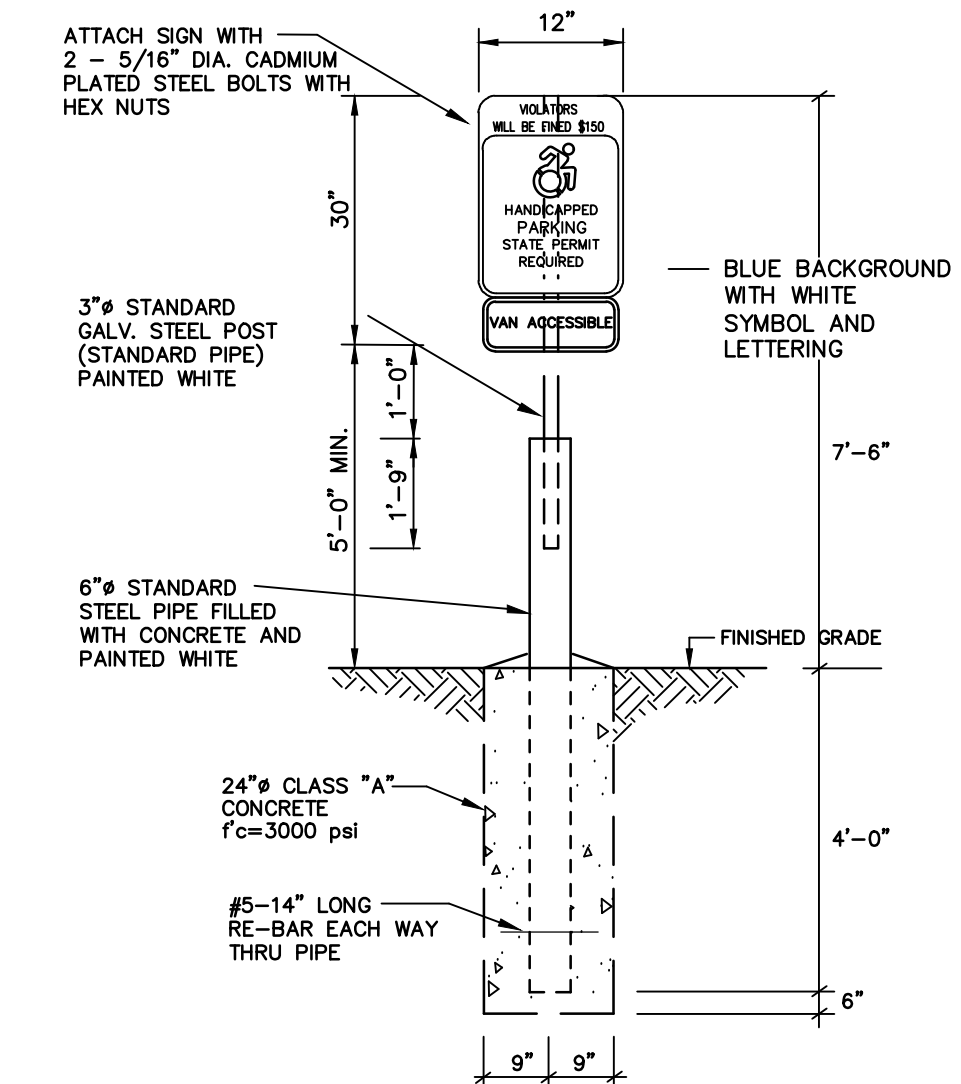
**TRASH ENCLOSURE GATE (HALF SECTION)**  
N.T.S. BLSE-001



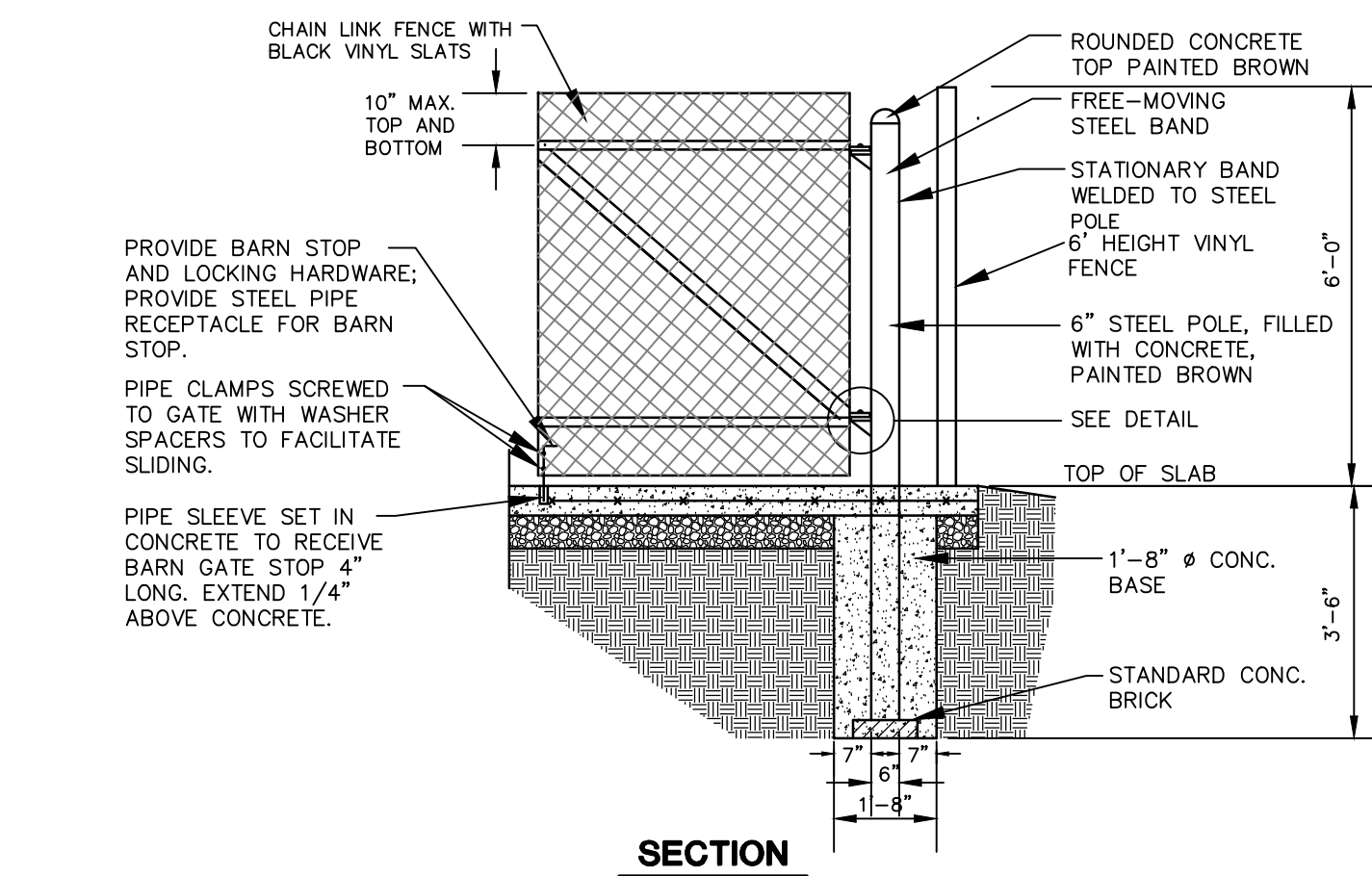
**6" CONCRETE FILLED STEEL BOLLARD**  
N.T.S. BLSE-005



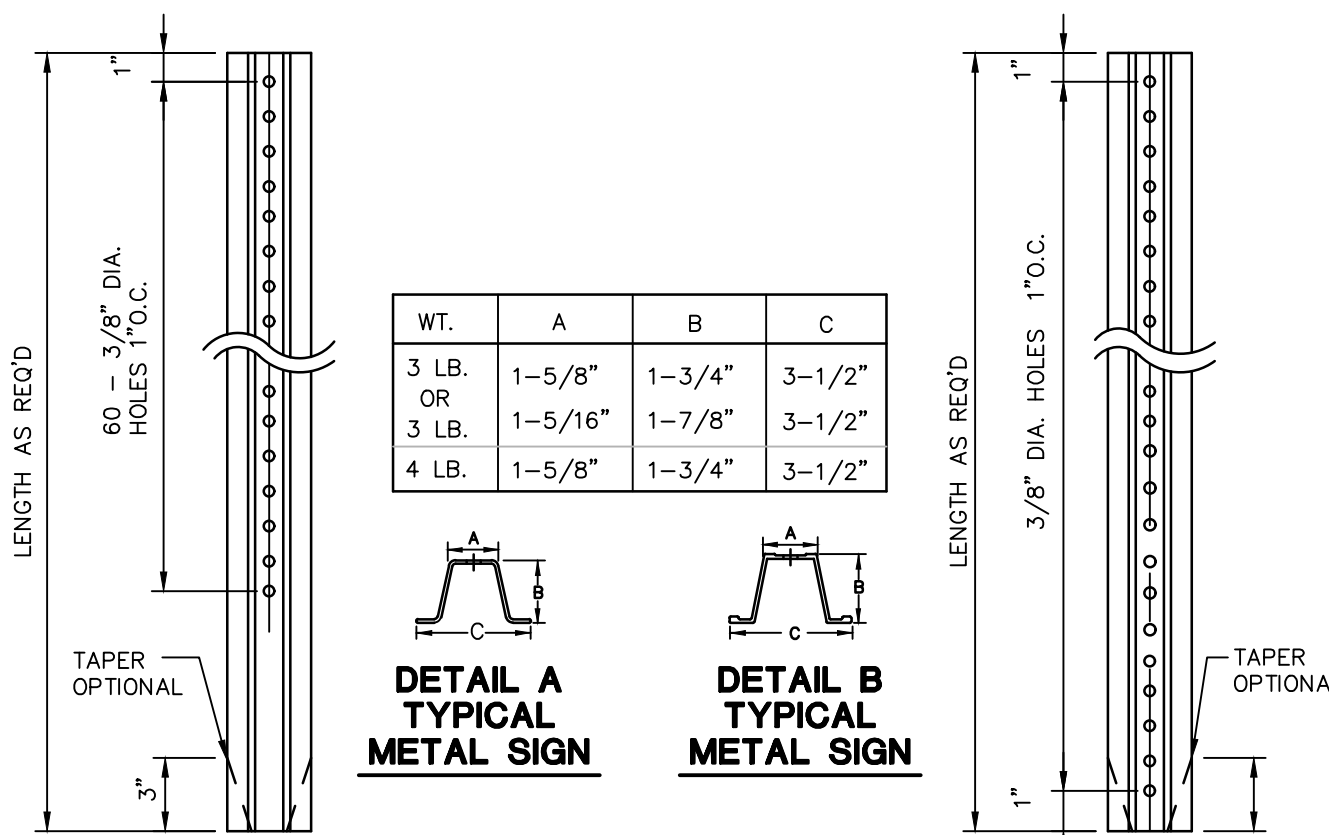
**INVERTED 'U' BICYCLE RACK**  
N.T.S.



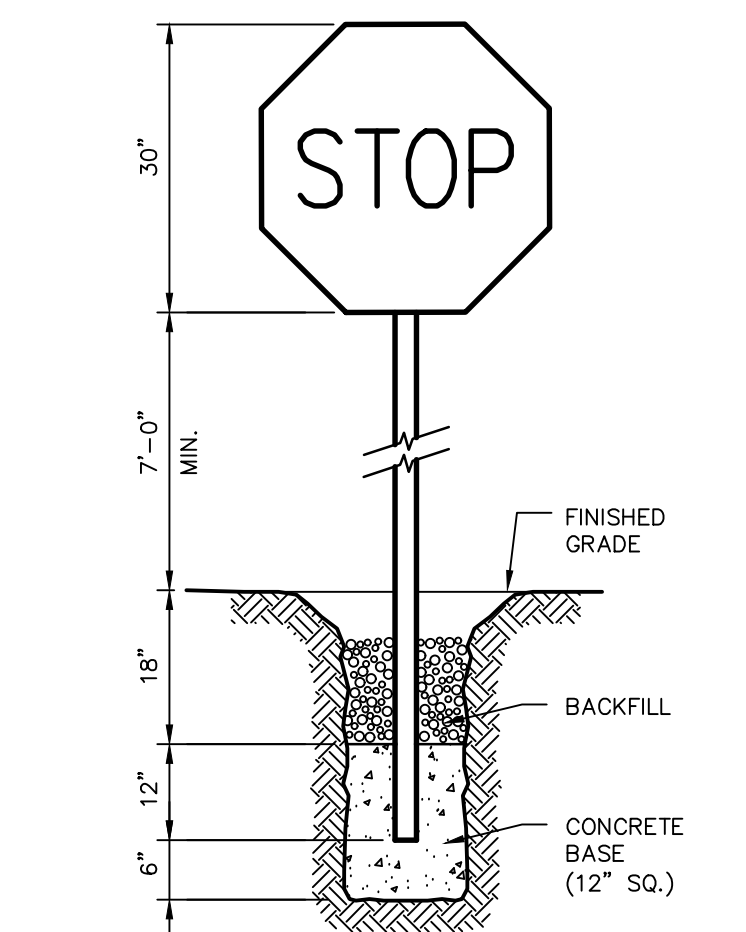
**HANDICAP SIGN BOLLARD DETAIL**  
N.T.S.



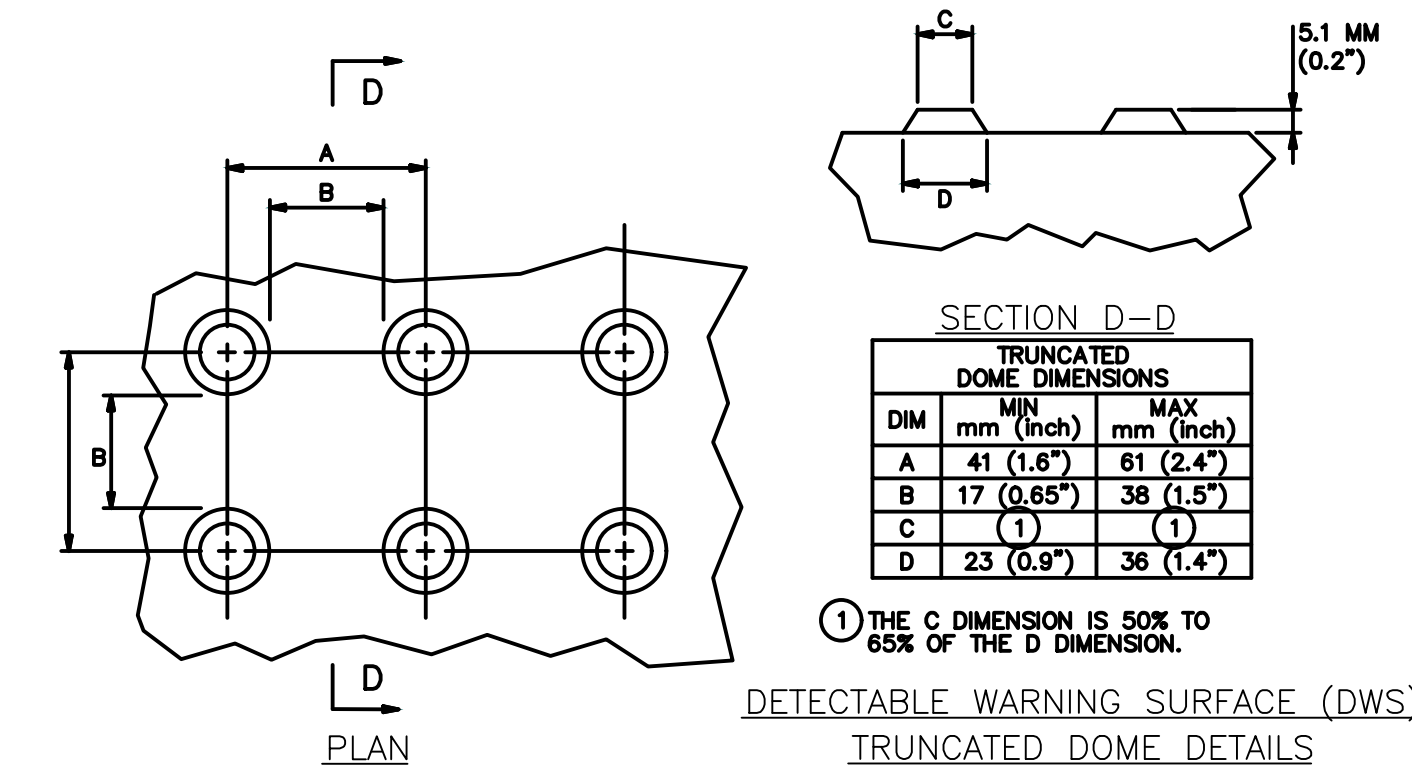
**TRASH ENCLOSURE CHAIN LINK FENCE GATE**  
N.T.S. BLFD-001



**TYPICAL METAL SIGN POSTS**  
N.T.S. BLSO-001

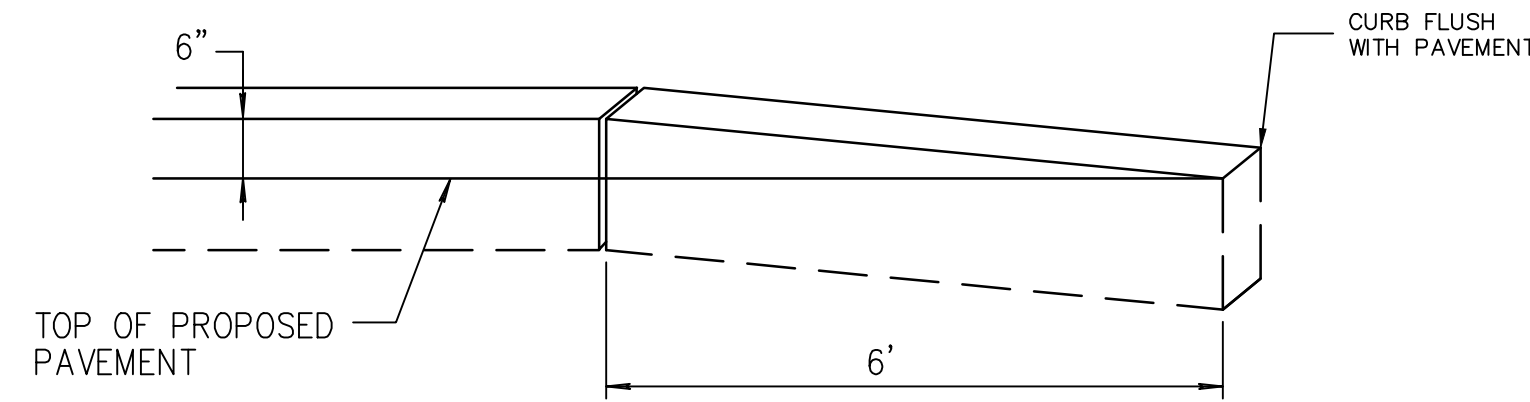


**STOP SIGN**  
N.T.S. BLSO-002



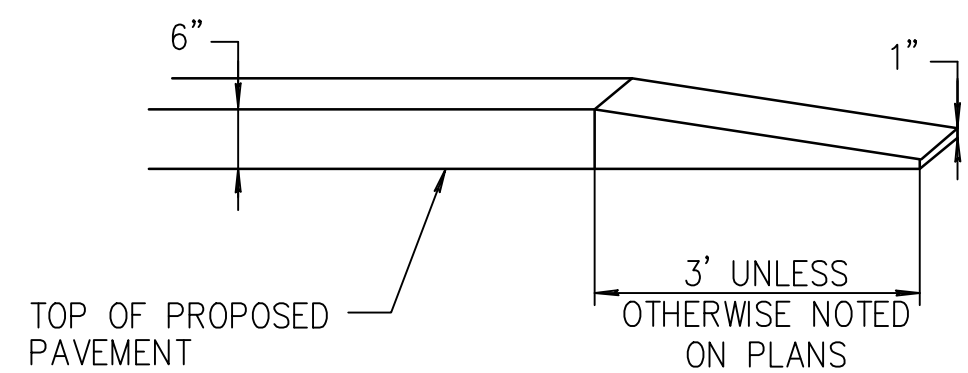
**DETECTABLE TRUNCATED DOME DETECTABLE WARNING SURFACE (DWS) AND X-SECT.**  
N.T.S.

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



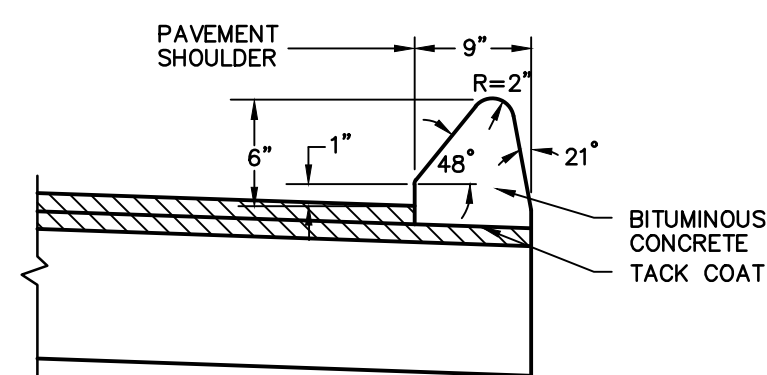
**6' CONCRETE TRANSITION CURB**

N.T.S.



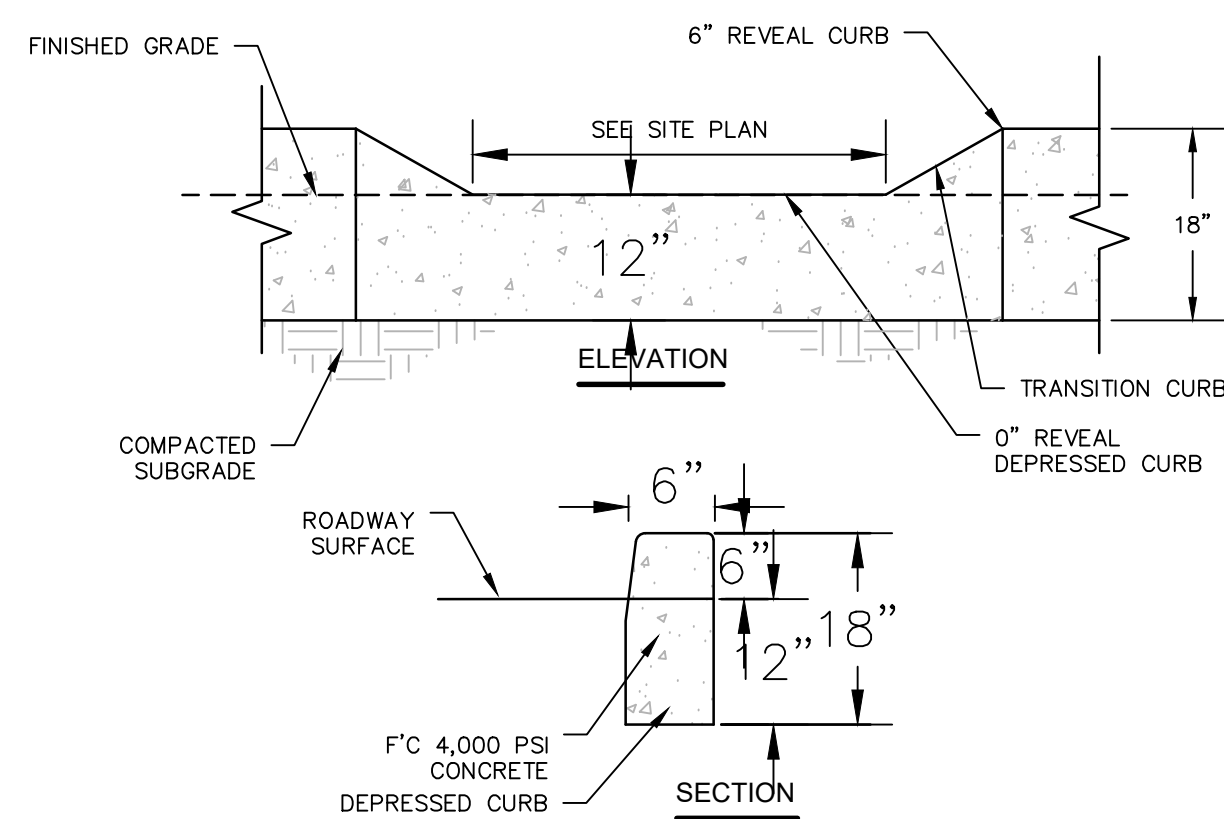
**3' BITUMINOUS CONCRETE TRANSITION CURB**

N.T.S.



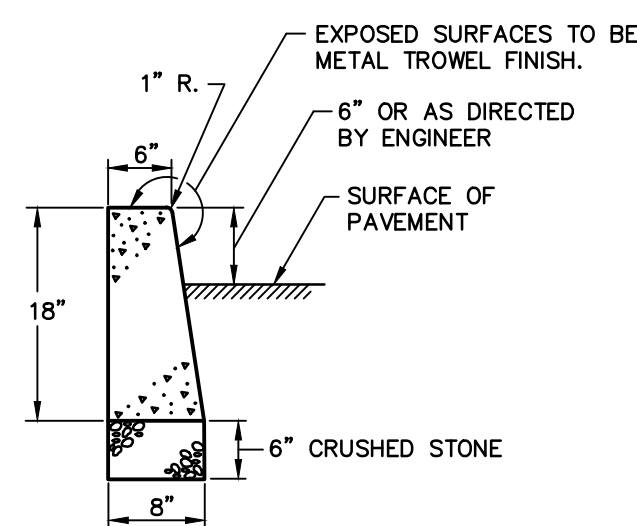
**BITUMINOUS CONCRETE LIP CURBING**

N.T.S.



**6" REVEAL DEPRESSED/ CONCRETE CURB**

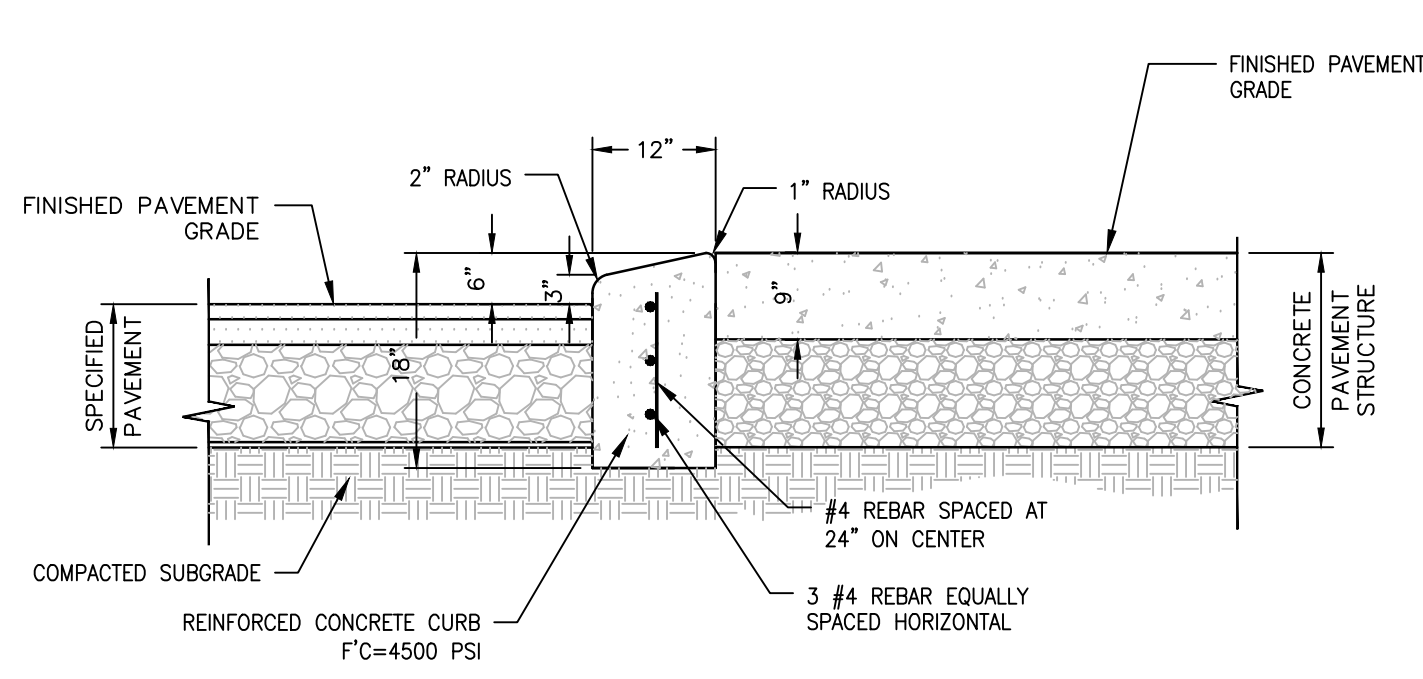
N.T.S.



**CONCRETE CURB DETAIL**

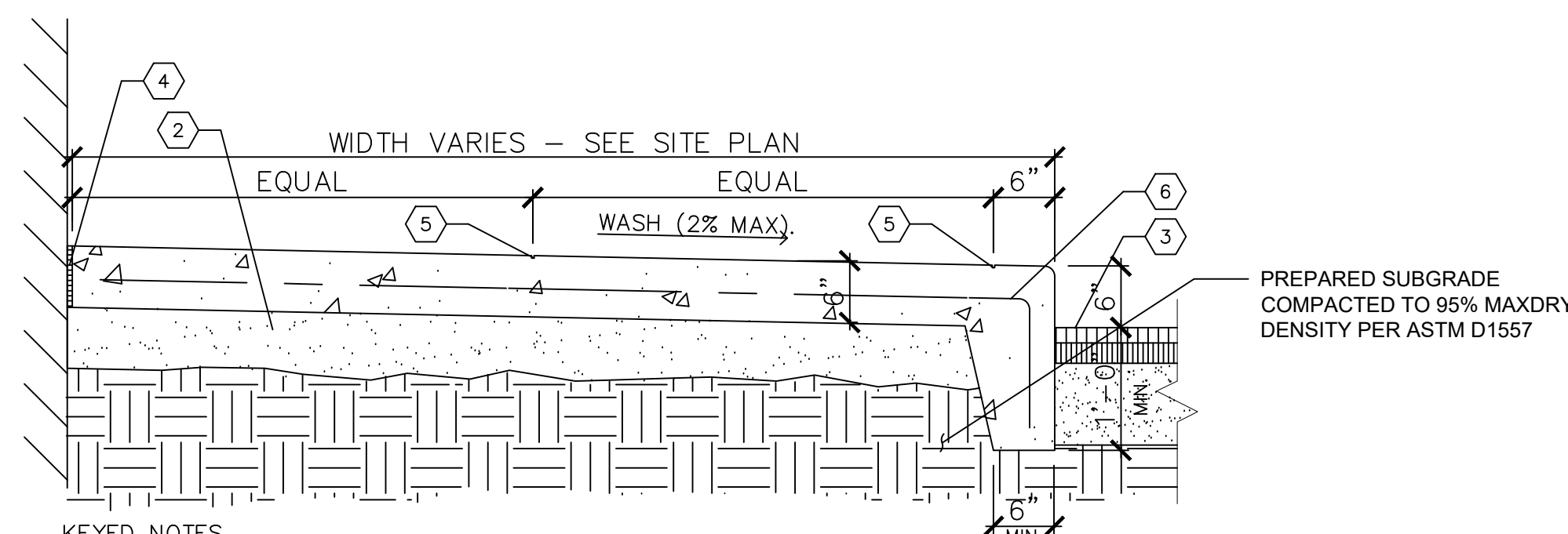
N.T.S.

ZPC-014



**MOUNTABLE CONCRETE CURB**

N.T.S.

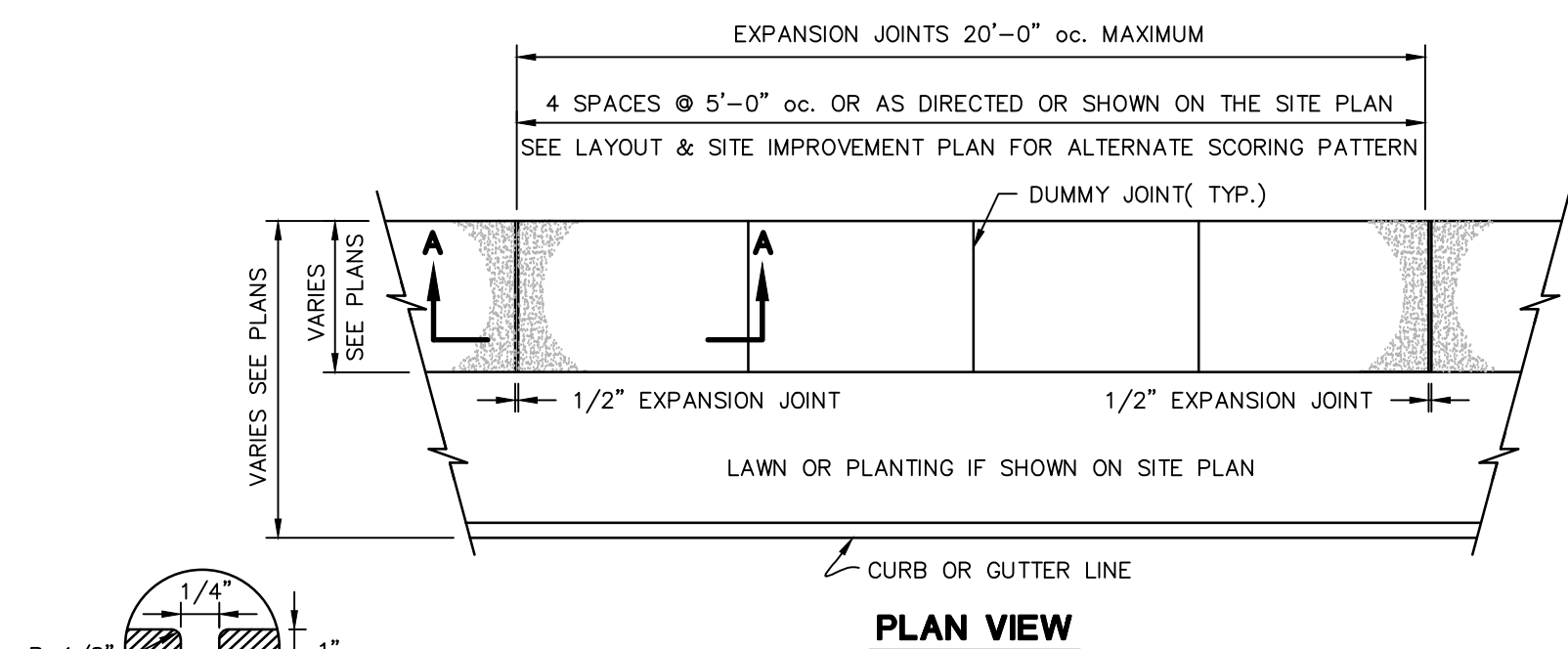


- KEYED NOTES**
- 1) N/A
  - 2) 6" PROCESSED AGGREGATE BASE COURSE, CTDOT M.05.01
  - 3) PAVEMENT.
  - 4) COMPRESSIBLE FILLER (3/4" MAXIMUM). CUT BACK AND PROVIDE SEALANT, TYPICAL, AT ALL JOINTS WITH FILLER.
  - 5) 1/4" TOOLED JOINT 20' O.C. MAXIMUM. 1/4" TOOL JOINT 5' O.C. OR AS DIRECTED. CONCRETE TO BE 4,000 P.S.I.
  - 6) 6" X 6" W2.1 X 2.1 W.W.F.

**MONOLITHIC CONCRETE CURB AND SIDEWALK DETAIL**

N.T.S.

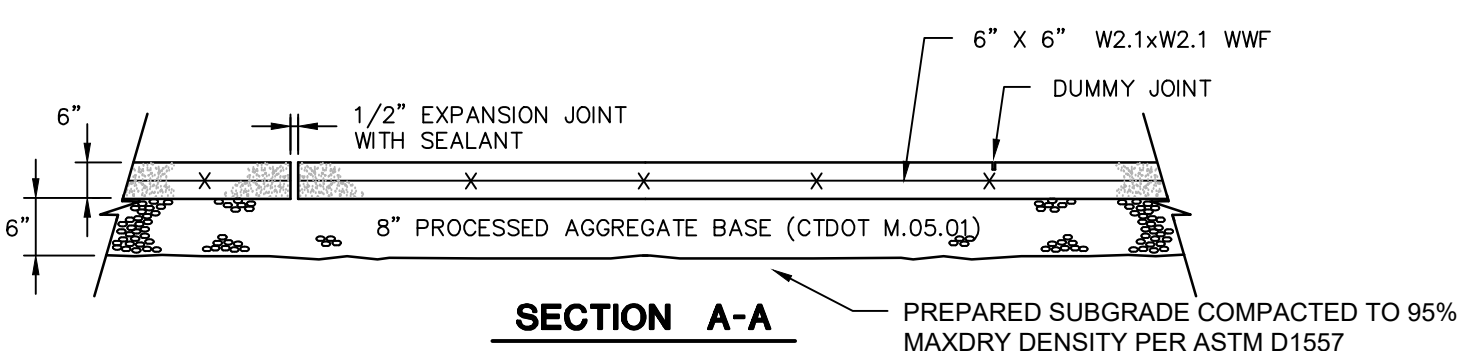
WAG



**CONCRETE SIDEWALK DETAIL**

N.T.S.

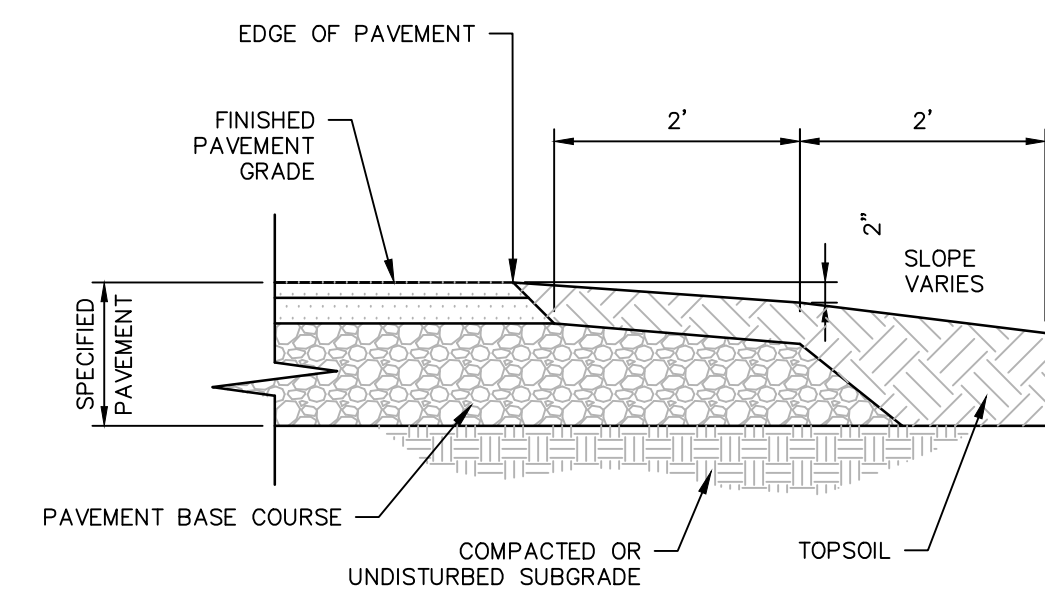
BLSR-001



**CONCRETE SIDEWALK DETAIL**

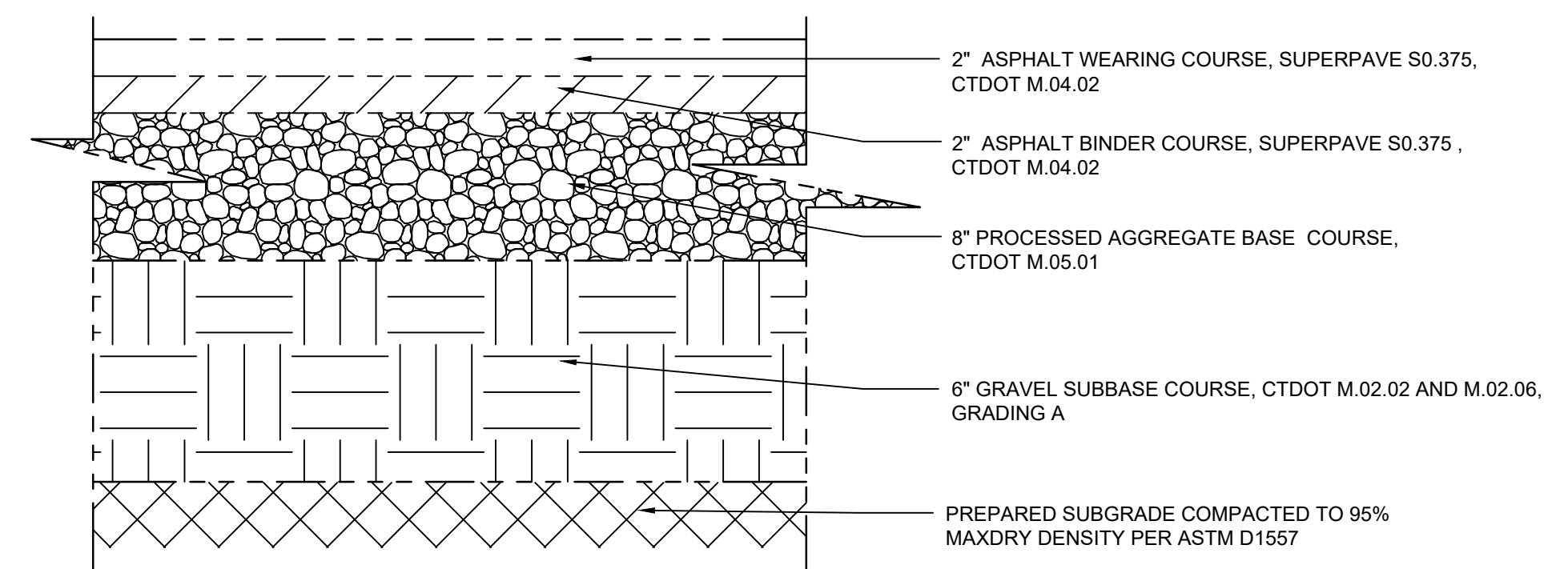
N.T.S.

BLSR-001



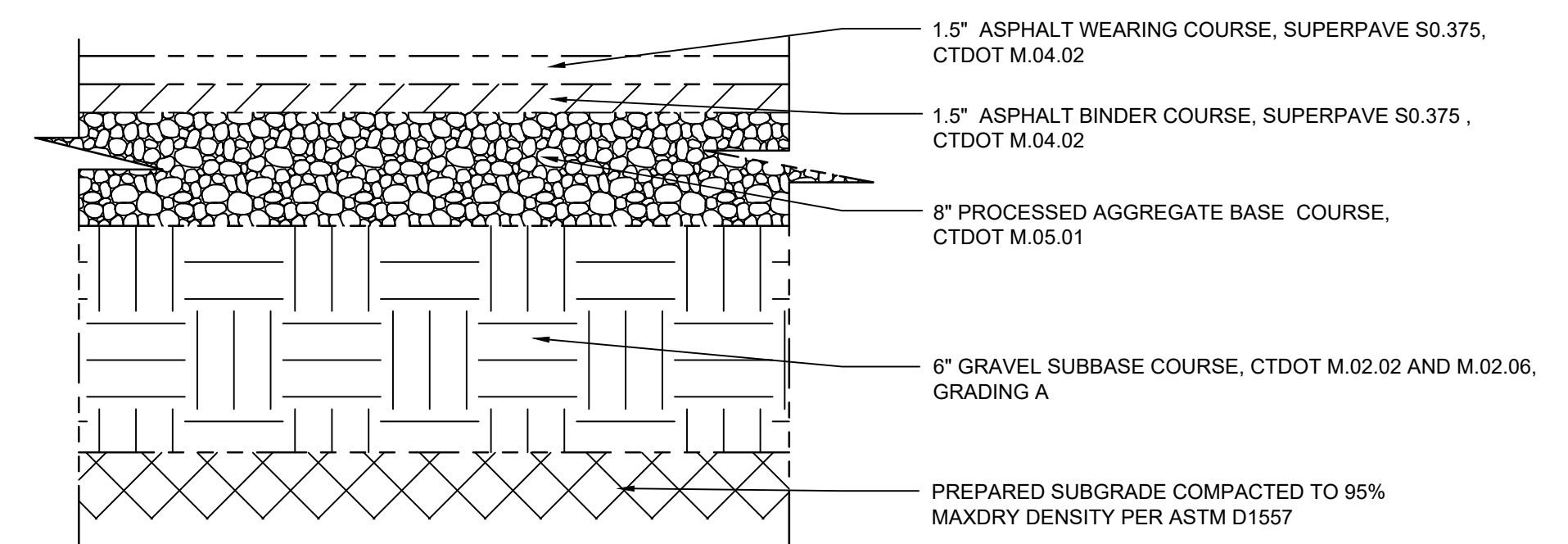
**PAVEMENT END SECTION DETAIL**

N.T.S.



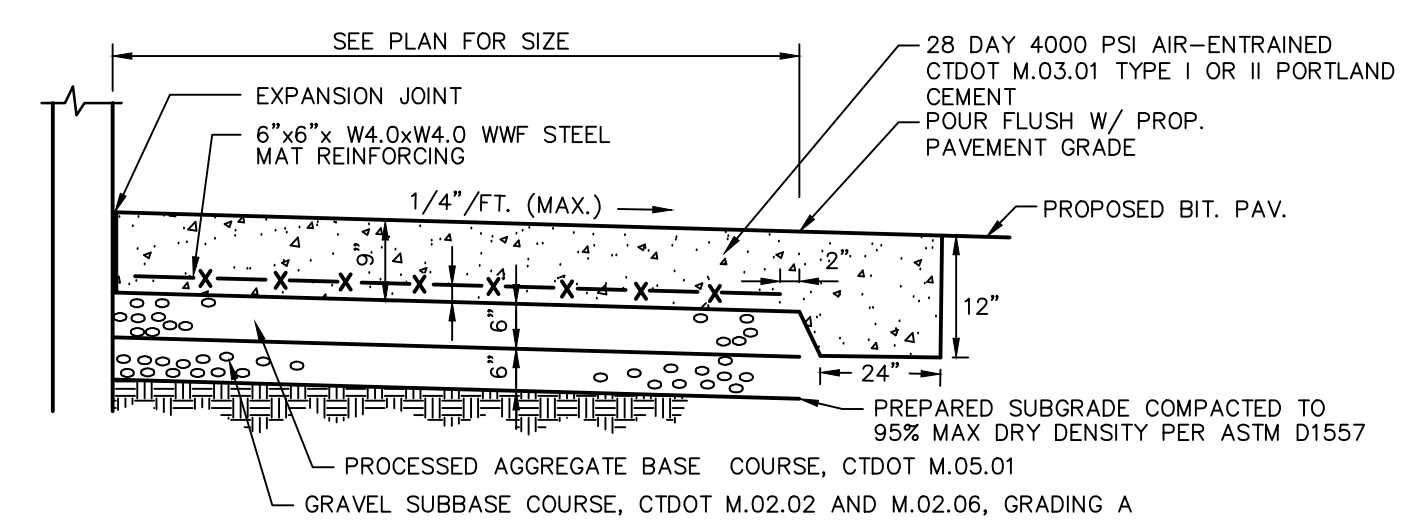
**HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE DETAIL**

N.T.S.



**STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE DETAIL**

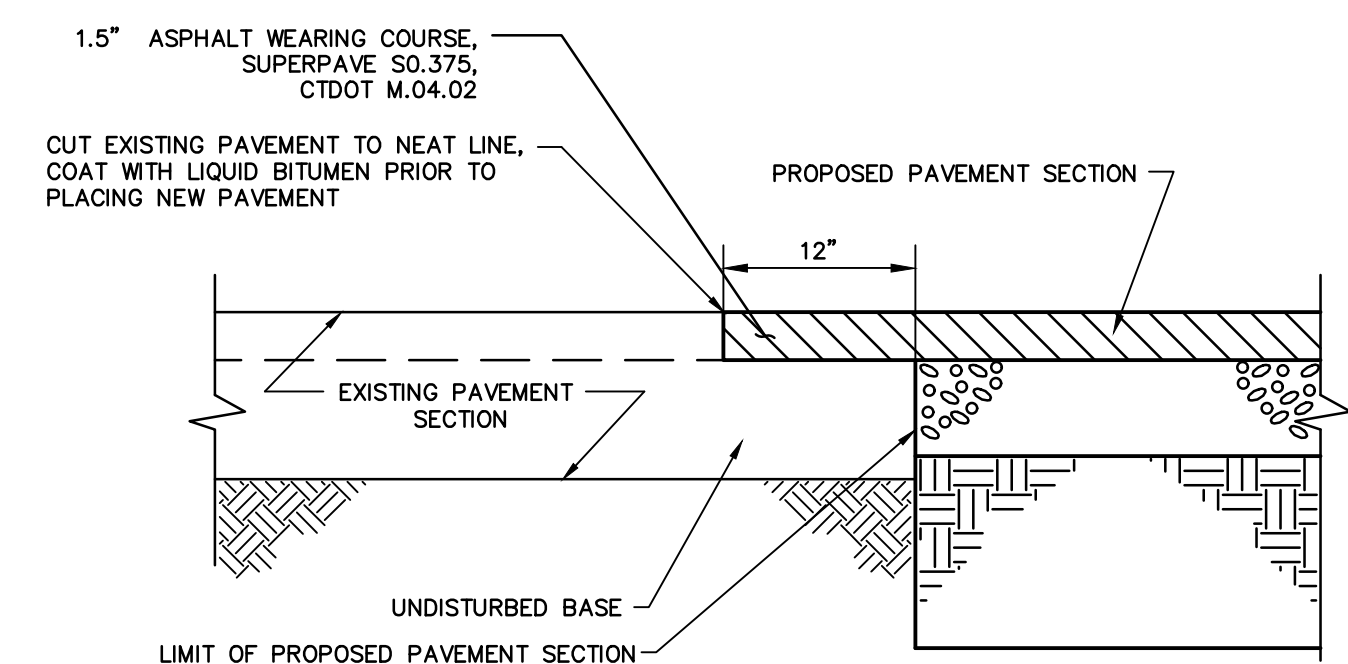
N.T.S.



**CONCRETE TRASH ENCLOSURE DUMPSTER PAD AND CONCRETE PAVEMENT**

N.T.S.

BLPC-002



**EDGE OF PAVEMENT DETAIL**

N.T.S.

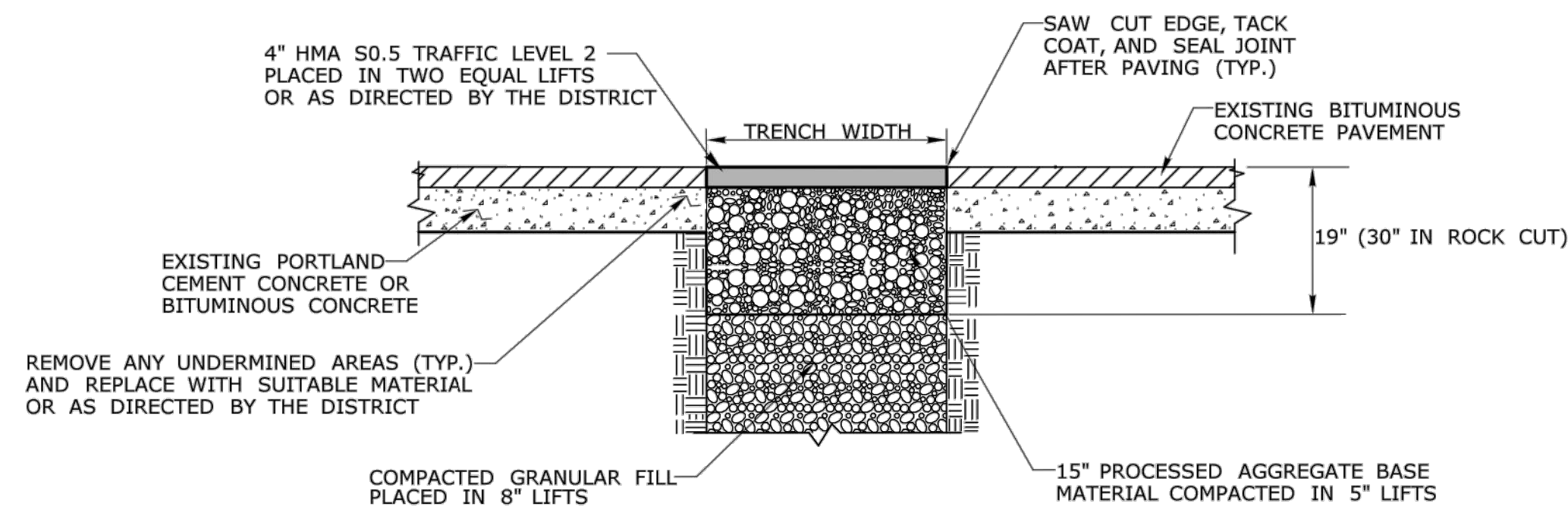
**FOR PERMITTING PURPOSES ONLY  
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**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

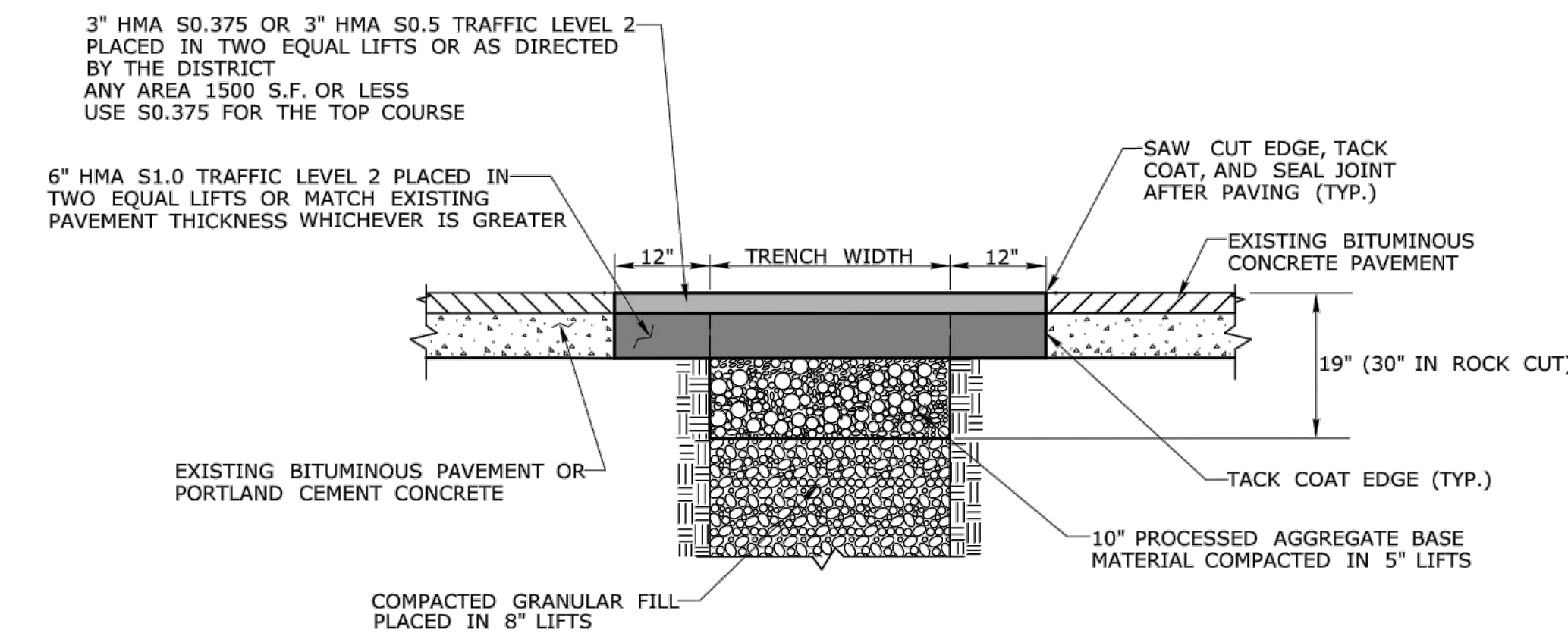
DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN

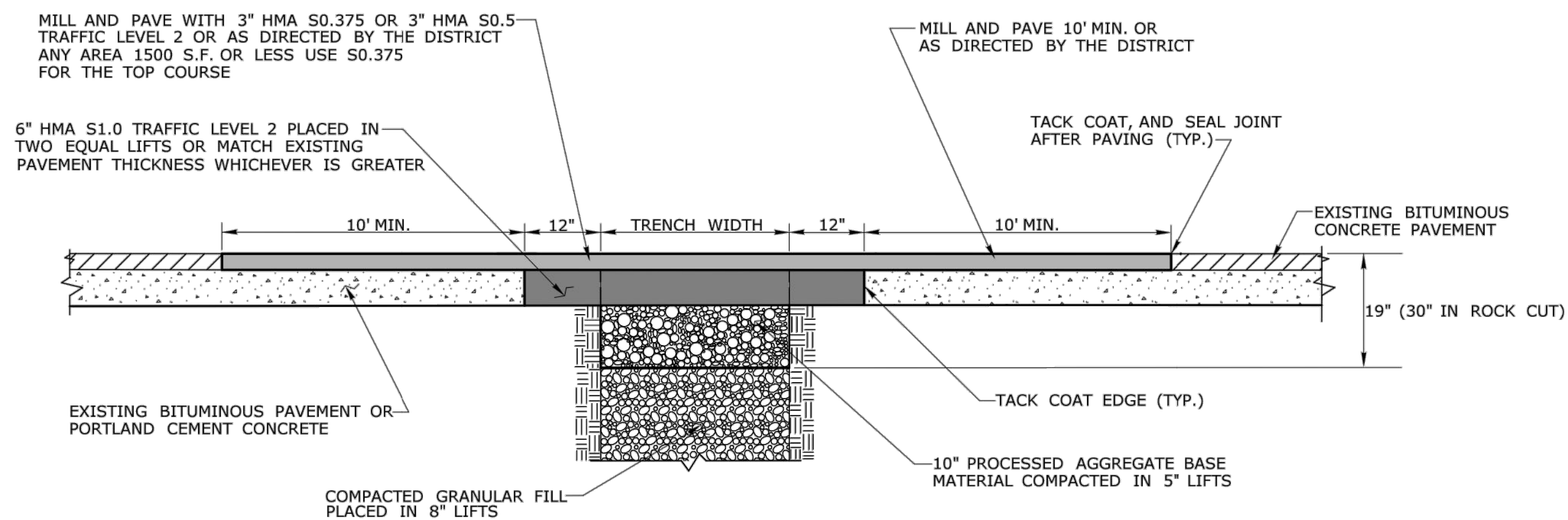
THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_



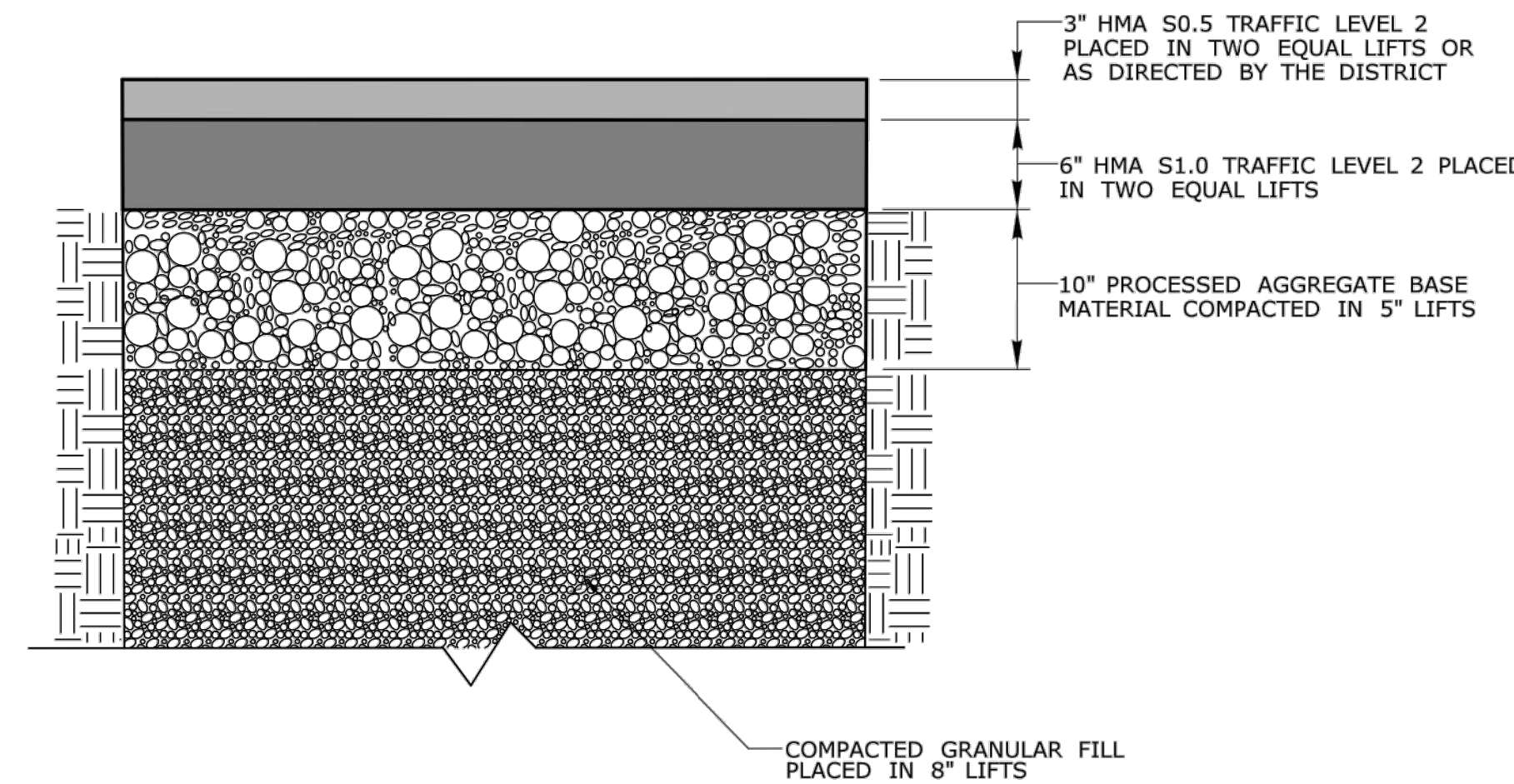
**TEMPORARY PAVEMENT REPAIR FOR TRENCH THROUGH OVERLAID PORTLAND CEMENT CONCRETE OR BITUMINOUS CONCRETE PAVEMENT**



**PERMANENT PAVEMENT REPAIR WITHOUT MILLING - THROUGH PORTLAND CEMENT CONCRETE OR BITUMINOUS CONCRETE PAVEMENT**



**PERMANENT PAVEMENT REPAIR WITH MILLING**



**ROADWAY PROFILE**

**GENERAL NOTES:**

**1. LONGITUDINAL TRENCHING FOR JOINTED CONCRETE PAVEMENT:**

A. IF THE LONGITUDINAL TRENCH FALLS BETWEEN THE SLAB CENTERLINE AND THE EDGE OF SLAB, REMOVE CONCRETE AND BITUMINOUS CONCRETE PAVEMENT FROM THE TRENCH EDGE TO THE EDGE OF ROAD. IF THE LONGITUDINAL TRENCH FALLS BETWEEN THE LONGITUDINAL JOINT AND THE SLAB CENTERLINE, REMOVE THE ENTIRE CONCRETE SLAB AND BITUMINOUS CONCRETE PAVEMENT TO THE EDGE OF ROAD. IN EITHER CASE REBUILD WITH THE FOLLOWING:

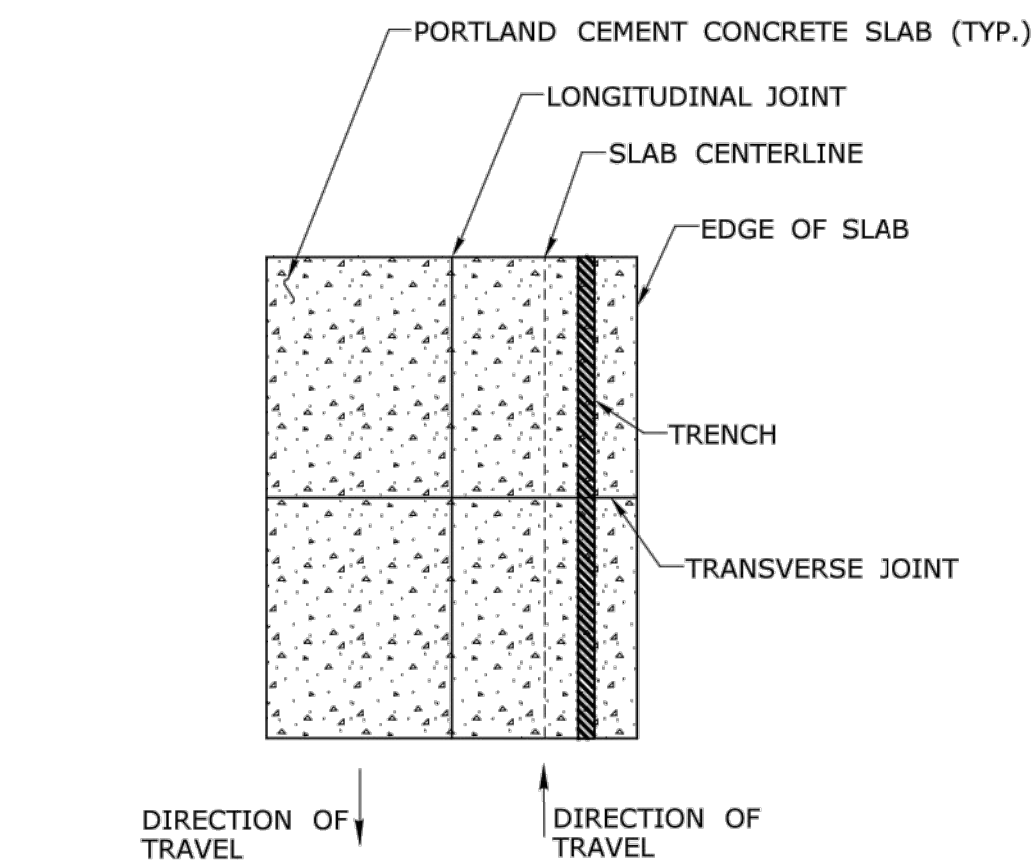
- a. PLACE HMA S1.0 TRAFFIC LEVEL 2 IN TWO EQUAL 4" - 5" LIFTS TO MATCH EXISTING CONCRETE PAVEMENT THICKNESS
- b. PLACE HMA S0.5 TRAFFIC LEVEL 2 IN 2" - 3" LIFTS TO MATCH EXISTING BITUMINOUS CONCRETE PAVEMENT THICKNESS, WITH THE FINAL LIFT BEING 2"

**2. TRANSVERSE TRENCHING FOR JOINTED CONCRETE PAVEMENT:**

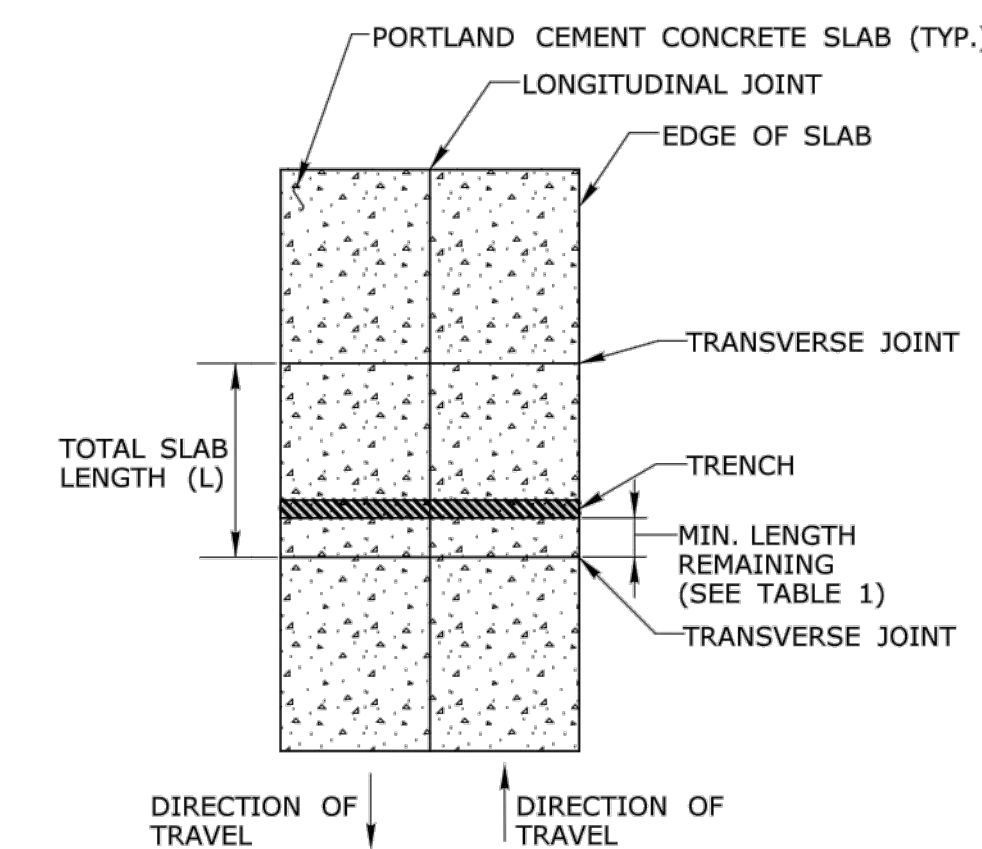
TABLE 1	
TOTAL SLAB LENGTH (L)	MIN. LENGTH REMAINING
40' OR LONGER	1/4 L
15' - 40'	10'
15' OR SHORTER	REBUILD TO NEAREST JOINT

A. FOR TRANSVERSE TRENCHES, THE MINIMUM SLAB LENGTH AS SHOWN IN TABLE 1 SHALL BE LEFT IN PLACE TO THE NEAREST TRANSVERSE JOINT. IF THIS CRITERIA CANNOT BE MET, THE EXISTING SLAB AREA FROM THE TRENCH EDGE TO THE NEAREST TRANSVERSE JOINT SHALL BE REMOVED AND REBUILT AS FOLLOWS:

- a. PLACE HMA S1.0 TRAFFIC LEVEL 2 IN TWO EQUAL 4" - 5" LIFTS TO MATCH EXISTING CONCRETE PAVEMENT THICKNESS
- b. PLACE HMA S0.5 TRAFFIC LEVEL 2 IN 2" - 3" LIFTS TO MATCH EXISTING BITUMINOUS CONCRETE PAVEMENT THICKNESS, WITH THE FINAL LIFT BEING 2"



**LONGITUDINAL TRENCHING FOR JOINTED CONCRETE PAVEMENT (SEE NOTE 1)**



**TRANSVERSE TRENCHING FOR JOINTED CONCRETE PAVEMENT (SEE NOTE 2)**

DRAFTER: **MS**  
 CHECKED BY: **EL**  
 NO SCALE

**HIGHWAY OPERATIONS**

**OFFICE OF MAINTENANCE OPERATIONS  
 SPECIAL SERVICES AND PLANNING**



**STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION**



DRAWING TITLE:

**ENCROACHMENT PERMIT - PAVEMENT REPAIR**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**  
 DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
 \_\_\_\_\_ CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_  
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REVISIONS

No.	Date	Description
1	03/20/2021	REVISED PER TOWN COMMENTS
2	03/07/2021	REVISED PER TOWN COMMENTS

Designed: S.E.L.  
 Drawn: S.E.L.  
 Reviewed:  
 Scale: NONE  
 Project No.: 2002032  
 Date: 04/02/2021  
 CAD File: DN200203201

Title: **DETAILS SHEET**  
 Sheet No. \_\_\_\_\_

R1 - SERIES						R2 - SERIES						R3 - SERIES												R4 - SERIES						R5 - SERIES											
R1-1  LEGEND - WHITE BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.85 18 31-0532 1 .080 5.19 30 31-0552 1 .080 7.98 36 31-0553 1 .080 13.3 48 31-0557 2 .100						R2-1  LEGEND - WHITE BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-5505 1 .080 7.50 30X36 31-5504 1 .080 13.00 36X48 31-5506 2 .100 26.00 48X60 31-5507 2 .100						R3-1  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 4.00 24X24 31-1604 1 .080 9.00 36X36 31-1627 2 .080			R3-5  31-0183  31-0184			R3-6  31-0282  31-0283			R3-8b   31-0307   31-0372			R4-1  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-1502 1 .080 20.00 48X60 31-1574 2 .100						R4-16  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.25 30X30 31-1119 1 .080 9.00 36X36 31-1120 2 .080 16.00 48X48 31-1121 2 .100						R5-1  LEGEND - WHITE BACKGROUND - WHITE CIRCLE - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.25 30X30 31-1119 1 .080 9.00 36X36 31-1120 2 .080 16.00 48X48 31-1121 2 .100			R5-10e(CT)  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.25 30X30 31-1119 1 .080 9.00 36X36 31-1120 2 .080 16.00 48X48 31-1121 2 .100		
R1-2  LEGEND - RED BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 0.97 18 31-0520 1 .080 3.90 36 31-0523 1 .080 6.77 48 31-0522 2 .100 10.83 60 31-0528 2 .100						R2-4a  LEGEND - RED BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 32 48X96 31-5510 2 .125						R3-2  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 4.00 24X24 31-1603 1 .080 9.00 36X36 31-1629 2 .080			R3-6  31-0157  31-0158			R3-8  31-0295  31-0219			R3-8b   31-0307   31-0372			R4-3  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-1562 1 .080 20.00 48X60 31-1564 2 .100						R5-1a  LEGEND - WHITE BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.00 36X24 31-1122 2 .080 8.75 42X30 31-1123 2 .100 20.00 48X36 31-1792 2 .100						R5-11  LEGEND - WHITE BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.00 36X24 31-1122 2 .080 8.75 42X30 31-1123 2 .100 20.00 48X36 31-1792 2 .100					
R1-3P  LEGEND - WHITE BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 0.75 18X6 31-0508 .080						R3-3  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 4.00 24X24 31-1648 1 .080 9.00 36X36 31-1647 2 .080						R3-7  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.25 30X30 31-0117 1 .080 6.25 30X30 31-0120 2 .080			R3-8  31-0222  31-0223			R3-8  31-0222  31-0223			R3-8b   31-0370   31-0371			R4-7  AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-1526 1 .080 12.00 36X48 31-1536 2 .100 20.00 48X60 31-1546 2 .100						R5-10e(CT)  LEGEND - BLACK TOP SECTION BACKGROUND - YELLOW BOTTOM SECTION BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 32.50 60X78 31-1719 2 .125						R5-10c  LEGEND - BLACK TOP SECTION BACKGROUND - YELLOW BOTTOM SECTION BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 2.00 24X12 31-1774 1 .080					

R6 - SERIES						R7 - SERIES						R8 - SERIES						R9 - SERIES						R10 - SERIES						R11 - SERIES						RETROREFLECTIVE STRIP																	
R6-1  LEGEND - BLACK BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 3.00 36X12 31-1188 1 .080 6.75 54X18 31-1189 2 .100						R7-1  LEGEND - RED BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.50 12X18 31-0630 1 .080						R8-7  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 12.00 48X36 31-0670 2 .100						R9-3  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 2.25 18X18 31-1705 1 .080 4.00 24X24 31-1769 1 .080 6.25 30X30 31-1770 1 .080						R10-6  31-0801  31-0802 LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 6.00 24X36 31-0816 2 .080						R10-11b  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 9.00 36X36 31-0816 2 .080						R10-11c(CT)  LEGEND - N/A BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 7.50 30X36 31-0847 1 .080						R11-1  LEGEND - N/A BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-1915 1 .080 20.00 48X60 31-1918 2 .100						RETROREFLECTIVE STRIP LEGEND - N/A BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.00 4X48 31-5003 1 .080 2.00 4X72 31-5004 1 .080					
R6-1  LEGEND - RED BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 3.00 36X12 31-1177 1 .080 6.75 54X18 31-1178 2 .100						R7-2a  LEGEND - RED BACKGROUND - WHITE AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.50 12X18 31-0603 1 .080						R8-9a  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.50 12X18 31-1702 1 .080						R9-7  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-0806 1 .080						R10-10L  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 7.50 30X36 31-0852 1 .080						R10-11a  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 7.50 30X36 31-0830 1 .080 12.00 36X48 31-0819 2 .100						R11-1  LEGEND - N/A BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 5.00 24X30 31-1915 1 .080 20.00 48X60 31-1918 2 .100						RETROREFLECTIVE STRIP LEGEND - N/A BACKGROUND - RED AREA (SQ. FT) SIZE (INCHES) CONN. D.O.T. # POSTS ALUM. THK. 1.00 4X48 31-5003 1 .080 2.00 4X72 31-5004 1 .080											

**NOTES:**

1. THE LEGEND "O.S.T.A." SHALL APPEAR ON ALL R - SERIES SIGNS EXCEPT WHEN SUFFIXED WITH THE LETTER "Z".
2. FOR SPECIFIC SIGN DESIGN CONTACT CONN. D.O.T., DIVISION OF TRAFFIC ENGINEERING. FOR BOLT HOLE PATTERN REFER TO FHWA PUBLICATION "STANDARD HIGHWAY SIGNS". SIGNS OF DIFFERENT DIMENSIONS TO BE ERRECTED ON THE SAME POSTS, OR SPAN/MAST ARM MOUNTED, MAY REQUIRE SPECIAL BOLT HOLE PATTERNS.
3. POSTS - SEE STANDARD SHEET TR-1208.02 - "METAL SIGN POSTS AND SIGN MOUNTING DETAILS."
4. POSTS SHALL BE 4 LBS./FT.
5. SIGNS SHALL BE FABRICATED OF ONE CONTINUOUS PIECE OF SHEET ALUMINUM. SPLICING OF SHEET ALUMINUM WILL NOT BE ACCEPTED.
6. FOR OVERHEAD MOUNTED SIGNS, SEE STANDARD SHEET TR-1114.01 - "BONDING AND UTILITY POLE ATTACHMENT DETAILS, SIGN HANGER, "Y" CLAMP DETAIL."

**COLORS:**  
BACKGROUND - WHITE - EXCEPT AS NOTED.  
LEGEND - BLACK - EXCEPT AS NOTED.  
ALL SIGNS TO USE TYPE IX RETROREFLECTIVE SHEETING.

DESIGNER/DRAFTER: <b>A. MERMELSTEIN</b>	CHECKED BY: <b>B. SCHILLING</b>	SIGNATURE/BLOCK: <b>OFFICE OF ENGINEERING</b>	PROJECT TITLE: <b>SIGN FACE SHEET ALUMINUM R-SERIES TYPICAL SIGN DETAILS</b>
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	NOT TO SCALE	APPROVED BY: _____ DATE: _____	TOWN: _____ PROJECT NO. _____ DRAWING NO. <b>TR-GS_01</b> SHEET NO. _____

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
3	12-2018	REVISED RETROREFLECTIVE STRIPS	TR-GS_01
2	10-2018	REVISED R5-11 SIGNS PER MUTCD	TR-GS_01
1	6-2018	NEW SHEET ISSUED	TR-GS_01

Plotted Date: 1/16/2019  
Filename: ... \CTDOT - TRAFFIC.GS.dgn

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

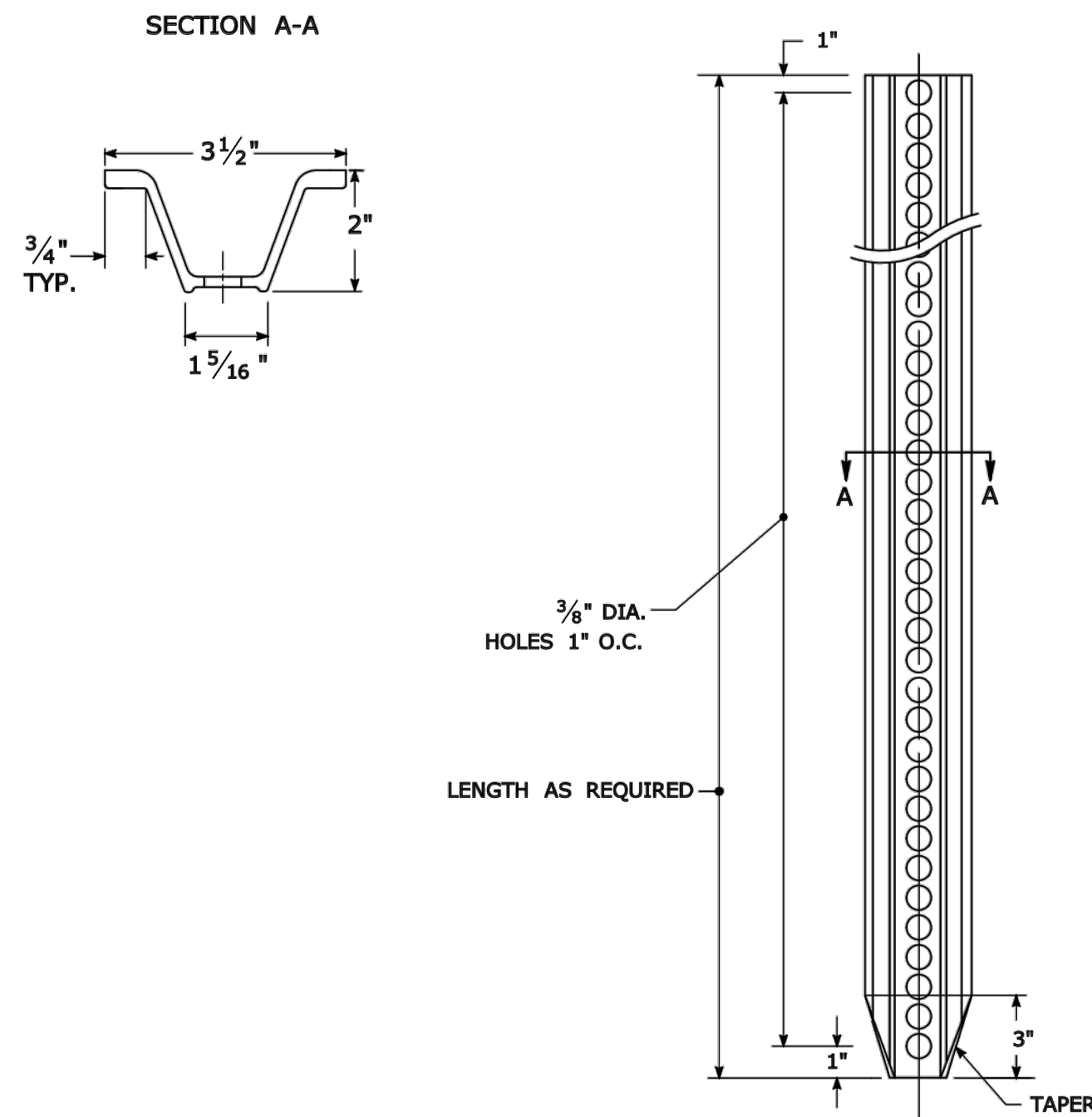
DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
CHAIRMAN \_\_\_\_\_

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

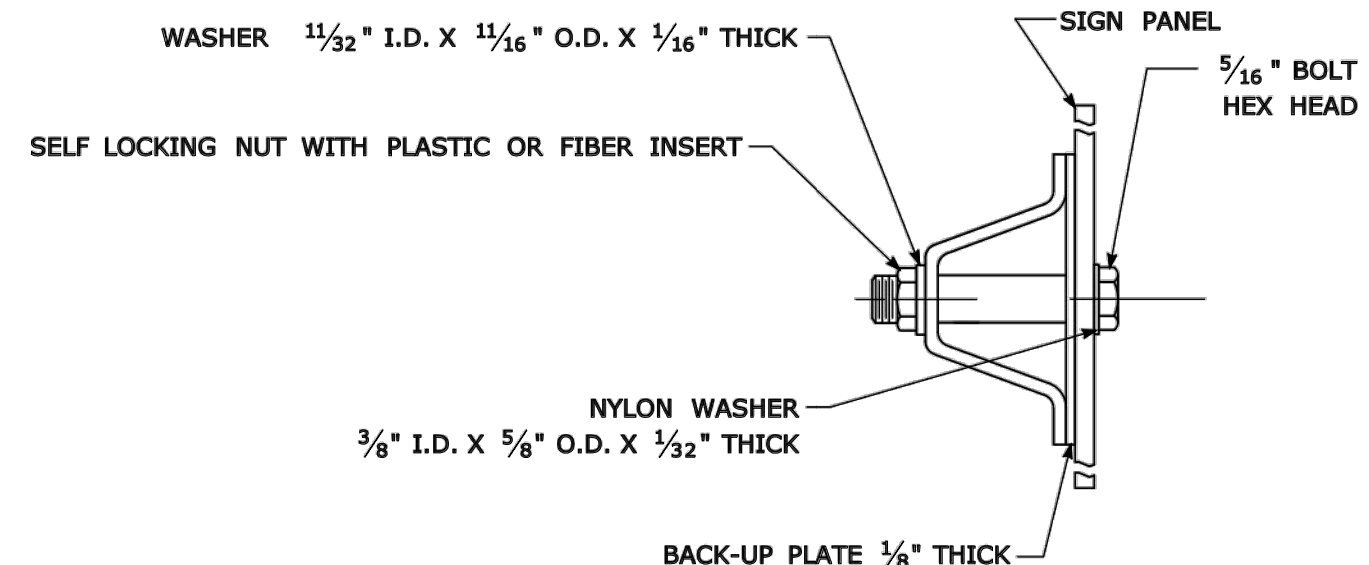
**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



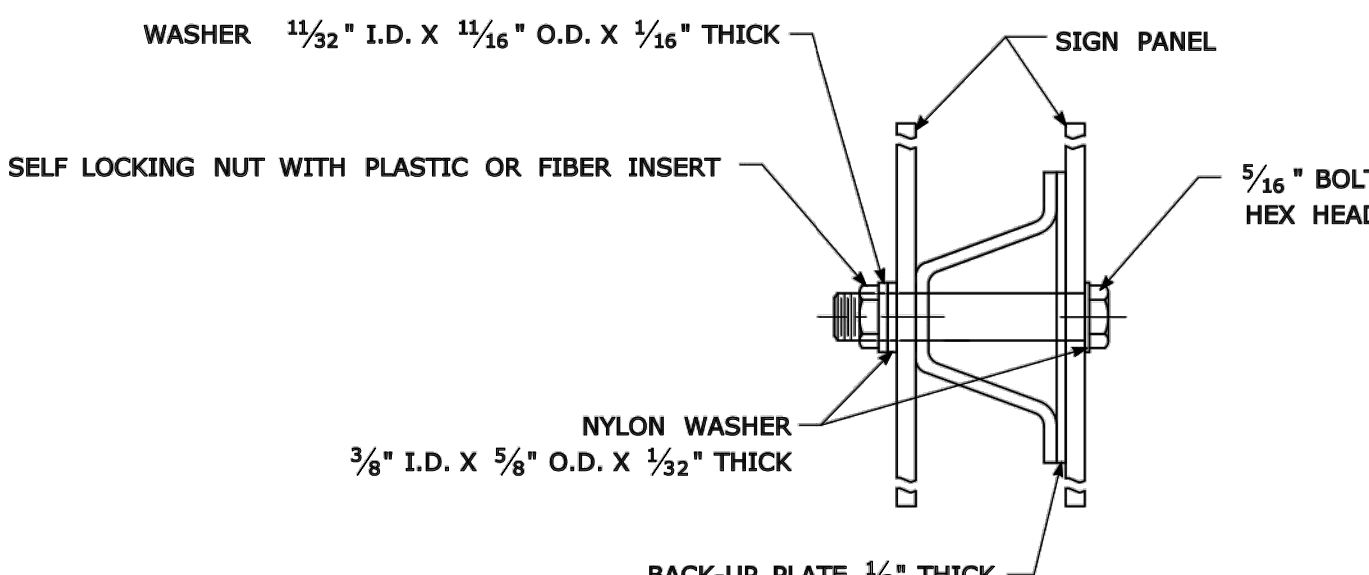
**TYPICAL METAL SIGN POSTS**



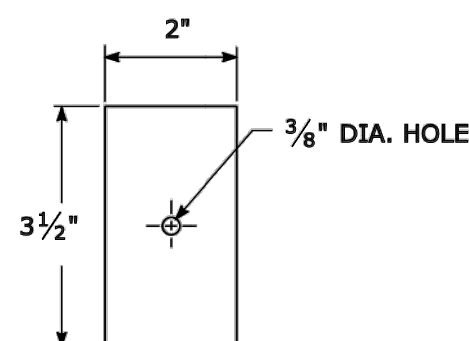
**TYPICAL SIGN PANEL ATTACHMENT**



**TYPICAL BACK TO BACK SIGN PANEL ATTACHMENT**



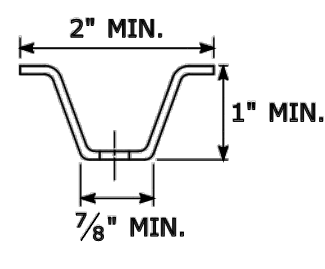
**TYPICAL BACK-UP PLATE**



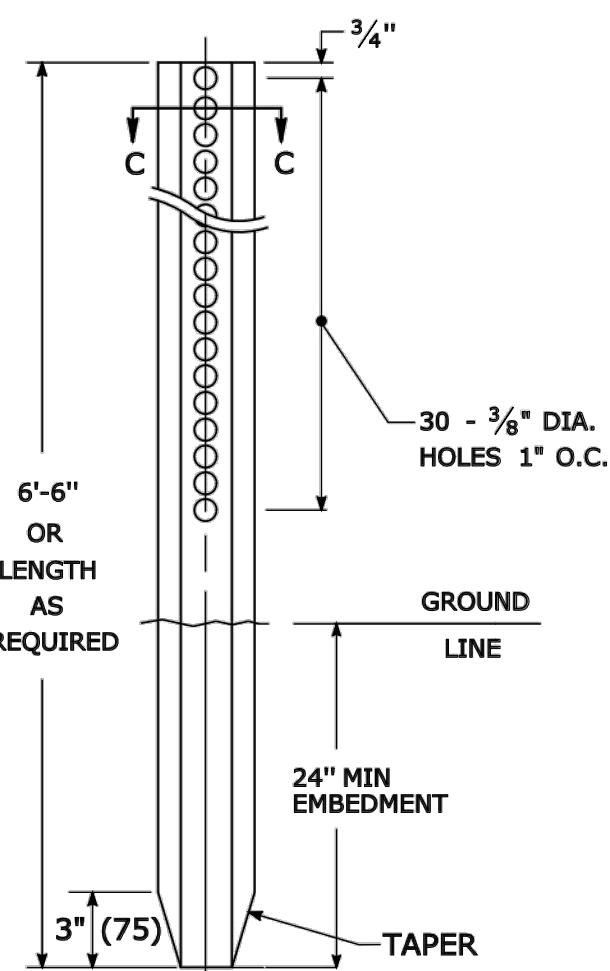
BOLTS - STAINLESS STEEL CONFORMING TO ASTM F593, ALLOY GROUP 1 OR 2 (ALLOY TYPES 304 OR 316).  
 SELF LOCKING NUTS - STAINLESS STEEL CONFORMING TO ASTM F594, ALLOY GROUP 1 OR 2 (ALLOY TYPES 304 OR 316).  
 WASHERS - STAINLESS STEEL CONFORMING TO ASTM A240, (ALLOY TYPES 304 OR 316).

**METAL DELINEATOR POST**

WT./FT. = 1.12 LBS./FT. MIN.



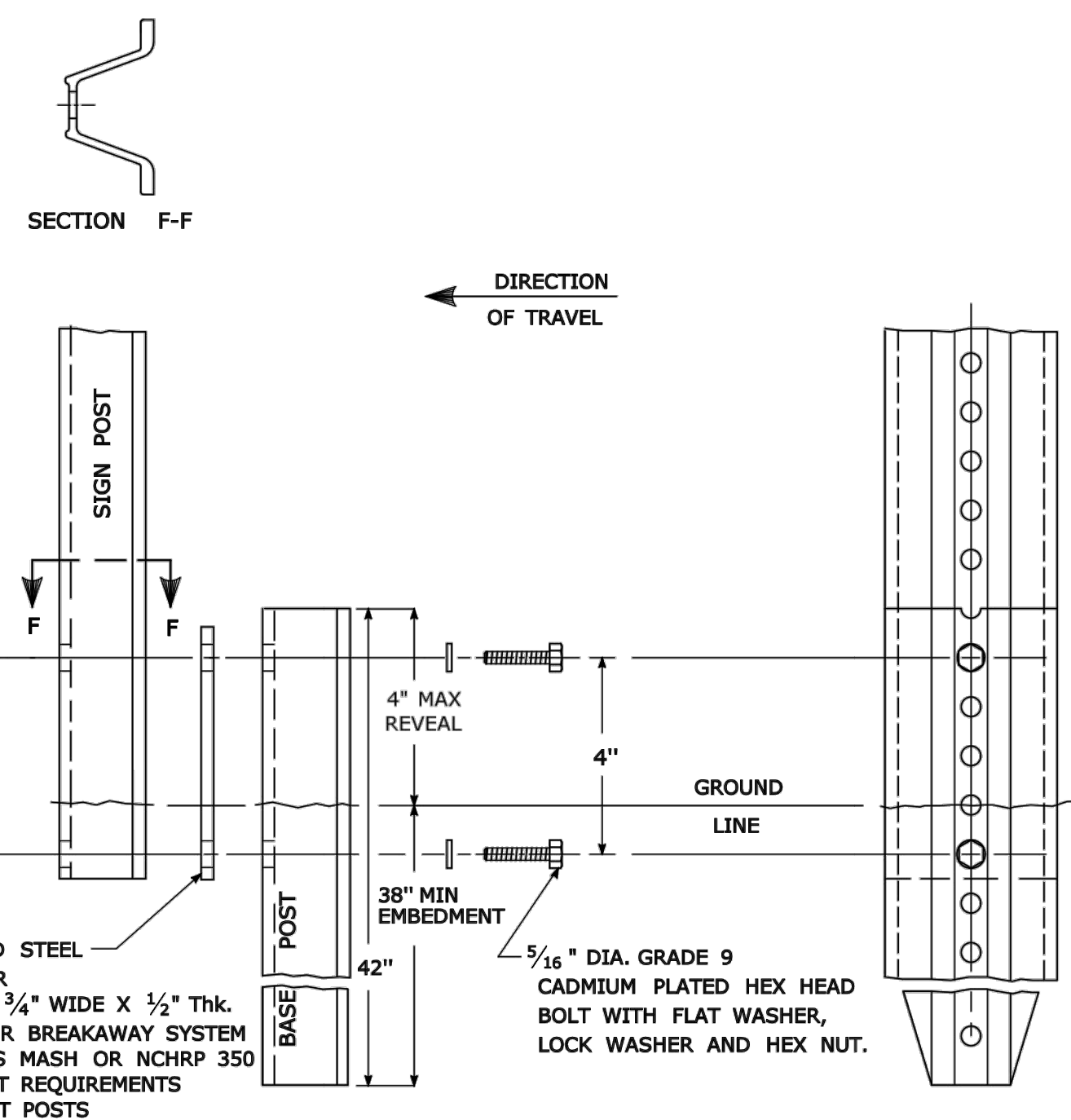
SECTION C-C



**GENERAL NOTES:**

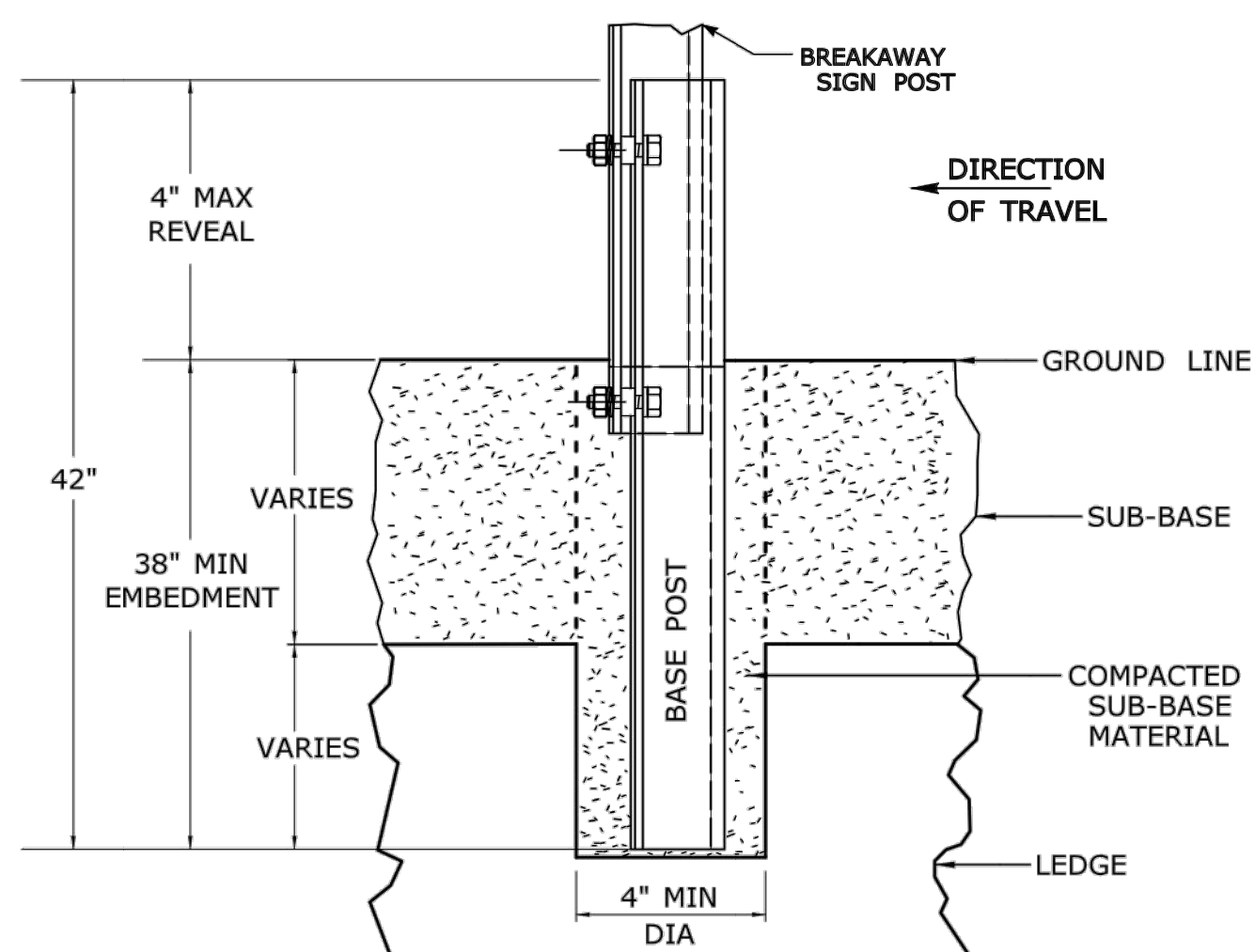
1. STEEL FOR DELINEATOR POSTS SHALL BE ASTM A36 STEEL. STEEL FOR ALL OTHER POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499 GRADE 80 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT (MASS) OF 91 LBS. OR GREATER PER LINEAR YARD.
2. AFTER FABRICATION, ALL STEEL POSTS, STRAPS AND PLATES SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A123.
3. WASHERS FOR BREAKAWAY INSTALLATIONS SHALL MEET ASTM F436, TYPE 1.
4. SPACER BAR FOR BREAKAWAY INSTALLATION SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A36.
5. ALL BOLTS, NUTS, AND WASHERS FOR BREAKAWAY INSTALLATIONS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A153.
6. ALL SIGN POSTS SHALL HAVE BREAKAWAY FEATURES THAT MEET AASHTO REQUIREMENTS CONTAINED IN THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS." THE BREAKAWAY FEATURES SHALL BE STRUCTURALLY ADEQUATE TO CARRY THE SIGNS SHOWN IN THE PLANS AT 60 MPH WIND LOADINGS. INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
7. SIGN POSTS SHALL BE 4 LBS./FT.

**BREAKAWAY INSTALLATION FOR 4 LBS./FT. POSTS**

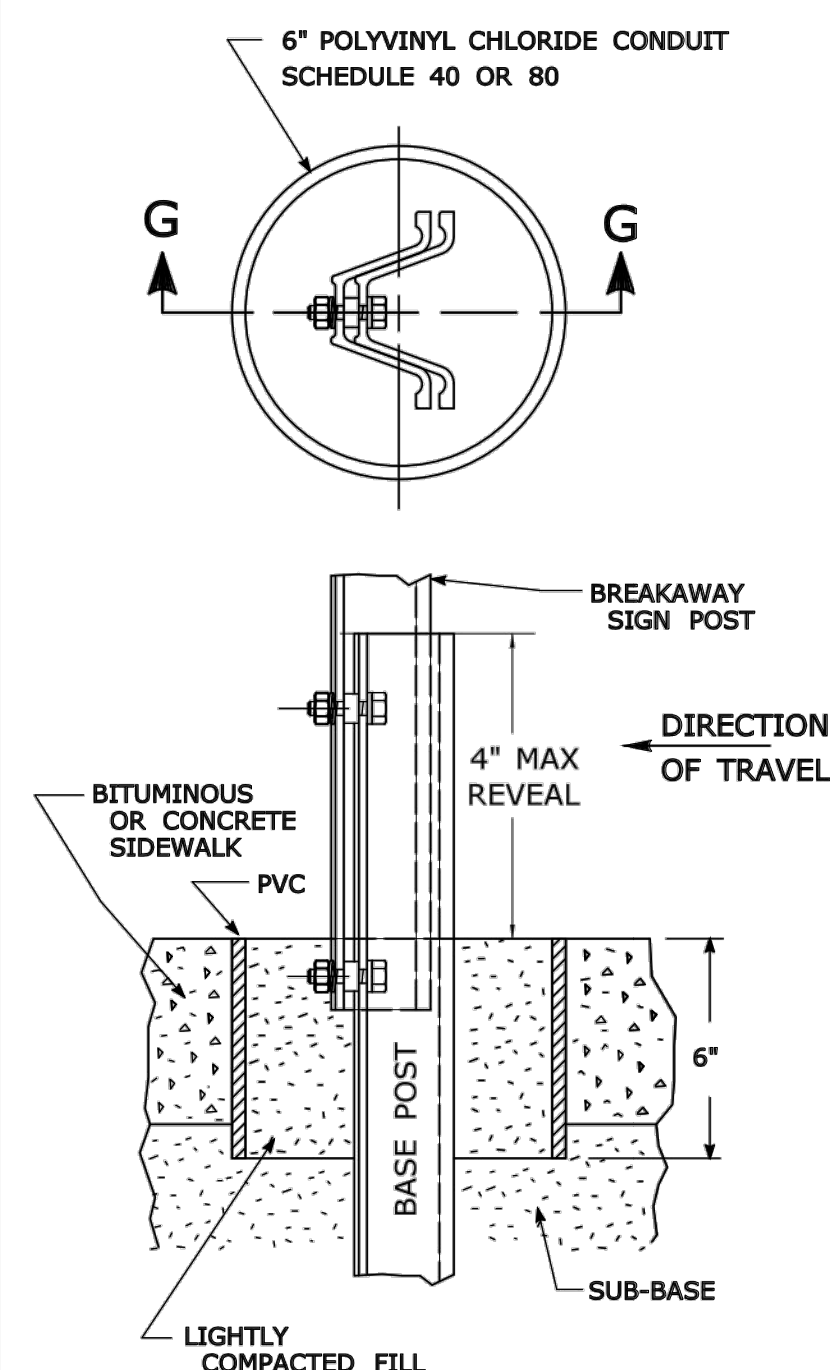


**TYPICAL SIGN POST INSTALLATION IN LEDGE**

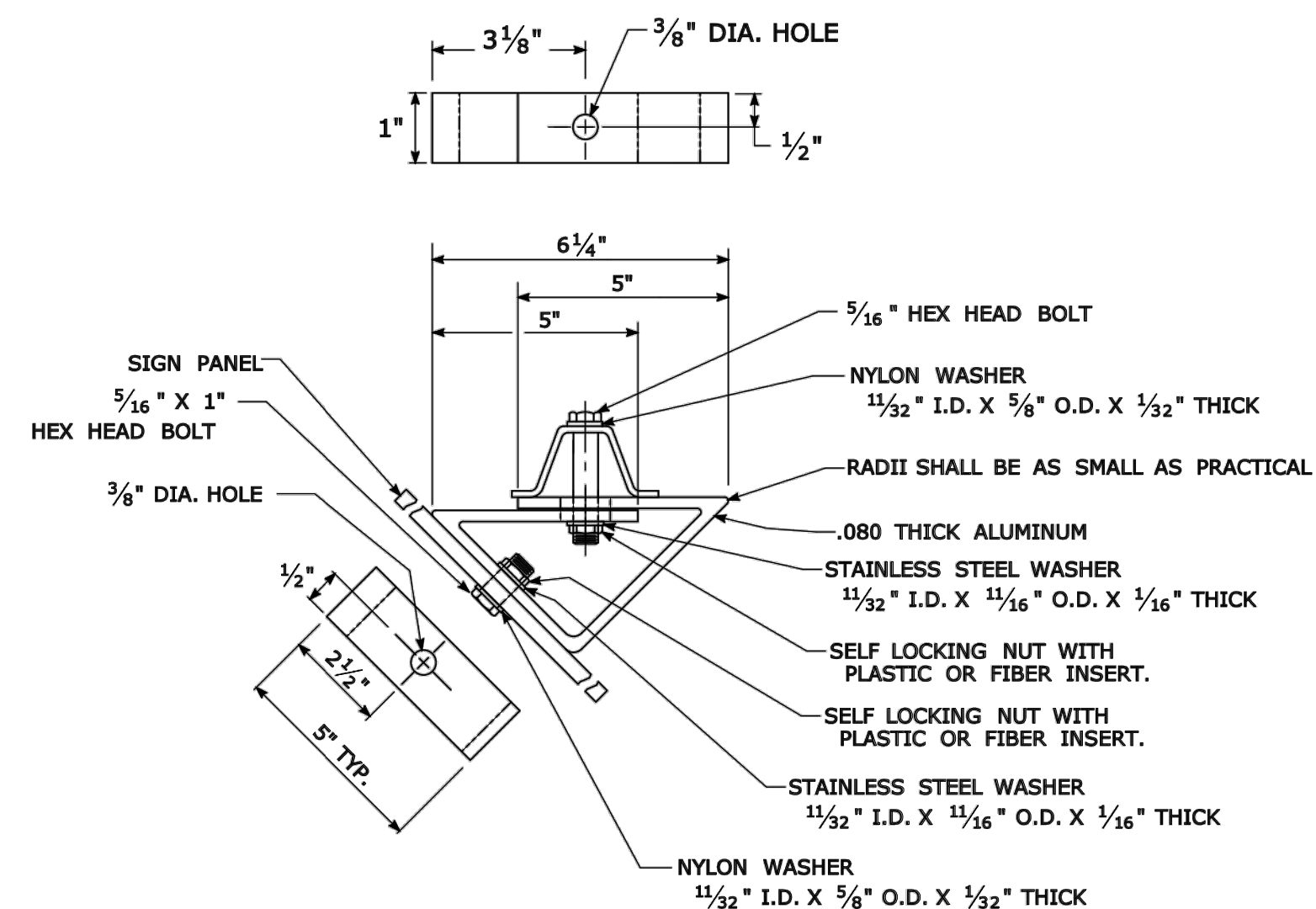
LEDGE SHALL BE REMOVED TO DRIVE THE BASE POST TO A DEPTH OF 38". HOLE SHALL BE FILLED WITH SUB-BASE MATERIAL AND COMPACTED WITH A TAMPING BAR, OR TECHNIQUE APPROVED BY THE ENGINEER, PRIOR TO BASE POST INSTALLATION.



**TYPICAL SLEEVE FOR PAVED AREAS**



**45° MOUNTING BRACKET FOR INSTALLATION OF PARKING SIGNS**



REV.	DATE	REVISION DESCRIPTION
2	6-2017	SIGN POST REVISIONS.
1	2-2011	MINOR REVISIONS.

Plotted Date: 6/6/2017

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NOT TO SCALE



Filename: TR-1208\_02\_May\_2017\_Revision.dgn Model: TR-1208\_02

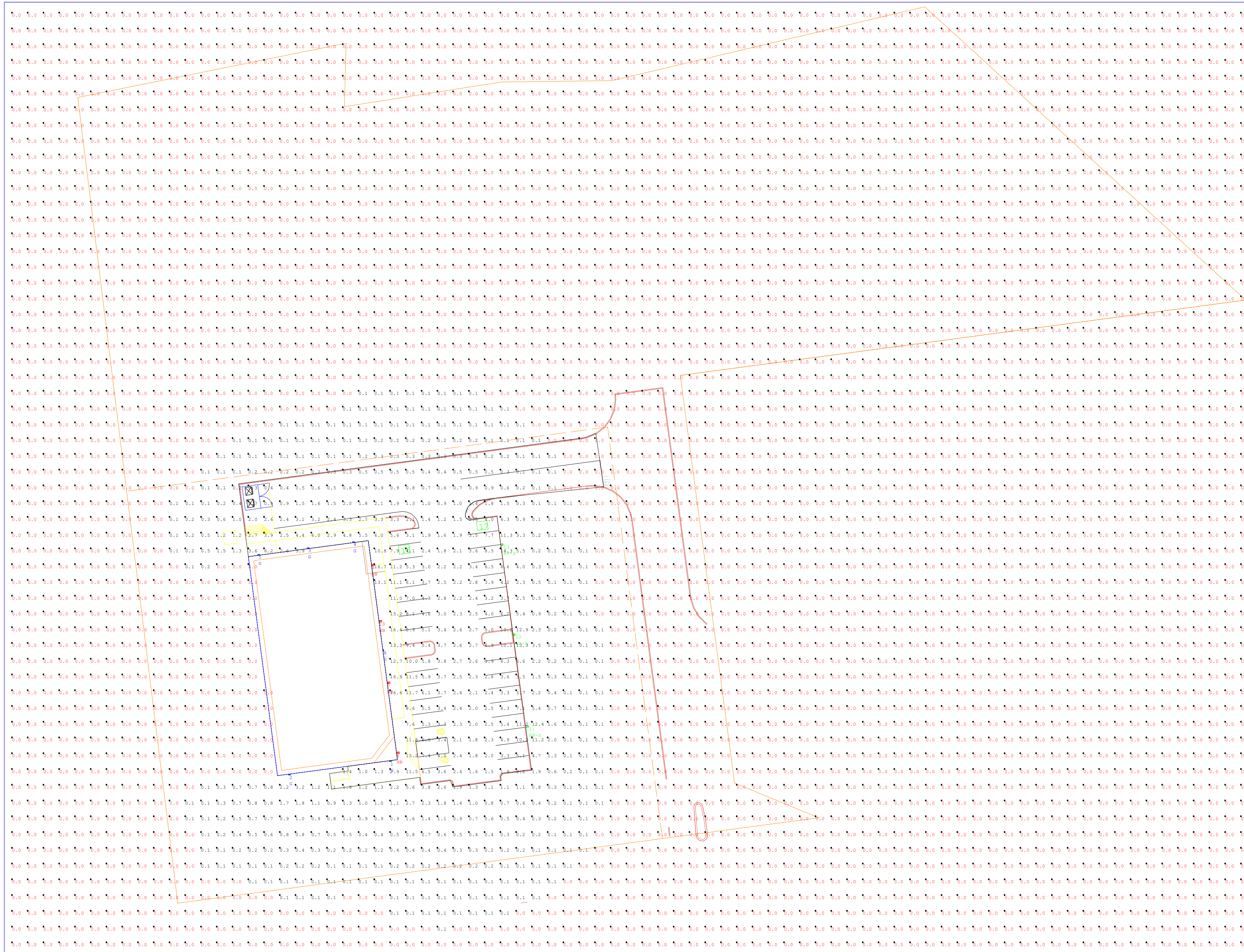
SUBMITTED BY: Mark F. Makuch, P.E. 2017.06.07 07:30:30-04'00'

APPROVED BY: Gregory M. Dorosh, P.E. 2017.06.15 09:27:29-04'00'

CTDOT STANDARD SHEET  
OFFICE OF ENGINEERING

STANDARD SHEET TITLE: METAL SIGN POSTS AND SIGN MOUNTING DETAILS  
GUIDE SHEET NO.: TR-1208\_02

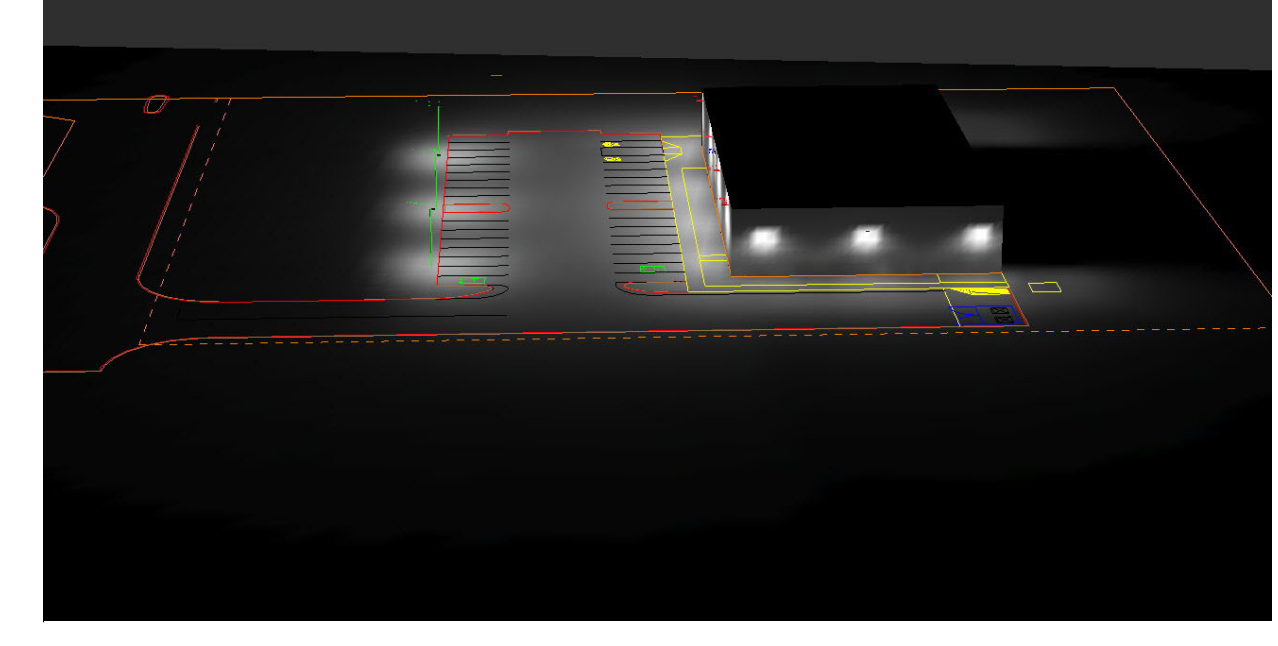
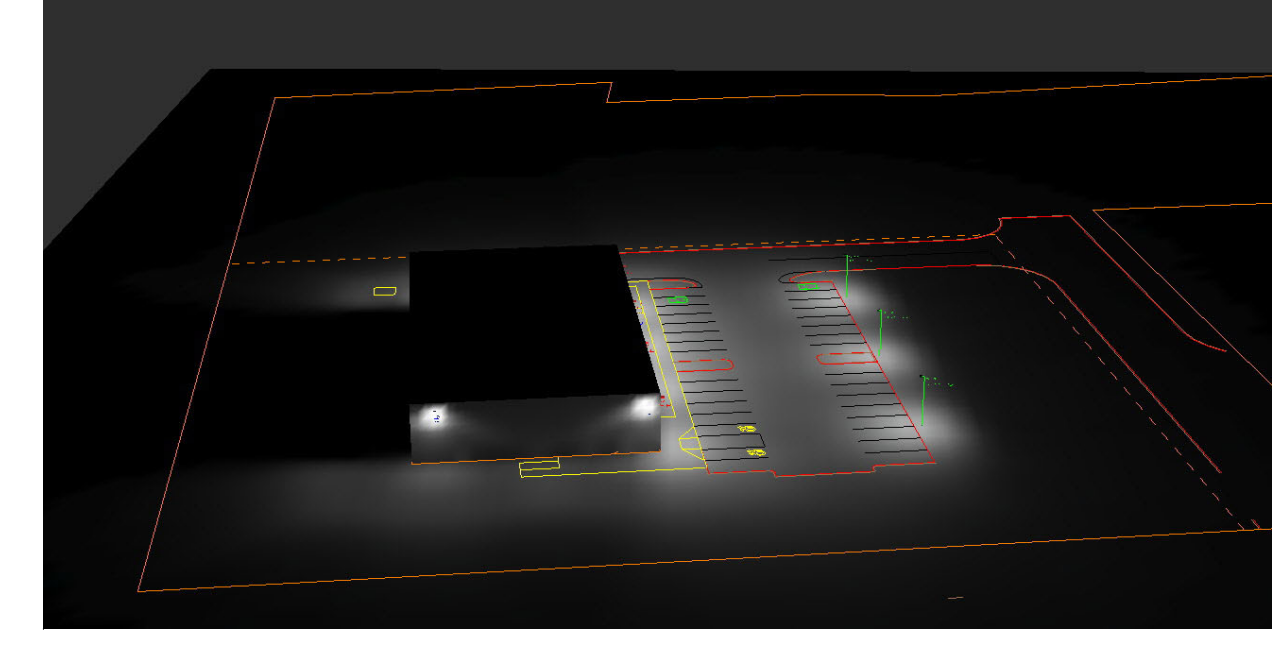
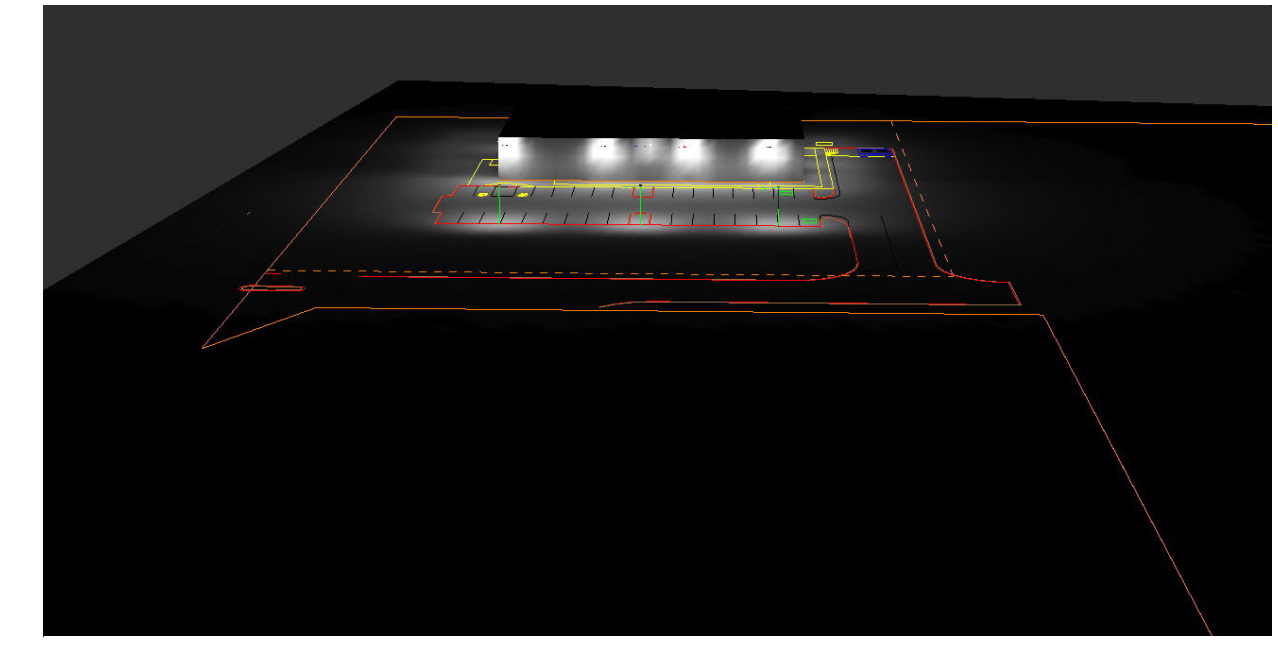
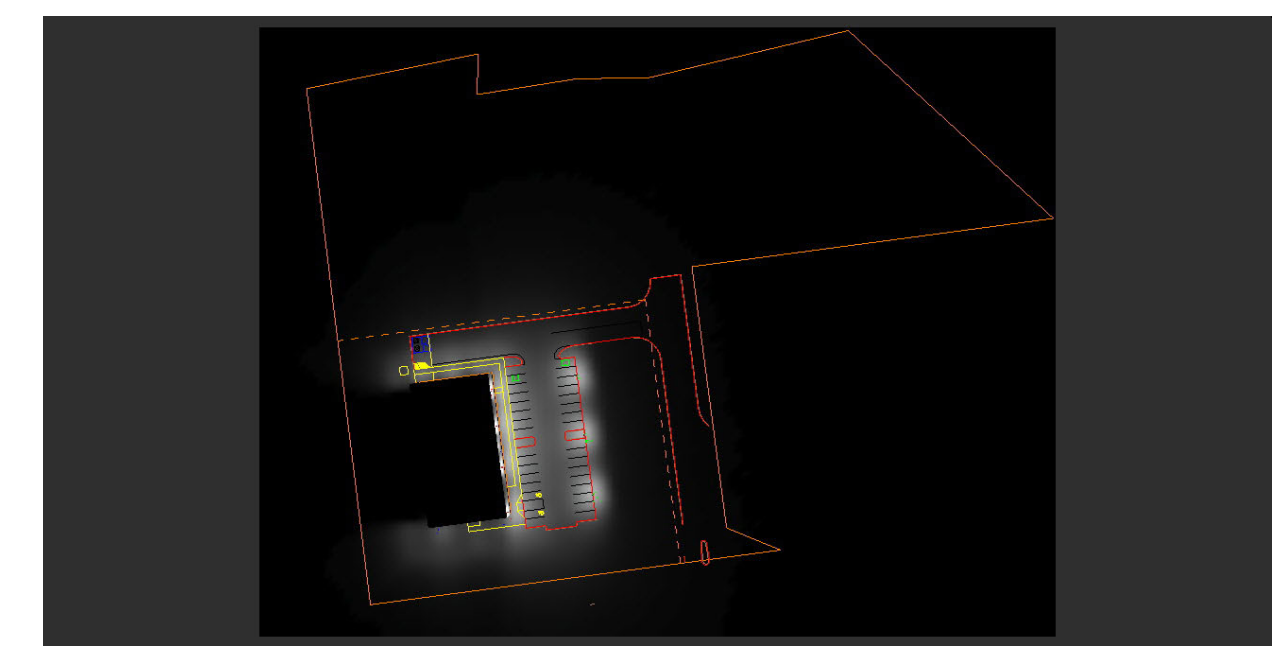
FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION



LumNo	Label	Z
1	G	16.5
2	G	16.5
3	G	12
4	G	12
5	G	12
6	HB	16.5
7	HB	16.5
8	G	16.5
9	HB	16.5
10	HB	16.5
11	HP-S	17
12	HP-S	17
13	HP-S	17

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
[Symbol]	3	HP-S	SINGLE	13632	0.950	LEDS-1210-S - Single Pole Mt 150w, Type 4, 5K, Shielded
[Symbol]	4	HB	SINGLE	19188	0.950	LEDS-AL120 - Wall Mt, 150w, Type 4, 5K
[Symbol]	6	G	SINGLE	4740	0.950	LEDBG42W001B-5000K - Wall Pack, 42W, Full Cutoff, 5K

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Illuminance	Fc	0.24	16.9	0.0	N.A.	N.A.
Parking Lot	Illuminance	Fc	3.75	16.9	0.0	N.A.	N.A.



#	Date	Comments
Revisions		

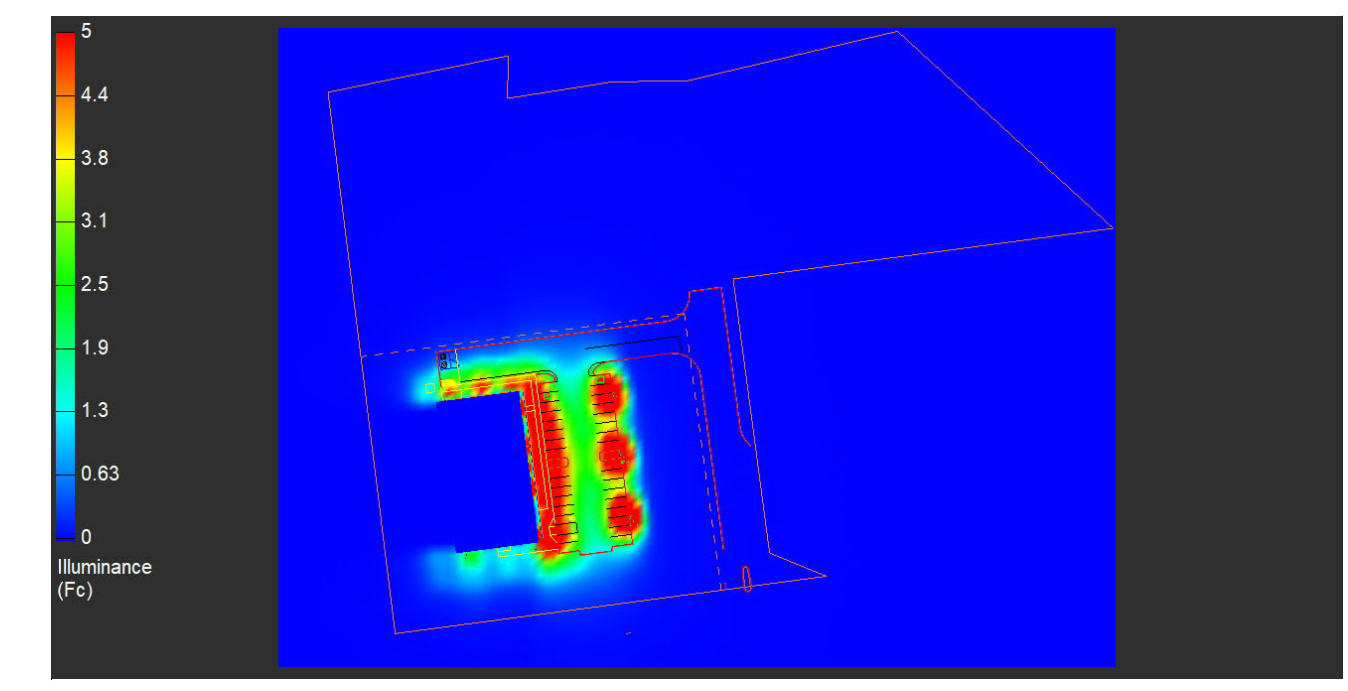
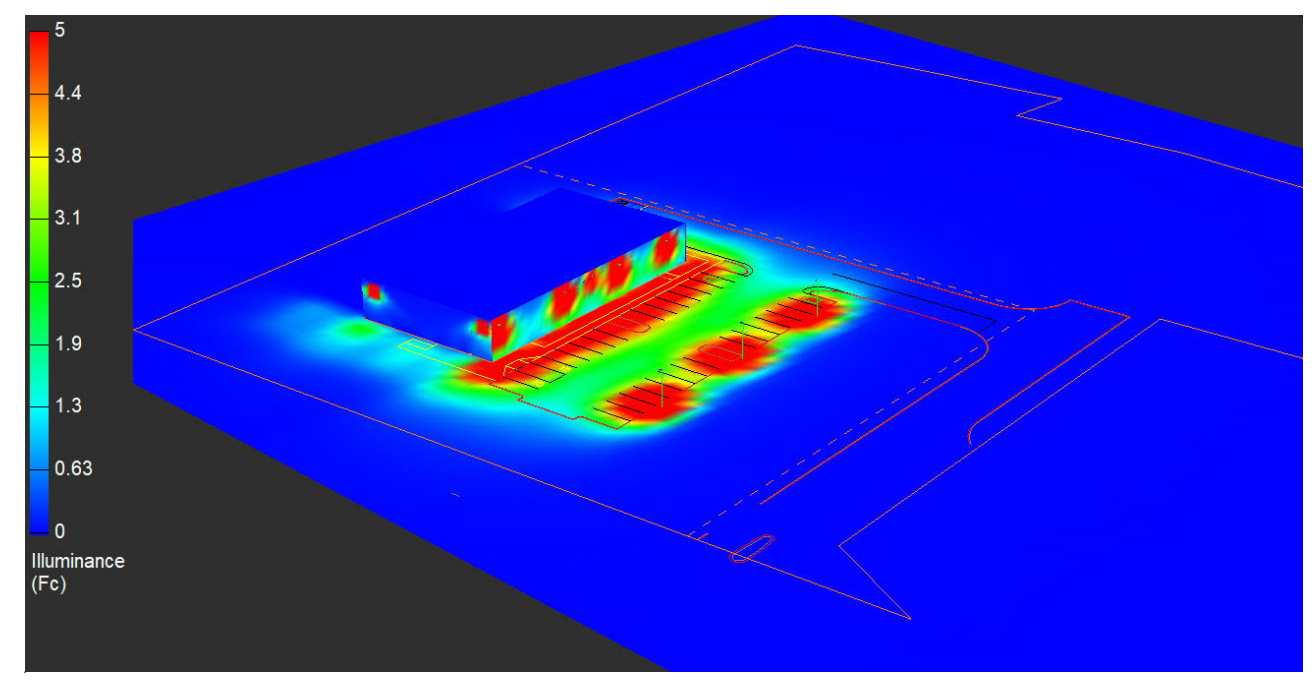
Drawn By: BMF, LC  
 Checked By:  
 Date: 3/29/2021  
 Scale:

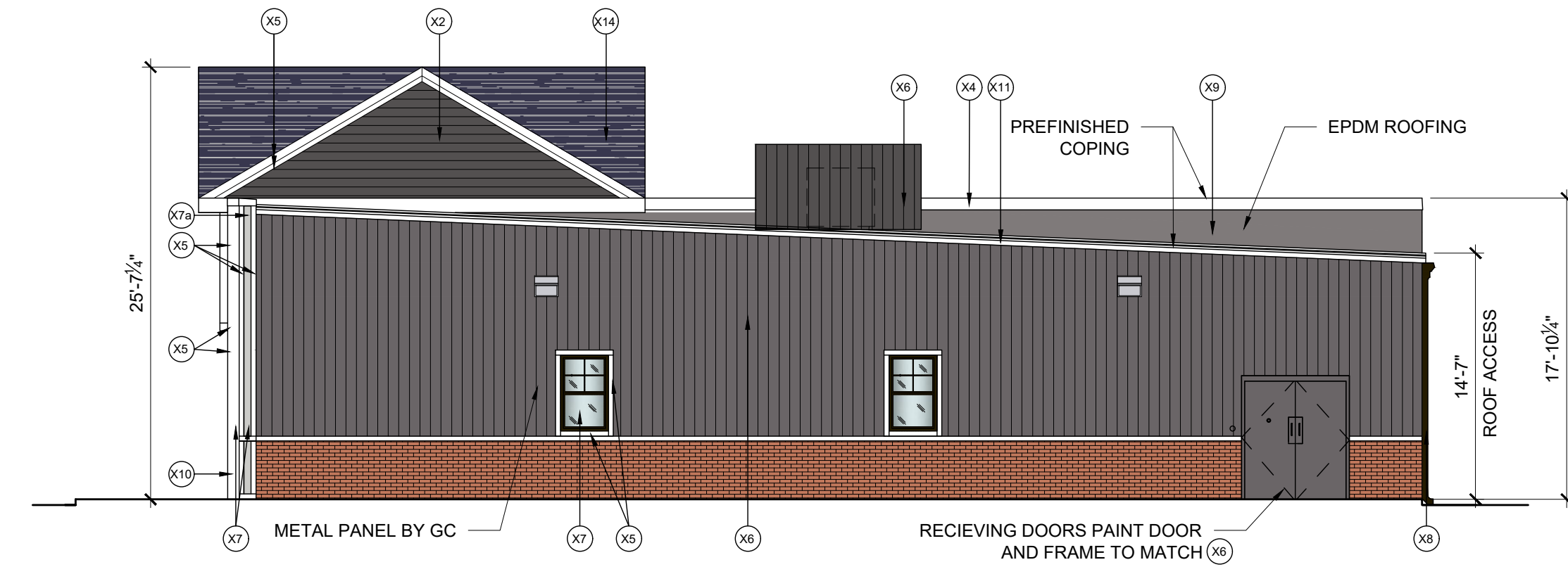
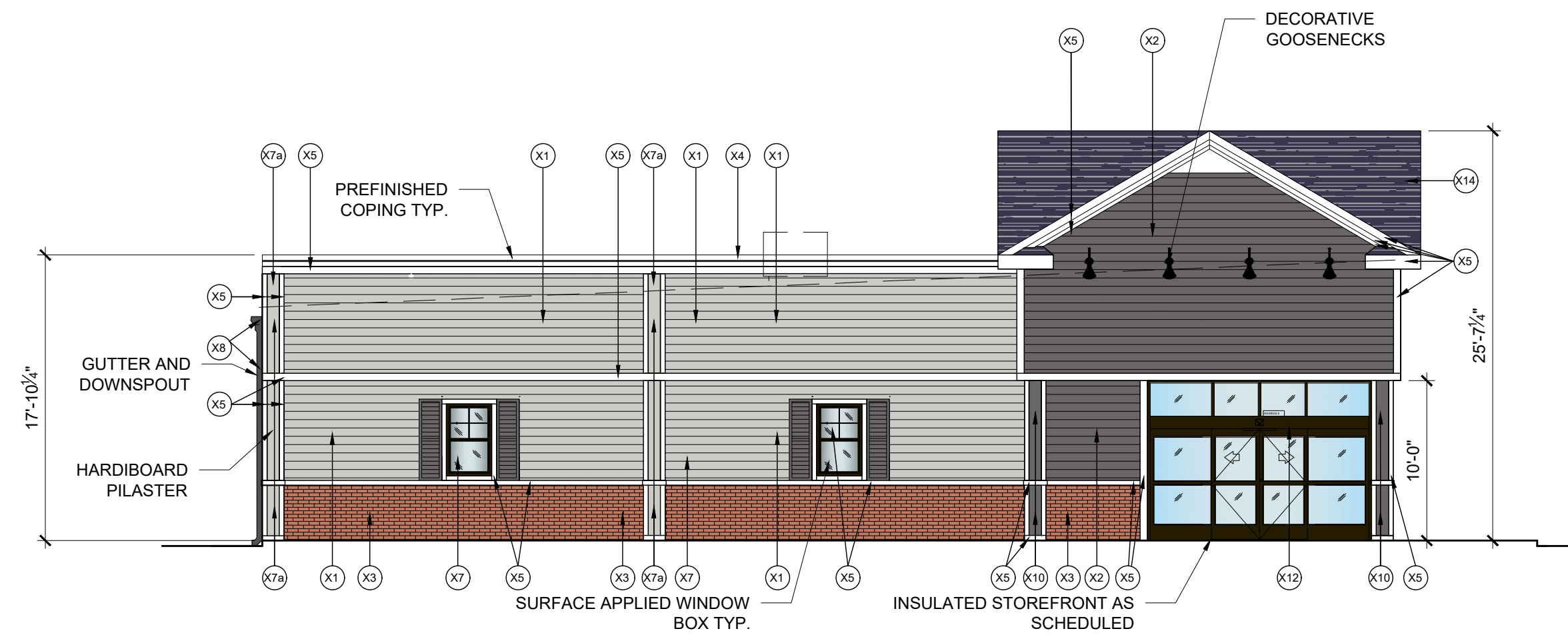
Bolton CT 23232

Notes:

**Plan Notes:**  
 Calculations at Ground Level (10' x 10' Grid Spacing). Refer to luminaire location summary for mounting heights of each fixture. Pole mounted fixtures include a 2ft concrete base. Mounting heights indicated on luminaire location summary is a total A.F.G. height.

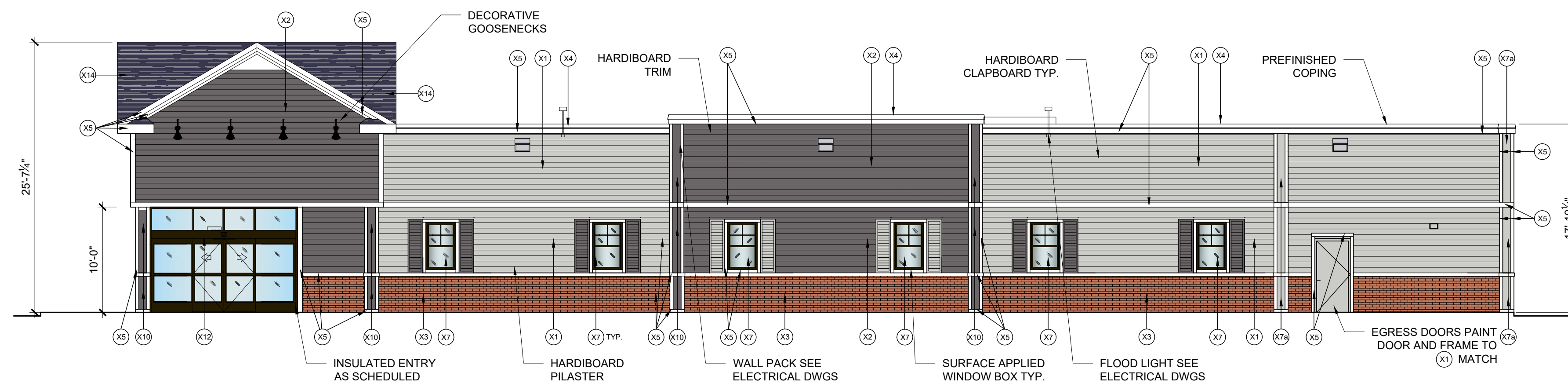
**General Notes:**  
 Due to changing lighting ordinances it is the contractors responsibility to submit the site photometrics & luminaire specs to the local inspector before ordering to ensure this plan complies with local lighting ordinances. This lighting design is based on information supplied by others. Changes in electrical supply, area geometry & objects within the lighted area may produce illumination values different from the predicted results shown on this layout. This layout is based on .IES files that were lab tested or computer generated, actual results may vary.





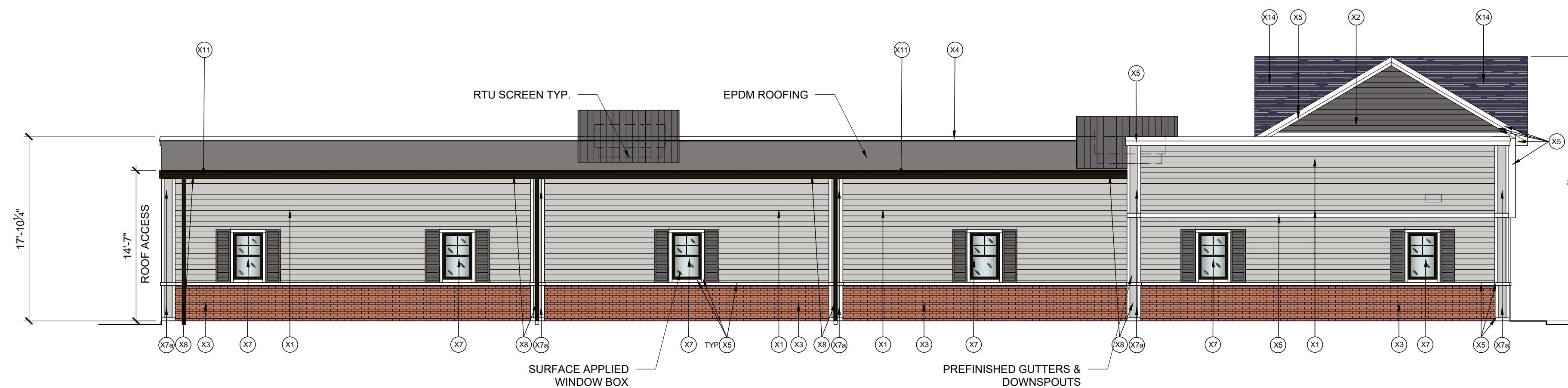
1 PROPOSED SIDE ELEVATION ( BOSTON TURNPIKE RT 44)  
SCALE: 3/16"-1'-0"

2 PROPOSED SIDE ELEVATION  
SCALE: 3/16"-1'-0"

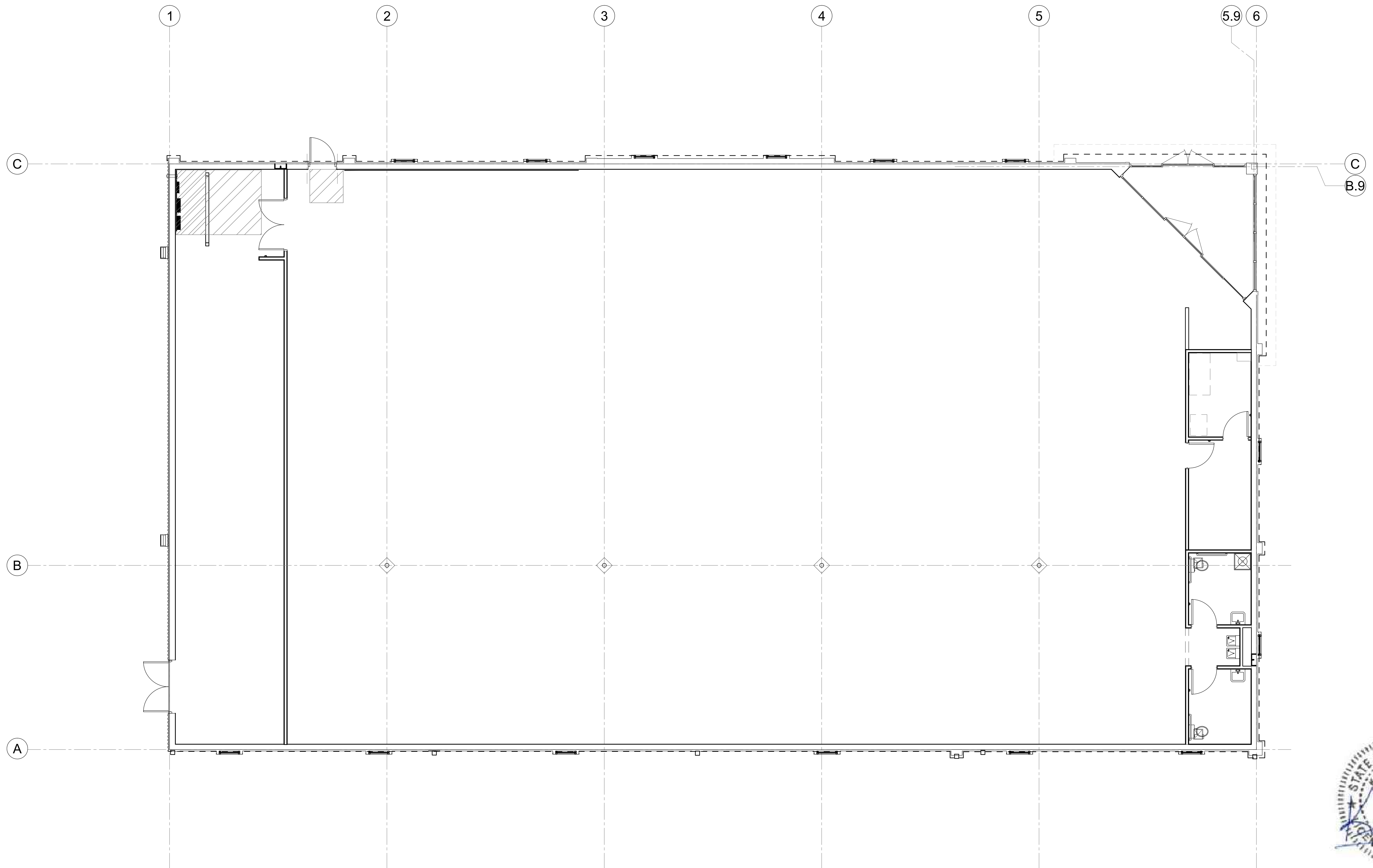


3 PROPOSED FRONT ELEVATION  
SCALE: 3/16"-1'-0"

EXTERIOR FINISH SCHEDULE			
TAG	MATERIAL/ MFG.	COLOR/ NO.	NOTES
X1	HARDIEE-PLANK LAP SIDING	COLOR: PEARL GRAY	PRE-FINISHED, 6" EXPOSURE
X2	HARDIEE-PLANK LAP SIDING	COLOR: NIGHT GRAY	PRE-FINISHED 6" EXPOSURE
X3	VEE BRICK	COLOR: TAVERN FLASH	
X4	METAL COPING	COLOR: WHITE	PRE-FINISHED
X5	HARDIE-BOARD TRIM	COLOR: WHITE TO MATCH (X4)	COPING BY GC PRE-FINISHED
X6	METAL WALL PANEL	COLOR: CHARCOAL GRAY O.A.E	PRE-FINISHED
X7	SURFACE APPLIED STOREFRONT	COLOR: DARK BRONZE	LIGHT GRAY SPANDREL
X7a	HARDIE-BOARD TRIM	COLOR: TO MATCH (X1)	PAINTED
X8	GUTTER & DOWNSPOUT	COLOR: DARK BRONZE	PRE-FINISHED
X9	EPDM ROOF	COLOR: DARK GRAY	PRE-FINISHED
X10	HARDIE-BOARD TRIM	COLOR: TO MATCH (X2)	PAINTED
X11	METAL COPING	COLOR: CHARCOAL GRAY	PRE-FINISHED
X12	INSULATED SLIDING ENTRY DOORS	COLOR: DARK BRONZE	PRE-FINISHED
X13	METAL DOOR & FRAME	COLOR: TO MATCH (X2)	PAINTED
X14	ARCH ASPHALT SHINGLES	COLOR: PEWTER GREY	GAF TIMBERLINE



4 PROPOSED REAR ELEVATION  
SCALE: 3/16"-1'-0"



1 PROPOSED FLOOR PLAN  
SCALE: 3/16"=1'-0"

Conceptual Floor Plan

Bolton, CT Retail Building Conceptual Scheme  
1100 Boston Turnpike Bolton, CT

Prepared For Garrett Homes

SCALE: NOTED  
31, March 2021

1 OF 1  
DRAWN BY: DSG  
PROJECT NO: 221003

**BKA** ARCHITECTS

Boston + Brockton  
142 Crescent Street  
Brockton, MA 02302  
508.583.5603  
bkaarchitects.com



# Stormwater Management Report

*For the Proposed:*

## **Retail Development**

*Located at:*

1100 Boston Turnpike  
Bolton, Connecticut

*Prepared for Submission to:*

**Town of Bolton, Connecticut**

April 2, 2021

Revised May 20, 2021

Revised June 7, 2021

*Prepared for:*

**Garrett Homes, LLC**

59 Field Street

Torrington, Connecticut

*Prepared by:*



**BL Companies**

100 Constitution Plaza, 10<sup>th</sup> Floor

Hartford, Connecticut 06103

Phone: (860) 249-2200

Fax: (860) 249-2400



BL Project Number: 2002032

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## Executive Summary

This report has been prepared in support of a Permit Application by Garrett Homes, LLC to the Town of Bolton for the proposed retail development at 1100 Boston Turnpike. The property is approximately 1.85 acres in size and is currently an undeveloped parcel. The property is located on the northern side of Boston Turnpike and is roughly bordered by residential properties to the west and south and a dentist office on the previously subdivided parcel to the east. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from “Parcel 2” to the north.

In general, the existing topography slopes from the southwest corner of the site, towards the northern edge and southeastern corner of the site with elevations varying from 661 feet to 674 feet. In the existing condition, stormwater runoff sheet flows to the north and eventually to a wetland along the northeastern edge of the subdivided “Parcel 2” or sheet flows to the southeast to a catch basin within the shared driveway and into the stormwater management system located on the previously subdivided parcel to the east.

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system.

The proposed stormwater management system is designed to be in compliance with the 2002 State of Connecticut Guidelines for Soil Erosion and Sediment Control, the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, and the 2004 State of Connecticut Stormwater Quality Manual.

A HydroCAD model, using TR-55 methodology, was developed to evaluate the proposed drainage conditions of the property. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis was not desired or required. A peak flow analysis has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. In addition, hydrographs have still been provided within appendix B for the 2-, 10-, and 100-year storm events in order to show that the proposed Infiltration Basin will not overflow during storm events and to show storage provided.

The proposed stormwater management system has been designed to treat the runoff generated by the proposed development for a minimum 80% TSS removal as required in the CT Stormwater Quality Manual, retain and infiltrate the Water Quality Volume, and provide groundwater



recharge. Stormwater quality is being addressed by formulized street sweeping and a Infiltration Basin with a grass filter strip.

## **Existing Site Conditions and Hydrologic Conditions**

### *General Site Information*

The site soil identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) is Woodbridge fine sandy loam, 3 to 8 percent slopes, Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony, and Canton and Charlton fine sandy loams, 3 to 8 percent slopes. Per the USDA, the NRCS Hydrologic Soil Group rating for within the project area is C/D, C/D, and B respectively. A copy of the USDA NRCS Hydrologic Soil Group Map is included in Appendix A for reference. For the Soil Group ratings of C/D, a Soil Group rating of C was assumed in order to be conservative in the change of curve number from grass to impervious.

Per the FEMA Flood Insurance Rate Map Number 090109001B for Town of Bolton, Tolland County, Connecticut, map revised date: June 1, 1981, the site resides in FEMA Flood Hazard Area C (unshaded). This is defined as areas of minimal flooding. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. A copy of the FEMA Flood insurance rate Map is included in Appendix A for reference.

### *Existing Hydrologic Conditions*

The existing site drainage area that was analyzed totals 4.92 acres and is approximately 8% impervious. There is currently no existing stormwater management system onsite. Stormwater from the subject property sheet flows untreated to the adjacent properties. There is a ridge line that roughly bifurcates the site into two main drainage areas. The northern portion of the project parcel and neighboring properties sheet flow to the wetland to the northeast of the site. The northern portion of the site consists of primarily of grassed surface cover with some wooded and impervious surface cover. The southeastern portion of the project parcel sheet flows to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east. The southeastern portion of the site consists mainly of grassed area with some impervious area from the shared driveway. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis for the runoff draining to the wetland was not desired or required.

**Table 1 – Pre Development (Existing Conditions) Drainage Characteristics**

Drainage Area	Total Area	Composite Curve Number	Imperviousness Cover	Time of Concentration
	SF		%	Minutes
EDA-10	185,210	72	6.6%	14.50
EDA-20	29,230	81	15.8%	25.30

**Table 2 – Pre Development Conditions Peak Flows**

Analysis Point	Description	Peak Flows (CFS)		
		2-yr	10-yr	100-yr
DP-1	Wetland to NE	2.57	6.27	12.93
DP-2	Ex. CBs in Driveway	0.92	1.82	3.30

### Developed Site Conditions and Hydrologic Conditions

The proposed site drainage area totals 4.92 acres and is approximately 25% impervious. The intent of the proposed site drainage is to match existing drainage patterns to the maximum extent practical. The site stormwater system will provide stormwater retention and quality improvements through the installation of a Infiltration Basin with a grass filter strip and a formalized street sweeping program for the impervious surfaces. These measures will treat the stormwater quality flow through structural means to provide water quality treatment in conformance with the State of Connecticut Water Quality Manual. As noted above, at the pre-application meeting with town staff, a peak flow analysis was not desired or required due to the site location at the lower reaches of the watershed. However, a comparison of the peak flow generated by this site for the existing and proposed conditions has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. The proposed stormwater management system has been designed to treat the runoff generated by the proposed development for a minimum 80% TSS removal as required in the CT Stormwater Quality Manual, retain and infiltrate the Water Quality Volume, and provide groundwater recharge. Storage volumes for the Infiltration Basin are provided in table 6. The following drainage areas were developed to model the proposed site improvements.

**Proposed Drainage Area 101 (PDA-101):** This drainage area consists of the northern and western edges of the project parcel and neighboring properties that will continue to sheet flow to the wetland offsite to the northeast of the site (DP-1), it is 3.05 acres and is approximately 11%

impervious. PDA-101 consists of primarily of grassed surface cover with some wooded and impervious surface cover. This area remains unchanged as part of the construction activities of this application. The stormwater discharge from this area is considered clean by water quality standards and is not subject to the State's requirements to remove 80% of the total suspended solids.

**Proposed Drainage Area 201 (PDA-201):** This drainage area consists of the southeastern portion of the project parcel that drains to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east (DP-1). PDA-201 is 0.42 acres and is approximately 32.7% impervious. PDA-201 consists mainly of grassed area with some impervious area from the shared driveway. This area remains unchanged as part of the construction activities of this application. The stormwater discharge from this area is considered clean by water quality standards and is not subject to the State's requirements to remove 80% of the total suspended solids.

**Proposed Drainage Area 202 (PDA-202):** This drainage area consists of the majority of the project parcel which sheet flows through riprap energy dissipation trenches and a grassed filter strip to Infiltration Basin #1, which will provided treatment for a minimum of 80% total suspended solids. This area is 1.20 acres and is 42% impervious. The Infiltration Basin will retain and infiltrate the water quality volume. Higher volumes will be safely routed through the open ponded area of the Infiltration Basin to the existing closed drainage system by an overflow connection to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east (DP-1). PDA-202 consists of impervious and grassed areas.

**Proposed Drainage Area 203 (PDA-203):** This drainage area consists of the building area from which runoff will be routed via downspouts to a roof leader system which discharges via a flared end section and riprap apron to wetland offsite to the northeast of the site (DP-1), it is 0.25 acres and is 100% impervious. Stormwater runoff in this area is generated from the building's roof only, as such all runoff is considered clean not subject to total suspended solids treatment. PDA-112 consists solely of impervious proposed building roof area.

**Table 3 – Post Development Drainage Characteristics.**

Drainage Area	Total Area	Composite Curve Number	Imperviousness Cover	Time of Concentration
	SF		%	Minutes
PDA-101	133,070	73	10.7%	14.50
PDA-201	18,255	84	32.7%	9.60
PDA-202	52,345	84	41.5%	8.80
PDA-203	10,770	98	100.0%	5.00

**Table 4 – Post Development Conditions Peak Flows**

Analysis Point	Description	Peak Flows (CFS)		
		2-yr	10-yr	100-yr
DP-1	Wetland to NE	2.17	4.99	9.99
DP-2	Ex. CBs in Driveway	0.81	1.52	2.66

**Table 5 – Existing vs. Proposed Peak Rates of Runoff**

Peak Flow (cfs)			
Analysis Point	Design Storms		
	2-yr	10-yr	100-yr
<b>DP-1</b>			
Existing	2.57	6.27	12.93
Proposed	2.17	4.99	9.99
Percent Change	-15.56%	-20.41%	-22.74%
<b>DP-2</b>			
Existing	0.92	1.82	3.30
Proposed	0.81	1.52	2.66
Percent Change	-11.96%	-16.48%	-19.39%

**Table 6 – Infiltration Basin Volumes**

<b>Infiltration Basin 1</b>	<b>Storm Event</b>		
	<b>2-yr</b>	<b>10-yr</b>	<b>100-yr</b>
<b>Peak Elevation (FT)</b>	659.84	660.79	661.36
<b>Storage Volume (CF)</b>	4,413	8,849	12,784

**Required WQV= 4,138CF**

**Provided Available WQV= 11,960CF**

**Top of Infiltration Basin Elevation= 662.00ft**

## Stormwater Management

### *Hydrologic Modeling of the Entire Site*

The hydrologic analysis to determine peak stormwater discharge rates was performed using the HydroCAD stormwater modeling system computer program, version 10.00 developed by HydroCAD Software Solutions, LLC. Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method. Rainfall depths and distribution per the NOAA Atlas 14 for Coventry, CT were used for the calculation of peak flow rates and are listed in Table 7. A flood caused by a pipe burst in the NOAA headquarters incapacitated the servers storing the NOAA Atlas 14 rainfall data preventing the data for Bolton, CT from being able to be downloaded and viewed. The rainfall depths and distribution for Coventry, CT were selected to be used due to the proximity of Coventry to Bolton and since the data has been previously downloaded by the design engineer. The drainage areas, or subcatchments as labeled by the program, are depicted by hexagons on the attached drainage diagrams. Post-development HydroCAD output can be found in Appendix B.

Test pits were performed on site on 5/4/2021. A total of three test pits, spaces 50' on center, were observed spanning the location of the proposed infiltration basin. Test pit locations have been added to the Land Development Plans included with this submission. Test Pit logs and Falling Head Permeability Test Logs have been provided in Appendix E.

**Table 7 – Rainfall Depths per NOAA Atlas 14  
Appendix B - 24 hour Rainfall Data**

<b>Return Period</b>	<b>24-hour Rainfall Depth</b>
2-year	3.31"
10-year	5.08"
100-year	7.90"

## Summary

All post development stormwater will be discharged offsite to match existing drainage patterns. The proposed stormwater management system has been designed to treat the runoff generated by the proposed development, retain and infiltrate the Water Quality Volume, and provide groundwater recharge. Stormwater quality is being addressed by formulized street sweeping and a Infiltration Basin with a grass filter strip. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis was not desired or required. However, a peak flow analysis has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. The peak flows discharging from the proposed development have been maintained or reduced for all storm events. These features will provide the minimum required 80% TSS removal as required in the CT Stormwater Manual. The proposed stormwater management system will meet the stormwater quality requirements of the State of Connecticut.

## APPENDIX A

### LOCATION MAPS

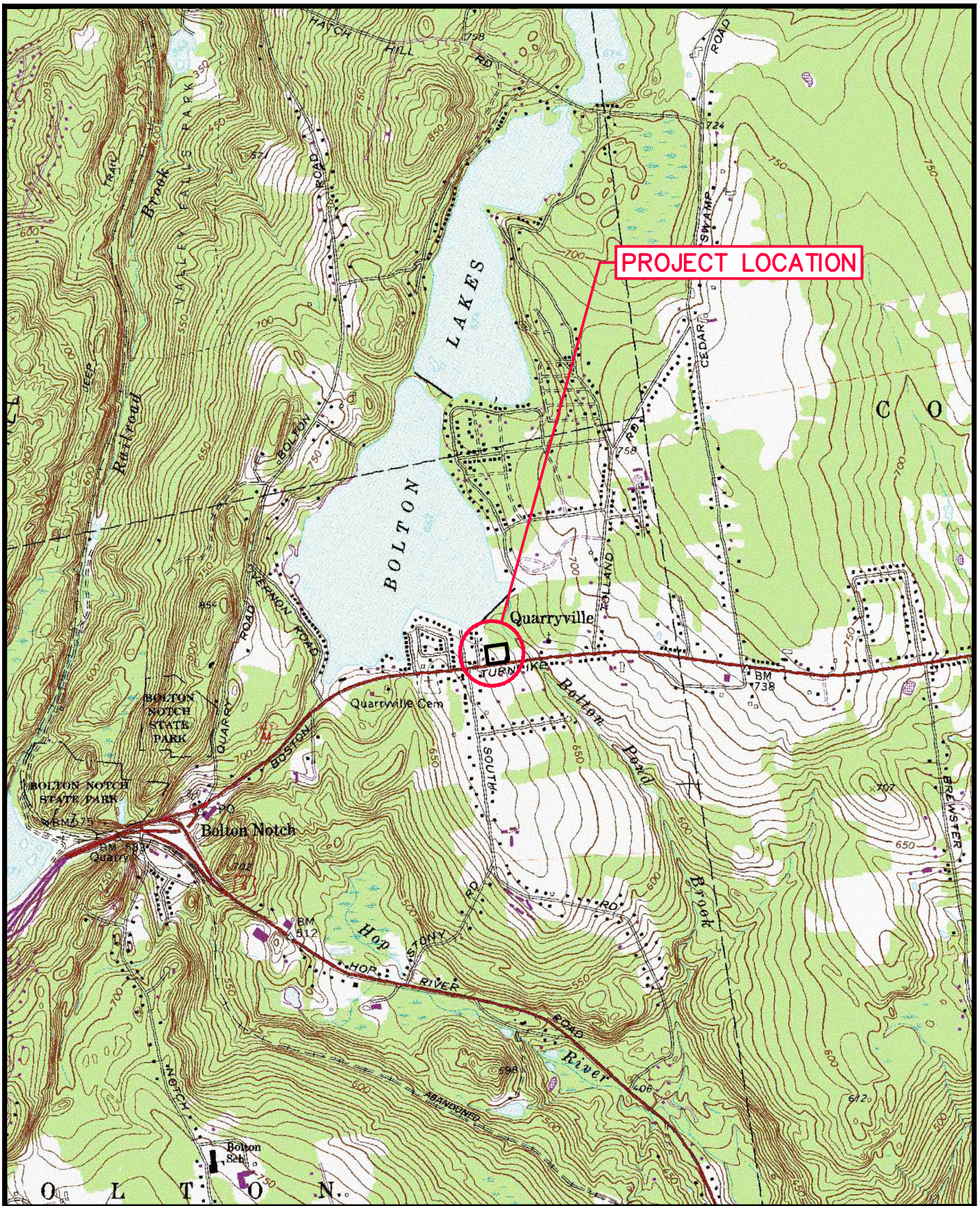
Figure 1: USGS Location Map

Figure 2: Aerial Location Map

Figure 3: NRCS Soil Survey Map with Hydrologic Soil Group Data

Figure 4: FEMA Federal Insurance Rate Map

Figure 5: NOAA Atlas 14 Storm Data



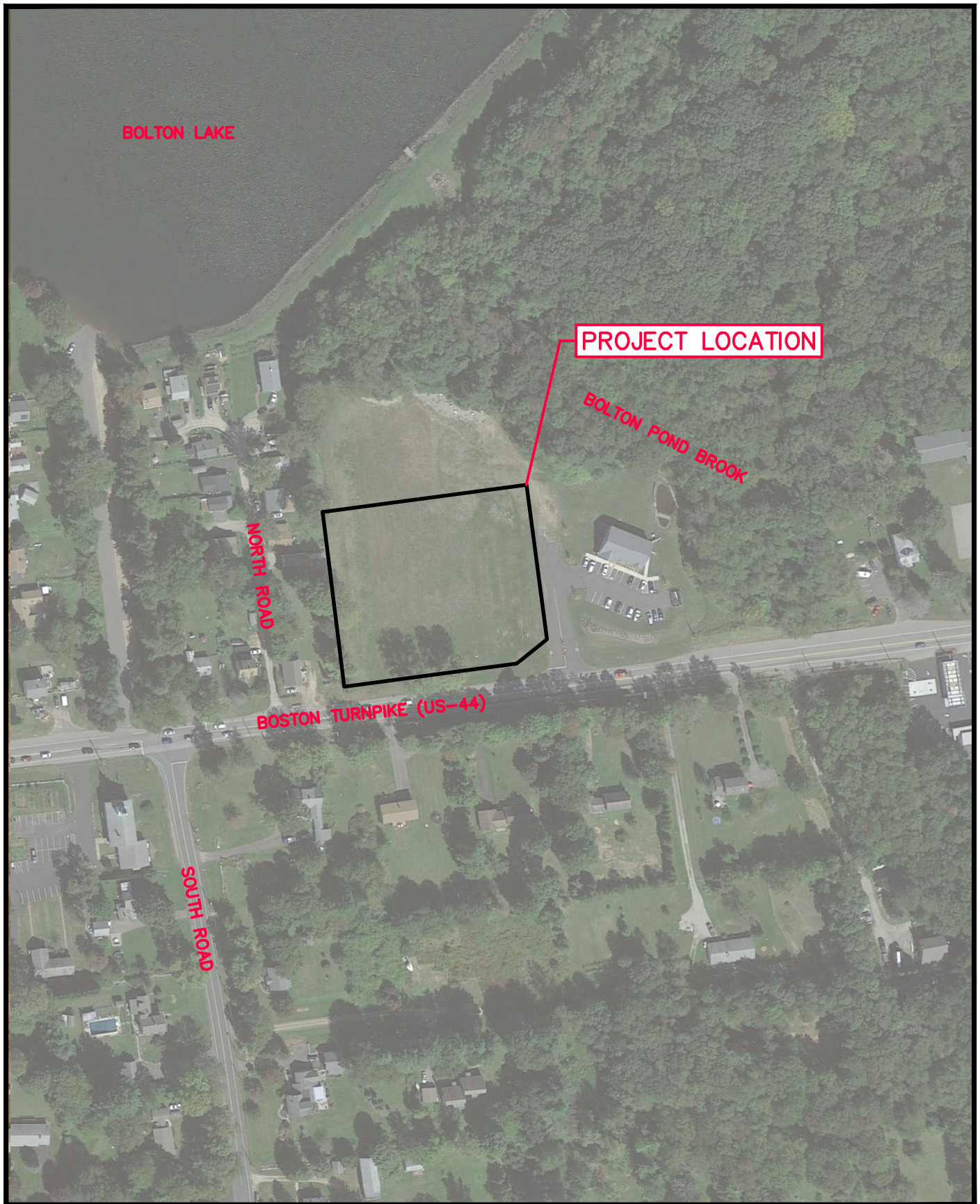
**PROPOSED  
RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed  
Drawn  
Checked  
Approved  
Scale  
Project No.  
Date

S.E.L.  
S.E.L.  
J.A.B.  
J.A.B.  
1"=2,000'  
2002032  
04/02/2021

**FIGURE 1**  
USGS LOCATION MAP





**BL**  
**Companies**  
 ARCHITECTURE  
 ENGINEERING  
 ENVIRONMENTAL  
 LAND SURVEYING

**PROPOSED  
 RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

Designed  
 Drawn  
 Checked  
 Approved  
 Scale  
 Project No.  
 Date

S.E.L.  
 S.E.L.  
 J.A.B.  
 J.A.B.  
 1"=200'  
 2002032  
 04/02/2021

**FIGURE 2**  
**AERIAL LOCATION MAP**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for State of Connecticut



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Soil Map

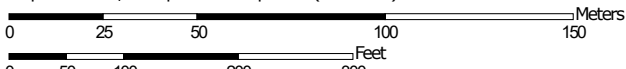
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Map Scale: 1:2,010 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84





### MAP LEGEND


**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

### MAP INFORMATION

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

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 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Sep 3, 2019—Oct 22, 2019

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
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	1.6	12.9%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	3.1	24.8%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	7.2	57.0%
W	Water	0.7	5.3%
<b>Totals for Area of Interest</b>		<b>12.7</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

## Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## State of Connecticut

### 45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2t2ql  
*Elevation:* 0 to 1,470 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Woodbridge, fine sandy loam, and similar soils:* 82 percent  
*Minor components:* 18 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Woodbridge, Fine Sandy Loam

##### Setting

*Landform:* Hills, drumlins, ground moraines  
*Landform position (two-dimensional):* Backslope, footslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

##### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam  
*Bw1 - 7 to 18 inches:* fine sandy loam  
*Bw2 - 18 to 30 inches:* fine sandy loam  
*Cd - 30 to 65 inches:* gravelly fine sandy loam

##### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 39 inches to densic material  
*Drainage class:* Moderately well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144AY037MA - Moist Dense Till Uplands  
*Hydric soil rating:* No

## Minor Components

### Paxton

*Percent of map unit:* 10 percent  
*Landform:* Drumlins, hills, ground moraines  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Side slope, crest, nose slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### Ridgebury

*Percent of map unit:* 8 percent  
*Landform:* Ground moraines, depressions, drainageways, hills  
*Landform position (two-dimensional):* Toeslope, backslope, footslope  
*Landform position (three-dimensional):* Base slope, head slope, dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## 46B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

### Map Unit Setting

*National map unit symbol:* 2t2qr  
*Elevation:* 0 to 1,440 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Woodbridge, very stony, and similar soils:* 82 percent  
*Minor components:* 18 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Woodbridge, Very Stony

#### Setting

*Landform:* Hills, ground moraines, drumlins  
*Landform position (two-dimensional):* Backslope, footslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

#### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material  
*A - 2 to 9 inches:* fine sandy loam  
*Bw1 - 9 to 20 inches:* fine sandy loam

## Custom Soil Resource Report

*Bw2 - 20 to 32 inches:* fine sandy loam  
*Cd - 32 to 67 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 0 to 8 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* 20 to 43 inches to densic material  
*Drainage class:* Moderately well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 19 to 27 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Low (about 4.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144AY037MA - Moist Dense Till Uplands  
*Hydric soil rating:* No

### Minor Components

#### Paxton, very stony

*Percent of map unit:* 10 percent  
*Landform:* Drumlins, hills, ground moraines  
*Landform position (two-dimensional):* Shoulder, backslope, summit  
*Landform position (three-dimensional):* Crest, side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex, linear  
*Hydric soil rating:* No

#### Ridgebury, very stony

*Percent of map unit:* 8 percent  
*Landform:* Ground moraines, depressions, drumlins, drainageways, hills  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Head slope, base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## 60B—Canton and Charlton fine sandy loams, 3 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2w81s  
*Elevation:* 0 to 1,460 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F

## Custom Soil Resource Report

*Frost-free period:* 140 to 240 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Canton and similar soils:* 50 percent

*Charlton and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Canton

#### Setting

*Landform:* Ridges, moraines, hills

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Side slope, nose slope, crest

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

#### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam

*Bw1 - 7 to 15 inches:* fine sandy loam

*Bw2 - 15 to 26 inches:* gravelly fine sandy loam

*2C - 26 to 65 inches:* gravelly loamy sand

#### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Very low (about 2.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* B

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Description of Charlton

#### Setting

*Landform:* Hills, ground moraines, ridges

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, side slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

## Custom Soil Resource Report

### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam  
*Bw - 7 to 22 inches:* gravelly fine sandy loam  
*C - 22 to 65 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.14 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Moderate (about 6.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B  
*Ecological site:* F144AY034CT - Well Drained Till Uplands  
*Hydric soil rating:* No

### Minor Components

#### Sutton

*Percent of map unit:* 5 percent  
*Landform:* Hills, ridges, ground moraines  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Leicester

*Percent of map unit:* 5 percent  
*Landform:* Drainageways, ground moraines, hills, depressions  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Chatfield

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Crest, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

**W—Water**

**Map Unit Composition**

*Water: 100 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*



# Soil Information for All Uses

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## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

## Hydrologic Soil Group

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

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

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

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

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

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

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

Custom Soil Resource Report  
Map—Hydrologic Soil Group



Soil Map may not be valid at this scale.


Map Scale: 1:2,010 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

### MAP LEGEND

**Area of Interest (AOI)**









 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**





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

**Soil Rating Lines**


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

**Soil Rating Points**






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

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


**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

### MAP INFORMATION

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

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 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Sep 3, 2019—Oct 22, 2019

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.

**Table—Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	1.6	12.9%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	3.1	24.8%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	7.2	57.0%
W	Water		0.7	5.3%
<b>Totals for Area of Interest</b>			<b>12.7</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group**

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

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NOAA Atlas 14, Volume 10, Version 3  
 Location name: Coventry, Connecticut, USA\*  
 Latitude: 41.7995°, Longitude: -72.3493°  
 Elevation: 479.37 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 & aerials](#)

**PF tabular**

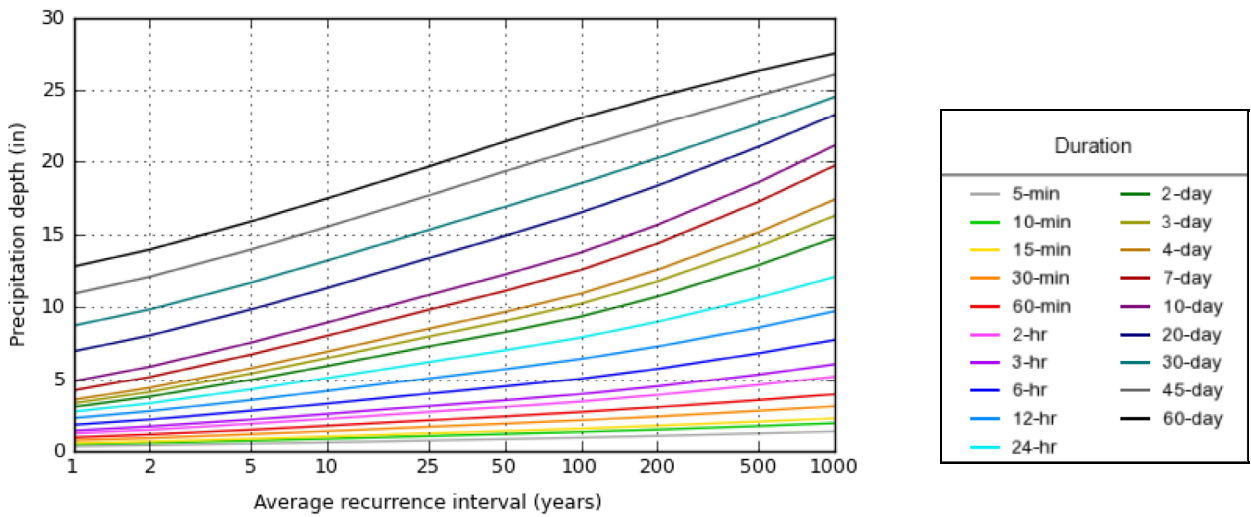
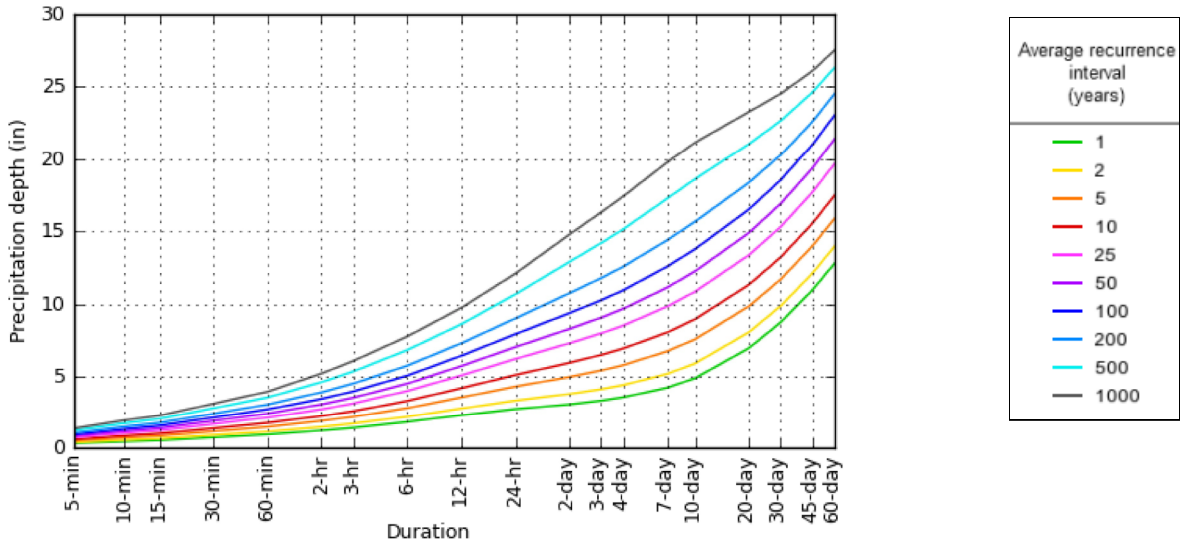
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.327 (0.248-0.431)	0.396 (0.300-0.523)	0.510 (0.385-0.673)	0.604 (0.454-0.803)	0.734 (0.537-1.02)	0.831 (0.599-1.17)	0.933 (0.656-1.36)	1.05 (0.701-1.56)	1.22 (0.787-1.87)	1.36 (0.859-2.12)
10-min	0.463 (0.351-0.610)	0.561 (0.425-0.740)	0.722 (0.546-0.955)	0.855 (0.643-1.14)	1.04 (0.761-1.44)	1.18 (0.846-1.66)	1.32 (0.929-1.93)	1.49 (0.994-2.21)	1.73 (1.12-2.65)	1.92 (1.22-3.01)
15-min	0.544 (0.413-0.718)	0.660 (0.500-0.871)	0.850 (0.642-1.13)	1.01 (0.758-1.34)	1.22 (0.895-1.69)	1.39 (0.996-1.96)	1.56 (1.09-2.27)	1.75 (1.17-2.60)	2.03 (1.31-3.12)	2.26 (1.43-3.54)
30-min	0.744 (0.564-0.980)	0.902 (0.684-1.19)	1.16 (0.877-1.54)	1.38 (1.03-1.83)	1.67 (1.22-2.32)	1.89 (1.36-2.67)	2.13 (1.50-3.11)	2.39 (1.60-3.56)	2.78 (1.80-4.26)	3.10 (1.96-4.84)
60-min	0.943 (0.715-1.24)	1.14 (0.867-1.51)	1.47 (1.11-1.95)	1.75 (1.31-2.32)	2.12 (1.55-2.94)	2.40 (1.73-3.39)	2.70 (1.90-3.94)	3.04 (2.03-4.51)	3.53 (2.28-5.41)	3.93 (2.49-6.14)
2-hr	1.22 (0.927-1.60)	1.47 (1.12-1.93)	1.88 (1.43-2.48)	2.23 (1.68-2.95)	2.70 (1.99-3.73)	3.05 (2.21-4.31)	3.43 (2.44-5.03)	3.89 (2.60-5.75)	4.59 (2.97-7.00)	5.19 (3.29-8.05)
3-hr	1.41 (1.08-1.85)	1.70 (1.30-2.23)	2.17 (1.65-2.86)	2.57 (1.94-3.39)	3.11 (2.30-4.30)	3.51 (2.56-4.95)	3.95 (2.82-5.79)	4.49 (3.01-6.61)	5.32 (3.45-8.09)	6.05 (3.85-9.35)
6-hr	1.81 (1.39-2.36)	2.18 (1.67-2.84)	2.78 (2.12-3.64)	3.29 (2.50-4.32)	3.98 (2.95-5.46)	4.48 (3.28-6.30)	5.04 (3.61-7.36)	5.73 (3.86-8.40)	6.80 (4.43-10.3)	7.74 (4.93-11.9)
12-hr	2.29 (1.76-2.97)	2.76 (2.12-3.58)	3.53 (2.70-4.60)	4.17 (3.18-5.46)	5.05 (3.76-6.90)	5.70 (4.18-7.95)	6.41 (4.60-9.28)	7.27 (4.91-10.6)	8.58 (5.60-12.9)	9.71 (6.21-14.8)
24-hr	2.72 (2.10-3.51)	3.31 (2.55-4.28)	4.28 (3.29-5.55)	5.08 (3.89-6.62)	6.19 (4.62-8.42)	7.01 (5.15-9.73)	7.90 (5.69-11.4)	8.98 (6.09-13.0)	10.6 (6.97-15.9)	12.1 (7.75-18.3)
2-day	3.05 (2.37-3.92)	3.77 (2.92-4.85)	4.95 (3.82-6.39)	5.93 (4.56-7.69)	7.27 (5.46-9.87)	8.26 (6.11-11.5)	9.35 (6.80-13.5)	10.7 (7.28-15.4)	12.9 (8.46-19.1)	14.8 (9.51-22.2)
3-day	3.31 (2.57-4.24)	4.10 (3.18-5.26)	5.39 (4.18-6.95)	6.47 (4.98-8.37)	7.95 (5.99-10.8)	9.03 (6.71-12.5)	10.2 (7.47-14.7)	11.8 (8.00-16.9)	14.2 (9.32-20.9)	16.3 (10.5-24.4)
4-day	3.54 (2.76-4.54)	4.39 (3.41-5.62)	5.77 (4.47-7.42)	6.92 (5.34-8.93)	8.50 (6.41-11.5)	9.65 (7.18-13.3)	10.9 (7.99-15.7)	12.6 (8.56-18.0)	15.1 (9.97-22.3)	17.4 (11.2-26.0)
7-day	4.20 (3.28-5.36)	5.16 (4.02-6.59)	6.72 (5.23-8.61)	8.02 (6.20-10.3)	9.80 (7.41-13.2)	11.1 (8.28-15.3)	12.6 (9.19-17.9)	14.4 (9.83-20.5)	17.2 (11.4-25.2)	19.7 (12.8-29.4)
10-day	4.86 (3.81-6.19)	5.88 (4.60-7.49)	7.54 (5.88-9.64)	8.92 (6.92-11.5)	10.8 (8.20-14.5)	12.2 (9.11-16.7)	13.8 (10.0-19.5)	15.6 (10.7-22.2)	18.6 (12.3-27.1)	21.1 (13.7-31.3)
20-day	6.94 (5.46-8.80)	8.04 (6.31-10.2)	9.83 (7.69-12.5)	11.3 (8.81-14.5)	13.4 (10.1-17.7)	14.9 (11.1-20.0)	16.5 (12.0-22.9)	18.4 (12.6-25.8)	21.0 (14.0-30.5)	23.3 (15.1-34.2)
30-day	8.71 (6.86-11.0)	9.83 (7.74-12.4)	11.7 (9.16-14.8)	13.2 (10.3-16.8)	15.3 (11.6-20.1)	16.9 (12.5-22.5)	18.5 (13.4-25.4)	20.3 (14.0-28.4)	22.6 (15.1-32.6)	24.5 (16.0-35.9)
45-day	10.9 (8.63-13.8)	12.1 (9.53-15.2)	14.0 (11.0-17.7)	15.5 (12.1-19.7)	17.7 (13.4-23.0)	19.3 (14.3-25.6)	21.0 (15.1-28.4)	22.6 (15.6-31.5)	24.6 (16.5-35.3)	26.1 (17.0-38.1)
60-day	12.8 (10.1-16.1)	14.0 (11.0-17.6)	15.9 (12.5-20.1)	17.5 (13.7-22.2)	19.7 (14.9-25.5)	21.4 (15.9-28.2)	23.0 (16.5-30.9)	24.5 (17.0-34.1)	26.3 (17.6-37.6)	27.5 (18.0-40.1)

<sup>1</sup> 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.

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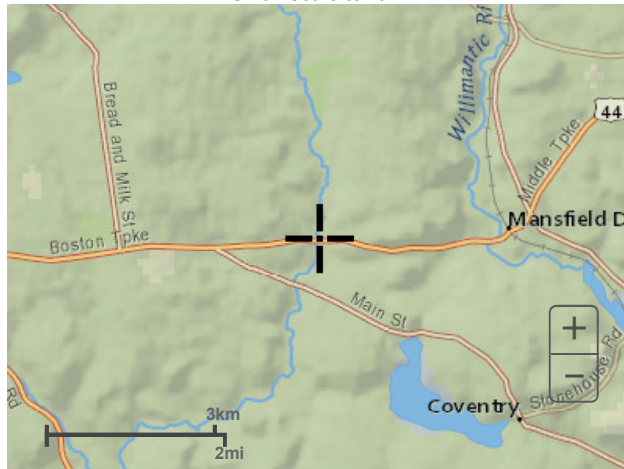
## PF graphical

PDS-based depth-duration-frequency (DDF) curves  
Latitude: 41.7995°, Longitude: -72.3493°



## Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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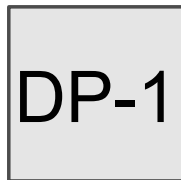
[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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APPENDIX B  
PRE-DEVELOPMENT HYDROLOGY



Area to Wetland to the Northeast



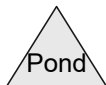
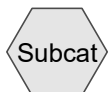
Wetland to Northeast



Area to Ex. CBs in Driveway



Ex. CBs in Driveway



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

**SubcatchmentEDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>0.99"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=2.57 cfs 0.350 af

**SubcatchmentEDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>1.55"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=0.92 cfs 0.087 af

**Reach DP-1: Wetland to Northeast** Inflow=2.57 cfs 0.350 af  
Outflow=2.57 cfs 0.350 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=0.92 cfs 0.087 af  
Outflow=0.92 cfs 0.087 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.437 af Average Runoff Depth = 1.06"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

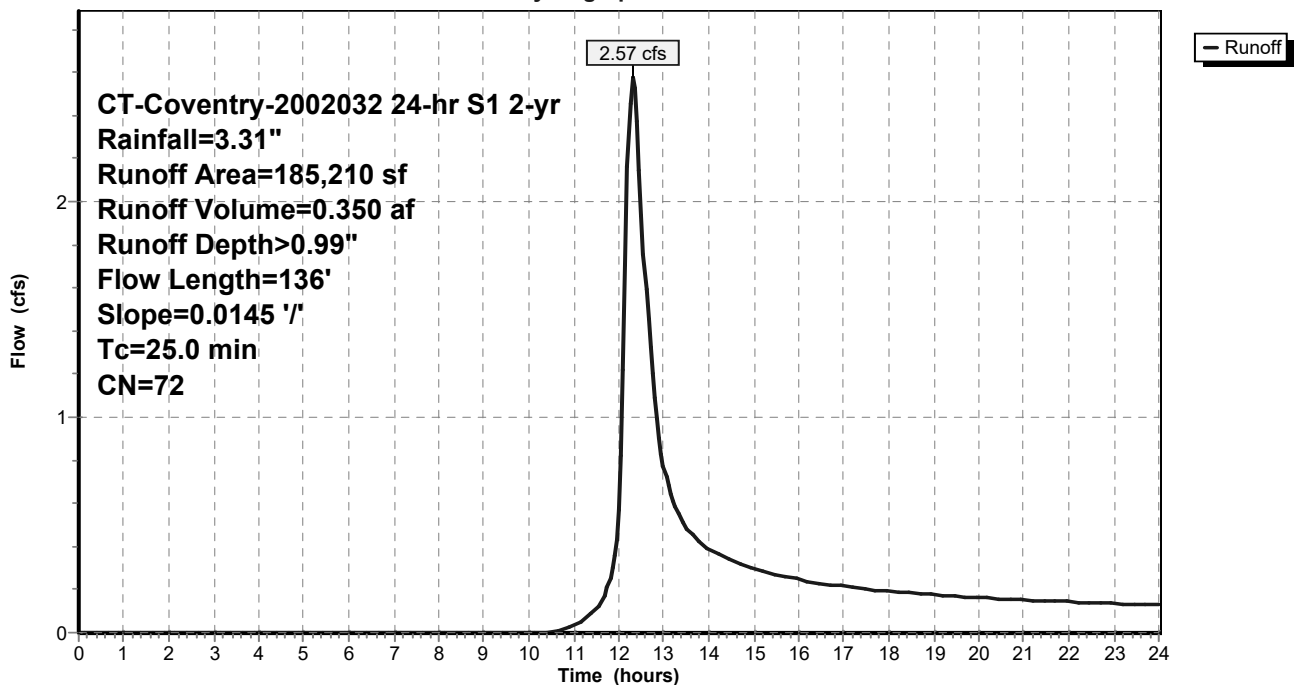
Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph





**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

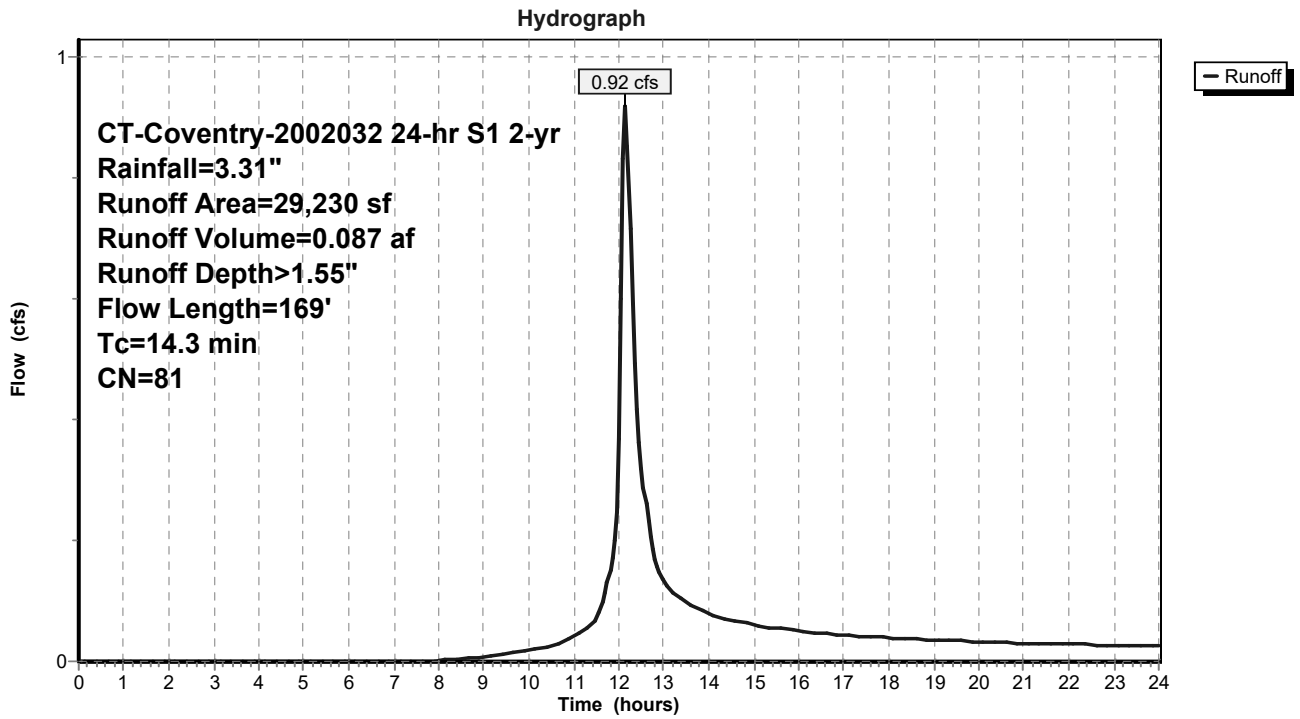
Runoff = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**



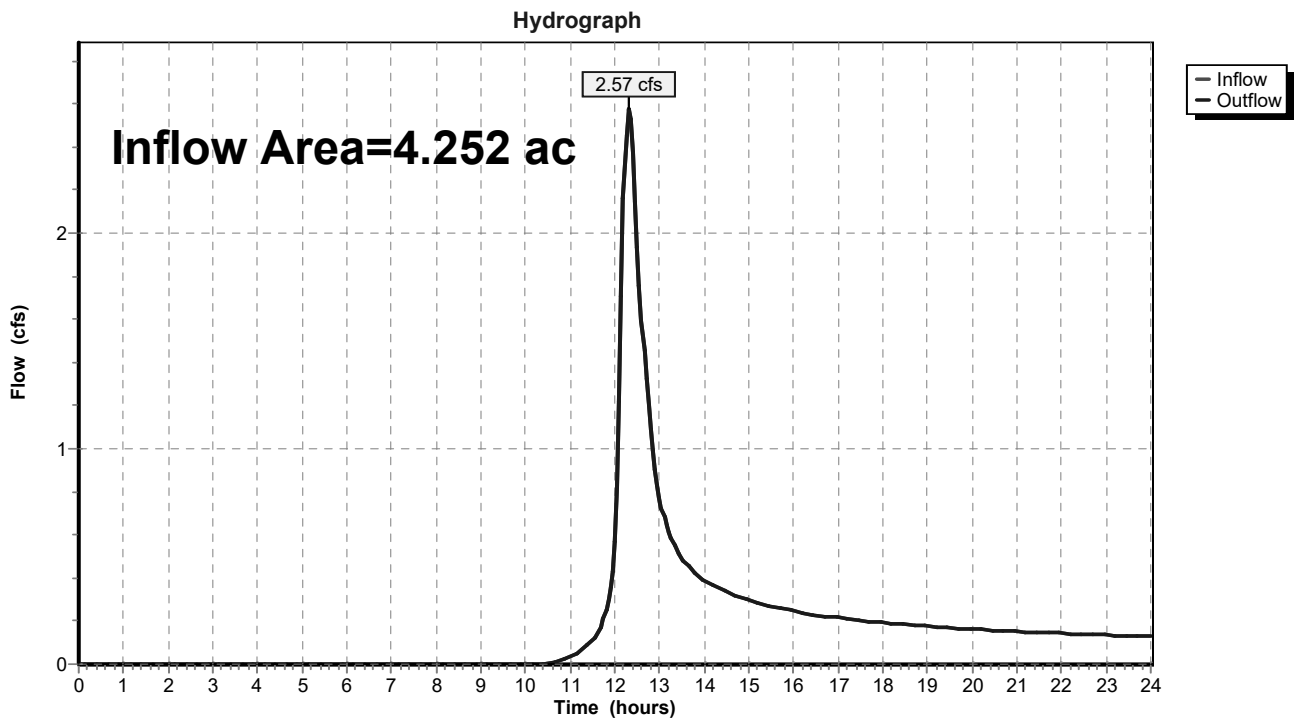
### Summary for Reach DP-1: Wetland to Northeast

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 0.99" for 2-yr event  
Inflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af  
Outflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-1: Wetland to Northeast



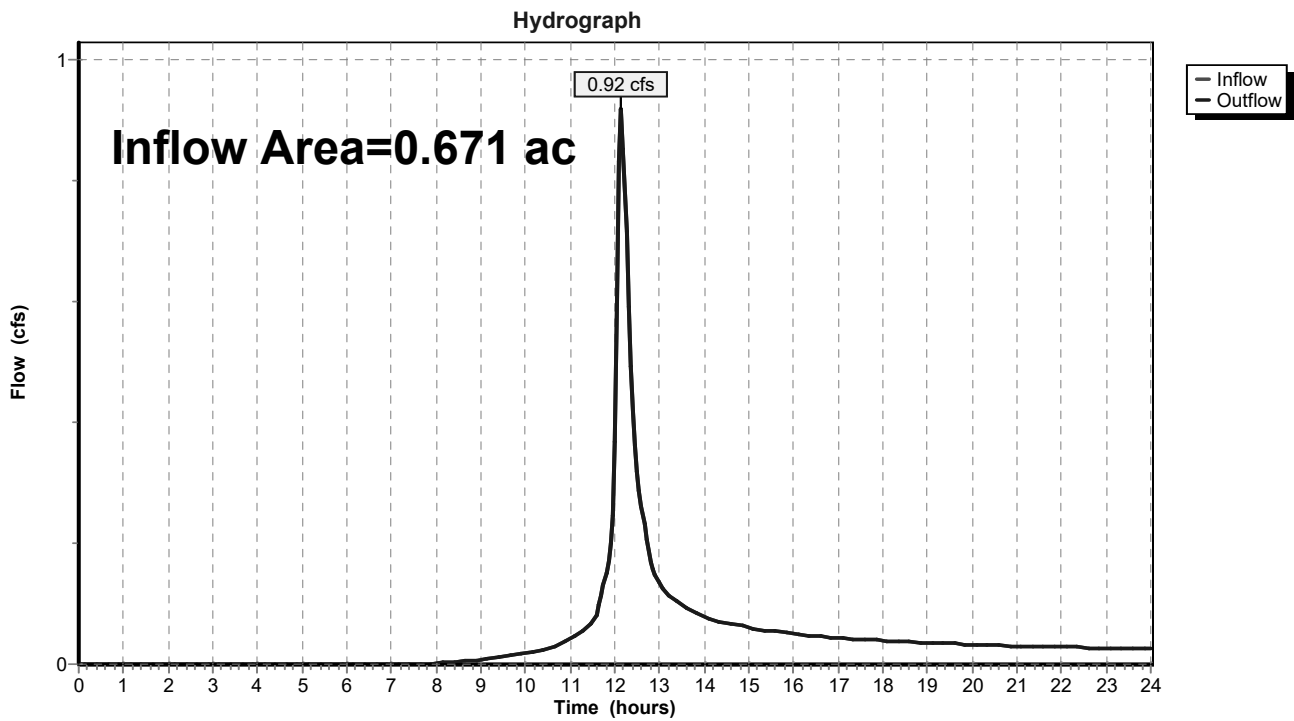
**Summary for Reach DP-2: Ex. CBs in Driveway**

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 1.55" for 2-yr event  
 Inflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af  
 Outflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-2: Ex. CBs in Driveway**



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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>2.24"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=6.27 cfs 0.794 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>3.04"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=1.82 cfs 0.170 af

**Reach DP-1: Wetland to Northeast**

Inflow=6.27 cfs 0.794 af  
Outflow=6.27 cfs 0.794 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=1.82 cfs 0.170 af  
Outflow=1.82 cfs 0.170 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.964 af Average Runoff Depth = 2.35"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Depth> 2.24"

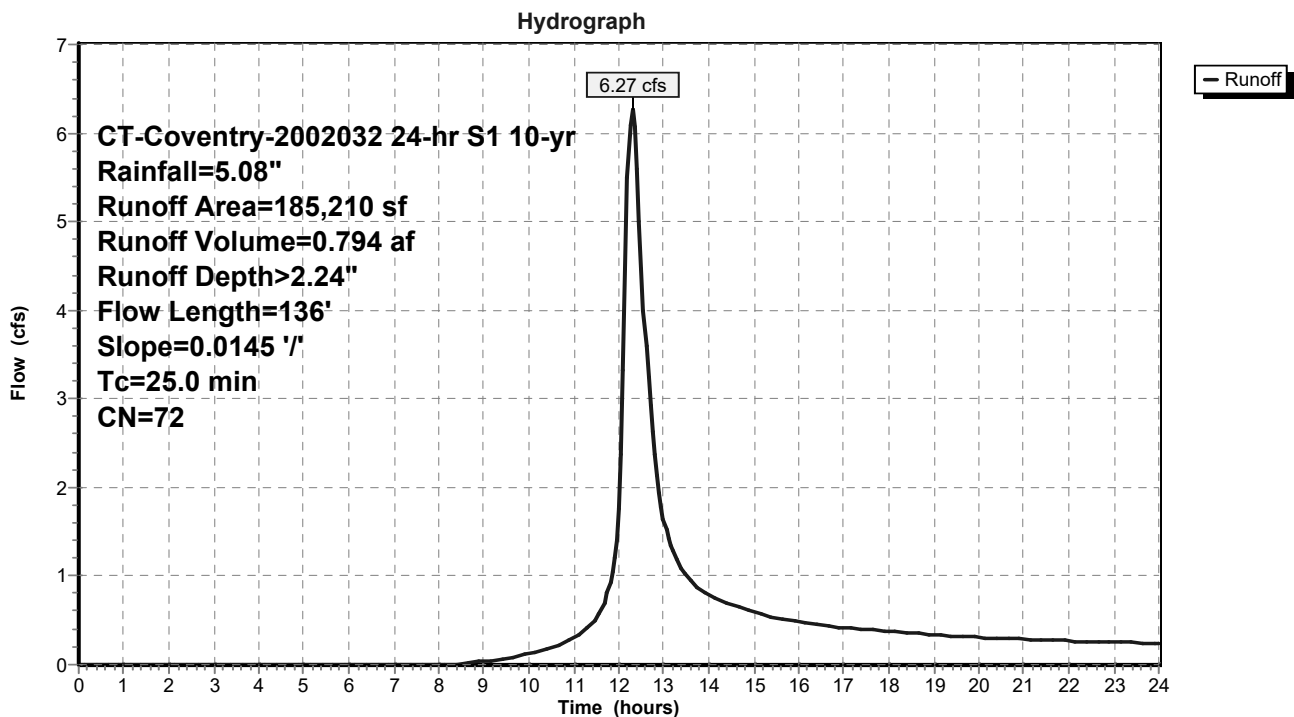
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

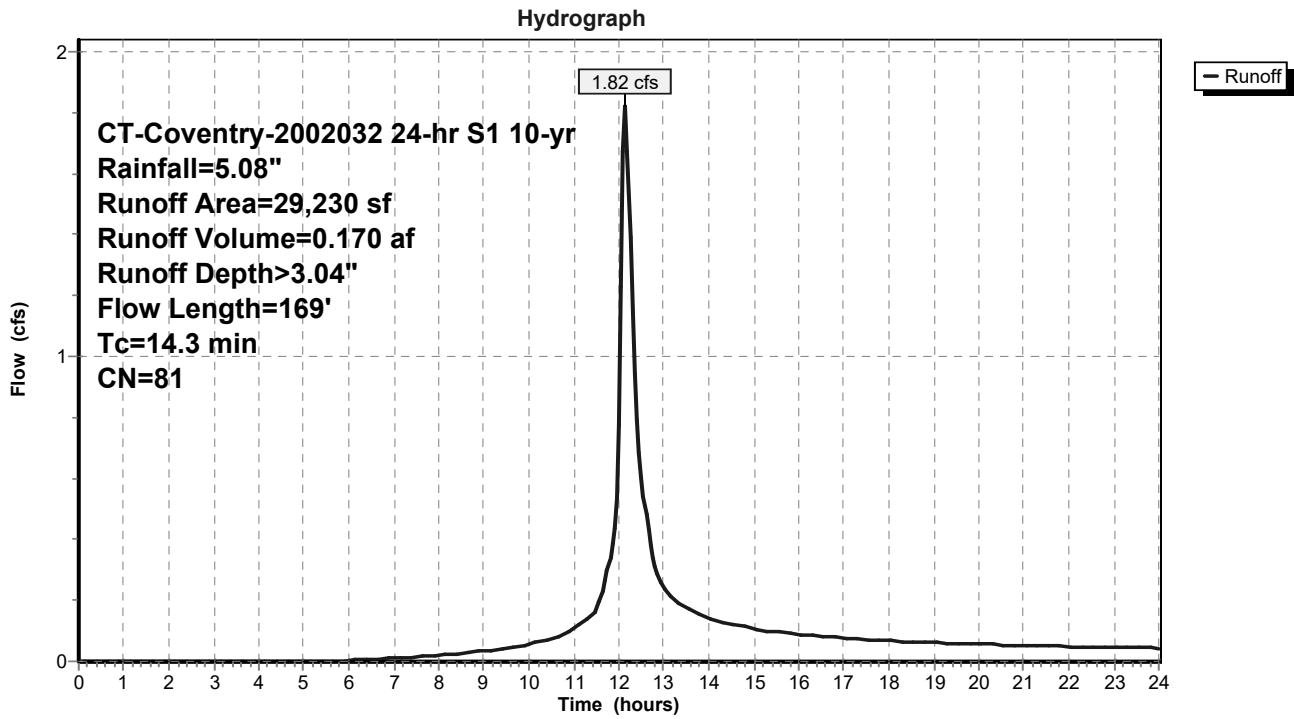
Runoff = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**





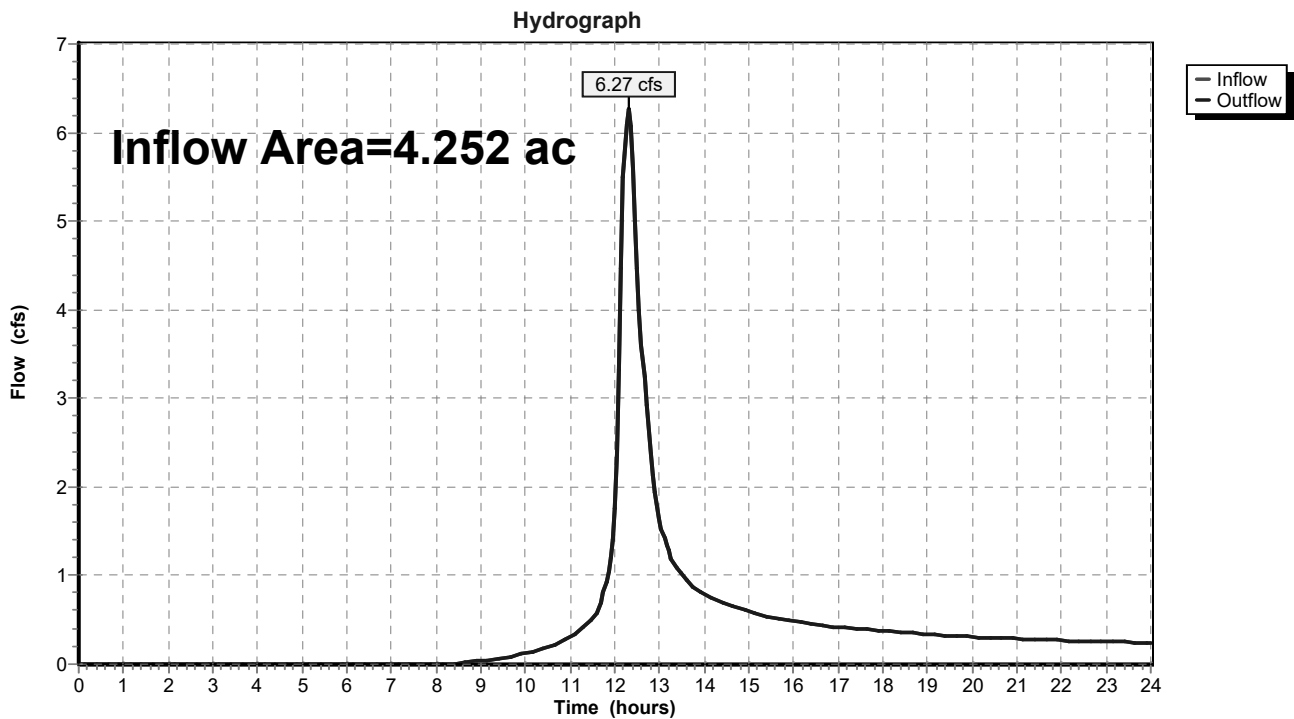
**Summary for Reach DP-1: Wetland to Northeast**

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 2.24" for 10-yr event  
 Inflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af  
 Outflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-1: Wetland to Northeast**



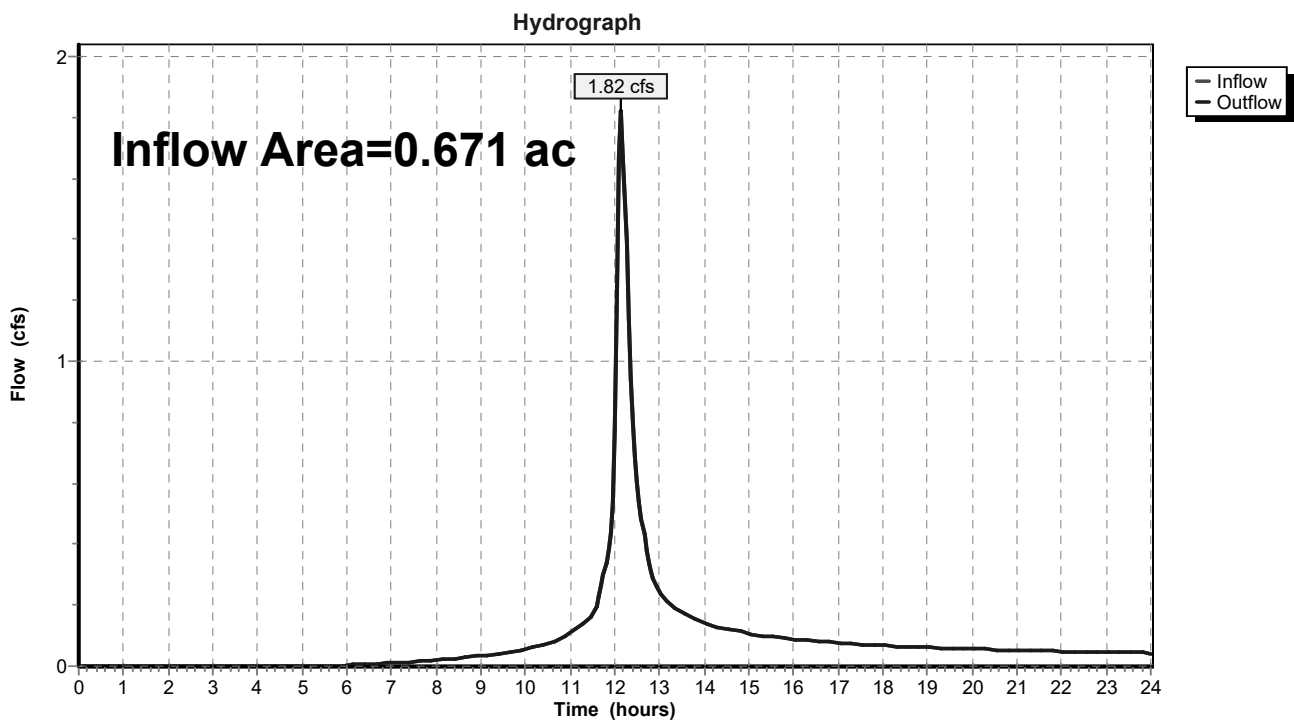
### Summary for Reach DP-2: Ex. CBs in Driveway

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 3.04" for 10-yr event  
Inflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af  
Outflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-2: Ex. CBs in Driveway



**C-DAT-2002032-EXISTING HYDROLOG** CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Prepared by BL Companies, Inc.

Printed 5/13/2021

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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>4.57"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=12.93 cfs 1.620 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>5.63"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=3.30 cfs 0.315 af

**Reach DP-1: Wetland to Northeast**

Inflow=12.93 cfs 1.620 af  
Outflow=12.93 cfs 1.620 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=3.30 cfs 0.315 af  
Outflow=3.30 cfs 0.315 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.934 af Average Runoff Depth = 4.72"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

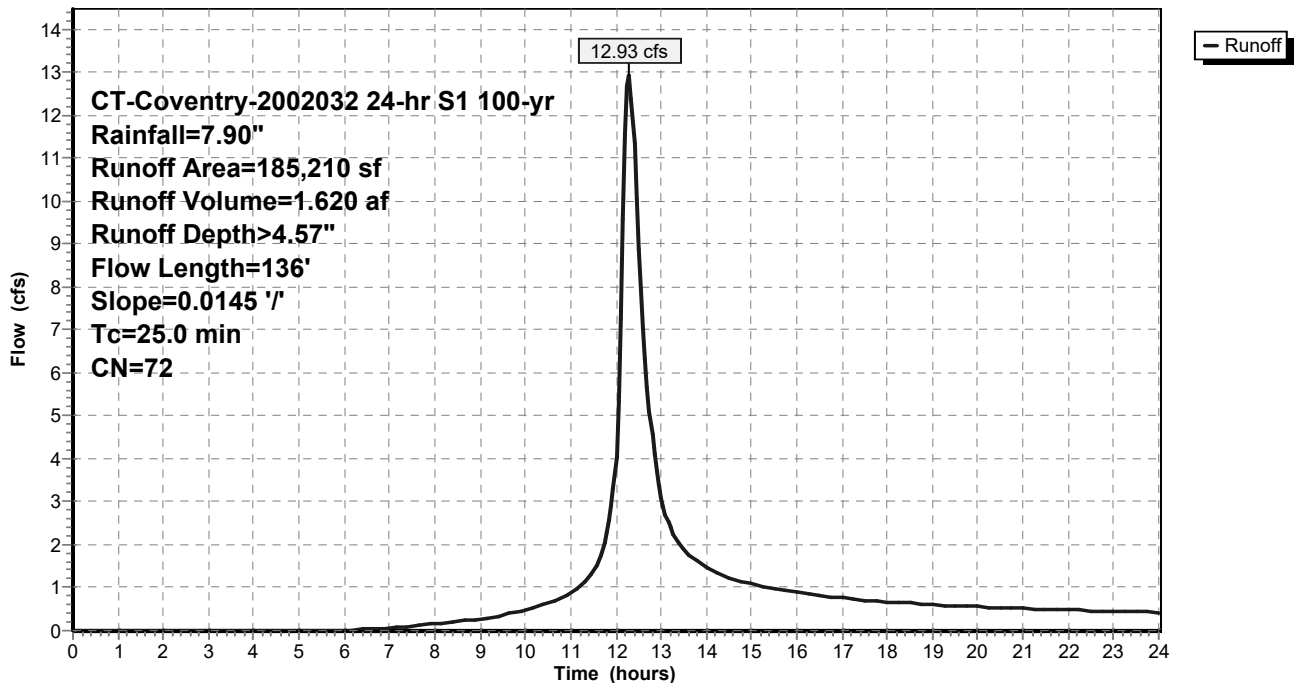
Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

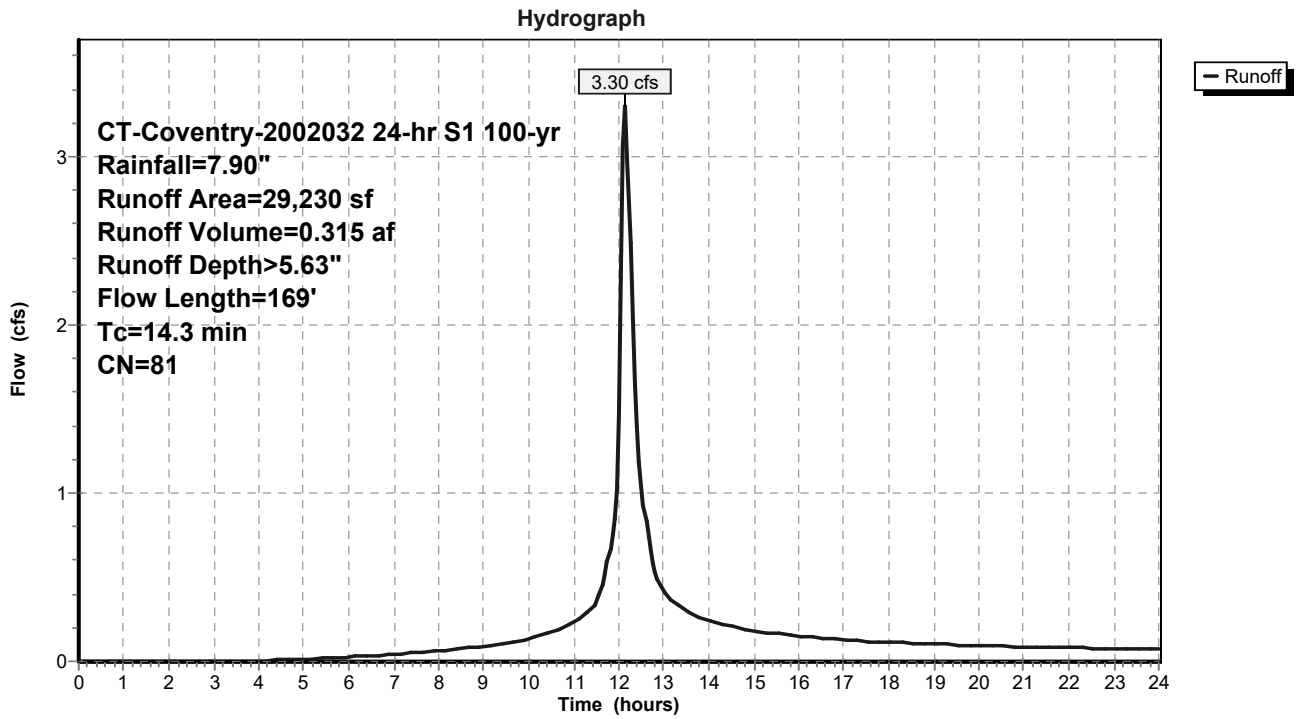
Runoff = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Depth> 5.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**



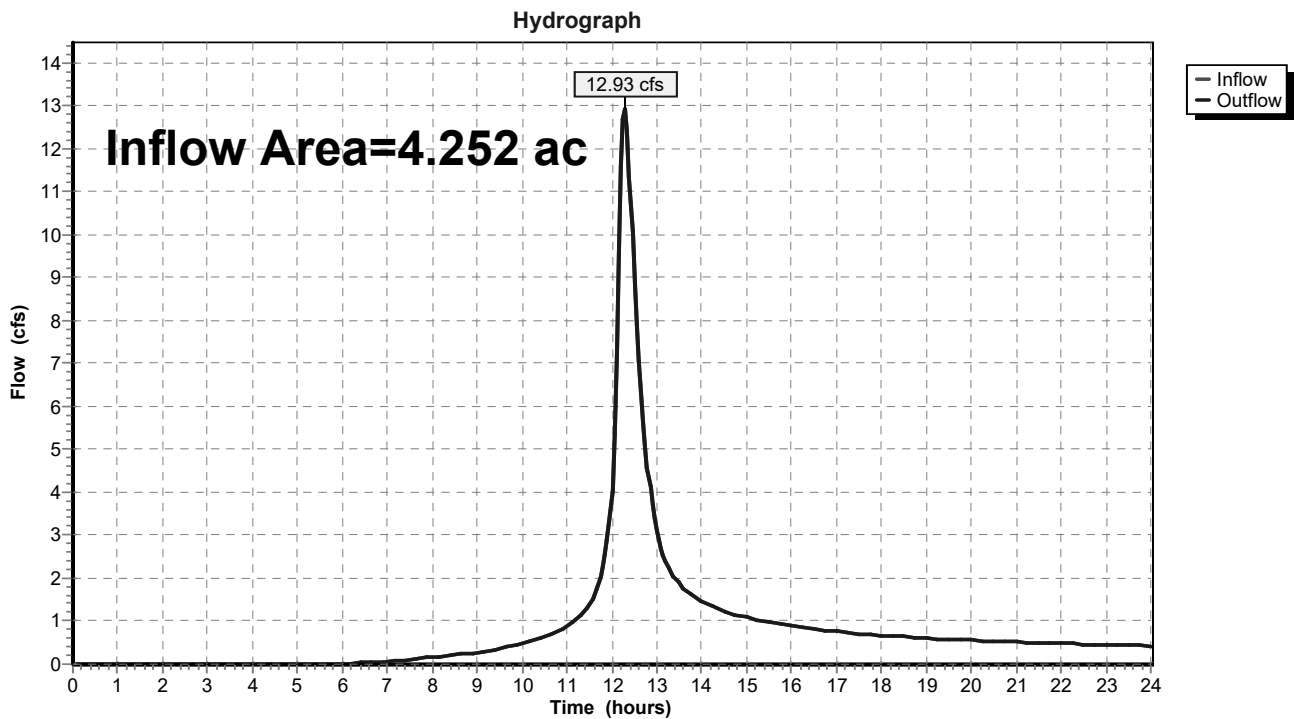
**Summary for Reach DP-1: Wetland to Northeast**

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 4.57" for 100-yr event  
 Inflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af  
 Outflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-1: Wetland to Northeast**



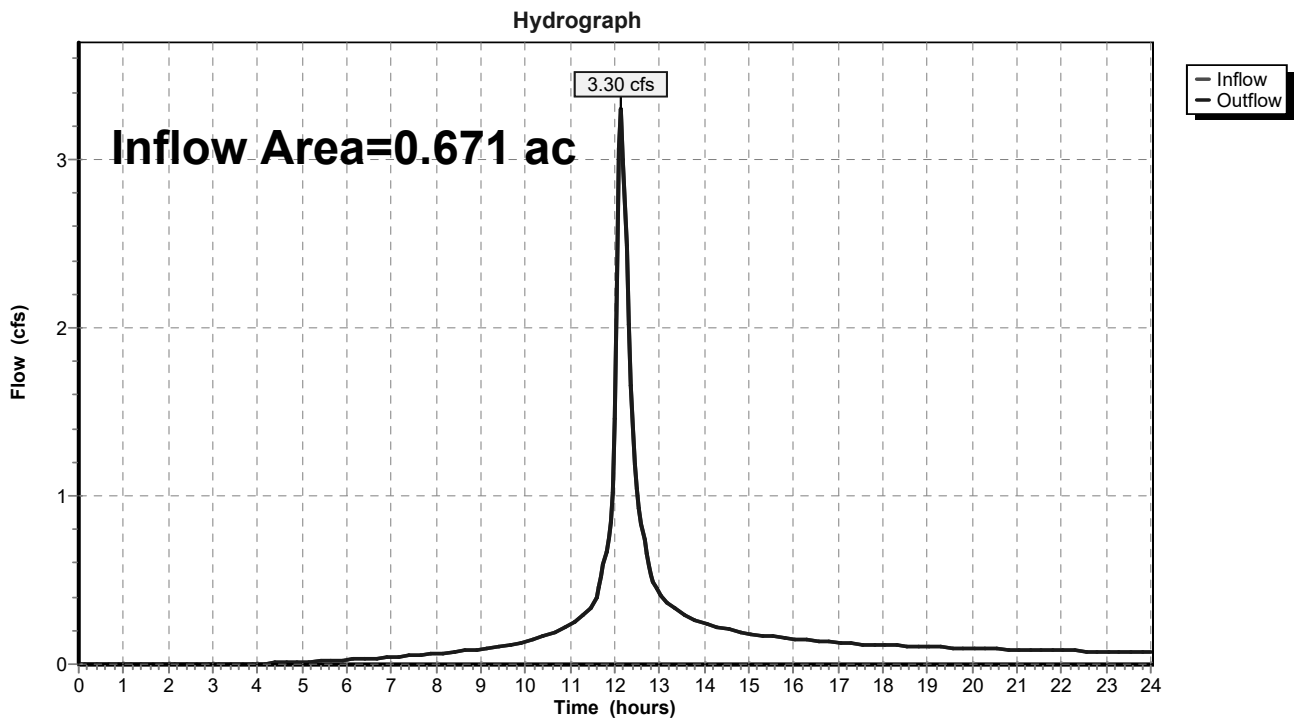
**Summary for Reach DP-2: Ex. CBs in Driveway**

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 5.63" for 100-yr event  
 Inflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af  
 Outflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

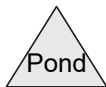
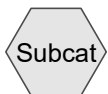
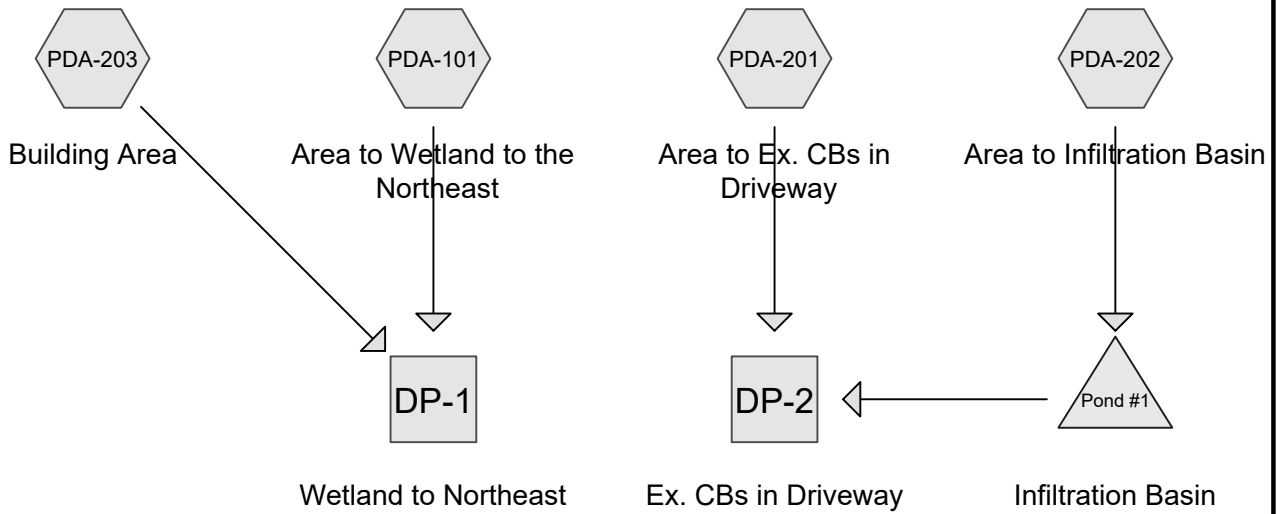
**Reach DP-2: Ex. CBs in Driveway**





## APPENDIX C

### POST-DEVELOPMENT HYDROLOGY



Routing Diagram for C-DAT-2002032-PROPOSED HYDROLOGY - 2021-05-12

Prepared by BL Companies, Inc., Printed 5/13/2021

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=1.05"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=1.99 cfs 0.268 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=1.77"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=0.81 cfs 0.062 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=1.77"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=2.42 cfs 0.178 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=3.08"  
 Tc=5.0 min CN=98 Runoff=0.96 cfs 0.063 af

**Reach DP-1: Wetland to Northeast** Inflow=2.17 cfs 0.332 af  
 Outflow=2.17 cfs 0.332 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=0.81 cfs 0.062 af  
 Outflow=0.81 cfs 0.062 af

**Pond Pond #1: Infiltration Basin** Peak Elev=659.84' Storage=4,413 cf Inflow=2.42 cfs 0.178 af  
 Discarded=0.08 cfs 0.178 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.178 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.571 af Average Runoff Depth = 1.39"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 1.99 cfs @ 12.31 hrs, Volume= 0.268 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

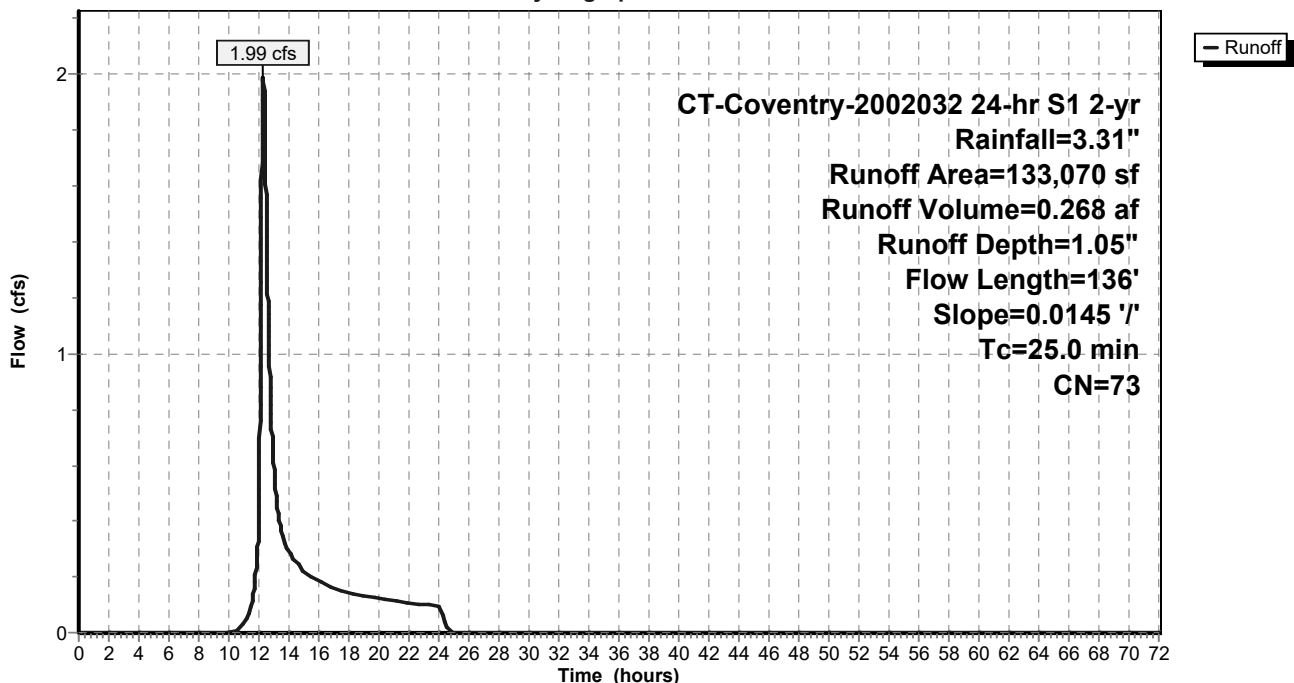
Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C
133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

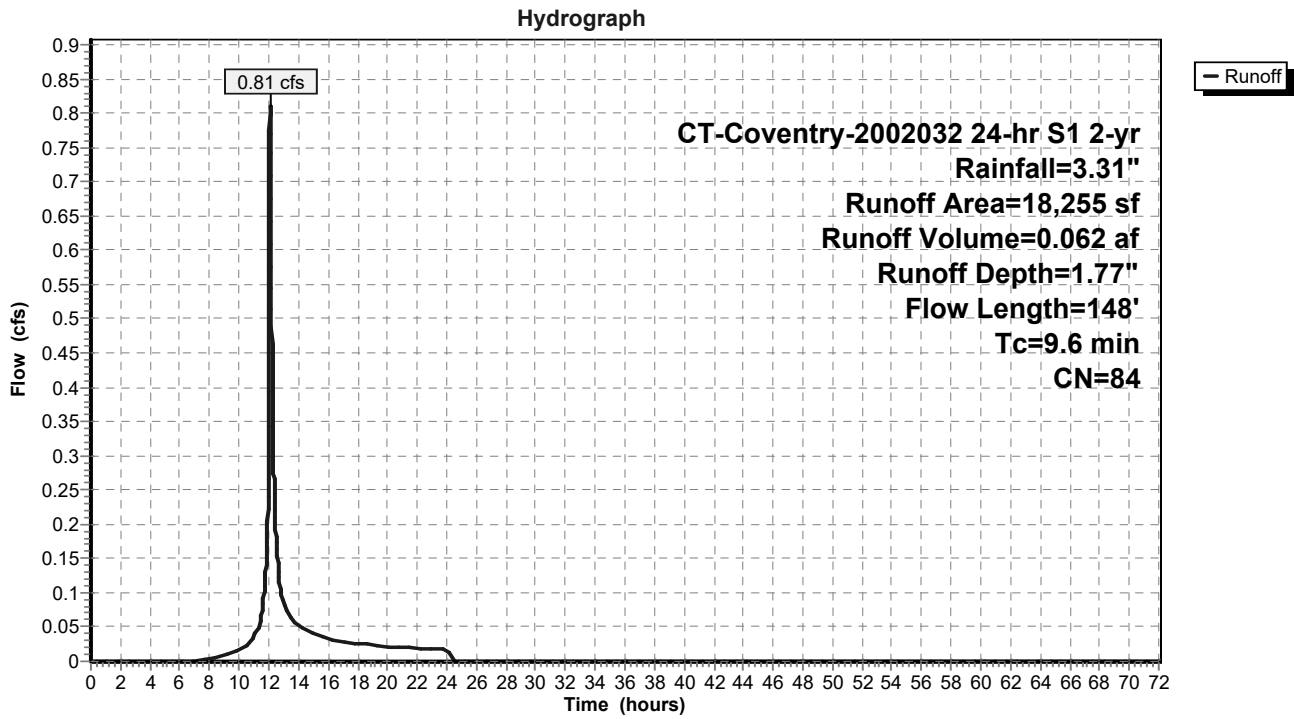
Runoff = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**



**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 2.42 cfs @ 12.07 hrs, Volume= 0.178 af, Depth= 1.77"

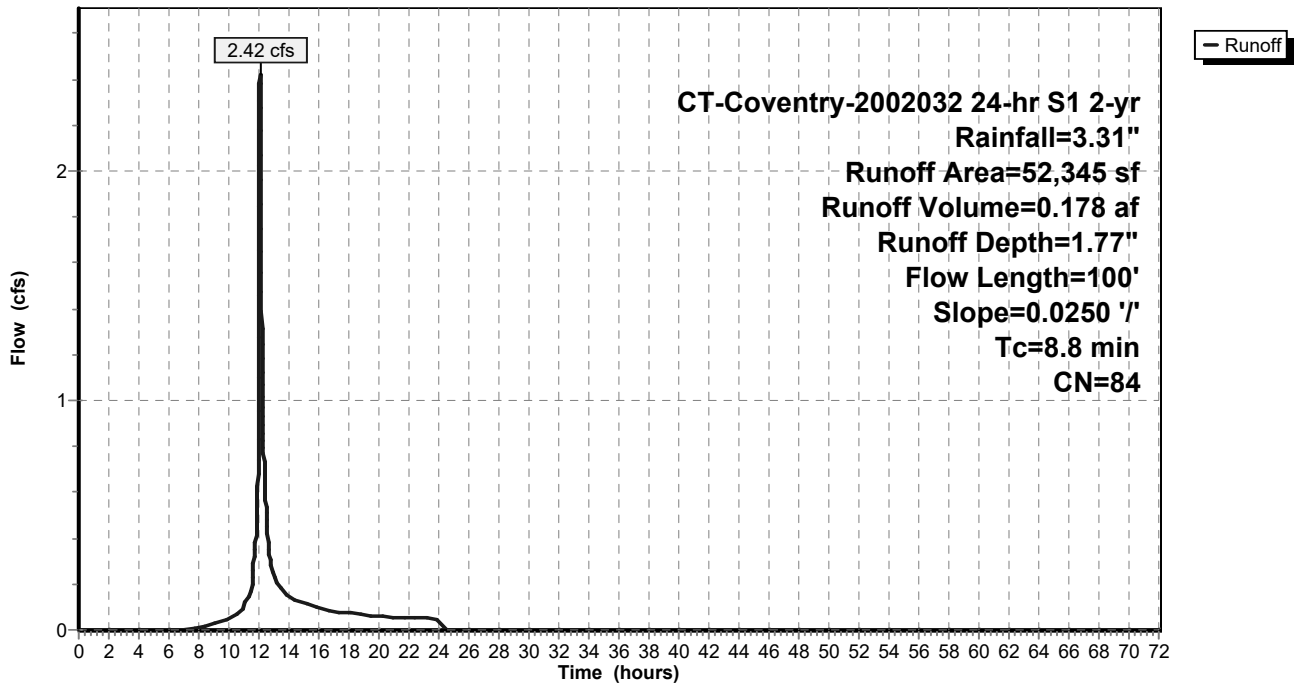
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 0.96 cfs @ 12.03 hrs, Volume= 0.063 af, Depth= 3.08"

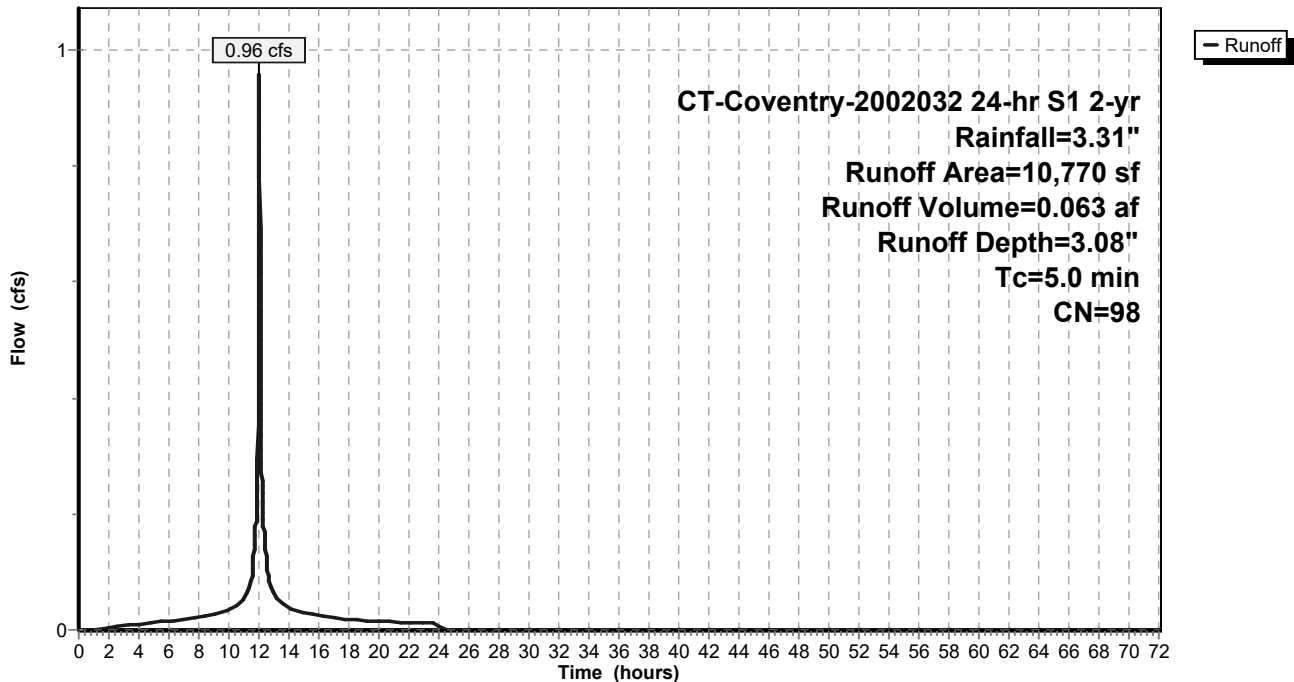
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



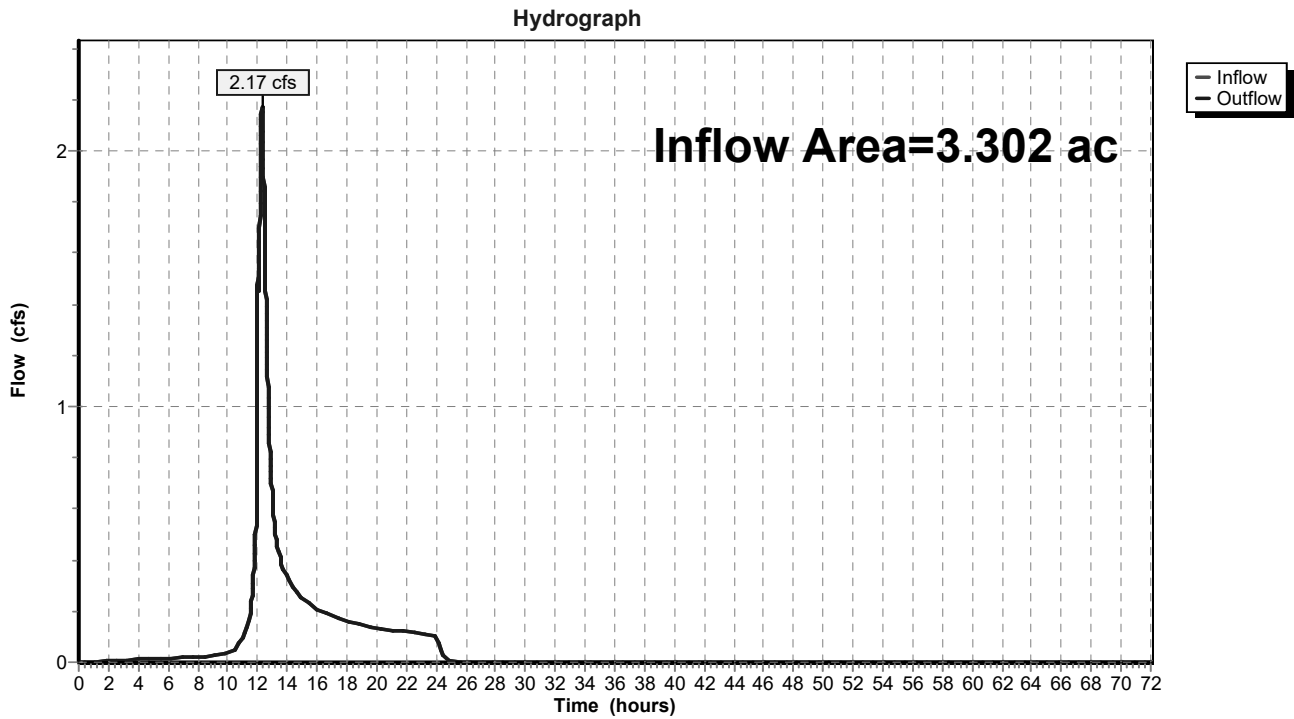


### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 1.21" for 2-yr event  
Inflow = 2.17 cfs @ 12.30 hrs, Volume= 0.332 af  
Outflow = 2.17 cfs @ 12.30 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-1: Wetland to Northeast



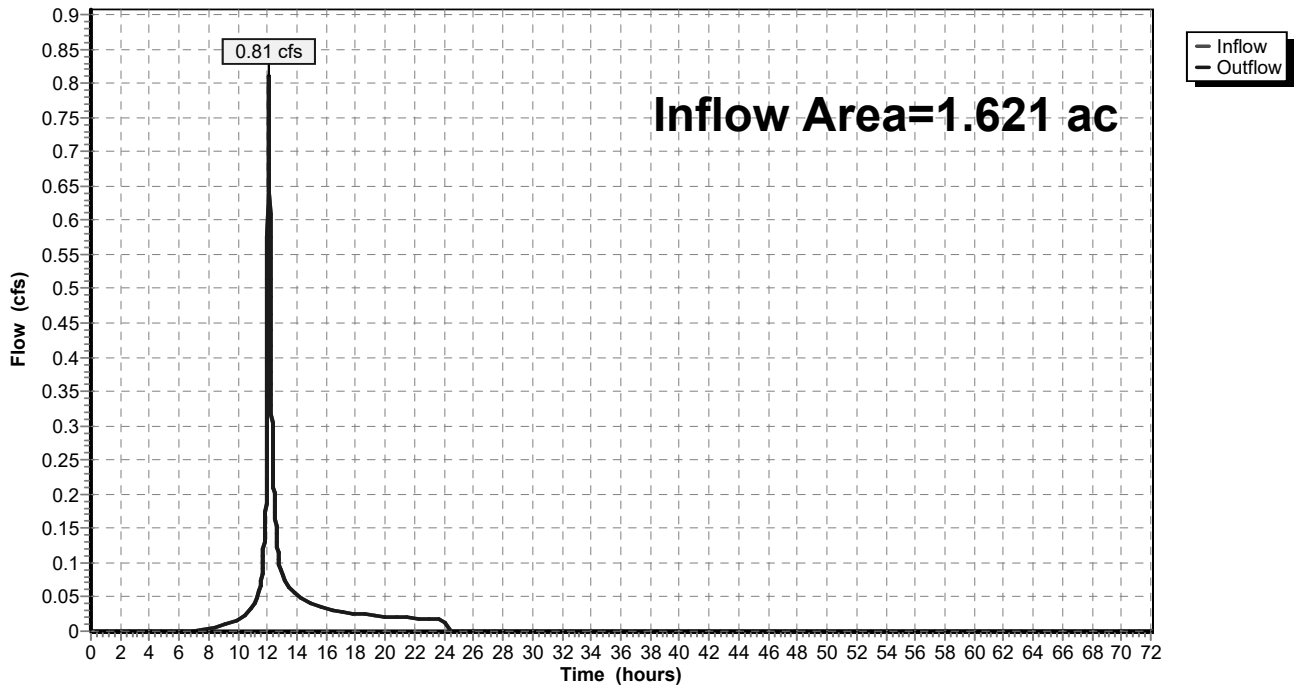
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 0.46" for 2-yr event  
 Inflow = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af  
 Outflow = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 1.77" for 2-yr event  
 Inflow = 2.42 cfs @ 12.07 hrs, Volume= 0.178 af  
 Outflow = 0.08 cfs @ 17.23 hrs, Volume= 0.178 af, Atten= 97%, Lag= 309.5 min  
 Discarded = 0.08 cfs @ 17.23 hrs, Volume= 0.178 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 659.84' @ 17.23 hrs Surf.Area= 3,474 sf Storage= 4,413 cf

Plug-Flow detention time= 671.1 min calculated for 0.178 af (100% of inflow)  
 Center-of-Mass det. time= 671.1 min ( 1,524.2 - 853.1 )

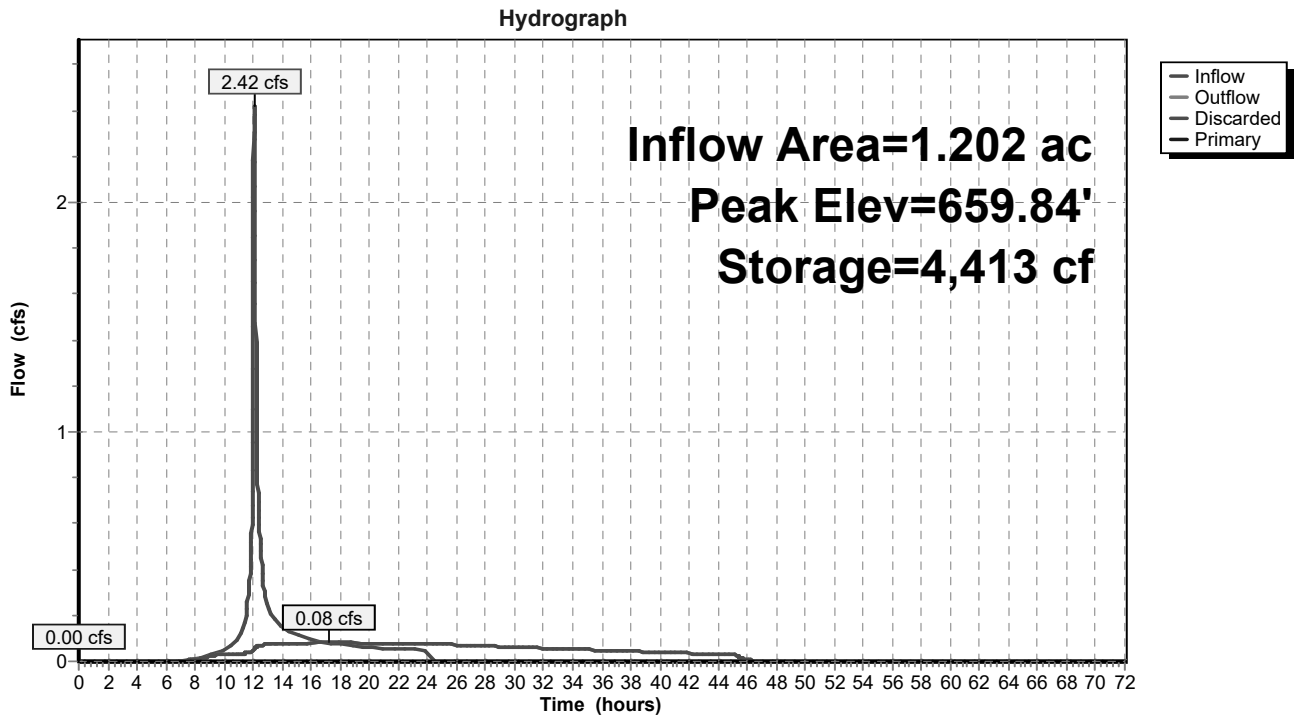
Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.08 cfs @ 17.23 hrs HW=659.84' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=657.90' (Free Discharge)  
 ↑2=Culvert ( Controls 0.00 cfs)  
 ↑3=Orifice/Grate ( Controls 0.00 cfs)

### Pond Pond #1: Infiltration Basin



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=2.34"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=4.71 cfs 0.597 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=3.34"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=1.52 cfs 0.117 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=3.34"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=4.52 cfs 0.335 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=4.84"  
 Tc=5.0 min CN=98 Runoff=1.47 cfs 0.100 af

**Reach DP-1: Wetland to Northeast** Inflow=4.99 cfs 0.696 af  
 Outflow=4.99 cfs 0.696 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=1.52 cfs 0.117 af  
 Outflow=1.52 cfs 0.117 af

**Pond Pond #1: Infiltration Basin** Peak Elev=660.79' Storage=8,849 cf Inflow=4.52 cfs 0.335 af  
 Discarded=0.14 cfs 0.335 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.335 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.148 af Average Runoff Depth = 2.80"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 4.71 cfs @ 12.30 hrs, Volume= 0.597 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

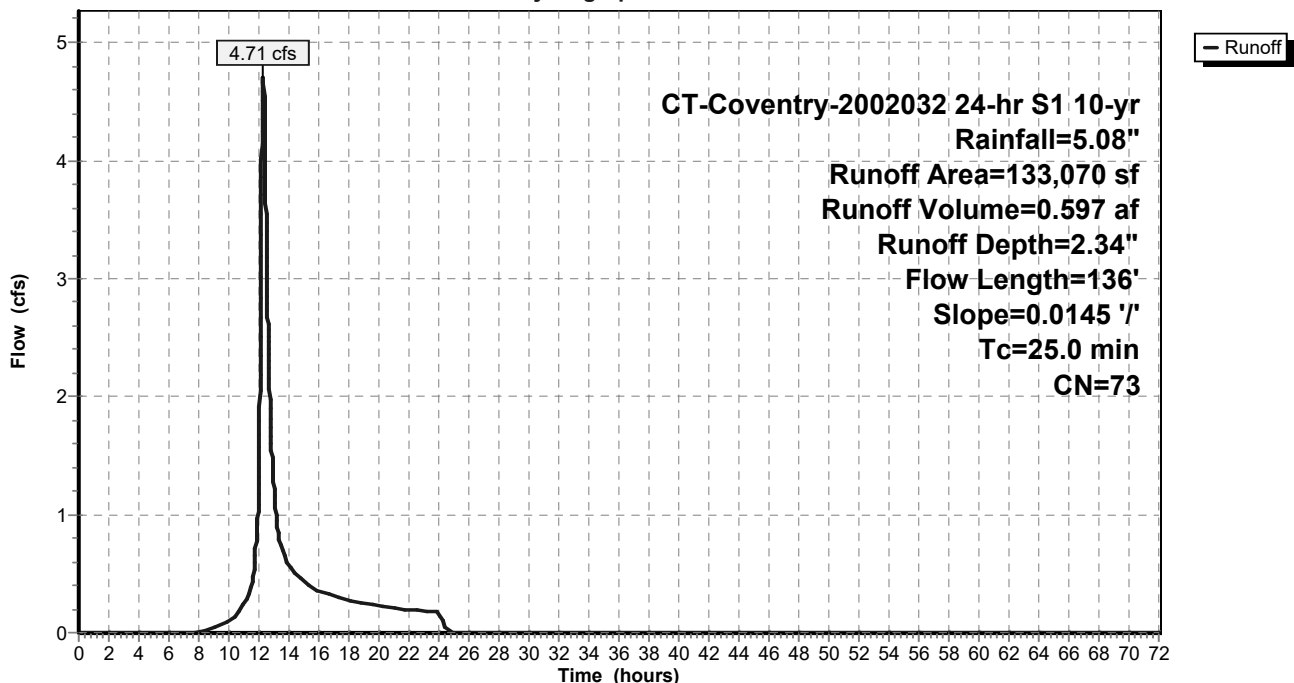
Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C
133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

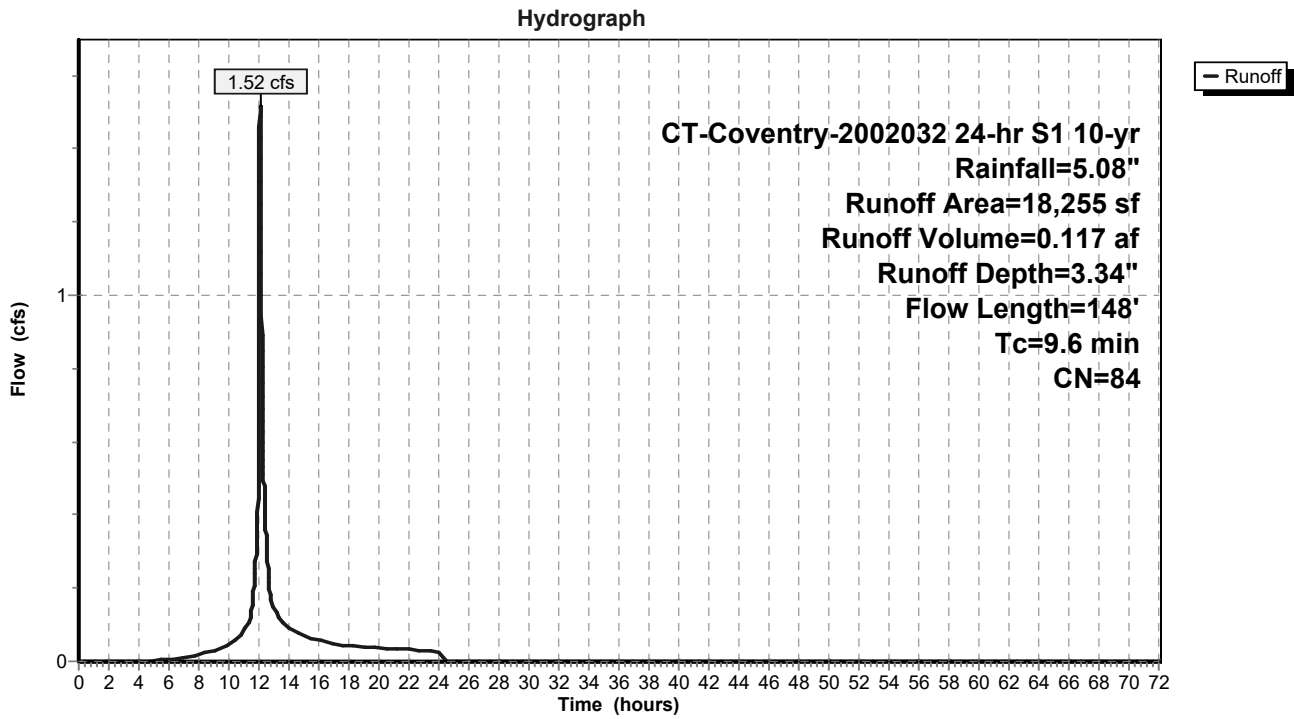
Runoff = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**





**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 4.52 cfs @ 12.07 hrs, Volume= 0.335 af, Depth= 3.34"

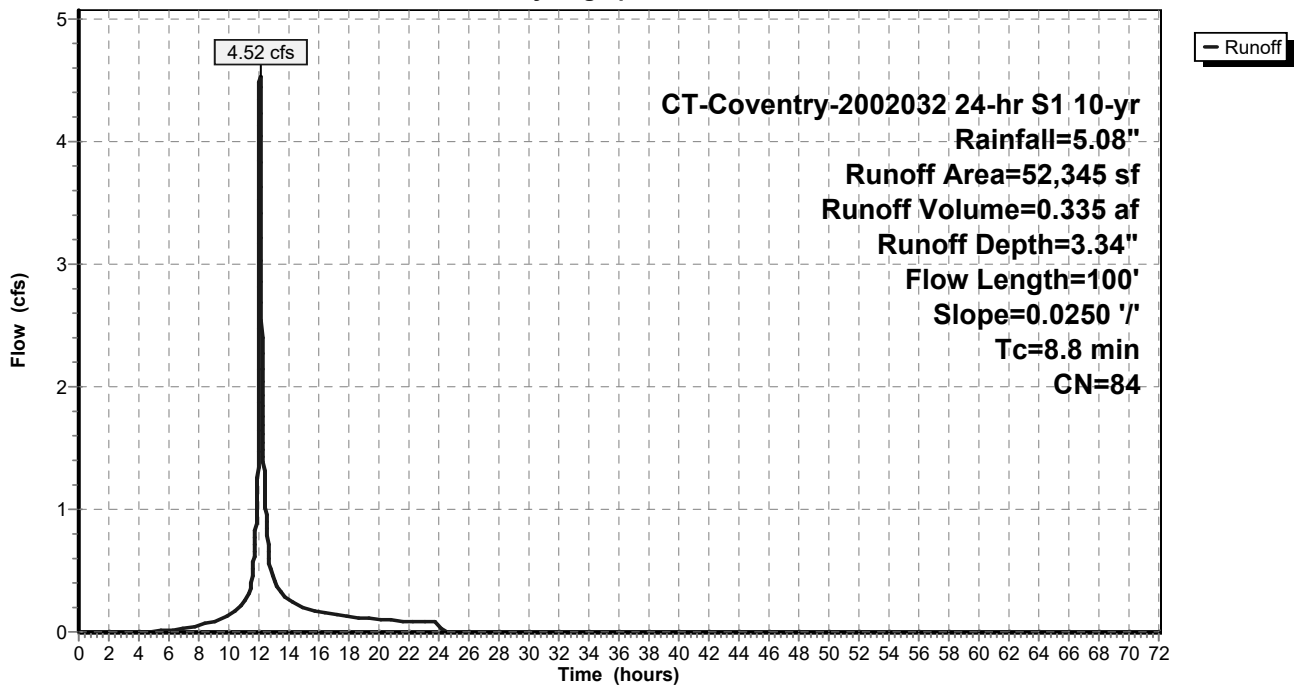
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 1.47 cfs @ 12.03 hrs, Volume= 0.100 af, Depth= 4.84"

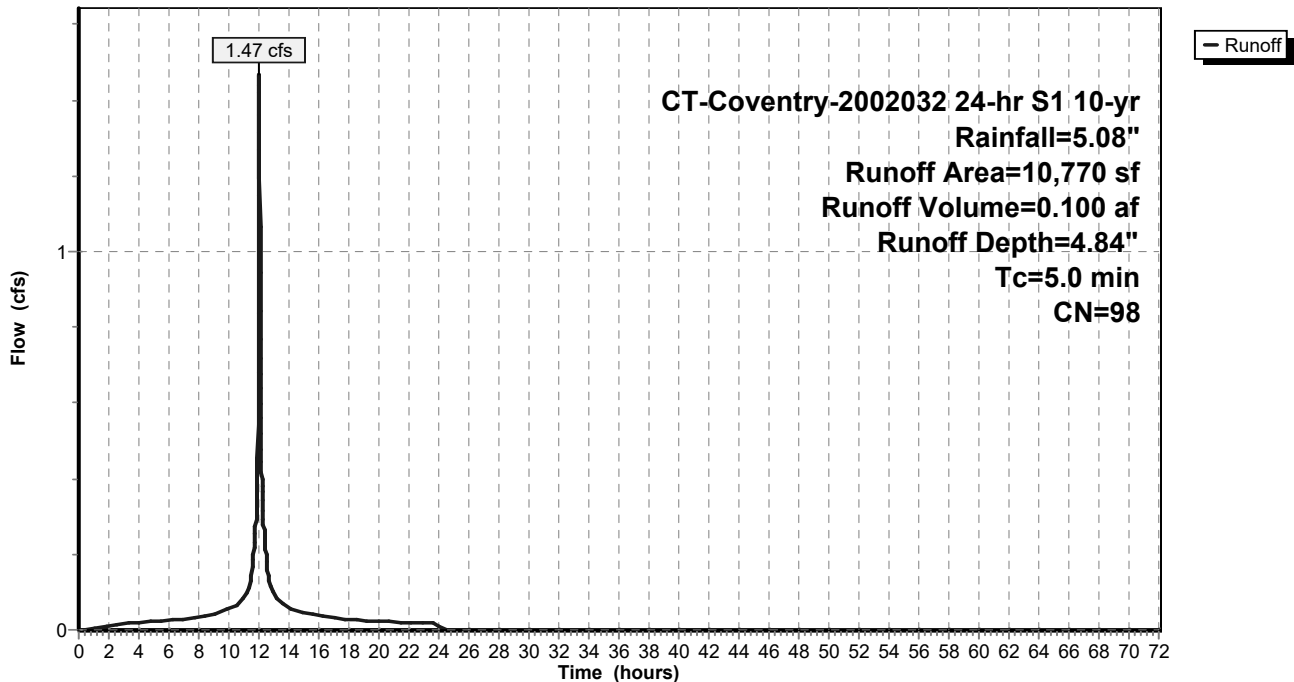
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



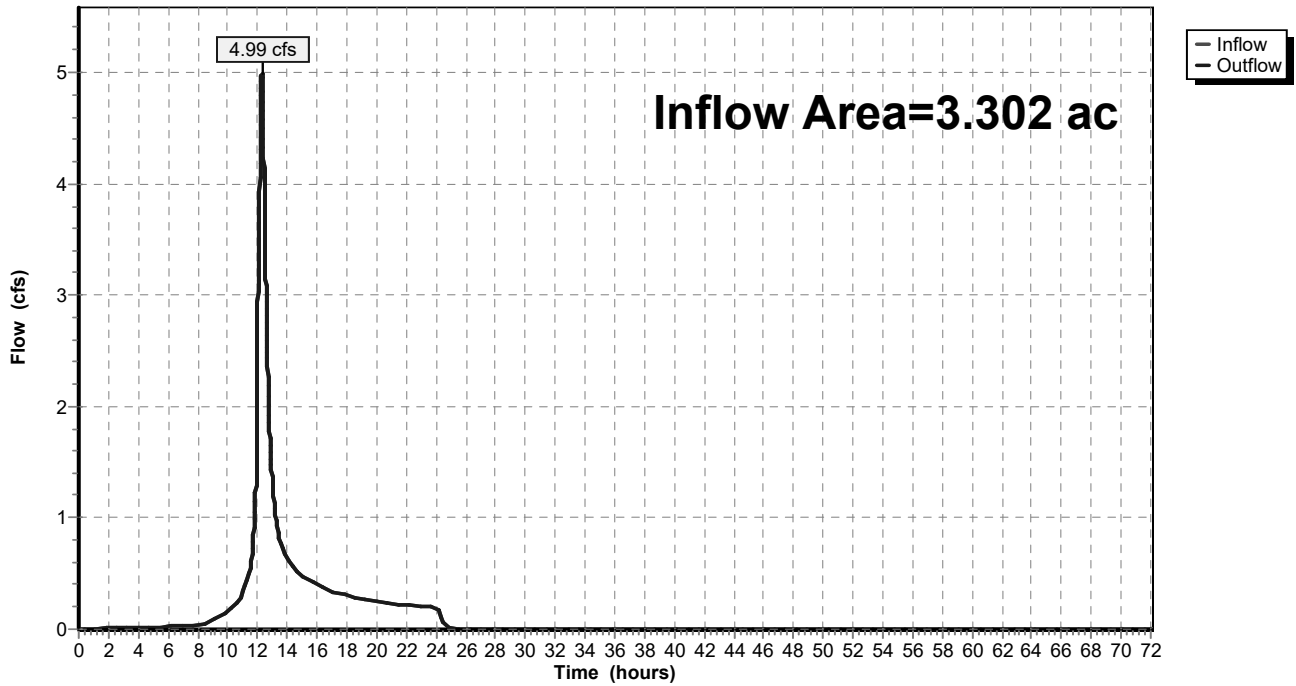
### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 2.53" for 10-yr event  
Inflow = 4.99 cfs @ 12.30 hrs, Volume= 0.696 af  
Outflow = 4.99 cfs @ 12.30 hrs, Volume= 0.696 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-1: Wetland to Northeast

Hydrograph



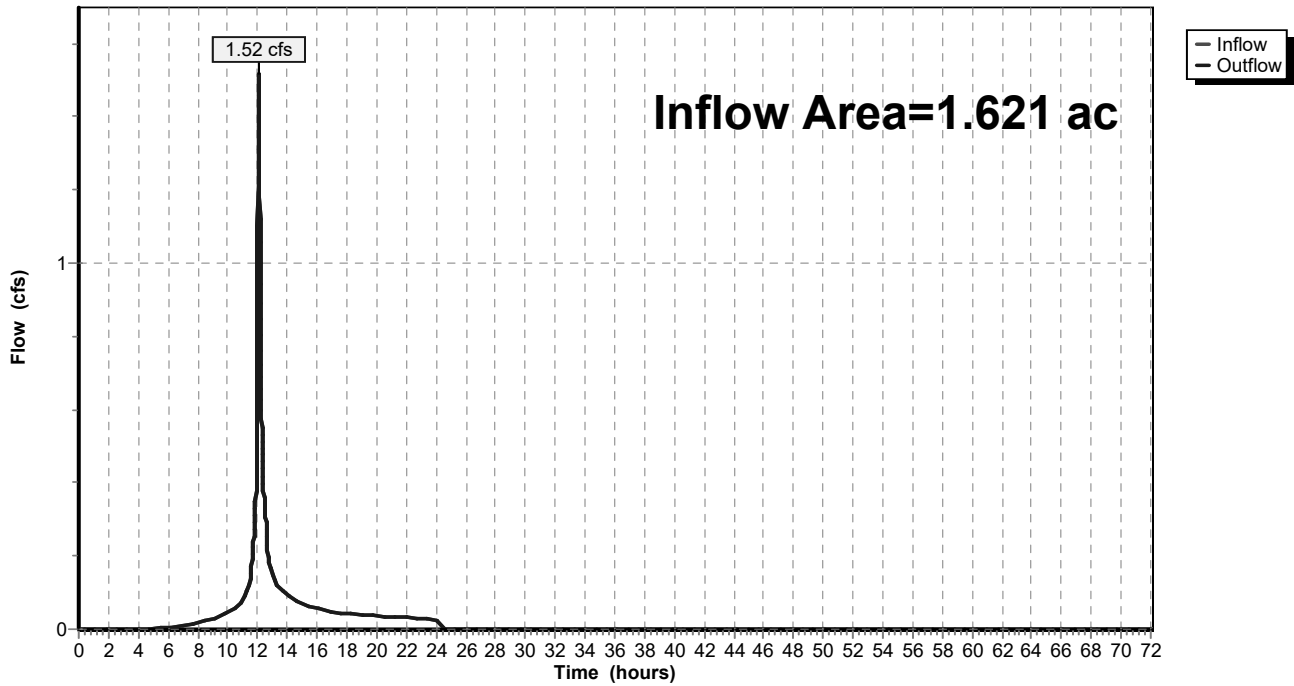
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 0.86" for 10-yr event  
 Inflow = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af  
 Outflow = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 3.34" for 10-yr event  
 Inflow = 4.52 cfs @ 12.07 hrs, Volume= 0.335 af  
 Outflow = 0.14 cfs @ 16.94 hrs, Volume= 0.335 af, Atten= 97%, Lag= 292.0 min  
 Discarded = 0.14 cfs @ 16.94 hrs, Volume= 0.335 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 660.79' @ 16.94 hrs Surf.Area= 6,105 sf Storage= 8,849 cf

Plug-Flow detention time= 841.0 min calculated for 0.335 af (100% of inflow)  
 Center-of-Mass det. time= 840.9 min ( 1,670.4 - 829.5 )

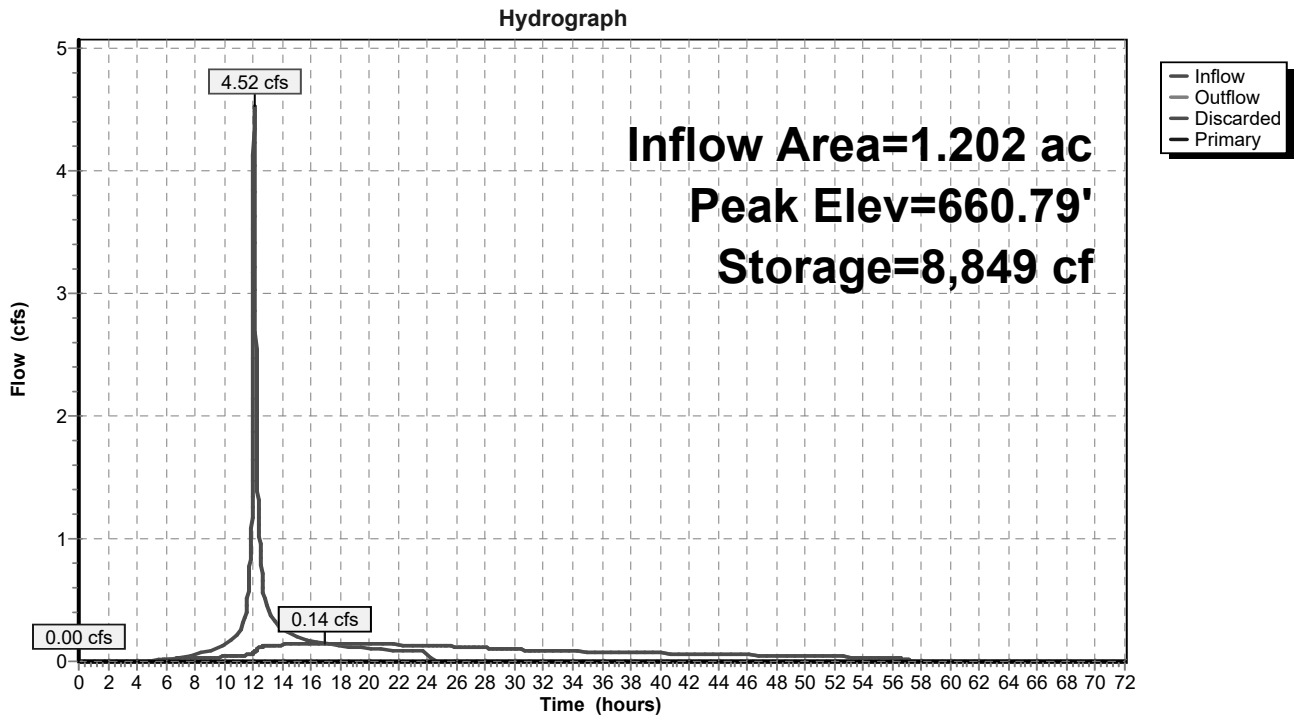
Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.14 cfs @ 16.94 hrs HW=660.79' (Free Discharge)  
 ↑**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=657.90' (Free Discharge)  
 ↑**2=Culvert** ( Controls 0.00 cfs)  
 ↑**3=Orifice/Grate** ( Controls 0.00 cfs)

### Pond Pond #1: Infiltration Basin



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=4.72"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=9.54 cfs 1.202 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=6.00"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=2.66 cfs 0.210 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=6.00"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=7.91 cfs 0.601 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=7.66"  
 Tc=5.0 min CN=98 Runoff=2.28 cfs 0.158 af

**Reach DP-1: Wetland to Northeast** Inflow=9.99 cfs 1.360 af  
 Outflow=9.99 cfs 1.360 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=2.66 cfs 0.344 af  
 Outflow=2.66 cfs 0.344 af

**Pond Pond #1: Infiltration Basin** Peak Elev=661.36' Storage=12,784 cf Inflow=7.91 cfs 0.601 af  
 Discarded=0.18 cfs 0.466 af Primary=1.21 cfs 0.134 af Outflow=1.39 cfs 0.601 af

**Total Runoff Area = 4.923 ac Runoff Volume = 2.170 af Average Runoff Depth = 5.29"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 9.54 cfs @ 12.30 hrs, Volume= 1.202 af, Depth= 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

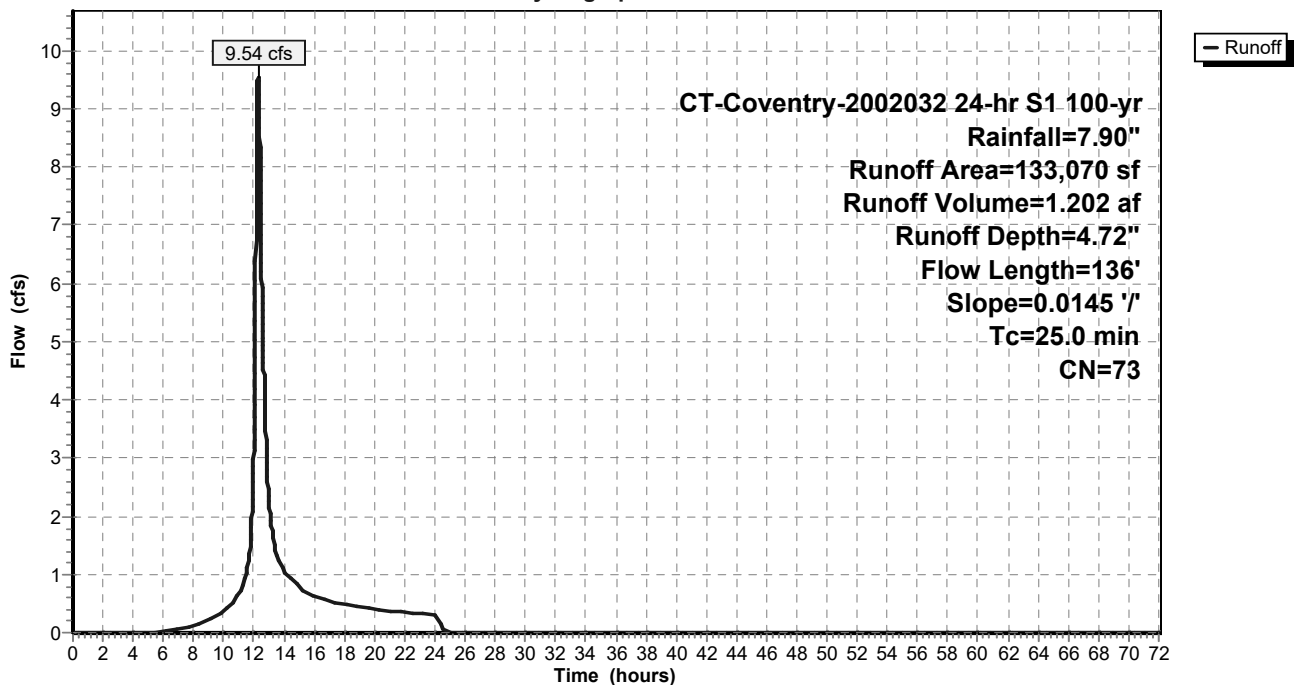
Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C

133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph





**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

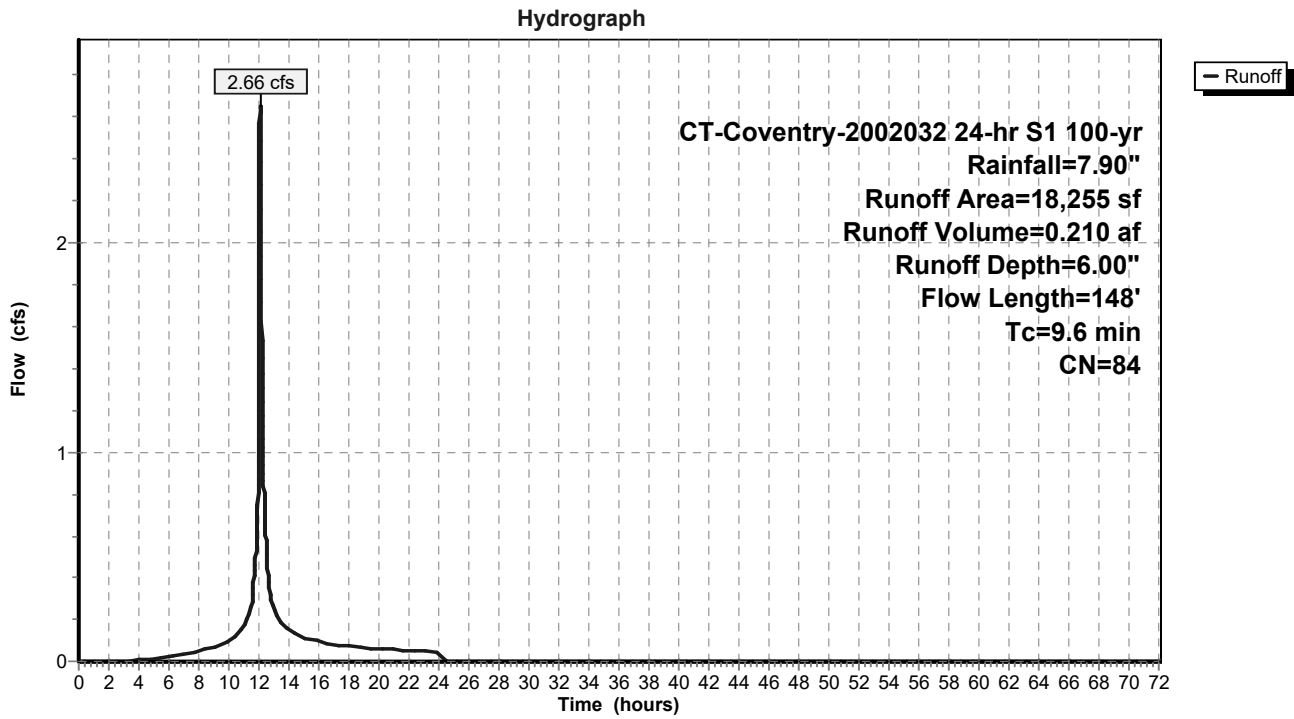
Runoff = 2.66 cfs @ 12.08 hrs, Volume= 0.210 af, Depth= 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**



**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 7.91 cfs @ 12.07 hrs, Volume= 0.601 af, Depth= 6.00"

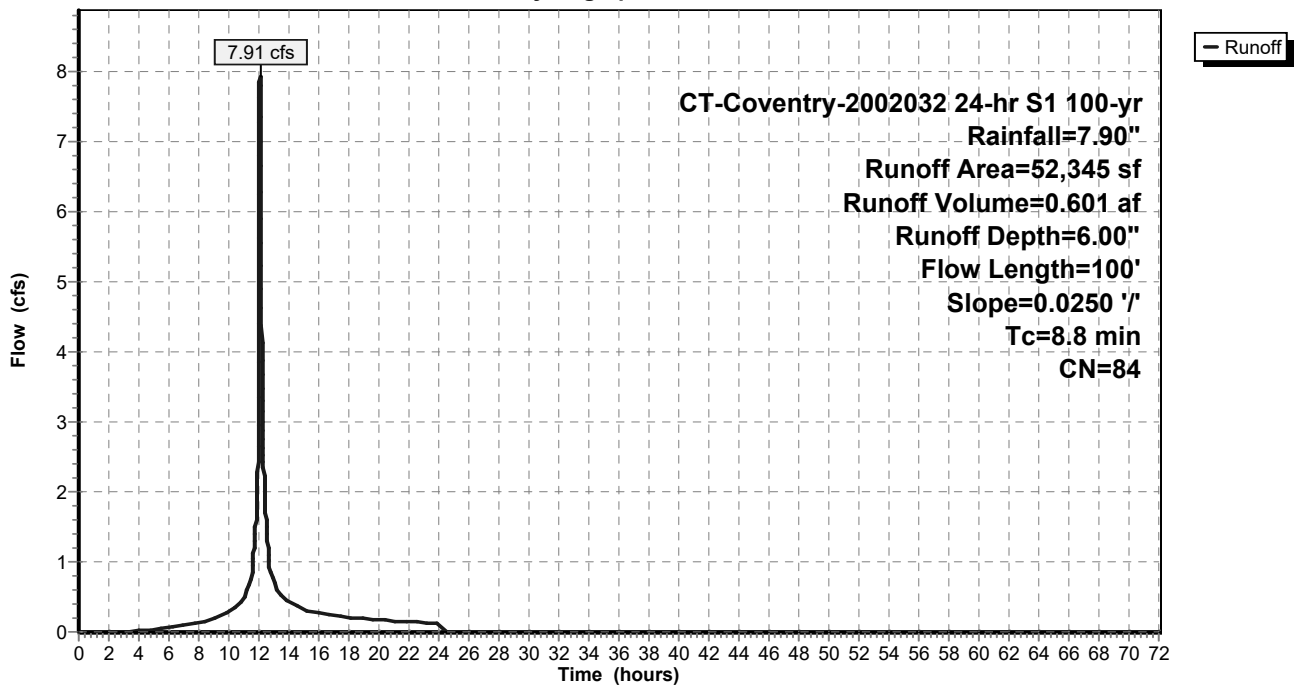
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 2.28 cfs @ 12.03 hrs, Volume= 0.158 af, Depth= 7.66"

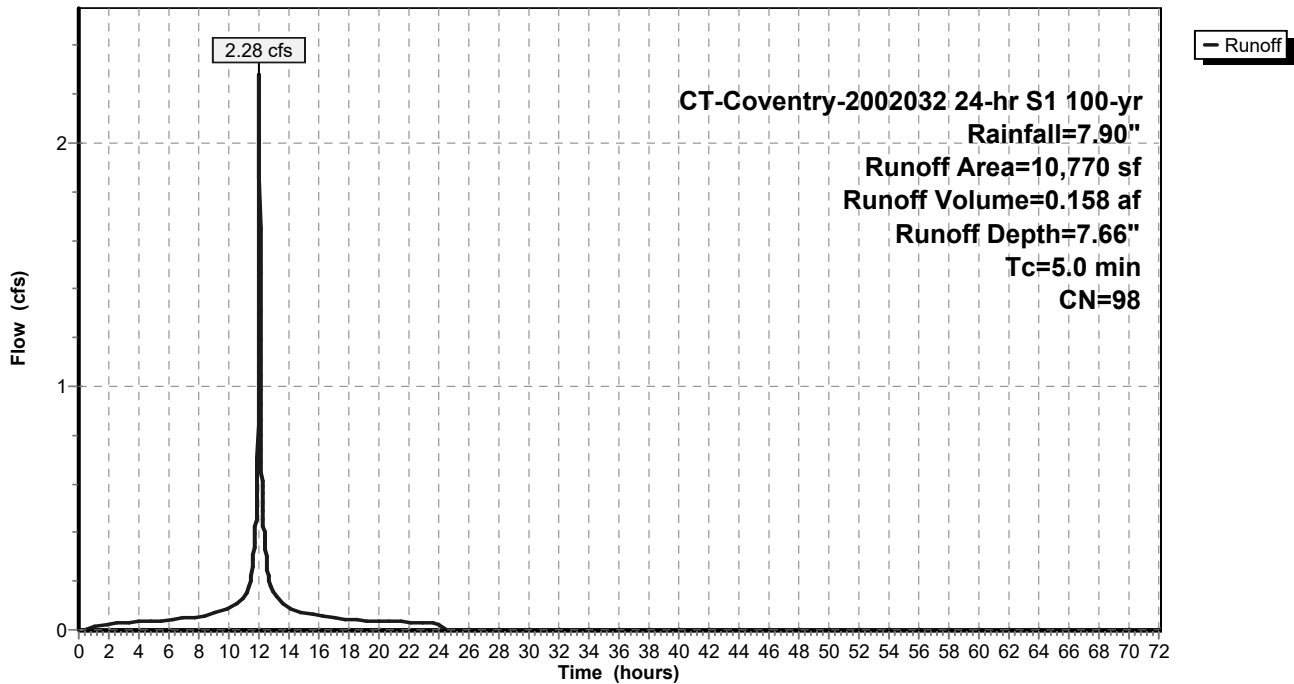
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



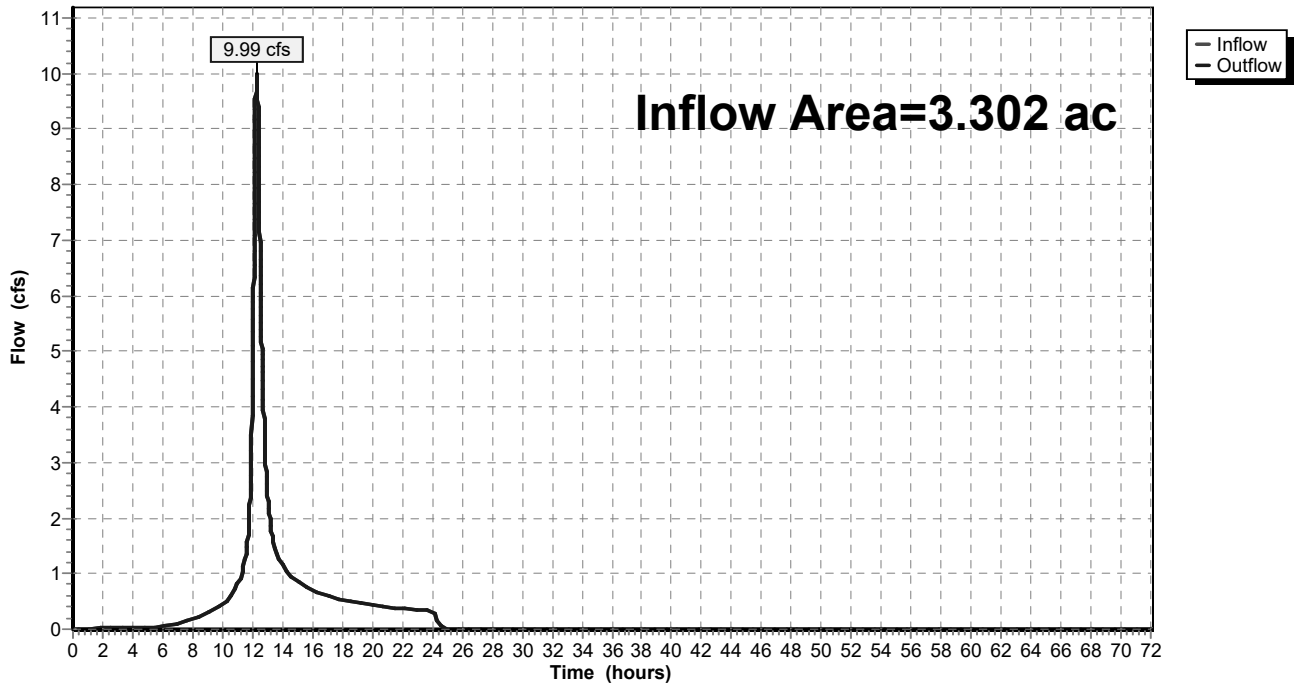
**Summary for Reach DP-1: Wetland to Northeast**

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 4.94" for 100-yr event  
 Inflow = 9.99 cfs @ 12.28 hrs, Volume= 1.360 af  
 Outflow = 9.99 cfs @ 12.28 hrs, Volume= 1.360 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-1: Wetland to Northeast**

Hydrograph



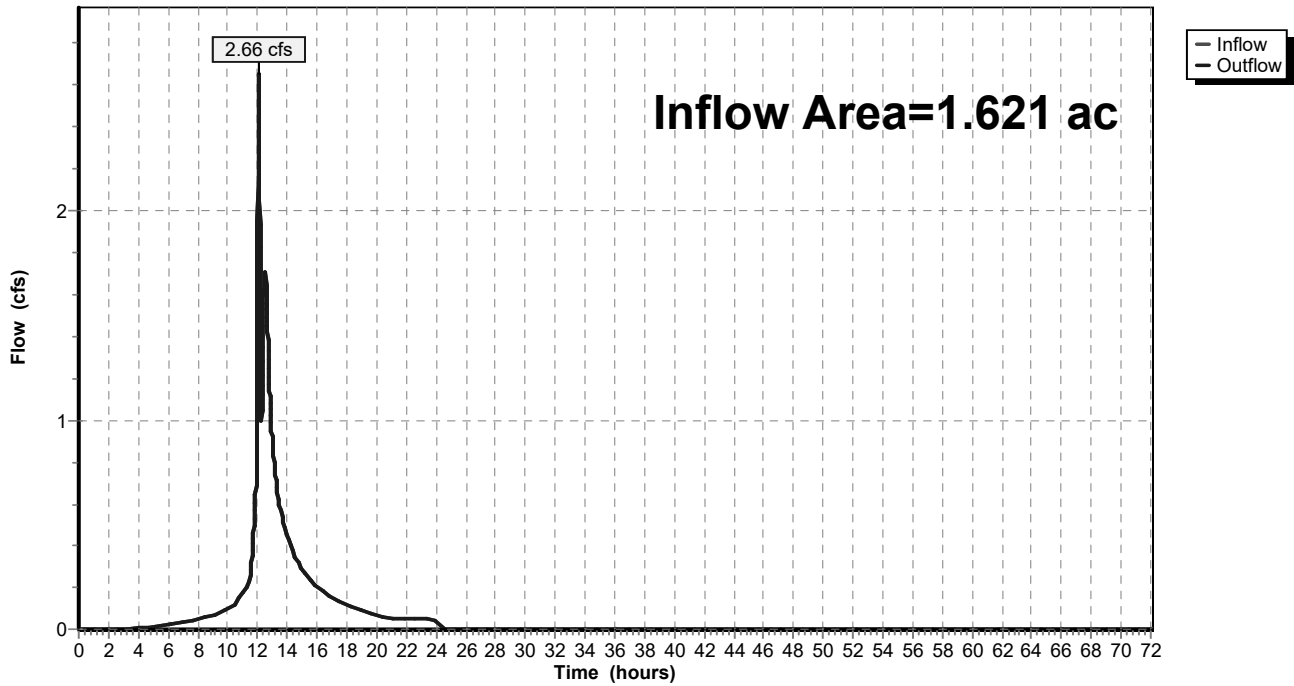
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 2.55" for 100-yr event  
 Inflow = 2.66 cfs @ 12.08 hrs, Volume= 0.344 af  
 Outflow = 2.66 cfs @ 12.08 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 6.00" for 100-yr event  
 Inflow = 7.91 cfs @ 12.07 hrs, Volume= 0.601 af  
 Outflow = 1.39 cfs @ 12.55 hrs, Volume= 0.601 af, Atten= 82%, Lag= 29.1 min  
 Discarded = 0.18 cfs @ 12.55 hrs, Volume= 0.466 af  
 Primary = 1.21 cfs @ 12.55 hrs, Volume= 0.134 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 661.36' @ 12.55 hrs Surf.Area= 7,609 sf Storage= 12,784 cf

Plug-Flow detention time= 737.2 min calculated for 0.601 af (100% of inflow)  
 Center-of-Mass det. time= 737.5 min ( 1,546.0 - 808.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

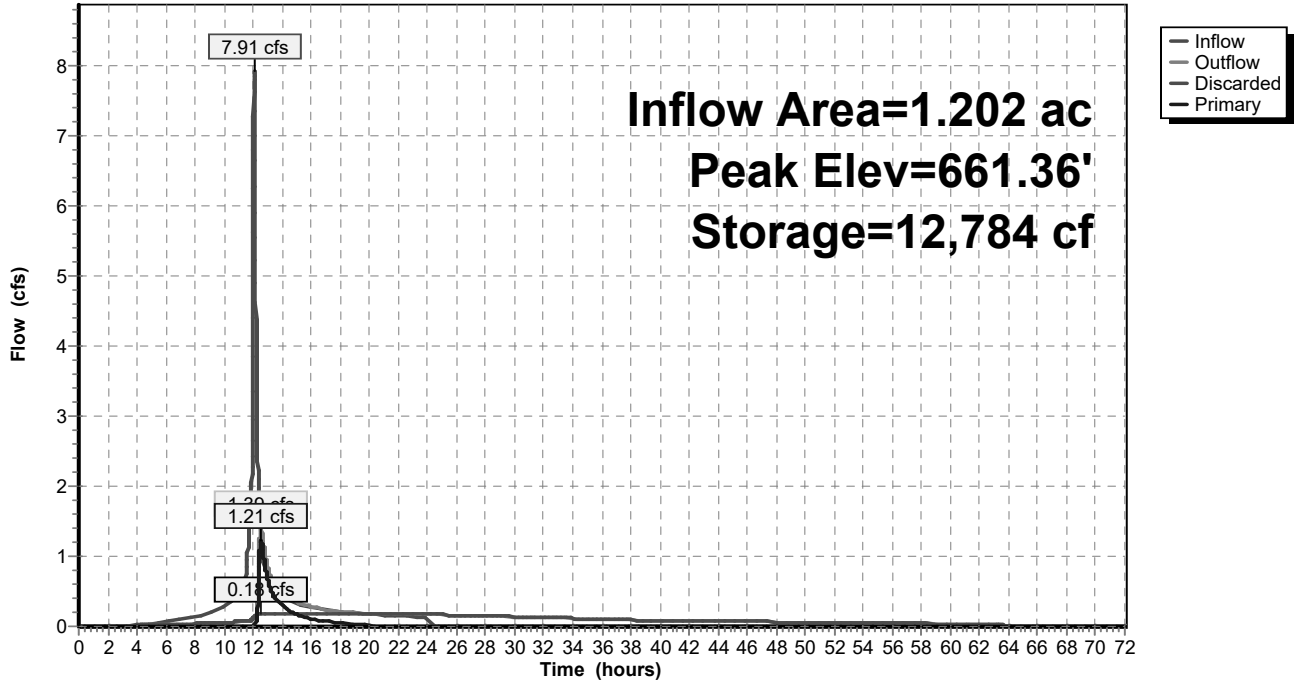
Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.18 cfs @ 12.55 hrs HW=661.36' (Free Discharge)  
 ↑**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

**Primary OutFlow** Max=1.20 cfs @ 12.55 hrs HW=661.36' (Free Discharge)  
 ↑**2=Culvert** (Passes 1.20 cfs of 5.14 cfs potential flow)  
 ↑**3=Orifice/Grate** (Weir Controls 1.20 cfs @ 1.09 fps)

### Pond Pond #1: Infiltration Basin

Hydrograph





**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			



**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			

## APPENDIX D

### WATER QUALITY CALCULATIONS

CTDEEP Water Quality Volume Calculations

Infiltration Basin Calculation

Treatment Train Efficiency Worksheet

**Water Quality Calculations**

**Determine Water Quality Volume**

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(I')(R)(A)}{12}$$

WQV = water quality volume (ac-ft)  
 R = volumetric runoff coefficient  
 I = percent impervious cover  
 A = site area in acres

$$R = 0.05 + 0.009(I)$$

WQv = Calculated Water Quality Volume

Area	ID	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Proposed Water Quality Volume (WQV)	
		ac	ft <sup>2</sup>	ac	ft <sup>2</sup>	%	R	acre-feet	ft <sup>3</sup>	acre-feet	ft <sup>3</sup>
Area to Infiltration Basin	PDA 202	1.202	52,345	0.498	21,710	41.43	0.423	0.042	1,830	0.275	11,960

\*The Proposed Water Quality Volume (WQV) is calculated at the available ponding depth below the lowest orifice

**Water Quality Calculations- CT General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities**

**Determine Water Quality Volume**

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(I)(R)(A)}{12}$$

WQV = water quality volume (ac-ft)  
 R = volumetric runoff coefficient  
 I = percent impervious cover  
 A = site area in acres

$$R = 0.05 + 0.009(I)$$

WQv = Calculated Water Quality Volume

Area ID	Total Area		Impervious Area		Impervious Cover %	Volumetric Runoff Coefficient R	Water Quality Volume (WQV)		Proposed Water Quality Volume (WQV)	
	ac	ft <sup>2</sup>	ac	ft <sup>2</sup>			acre-feet	ft <sup>3</sup>	acre-feet	ft <sup>3</sup>
Entire Site	1.853	80,707	1.165	50,761	62.87	0.616	0.095	4,138	0.275	11,960

\*The Proposed Water Quality Volume (WQV) is calculated at the available ponding depth below the lowest orifice

**Groundwater Recharge Volume Calculations**

**Groundwater Recharge Volume**

From CT 2004 Stormwater Quality Manual:

$$GVR = \frac{(D)(A)(I)}{12}$$

GRV = Groundwater Recharge Volume (ac-ft)  
 D = Depth of Runoff to be Recharged (table 7-4)  
 A = site area in acres  
 I = impervious cover (decimal)  
 WQv = Calculated Water Quality Volume

1.37

4366

	A	Site Area by NRCS Hydrologic Soil Group				Impervious Cover by NRCS Hydrologic Soil Group				Site Imperviousness (Decimal) by NRCS Hydrologic Soil Group				GRV Required (ac-ft)	Potential Recharge Pond Volumes Proposed (ac-ft)
	Total Site Area (AC)	A	B	C	D	A	B	C	D	A	B	C	D		
	1.87	0.00	1.46	0.41	0.00	0.00	0.76	0.13	0.00	0.00	0.41	0.07	0.00	0.013	0.275

NRCS Hydrologic Soil Group	Average Annual Recharge	Groundwater Recharge Depth (D)
A	18 inches/year	0.4 inches
B	12 inches/year	0.25 inches
C	6 inches/year	0.10 inches
D	3 inches/year	0 inches (waived)

Source: MADEP, 1997.  
 NRCS – Natural Resources Conservation Service



**Best Management Practice (BMP) Treatment Train Efficiency Worksheet**

Prepared for:  
**Proposed Retail Development**  
**1100 Boston Turnpike**  
**Bolton, Connecticut**

Prepared by:  
**BL Companies**  
**100 Constitution Plaza, 10th Floor**  
**Hartford Connecticut**

Date prepared:  
**May 13, 2021**

**Overall Site Treatment Train Efficiency**

E <sub>T</sub> =[(1-(E1)(1-E2)(1-E3)(1-E4)(1-E7))]^100	<b>BMP</b>	<b>BMP Description</b>	<b>Type of Treatment</b>	<b>Efficiency Rate %</b>
		E1	Impervious Surface Sweeping***	Secondary (conventional)
	E2	Grass Filter Strip****	Secondary (conventional)	60
	E3	Infiltration Basin	Primary	80

Overall Treatment Train Efficiency (E<sub>T</sub>)= **93 % Total Suspended Solids (TSS) Remova**

\* 80% require per CT DEP  
 \*\* Manufacturers claim 80% TSS removal  
 \*\*\* Schueler 1996 & EPA 1993  
 \*\*\*\* New Jersey Stormwater Best Management Practices Manua

<b>BMP</b>	<b>Type of Treatment</b>	<b>TSS Removal Rate</b>	<b>Starting TSS Load</b>	<b>Amount Removed</b>	<b>Remaining Load</b>
		0.10	1.00	0.10	0.90
Grass Filter Strip****	Secondary (conventional)	0.6	0.90	0.54	0.36
Bioretention Basin	Primary	0.8	0.36	0.29	0.07

Overall Treatment Train Efficiency (%) **93**

**TSS Removal Rates (adapted from Schueler, 1996, & EPA, 1993)**

BMP List	Design Rate	Range of Average TSS Removal Rates	Brief Design Requirements
Extended Detention Pond	70%	60-80%	Sediment forebay
Wet Pond (a)	70%	60-80%	Sediment forebay
Constructed Wetland (b)	80%	65-80%	Designed to infiltrate or retain
Water Quality Swale	70%	60-80%	Designed to infiltrate or retain
Infiltration Trench	80%	75-80%	Pretreatment critical
Infiltration Basin	80%	75-80% (predicted)	Pretreatment critical
Dry Well	80%	80% (predicted)	Rooftop runoff (uncontaminated only)
Sand Filter (c)	80%	80%	Pretreatment
Organic Filter (d)	80%	80%+	Pretreatment
Water Quality Inlet	25%	15-35% w/ cleanout	Off-line only; 0.1" minimum Water Quality Volume (WQV) storage
Sediment Trap (Forebay)	25%	25% w/ cleanout	Storm flows for 2-year event must not cause erosion; 0.1" minimum WQV storage
Drainage Channel	25%	25%	Check dams; non-erosive for 2-yr.
Deep Sump and Hooded Catch Basin	25%	25% w/ cleanout	Deep sump general rule = 4 x pipe diameter or 4.0' for pipes 18" or less
Street Sweeping	10%	10%	Discretionary non-structural credit, must be part of approved plan

## APPENDIX E

### SUBSURFACE SOIL INVESTIGATION LOGS

Test Pit Logs

Falling Head Permeability Test Logs



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-1</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.50</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-2"	Topsoil	E		
2"-60"	Dark brown coarse sand with trace cobbles	E	TR C	
60"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24          Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-2</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.30</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-72"	Dark brown coarse sand with trace cobbles	E	TR C	
72"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
	<b>COBBLES AND BOULDERS</b>	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>	<b>QUALITATIVE TERMS</b>	<b>EXCAVATION EFFORT</b>
	Size Range      Letter Classification      Designation 3" - 12"      Cobble (C) 12" - 24      Small (S) 24" - 36"      Medium (M) 36" and Larger      Large (L)	TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	OCCASIONAL FEW FREQUENT NUMEROUS	E - Easy M - Moderate D - Difficult  ▼      Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-3</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>661.90</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-66"	Dark brown coarse sand with trace cobbles	E	TR C	
66"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 7'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24"        Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

TEST PIT # 1

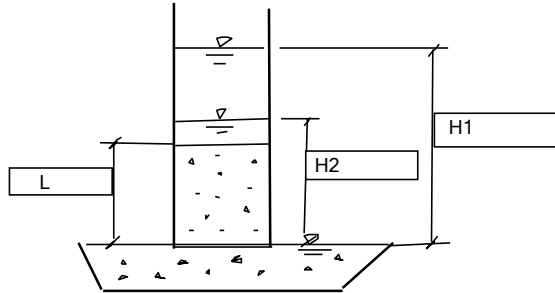
SAMPLE TP-1

SAMPLE LENGTH: 4.50 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am

presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.260	0.240	6.380	0.034	4.063
10.000	6.500	5.960	0.540	6.230	0.039	4.681
15.000	6.500	5.720	0.780	6.110	0.038	4.596
20.000	6.500	5.540	0.960	6.020	0.036	4.306
25.000	6.500	5.420	1.080	5.960	0.033	3.914
30.000	6.500	5.300	1.200	5.900	0.031	3.661
35.000	6.500	5.060	1.440	5.780	0.032	3.844
40.000	6.500	4.880	1.620	5.690	0.032	3.844
45.000	6.500	4.680	1.820	5.590	0.033	3.907
50.000	6.500	4.500	2.000	5.500	0.033	3.927
					<b>Average=</b>	<b>4.074</b> ft/day
					or	2.04 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

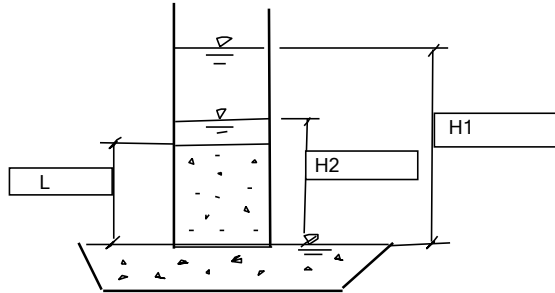
BY: C.J.L.

TEST PIT # 1

SAMPLE TP-2

SAMPLE LENGTH: 4.50 in.  
SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am  
presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.170	0.330	6.335	0.047	5.626
10.000	6.500	5.880	0.620	6.190	0.045	5.409
15.000	6.500	5.650	0.850	6.075	0.042	5.037
20.000	6.500	5.300	1.200	5.900	0.046	5.492
25.000	6.500	5.060	1.440	5.780	0.045	5.381
30.000	6.500	4.680	1.820	5.590	0.049	5.860
35.000	6.500	4.500	2.000	5.500	0.047	5.610
40.000	6.500	4.300	2.200	5.400	0.046	5.500
45.000	6.500	4.000	2.500	5.250	0.048	5.714
					<b>Average=</b>	<b>5.514</b> ft/day
					or	2.76 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

TEST PIT # 1

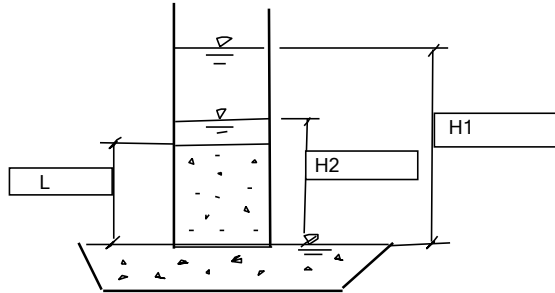
SAMPLE TP-3

SAMPLE LENGTH: 4.00 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am

presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.180	0.320	6.340	0.040	4.845
10.000	6.500	5.540	0.960	6.020	0.064	7.654
15.000	6.500	5.060	1.440	5.780	0.066	7.972
20.000	6.500	4.280	2.220	5.390	0.082	9.885
25.000	6.500	4.220	2.280	5.360	0.068	8.167
30.000	6.500	4.000	2.500	5.250	0.063	7.619
					<b>Average=</b>	<b>7.691</b> ft/day
					or	3.85 in/hr



## APPENDIX F

### DRAINAGE MAPS

ED-1 – Existing Drainage Mapping



PD-1 – Proposed Drainage Mapping

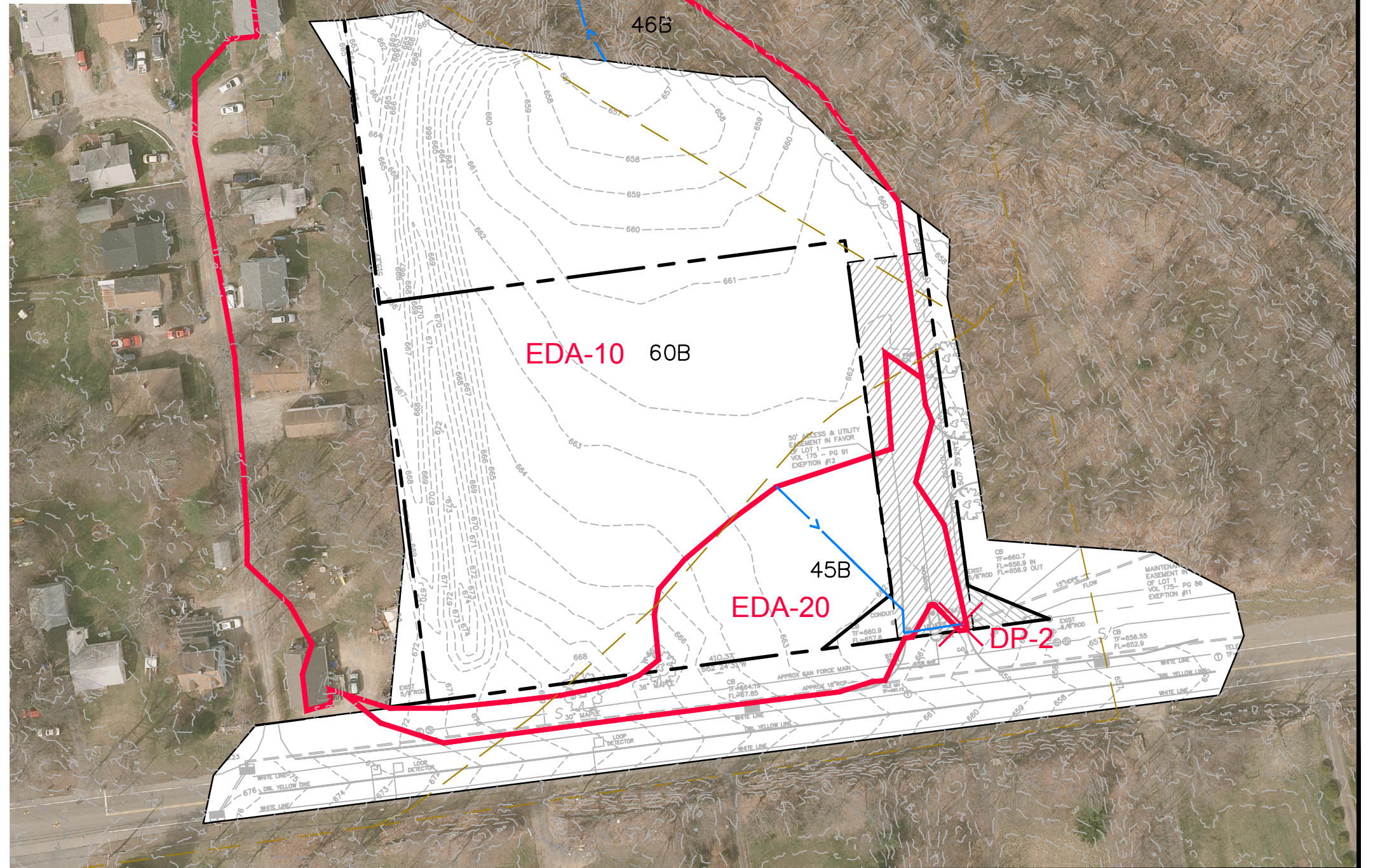
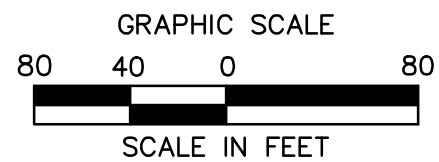
GD-1 – Grading and Drainage Plan

# EXISTING HYDROLOGY INFORMATION

DRAINAGE AREA	TOTAL AREA (S.F.)	IMPERVIOUS AREA (S.F.)	PERVIOUS AREA (S.F.)	PERCENT IMPERVIOUS (%)	CN	TIME OF CONCENTRATIONS (MIN.)
EDA-10	185,210	12,135	173,075	6.6%	72	14.5
EDA-20	29,230	4,605	24,625	15.8%	81	25.3

## HYDROLOGY LEGEND

-  PROPERTY LINE
-  DRAINAGE AREA BOUNDARY
-  TIME OF CONCENTRATION FLOW PATH
-  SOIL TYPE BOUNDARY
-  SOIL TYPE DESIGNATION



## EXISTING DRAINAGE MAPPING

PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	J.A.B.
Scale	1"=80'
Project No.	2002032
Date	04/02/2021
CAD File	ED200203201

# ED-1








ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING

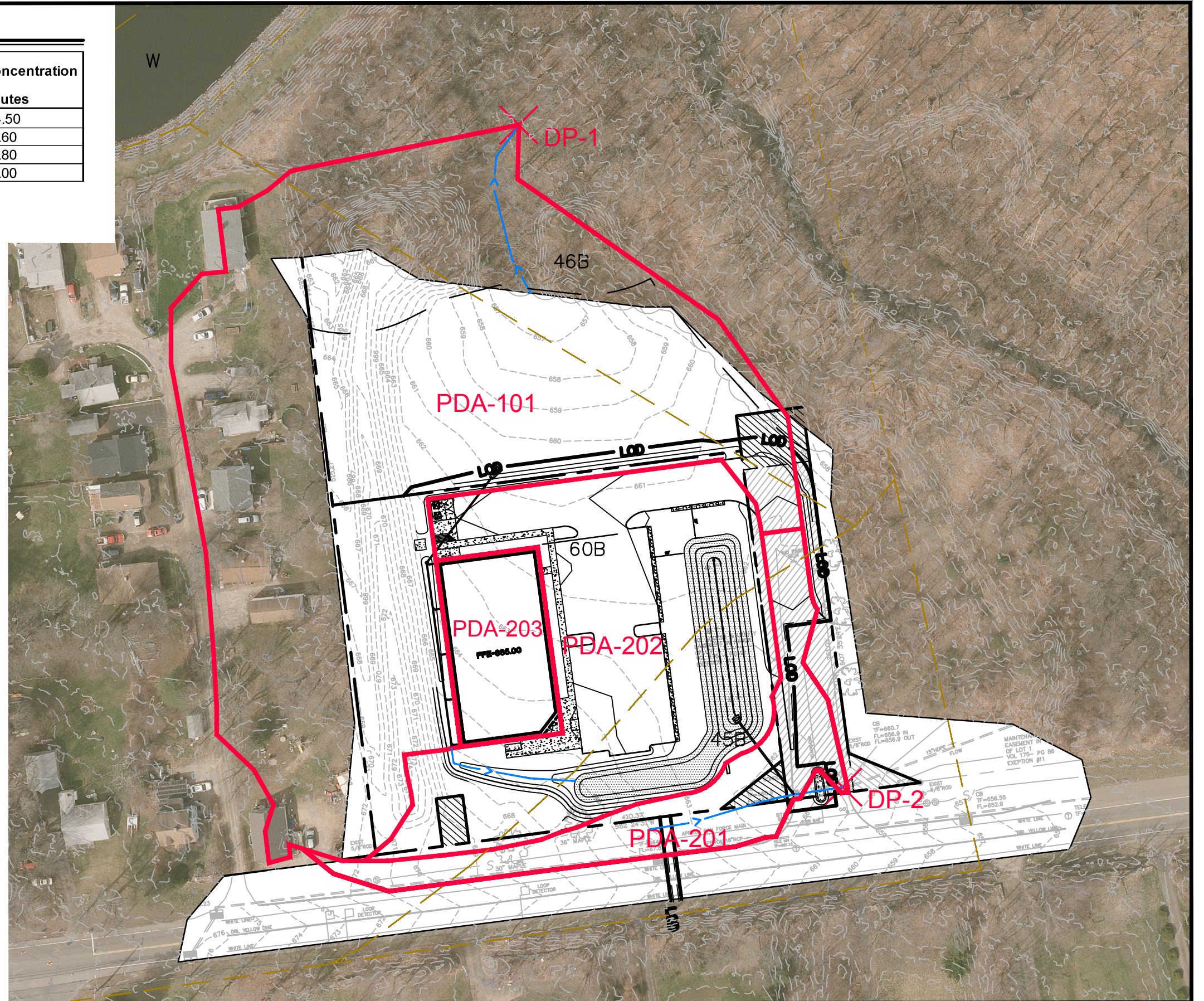
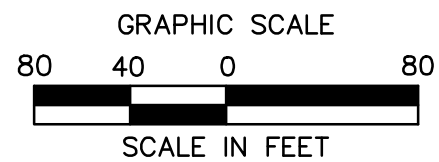
100 Constitution Plaza, 10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

## PROPOSED HYDROLOGY INFORMATION

Drainage Area	Total Area SF	Composite Curve Number	Imperviousness Cover %	Time of Concentration Minutes
PDA-101	133,070	73	10.7%	14.50
PDA-201	18,255	84	32.7%	9.60
PDA-202	52,345	84	41.5%	8.80
PDA-203	10,770	98	100.0%	5.00

## HYDROLOGY LEGEND

	PROPERTY LINE
	DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	SOIL TYPE BOUNDARY
	SOIL TYPE DESIGNATION



## PROPOSED DRAINAGE MAPPING

PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	J.A.B.
Scale	1"=80'
Project No.	2002032
Date	05/04/2021
CAD File	PD200203201

# PD-1



ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING

100 Constitution Plaza, 10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

**GRADING AND DRAINAGE LEGEND**

- PROPERTY LINE
  - LOD
  - LIMIT OF DISTURBANCE AND SITEWORK CONTRACT LIMIT LINE
  - SAWCUT LINE
  - STORM LINE
  - MANHOLE
  - CATCH BASIN
  - PROPOSED CONTOUR LINE
  - ×(100.00) PROPOSED SPOT GRADE
- SPOT GRADE ABBREVIATIONS**
- BC BOTTOM OF CURB
  - TC TOP OF CURB
  - BW BOTTOM OF WALL
  - TW TOP OF WALL
  - MEX MEET EXISTING CONDITION

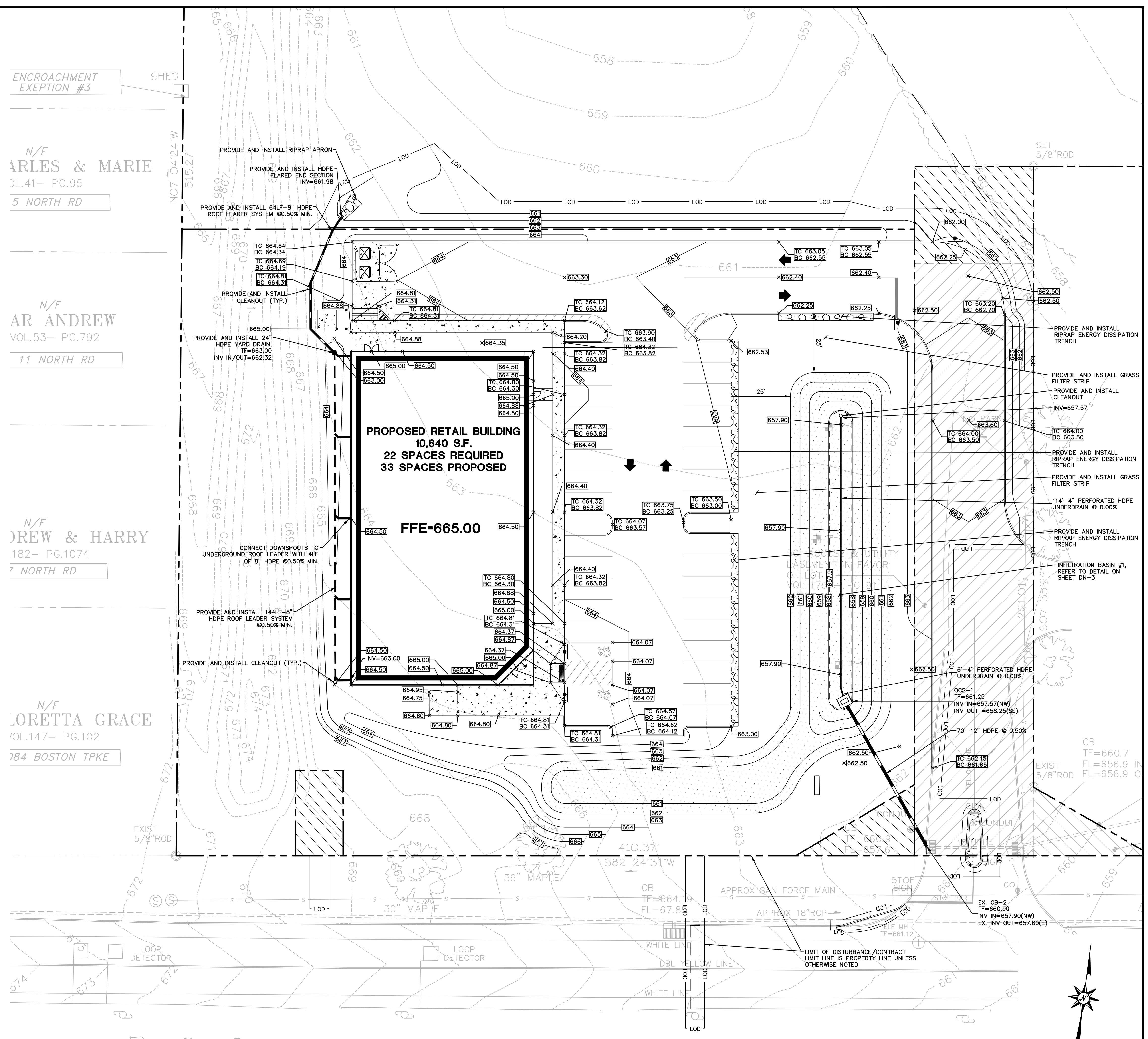
ENCROACHMENT EXEPTION #3

N/F ARLES & MARIE  
DL-41- PG.95  
5 NORTH RD

N/F AR ANDREW  
VOL.53- PG.792  
11 NORTH RD

N/F DREW & HARRY  
182- PG.1074  
7 NORTH RD

N/F LORETTA GRACE  
VOL.147- PG.102  
184 BOSTON TPKE



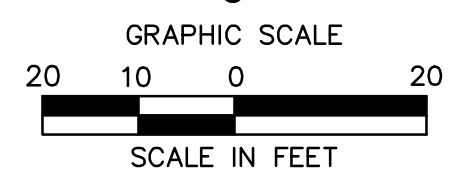
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

REVISIONS

No.	Date	Desc.	REVISED PER TOWN COMMENTS
1.	05/14/2021		

Designed by S.E.L.  
Drawn by S.E.L.  
Reviewed by  
Scale 1"=20'  
Project No. 2002032  
Date 04/02/2021  
CAD File: GD200203201

Title  
**GRADING AND DRAINAGE PLAN**  
Sheet No.

APPENDIX G

STORMWATER SYSTEM  
OPERATION AND MAINTENANCE MANUAL

**Appendix G:**

**Stormwater System  
Operations and Maintenance Plan**

*For the Proposed:*  
**Retail Development**

*Located at:*  
1100 Boston Turnpike  
Bolton, Connecticut

*Prepared for Submission to:*  
**Town of Bolton, Connecticut**

April 2, 2021  
*Revised May 1, 2021*

*Prepared for:*  
**Garrett Homes, LLC**  
59 Field Street  
Torrington, Connecticut

*Prepared by:*



**BL Companies**

100 Constitution Plaza, 10<sup>th</sup> Floor  
Hartford, Connecticut 06103  
Phone: (860) 249-2200  
Fax: (860) 249-2400

BL Project Number: 2002032

## Table of Contents

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## General Overview

The site is located at 1100 Boston Turnpike. The property is approximately 1.85 acres in size and is currently an undeveloped parcel. The property is located on the northern side of Boston Turnpike and is roughly bordered by residential properties to the west and south and a dentist office on the previously subdivided parcel to the east. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from “Parcel 2” to the north.

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system.

The following Operations and Maintenance Plan was prepared specifically for this proposed development in the Town of Bolton, Connecticut. The Plan was developed to satisfy the requirements of the Connecticut Department of Energy and Environmental Protection’s 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

### Purpose & Goals

The purpose of this Manual is to ensure that the stormwater management components are operated in accordance with all approvals and permits. The primary goal is to inform all the property managers about how the system operates and what maintenance items are necessary to protect downstream wetlands and watercourses. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping to verify permit compliance.

### Responsible Parties

The Property Owner will be responsible for implementing the Plan on the property.

Maintenance inspections shall be performed by a qualified professional.

Some utilities located on the site will be owned and maintained by various utility companies in accordance with their standards. The property owner may maintain the service connections.

### List of Permits & Special Conditions

The project will receive several permits, which may contain special conditions that require compliance by the property owner and maintenance contractors. This permit may include the following:

- Town of Bolton Permits –Site Plan Special Permit, Subdivision Permit, Building Permit
- State of Connecticut – Encroachment Permit



### Maintenance Logs and Checklists

The property owner will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of inspection reports and maintenance records shall be kept on-site.

### Forms

The following forms will be developed for annual maintenance. Copies of the forms will be kept on-site as part of the Storm Water Management Plan.

- Annual Checklist
- Quarterly Checklist
- Monthly Checklist

### Employee Training

The property owner will have an employee-training program, with annual up-dates, to ensure that the qualified employees charged with maintaining the buildings and grounds do so in accordance with the approved permit conditions. All employees that have maintenance duties will be adequately informed of their responsibilities.

### Spill Control

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean-up:

- Manufacturer's recommended methods for spill clean-up will be clearly posted and site personnel will be made aware of the procedures and the location of the information and clean-up supplies.
- Materials and equipment necessary for spill clean-up will be kept in the material storage area on-site. Equipment and materials will include but not be limited to: absorbent booms or mats, brooms, dust pans, mops, rags, gloves, goggles, sand, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned immediately after discovery.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substance.
- Spills of toxic or hazardous material, regardless of size, will be reported to the appropriate State or local government agency.
- If a spill occurs, this plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean the spill if there is another one. A description of the spill, the cause, and the remediation measures will also be included.

A spill report shall be prepared by the property owner following each occurrence. The spill report shall present a description of the release, including quantity and type of material, date of spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

The property owner shall identify an appropriately qualified and trained site employee involved with day-to-day site operations to be the spill prevention and clean-up coordinator. The name(s) of responsible spill personnel shall be posted on-site. Each employee shall be instructed that all spills are to be reported to the spill prevention and clean-up coordinator.

## **Storm Water Management**

### System Components

The storm water management system has several components that are shown on the Grading and Drainage Plan (GD-1), that performs various functions in treating storm water runoff:

### Infiltration Basin

The Infiltration basin is designed to infiltrate and retain stormwater runoff from contributing watersheds. Wet meadow environments are proposed within the basins to provide biological and physical filtration of runoff prior to discharge. Runoff storage capacity for flood flows is also provided in the system by means of a control outlet structure. The basins are planted to provide soil stabilization, filtration and wildlife habitat.

Management actions include the following measures:

1. For the first few months after construction basins should be inspected after every major storm. Inspections should focus on the duration of standing water in a basin.
2. Replacement of any diseased or dead vegetation within the basin with native species, as per the approved plan;
3. Removal of any invasive plants, as identified by the current listing of Invasive Species compiled by the CT Invasive Plant Working Group. These shall include, but not be limited to, purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and multiflora rose (*Rosa multiflora*). Removal shall be by hand, shovel or pulling, treatment of cut stump within 20 minutes of cutting or spraying of foliage with a 1-2% solution of Rodeo™ or an aquatic solution of Imazypr™;
4. Inspection and clearing of debris from the basin floor, inlet and outlet locations when necessary. To be inspected quarterly for the first two years and adjusted as necessary, but no less frequently than biennially. Remove sediment from basin floor as needed.
5. Sediment should be removed from Biofiltration basins by hand when the sediment is dry (visible cracks) and readily separates from the floor of the basin to minimize smearing the basin floor.
6. The Infiltration Basin should be drain within 72 hours of a storm event. If ponding is realized more than 72 hours after the end of the rain event, the engineered soil may be clogged and should be hand ranted to restore the infiltration capabilities of the soil.

7. See attached additional Regular Inspection and Maintenance Guidance for Infiltration Systems and Checklist for Inspection of Infiltration Systems.

### Vegetative Filter Strip

A vegetative filter strip is designed to accept stormwater runoff from the riprap energy dissipation trenches. The system is created to trap sediment, infiltrate runoff, provide a natural floral transition from paved surfaces to the downstream stormwater management practice. The system is planted with a dense stand of water tolerant grass to provide for long-term soil stabilization, seasonal nutrient uptake by plants and maintain the soil's infiltration capacity. The plans should be able to withstand prolonged periods of wet and dry. Management actions include the following measures:

1. For the first three growing seasons inspect the system twice per year (late spring and early fall). Replace any diseased or dead vegetation within the system with native species, as per the approved plan;
2. Long-term management requires control of invasive plants, as identified by the current listing of Invasive Species compiled by the CT Invasive Plant Working Group. These shall include, but not be limited to, purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and multiflora rose (*Rosa multiflora*). Removal shall be by hand, shovel or pulling, treatment of cut stump within 20 minutes of cutting or spraying of foliage with a 1-2% solution of Rodeo™ or an aquatic solution of Imazypr™;
3. Repair any obvious soil erosion (i.e., rills, gullies). Pack rills with sandy till, compact and apply 4-6" of settled top soil, reseed with appropriate seed mix, mulch and water, as needed, until grass is established (70% coverage).
4. Only organic slow release fertilizers shall be applied based on the results of soil fertility tests.

## **Site Maintenance**

### Parking Lots

Parking lots and sidewalks shall be swept as necessary by the property owner, or at least every 6 months, to clean sediment, trash, and other debris. The property owner will sweep parking lots on the property in the spring to remove winter accumulations of road sand.

### Landscaping

The management company retained by the property owner will maintain landscaped areas. Normally the landscaping maintenance will consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

The lawn areas, once established, will be maintained at a typical height of 3 ½". This will allow the grass to be maintained with minimal impact from weeds and/or pests. The low-maintenance areas will be maintained as a meadow or allowed to revert back to natural

conditions. Topsoil, brush, leaves, clippings, woodchips, mulch, equipment, and other material shall be stored off site.

### Outdoor Storage

There will be no outdoor storage of hazardous chemicals, de-icing agents, fertilizer, pesticides, or herbicides anywhere around the building or on site.

### Deicing and Snow Removal & Storage

The use of clean sand may be used to aid traction in conjunction with salt and/or chemicals for deicing, snow melting and other related winter weather management. Snow shall be shoveled and plowed from sidewalk and parking areas as soon as practical during and after winter storms. Sand accumulation shall be removed from the site at the end of the winter season or appropriate time when seasonal snow has melted. Alternative deicing methods must be submitted prior to use onsite for review to the Town of Bolton for approval.

## Regular Inspection and Maintenance Guidance for Infiltration Systems / Tree Filters

Maintenance of infiltration systems and tree filters can typically be performed as part of standard landscaping. Regular inspection and maintenance is critical to the effective operation of infiltration systems and tree filters to insure they remain clear of leaves and debris and free draining. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less frequent maintenance needs depending on a variety of factors including but not limited to: the occurrence of large storm events, overly wet or dry periods, regional hydrologic conditions, and the upstream land use.

### ACTIVITIES

The most common maintenance activity is the removal of sediment and organic debris from the system and bypass structures. Visual inspections are routine for system maintenance. This includes looking for standing water, accumulated leaves, holes in the soil media, signs of plant distress, and debris and sediment accumulation in the system. Vegetation coverage is integral to the performance of the system, including infiltration rate and nutrient uptake. Vegetation care is important to system productivity and health.

ACTIVITY	FREQUENCY
----------	-----------

### CLOGGING AND SYSTEM PERFORMANCE

<p>A record should be kept of the time to drain for the system completely after a storm event. The system should drain completely within 72 hours.</p>	<p>After every major storm in the first few months, then annually at minimum.</p>
<p>Check to insure the filter surface remains well draining after storm events.</p> <p><b>Remedy:</b> If filter bed is clogged, draining poorly, or standing water covers more than 50% of the surface 48 hours after a precipitation event, then remove top few inches of discolored material. Till, or rake remaining material as needed.</p>	
<p>Check inlets and outlets for leaves and debris.</p> <p><b>Remedy:</b> Rake in and around the system to clear it of debris. Also, clear the inlet and overflow if obstructed.</p>	<p>Quarterly initially, annually as a minimum thereafter.</p>
<p>Check for animal burrows and short-circuiting in the system.</p> <p><b>Remedy:</b> Soil erosion from short circuiting or animal borrows should be repaired when they occur. The holes should be filled and lightly compacted</p>	
<p>Inspect inlets and outlets to ensure good condition and no evidence of deterioration. Check to see if high-flow bypass is functioning.</p> <p><b>Remedy:</b> Repair or replace any damaged structural parts, inlets, outlets, sidewalls.</p>	

### VEGETATION

<p>Check for robust vegetation coverage throughout the system and dead or dying plants.</p> <p><b>Remedy:</b> Vegetation should cover &gt; 75% of the system and should be cared for as needed.</p>	<p>Annually or as needed</p>
---	------------------------------

## CHECKLIST FOR INSPECTION OF INFILTRATION SYSTEM / TREE FILTERS

Location:  
 Inspector:  
 Date:  
 Time:  
 Site Conditions:  
 Days Since Last Rain Event:

Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
<b>1. Initial Inspection After Planting and Mulching</b>		
Plants are stable, roots not exposed	S      U	
Surface is at design level, no evidence of preferential flow/shoving	S      U	
Inlet and outlet/bypass are functional	S      U	
<b>2. Debris Cleanup (1 time/year minimum, Spring/Fall)</b>		
Litter, leaves, and dead vegetation removed from the system	S      U	
Prune/mow vegetation	S      U	
<b>3. Standing Water (1 time/year and/or after large storm events)</b>		
No evidence of standing water after 72 hours since rainfall	S      U	
<b>4. Vegetation Condition and Coverage</b>		
Vegetation condition good with good coverage (typically > 75%)	S      U	
<b>5. Other Issues</b>		
Note any additional issues not previously covered.	S      U	
<b>Corrective Action Needed</b>		<b>Due Date</b>
1.		
2.		
3.		
Inspector Signature		Date

## **Stormwater Management Narrative and Hydrologic Calculations Proposed Retail Development – 1100 Boston Turnpike – Bolton, CT May 5, 2021**

This narrative has been prepared in support of a Permit Application by Garrett Homes, LLC to the Town of Bolton for the proposed retail development at 1100 Boston Turnpike. The property is approximately 1.85 acres in size and is currently an undeveloped parcel. The property is located on the northern side of Boston Turnpike and is roughly bordered by residential properties to the west and south and a dentist office on the previously subdivided parcel to the east. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from “Parcel 2” to the north.

### **Existing Site Conditions**

The project parcel is currently undeveloped, consisting entirely of lawn area. There are no formal stormwater management systems currently located on site. Stormwater from the subject property sheet flows untreated to the adjacent properties.

The site soil identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) is Woodbridge fine sandy loam, 3 to 8 percent slopes, Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony, and Canton and Charlton fine sandy loams, 3 to 8 percent slopes. Per the USDA, the NRCS Hydrologic Soil Group rating for within the project area is C/D, C/D, and B respectively. For the Soil Group ratings of C/D, a Soil Group rating of C was assumed in order to be conservative in the change of curve number from grass to impervious.

### **Developed Site Conditions**

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system.

The proposed stormwater management system will utilize a surface bioretention basin for stormwater quality treatment and peak flow mitigation of stormwater runoff generated by impervious surfaces eventually draining to the neighboring property to the east.

### **Stormwater Management – Existing Drainage Patterns**

The existing site drainage area that was analyzed totals 4.92 acres and is approximately 8% impervious.

Stormwater from the subject property sheet flows untreated to the adjacent properties. There is a ridge line that roughly bifurcates the site into two main drainage areas. The northern portion of the project parcel and neighboring properties sheet flow to the wetland to the northeast of the site (Design Point 1). The northern portion of the site consists of primarily of grassed surface cover

with some wooded and impervious surface cover. The southeastern portion of the project parcel sheet flows to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east (Design Point 2). The southeastern portion of the site consists mainly of grassed area with some impervious area from the shared driveway.

### Stormwater Management – Proposed Drainage Patterns

The proposed site drainage area totals 4.92 acres and is approximately 28% impervious.

The same Design Points used in the existing conditions analysis have been retained for the proposed analysis. The site stormwater system will provide stormwater retention and quality improvements through the installation of a Bioretention Basin with a grass filter strip and a formalized street sweeping program for the impervious surfaces. These measures will treat the stormwater quality flow through structural means to provide water quality treatment in conformance with the State of Connecticut Water Quality Manual. The proposed stormwater management system has been designed to treat the runoff generated by the proposed development for a minimum 80% TSS removal as required in the CT Stormwater Quality Manual, retain and infiltrate the Water Quality Volume, and provide groundwater recharge.

As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed peak flow mitigation has not been deemed necessary to the wetland located northeast of the site (Design Point 1). Peak flow to the existing offsite drainage system on the parcel to the east (Design Point 2) will be matched in the 2, 10, and 100-year storms to ensure the proposed development will not negatively impact the existing neighboring drainage system, as seen in the peak flow rate comparison table below.

Drainage Area	Peak Flow Rate in Cubic Feet per Second (cfs)		
	2-yr	10-yr	100-yr
<b>Design Point 1</b> Wetland to Northeast			
Existing	2.6	6.3	12.9
Proposed	2.0	4.7	9.3
Percent Change	-23.1%	-25.4%	-27.9%
<b>Design Point 2</b> Ex. CBs in Driveway			
Existing	0.9	1.8	3.3
Proposed	0.9	1.8	3.2
Percent Change	0.0%	0.0%	-3.0%



## **Conclusion**

The post-development peak discharge rates for the total developed site have been decreased or matched for all storm events. All post development stormwater will be discharged offsite to mimic existing drainage patterns. The proposed Bioretention Basin been designed to attenuate peak flows to Design Point 2 at the offsite drainage system, while providing water quality improvements. Though it was not necessary to match peak flows to Design Point 1, the flow has been mitigated by reducing the size of the contributing drainage area. The area removed from the drainage area to Design Point 1 now contributes to the proposed Bioretention Basin drainage area, which ultimately discharges to Design Point 2.

This letter has been prepared to compliment the submitted project plans and full Stormwater Management Report, as well as to represent the technical basis for the designs presented herein.

## APPENDIX A

### DRAINAGE MAPS






ED-1 – Existing Hydrology Mapping

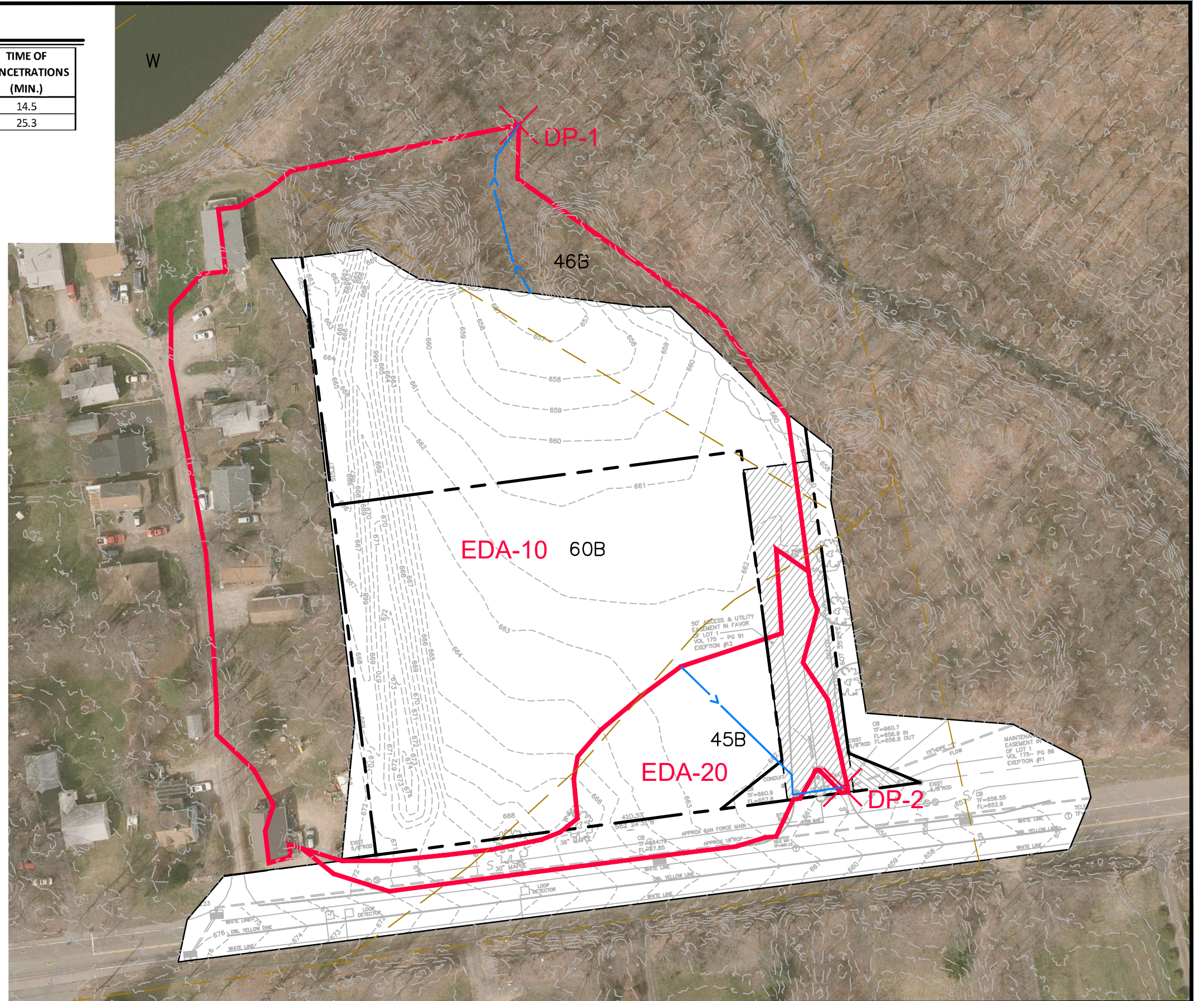
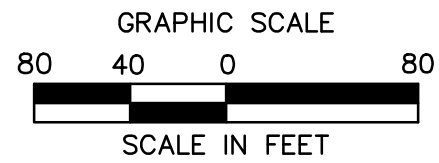
PD-1 – Proposed Hydrology Mapping

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ARC/INFO/ECORE  
 ENGINEERING  
 ENVIRONMENTAL  
 LAND SURVEYING

100 COUNTRY PLACE, SUITE 100  
 FORT COLLINS, CO 80503  
 970.249-2200  
 970.249-2400 FAX

## EXISTING DRAINAGE MAPPING

PROPOSED REDEVELOPMENT  
 1100 BOSTON CORNER  
 BOULDER COUNTY, CO






Drawn by: S.E.L.  
 Checked by: S.E.L.  
 Reviewed by: A.B.  
 Scale: 1"=80'  
 Project No: 2002032  
 Date: 04/02/2021  
 CAD File: ED200203201

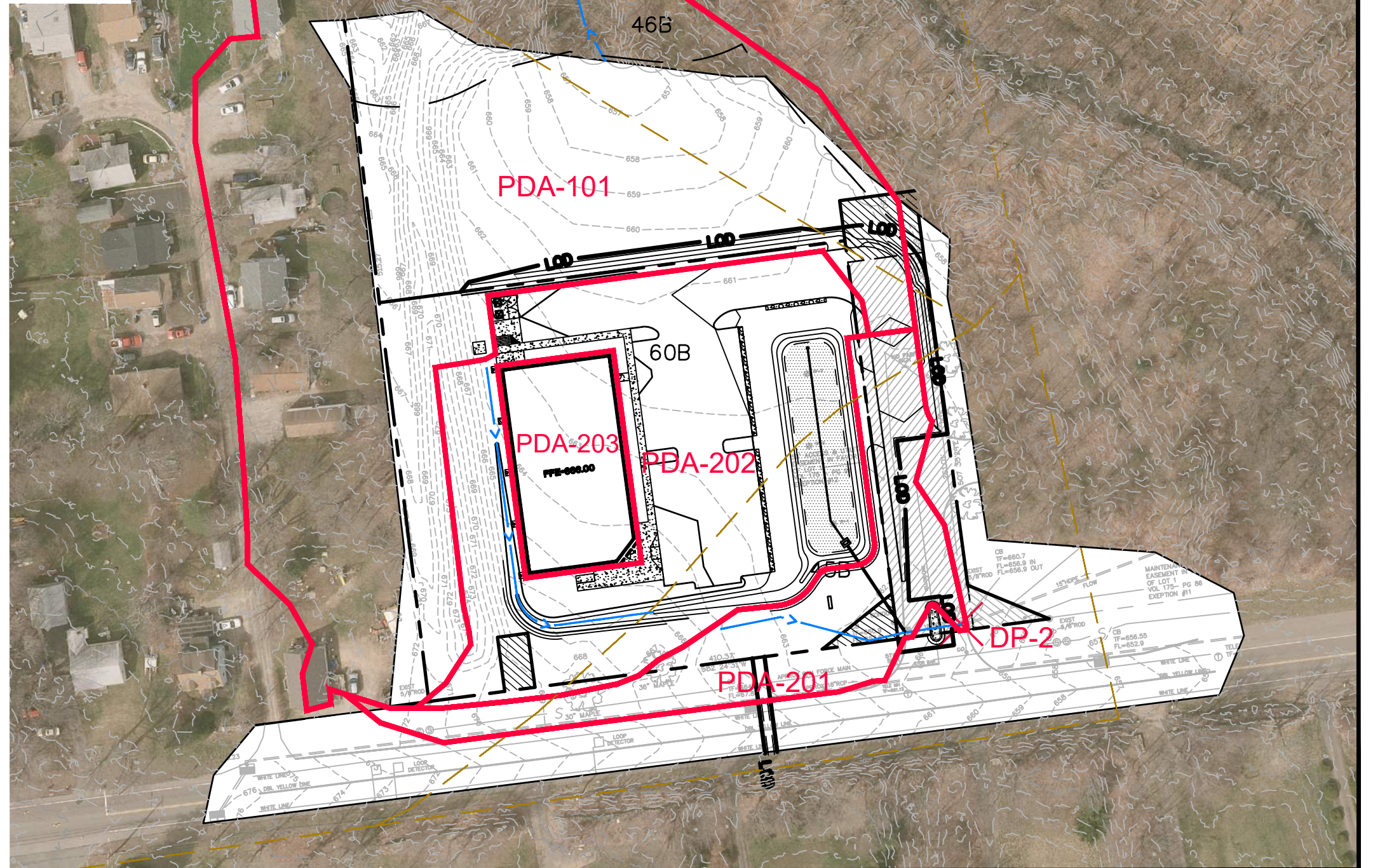
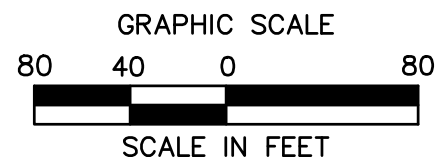
ED-01

# PROPOSED HYDROLOGY INFORMATION

DRAINAGE AREA	TOTAL AREA (S.F.)	IMPERVIOUS AREA (S.F.)	PERVIOUS AREA (S.F.)	PERCENT IMPERVIOUS (%)	CN	TIME OF CONCENTRATIONS (MIN.)
PDA-101	127,015	15,295	111,720	12.0%	74	25.0
PDA-201	22,250	5,970	16,280	26.8%	83	9.8
PDA-202	54,405	27,695	26,710	50.9%	85	16.3
PDA-203	10,770	10,770	0	100.0%	98	5.0

## HYDROLOGY LEGEND

-  PROPERTY LINE
-  DRAINAGE AREA BOUNDARY
-  TIME OF CONCENTRATION FLOW PATH
-  SOIL TYPE BOUNDARY
-  SOIL TYPE DESIGNATION



## PROPOSED DRAINAGE MAPPING

PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	J.A.B.
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Project No.	2002032
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CAD File	PD200203201

# PD-1



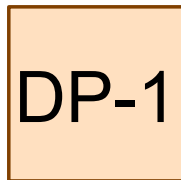
ARCHITECTURE  
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ENVIRONMENTAL  
LAND SURVEYING

100 Constitution Plaza, 10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

APPENDIX B  
PRE-DEVELOPMENT HYDROLOGY



Area to Wetland to the Northeast



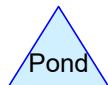
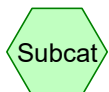
Wetland to Northeast



Area to Ex. CBs in Driveway



Ex. CBs in Driveway



Routing Diagram for C-DAT-2002032-EXISTING HYDROLOGY  
Prepared by {enter your company name here}, Printed 5/4/2021  
HydroCAD® 10.00-25 s/n 01334 © 2019 HydroCAD Software Solutions LLC

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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>0.99"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=2.57 cfs 0.350 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>1.55"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=0.92 cfs 0.087 af

**Reach DP-1: Wetland to Northeast** Inflow=2.57 cfs 0.350 af  
Outflow=2.57 cfs 0.350 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=0.92 cfs 0.087 af  
Outflow=0.92 cfs 0.087 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.437 af Average Runoff Depth = 1.06"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

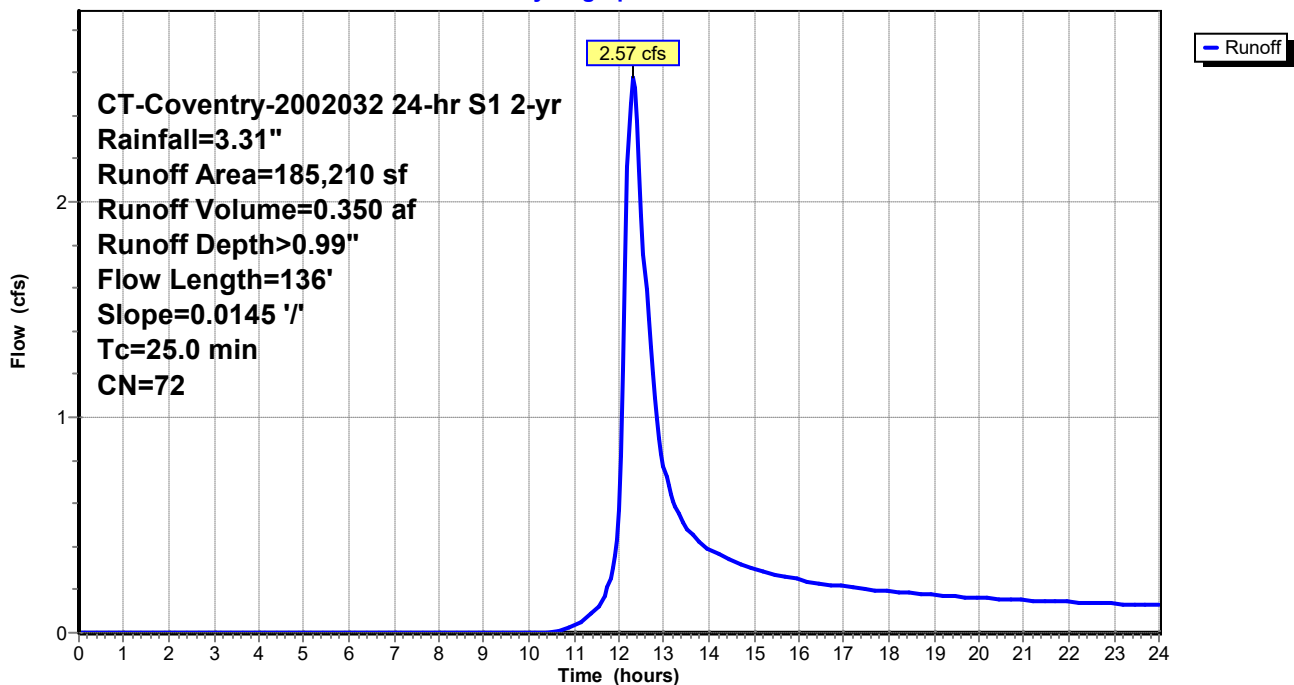
Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph





**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

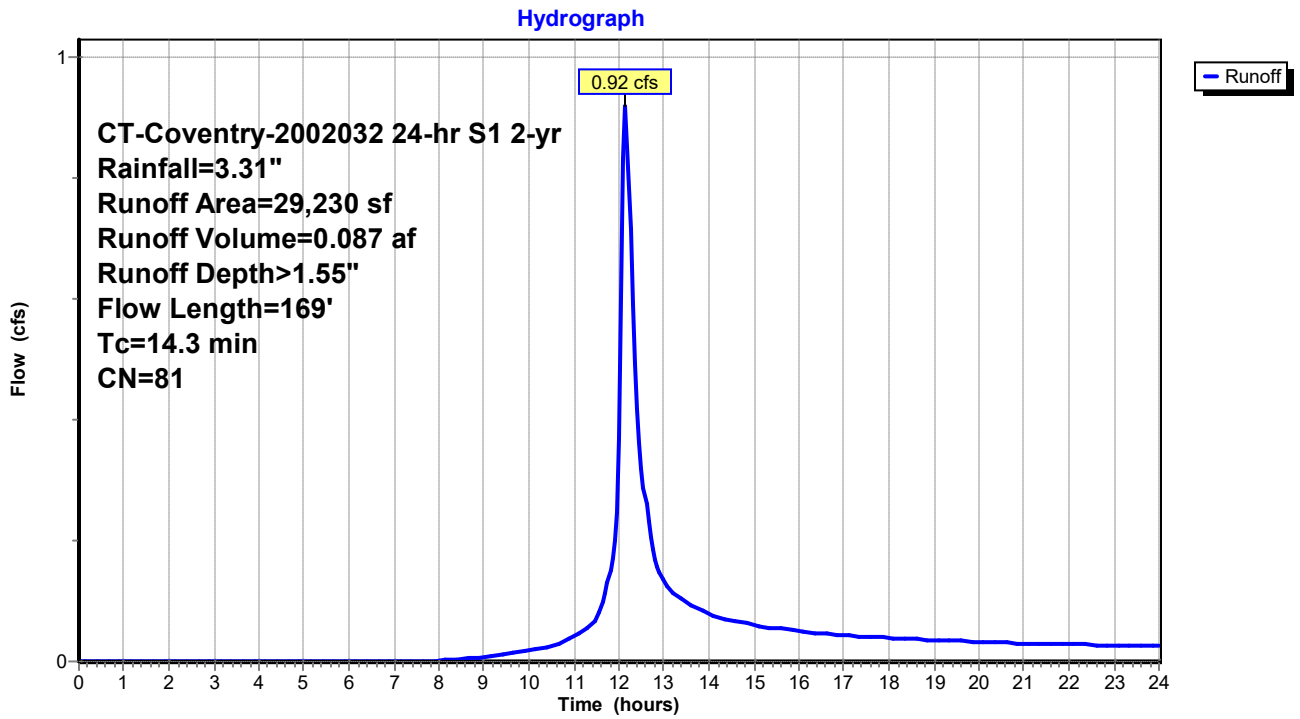
Runoff = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**

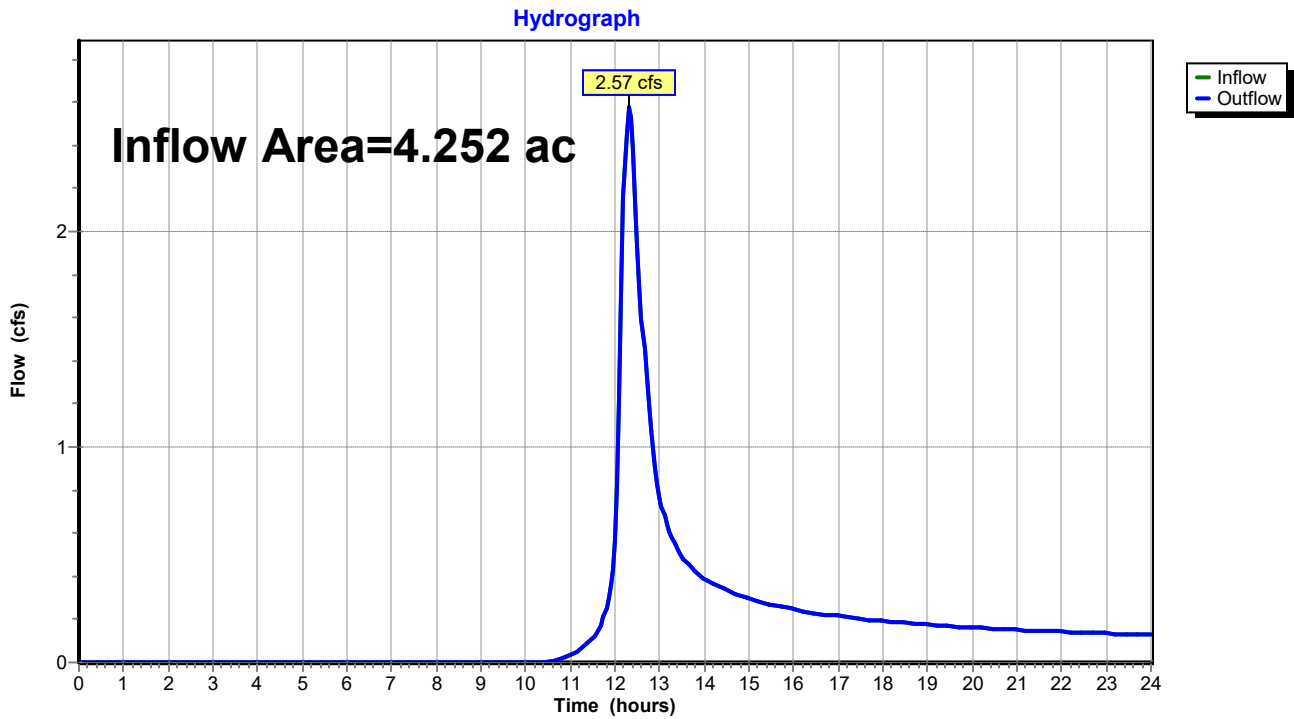


### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 0.99" for 2-yr event  
Inflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af  
Outflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-1: Wetland to Northeast

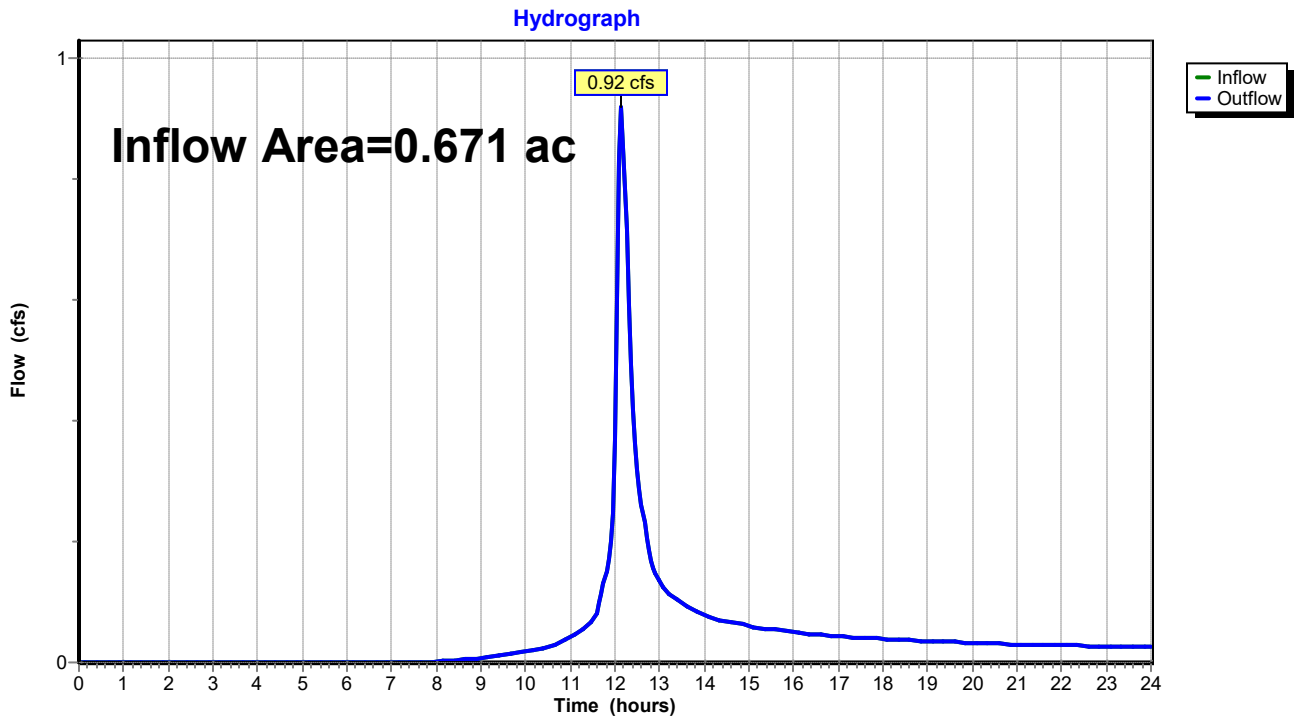


### Summary for Reach DP-2: Ex. CBs in Driveway

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 1.55" for 2-yr event  
Inflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af  
Outflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-2: Ex. CBs in Driveway



**C-DAT-2002032-EXISTING HYDROLOGY** CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Prepared by {enter your company name here}

Printed 5/4/2021

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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>2.24"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=6.27 cfs 0.794 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>3.04"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=1.82 cfs 0.170 af

**Reach DP-1: Wetland to Northeast**

Inflow=6.27 cfs 0.794 af  
Outflow=6.27 cfs 0.794 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=1.82 cfs 0.170 af  
Outflow=1.82 cfs 0.170 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.964 af Average Runoff Depth = 2.35"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Depth> 2.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

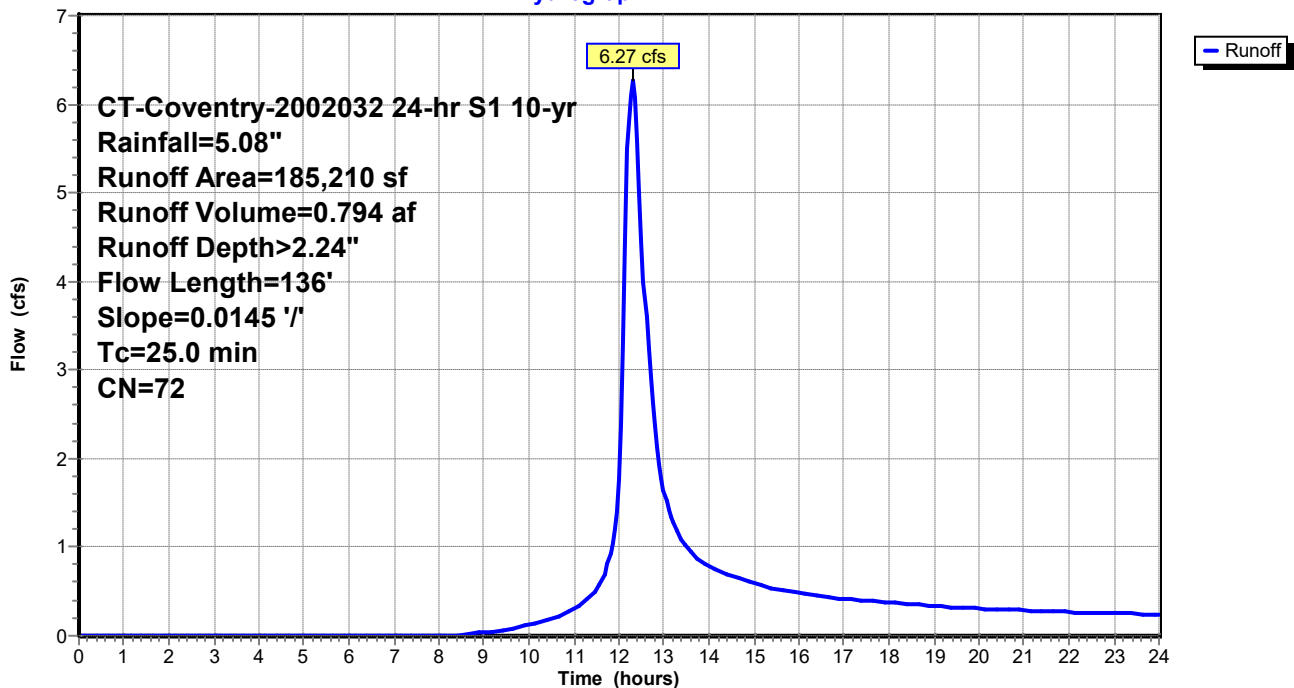
Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

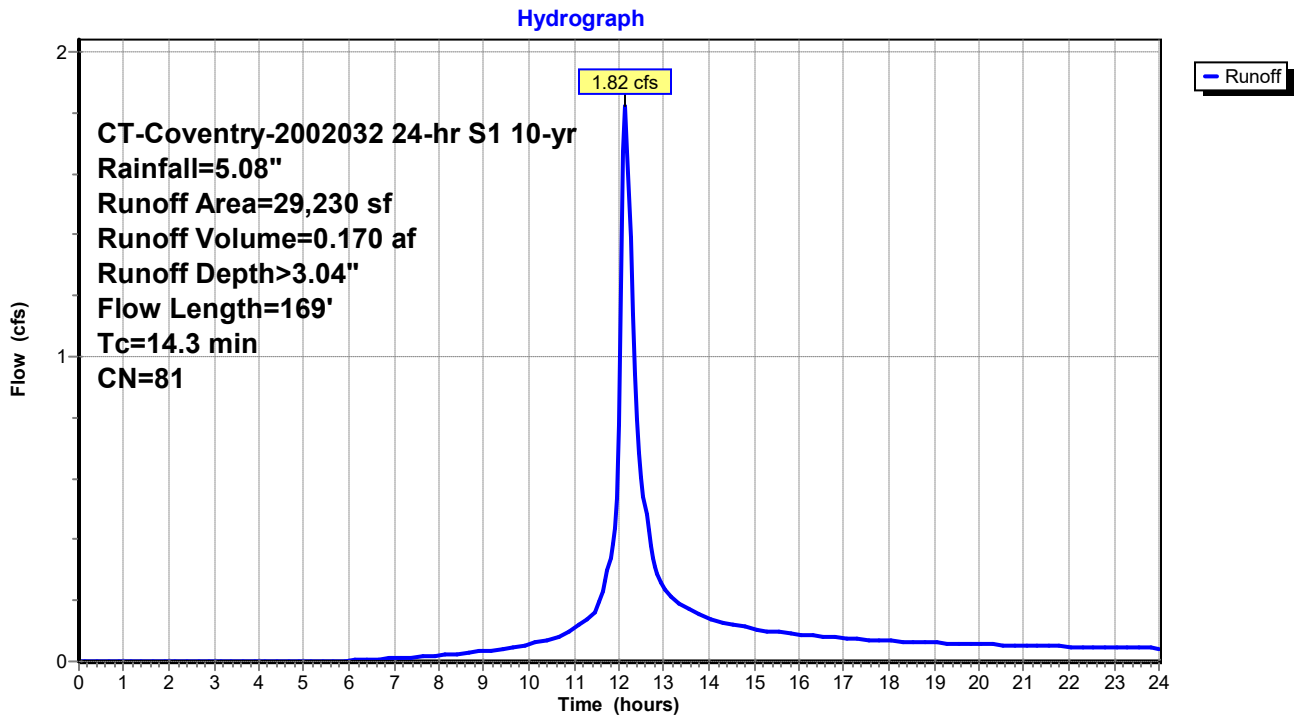
Runoff = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**



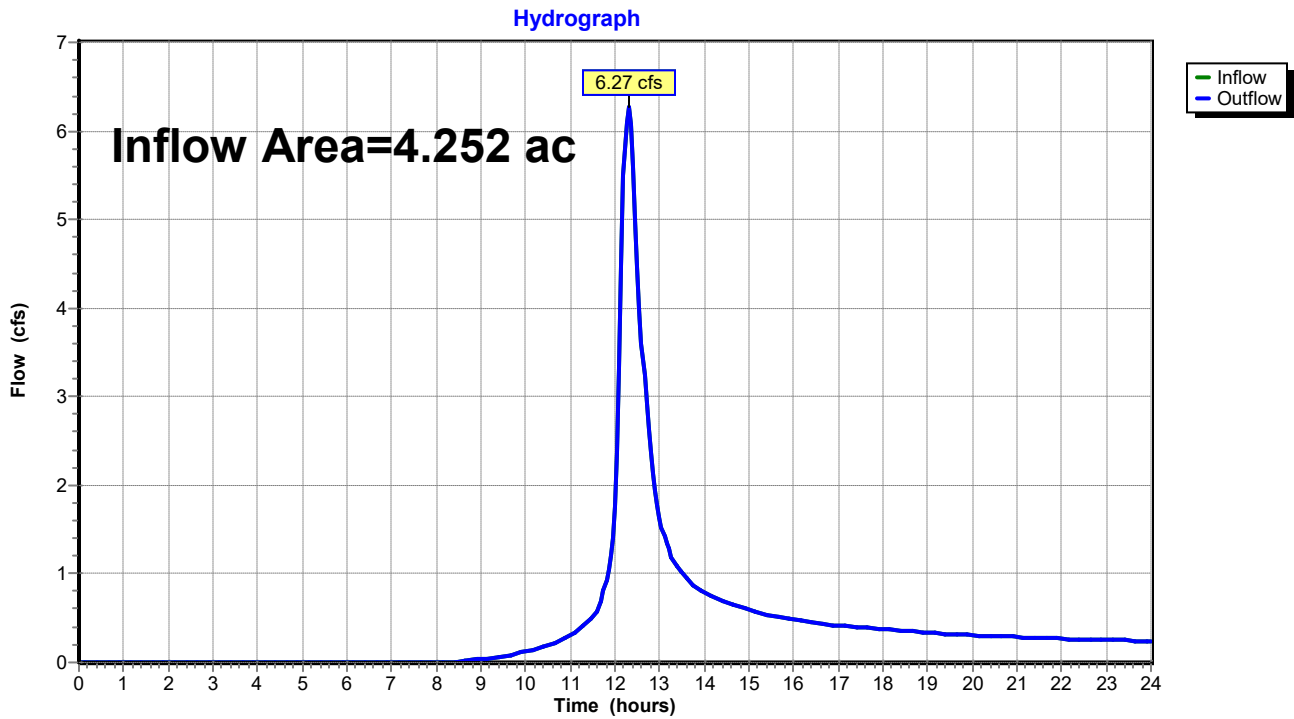


### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 2.24" for 10-yr event  
Inflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af  
Outflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-1: Wetland to Northeast

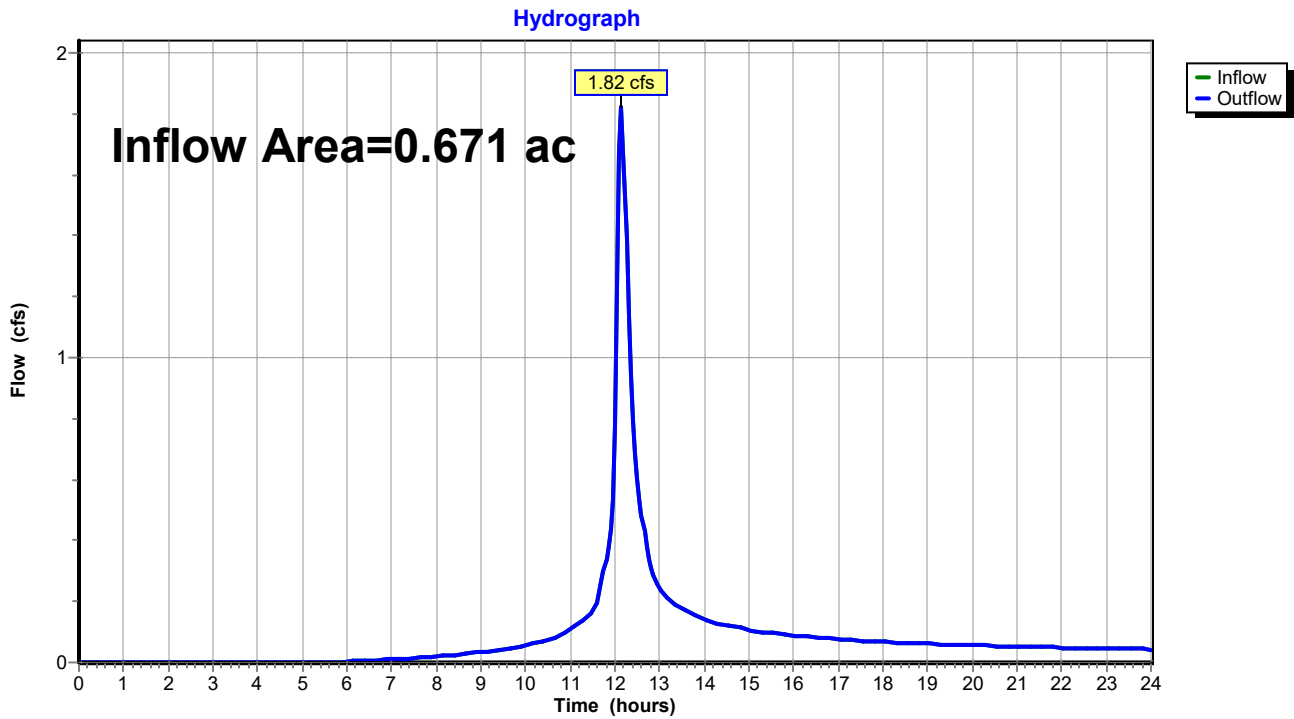


**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 3.04" for 10-yr event  
 Inflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af  
 Outflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-2: Ex. CBs in Driveway**



**C-DAT-2002032-EXISTING HYDROLOG** CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Prepared by {enter your company name here}

Printed 5/4/2021

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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>4.57"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=12.93 cfs 1.620 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>5.63"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=3.30 cfs 0.315 af

**Reach DP-1: Wetland to Northeast**

Inflow=12.93 cfs 1.620 af  
Outflow=12.93 cfs 1.620 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=3.30 cfs 0.315 af  
Outflow=3.30 cfs 0.315 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.934 af Average Runoff Depth = 4.72"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Depth> 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

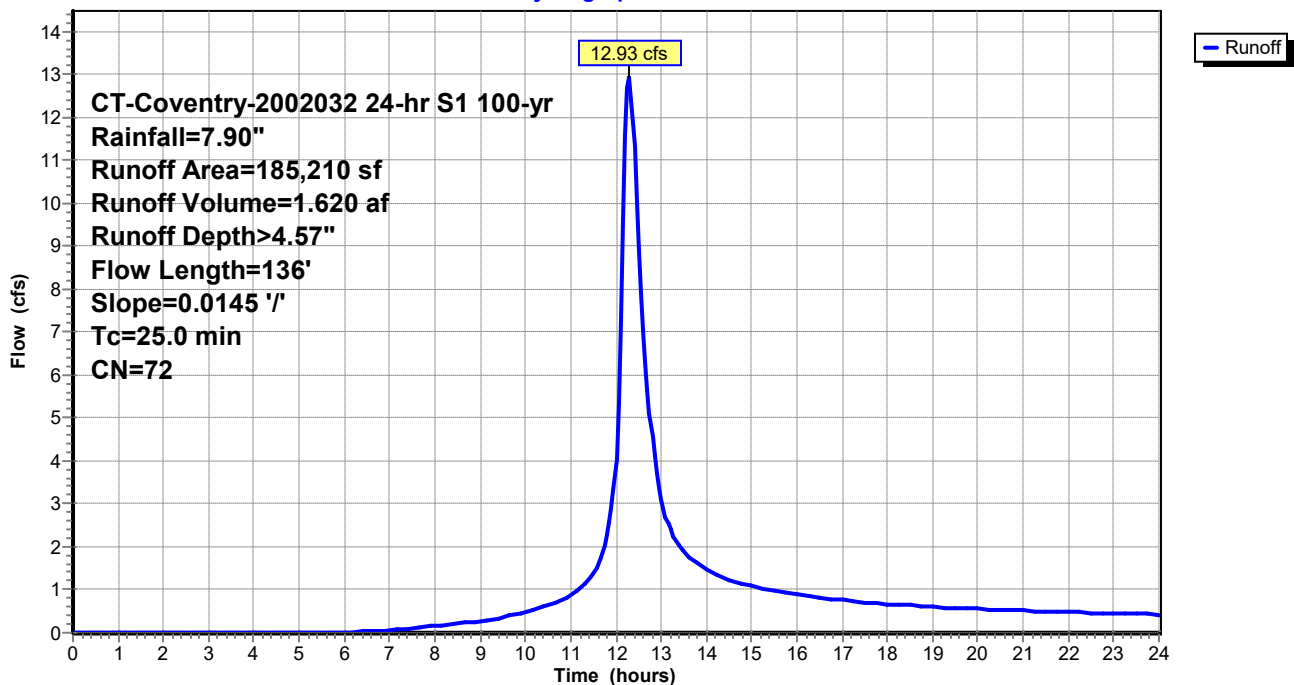
Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

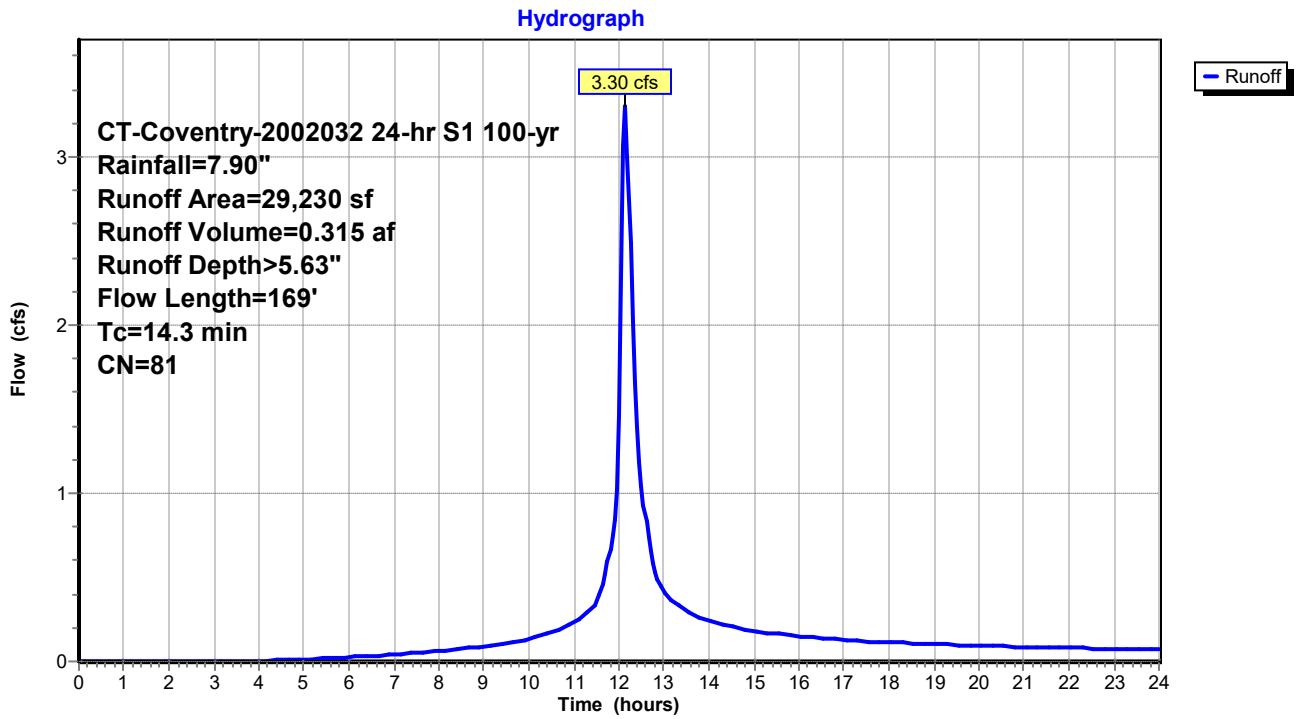
Runoff = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Depth> 5.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**

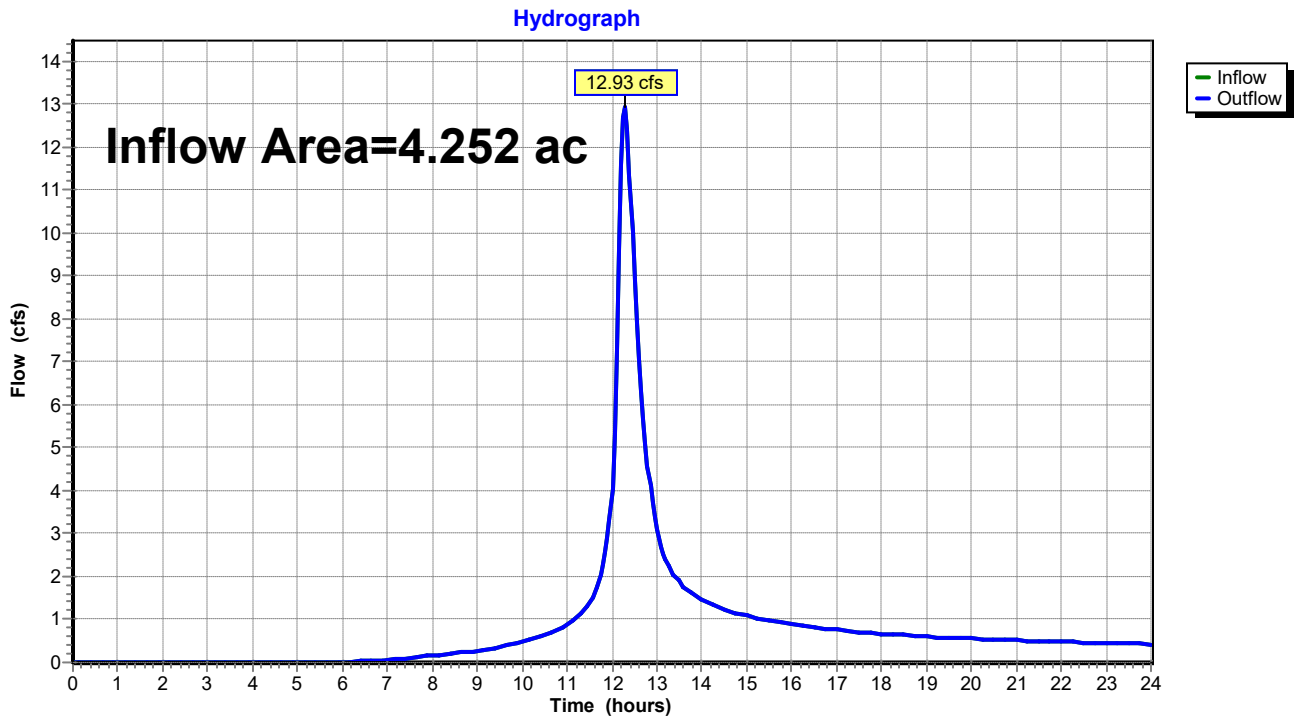


**Summary for Reach DP-1: Wetland to Northeast**

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 4.57" for 100-yr event  
 Inflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af  
 Outflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-1: Wetland to Northeast**

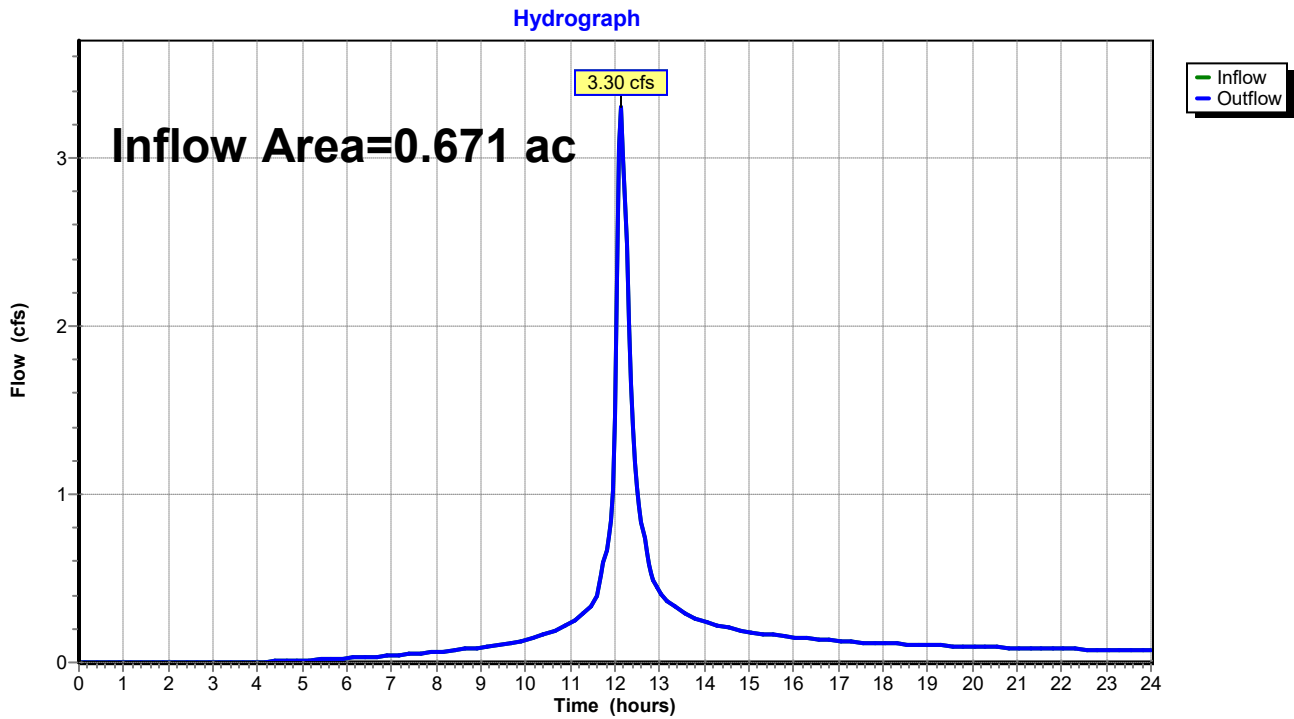


### Summary for Reach DP-2: Ex. CBs in Driveway

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 5.63" for 100-yr event  
Inflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af  
Outflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min

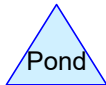
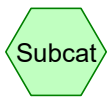
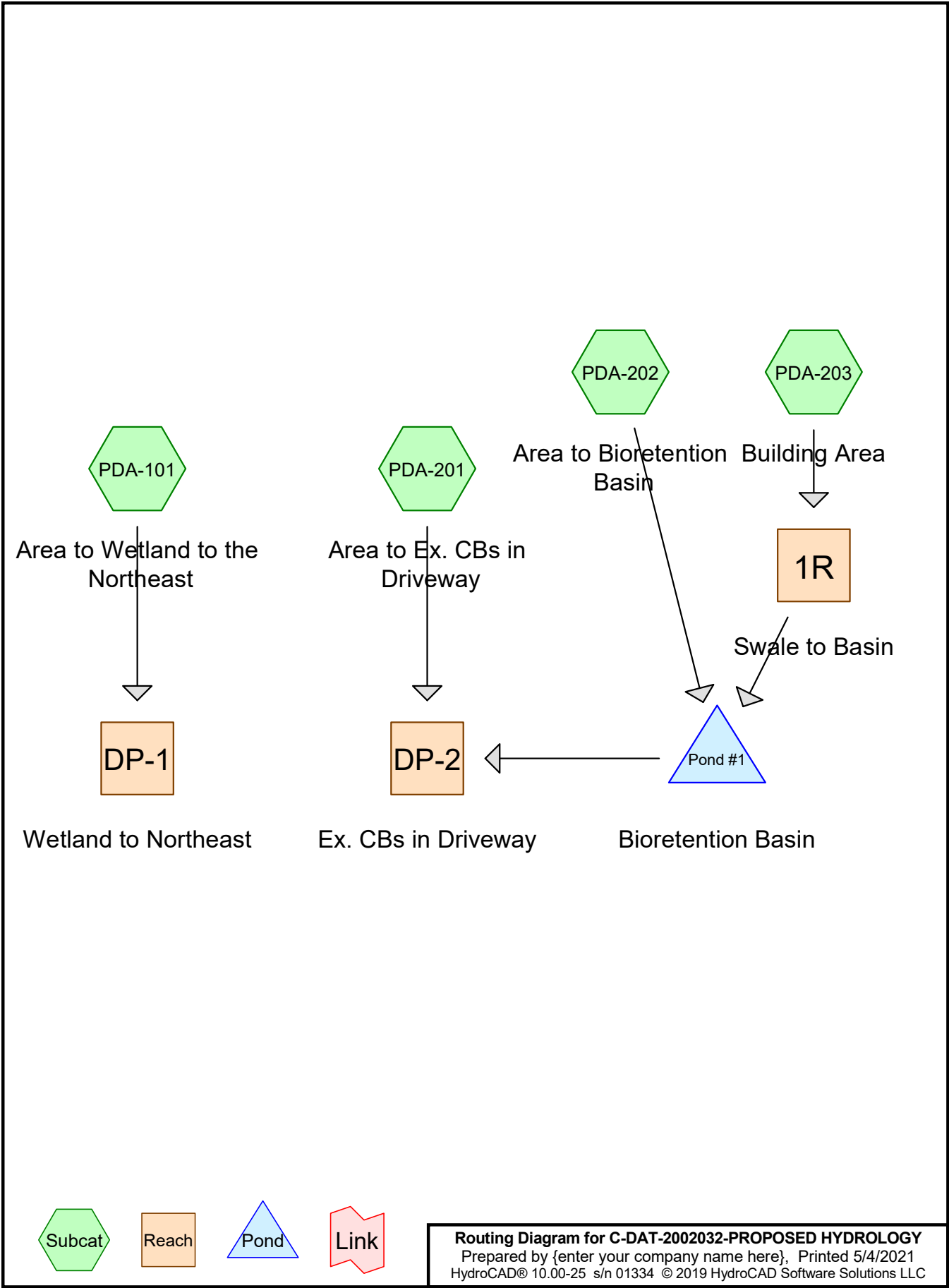
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-2: Ex. CBs in Driveway





APPENDIX C  
POST-DEVELOPMENT HYDROLOGY



**Routing Diagram for C-DAT-2002032-PROPOSED HYDROLOGY**  
 Prepared by {enter your company name here}, Printed 5/4/2021  
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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment PDA-101: Area to Wetland** Runoff Area=127,015 sf 12.04% Impervious Runoff Depth=1.11"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=74 Runoff=2.03 cfs 0.270 af

**Subcatchment PDA-201: Area to Ex. CBs** Runoff Area=22,250 sf 26.83% Impervious Runoff Depth=1.70"  
 Flow Length=161' Tc=9.8 min CN=83 Runoff=0.94 cfs 0.072 af

**Subcatchment PDA-202: Area to** Runoff Area=54,405 sf 50.91% Impervious Runoff Depth=1.85"  
 Flow Length=250' Slope=0.0100 '/' Tc=16.3 min CN=85 Runoff=1.94 cfs 0.193 af

**Subcatchment PDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=3.08"  
 Tc=5.0 min CN=98 Runoff=0.96 cfs 0.063 af

**Reach 1R: Swale to Basin** Avg. Flow Depth=0.31' Max Vel=1.73 fps Inflow=0.96 cfs 0.063 af  
 n=0.030 L=370.0' S=0.0105 '/' Capacity=9.44 cfs Outflow=0.81 cfs 0.063 af

**Reach DP-1: Wetland to Northeast** Inflow=2.03 cfs 0.270 af  
 Outflow=2.03 cfs 0.270 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=0.94 cfs 0.072 af  
 Outflow=0.94 cfs 0.072 af

**Pond Pond #1: Bioretention Basin** Peak Elev=659.88' Storage=5,907 cf Inflow=2.64 cfs 0.256 af  
 Discarded=0.10 cfs 0.256 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.256 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.598 af Average Runoff Depth = 1.46"**  
**72.15% Pervious = 3.552 ac 27.85% Impervious = 1.371 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 2.03 cfs @ 12.31 hrs, Volume= 0.270 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

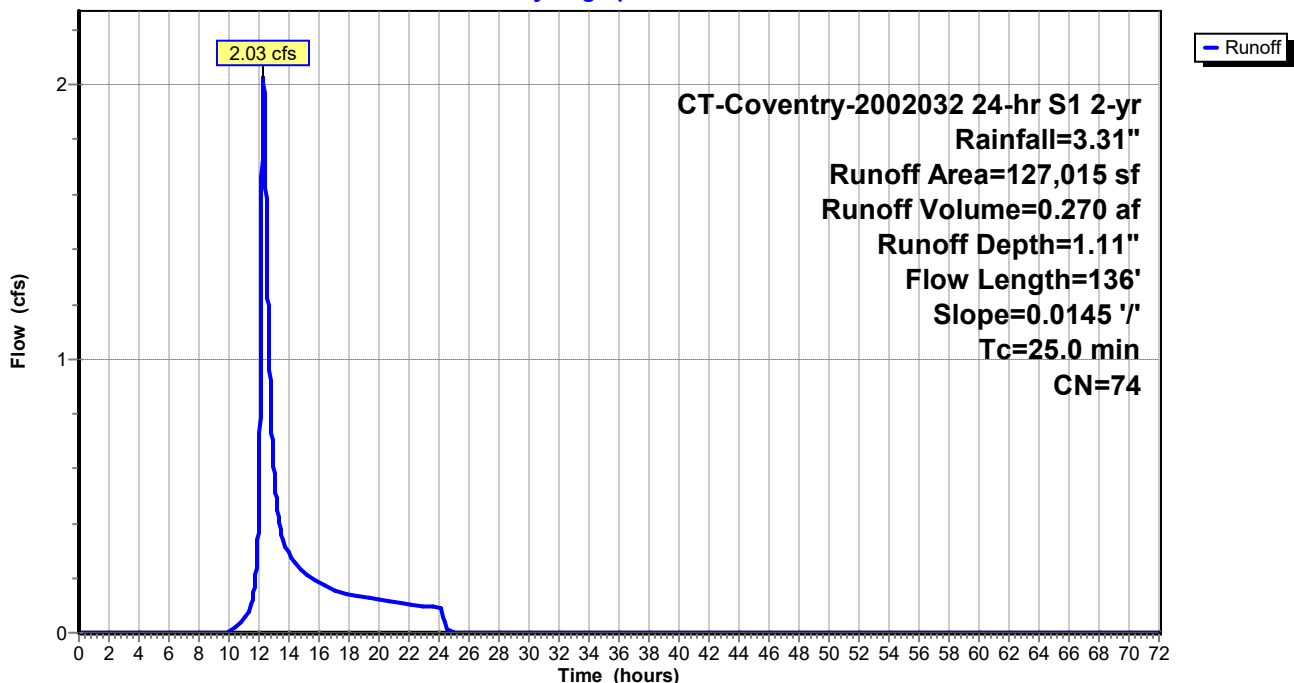
Area (sf)	CN	Description
78,455	69	50-75% Grass cover, Fair, HSG B
10,060	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,830	98	Paved parking, HSG B
1,465	98	Paved parking, HSG C
127,015	74	Weighted Average
111,720		87.96% Pervious Area
15,295		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Runoff = 0.94 cfs @ 12.08 hrs, Volume= 0.072 af, Depth= 1.70"

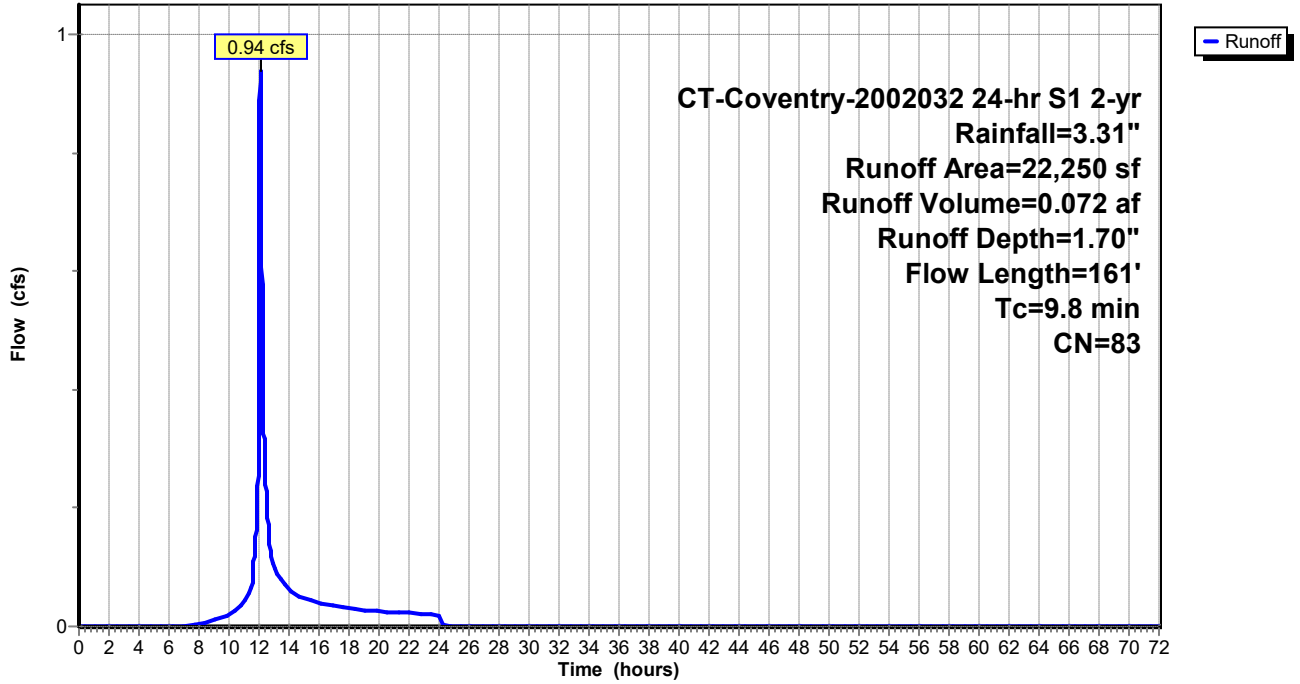
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,580	69	50-75% Grass cover, Fair, HSG B
13,700	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,060	98	Paved parking, HSG C
22,250	83	Weighted Average
16,280		73.17% Pervious Area
5,970		26.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.4	23	0.0174	0.92		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.8	161	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Hydrograph



**Summary for Subcatchment PDA-202: Area to Bioretention Basin**

Runoff = 1.94 cfs @ 12.17 hrs, Volume= 0.193 af, Depth= 1.85"

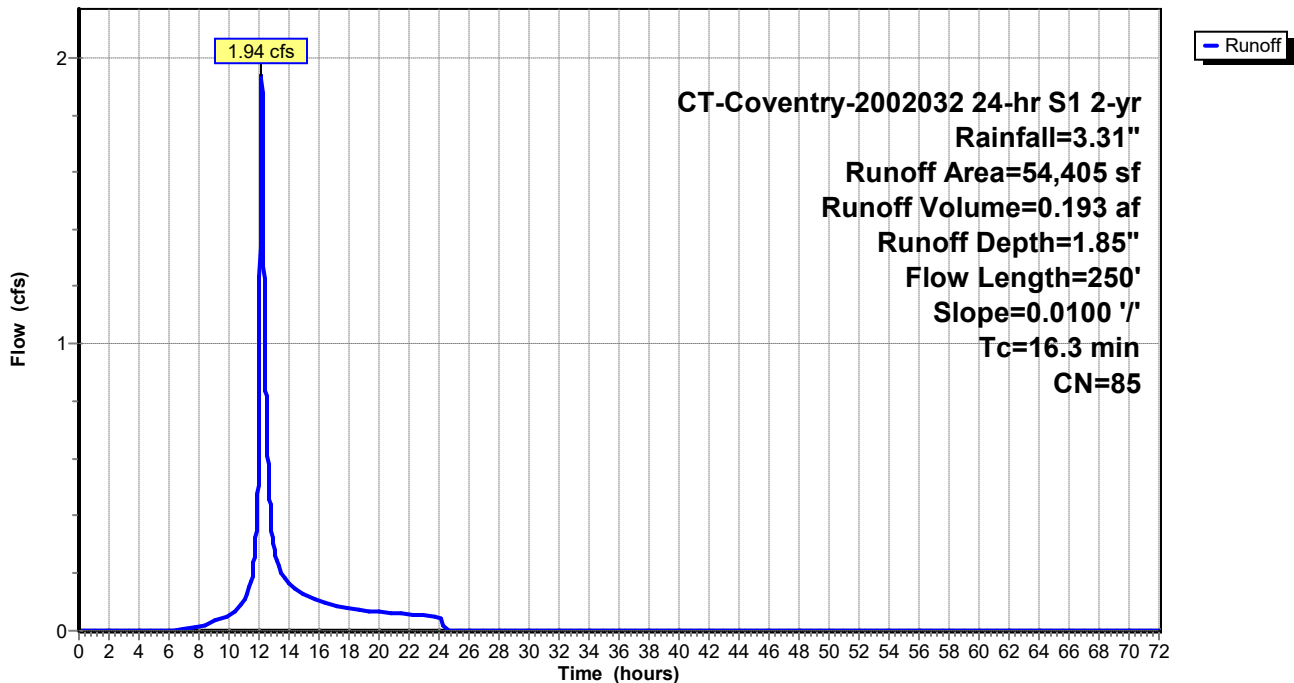
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
20,135	69	50-75% Grass cover, Fair, HSG B
6,575	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
22,195	98	Paved parking, HSG B
5,500	98	Paved parking, HSG C
54,405	85	Weighted Average
26,710		49.09% Pervious Area
27,695		50.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
3.6	150	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.3	250	Total			

**Subcatchment PDA-202: Area to Bioretention Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 0.96 cfs @ 12.03 hrs, Volume= 0.063 af, Depth= 3.08"

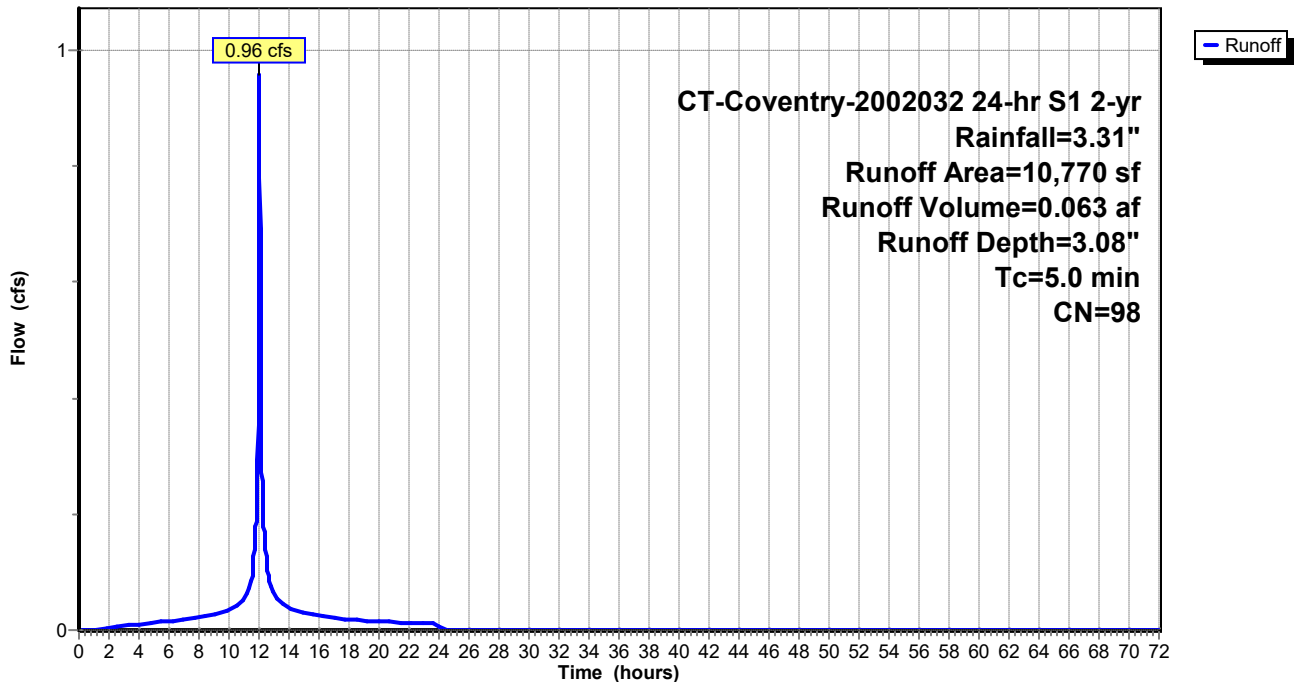
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph





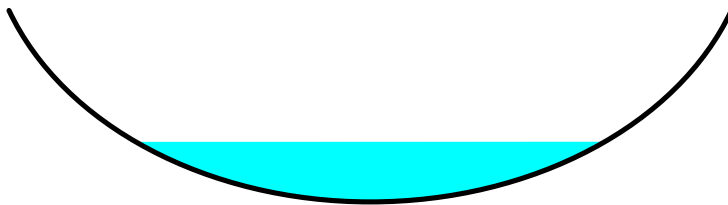
**Summary for Reach 1R: Swale to Basin**

Inflow Area = 0.247 ac, 100.00% Impervious, Inflow Depth = 3.08" for 2-yr event  
 Inflow = 0.96 cfs @ 12.03 hrs, Volume= 0.063 af  
 Outflow = 0.81 cfs @ 12.12 hrs, Volume= 0.063 af, Atten= 15%, Lag= 5.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 1.73 fps, Min. Travel Time= 3.6 min  
 Avg. Velocity = 0.54 fps, Avg. Travel Time= 11.3 min

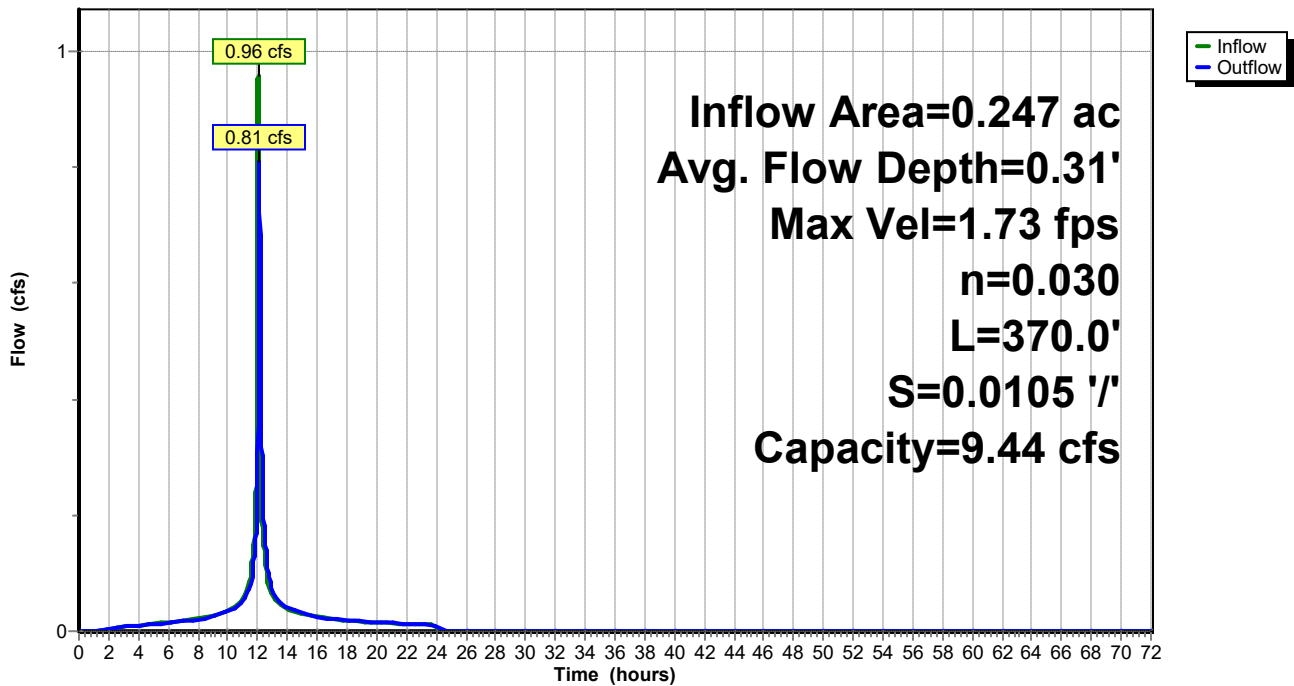
Peak Storage= 173 cf @ 12.06 hrs  
 Average Depth at Peak Storage= 0.31'  
 Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 9.44 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, grassed & winding  
 Length= 370.0' Slope= 0.0105 '/'  
 Inlet Invert= 665.90', Outlet Invert= 662.00'



**Reach 1R: Swale to Basin**

Hydrograph



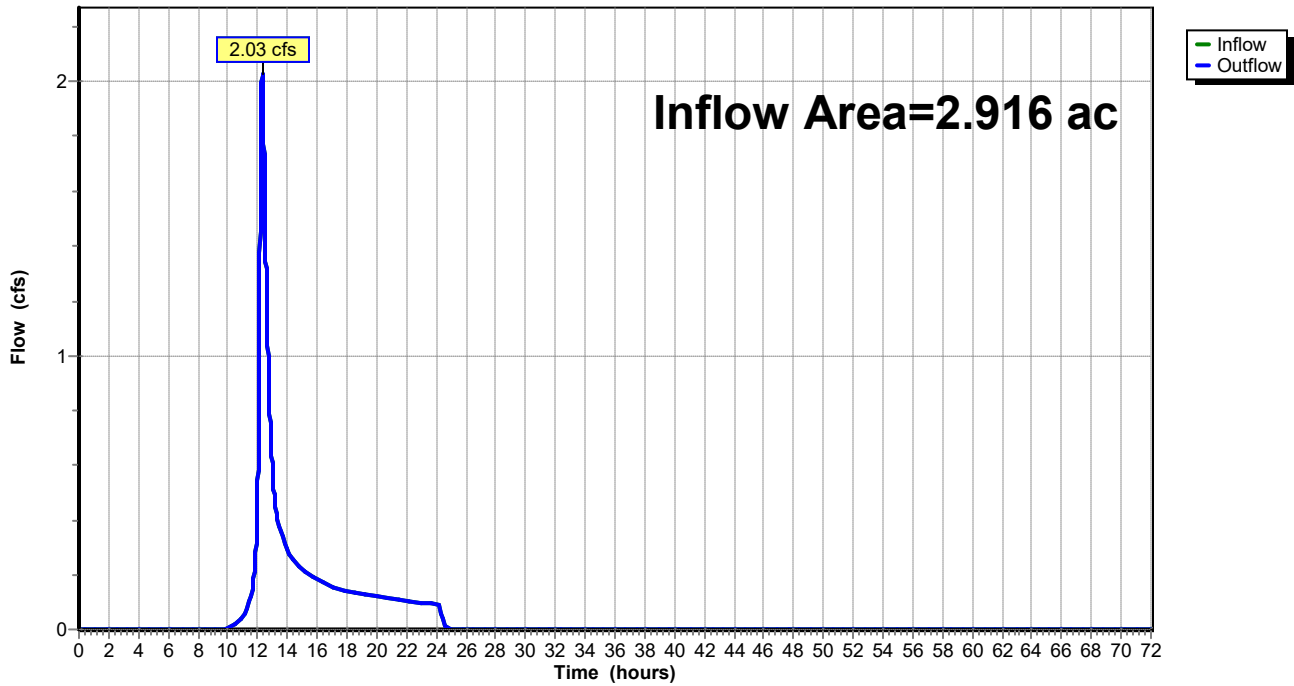
**Summary for Reach DP-1: Wetland to Northeast**

Inflow Area = 2.916 ac, 12.04% Impervious, Inflow Depth = 1.11" for 2-yr event  
 Inflow = 2.03 cfs @ 12.31 hrs, Volume= 0.270 af  
 Outflow = 2.03 cfs @ 12.31 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-1: Wetland to Northeast**

Hydrograph



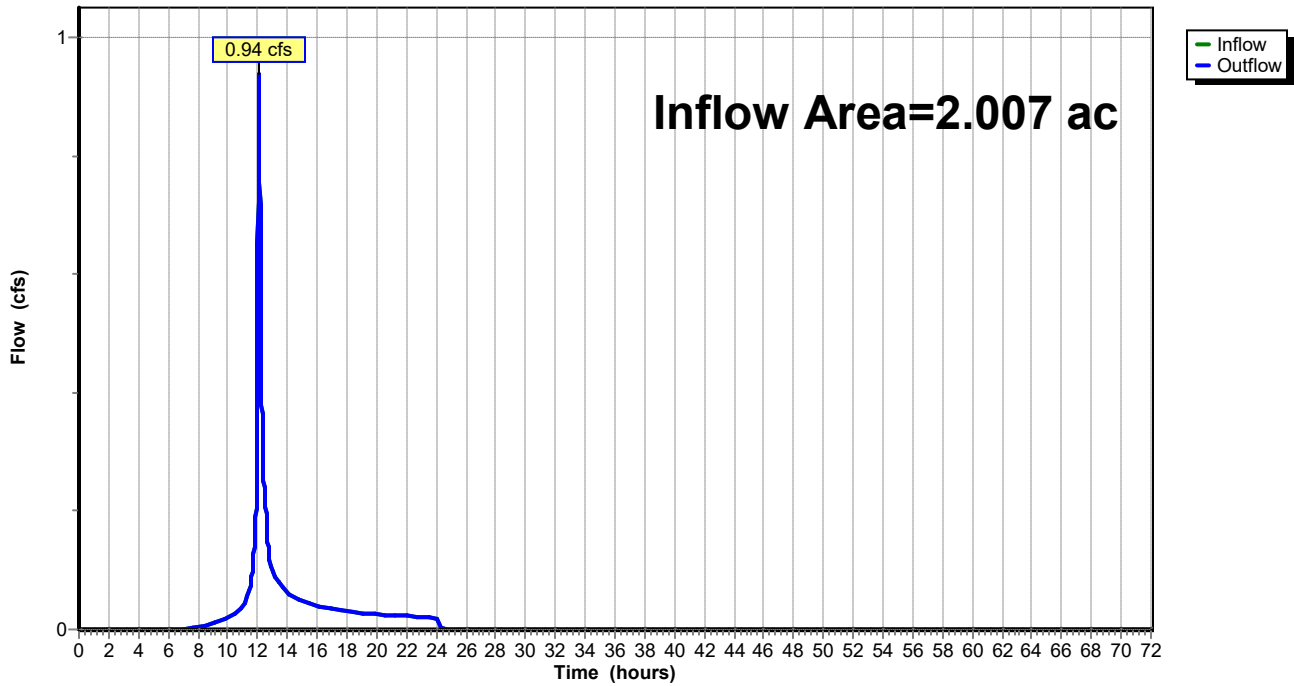
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 2.007 ac, 50.83% Impervious, Inflow Depth = 0.43" for 2-yr event  
 Inflow = 0.94 cfs @ 12.08 hrs, Volume= 0.072 af  
 Outflow = 0.94 cfs @ 12.08 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Bioretention Basin**

Inflow Area = 1.496 ac, 59.02% Impervious, Inflow Depth = 2.05" for 2-yr event  
 Inflow = 2.64 cfs @ 12.14 hrs, Volume= 0.256 af  
 Outflow = 0.10 cfs @ 10.54 hrs, Volume= 0.256 af, Atten= 96%, Lag= 0.0 min  
 Discarded = 0.10 cfs @ 10.54 hrs, Volume= 0.256 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 659.88' @ 17.72 hrs Surf.Area= 4,366 sf Storage= 5,907 cf

Plug-Flow detention time= 578.0 min calculated for 0.256 af (100% of inflow)  
 Center-of-Mass det. time= 578.0 min ( 1,412.2 - 834.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	656.50'	6,986 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 17,464 cf Overall x 40.0% Voids
#2	660.50'	15,465 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) -Impervious
		22,450 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.50	4,366	0	0
660.50	4,366	17,464	17,464

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
660.50	4,366	0	0
661.00	4,888	2,314	2,314
662.00	6,042	5,465	7,779
663.00	7,775	6,909	14,687
663.10	7,775	778	15,465

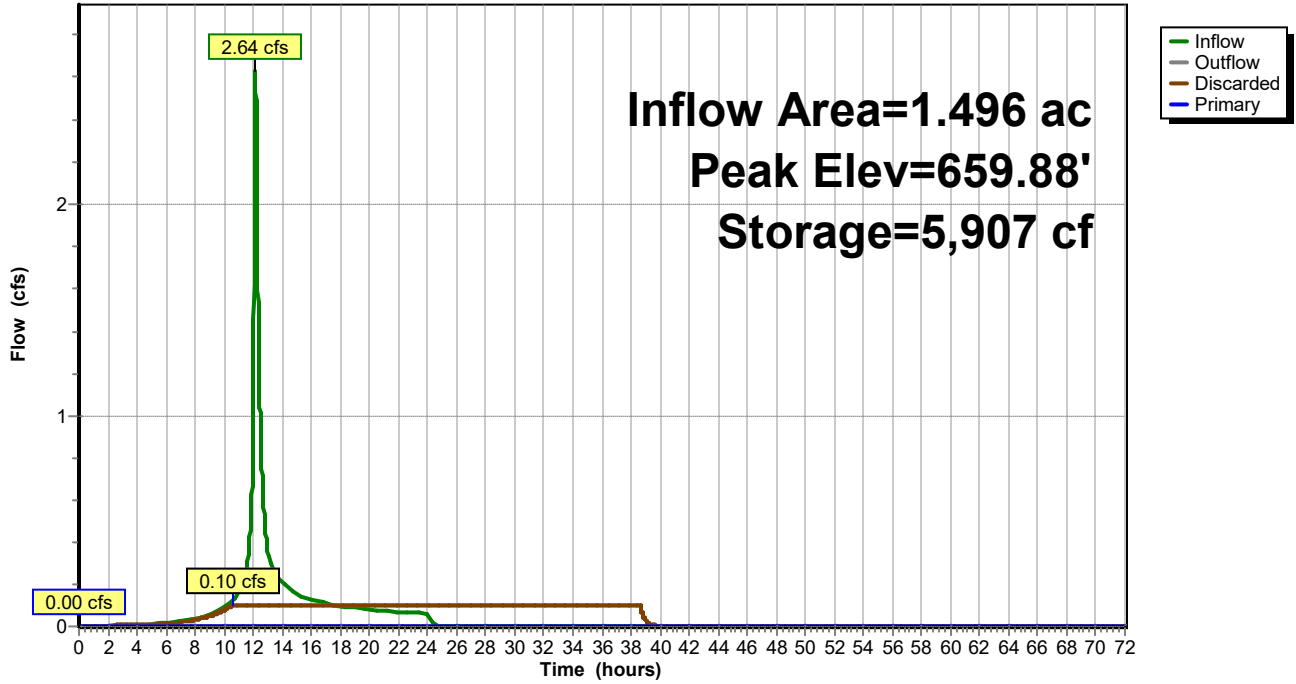
Device	Routing	Invert	Outlet Devices
#1	Discarded	656.50'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 69.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0051 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.87'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.10 cfs @ 10.54 hrs HW=656.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.10 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=656.50' (Free Discharge)  
 ↑2=Culvert ( Controls 0.00 cfs)  
 ↑3=Orifice/Grate ( Controls 0.00 cfs)

### Pond Pond #1: Bioretention Basin

Hydrograph



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment PDA-101: Area to Wetland** Runoff Area=127,015 sf 12.04% Impervious Runoff Depth=2.43"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=74 Runoff=4.67 cfs 0.590 af

**Subcatchment PDA-201: Area to Ex. CBs** Runoff Area=22,250 sf 26.83% Impervious Runoff Depth=3.25"  
Flow Length=161' Tc=9.8 min CN=83 Runoff=1.79 cfs 0.138 af

**Subcatchment PDA-202: Area to** Runoff Area=54,405 sf 50.91% Impervious Runoff Depth=3.44"  
Flow Length=250' Slope=0.0100 '/' Tc=16.3 min CN=85 Runoff=3.57 cfs 0.358 af

**Subcatchment PDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=4.84"  
Tc=5.0 min CN=98 Runoff=1.47 cfs 0.100 af

**Reach 1R: Swale to Basin** Avg. Flow Depth=0.39' Max Vel=1.98 fps Inflow=1.47 cfs 0.100 af  
n=0.030 L=370.0' S=0.0105 '/' Capacity=9.44 cfs Outflow=1.28 cfs 0.100 af

**Reach DP-1: Wetland to Northeast** Inflow=4.67 cfs 0.590 af  
Outflow=4.67 cfs 0.590 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=1.79 cfs 0.138 af  
Outflow=1.79 cfs 0.138 af

**Pond Pond #1: Bioretention Basin** Peak Elev=661.76' Storage=13,330 cf Inflow=4.60 cfs 0.458 af  
Discarded=0.10 cfs 0.458 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.458 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.186 af Average Runoff Depth = 2.89"**  
**72.15% Pervious = 3.552 ac 27.85% Impervious = 1.371 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 4.67 cfs @ 12.30 hrs, Volume= 0.590 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

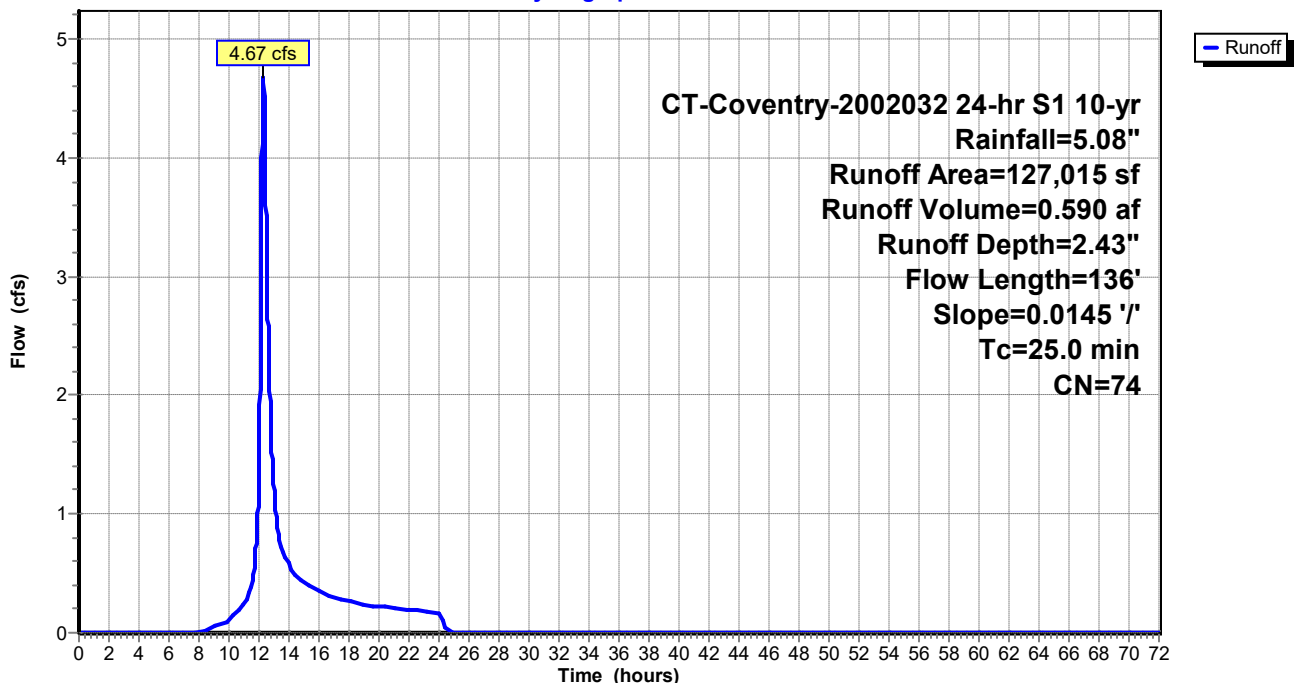
Area (sf)	CN	Description
78,455	69	50-75% Grass cover, Fair, HSG B
10,060	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,830	98	Paved parking, HSG B
1,465	98	Paved parking, HSG C
127,015	74	Weighted Average
111,720		87.96% Pervious Area
15,295		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 0.138 af, Depth= 3.25"

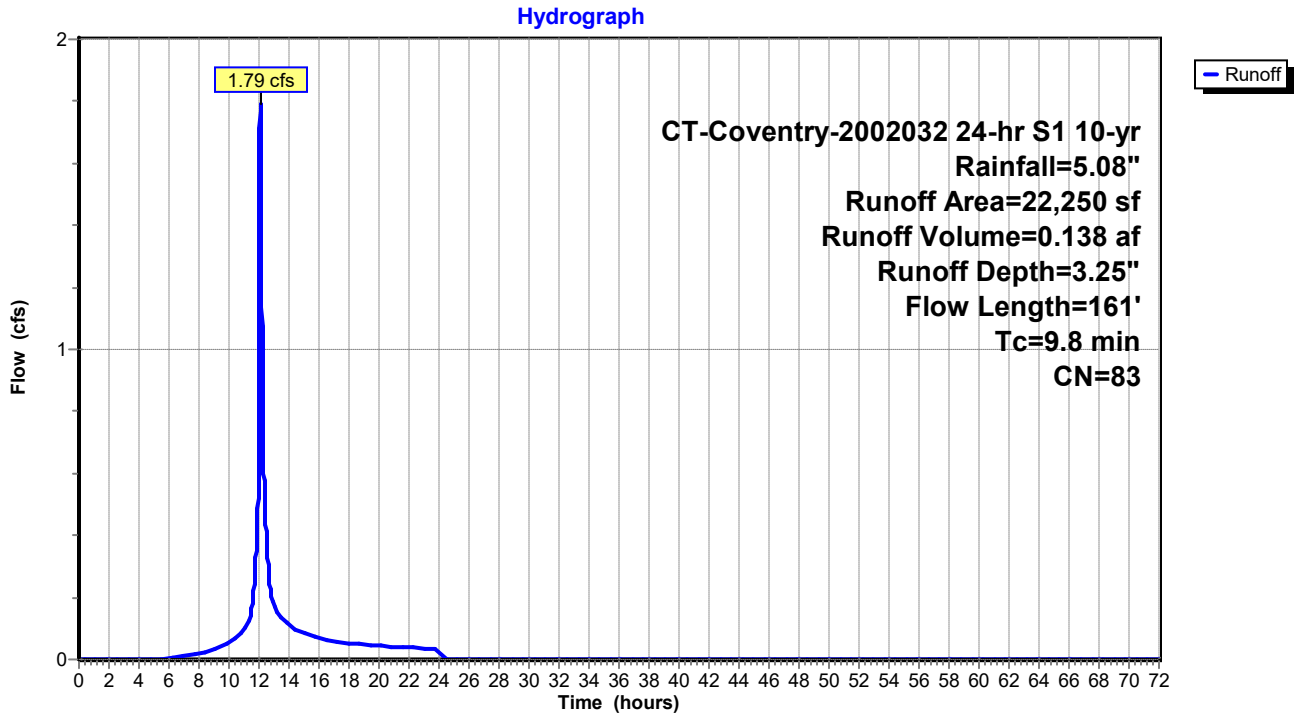
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,580	69	50-75% Grass cover, Fair, HSG B
13,700	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,060	98	Paved parking, HSG C
22,250	83	Weighted Average
16,280		73.17% Pervious Area
5,970		26.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.4	23	0.0174	0.92		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.8	161	Total			



**Subcatchment PDA-201: Area to Ex. CBs in Driveway**



**Summary for Subcatchment PDA-202: Area to Bioretention Basin**

Runoff = 3.57 cfs @ 12.17 hrs, Volume= 0.358 af, Depth= 3.44"

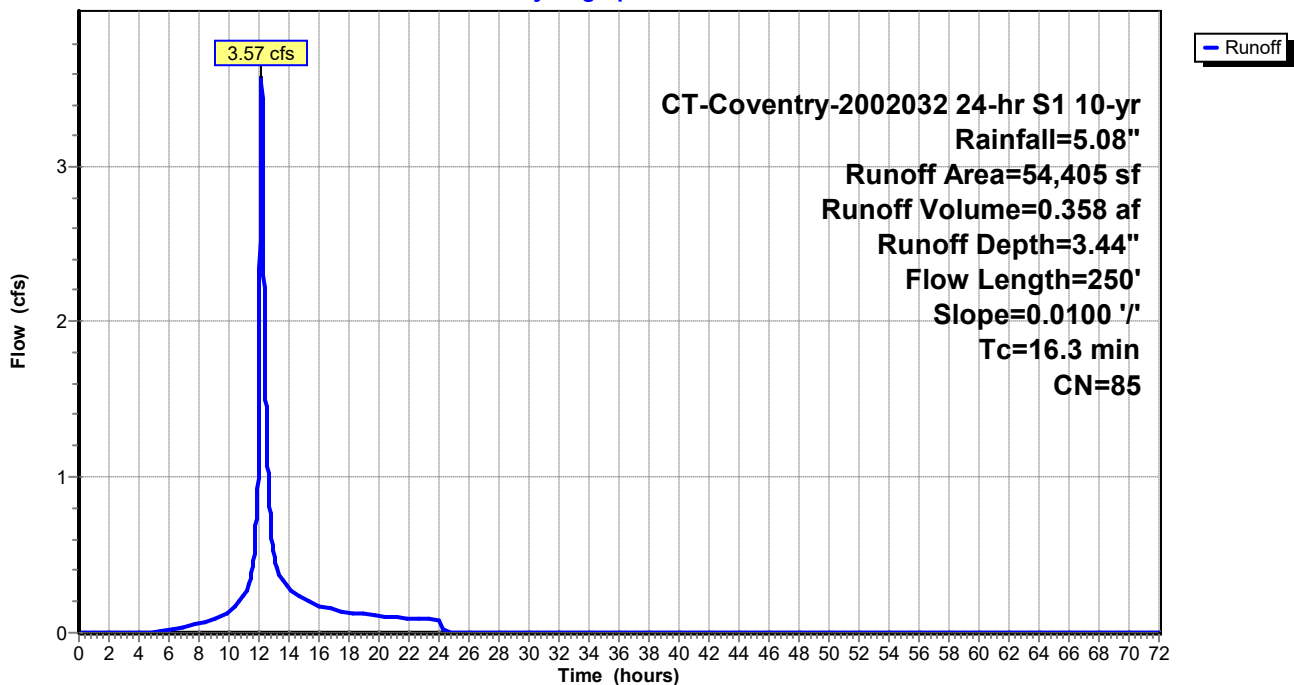
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
20,135	69	50-75% Grass cover, Fair, HSG B
6,575	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
22,195	98	Paved parking, HSG B
5,500	98	Paved parking, HSG C
54,405	85	Weighted Average
26,710		49.09% Pervious Area
27,695		50.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
3.6	150	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.3	250	Total			

**Subcatchment PDA-202: Area to Bioretention Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 1.47 cfs @ 12.03 hrs, Volume= 0.100 af, Depth= 4.84"

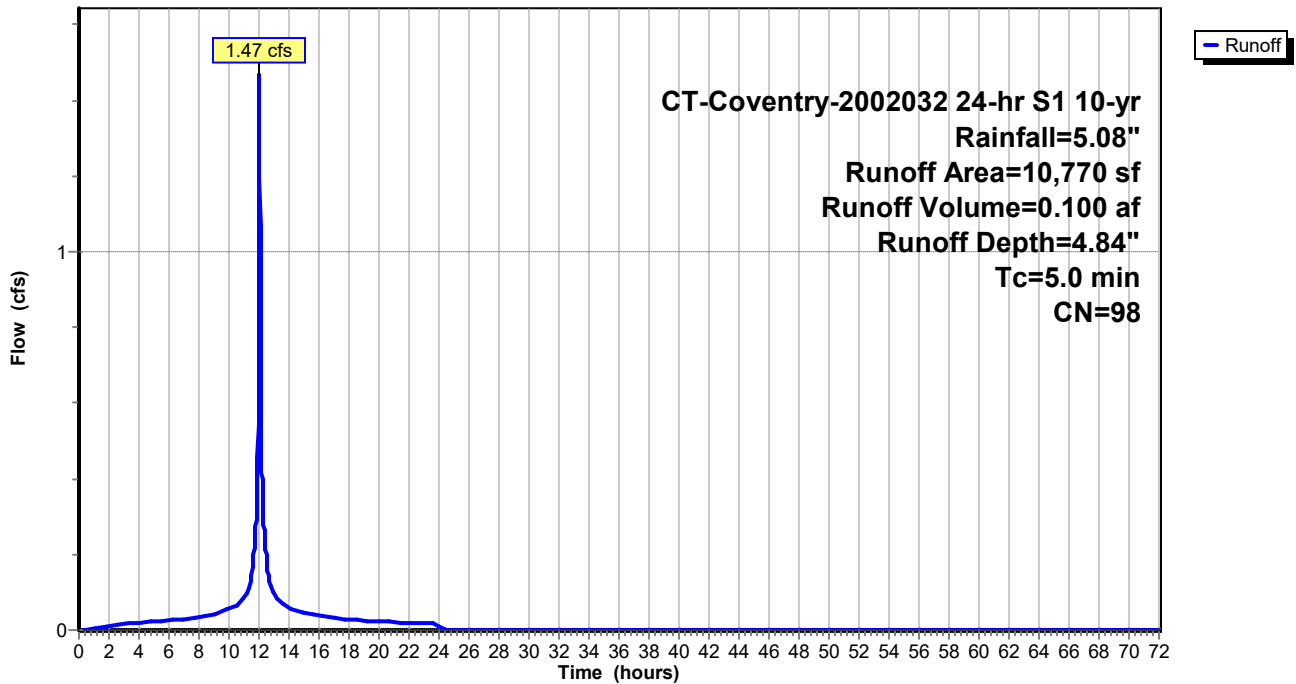
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



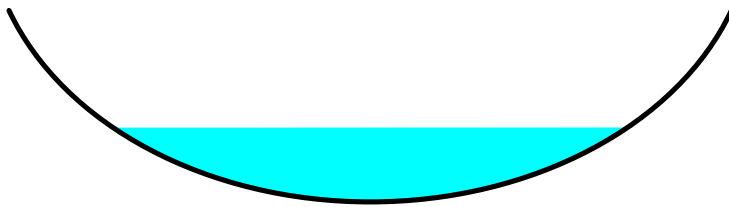
**Summary for Reach 1R: Swale to Basin**

Inflow Area = 0.247 ac, 100.00% Impervious, Inflow Depth = 4.84" for 10-yr event  
 Inflow = 1.47 cfs @ 12.03 hrs, Volume= 0.100 af  
 Outflow = 1.28 cfs @ 12.11 hrs, Volume= 0.100 af, Atten= 13%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 1.98 fps, Min. Travel Time= 3.1 min  
 Avg. Velocity = 0.62 fps, Avg. Travel Time= 9.9 min

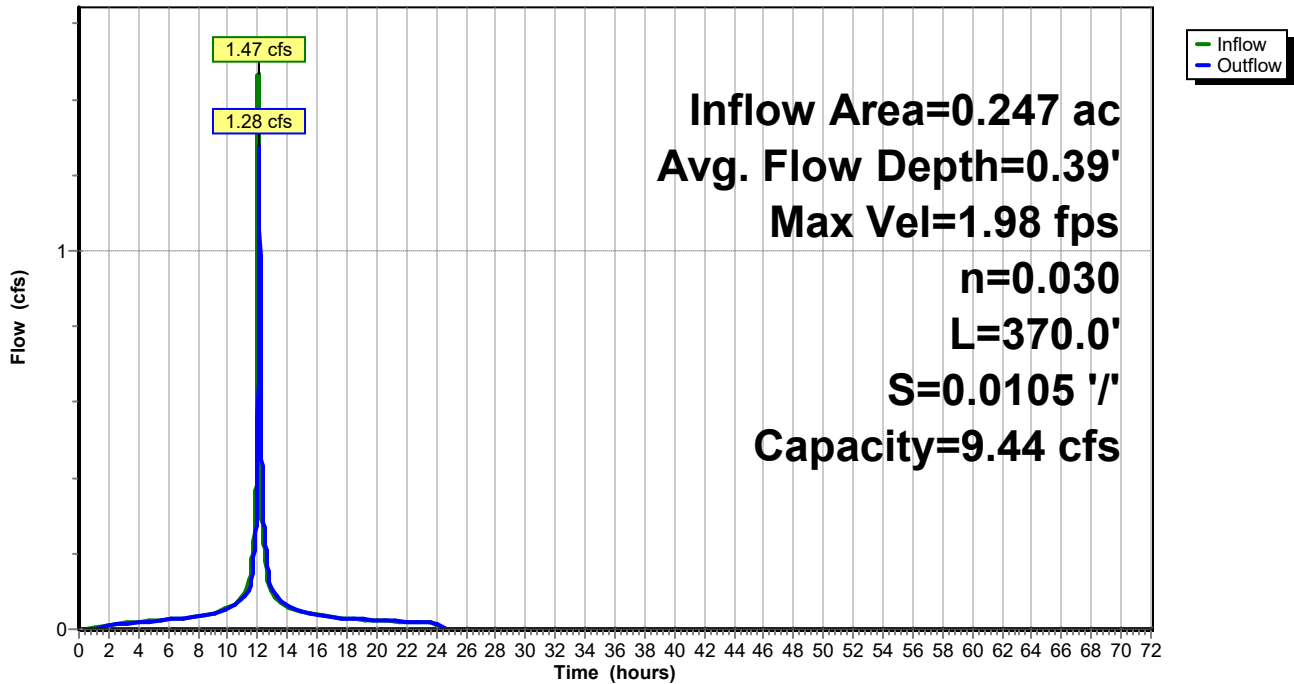
Peak Storage= 239 cf @ 12.05 hrs  
 Average Depth at Peak Storage= 0.39'  
 Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 9.44 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, grassed & winding  
 Length= 370.0' Slope= 0.0105 '/'  
 Inlet Invert= 665.90', Outlet Invert= 662.00'



**Reach 1R: Swale to Basin**

Hydrograph



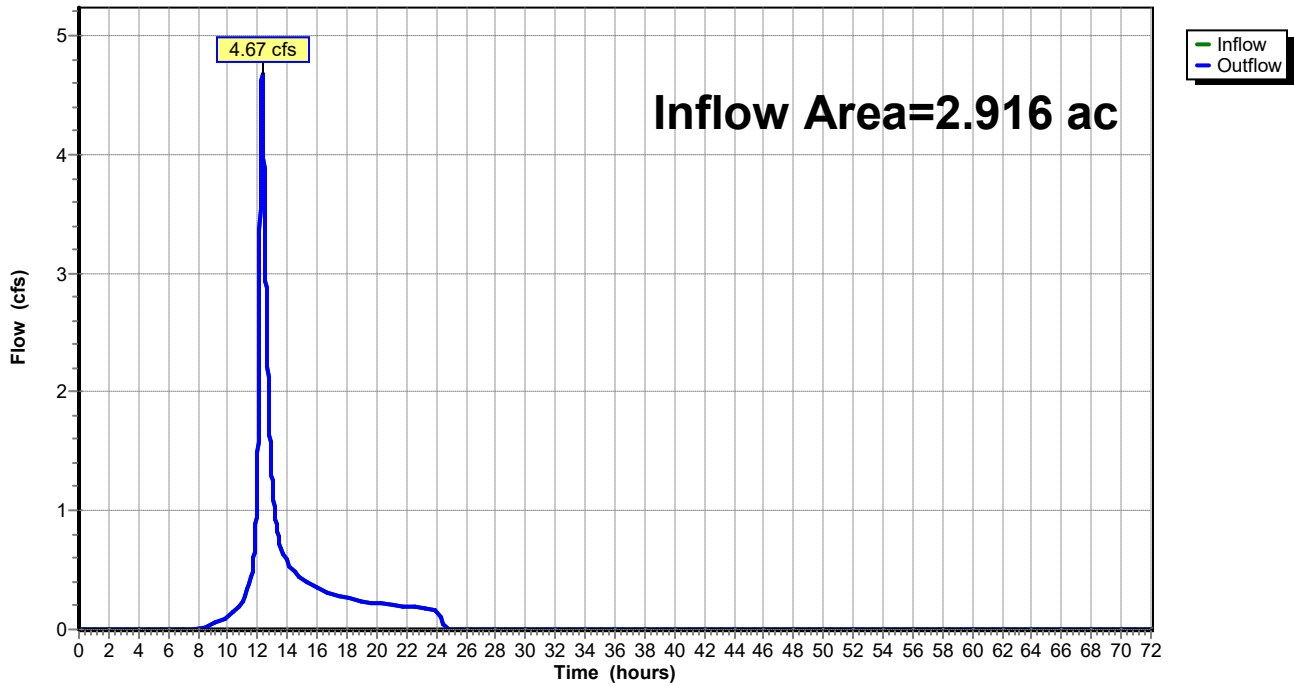
### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 2.916 ac, 12.04% Impervious, Inflow Depth = 2.43" for 10-yr event  
Inflow = 4.67 cfs @ 12.30 hrs, Volume= 0.590 af  
Outflow = 4.67 cfs @ 12.30 hrs, Volume= 0.590 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-1: Wetland to Northeast

Hydrograph



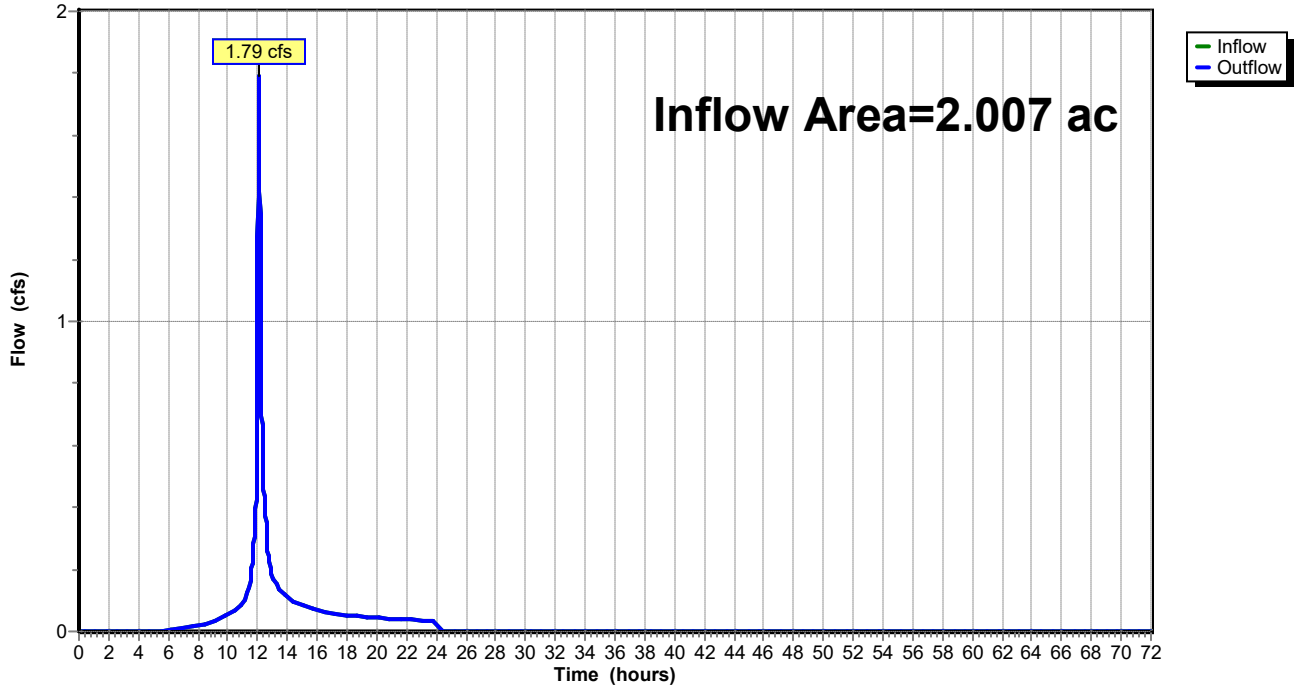
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 2.007 ac, 50.83% Impervious, Inflow Depth = 0.83" for 10-yr event  
 Inflow = 1.79 cfs @ 12.08 hrs, Volume= 0.138 af  
 Outflow = 1.79 cfs @ 12.08 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Bioretention Basin**

Inflow Area = 1.496 ac, 59.02% Impervious, Inflow Depth = 3.67" for 10-yr event  
 Inflow = 4.60 cfs @ 12.14 hrs, Volume= 0.458 af  
 Outflow = 0.10 cfs @ 8.55 hrs, Volume= 0.458 af, Atten= 98%, Lag= 0.0 min  
 Discarded = 0.10 cfs @ 8.55 hrs, Volume= 0.458 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 661.76' @ 24.04 hrs Surf.Area= 4,366 sf Storage= 13,330 cf

Plug-Flow detention time= 1,190.4 min calculated for 0.458 af (100% of inflow)  
 Center-of-Mass det. time= 1,190.4 min ( 2,006.8 - 816.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	656.50'	6,986 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 17,464 cf Overall x 40.0% Voids
#2	660.50'	15,465 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) -Impervious
		22,450 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.50	4,366	0	0
660.50	4,366	17,464	17,464

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
660.50	4,366	0	0
661.00	4,888	2,314	2,314
662.00	6,042	5,465	7,779
663.00	7,775	6,909	14,687
663.10	7,775	778	15,465

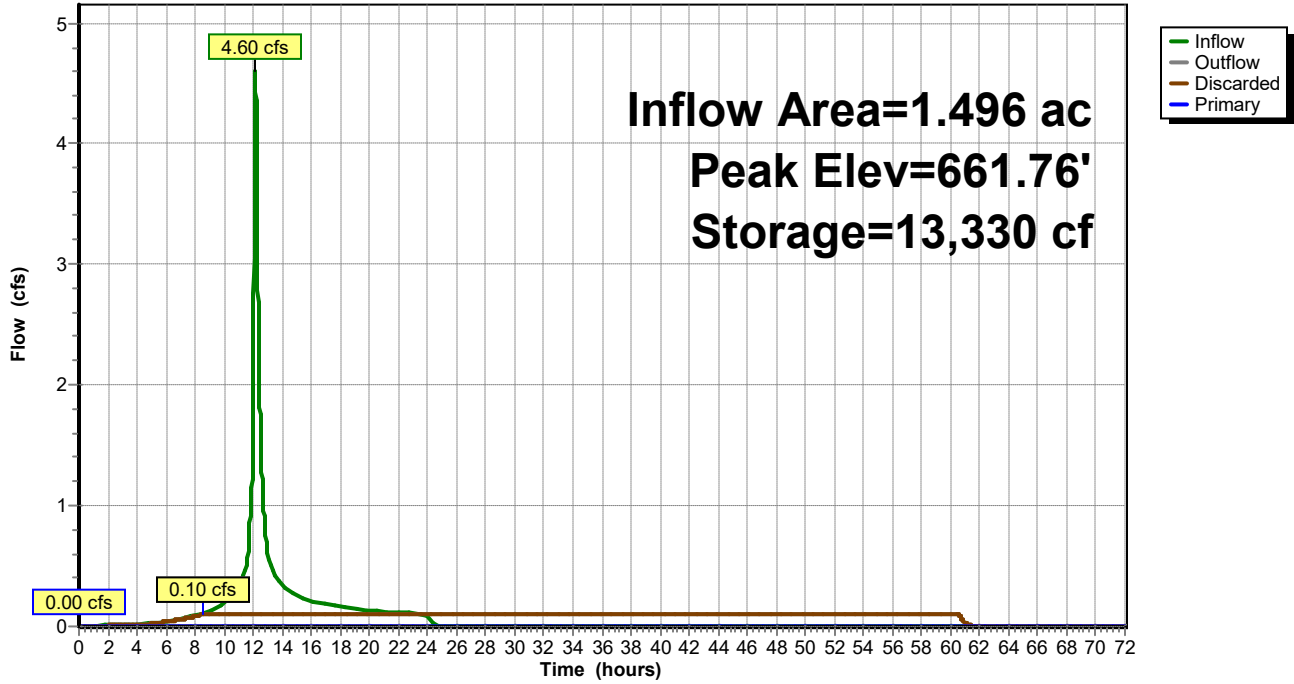
Device	Routing	Invert	Outlet Devices
#1	Discarded	656.50'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 69.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0051 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.87'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.10 cfs @ 8.55 hrs HW=656.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.10 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=656.50' (Free Discharge)  
 ↑2=Culvert ( Controls 0.00 cfs)  
 ↑3=Orifice/Grate ( Controls 0.00 cfs)

### Pond Pond #1: Bioretention Basin

Hydrograph





Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment PDA-101: Area to Wetland** Runoff Area=127,015 sf 12.04% Impervious Runoff Depth=4.84"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=74 Runoff=9.32 cfs 1.175 af

**Subcatchment PDA-201: Area to Ex. CBs** Runoff Area=22,250 sf 26.83% Impervious Runoff Depth=5.88"  
Flow Length=161' Tc=9.8 min CN=83 Runoff=3.17 cfs 0.250 af

**Subcatchment PDA-202: Area to** Runoff Area=54,405 sf 50.91% Impervious Runoff Depth=6.12"  
Flow Length=250' Slope=0.0100 '/' Tc=16.3 min CN=85 Runoff=6.17 cfs 0.637 af

**Subcatchment PDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=7.66"  
Tc=5.0 min CN=98 Runoff=2.28 cfs 0.158 af

**Reach 1R: Swale to Basin** Avg. Flow Depth=0.48' Max Vel=2.28 fps Inflow=2.28 cfs 0.158 af  
n=0.030 L=370.0' S=0.0105 '/' Capacity=9.44 cfs Outflow=2.03 cfs 0.158 af

**Reach DP-1: Wetland to Northeast** Inflow=9.32 cfs 1.175 af  
Outflow=9.32 cfs 1.175 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=3.18 cfs 0.552 af  
Outflow=3.18 cfs 0.552 af

**Pond Pond #1: Bioretention Basin** Peak Elev=662.05' Storage=15,071 cf Inflow=7.69 cfs 0.794 af  
Discarded=0.10 cfs 0.493 af Primary=2.52 cfs 0.302 af Outflow=2.62 cfs 0.794 af

**Total Runoff Area = 4.923 ac Runoff Volume = 2.220 af Average Runoff Depth = 5.41"**  
**72.15% Pervious = 3.552 ac 27.85% Impervious = 1.371 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 9.32 cfs @ 12.30 hrs, Volume= 1.175 af, Depth= 4.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

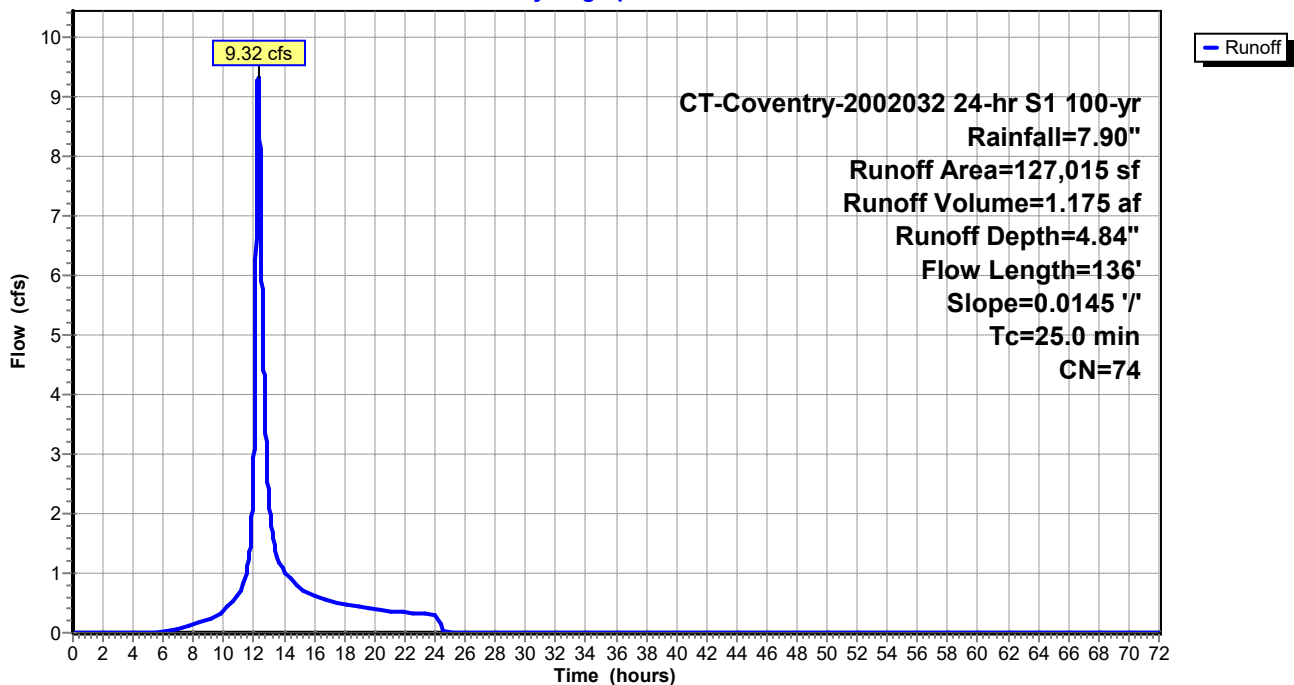
Area (sf)	CN	Description
78,455	69	50-75% Grass cover, Fair, HSG B
10,060	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,830	98	Paved parking, HSG B
1,465	98	Paved parking, HSG C
127,015	74	Weighted Average
111,720		87.96% Pervious Area
15,295		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Runoff = 3.17 cfs @ 12.08 hrs, Volume= 0.250 af, Depth= 5.88"

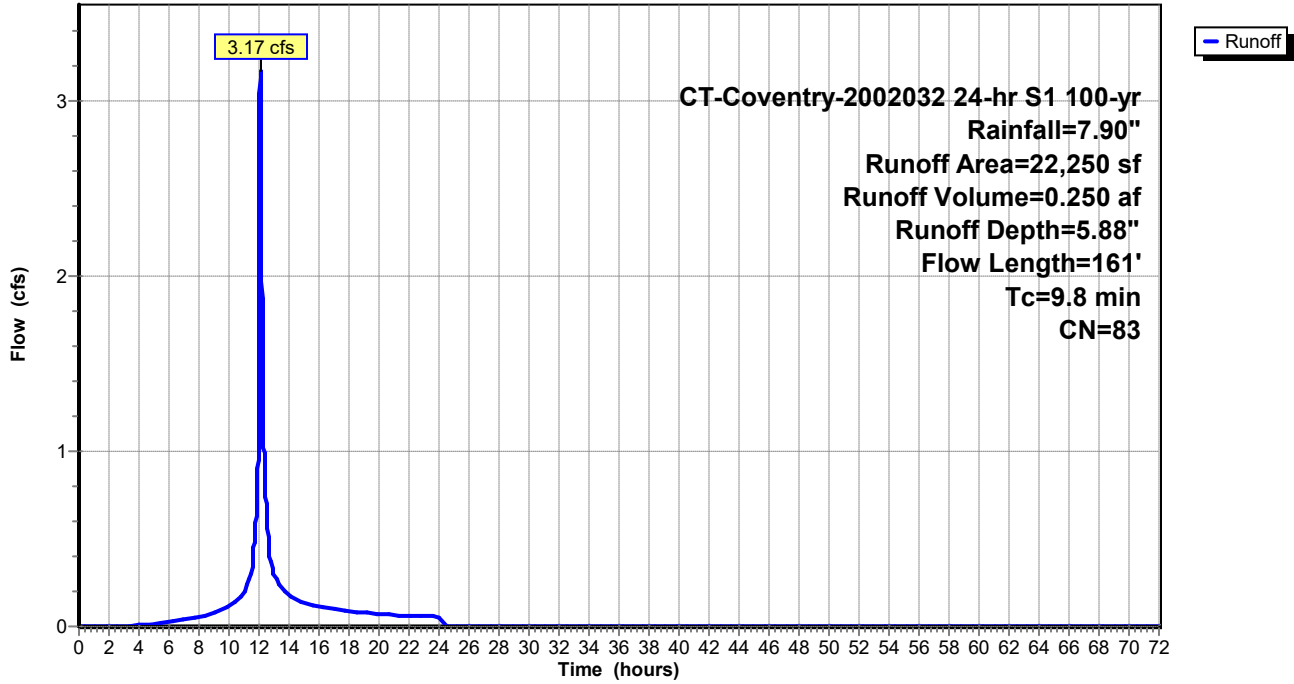
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,580	69	50-75% Grass cover, Fair, HSG B
13,700	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,060	98	Paved parking, HSG C
22,250	83	Weighted Average
16,280		73.17% Pervious Area
5,970		26.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.4	23	0.0174	0.92		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.8	161	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Hydrograph



**Summary for Subcatchment PDA-202: Area to Bioretention Basin**

Runoff = 6.17 cfs @ 12.17 hrs, Volume= 0.637 af, Depth= 6.12"

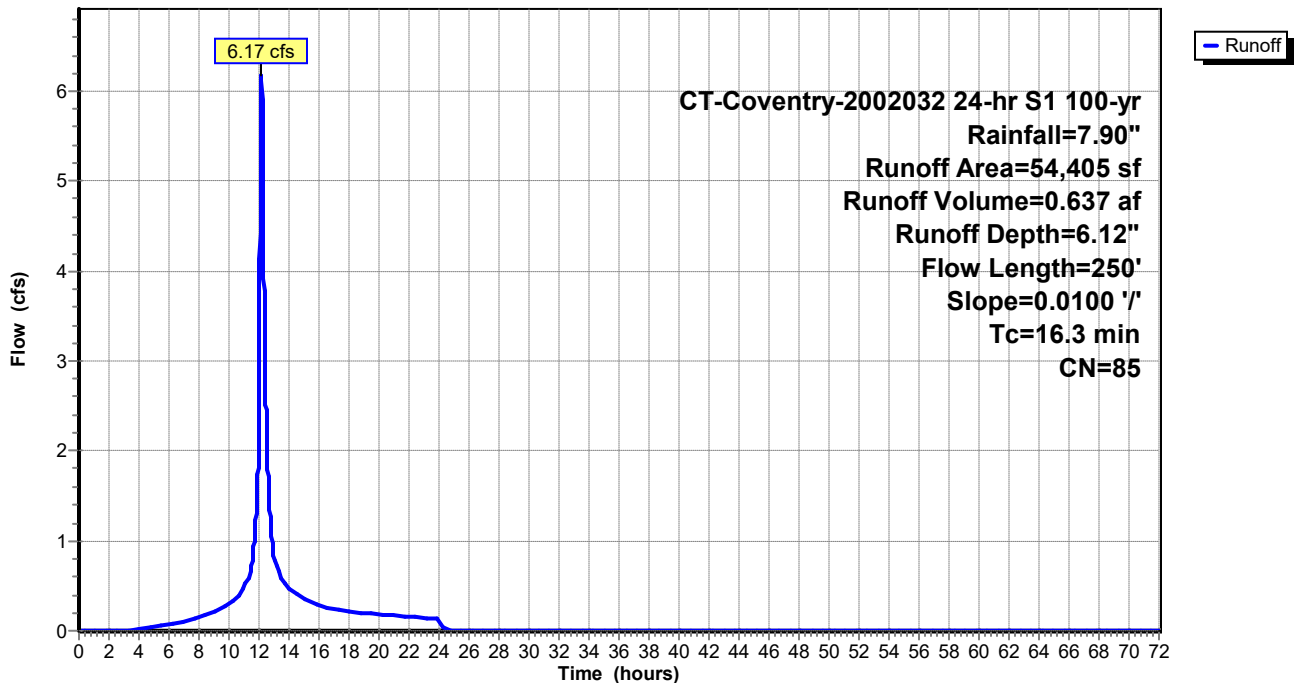
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
20,135	69	50-75% Grass cover, Fair, HSG B
6,575	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
22,195	98	Paved parking, HSG B
5,500	98	Paved parking, HSG C
54,405	85	Weighted Average
26,710		49.09% Pervious Area
27,695		50.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
3.6	150	0.0100	0.70		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
16.3	250	Total			

**Subcatchment PDA-202: Area to Bioretention Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 2.28 cfs @ 12.03 hrs, Volume= 0.158 af, Depth= 7.66"

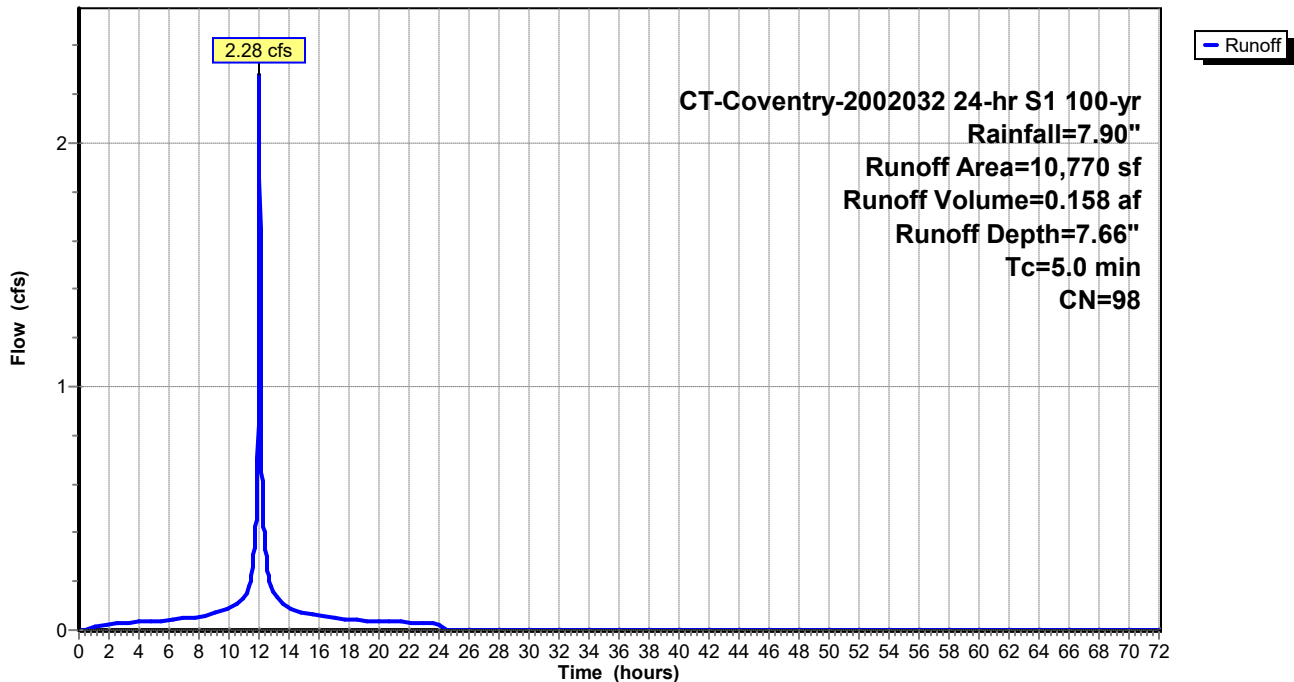
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



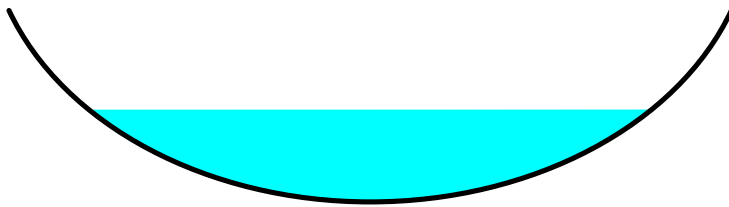
**Summary for Reach 1R: Swale to Basin**

Inflow Area = 0.247 ac, 100.00% Impervious, Inflow Depth = 7.66" for 100-yr event  
 Inflow = 2.28 cfs @ 12.03 hrs, Volume= 0.158 af  
 Outflow = 2.03 cfs @ 12.10 hrs, Volume= 0.158 af, Atten= 11%, Lag= 4.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Max. Velocity= 2.28 fps, Min. Travel Time= 2.7 min  
 Avg. Velocity = 0.71 fps, Avg. Travel Time= 8.6 min

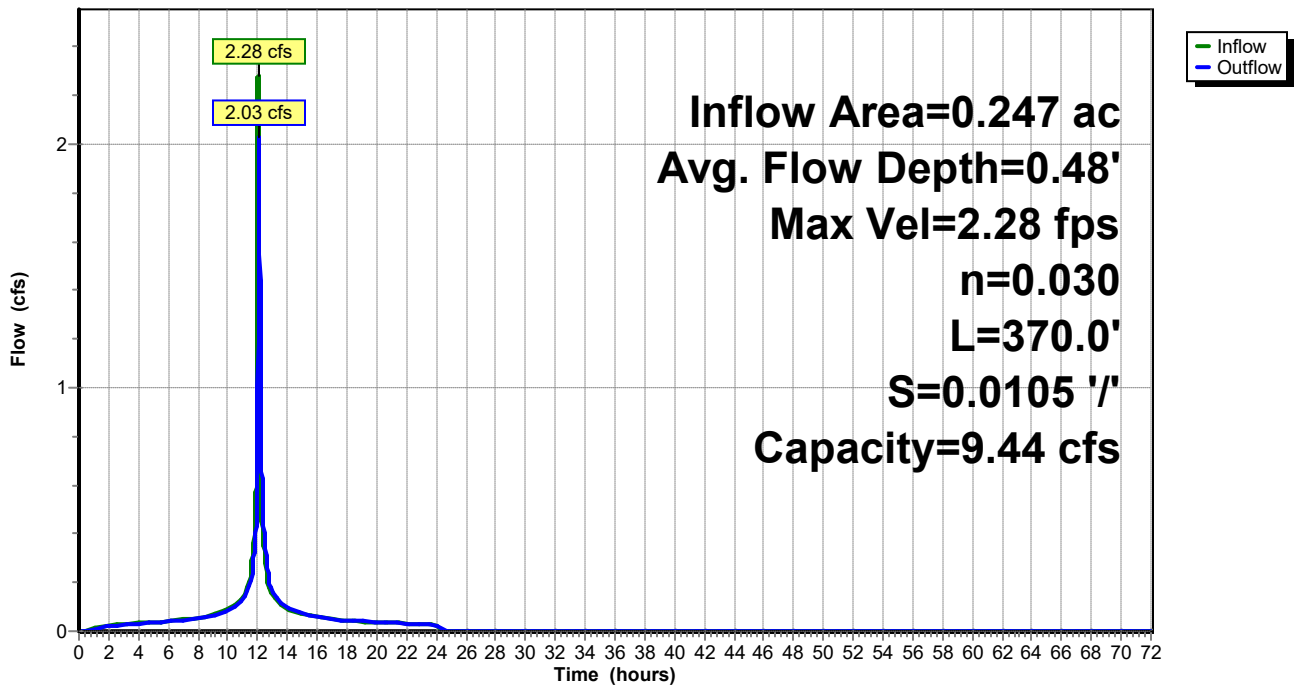
Peak Storage= 331 cf @ 12.05 hrs  
 Average Depth at Peak Storage= 0.48'  
 Bank-Full Depth= 1.00' Flow Area= 2.7 sf, Capacity= 9.44 cfs

4.00' x 1.00' deep Parabolic Channel, n= 0.030 Earth, grassed & winding  
 Length= 370.0' Slope= 0.0105 '/'  
 Inlet Invert= 665.90', Outlet Invert= 662.00'



**Reach 1R: Swale to Basin**

Hydrograph



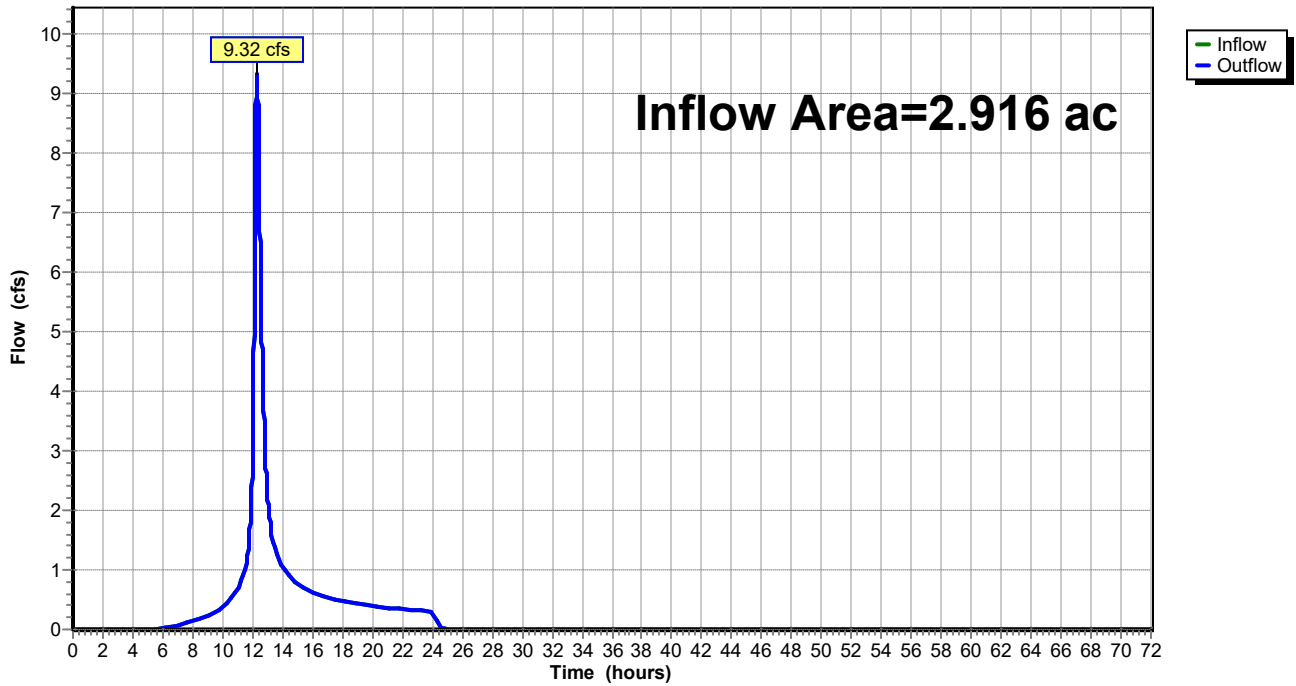
### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 2.916 ac, 12.04% Impervious, Inflow Depth = 4.84" for 100-yr event  
Inflow = 9.32 cfs @ 12.30 hrs, Volume= 1.175 af  
Outflow = 9.32 cfs @ 12.30 hrs, Volume= 1.175 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-1: Wetland to Northeast

Hydrograph





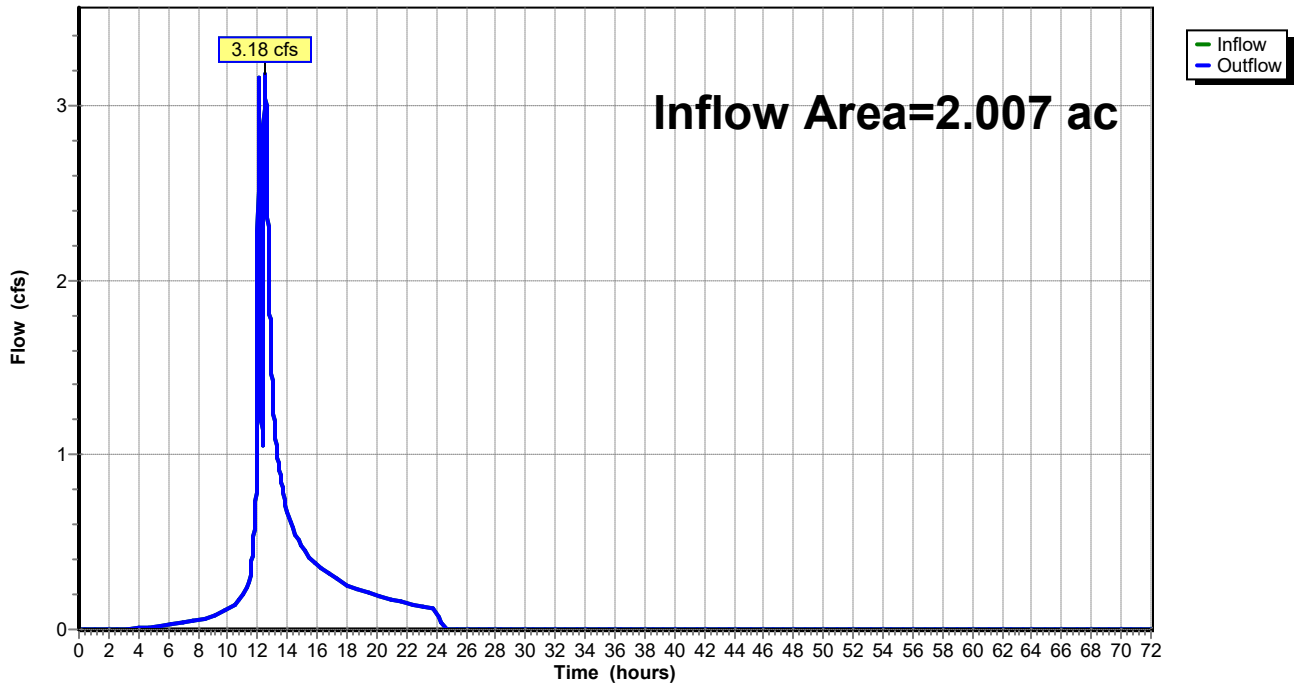
### Summary for Reach DP-2: Ex. CBs in Driveway

Inflow Area = 2.007 ac, 50.83% Impervious, Inflow Depth = 3.30" for 100-yr event  
Inflow = 3.18 cfs @ 12.49 hrs, Volume= 0.552 af  
Outflow = 3.18 cfs @ 12.49 hrs, Volume= 0.552 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-2: Ex. CBs in Driveway

Hydrograph



**Summary for Pond Pond #1: Bioretention Basin**

Inflow Area = 1.496 ac, 59.02% Impervious, Inflow Depth = 6.37" for 100-yr event  
 Inflow = 7.69 cfs @ 12.14 hrs, Volume= 0.794 af  
 Outflow = 2.62 cfs @ 12.50 hrs, Volume= 0.794 af, Atten= 66%, Lag= 21.7 min  
 Discarded = 0.10 cfs @ 5.84 hrs, Volume= 0.493 af  
 Primary = 2.52 cfs @ 12.50 hrs, Volume= 0.302 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 662.05' @ 12.50 hrs Surf.Area= 4,366 sf Storage= 15,071 cf

Plug-Flow detention time= 786.5 min calculated for 0.794 af (100% of inflow)  
 Center-of-Mass det. time= 786.5 min ( 1,586.2 - 799.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	656.50'	6,986 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) 17,464 cf Overall x 40.0% Voids
#2	660.50'	15,465 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) -Impervious
		22,450 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.50	4,366	0	0
660.50	4,366	17,464	17,464

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
660.50	4,366	0	0
661.00	4,888	2,314	2,314
662.00	6,042	5,465	7,779
663.00	7,775	6,909	14,687
663.10	7,775	778	15,465

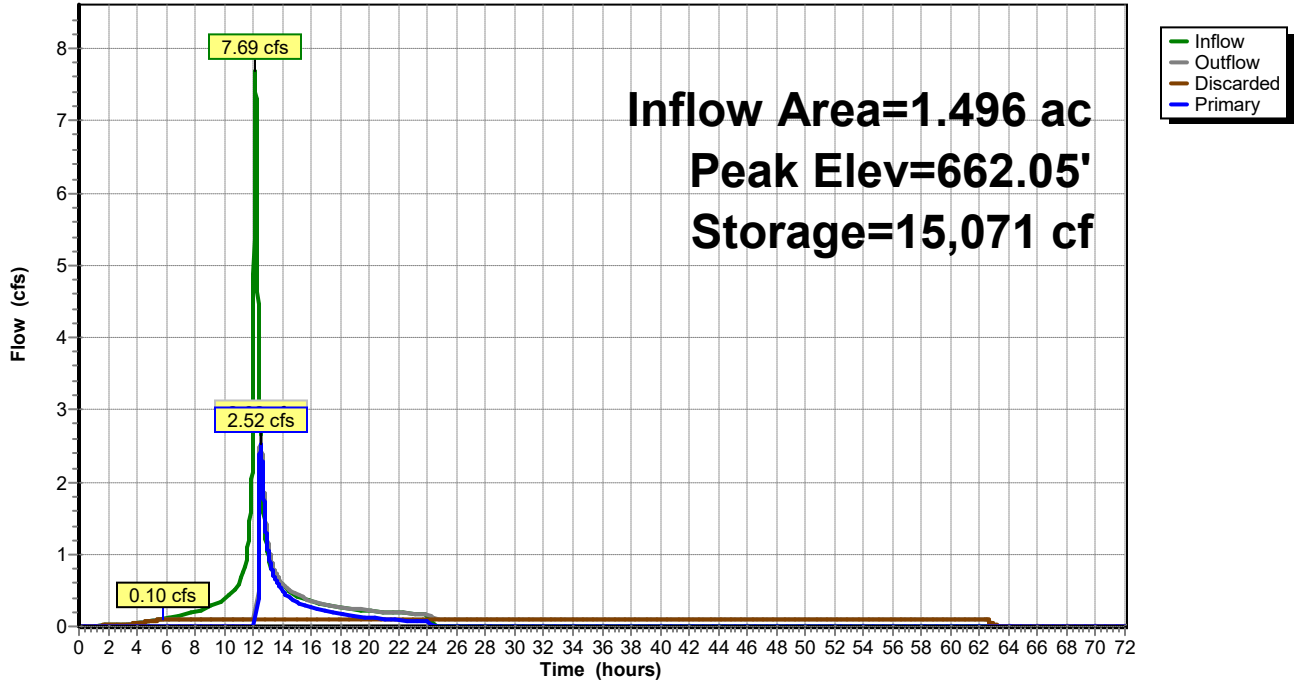
Device	Routing	Invert	Outlet Devices
#1	Discarded	656.50'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 69.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0051 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.87'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.10 cfs @ 5.84 hrs HW=656.57' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.10 cfs)

**Primary OutFlow** Max=2.50 cfs @ 12.50 hrs HW=662.05' (Free Discharge)  
 ↑2=Culvert (Passes 2.50 cfs of 5.84 cfs potential flow)  
 ↑3=Orifice/Grate (Weir Controls 2.50 cfs @ 1.39 fps)

### Pond Pond #1: Bioretention Basin

Hydrograph



## APPENDIX D

### WATER QUALITY CALCUATIONS

CTDEEP Water Quality Volume Calculations

Bioretention Basin Calculation

Groundwater Recharge Calculation

Treatment Train Efficiency Worksheet

**Water Quality Calculations**

**Determine Water Quality Volume**

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(I)(R)(A)}{12}$$

$$R = 0.05 + 0.009(I)$$

WQV = water quality volume (ac-ft)

R = volumetric runoff coefficient

I = percent impervious cover

A = site area in acres

WQv = Calculated Water Quality Volume

Area	ID	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Proposed Water Quality Volume (WQV)	
		ac	ft <sup>2</sup>	ac	ft <sup>2</sup>	%	R	acre-feet	ft <sup>3</sup>	acre-feet	ft <sup>3</sup>
Area to Bioretention Basin	PDA 202/PDA 203	1.496	65,175	0.883	38,465	59.02	0.581	0.072	3,136	0.117	5,079

## Bioretention Basin Calculations

Surface area of the Bioretention System  
 $SA = (WQv) / hf$

WQv = Calculated Water Quality Volume  
 hf = depth of ponding above soil media in feet)

		Water Quality Volume Required (CF)	Depth of Ponding (FT)	Required Surface Area (SF)	Surface Area Provided (SF)	WQV Provided in Ponded Depth (CF)
Bioretention Basin #1	PDA 202/PDA 203	3,136	1.37	2,289	4,366	5,079

**Groundwater Recharge Volume Calculations**

**Groundwater Recharge Volume**

From CT 2004 Stormwater Quality Manual:

$$GVR = \frac{(D)(A)(I)}{12}$$

GRV = Groundwater Recharge Volume (ac-ft)  
 D = Depth of Runoff to be Recharged (table 7-4)  
 A = site area in acres  
 I = impervious cover (decimal)  
 WQv = Calculated Water Quality Volume

1.37

4366

	A	Site Area by NRCS Hydrologic Soil Group				Impervious Cover by NRCS Hydrologic Soil Group				Site Imperviousness (Decimal) by NRCS Hydrologic Soil Group				GRV Required (ac-ft)	Potential Recharge Pond Volumes Proposed (ac-ft)
	Total Site Area (AC)	A	B	C	D	A	B	C	D	A	B	C	D		
	1.87	0.00	1.46	0.41	0.00	0.00	0.76	0.13	0.00	0.00	0.41	0.07	0.00		

**Table 7-4  
Groundwater Recharge Depth**

NRCS Hydrologic Soil Group	Average Annual Recharge	Groundwater Recharge Depth (D)
A	18 inches/year	0.4 inches
B	12 inches/year	0.25 inches
C	6 inches/year	0.10 inches
D	3 inches/year	0 inches (waived)

Source: MADRP, 1997.  
 NRCS – Natural Resources Conservation Service

**Best Management Practice (BMP) Treatment Train Efficiency Worksheet**

Prepared for:  
**Proposed Retail Development**  
**1100 Boston Turnpike**  
**Bolton, Connecticut**

Prepared by:  
**BL Companies**  
**100 Constitution Plaza, 10th Floor**  
**Hartford Connecticut**

Date prepared:  
**April 2, 2021**

**Overall Site Treatment Train Efficiency**

Ei=[1-(1-E1)(1-E2)(1-E3)(1-E4)(1-E?)]*100	<u>BMP</u>	<u>BMP Description</u>	<u>Type of Treatment</u>	<u>Efficiency Rate %</u>
		E1	Impervious Surface Sweeping***	Secondary (conventional)
	E2	Bioretention Basin	Primary	90

Overall Treatment Train Efficiency (Et)= **91 % Total Suspended Solids (TSS) Remova**

\* 80% require per CT DEP  
 \*\* Manufacturers claim 80% TSS removal  
 \*\*\* Schueler 1996 & EPA 1993  
 \*\*\*\* University of New Hampshire

<u>BMP</u>	<u>Type of Treatment</u>	<u>TSS Removal Rate</u>	<u>Starting TSS Load</u>	<u>Amount Removed</u>	<u>Remaining Load</u>
		0.10	1.00	0.10	0.90
0.9	0.90	0.81	0.09		

Overall Treatment Train Efficiency (%) **91**

**TSS Removal Rates (adapted from Schueler, 1996, & EPA, 1993)**

BMP List	Design Rate	Range of Average TSS Removal Rates	Brief Design Requirements
Extended Detention Pond	70%	60-80%	Sediment forebay
Wet Pond (a)	70%	60-80%	Sediment forebay
Constructed Wetland (b)	80%	65-80%	Designed to infiltrate or retain
Water Quality Swale	70%	60-80%	Designed to infiltrate or retain
Infiltration Trench	80%	75-80%	Pretreatment critical
Infiltration Basin	80%	75-80% (predicted)	Pretreatment critical
Dry Well	80%	80% (predicted)	Rooftop runoff (uncontaminated only)
Sand Filter (c)	80%	80%	Pretreatment
Organic Filter (d)	80%	80%+	Pretreatment
Water Quality Inlet	25%	15-35% w/ cleanout	Off-line only; 0.1" minimum Water Quality Volume (WQV) storage
Sediment Trap (Forebay)	25%	25% w/ cleanout	Storm flows for 2-year event must not cause erosion; 0.1" minimum WQV storage
Drainage Channel	25%	25%	Check dams; non-erosive for 2-yr.
Deep Sump and Hooded Catch Basin	25%	25% w/ cleanout	Deep sump general rule = 4 x pipe diameter or 4.0' for pipes 18" or less
Street Sweeping	10%	10%	Discretionary non-structural credit, must be part of approved plan



APPENDIX E

SUBSURFACE SOIL INVESTIGATION LOGS

Test Pit Logs

Falling Head Permeability Test Logs



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-1</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.50</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-2"	Topsoil	E		
2"-60"	Dark brown coarse sand with trace cobbles	E	TR C	
60"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification      Designation 3" - 12"      Cobble (C) 12" - 24"      Small (S) 24" - 36"      Medium (M) 36" and Larger      Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)      0-10% LITTLE (LI)      10-20% SOME (SO)      20-35% MANY (MA)      35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-2</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.30</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-72"	Dark brown coarse sand with trace cobbles	E	TR C	
72"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24          Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-3</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>661.90</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-66"	Dark brown coarse sand with trace cobbles	E	TR C	
66"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 7'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24          Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

TEST PIT # 1

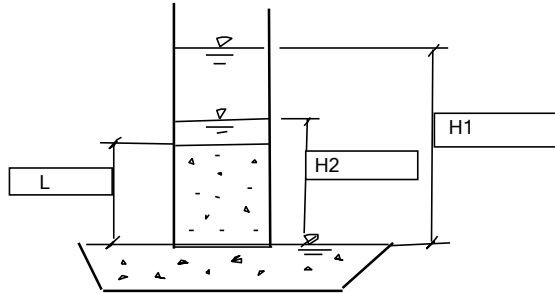
SAMPLE TP-1

SAMPLE LENGTH: 4.50 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am

presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.260	0.240	6.380	0.034	4.063
10.000	6.500	5.960	0.540	6.230	0.039	4.681
15.000	6.500	5.720	0.780	6.110	0.038	4.596
20.000	6.500	5.540	0.960	6.020	0.036	4.306
25.000	6.500	5.420	1.080	5.960	0.033	3.914
30.000	6.500	5.300	1.200	5.900	0.031	3.661
35.000	6.500	5.060	1.440	5.780	0.032	3.844
40.000	6.500	4.880	1.620	5.690	0.032	3.844
45.000	6.500	4.680	1.820	5.590	0.033	3.907
50.000	6.500	4.500	2.000	5.500	0.033	3.927
					<b>Average=</b>	<b>4.074</b> ft/day
					or	2.04 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

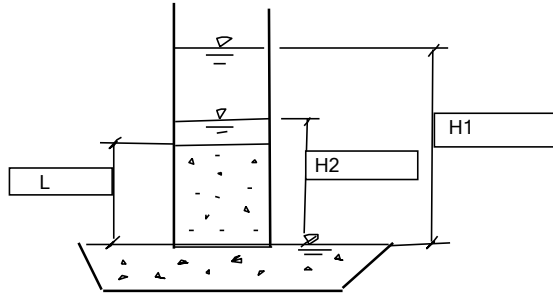
TEST PIT # 1

SAMPLE TP-2

SAMPLE LENGTH: 4.50 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am  
presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.170	0.330	6.335	0.047	5.626
10.000	6.500	5.880	0.620	6.190	0.045	5.409
15.000	6.500	5.650	0.850	6.075	0.042	5.037
20.000	6.500	5.300	1.200	5.900	0.046	5.492
25.000	6.500	5.060	1.440	5.780	0.045	5.381
30.000	6.500	4.680	1.820	5.590	0.049	5.860
35.000	6.500	4.500	2.000	5.500	0.047	5.610
40.000	6.500	4.300	2.200	5.400	0.046	5.500
45.000	6.500	4.000	2.500	5.250	0.048	5.714
					<b>Average=</b>	<b>5.514</b> ft/day
					or	2.76 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

TEST PIT # 1

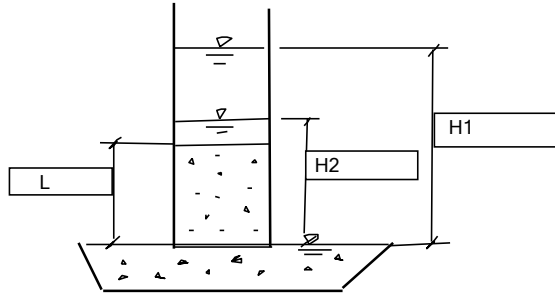
SAMPLE TP-3

SAMPLE LENGTH: 4.00 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am

presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.180	0.320	6.340	0.040	4.845
10.000	6.500	5.540	0.960	6.020	0.064	7.654
15.000	6.500	5.060	1.440	5.780	0.066	7.972
20.000	6.500	4.280	2.220	5.390	0.082	9.885
25.000	6.500	4.220	2.280	5.360	0.068	8.167
30.000	6.500	4.000	2.500	5.250	0.063	7.619
					<b>Average=</b>	<b>7.691</b> ft/day
					or	3.85 in/hr



## TRAFFIC STUDY

Proposed Retail Development

1100 Boston Turnpike

Bolton, CT



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## APPENDIX

CAPACITY ANALYSES

## EXECUTIVE SUMMARY

This traffic study has been prepared for a new retail development at 1100 Boston Turnpike in Bolton, CT. The study area is along a suburban stretch of US Route 44 (Boston Turnpike) that contains light commercial developments, farmland, and single-family residential units. The Site will consist of a 10,640 SF retail development. Access to the Site will be via the existing shared driveway to 1100 Boston Turnpike, which ultimately provides access to Boston Turnpike at an unsignalized curb cut.

This study investigated the potential traffic impacts of the proposed development during the weekday evening and Saturday mid-day traffic periods. To assess existing traffic conditions in the vicinity of the Site, peak hour manual turning movement traffic volumes, vehicle classification and pedestrian counts were recorded at key intersections within the study area.

The proposed development is projected to generate approximately 59 trips in the PM peak hour (31 in/enter, 28 out/exit) and 89 trips in the Saturday mid-day peak hour (46 in/enter, 43 out/exit).

A detailed traffic analysis was conducted at key intersections and roadways in the general vicinity of the Site in accordance with methodologies outlined in the Highway Capacity Manual 2010, published by the Transportation Research Board. After analyses of the Existing, No Build and Build Scenarios of the PM weekday and Saturday mid-day Peak Hours, it is projected that this development will have no significant impacts on the surrounding roadway network.

All intersections, overall, during the two study peak periods are projected to perform adequately and have negligible impacts from the proposed development on Route 44 and surrounding local streets. Any movement projected to operate at an undesirable

Level of Service does not deteriorate significantly further from the Existing to Build scenarios.

The following is a summary of the results/recommendations for this Site:

- Install 12" white Stop Bars and "Stop" Signs (R1-1) at the Site driveway egress.
- Removal of existing median in the driveway to accommodate heavy vehicles (WB-67) turns radius / movements.

## I. INTRODUCTION

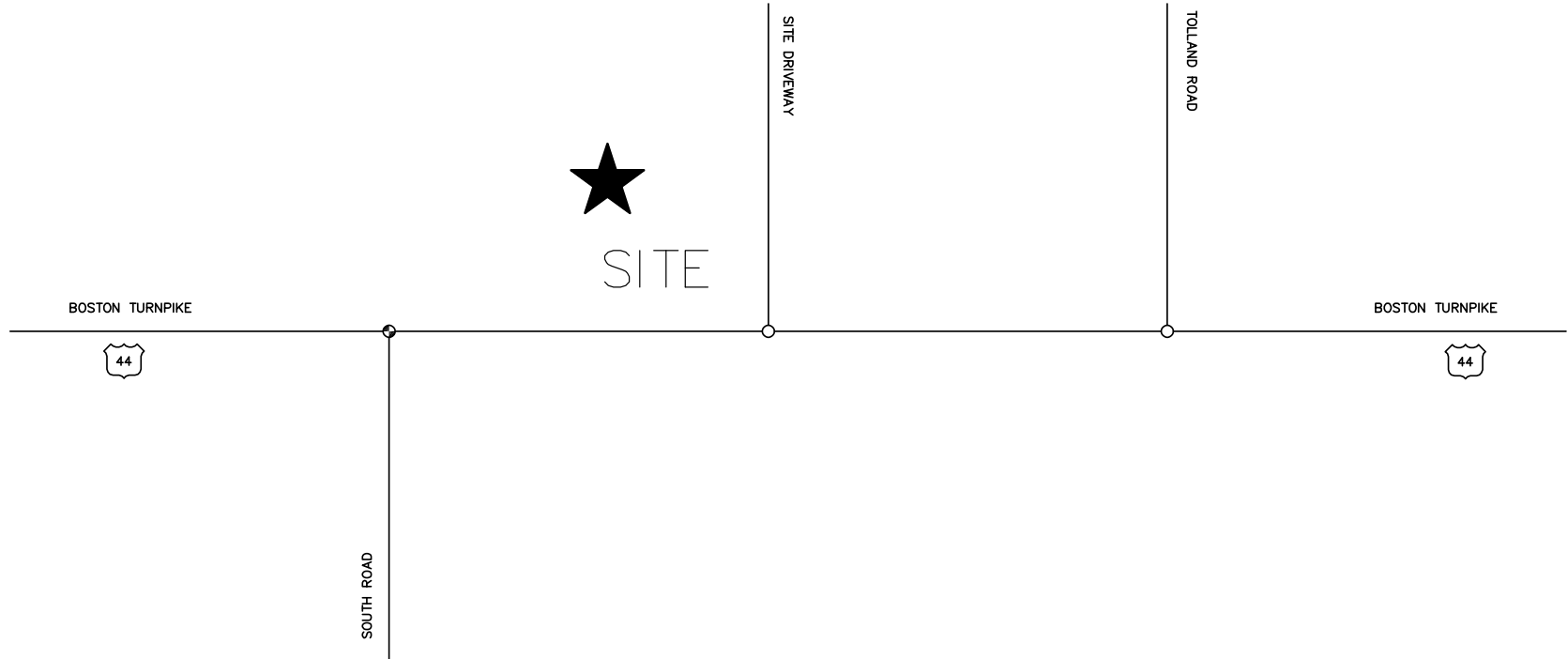
This traffic study has been prepared for a new retail development at 1100 Boston Turnpike in Bolton, CT. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections. The study area is along a suburban stretch of Boston Turnpike that contains light commercial developments, farmland, and single-family residential units. See **Figure 1** for a location map.

The Site will consist of a 10,640 SF retail development. Access to the Site will be via the existing driveway to 1100 Boston Turnpike (US Route 44), which ultimately provides access to Boston Turnpike at an unsignalized curb cut.

The study investigated the potential traffic impacts associated with the development in the weekday evening and Saturday mid-day shopping peak periods. The greatest cumulative impacts of project related traffic are likely to occur during the weekday evening peak hour, when traffic consists mostly of commuters, and the Saturday mid-day, which would include mostly shoppers. As such, traffic operating conditions at the study intersections were analyzed during these peak periods.

LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION



1/20/2021, 11:40:00 AM, G:\JOBS\20\2002032\DWG\1\FLO2002032.DWG, FIGURE 1.



**SITE LOCATION**  
PROPOSED DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT  
SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

FIGURE 1

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## II. EXISTING CONDITIONS

An investigation of the existing traffic conditions on the adjacent roadway network formed the basis for assessing any traffic issues associated with the proposed development. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available with Connecticut Department of Transportation (CTDOT) and the Town of Bolton.

### **Access Network**

The project study area consists of a signalized intersection at the following location:

- US Route 44 (Boston Turnpike) at South Road

Major roadways in the vicinity of the project include US Route 44, South Road, North Road, and Tolland Road.

**US Route 44 (Boston Turnpike)** is an east-west oriented minor arterial, running through four states in the Northeastern United States (New York, Connecticut, Rhode Island and Massachusetts). The western terminus is at US 209 and New York State Route 55 in Kerhonkson, New York and the eastern terminus is at Massachusetts State Route 3A in Plymouth. In the Town of Bolton, US Route 44 (Boston Turnpike) near the proposed Site is a 2-lane facility with wide shoulders, gently rolling alignment, and 40 mile per hour speed limit. Abutting lands and developments include shopping plazas, light commercial developments, farmland, and single-family residential units. There is a traffic signal at the South Street intersection.

**South Road South** is a two lane, 1.6 miles long roadway, classified as a collector by CTDOT. South Road is straight and is generally flat with a 25 mile per hour speed limit. It originates at the intersection with US Route 44 (Boston Turnpike) and extends southward where it terminates at the intersection of US Route 6 (Hop River Road). Abutting lands are residential and farmlands. The average daily traffic readily available from CTDOT,

shows 550 vehicles per day. The "No Through Truck" regulation is posted on the South Road.

**Tolland Road** is a mile-long local road that runs in the north - south direction. It originates at the intersection with US Route 44 (Boston Turnpike) and extends north and east towards Cedar Swamp Road in the Town of Coventry. Abutting lands include residential and recreational developments associated with access to Lower Bolton Lake and Middle Bolton Lake. The speed limit is posted as 30 mph.

### **Intersection Characteristics**

Several key intersections were reviewed in this study to determine if they would be impacted by the expected Site traffic volumes. They are as follows:

- **US Route 44 (Boston Turnpike) at South Road** - This is a signalized "T" intersection with approaches to the intersection having a single lane. The traffic signal provides simple two-phase operation with preemption for westbound traffic. This signal is free operation and not part of a coordinated system.
- **US Route 44 (Boston Turnpike) at Tolland Road** - This unsignalized "T" type intersection is located about 1/4 mile east of the proposed development. All approaches are single lane. Tolland Road is stop controlled. There is a private driveway across from Tolland Road that serves a single-family house.
- **US Route 44 (Boston Turnpike) at Site Drive** - The Site Drive connects into the existing drive for 1100 Boston Turnpike at an unsignalized intersection.

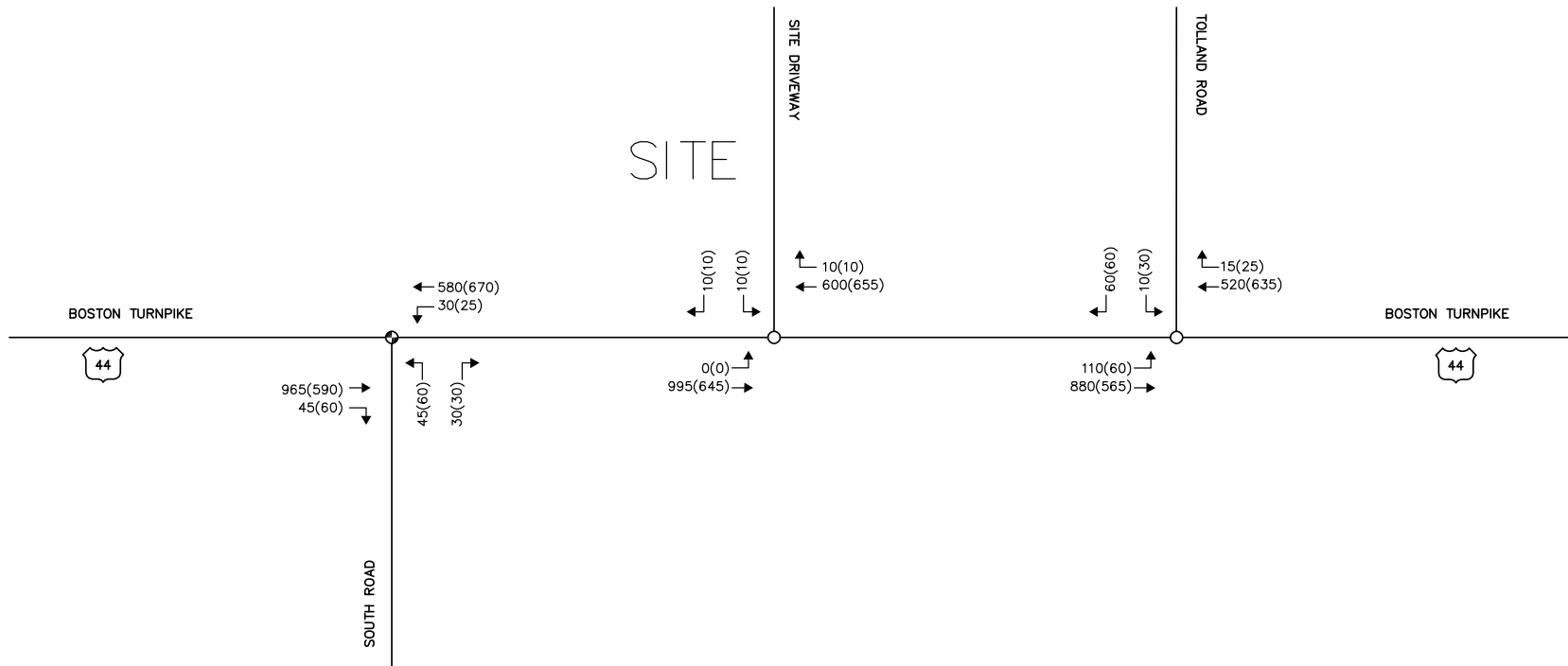


### Existing Traffic Volumes

Weekday afternoon peak hour and Saturday mid-day peak hour traffic volumes were counted at the above intersections the week of January 4, 2021. It should be noted that these counts were collected during the COVID-19 Pandemic. Using historical counts collected by CTDOT and comparing these counts to the 2021 collected, the volumes were grown and balanced, and subsequently reviewed and approved by CTDOT. The current peak hour traffic volumes for the intersections are illustrated in **Figure 2**.

**LEGEND**

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- WEEKDAY PM: XXX
- SATURDAY PEAK: (XXX)



I:\20\2021\_PPADLO\_G\JOBS\210\2002032\DWG\1\LOC2002032.DWG-FIGURE 2



**EXISTING (2021) TRAFFIC VOLUMES**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

**FIGURE 2**

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### **Truck Restrictions**

In the traffic study area and surroundings, truck restrictions exist at selected roadways. No through trucks are allowed on sections of South Road and Stony Road according to OSTA (Office of the State Traffic Administration).

In Connecticut, a through truck is defined as one that passes through a town without having an origin or destination in that town. If a truck originates or has a scheduled stop within that town, it would not be affected by a through truck prohibition. Both roadways provide a cut through between US Route 44 and US Route 6.

### **Crash Data Analysis**

As part of the existing conditions analysis, crash data for the most recent three-year period from January 1, 2018 through December 31, 2020, was obtained from the Connecticut Crash Data Repository.

Twenty (20) crashes in the study area were reviewed; the most common crashes were the front to rear at sixty percent (60%) followed by angle crashes at twenty-five percent (25%), and fifteen percent (15%) noted as “not applicable”. It should be noted these three crashes (15% of total observed) were distracted driver crash types, where driver struck a pole, pole support, or guardrail. The majority of crashes resulted in “No Apparent Injury” at eighty-five percent (85%). There were no fatalities and zero crashes associated with “Suspected Serious Injury” in the corridor for the three-year period. According to the crash records mentioned above, US Route 44 near and at the South Street intersection experienced the majority of the crashes in the corridor with fifty-five percent (55%). Below **Table 1** summarizes the crash data.

Table 1 – Crash Data Summary

Proposed Development: 1100 Boston Turnpike, Bolton, CT					
	Intersection at US Route 44 / South Road	Segment of Boston Turnpike between South Road and Tolland Road	Segment of Boston Turnpike between Tolland Road & Old Coventry Road	Total	Percent
<b>Year</b>					
2018	4	3	3	10	50%
2019	2	4	2	8	40%
2020	0	0	2	2	10%
Total	6	7	7	20	100%
<b>Crash Type</b>					
Angle	2	2	1	5	25%
Front to Front	0	0	0	0	0%
Front to Rear	4	3	5	12	60%
Not Applicable	0	2	1	3	15%
Other	0	0	0	0	0%
Rear to Rear	0	0	0	0	0%
Rear to Side	0	0	0	0	0%
Sideswipe, Opposite Direction	0	0	0	0	0%
Sideswipe, Same Direction	0	0	0	0	0%
Total	6	7	7	20	100%
<b>Severity</b>					
Fatal Injury (K)	0	0	0	0	0%
Suspected Serious Injury (A)	0	0	0	0	0%
Suspected Minor Injury (B)	1	0	0	1	5%
Possible Injury (C)	0	1	1	2	10%
No Apparent Injury (O)	5	6	6	17	85%
Unknown	0	0	0	0	0%
Total	6	7	7	20	100%
<b>Note: Data collected from the Connecticut Crash Data Repository</b>					

### III. PROJECTED TRAFFIC CONDITIONS

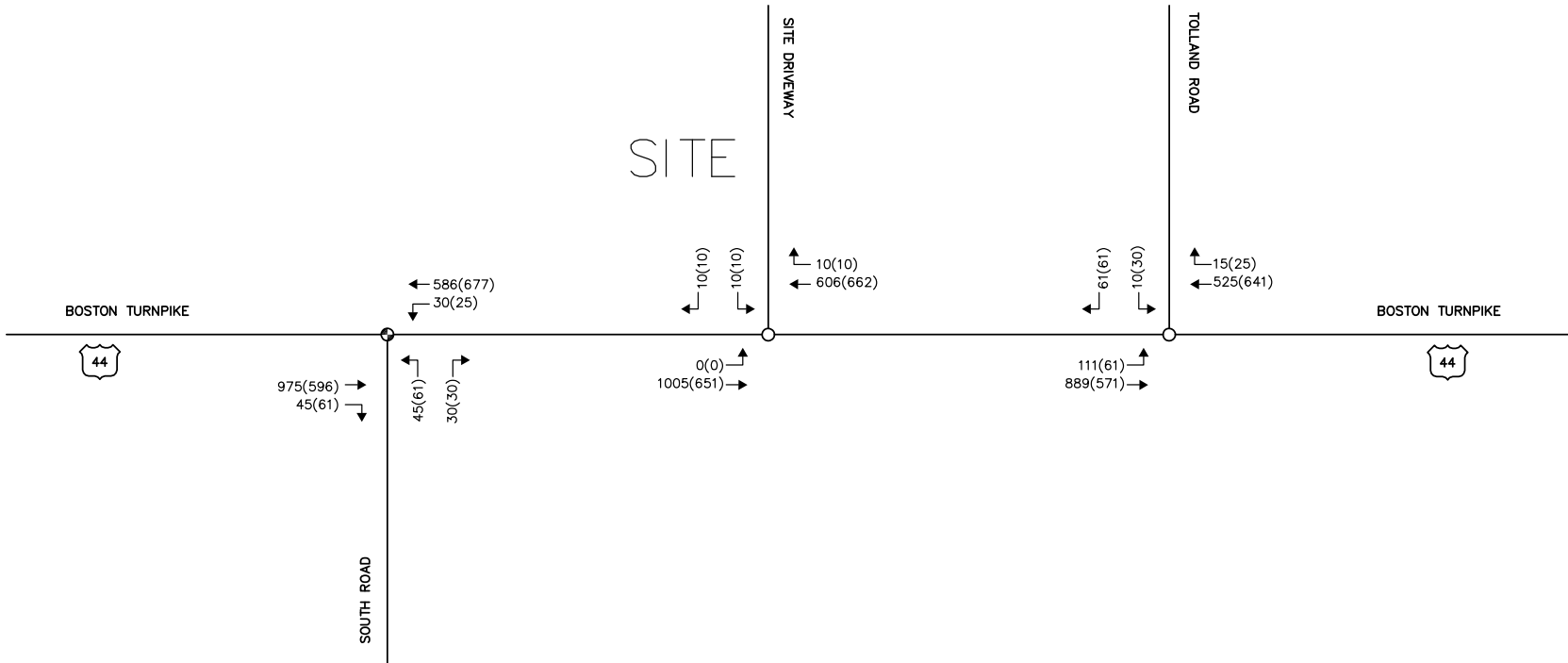
In order to evaluate traffic conditions when the proposed development is completed in 2022, future traffic volumes networks were forecast under the 2022 No Build Conditions (without the proposed retail development) and under 2022 Build Conditions (with the proposed retail development). The projected traffic volumes on the roadway network under 2022 No Build conditions were assumed to include all existing traffic and new traffic resulting from background sources of traffic growth, independent of the proposed development. The project traffic volumes on the roadway network under 2022 Build conditions were assumed to include the anticipated project Site-generated traffic volumes in addition to the assumed background traffic growth.

#### **No Build Traffic Volumes**

A 1% annual growth rate was applied to the existing traffic volumes to develop the 2021 No Build traffic volumes. In addition to applying a growth rate, any approved or pending developments in the area that may add substantial traffic volume to the study intersections were considered. In discussions with Connecticut Department of Transportation and the Town of Bolton there were no additional developments in the vicinity of the project. **Figure 3** graphically illustrates the No Build Traffic Volumes.

**LEGEND**

- ⊕ SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- WEEKDAY PM: XXX
- SATURDAY PEAK: (XXX)



1/20/2021, PPA.DWG, C:\JOB\520\200\20232.DWG\TFL020002032.DWG-FIGURE 3.



**NO BUILD (2021) TRAFFIC VOLUMES**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

**FIGURE 3**

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## Trip Generation

The anticipated traffic volumes generated by the proposed development were projected based upon guidelines set forth by CTDOT and data provided by the *ITE Trip Generation Manual 10<sup>th</sup> Edition*. This widely used reference manual provided trip generation rates for various land uses based on traffic count data collected at similar sites. The following table shows projected trip generation for a variety store (Land Use Code 814). Saturday peak hour data for 814-Variety Store is not available in the Trip Generation Manual and estimated to be 1.5 times the PM Peak. Due to the small retail nature of the use, a significant portion of the Site trips will come from the existing Boston Turnpike (US Route 44) traffic stream, referred to as “pass-by” trips. While empirical studies of similar sized retail buildings by the *ITE Trip Generation Manual 10<sup>th</sup> Edition*, use a pass-by component of 30%, this study referred to the Connecticut Department of Transportation (CTDOT) guidelines which allows 20% pass-by component.

**Table 2** illustrates the trip generation for the proposed development scenarios. It is projected that the proposed development will generate approximately 59 trips in the PM peak hour (31 in/enter, 28 out/exit) and 89 trips in the Saturday mid-day peak hour (46 in/enter, 43 out/exit).

**Table 2 – Peak Hour Trip Generation**

Proposed Retail		Trips					
ITE Land Use Code	Size	PM Peak Hour			Saturday Peak Hour <sup>2</sup>		
		Total	In	Out	Total	In	Out
814 - Variety Store	10.64	73	38	35	110	57	53
Less Pass-By (20% Average) <sup>1</sup>		-14	-7	-7	-21	-11	-10
<b>Net New Trips</b>		<b>59</b>	<b>31</b>	<b>28</b>	<b>89</b>	<b>46</b>	<b>43</b>
Ref: Trip Generation, 10th Edition <sup>1</sup> CTDOT Allowance for Pass-By Used 20%; <sup>2</sup> Estimated as 1.5 times the PM Peak Hour							

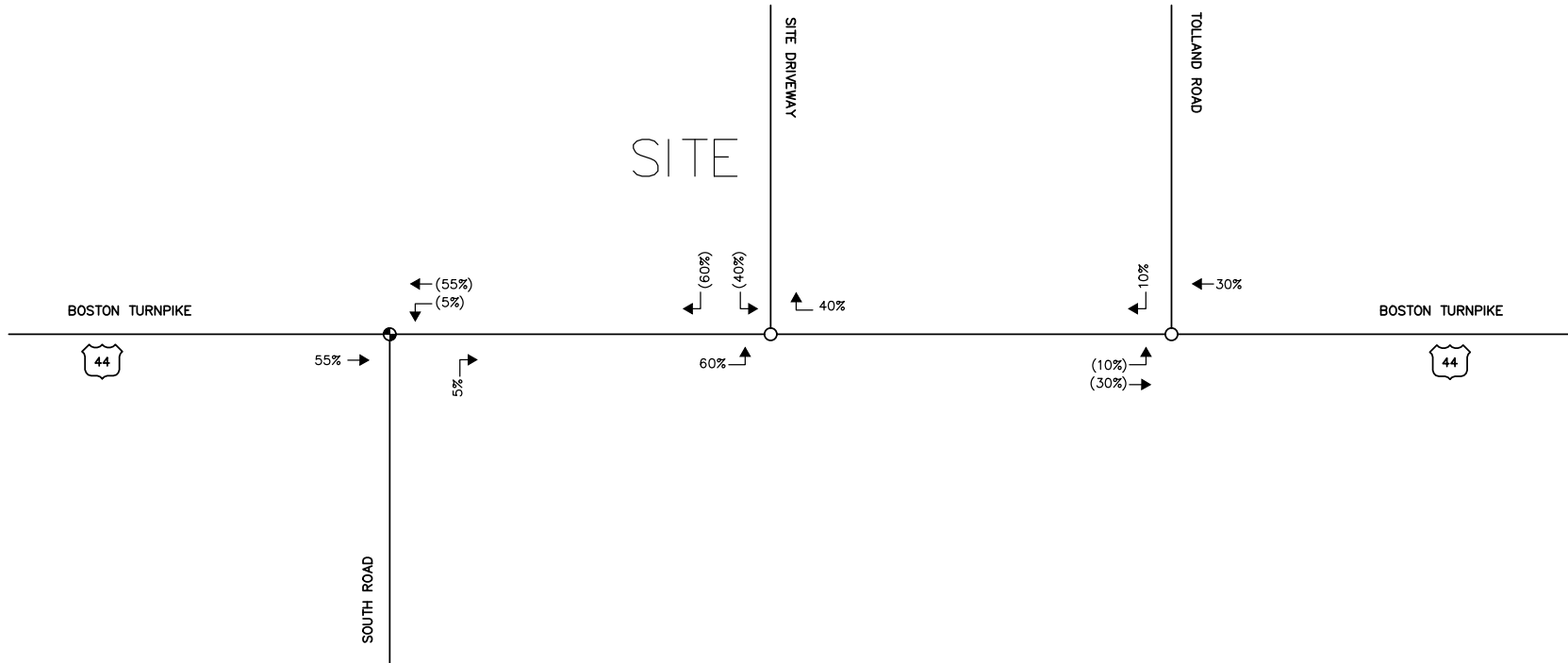
### **Trip Distribution**

The directional distribution of traffic is typically a function of population densities, competing opportunities, existing travel patterns adjacent to the Site, and the efficiency and limitations of the existing roadway system. The trip distribution was reviewed and approved by CTDOT. The distribution of the anticipated traffic volumes was based on arrival/departure patterns shown in **Figure 4**.



**LEGEND**

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- WEEKDAY PM: XX%
- SATURDAY PEAK: (XX%)



I:\2020\21 - P\ADLO, G:\JOBS\20\20\2002021.DWG\T\FIG02002032.DWG-FIGURE 4.



**TRIP DISTRIBUTION**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

**FIGURE 4**

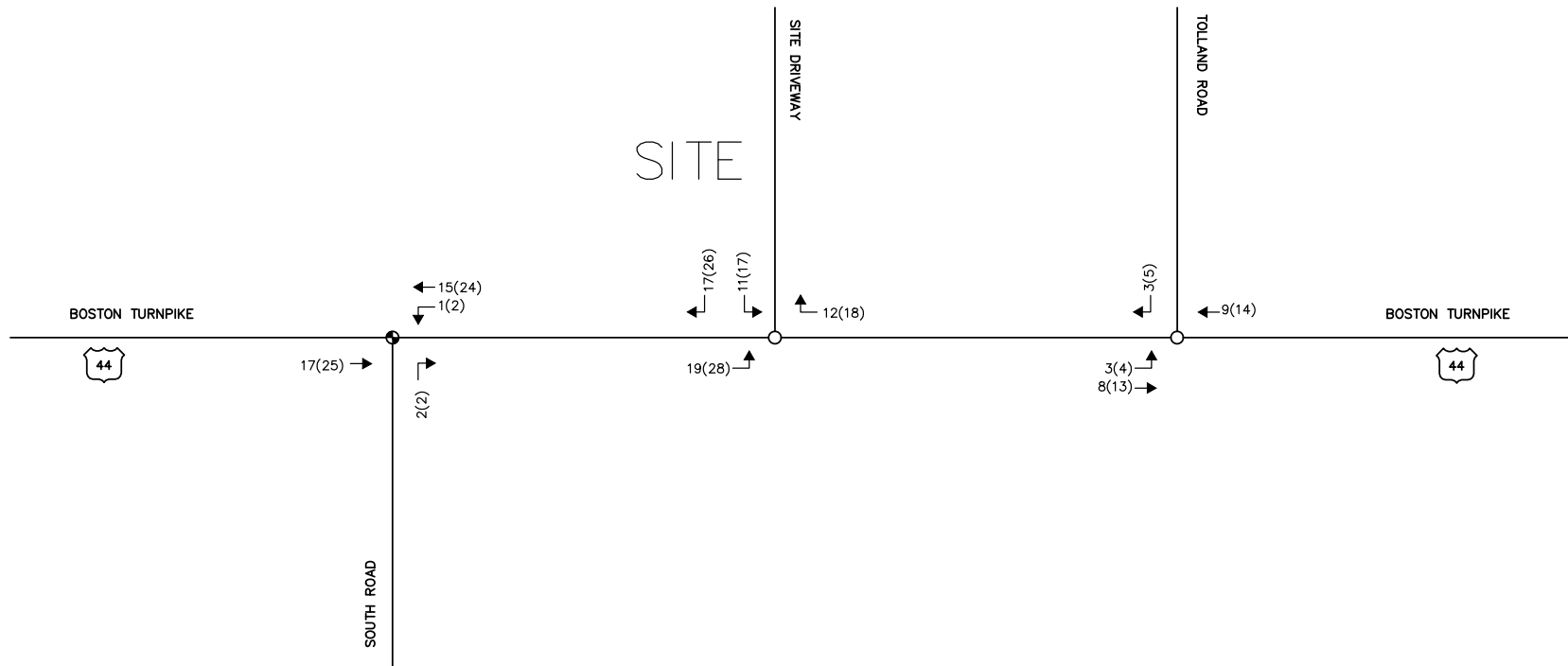
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### **Assigned Site Generated Traffic Volumes and Pass-By Traffic Volumes**

The generated trips are multiplied by the corresponding proportions to ascertain the Site-generated traffic volumes. **Figure 5** shows the Site generated peak hour traffic generated by the Site assigned to the nearby roadway network. A portion of trips generated are classified as “pass-by” traffic. Pass-by traffic consists of vehicles already on the roadway that are attracted to the Site when passing through the area. The primary destination of this traffic is elsewhere, and the primary trip will be resumed following a stop at the proposed development. The Pass-By Traffic Volumes were assigned to the Site driveway and are shown in **Figure 6**.

**LEGEND**

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- INCOMING TRAFFIC: XX
- OUTGOING TRAFFIC: (XX)



I:\20\2021\_1\_P\ADLO\_G\JOBS\20\20\2021\DWG\FILE\0200032.DWG FIGURE 5.



**SITE GENERATED TRAFFIC VOLUMES**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

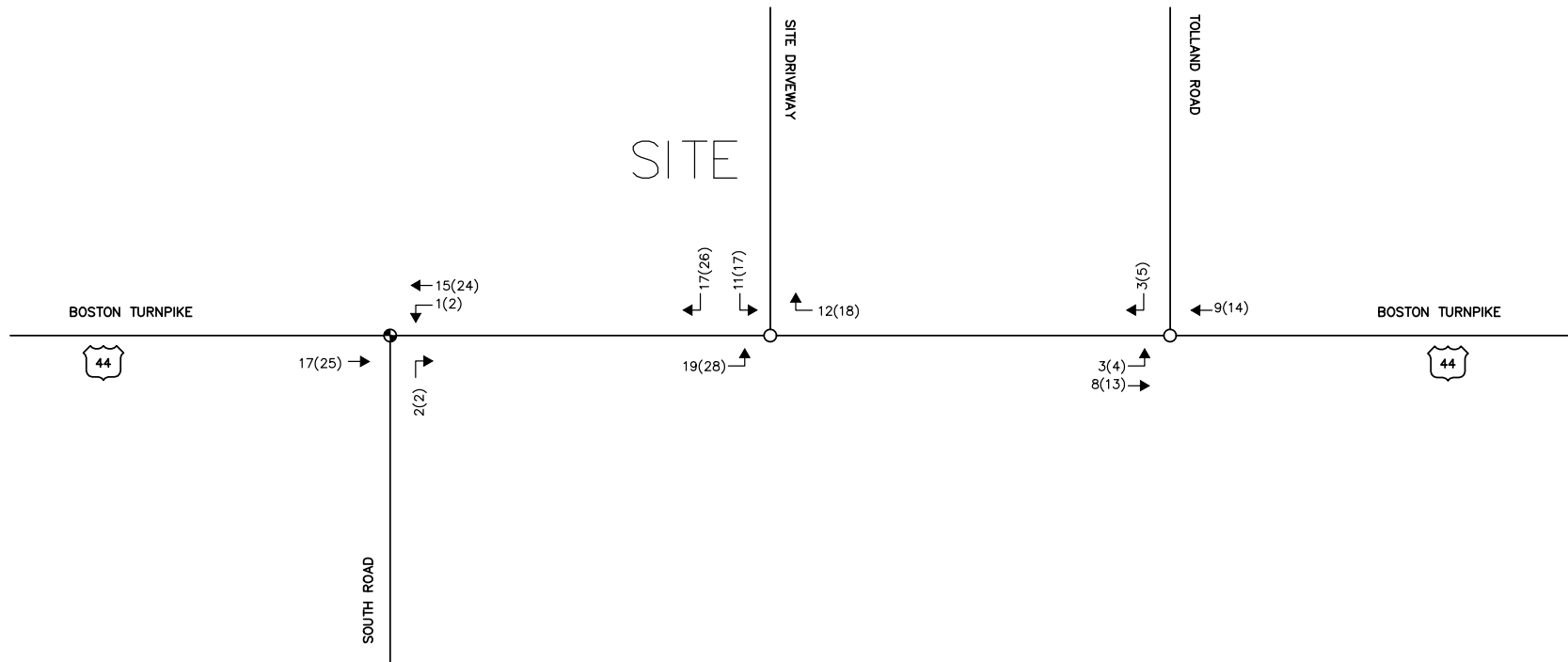
FEBRUARY 2021

FIGURE 5

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**LEGEND**

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- INCOMING TRAFFIC: XX
- OUTGOING TRAFFIC: (XX)



I:\20\2021\_1\_PPADLO\_G\JOBS\20\20\2021\DWG\TFC\0200032.DWG-FIGURE.5



**SITE GENERATED TRAFFIC VOLUMES**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

FIGURE 5

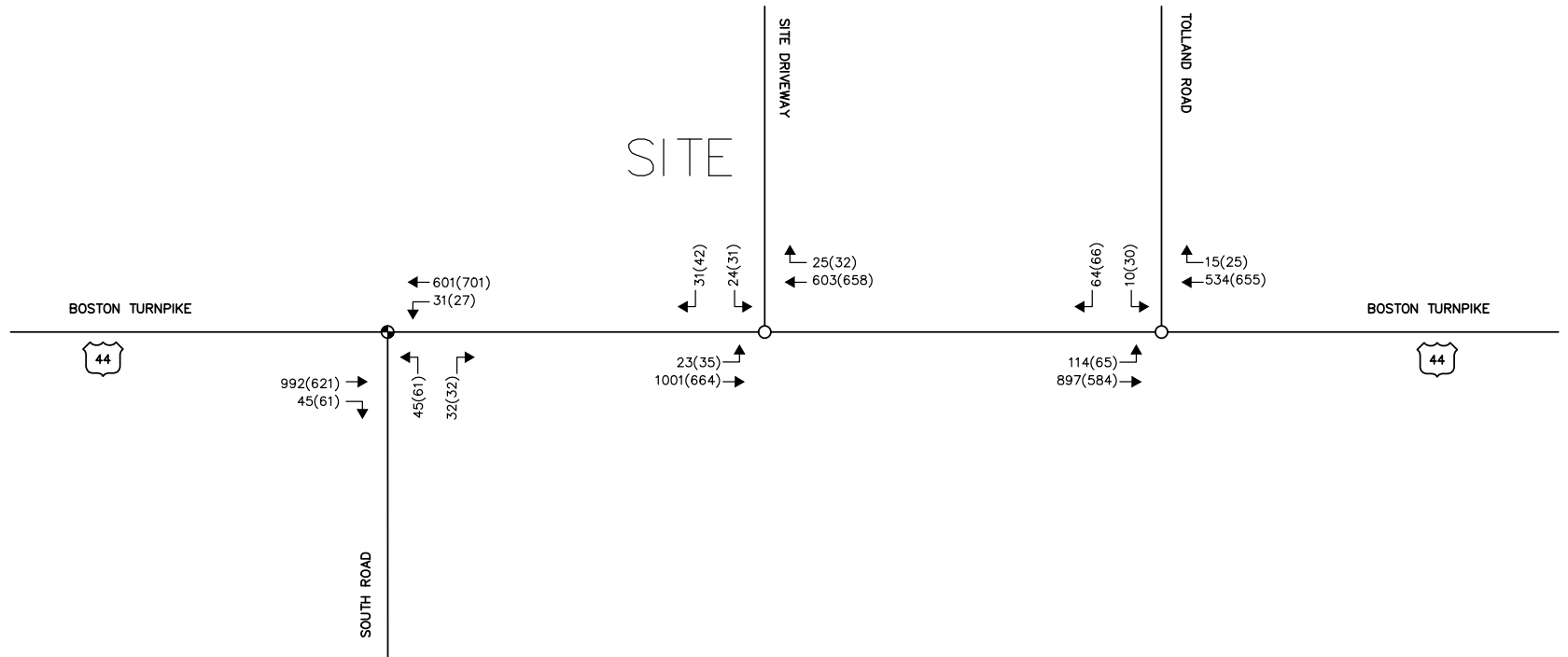
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### **Build Traffic Volumes**

The assigned Site-generated traffic volumes were superimposed onto the 2022 No Build Traffic volumes to establish the future 2022 Build Traffic volumes, as illustrated in **Figure 7**.

**LEGEND**

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION
- WEEKDAY PM: XXX
- SATURDAY PEAK: (XXX)



I:\20\2021\_1\PADLO\_G\JOBS\20\20\2021\DWG\FILE\020032.DWG-FIGURE 7.



**BUILD (2022) TRAFFIC VOLUMES**  
 PROPOSED DEVELOPMENT  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT  
 SCHEMATIC, NOT TO SCALE

FEBRUARY 2021

FIGURE 7

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#### IV. ROADWAY ADEQUACY

The intersection capacity analyses were prepared using the methodology described in the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) for the existing and build traffic volume scenarios to simulate the traffic impact of a proposed delivery station on the adjacent roadway network. As documented in the HCM, intersection performance is influenced by several factors, including traffic demand; lane configurations; lane widths; turning restrictions; roadway grades; and signal phasing. The existing physical roadway characteristics and signal phasing and timing settings were determined by observing conditions in the field and reviewing the current traffic control signal plans provided by the Connecticut Department of Transportation.

Synchro™ software (Version 9) was used to model the study intersections based on the parameters mentioned above. The Synchro software is widely utilized by the traffic engineering industry and is consistent with the procedures in the HCM.

### **Signalized Intersections**

Signalized intersections are analyzed in terms of vehicle capacity and motorist delay. Capacity is the maximum rate of vehicle flow through an intersection given typical operating conditions. The number of vehicles traveling through an intersection is divided by the capacity of the intersection to determine an overall volume to capacity ratio (v/c). A v/c value under 1.00 indicates that the number of vehicles traveling through an intersection is less than capacity.

As stated in the HCM, level of service for signalized intersections is defined in terms of control delay. Control delay measures the increase in delay a motorist experiences while encountering a traffic control signal. These factors include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. This delay is measured per vehicle for a 15-minute analysis period and is associated with the levels of service, which are summarized in **Table 3** below:

**Table 3 – Signalized Intersection – Level of Service**

<u>Level of Service<sup>1</sup></u>	<u>Average Control Delay (seconds per vehicle)</u>
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

<sup>1</sup>If volume-to-capacity ratio is over 1.0 for a lane group, LOS F. Intersection and approach-based LOS is based solely on control delay.

Level of Service A represents the optimum level where most motorists arrive at the subject intersection during the green phase and thus experience virtually no delay. Conversely, Level of Service F indicates that motorists are delayed over 80 seconds while traveling through the intersection and can often imply a complete breakdown of



that location. Level of Service D is generally considered the limit of acceptable motorist delay.

### **Unsignalized Intersections**

Unsignalized intersections are generally evaluated in terms of average side street delay, as well as the capacity of the roadway approach. This analysis is based on the random arrival of vehicles and the associated gaps generated by this random arrival within the traffic stream. There is no overall level of service for unsignalized intersections. The relationship between levels of service and average side street delay are summarized in **Table 4** below:

**Table 4 – Unsignalized Intersection – Level of Service**

<u>Level of Service</u> <sup>1</sup>	<u>Average Control Delay</u> (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

<sup>1</sup>If volume-to-capacity ratio is over 1.0 for a lane group, LOS F. Intersection and approach-based LOS is based solely on control delay.

It should be noted that unsignalized levels of service do not correspond to those for signalized intersections, nor do they constitute warrants for the installation of traffic control signals. It is also recognized that the methodology is overly conservative and that computations can indicate operations at poor levels of service (E or F) with even very low side street volumes, although they often function without serious problems in the real world.

**Table 5** shows the levels of service (LOS) at the subject intersections. A more detailed table is included in the Appendix.

Table 5 – Peak Hour Levels of Service

	Weekday PM			Saturday Midday		
	2021 Existing	2022 No Build	2022 Build	2021 Existing	2022 No Build	2022 Build
<b>Route 44 (Boston Turnpike) at South Road <sup>1</sup></b>	<b>C/34.1</b>	<b>D/36.6</b>	<b>D/45.6</b>	<b>B/12.6</b>	<b>B/12.9</b>	<b>B/13.6</b>
Route 44 EB Thru / Right	D/1.00/#990	E/1.02/#1005	E/1.07/#1025	B/0.66/450	B/0.67/455	C/0.70/485
Route 44 WB Thru / Left	A/0.66/145	A/0.66/150	A/0.66/155	A/0.52/195	A/0.52/200	A/0.54/215
South Road NB Left / Right	C/0.42/70	C/0.42/70	C/0.42/70	C/0.47/85	C/0.47/85	C/0.48/85
<b>Route 44 (Boston Turnpike) at Site Driveway <sup>2</sup></b>	<b>D/31.2</b>	<b>D/32.0</b>	<b>E/43.7</b>	<b>C/22.9</b>	<b>C/23.3</b>	<b>D/32.0</b>
Route 44 EB Thru / Left	-	-	A/0.03/25	-	-	A/0.04/25
Route 44 WB Thru/ Right	-	-	-	-	-	-
Site Driveway SB Left / Right	D/0.14/25	D/0.14/25	E/0.40/45	C/0.10/25	C/0.10/25	D/0.38/45
<b>Route 44 (Boston Turnpike) at Tolland Road <sup>2</sup></b>	<b>C/23.9</b>	<b>C/24.3</b>	<b>D/25.2</b>	<b>D/29.5</b>	<b>D/30.3</b>	<b>D/32.4</b>
Route 44 EB Thru / Left	A/0.12/25	A/0.12/25	A/0.13/25	A/0.07/25	A/0.08/25	A/0.08/25
Route 44 WB Thru/ Right	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25	A/0.00/25
Site Driveway SB Left / Right	C/0.29/30	C/0.29/30	-	D/0.40/45	D/0.41/50	D/0.45/55

**Overall Intersection – X/XX.X - Level of Service/Intersection Signal Delay in sec**

**Approaches - X/X.XX/XXX – Level of Service/Volume to Capacity Ratio/95% Queue Length in ft**

<sup>1</sup> – Signalized Intersection

<sup>2</sup> – Unsignalized Intersections, controlled movements

# – 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m – Volume for 95th percentile queue is metered by upstream signal.

As illustrated in **Table 5**, weekday PM Peak hour and Saturday Midday Peak Hour Existing Scenario traffic operations were analyzed as the base conditions for comparison with the Build Scenarios. The traffic operations for the overall intersection LOS during the two peak periods are projected to remain the same among the Existing, No Build and Build scenarios for the signalized intersection at Boston Turnpike at South Road. During the PM Peak Hour, at the intersection of Boston Turnpike at South Road the net increase in delay for the intersection is 9 seconds, from 36.6 seconds in No Build conditions to 45.6 seconds in Build condition. The intersection continues to perform at LOS D during weekday PM Peak hour and LOS B during Saturday Midday Peak Hour. The eastbound approach is projected to operate at a LOS E in future scenarios but has negligible impacts from this Site development. Although this movement has undesirable levels of service, the approaches can handle the projected queue length. At the Site access point, the major movements east and west operate at acceptable levels. The Site driveway may experience some delay, as during weekday PM Peak LOS drops from LOS D to LOS E between No Build and Build conditions. The net increase in delay for the intersection is 12 seconds, from 32.0 seconds in No Build conditions to 43.7 seconds in Build condition. During Saturday Midday Peak Hour, the intersection operates at LOS C and drops to LOS D during Build condition. All movements are LOS D or better.

## V. CONCLUSIONS AND RECOMMENDATIONS

This traffic study has been prepared for a new retail development at 1100 Boston Turnpike in Bolton, CT. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections. After analyses of the Existing, No Build and Build Scenarios of the Weekday PM Peak hour and Saturday Midday Peak Hour, it is projected that the proposed development will have no significant impacts to the surrounding roadway network. All intersections during the three study peak periods are projected to perform adequately and have negligible impacts from the proposed development on Route 44.

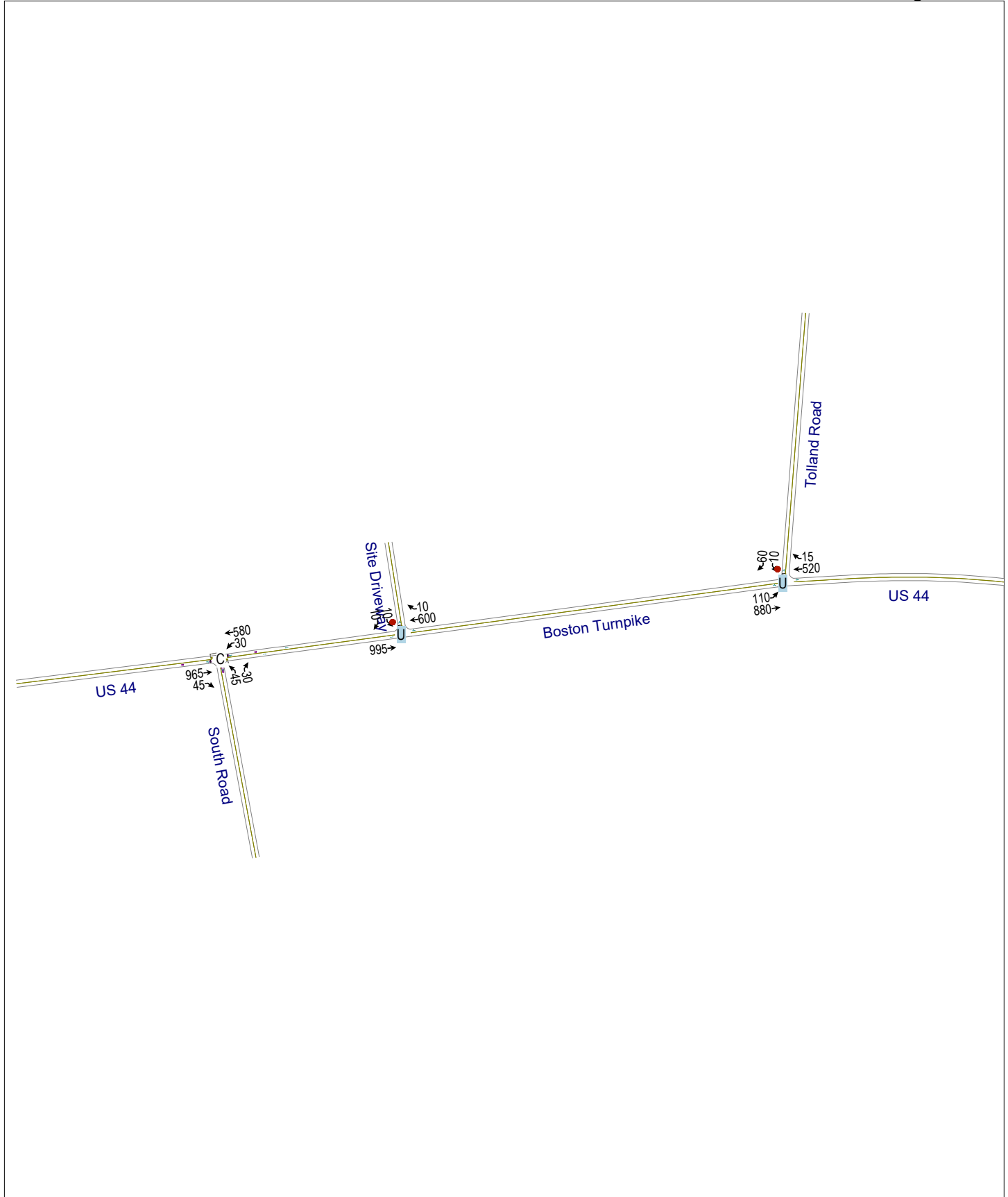
The following is a summary of the results/recommendations for this Site:

- Install 12" white Stop Bars and "Stop" Signs (R1-1) at the Site driveway egress.
- Removal of existing median in the driveway to accommodate heavy vehicles (WB-67) turns radius / movements.

# APPENDIX

**CAPACITY ANALYSES**

**EXISTING**





Lanes, Volumes, Timings  
1: South Road & US 44

Existing  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	965	45	30	580	45	30
Future Volume (vph)	965	45	30	580	45	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994			0.946		
Flt Protected				0.998	0.971	
Satd. Flow (prot)	1852	0	0	1859	1711	0
Flt Permitted				0.617	0.971	
Satd. Flow (perm)	1852	0	0	1149	1711	0
Right Turn on Red	Yes				Yes	
Satd. Flow (RTOR)	4				33	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1049	49	33	630	49	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1098	0	0	663	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0				0	12
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Turn Type	NA	pm+pt		NA	Prot	
Protected Phases	2	1		1 2	4	
Permitted Phases	1 2			2		
Detector Phase	2	1		1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0	7.0		
Minimum Split (s)	20.3		8.1	11.5		
Total Split (s)	50.3		14.1	24.5		
Total Split (%)	56.6%		15.9%	27.6%		
Maximum Green (s)	45.0		11.0	20.0		
Yellow Time (s)	4.3		3.0	3.0		
All-Red Time (s)	1.0		0.1	1.5		
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	Min		None	None		
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effect Green (s)	45.3		58.2		8.3	

Lanes, Volumes, Timings  
1: South Road & US 44

Existing  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.61			0.78	0.11	
v/c Ratio	0.98			0.66	0.37	
Control Delay	39.6			6.8	26.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	39.6			6.8	26.4	
LOS	D			A	C	
Approach Delay	39.6			6.8	26.4	
Approach LOS	D			A	C	
Queue Length 50th (ft)	~486			66	22	
Queue Length 95th (ft)	#848			139	62	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1126			1007	485	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.98			0.66	0.17	

Intersection Summary

Area Type:	Other
Cycle Length:	88.9
Actuated Cycle Length:	74.6
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization:	67.9%
ICU Level of Service:	C
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: South Road & US 44



Lanes, Volumes, Timings  
2: Boston Turnpike & Site Driveway

Existing  
Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Traffic Volume (vph)	0	995	600	10	10	10
Future Volume (vph)	0	995	600	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1859	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1859	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1082	652	11	11	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1082	663	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.4%
Analysis Period (min)	15
	ICU Level of Service B

**Intersection**

Int Delay, s/veh 0.4

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	0	995	600	10	10	10
Future Vol, veh/h	0	995	600	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1082	652	11	11	11

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	-	0	-	0	1740	658
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	1082	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	-	96	464
Stage 1	0	-	-	-	515	-
Stage 2	0	-	-	-	325	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	96	464
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	325	-

**Approach** EB WB SB

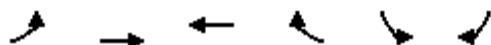
HCM Control Delay, s	0	0	31.2
HCM LOS			D

**Minor Lane/Major Mvmt** EBT WBT WBR SBLn1

Capacity (veh/h)	-	-	-	159
HCM Lane V/C Ratio	-	-	-	0.137
HCM Control Delay (s)	-	-	-	31.2
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.5

Lanes, Volumes, Timings  
 3: Boston Turnpike/US 44 & Tolland Road

Existing  
 Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (vph)	110	880	520	15	10	60
Future Volume (vph)	110	880	520	15	10	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.885	
Flt Protected		0.994			0.993	
Satd. Flow (prot)	0	1852	1855	0	1637	0
Flt Permitted		0.994			0.993	
Satd. Flow (perm)	0	1852	1855	0	1637	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	957	565	16	11	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1077	581	0	76	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

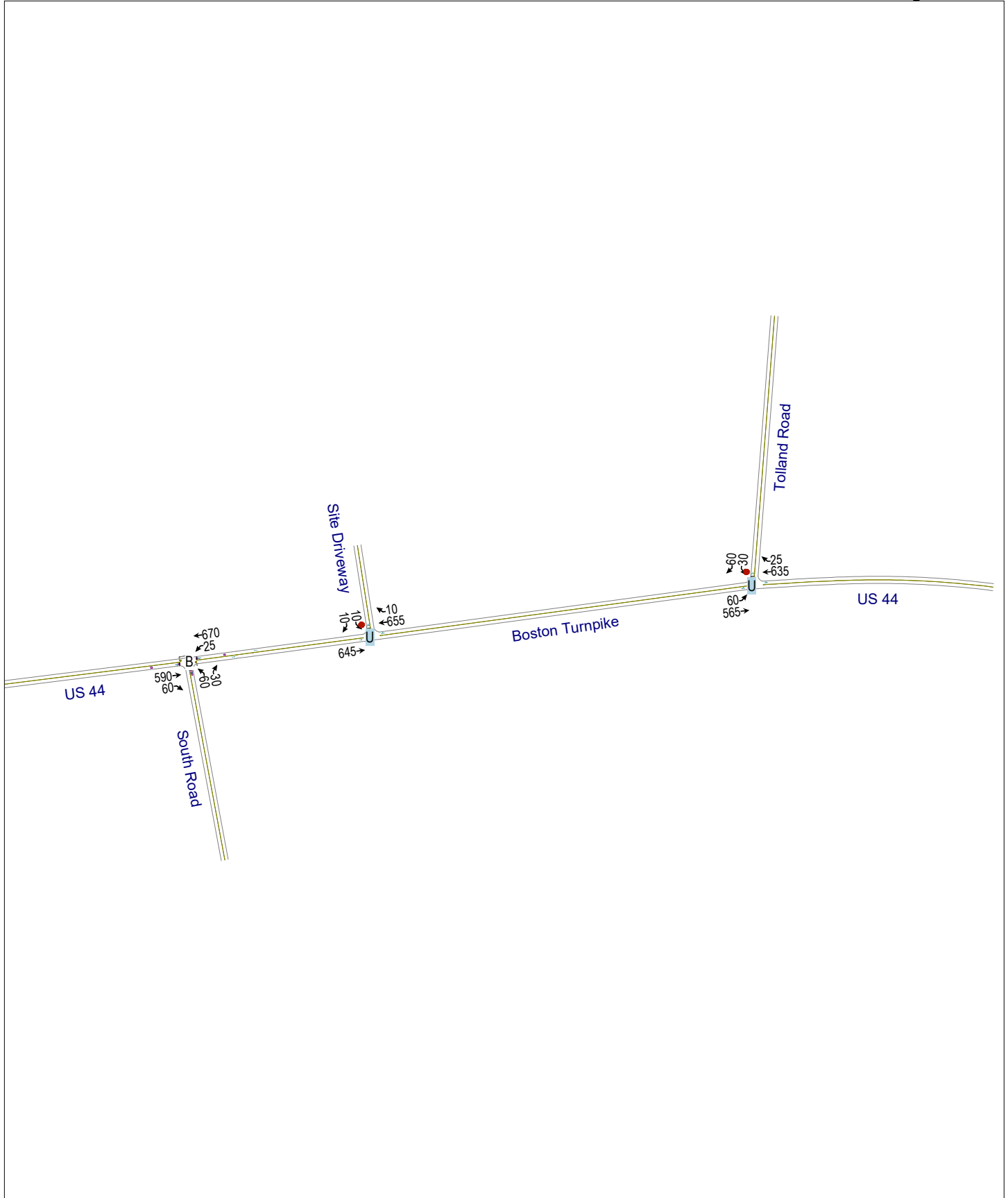
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	94.9%
Analysis Period (min)	15
	ICU Level of Service F

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	110	880	520	15	10	60
Future Vol, veh/h	110	880	520	15	10	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	957	565	16	11	65

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	581	0	-	0	1770 573
Stage 1	-	-	-	-	573 -
Stage 2	-	-	-	-	1197 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	993	-	-	-	92 519
Stage 1	-	-	-	-	564 -
Stage 2	-	-	-	-	286 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	993	-	-	-	68 519
Mov Cap-2 Maneuver	-	-	-	-	68 -
Stage 1	-	-	-	-	418 -
Stage 2	-	-	-	-	286 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	23.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	993	-	-	-	266
HCM Lane V/C Ratio	0.12	-	-	-	0.286
HCM Control Delay (s)	9.1	0	-	-	23.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.1



Lanes, Volumes, Timings  
1: South Road & US 44

Existing  
Timing Plan: MD



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	590	60	25	670	60	30
Future Volume (vph)	590	60	25	670	60	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.988				0.955	
Fl <sub>t</sub> Protected				0.998	0.968	
Satd. Flow (prot)	1840	0	0	1859	1756	0
Fl <sub>t</sub> Permitted				0.980	0.968	
Satd. Flow (perm)	1840	0	0	1825	1756	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				27	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Adj. Flow (vph)	641	65	27	728	65	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	706	0	0	755	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			1 2	2		
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0		7.0	
Minimum Split (s)	20.3		8.1		11.5	
Total Split (s)	50.3		14.1		24.5	
Total Split (%)	56.6%		15.9%		27.6%	
Maximum Green (s)	45.0		11.0		20.0	
Yellow Time (s)	4.3		3.0		3.0	
All-Red Time (s)	1.0		0.1		1.5	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	
Recall Mode	Min		None		None	
Walk Time (s)	7.0		7.0		7.0	
Flash Dont Walk (s)	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0		0		0	



Lanes, Volumes, Timings  
1: South Road & US 44

Existing  
Timing Plan: MD



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Act Effct Green (s)	35.0			48.3	9.3	
Actuated g/C Ratio	0.54			0.74	0.14	
v/c Ratio	0.71			0.56	0.36	
Control Delay	16.7			5.5	27.2	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.7			5.5	27.2	
LOS	B			A	C	
Approach Delay	16.7			5.5	27.2	
Approach LOS	B			A	C	
Queue Length 50th (ft)	207			89	29	
Queue Length 95th (ft)	363			188	76	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1291			1550	613	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.55			0.49	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	88.9
Actuated Cycle Length:	65.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	11.9
Intersection LOS:	B
Intersection Capacity Utilization:	68.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: South Road & US 44



Lanes, Volumes, Timings  
 2: Boston Turnpike & Site Driveway

Existing  
 Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Traffic Volume (vph)	0	645	655	10	10	10
Future Volume (vph)	0	645	655	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1859	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1859	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	701	712	11	11	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	701	723	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.1%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 0.3

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↑	↑		↑	
Traffic Vol, veh/h	0	645	655	10	10	10
Future Vol, veh/h	0	645	655	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	701	712	11	11	11

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	-	0	-	0	1419	718
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	701	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	-	151	429
Stage 1	0	-	-	-	483	-
Stage 2	0	-	-	-	492	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	151	429
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	492	-

**Approach** EB WB SB

HCM Control Delay, s	0	0	22.9
HCM LOS			C

**Minor Lane/Major Mvmt** EBT WBT WBR SBLn1

Capacity (veh/h)	-	-	-	223
HCM Lane V/C Ratio	-	-	-	0.097
HCM Control Delay (s)	-	-	-	22.9
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

Lanes, Volumes, Timings  
 3: Boston Turnpike/US 44 & Tolland Road

Existing  
 Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	60	565	635	25	30	60
Future Volume (vph)	60	565	635	25	30	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.910	
Flt Protected		0.995			0.983	
Satd. Flow (prot)	0	1853	1853	0	1666	0
Flt Permitted		0.995			0.983	
Satd. Flow (perm)	0	1853	1853	0	1666	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	614	690	27	33	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	679	717	0	98	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	83.3%
Analysis Period (min)	15
	ICU Level of Service E

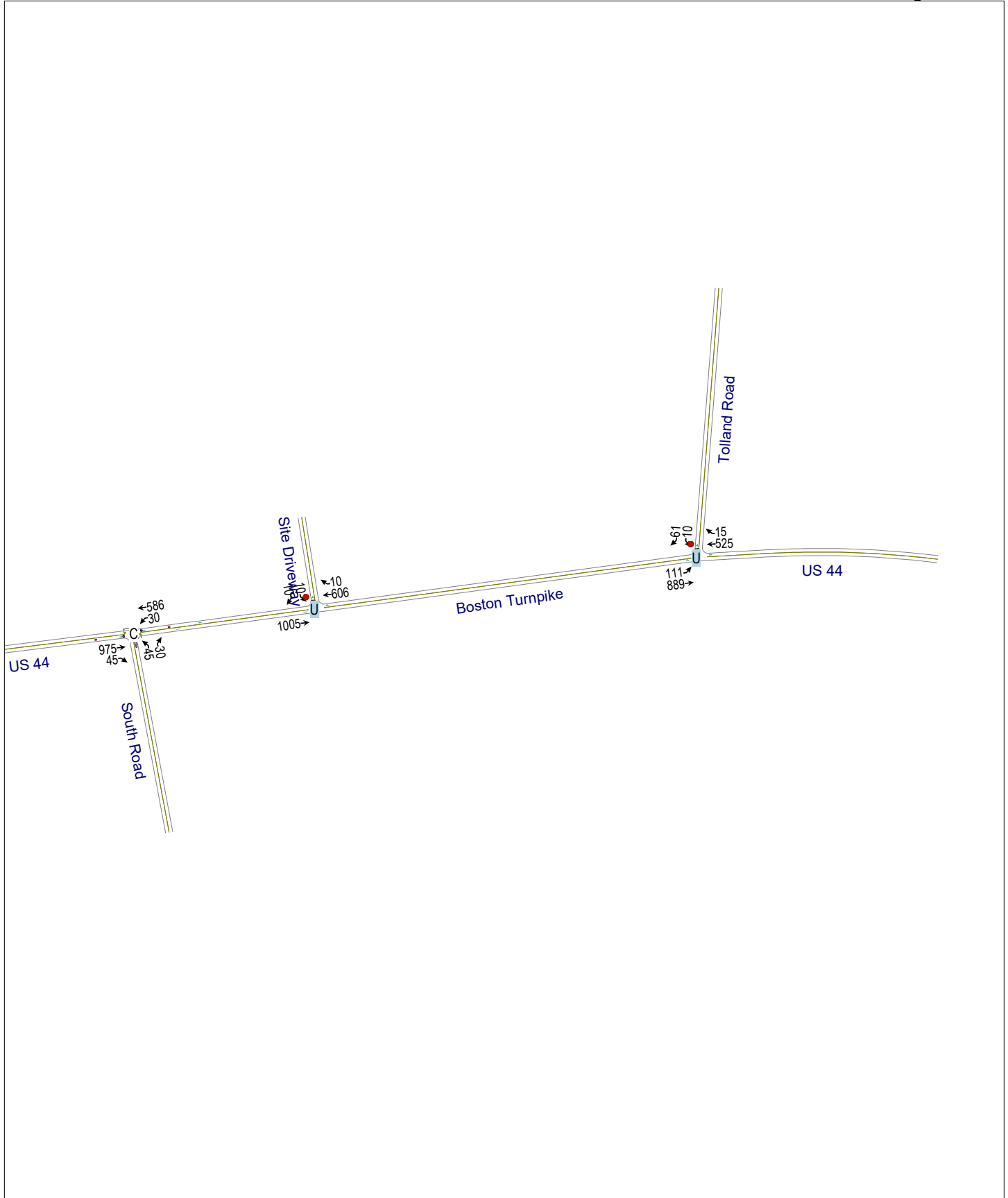
Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	60	565	635	25	30	60
Future Vol, veh/h	60	565	635	25	30	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	614	690	27	33	65

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	717	0	-	0	1448 704
Stage 1	-	-	-	-	704 -
Stage 2	-	-	-	-	744 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	884	-	-	-	145 437
Stage 1	-	-	-	-	490 -
Stage 2	-	-	-	-	470 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	884	-	-	-	129 437
Mov Cap-2 Maneuver	-	-	-	-	129 -
Stage 1	-	-	-	-	435 -
Stage 2	-	-	-	-	470 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	29.5
HCM LOS			D

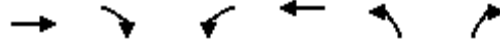
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	884	-	-	-	243
HCM Lane V/C Ratio	0.074	-	-	-	0.403
HCM Control Delay (s)	9.4	0	-	-	29.5
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	1.8

**NO BUILD**



Lanes, Volumes, Timings  
1: South Road & US 44

No Build  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (vph)	975	45	30	586	45	30
Future Volume (vph)	975	45	30	586	45	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.994				0.946	
Fl <sub>t</sub> Protected				0.998	0.971	
Satd. Flow (prot)	1852	0	0	1859	1711	0
Fl <sub>t</sub> Permitted				0.591	0.971	
Satd. Flow (perm)	1852	0	0	1101	1711	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4				33	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	49	33	637	49	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1109	0	0	670	82	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			1 2	2		
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0		7.0	
Minimum Split (s)	20.3		8.1		11.5	
Total Split (s)	50.3		14.1		24.5	
Total Split (%)	56.6%		15.9%		27.6%	
Maximum Green (s)	45.0		11.0		20.0	
Yellow Time (s)	4.3		3.0		3.0	
All-Red Time (s)	1.0		0.1		1.5	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	
Recall Mode	Min		None		None	
Walk Time (s)	7.0		7.0		7.0	
Flash Dont Walk (s)	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0		0		0	
Act Effct Green (s)	45.3			58.3	8.3	
Actuated g/C Ratio	0.61			0.78	0.11	
v/c Ratio	0.99			0.69	0.37	
Control Delay	42.1			7.6	26.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	42.1			7.6	26.4	
LOS	D			A	C	
Approach Delay	42.1			7.6	26.4	
Approach LOS	D			A	C	



Lanes, Volumes, Timings  
1: South Road & US 44

No Build  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 50th (ft)	~512			67	22	
Queue Length 95th (ft)	#858			142	62	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1125			976	485	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.99			0.69	0.17	

Intersection Summary

Area Type:	Other
Cycle Length:	88.9
Actuated Cycle Length:	74.7
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	29.0
Intersection LOS:	C
Intersection Capacity Utilization	68.2%
ICU Level of Service	C
Analysis Period (min)	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 1: South Road & US 44



Lanes, Volumes, Timings  
2: Boston Turnpike & Site Driveway

No Build  
Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↔		↘	
Traffic Volume (vph)	0	1005	606	10	10	10
Future Volume (vph)	0	1005	606	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1859	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1859	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1092	659	11	11	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1092	670	0	22	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.9%
Analysis Period (min)	15
	ICU Level of Service B

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Traffic Vol, veh/h	0	1005	606	10	10	10
Future Vol, veh/h	0	1005	606	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1092	659	11	11	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	1757 665
Stage 1	-	-	-	-	665 -
Stage 2	-	-	-	-	1092 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	0	-	-	-	93 460
Stage 1	0	-	-	-	511 -
Stage 2	0	-	-	-	322 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	93 460
Mov Cap-2 Maneuver	-	-	-	-	93 -
Stage 1	-	-	-	-	511 -
Stage 2	-	-	-	-	322 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	32
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	155
HCM Lane V/C Ratio	-	-	-	0.14
HCM Control Delay (s)	-	-	-	32
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.5

Lanes, Volumes, Timings  
 3: Boston Turnpike/US 44 & Tolland Road

No Build  
 Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	111	889	525	15	10	61
Future Volume (vph)	111	889	525	15	10	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.884	
Flt Protected		0.994			0.993	
Satd. Flow (prot)	0	1852	1855	0	1635	0
Flt Permitted		0.994			0.993	
Satd. Flow (perm)	0	1852	1855	0	1635	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	966	571	16	11	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1087	587	0	77	0
Sign Control		Free	Free		Stop	

Intersection Summary

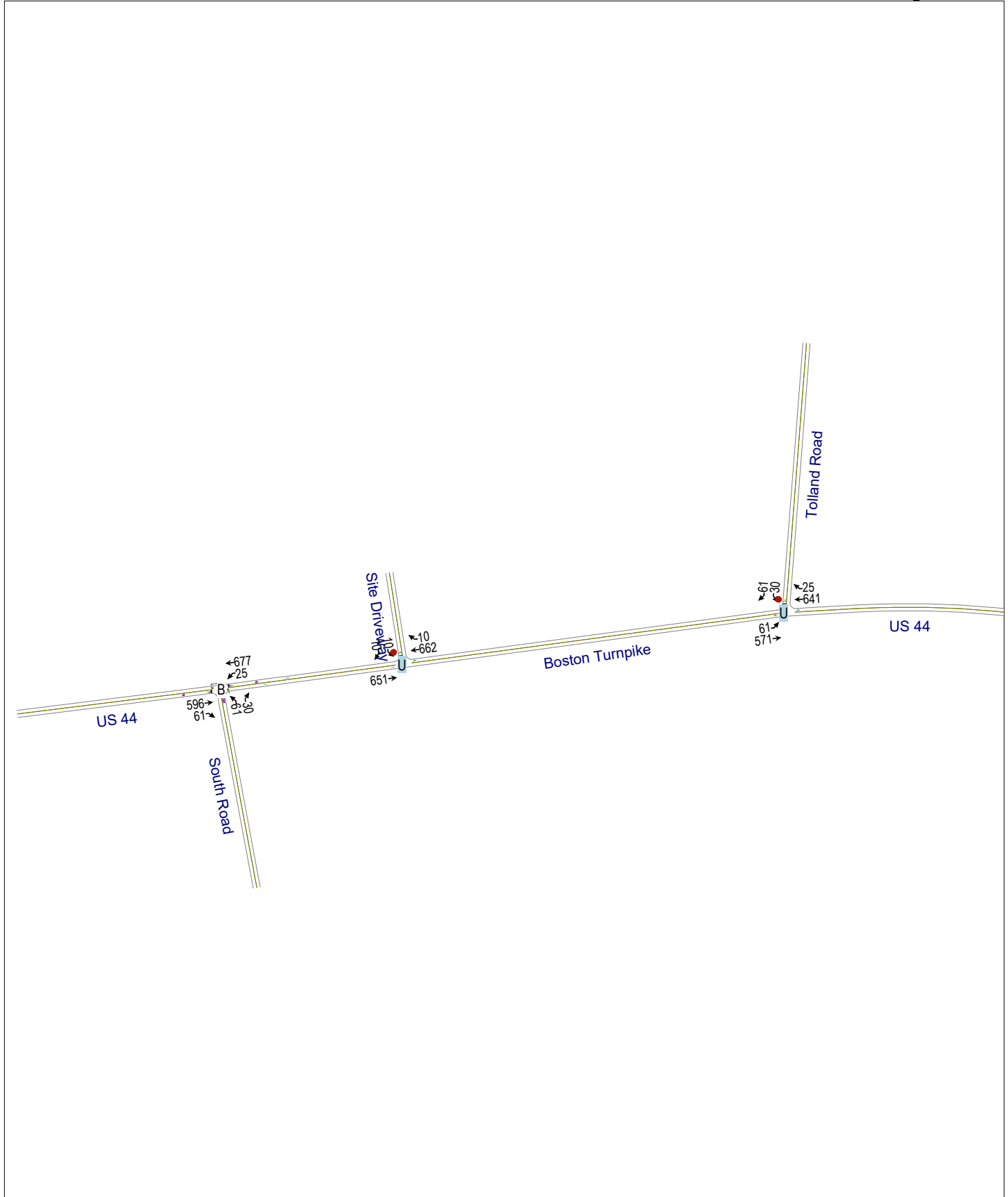
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	95.8%
ICU Level of Service	F
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	111	889	525	15	10	61
Future Vol, veh/h	111	889	525	15	10	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	966	571	16	11	66

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	587	0	-	0	1787 579
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	1208 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	988	-	-	-	89 515
Stage 1	-	-	-	-	560 -
Stage 2	-	-	-	-	283 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	988	-	-	-	66 515
Mov Cap-2 Maneuver	-	-	-	-	66 -
Stage 1	-	-	-	-	412 -
Stage 2	-	-	-	-	283 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	24.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	263
HCM Lane V/C Ratio	0.122	-	-	-	0.293
HCM Control Delay (s)	9.2	0	-	-	24.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2



Lanes, Volumes, Timings  
1: South Road & US 44

No Build 2022  
Timing Plan: MD



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	596	61	25	677	61	30
Future Volume (vph)	596	61	25	677	61	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.988				0.955	
Fl <sub>t</sub> Protected				0.998	0.968	
Satd. Flow (prot)	1840	0	0	1859	1756	0
Fl <sub>t</sub> Permitted				0.980	0.968	
Satd. Flow (perm)	1840	0	0	1825	1756	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				26	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Adj. Flow (vph)	648	66	27	736	66	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	714	0	0	763	99	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			1 2	2		
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0		7.0	
Minimum Split (s)	20.3		8.1		11.5	
Total Split (s)	50.3		14.1		24.5	
Total Split (%)	56.6%		15.9%		27.6%	
Maximum Green (s)	45.0		11.0		20.0	
Yellow Time (s)	4.3		3.0		3.0	
All-Red Time (s)	1.0		0.1		1.5	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	
Recall Mode	Min		None		None	
Walk Time (s)	7.0		7.0		7.0	
Flash Dont Walk (s)	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0		0		0	

Lanes, Volumes, Timings  
1: South Road & US 44

No Build 2022  
Timing Plan: MD



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Act Effct Green (s)	35.4			48.8	9.4	
Actuated g/C Ratio	0.54			0.74	0.14	
v/c Ratio	0.72			0.56	0.36	
Control Delay	16.8			5.6	27.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	16.8			5.6	27.8	
LOS	B			A	C	
Approach Delay	16.8			5.6	27.8	
Approach LOS	B			A	C	
Queue Length 50th (ft)	212			92	30	
Queue Length 95th (ft)	371			194	78	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1283			1542	608	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.56			0.49	0.16	

Intersection Summary

Area Type: Other  
 Cycle Length: 88.9  
 Actuated Cycle Length: 65.6  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 12.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 68.8%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 1: South Road & US 44





Lanes, Volumes, Timings  
 2: Boston Turnpike & Site Driveway

No Build 2022  
 Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↔		↘	
Traffic Volume (vph)	0	651	662	10	10	10
Future Volume (vph)	0	651	662	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1859	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1859	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	708	720	11	11	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	708	731	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.4%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Traffic Vol, veh/h	0	651	662	10	10	10
Future Vol, veh/h	0	651	662	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	708	720	11	11	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	1434 726
Stage 1	-	-	-	-	726 -
Stage 2	-	-	-	-	708 -
Critical Hdwy	-	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	0	-	-	-	147 425
Stage 1	0	-	-	-	479 -
Stage 2	0	-	-	-	488 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	147 425
Mov Cap-2 Maneuver	-	-	-	-	147 -
Stage 1	-	-	-	-	479 -
Stage 2	-	-	-	-	488 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	23.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	218
HCM Lane V/C Ratio	-	-	-	0.1
HCM Control Delay (s)	-	-	-	23.3
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

Lanes, Volumes, Timings  
 3: Boston Turnpike/US 44 & Tolland Road

No Build 2022  
 Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (vph)	61	571	641	25	30	61
Future Volume (vph)	61	571	641	25	30	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.910	
Flt Protected		0.995			0.984	
Satd. Flow (prot)	0	1853	1853	0	1668	0
Flt Permitted		0.995			0.984	
Satd. Flow (perm)	0	1853	1853	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	621	697	27	33	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	687	724	0	99	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	84.1%
Analysis Period (min)	15
	ICU Level of Service E

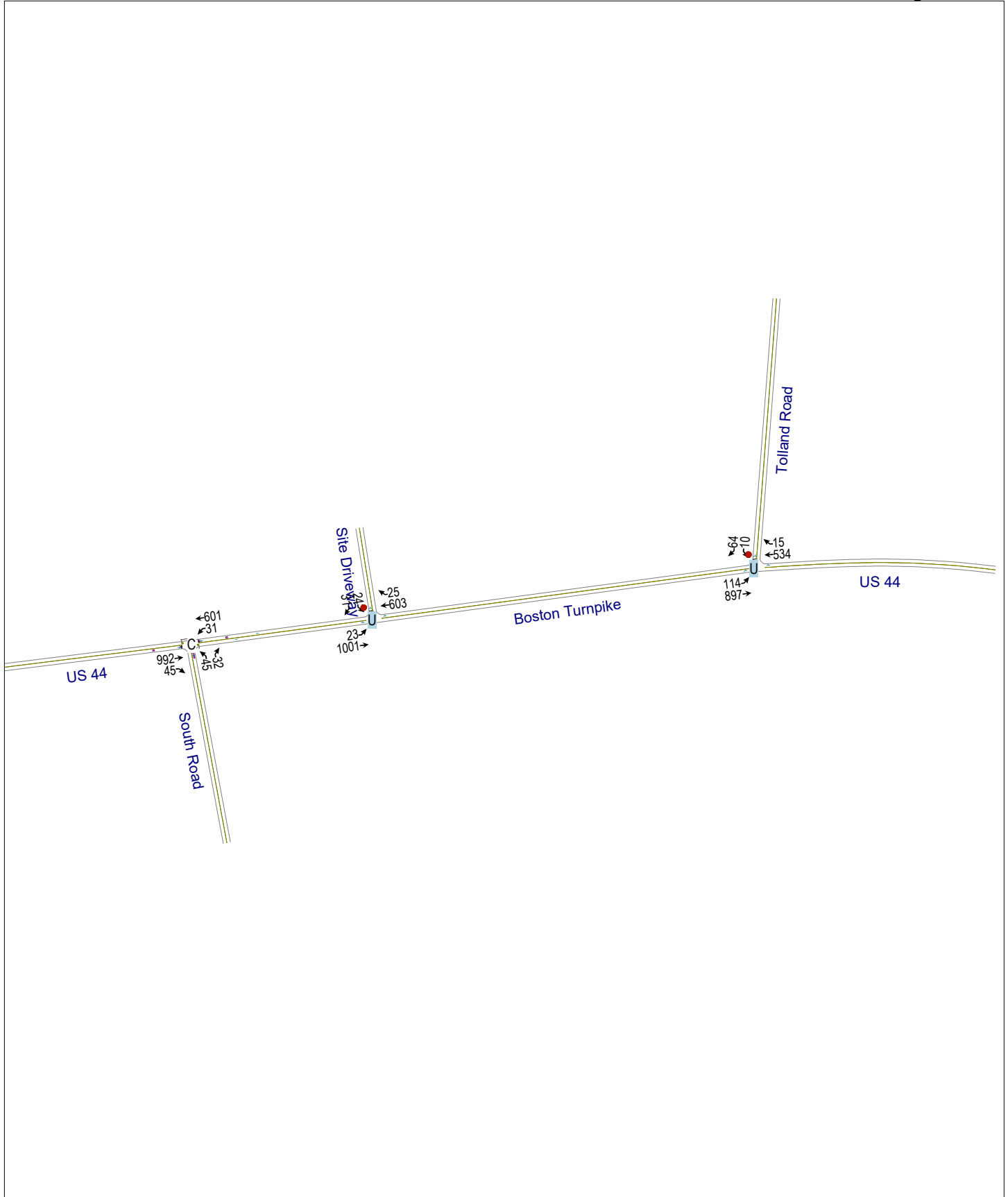
Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	61	571	641	25	30	61
Future Vol, veh/h	61	571	641	25	30	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	621	697	27	33	66

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	724	0	-	0	1464 711
Stage 1	-	-	-	-	711 -
Stage 2	-	-	-	-	753 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	879	-	-	-	141 433
Stage 1	-	-	-	-	487 -
Stage 2	-	-	-	-	465 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	879	-	-	-	125 433
Mov Cap-2 Maneuver	-	-	-	-	125 -
Stage 1	-	-	-	-	431 -
Stage 2	-	-	-	-	465 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	30.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	879	-	-	-	239
HCM Lane V/C Ratio	0.075	-	-	-	0.414
HCM Control Delay (s)	9.4	0	-	-	30.3
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	1.9

**BUILD**



Lanes, Volumes, Timings  
1: South Road & US 44

Build  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	992	45	31	601	45	32
Future Volume (vph)	992	45	31	601	45	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994			0.944		
Flt Protected				0.998	0.972	
Satd. Flow (prot)	1852	0	0	1859	1709	0
Flt Permitted				0.551	0.972	
Satd. Flow (perm)	1852	0	0	1026	1709	0
Right Turn on Red	Yes			Yes		
Satd. Flow (RTOR)	4				35	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1078	49	34	653	49	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1127	0	0	687	84	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0				0	12
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Turn Type	NA	pm+pt		NA	Prot	
Protected Phases	2	1		1 2	4	
Permitted Phases	1 2			2		
Detector Phase	2	1		1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0	7.0		
Minimum Split (s)	20.3		8.1	11.5		
Total Split (s)	50.3		14.1	24.5		
Total Split (%)	56.6%		15.9%	27.6%		
Maximum Green (s)	45.0		11.0	20.0		
Yellow Time (s)	4.3		3.0	3.0		
All-Red Time (s)	1.0		0.1	1.5		
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0		
Recall Mode	Min		None	None		
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effect Green (s)	45.3		58.6		8.3	

Lanes, Volumes, Timings  
1: South Road & US 44

Build  
Timing Plan: PM



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Actuated g/C Ratio	0.60			0.78	0.11	
v/c Ratio	1.01			0.74	0.38	
Control Delay	47.3			9.8	26.1	
Queue Delay	0.0			0.0	0.0	
Total Delay	47.3			9.8	26.1	
LOS	D			A	C	
Approach Delay	47.3			9.8	26.1	
Approach LOS	D			A	C	
Queue Length 50th (ft)	~586			70	22	
Queue Length 95th (ft)	#881			#161	63	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1120			924	484	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	1.01			0.74	0.17	

Intersection Summary

Area Type: Other  
 Cycle Length: 88.9  
 Actuated Cycle Length: 75  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 32.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.8%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: South Road & US 44





Lanes, Volumes, Timings  
2: Boston Turnpike & Site Driveway

Build  
Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↔		↔	
Traffic Volume (vph)	23	1001	603	25	24	31
Future Volume (vph)	23	1001	603	25	24	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.923	
Flt Protected		0.999			0.979	
Satd. Flow (prot)	0	1861	1853	0	1683	0
Flt Permitted		0.999			0.979	
Satd. Flow (perm)	0	1861	1853	0	1683	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	1088	655	27	26	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1113	682	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	81.2%
Analysis Period (min)	15
	ICU Level of Service D

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	
Traffic Vol, veh/h	23	1001	603	25	24	31
Future Vol, veh/h	23	1001	603	25	24	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	1088	655	27	26	34

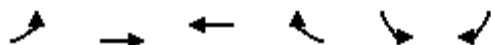
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	682	0	-	0	1807 669
Stage 1	-	-	-	-	669 -
Stage 2	-	-	-	-	1138 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	911	-	-	-	87 458
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	306 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	911	-	-	-	81 458
Mov Cap-2 Maneuver	-	-	-	-	81 -
Stage 1	-	-	-	-	474 -
Stage 2	-	-	-	-	306 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	43.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	911	-	-	-	151
HCM Lane V/C Ratio	0.027	-	-	-	0.396
HCM Control Delay (s)	9.1	-	-	-	43.7
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

Lanes, Volumes, Timings  
3: Boston Turnpike/US 44 & Tolland Road

Build  
Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	114	897	534	15	10	64
Future Volume (vph)	114	897	534	15	10	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.883	
Flt Protected		0.994			0.993	
Satd. Flow (prot)	0	1852	1855	0	1633	0
Flt Permitted		0.994			0.993	
Satd. Flow (perm)	0	1852	1855	0	1633	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	975	580	16	11	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1099	596	0	81	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

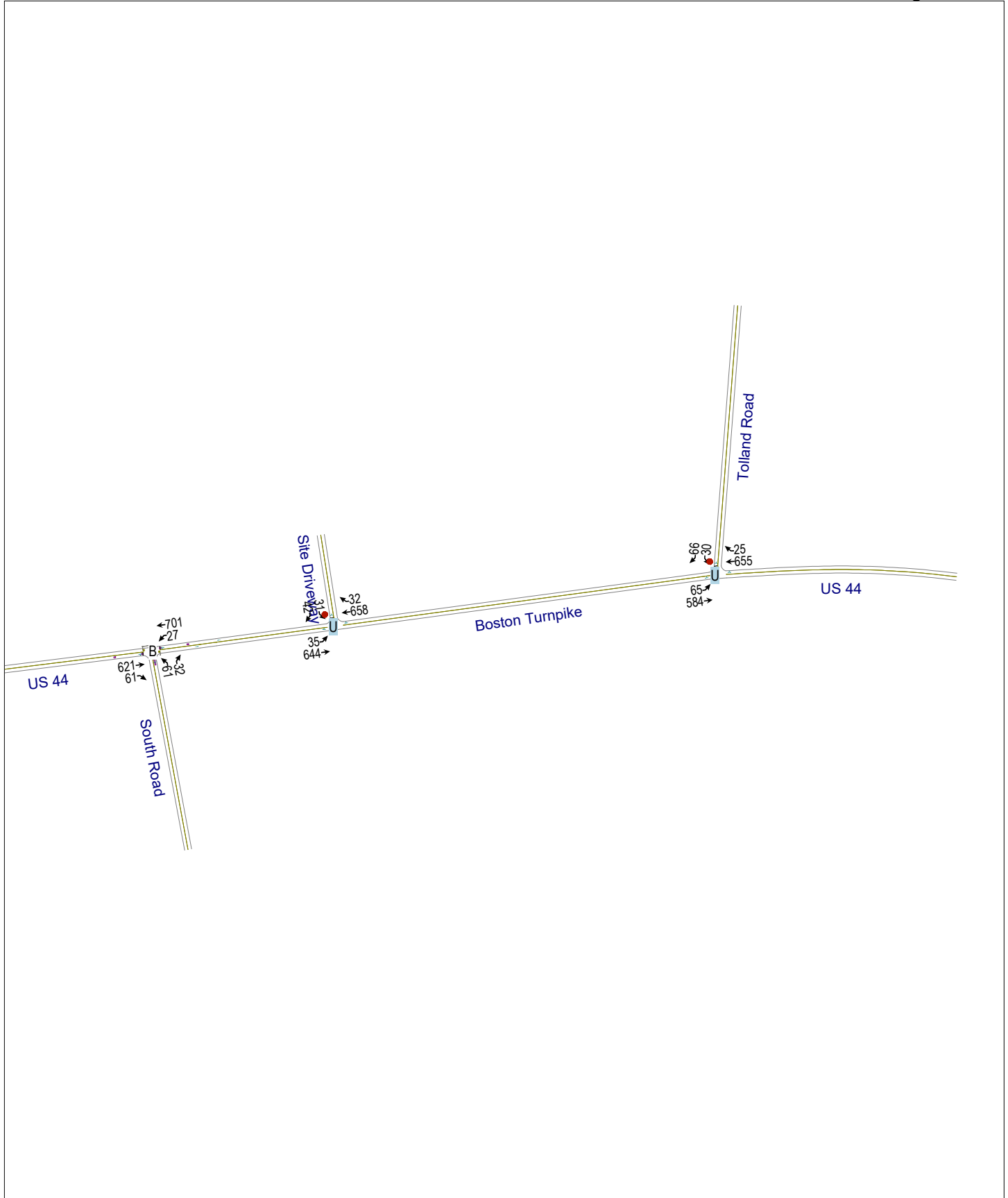
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	97.0%
Analysis Period (min)	15
	ICU Level of Service F

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	114	897	534	15	10	64
Future Vol, veh/h	114	897	534	15	10	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	975	580	16	11	70

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	596	0	-	0	1811 588
Stage 1	-	-	-	-	588 -
Stage 2	-	-	-	-	1223 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	980	-	-	-	86 509
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	278 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	980	-	-	-	62 509
Mov Cap-2 Maneuver	-	-	-	-	62 -
Stage 1	-	-	-	-	402 -
Stage 2	-	-	-	-	278 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	980	-	-	-	258
HCM Lane V/C Ratio	0.126	-	-	-	0.312
HCM Control Delay (s)	9.2	0	-	-	25.2
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.4	-	-	-	1.3



Lanes, Volumes, Timings  
1: South Road & US 44

Build 2022  
Timing Plan: MD



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	621	61	27	701	61	32
Future Volume (vph)	621	61	27	701	61	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t	0.988				0.953	
Fl t Protected				0.998	0.968	
Satd. Flow (prot)	1840	0	0	1859	1753	0
Fl t Permitted				0.976	0.968	
Satd. Flow (perm)	1840	0	0	1818	1753	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				28	
Link Speed (mph)	30			30	30	
Link Distance (ft)	694			188	682	
Travel Time (s)	15.8			4.3	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%
Adj. Flow (vph)	675	66	29	762	66	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	741	0	0	791	101	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			1 2	2		
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	15.0		5.0		7.0	
Minimum Split (s)	20.3		8.1		11.5	
Total Split (s)	50.3		14.1		24.5	
Total Split (%)	56.6%		15.9%		27.6%	
Maximum Green (s)	45.0		11.0		20.0	
Yellow Time (s)	4.3		3.0		3.0	
All-Red Time (s)	1.0		0.1		1.5	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.3				4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	
Recall Mode	Min		None		None	
Walk Time (s)	7.0		7.0		7.0	
Flash Dont Walk (s)	11.0		11.0		11.0	
Pedestrian Calls (#/hr)	0		0		0	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Act Effct Green (s)	36.8			50.1	9.4	
Actuated g/C Ratio	0.55			0.75	0.14	
v/c Ratio	0.73			0.58	0.37	
Control Delay	17.2			5.8	27.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	17.2			5.8	27.9	
LOS	B			A	C	
Approach Delay	17.2			5.8	27.9	
Approach LOS	B			A	C	
Queue Length 50th (ft)	225			98	32	
Queue Length 95th (ft)	398			207	78	
Internal Link Dist (ft)	614			108	602	
Turn Bay Length (ft)						
Base Capacity (vph)	1263			1512	593	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.59			0.52	0.17	

**Intersection Summary**

Area Type:	Other
Cycle Length:	88.9
Actuated Cycle Length:	67
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization:	71.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: South Road & US 44



Lanes, Volumes, Timings  
2: Boston Turnpike & Site Driveway

Build 2022  
Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↔		↘	↙
Traffic Volume (vph)	35	644	658	32	31	42
Future Volume (vph)	35	644	658	32	31	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.922	
Flt Protected		0.997			0.979	
Satd. Flow (prot)	0	1857	1852	0	1681	0
Flt Permitted		0.997			0.979	
Satd. Flow (perm)	0	1857	1852	0	1681	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		428	1302		312	
Travel Time (s)		9.7	29.6		7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	700	715	35	34	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	738	750	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	73.4%
ICU Level of Service	D
Analysis Period (min)	15



**Intersection**

Int Delay, s/veh 1.9

**Movement** EBL EBT WBT WBR SBL SBR

Lane Configurations		↑	↑		↑	
Traffic Vol, veh/h	35	644	658	32	31	42
Future Vol, veh/h	35	644	658	32	31	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	700	715	35	34	46

**Major/Minor** Major1 Major2 Minor2

Conflicting Flow All	750	0	-	0	1509	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	776	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	859	-	-	-	133	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	454	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	859	-	-	-	123	421
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	454	-

**Approach** EB WB SB

HCM Control Delay, s	0.5	0	32.6
HCM LOS			D

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1

Capacity (veh/h)	859	-	-	-	208
HCM Lane V/C Ratio	0.044	-	-	-	0.381
HCM Control Delay (s)	9.4	-	-	-	32.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

Lanes, Volumes, Timings  
3: Boston Turnpike/US 44 & Tolland Road

Build 2022  
Timing Plan: MD



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	65	584	655	25	30	66
Future Volume (vph)	65	584	655	25	30	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.907	
Flt Protected		0.995			0.985	
Satd. Flow (prot)	0	1853	1853	0	1664	0
Flt Permitted		0.995			0.985	
Satd. Flow (perm)	0	1853	1853	0	1664	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1302	817		913	
Travel Time (s)		29.6	18.6		20.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	635	712	27	33	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	706	739	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	86.0%
Analysis Period (min)	15
	ICU Level of Service E

**Intersection**

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	65	584	655	25	30	66
Future Vol, veh/h	65	584	655	25	30	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	635	712	27	33	72

**Major/Minor**

	Major1	Major2	Minor2		
Conflicting Flow All	739	0	0	1503	726
Stage 1	-	-	-	726	-
Stage 2	-	-	-	777	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	867	-	-	134	425
Stage 1	-	-	-	479	-
Stage 2	-	-	-	453	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	867	-	-	117	425
Mov Cap-2 Maneuver	-	-	-	117	-
Stage 1	-	-	-	418	-
Stage 2	-	-	-	453	-

**Approach**

	EB	WB	SB
HCM Control Delay, s	1	0	32.4
HCM LOS			D

**Minor Lane/Major Mvmt**

	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	867	-	-	-	233
HCM Lane V/C Ratio	0.081	-	-	-	0.448
HCM Control Delay (s)	9.5	0	-	-	32.4
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2.1



## Bolton Lakes Regional Water Pollution Control Authority

222 Bolton Center Rd • Bolton, CT 06043 • <http://www.blrwpc.com>

Phone (860) 649-8066 • Fax (860) 643-0021

5/4/21

To: Bolton PZC

Subject: sewer connection 1100 Boston Turnpike

Dear Bolton Planning and Zoning Commission,

At the April meeting of the BLWPCA the application for connection to the sewer for the project located at 1100 Boston Turnpike was discussed. BLWPCA requested additional details be provided regarding the connection so they did not act on the request. On their behalf I have been requested to provide this memo to outline conditions the BLWPCA is requesting so that PZC may approve the application. BLWPCA does anticipate holding a special meeting in May to review and act on this application. Please consider approving the application with the following conditions.

- 01) Install a water meter to be read by a representative of BLWPCA at or about the time of CO issuance and at intervals as determined by BLWPCA
- 02) Purchase EDU's as determined by the BLWPCA
- 03) Apply for and gain approval for permits to install a new sewer connection as approved by the BLWPCA
- 04) Pay all associated fees and post the required bonds for the sewer connection
- 05) Execute an easement in favor of BLWPCA for the purposes of access, maintenance and repair of sewer equipment

Respectfully,

James Rupert  
BLWPCA Administrator



# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

Date: May 3, 2021 - **REVISED June 3, 2021**

To: Planning & Zoning Commission

From: Patrice L. Carson, AICP, Consulting Director of Community Development

**Subject: Garrett Homes, LLC's Special Permit appl. for a Retail Facility at 1100 Boston Turnpike Lot #3**

---

## INFORMATION

**Application No.:** VP#PL-21-5

**Application Date:** April 2, 2021

**Receipt Date:** April 14, 2021

**Public Notification:** Published on Town Website April 23, 2021 & Sign Posted 04/23/21

**Public Hearing Date(s):** May 5, 2021; **continued to June 9, 2021**

**Applicable Sections:** Sections 8C.2.b & 16B

**Applicant:** Garrett Homes, LLC

## PROPOSAL / EXISTING CONDITIONS/BACKGROUND

Applicant, Garrett Homes, LLC, of 59 Field Street, Torrington, CT, is seeking a Special Permit for a 10,640 square foot retail facility on a 1.853 acre parcel of land to be subdivided as lot #3 from the larger 5.44 acres at 1100 Boston Turnpike.

Located east of North Road, the property is zoned RMUZ and is surrounded by R-1 and R3 Zones on all sides except directly east where it abuts another RMUZ zoned property. Currently the property is vacant but has had some improvements made to it with the installation of a berm along the west side of the property. There was a commercial development proposal previously approved for the site. Since then a second Unified Village style development was proposed and a free cut was made from the site on the east side where a dentist office was approved. There are wetlands on the property, both existing and man-made. Bolton Pond Brook also runs along the western border of the property and is protected by a conservation easement granted to the Town that blankets the east side of the property encompassing the Bolton Pond Brook area. The Inland Wetlands Agency has reviewed a permit for the project and has issued its decision and permit approval.

On June 14, 2017, the Commission held an informal discussion with the previous applicant Dr. Ilies, owner Dr. Rosenlicht, and their design professionals. An Overall Concept Plan was discussed showing three lots to be developed in the unified village-style design. Parking, landscaping, and drainage seemed to be the only discussion items. The application has addressed those concerns. Please see the Project Statement of Use submitted with the application.

The plans have been revised mainly to accommodate lowering the first floor of the building, which would affect the stormwater and drainage calculations. Other items from the first staff review have also been addressed.

A shared directory sign is now proposed on frontage of lot 2 which is next to the northeast corner of lot 3. The original location for the sign was in the island in the common accessway and the Commission will have to review and act on the new location.

#### **REPORTS RECEIVED**

- Site Plan Checklist - completed
- Project Statement of Use - Revised with Owners Signature
- Inland Wetlands Approval
- 09/05/17 review letter from Joseph Dillon, PE with 4 issues to address

#### **ADDITIONAL INFORMATION RECEIVED**

- Application with Owner Signature
- 05/14/21 Signed Owner Authorization Letter
- Signed Purchase and Sale Agreement
- 05/20/21 Response to Staff Comments Letter
- E&S Cost Control Estimate
- Abutters List
- 04/23/21 Proof of Posted Sign
- Lighting Detail and Photometric map/plan
- 04/02/21 Stormwater Management Report - Revised 05/20/21
- Traffic Study
- Overall Concept Plan & Survey -05/20/21 Revised Site Plans
- Subdivision Plan -05/20/21 Revised Site Plans
- Architectural Floor Plans & Elevations
- Engineering & Legal Review Fee of \$2,000

#### **INFORMATION STILL NEEDED:**

- Fire Marshal/Fire Chief Review
- BLRWPCA Review

- EHHD Public Health Code Review – 05/05/21 Comments below
- Street Numbers as Approved by the Town – Have been added to the Revised Plans
- Proposed Easements for Maintenance, Access and Utility should be submitted for review
- BLRWPCA comments re: approval conditions and any remaining Sewer Assessment Fee

## STAFF ANALYSIS

The plans appear to meet Town Regulations. The following items may require additional information:

- The PZC will hold a Public Hearing on May 5, 2021 as required by CGS. – The Public Hearing was opened and continued to June 9, 2021.
- Once Street Numbers are assigned and approved by the Town, they should be shown on the Plan. – Have been added to the Revised Plans
- The Town Engineer’s comments need to be addressed.
- Section 16A.3.x. – Buildings and Structures: Architectural and Design Requirements & Section 16B.4.l. – Architectural Character, Historic Preservation, Site Design. The Commission needs to determine if the design of the proposed building is adequate to meet these standards. If the Commission’s intention along this corridor is to preserve the residential-type character and create transitions to existing residential neighborhoods, this proposal seems to accomplish that. Staff feels the applicant has paid particular attention to keeping all activity (no lighting, windows, etc.) away from the west side of the building to keep from interfering with the residences on North Road. – The applicant also notes that additional brick banding and faux windows have been added to the northern side of the building in an effort to increase visual aesthetics while mitigating disturbance to the residential abutters.
- Section 16A.4.d. – Notices – Statutory notices have been published on the town’s website, and the applicant has been provided with a sign for posting. The applicant has provided an affidavit for the posting of a sign.

## STAFF RECOMMENDATION

The staff has determined that:

- the application is complete
- the application complies with Town Regulations subject to conditions set forth in the staff analysis and reports received to date; comments from the Fire Marshal/Fire Chief, EHHD and the BLRWPCA are still forthcoming;
- the use is compatible with other uses in the neighborhood, and is in keeping with the zone in which it is located.



April 26, 2021

Ms. Patrice Carson, AICP  
Director of Community Development  
Bolton Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

Re: Proposed Retail Development  
1100 Boston Turnpike  
Bolton, Connecticut  
NLJ #0968-0037

Dear Ms. Carson:

As requested, we have reviewed the following information received via e-mail for the subject project at our office through April 4, 2021:

- Item 1: Bolton Planning & Zoning Commission Application for Special Permit, Site Plan Review or Modification of a Previously Approved Application, accompanied by Special Permit Checklist, Abutters List and Statement of Use
- Item 2: Set of twenty-three (23) drawings titled "Land Development Plans for Planning and Zoning Special Permit Application, Proposed Retail Development, 1100 Boston Turnpike, Bolton, Connecticut", prepared by BL Companies, scale as noted, dated: April 2, 2021.
- Item 3: Report titled "Traffic Study – Proposed Retail Development, 1100 Boston Turnpike, Bolton, CT", dated February 2021, prepared by BL Companies.
- Item 4: Report titled "Stormwater Management Report for the Proposed Retail Development located at 1100 Boston Turnpike, Bolton, Connecticut", dated April 2, 2021, Prepared by BL Companies.

---

**Nathan L. Jacobson & Associates, Inc.**  
Nathan L. Jacobson & Associates, P.C. (NY)  
86 Main Street P.O. Box 337 Chester, Connecticut 06412-0337

Tel 860.526.9591 Fax 860.526.5416

Consulting Civil and Environmental Engineers Since 1972





Ms. Patrice Carson, AICP  
Director of Community Development  
Re: Proposed Retail Development  
1100 Boston Turnpike NLJ  
#0968-0037

April 26, 2021  
Page 2 of 2

The subject application proposes to construct a 10,640 s.f. retail building with associated parking, stormwater treatment and utilities,

We have the following comments:

1. Referral should be made to the Connecticut Department of Transportation (CTDOT) for work proposed within the State right-of-way.
2. An application should be made to the Bolton Lakes Regional Water Pollution Authority (BLRWPCA)  
  
prior to the installation of the pressure line and sewage pump station.
3. We would recommend that an underdrain be placed along the centerline of the proposed water quality basin to help to drain the basin between rain events and prevent problems with standing water.
4. An existing conditions model should be provided for the subarea that contributes to the water quality basin on the Bolton Dental site. From the data provided in the Stormwater Management Report, it appears that flows being sent to the existing basin will be minimal, but it should be quantified.
5. The available Water Quality Volume (WQv) should be calculated as the volume of the basin up to the lowest proposed outlet elevation. In this regard, the available storage should be calculated only up to the top of frame of the proposed outlet structure. The data provided in the Stormwater Management Report indicates that the basin still provides adequate WQv even with the reduced available storage. The "Proposed Water Quality Volume (WQv)" column of the WQv table should be revised for accuracy.
6. Test pits should be performed within the area of the proposed stormwater basin to determine if rock or high groundwater will conflict with the soil media and drainage layers below the proposed basin floor elevation.

Should you have any questions, please feel free to contact me.

Very truly yours,

NATHAN L. JACOBSON & ASSOCIATES, INC.



Joseph M. Dillon, P.E.

JMD:jmd

cc: Jim Rupert  
Barbara Kelly  
BL Companies

---

From: Thad King, Health Comments, May 5, 2021:

- Lot 3, the 10640 SQ Ft Retail proposal was previously reviewed.
  - Lot 2 was incorporated within a previous plan called "Indian Notch Square" dated 3-26-90, and a concept plan called "Commercial Subdivision" dated 5-26-17.
  - Lot 2 has been tested and has a suitable location for a subsurface sewage disposal system and for a water supply well. The lot is proposed as undeveloped.
-

**From:** Joseph M. Dillon, P.E. [mailto:jdillon@nlja.com]  
**Sent:** Thursday, June 03, 2021 3:14 PM  
**To:** Carson, Patrice <pcarson@boltonct.org>  
**Cc:** Masiuk, Kimberly <kmasiuk@Blcompanies.com>; Kelly, Barbara <bkelly@boltonct.org>;  
Rupert, Jim <jrupert@boltonct.org>  
**Subject:** 1100 Boston Turnpike Review Letter

Patrice,

Attached, please find my review comments for 1100 Boston Turnpike.

Regards,

Joe

---

Joseph M. Dillon, P.E.



**Nathan L. Jacobson & Associates**

*Consulting Civil and Environmental Engineers Since 1972*

86 Main Street, P.O. Box 337, Chester, Connecticut 06412-0337

Tel: 860.526.9591 • Fax: 860.526.5416

[www.nlja.com](http://www.nlja.com) • [jdillon@nlja.com](mailto:jdillon@nlja.com)



June 3, 2021

Ms. Patrice Carson, AICP  
Director of Community Development  
Bolton Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

Proposed Retail Development  
1100 Boston Turnpike  
Bolton, Connecticut  
NLJ #0968-0037

Dear Ms. Carson:

As requested, we have reviewed the following information received via e-mail for the subject project at our office through May 27, 2021:

Item 1: Letter to Patrice L. Carson, AICP, Director of Community Development, from Kimberly M. Masiuk, P.E. dated May 20, 2021.

Item 2: Set of twenty-six (26) drawings titled "Land Development Plans for Planning and Zoning Special Permit Application, Proposed Retail Development, 1100 Boston Turnpike, Bolton, Connecticut", prepared by BL Companies, scale as noted, dated: April 2, 2021, revised May 20, 2021.

Item 3: Report titled "Stormwater Management Report for the Proposed Retail Development located at 1100 Boston Turnpike, Bolton, Connecticut", dated April 2, 2021, revised May 20, 2021, prepared by BL Companies.

The submitted information has adequately addressed the comments noted in our April 26, 2021, engineering review letter. In addition to the site plan modifications made as a result of our comments, the Applicant has elected to lower the building elevation by 1 foot therefore necessitating additional changes to the plans and Stormwater Management Report.

We have the following comments:

1. The roof leaders from the proposed building have been directed to a riprap apron to the north of the building. The proposed apron and swale are located on Lot 2, to the north. We would recommend that the discharge point for the roof leaders be located on Lot 3 where the building is proposed. If this cannot be accomplished, the subdivision plan will require a modification to create an easement for discharge rights or an adjustment of the property line between Lots 2 & 3.
2. For the purposes of continuity between the drawings, the proposed well should be shown on all of the site plan sheets.



Ms. Patrice Carson, AICP  
Director of Community Development  
Re: Proposed Retail Development  
1100 Boston Turnpike  
NLJ #0968-0037  
June 3, 2021  
Page 2 of 2

1. The data included for DP-2 in Table 2 – Pre-Development Conditions Peak Flows does not match the Existing DP-2 data provided in Table 5 – Existing vs. Proposed Peak Rates of Runoff. It appears that the existing peak flows for DP-2 were copied in error from DP-1 existing peak flows. This discrepancy should be rectified.
2. The Subdivision Plan should show a proposed building location and general site layout to demonstrate feasibility of Lot 2 to the north.

Should you have any questions, please feel free to contact me.

Very truly yours,

NATHAN L. JACOBSON & ASSOCIATES, INC.

  
Joseph M. Dillon; P.E.

JMD:jmd

cc: Jim Rupert  
Barbara Kelly  
BL Companies

June 7, 2021

Patrice L. Carson, AICP, Director of Community Development  
Town of Bolton  
222 Bolton Center Road  
Bolton, CT 06043

Re: Special Permit Application  
2-Lot Subdivision Application  
Proposed Retail Development  
1100 Boston Turnpike

Dear Ms. Carson:

We are in receipt of engineering comments dated June 3, 2021, from Nathan L. Jacobson & Associates, Inc. regarding the project referenced above. Our responses below are shown in ***bold italic*** text.

1. The roof leaders from the proposed building have been directed to a riprap apron to the north of the building. The proposed apron and swale are located on Lot 2, to the north. We would recommend that the discharge point for the roof leaders be located on Lot 3 where the building is proposed. If this cannot be accomplished, the subdivision plan will require a modification to create an easement for discharge rights or an adjustment of the property line between Lots 2 & 3.

***Response: Acknowledged. Please refer to revised subdivision plan for added drainage easement in favor of Lot 3.***

2. For the purposes of continuity between the drawings, the proposed well should be shown on all of the site plan sheets.

***Response: Acknowledged. The well has been added to the rest of the site plan sheets.***

3. The data included for DP-2 in Table 2 – Pre-Development Conditions Peak Flows does not match the Existing DP-2 data provided in Table 5 – Existing vs. Proposed Peak Rates of Runoff. It appears that the existing peak flows for DP-2 were copied in error from DP-1 existing peak flows. This discrepancy should be rectified.

***Response: Acknowledged. The typo has been corrected. Please refer to the revised Stormwater Management Report.***

4. The Subdivision Plan should show a proposed building location and general site layout to demonstrate feasibility of Lot 2 to the north.

***Response: Acknowledged. Please refer to the master plan on sheet MP-1.***

We trust this addresses your concerns. Should you require additional information, please contact me at 860-760-1908.

Sincerely,

A handwritten signature in black ink that reads 'Kimberly M. Masiuk'.

Kimberly M. Masiuk, P.E.  
Senior Project Manager

**From:** Joseph M. Dillon, P.E. [mailto:jdillon@nlja.com]  
**Sent:** Tuesday, June 08, 2021 3:25 PM  
**To:** Carson, Patrice <pcarson@boltonct.org>  
**Cc:** Masiuk, Kimberly <kmasiuk@Blcompanies.com>  
**Subject:** 1100 Boston Turnpike

Patrice,

Attached is my follow-up review for 1100 Boston Turnpike. My only concern is that the location of the roof leader outlet will be an issue for the person developing lot 2. My suggestion is to extend the easement and outlet to the north.

Feel free to contract me if you have any questions.

Regards,  
Joe

---

Joseph M. Dillon, P.E.



**Nathan L. Jacobson & Associates**

*Consulting Civil and Environmental Engineers Since 1972*

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June 8, 2021

Ms. Patrice Carson, AICP  
Director of Community Development Bolton  
Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

Re: Proposed Retail Development  
1100 Boston Turnpike  
Bolton, Connecticut  
NLJ #0968-0037

Dear Ms. Carson:

As requested, we have reviewed the following information received via e-mail for the subject project at our office through June 7, 2021:

Item 1: Letter to Patrice L. Carson, AICP, Director of Community Development, from Kimberly M. Masiuk, P.E. dated June 7, 2021.

Item 2: Set of twenty-six (26) drawings titled "Land Development Plans for Planning and Zoning Special Permit Application, Proposed Retail Development, 1100 Boston Turnpike, Bolton, Connecticut", prepared by BL Companies, scale as noted, dated: April 2, 2021, revised June 7, 2021.

Item 3: Report titled "Stormwater Management Report for the Proposed Retail Development located at 1100 Boston Turnpike, Bolton, Connecticut", dated April 2, 2021, revised June 7, 2021, prepared by BL Companies.

The submitted information has adequately addressed the comments noted in our June 3, 2021, engineering review letter.

We have the following comment:

1. The location of the roof leader discharge for Lot 3 will likely impact the parking area for Lot 2 based on the subdivision Master Plan. Consideration should be given to extending the discharge point and corresponding easement to the north to reduce the impact on the developable portion of Lot

Should you have any questions, please feel free to contact me.

Very truly  
yours,

---

**Nathan L. Jacobson & Associates, Inc.**  
Nathan L. Jacobson & Associates, P.C. (NY)  
86 Main Street P.O. Box 337 Chester, Connecticut 06412-0337  
Tel 860.526.9591 Fax 860.526.5416

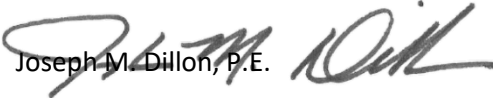


Jacobson

Ms. Patrice Carson, AICP  
Director of Community Development  
Re: Proposed Retail Development  
1100 Boston Turnpike  
NJL #0968-0037

June 8, 2021  
Page 2 of 2

NATHAN L. JACOBSON & ASSOCIATES, INC.

Joseph M. Dillon, P.E. 

JMD:jmd

cc: Jim Rupert  
Barbara Kelly  
BL Companies



# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

## BOLTON PLANNING AND ZONING COMMISSION

### APPENDIX I

### APPLICATION FOR APPROVAL OF SUBDIVISION / RESUBDIVISION / MODIFICATION OF PREVIOUSLY APPROVED SUBDIVISION / RESUBDIVISION

1. NAME OF SUBDIVISION / RESUBDIVISION Proposed Retail Development
2. CHECK ONE: APPLICATION IS FOR: SUBDIVISION X RESUBDIVISION      MODIFICATION
3. STREET ADDRESS OF SUBJECT PROPERTY 1100 Boston Turnpike Bolton, Connecticut  
Rural Mixed Use  
 ZONE Zone (RMUZ) DEED REFERENCE: VOLUME 141 PAGE 790  
 ASSESSOR'S MAP # 05 BLOCK # 81 LOT # 2180
4. APPLICANT(S) Garrett Homes, LLC  
 ADDRESS 59 Field Street Torrington, CT ZIP 06790  
 PHONE # 860-307-5479; FAX #                     ; E-MAIL eucalittogary@gmail.com

I AM A WILLFUL PARTICIPANT AND FULLY FAMILIAR WITH THE CONTENTS OF THIS APPLICATION.

SIGNATURE(S) OF APPLICANT(S) 

5. OWNER(S) OF RECORD 1100 Boston Turnpike LLC C/O Joel Rosenlicht  
483 Middle Turnpike West, Suite 102  
 ADDRESS Manchester, CT ZIP 06040  
 PHONE # 860-930-9588; FAX #                      E-MAIL DIRROSENLICHT@JAWFIXERS.COM

I AM A WILLFUL PARTICIPANT AND FULLY FAMILIAR WITH THE CONTENTS OF THIS APPLICATION.

SIGNATURE(S) OF OWNER(S): 

6. OFFICIAL CONTACT REGARDING THIS APPLICATION:  
 NAME Kimberly Masiuk  
 COMPANY BL Companies  
 ADDRESS 100 Constitution Plaza, 10th Floor Hartford CT ZIP 06103  
 PHONE # 860-760-1908; FAX # 860-249-2400 E-MAIL kmasiuk@Blcompanies.com

7. APPLICANT'S ENGINEER:

NAME Kimberly Masiuk

COMPANY BL Companies

ADDRESS 100 Constitution Plaza, 10th Floor Hartford CT ZIP 06103

PHONE # 860-760-1908 ; FAX # 860-249-2400 E-MAIL kmasiuk@Blcompanies.com

8. APPLICANT'S SURVEYOR::

NAME Carmine J. Matrascia

COMPANY Dufour Surveying LLC

ADDRESS 575 North Main Street Bristol, Connecticut ZIP 06010

PHONE # 860-314-0502 ; FAX # \_\_\_\_\_ E-MAIL dufour.surveying@yahoo.com

9. OTHER EXPERTS RETAINED BY THE APPLICANT: \_\_\_\_\_

10. NUMBER OF NEW LOTS IN SUBDIVISION / RESUBDIVISION 2

11. TOTAL ACREAGE OF SUBJECT PROPERTY BEING DIVIDED 5.44

12. TOTAL LENGTH OF NEW PUBLIC ROADS 0 FEET

13. TOTAL ACREAGE OF PROPOSED OPEN SPACE: 0

14. IF MODIFICATION, DESCRIBE NATURE OF SUCH MODIFICATION: N/A

15. IS APPLICATION FOR OPEN SPACE CONSERVATION DEVELOPMENT? No IF YES, SPECIAL PERMIT APPLICATION TO BE SUBMITTED CONCURRENTLY.

16. ARE THE SUBDIVISION / RESUBDIVISION ACTIVITIES SUBJECT TO THE BOLTON INLAND WETLANDS AND WATERCOURSES REGULATIONS? No IF YES, APPROVAL MUST BE SECURED BY THE APPLICANT PRIOR TO PZC ACTION. STATUS: \_\_\_\_\_

17. PROVIDE ALL THE APPLICABLE ITEMS FOR A COMPLETE APPLICATION INCLUDING THE COMPLETED CHECKLIST FOR SUBDIVISION / RESUBDIVISION APPLICATIONS

A COMPLETED CHECKLIST MUST BE PROVIDED TO COMPRISE A COMPLETE APPLICATION

18. DATE FILED WITH TOWN 04/02/2021

19. BASE FEE PAID \_\_\_\_\_ CHECK # \_\_\_\_\_ (APPLICANTS MAY BE SUBJECT TO SUPPLEMENTAL PEER REVIEW FEES TO DEFRAY THE COST OF PROFESSIONAL REVIEW SERVICES, SUCH AS ENGINEERING OR LEGAL REVIEWS)

**Revised March 1, 2009**

**BOLTON PLANNING AND ZONING COMMISSION  
CHECKLIST  
FOR SUBDIVISION & RESUBDIVISION APPLICATIONS  
Revised March 11, 2009**

THIS CHECKLIST MUST BE COMPLETED BY THE APPLICANT OR AN AUTHORIZED REPRESENTATIVE AND SUBMITTED WITH THE APPLICATION.

The Planning and Zoning Commission will use this checklist in determining the completeness or incompleteness of the application. The applicant is responsible for providing all the applicable information on this checklist. The applicant is encouraged to provide any additional information to clearly present a proposed activity and its potential effects on the community. The Commission may require additional information not included in this checklist to determine compliance with the regulations.

AN APPROVAL OF AN APPLICATION COULD BE DENIED IF AN APPLICATION LACKS SUFFICIENT INFORMATION.

WAIVERS. Some of the items below are essential for any application while others may not be applicable for a particular proposal. The applicant is encouraged to ask the town staff to review the completed application with all supporting information and the completed checklist, prior to submitting the application to the Planning and Zoning Commission so that the staff can provide the applicant an opinion on the completeness of the application. The applicant shall provide an accompanying narrative for any item that is represented by the applicant as not applicable or not included. Should the applicant intend to seek a waiver of any requirement of the Bolton Subdivision Regulations pursuant to Section 1.3, the applicant shall submit an itemized request listing each such waiver with a statement justifying such request at time of application.

SUPPLEMENTAL REVIEW FEES: The applicant may be liable for supplemental review fees to defray the cost of professional review services, such as engineering, legal, and traffic reviews. Staff will seek estimates of these professional services at time of application acceptance. Please see the attached fee schedule.

Name of Subdivision or Resubdivision: Proposed Retail Development

Applicant Garrett Homes, LLC Date 04/02/2021

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
1	Completed, signed application by applicant and owner	x			
2	Payment of required application fees	x			
3	All draft deeds, easements and declarations for all proposed roads, road widenings and open spaces, letter of consent from entity to receive open space and easements for drainage, conservation, driveways, utilities		x		
4	Evidence of Approval by the Health District and/or Sewer Authority		x		
5	Evidence of approval of the proposed activity by the Inland Wetlands Commission if it is within that Commission's jurisdiction		x		

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
6	Evidence of approval by the Fire Marshal and Fire Chief of the water supply for fire protection		x		
7	Copies of any required applications for other local, state or federal regulatory approvals		x		
8	Written evidence of applicant's legal interest in the subject property (deed, lease, option to purchase, bond for deed, etc.)	x			
9	List of all current property owners within 500 feet of the subject property obtained from the Town Assessor records.	x			
10	Paper and digital copies of all reports including hydrology, hydraulic and drainage computations and	x			
11	14 sets of complete stamped and signed plans measuring 24" x 36", and at a scale not more than 40' to the inch	x			
	<b>ITEMS 12 THROUGH 65 SHALL BE INCORPORATED IN THE SET OF PLANS</b>				
12	A-2 boundary survey of the subject property showing all existing and proposed boundary lines and markers, easements, adjoining property lines and the names of all current abutting property owners	x			
13	Subdivision owner's name and address, total area of subdivision and number of lots, shown on plan	x			
14	Digital copy of plans in DXF, DGN, or other format acceptable to Town staff	x			
15	Plan title block in the extreme lower right corner (not sideways) to include the subdivision name, individual sheet title and the name of the Town of Bolton	x			
16	All plan sheets numbered with the format "sheet x of y"	x			
17	Clear legible plans with all lines, symbols and features readily identifiable	x			
18	North arrow on each plan including the reference meridian	x			
19	Graphic bar scale on each plan sheet, within the acceptable scale limits of the regulations	x			
20	Overall plan of site at a smaller scale, with sheet index, if the site does not fit on one sheet at required scale		n/a		
21	Key map at a scale of 1"= 500' showing the relation of the site to abutting properties and streets, shown on plan	x			
22	Original and revision plan dates and revision explanations shown on the affected plan sheets	x			
23	Total area of Subdivision	x			
24	Square footage and acreage of all lots, roads, open spaces, easements, etc.	x			
25	Number of lots in Subdivision	x			
26	Existing and proposed property and street lines	x			
27	Existing and proposed watercourses and ponds	x			
28	Existing and proposed easements and ROWs	x			
29	Existing and proposed lot markers and lot numbers	x			
30	Proposed Street numbers	x			

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
31	All dimensions to 1/100 <sup>th</sup> of a foot, and all bearings or angles on all property lines and easements, existing and proposed.	x			
32	Central angle, arc length, and radius of all arcs	x			
33	Width of streets, ROWs, and easements	x			
34	Proposed street names	x			
35	Existing and proposed street monuments	x			
36	Length of proposed streets	x			
37	Survey relationship of proposed streets to Town roads or State Highways	x			
38	Revision number, date, and brief description of revision	x			
39	Commission's endorsement signature block on each plan sheet in accordance with Section 8.t.	x			
40	Existing and proposed parks, recreation areas, and open spaces	x			
41	Existing and proposed grading with two foot contours for all ground surfaces based on USGS datum, shown on plan	x			
42	Existing and proposed structures and features, their uses and those to be removed, shown on the plan	x			
43	Existing and proposed driveway entrances to street	x			
44	Sight distances from property entrances along public roads shown on plan and on profile if grading is needed	x			
45	Existing and proposed water supply shown on plan	x			
46	Existing wells and sewage disposal systems on other properties that could conflict with proposed site improvements, shown on plan		x		
47	Existing and proposed footing drains, curtain drains and dry wells, shown on plan	x			
48	Existing and proposed drainage systems, any affected floodway and construction detail drawings, shown on plan	x			
49	Existing stone walls, fences, trails, foundations and other similar landmarks, shown on plan	x			
50	Existing and proposed bridges and culverts on or adjacent to the site, shown on plan		x		
51	Zoning district boundaries and zoning dimensions table	x			
52	Table shown on plan of zoning dimensions required and provided for lot area, street frontage, lot width, yard setbacks, impervious area and building coverage	x			
53	Location of minimum buildable area for each lot, shown on plan	x			
54	Limits of wetlands as delineated by a certified soil scientist with the soil scientist's signed certification, shown on plan or a certification signed by a soil scientist that no wetlands are within 100 feet	x			

Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
55	Natural features including watercourses, ponds, vernal pools, aquifers, 100 year flood plain areas, ridge lines, large ledge outcrops, slopes steeper than 25% and potential areas of endangered species, shown on plan	x			
56	Soil deep test hole and percolation test locations and soil test results		x		
57	Conceptual design and locations of principal structure, primary and reserve sewage disposal areas each with percolation and deep test holes for suitable soils, curtain and footing drains with outlets, and well; location of existing septic systems and wells on property and abutting properties that impact location of new wells and septic systems.	x			
58	Existing and proposed streets within the ROW, edges of pavement, centerline, station numbers	x			
59	Driveway locations	x			
60	Signature and seal of engineer and surveyor preparing map	x			
61	Traffic control signs, pavement markings, street lights	x			
62	Plan and profile construction drawings at 1"=40' (H) scale and 1"=4' (V) scale for all the features of proposed roads, drainage systems and public improvements with construction detail drawings for all features in accordance with the regulation requirements	x			
63	Best management practices to remove contaminants, including sediments and oils, from runoff water, shown on plan, in construct detail drawings, and explained in a report by a qualified professional	x			
64	Landscaping Plan	x			
65	Erosion and Sedimentation Control Plan, with narrative and construction detail drawings, in accordance with the latest Connecticut Guidelines for Soil Erosion and Sediment Control	x			
66	Thorough, well-organized drainage design report for existing and proposed development conditions, that conforms to the latest Conn. Dept. of Transportation and Conn. Dept. of Environmental Protection guidelines and requirements with appropriate calculations, maps, graphics and narrative descriptions of hydrology, hydraulics, assumptions, erosion controls, drainage paths and systems for the 1, 2, 10, 50 and 100 year storm events	x			
67	Statement in drainage report that the after development flows for all storm events do not exceed the before development flows		x		
68	Engineer's itemized cost estimate (including item, quantity, and price) for the installation of all erosion and sediment controls based on current published Connecticut DOT unit prices		x		



Item	Description	Applicant		Staff	
		Included	Not Included	Completeness Opinion	
				Yes	No
69	Engineer's itemized cost estimate (including item, quantity, and price) for the construction of all public improvements based on current published Connecticut DOT unit prices		x		
70	Open Space Proposal: Open Space Conservation Development, Traditional Development or Fee-In-Lieu-of-Open-Space with Land Appraisal prepared by appraiser mutually agreeable to Commission and applicant		x		
71	Written evidence from receiving entity that it is willing to accept, preserve and maintain open space		x		

LEBRUN PATRICIA L  
KISS JOSEPH A & RACHAEL F  
UNITED METHODIST CHURCH OF  
UNITED METHODIST CHURCH OF  
ABBOTT JACQUELINE A  
HUSSEY BRETT  
ZHANG WANRU  
ZHANG WANRU  
AITNER LAURIE H & LYNN K  
JONAS PAUL E JR  
CHAMBERLAIN SARAH  
ROSE CHARLES N & MARIE L  
CONNECTICUT STATE OF  
GAGNON JESSICA L  
HD PROPERTY GROUP LLC  
BOSTON TURNPIKE ENTERPRISES LLC  
UNITED METHODIST CHURCH OF  
NIELSEN DONALD J & JOYCE M  
BAKANAS JEANETTE P (L/U) & LISA G & ERIN L  
KARPIEJ PAUL  
CHAMBERLAIN SARAH  
HOAR LORETTA GRACE  
RUNKIS ROGER A & KATHLEEN D  
FULLER JASON C & FULLER KERI A  
1638 TRUST & 1638S TRUST  
GARDNER VERONICA J  
IGER RUSSELL M  
BENITEZ RICARDO & SHARON  
SMITH MARK S & KATHLEEN A  
HUSSEY BRETT  
ROBERTS ROBERT E  
DOTY LESLIE S  
LARSON DOROTHY S  
ROBINSON NICHOLAS & JESSICA & SURV  
GALLIGAN TIMOTHY  
LANDRY GERALD JASON  
MCGUIRE EDWARD C & CORRADINA B  
MISSIONARY SOCIETY FOR THE  
DAVIS FREDERICK  
PALUSO JOSEPH J  
MAYA PROPERTIES LLC  
MAYA PROPERTIES LLC  
MELQUIST CAROL O  
HILTON CHARLES H & SHELLY D  
DUTTON CHRISTOPHER K  
HOAR ANDREW F  
HOAR ISABEL L EST & ANDREW F & HARRY L II

1100 BOSTON TURNPIKE LLC  
STEVENS JOHN B

30 TOLLAND RD  
7 SOUTH ROAD  
1041 BOSTON TPKE  
1041 BOSTON TPKE  
7 KEENEY DR  
1074 BOSTON TPKE  
195 SPENO RIDGE  
195 SPENO RIDGE  
14 NORTH RD  
18 NORTH RD  
17 NORTH RD  
P O BOX 9214  
79 ELM ST  
1173 BOSTON TPKE  
3515 SOUTH ST  
530 SILAS DEANE HIGHWAY #209  
1041 BOSTON TPKE  
21 KEENEY DR  
3 TIMOTHY DR  
51 GLASTONBURY AVE  
17 NORTH RD  
1084 BOSTON TPKE  
P.O. BOX 9548  
1055 BOSTON TPKE  
540 EAST MAIN ST  
9 SOUTH RD  
15 KEENEY DR  
9 KEENEY DR  
1040 BOSTON TPKE  
1074 BOSTON TPKE  
1066 BOSTON TPKE  
16 NORTH RD  
1071 BOSTON TPKE  
1061 BOSTON TPKE  
10 SOUTH RD  
12 + 12A SOUTH RD  
1130 BOSTON TPKE  
PO BOX 9158  
1079 BOSTON TPKE  
27 RICHARDSON RD  
83 LOOKOUT MT RD  
83 LOOKOUT MT RD  
19 KEENEY DR  
17 KEENEY DR  
20 NORTH RD  
11 NORTH RD  
11 NORTH RD

BOLTON, CT 06043  
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BOLTON, CT 06043  
ROCKY HILL, CT 06067  
ROCKY HILL, CT 06067  
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BOLTON, CT 06043  
HARTFORD, CT 06106  
BOLTON, CT 06043  
COVENTRY, CT 06238  
WETHERSFIELD, CT 06109  
BOLTON, CT 06043  
BOLTON, CT 06043  
MIDDLETOWN, CT 06457  
ROCKYHILL, CT 06067  
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BRANFORD, CT 06405  
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BOLTON, CT 06043  
BOLTON, CT 06043  
HEBRON, CT 06248  
MANCHESTER, CT 06040  
MANCHESTER, CT 06040  
BOLTON, CT 06043  
BOLTON, CT 06043  
BOLTON, CT 06043  
BOLTON, CT 06043  
BOLTON, CT 06043

483 MIDDLE TURNPIKE WEST, SUITE 102  
1069 BOSTON TPKE

MANCHESTER, CT 06040  
BOLTON, CT 06043

May 14, 2021

Town of Bolton  
Planning and Zoning Commission  
Bolton Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

RE: Owner Authorization for Proposed Retail at 1100 Boston Turnpike

To Whom it May Concern:

I, Joel Rosenlicht, of 1100 Boston Turnpike, LLC, the property owner of 1100 Boston Turnpike, am writing this letter in conjunction with the Application to the Town of Bolton. I authorize Garrett Homes, LLC to act as the authorized applicant/agent for the proposed development located at 1100 Boston Turnpike, Bolton, Connecticut.

Please feel free to contact me if you have any further questions.

Sincerely,



Joel Rosenlicht  
Boston Turnpike, LLC

## PURCHASE AND SALE AGREEMENT

This PURCHASE AND SALE AGREEMENT (this "**Agreement**") is made and entered into as of the 24<sup>th</sup> day of November, 2020 (the "**Effective Date**"), by and between GARRETT HOMES LLC, a Connecticut limited liability company having a mailing address of 59 Field Street, Suite 108, Torrington, Connecticut 06790, or its nominee ("**Purchaser**") and 1100 BOSTON TURNPIKE LLC, a Connecticut limited liability company having an address of 483 Middle Turnpike West, Suite 102, Manchester, Connecticut 06040 ("**Seller**").

### WITNESSETH:

In consideration of the premises herein contained, Seller agrees to sell and Purchaser agrees to purchase the land and improvements thereon and appurtenances thereto located at 1100 Boston Turnpike (Lot 3), Bolton, Connecticut, and being more particularly described on the plan attached hereto as Exhibit A and made a part hereof (the "**Property**"), all in accordance with and subject to the terms and conditions set forth herein.

1. Purchase Price.

The TOTAL purchase price for the Property is  
(the "**Purchase Price**"), payable as follows:

(i) within five (5) business days following the Effective Date, a deposit in the amount of FIVE THOUSAND AND NO/100 DOLLARS (\$5,000.00) (the "**Deposit**"), shall be delivered to Juliano & Marks, LLC, 9C Pasco Drive, East Windsor, Connecticut 06088 (the "**Escrow Agent**") to be held in accordance with the terms of this Agreement;

(ii) The Purchase Price, less the Deposit, subject to further adjustment as contemplated in this Agreement, shall be payable at Closing, by wire transfer, bank cashier's or treasurer's check, or certified check.

Seller and Purchaser recognize that Escrow Agent will hold the Deposit in Escrow Agent's non-interest bearing IOLTA account. The parties agree that Escrow Agent is not bound by any agreement between Seller and Purchaser other than this Agreement and that the only duties and responsibilities of Escrow Agent are to receive and hold the Deposit and to dispose of the Deposit, all in accordance with the terms of this Agreement. In respect to all matters, Escrow Agent shall be entitled to rely on the advice of counsel of its choosing without liability therefor. In no event shall Escrow Agent be liable or responsible to Seller or Purchaser except for its willful misconduct. Seller and Purchaser shall, jointly and severally, indemnify and hold Escrow Agent harmless from and against any and all liabilities, obligations, damages, penalties, claims, losses, costs and expenses whatsoever (including, without limitation, reasonable attorneys fees) in any way connected with Escrow Agent's carrying out of its responsibilities under this Agreement. Escrow Agent may resign as escrow agent at any time upon fifteen (15) days written notice to Seller and Purchaser. Seller and Purchaser may remove Escrow Agent as escrow agent at any time upon fifteen (15) days written notice to Escrow Agent, signed by both Seller and Purchaser. In the event of Escrow Agent's resignation or removal, Escrow Agent's only duty until a successor escrow agent is appointed shall be to hold and dispose of the Deposit in accordance with the provisions of this Agreement existing at the time of such resignation or removal and Escrow Agent shall not be bound by any notices, requests, instructions, or

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals as of the day and year first above written.

**PURCHASER**

GARRETT HOMES LLC

By:   
Name: Gary W. Eucalitto  
Title: Member

**SELLER**

1100 BOSTON TURNPIKE LLC

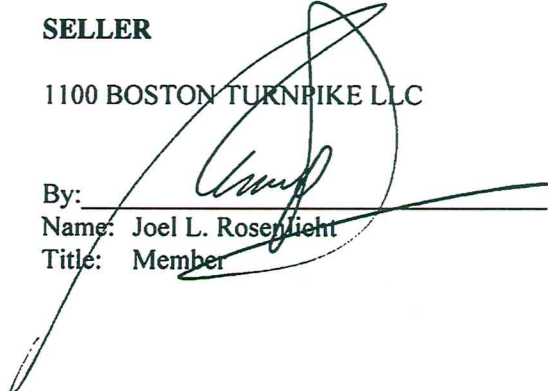
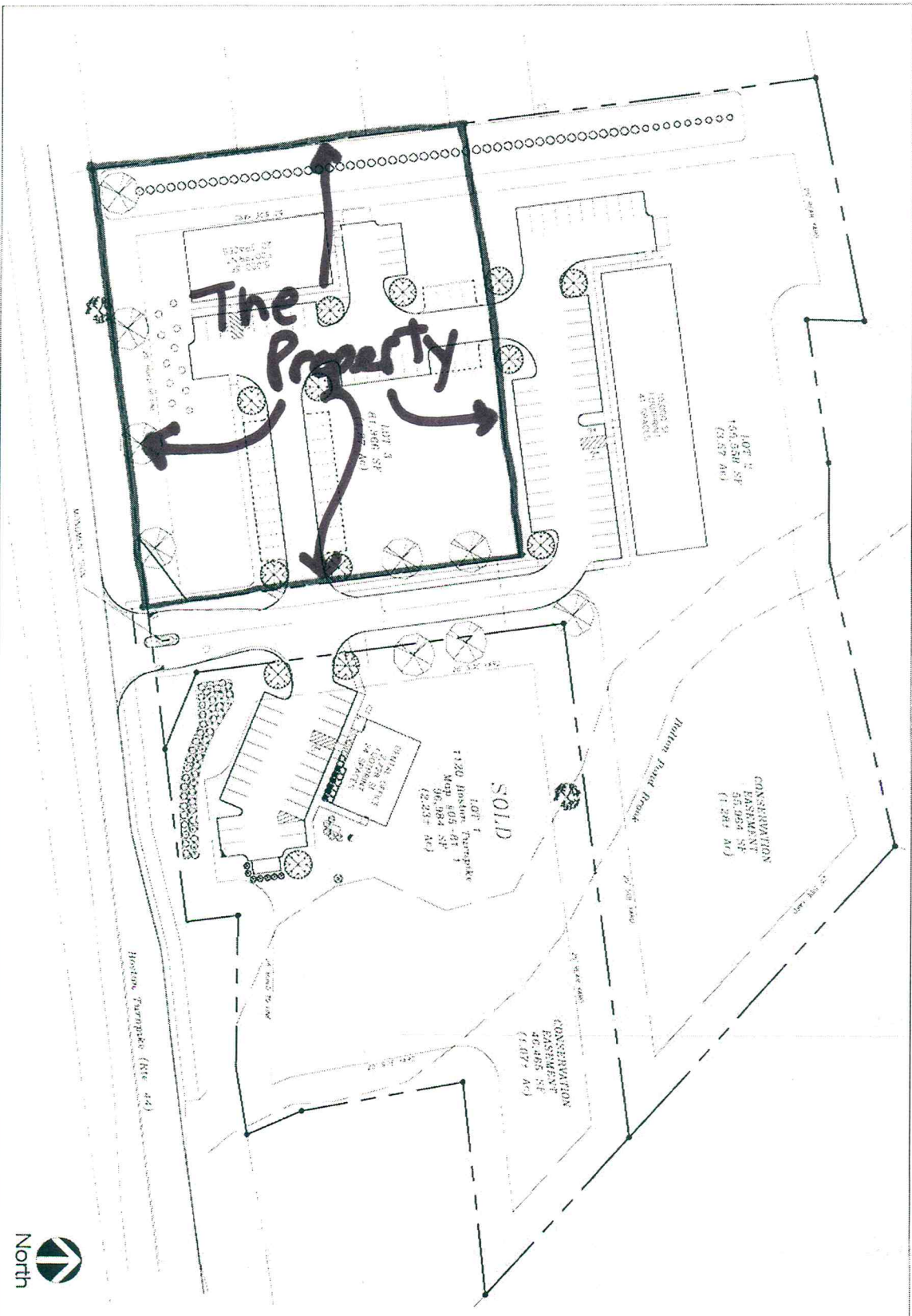
By:   
Name: Joel L. Rosenlicht  
Title: Member



EXHIBIT A  
The Property

See Plan Attached



**SP-1**

Scale: 1" = 30'-0"  
 Date: 04/03/14

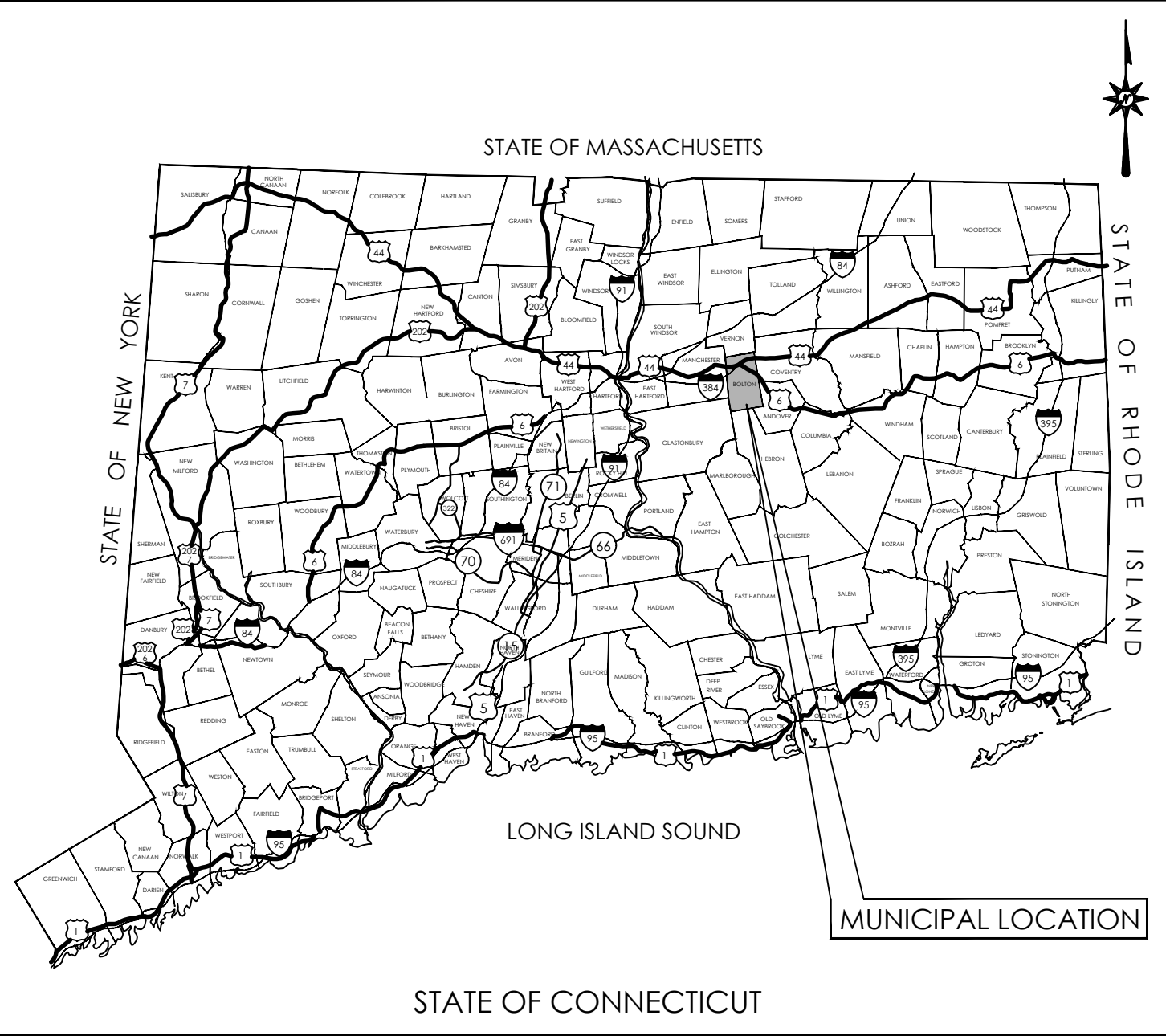
**Concept Site Plan**  
 Option "A" (Lots 2 and 3 Separate)

1100 Boston Turnpike  
 Bolton, Connecticut 06043

**Aldrich Construction Company Inc.**

1395 Toland Turnpike  
 Manchester Connecticut 06042-1632  
 660 647.7544

#	DATE	REVISION



LOCATION MAP  
N.T.S.

# LAND DEVELOPMENT PLANS FOR PLANNING AND ZONING SPECIAL PERMIT APPLICATION

## PROPOSED RETAIL DEVELOPMENT

1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

PREPARED FOR:  
GARRETT HOMES, LLC  
59 FIELD STREET  
TORRINGTON, CT 06790



VICINITY MAP  
SCALE: 1"=800'

**CONTENTS**

	TITLE SHEET
	ALTA/NSPS LAND TITLE SURVEY (BY OTHERS)
	2-LOT SUBDIVISION PLAN (BY OTHERS)
MP-1	MASTER PLAN
GN-1	GENERAL NOTES
DM-1	DEMOLITION PLAN
SP-1	SITE PLAN
TT-1	TRUCK TURNING PLAN - WB-67
GD-1	GRADING AND DRAINAGE PLAN
SU-1	SITE UTILITIES PLAN
EC-1	SEDIMENT AND EROSION CONTROL PLAN
EC-2	SEDIMENT AND EROSION CONTROL NOTES
LL-1	LANDSCAPING PLAN
LL-2	LANDSCAPING DETAILS AND NOTES
SD-1	INTERSECTION SITE DISTANCE PLAN
DN-1 TO DN-8	DETAILS SHEET
	SITE LIGHTING PHOTOMETRICS PLAN (BY OTHERS)
	ARCHITECTURAL CONCEPTUAL ELEVATIONS (BY OTHERS)
	ARCHITECTURAL CONCEPTUAL FLOOR PLAN (BY OTHERS)

PREPARED BY:



100 CONSTITUTION PLAZA, 10TH FLOOR  
HARTFORD, CONNECTICUT 06103  
(860) 249-2200  
(860) 249-2400 Fax

FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_  
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

<p>DEVELOPER:</p> <p>GARRETT HOMES, LLC 59 FIELD STREET TORRINGTON, CT 06790</p>	<p>OWNER:</p> <p>1100 BOSTON TRUNPIKE LLC C/O JOEL ROSENLICHT 483 MIDDLE TURNPIKE WEST, SUITE 102 MANCHESTER, CT 06040</p>
--	--

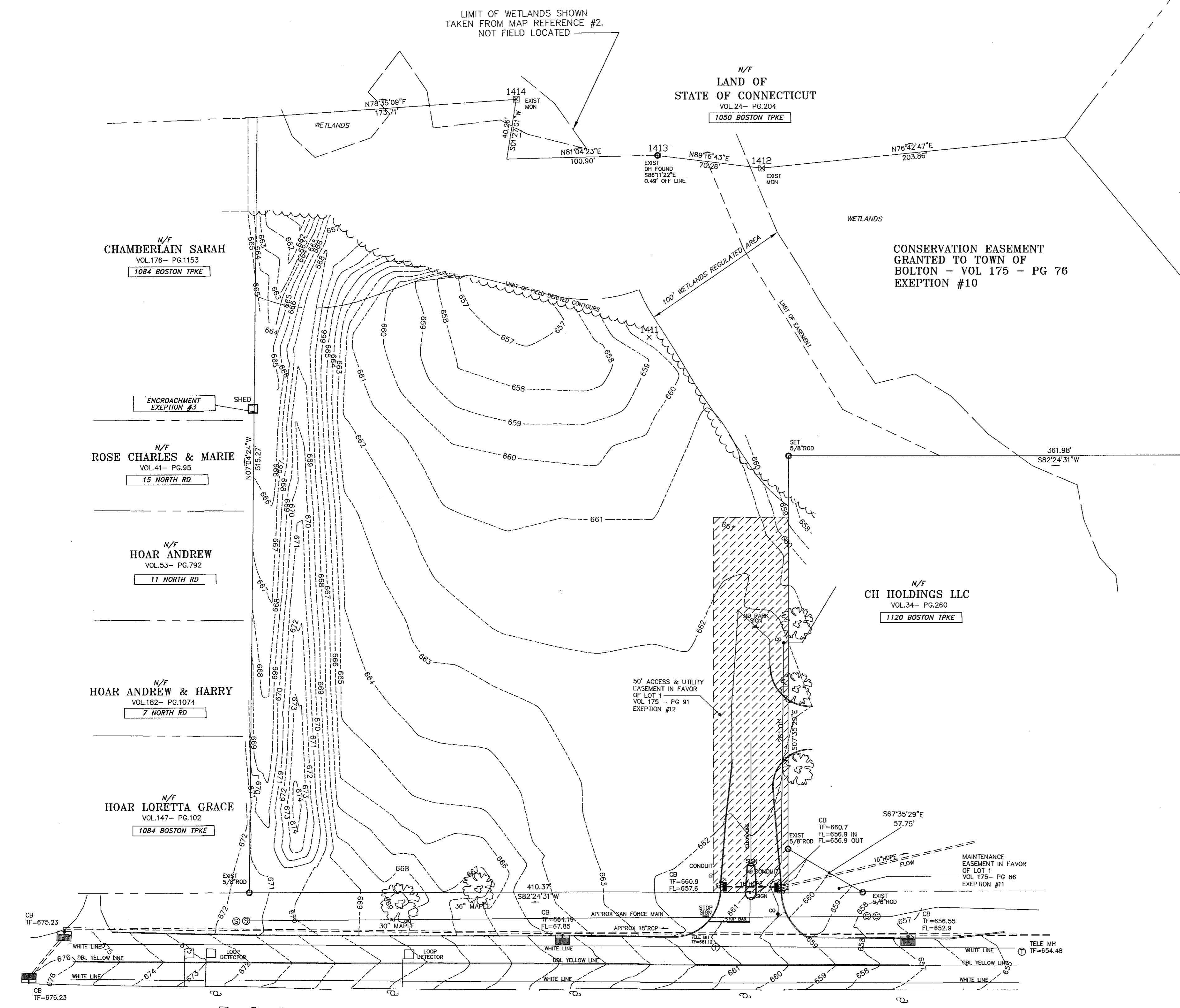
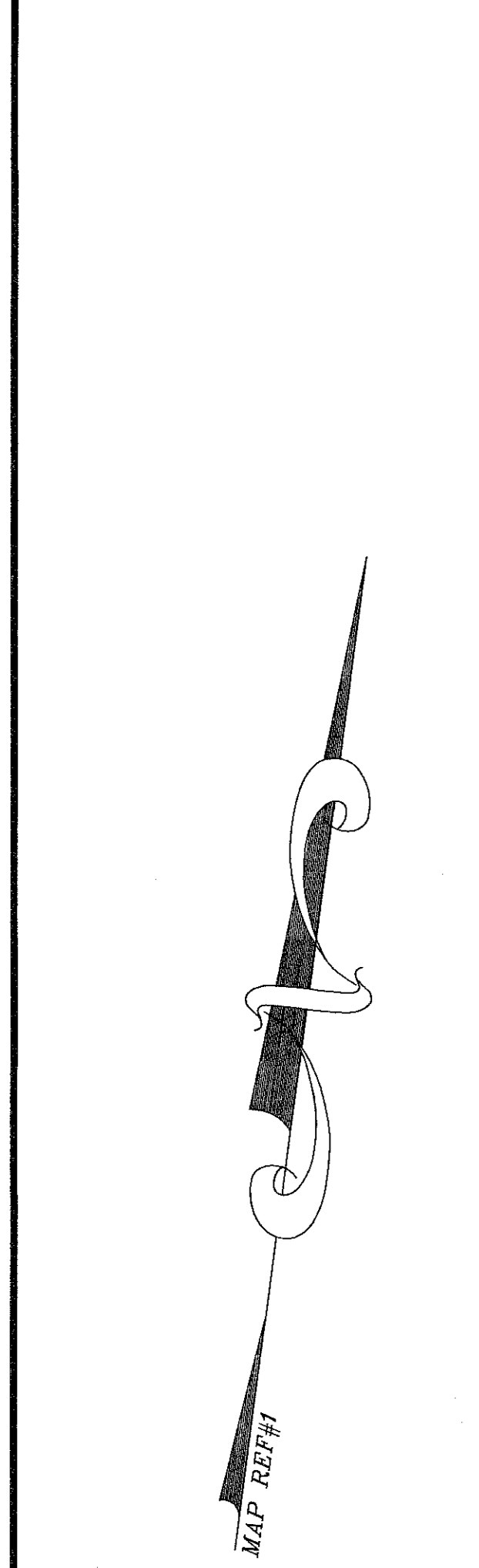


**DATES**

ISSUE DATE:	APRIL 2, 2021	
REVISION:	MAY 20, 2021	(REVISED PER TOWN COMMENTS)
	JUNE 7, 2021	(REVISED PER TOWN COMMENTS)

LEGEND

- STORM SEWER
- CONTOUR LINE
- FOLIAGE LINE
- FENCE
- IRON PIN
- CURB CATCHBASIN
- UTILITY POLE
- TELEPHONE MANHOLE
- SANITARY MANHOLE
- CONDUIT
- SIGN



**LEGAL DESCRIPTION - 1100 BOSTON TURNPIKE:**  
 COMMENCING AT AN EXISTING 5/8" ROD IN THE NORTHERLY HIGHWAY LINE OF RT 44 ALSO KNOWN AS BOSTON TURNPIKE, MARKING THE SOUTHEAST CORNER OF THE PROPERTY BEING DESCRIBED HEREIN AND THE SOUTHWEST CORNER OF LAND NOW OR FORMALLY OF CH HOLDINGS LLC; THENCE ALONG THE NORTHERLY HIGHWAY LINE OF SAID BOSTON TURNPIKE S82°24'31"W, 410.30' TO AN EXISTING 5/8" ROD MARKING THE SOUTHEASTERN CORNER OF LAND NOW OR FORMERLY OF LORETTA GRACE HOAR AND THE SOUTHWESTERLY CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG LANDS OF HARRY AND ANDREW HOAR, ANDREW HOAR, MARIE AND CHARLES ROSE, AND SARAH CHAMBERLIN PARTLY BY EACH N07°04'24"W, 515.27 TO A POINT MARKING NORTHEAST CORNER OF LAND NOW OR FORMERLY OF SARAH CHAMBERLAIN AND THE NORTHWEST CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG THE SOUTHERLY LINE OF LAND NOW OR FORMERLY OF STATE OF CONNECTICUT THE FOLLOWING FIVE COURSES:  
 N78°35'09"E, 173.71, S01°27'01"W, 40.26', N81°04'23"E, 100.90', N89°16'43"E, 70.26', N76°42'47"E, 203.86, TO A POINT MARKING THE NORTHWEST CORNER OF LAND NOW OR FORMERLY OF MISSIONARY SOCIETY FOR THE DIOCESE AND THE NORTHEAST CORNER OF LAND BEING DESCRIBED HEREIN; THENCE ALONG LAND OF SAID MISSIONARY FOR THE DIOCESE OF CONNECTICUT S47°34'01"E, 275.82', TO A POINT MARKING THE NORTHEAST CORNER OF SAID CH HOLDING LLC; THENCE ALONG SAID CH HOLDINGS LLC S82°24'31"W, 361.98, TO A POINT MARKING THE NORTHWEST CORNER OF SAID CH HOLDING LLC, THENCE ALONG SAID CH HOLDING LLC S07°35'29"E, 261.01', TO AN EXISTING 5/8" ROD; THENCE CONTINUING ALONG CH HOLDING LLC S67°35'29"E, 57.75', TO THE POINT AND PLACE OF BEGINNING CONTAINING 236,912.34 OR 5.44 ACRES.

N/F  
 THE MISSIONARY SOCIETY FOR THE  
 DIOCESE OF CONNECTICUT  
 VOL.34 - PG.260  
 1150 BOSTON TPKE

N/F  
 CHAMBERLAIN SARAH  
 VOL.176 - PG.1153  
 1084 BOSTON TPKE

N/F  
 ROSE CHARLES & MARIE  
 VOL.41 - PG.95  
 15 NORTH RD

N/F  
 HOAR ANDREW  
 VOL.53 - PG.792  
 11 NORTH RD

N/F  
 HOAR ANDREW & HARRY  
 VOL.182 - PG.1074  
 7 NORTH RD

N/F  
 HOAR LORETTA GRACE  
 VOL.147 - PG.102  
 1084 BOSTON TPKE

N/F  
 LAND OF  
 STATE OF CONNECTICUT  
 VOL.24 - PG.204  
 1050 BOSTON TPKE

N/F  
 CH HOLDINGS LLC  
 VOL.34 - PG.260  
 1120 BOSTON TPKE

NOTES:

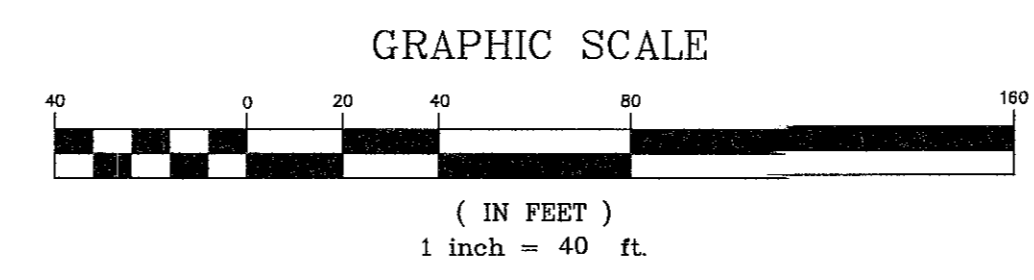
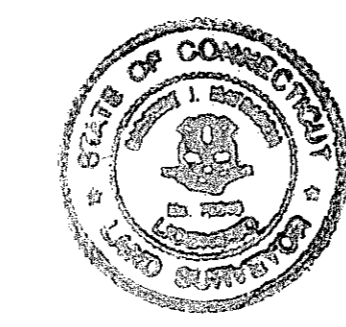
1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED ON SEPTEMBER 26, 1996.
2. TYPE OF SURVEY = PROPERTY SURVEY
3. BOUNDARY DETERMINATION CATEGORY = DEPENDENT RE-SURVEY
4. OWNERS OF RECORD - 1100 BOSTON TURNPIKE LLC (Vol. 141- Pg 790)
5. TOTAL AREA - 236912 S.F. OR 5.439 Ac.
6. ZONE - RMUZ
7. ELEVATIONS BASED ON NAVD 88 DATUM (MAP REFERENCE #2)
8. NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED.
9. NO INFORMATION OF PROPOSED CHANGES IN STREET RIGHT OF WAY LINES HAS BEEN MADE AVAILABLE TO SURVEYOR, NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OBSERVED.
10. NO WETLAND DELINEATION OBSERVED
11. PROPERTY LIES WITHIN FLOOD ZONE X - AREA OF MINIMAL FLOOD HAZARD, AS SHOWN ON MAP ENTITLED "FIRM - FLOOD INSURANCE RATE MAP - TOWN OF BOLTON, CONNECTICUT- TOLLAND COUNTY - PANEL 1 OF 3 COMMUNITY PANEL NUMBER 090109 0001 B WITH AN EFFECTIVE DATE OF JUNE 1 1981 AND PREPARED BY FEDERAL EMERGENCY MANAGEMENT AGENCY.
12. REFER TO VOL 72 - PG 443 FOR POSSIBLE EFFECTS OF SPECIAL PERMIT GRANTED ON APRIL 4, 1990 - EXEPTION #9
13. UNDERGROUND UTILITIES, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROLE TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS ARE APPROXIMATE AND OTHER SUCH FEATURES MAY EXIST UNKNOWN TO DUFOUR SURVEYING AND OTHER SUCH FEATURES LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455

FIRST AMERICAN TITLE INSURANCE COMPANY - COMMITMENT FOR TITLE INSURANCE : COMMITMENT No. CT5142976 - DATED JANUARY 8, 2021 CERTIFIED TO: CALITO DEVELOPMENT LLC FIRST AMERICAN TITLE INSURANCE COMPANY  
 THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES TABLE A ITEMS 2,3,4,5,8,11,13,16,17,18 AND 19.  
 SCHEDULE B, PART II, EXCEPTIONS:  
 1. NON-SURVEY ISSUE  
 2. NON SURVEY ISSUE  
 3. PLOTTED  
 4. NON SURVEY ISSUE  
 5. NON SURVEY ISSUE  
 6. NON SURVEY ISSUE  
 7. NON SURVEY ISSUE  
 8. NON SURVEY ISSUE  
 9. PLOTTED - NOTE 12  
 10. PLOTTED  
 11. PLOTTED  
 12. PLOTTED  
 FIELD WORK WAS COMPLETED ON FEBRUARY 17, 2021  
 DATE: 3/31/2021  
 CARMINE J. MATRASCIA - LS#70219

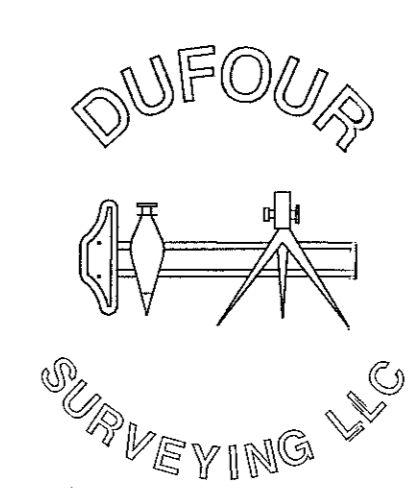
MAP REFERENCES :

1. "LOT SPLIT PLAN & EASEMENT PLAN - PREPARED FOR - 1100 BOSTON TURNPIKE, LLC - 1100 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81 - ZONE: RMUZ", scale 1" = 40', dated 7-18-17, revised to 9-28-17 and prepared by J R Russo & Associates LLC, Surveyors - Engineers.
2. "AS-BUILT PLAN - BOLTON COMETIC & FAMILY DENTISTRY - 1120 BOSTON TURNPIKE - BOLTON, CT - MAP 05 LOT 81-1 ZONE: RMUZ", scale 1" = 20', dated 7-24-18 and prepared by JR Russo & Associates, LLD Surveyors - Engineers
3. "CONNECTICUT - STATE HIGHWAY DEPARTMENT - RIGHT OF WAY MAP - TOWN OF BOLTON - HARTFORD-WILLMANTIC ROAD - FROM THE COVENTRY TOWN LINE - WESTERLY ABOUT 6,300 FEET - ROUTES U.S. 6 & U.S. 44", scale 1" = 40', dated Oct. 31, 1935 and prepared by Connecticut State Highway Department
4. "SOME LAND - OF THE ESTATE OF - ALBERT N. SKINNER - TOWN OF BOLTON CONN." - scale 1"=50', dated Nov. 20, 1968 and prepared by Everett O. Gardner L.S 4349

BOSTON TURNPIKE (RTE. 44)



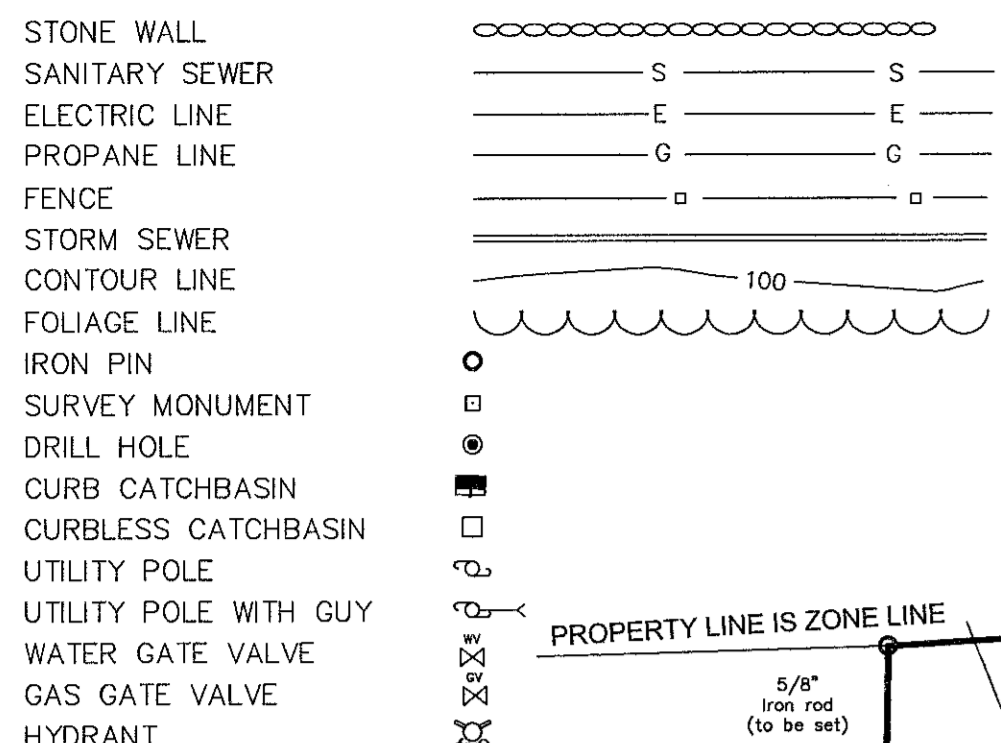
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-2 & T-2 SURVEY AS DEFINED IN THE CODE OF PRACTICE FOR STANDARDS OF ACCURACY OF SURVEYS AND MAPS, ADOPTED SEPT. 26, 1996 AS AMENDED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED.  
 CARMINE J. MATRASCIA - L.S. #70219  
 NOT VALID WITHOUT EMBOSSED SEAL



ALTA/NSPS LAND TITLE SURVEY		
PREPARED FOR: CALITO DEVELOPMENT, LLC		
1100 BOSTON TPKE, RTE 44, BOLTON, CT		
SCALE: 1" = 40'	APPROVED: CARMINE J. MATRASCIA - L.S. #70219	
DATE: 02-18-2021	JOB NO.: 21-05	FILE NO.: 21-05
DUFOR SURVEYING LLC 575 NORTH MAIN STREET BRISTOL, CONNECTICUT 860-314-0502 860-738-0222		

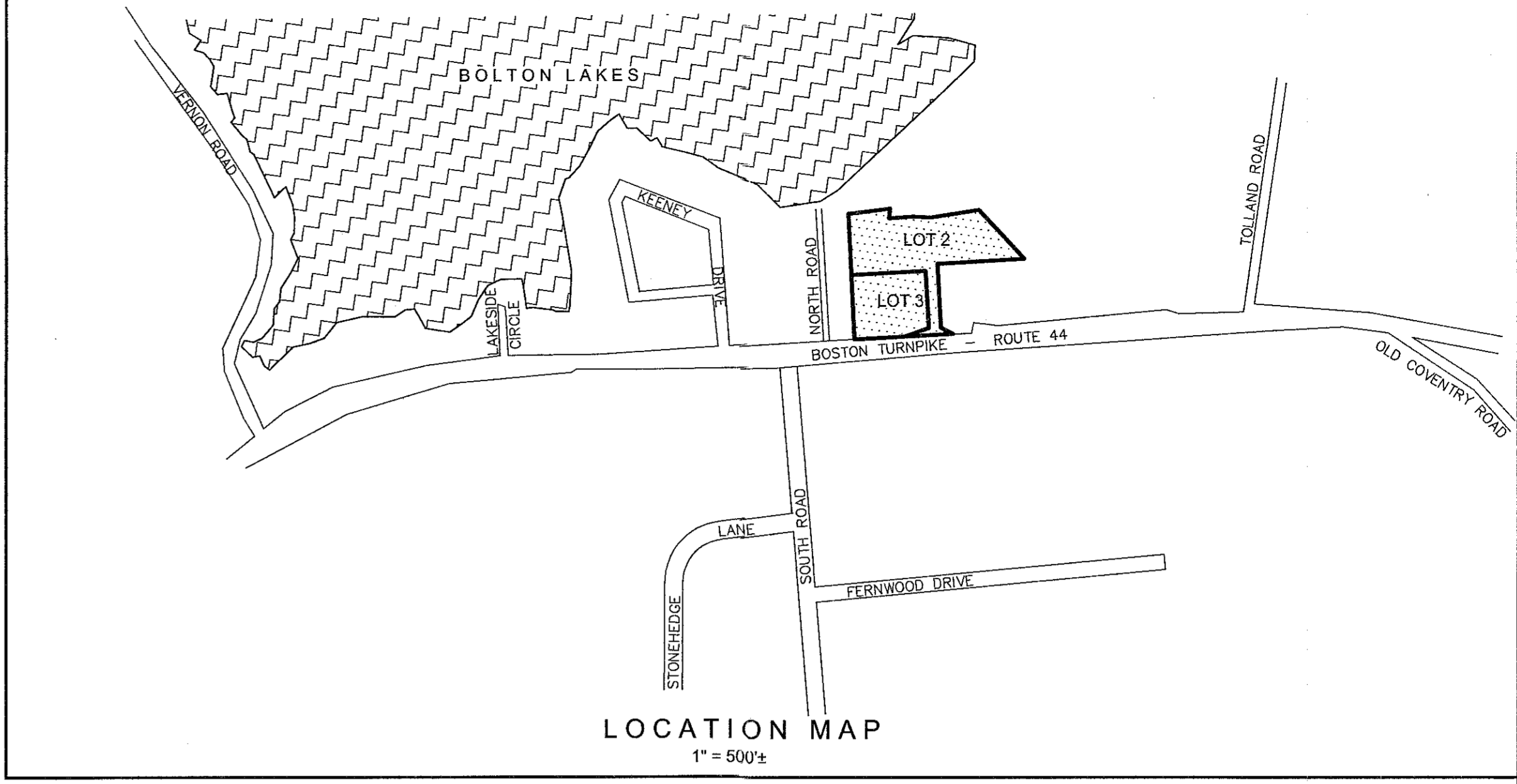
REVISED 3/31/2021 : ADD WETLANDS LIMITS  
 REVISED 3/22/2021 : CORRECTED ZONE RMUZ

**LEGEND**



**ZONING REQUIREMENTS**

ZONE - RMUZ
MINIMUM LOT AREA = 80,000 S.F.
MINIMUM LOT WIDTH = 150'
MINIMUM SETBACKS -
FRONT = 25'
SIDE = 25' (50' WHEN ABUTTING RESIDENTIAL ZONE)
REAR = 25' (50' WHEN ABUTTING RESIDENTIAL ZONE)
MINIMUM LANDSCAPE AREA = 30%
MAXIMUM BUILDING HEIGHT = 35' or 2.5 STORIES
MINIMUM FLOOR AREA - 600 S.F.(GROUND FLOOR)
MAXIMUM LOT COVERAGE = 25%
MAXIMUM IMPERVIOUS SURFACE = 50%



**THE MISSINOARY SOCIETY FOR THE DIOCESE OF CONNECTICUT**  
VOL.34- PG.260  
1150 BOSTON TPKE

- MAP REFERENCES :**
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- NOTES:**
- THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED ON SEPTEMBER 26, 1996.
  - TYPE OF SURVEY = PROPERTY SURVEY
  - BOUNDARY DETERMINATION CATEGORY = DEPENDENT RE-SURVEY
  - OWNERS OF RECORD - 1100 BOSTON TURNPIKE LLC (Vol. 141- Pg 790)
  - TOTAL AREA - 236912 S.F. or 5.439 Ac.
  - ZONE - RMUZ
  - PROPERTY LIES WITHIN FLOOD ZONE X - AREA OF MINIMAL FLOOD HAZARD, AS SHOWN ON MAP ENTITLED "FIRM - FLOOD INSURANCE RATE MAP - TOWN OF BOLTON, CONNECTICUT- TOLLAND COUNTY - PANEL 1 OF 3 COMMUNITY PANEL NUMBER 090109 0001 B WITH AN EFFECTIVE DATE OF JUNE 1 1981 AND PREPARED BY FEDERAL EMERGENCY MANAGEMENT AGENCY.
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REVISED 6/4/2021 : PER STAFF COMMENTS  
REVISED 5/13/2021 : ADD PROPOSED SANITARY SEWER EASEMENT  
REVISED 3/31/2021 : PER STAFF COMMENTS

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-2 SURVEY AS DEFINED IN THE CODE OF PRACTICE FOR STANDARDS OF ACCURACY OF SURVEYS AND MAPS, ADOPTED SEPT. 26, 1996 AS AMENDED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INCORPORATED.

*CJM*  
CARMINE J. MATRASCIA - L.S. #70219  
NOT VALID WITHOUT EMBOSSED SEAL



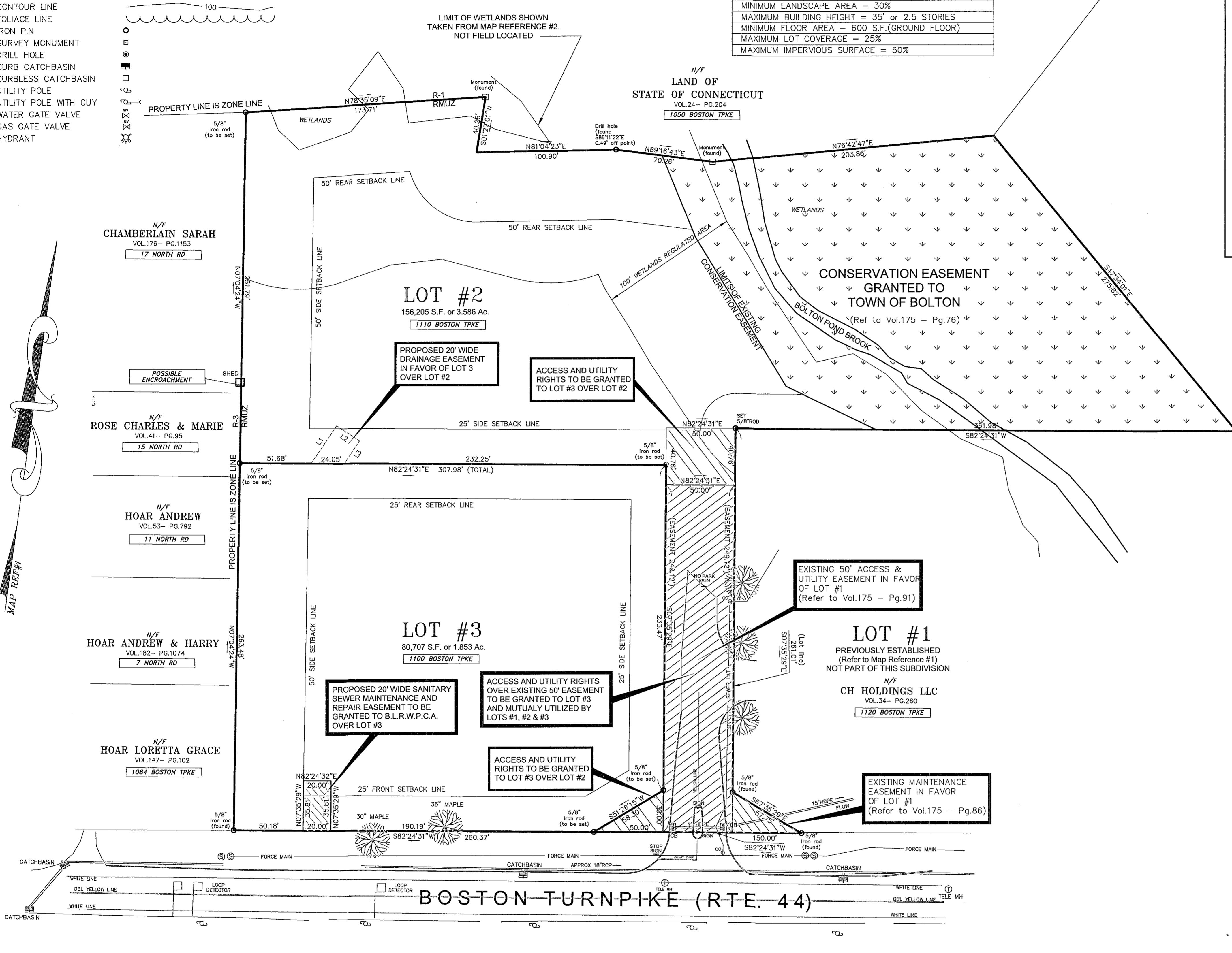
**2 - LOT SUBDIVISION PLAN**

PREPARED FOR: CALITTO DEVELOPMENT LLC  
1100 BOSTON TURNPIKE, ROUTE 44, BOLTON, CONNECTICUT

SCALE: 1" = 40'  
DATE: 03-18-2021

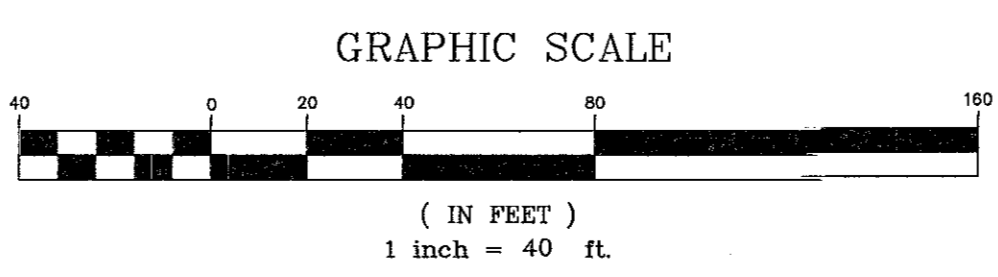
APPROVED: CARMINE J. MATRASCIA - L.S. #70219  
JOB NO.: 21-05 FILE NO.: 121-05

DUFOR SURVEYING LLC  
575 NORTH MAIN STREET  
BRISTOL, CONNECTICUT  
860-314-0502 860-738-0222



**LINE DATA**

LINE	BEARING	DISTANCE
L1	N 26°09'29" E	32.60'
L2	N 63°50'31" W	20.00'
L3	N 26°09'29" E	19.23'



ALL CONSTRUCTION OF PUBLIC FACILITIES REQUIRED FOR THIS SUBDIVISION SHALL BE COMPLETED WITHIN FIVE YEARS AFTER THE APPROVAL OF THIS SUBDIVISION PLAN AND THIS FIVE YEAR PERIOD EXPIRES ON:

APPROVED BY THE BOLTON PLANNING COMMISSION

CHAIRMAN / SECRETARY DATE:

### ZONING INFORMATION

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT					
ZONE: RURAL MIXED USE ZONE (RMUZ)					
USE: RETAIL (PERMITTED BY SPECIAL PERMIT)					
ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	MINIMUM LOT AREA	80,000 S.F.	80,707 S.F. (1.85 AC.)	82,061 S.F. (1.88 AC.) [2]	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	308 FEET	560 FEET	NO
3	MINIMUM LOT FRONTAGE	150 FEET	260.4 FEET	150 FEET	NO
4	MINIMUM FRONT SETBACK	NONE REQUIRED	71.9 FEET	343 FEET	NO
5	MINIMUM SIDE SETBACK	25 FEET (50 FEET) [1]	72.8 FEET	118.6 FEET	NO
6	MINIMUM REAR SETBACK	25 FEET (50 FEET) [1]	51.4 FEET	89.3 FEET	NO
7	MAXIMUM BUILDING HEIGHT	35 FEET/2.5 STORIES	25.6 FEET	<35 FEET/2.5 STORIES	NO
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	13.2 PERCENT	12.2 PERCENT	NO
9	MAXIMUM IMPERVIOUS COVERAGE	50 PERCENT	39.9 PERCENT	33.5 PERCENT	NO

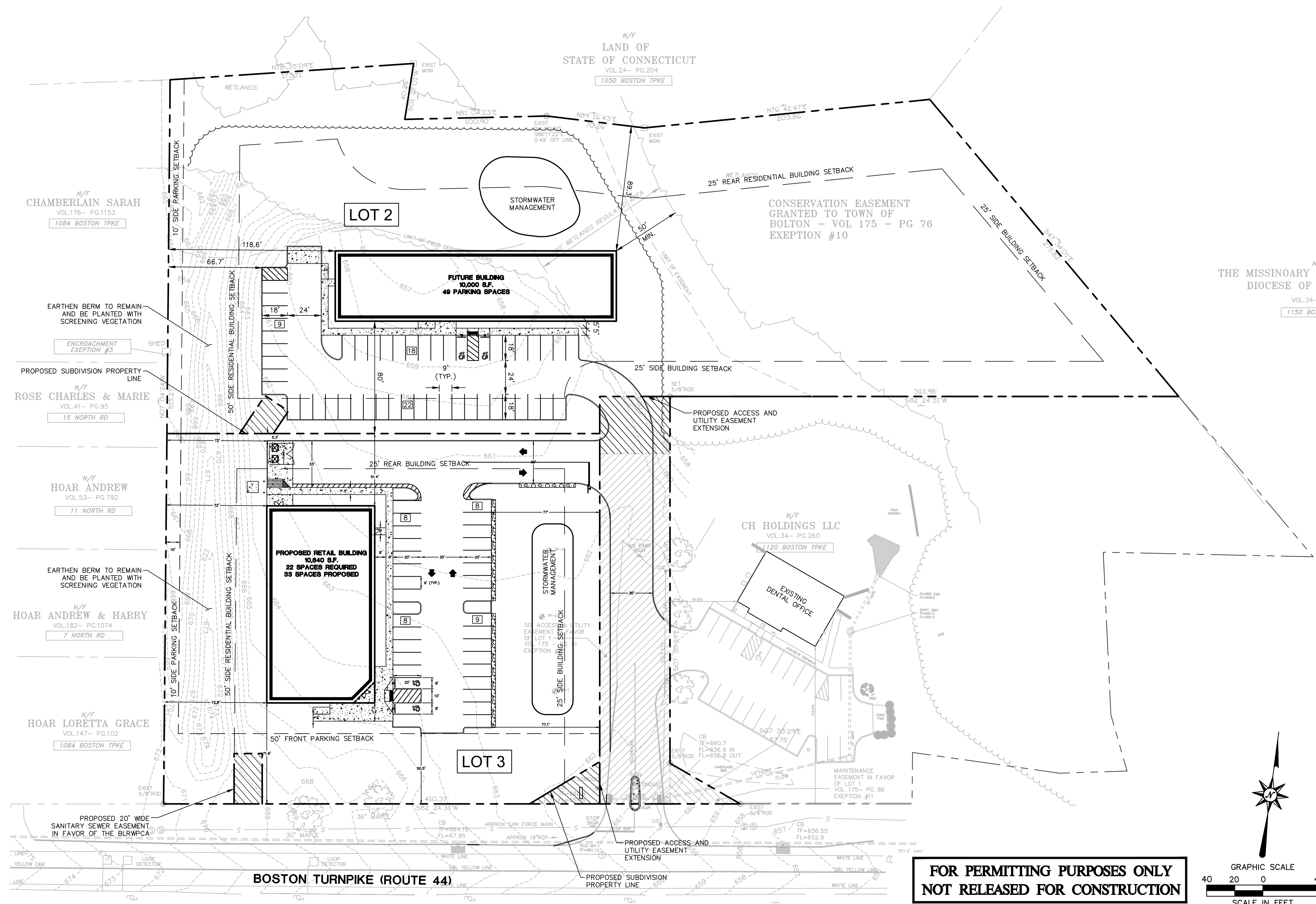
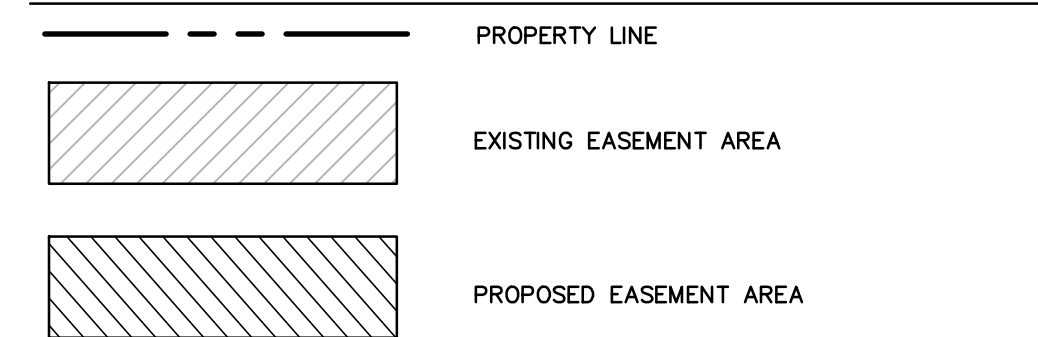
[1] MINIMUM SIDE AND REAR SETBACKS - 50 FEET WHEN ABUTTING A RESIDENTIAL DISTRICT  
 [2] LOT AREA FOR LOT 2 DOES NOT INCLUDE ACCESS STRIP, CONSERVATION EASEMENT, OR WETLAND AREAS.

### PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	BUILDING SIZE	600 S.F.	10,640 S.F.	10,000 S.F.	NO
2	PARKING REQUIRED	RETAIL: MINIMUM - 2 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MINIMUM REQUIRED = 22 / 20 SPACES  MAXIMUM - 5 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MAXIMUM ALLOWED = 54 / 50 SPACES	33 SPACES	49 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	2 SPACES	2 SPACES	2 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 20 FEET	9 FEET X 18 FEET	NO
5	MINIMUM LOADING DIMENSIONS	10 FEET X 25 FEET X 14 FEET	33 FEET X 71 FEET X > 14 FEET	10 FEET X 25 FEET X > 14 FEET	NO
6	MINIMUM AISLE WIDTH	22 FEET - 2-WAY FEET - 1-WAY 11	30 FEET - 2-WAY	24 FEET - 2-WAY	NO
7	MINIMUM FRONT SETBACK	50 FEET [3]	50.5 FEET	273.4 FEET	NO
8	MINIMUM SIDE SETBACK	NONE REQUIRED [3]	77.1 FEET	66.7 FEET	NO
9	MINIMUM REAR SETBACK	NONE REQUIRED [3]	5.3 FEET	124 FEET	NO
10	BICYCLE PARKING REQUIRED	1 BICYCLE PARKING SPACE PER 25 PARKING STALLS (2 REQUIRED)	2 BICYCLE PARKING SPACES	2 BICYCLE PARKING SPACES	NO

[3] 10 FEET LANDSCAPED BUFFER STRIP REQUIRED WHERE ABUTTING A RESIDENCE DISTRICT

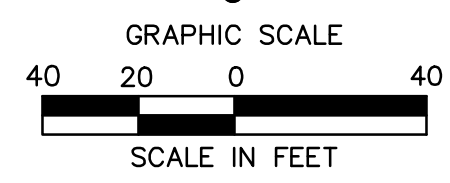
### SITE PLAN LEGEND



BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT	
DATE APPROVED _____	DATE OF EXPIRATION _____
CHAIRMAN	

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

REVISIONS

Date	Desc.
03/20/2021	REVISED PER TOWN COMMENTS
03/07/2021	REVISED PER TOWN COMMENTS

Designed C.J.L.  
 Drawn C.J.L.  
 Reviewed C.J.L.  
 Scale 1"=40'  
 Project No. 2002032  
 Date 04/02/2021  
 CAD File: MP200203201

Title  
**MASTER PLAN**

Sheet No.

**MP-1**

4/2/2021 11:52:13 AM C:\Users\jcm\OneDrive\Documents\MP200203201.DWG MP-1 24x36 45%

Sheet ID: 180200203201 - 1/10/2020 08:01 - AC200203201

**SITE WORK GENERAL NOTES**

- THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION.
- ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE PROJECT SPECIFICATION MANUAL, CLIENT CORPORATION STANDARDS, MUNICIPALITY STANDARDS AND SPECIFICATIONS DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS FORM 818, 2010 ADA STANDARDS, AND STATE BUILDING CODE IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- REFER TO OTHER PLANS BY OTHER DISCIPLINES, DETAILS AND PROJECT MANUAL FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE AND BUILDING CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER AND ARCHITECT IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS. THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO BIDDING.
- DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES AND STORMWATER SYSTEM) TO THE OWNER AT THE END OF CONSTRUCTION.
- THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL, THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH PROTECTION REQUIREMENTS.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL OR COUNTY OR STATE RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT [CT CALL BEFORE YOU DIG (CBYD)] [CT (800) 922-4455] OR AT 811 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
- IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST COSTLY SHALL APPLY.
- ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS OR PLAN SET ELECTRONIC POSTINGS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTORS' AND SUBCONTRACTORS' RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS OR COMPLETE PLAN SET ELECTRONIC POSTINGS FOR USE IN BIDDING AND CONSTRUCTION.
- ALL NOTES AND DIMENSIONS DESIGNATED 'TYPICAL' APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
- CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
- BL COMPANIES WILL PREPARE FINAL CONSTRUCTION DOCUMENTS SUITABLE FOR BIDDING AND CONSTRUCTION. PROGRESS SETS OF THESE DOCUMENTS ARE NOT SUITABLE FOR THOSE PURPOSES. IF CLIENT ELECTS TO SOLICIT BIDS OR ENTER INTO CONSTRUCTION CONTRACTS UTILIZING CONSTRUCTION DOCUMENTS THAT ARE NOT YET FINAL, CONSULTANT SHALL NOT BE RESPONSIBLE FOR ANY COSTS OR DELAY ARISING AS A RESULT.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
- THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT AND OBTAIN FROM CONSTRUCTION PERMITS, INCLUDING ANY STATE DOT PERMITS, SEWER AND WATER CONNECTION PERMITS, AND ROADWAY CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK EXCEPT CT DOT ENCROACHMENT PERMIT BOND.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS PER PLANS AND SPECIFICATIONS TO THE OWNER AND CIVIL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE SEDIMENT AND EROSION CONTROL PLAN.
- THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING, AND THE RAISED CONCRETE SIDEWALKS, LANDINGS, RAMPS, AND STAIRS.
- SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPE OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING AS APPLICABLE UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TEMPORARY WALKWAYS, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS OR AS REQUIRED BY THE OWNER. CONTRACTOR SHALL MAINTAIN ALL TRAFFIC LANE AND PEDESTRIAN WALKWAYS FOR USE AT ALL TIMES UNLESS WRITTEN APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY IS GRANTED.
- TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
- REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- PAVEMENT MARKING KEY:  
 4" SYDL 4' SOLID YELLOW DOUBLE LINE  
 4" SYL 4' SOLID YELLOW LINE  
 4" SWL 4' SOLID WHITE LINE  
 12" SWB 12' SOLID WHITE STOP BAR  
 4" SWL 4' BROKEN WHITE LINE 10' STRIPE 30' SPACE
- PARKING SPACES SHALL BE STRIPED WITH 4" SWL; HATCHED AREA SHALL BE STRIPED WITH 4" SWL AT A 45° ANGLE, 2' ON CENTER. HATCHING, SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED WHITE AND BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
- ALL PARKING SPACES AND HATCHED AREAS SHALL HAVE TWO COATS OF PAVEMENT MARKINGS APPLIED TO STRIPING.
- PAVEMENT MARKINGS SHALL BE HOT APPLIED TYPE IN ACCORDANCE WITH STATE DOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS, SWALE, PAVEMENT MARKINGS, OR SIGNAGE DISTURBED DURING DEMOLITION AND/OR CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER, AND TO THE SATISFACTION OF THE OWNER AND COUNTY.
- EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON SURVEYING TITLED "ATA\NSPS LAND TITLE SURVEY" SCALE 1"=40', DATED 02/02/18, BY DUFOR SURVEYING LLC.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, CIVIL ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
- CTDOT ENCROACHMENT PERMIT SHALL BE OBTAINED BY CONTRACTOR WHO SHALL PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THE WORK. THE OWNER SHALL POST CTDOT ENCROACHMENT PERMIT BOND.
- AN EROSION CONTROL BOND IS REQUIRED TO BE POSTED BY THE CONTRACTOR BEFORE THE START OF ANY ACTIVITY ON OR OFF SITE. THE AMOUNT OF THE EROSION CONTROL BOND WILL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
- NO PART OF THE PROJECT PARCEL IS LOCATED WITHIN ANY FEMA DESIGNATED FLOOD HAZARD AREAS.
- THERE ARE NO WETLANDS LOCATED ON THE SITE AS INDICATED BY INLAND WETLANDS PERMIT #2017-00 AND J.R. RUSSO & ASSOCIATES MAPPING AND VISUAL OBSERVATIONS.
- 12" SWB (STOP BAR) AND 4" SYDL AND SWL PAVEMENT MARKINGS LOCATED IN DRIVEWAYS AND IN STATE HIGHWAY SHALL BE EPOXY RESIN TYPE ACCORDING TO CONDOT SPECIFICATIONS.
- FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL.
- THE CONTRACTOR SHALL REMOVE CONFLICTING PAVEMENT MARKINGS IN THE ROADWAY BY METHOD APPROVED BY THE AUTHORITY HAVING JURISDICTION OR DOT AS APPLICABLE FOR THE LOCATION OF THE WORK.
- ALL ADA DESIGNATED PARKING STALLS, ACCESSIBLE ISLES AND PEDESTRIAN WALKWAYS SHALL CONFORM TO THE CURRENT VERSION OF THE AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN AND ANSI STANDARDS AND AS MAY BE SUPERCEDED BY THE STATE BUILDING CODE.
- CONSTRUCTION OCCURRING ON THIS SITE SHALL COMPLY WITH NFPA 241 STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS, AND CHAPTER 16 OF NFPA 1 UNIFORM FIRE CODE.
- ALL BUILDINGS, INCLUDING FOUNDATION WALLS AND FOOTINGS AND BASEMENT SLABS INDICATED ON THE DEMOLITION PLAN ARE TO BE REMOVED FROM THE SITE. CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
- SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND/OR DEMOLITION PLAN SHALL BE INSTALLED BY THE DEMOLITION CONTRACTOR PRIOR TO START OF DEMOLITION AND CLEARING AND GRUBBING OPERATIONS.

- REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL, BY AN APPROVED HAULER. HAULER SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS.
- THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING-DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF ALL BUILDING DEMOLITION DEBRIS IN AN APPROVED OFF-SITE LANDFILL.
- ASBESTOS OR HAZARDOUS MATERIAL, IF FOUND ON SITE, SHALL BE REMOVED BY A LICENSED HAZARDOUS MATERIAL ABATEMENT CONTRACTOR.
- THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF DEMOLITION.
- THE CONTRACTOR SHALL CUT AND PLUG, OR ARRANGE FOR THE APPROPRIATE UTILITY PROVIDER TO CUT AND PLUG ALL SERVICE PIPING AT THE STREET LINE OR AT THE MAIN, AS REQUIRED BY THE UTILITY PROVIDER, OR AS OTHERWISE NOTED OR SHOWN ON THE CONTRACT DRAWINGS. ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL INVESTIGATE THE SITE PRIOR TO BIDDING TO DETERMINE THE EXTENT OF SERVICE PIPING TO BE REMOVED, CUT OR PLUGGED. THE CONTRACTOR SHALL PAY ALL UTILITY PROVIDER FEES FOR ABANDONMENTS AND REMOVALS.
- THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, AND OR PROPERTY CORNERS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- THE DEMOLITION CONTRACTOR SHALL STABILIZE THE SITE AND KEEP EROSION CONTROL MEASURES IN PLACE UNTIL THE COMPLETION OF HIS WORK OR UNTIL THE COMMENCEMENT OF WORK BY THE SITE CONTRACTOR, WHICHEVER OCCURS FIRST, AS REQUIRED OR DEEMED NECESSARY BY THE ENGINEER OR OWNER'S REPRESENTATIVE. THE SITE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE MAINTENANCE OF EXISTING EROSION AND SEDIMENTATION CONTROLS AND FOR INSTALLATION OF ANY NEW SEDIMENT AND EROSION CONTROLS AS PER THE SEDIMENT AND EROSION CONTROL PLAN, AT THAT TIME.
- THE CONTRACTOR SHALL PUMP OUT BUILDING FUEL AND WASTE OIL TANKS (IF ANY ARE ENCOUNTERED) AND REMOVE FUEL TO AN APPROVED DISPOSAL AREA BY A LICENSED WASTE OIL HANDLING CONTRACTOR IN STRICT ACCORDANCE WITH STATE REQUIREMENTS.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
- EXISTING WATER SERVICES SHALL BE DISCONNECTED AND CAPPED AT MAIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE POTABLE WELL AUTHORITY. REMOVE EXISTING ONSITE WATER PIPING TO BE ABANDONED TO RIGHT OF WAY LINE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE POTABLE WELL AUTHORITY TO BE REMOVED TO MAIN.
- EXISTING SANITARY LATERAL SHALL BE PLUGGED WITH NON-SHRINK GROUT AT CURB LINE OR AT MAIN CONNECTION IN ACCORDANCE WITH THE SANITARY UTILITY PROVIDER REQUIREMENTS. REMOVE EXISTING LATERAL PIPING FROM SITE UNLESS OTHERWISE SHOWN ON DEMOLITION PLANS OR AS REQUIRED BY THE SANITARY UTILITY PROVIDER.
- DOMESTIC GAS SERVICES SHALL BE CAPPED AND SERVICE LINES PURGED OF RESIDUAL GAS IN ACCORDANCE WITH THE GAS UTILITY PROVIDER REQUIREMENTS. WORK TO BE COORDINATED BY AND PAID FOR BY THE CONTRACTOR. REMOVE EXISTING SERVICE PIPING ON SITE. ANY PROPANE TANKS SHALL BE PURGED OF RESIDUAL GAS BY PROPANE SUPPLIER. CONTRACTOR SHALL COORDINATE THIS WORK AND PAY NECESSARY FEES.
- THE CONTRACTOR SHALL PROVIDE DISCONNECT NOTIFICATION TO THE MUNICIPALITY ENGINEERING DEPARTMENT, TELECOMMUNICATIONS UTILITY PROVIDER, GAS UTILITY PROVIDER, ELECTRIC UTILITY PROVIDER, SANITARY UTILITY PROVIDER, AND POTABLE WELL AUTHORITY AT LEAST THREE WEEKS PRIOR TO BEGINNING DEMOLITION.
- THE CONTRACTOR IS RESPONSIBLE FOR SECURING A DEMOLITION PERMIT FROM THE MUNICIPALITY BUILDING DEPARTMENT AND MUST FURNISH THE REQUIRED APPLICATION MATERIAL AND PAY ALL FEES.
- BACK FILL DEPRESSIONS, FOUNDATION HOLES AND REMOVED DRIVEWAY AREAS IN LOCATIONS NOT SUBJECT TO FURTHER EXCAVATION WITH SOIL MATERIAL APPROVED BY THE OWNER'S GEOTECHNICAL ENGINEER AND COMPACT, FERTILIZE, SEED AND SUELO DISTURBED AREAS NOT SUBJECT TO FURTHER SITE CONSTRUCTION. DEMOLISHED BUILDING FOUNDATION AREA AND BASEMENT IF PRESENT TO BE BACKFILLED WITH GRAVEL FILL OR MATERIAL SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT IN LIFT THICKNESS SPECIFIED IN THE GEOTECHNICAL REPORT. COMPACT TO 95% MAX. DRY DENSITY PER ASTM D1557 AT MOISTURE CONTENT SPECIFIED IN GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATION. EMPLOY WATERING EQUIPMENT FOR DUST CONTROL.
- THE CONTRACTOR SHALL REPAIR PAVEMENTS BY INSTALLING TEMPORARY AND PERMANENT PAVEMENTS IN PUBLIC RIGHTS OF WAYS AS REQUIRED BY LOCAL GOVERNING AUTHORITIES AND THE MUNICIPALITY AND PER PERMIT REQUIREMENTS DUE TO DEMOLITION AND PIPE REMOVAL ACTIVITIES.
- THE CONTRACTOR SHALL CUT AND REMOVE AT LUMINAIRE AND SIGN LOCATIONS ANY PROTRUDING CONDUITS TO 24" BELOW GRADE. THE CONTRACTOR SHALL REMOVE ALL CABLE AND CONDUCTORS FROM REMAINING LIGHTING AND SIGNING CONDUITS TO BE ABANDONED. ANY REMAINING LIGHTING TO REMAIN IN PLACE SHALL BE REROUTED OR REMOVED AS NECESSARY TO REMAIN IN OPERATION.
- NO WORK ON THIS SITE SHALL BE INITIATED BY THE CONTRACTOR UNTIL A PRE-CONSTRUCTION MEETING WITH OWNER AND THE CIVIL ENGINEER IS PERFORMED. THE CONTRACTOR SHOULD BE AWARE OF ANY SITE INFORMATION AVAILABLE SUCH AS GEOTECHNICAL AND ENVIRONMENTAL REPORTS. THE CONTRACTOR SHALL HAVE CBYD MARK OUTS OF EXISTING UTILITIES COMPLETED PRIOR TO MEETING.
- THE CONTRACTOR SHALL ARRANGE FOR AND INSTALL TEMPORARY OR PERMANENT UTILITY CONNECTIONS WHERE INDICATED ON PLAN OR AS REQUIRED. MAINTAIN UTILITY SERVICES TO BUILDINGS OR TO SERVICES TO REMAIN. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS FOR INSTALLATION AND PAY UTILITY PROVIDER FEES.
- THE CONTRACTOR SHALL NOT COMMENCE DEMOLITION OR UTILITY DISCONNECTIONS UNTIL AUTHORIZED TO DO SO BY THE OWNER.
- THE CONTRACTOR OR DEMOLITION CONTRACTOR SHALL INSTALL TEMPORARY SHEETING OR SHORING AS NECESSARY TO PROTECT EXISTING AND NEW BUILDINGS, STRUCTURES AND UTILITIES DURING CONSTRUCTION AND DEMOLITION. SHEETING OR SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THIS STATE, AND EVIDENCE OF SUCH SUBMITTED TO THE OWNER PRIOR TO INSTALLATION.
- NO SALVAGE SHALL BE PERMITTED UNLESS PAID TO THE OWNER AS A CREDIT.
- ANY EXISTING POTABLE WELL AND ANY EXISTING SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE DEEP AND HEALTH CODE REQUIREMENTS.
- THE EXISTING DRIVEWAYS SHALL REMAIN OPEN FOR NORMAL BUSINESS OPERATIONS UNTIL COMPLETION AND OCCUPATION OF THE NEW BUILDING.
- THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO SEDIMENT AND EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
- SUBGRADE SHALL BE FORMED WITH REMOVAL AND REPLACEMENT OF FILL AND REMOVAL AND REPLACEMENT OF UNSUITABLE AND SOFT SUBGRADE MATERIAL AS REQUIRED BY THE GEOTECHNICAL ENGINEER. SEE GEOTECHNICAL REPORT AND EARTHWORK SPECIFICATIONS FOR FURTHER DESCRIPTION.
- THE CONTRACTOR SHALL COMPACT FILL IN LIFT THICKNESS PER THE GEOTECHNICAL REPORT UNDER ALL PARKING, BUILDING, DRIVE, AND STRUCTURE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
- UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
- VERTICAL DATUM IS NAVD 88.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE MUNICIPALITY'S AGENT PRIOR TO THE START OF WORK ON THE SITE.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE CT DEEP AND THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE SEDIMENT AND EROSION CONTROL PLAN CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES, OR SOIL CONSERVATION DISTRICT WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL, OTHERWISE THIS WORK SHALL CONFORM TO THE STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN LIFT THICKNESSES PER THE PROJECT GEOTECHNICAL REPORT TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT MOISTURE CONTENT INDICATED IN PROJECT GEOTECHNICAL REPORT.
- ALL DISTURBANCE INCURRED TO MUNICIPAL AND STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE MUNICIPALITY AND STATE AS APPLICABLE FOR THE LOCATION OF THE WORK.
- ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
- THE UTILITY PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY ARCHITECT FOR BUILDING CONNECTIONS. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST FITS SHALL BE DONE AT ALL LOCATIONS WHERE PROPOSED SANITARY SEWERS AND WHERE PROPOSED STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE CIVIL ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL

- PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED, WHICH SHALL INCLUDE CONCRETE ENCASEMENT OF PIPING UNLESS OTHERWISE DIRECTED BY THE UTILITY PROVIDERS AND CIVIL ENGINEER.
- RELOCATION OF UTILITY PROVIDER FACILITIES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
  - THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
  - CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
  - BUILDING UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE BUILDING MEP, STRUCTURAL, AND ARCHITECTURAL DRAWINGS AND WITH THE OWNER'S CONSTRUCTION MANAGER.
  - ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
  - A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER WITH A CONCRETE ENCASEMENT, AN 18-INCH TO 6-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROPOSED PIPING.
  - GRAVITY SANITARY SEWER PIPING AND PRESSURIZED WATERLINES SHALL BE LOCATED IN SEPARATE TRENCHES AT LEAST 10 FEET APART WHENEVER POSSIBLE. WHEN INSTALLED IN THE SAME TRENCH, THE WATER PIPE SHALL BE LAID ON A TRENCH BENCH AT LEAST 18 INCHES ABOVE THE TOP OF THE SANITARY SEWER PIPE AND AT LEAST 12 INCHES (PREFERABLY 18 INCHES) FROM THE SIDE OF THE SANITARY SEWER PIPE TRENCH.
  - SITE CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/ DRAINING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
  - MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
  - SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
  - CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO PYLON SIGNS AND SITE LIGHTING WITH THE BUILDING ELECTRICAL CONTRACTOR.
  - THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
  - ELECTRIC AND TELECOMMUNICATIONS SERVICES SHALL BE INSTALLED UNDERGROUND FROM THE SERVICE POLE INDICATED ON THE SITE UTILITIES PLAN. THE CONTRACTOR SHALL PROVIDE AND INSTALL AND BACKFILL (2) 4" PVC CONDUITS FOR TELECOMMUNICATIONS SERVICE, (2) 4" PVC CONDUITS FOR ELECTRIC SERVICE PRIMARY, PVC CONDUITS FOR ELECTRICAL SECONDARY PER BUILDING ELECTRICAL PLANS, (SCHEDULE 80 UNDER PAVEMENT, SCHEDULE 40 IN NON PAVEMENT AREAS). SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 12" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS, AND 24" ON TELECOMMUNICATIONS CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC UTILITY PROVIDER, AND TELECOMMUNICATIONS COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL HANDHOLES AS REQUIRED TO FACILITATE INSTALLATION AND AS REQUIRED BY UTILITY PROVIDER. INSTALL TRAFFIC LOAD QUALIFIED HANDHOLES IN VEHICULAR AREAS. INSTALL CONCRETE ENCASEMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC UTILITY PROVIDER.
  - ALL WATER LINES TO HAVE A MINIMUM COVER OF 3'-6". ALL LINES SHALL BE BEDDED IN 6" SAND AND INITIALLY BACKFILLED WITH 12" SAND.
  - ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERALS SHALL CONFORM TO THE APPLICABLE POTABLE WELL AUTHORITY SPECIFICATIONS, AND TO THE APPLICABLE SANITARY SEWER PROVIDER SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE INDUSTRY CODES (AWWA), CTRP, AND PROJECT SPECIFICATIONS FOR POTABLE WATER SYSTEMS, AND FOR SANITARY SEWER SYSTEMS.
  - THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE CIVIL ENGINEER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.
  - CONTRACTOR MAY SUBSTITUTE MASONRY STRUCTURES FOR PRECAST STRUCTURES IF APPROVED BY THE CIVIL ENGINEER AND ALLOWED BY THE GOVERNING AUTHORITY ENGINEER OR OTHER GOVERNING AUTHORITY.
  - PIPING SHALL BE LAID FROM DOWNGRADIENT END OF PIPE RUN IN AN UPGRADIENT DIRECTION WITH BELL END FACING UPGRADIE IN THE DIRECTION OF PIPE LAYING.
  - ALL RCP SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76; ALL RCP SHALL BE CLASS IV UNLESS OTHERWISE SHOWN. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
  - MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
  - HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE HI-Q SURE-LOK 10.8 PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M234, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH BELL-AND-SPOUT JOINT MEETING THE REQUIREMENTS OF AASHTO M234. THE BELL SHALL BE AN INTEGRAL PART OF THE PIPE AND PROVIDE A MINIMUM FULL-APART STRENGTH OF 400 POUNDS. THE JOINT SHALL BE WATERIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE MADE OF POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
  - HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE HI-Q PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL. HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO 252, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH COUPLING BANDS OR EXTERNAL SNAP COUPLERS COVERING AT LEAST 2 FULL CORRUGATIONS ON EACH END OF THE PIPE. SILT-TIGHT (GASKET) CONNECTIONS SHALL INCORPORATE A CLOSED SYNTHETIC EXPANDED RUBBER GASKET. MEETING THE REQUIREMENTS OF AASHTO D1056 GRADE 2A2. GASKETS SHALL BE INSTALLED ON THE CONNECTION BY THE PIPE MANUFACTURER. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND OWNER'S CONSTRUCTION MANAGER PRIOR TO ORDERING.
  - COPPER PIPE SHALL BE TYPE K TUBING WITH COMPRESSION FITTINGS.
  - GAS PIPE MATERIAL SHALL BE PER GAS COMPANY REQUIREMENTS.
  - POLYVINYL CHLORIDE PIPE (PVCP) FOR SANITARY PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVCP SHALL CONFORM TO ASTM D3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVCP SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS, ASTM D2321 AND MANUFACTURER'S RECOMMENDED PROCEDURE.
  - PVC WATER MAIN PIPING SHALL CONFORM TO AWWA C900.
  - WORK WITHIN ROUTE 44 SHALL OCCUR BETWEEN 8AM AND 1PM. HOURS MAY BE ADJUSTED AS NEEDED.

**DEFINITIONS**  
 MUNICIPALITY SHALL MEAN TOWN OF BOLTON  
 COUNTY SHALL MEAN TOLLAND COUNTY  
 STATE SHALL MEAN CONNECTICUT  
 POTABLE WELL AUTHORITY SHALL MEAN EASTERN HIGHLANDS HEALTH DISTRICT  
 SANITARY UTILITY PROVIDER SHALL MEAN BOLTON LAKES REGIONAL WATER POLLUTION CONTROL AUTHORITY  
 GAS UTILITY PROVIDER SHALL MEAN PROPANE TANK PROVIDER  
 TELECOMMUNICATIONS UTILITY PROVIDER SHALL MEAN FRONTIER COMMUNICATIONS OF CONNECTICUT  
 ELECTRIC UTILITY PROVIDER SHALL MEAN EVERSOURCE ENERGY - ELECTRIC DISTRIBUTION

Architecture  
 Engineering  
 Environmental  
 Land Surveying

100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax

**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

REV. NO.	DATE	DESCRIPTION
1	03/20/2021	REVISIONS
2	06/07/2021	REVISIONS

Disc.	REVISED PER TOWN COMMENTS
REVISED	REVISED PER TOWN COMMENTS
REVISED	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	NONE
Project No.	2002032
Date	04/02/2021
CAD File:	GN200203201
Title	<b>GENERAL NOTES</b>
Sheet No.	












**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_ CHAIRMAN

**DEMOLITION LEGEND**

-  PROPERTY LINE
-  LIMIT OF DISTURBANCE AND SITEWORK
-  CONTRACT LIMIT LINE
-  SAWCUT LINE
-  REMOVE AND DISPOSE OF CURB, FENCE, ETC.
-  PROTECT EXISTING UTILITY LINE
-  LIMIT OF TREE AND VEGETATION CLEARING
-  REMOVE AND DISPOSE OF SIGN, HYDRANT, FIXTURE, ETC.
-  REMOVE AND DISPOSE OF EXISTING BITUMINOUS CONCRETE PAVEMENT STRUCTURE
-  REMOVE AND DISPOSE OF EXISTING TREE AND STUMP
-  PROTECT EXISTING TREE TO REMAIN

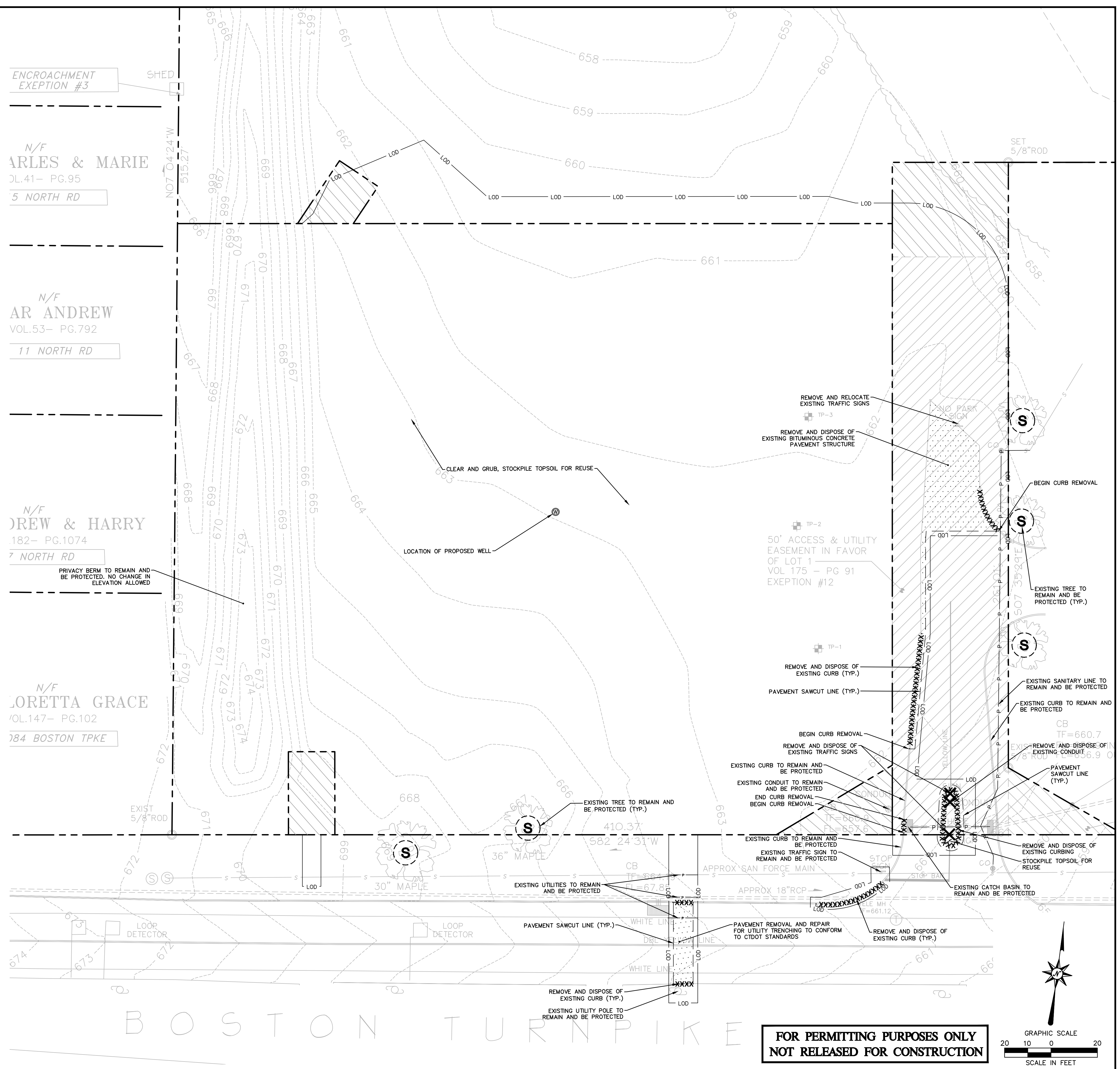
ENCROACHMENT EXEPTION #3  
SHED

N/F  
**ARLES & MARIE**  
VOL.41- PG.95  
5 NORTH RD

N/F  
**AR ANDREW**  
VOL.53- PG.792  
11 NORTH RD

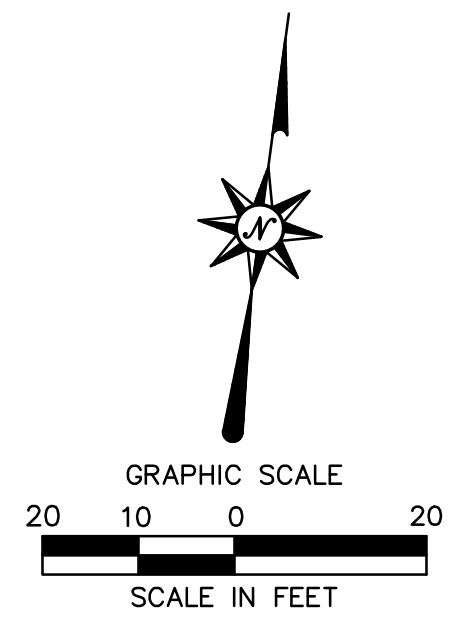
N/F  
**OREW & HARRY**  
VOL.182- PG.1074  
7 NORTH RD

N/F  
**LORETTA GRACE**  
VOL.147- PG.102  
184 BOSTON TPKE



**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**  
DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
CHAIRMAN

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(860) 249-2200  
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**PROPOSED RETAIL DEVELOPMENT**  
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BOLTON, CONNECTICUT

REVISIONS

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2	06/07/2021	REVISED PER TOWN COMMENTS

Designed by S.E.L.  
Drawn by S.E.L.  
Reviewed by  
Scale 1"=20'  
Project No. 2002032  
Date 04/02/2021  
CAD File: DM20203201

**DEMOLITION PLAN**

Sheet No.

**DM-1**

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**ZONING INFORMATION**

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT				
ZONE: RURAL MIXED USE ZONE (RMUZ)				
USE: RETAIL (PERMITTED BY SPECIAL PERMIT)				
ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	MINIMUM LOT AREA	80,000 S.F.	80,707 S.F. (1.85 AC.)	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	308 FEET	NO
3	MINIMUM LOT FRONTAGE	150 FEET	260.4 FEET	NO
4	MINIMUM FRONT SETBACK	NONE REQUIRED	71.9 FEET	NO
5	MINIMUM SIDE SETBACK	25 FEET (50 FEET) [1]	72.8 FEET	NO
6	MINIMUM REAR SETBACK	25 FEET [1]	51.4 FEET	NO
7	MAXIMUM BUILDING HEIGHT	35 FEET/2.5 STORIES	25.6 FEET	NO
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	13.2 PERCENT	NO
9	MAXIMUM IMPERVIOUS COVERAGE	50 PERCENT	39.9 PERCENT	NO

[1] MINIMUM SIDE AND REAR SETBACKS - 50 FEET WHEN ABUTTING A RESIDENTIAL DISTRICT

**PARKING INFORMATION**

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	BUILDING SIZE	600 S.F.	10,640 S.F.	NO
2	PARKING REQUIRED	RETAIL - MINIMUM - 2 SPACES PER 1,000 S.F. OF GFA (10,640 S.F.) MINIMUM REQUIRED = 22 SPACES MAXIMUM - 5 SPACES PER 1,000 S.F. OF GFA (10,640 S.F.) MAXIMUM ALLOWED = 54 SPACES	33 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	2 SPACES	2 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 20 FEET	NO
5	MINIMUM LOADING DIMENSIONS	10 FEET X 25 FEET X 14 FEET	33 FEET X 71 FEET X > 14 FEET	NO
6	MINIMUM AISLE WIDTH	22 FEET - 2-WAY 11 FEET - 1-WAY	30 FEET - 2-WAY	NO
7	MINIMUM FRONT SETBACK	50 FEET [2]	50.5 FEET	NO
8	MINIMUM SIDE SETBACK	NONE REQUIRED [2]	77.1 FEET	NO
9	MINIMUM REAR SETBACK	NONE REQUIRED [2]	5.3 FEET	NO
10	BICYCLE PARKING REQUIRED	1 BICYCLE PARKING SPACE PER 25 PARKING SPACES (2 REQUIRED)	2 BICYCLE PARKING SPACES	NO

[2] 10 FEET LANDSCAPED BUFFER STRIP REQUIRED WHERE ABUTTING A RESIDENCE DISTRICT

**SITE PLAN LEGEND**

	PROPERTY LINE
	LIMIT OF DISTURBANCE AND SITWORK CONTRACT LIMIT LINE
	SAWCUT LINE
	PROVIDE AND INSTALL CONCRETE PAVEMENT STRUCTURE, REINFORCED CONCRETE SIDEWALK, OR MONOLITHIC CONCRETE CURB AND SIDEWALK
	PROVIDE AND INSTALL FULL DEPTH HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE
	PROVIDE AND INSTALL FULL DEPTH STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT STRUCTURE
	PROVIDE AND INSTALL SIGN

**SIGN LEGEND**

SIGN NO.	C-DOT NO.	LEGEND
A	31-0552Z	30"
B	31-0629	
C	31-0648	

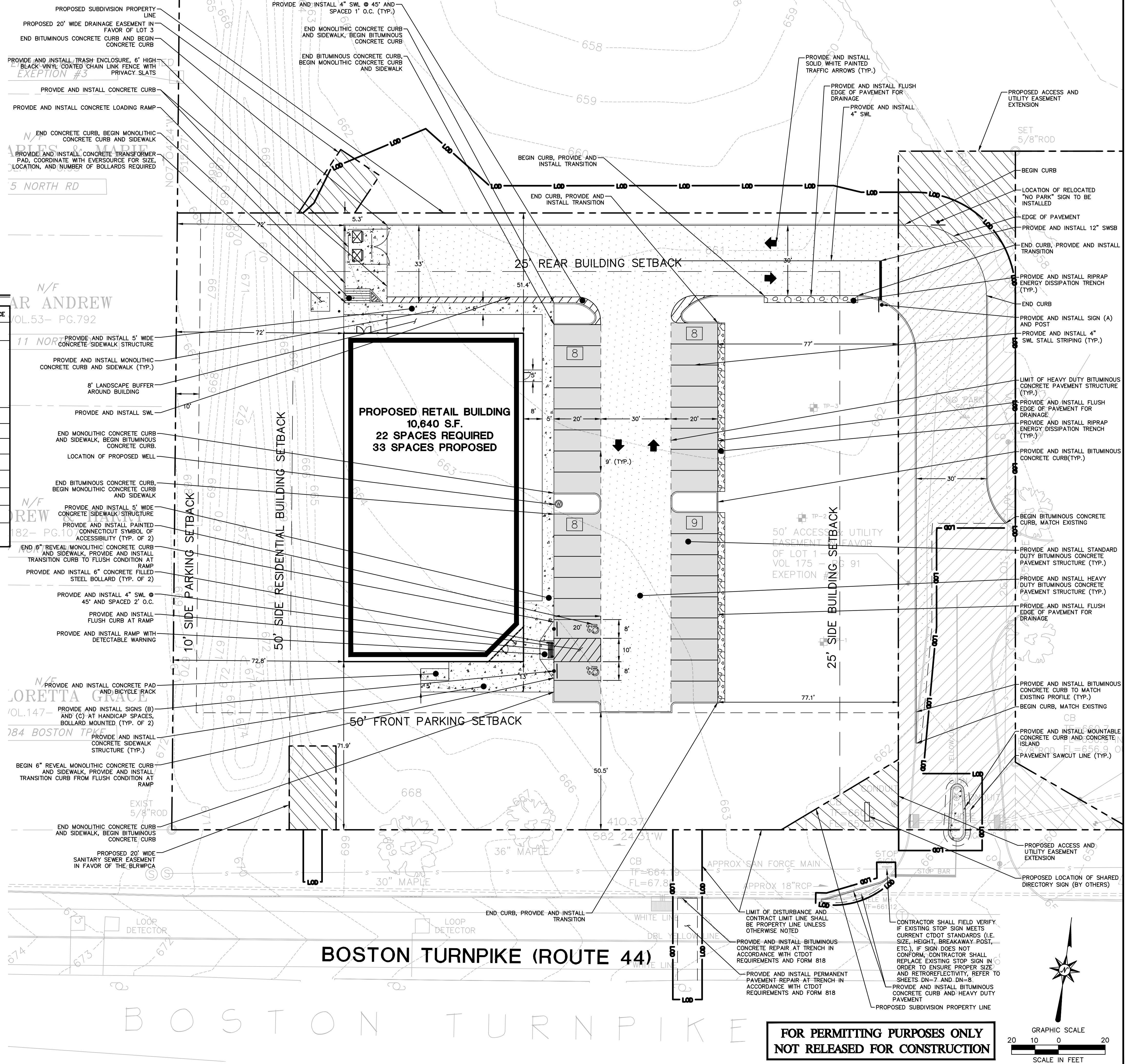
NOTE:  
1. HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL). ALL HANDICAP SIGNAGE TO CONFORM TO LATEST BUILDING CODE.  
2. SIGNS INSTALLED IN THE STATE RIGHT-OF-WAY MUST BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT'S TYPICAL DETAIL SHEETS (I.E. HEIGHT, BREAKAWAY POSTS, ETC.)

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN \_\_\_\_\_

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_



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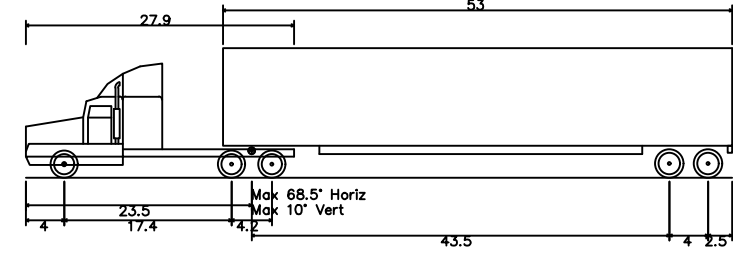


**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

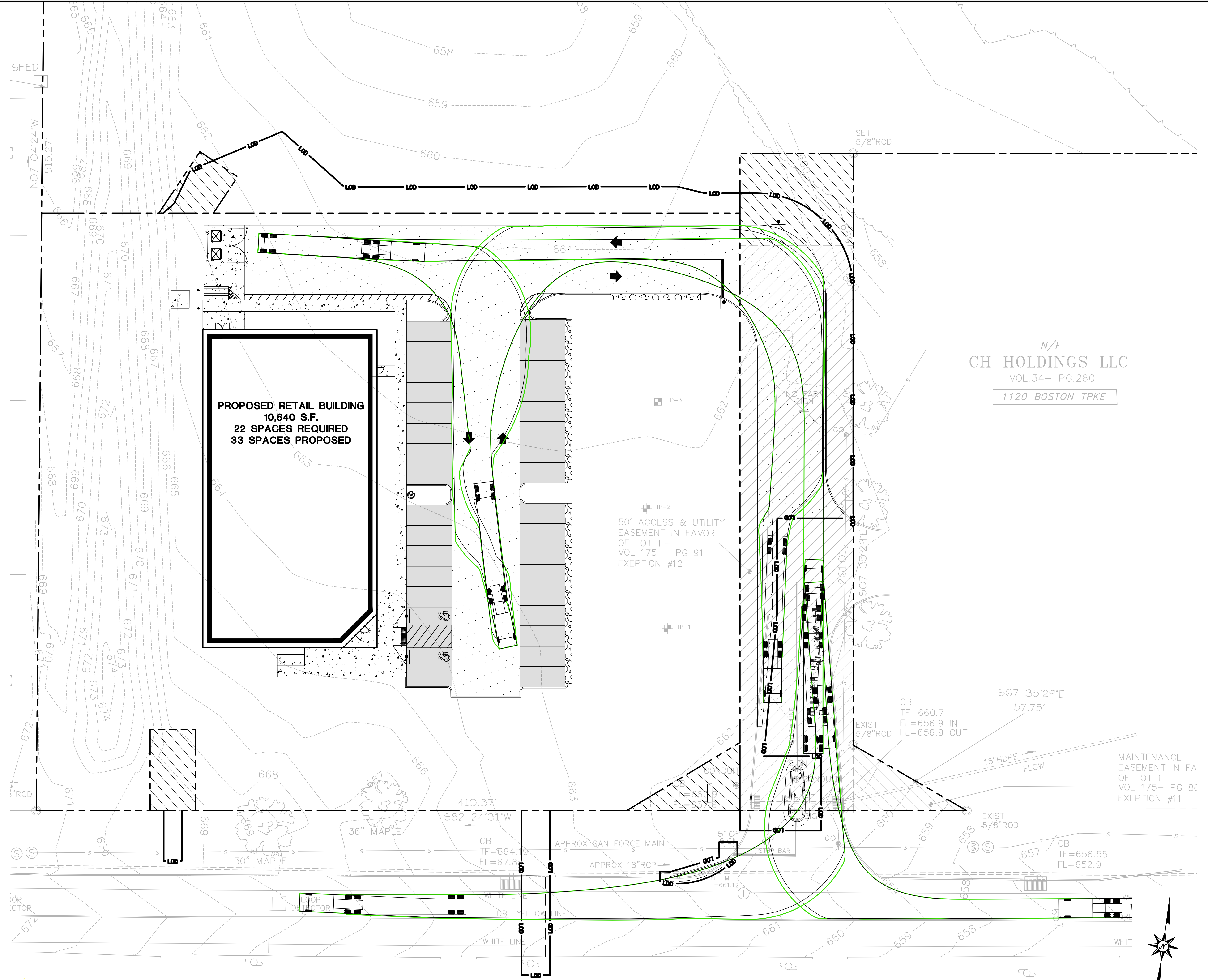
REVISIONS

No.	Date	Description
1	03/20/2021	REVISED PER TOWN COMMENTS
2	06/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	1"=20'
Project No.	2002032
Date	04/02/2021
CAD File:	SP200203201
Title	<b>SITE PLAN</b>
Sheet No.	<b>SP-1</b>



WB-67 - Interstate Semi-Trailer  
 Overall Length 73.50ft  
 Overall Width 8.50ft  
 Overall Body Height 13.50ft  
 Min. Body Ground Clearance 13.54ft  
 Max. Track Width 8.50ft  
 Lock-to-lock time 6.00s  
 Max Steering Angle (Virtual) 28.40



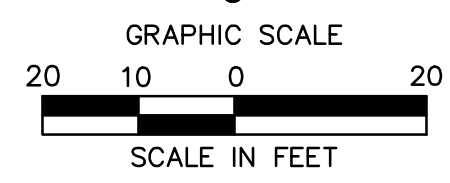
N/F  
**CH HOLDINGS LLC**  
 VOL.34- PG.260  
 1120 BOSTON TPKE

TP-2  
 50' ACCESS & UTILITY  
 EASEMENT IN FAVOR  
 OF LOT 1  
 VOL 175 - PG 91  
 EXEPTION #12

MAINTENANCE  
 EASEMENT IN FA  
 OF LOT 1  
 VOL 175- PG 91  
 EXEPTION #11

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**  
 DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
 \_\_\_\_\_ CHAIRMAN  
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Drawn	SEL
Reviewed	
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Project No.	2002032
Date	04/02/2021
CAD File:	T1200203201

Title  
**TRUCK TURNING  
 PLAN - WB-67**

Sheet No.

**TT-1**

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Sheet No.: TT-1; 1200203201; 1200203201; 1200203201; 1200203201; 1200203201





**EROSION CONTROL LEGEND**

- PROPERTY LINE
- LOD --- LIMIT OF DISTURBANCE AND SITEWORK CONTRACT LIMIT LINE
- SAWCUT LINE
- SF --- SILT FENCE BARRIER
- SS SILT SACK INLET PROTECTION
- CONCRETE WASH PIT
- TEMPORARY MATERIAL STOCKPILE
- EROSION CONTROL BLANKET
- CONSTRUCTION ENTRANCE

ENCROACHMENT EXEPTION #3

N/F  
ARLES & MARIE  
DL.41- PG.95  
5 NORTH RD

N/F  
AR ANDREW  
VOL.53- PG.792  
11 NORTH RD

N/F  
DREW & HARRY  
182- PG.1074  
7 NORTH RD

N/F  
LORETTA GRACE  
VOL.147- PG.102  
184 BOSTON TPKE

**PROPOSED RETAIL BUILDING**  
10,640 S.F.  
22 SPACES REQUIRED  
33 SPACES PROPOSED

FFE-665.00

DESIGNATED LOCATION FOR CONCRETE WASHPIT

DESIGNATED LOCATION FOR MATERIAL STOCKPILE, PROVIDE AND INSTALL DOUBLE ROW OF SILT FENCE BARRIER AROUND ENTIRE STOCKPILE

PROVIDE AND INSTALL EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR STEEPER (TYP.)

PROVIDE AND INSTALL SILT FENCE BARRIER (TYP.)

PROVIDE AND INSTALL STONE CONSTRUCTION ENTRANCE (MINIMUM 30'X50')

PROVIDE AND INSTALL SILT SACK INLET PROTECTION (TYP.)

LIMIT OF DISTURBANCE AND SITE CONTRACT LIMIT LINE SHALL BE PROPERTY LINE UNLESS OTHERWISE NOTED

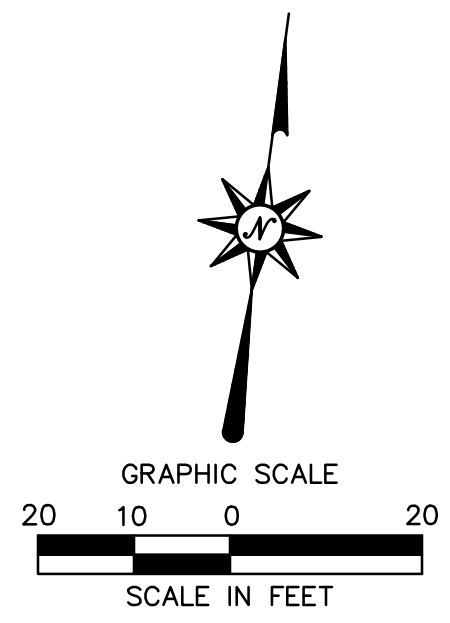
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

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CHAIRMAN

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B O S T O N T U R N P I K E

**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

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Drawn	S.E.L.
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Date	04/02/2021
CAD File:	EC200203201

Title  
**SEDIMENT AND EROSION CONTROL PLAN**

Sheet No.

**EC-1**

# SEDIMENT AND EROSION CONTROL NOTES

SEDIMENT & EROSION CONTROL NARRATIVE  
 THE SEDIMENT AND EROSION CONTROL PLAN WAS DEVELOPED TO PROTECT THE EXISTING ROADWAY AND STORM DRAINAGE SYSTEMS, ADJACENT PROPERTIES, AND ANY ADJACENT WETLAND AREA AND ANY ADJACENT WATER COURSE FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION. A CONSTRUCTION SEQUENCE IS PROVIDED TO PROVIDE SURFACE RUNOFF EROSION CONTROLS PRIOR TO THE BEGINNING OF PROJECT DEMOLITION AND/OR CONSTRUCTION.

CONSTRUCTION SCHEDULE  
 THE ANTICIPATED STARTING DATE FOR CONSTRUCTION IS SPRING 2021 WITH COMPLETION ANTICIPATED FALL 2021. APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES AS DESCRIBED HEREIN SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL DEMOLITION OR CONSTRUCTION ACTIVITY. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED.

CONTINGENCY EROSION PLAN  
 THE CONTRACTOR SHALL INSTALL ALL SPECIFIED SEDIMENT AND EROSION CONTROL MEASURES AND WILL BE REQUIRED TO MAINTAIN THEM IN THEIR INTENDED FUNCTIONING CONDITION. THE AGENTS OF THE MUNICIPALITY OR INLAND WETLANDS COMMISSION AND/OR CIVIL ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

CONSTRUCTION SEQUENCE  
 THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

- CONTACT MUNICIPALITY OR INLAND WETLANDS COMMISSION AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.
- CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE MUNICIPALITY OR INLAND WETLANDS COMMISSION AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL TREE PROTECTION AND PERIMETER SILT FENCE.
- CONSTRUCT STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS AT CONSTRUCTION ENTRANCES/EXITS AND INSTALL FILTER FABRIC AROUND GRATES OF CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS ON OFF SITE ROADS. INSTALL SILT FENCE AND OTHER EROSION CONTROL DEVICES INDICATED ON THESE PLANS AT PERIMETER OF PROPOSED SITE. DISTURBANCE AND INSTALL ALL EROSION CONTROL MEASURES AND TREE PROTECTION INDICATED ON THESE PLANS. INSTALL SEDIMENT BASINS AND SEDIMENT TRAPS IF REQUIRED AT LOW AREAS OF SITE OR AS ORDERED BY THE ENGINEER OR AS SHOWN ON THESE PLANS.
- CLEAR AND GRUB SITE. STOCKPILE CHIPS. STOCKPILE TOPSOIL. INSTALL SEDIMENT AND EROSION CONTROLS AT STOCKPILES.
- ANY BUILDING AND SITE DEMOLITION AND REMOVAL. PAVEMENT REMOVAL.
- INSTALL SILT FENCE, CONSTRUCT ANY DIVERSION SWALES AND SEDIMENT BASINS AND SEDIMENT TRAPS. COMMENCE INSTALLATION OF STORM DRAINAGE SYSTEM.
- COMMENCE EARTHWORK. INSTALL ADDITIONAL SEDIMENT AND EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.
- CONSTRUCTION STAKING OF ALL BUILDING CORNERS, UTILITIES, ACCESS DRIVES, AND PARKING AREAS.
- ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE CONTRACTOR MUST PROVIDE EVIDENCE THAT EACH SPILL OR BORROW AREA HAS A SEDIMENT AND EROSION CONTROL PLAN APPROVED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.
- CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.
- BUILDING FOUNDATION SUBGRADE AND PAD SUBGRADE PREPARATION.
- BUILDING FOUNDATION CONSTRUCTION. BEGIN BUILDING SUPERSTRUCTURE.
- THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND ANY SILT FENCES, HAY BALES AND OTHER EROSION CONTROL DEVICES, AND FROM SEDIMENT BASINS AND SEDIMENT TRAPS AS REQUIRED. REMOVAL SHALL BE ON A PERIODIC BASIS (EVERY SIGNIFICANT RAINFALL OF 0.25 INCH OR GREATER). INSPECTION OF SEDIMENT AND EROSION CONTROL MEASURES SHALL BE ON A WEEKLY BASIS AND AFTER EACH RAINFALL OF 0.25 INCHES OR GREATER. SEDIMENT COLLECTED SHALL BE DEPOSITED AND SPREAD EVENLY UPLAND ON SLOPES DURING CONSTRUCTION.
- INSTALL SANITARY LATERAL AND UTILITIES. COMPLETE STORM DRAINAGE SYSTEM.
- INSTALL SITE LIGHTING AND TRASH ENCLOSURE.
- COMPLETE GRADING TO SUBGRADES AND CONSTRUCT PARKING AREA SUBGRADE.
- CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS.
- CONDUCT FINE GRADING.
- PAVING OF PARKING AREAS AND DRIVEWAYS
- FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.
- PLACE 4" TOPSOIL ON SLOPES AFTER FINAL GRADING IS COMPLETED. FERTILIZE SEED AND MULCH. SEED MIXTURE TO BE INSTALLED APRIL 15 - JUNE 1 OR AUGUST 15 - OCTOBER 1. USE EROSION CONTROL BLANKETS AS REQUIRED OR ORDERED FOR SLOPES GREATER THAN 3:1 AND AS SHOWN ON LANDSCAPE PLANS OR EROSION CONTROL PLANS. FOR TEMPORARY STABILIZATION BEYOND SEEDING DATES USE ANNUAL RYE AT 4.0 LBS/1,000 S.F. FERTILIZE WITH 10-10-10 AT 1.0 LBS. OF NITROGEN PER 1,000 S.F. AND LIME AT 100 LBS/1,000 S.F. (MAX.).
- LANDSCAPE ISLANDS, INTERIOR NON-PAVED AREAS, AND PERIMETER AREAS.
- INSTALL SIGNING AND PAVEMENT MARKINGS
- CLEAN STORM DRAINAGE PIPE STRUCTURES, DETENTION SYSTEMS AND WATER QUALITY DEVICES OF DEBRIS AND SEDIMENT.
- UPON DIRECTION OF THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION AGENT, SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.

## OPERATION REQUIREMENTS

### CLEARING AND GRUBBING OPERATIONS

- ALL SEDIMENT AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION BASINS AND STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS, WILL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- FOLLOWING INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL MEASURES, THE CONTRACTOR SHALL NOT PROCEED WITH GRADING, FILLING OR OTHER CONSTRUCTION OPERATIONS UNTIL THE ENGINEER HAS INSPECTED AND APPROVED ALL INSTALLATIONS.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CLEARING AND GRUBBING OPERATIONS SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENT AND EROSION CONTROL DEVICES.
- FOLLOWING THE COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ALL AREAS SHALL BE STABILIZED WITH TOPSOIL AND SEEDING OR CRUSHED STONE AS SOON AS PRACTICAL.

### ROUGH GRADING OPERATIONS

- DURING THE REMOVAL AND/OR PLACEMENT OF EARTH AS INDICATED ON THE GRADING PLAN, TOPSOIL SHALL BE STRIPPED AND APPROPRIATELY STOCKPILED FOR REUSE.
- ALL STOCKPILED TOPSOIL SHALL BE SEED, MULCHED WITH HAY, AND ENCLOSED BY A SILTATION FENCE.

### FILLING OPERATIONS

- PRIOR TO FILLING, ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PROPERLY IMPLEMENTED, MAINTAINED AND FULLY INSTALLED, AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THIS PLAN.
- ALL FILL MATERIAL ADJACENT TO ANY WETLAND AREAS, IF APPLICABLE TO THIS PROJECT, SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN). SHALL BE PLACED IN LIFT THICKNESSES NOT GREATER THAN THAT SPECIFIED IN PROJECT SPECIFICATIONS AND/OR THE PROJECT GEOTECHNICAL REPORT. LIFTS SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS OR IN THE GEOTECHNICAL REPORT.
- AS GENERAL GRADING OPERATIONS PROGRESS, ANY TEMPORARY DIVERSION DITCHES SHALL BE RAISED OR LOWERED, AS NECESSARY, TO DIVERT SURFACE RUNOFF TO THE SEDIMENT BASINS OR SEDIMENT TRAPS.

### PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND BUILDING CONSTRUCTION OPERATIONS.

- SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF BUILDING EXCAVATIONS, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. HAY BALES/STRAW BALES MAY BE USED IF SHOWN ON THE SEDIMENT AND EROSION CONTROL PLANS OR IF DIRECTED BY THE CIVIL ENGINEER.

### FINAL GRADING AND PAVING OPERATIONS

- ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON SEDIMENT AND EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, OR JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.
- AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE IS STABLE AND HAS BEEN INSPECTED AND APPROVED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION.

### INSTALLATION OF SEDIMENTATION AND EROSION CONTROL MEASURES

- SILTATION FENCE
  - DIG A SIX INCH TRENCH ON THE UPHILL SIDE OF THE DESIGNATED FENCE LINE LOCATION.
  - POSITION THE POST AT THE BACK OF THE TRENCH (DOWNHILL SIDE), AND HAMMER THE POST AT LEAST 1.5 FEET INTO THE GROUND.
  - LAY THE BOTTOM SIX INCHES OF THE FABRIC INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUN-OFF.
  - BACKFILL THE TRENCH AND COMPACT.
- HAY BALES/STRAW BALES
  - BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PARALLEL TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
  - BALES SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER.
  - EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES.
  - THE GAPS BETWEEN BALES SHALL BE WEDGED WITH STRAW TO PREVENT WATER LEAKAGE.
  - THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE, TO ENSURE THAT RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER, BUT NOT AROUND IT.

### OPERATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES

- SILTATION FENCES
  - ALL SILTATION FENCES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.
  - SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT.
- HAY BALES/STRAW BALES
  - ALL HAY BALE/STRAW BALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.
  - DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.
- SEDIMENT BASINS/SEDIMENT TRAPS
  - CONTRACTOR TO KEEP WEEKLY CHECKLIST LOSS FOR INSPECTIONS OF ALL SEDIMENT AND EROSION CONTROL DEVICES AND HAVE THEM READILY AVAILABLE ON-SITE AT ALL TIMES FOR INSPECTION BY DEEP, LOCAL AUTHORITIES OR ENGINEER.
  - ALL SEDIMENT BASINS AND/OR SEDIMENT TRAPS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OF SLOPES SHALL BE PROMPTLY MADE AS NEEDED.
  - SEDIMENT DEPOSITS SHALL BE REMOVED FROM SEDIMENT BASINS AND/OR SEDIMENT TRAPS WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT UNLESS OTHERWISE INDICATED ON THE EROSION CONTROL PLANS AND DETAILS TO BE AT A SPECIFIC ELEVATION PER CLEAN OUT MARKERS.
  - SEDIMENT SHALL BE DISPOSED OF ON-SITE OR AS DIRECTED BY THE ENGINEER AND LOCAL GOVERNING OFFICIALS. SEE SEDIMENT AND EROSION CONTROL NOTES HEREIN REGARDING DISPOSAL REQUIREMENTS FOR OFF SITE SPOIL DISPOSAL.

### SEDIMENT AND EROSION CONTROL PLAN

- CONTRACTOR TO KEEP WEEKLY CHECKLIST LOSS FOR INSPECTIONS OF ALL SEDIMENT AND EROSION CONTROL DEVICES AND HAVE THEM READILY AVAILABLE ON-SITE AT ALL TIMES FOR INSPECTION BY DEEP, LOCAL AUTHORITIES OR ENGINEER.
- ALL SEDIMENT BASINS AND/OR SEDIMENT TRAPS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OF SLOPES SHALL BE PROMPTLY MADE AS NEEDED.
- SEDIMENT DEPOSITS SHALL BE REMOVED FROM SEDIMENT BASINS AND/OR SEDIMENT TRAPS WHEN THEY REACH A MAXIMUM HEIGHT OF ONE FOOT UNLESS OTHERWISE INDICATED ON THE EROSION CONTROL PLANS AND DETAILS TO BE AT A SPECIFIC ELEVATION PER CLEAN OUT MARKERS.
- SEDIMENT SHALL BE DISPOSED OF ON-SITE OR AS DIRECTED BY THE ENGINEER AND LOCAL GOVERNING OFFICIALS. SEE SEDIMENT AND EROSION CONTROL NOTES HEREIN REGARDING DISPOSAL REQUIREMENTS FOR OFF SITE SPOIL DISPOSAL.
- SEDIMENT AND EROSION CONTROL PLAN
  - HAY BALE/STRAW BALE FILTERS WILL BE INSTALLED AT ALL CULVERT OUTLETS IF CULVERT OUTLETS ARE APPLICABLE TO THIS PROJECT AND SILTATION FENCE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
  - CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIP RAP CHANNELS. EROSION DISSIPATORS WILL BE INSTALLED AS SHOWN ON THESE PLANS AND AS NECESSARY.
  - CATCH BASINS WILL BE PROTECTED WITH HAY BALE/STRAW BALE FILTERS, SILT SACKS, SILTATION FENCE, OR OTHER INLET PROTECTION DEVICES PER DETAILS, THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
  - ALL SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.
  - SEDIMENT AND EROSION CONTROL MEASURES WILL BE INSTALLED PRIOR TO DEMOLITION AND/OR CONSTRUCTION WHENEVER POSSIBLE.
  - ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE DEMOLITION AND CONSTRUCTION PERIOD UNTIL THE SITE IS DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION.
  - ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED OR AS DIRECTED BY THE CIVIL ENGINEER OR BY THE AUTHORITY HAVING JURISDICTION.
  - SEDIMENT REMOVED FROM EROSION CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLANS, NOTES, AND DETAILS.
  - THE CONTRACTOR IS ASSIGNED THE RESPONSIBILITY FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, NOTIFICATION OF THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION OFFICE OR AUTHORITY HAVING JURISDICTION OF ANY TRANSFER OF THIS RESPONSIBILITY AND FOR CONVEYING A COPY OF THE SEDIMENT AND EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.

### SEDIMENT AND EROSION CONTROL NOTES

- THE SEDIMENT AND EROSION CONTROL PLAN IS ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL TREATMENT FOR THIS SITE. SEE SEDIMENT AND EROSION CONTROL DETAILS AND CONSTRUCTION SEQUENCE. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE AUTHORITY HAVING JURISDICTION OR COUNTY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
- AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED WITH THE MUNICIPALITY TO ENSURE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF THIS BOND AND FOR INQUIRIES TO THE MUNICIPALITY FOR INFORMATION ON THE METHOD, TYPE AND AMOUNT OF THE BOND POSTING UNLESS OTHERWISE DIRECTED BY THE OWNER.
- VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT OF 0.25 INCHES OR GREATER BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN SEDIMENT AND EROSION CONTROL, TO ASCERTAIN THAT THE SEDIMENT AND EROSION CONTROL (E&S) BMPs ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
  - A) SUMMARY OF THE SITE CONDITIONS, E&S BMPs, AND COMPLIANCE; AND
  - B) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION
- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION. THE CONTRACTOR SHALL KEEP A COPY OF THE GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION.
- ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPALITY AND/OR INLAND WETLANDS COMMISSION, OR GOVERNING AGENCIES. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED.
- THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS BEFORE AND AFTER EACH STORM (0.25 INCHES OR GREATER RAINFALL), OR AT LEAST WEEKLY, TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF SEDIMENT AND EROSION CONTROL MATERIAL (ANY HAY BALES, SILT FENCE, JUTE MESH, RIP RAP, ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.

- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE OR AS SHOWN WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- INSTALL PERIMETER SEDIMENT AND EROSION CONTROLS PRIOR TO CLEARING OR CONSTRUCTION. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, OR EQUIVALENT FENCING. ALL CONSTRUCTION SHALL BE MAINTAINED WITHIN THE UPHILL SIDE OF THE SILT FENCE UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE FENCE.
- ANY STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED AT START OF CONSTRUCTION AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN ONE (1) MONTH.
- ANY SEDIMENT BASINS AND SEDIMENT TRAPS SHALL PROVIDE 134 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE CONTRIBUTING TO THE BASIN. PROVIDE BASIN VOLUMES FOR ALL DISTURBANCE ON SITE.
- COMPLY WITH REQUIREMENTS OF CGS SECTION 22A 430B, FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.
- ANY STONE CONSTRUCTION ENTRANCE ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY ON SITE EXCAVATION AND SHALL BE MAINTAINED DURING ALL DEMOLITION, EXCAVATION AND CONSTRUCTION ACTIVITIES.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (ONE WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
- MAINTAIN EXISTING PAVED AREAS FOR CONSTRUCTION STAGING FOR AS LONG AS POSSIBLE.
- SILT FENCE AND OTHER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS PRIOR TO WORK IN ANY UPLAND AREAS.
- EXCAVATED MATERIAL FROM TEMPORARY SILT TRAPS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.
- INSTALL SILT FENCE ACCORDING TO MANUFACTURER'S INSTRUCTION, PARTICULARLY, BURY LOWER EDGE OF FABRIC INTO GROUND. SILT FENCE SHALL BE TENCATE ENVIROFENCE, PROPEX GETOX OR EQUIVALENT APPROVED BY THE CIVIL ENGINEER. FILTER FABRIC USED SHALL BE TENCATE 140N OR 170N, OR APPROVED EQUIVALENT. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
- WHERE INDICATED ON SEDIMENT AND EROSION CONTROL PLANS USE NEW HAY/STRAW BALES AND REPLACE THEM WHENEVER THEIR CONDITION DEGRADES BEYOND THEIR USABILITY. STAKE BALES SECURELY INTO GROUND AND BUTT TIGHTLY TOGETHER TO PREVENT UNDERCUTTING AND BYPASSING.
- INSTALL ANY TEMPORARY DIVERSION DITCHES, PLUNGE POOLS, SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH PITS AND DEWATERING PITS AS SHOWN AND AS NECESSARY DURING VARIOUS PHASES OF CONSTRUCTION TO CONTROL RUNOFF UNTIL UPHILL AREAS ARE DETERMINED TO BE STABILIZED BY THE AUTHORITY HAVING JURISDICTION. LOCATION OF TEMPORARY SEDIMENT BASINS WILL REQUIRE REVIEW AND APPROVAL BY THE CIVIL ENGINEER AND AUTHORITY HAVING JURISDICTION.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY PITS, SEDIMENT TRAP, SEDIMENT BASINS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINAGE SYSTEM OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR.
- BLOCK THE OPEN UPSTREAM ENDS OF DETENTION BASIN/SEDIMENTATION BASIN OUTLET CONTROL ORIFICE UNTIL SITE IS STABILIZED. BLOCK END OF STORM SEWERS IN EXPOSED TRENCHES WITH BOARDS AND SANDBAGS AT THE END OF EACH WORKING DAY WHEN RAIN IS EXPECTED.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. OTHER DUST CONTROL MEASURES TO BE USED AS NECESSARY INCLUDE WATERING DOWN DISTURBED AREAS, USING CALCIUM CHLORIDE, AND COVERING LOADS ON DUMP TRUCKS.
- PERIODICALLY CHECK ACCUMULATED SEDIMENT LEVELS IN ANY SEDIMENT BASINS AND SEDIMENT TRAPS DURING CONSTRUCTION AND CLEAN AS SHOWN AND AS NECESSARY. REMOVE ACCUMULATED OR PER SPECIFIC CLEANOUT MARKER ELEVATION. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY AND AS DIRECTED BY THE CIVIL ENGINEER OR OWNER'S CONSTRUCTION REPRESENTATIVE. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY/STRAW BALES AND SILT FENCE WHEN LEVEL REACHES HALF THE HEIGHT OF THE BALE OR ONE FOOT AT SILT FENCE. DISPOSE OF SEDIMENT LEGALLY EITHER ON OR OFF SITE.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
- ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF UTILITY AND STORM PIPE TRENCHES SO AS TO ALLOW THE TRENCH TO INTERCEPT ALL SILT LADEN RUNOFF.
- CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING.
- ANY STOCKPILES OF STRIPPED MATERIALS ARE TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL. HAUL ROADS BOTH INTO AND AROUND THE SITE ARE TO BE SPRAYED AS NEEDED TO SUPPRESS DUST. TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARPED TO AID IN THE CONTROL OF AIRBORNE DUST. DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS UNLESS OTHERWISE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
- MAINTAIN ALL PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROLS WHEN AUTHORIZED BY AUTHORITY HAVING JURISDICTION. FILE NOT (NOTICE OF TERMINATION) WITH AUTHORITY HAVING JURISDICTION RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

### STATE SPECIAL CONCERN SPECIES

- CONTRACTOR IS RESPONSIBLE FOR HIRING A QUALIFIED HERPETOLOGIST TO WORK WITH CONSTRUCTION CREW TO ENSURE THAT TURTLES WILL NOT BE UNINTENTIONALLY KILLED DURING THE MOVING OF HEAVY EQUIPMENT, ESPECIALLY IN THE MONTH OF JUNE.
- THE LIMIT OF DISTURBANCE SHALL BE FENCED WITH EXCLUSIONARY FENCING THAT IS SECURED AND IN CONTACT WITH THE GROUND AND AT LEAST 30INCHES HIGH. THE FENCE SHALL BE MAINTAINED BI-WEEKLY AND AFTER MAJOR WEATHER EVENTS. DO NOT USE PLASTIC NETTED OR NETTED SILT FENCE.
- ALL STAGING AND STORAGE AREAS, OUTSIDE OF PREVIOUSLY PAVED LOCATIONS, REGARDLESS OF THE DURATION OF TIME THEY WILL BE UTILIZED, MUST BE REVIEWED TO REMOVE INDIVIDUALS AND EXCLUDE THEM FROM RE-ENTRY.
- ALL CONSTRUCTION PERSONNEL WORKING WITHIN THE TURTLE HABITAT MUST BE APPRISED OF THE SPECIES DESCRIPTION AND THE POSSIBLE PRESENCE OF A LISTED SPECIES, AND INSTRUCTED TO RELOCATE TURTLES FOUND INSIDE WORK AREAS OR NOTIFY THE APPROPRIATE AUTHORITIES TO RELOCATE INDIVIDUALS.
- ANY TURTLES ENCOUNTERED WITHIN THE IMMEDIATE WORK AREA SHALL BE CAREFULLY MOVED TO AN ADJACENT AREA OUTSIDE OF THE EXCLUDED AREA AND FENCING SHOULD BE INSPECTED TO IDENTIFY AND REMOVE ACCESS POINT.
- IN AREAS WHERE SILT FENCE IS USED FOR EXCLUSION, IT SHALL BE REMOVED AS SOON AS THE AREA IS STABLE TO ALLOW FOR REPTILE AND AMPHIBIAN PASSAGE TO RESUME.
- NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT.
- SPECIAL PRECAUTIONS MUST BE TAKEN TO AVOID DEGRADATION OF WETLAND HABITATS INCLUDING ANY WET MEADOWS AND SEASONAL POOLS.
- THE CONTRACTOR AND CONSULTING HERPETOLOGIST MUST SEARCH THE WORK AREA EACH MORNING PRIOR TO ANY WORK BEING DONE.
- WHEN FELLING TREES ADJACENT TO BROOKS AND STREAMS PLEASE CUT THEM TO FALL AWAY FROM THE WATERWAY AND DO NOT DRAG TREES ACROSS THE WATERWAY OR REMOVE STUMPS FROM BANKS.
- AVOID AND LIMIT ANY EQUIPMENT USE WITHIN 50 FEET OF STREAMS AND BROOKS.
- ANY CONFIRMED TURTLE SIGHTINGS SHOULD BE REPORTED TO THE NATURAL DIVERSITY DATA BASE AT (nddbrequestdep@ct.gov) USING REPORTING FORMS FOUND ON THE NDDB WEBPAGE



100 Constitution Plaza  
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 (860) 249-2200  
 (860) 249-2400 Fax



**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

Desc. REVISED PER TOWN COMMENTS  
 REVISIONS

No. 2  
 Date 03/20/2021  
 Date 06/07/2021

Designed S.E.L.  
 Drawn S.E.L.  
 Reviewed  
 Scale NONE  
 Project No. 2002032  
 Date 04/02/2021  
 CAD File: EC200203201

Title  
**SEDIMENT AND EROSION CONTROL NOTES**

Sheet No.

**EC-2**

**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_ CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**LANDSCAPE ZONING INFORMATION**

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT  
 ZONE: RURAL MIXED USE ZONE (RMUZ)  
 USE: RETAIL (PERMITTED BY SPECIAL PERMIT)

ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE
1	LANDSCAPE AREA (SEC.11.J)	NO LESS THAN 30% OF AN RMUZ ZONE SHALL BE LANDSCAPED. SIDEWALKS ARE EXCLUDED FROM LANDSCAPE AREA	GREATER THAN 30% LANDSCAPED	NO
2	LANDSCAPE PARKING (SEC.15.H)	INTERIOR LANDSCAPING SHALL BE PROVIDED AT A RATE OF 20 SF PER PARKING SPACE. LANDSCAPING SHALL BE WITHIN RAISED, CURBED ISLANDS. (20 SF X 33 SPACES = 660 SF)	730 SF PROPOSED	NO
3	LANDSCAPE PARKING (SEC.15.H)	PARKING AREAS ABUTTING A RESIDENTIAL ZONE SHALL BE SCREENED BY A 10' WIDTH EVERGREEN ROW. PLANTS TO BE 4' HT AND 4' O.C. AT TIME OF PLANTING.	COMPLIES	NO
4	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	INTERIOR LANDSCAPE AREAS SHALL BE 100 SF MIN AND 8' WIDTH MIN.	COMPLIES	NO
5	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	INTERIOR AREAS SHALL HAVE 1 TREE PER 20 PARKING SPACES	COMPLIES	NO
6	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	PARKING PERIMETER LANDSCAPE AREA SHALL BE 5' WIDTH MIN. WITH 1 TREE PER 50 LF	COMPLIES	NO
7	LANDSCAPE REQUIREMENTS (SEC.16A.3.q.3)	TREES TO BE 3" CAL. AND 10' HT. MIN. AT TIME OF PLANTING	COMPLIES	NO
8	STREET PLANTINGS (SEC.16A.3.q.4)	LANDSCAPE ADJACENT TO STREET TO BE 30' WIDTH WITH 1 TREE PER 40' LOT LINE FRONTAGE (260 LF FRONTAGE ÷ 40 = 6.5 TREES)	5 TREES PROPOSED, 2 TREES TO REMAIN	NO
9	LANDSCAPE DESIGN (SEC.16A.3.x.3.g.10)	FOR EVERY 5 PARKING SPACES, 1 TREE SHALL BE PROVIDED (33 PARKING SPACES ÷ 5 = 6.6 TREES)	GREATER THAN 7 TREES PROVIDED	NO
10	LANDSCAPE DESIGN GUIDELINES (CH.8.1.3)	PLANT MATERIAL TO BE INDIGENOUS TO THE AREA, OR IF NOT NATIVE, THAN HARDY AND NON-INVASIVE	COMPLIES	NO
11	LANDSCAPE DESIGN GUIDELINES (CH.8.1.20&21)	ALL PLANTINGS SHALL BE GUARANTEED FOR 2 YEARS MINIMUM. A COPY OF THE GUARANTEE CONTRACT SHALL BE SUBMITTED TO THE TOWN.	SEE LANDSCAPE NOTE #4 ON SHEET LL-2	NO
12	LANDSCAPE DESIGN GUIDELINES (CH.8.1.22)	FLOWERING TREES TO BE 2"-2.5" CAL./DECIDUOUS TREES 3"-3.5" CAL./EVERGREEN TREES TO BE 5'-7' HT. MIN./DECIDUOUS SHRUBS 24" HT./EVERGREEN SHRUBS 18" HT./PERENNIALS 1 GAL. CONT.	COMPLIES	NO

**LANDSCAPE PLANT SCHEDULE**

TREES							
KEY	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE AT INSTALL	SIZE AT MATURITY	COMMENTS
AR	3	<i>Acer rubrum</i> 'Franksred'	RED SUNSET RED MAPLE	B&B	3" CAL. MIN.	45' x 35'	7' BRANCH HT. MIN.
AS	3	<i>Acer saccharum</i>	SUGAR MAPLE	B&B	3" CAL. MIN.	45' x 40'	7' BRANCH HT. MIN.
BN	3	<i>Betula nigra</i> 'Cully'	HERITAGE RIVER BIRCH	B&B	10' HT. MIN.	40' x 30'	MULTI-STEM
CO	4	<i>Celtis occidentalis</i> 'Prairie Pride'	PRAIRIE PRIDE HACKBERRY	B&B	3" CAL. MIN.	45' x 35'	7' BRANCH HT. MIN.
PG	3	<i>Picea glauca</i>	WHITE SPRUCE	B&B	6' HT. MIN.	50' x 15'	FULL BRANCHING TO GROUND
PS	8	<i>Pinus strobus</i>	EASTERN WHITE PINE	B&B	6' HT. MIN.	60' x 30'	FULL BRANCHING TO GROUND
PA	4	<i>Platanus x acerifolia</i> 'Morton's Circle'	EXCLAMATION! PLANETREE	B&B	3" CAL. MIN.	55' x 35'	7' BRANCH HT. MIN.
QR	3	<i>Quercus rubra</i>	RED OAK	B&B	3" CAL. MIN.	50' x 45'	7' BRANCH HT. MIN.
QP	3	<i>Quercus palustris</i>	PIN OAK	B&B	3" CAL. MIN.	55' x 40'	7' BRANCH HT. MIN.
TG	20	<i>Thuja</i> 'Green Giant'	GREEN GIANT ARBORVITAE	B&B	6' HT. MIN.	50' x 15'	FULL BRANCHING TO GROUND
SHRUBS							
CS	7	<i>Cornus sericea</i> 'Arctic Fire'	ARCTIC FIRE REDTWIG DOGWOOD	CONT.	24" HT. MIN.	3.5' x 3.5'	PLANT 4' O.C.
IG	17	<i>Ilex glabra</i>	INKBERRY	CONT.	4' HT. MIN.	7' x 6'	PLANT 4' O.C.
IGC	27	<i>Ilex glabra</i> 'Compacta'	COMPACT INKBERRY	CONT.	24" HT. MIN.	4' x 5'	PLANT 4' O.C.
MP	7	<i>Myrica pensylvanica</i>	BAYBERRY	CONT.	30" HT. MIN.	8' x 8'	PLANT 5' O.C.
RC	8	<i>Rhododendron</i> 'Cunningham's White'	CUNNINGHAM'S WHITE RHODODENDRON	CONT.	24" HT. MIN.	3' x 4'	PLANT 4' O.C.
RH	6	<i>Rhododendron</i> 'Lavender Princess'	LAVENDER PRINCESS RHODODENDRON	CONT.	24" HT. MIN.	4' x 5'	PLANT 4' O.C.
ORNAMENTAL GRASSES							
PV	24	<i>Panicum virgatum</i> 'Shenandoah'	SHENANDOAH SWITCHGRASS	CONT.	24" HT. MIN.	4' x 2'	PLANT 30" O.C.
SH	27	<i>Sporobolus heterolepis</i>	PRARIE DROPSEED	CONT.	12" HT. MIN.	2.5' x 2.5'	PLANT 30" O.C.
PERENNIALS AND GROUNDCOVERS							
AM	15	<i>Aronia melanocarpa</i> 'CONNAM165'	LOW SCAPE MOUND CHOKEBERRY	CONT.	12" HT. MIN.	2' x 3'	PLANT 30" O.C.
CV	10	<i>Coreopsis verticillata</i> 'Grandiflora'	GRANDIFLORA COREOPSIS	CONT.	8" HT. MIN./1 GAL. CONT.	2.5' x 2.5'	PLANT 30" O.C.
RF	16	<i>Rudbeckia fulgida</i> 'Goldstrum'	BLACK-EYED SUSAN	CONT.	8" HT. MIN./1 GAL. CONT.	2.5' x 2.5'	PLANT 30" O.C.

- NOTES:**
- ALL SUBSTITUTIONS MUST RECEIVE APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO SITE.
  - PROVIDE AND INSTALL ALL PLANTS SHOWN ON THE PLANTING PLAN DRAWINGS; THE QUANTITIES IN THE PLANT LIST ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. IF DISCREPANCIES OCCUR, THE LARGER QUANTITY SHALL APPLY.
  - IF THERE IS A DISCREPANCY BETWEEN BOTANICAL AND COMMON NAME, BOTANICAL NAME PREVAILS.

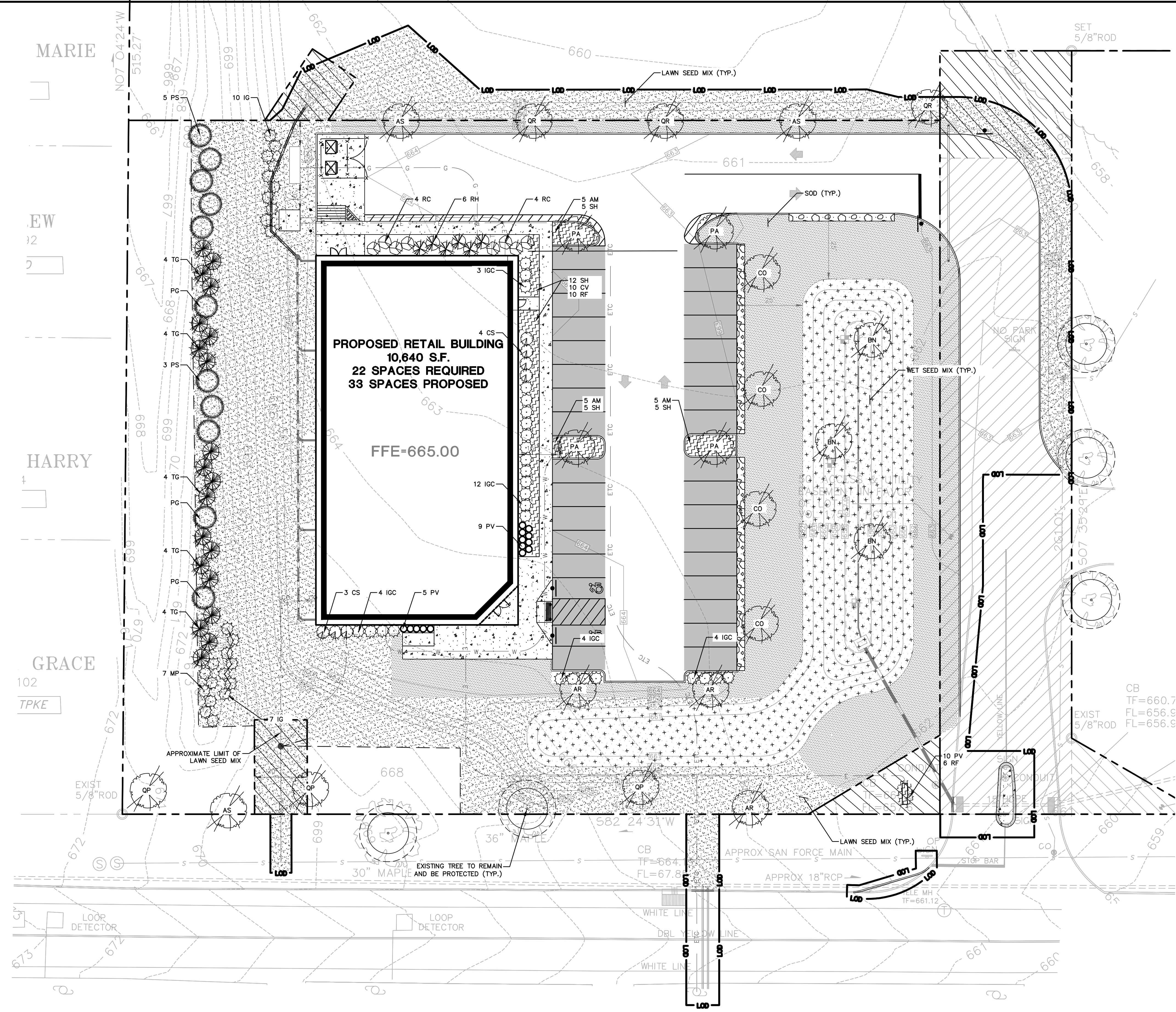
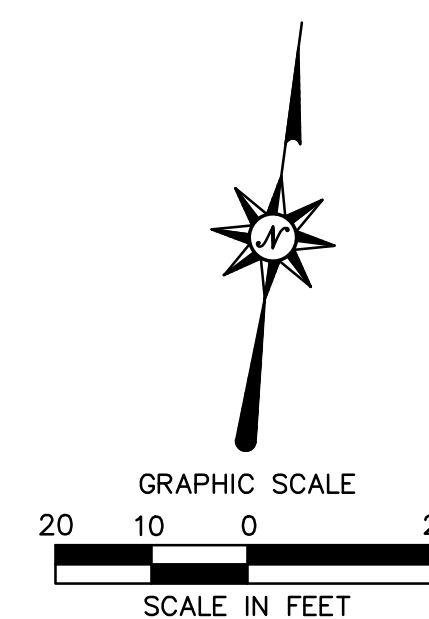
**SEE SHEET LL-2 FOR LANDSCAPE NOTES AND DETAILS**

BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT  
 DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
 \_\_\_\_\_ CHAIRMAN

**LEGEND**

PATTERN	DESCRIPTION	PATTERN	DESCRIPTION	PATTERN	DESCRIPTION
[Pattern]	SOD (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	PERENNIALS/GROUNDCOVERS (REFER TO PLANT SCHEDULE THIS PAGE)	[Pattern]	EXISTING TREE TO REMAIN AND BE PROTECTED
[Pattern]	LAWN SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	WET SEED MIX (REFER TO SEED MIXES ON SHEET LL-2)	[Pattern]	APPROXIMATE LIMIT OF LAWN SEED MIX WITHIN PROPERTY INTERIOR

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100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax

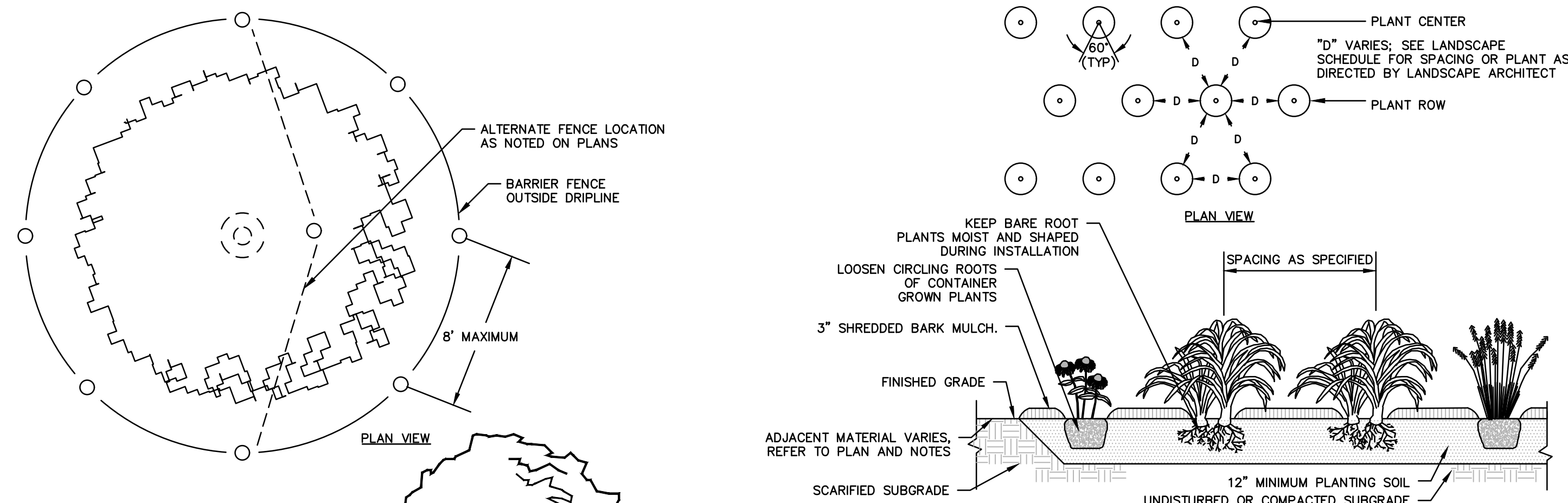


**PROPOSED RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

REVISIONS  
 Date: 03/20/2021  
 No.: 2  
 Description: REVISED PER TOWN COMMENTS  
 REVISED PER TOWN COMMENTS

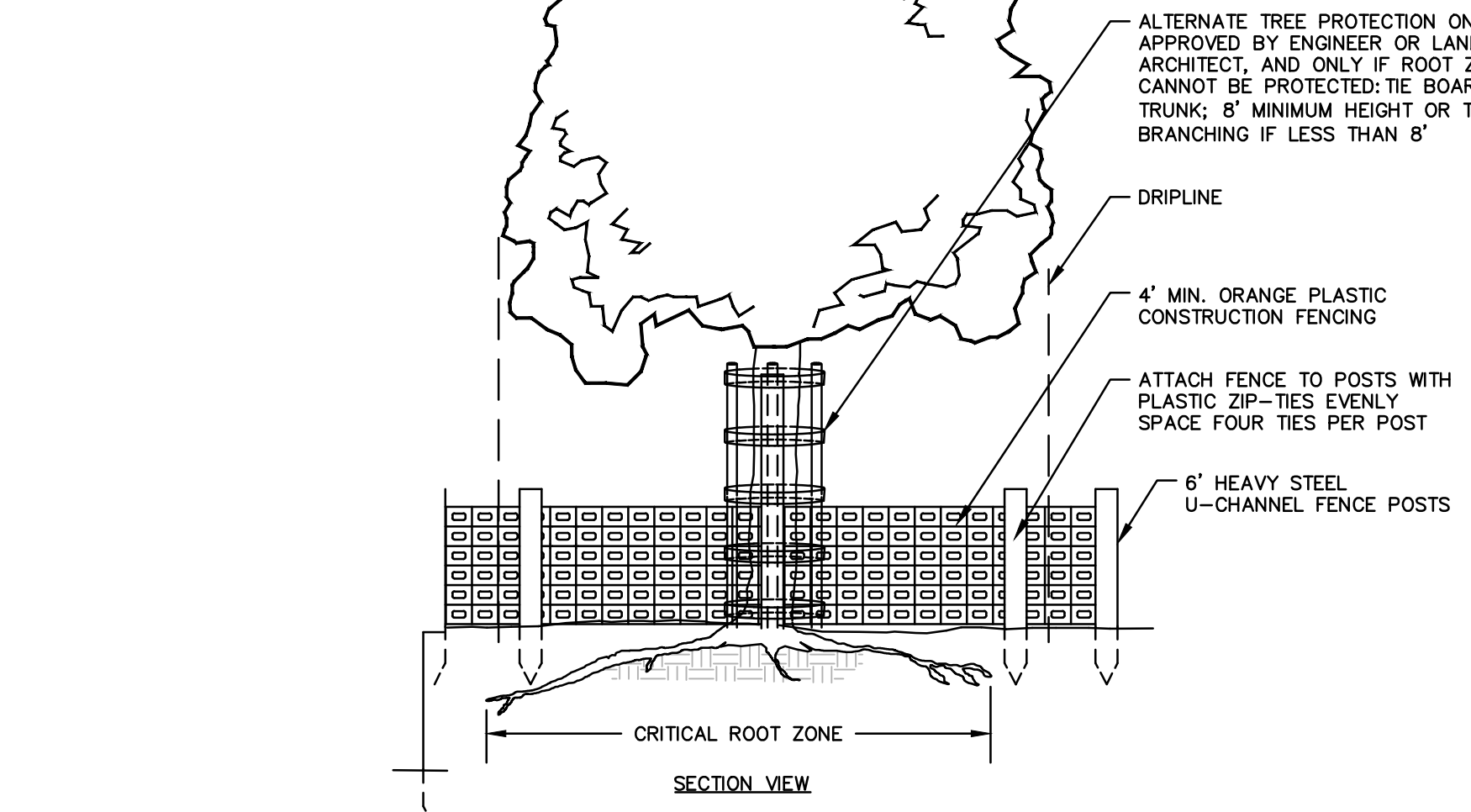
Designed: L.M.W.  
 Drawn: L.M.W.  
 Reviewed: W.E.V.  
 Scale: 1"=20'  
 Project No.: 2002032  
 Date: 04/02/2021  
 CAD File: LL200203201  
 Title: LANDSCAPE PLAN  
 Sheet No.:

**LL-1**



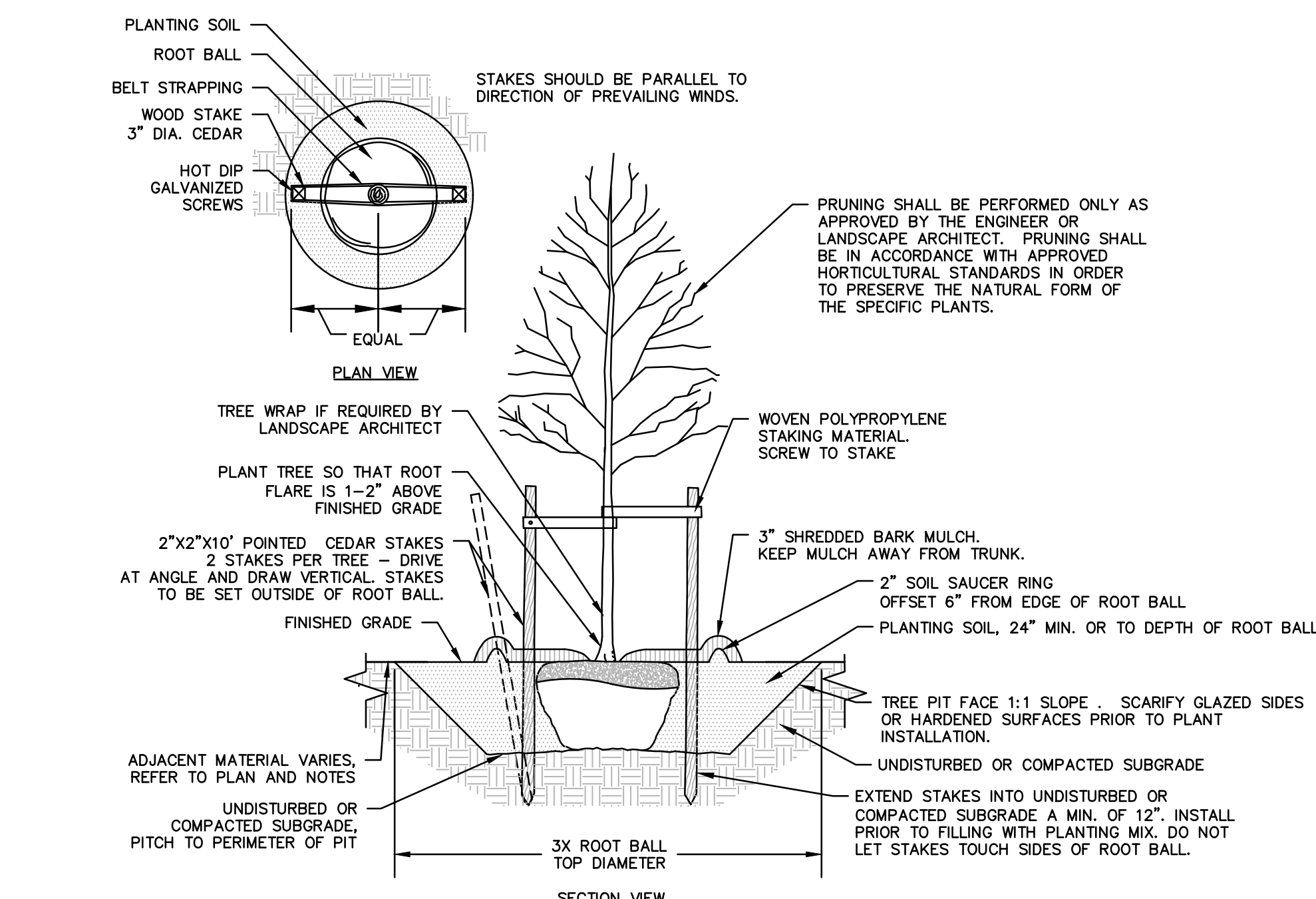
### GROUNDCOVER PLANTING

N.T.S.



### TREE PROTECTION

N.T.S.



### DECIDUOUS TREE PLANTING

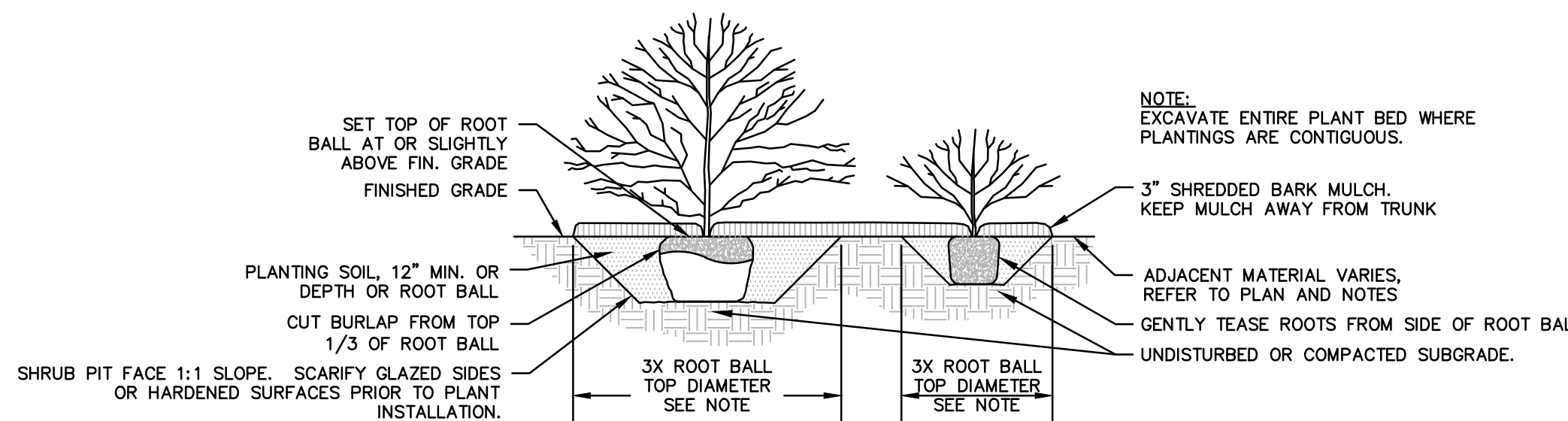
N.T.S.

BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT	
DATE APPROVED _____	DATE OF EXPIRATION _____
CHAIRMAN	

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

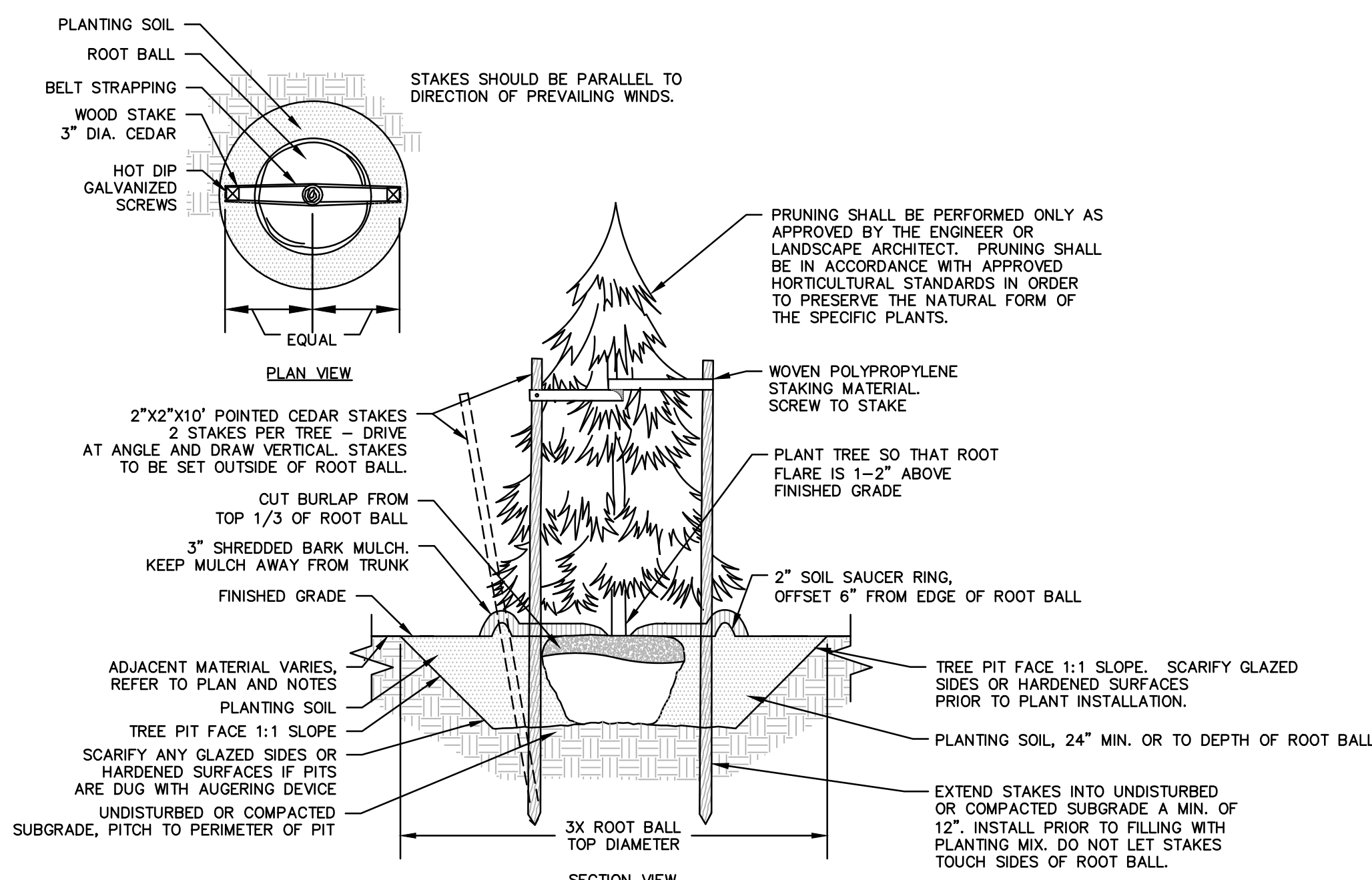
### SEED MIX NOTES

- A. LAWN SEEDING MIX:
    - 15% PERENNIAL RYEGRASS (BLEND OF 3 IMPROVED HYBRIDS)
    - 25% FINE LEAF OR CREEPING FESCUE (BLEND OF 3 IMPROVED HYBRIDS)
    - 60% KENTUCKY BLUEGRASS (BLEND OF 3 IMPROVED HYBRIDS)
    - SEEDING RATE: 5 LBS/1,000 S.F.
    - SEEDING DATES: AUGUST 15 - OCTOBER 1 AND APRIL 15 - JUNE 30 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
  - B. SOD - TUCKAHOE FESCUE TURF BY TUCKAHOE FARMS OR APPROVED EQUAL
    - 45% REBEL EXEDA TURF TYPE TALL FESCUE, 45% REBEL SENTRY TURF TYPE FALL FESCUE, 10% TUCKAHOE TURF BLUEGRASS BLEND
    - FERTILIZATION: PER SOIL TEST AND SOD MANUFACTURERS RECOMMENDATIONS
  - C. WETLAND SEED MIX -
    - NEW ENGLAND WETMIX (WETLAND SEED MIX)
    - NEW ENGLAND WETLAND PLANTS INC. OR APPROVED EQUAL
- SPECIES: FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRIS), HOP SEDGE (CAREX LUPULINA), FOWL BLUEGRASS (POA PALUSTRIS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEJAIL (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), MONKEY FLOWER (MIMULUS RINGENS).
- APPLICATION RATE: 20 LBS/ACRE AT STORMWATER PONDS  
SEEDING DATES: AUGUST 15 - OCTOBER 1 AND APRIL 15 - JUNE 30 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.



### SHRUB PLANTING

N.T.S.



### EVERGREEN TREE PLANTING

N.T.S.

1. STAKING FOR TREES ON 4:1 SLOPES OR LESS TO BE PERFORMED AT CONTRACTOR'S DISCRETION.
2. WOVEN POLYPROPYLENE STAKING MATERIAL SHALL BE DEEPROOT ARBORITE (GREEN) OR APPROVED EQUIVALENT. MATERIAL SHALL BE LOOPED AROUND TREE THROUGH EACH OTHER, TWISTED, AND SECURED TO THE STAKE. INSTALL SPECIFIED MATERIAL IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
3. BEFORE IN HOLE, REMOVE BOTTOM OF CAGE. ONCE IN HOLE, REMOVE REST OF CAGE FROM ROOT BALL. REMOVE TWINE AND BURLAP FROM TOP 1/3 OF ROOT BALL - SCORE REMAINING 2/3 OF BURLAP. IF BURLAP IS SYNTHETIC OR HAS BEEN TREATED WITH ANTI-DESICCANT, COMPLETELY REMOVE IT FROM ROOT BALL.

### LANDSCAPE NOTES

1. THE LANDSCAPE PLAN AND DETAIL SHEET ARE FOR LANDSCAPING INFORMATION ONLY. REFER TO THE OTHER PLANS FOR ALL OTHER INFORMATION.
2. COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE. PRIOR TO DIGGING AND INSTALLATION OF PLANT MATERIAL, THE CONTRACTOR SHALL CONTACT CALL BEFORE YOU DIG 72 HOURS BEFORE COMMENCEMENT OF WORK AT (800) 922-4455 AND VERIFY ALL UTILITY SYSTEM LOCATIONS.
3. THE LOCATIONS FOR PLANT MATERIAL ARE APPROXIMATE AND ARE SUBJECT TO FIELD ADJUSTMENT DUE TO UTILITY LOCATIONS AND SITE CONDITIONS. THE CONTRACTOR SHALL ACCURATELY STAKE OUT THE LOCATIONS FOR ALL PLANTS FOR THE REVIEW, ADJUSTMENT, AND APPROVAL BY OWNER OR LANDSCAPE ARCHITECT PRIOR TO PLANTING.
4. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANTS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF TWO YEARS AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY OWNER OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. PLANT MATERIAL REPLACEMENTS SHALL BE GUARANTEED FOR TWO FULL YEARS FROM DATE OF REPLACEMENT. REPLACEMENT PLANTS SHALL BE THE SAME AS SPECIFIED FOR THE ORIGINAL PLANTING. REPLACEMENTS SHALL BE MADE AS MANY TIMES AS NECESSARY TO ENSURE HEALTHY PLANTS. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE CULTIVATING, SPRAYING, WEEDING, WATERING, TIGHTENING CUTS, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL THE END OF THE GUARANTEE PERIOD. DURING THE LANDSCAPE MAINTENANCE PERIOD (GUARANTEE) THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ANY SITE CONSTRAINTS (PHYSICAL, ENVIRONMENT, ETC.) OR MAINTENANCE DEFICIENCIES THAT MAY AFFECT LANDSCAPE VEGETATION ESTABLISHMENT.
5. THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY. ALL PLANTS SHALL BE ACCLIMATED BY THE SUPPLY NURSERY TO THE LOCAL HARDINESS ZONE AND BE CERTIFIED THAT THE PLANTING MATERIAL HAS BEEN GROWN FOR A MINIMUM OF TWO YEARS AT THE SOURCE AND OBTAINED WITHIN 200 MILES OF PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT.
6. PLANTS SHALL HAVE TAGS THAT IDENTIFY PLANT GENUS, SPECIES, CULTIVAR (IF APPLICABLE), PLANT COMMON NAME, NAME OF SOURCE NURSERY, AND SIZE OF PLANT FOR REVIEW OF OWNER OR LANDSCAPE ARCHITECT.
7. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT. STAKING THE LOCATION OF ALL TREES AND SHRUBS SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT.
8. FINAL GRADES SHALL BLEND SMOOTHLY WITH EXISTING GRADES, AND TOP AND BOTTOM OF SLOPES SHALL BE ROUNDED.
9. ALL TREE AND SHRUB MASSINGS SHALL BE MULCHED TO A DEPTH OF 3". ANNUAL AND PERENNIAL BEDS SHALL BE MULCHED TO A DEPTH OF 2". MULCH SHALL BE UNCOLORED TRIPLE-SHREDDED HARDWOOD BARK MULCH, AGED AT LEAST 6 MONTHS.
10. IF TREE STAKING IS PROPOSED, TREE STAKING MUST BE COMPLETED THE SAME DAY AS THE TREE IS INSTALLED. ALL TREES SHALL BE STAKED OR GUYED PER DETAIL.
11. LANDSCAPE PLANTING AREAS MUST BE FREE DRAINING. PAVEMENT, COMPACTED SUBGRADE, DEAD OR DYING PLANT MATERIAL, BLASTED ROCK, STONES GREATER THAN 1" IN DIAMETER, AND ANY OTHER MATERIAL HARMFUL TO PLANT GROWTH AND DEVELOPMENT SHALL BE REMOVED FROM AREAS TO BE LANDSCAPED AS REQUIRED BY PLANTING DETAILS OR SPECIFICATIONS.
12. PLANTING SOIL:
  - DEPTH: PLANTING SOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4" OR AS NOTED IN THE LANDSCAPE DETAILS. PLANTING SOIL SHALL BE UTILIZED IN ALL PLANTING AREAS INCLUDING SEEDED AREAS.
  - TESTING: CONTRACTOR SHALL SUBMIT (2) SOIL SAMPLES PER SOIL STOCKPILE TO A CERTIFIED TESTING LABORATORY TO DETERMINE ACIDITY, ORGANIC CONTENT, MECHANICAL ANALYSIS, AVAILABLE NUTRIENTS (N,P,K,Ca,Mg,S,Fa,Mn,Zn,Cu,Ba,Al,Pb) AND NECESSARY AMENDMENTS TO SOIL. THE CONTRACTOR SHALL TEST RESULTS TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. TEST RESULTS SHALL RECOMMEND AMENDMENTS THAT WILL ALTER THE SOIL CHARACTERISTICS SUCH THAT THE CHARACTERISTICS DESCRIBED BELOW ARE ACHIEVED AND THE SPECIFIED PLANTS (CONTRACTOR TO PROVIDE LIST TO TESTING LABORATORY) WILL ACHIEVE PROPER GROWTH THAT IS NEITHER DEFICIENT NOR EXCESSIVE. THE CONTRACTOR SHALL INCORPORATE THESE AMENDMENTS AT NO INCREASE IN CONTRACT PRICE.
  - CHARACTERISTICS: PLANTING SOIL MAY CONSIST OF EXISTING ON-SITE SOILS, AMENDED ON-SITE SOILS, OR IMPORTED SOILS MEETING THE FOLLOWING CRITERIA:
    - A. NOT TO CONTAIN MATERIALS HARMFUL TO PLANT LIFE. TO BE CLEAN, FERTILE, FRIABLE, AND WELL DRAINING. ALL SHOTS, STONES, OR ANY SUBSON EARTH CLODS, SODS, STONES OVER 1" IN ANY DIMENSION, STICKS, ROOTS, WEEDS, LITTER AND OTHER DELETERIOUS MATERIAL. PLANTING SOIL SHALL BE UNIFORM IN QUALITY AND TEXTURE.
    - B. PLANTING SOIL SHALL HAVE THE FOLLOWING OPTIMUM RANGES UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
 

ORGANIC CONTENT	3% - 6% FOR LAWN OR GRASS AREAS.
	4% - 8% FOR TREE AND SHRUB PLANTERS.
	8%-16% FOR RETENTION OR DETENTION BASINS.
(BY LOSS OF IGNITION AT 375 C METHOD OF TESTING)	
PH	6.0 - 7.3
    - C. NUTRIENT LEVELS SHALL BE ACHIEVED BY THE CONTRACTOR'S ADDITION OF AMENDMENTS TO THE PLANTING SOIL TO MEET THE OPTIMUM NUTRIENT LEVELS SPECIFIED IN THE TESTING LABORATORY REPORT FOR EACH OF PLANTS TO BE INSTALLED.
    - D. SOIL SHALL BE COMPACTED TO A SURFACE PENETRATION RESISTANCE OF 75-125 LBS/50IN.
    - E. SOIL MAY BE TREATED FOR WEEDS WITH PRE-EMERGENT HERBICIDE. HERBICIDE IS NEEDED AND AS APPROPRIATE FOR THE APPLICATION SEASON OR LOCATION, OR ELIMINATE GROWTH OF UNWANTED PLANT MATERIAL. APPLY HERBICIDES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. HERBICIDE APPLICATOR MUST BE LICENSED IN THE STATE OF CONNECTICUT, AND PERFORM APPLICATIONS IN ACCORDANCE WITH LOCAL REQUIREMENTS, PERMITTING STIPULATIONS, AND ANY OTHER RESTRICTIONS INCLUDING AND IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.
    - F. PROPOSED TOPSOIL SHALL MEET THE USDA SOILS TEXTURAL PERCENTAGES OF SAND, SILT, AND CLAY FOR FOLLOWING CLASSIFICATIONS:
      - LOAM
      - SANDY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS NOT LESS THAN 5%.
      - SANDY CLAY LOAM WHERE SAND DOES NOT EXCEED 70% AND CLAY IS LESS THAN 28%.
    - G. BIORETENTION SOILS: SOIL TO BE INSTALLED IN RETENTION BASINS, PONDS, OR OTHER STORMWATER MANAGEMENT ENVIRONS SHALL MEET THE ABOVE DESCRIBED CHARACTERISTICS AND AS FOLLOWS:
      - SOIL SHALL NOT CONTAIN MORE THAN 20% CLAY AND LESS THAN 40% SILT.
      - SOIL SHALL HAVE AN INFILTRATION RATE BETWEEN 1/2" AND 3" PER HOUR.
    - H. MODIFICATION TO THE PLANTING CHARACTERISTICS DESCRIBED ABOVE MAY BE SUBMITTED FOR APPROVAL BY THE LANDSCAPE ARCHITECT. CONTRACTOR MUST DEMONSTRATE PROPOSED CHARACTERISTICS ARE EQUAL TO OR SUPERIOR TO THE SPECIFIED CHARACTERISTICS WITH RESPECT TO SUPPORTING PLANT GROWTH, AND STORMWATER MANAGEMENT.

12. PLANTING AMENDMENTS:  
APPLY FERTILIZER AND OTHER AMENDMENTS AS RECOMMENDED FOR EACH PLANTING AREA BY SOIL ANALYSIS. APPLY AMENDMENTS IN A MANNER CONSISTENT WITH MANUFACTURER'S RECOMMENDATIONS. ANY ORGANIC AMENDMENTS SHALL HAVE A pH BETWEEN 4.5 AND 5.5 UNLESS OTHERWISE RECOMMENDED.

13. PLANT REQUIREMENTS: ALL PLANTS SHALL CONFORM IN SIZE AND GRADE TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z601 (LATEST EDITION). ALL PLANTS SHALL MEET THE ADDITIONAL REQUIREMENTS SET FORTH BELOW AND IN WRITTEN SPECIFICATIONS AS APPLICABLE. ALL TREES AND SHRUBS SHALL HAVE BEEN GROWN AT A COMMERCIAL NURSERY WITHIN 200 MILES OF THE PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER OR LANDSCAPE ARCHITECT. THEY SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY. THEY SHALL BE HEALTHY, SYMMETRICAL, EVENLY AND DENSELY BRANCHED, AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF BARK INJURY, DISEASE, AND INSECT PESTS. ALL TREES SHALL HAVE A STRAIGHT TRUNK WITH A SINGLE MAIN LEADER UNLESS OTHERWISE CHARACTERISTIC OF THE SPECIES OR VARIETY. THE OWNER OR LANDSCAPE ARCHITECT WILL ALLOW SUBSTITUTIONS ONLY UPON WRITTEN APPROVAL. SIZES SHALL CONFORM TO THE MEASUREMENT SPECIFIED ON THE DRAWINGS. PLANTS LARGER THAN SPECIFIED MAY BE USED IF APPROVED, BUT THE USE OF SUCH PLANTS SHALL NOT INCREASE THE CONTRACT PRICE. ALL OVERSTORY TREES PLANTED ALONG PARKING AREAS, SIDEWALKS AND PEDESTRIAN ACCESSES SHALL NOT BRANCH BELOW 7' FEET IF THE TREE CALIPER IS 3" INCHES OR GREATER. ALL PLANT MATERIALS ARE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE. THE CONTRACTOR SHALL COORDINATE SOURCE VISITS WITH THE LANDSCAPE ARCHITECT AND SHALL ACCOMPANY THE OWNER AND/OR LANDSCAPE ARCHITECT FOR ALL INSPECTIONS. CERTIFICATES OF COMPLIANCE WITH SPECIFICATIONS ARE REQUIRED FOR ALL PLANTS.
14. INSPECTION AND REVIEW:  
ALL PLANT MATERIAL SHALL BE SUBJECT TO INSPECTION AND ACCEPTANCE BY THE OWNER OR LANDSCAPE ARCHITECT AT THE NURSERY SOURCE OR PLACE OF GROWTH. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT ON A SCHEDULE FOR SOURCE VISITS AND ACCOMPANY THE OWNER OR LANDSCAPE ARCHITECT FOR ALL SOURCE INSPECTIONS. CERTIFICATES OF COMPLIANCE ARE REQUIRED FOR ALL PLANT MATERIALS.  
PHOTOGRAPHIC REVIEW OF PLANT MATERIAL IS ACCEPTABLE IF APPROVED BY LANDSCAPE ARCHITECT. PHOTOGRAPHS MUST BE PROVIDED IN QUANTITY AND VARIETY TO ALLOW LANDSCAPE ARCHITECT SUFFICIENT INFORMATION TO MAKE A REASONABLE DETERMINATION AS TO THE PLANTS' QUALITY. OWNER AND LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT PLANT MATERIAL DELIVERED TO THE SITE BUT PREVIOUSLY ACCEPTED IF DAMAGED OR NOT PROPERLY MAINTAINED DURING THE DELIVERY PROCESS.
15. PLANTING SEASONS (UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT)
 

EVERGREEN TREES AND SHRUBS	SPRING APRIL 1 TO JUNE 15	FALL SEPTEMBER 1 TO OCTOBER 15
DECIDUOUS TREES AND SHRUBS	APRIL 1 TO JUNE 15	SEPTEMBER 15 TO NOVEMBER 15
GROUNDCOVERS	APRIL 1 TO JUNE 15	SEPTEMBER 15 TO OCTOBER 15
PERENNIALS	MAY 15 TO JUNE 15	SEPTEMBER 1 TO OCTOBER 15

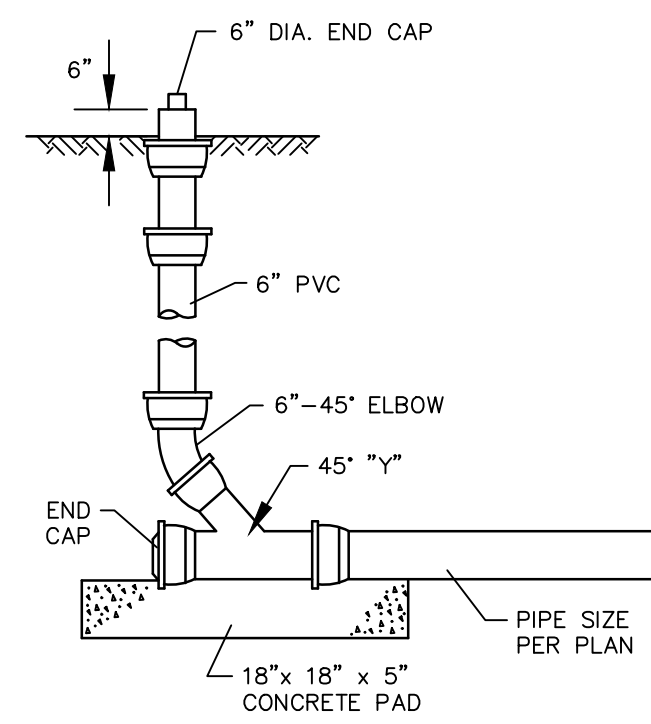
SEED MIXES: REFER TO SEED MIX NOTES. SEEDED AREA SHALL BE ACCEPTED WHEN SEED AREA ACHIEVES 90% COVERAGE.
16. ALL SLOPES STEEPER THAN 3:1 RECEIVING A SEED MIX SHALL BE COVERED WITH AN EROSION CONTROL BLANKET OF STRAW FIBER AND BIODEGRADABLE OR PHOTODEGRADABLE NETTING.
17. UNLESS OTHERWISE NOTED IN DRAWING SET, NEW TREELINES SHALL EQUAL CLEARING AND GRUBBING LIMIT FOR CONSTRUCTION.
18. ALL DISTURBED AREAS NOT OTHERWISE DEVELOPED SHALL BE SEEDED WITH THE LAWN SEED MIX.
19. ALL SHADE TREE, BUFFER YARD AND OTHER LANDSCAPING REQUIRED BY LOCAL ORDINANCE OR ZONING SHALL BE PERPETUALLY MAINTAINED BY THE PROPERTY OWNER. ANY LANDSCAPING NEEDED TO MEET AN ORDINANCE OR ZONING REQUIREMENT THAT DIES, IS REMOVED, OR IS SEVERELY DAMAGED SHALL BE REPLACED BY THE CURRENT PROPERTY OWNER AS SOON AS IS PRACTICAL CONSIDERING GROWING SEASONS, WITH A MAXIMUM OF 150 DAYS.

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NOT RELEASED FOR CONSTRUCTION



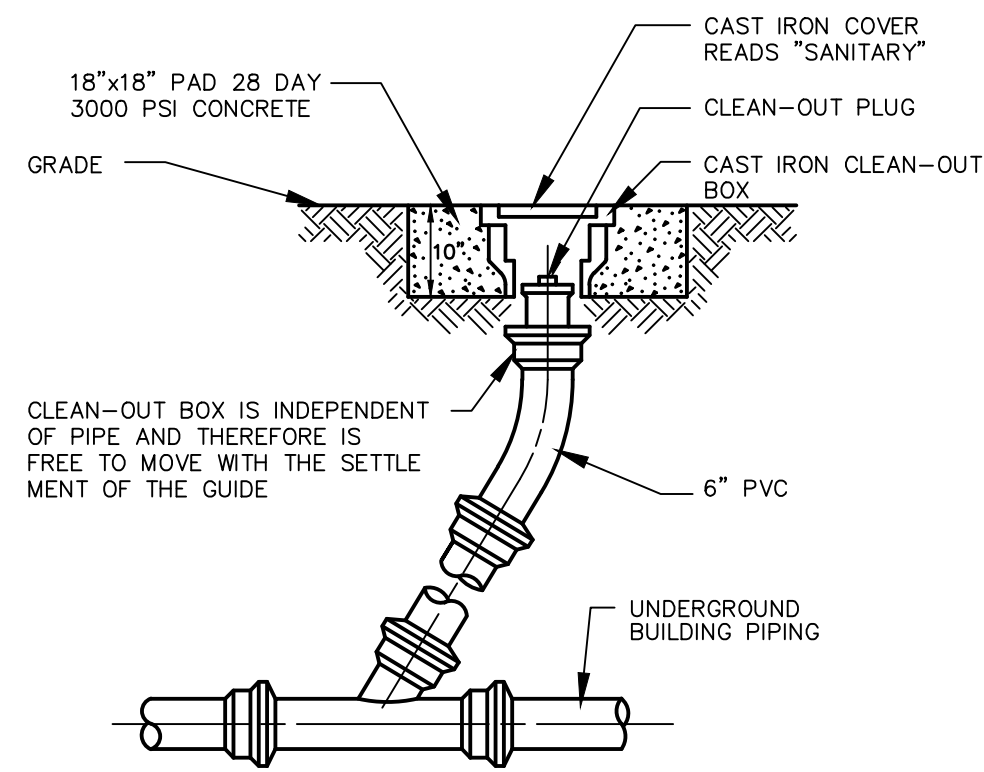






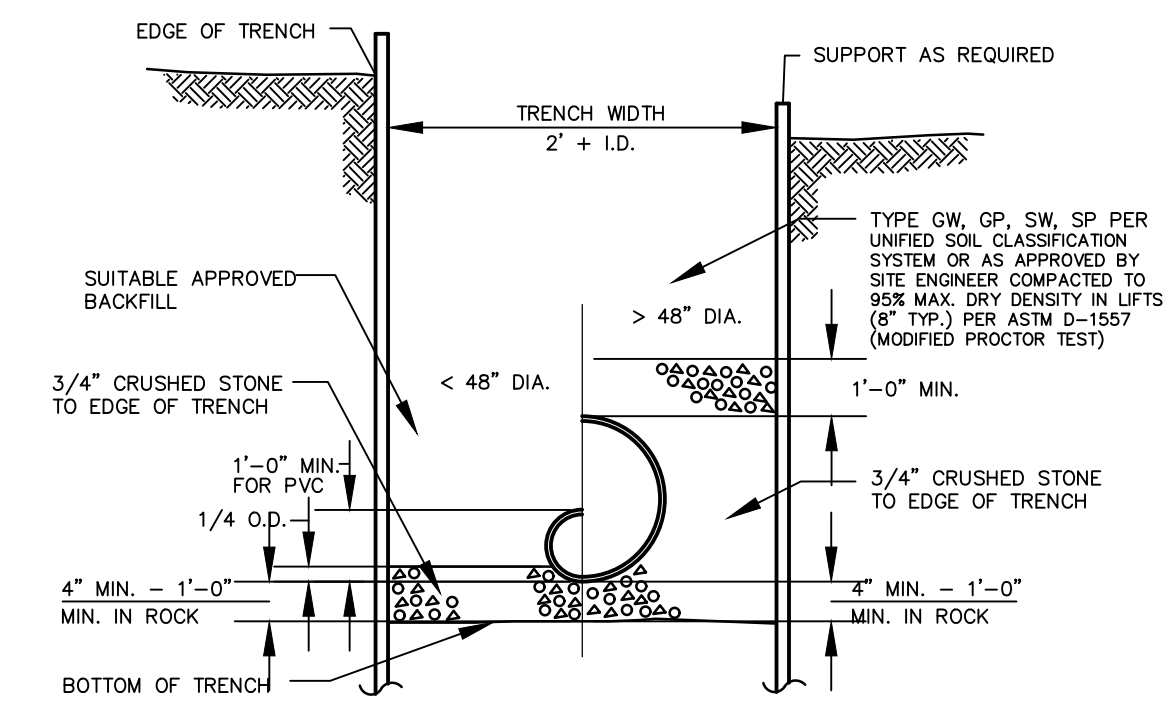
**CLEANOUT IN LANDSCAPED AREA**

N.T.S. BLS-007



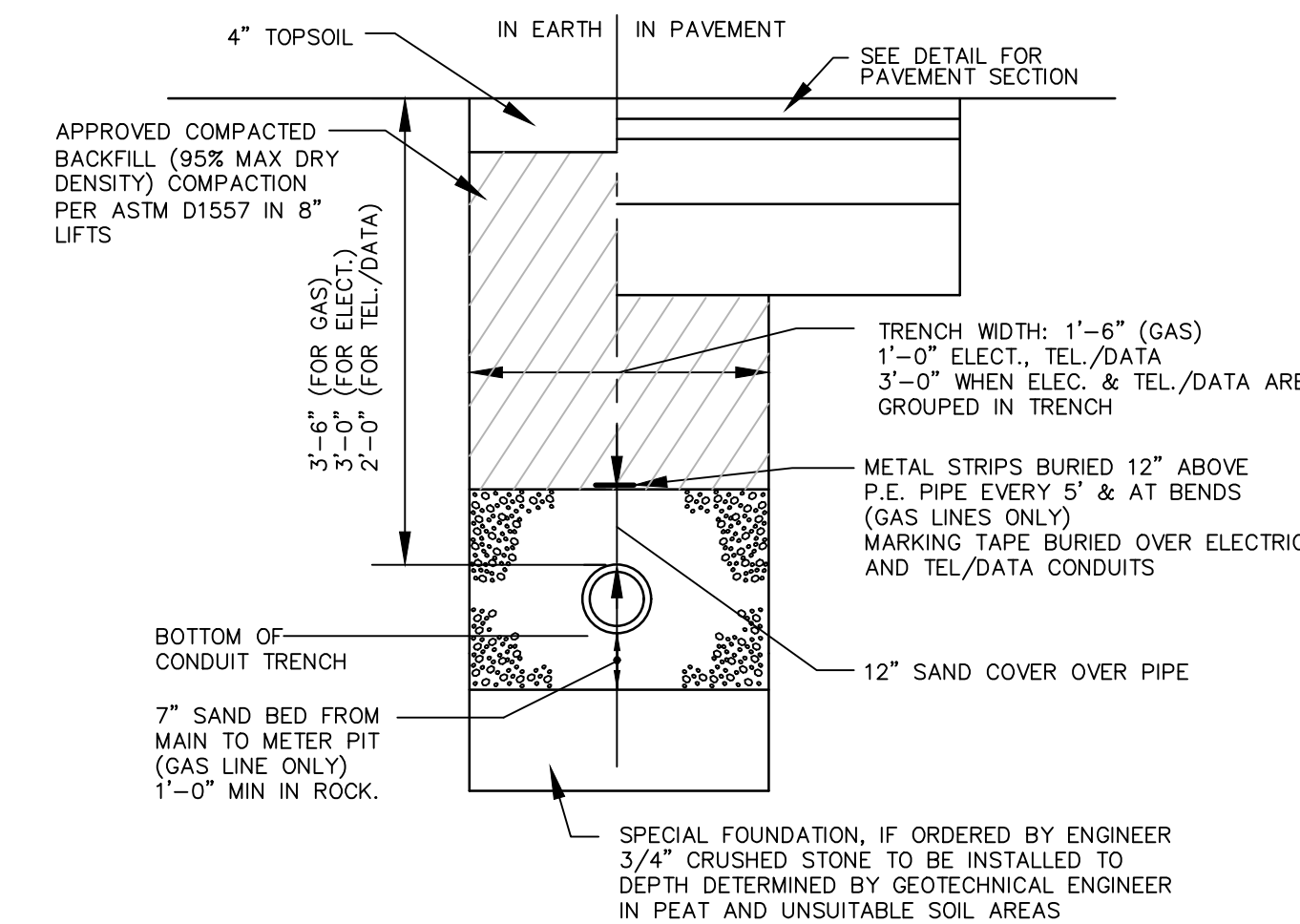
**CLEANOUT IN PAVED AREA**

N.T.S. BLS-008



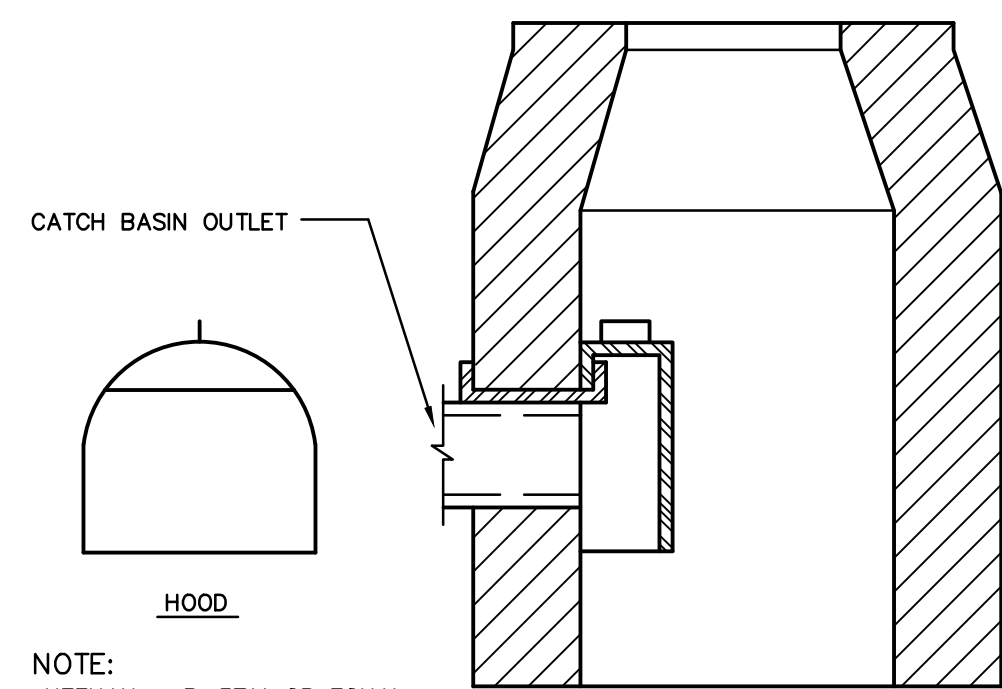
**TYPICAL STORM SEWER TRENCH SECTION**

N.T.S. BLD-004



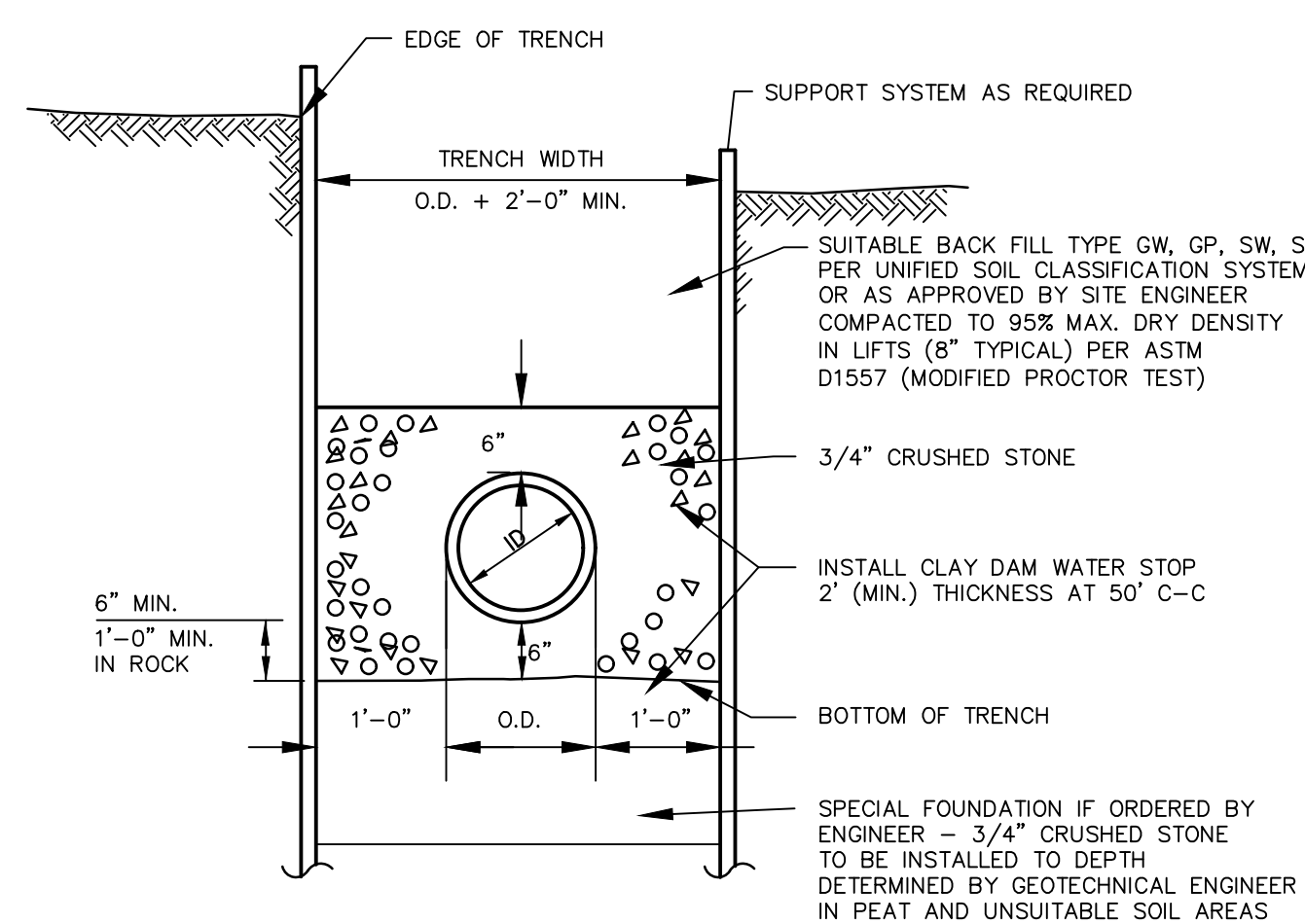
**ELECTRICAL, TELEPHONE AND GAS TRENCH DETAIL**

N.T.S. BLU-001



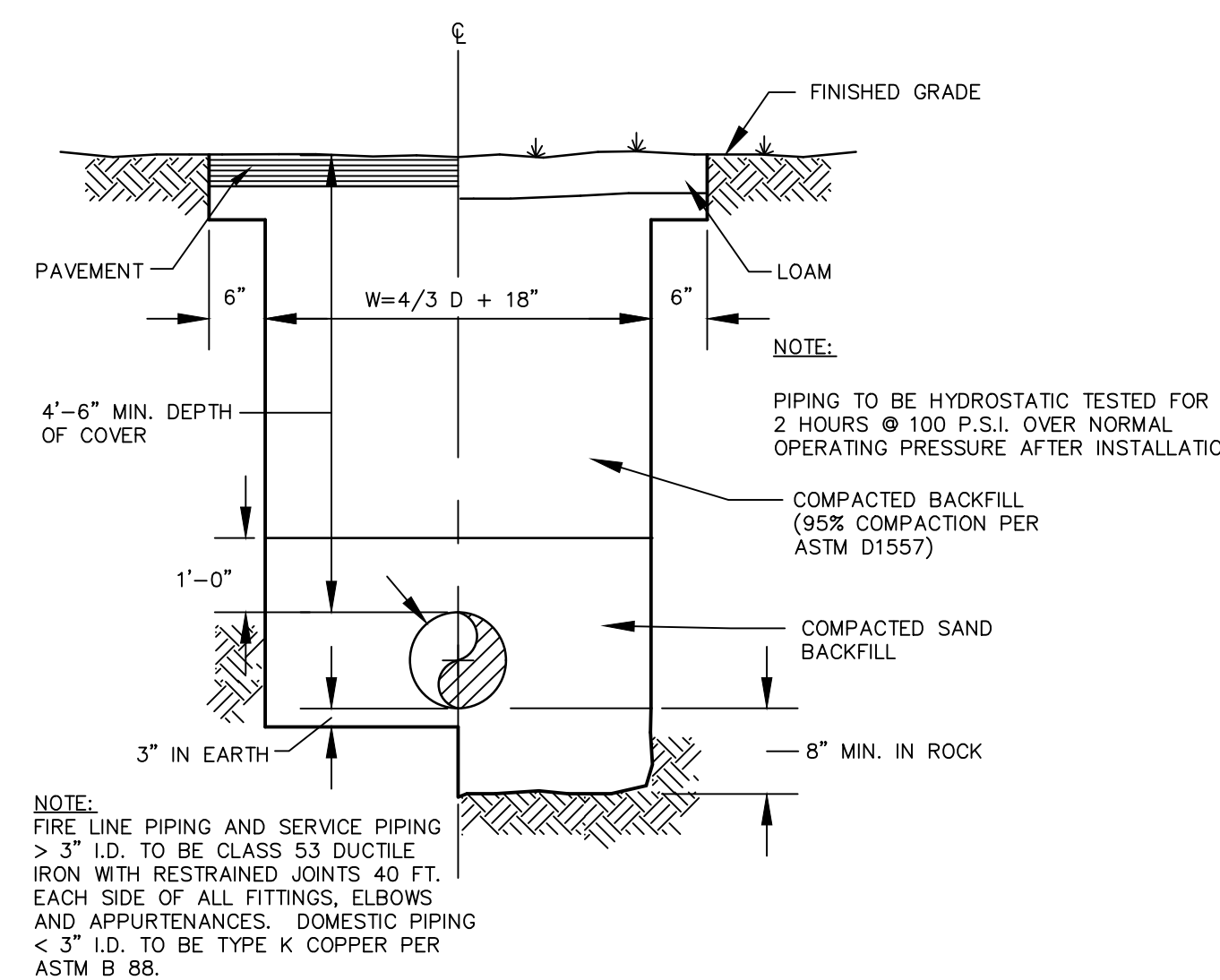
**HOODED OUTLET**

N.T.S.



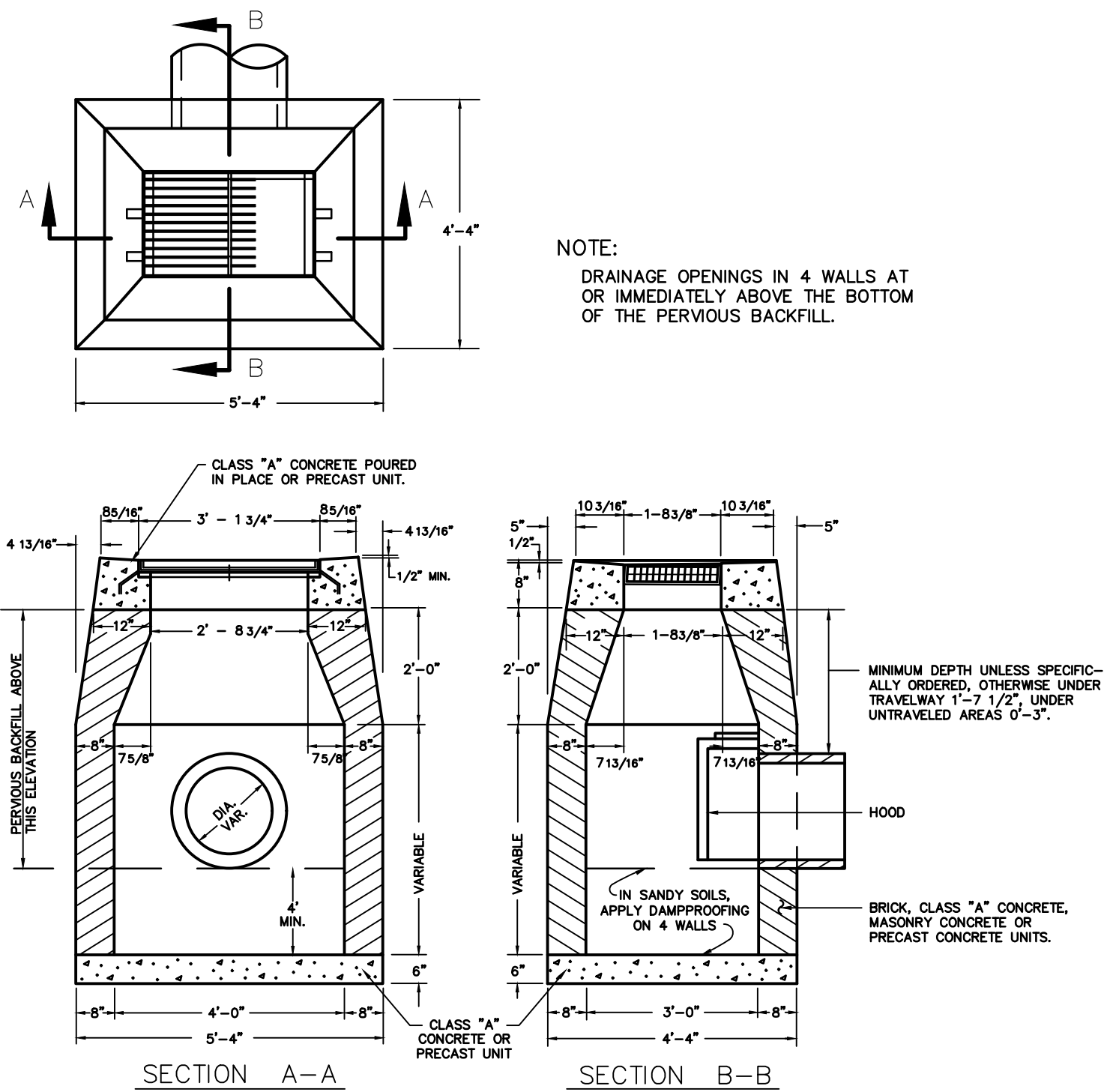
**TYPICAL SANITARY SEWER TRENCH SECTION**

N.T.S. BLS-010



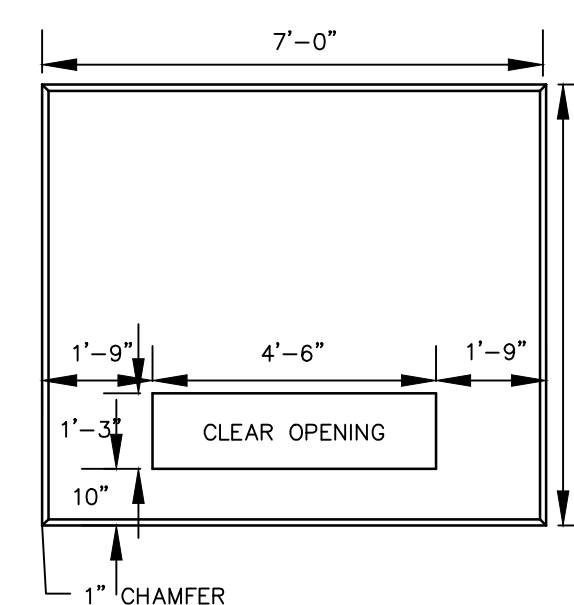
**TYPICAL WATER SERVICE TRENCH DETAIL**

N.T.S. BLW-005



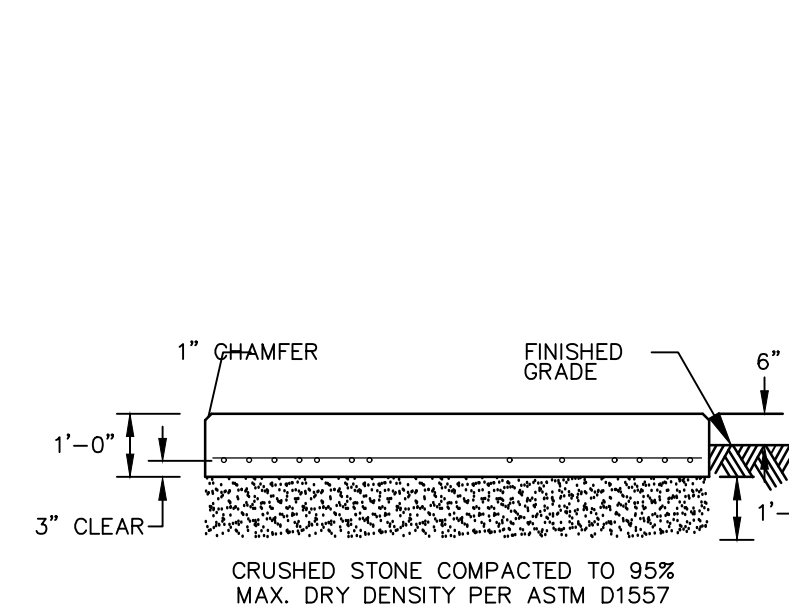
**TYPE "C-L" CATCH BASIN WITH HOOD**

N.T.S.



**PLAN VIEW**

N.T.S.

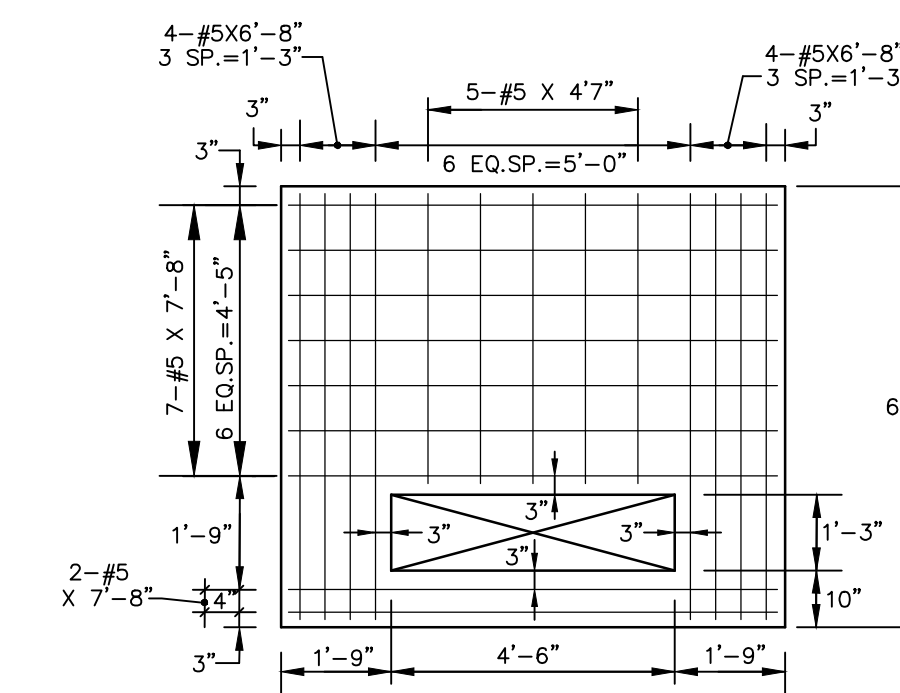


**SECTION**

CONFIRM SIZE WITH ELECTRIC COMPANY PRIOR TO CONSTRUCTION

**TRANSFORMER PAD**

N.T.S.



**PLAN OF REINFORCING**

BLLE-001

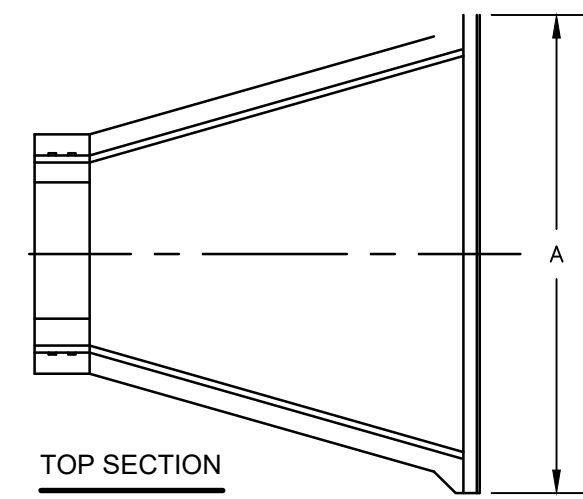
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

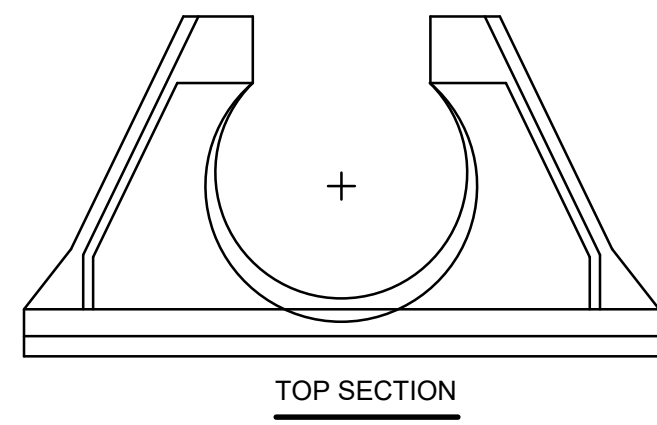
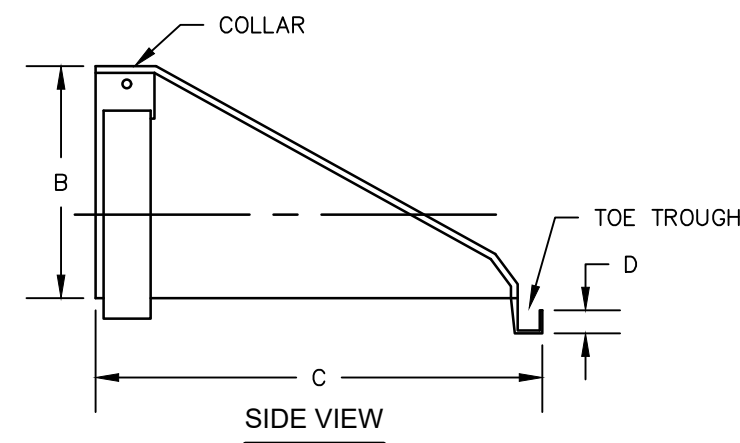
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**

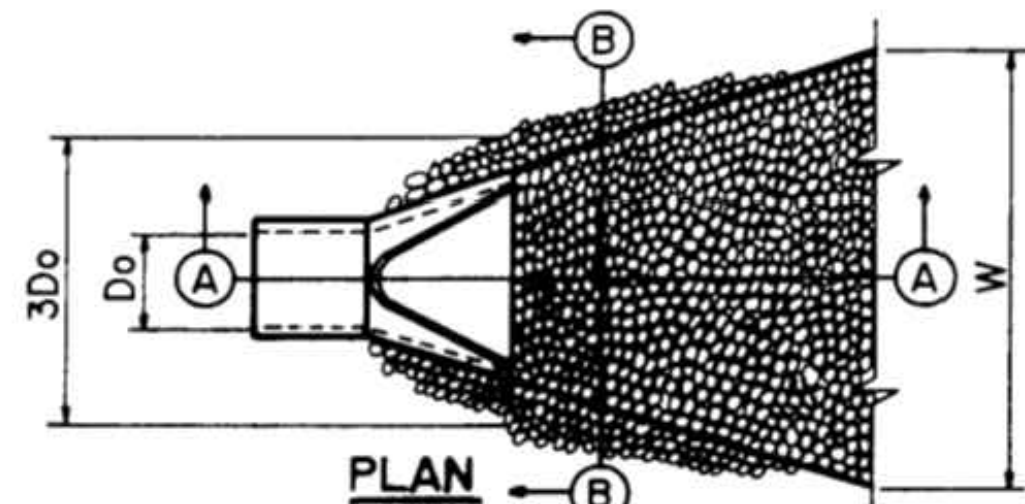


DIMENSION	PIPE DIAMETER					
	10"/12"	15"	18"	24"	30"	36"
A	42"	41"	49"	59.5"	88"	88"
B	14.5"	19"	22"	28"	36"	43"
C	33"	34"	43"	48"	63.5"	66.5"
D	6"	6"	6"	6"	6"	6"

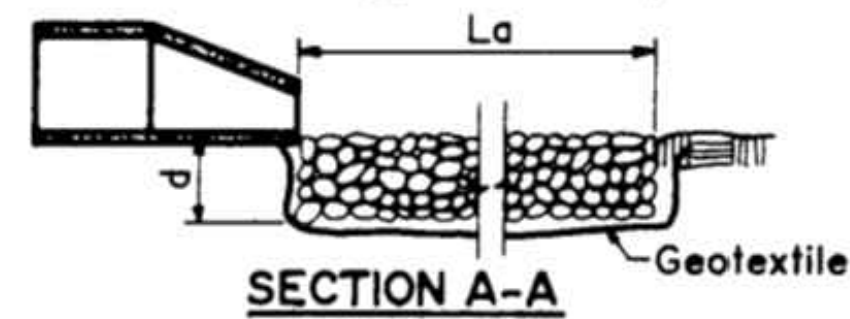


**HDPE FLARED END DETAIL**

N.T.S.



**SECTION B-B**



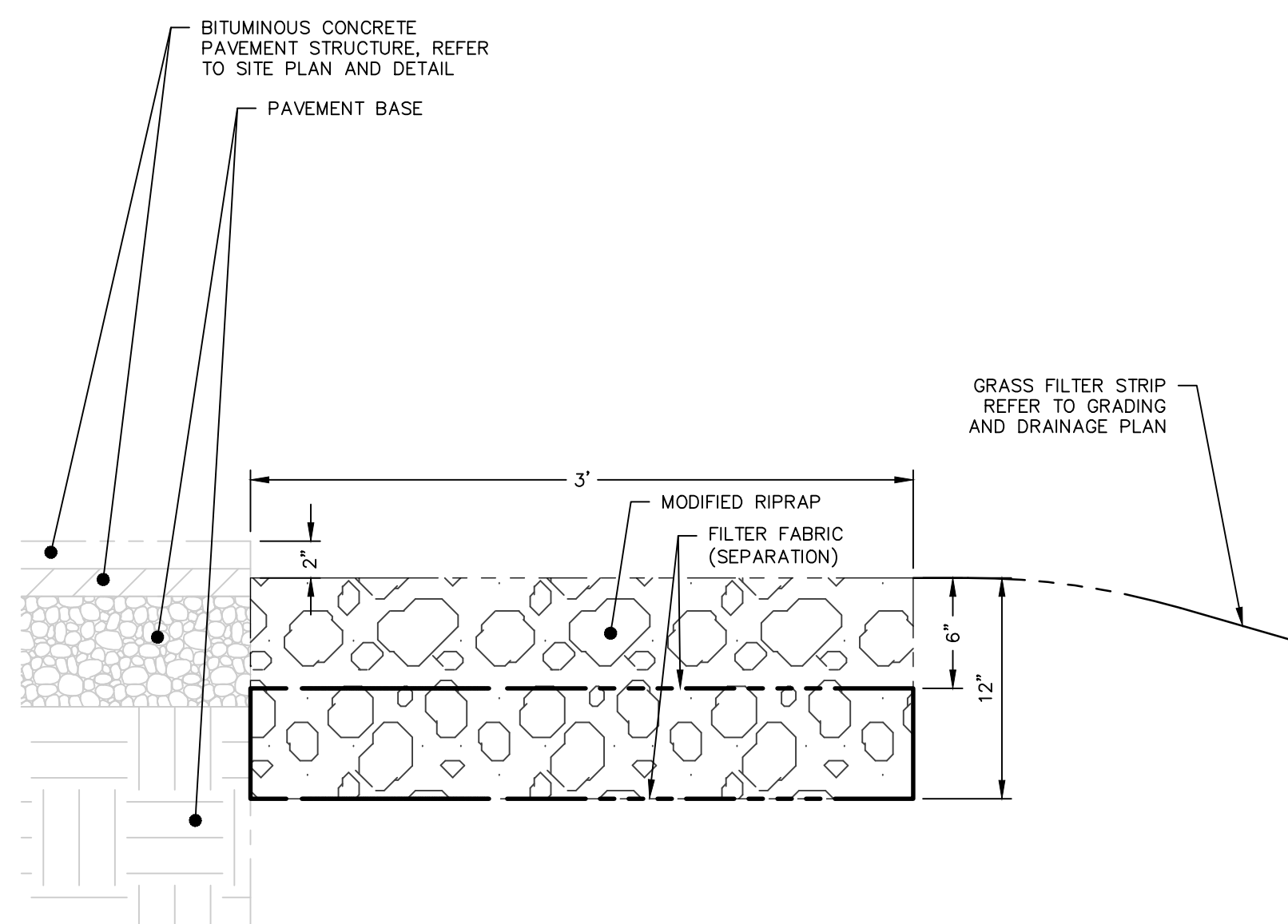
**SECTION A-A**

$d = 1.5$  times the maximum stone diameter but not less than 6 inches.

NOTE: REFER TO GRADING AND DRAINAGE PLAN FOR RIPRAP APRON DIMENSIONS

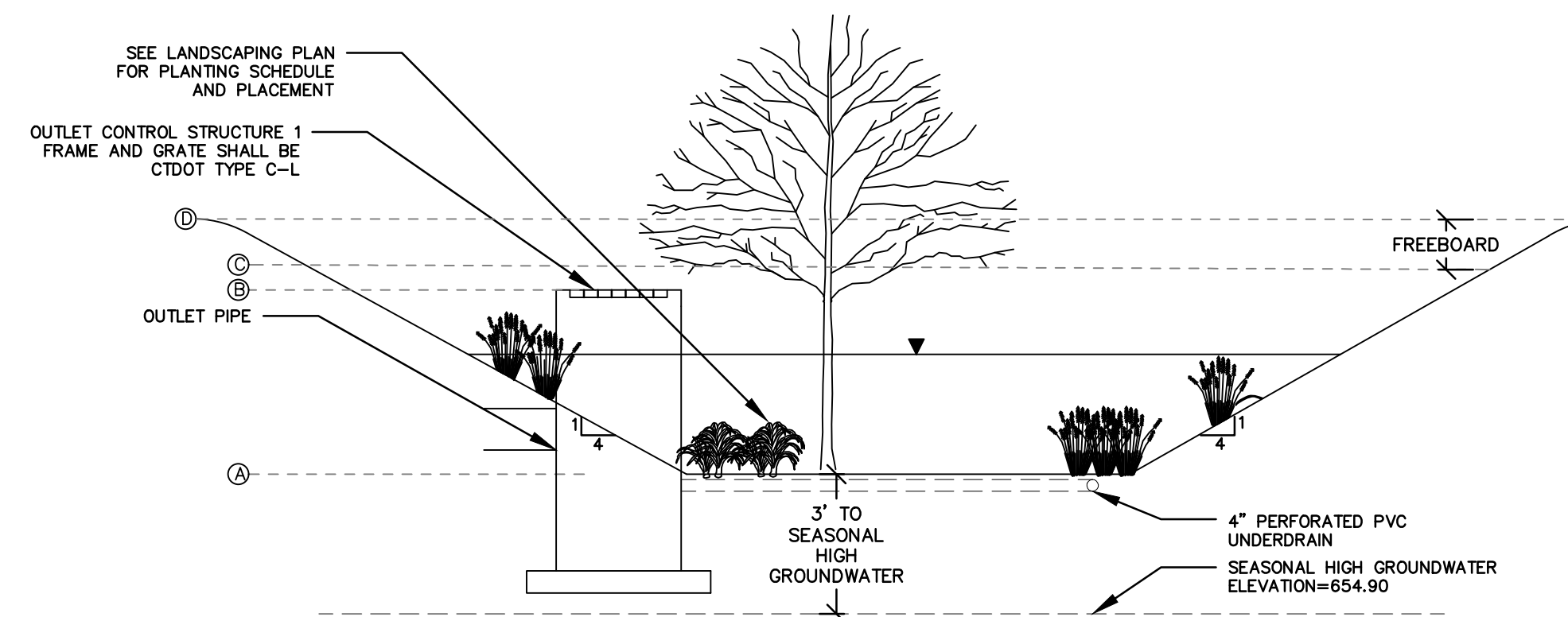
**RIPRAP APRON**

N.T.S.



**ENERGY DISSIPATION TRENCH**

N.T.S.



**TYPICAL INFILTRATION BASIN SECTION**

N.T.S.

	BOTTOM OF BASIN (A)	WATER QUALITY VOLUME REQUIRED	WATER QUALITY VOLUME PROVIDED (B)	100 YEAR STORM EVENT (C)	TOP OF BASIN (D)
INFILTRATION BASIN #1	657.90 FT	4,138 CF (PER CT GENERAL PERMIT)	661.25 FT (11,960 CF)	661.36 FT	662.00 FT

NOTES AND DESIGN REQUIREMENTS

- RECHARGE WILL BE PROVIDED BY INFILTRATION BASIN.
- THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF INFILTRATION BASIN.
- REFER TO LANDSCAPING PLAN FOR PLANT AND SEED SCHEDULE FOR INFILTRATION BASIN.

**TYPICAL INFILTRATION BASIN DETAIL**

N.T.S.

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

\_\_\_\_\_  
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

REVISIONS

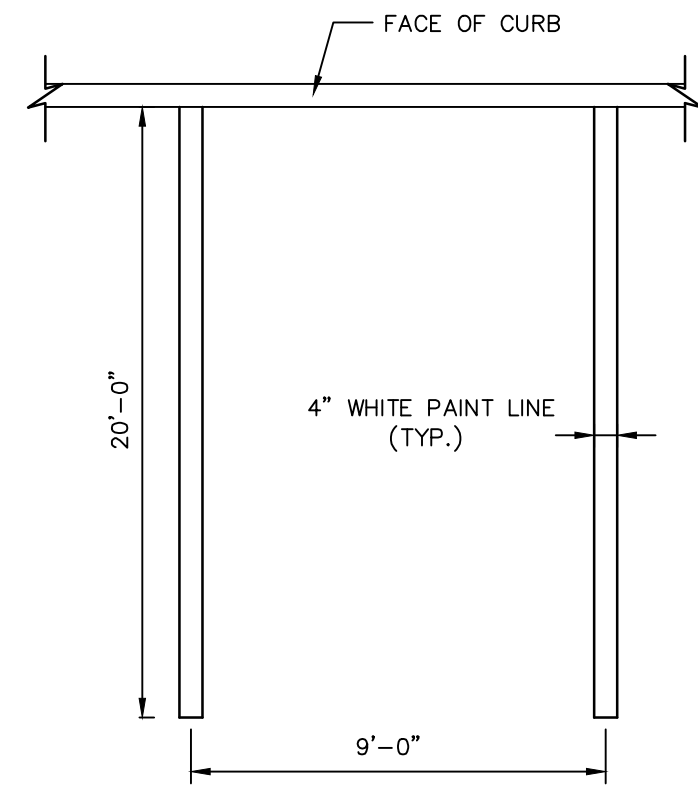
No.	Date	Desc.
1	03/20/2021	REVISED PER TOWN COMMENTS
2	03/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	NONE
Project No.	2002032
Date	04/02/2021
CAD File:	DN200203201

Title  
**DETAILS SHEET**

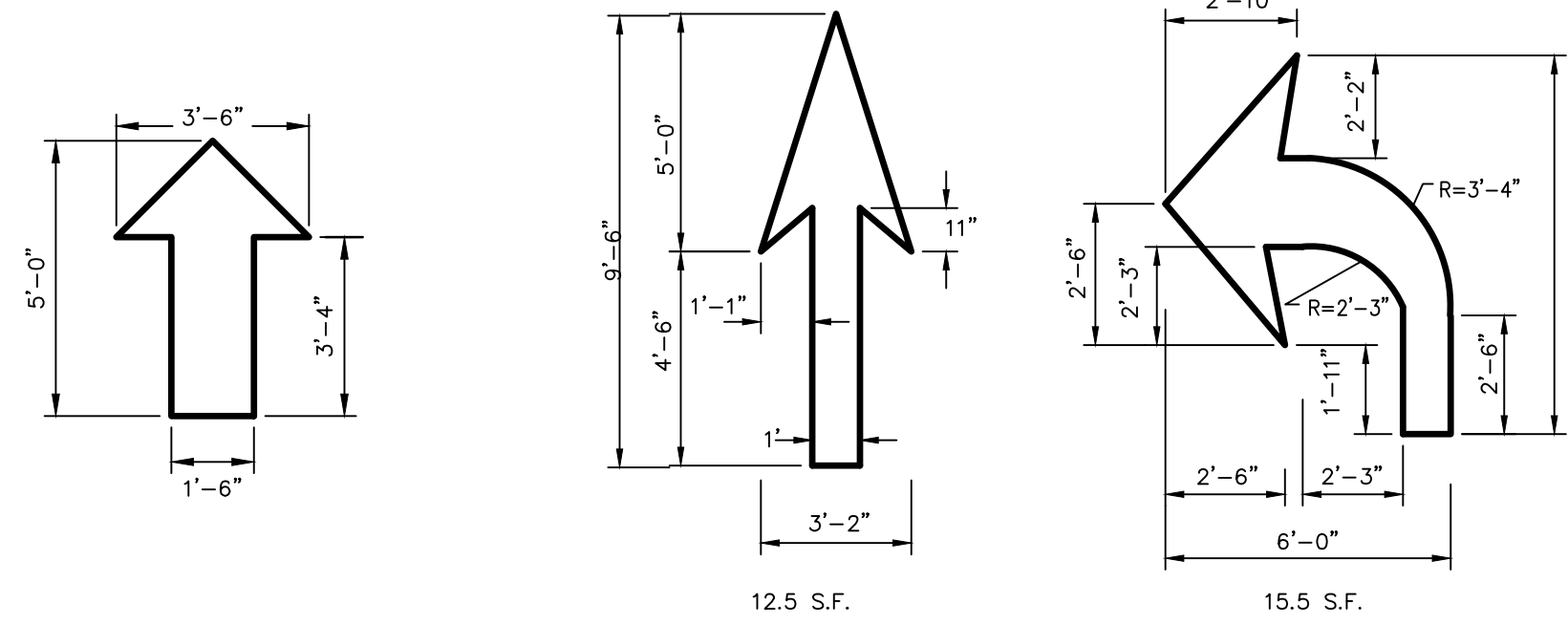
Sheet No.

**DN-3**



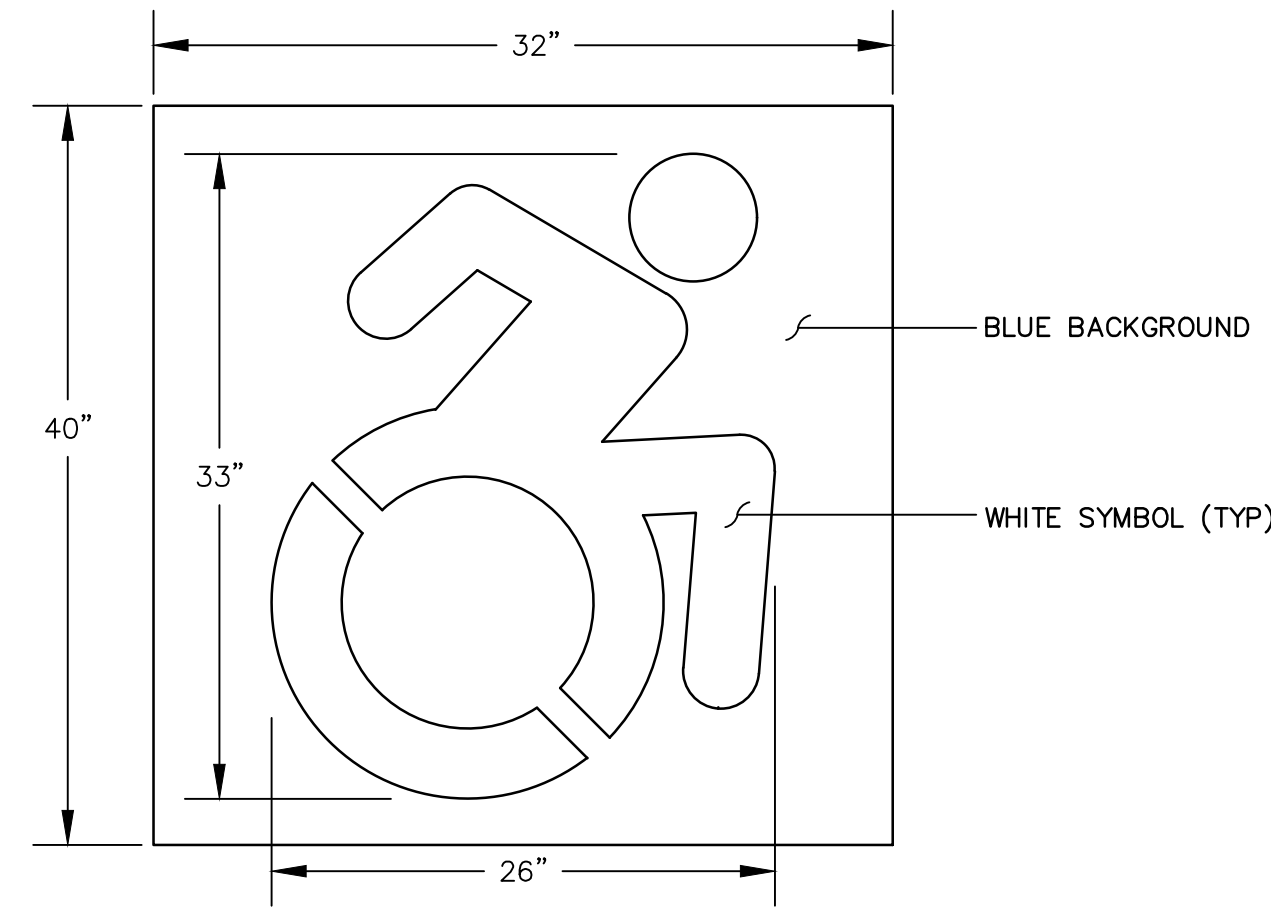
NOTE:  
1. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.  
2. SEE PLAN FOR ACTUAL SPACE LOCATION AND DIMENSIONS.

**TYPICAL PARKING SPACE DETAIL**  
N.T.S. BLPC-003



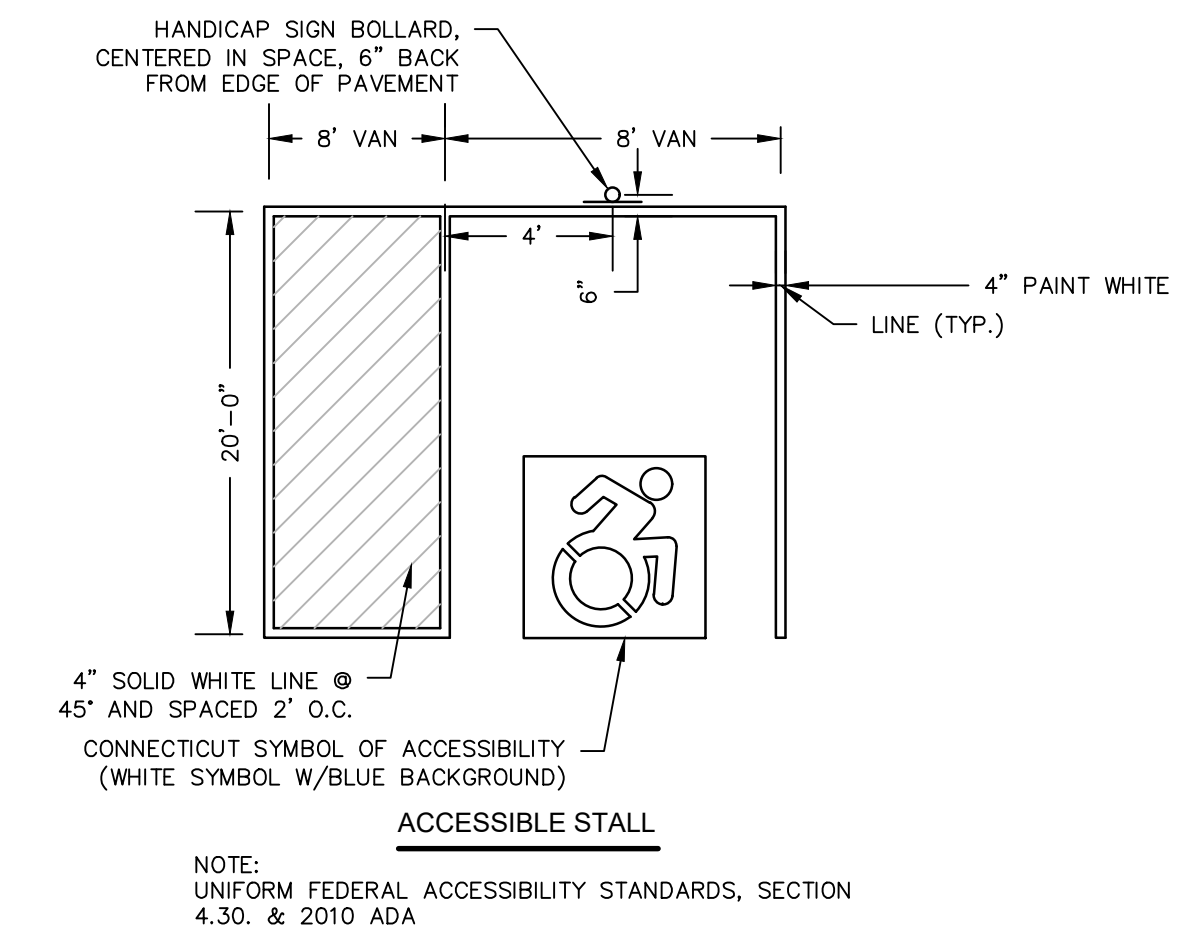
NOTES:  
1. WHITE (ARROWS TO BE CENTERED IN TRAVEL LANE)

**PAINTED TRAFFIC ARROW DETAILS**  
N.T.S. BLPC-006



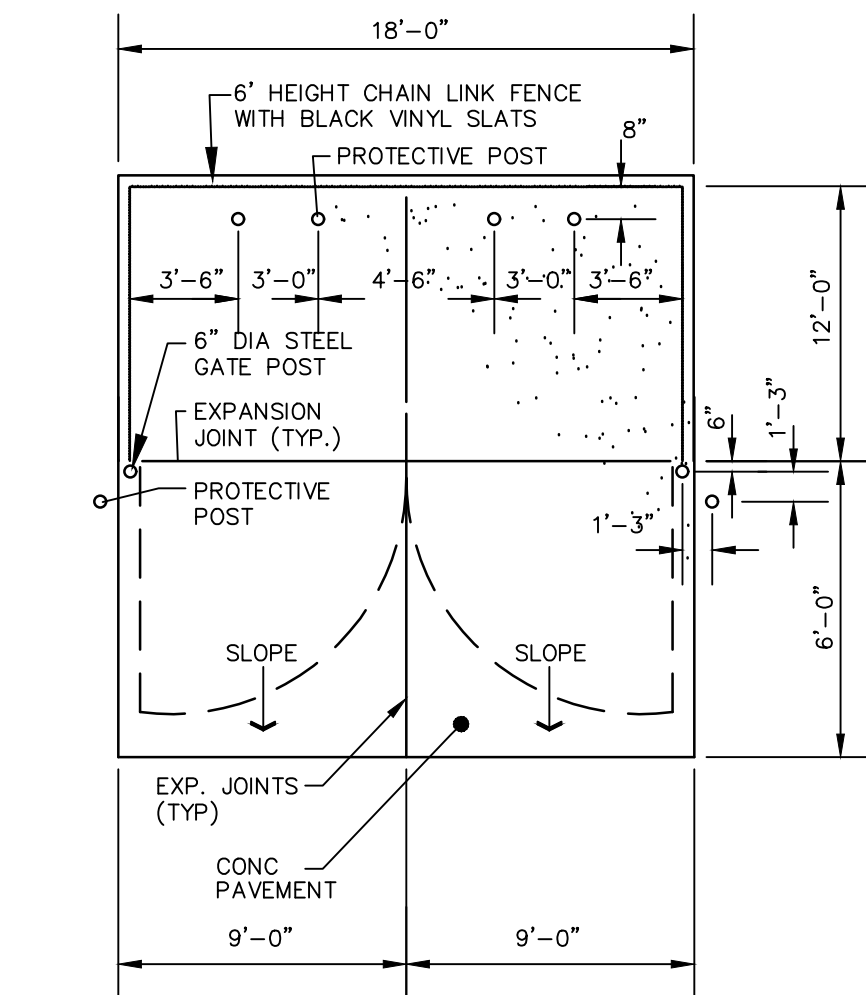
NOTE: HANDICAP SYMBOL TO ADHERE TO STATE BUILDING CODE, LATEST EDITION

**CONNECTICUT SYMBOL OF ACCESSIBILITY**  
N.T.S.

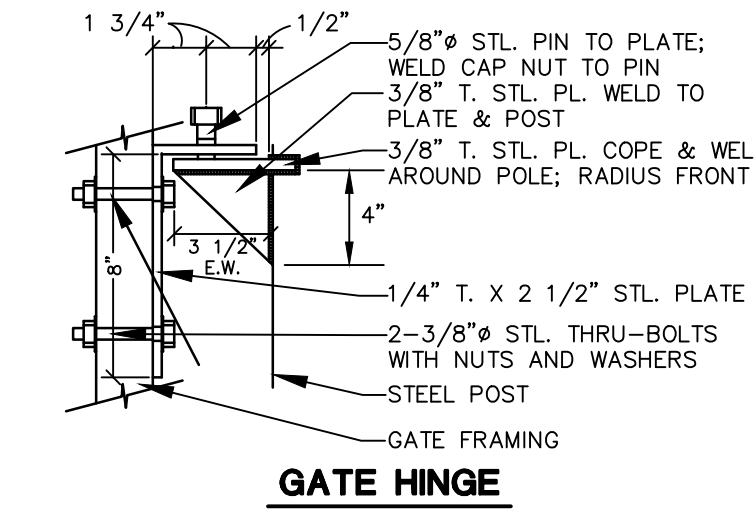


NOTE: UNIFORM FEDERAL ACCESSIBILITY STANDARDS, SECTION 4.30. & 2010 ADA

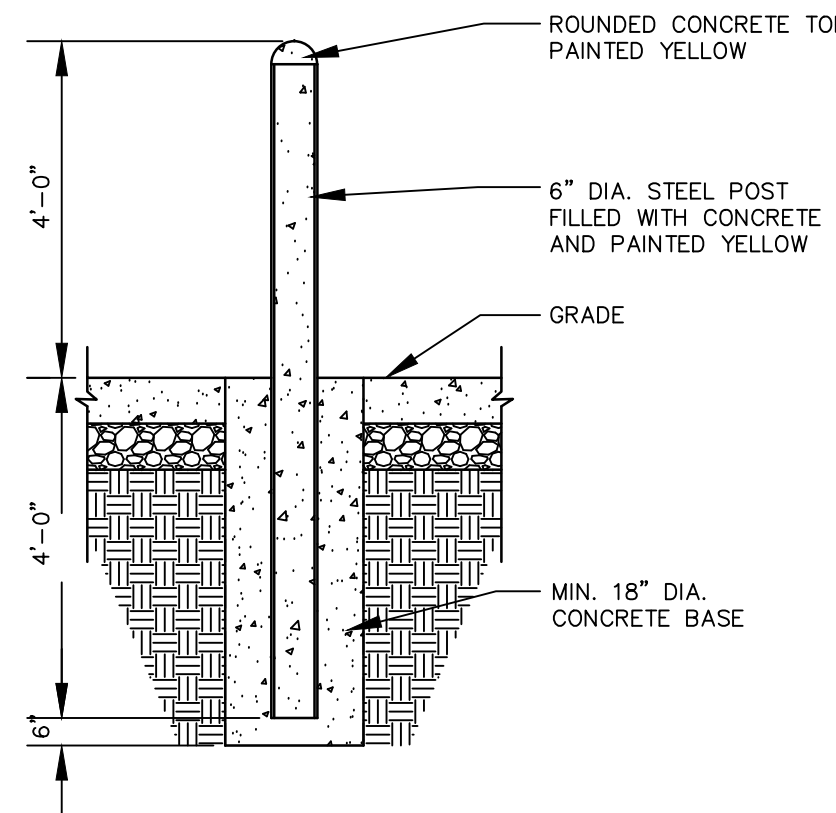
**TYPICAL HANDICAP PARKING STALL LAYOUT**  
N.T.S.



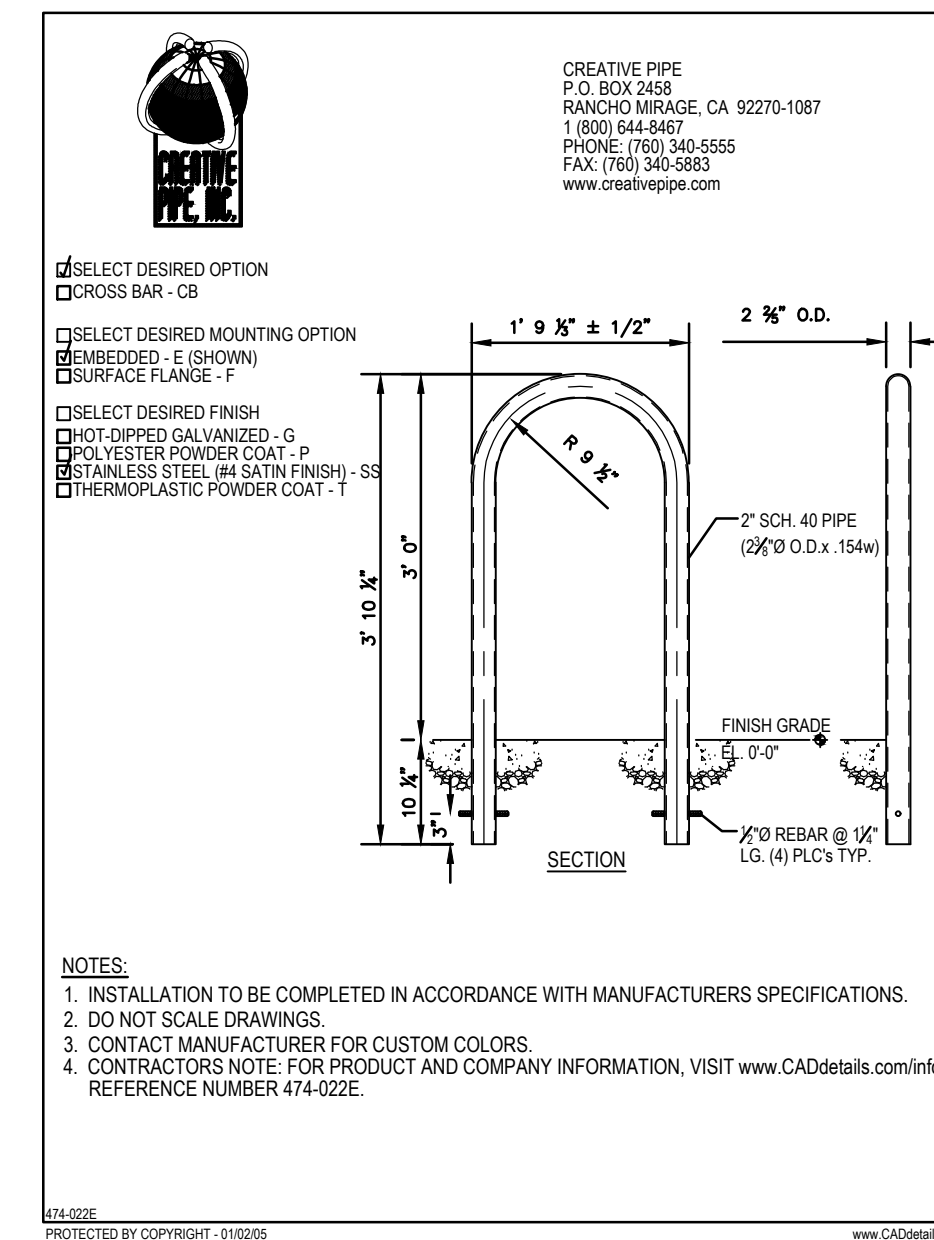
**TRASH ENCLOSURE PLAN**  
N.T.S. BLSE-004



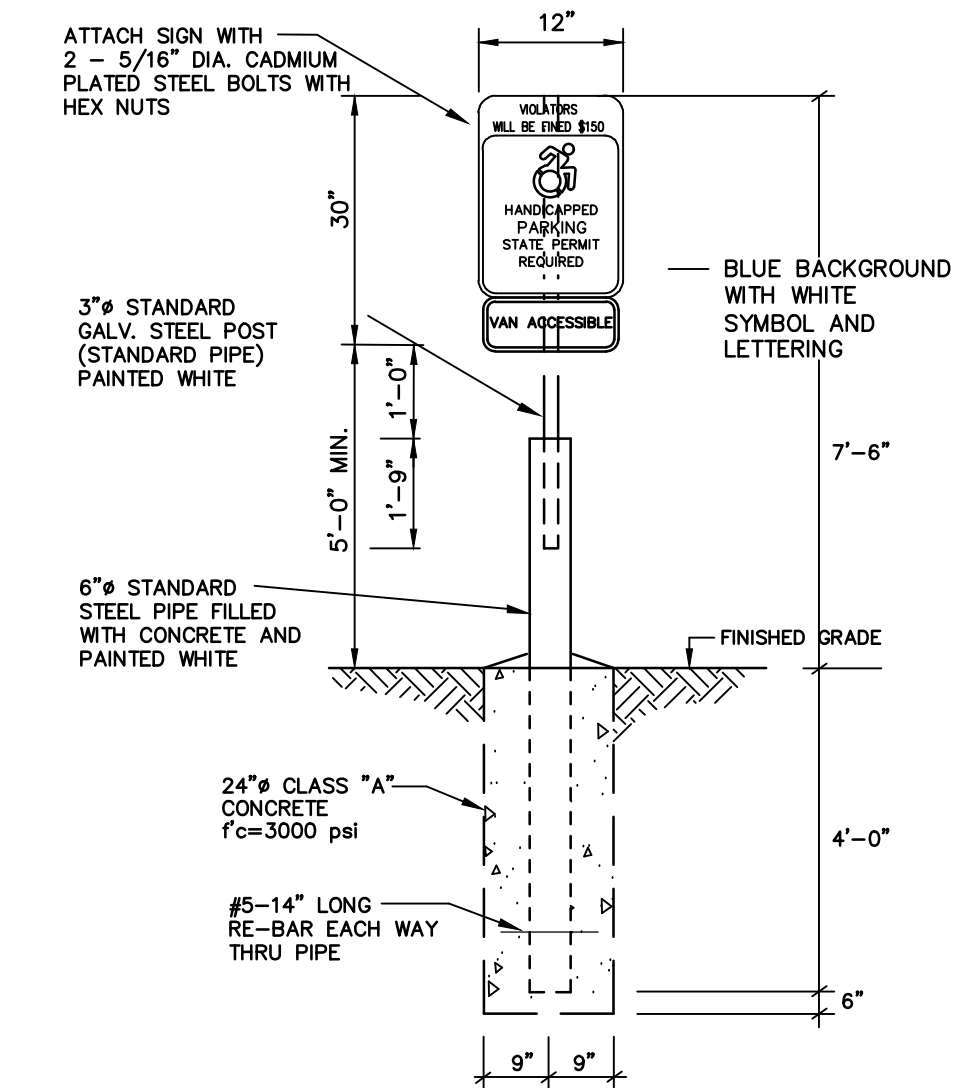
**TRASH ENCLOSURE GATE (HALF SECTION)**  
N.T.S. BLSE-001



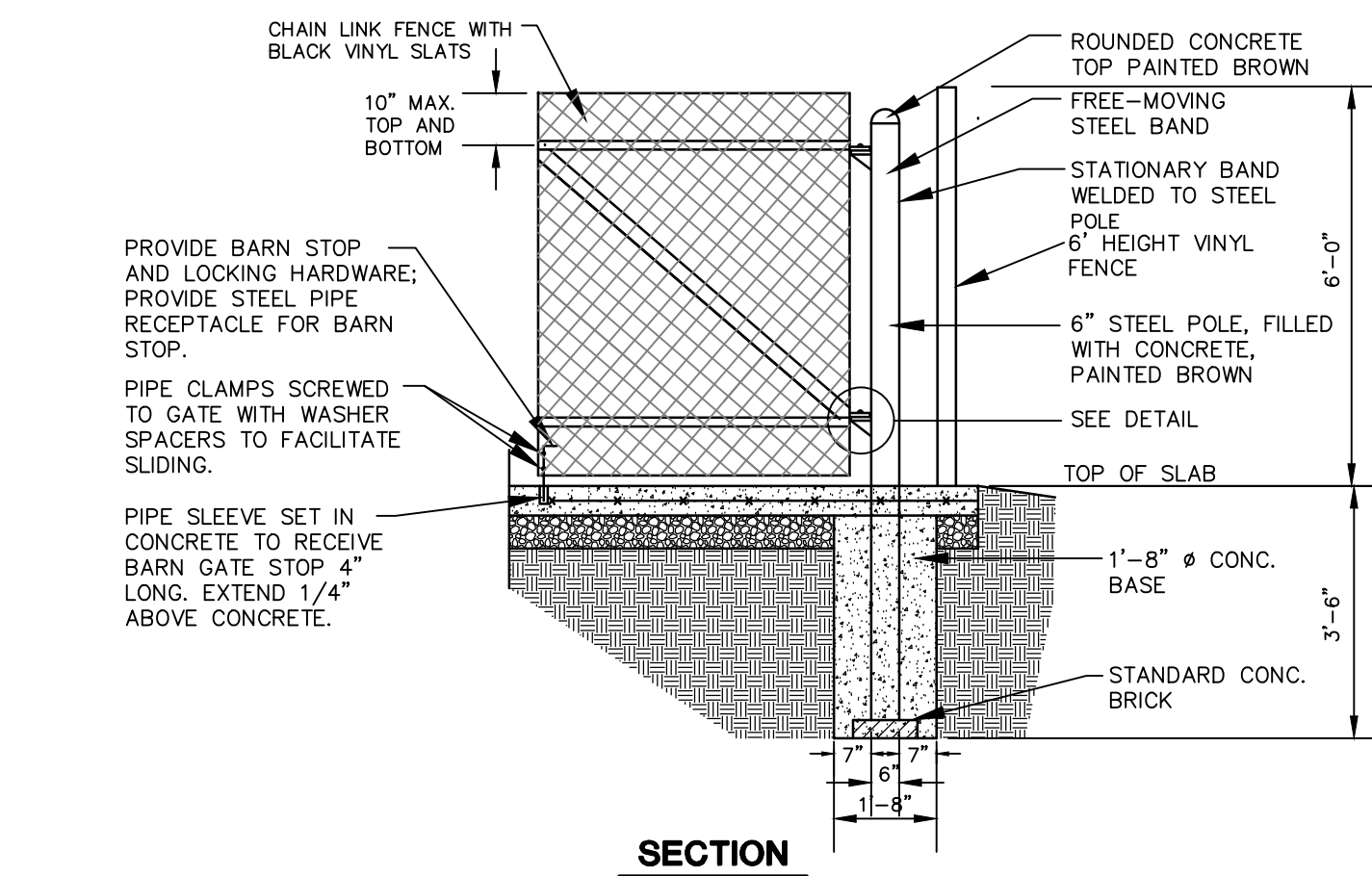
**6" CONCRETE FILLED STEEL BOLLARD**  
N.T.S. BLSE-005



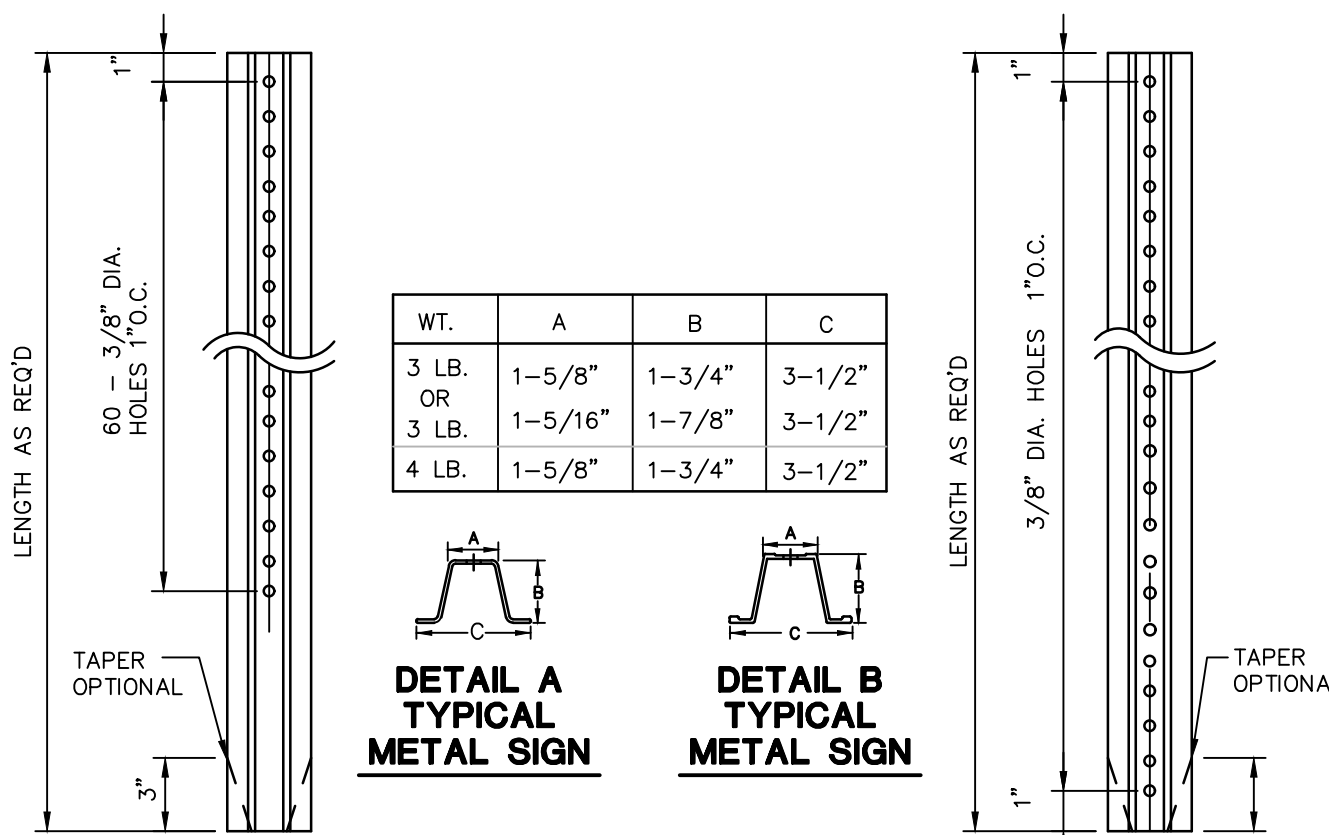
**INVERTED 'U' BICYCLE RACK**  
N.T.S.



**HANDICAP SIGN BOLLARD DETAIL**  
N.T.S.

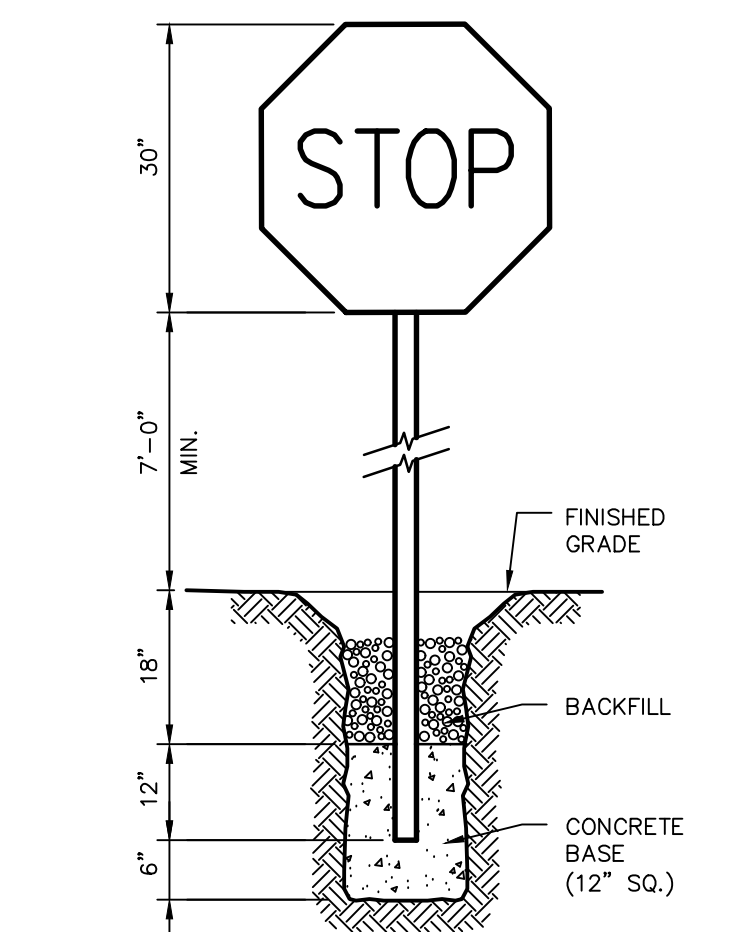


**TRASH ENCLOSURE CHAIN LINK FENCE GATE**  
N.T.S. BLFD-001

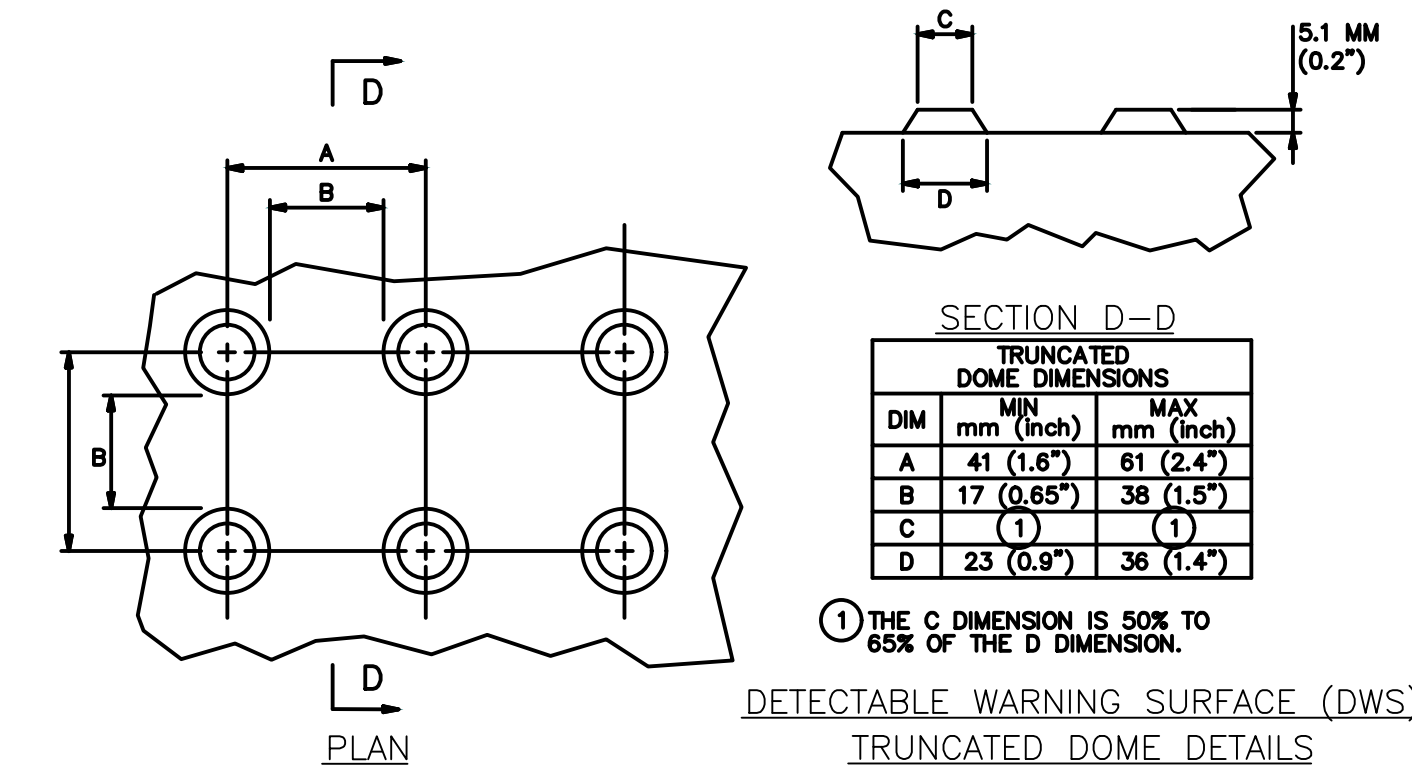


**TYPICAL METAL SIGN POSTS**  
N.T.S. BLSO-001

WT.	A	B	C
3 LB. OR 3 LB.	1-5/8"	1-3/4"	3-1/2"
4 LB.	1-5/8"	1-3/4"	3-1/2"



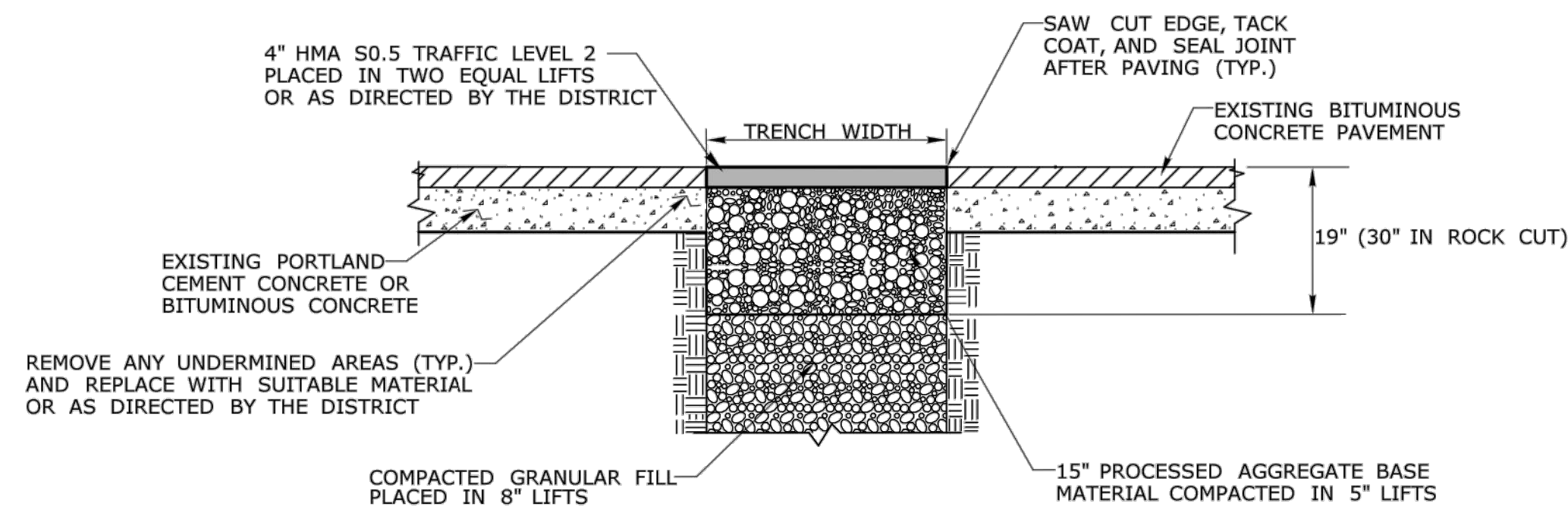
**STOP SIGN**  
N.T.S. BLSO-002



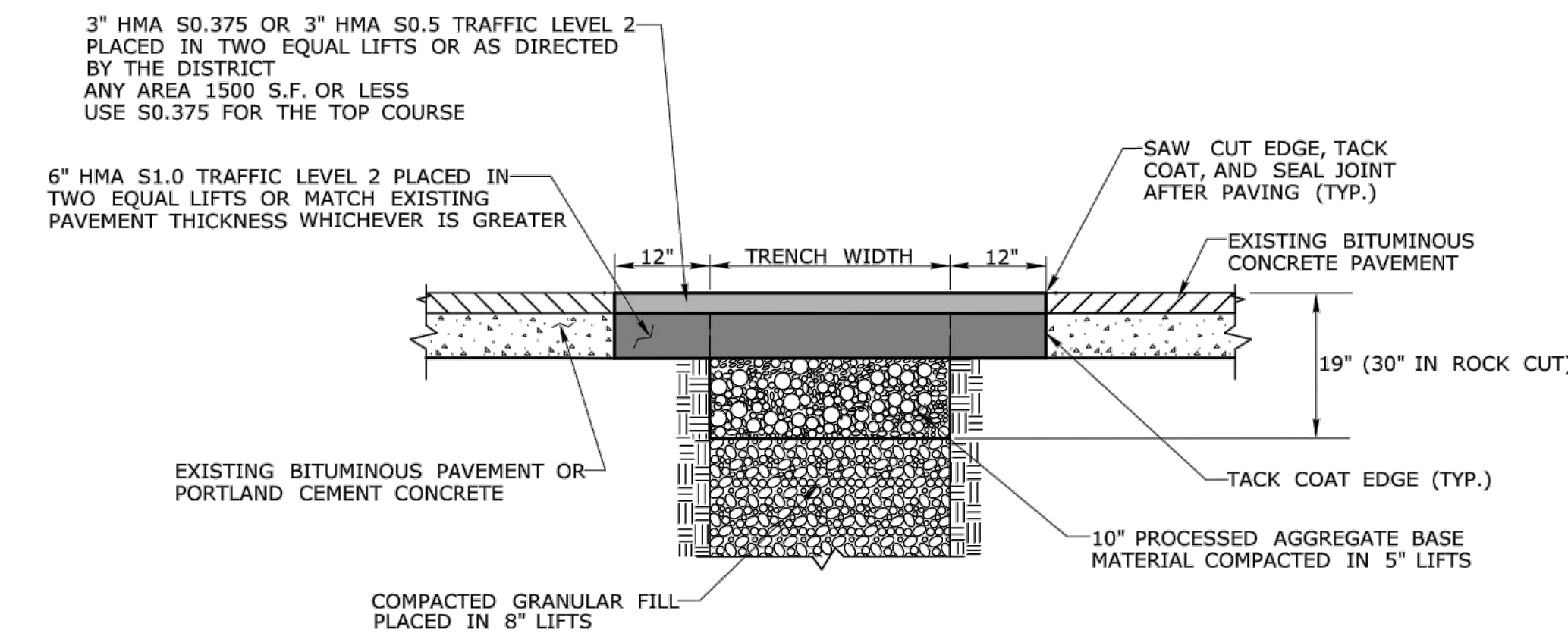
**DETECTABLE TRUNCATED DOME DETECTABLE WARNING SURFACE (DWS) AND X-SECT.**  
N.T.S.

**FOR PERMITTING PURPOSES ONLY  
NOT RELEASED FOR CONSTRUCTION**

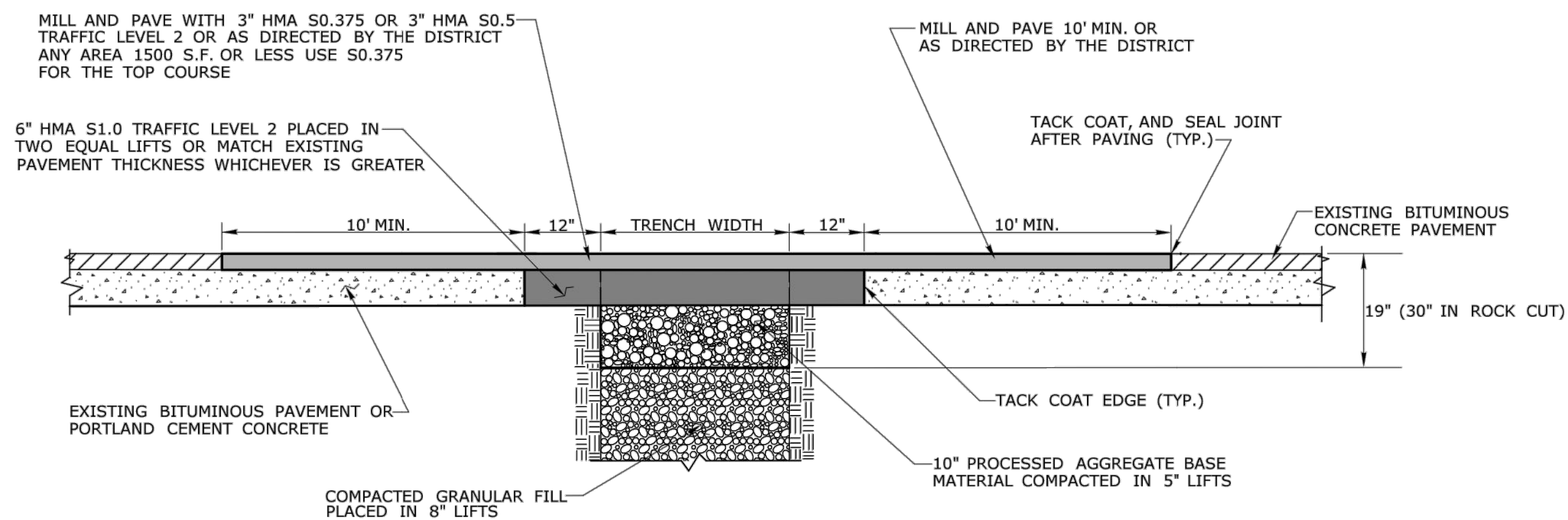




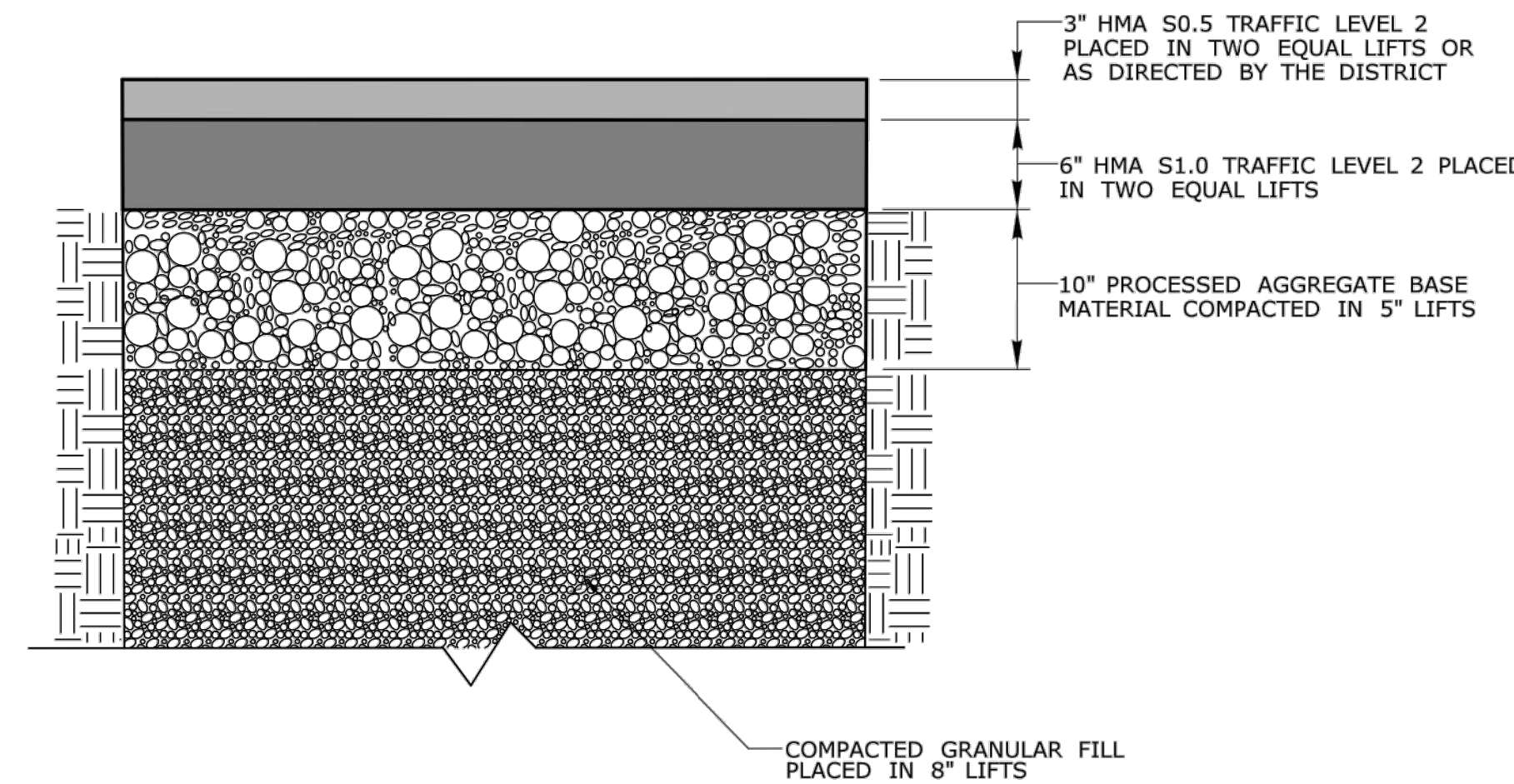
**TEMPORARY PAVEMENT REPAIR FOR TRENCH THROUGH OVERLAID PORTLAND CEMENT CONCRETE OR BITUMINOUS CONCRETE PAVEMENT**



**PERMANENT PAVEMENT REPAIR WITHOUT MILLING - THROUGH PORTLAND CEMENT CONCRETE OR BITUMINOUS CONCRETE PAVEMENT**



**PERMANENT PAVEMENT REPAIR WITH MILLING**



**ROADWAY PROFILE**

**GENERAL NOTES:**

**1. LONGITUDINAL TRENCHING FOR JOINTED CONCRETE PAVEMENT:**

A. IF THE LONGITUDINAL TRENCH FALLS BETWEEN THE SLAB CENTERLINE AND THE EDGE OF SLAB, REMOVE CONCRETE AND BITUMINOUS CONCRETE PAVEMENT FROM THE TRENCH EDGE TO THE EDGE OF ROAD. IF THE LONGITUDINAL TRENCH FALLS BETWEEN THE LONGITUDINAL JOINT AND THE SLAB CENTERLINE, REMOVE THE ENTIRE CONCRETE SLAB AND BITUMINOUS CONCRETE PAVEMENT TO THE EDGE OF ROAD. IN EITHER CASE REBUILD WITH THE FOLLOWING:

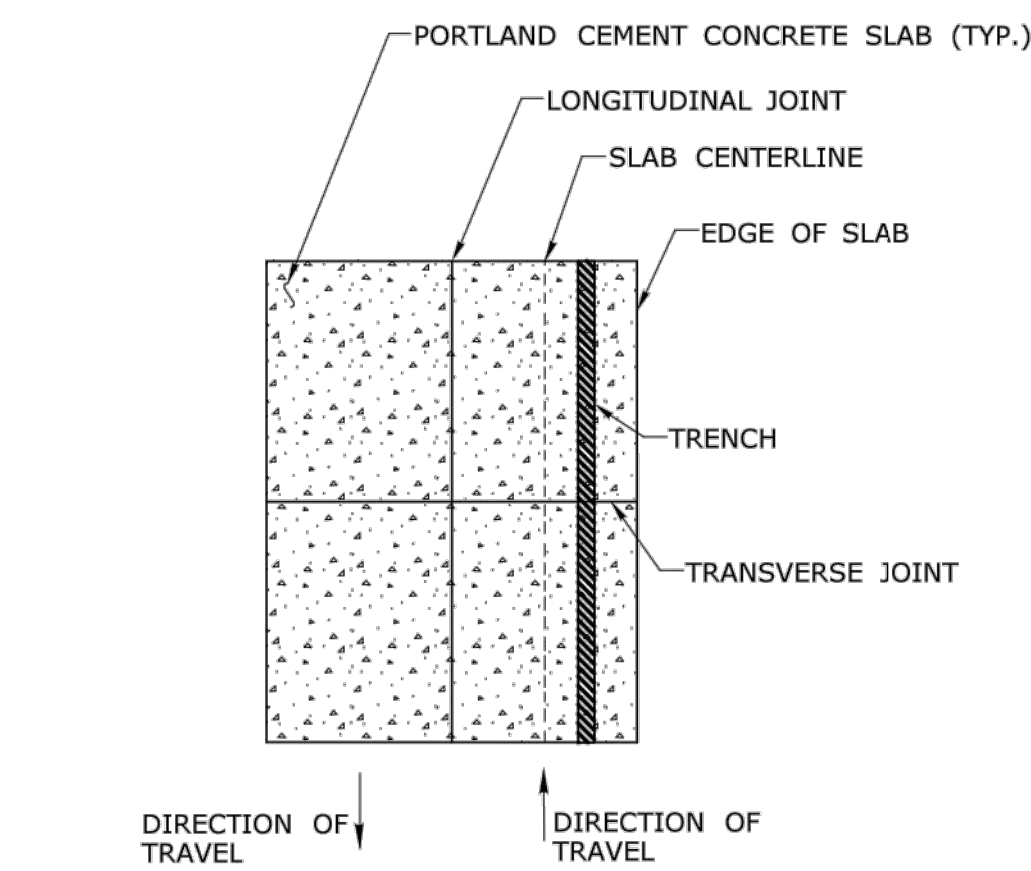
- a. PLACE HMA S1.0 TRAFFIC LEVEL 2 IN TWO EQUAL 4" - 5" LIFTS TO MATCH EXISTING CONCRETE PAVEMENT THICKNESS
- b. PLACE HMA S0.5 TRAFFIC LEVEL 2 IN 2" - 3" LIFTS TO MATCH EXISTING BITUMINOUS CONCRETE PAVEMENT THICKNESS, WITH THE FINAL LIFT BEING 2"

**2. TRANSVERSE TRENCHING FOR JOINTED CONCRETE PAVEMENT:**

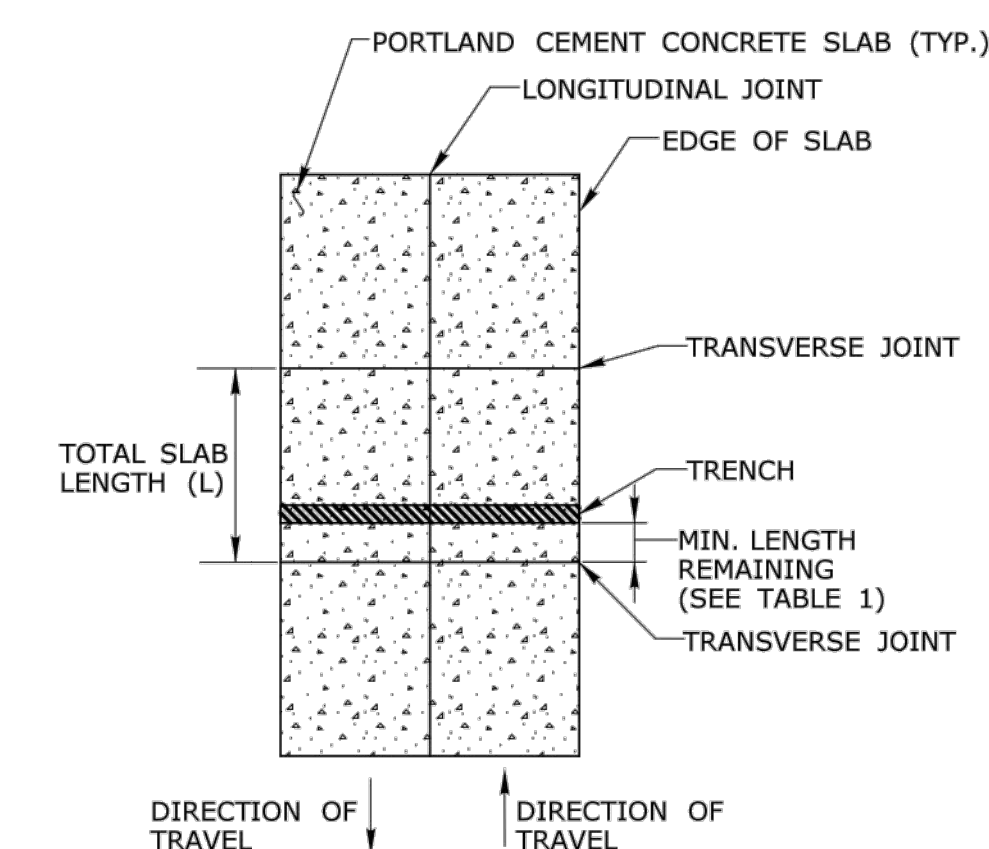
TABLE 1	
TOTAL SLAB LENGTH (L)	MIN. LENGTH REMAINING
40' OR LONGER	1/4 L
15' - 40'	10'
15' OR SHORTER	REBUILD TO NEAREST JOINT

A. FOR TRANSVERSE TRENCHES, THE MINIMUM SLAB LENGTH AS SHOWN IN TABLE 1 SHALL BE LEFT IN PLACE TO THE NEAREST TRANSVERSE JOINT. IF THIS CRITERIA CANNOT BE MET, THE EXISTING SLAB AREA FROM THE TRENCH EDGE TO THE NEAREST TRANSVERSE JOINT SHALL BE REMOVED AND REBUILT AS FOLLOWS:

- a. PLACE HMA S1.0 TRAFFIC LEVEL 2 IN TWO EQUAL 4" - 5" LIFTS TO MATCH EXISTING CONCRETE PAVEMENT THICKNESS
- b. PLACE HMA S0.5 TRAFFIC LEVEL 2 IN 2" - 3" LIFTS TO MATCH EXISTING BITUMINOUS CONCRETE PAVEMENT THICKNESS, WITH THE FINAL LIFT BEING 2"



**LONGITUDINAL TRENCHING FOR JOINTED CONCRETE PAVEMENT (SEE NOTE 1)**



**TRANSVERSE TRENCHING FOR JOINTED CONCRETE PAVEMENT (SEE NOTE 2)**

DRAFTER: **MS**  
 CHECKED BY: **EL**  
 NO SCALE

**HIGHWAY OPERATIONS**

**OFFICE OF MAINTENANCE OPERATIONS  
 SPECIAL SERVICES AND PLANNING**



**STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION**



DRAWING TITLE:

**ENCROACHMENT PERMIT - PAVEMENT REPAIR**

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**  
 DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_  
 \_\_\_\_\_ CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
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REVISIONS

No.	Date	Description
1	03/20/2021	REVISED PER TOWN COMMENTS
2	03/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	NONE
Project No.	2002032
Date	04/02/2021
CAD File:	DN200203201

Title  
**DETAILS SHEET**

Sheet No.



**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Desc. REVISED PER TOWN COMMENTS  
REVISED PER TOWN COMMENTS

REVISIONS  
Date 05/20/2021  
No. 2

Designed S.E.L.  
Drawn S.E.L.  
Reviewed  
Scale NONE  
Project No. 2002032  
Date 04/02/2021

CAD File: DN200203201

Title

**DETAILS SHEET**

Sheet No.

**DN-7**

R1 - SERIES					R2 - SERIES					R3 - SERIES										R4 - SERIES					R5 - SERIES																																																																																																																																																																																			
<b>R1-1</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>1.85</td><td>18</td><td>31-0532</td><td>1</td><td>.080</td></tr> <tr><td>5.19</td><td>30</td><td>31-0552</td><td>1</td><td>.080</td></tr> <tr><td>7.98</td><td>36</td><td>31-0553</td><td>1</td><td>.080</td></tr> <tr><td>13.3</td><td>48</td><td>31-0557</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	1.85	18	31-0532	1	.080	5.19	30	31-0552	1	.080	7.98	36	31-0553	1	.080	13.3	48	31-0557	2	.100	<b>R2-1</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>5.00</td><td>24X30</td><td>31-5505</td><td>1</td><td>.080</td></tr> <tr><td>7.50</td><td>30X36</td><td>31-5504</td><td>1</td><td>.080</td></tr> <tr><td>12.00</td><td>36X48</td><td>31-5506</td><td>2</td><td>.100</td></tr> <tr><td>26.00</td><td>48X60</td><td>31-5507</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	5.00	24X30	31-5505	1	.080	7.50	30X36	31-5504	1	.080	12.00	36X48	31-5506	2	.100	26.00	48X60	31-5507	2	.100	<b>R3-1</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>4.00</td><td>24X24</td><td>31-1604</td><td>1</td><td>.080</td></tr> <tr><td>9.00</td><td>36X36</td><td>31-1627</td><td>2</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	4.00	24X24	31-1604	1	.080	9.00	36X36	31-1627	2	.080	<b>R3-5</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>30X36</td><td></td><td>1</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	30X36		1	.080	<b>R3-6</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>30X36</td><td>31-0175</td><td>1</td><td>.080</td></tr> <tr><td>7.50</td><td>36X30</td><td></td><td>2</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	30X36	31-0175	1	.080	7.50	36X30		2	.080	<b>R3-8</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>36X30</td><td>31-0282</td><td>1</td><td>.080</td></tr> <tr><td>7.50</td><td>36X30</td><td>31-0283</td><td>1</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	36X30	31-0282	1	.080	7.50	36X30	31-0283	1	.080	<b>R3-8b</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>10.00</td><td>48X30</td><td>31-0302</td><td>2</td><td>.100</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	10.00	48X30	31-0302	2	.100	<b>R4-1</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>5.00</td><td>24X30</td><td>31-1502</td><td>1</td><td>.080</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	5.00	24X30	31-1502	1	.080	<b>R4-16</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>20.00</td><td>48X60</td><td>31-1574</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	20.00	48X60	31-1574	2	.100	<b>R5-1</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>6.25</td><td>30X30</td><td>31-1119</td><td>1</td><td>.080</td></tr> <tr><td>9.00</td><td>36X36</td><td>31-1120</td><td>2</td><td>.080</td></tr> <tr><td>16.00</td><td>48X48</td><td>31-1121</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	6.25	30X30	31-1119	1	.080	9.00	36X36	31-1120	2	.080	16.00	48X48	31-1121	2	.100	<b>R5-10a(CT)</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>9.00</td><td>36X36</td><td>31-1775</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	9.00	36X36	31-1775	2	.100
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<b>R1-2</b>  LEGEND - RED BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>0.97</td><td>18</td><td>31-0520</td><td>1</td><td>.080</td></tr> <tr><td>3.90</td><td>36</td><td>31-0523</td><td>1</td><td>.080</td></tr> <tr><td>6.77</td><td>48</td><td>31-0522</td><td>2</td><td>.100</td></tr> <tr><td>10.83</td><td>60</td><td>31-0528</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	0.97	18	31-0520	1	.080	3.90	36	31-0523	1	.080	6.77	48	31-0522	2	.100	10.83	60	31-0528	2	.100	<b>R2-4a</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>32</td><td>48X96</td><td>31-5510</td><td>2</td><td>.125</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	32	48X96	31-5510	2	.125	<b>R3-2</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>4.00</td><td>24X24</td><td>31-1603</td><td>1</td><td>.080</td></tr> <tr><td>9.00</td><td>36X36</td><td>31-1629</td><td>2</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	4.00	24X24	31-1603	1	.080	9.00	36X36	31-1629	2	.080	<b>R3-6</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>30X36</td><td></td><td>1</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	30X36		1	.080	<b>R3-8</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>36X30</td><td>31-0290</td><td>1</td><td>.080</td></tr> <tr><td>7.50</td><td>36X30</td><td></td><td>2</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	36X30	31-0290	1	.080	7.50	36X30		2	.080	<b>R3-8b</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>10.00</td><td>48X30</td><td></td><td>2</td><td>.100</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	10.00	48X30		2	.100	<b>R4-3</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>5.00</td><td>24X30</td><td>31-1562</td><td>1</td><td>.080</td></tr> <tr><td>20.00</td><td>48X60</td><td>31-1564</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	5.00	24X30	31-1562	1	.080	20.00	48X60	31-1564	2	.100	<b>R5-1a</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>6.00</td><td>36X24</td><td>31-1122</td><td>2</td><td>.080</td></tr> <tr><td>8.75</td><td>42X30</td><td>31-1123</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	6.00	36X24	31-1122	2	.080	8.75	42X30	31-1123	2	.100	<b>R5-11</b>  LEGEND - WHITE BACKGROUND - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>5.00</td><td>30X24</td><td>31-1790</td><td>1</td><td>.080</td></tr> <tr><td>20.00</td><td>48X36</td><td>31-1792</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	5.00	30X24	31-1790	1	.080	20.00	48X36	31-1792	2	.100																																										
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<b>R6-1</b>  LEGEND - BLACK BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>3.00</td><td>36X12</td><td>31-1177</td><td>1</td><td>.080</td></tr> <tr><td>6.75</td><td>54X18</td><td>31-1178</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	3.00	36X12	31-1177	1	.080	6.75	54X18	31-1178	2	.100	<b>R7-2a</b>  LEGEND - RED BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>1.50</td><td>12X18</td><td>31-0603</td><td>1</td><td>.080</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	1.50	12X18	31-0603	1	.080	<b>R8-9a</b>  LEGEND - BLACK BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>1.50</td><td>12X18</td><td>31-1702</td><td>1</td><td>.080</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	1.50	12X18	31-1702	1	.080	<b>R10-7</b>  LEGEND - BLACK BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>5.00</td><td>24X30</td><td>31-0806</td><td>1</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	5.00	24X30	31-0806	1	.080	<b>R10-10L</b>  LEGEND - BLACK BACKGROUND - WHITE <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>30X36</td><td>31-0852</td><td>1</td><td>.080</td></tr> </table>		AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	30X36	31-0852	1	.080	<b>R10-11a</b>  LEGEND - BLACK BACKGROUND - WHITE CIRCLE & DIAGONAL - RED <table border="1"> <tr><th>AREA (SQ. FT)</th><th>SIZE (INCHES)</th><th>CONN. D.O.T. #</th><th>POSTS</th><th>ALUM. THK.</th></tr> <tr><td>7.50</td><td>30X36</td><td>31-0830</td><td>1</td><td>.080</td></tr> <tr><td>12.00</td><td>36X48</td><td>31-0819</td><td>2</td><td>.100</td></tr> </table>					AREA (SQ. FT)	SIZE (INCHES)	CONN. D.O.T. #	POSTS	ALUM. THK.	7.50	30X36	31-0830	1	.080	12.00	36X48	31-0819	2	.100																																																									
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- NOTES:**
1. THE LEGEND "O.S.T.A." SHALL APPEAR ON ALL R - SERIES SIGNS EXCEPT WHEN SUFFIXED WITH THE LETTER "Z".
  2. FOR SPECIFIC SIGN DESIGN CONTACT CONN. D.O.T., DIVISION OF TRAFFIC ENGINEERING. FOR BOLT HOLE PATTERN REFER TO FHWA PUBLICATION "STANDARD HIGHWAY SIGNS". SIGNS OF DIFFERENT DIMENSIONS TO BE ERRECTED ON THE SAME POSTS, OR SPAN/MAST ARM MOUNTED, MAY REQUIRE SPECIAL BOLT HOLE PATTERNS.
  3. POSTS - SEE STANDARD SHEET TR-1208.02 - "METAL SIGN POSTS AND SIGN MOUNTING DETAILS."
  4. POSTS SHALL BE 4 LBS./FT.
  5. SIGNS SHALL BE FABRICATED OF ONE CONTINUOUS PIECE OF SHEET ALUMINUM. SPLICING OF SHEET ALUMINUM WILL NOT BE ACCEPTED.
  6. FOR OVERHEAD MOUNTED SIGNS, SEE STANDARD SHEET TR-1114.01 - "BONDING AND UTILITY POLE ATTACHMENT DETAILS, SIGN HANGER, "Y" CLAMP DETAIL."
- COLORS:**
- BACKGROUND - WHITE - EXCEPT AS NOTED.  
LEGEND - BLACK - EXCEPT AS NOTED.  
ALL SIGNS TO USE TYPE IX RETROREFLECTIVE SHEETING.

DESIGNER/DRAFTER: <b>A. MERMELSTEIN</b> CHECKED BY: <b>B. SCHILLING</b>		 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>		SIGNATURE/ BLOCK: <b>OFFICE OF ENGINEERING</b> APPROVED BY: _____ DATE: _____		PROJECT TITLE: <b>SIGN FACE SHEET ALUMINUM</b> <b>R-SERIES TYPICAL SIGN DETAILS</b>		TOWN: - DRAWING NO.: <b>TR-GS_01</b> SHEET NO.:		PROJECT NO.: - DRAWING NO.: <b>TR-GS_01</b> SHEET NO.:	
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		NOT TO SCALE		Filename: ...CTDOT-TRAFFIC.GS.dgn		REV. DATE REVISION DESCRIPTION SHEET NO.		Plotted Date: 1/16/2019		REV. DATE REVISION DESCRIPTION SHEET NO.	

**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

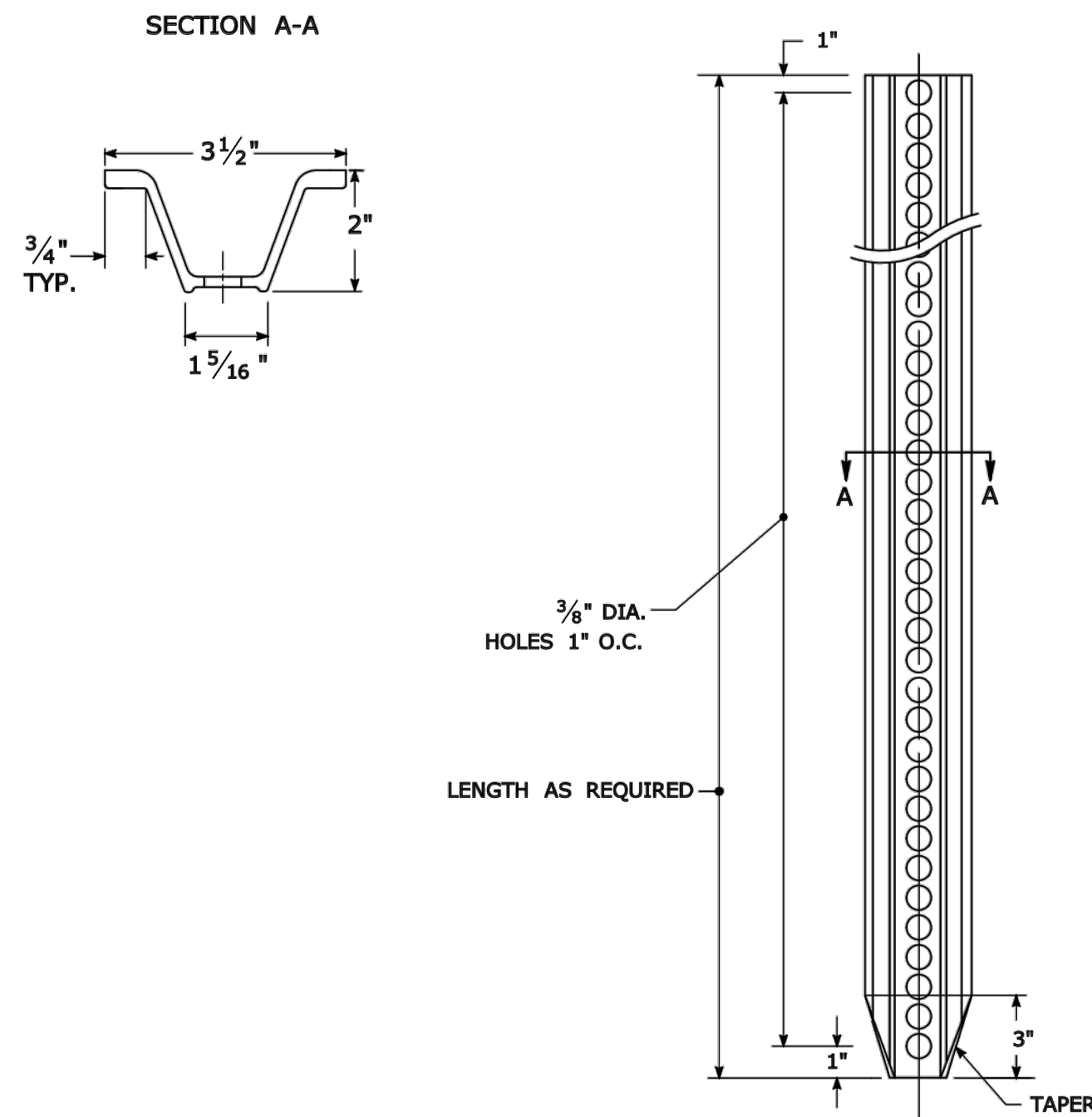
CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

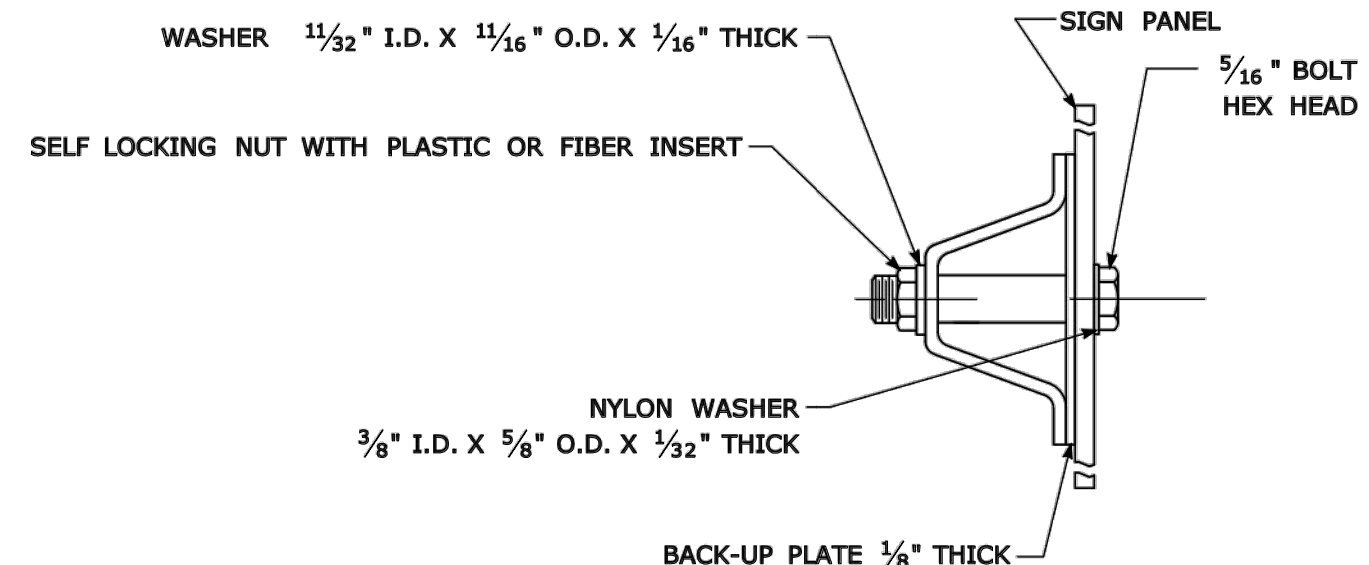
**FOR PERMITTING PURPOSES ONLY**  
**NOT RELEASED FOR CONSTRUCTION**



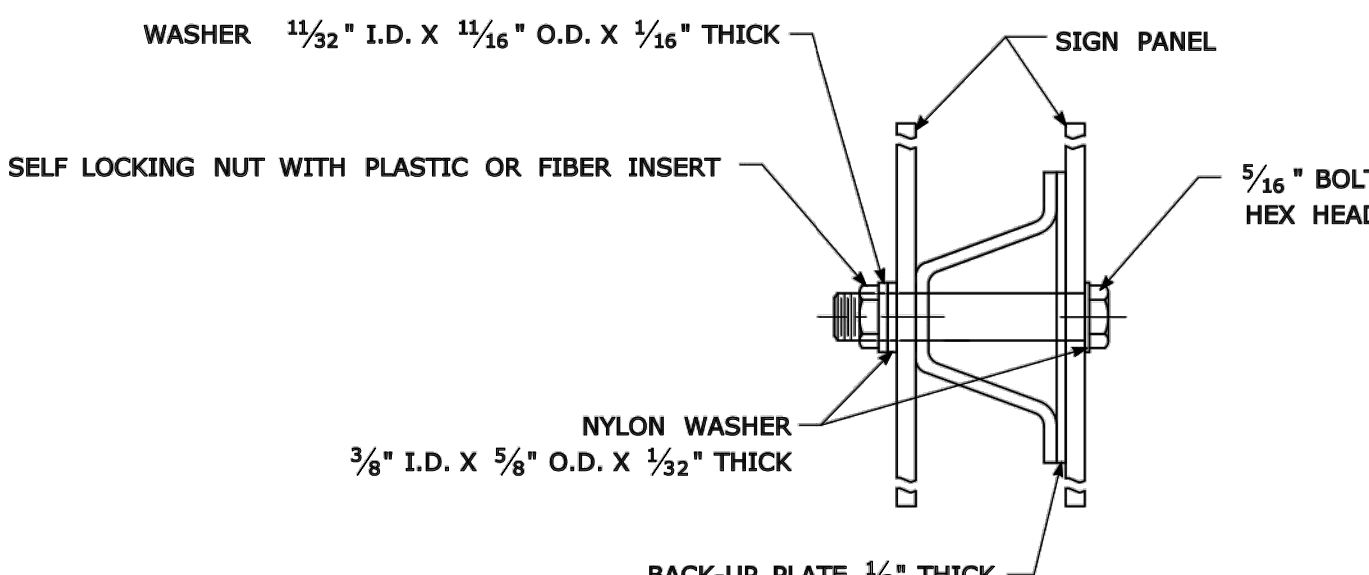
**TYPICAL METAL SIGN POSTS**



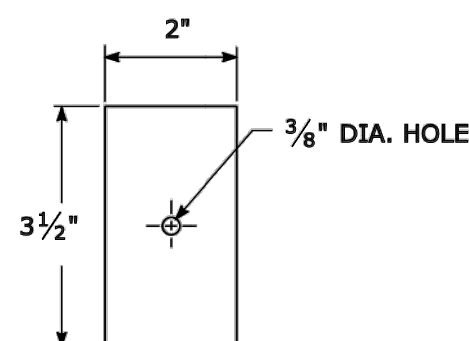
**TYPICAL SIGN PANEL ATTACHMENT**



**TYPICAL BACK TO BACK SIGN PANEL ATTACHMENT**



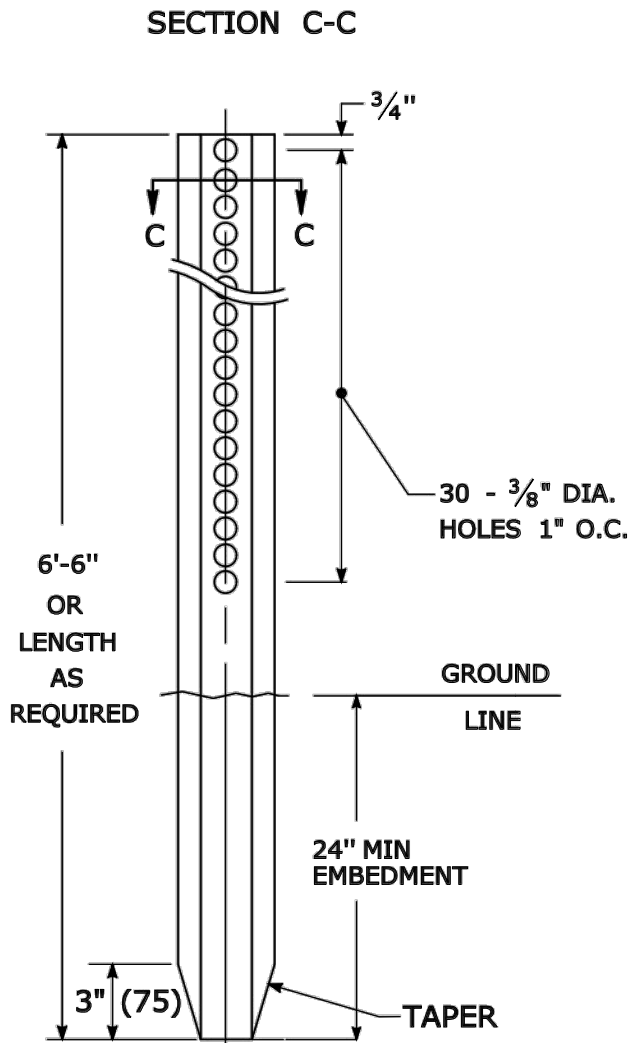
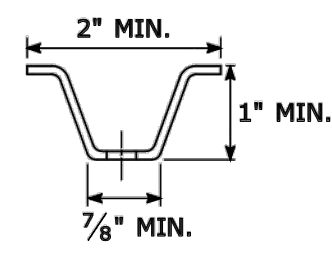
**TYPICAL BACK-UP PLATE**



BOLTS - STAINLESS STEEL CONFORMING TO ASTM F593, ALLOY GROUP 1 OR 2 (ALLOY TYPES 304 OR 316).  
 SELF LOCKING NUTS - STAINLESS STEEL CONFORMING TO ASTM F594, ALLOY GROUP 1 OR 2 (ALLOY TYPES 304 OR 316).  
 WASHERS - STAINLESS STEEL CONFORMING TO ASTM A240, (ALLOY TYPES 304 OR 316).

**METAL DELINEATOR POST**

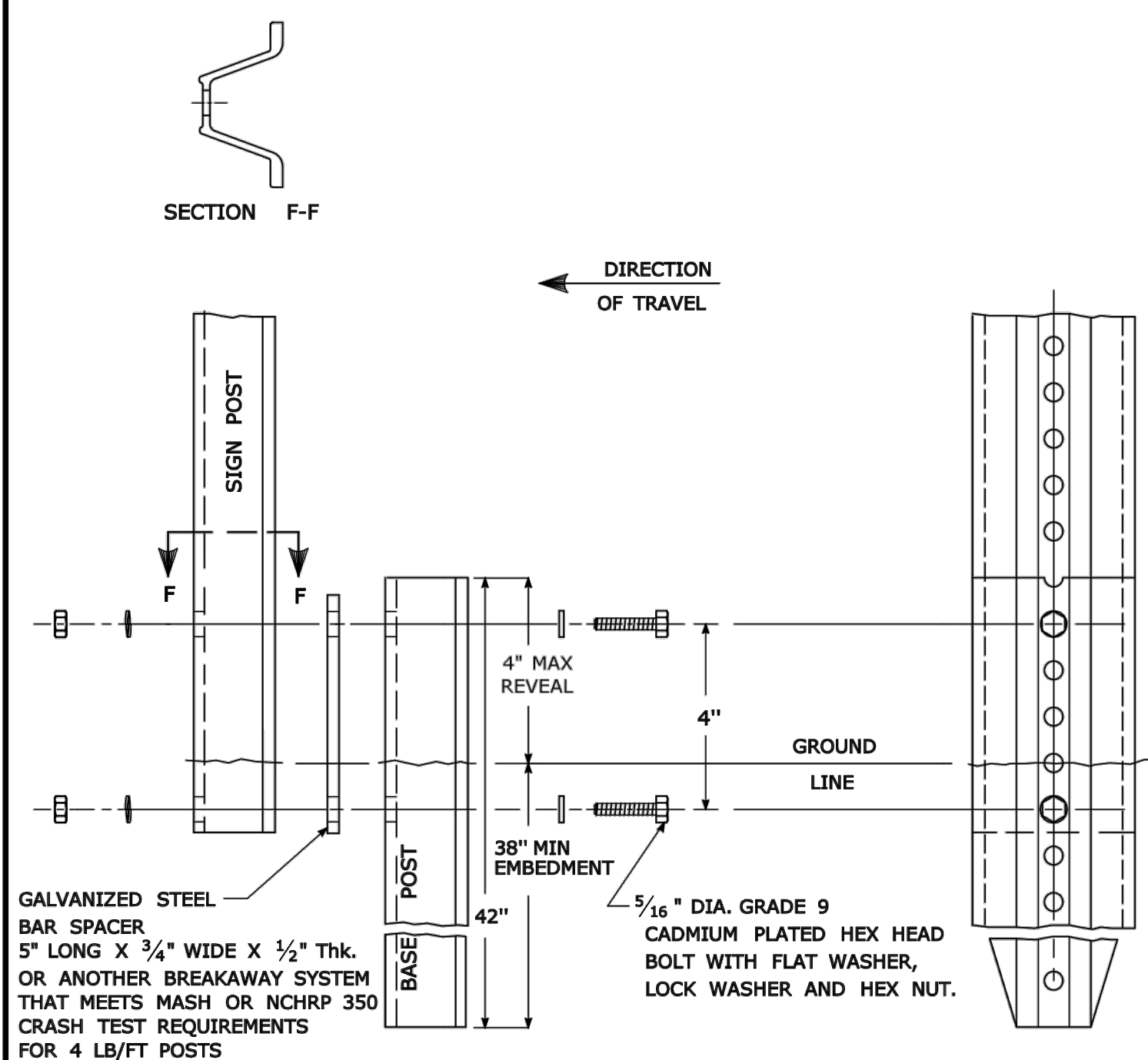
WT./FT. = 1.12 LBS./FT. MIN.



**GENERAL NOTES:**

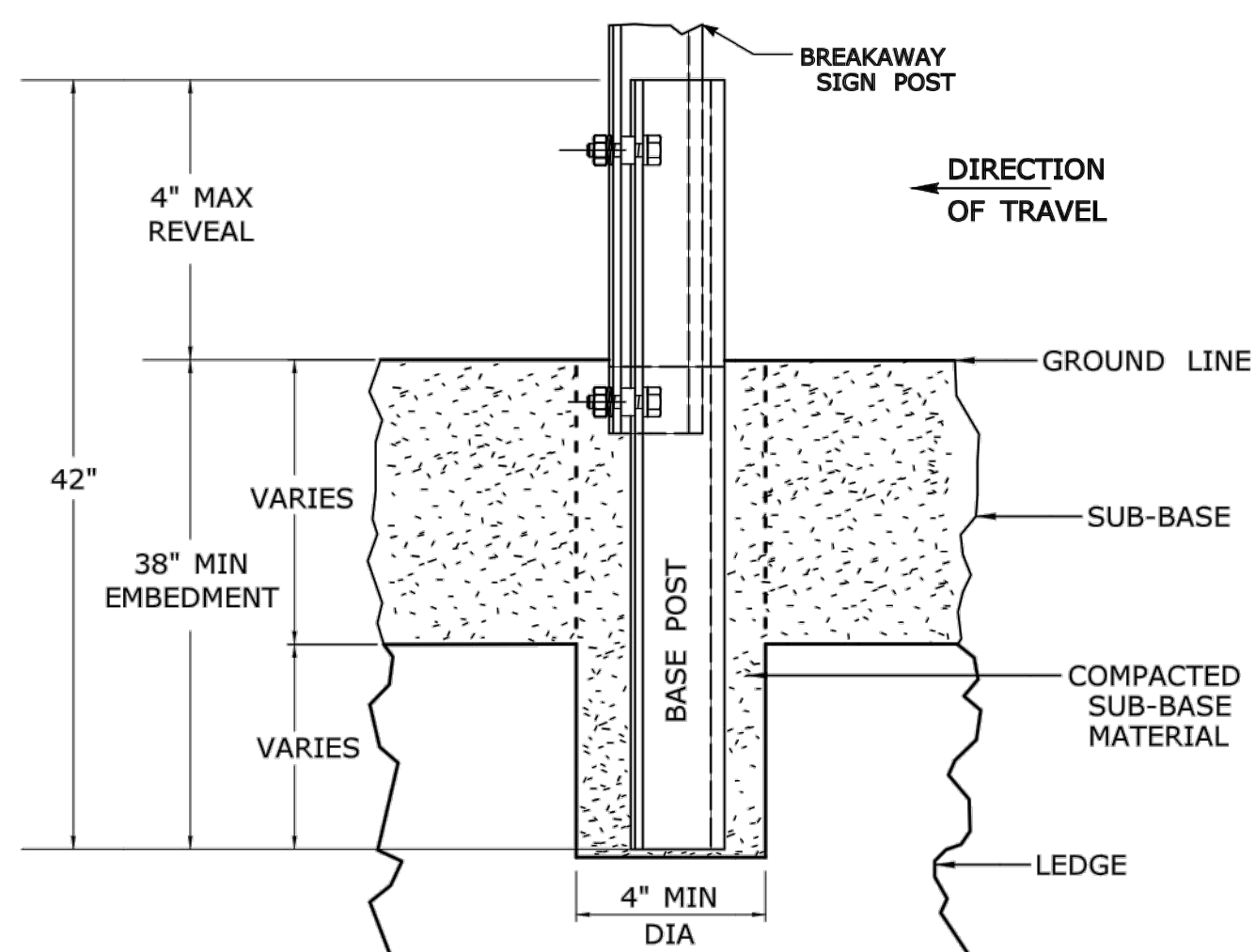
1. STEEL FOR DELINEATOR POSTS SHALL BE ASTM A36 STEEL. STEEL FOR ALL OTHER POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499 GRADE 80 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT (MASS) OF 91 LBS. OR GREATER PER LINEAR YARD.
2. AFTER FABRICATION, ALL STEEL POSTS, STRAPS AND PLATES SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A123.
3. WASHERS FOR BREAKAWAY INSTALLATIONS SHALL MEET ASTM F436, TYPE 1.
4. SPACER BAR FOR BREAKAWAY INSTALLATION SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A36.
5. ALL BOLTS, NUTS, AND WASHERS FOR BREAKAWAY INSTALLATIONS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A153.
6. ALL SIGN POSTS SHALL HAVE BREAKAWAY FEATURES THAT MEET AASHTO REQUIREMENTS CONTAINED IN THE CURRENT "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS." THE BREAKAWAY FEATURES SHALL BE STRUCTURALLY ADEQUATE TO CARRY THE SIGNS SHOWN IN THE PLANS AT 60 MPH WIND LOADINGS. INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
7. SIGN POSTS SHALL BE 4 LBS./FT.

**BREAKAWAY INSTALLATION FOR 4 LBS./FT. POSTS**

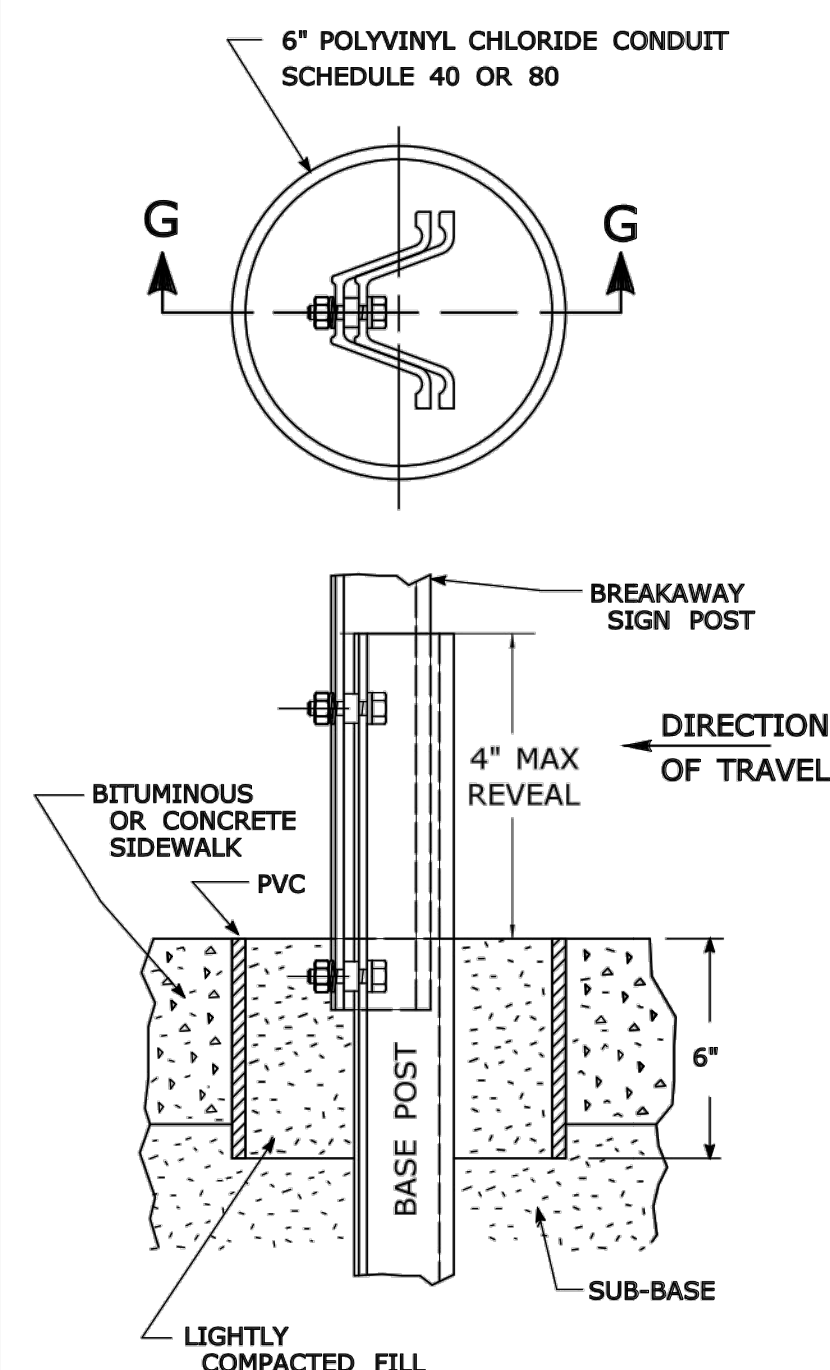


**TYPICAL SIGN POST INSTALLATION IN LEDGE**

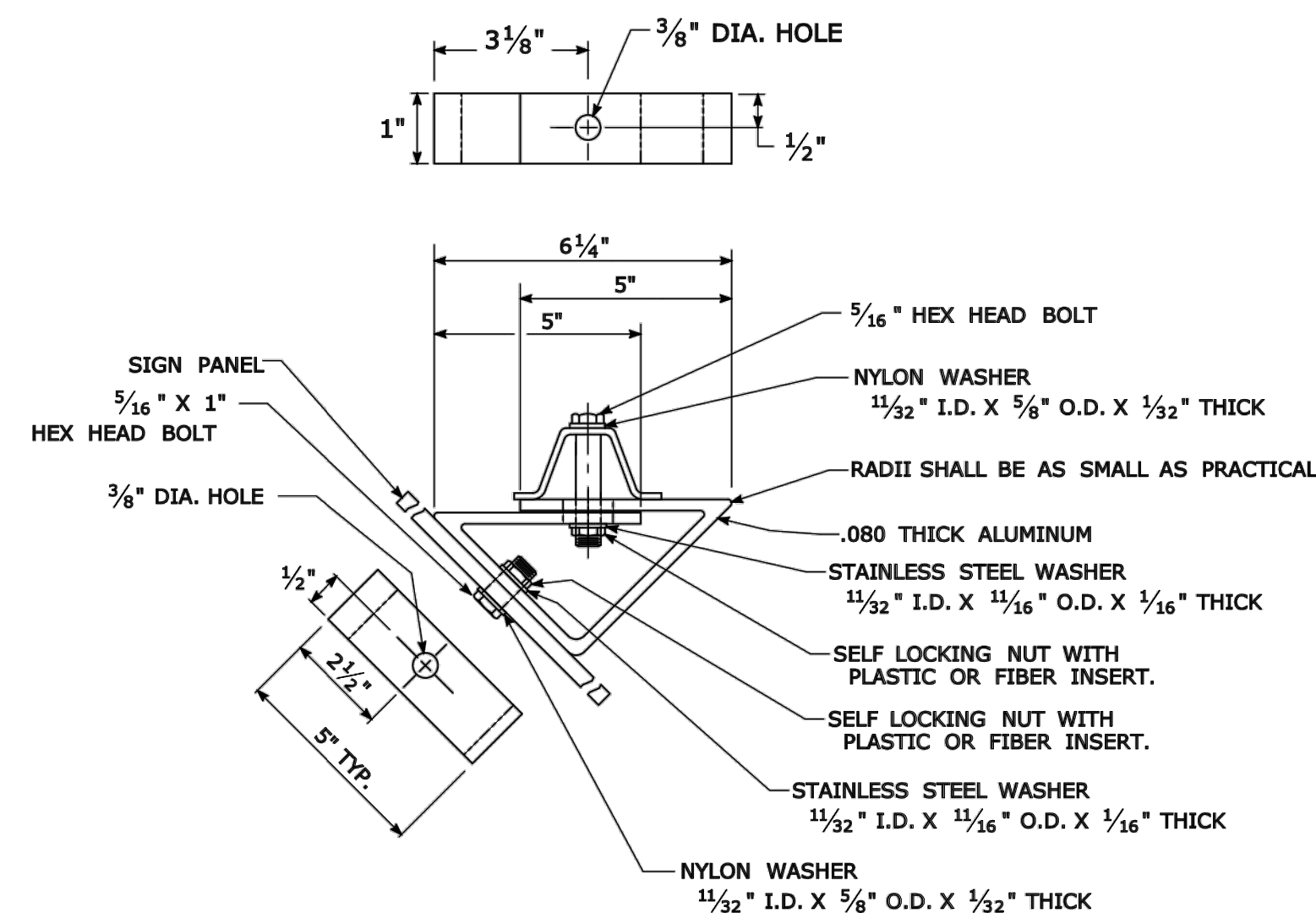
LEDGE SHALL BE REMOVED TO DRIVE THE BASE POST TO A DEPTH OF 38".  
 HOLE SHALL BE FILLED WITH SUB-BASE MATERIAL AND COMPACTED WITH A TAMPING BAR, OR TECHNIQUE APPROVED BY THE ENGINEER, PRIOR TO BASE POST INSTALLATION.



**TYPICAL SLEEVE FOR PAVED AREAS**



**45° MOUNTING BRACKET FOR INSTALLATION OF PARKING SIGNS**



REV.	DATE	REVISION DESCRIPTION
2	6-2017	SIGN POST REVISIONS.
1	2-2011	MINOR REVISIONS.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NOT TO SCALE

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

SUBMITTED BY: Mark F. Makuch, P.E.  
 NAME/DATE/TIME: Mark F. Makuch, P.E. 2017.06.07 07:30:30-04'00'

APPROVED BY: Gregory M. Dorosh, P.E.  
 NAME/DATE/TIME: Gregory M. Dorosh, P.E. 2017.06.15 09:27:29-04'00'

CTDOT  
 STANDARD SHEET  
 OFFICE OF ENGINEERING

STANDARD SHEET TITLE:  
**METAL SIGN POSTS AND SIGN MOUNTING DETAILS**

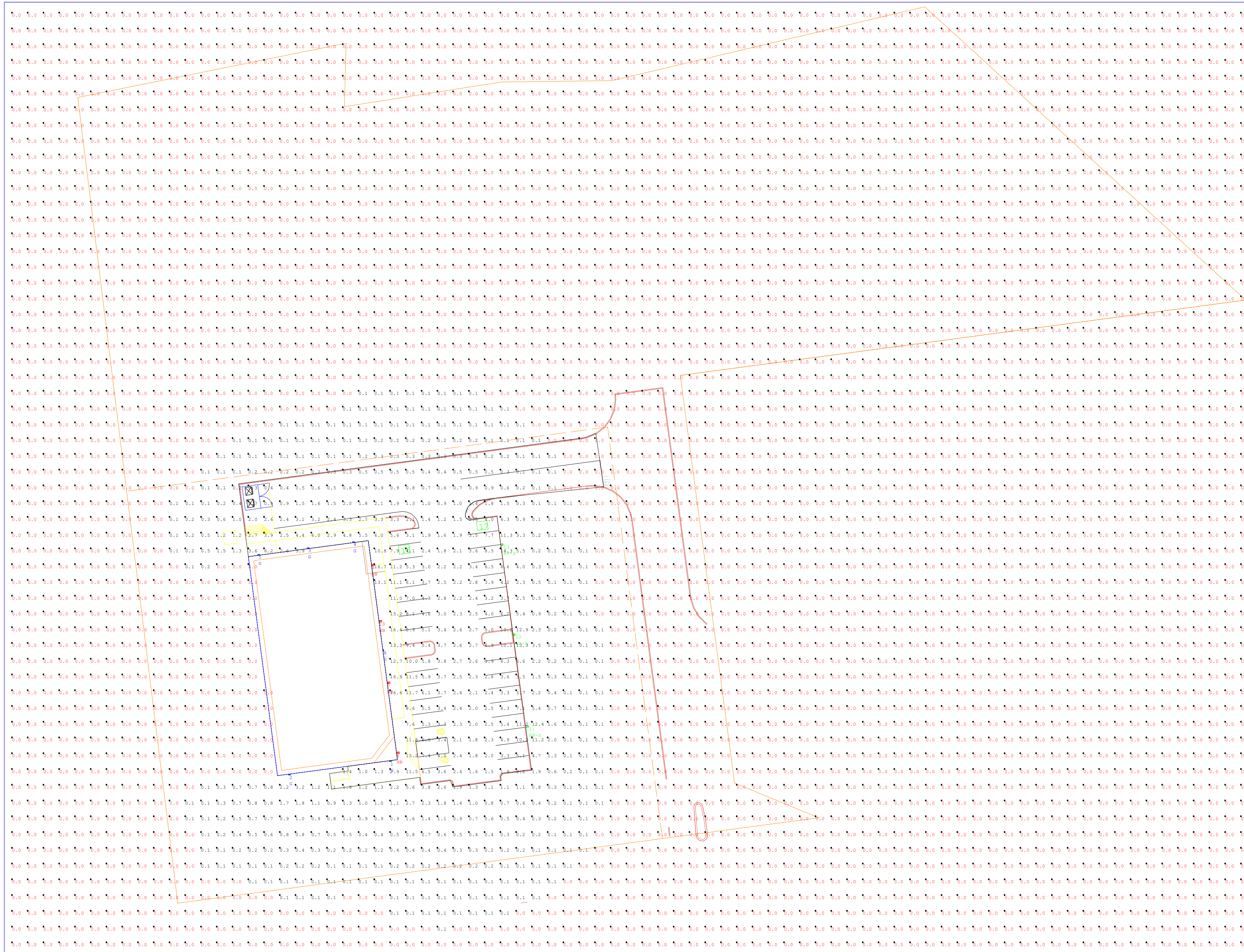
GUIDE SHEET NO.: TR-1208\_02

REVISIONS

No.	Date	REVISION
1	05/20/2021	REVISED PER TOWN COMMENTS
2	06/07/2021	REVISED PER TOWN COMMENTS

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	
Scale	NONE
Project No.	2002032
Date	04/02/2021
CAD File:	DN200203201
Title	<b>DETAILS SHEET</b>
Sheet No.	

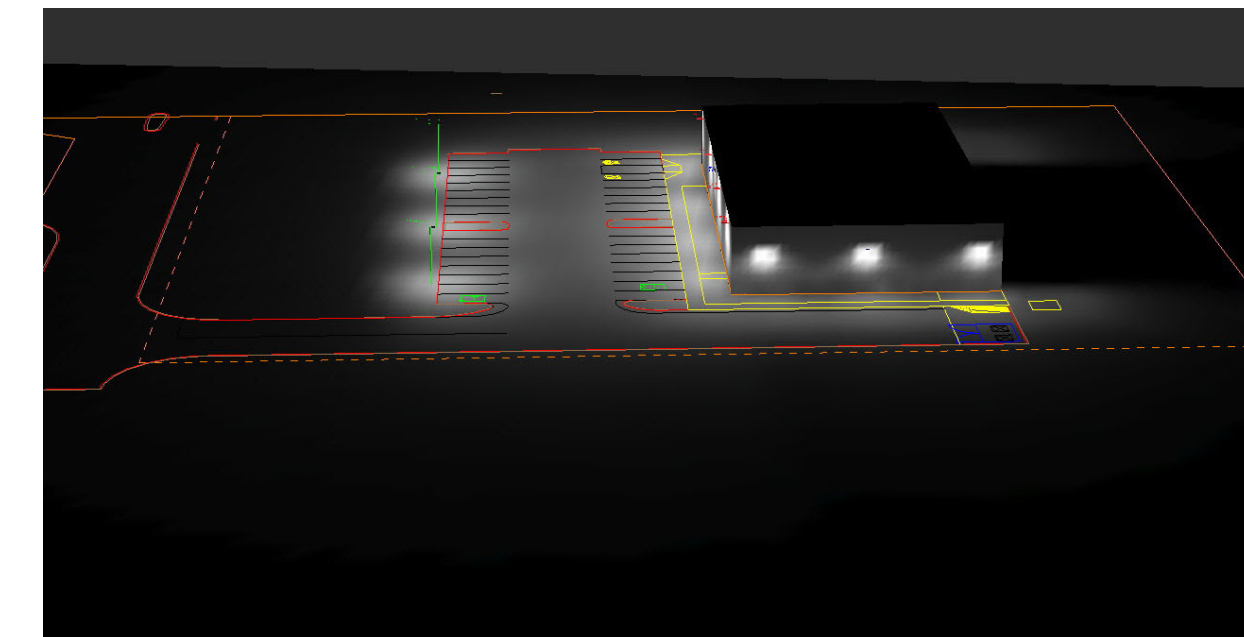
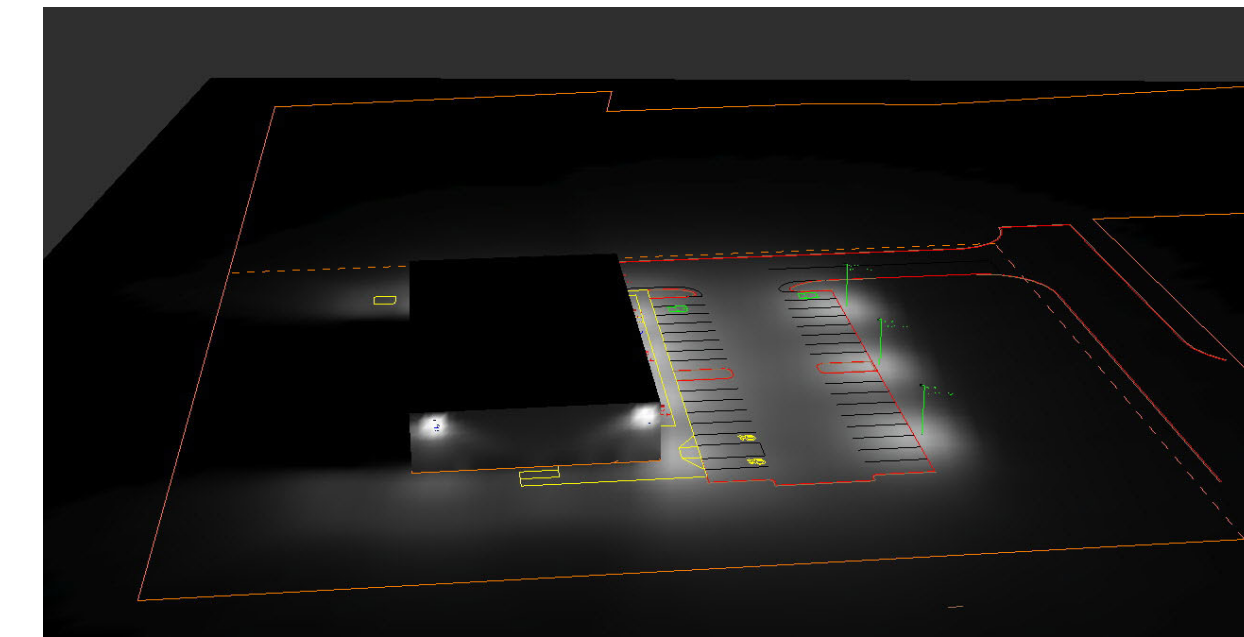
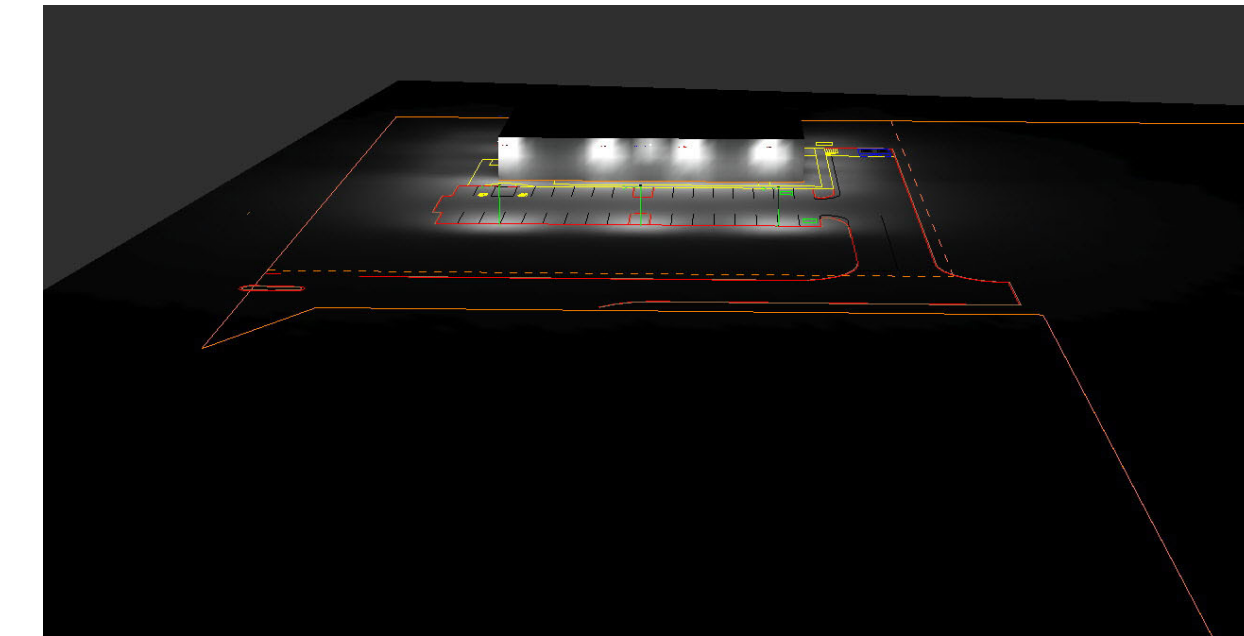
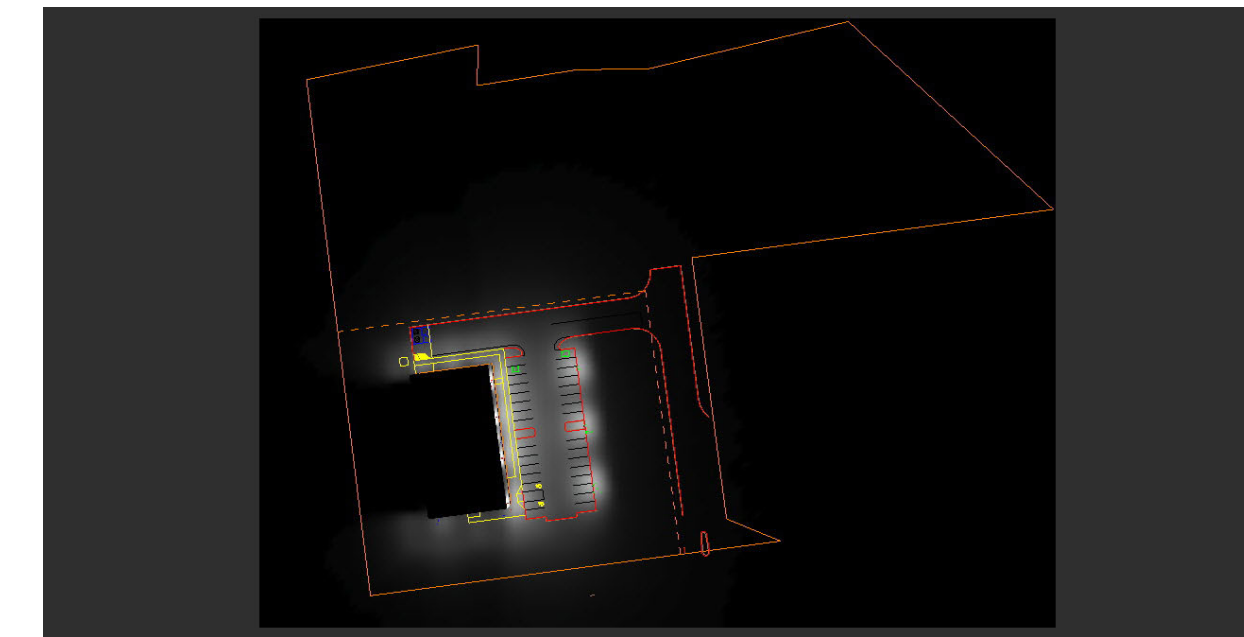
**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**



LumNo	Label	Z
1	G	16.5
2	G	16.5
3	G	12
4	G	12
5	G	12
6	HB	16.5
7	HB	16.5
8	G	16.5
9	HB	16.5
10	HB	16.5
11	HP-S	17
12	HP-S	17
13	HP-S	17

Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
[Green Square]	3	HP-S	SINGLE	13632	0.950	LEDS-1210-S - Single Pole Mt 150w, Type 4, 5K, Shielded
[Red Square]	4	HB	SINGLE	19188	0.950	LEDS-AL120 - Wall Mt, 150w, Type 4, 5K
[Blue Square]	6	G	SINGLE	4740	0.950	LEDBG42W001B-5000K - Wall Pack, 42W, Full Cutoff, 5K

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Illuminance	Fc	0.24	16.9	0.0	N.A.	N.A.
Parking Lot	Illuminance	Fc	3.75	16.9	0.0	N.A.	N.A.



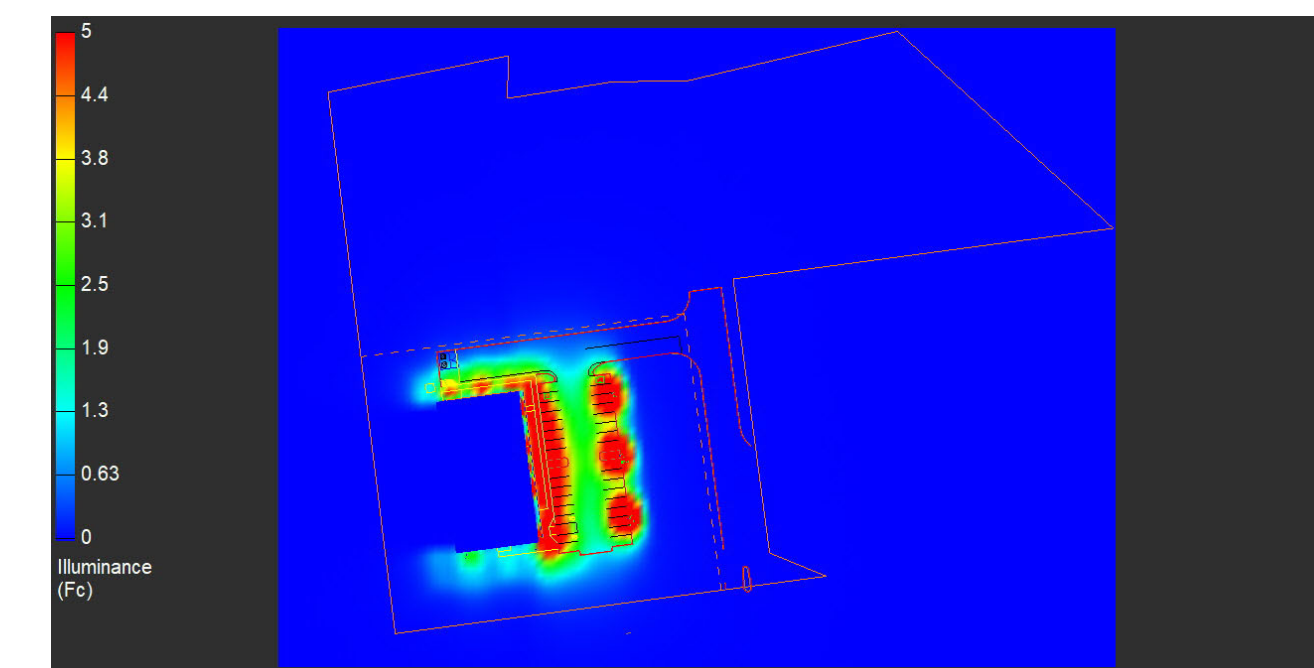
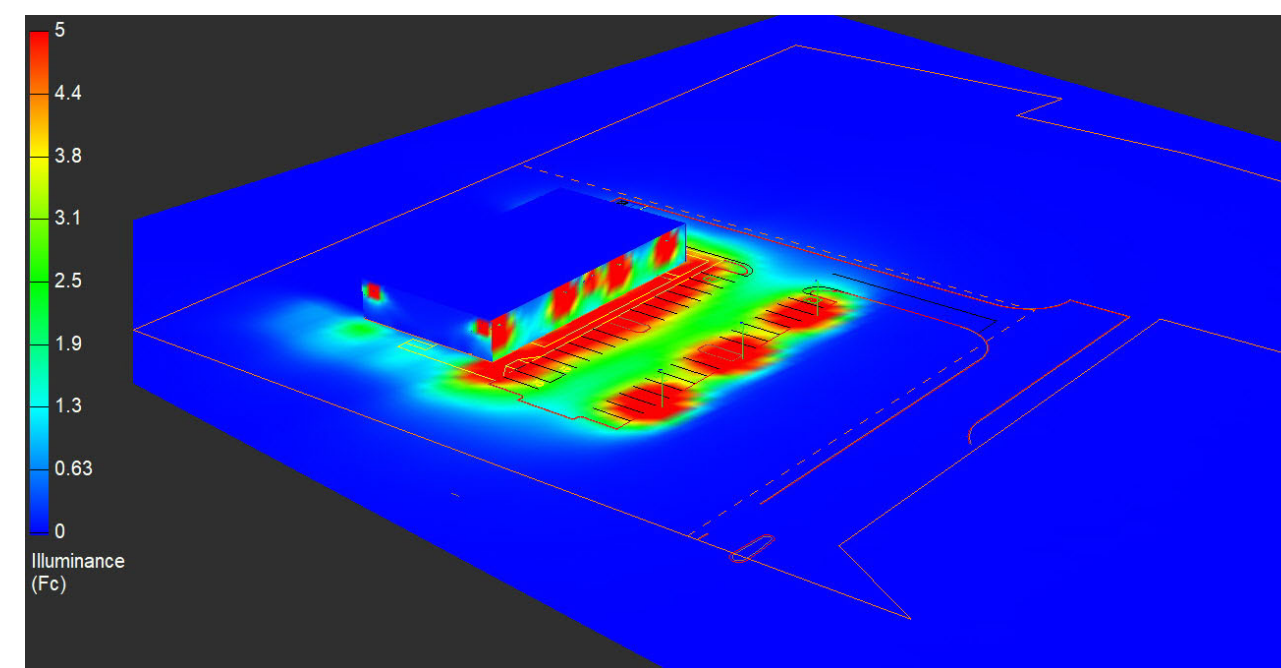
#	Date	Comments
Revisions		

Drawn By: BMF, LC  
 Checked By:  
 Date: 3/29/2021  
 Scale:

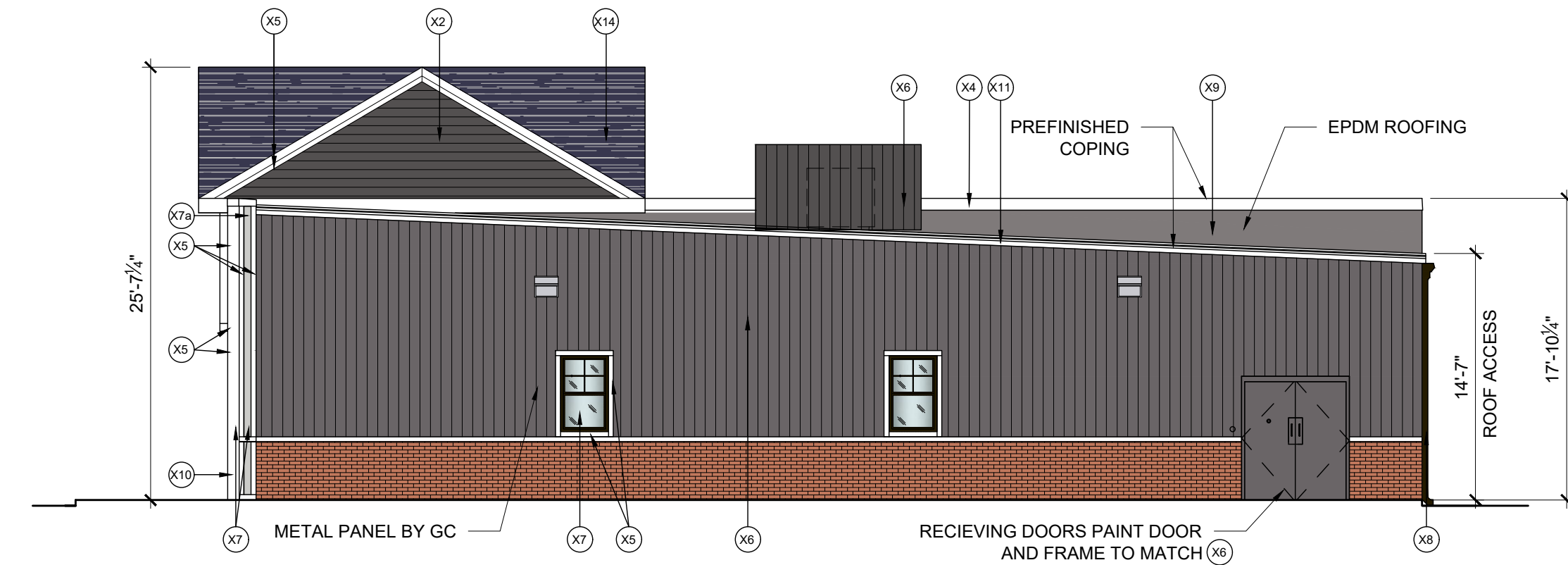
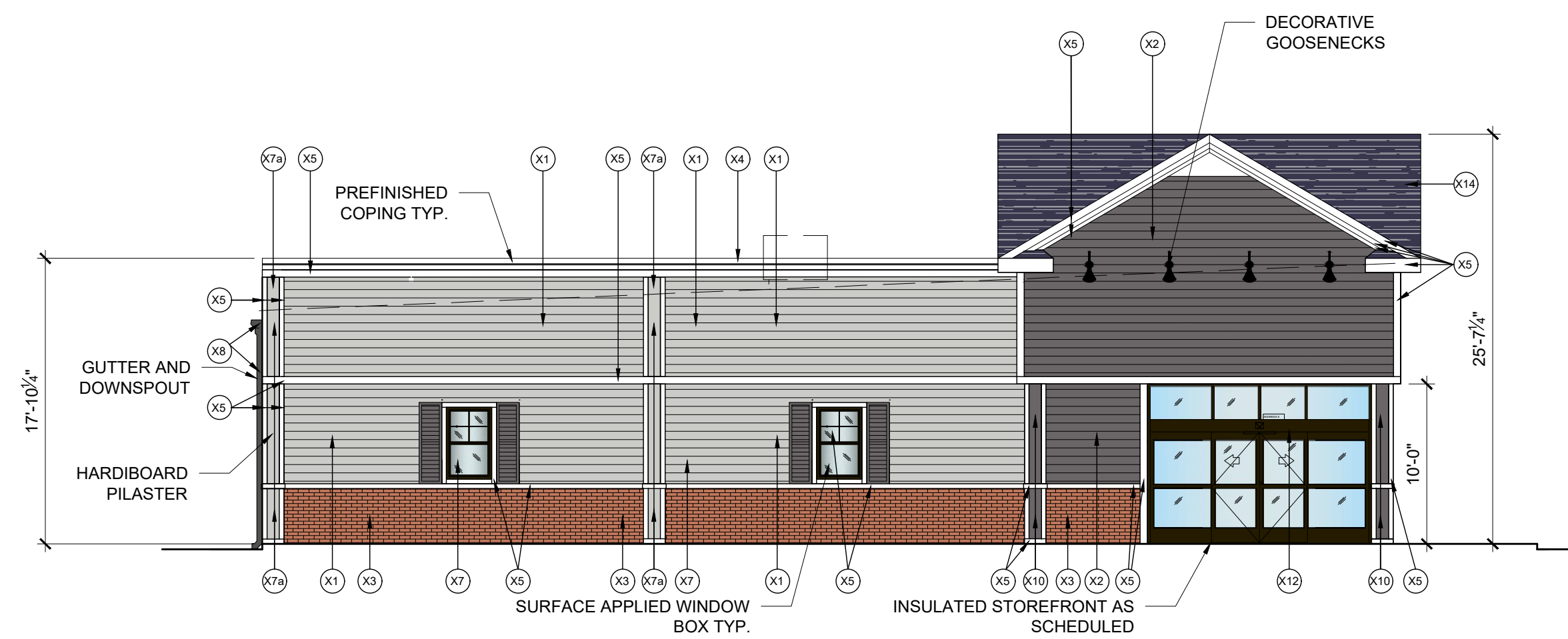
Notes:

**Plan Notes:**  
 Calculations at Ground Level (10' x 10' Grid Spacing). Refer to luminaire location summary for mounting heights of each fixture. Pole mounted fixtures include a 2ft concrete base. Mounting heights indicated on luminaire location summary is a total A.F.G. height.

**General Notes:**  
 Due to changing lighting ordinances it is the contractors responsibility to submit the site photometrics & luminaire specs to the local inspector before ordering to ensure this plan complies with local lighting ordinances. This lighting design is based on information supplied by others. Changes in electrical supply, area geometry & objects within the lighted area may produce illumination values different from the predicted results shown on this layout. This layout is based on .IES files that were lab tested or computer generated, actual results may vary.

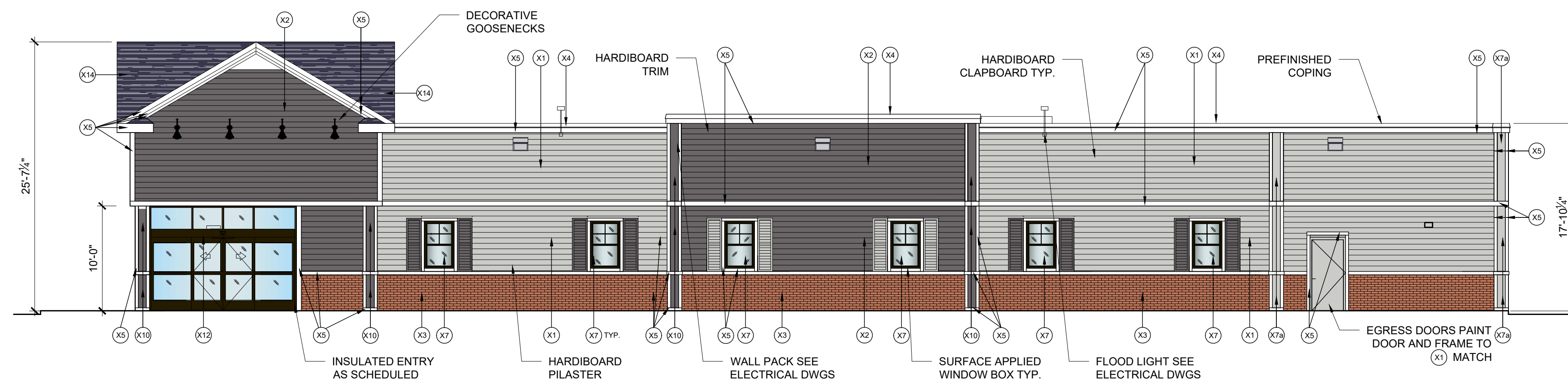


Bolton CT 23232



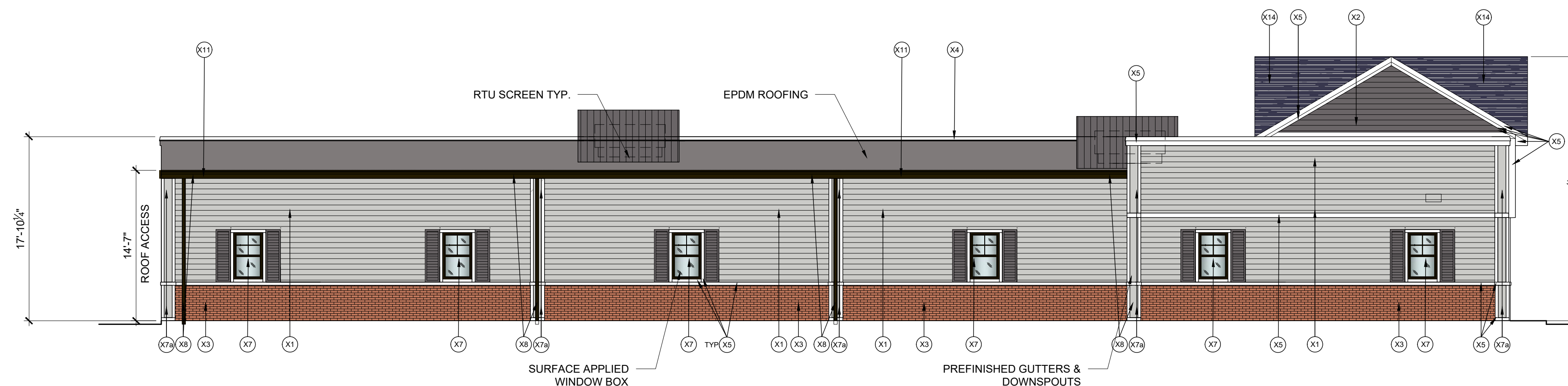
1 PROPOSED SIDE ELEVATION ( BOSTON TURNPIKE RT 44)  
SCALE: 3/16"-1'-0"

2 PROPOSED SIDE ELEVATION  
SCALE: 3/16"-1'-0"

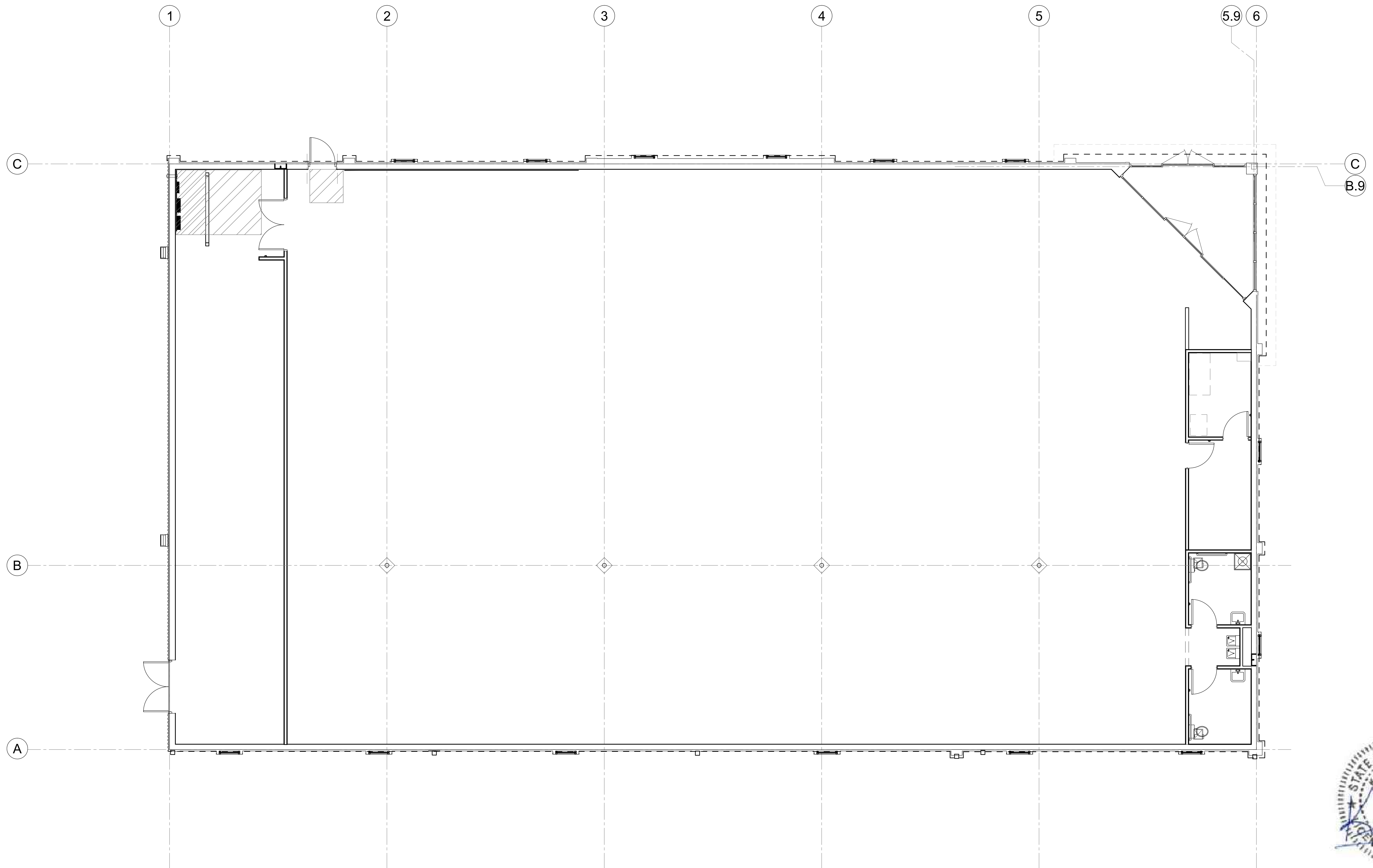


3 PROPOSED FRONT ELEVATION  
SCALE: 3/16"-1'-0"

EXTERIOR FINISH SCHEDULE			
TAG	MATERIAL/ MFG.	COLOR/ NO.	NOTES
X1	HARDIEE-PLANK LAP SIDING	COLOR: PEARL GRAY	PRE-FINISHED, 6" EXPOSURE
X2	HARDIEE-PLANK LAP SIDING	COLOR: NIGHT GRAY	PRE-FINISHED 6" EXPOSURE
X3	VEE BRICK	COLOR: TAVERN FLASH	
X4	METAL COPING	COLOR: WHITE	PRE-FINISHED
X5	HARDIE-BOARD TRIM	COLOR: WHITE TO MATCH (X4)	COPING BY GC PRE-FINISHED
X6	METAL WALL PANEL	COLOR: CHARCOAL GRAY O.A.E	PRE-FINISHED
X7	SURFACE APPLIED STOREFRONT	COLOR: DARK BRONZE	LIGHT GRAY SPANDREL
X7a	HARDIE-BOARD TRIM	COLOR: TO MATCH (X1)	PAINTED
X8	GUTTER & DOWNSPOUT	COLOR: DARK BRONZE	PRE-FINISHED
X9	EPDM ROOF	COLOR: DARK GRAY	PRE-FINISHED
X10	HARDIE-BOARD TRIM	COLOR: TO MATCH (X2)	PAINTED
X11	METAL COPING	COLOR: CHARCOAL GRAY	PRE-FINISHED
X12	INSULATED SLIDING ENTRY DOORS	COLOR: DARK BRONZE	PRE-FINISHED
X13	METAL DOOR & FRAME	COLOR: TO MATCH (X2)	PAINTED
X14	ARCH ASPHALT SHINGLES	COLOR: PEWTER GREY	GAF TIMBERLINE



4 PROPOSED REAR ELEVATION  
SCALE: 3/16"-1'-0"



1 PROPOSED FLOOR PLAN  
SCALE: 3/16"=1'-0"

Conceptual Floor Plan

Bolton, CT Retail Building Conceptual Scheme  
1100 Boston Turnpike Bolton, CT

Prepared For Garrett Homes

SCALE: NOTED  
31, March 2021

1 OF 1  
DRAWN BY: DSG  
PROJECT NO: 221003



Boston + Brockton  
142 Crescent Street  
Brockton, MA 02302  
508.583.5603  
bkaarchitects.com

### ZONING INFORMATION

LOCATION: BOLTON, TOLLAND COUNTY, CONNECTICUT					
ZONE: RURAL MIXED USE ZONE (RMUZ)					
USE: RETAIL (PERMITTED BY SPECIAL PERMIT)					
ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	MINIMUM LOT AREA	80,000 S.F.	80,707 S.F. (1.85 AC.)	82,061 S.F. (1.88 AC.) [2]	NO
2	MINIMUM LOT WIDTH	NONE REQUIRED	308 FEET	560 FEET	NO
3	MINIMUM LOT FRONTAGE	150 FEET	260.4 FEET	150 FEET	NO
4	MINIMUM FRONT SETBACK	NONE REQUIRED	71.9 FEET	343 FEET	NO
5	MINIMUM SIDE SETBACK	25 FEET (50 FEET) [1]	72.8 FEET	118.6 FEET	NO
6	MINIMUM REAR SETBACK	25 FEET (50 FEET) [1]	51.4 FEET	89.3 FEET	NO
7	MAXIMUM BUILDING HEIGHT	35 FEET/2.5 STORIES	25.6 FEET	<35 FEET/2.5 STORIES	NO
8	MAXIMUM BUILDING COVERAGE	25 PERCENT	13.2 PERCENT	12.2 PERCENT	NO
9	MAXIMUM IMPERVIOUS COVERAGE	50 PERCENT	39.9 PERCENT	33.5 PERCENT	NO

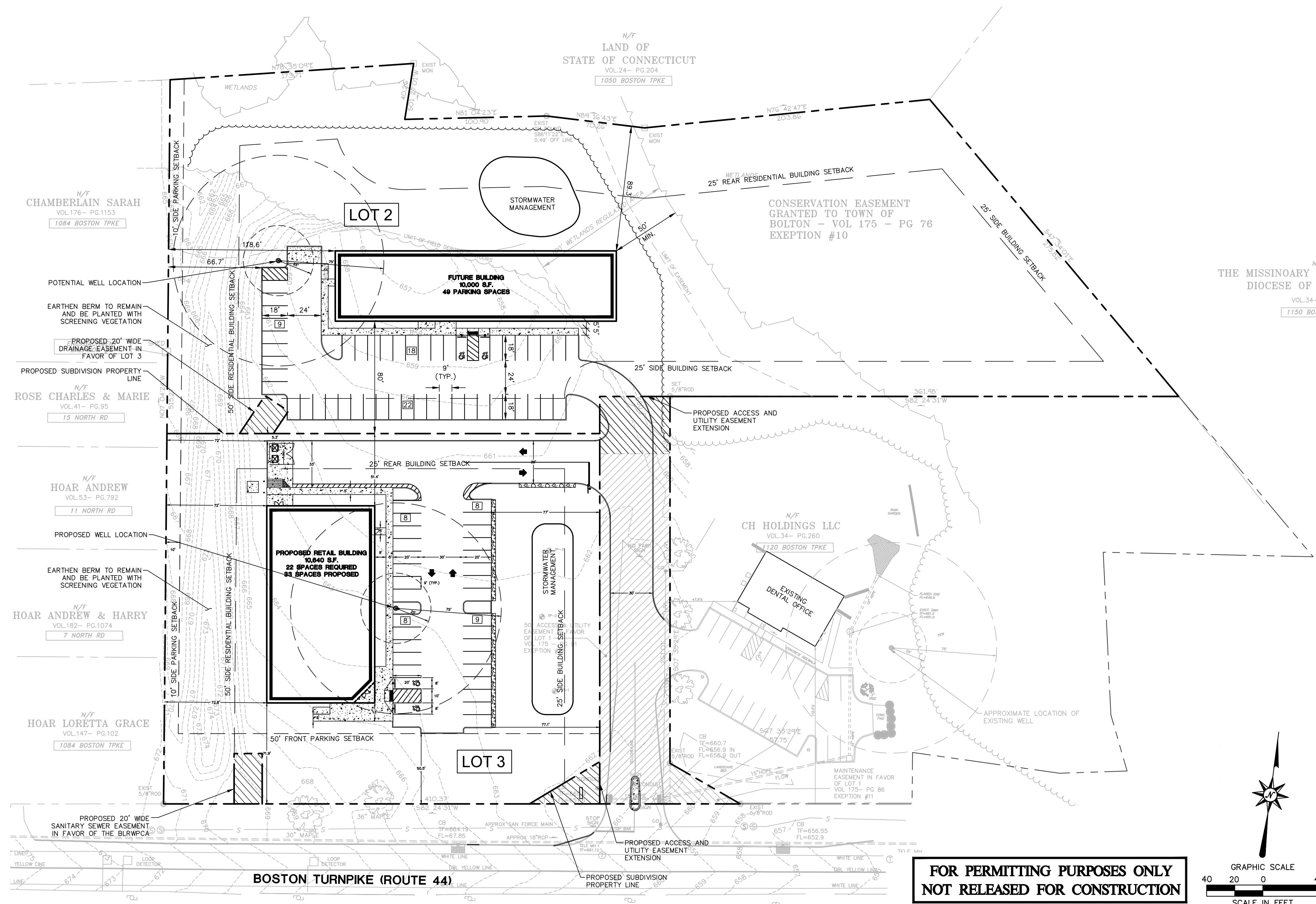
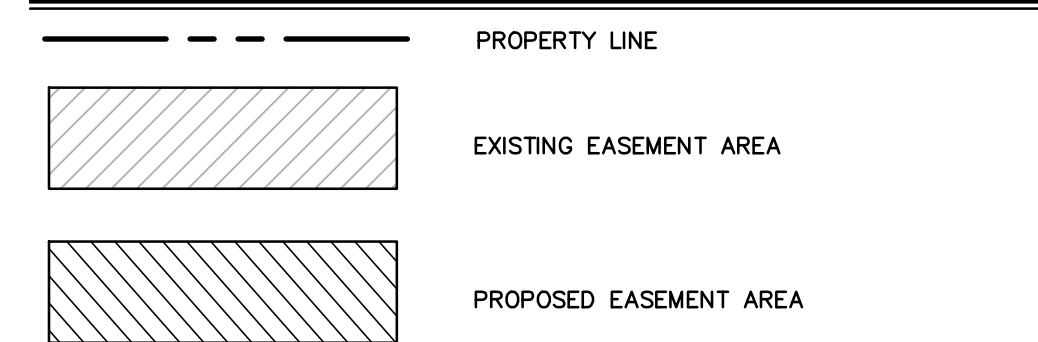
[1] MINIMUM SIDE AND REAR SETBACKS - 50 FEET WHEN ABUTTING A RESIDENTIAL DISTRICT  
 [2] LOT AREA FOR LOT 2 DOES NOT INCLUDE ACCESS STRIP, CONSERVATION EASEMENT, OR WETLAND AREAS.

### PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED LOT 3	FUTURE LOT 2	VARIANCE
1	BUILDING SIZE	600 S.F.	10,640 S.F.	10,000 S.F.	NO
2	PARKING REQUIRED	RETAIL: MINIMUM - 2 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MINIMUM REQUIRED = 22 / 20 SPACES  MAXIMUM - 5 SPACES PER 1,000 S.F. OF GFA (10,640/10,000 S.F.) MAXIMUM ALLOWED = 54 / 50 SPACES	33 SPACES	49 SPACES	NO
3	MINIMUM HANDICAPPED PARKING SPACES REQUIRED	2 SPACES	2 SPACES	2 SPACES	NO
4	MINIMUM PARKING DIMENSIONS	9 FEET X 18 FEET	9 FEET X 20 FEET	9 FEET X 18 FEET	NO
5	MINIMUM LOADING DIMENSIONS	10 FEET X 25 FEET X 14 FEET	33 FEET X 71 FEET X > 14 FEET	10 FEET X 25 FEET X > 14 FEET	NO
6	MINIMUM AISLE WIDTH	22 FEET - 2-WAY FEET - 1-WAY	30 FEET - 2-WAY	24 FEET - 2-WAY	NO
7	MINIMUM FRONT SETBACK	50 FEET [3]	50.5 FEET	273.4 FEET	NO
8	MINIMUM SIDE SETBACK	NONE REQUIRED [3]	77.1 FEET	66.7 FEET	NO
9	MINIMUM REAR SETBACK	NONE REQUIRED [3]	5.3 FEET	124 FEET	NO
10	BICYCLE PARKING REQUIRED	1 BICYCLE PARKING SPACE PER 25 PARKING STALLS (2 REQUIRED)	2 BICYCLE PARKING SPACES	2 BICYCLE PARKING SPACES	NO

[3] 10 FEET LANDSCAPED BUFFER STRIP REQUIRED WHERE ABUTTING A RESIDENCE DISTRICT

### SITE PLAN LEGEND



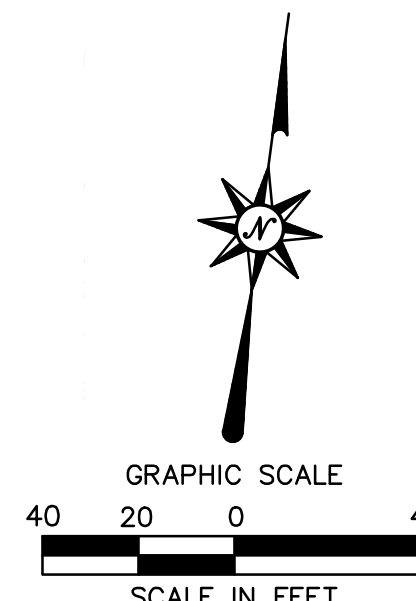
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN \_\_\_\_\_

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY  
 NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
 10th Floor  
 Hartford, CT 06103  
 (860) 249-2200  
 (860) 249-2400 Fax



## PROPOSED RETAIL DEVELOPMENT 1100 BOSTON TURNPIKE BOLTON, CONNECTICUT

REVISIONS

Date	REVISIONS
03/20/2021	REVISED PER TOWN COMMENTS
06/07/2021	REVISED PER TOWN COMMENTS

Designed C.J.L.  
 Drawn C.J.L.  
 Reviewed C.J.L.  
 Scale 1"=40'  
 Project No. 2002032  
 Date 04/02/2021  
 CAD File: MP200203201

### MASTER PLAN

Sheet No.

# MP-1

# Stormwater Management Report

*For the Proposed:*

## **Retail Development**

*Located at:*

1100 Boston Turnpike  
Bolton, Connecticut

*Prepared for Submission to:*

**Town of Bolton, Connecticut**

April 2, 2021

Revised May 20, 2021

Revised June 7, 2021

*Prepared for:*

**Garrett Homes, LLC**

59 Field Street

Torrington, Connecticut

*Prepared by:*



**BL Companies**

100 Constitution Plaza, 10<sup>th</sup> Floor

Hartford, Connecticut 06103

Phone: (860) 249-2200

Fax: (860) 249-2400



BL Project Number: 2002032

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 Existing Site Conditions and Hydrologic Conditions ..... 2  
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- Figure 2: Aerial Location Map
- Figure 3: NRCS Soil Survey Map with Hydrologic Soil Group Data
- Figure 4: FEMA Federal Insurance Rate Map
- Figure 5: NOAA Atlas 14 Storm Data

Appendix B: Pre-development Hydrology (2-, 10-, and 100-year storms)

Appendix C: Post-development Hydrology (2-, 10-, and 100-year storms)

Appendix D: Water Quality Calculations

- CTDEEP Water Quality Volume Calculations
- Groundwater Recharge Calculation
- Treatment Train Efficiency Worksheet

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- Falling Head Permeability Test Logs

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- ED-1 – Existing Drainage Mapping
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## Executive Summary

This report has been prepared in support of a Permit Application by Garrett Homes, LLC to the Town of Bolton for the proposed retail development at 1100 Boston Turnpike. The property is approximately 1.85 acres in size and is currently an undeveloped parcel. The property is located on the northern side of Boston Turnpike and is roughly bordered by residential properties to the west and south and a dentist office on the previously subdivided parcel to the east. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from “Parcel 2” to the north.

In general, the existing topography slopes from the southwest corner of the site, towards the northern edge and southeastern corner of the site with elevations varying from 661 feet to 674 feet. In the existing condition, stormwater runoff sheet flows to the north and eventually to a wetland along the northeastern edge of the subdivided “Parcel 2” or sheet flows to the southeast to a catch basin within the shared driveway and into the stormwater management system located on the previously subdivided parcel to the east.

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system.

The proposed stormwater management system is designed to be in compliance with the 2002 State of Connecticut Guidelines for Soil Erosion and Sediment Control, the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, and the 2004 State of Connecticut Stormwater Quality Manual.

A HydroCAD model, using TR-55 methodology, was developed to evaluate the proposed drainage conditions of the property. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis was not desired or required. A peak flow analysis has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. In addition, hydrographs have still been provided within appendix B for the 2-, 10-, and 100-year storm events in order to show that the proposed Infiltration Basin will not overflow during storm events and to show storage provided.

The proposed stormwater management system has been designed to treat the runoff generated by the proposed development for a minimum 80% TSS removal as required in the CT Stormwater Quality Manual, retain and infiltrate the Water Quality Volume, and provide groundwater



recharge. Stormwater quality is being addressed by formulized street sweeping and a Infiltration Basin with a grass filter strip.

## **Existing Site Conditions and Hydrologic Conditions**

### *General Site Information*

The site soil identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) is Woodbridge fine sandy loam, 3 to 8 percent slopes, Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony, and Canton and Charlton fine sandy loams, 3 to 8 percent slopes. Per the USDA, the NRCS Hydrologic Soil Group rating for within the project area is C/D, C/D, and B respectively. A copy of the USDA NRCS Hydrologic Soil Group Map is included in Appendix A for reference. For the Soil Group ratings of C/D, a Soil Group rating of C was assumed in order to be conservative in the change of curve number from grass to impervious.

Per the FEMA Flood Insurance Rate Map Number 090109001B for Town of Bolton, Tolland County, Connecticut, map revised date: June 1, 1981, the site resides in FEMA Flood Hazard Area C (unshaded). This is defined as areas of minimal flooding. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. A copy of the FEMA Flood insurance rate Map is included in Appendix A for reference.

### *Existing Hydrologic Conditions*

The existing site drainage area that was analyzed totals 4.92 acres and is approximately 8% impervious. There is currently no existing stormwater management system onsite. Stormwater from the subject property sheet flows untreated to the adjacent properties. There is a ridge line that roughly bifurcates the site into two main drainage areas. The northern portion of the project parcel and neighboring properties sheet flow to the wetland to the northeast of the site. The northern portion of the site consists of primarily of grassed surface cover with some wooded and impervious surface cover. The southeastern portion of the project parcel sheet flows to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east. The southeastern portion of the site consists mainly of grassed area with some impervious area from the shared driveway. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis for the runoff draining to the wetland was not desired or required.

**Table 1 – Pre Development (Existing Conditions) Drainage Characteristics**

Drainage Area	Total Area	Composite Curve Number	Imperviousness Cover	Time of Concentration
	SF		%	Minutes
EDA-10	185,210	72	6.6%	14.50
EDA-20	29,230	81	15.8%	25.30

**Table 2 – Pre Development Conditions Peak Flows**

Analysis Point	Description	Peak Flows (CFS)		
		2-yr	10-yr	100-yr
DP-1	Wetland to NE	2.57	6.27	12.93
DP-2	Ex. CBs in Driveway	0.92	1.82	3.30

### Developed Site Conditions and Hydrologic Conditions

The proposed site drainage area totals 4.92 acres and is approximately 25% impervious. The intent of the proposed site drainage is to match existing drainage patterns to the maximum extent practical. The site stormwater system will provide stormwater retention and quality improvements through the installation of a Infiltration Basin with a grass filter strip and a formalized street sweeping program for the impervious surfaces. These measures will treat the stormwater quality flow through structural means to provide water quality treatment in conformance with the State of Connecticut Water Quality Manual. As noted above, at the pre-application meeting with town staff, a peak flow analysis was not desired or required due to the site location at the lower reaches of the watershed. However, a comparison of the peak flow generated by this site for the existing and proposed conditions has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. The proposed stormwater management system has been designed to treat the runoff generated by the proposed development for a minimum 80% TSS removal as required in the CT Stormwater Quality Manual, retain and infiltrate the Water Quality Volume, and provide groundwater recharge. Storage volumes for the Infiltration Basin are provided in table 6. The following drainage areas were developed to model the proposed site improvements.

**Proposed Drainage Area 101 (PDA-101):** This drainage area consists of the northern and western edges of the project parcel and neighboring properties that will continue to sheet flow to the wetland offsite to the northeast of the site (DP-1), it is 3.05 acres and is approximately 11%

impervious. PDA-101 consists of primarily of grassed surface cover with some wooded and impervious surface cover. This area remains unchanged as part of the construction activities of this application. The stormwater discharge from this area is considered clean by water quality standards and is not subject to the State's requirements to remove 80% of the total suspended solids.

**Proposed Drainage Area 201 (PDA-201):** This drainage area consists of the southeastern portion of the project parcel that drains to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east (DP-1). PDA-201 is 0.42 acres and is approximately 32.7% impervious. PDA-201 consists mainly of grassed area with some impervious area from the shared driveway. This area remains unchanged as part of the construction activities of this application. The stormwater discharge from this area is considered clean by water quality standards and is not subject to the State's requirements to remove 80% of the total suspended solids.

**Proposed Drainage Area 202 (PDA-202):** This drainage area consists of the majority of the project parcel which sheet flows through riprap energy dissipation trenches and a grassed filter strip to Infiltration Basin #1, which will provided treatment for a minimum of 80% total suspended solids. This area is 1.20 acres and is 42% impervious. The Infiltration Basin will retain and infiltrate the water quality volume. Higher volumes will be safely routed through the open ponded area of the Infiltration Basin to the existing closed drainage system by an overflow connection to the existing catch basins within the shared driveway to the east that drains to the stormwater management system located within the previously subdivided parcel to the east (DP-1). PDA-202 consists of impervious and grassed areas.

**Proposed Drainage Area 203 (PDA-203):** This drainage area consists of the building area from which runoff will be routed via downspouts to a roof leader system which discharges via a flared end section and riprap apron to wetland offsite to the northeast of the site (DP-1), it is 0.25 acres and is 100% impervious. Stormwater runoff in this area is generated from the building's roof only, as such all runoff is considered clean not subject to total suspended solids treatment. PDA-112 consists solely of impervious proposed building roof area.

**Table 3 – Post Development Drainage Characteristics.**

Drainage Area	Total Area	Composite Curve Number	Imperviousness Cover	Time of Concentration
	SF		%	Minutes
PDA-101	133,070	73	10.7%	14.50
PDA-201	18,255	84	32.7%	9.60
PDA-202	52,345	84	41.5%	8.80
PDA-203	10,770	98	100.0%	5.00

**Table 4 – Post Development Conditions Peak Flows**

Analysis Point	Description	Peak Flows (CFS)		
		2-yr	10-yr	100-yr
DP-1	Wetland to NE	2.17	4.99	9.99
DP-2	Ex. CBs in Driveway	0.81	1.52	2.66

**Table 5 – Existing vs. Proposed Peak Rates of Runoff**

Peak Flow (cfs)			
Analysis Point	Design Storms		
	2-yr	10-yr	100-yr
<b>DP-1</b>			
Existing	2.57	6.27	12.93
Proposed	2.17	4.99	9.99
Percent Change	-15.56%	-20.41%	-22.74%
<b>DP-2</b>			
Existing	0.92	1.82	3.30
Proposed	0.81	1.52	2.66
Percent Change	-11.96%	-16.48%	-19.39%

**Table 6 – Infiltration Basin Volumes**

<b>Infiltration Basin 1</b>	<b>Storm Event</b>		
	<b>2-yr</b>	<b>10-yr</b>	<b>100-yr</b>
<b>Peak Elevation (FT)</b>	659.84	660.79	661.36
<b>Storage Volume (CF)</b>	4,413	8,849	12,784

**Required WQV= 4,138CF**

**Provided Available WQV= 11,960CF**

**Top of Infiltration Basin Elevation= 662.00ft**

## **Stormwater Management**

### *Hydrologic Modeling of the Entire Site*

The hydrologic analysis to determine peak stormwater discharge rates was performed using the HydroCAD stormwater modeling system computer program, version 10.00 developed by HydroCAD Software Solutions, LLC. Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method. Rainfall depths and distribution per the NOAA Atlas 14 for Coventry, CT were used for the calculation of peak flow rates and are listed in Table 7. A flood caused by a pipe burst in the NOAA headquarters incapacitated the servers storing the NOAA Atlas 14 rainfall data preventing the data for Bolton, CT from being able to be downloaded and viewed. The rainfall depths and distribution for Coventry, CT were selected to be used due to the proximity of Coventry to Bolton and since the data has been previously downloaded by the design engineer. The drainage areas, or subcatchments as labeled by the program, are depicted by hexagons on the attached drainage diagrams. Post-development HydroCAD output can be found in Appendix B.

Test pits were performed on site on 5/4/2021. A total of three test pits, spaces 50' on center, were observed spanning the location of the proposed infiltration basin. Test pit locations have been added to the Land Development Plans included with this submission. Test Pit logs and Falling Head Permeability Test Logs have been provided in Appendix E.

**Table 7 – Rainfall Depths per NOAA Atlas 14  
Appendix B - 24 hour Rainfall Data**

<b>Return Period</b>	<b>24-hour Rainfall Depth</b>
2-year	3.31"
10-year	5.08"
100-year	7.90"

## Summary

All post development stormwater will be discharged offsite to match existing drainage patterns. The proposed stormwater management system has been designed to treat the runoff generated by the proposed development, retain and infiltrate the Water Quality Volume, and provide groundwater recharge. Stormwater quality is being addressed by formulized street sweeping and a Infiltration Basin with a grass filter strip. As noted from town staff during a pre-application meeting, due to the site being in the lower reach of the watershed, a peak flow analysis was not desired or required. However, a peak flow analysis has still been provided to ensure that the proposed development will not negatively impact the existing neighboring drainage system to the East. The peak flows discharging from the proposed development have been maintained or reduced for all storm events. These features will provide the minimum required 80% TSS removal as required in the CT Stormwater Manual. The proposed stormwater management system will meet the stormwater quality requirements of the State of Connecticut.

## APPENDIX A

### LOCATION MAPS

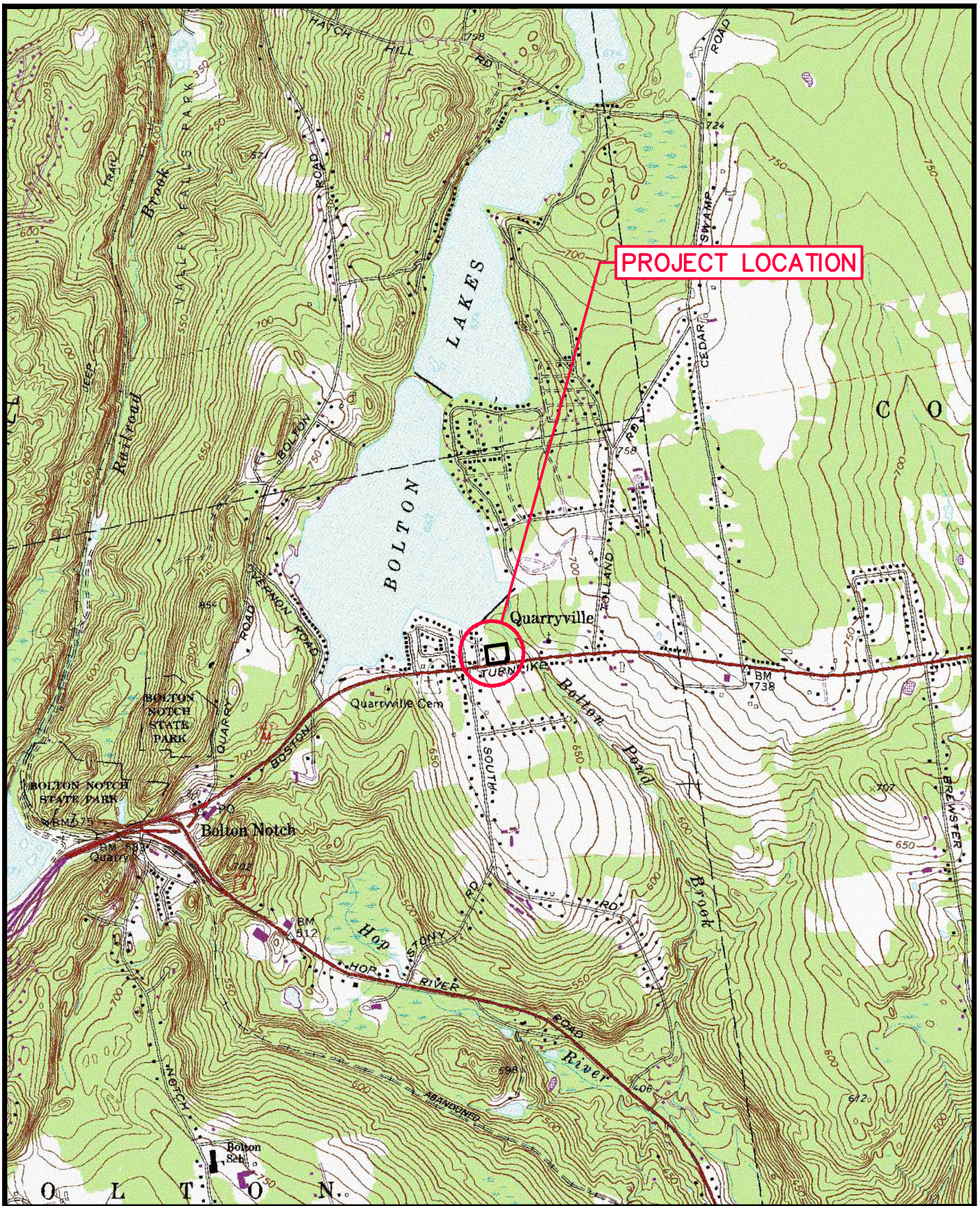
Figure 1: USGS Location Map

Figure 2: Aerial Location Map

Figure 3: NRCS Soil Survey Map with Hydrologic Soil Group Data

Figure 4: FEMA Federal Insurance Rate Map

Figure 5: NOAA Atlas 14 Storm Data



ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING

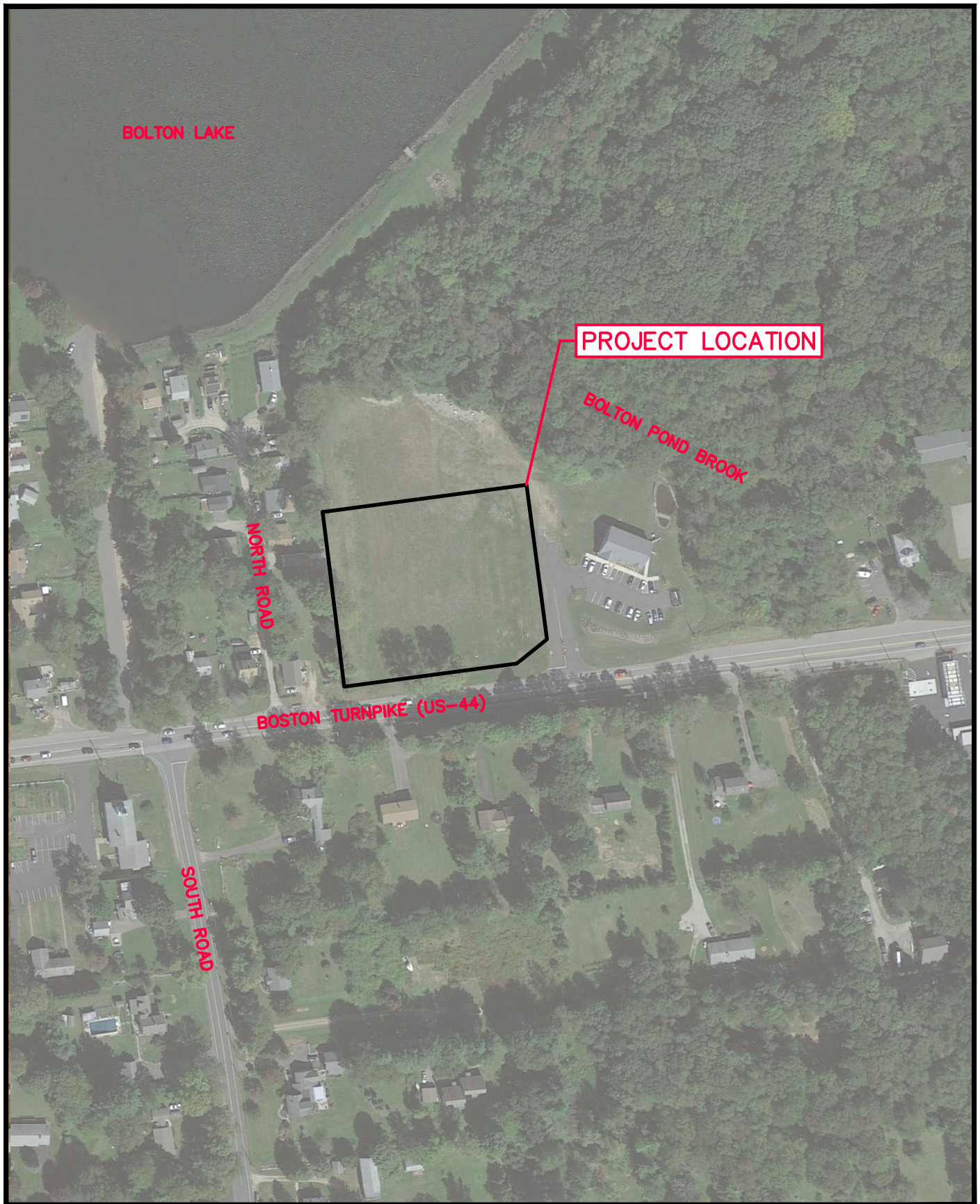
**PROPOSED  
RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed  
Drawn  
Checked  
Approved  
Scale  
Project No.  
Date

S.E.L.  
S.E.L.  
J.A.B.  
J.A.B.  
1"=2,000'  
2002032  
04/02/2021

**FIGURE 1**  
USGS LOCATION MAP





**BL**  
**Companies**  
 ARCHITECTURE  
 ENGINEERING  
 ENVIRONMENTAL  
 LAND SURVEYING

**PROPOSED  
 RETAIL DEVELOPMENT**  
 1100 BOSTON TURNPIKE  
 BOLTON, CONNECTICUT

Designed  
 Drawn  
 Checked  
 Approved  
 Scale  
 Project No.  
 Date

S.E.L.  
 S.E.L.  
 J.A.B.  
 J.A.B.  
 1"=200'  
 2002032  
 04/02/2021

**FIGURE 2**  
**AERIAL LOCATION MAP**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for State of Connecticut



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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# Soil Map

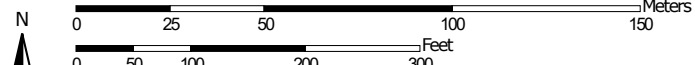
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map




Map Scale: 1:2,010 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

### MAP INFORMATION

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

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 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Sep 3, 2019—Oct 22, 2019

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
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	1.6	12.9%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	3.1	24.8%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	7.2	57.0%
W	Water	0.7	5.3%
<b>Totals for Area of Interest</b>		<b>12.7</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

## Custom Soil Resource Report

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## State of Connecticut

### 45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2t2ql  
*Elevation:* 0 to 1,470 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Woodbridge, fine sandy loam, and similar soils:* 82 percent  
*Minor components:* 18 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Woodbridge, Fine Sandy Loam

##### Setting

*Landform:* Hills, drumlins, ground moraines  
*Landform position (two-dimensional):* Backslope, footslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

##### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam  
*Bw1 - 7 to 18 inches:* fine sandy loam  
*Bw2 - 18 to 30 inches:* fine sandy loam  
*Cd - 30 to 65 inches:* gravelly fine sandy loam

##### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 39 inches to densic material  
*Drainage class:* Moderately well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Low (about 3.6 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144AY037MA - Moist Dense Till Uplands  
*Hydric soil rating:* No

**Minor Components**

**Paxton**

*Percent of map unit:* 10 percent  
*Landform:* Drumlins, hills, ground moraines  
*Landform position (two-dimensional):* Backslope, summit, shoulder  
*Landform position (three-dimensional):* Side slope, crest, nose slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Ridgebury**

*Percent of map unit:* 8 percent  
*Landform:* Ground moraines, depressions, drainageways, hills  
*Landform position (two-dimensional):* Toeslope, backslope, footslope  
*Landform position (three-dimensional):* Base slope, head slope, dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

**46B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol:* 2t2qr  
*Elevation:* 0 to 1,440 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Woodbridge, very stony, and similar soils:* 82 percent  
*Minor components:* 18 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Woodbridge, Very Stony**

**Setting**

*Landform:* Hills, ground moraines, drumlins  
*Landform position (two-dimensional):* Backslope, footslope, summit  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

**Typical profile**

*Oe - 0 to 2 inches:* moderately decomposed plant material  
*A - 2 to 9 inches:* fine sandy loam  
*Bw1 - 9 to 20 inches:* fine sandy loam

## Custom Soil Resource Report

*Bw2 - 20 to 32 inches:* fine sandy loam  
*Cd - 32 to 67 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 0 to 8 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* 20 to 43 inches to densic material  
*Drainage class:* Moderately well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 19 to 27 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Low (about 4.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F144AY037MA - Moist Dense Till Uplands  
*Hydric soil rating:* No

### Minor Components

#### Paxton, very stony

*Percent of map unit:* 10 percent  
*Landform:* Drumlins, hills, ground moraines  
*Landform position (two-dimensional):* Shoulder, backslope, summit  
*Landform position (three-dimensional):* Crest, side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex, linear  
*Hydric soil rating:* No

#### Ridgebury, very stony

*Percent of map unit:* 8 percent  
*Landform:* Ground moraines, depressions, drumlins, drainageways, hills  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Head slope, base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## 60B—Canton and Charlton fine sandy loams, 3 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2w81s  
*Elevation:* 0 to 1,460 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F

## Custom Soil Resource Report

*Frost-free period:* 140 to 240 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Canton and similar soils:* 50 percent

*Charlton and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Canton

#### Setting

*Landform:* Ridges, moraines, hills

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Side slope, nose slope, crest

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

#### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam

*Bw1 - 7 to 15 inches:* fine sandy loam

*Bw2 - 15 to 26 inches:* gravelly fine sandy loam

*2C - 26 to 65 inches:* gravelly loamy sand

#### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 19 to 39 inches to strongly contrasting textural stratification

*Drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Very low (about 2.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* B

*Ecological site:* F144AY034CT - Well Drained Till Uplands

*Hydric soil rating:* No

### Description of Charlton

#### Setting

*Landform:* Hills, ground moraines, ridges

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, side slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

## Custom Soil Resource Report

### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam  
*Bw - 7 to 22 inches:* gravelly fine sandy loam  
*C - 22 to 65 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.14 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water capacity:* Moderate (about 6.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B  
*Ecological site:* F144AY034CT - Well Drained Till Uplands  
*Hydric soil rating:* No

### Minor Components

#### Sutton

*Percent of map unit:* 5 percent  
*Landform:* Hills, ridges, ground moraines  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

#### Leicester

*Percent of map unit:* 5 percent  
*Landform:* Drainageways, ground moraines, hills, depressions  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Chatfield

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Crest, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

**W—Water**

**Map Unit Composition**

*Water: 100 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*



# Soil Information for All Uses

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## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

## Hydrologic Soil Group

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

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

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

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

## Custom Soil Resource Report

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

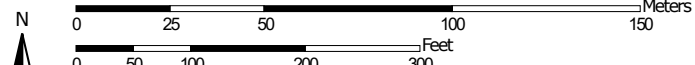
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over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

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

Custom Soil Resource Report  
Map—Hydrologic Soil Group




Map Scale: 1:2,010 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

### MAP LEGEND

**Area of Interest (AOI)**









 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**





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

**Soil Rating Lines**


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

**Soil Rating Points**






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

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


**Water Features**

 Streams and Canals

**Transportation**

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

**Background**

 Aerial Photography

### MAP INFORMATION

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

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 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Sep 3, 2019—Oct 22, 2019

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.

**Table—Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	1.6	12.9%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	3.1	24.8%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	7.2	57.0%
W	Water		0.7	5.3%
<b>Totals for Area of Interest</b>			<b>12.7</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group**

*Aggregation Method: Dominant Condition*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*

# References

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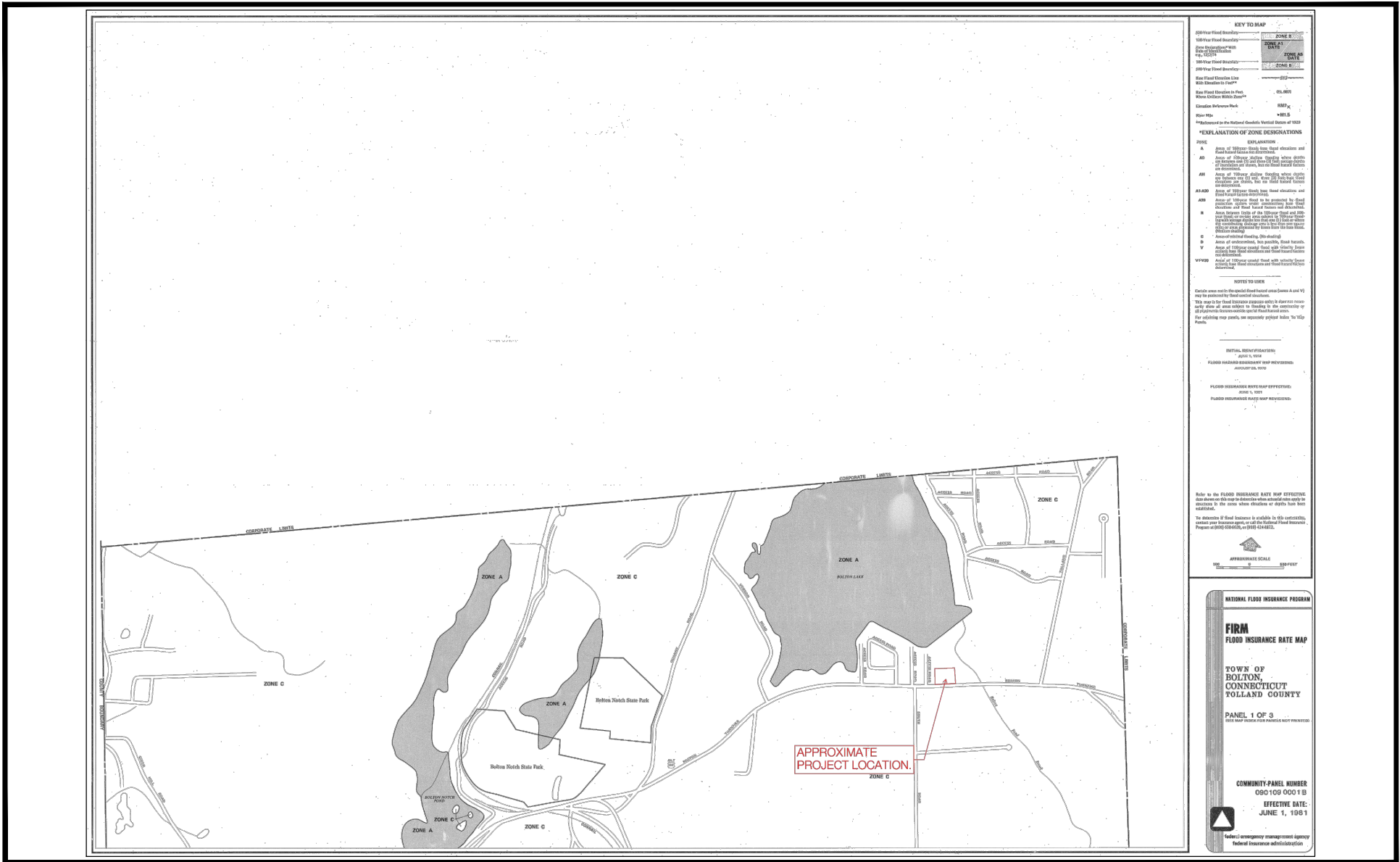
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**KEY TO MAP**

100 Year Flood Boundary	ZONE B
500 Year Flood Boundary	ZONE C
Zone D (Special Flood Hazard Area)	ZONE D
Zone E (Special Flood Hazard Area)	ZONE E
Zone F (Special Flood Hazard Area)	ZONE F
Zone G (Special Flood Hazard Area)	ZONE G
Zone H (Special Flood Hazard Area)	ZONE H
Zone I (Special Flood Hazard Area)	ZONE I
Zone J (Special Flood Hazard Area)	ZONE J
Zone K (Special Flood Hazard Area)	ZONE K
Zone L (Special Flood Hazard Area)	ZONE L
Zone M (Special Flood Hazard Area)	ZONE M
Zone N (Special Flood Hazard Area)	ZONE N
Zone O (Special Flood Hazard Area)	ZONE O
Zone P (Special Flood Hazard Area)	ZONE P
Zone Q (Special Flood Hazard Area)	ZONE Q
Zone R (Special Flood Hazard Area)	ZONE R
Zone S (Special Flood Hazard Area)	ZONE S
Zone T (Special Flood Hazard Area)	ZONE T
Zone U (Special Flood Hazard Area)	ZONE U
Zone V (Special Flood Hazard Area)	ZONE V
Zone W (Special Flood Hazard Area)	ZONE W
Zone X (Special Flood Hazard Area)	ZONE X
Zone Y (Special Flood Hazard Area)	ZONE Y
Zone Z (Special Flood Hazard Area)	ZONE Z

**EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program.
B	Area of 500-year flood, based on elevation and flood hazard data from the National Flood Insurance Program.
C	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate.
D	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
E	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
F	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
G	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
H	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
I	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
J	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
K	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
L	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
M	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
N	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
O	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
P	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
Q	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
R	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
S	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
T	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
U	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
V	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
W	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
X	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
Y	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.
Z	Area of 100-year flood, based on elevation and flood hazard data from the National Flood Insurance Program, but with a special flood hazard rate and a special flood hazard rate.

**NOTES TO USER**

Caution: Areas marked as special flood hazard areas (Zones A and V) may be subject to flood-related damages.

This map is for Flood Insurance purposes only. It does not necessarily show all areas subject to flooding. It is the responsibility of all property owners to consult with the National Flood Insurance Program for additional map sheets, or separate printed data, for their areas.

**RETAIL IDENTIFICATION:**

FLOOD HAZARD BOUNDARY MAP REVISIONS: JANUARY 2010

FLOOD INSURANCE RATE MAP EFFECTIVE: JUNE 1, 1981

FLOOD INSURANCE RATE MAP REVISIONS:

**Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map for information when actual rates apply in accordance with the state when effective or date from first established.**

**For information on Flood Insurance, or call the National Flood Insurance Program at 800-368-5848.**

**APPROXIMATE SCALE**

1" = 500'

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM**

**FLOOD INSURANCE RATE MAP**

**TOWN OF BOLTON, CONNECTICUT**

**TOLLAND COUNTY**

**PANEL 1 OF 3**

**SEE MAP INDEX FOR PANELS NOT PRINTED**

**COMMUNITY-PANEL NUMBER**

060109 0001 B

**EFFECTIVE DATE:**

JUNE 1, 1981

**Federal Emergency Management Agency**

**Federal Insurance Administration**

**BL** ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING  
**Companies**

**FEMA FLOOD INSURANCE RATE MAP**

SITE IMPROVEMENTS  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed C.M.N.  
Drawn C.M.N.  
Reviewed S.M.K.  
Scale 1"=500'  
Project No. 2002032  
Date 01/08/21  
CAD File FEMA200203201

**FIGURE 4**





NOAA Atlas 14, Volume 10, Version 3  
 Location name: Coventry, Connecticut, USA\*  
 Latitude: 41.7995°, Longitude: -72.3493°  
 Elevation: 479.37 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 & aerials](#)

**PF tabular**

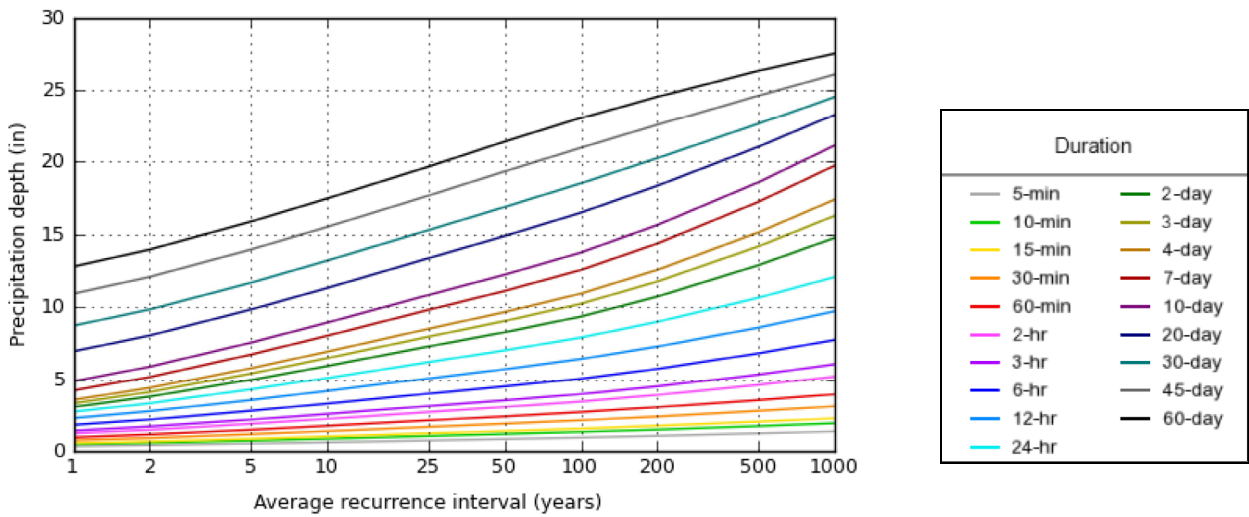
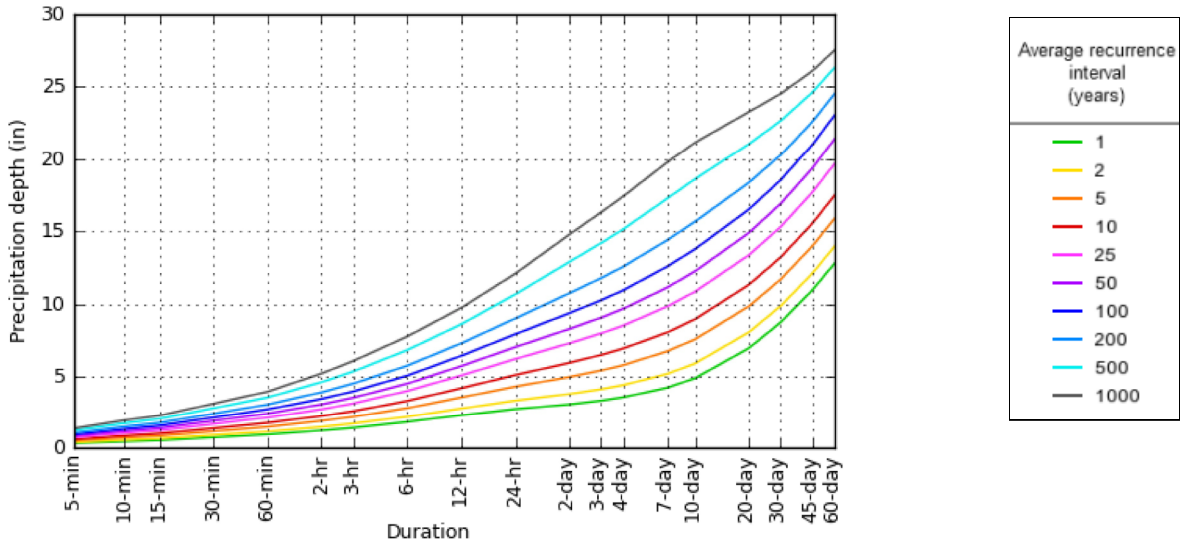
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.327 (0.248-0.431)	0.396 (0.300-0.523)	0.510 (0.385-0.673)	0.604 (0.454-0.803)	0.734 (0.537-1.02)	0.831 (0.599-1.17)	0.933 (0.656-1.36)	1.05 (0.701-1.56)	1.22 (0.787-1.87)	1.36 (0.859-2.12)
10-min	0.463 (0.351-0.610)	0.561 (0.425-0.740)	0.722 (0.546-0.955)	0.855 (0.643-1.14)	1.04 (0.761-1.44)	1.18 (0.846-1.66)	1.32 (0.929-1.93)	1.49 (0.994-2.21)	1.73 (1.12-2.65)	1.92 (1.22-3.01)
15-min	0.544 (0.413-0.718)	0.660 (0.500-0.871)	0.850 (0.642-1.13)	1.01 (0.758-1.34)	1.22 (0.895-1.69)	1.39 (0.996-1.96)	1.56 (1.09-2.27)	1.75 (1.17-2.60)	2.03 (1.31-3.12)	2.26 (1.43-3.54)
30-min	0.744 (0.564-0.980)	0.902 (0.684-1.19)	1.16 (0.877-1.54)	1.38 (1.03-1.83)	1.67 (1.22-2.32)	1.89 (1.36-2.67)	2.13 (1.50-3.11)	2.39 (1.60-3.56)	2.78 (1.80-4.26)	3.10 (1.96-4.84)
60-min	0.943 (0.715-1.24)	1.14 (0.867-1.51)	1.47 (1.11-1.95)	1.75 (1.31-2.32)	2.12 (1.55-2.94)	2.40 (1.73-3.39)	2.70 (1.90-3.94)	3.04 (2.03-4.51)	3.53 (2.28-5.41)	3.93 (2.49-6.14)
2-hr	1.22 (0.927-1.60)	1.47 (1.12-1.93)	1.88 (1.43-2.48)	2.23 (1.68-2.95)	2.70 (1.99-3.73)	3.05 (2.21-4.31)	3.43 (2.44-5.03)	3.89 (2.60-5.75)	4.59 (2.97-7.00)	5.19 (3.29-8.05)
3-hr	1.41 (1.08-1.85)	1.70 (1.30-2.23)	2.17 (1.65-2.86)	2.57 (1.94-3.39)	3.11 (2.30-4.30)	3.51 (2.56-4.95)	3.95 (2.82-5.79)	4.49 (3.01-6.61)	5.32 (3.45-8.09)	6.05 (3.85-9.35)
6-hr	1.81 (1.39-2.36)	2.18 (1.67-2.84)	2.78 (2.12-3.64)	3.29 (2.50-4.32)	3.98 (2.95-5.46)	4.48 (3.28-6.30)	5.04 (3.61-7.36)	5.73 (3.86-8.40)	6.80 (4.43-10.3)	7.74 (4.93-11.9)
12-hr	2.29 (1.76-2.97)	2.76 (2.12-3.58)	3.53 (2.70-4.60)	4.17 (3.18-5.46)	5.05 (3.76-6.90)	5.70 (4.18-7.95)	6.41 (4.60-9.28)	7.27 (4.91-10.6)	8.58 (5.60-12.9)	9.71 (6.21-14.8)
24-hr	2.72 (2.10-3.51)	3.31 (2.55-4.28)	4.28 (3.29-5.55)	5.08 (3.89-6.62)	6.19 (4.62-8.42)	7.01 (5.15-9.73)	7.90 (5.69-11.4)	8.98 (6.09-13.0)	10.6 (6.97-15.9)	12.1 (7.75-18.3)
2-day	3.05 (2.37-3.92)	3.77 (2.92-4.85)	4.95 (3.82-6.39)	5.93 (4.56-7.69)	7.27 (5.46-9.87)	8.26 (6.11-11.5)	9.35 (6.80-13.5)	10.7 (7.28-15.4)	12.9 (8.46-19.1)	14.8 (9.51-22.2)
3-day	3.31 (2.57-4.24)	4.10 (3.18-5.26)	5.39 (4.18-6.95)	6.47 (4.98-8.37)	7.95 (5.99-10.8)	9.03 (6.71-12.5)	10.2 (7.47-14.7)	11.8 (8.00-16.9)	14.2 (9.32-20.9)	16.3 (10.5-24.4)
4-day	3.54 (2.76-4.54)	4.39 (3.41-5.62)	5.77 (4.47-7.42)	6.92 (5.34-8.93)	8.50 (6.41-11.5)	9.65 (7.18-13.3)	10.9 (7.99-15.7)	12.6 (8.56-18.0)	15.1 (9.97-22.3)	17.4 (11.2-26.0)
7-day	4.20 (3.28-5.36)	5.16 (4.02-6.59)	6.72 (5.23-8.61)	8.02 (6.20-10.3)	9.80 (7.41-13.2)	11.1 (8.28-15.3)	12.6 (9.19-17.9)	14.4 (9.83-20.5)	17.2 (11.4-25.2)	19.7 (12.8-29.4)
10-day	4.86 (3.81-6.19)	5.88 (4.60-7.49)	7.54 (5.88-9.64)	8.92 (6.92-11.5)	10.8 (8.20-14.5)	12.2 (9.11-16.7)	13.8 (10.0-19.5)	15.6 (10.7-22.2)	18.6 (12.3-27.1)	21.1 (13.7-31.3)
20-day	6.94 (5.46-8.80)	8.04 (6.31-10.2)	9.83 (7.69-12.5)	11.3 (8.81-14.5)	13.4 (10.1-17.7)	14.9 (11.1-20.0)	16.5 (12.0-22.9)	18.4 (12.6-25.8)	21.0 (14.0-30.5)	23.3 (15.1-34.2)
30-day	8.71 (6.86-11.0)	9.83 (7.74-12.4)	11.7 (9.16-14.8)	13.2 (10.3-16.8)	15.3 (11.6-20.1)	16.9 (12.5-22.5)	18.5 (13.4-25.4)	20.3 (14.0-28.4)	22.6 (15.1-32.6)	24.5 (16.0-35.9)
45-day	10.9 (8.63-13.8)	12.1 (9.53-15.2)	14.0 (11.0-17.7)	15.5 (12.1-19.7)	17.7 (13.4-23.0)	19.3 (14.3-25.6)	21.0 (15.1-28.4)	22.6 (15.6-31.5)	24.6 (16.5-35.3)	26.1 (17.0-38.1)
60-day	12.8 (10.1-16.1)	14.0 (11.0-17.6)	15.9 (12.5-20.1)	17.5 (13.7-22.2)	19.7 (14.9-25.5)	21.4 (15.9-28.2)	23.0 (16.5-30.9)	24.5 (17.0-34.1)	26.3 (17.6-37.6)	27.5 (18.0-40.1)

<sup>1</sup> 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.

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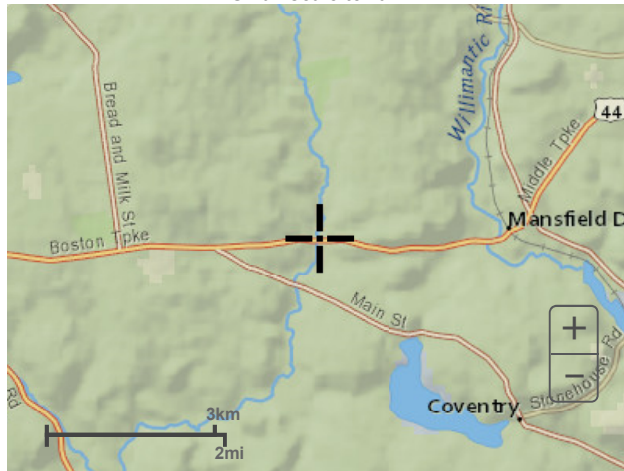
## PF graphical

PDS-based depth-duration-frequency (DDF) curves  
Latitude: 41.7995°, Longitude: -72.3493°



## Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



### Large scale aerial



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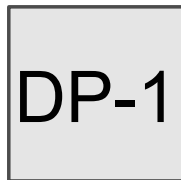
[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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APPENDIX B  
PRE-DEVELOPMENT HYDROLOGY



Area to Wetland to the Northeast



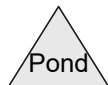
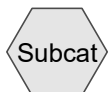
Wetland to Northeast



Area to Ex. CBs in Driveway



Ex. CBs in Driveway



Routing Diagram for C-DAT-2002032-EXISTING HYDROLOGY  
Prepared by BL Companies, Inc., Printed 5/13/2021  
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**C-DAT-2002032-EXISTING HYDROLOGY CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"**

Prepared by BL Companies, Inc.

Printed 5/13/2021

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

**SubcatchmentEDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>0.99"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=2.57 cfs 0.350 af

**SubcatchmentEDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>1.55"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=0.92 cfs 0.087 af

**Reach DP-1: Wetland to Northeast**

Inflow=2.57 cfs 0.350 af  
Outflow=2.57 cfs 0.350 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=0.92 cfs 0.087 af  
Outflow=0.92 cfs 0.087 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.437 af Average Runoff Depth = 1.06"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Depth> 0.99"

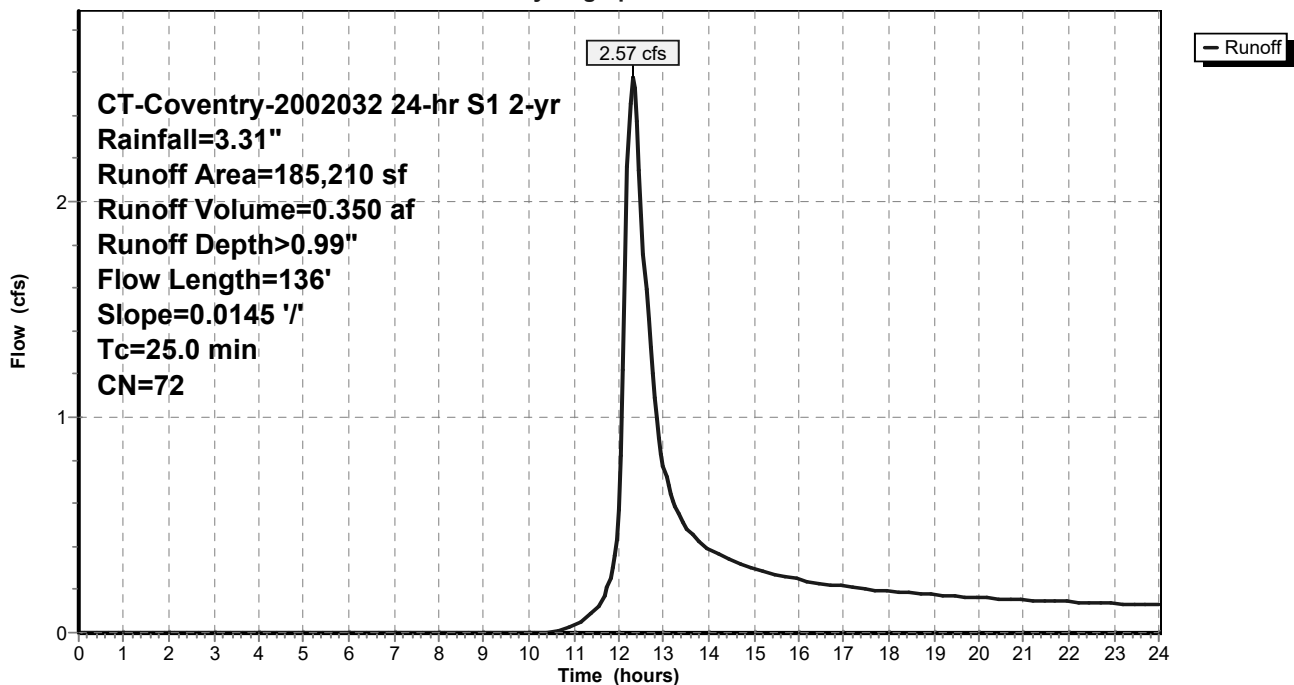
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph





**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

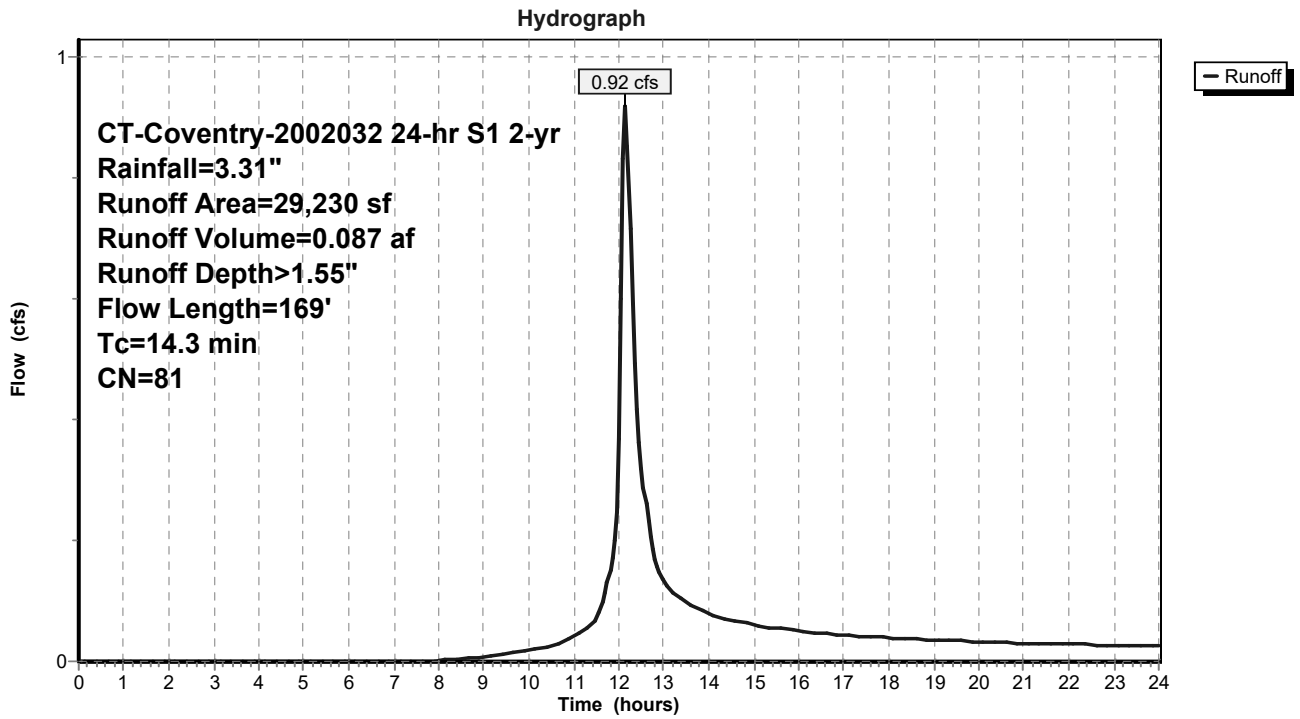
Runoff = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**



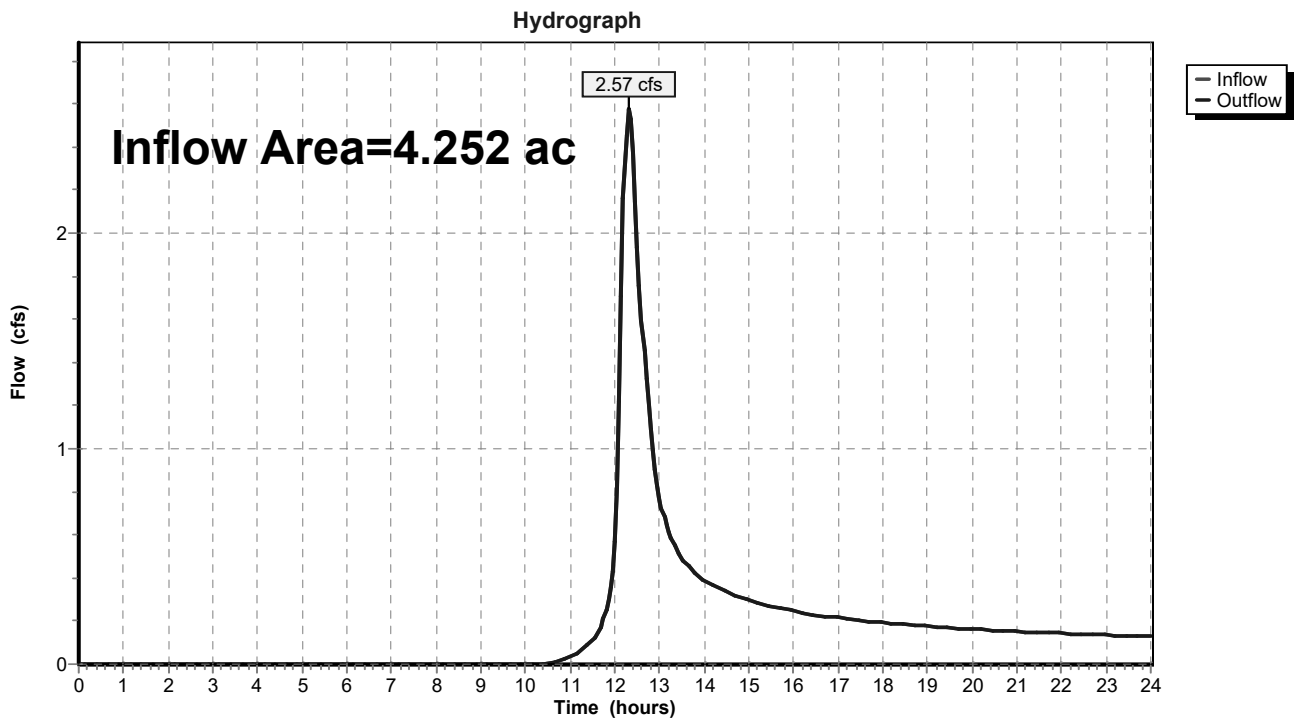
### Summary for Reach DP-1: Wetland to Northeast

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 0.99" for 2-yr event  
Inflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af  
Outflow = 2.57 cfs @ 12.31 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-1: Wetland to Northeast



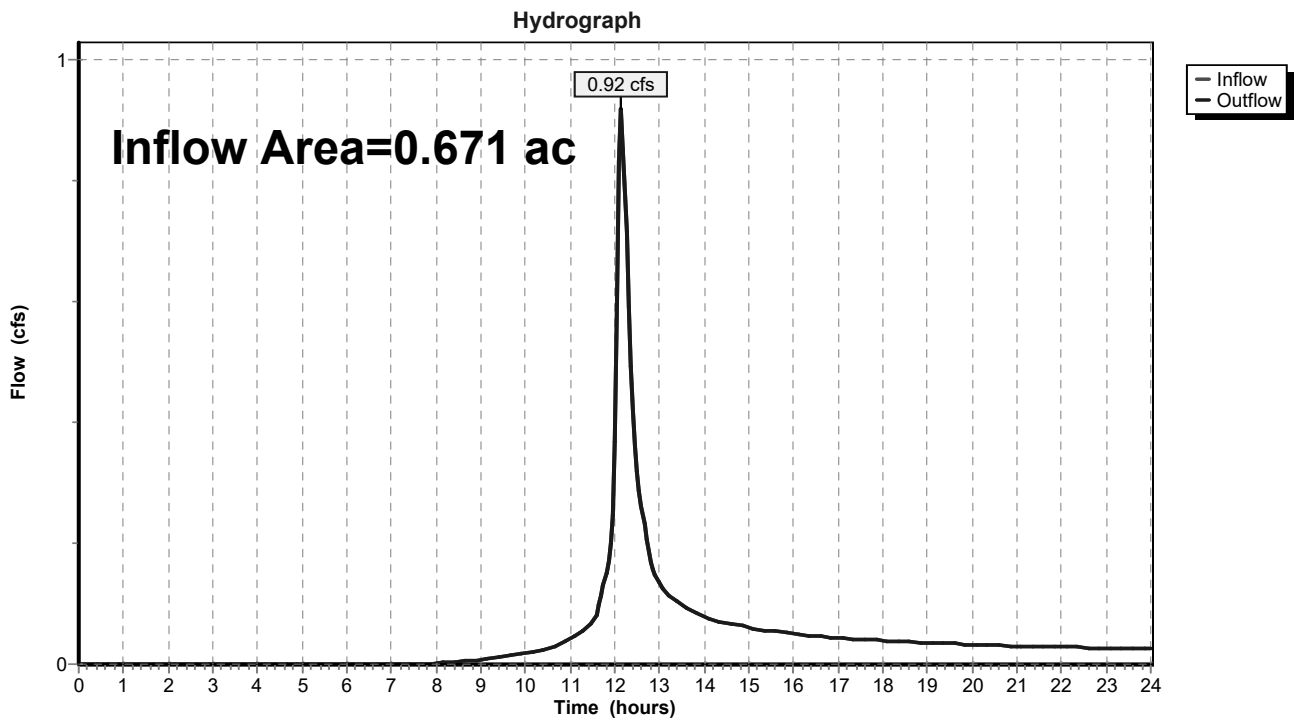
### Summary for Reach DP-2: Ex. CBs in Driveway

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 1.55" for 2-yr event  
Inflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af  
Outflow = 0.92 cfs @ 12.15 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-2: Ex. CBs in Driveway



**C-DAT-2002032-EXISTING HYDROLOGY** CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Prepared by BL Companies, Inc.

Printed 5/13/2021

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

**Subcatchment EDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>2.24"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=6.27 cfs 0.794 af

**Subcatchment EDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>3.04"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=1.82 cfs 0.170 af

**Reach DP-1: Wetland to Northeast**

Inflow=6.27 cfs 0.794 af  
Outflow=6.27 cfs 0.794 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=1.82 cfs 0.170 af  
Outflow=1.82 cfs 0.170 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.964 af Average Runoff Depth = 2.35"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Depth> 2.24"

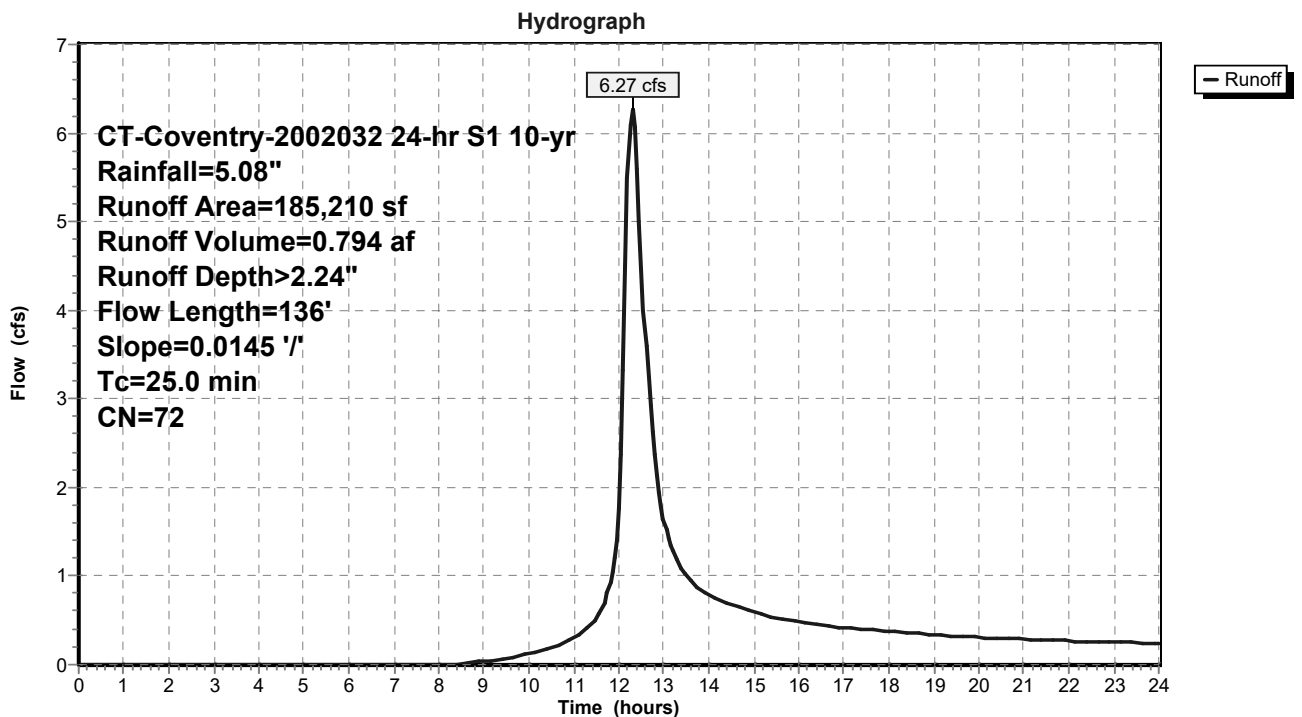
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

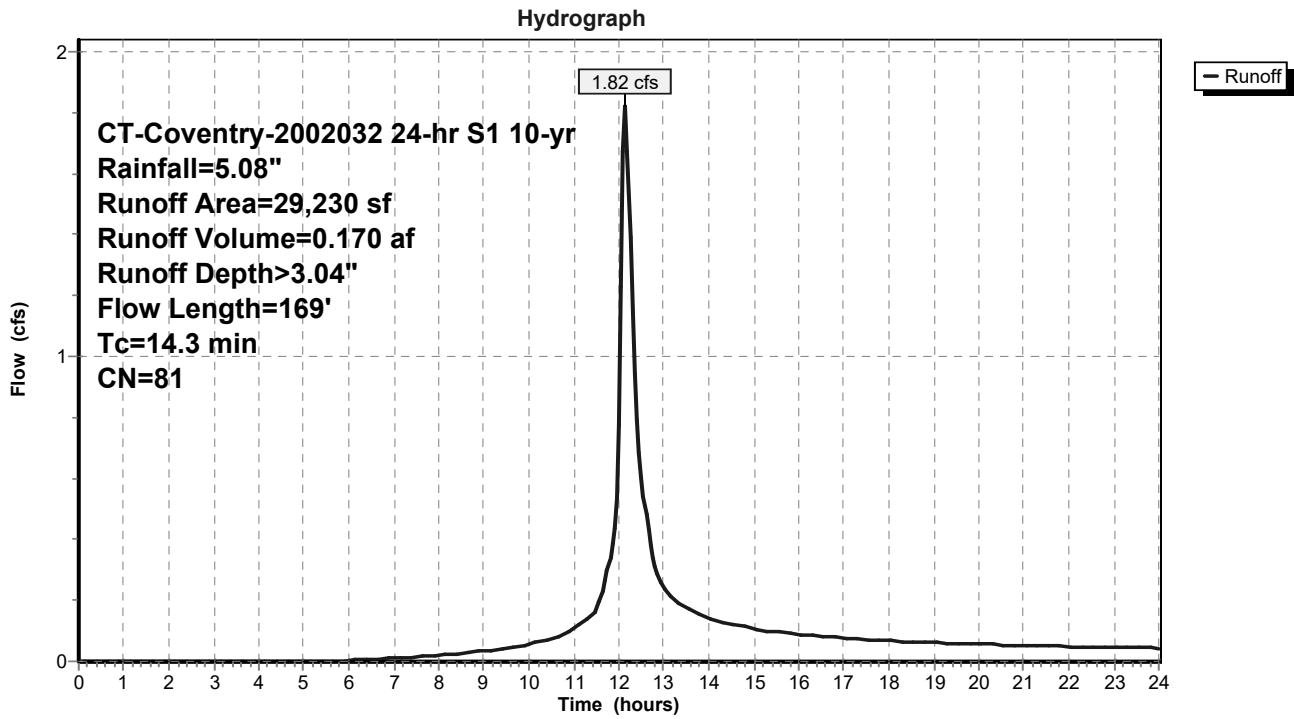
Runoff = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**





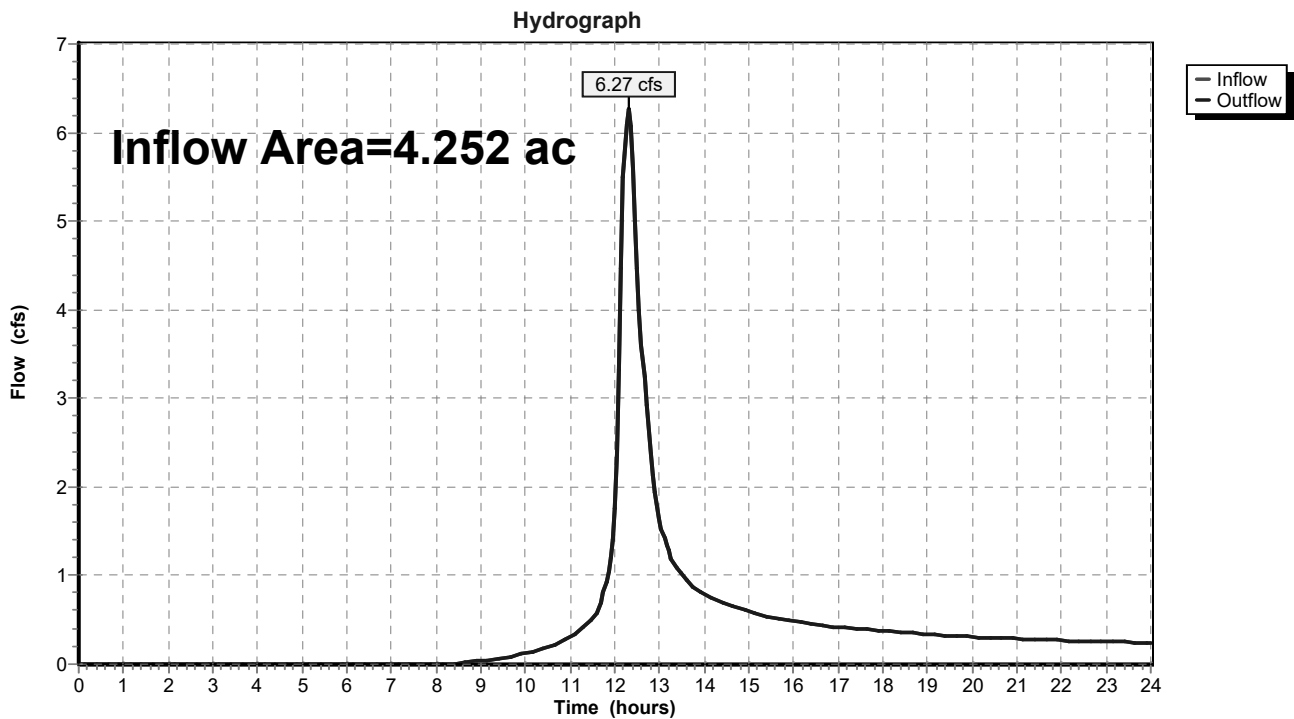
**Summary for Reach DP-1: Wetland to Northeast**

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 2.24" for 10-yr event  
 Inflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af  
 Outflow = 6.27 cfs @ 12.30 hrs, Volume= 0.794 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**Reach DP-1: Wetland to Northeast**



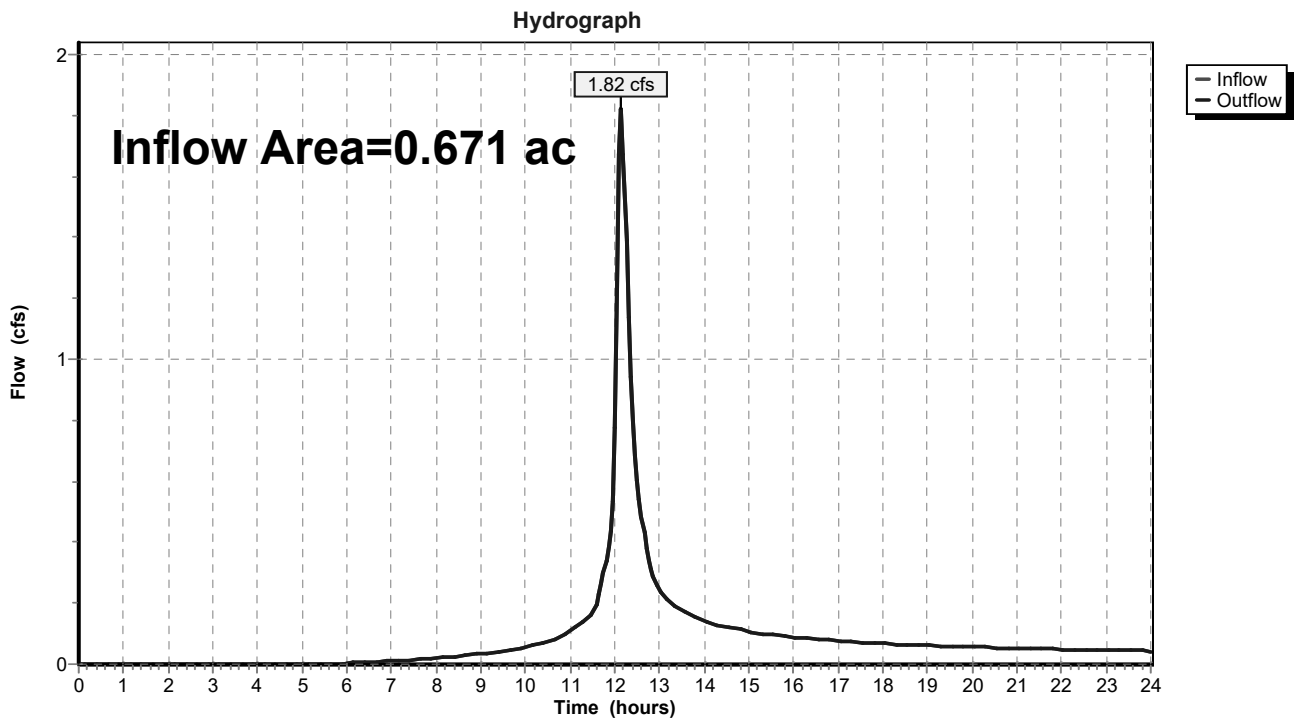
### Summary for Reach DP-2: Ex. CBs in Driveway

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 3.04" for 10-yr event  
Inflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af  
Outflow = 1.82 cfs @ 12.15 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-2: Ex. CBs in Driveway



**C-DAT-2002032-EXISTING HYDROLOGCT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"**

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

**SubcatchmentEDA-10: Area to Wetland to** Runoff Area=185,210 sf 6.55% Impervious Runoff Depth>4.57"  
Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=72 Runoff=12.93 cfs 1.620 af

**SubcatchmentEDA-20: Area to Ex. CBs in** Runoff Area=29,230 sf 15.75% Impervious Runoff Depth>5.63"  
Flow Length=169' Tc=14.3 min CN=81 Runoff=3.30 cfs 0.315 af

**Reach DP-1: Wetland to Northeast**

Inflow=12.93 cfs 1.620 af  
Outflow=12.93 cfs 1.620 af

**Reach DP-2: Ex. CBs in Driveway**

Inflow=3.30 cfs 0.315 af  
Outflow=3.30 cfs 0.315 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.934 af Average Runoff Depth = 4.72"**  
**92.19% Pervious = 4.539 ac 7.81% Impervious = 0.384 ac**

**Summary for Subcatchment EDA-10: Area to Wetland to the Northeast**

Runoff = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Depth> 4.57"

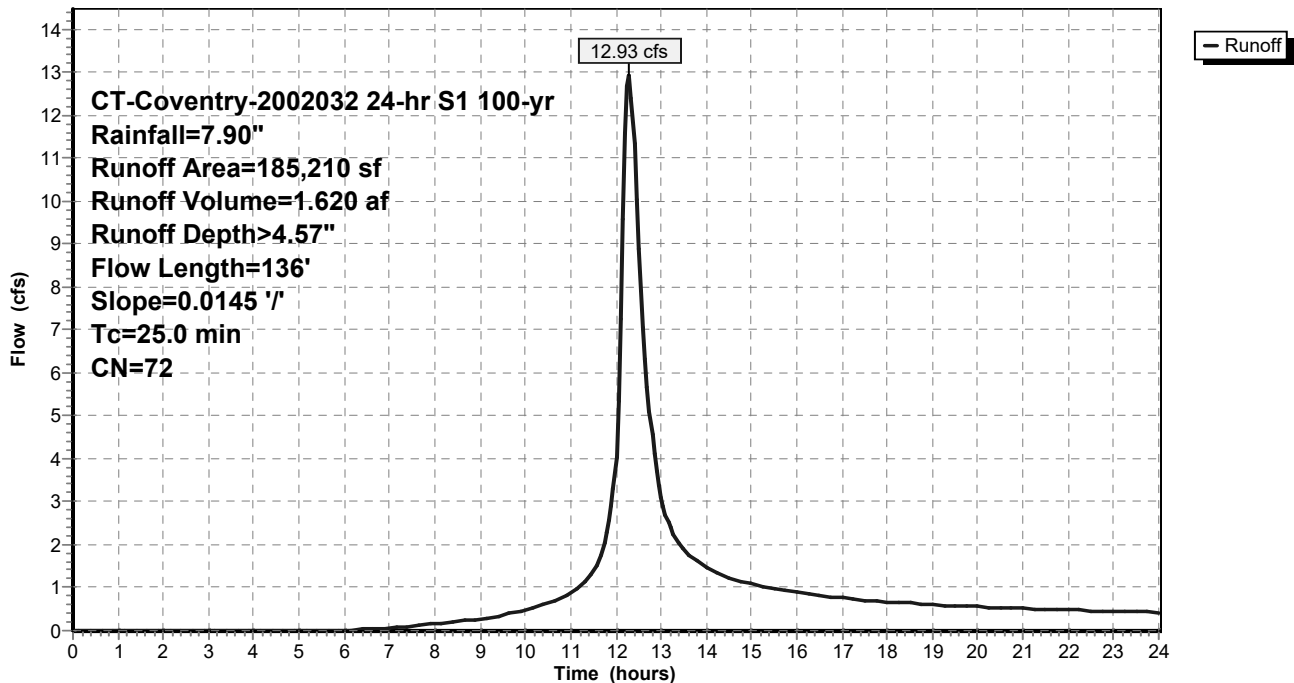
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
134,225	69	50-75% Grass cover, Fair, HSG B
15,340	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
21,065	73	Woods, Fair, HSG C
12,135	98	Paved parking, HSG B
0	98	Paved parking, HSG C
185,210	72	Weighted Average
173,075		93.45% Pervious Area
12,135		6.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment EDA-10: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment EDA-20: Area to Ex. CBs in Driveway**

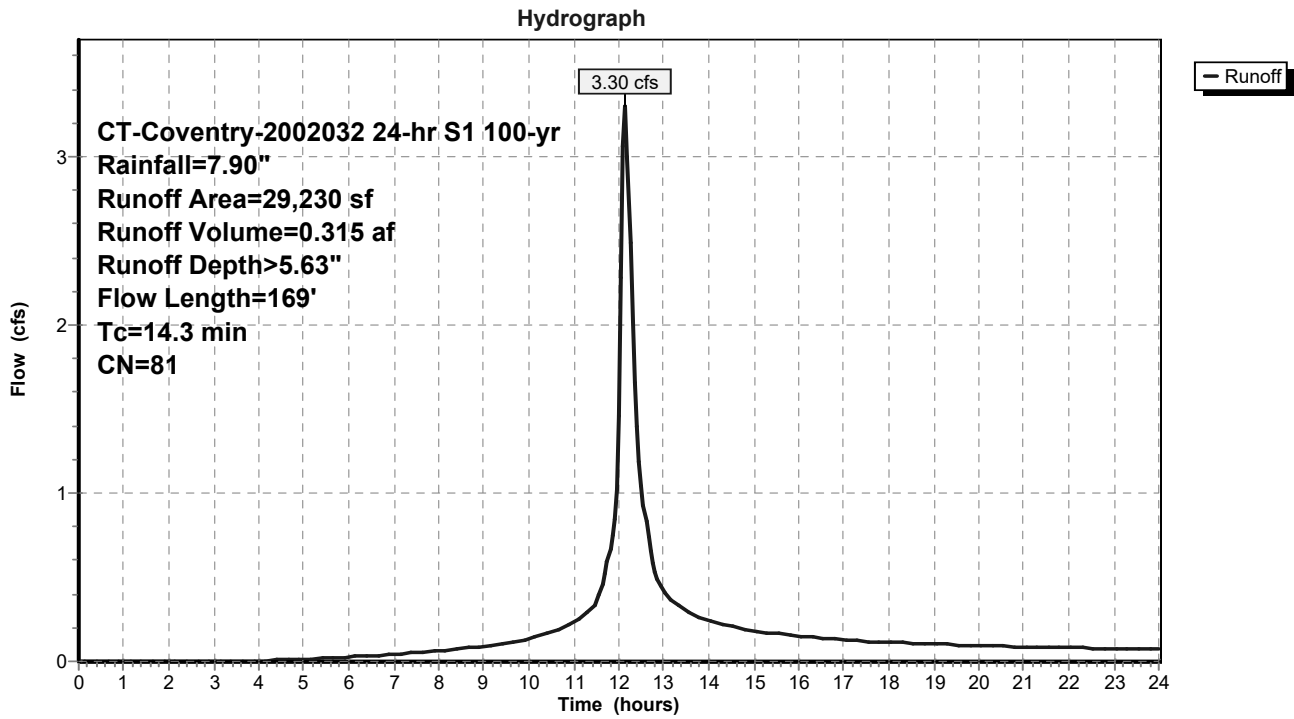
Runoff = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Depth> 5.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,335	69	50-75% Grass cover, Fair, HSG B
22,290	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
185	98	Paved parking, HSG B
4,420	98	Paved parking, HSG C
29,230	81	Weighted Average
24,625		84.25% Pervious Area
4,605		15.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0080	0.12		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	16	0.0284	1.18		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	15	0.0100	2.03		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
14.3	169	Total			

**Subcatchment EDA-20: Area to Ex. CBs in Driveway**



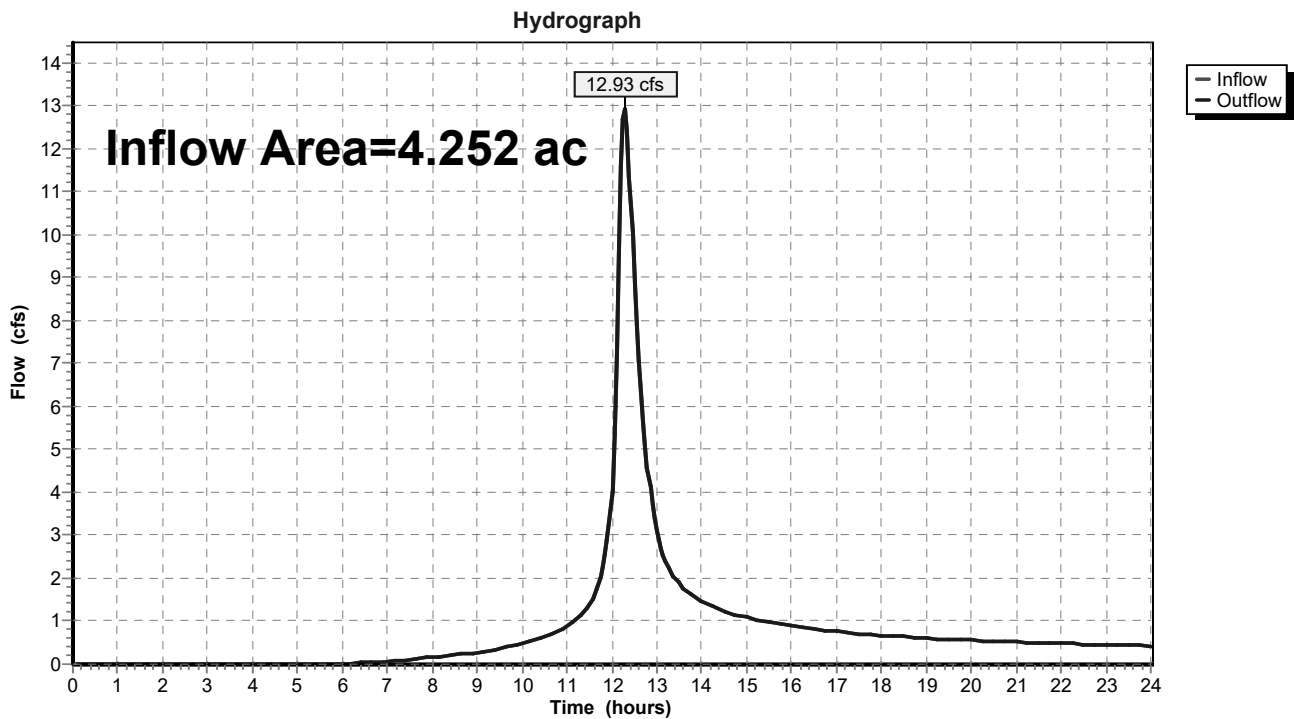
### Summary for Reach DP-1: Wetland to Northeast

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

Inflow Area = 4.252 ac, 6.55% Impervious, Inflow Depth > 4.57" for 100-yr event  
Inflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af  
Outflow = 12.93 cfs @ 12.29 hrs, Volume= 1.620 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Reach DP-1: Wetland to Northeast



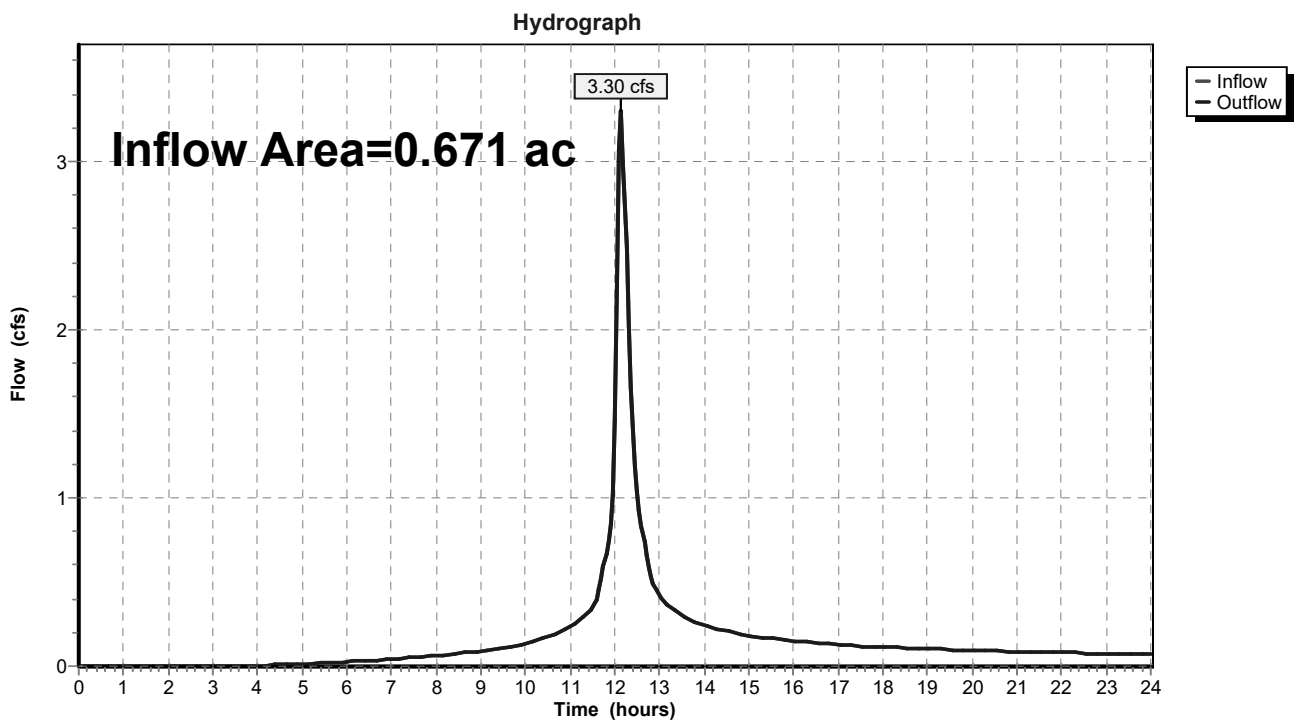
**Summary for Reach DP-2: Ex. CBs in Driveway**

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

Inflow Area = 0.671 ac, 15.75% Impervious, Inflow Depth > 5.63" for 100-yr event  
 Inflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af  
 Outflow = 3.30 cfs @ 12.15 hrs, Volume= 0.315 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

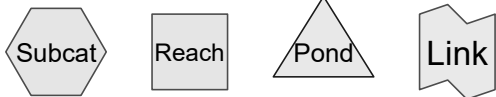
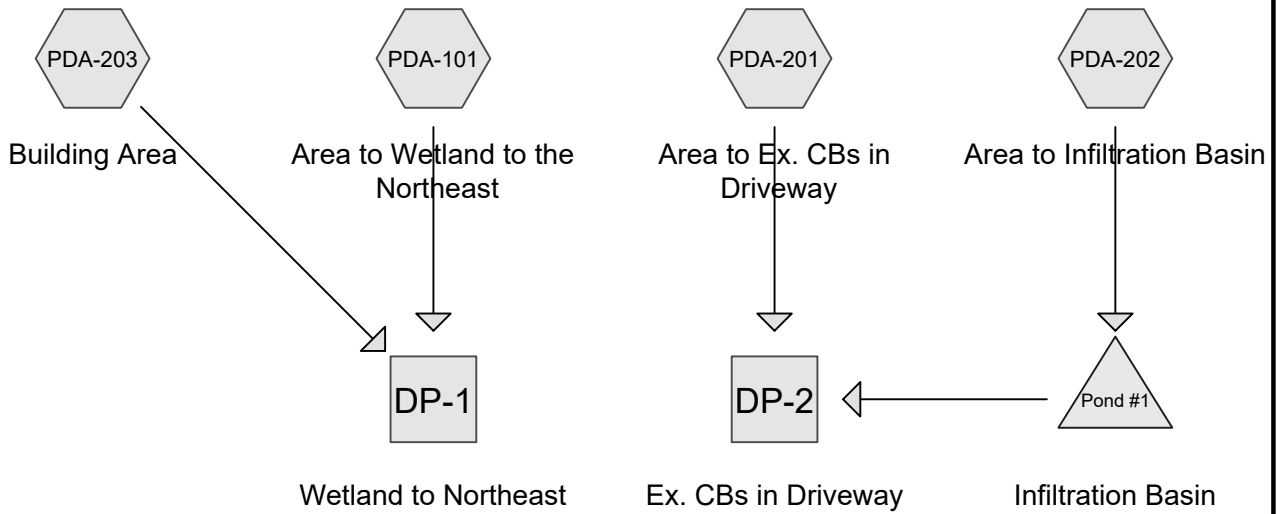
**Reach DP-2: Ex. CBs in Driveway**





## APPENDIX C

### POST-DEVELOPMENT HYDROLOGY



**Routing Diagram for C-DAT-2002032-PROPOSED HYDROLOGY - 2021-05-12**  
 Prepared by BL Companies, Inc., Printed 5/13/2021  
 HydroCAD® 10.00-26 s/n 01334 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=1.05"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=1.99 cfs 0.268 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=1.77"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=0.81 cfs 0.062 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=1.77"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=2.42 cfs 0.178 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=3.08"  
 Tc=5.0 min CN=98 Runoff=0.96 cfs 0.063 af

**Reach DP-1: Wetland to Northeast** Inflow=2.17 cfs 0.332 af  
 Outflow=2.17 cfs 0.332 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=0.81 cfs 0.062 af  
 Outflow=0.81 cfs 0.062 af

**Pond Pond #1: Infiltration Basin** Peak Elev=659.84' Storage=4,413 cf Inflow=2.42 cfs 0.178 af  
 Discarded=0.08 cfs 0.178 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.178 af

**Total Runoff Area = 4.923 ac Runoff Volume = 0.571 af Average Runoff Depth = 1.39"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 1.99 cfs @ 12.31 hrs, Volume= 0.268 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

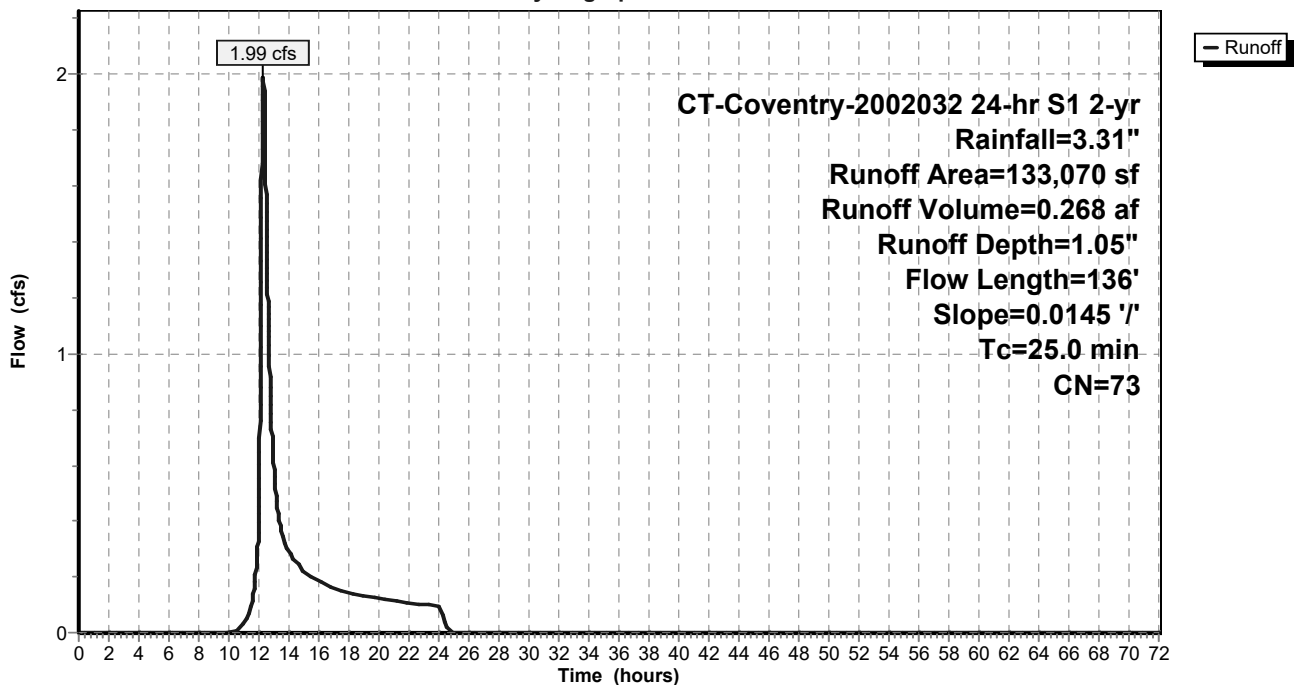
Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C
133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Runoff = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af, Depth= 1.77"

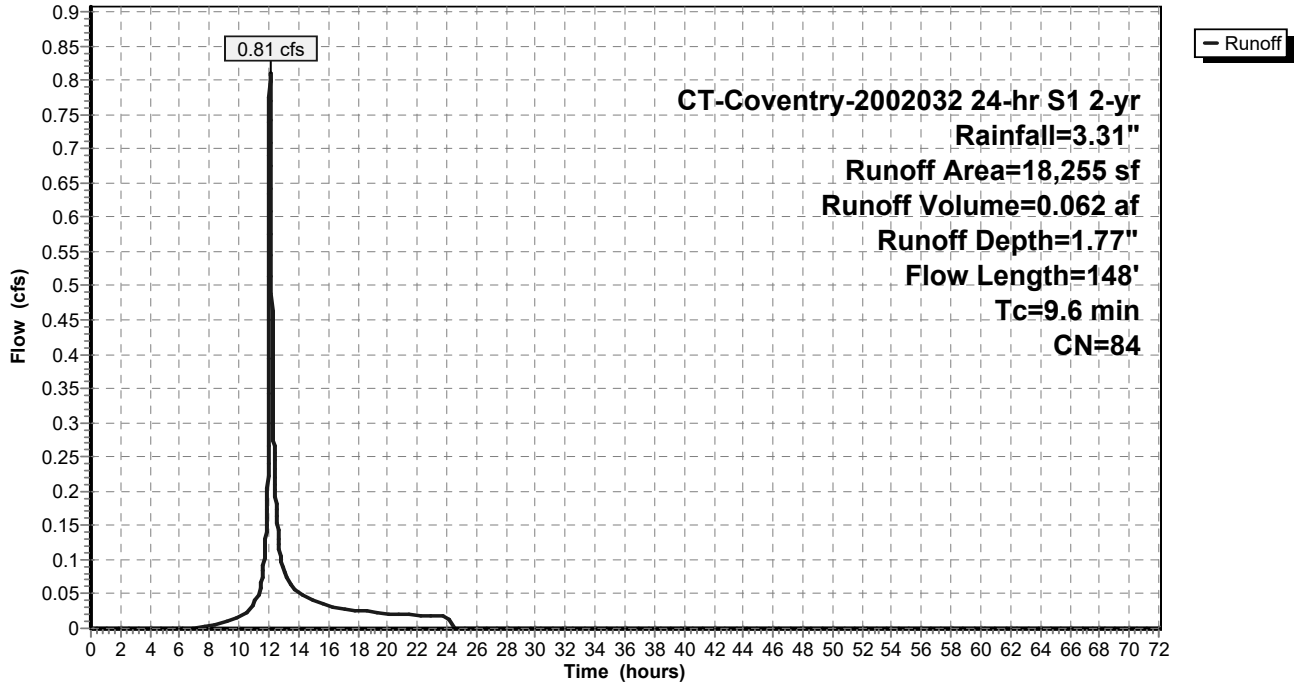
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**

Hydrograph



**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 2.42 cfs @ 12.07 hrs, Volume= 0.178 af, Depth= 1.77"

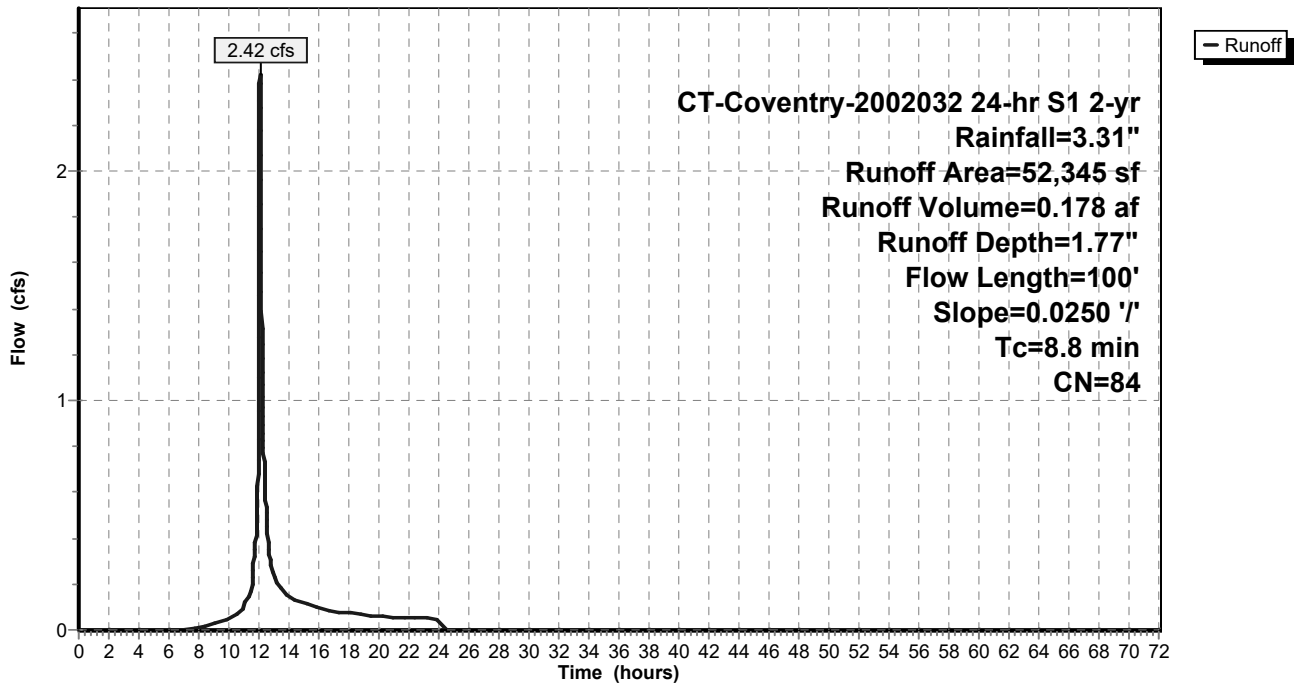
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 0.96 cfs @ 12.03 hrs, Volume= 0.063 af, Depth= 3.08"

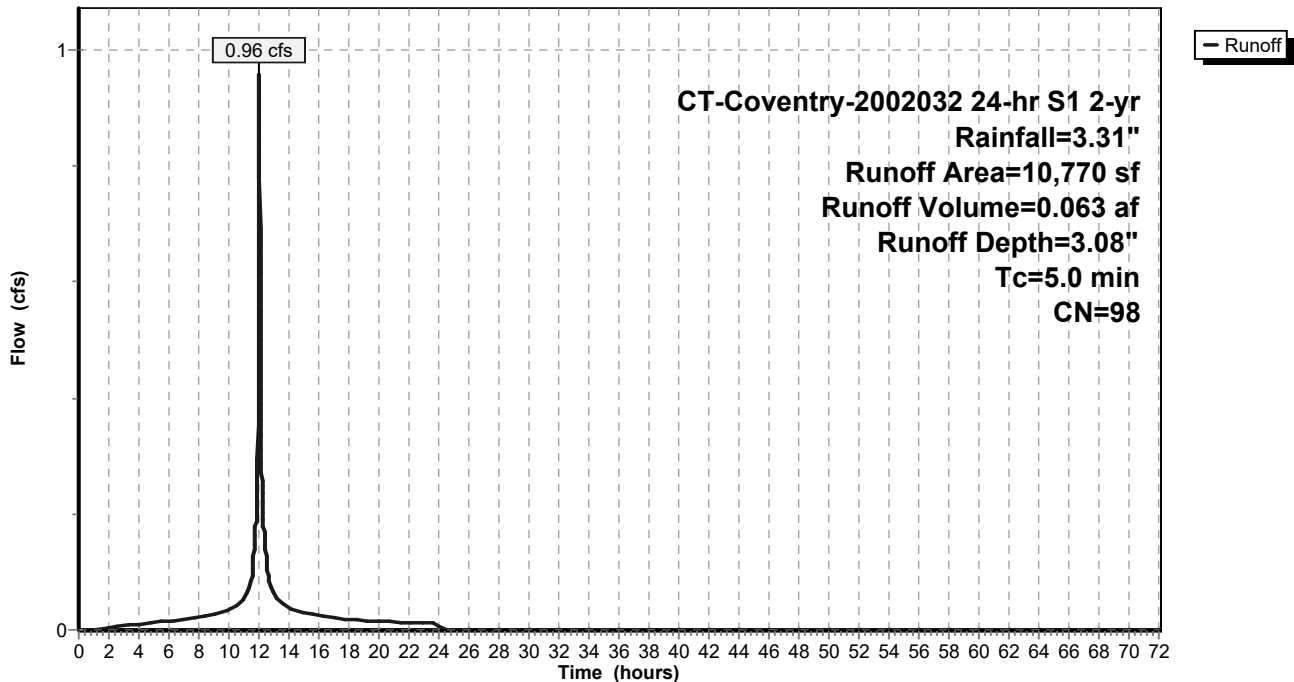
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 2-yr Rainfall=3.31"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph





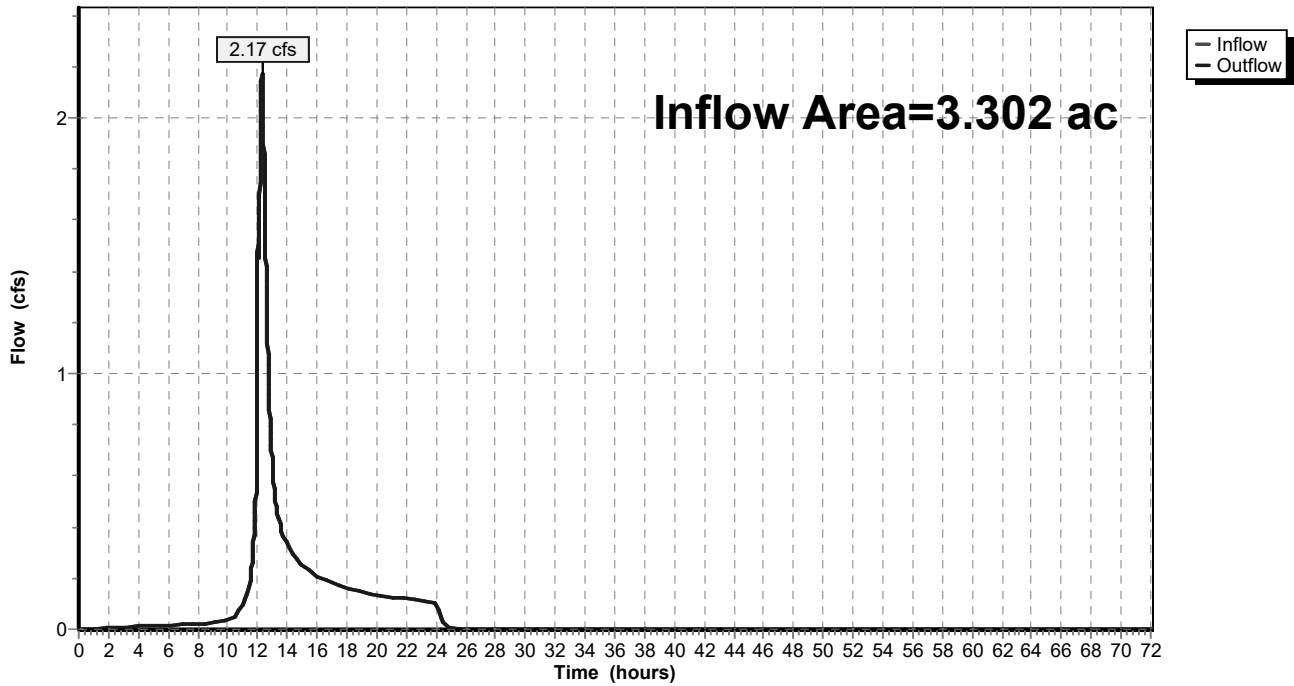
### Summary for Reach DP-1: Wetland to Northeast

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 1.21" for 2-yr event  
Inflow = 2.17 cfs @ 12.30 hrs, Volume= 0.332 af  
Outflow = 2.17 cfs @ 12.30 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-1: Wetland to Northeast

Hydrograph



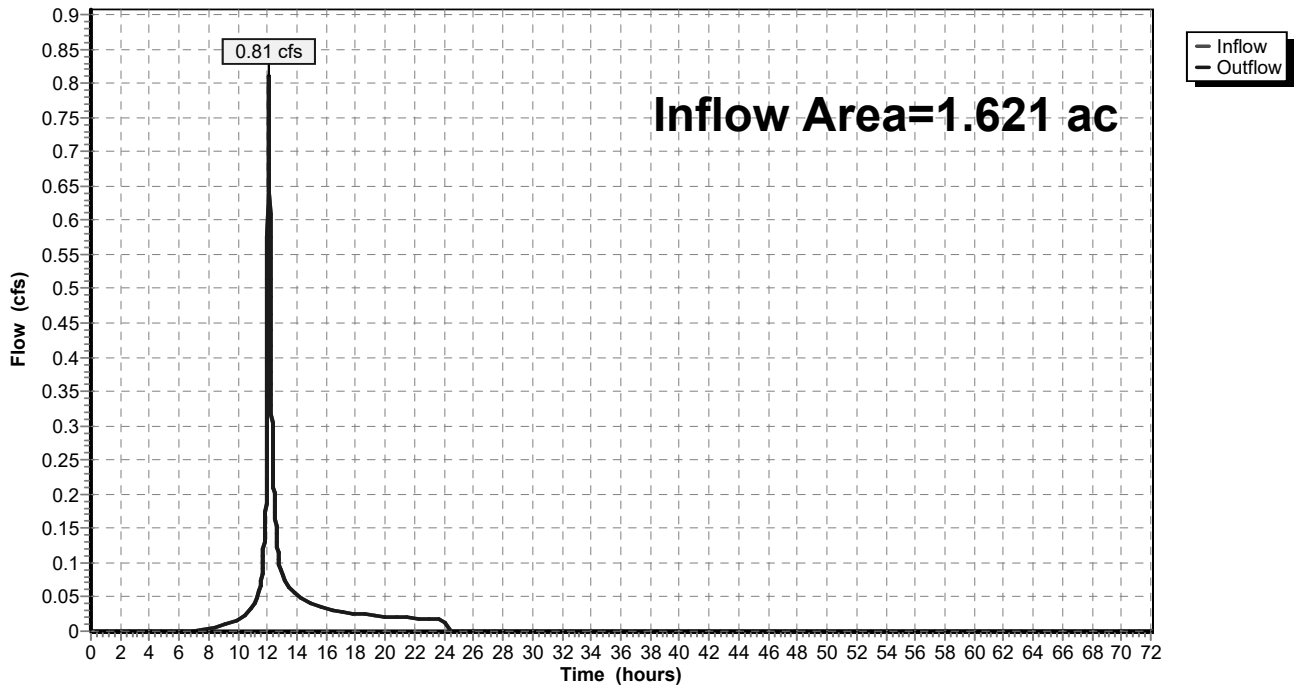
**Summary for Reach DP-2: Ex. CBs in Driveway**

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 0.46" for 2-yr event  
 Inflow = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af  
 Outflow = 0.81 cfs @ 12.08 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-2: Ex. CBs in Driveway**

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 1.77" for 2-yr event  
 Inflow = 2.42 cfs @ 12.07 hrs, Volume= 0.178 af  
 Outflow = 0.08 cfs @ 17.23 hrs, Volume= 0.178 af, Atten= 97%, Lag= 309.5 min  
 Discarded = 0.08 cfs @ 17.23 hrs, Volume= 0.178 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 659.84' @ 17.23 hrs Surf.Area= 3,474 sf Storage= 4,413 cf

Plug-Flow detention time= 671.1 min calculated for 0.178 af (100% of inflow)  
 Center-of-Mass det. time= 671.1 min ( 1,524.2 - 853.1 )

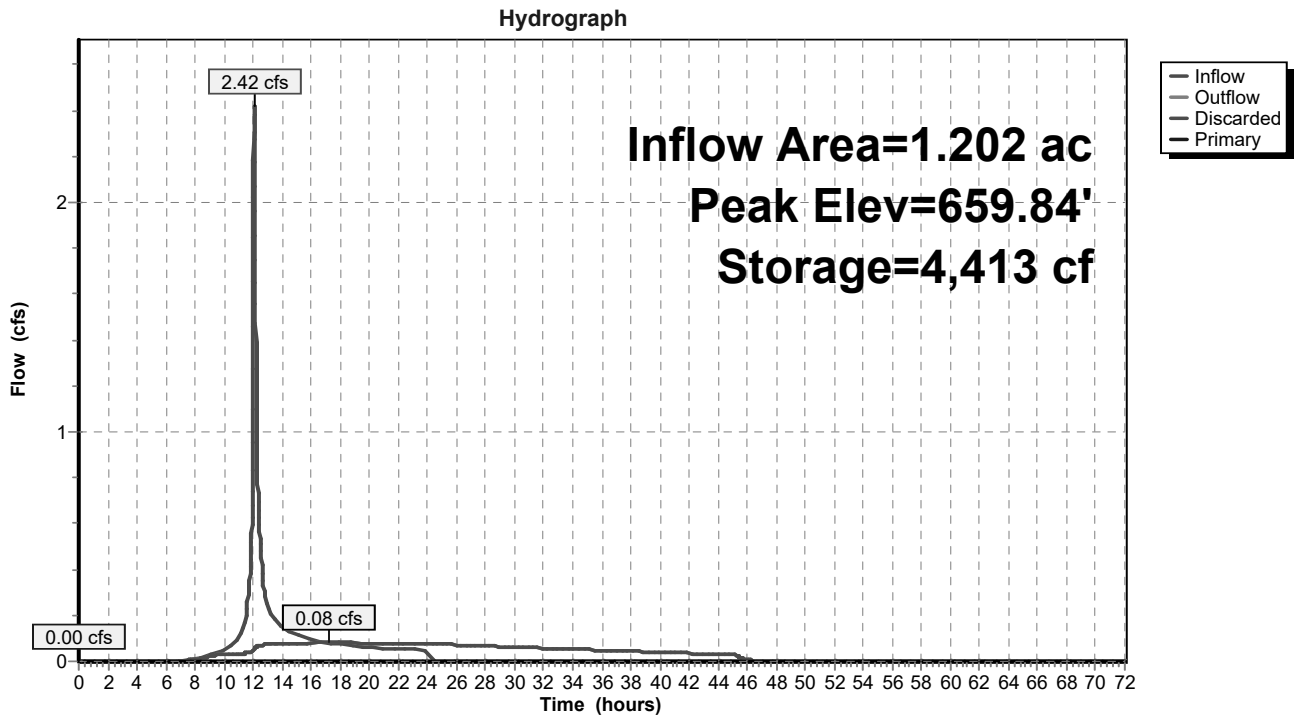
Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.08 cfs @ 17.23 hrs HW=659.84' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=657.90' (Free Discharge)  
 ↑2=Culvert ( Controls 0.00 cfs)  
 ↑3=Orifice/Grate ( Controls 0.00 cfs)

### Pond Pond #1: Infiltration Basin



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=2.34"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=4.71 cfs 0.597 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=3.34"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=1.52 cfs 0.117 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=3.34"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=4.52 cfs 0.335 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=4.84"  
 Tc=5.0 min CN=98 Runoff=1.47 cfs 0.100 af

**Reach DP-1: Wetland to Northeast** Inflow=4.99 cfs 0.696 af  
 Outflow=4.99 cfs 0.696 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=1.52 cfs 0.117 af  
 Outflow=1.52 cfs 0.117 af

**Pond Pond #1: Infiltration Basin** Peak Elev=660.79' Storage=8,849 cf Inflow=4.52 cfs 0.335 af  
 Discarded=0.14 cfs 0.335 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.335 af

**Total Runoff Area = 4.923 ac Runoff Volume = 1.148 af Average Runoff Depth = 2.80"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 4.71 cfs @ 12.30 hrs, Volume= 0.597 af, Depth= 2.34"

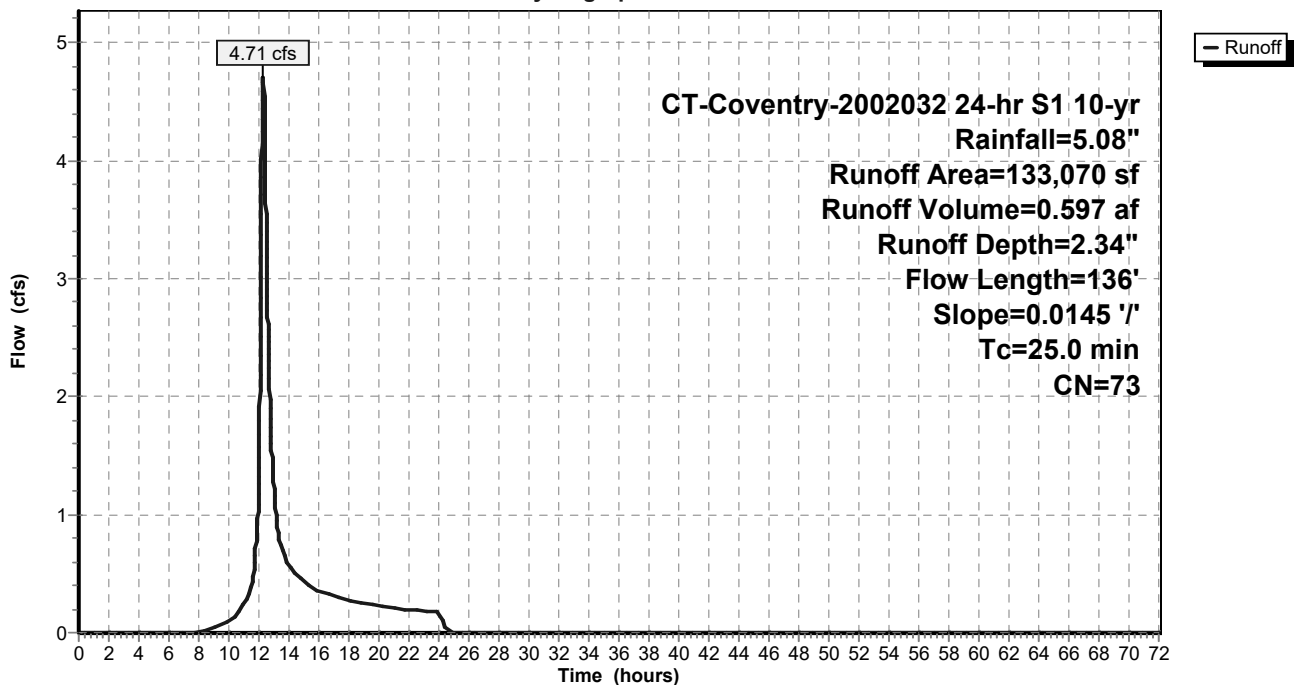
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C
133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph



**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

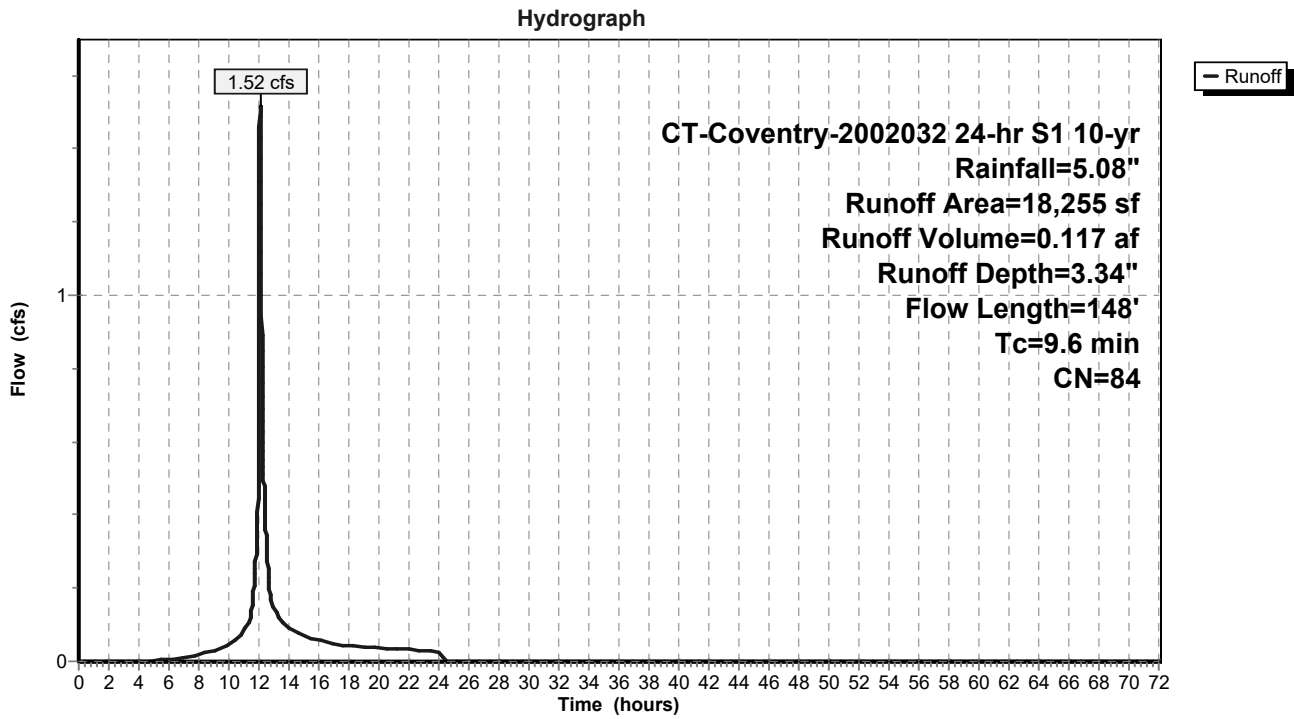
Runoff = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**





**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 4.52 cfs @ 12.07 hrs, Volume= 0.335 af, Depth= 3.34"

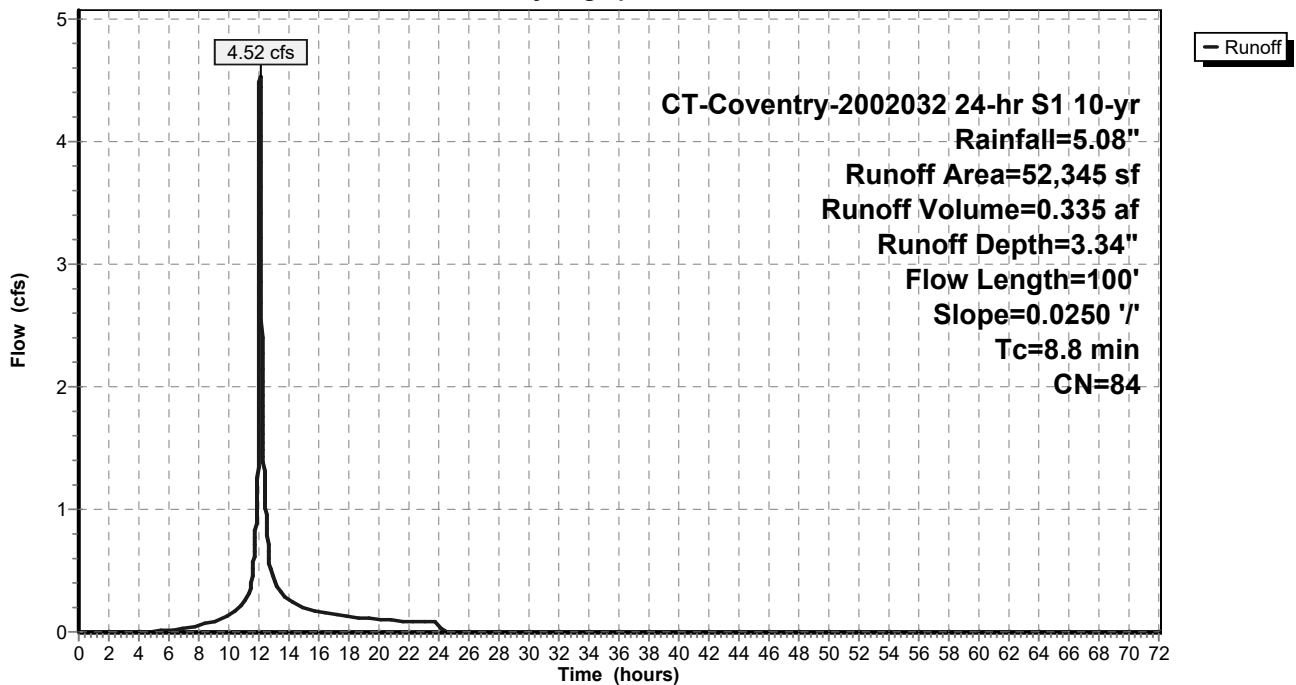
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 1.47 cfs @ 12.03 hrs, Volume= 0.100 af, Depth= 4.84"

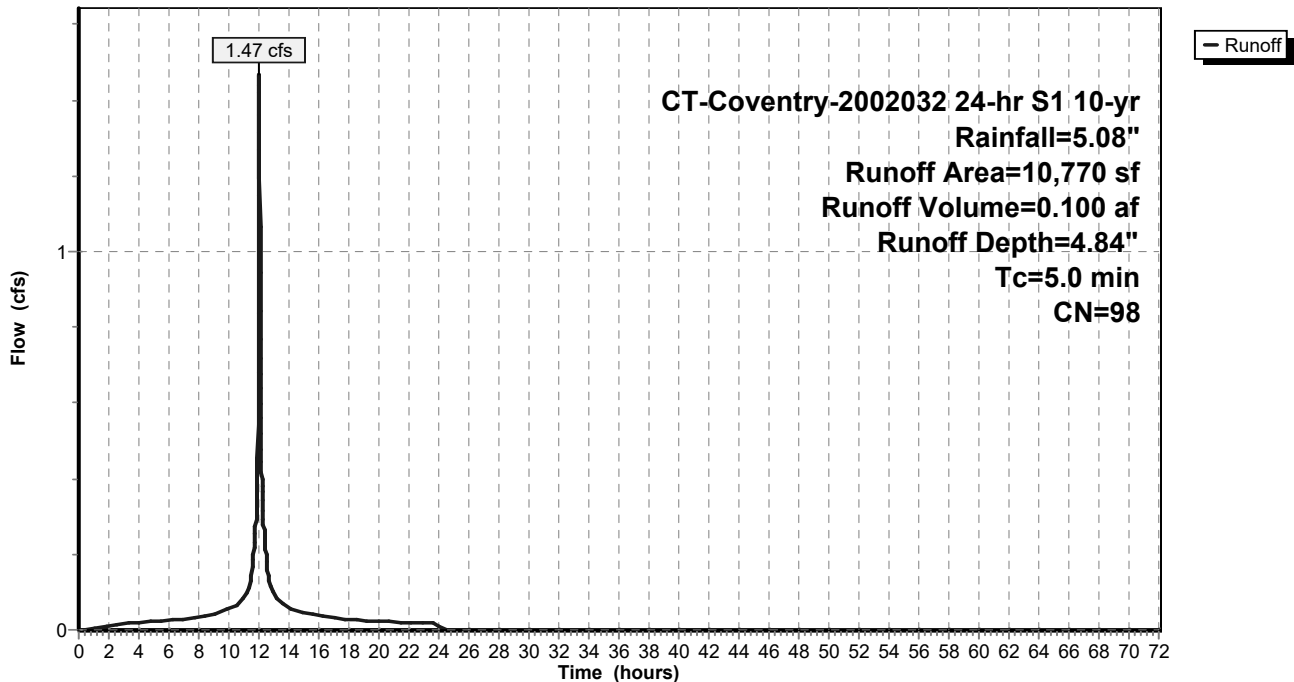
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 10-yr Rainfall=5.08"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



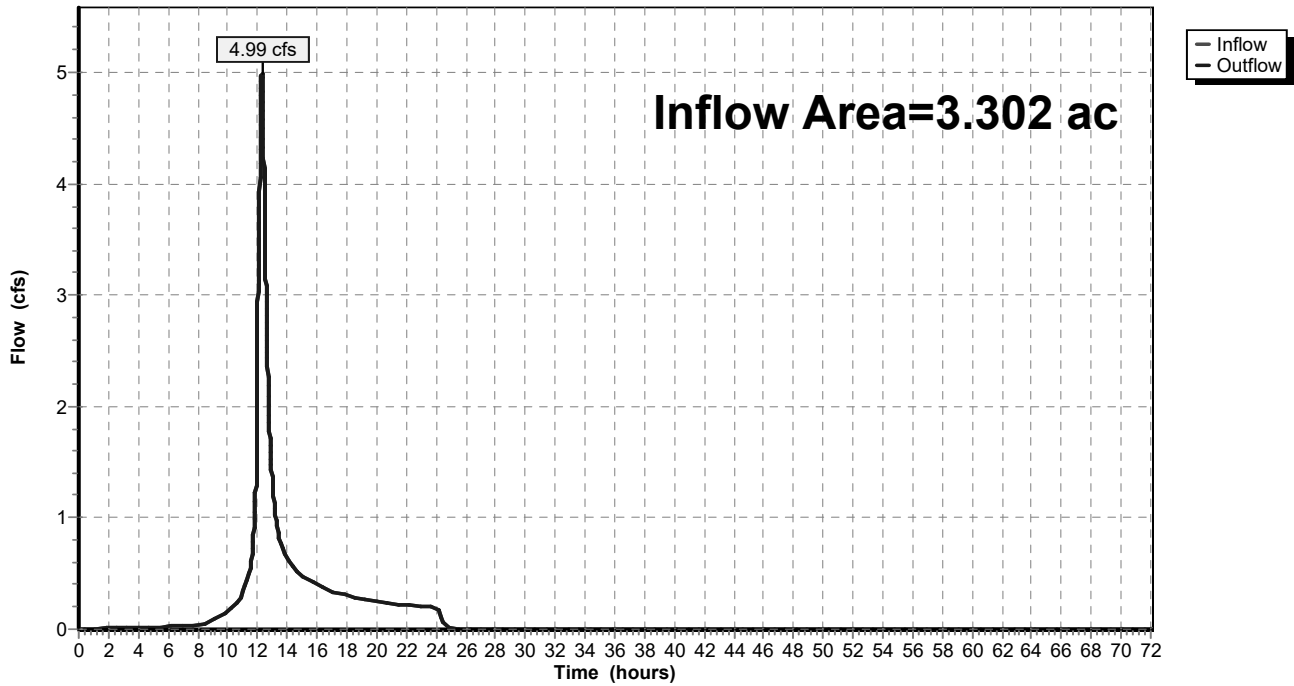
**Summary for Reach DP-1: Wetland to Northeast**

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 2.53" for 10-yr event  
 Inflow = 4.99 cfs @ 12.30 hrs, Volume= 0.696 af  
 Outflow = 4.99 cfs @ 12.30 hrs, Volume= 0.696 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-1: Wetland to Northeast**

Hydrograph



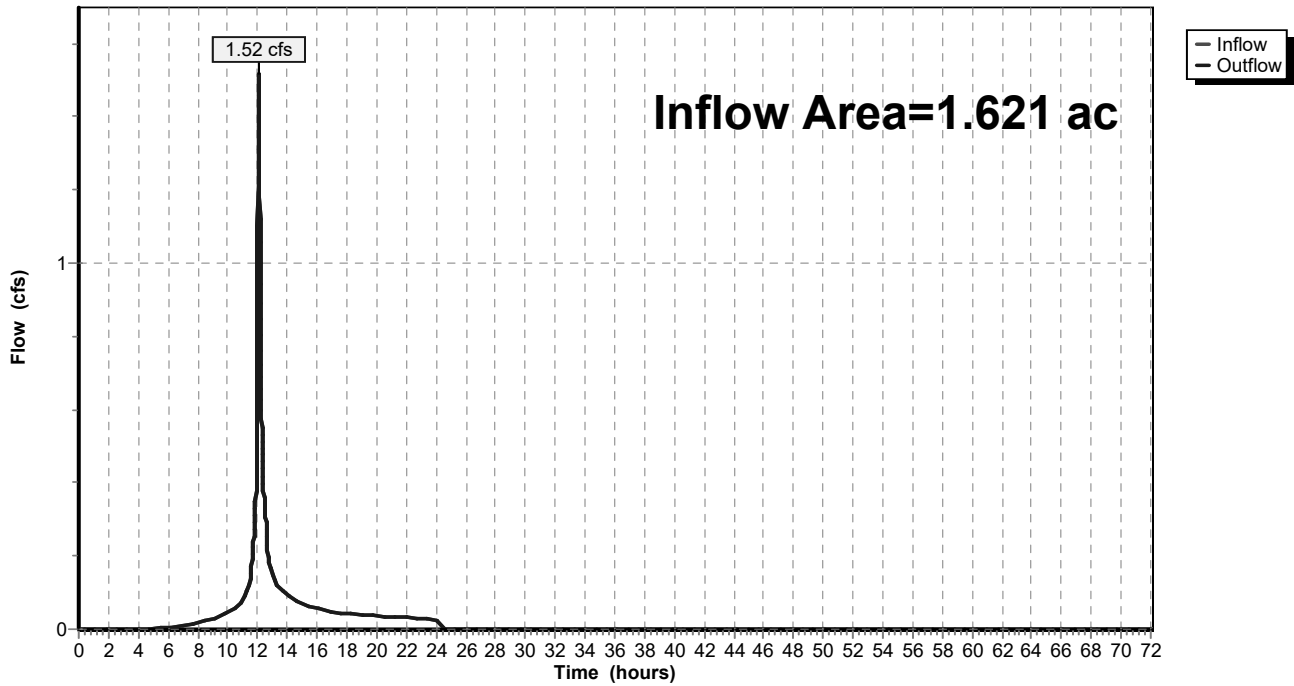
### Summary for Reach DP-2: Ex. CBs in Driveway

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 0.86" for 10-yr event  
Inflow = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af  
Outflow = 1.52 cfs @ 12.08 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-2: Ex. CBs in Driveway

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 3.34" for 10-yr event  
 Inflow = 4.52 cfs @ 12.07 hrs, Volume= 0.335 af  
 Outflow = 0.14 cfs @ 16.94 hrs, Volume= 0.335 af, Atten= 97%, Lag= 292.0 min  
 Discarded = 0.14 cfs @ 16.94 hrs, Volume= 0.335 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 660.79' @ 16.94 hrs Surf.Area= 6,105 sf Storage= 8,849 cf

Plug-Flow detention time= 841.0 min calculated for 0.335 af (100% of inflow)  
 Center-of-Mass det. time= 840.9 min ( 1,670.4 - 829.5 )

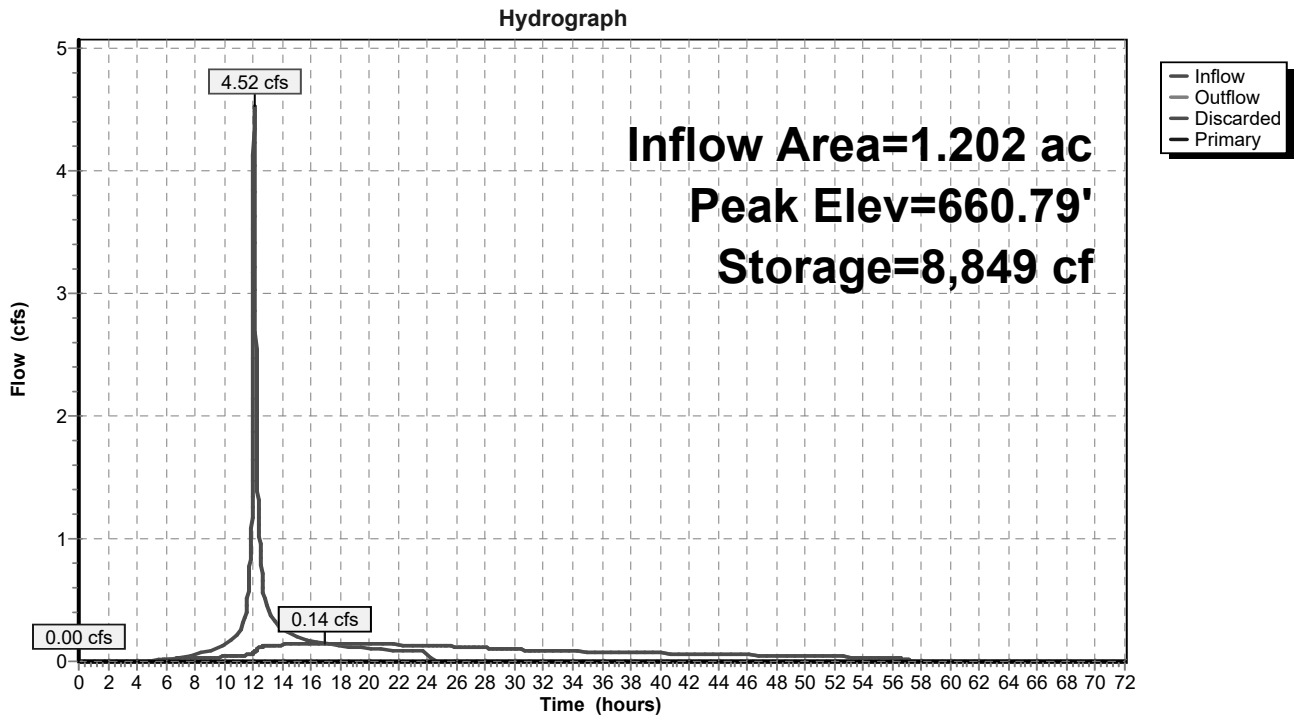
Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.14 cfs @ 16.94 hrs HW=660.79' (Free Discharge)  
 ↑**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=657.90' (Free Discharge)  
 ↑**2=Culvert** ( Controls 0.00 cfs)  
 ↑**3=Orifice/Grate** ( Controls 0.00 cfs)

### Pond Pond #1: Infiltration Basin



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentPDA-101: Area to Wetland** Runoff Area=133,070 sf 10.70% Impervious Runoff Depth=4.72"  
 Flow Length=136' Slope=0.0145 '/' Tc=25.0 min CN=73 Runoff=9.54 cfs 1.202 af

**SubcatchmentPDA-201: Area to Ex. CBs** Runoff Area=18,255 sf 32.68% Impervious Runoff Depth=6.00"  
 Flow Length=148' Tc=9.6 min CN=84 Runoff=2.66 cfs 0.210 af

**SubcatchmentPDA-202: Area to** Runoff Area=52,345 sf 41.47% Impervious Runoff Depth=6.00"  
 Flow Length=100' Slope=0.0250 '/' Tc=8.8 min CN=84 Runoff=7.91 cfs 0.601 af

**SubcatchmentPDA-203: Building Area** Runoff Area=10,770 sf 100.00% Impervious Runoff Depth=7.66"  
 Tc=5.0 min CN=98 Runoff=2.28 cfs 0.158 af

**Reach DP-1: Wetland to Northeast** Inflow=9.99 cfs 1.360 af  
 Outflow=9.99 cfs 1.360 af

**Reach DP-2: Ex. CBs in Driveway** Inflow=2.66 cfs 0.344 af  
 Outflow=2.66 cfs 0.344 af

**Pond Pond #1: Infiltration Basin** Peak Elev=661.36' Storage=12,784 cf Inflow=7.91 cfs 0.601 af  
 Discarded=0.18 cfs 0.466 af Primary=1.21 cfs 0.134 af Outflow=1.39 cfs 0.601 af

**Total Runoff Area = 4.923 ac Runoff Volume = 2.170 af Average Runoff Depth = 5.29"**  
**75.43% Pervious = 3.713 ac 24.57% Impervious = 1.209 ac**

**Summary for Subcatchment PDA-101: Area to Wetland to the Northeast**

Runoff = 9.54 cfs @ 12.30 hrs, Volume= 1.202 af, Depth= 4.72"

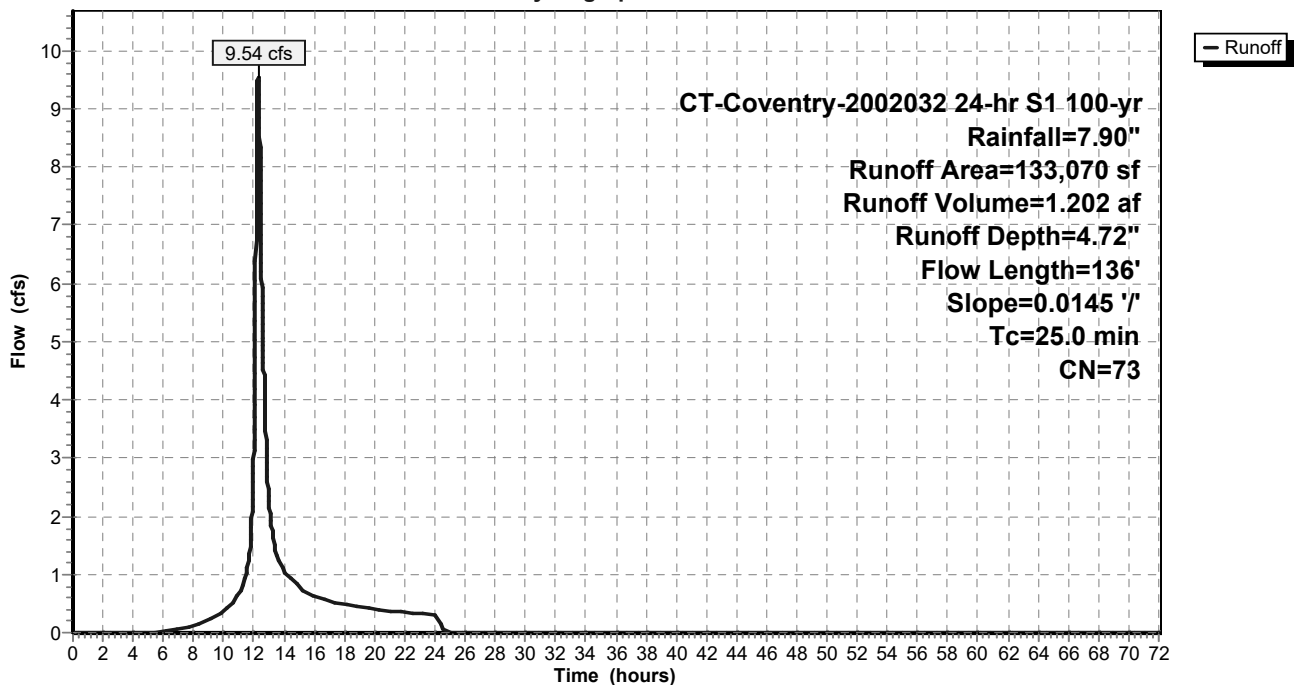
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
84,460	69	50-75% Grass cover, Fair, HSG B
11,165	79	50-75% Grass cover, Fair, HSG C
2,445	60	Woods, Fair, HSG B
20,760	73	Woods, Fair, HSG C
13,875	98	Paved parking, HSG B
365	98	Paved parking, HSG C
133,070	73	Weighted Average
118,830		89.30% Pervious Area
14,240		10.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.0	100	0.0145	0.07		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.31"
1.0	36	0.0145	0.60		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
25.0	136	Total			

**Subcatchment PDA-101: Area to Wetland to the Northeast**

Hydrograph





**Summary for Subcatchment PDA-201: Area to Ex. CBs in Driveway**

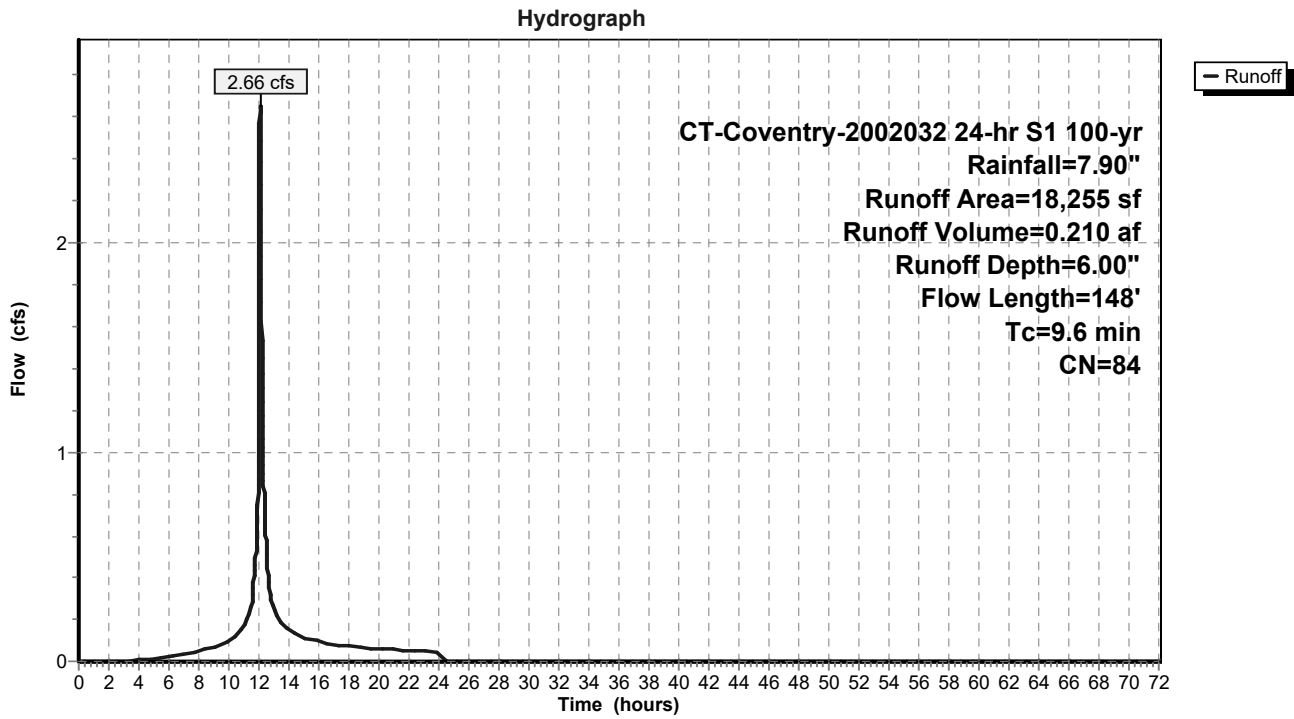
Runoff = 2.66 cfs @ 12.08 hrs, Volume= 0.210 af, Depth= 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
2,050	69	50-75% Grass cover, Fair, HSG B
10,240	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
910	98	Paved parking, HSG B
5,055	98	Paved parking, HSG C
18,255	84	Weighted Average
12,290		67.32% Pervious Area
5,965		32.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	100	0.0220	0.18		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0220	1.04		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
0.1	38	0.0185	7.16	8.79	<b>Pipe Channel,</b> 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
9.6	148	Total			

**Subcatchment PDA-201: Area to Ex. CBs in Driveway**



**Summary for Subcatchment PDA-202: Area to Infiltration Basin**

Runoff = 7.91 cfs @ 12.07 hrs, Volume= 0.601 af, Depth= 6.00"

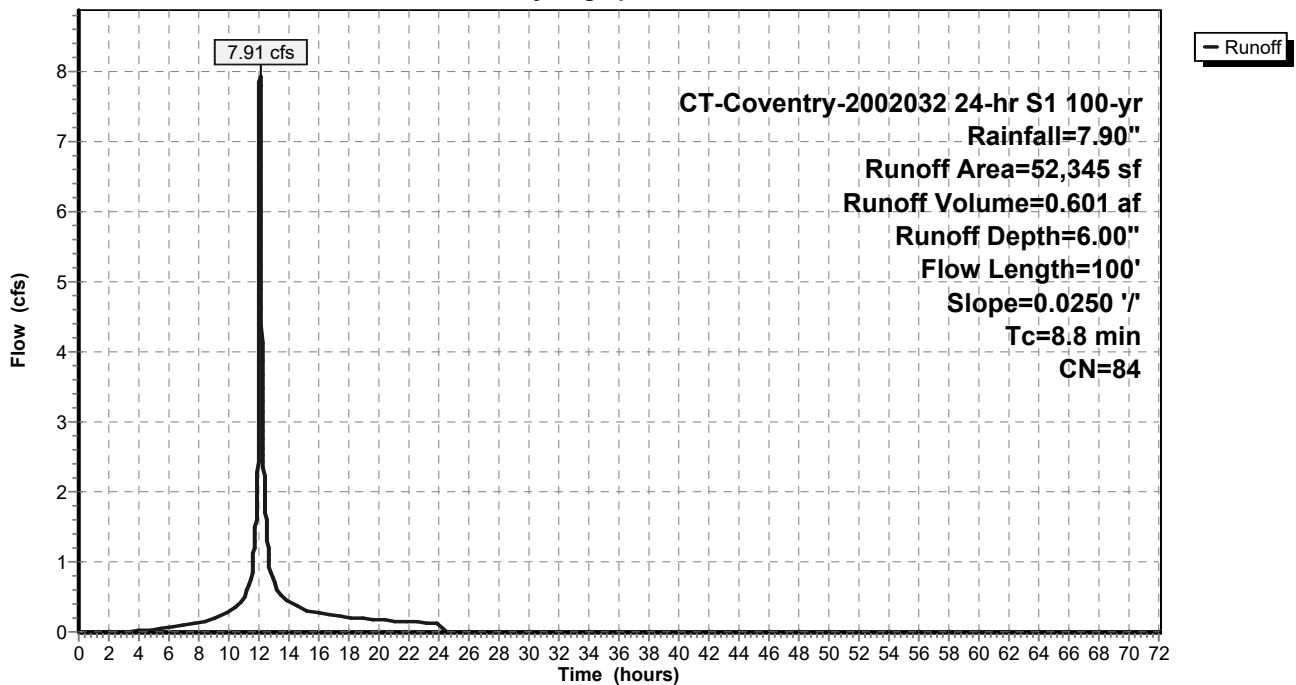
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
17,065	69	50-75% Grass cover, Fair, HSG B
13,570	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
19,750	98	Paved parking, HSG B
1,960	98	Paved parking, HSG C
52,345	84	Weighted Average
30,635		58.53% Pervious Area
21,710		41.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 3.31"

**Subcatchment PDA-202: Area to Infiltration Basin**

Hydrograph



**Summary for Subcatchment PDA-203: Building Area**

Runoff = 2.28 cfs @ 12.03 hrs, Volume= 0.158 af, Depth= 7.66"

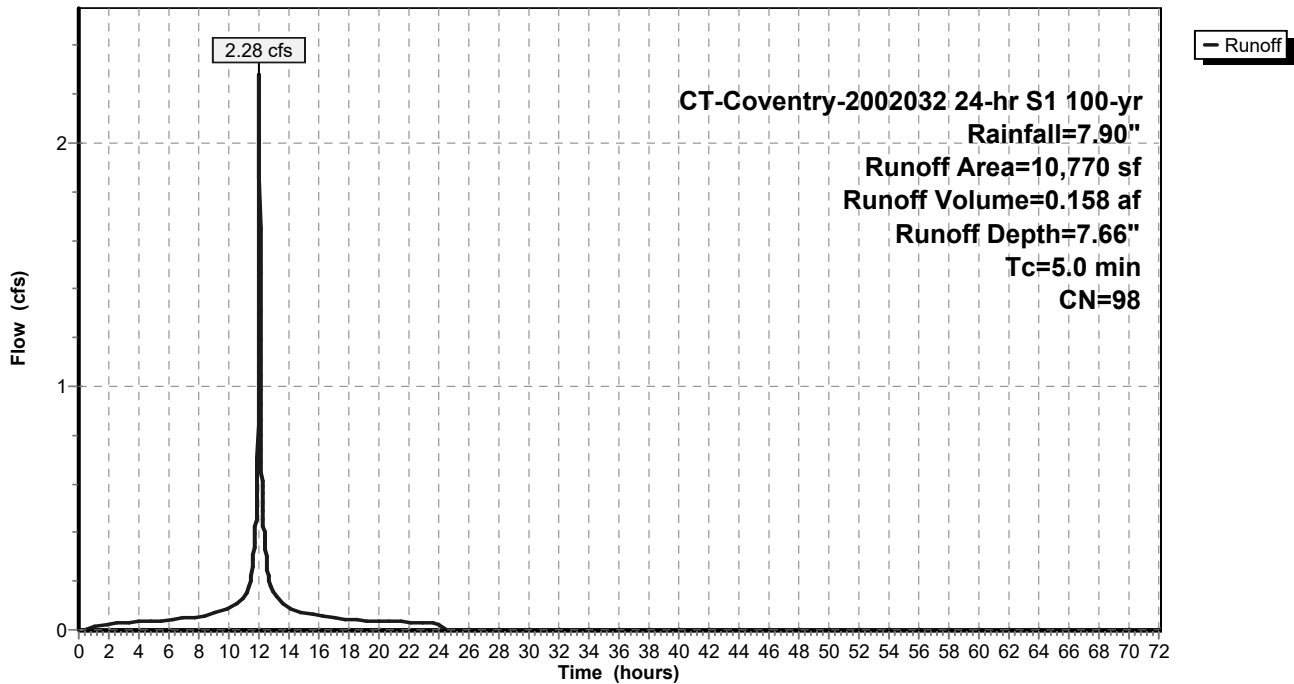
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 CT-Coventry-2002032 24-hr S1 100-yr Rainfall=7.90"

Area (sf)	CN	Description
0	69	50-75% Grass cover, Fair, HSG B
0	79	50-75% Grass cover, Fair, HSG C
0	60	Woods, Fair, HSG B
0	73	Woods, Fair, HSG C
10,770	98	Paved parking, HSG B
0	98	Paved parking, HSG C
10,770	98	Weighted Average
10,770		100.00% Impervious Area

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

**Subcatchment PDA-203: Building Area**

Hydrograph



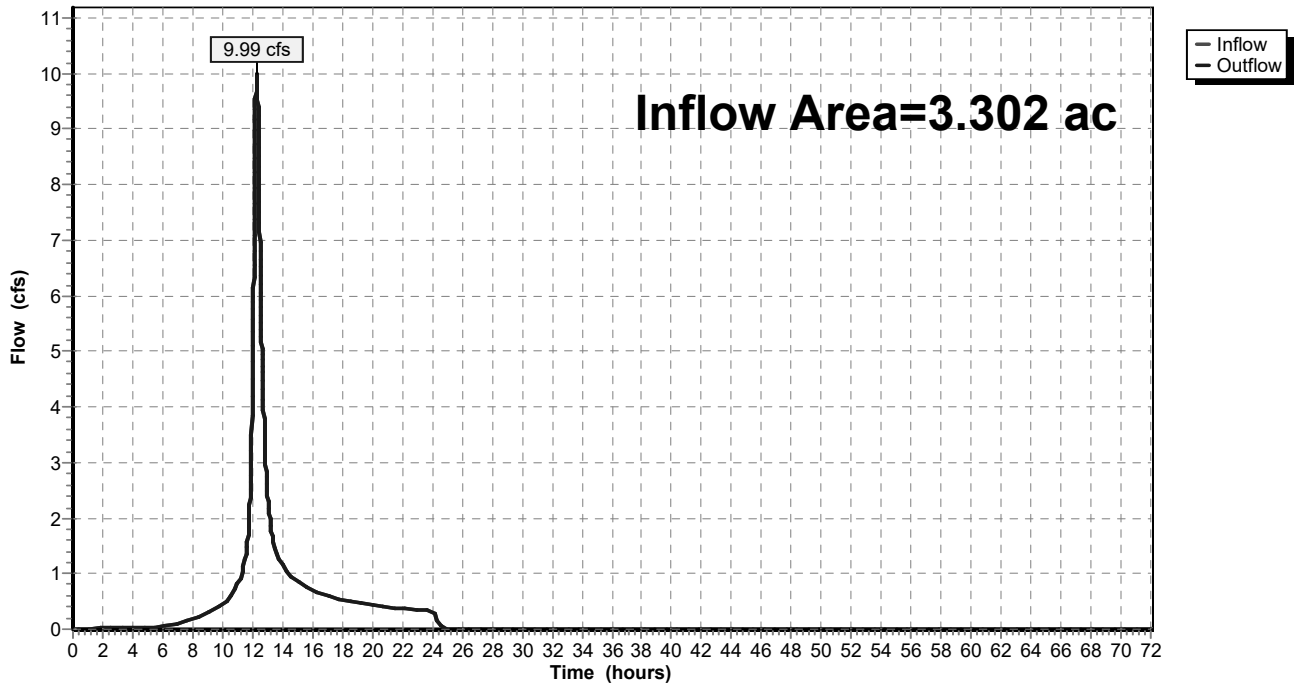
**Summary for Reach DP-1: Wetland to Northeast**

Inflow Area = 3.302 ac, 17.39% Impervious, Inflow Depth = 4.94" for 100-yr event  
 Inflow = 9.99 cfs @ 12.28 hrs, Volume= 1.360 af  
 Outflow = 9.99 cfs @ 12.28 hrs, Volume= 1.360 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach DP-1: Wetland to Northeast**

Hydrograph



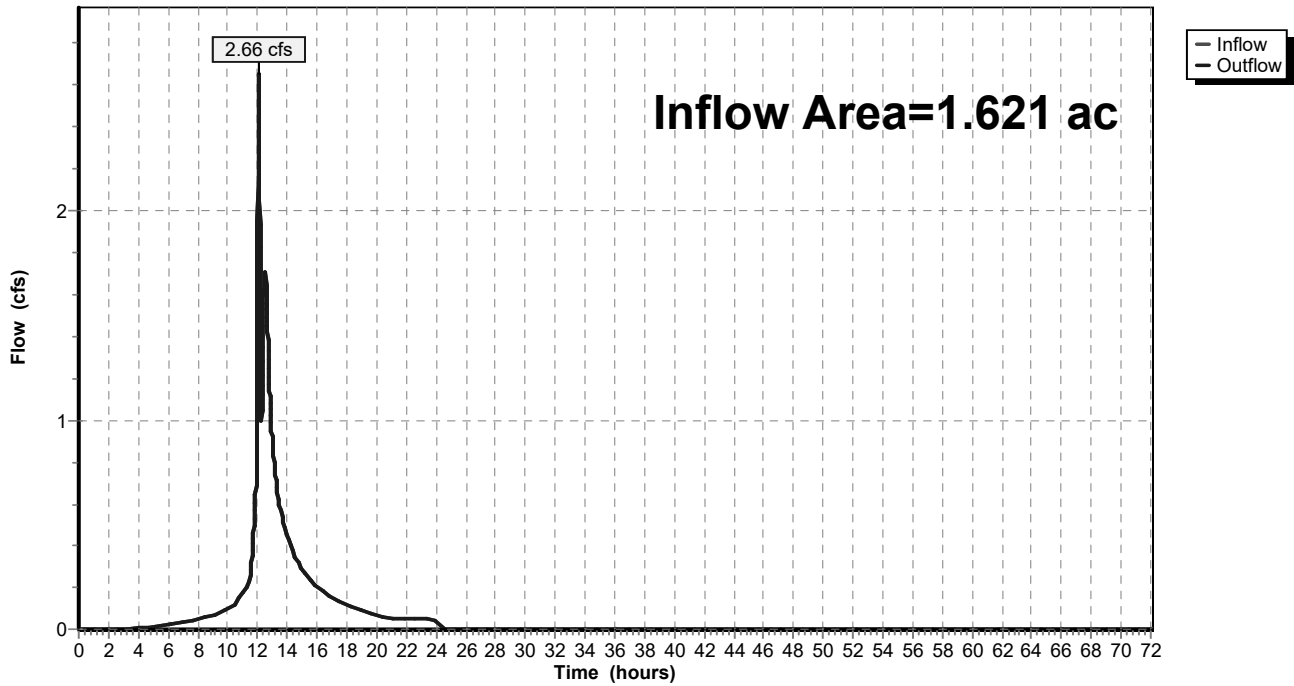
### Summary for Reach DP-2: Ex. CBs in Driveway

Inflow Area = 1.621 ac, 39.20% Impervious, Inflow Depth = 2.55" for 100-yr event  
Inflow = 2.66 cfs @ 12.08 hrs, Volume= 0.344 af  
Outflow = 2.66 cfs @ 12.08 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Reach DP-2: Ex. CBs in Driveway

Hydrograph



**Summary for Pond Pond #1: Infiltration Basin**

Inflow Area = 1.202 ac, 41.47% Impervious, Inflow Depth = 6.00" for 100-yr event  
 Inflow = 7.91 cfs @ 12.07 hrs, Volume= 0.601 af  
 Outflow = 1.39 cfs @ 12.55 hrs, Volume= 0.601 af, Atten= 82%, Lag= 29.1 min  
 Discarded = 0.18 cfs @ 12.55 hrs, Volume= 0.466 af  
 Primary = 1.21 cfs @ 12.55 hrs, Volume= 0.134 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2  
 Peak Elev= 661.36' @ 12.55 hrs Surf.Area= 7,609 sf Storage= 12,784 cf

Plug-Flow detention time= 737.2 min calculated for 0.601 af (100% of inflow)  
 Center-of-Mass det. time= 737.5 min ( 1,546.0 - 808.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	657.90'	18,140 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
657.90	1,146	0	0
658.00	1,250	120	120
659.00	2,400	1,825	1,945
660.00	3,678	3,039	4,984
661.00	6,750	5,214	10,198
662.00	9,134	7,942	18,140

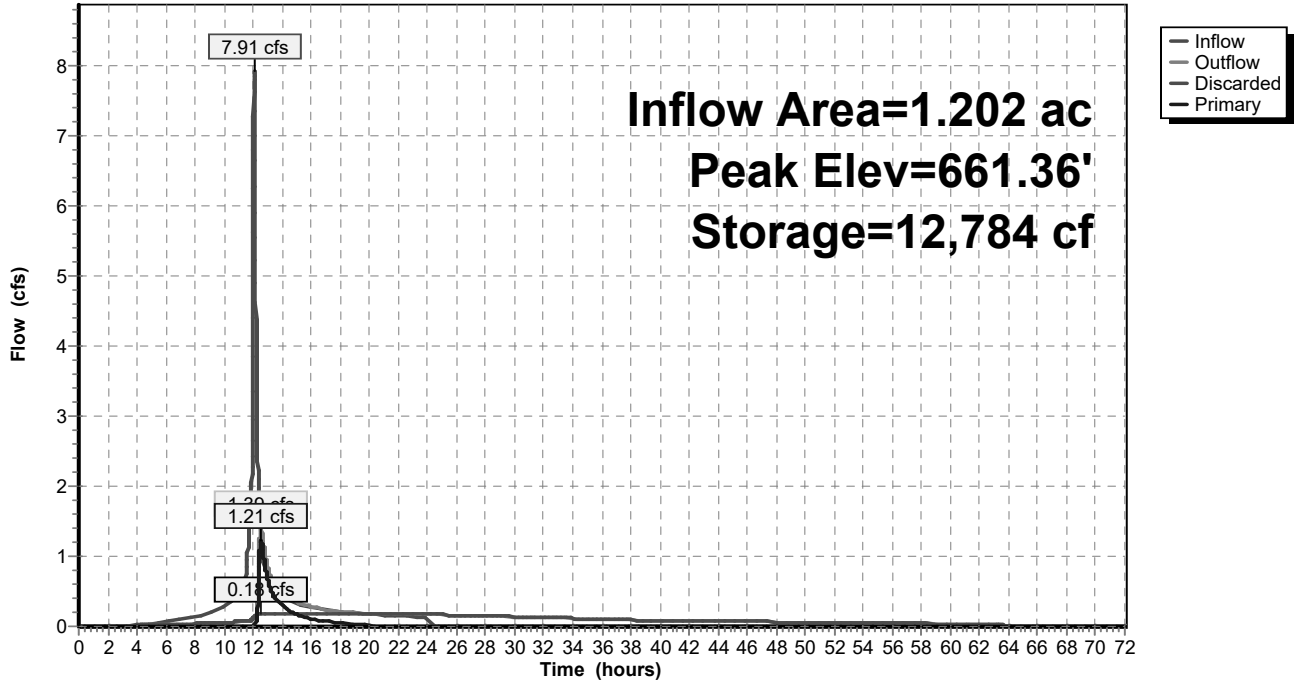
Device	Routing	Invert	Outlet Devices
#1	Discarded	657.90'	<b>1.000 in/hr Exfiltration over Surface area</b>
#2	Primary	658.25'	<b>12.0" Round Culvert</b> L= 70.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 658.25' / 657.90' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	661.25'	<b>24.0" x 36.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.18 cfs @ 12.55 hrs HW=661.36' (Free Discharge)  
 ↑**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

**Primary OutFlow** Max=1.20 cfs @ 12.55 hrs HW=661.36' (Free Discharge)  
 ↑**2=Culvert** (Passes 1.20 cfs of 5.14 cfs potential flow)  
 ↑**3=Orifice/Grate** (Weir Controls 1.20 cfs @ 1.09 fps)

### Pond Pond #1: Infiltration Basin

Hydrograph





**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			



**Stage-Area-Storage for Pond Pond #1: Infiltration Basin**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
657.90	1,146	0	658.42	1,733	746
657.91	1,156	12	658.43	1,744	764
657.92	1,167	23	658.44	1,756	781
657.93	1,177	35	658.45	1,767	799
657.94	1,188	47	658.46	1,779	816
657.95	1,198	59	658.47	1,791	834
657.96	1,208	71	658.48	1,802	852
657.97	1,219	83	658.49	1,814	870
657.98	1,229	95	658.50	1,825	889
657.99	1,240	107	658.51	1,836	907
658.00	1,250	120	658.52	1,848	925
658.01	1,261	132	658.53	1,859	944
658.02	1,273	145	658.54	1,871	962
658.03	1,284	158	658.55	1,882	981
658.04	1,296	171	658.56	1,894	1,000
658.05	1,307	184	658.57	1,905	1,019
658.06	1,319	197	658.58	1,917	1,038
658.07	1,330	210	658.59	1,929	1,057
658.08	1,342	223	658.60	1,940	1,077
658.09	1,354	237	658.61	1,952	1,096
658.10	1,365	251	658.62	1,963	1,116
658.11	1,377	264	658.63	1,974	1,136
658.12	1,388	278	658.64	1,986	1,155
658.13	1,399	292	658.65	1,997	1,175
658.14	1,411	306	658.66	2,009	1,195
658.15	1,422	320	658.67	2,020	1,215
658.16	1,434	335	658.68	2,032	1,236
658.17	1,445	349	658.69	2,043	1,256
658.18	1,457	363	658.70	2,055	1,277
658.19	1,468	378	658.71	2,066	1,297
658.20	1,480	393	658.72	2,078	1,318
658.21	1,491	408	658.73	2,090	1,339
658.22	1,503	423	658.74	2,101	1,360
658.23	1,515	438	658.75	2,113	1,381
658.24	1,526	453	658.76	2,124	1,402
658.25	1,538	468	658.77	2,135	1,423
658.26	1,549	484	658.78	2,147	1,445
658.27	1,560	499	658.79	2,158	1,466
658.28	1,572	515	658.80	2,170	1,488
658.29	1,583	531	658.81	2,181	1,510
658.30	1,595	547	658.82	2,193	1,531
658.31	1,606	563	658.83	2,204	1,553
658.32	1,618	579	658.84	2,216	1,576
658.33	1,629	595	658.85	2,228	1,598
658.34	1,641	611	658.86	2,239	1,620
658.35	1,653	628	658.87	2,251	1,643
658.36	1,664	644	658.88	2,262	1,665
658.37	1,676	661	658.89	2,273	1,688
658.38	1,687	678	658.90	2,285	1,711
658.39	1,698	695	658.91	2,296	1,733
658.40	1,710	712	658.92	2,308	1,756
658.41	1,721	729	658.93	2,319	1,780

**Stage-Area-Storage for Pond Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
658.94	2,331	1,803	659.46	2,988	3,184
658.95	2,342	1,826	659.47	3,001	3,214
658.96	2,354	1,850	659.48	3,013	3,244
658.97	2,366	1,873	659.49	3,026	3,274
658.98	2,377	1,897	659.50	3,039	3,305
658.99	2,389	1,921	659.51	3,052	3,335
659.00	2,400	1,945	659.52	3,065	3,366
659.01	2,413	1,969	659.53	3,077	3,396
659.02	2,426	1,993	659.54	3,090	3,427
659.03	2,438	2,017	659.55	3,103	3,458
659.04	2,451	2,042	659.56	3,116	3,489
659.05	2,464	2,066	659.57	3,128	3,520
659.06	2,477	2,091	659.58	3,141	3,552
659.07	2,489	2,116	659.59	3,154	3,583
659.08	2,502	2,141	659.60	3,167	3,615
659.09	2,515	2,166	659.61	3,180	3,647
659.10	2,528	2,191	659.62	3,192	3,678
659.11	2,541	2,217	659.63	3,205	3,710
659.12	2,553	2,242	659.64	3,218	3,743
659.13	2,566	2,268	659.65	3,231	3,775
659.14	2,579	2,293	659.66	3,243	3,807
659.15	2,592	2,319	659.67	3,256	3,840
659.16	2,604	2,345	659.68	3,269	3,872
659.17	2,617	2,371	659.69	3,282	3,905
659.18	2,630	2,398	659.70	3,295	3,938
659.19	2,643	2,424	659.71	3,307	3,971
659.20	2,656	2,450	659.72	3,320	4,004
659.21	2,668	2,477	659.73	3,333	4,037
659.22	2,681	2,504	659.74	3,346	4,071
659.23	2,694	2,531	659.75	3,359	4,104
659.24	2,707	2,558	659.76	3,371	4,138
659.25	2,720	2,585	659.77	3,384	4,172
659.26	2,732	2,612	659.78	3,397	4,206
659.27	2,745	2,639	659.79	3,410	4,240
659.28	2,758	2,667	659.80	3,422	4,274
659.29	2,771	2,695	659.81	3,435	4,308
659.30	2,783	2,722	659.82	3,448	4,342
659.31	2,796	2,750	659.83	3,461	4,377
659.32	2,809	2,778	659.84	3,474	4,412
659.33	2,822	2,806	659.85	3,486	4,446
659.34	2,835	2,835	659.86	3,499	4,481
659.35	2,847	2,863	659.87	3,512	4,516
659.36	2,860	2,892	659.88	3,525	4,552
659.37	2,873	2,920	659.89	3,537	4,587
659.38	2,886	2,949	659.90	3,550	4,622
659.39	2,898	2,978	659.91	3,563	4,658
659.40	2,911	3,007	659.92	3,576	4,694
659.41	2,924	3,036	659.93	3,589	4,729
659.42	2,937	3,066	659.94	3,601	4,765
659.43	2,950	3,095	659.95	3,614	4,801
659.44	2,962	3,125	659.96	3,627	4,838
659.45	2,975	3,154	659.97	3,640	4,874

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
659.98	3,652	4,910	660.50	5,214	7,207
659.99	3,665	4,947	660.51	5,245	7,259
660.00	3,678	4,984	660.52	5,275	7,312
660.01	3,709	5,021	660.53	5,306	7,365
660.02	3,739	5,058	660.54	5,337	7,418
660.03	3,770	5,096	660.55	5,368	7,471
660.04	3,801	5,133	660.56	5,398	7,525
660.05	3,832	5,172	660.57	5,429	7,579
660.06	3,862	5,210	660.58	5,460	7,634
660.07	3,893	5,249	660.59	5,490	7,689
660.08	3,924	5,288	660.60	5,521	7,744
660.09	3,954	5,327	660.61	5,552	7,799
660.10	3,985	5,367	660.62	5,583	7,855
660.11	4,016	5,407	660.63	5,613	7,911
660.12	4,047	5,447	660.64	5,644	7,967
660.13	4,077	5,488	660.65	5,675	8,023
660.14	4,108	5,529	660.66	5,706	8,080
660.15	4,139	5,570	660.67	5,736	8,138
660.16	4,170	5,612	660.68	5,767	8,195
660.17	4,200	5,653	660.69	5,798	8,253
660.18	4,231	5,696	660.70	5,828	8,311
660.19	4,262	5,738	660.71	5,859	8,369
660.20	4,292	5,781	660.72	5,890	8,428
660.21	4,323	5,824	660.73	5,921	8,487
660.22	4,354	5,867	660.74	5,951	8,547
660.23	4,385	5,911	660.75	5,982	8,606
660.24	4,415	5,955	660.76	6,013	8,666
660.25	4,446	5,999	660.77	6,043	8,727
660.26	4,477	6,044	660.78	6,074	8,787
660.27	4,507	6,089	660.79	6,105	8,848
660.28	4,538	6,134	660.80	6,136	8,909
660.29	4,569	6,180	660.81	6,166	8,971
660.30	4,600	6,225	660.82	6,197	9,033
660.31	4,630	6,272	660.83	6,228	9,095
660.32	4,661	6,318	660.84	6,258	9,157
660.33	4,692	6,365	660.85	6,289	9,220
660.34	4,722	6,412	660.86	6,320	9,283
660.35	4,753	6,459	660.87	6,351	9,346
660.36	4,784	6,507	660.88	6,381	9,410
660.37	4,815	6,555	660.89	6,412	9,474
660.38	4,845	6,603	660.90	6,443	9,538
660.39	4,876	6,652	660.91	6,474	9,603
660.40	4,907	6,701	660.92	6,504	9,668
660.41	4,938	6,750	660.93	6,535	9,733
660.42	4,968	6,800	660.94	6,566	9,798
660.43	4,999	6,849	660.95	6,596	9,864
660.44	5,030	6,899	660.96	6,627	9,930
660.45	5,060	6,950	660.97	6,658	9,997
660.46	5,091	7,001	660.98	6,689	10,063
660.47	5,122	7,052	660.99	6,719	10,130
660.48	5,153	7,103	661.00	6,750	10,198
660.49	5,183	7,155	661.01	6,774	10,265

**Stage-Area-Storage for Pond #1: Infiltration Basin (continued)**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
661.02	6,798	10,333	661.54	8,037	14,190
661.03	6,822	10,401	661.55	8,061	14,271
661.04	6,845	10,470	661.56	8,085	14,352
661.05	6,869	10,538	661.57	8,109	14,433
661.06	6,893	10,607	661.58	8,133	14,514
661.07	6,917	10,676	661.59	8,157	14,595
661.08	6,941	10,745	661.60	8,180	14,677
661.09	6,965	10,815	661.61	8,204	14,759
661.10	6,988	10,885	661.62	8,228	14,841
661.11	7,012	10,955	661.63	8,252	14,923
661.12	7,036	11,025	661.64	8,276	15,006
661.13	7,060	11,095	661.65	8,300	15,089
661.14	7,084	11,166	661.66	8,323	15,172
661.15	7,108	11,237	661.67	8,347	15,255
661.16	7,131	11,308	661.68	8,371	15,339
661.17	7,155	11,380	661.69	8,395	15,423
661.18	7,179	11,451	661.70	8,419	15,507
661.19	7,203	11,523	661.71	8,443	15,591
661.20	7,227	11,595	661.72	8,466	15,676
661.21	7,251	11,668	661.73	8,490	15,761
661.22	7,274	11,740	661.74	8,514	15,846
661.23	7,298	11,813	661.75	8,538	15,931
661.24	7,322	11,886	661.76	8,562	16,016
661.25	7,346	11,960	661.77	8,586	16,102
661.26	7,370	12,033	661.78	8,610	16,188
661.27	7,394	12,107	661.79	8,633	16,274
661.28	7,418	12,181	661.80	8,657	16,361
661.29	7,441	12,256	661.81	8,681	16,447
661.30	7,465	12,330	661.82	8,705	16,534
661.31	7,489	12,405	661.83	8,729	16,621
661.32	7,513	12,480	661.84	8,753	16,709
661.33	7,537	12,555	661.85	8,776	16,797
661.34	7,561	12,631	661.86	8,800	16,884
661.35	7,584	12,706	661.87	8,824	16,973
661.36	7,608	12,782	661.88	8,848	17,061
661.37	7,632	12,858	661.89	8,872	17,149
661.38	7,656	12,935	661.90	8,896	17,238
661.39	7,680	13,012	661.91	8,919	17,327
661.40	7,704	13,089	661.92	8,943	17,417
661.41	7,727	13,166	661.93	8,967	17,506
661.42	7,751	13,243	661.94	8,991	17,596
661.43	7,775	13,321	661.95	9,015	17,686
661.44	7,799	13,399	661.96	9,039	17,776
661.45	7,823	13,477	661.97	9,062	17,867
661.46	7,847	13,555	661.98	9,086	17,958
661.47	7,870	13,634	661.99	9,110	18,049
661.48	7,894	13,712	662.00	<b>9,134</b>	<b>18,140</b>
661.49	7,918	13,791			
661.50	7,942	13,871			
661.51	7,966	13,950			
661.52	7,990	14,030			
661.53	8,014	14,110			

## APPENDIX D

### WATER QUALITY CALCULATIONS

CTDEEP Water Quality Volume Calculations

Infiltration Basin Calculation

Treatment Train Efficiency Worksheet

**Water Quality Calculations**

**Determine Water Quality Volume**

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(I)(R)(A)}{12}$$

WQV = water quality volume (ac-ft)  
 R = volumetric runoff coefficient  
 I = percent impervious cover  
 A = site area in acres

$$R = 0.05 + 0.009(I)$$

WQv = Calculated Water Quality Volume

Area	ID	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Proposed Water Quality Volume (WQV)	
		ac	ft <sup>2</sup>	ac	ft <sup>2</sup>	%	R	acre-feet	ft <sup>3</sup>	acre-feet	ft <sup>3</sup>
Area to Infiltration Basin	PDA 202	1.202	52,345	0.498	21,710	41.43	0.423	0.042	1,830	0.275	11,960

\*The Proposed Water Quality Volume (WQV) is calculated at the available ponding depth below the lowest orifice

**Water Quality Calculations- CT General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities**

**Determine Water Quality Volume**

From CT 2004 Stormwater Quality Manual:

$$WQV = \frac{(I)(R)(A)}{12}$$

WQV = water quality volume (ac-ft)  
 R = volumetric runoff coefficient  
 I = percent impervious cover  
 A = site area in acres

$$R = 0.05 + 0.009(I)$$

WQv = Calculated Water Quality Volume

Area	ID	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Proposed Water Quality Volume (WQV)	
		ac	ft <sup>2</sup>	ac	ft <sup>2</sup>	%	R	acre-feet	ft <sup>3</sup>	acre-feet	ft <sup>3</sup>
Entire Site		1.853	80,707	1.165	50,761	62.87	0.616	0.095	4,138	0.275	11,960

\*The Proposed Water Quality Volume (WQV) is calculated at the available ponding depth below the lowest orifice

**Groundwater Recharge Volume Calculations**

**Groundwater Recharge Volume**

From CT 2004 Stormwater Quality Manual:

$$GVR = \frac{(D)(A)(I)}{12}$$

GRV = Groundwater Recharge Volume (ac-ft)  
 D = Depth of Runoff to be Recharged (table 7-4)  
 A = site area in acres  
 I = impervious cover (decimal)  
 WQv = Calculated Water Quality Volume

1.37

4366

	A	Site Area by NRCS Hydrologic Soil Group				Impervious Cover by NRCS Hydrologic Soil Group				Site Imperviousness (Decimal) by NRCS Hydrologic Soil Group				GRV Required (ac-ft)	Potential Recharge Pond Volumes Proposed (ac-ft)
	Total Site Area (AC)	A	B	C	D	A	B	C	D	A	B	C	D		
	1.87	0.00	1.46	0.41	0.00	0.00	0.76	0.13	0.00	0.00	0.41	0.07	0.00	0.013	0.275

NRCS Hydrologic Soil Group	Average Annual Recharge	Groundwater Recharge Depth (D)
A	18 inches/year	0.4 inches
B	12 inches/year	0.25 inches
C	6 inches/year	0.10 inches
D	3 inches/year	0 inches (waived)

Source: MADEP, 1997.  
 NRCS – Natural Resources Conservation Service



**Best Management Practice (BMP) Treatment Train Efficiency Worksheet**

Prepared for:  
**Proposed Retail Development**  
**1100 Boston Turnpike**  
**Bolton, Connecticut**

Prepared by:  
**BL Companies**  
**100 Constitution Plaza, 10th Floor**  
**Hartford Connecticut**

Date prepared:  
**May 13, 2021**

**Overall Site Treatment Train Efficiency**

E <sub>t</sub> = [1-(1-E <sub>1</sub> )(1-E <sub>2</sub> )(1-E <sub>3</sub> )(1-E <sub>4</sub> )(1-E <sub>5</sub> )]*100	<b>BMP</b>	<b>BMP Description</b>	<b>Type of Treatment</b>	<b>Efficiency Rate %</b>
		E1	Impervious Surface Sweeping***	Secondary (conventional)
	E2	Grass Filter Strip****	Secondary (conventional)	60
	E3	Infiltration Basin	Primary	80

Overall Treatment Train Efficiency (E<sub>t</sub>)= **93 % Total Suspended Solids (TSS) Removal**

\* 80% require per CT DEP  
 \*\* Manufacturers claim 80% TSS removal  
 \*\*\* Schueler 1996 & EPA 1993  
 \*\*\*\* New Jersey Stormwater Best Management Practices Manua

<b>BMP</b>	<b>Type of Treatment</b>	<b>TSS Removal Rate</b>	<b>Starting TSS Load</b>	<b>Amount Removed</b>	<b>Remaining Load</b>
		0.10	1.00	0.10	0.90
Grass Filter Strip****	Secondary (conventional)	0.6	0.90	0.54	0.36
Bioretention Basin	Primary	0.8	0.36	0.29	0.07

Overall Treatment Train Efficiency (%) **93**

**TSS Removal Rates (adapted from Schueler, 1996, & EPA, 1993)**

BMP List	Design Rate	Range of Average TSS Removal Rates	Brief Design Requirements
Extended Detention Pond	70%	60-80%	Sediment forebay
Wet Pond (a)	70%	60-80%	Sediment forebay
Constructed Wetland (b)	80%	65-80%	Designed to infiltrate or retain
Water Quality Swale	70%	60-80%	Designed to infiltrate or retain
Infiltration Trench	80%	75-80%	Pretreatment critical
Infiltration Basin	80%	75-80% (predicted)	Pretreatment critical
Dry Well	80%	80% (predicted)	Rooftop runoff (uncontaminated only)
Sand Filter (c)	80%	80%	Pretreatment
Organic Filter (d)	80%	80%+	Pretreatment
Water Quality Inlet	25%	15-35% w/ cleanout	Off-line only; 0.1" minimum Water Quality Volume (WQV) storage
Sediment Trap (Forebay)	25%	25% w/ cleanout	Storm flows for 2-year event must not cause erosion; 0.1" minimum WQV storage
Drainage Channel	25%	25%	Check dams; non-erosive for 2-yr.
Deep Sump and Hooded Catch Basin	25%	25% w/ cleanout	Deep sump general rule = 4 x pipe diameter or 4.0' for pipes 18" or less
Street Sweeping	10%	10%	Discretionary non-structural credit, must be part of approved plan

## APPENDIX E

### SUBSURFACE SOIL INVESTIGATION LOGS

Test Pit Logs

Falling Head Permeability Test Logs



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-1</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.50</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-2"	Topsoil	E		
2"-60"	Dark brown coarse sand with trace cobbles	E	TR C	
60"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24          Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)    35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-2</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT	
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation <u>662.30</u>
	Operator _____	Datum <u>NAVD 88</u>
	Make _____ Model _____	Temperature <u>54</u>
	Bucket Capacity _____ Reach _____	Weather <u>Cloudy w/ Rain</u>

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-72"	Dark brown coarse sand with trace cobbles	E	TR C	
72"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 8'.  
2. Bedrock was not observed.

<b>TEST PIT PLAN</b>	<b>LEGEND</b>			
<p>North</p>	<b>COBBLES AND BOULDERS</b>  Size Range      Letter Classification    Designation 3" - 12"          Cobble (C) 12" - 24          Small (S) 24" - 36"        Medium (M) 36" and Larger    Large (L)	<b>PROPORTIONS USED (QUANTITATIVE TERMS)</b>  TRACE (TR)    0-10% LITTLE (LI)    10-20% SOME (SO)     20-35% MANY (MA)     35-50%	<b>QUALITATIVE TERMS</b>  OCCASIONAL FEW FREQUENT NUMEROUS	<b>EXCAVATION EFFORT</b>  E - Easy M - Moderate D - Difficult  Observed Depth to Groundwater



**Proposed Retail Development - 1100 Boston Turnpike  
Bolton, CT**

<b>TP-3</b>
BL Project #2002032
May 4, 2021

**TEST PIT FIELD LOG**

PERSONNEL PRESENT	EXCAVATION EQUIPMENT			
Cody L'Heureux- BL Companies	Contractor _____	Ground Surface Elevation	661.90	
	Operator _____	Datum	NAVD 88	
	Make _____ Model _____	Temperature	54	
	Bucket Capacity _____ Reach _____	Weather	Cloudy w/ Rain	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0"-6"	Topsoil	E		
6"-66"	Dark brown coarse sand with trace cobbles	E	TR C	
66"-120"	Dark brown silty sand	E		1
<b>Bottom of Test Pit at 120" (10')</b>				

**REMARKS:**

1. Ground water was observed at 7'.  
2. Bedrock was not observed.

TEST PIT PLAN	LEGEND			
	COBBLES AND BOULDERS	PROPORTIONS USED (QUANTITATIVE TERMS)	QUALITATIVE TERMS	EXCAVATION EFFORT
	Size Range      Letter Classification      Designation 3" - 12"      Cobble (C) 12" - 24"      Small (S) 24" - 36"      Medium (M) 36" and Larger      Large (L)	TRACE (TR)      0-10% LITTLE (LI)      10-20% SOME (SO)      20-35% MANY (MA)      35-50%	OCCASIONAL FEW FREQUENT NUMEROUS	E - Easy M - Moderate D - Difficult  ▼      Observed Depth to Groundwater

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

TEST PIT # 1

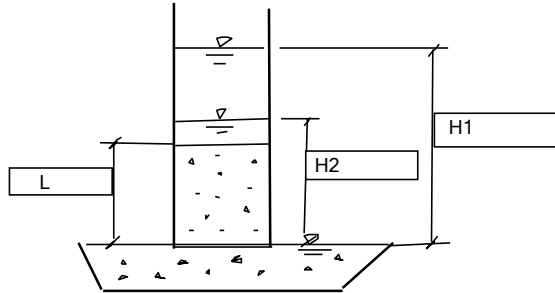
SAMPLE TP-1

SAMPLE LENGTH: 4.50 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am

presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.260	0.240	6.380	0.034	4.063
10.000	6.500	5.960	0.540	6.230	0.039	4.681
15.000	6.500	5.720	0.780	6.110	0.038	4.596
20.000	6.500	5.540	0.960	6.020	0.036	4.306
25.000	6.500	5.420	1.080	5.960	0.033	3.914
30.000	6.500	5.300	1.200	5.900	0.031	3.661
35.000	6.500	5.060	1.440	5.780	0.032	3.844
40.000	6.500	4.880	1.620	5.690	0.032	3.844
45.000	6.500	4.680	1.820	5.590	0.033	3.907
50.000	6.500	4.500	2.000	5.500	0.033	3.927
					<b>Average=</b>	<b>4.074</b> ft/day
					or	2.04 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

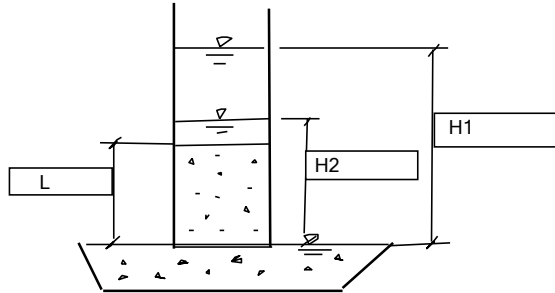
TEST PIT # 1

SAMPLE TP-2

SAMPLE LENGTH: 4.50 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am  
presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.170	0.330	6.335	0.047	5.626
10.000	6.500	5.880	0.620	6.190	0.045	5.409
15.000	6.500	5.650	0.850	6.075	0.042	5.037
20.000	6.500	5.300	1.200	5.900	0.046	5.492
25.000	6.500	5.060	1.440	5.780	0.045	5.381
30.000	6.500	4.680	1.820	5.590	0.049	5.860
35.000	6.500	4.500	2.000	5.500	0.047	5.610
40.000	6.500	4.300	2.200	5.400	0.046	5.500
45.000	6.500	4.000	2.500	5.250	0.048	5.714
					<b>Average=</b>	<b>5.514</b> ft/day
					or	2.76 in/hr

## FALLING HEAD PERMEABILITY TEST

PROJECT: Proposed Retail Development  
Bolton, CT

PROJECT #2002032  
DATE: 5/4/2021

BY: C.J.L.

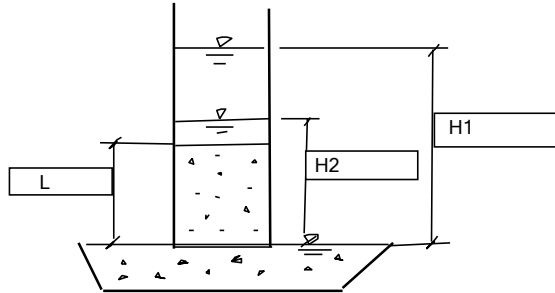
TEST PIT # 1

SAMPLE TP-3

SAMPLE LENGTH: 4.00 in.

SAMPLE DEPTH (BELOW EG): 6.00 ft

presoak start: 10:00 am  
presoak finish: 10:30 am



$$K = \frac{(H1 - H2) \times L}{t \times (H1 + H2)/2}$$

Time (min.)	H1 (in.)	H2 (in.)	H1 - H2	(H1 + H2)/2	K (in/min.)	K (ft./day)
0.000	6.500	6.500	0.000	6.500	-	-
5.000	6.500	6.180	0.320	6.340	0.040	4.845
10.000	6.500	5.540	0.960	6.020	0.064	7.654
15.000	6.500	5.060	1.440	5.780	0.066	7.972
20.000	6.500	4.280	2.220	5.390	0.082	9.885
25.000	6.500	4.220	2.280	5.360	0.068	8.167
30.000	6.500	4.000	2.500	5.250	0.063	7.619
					<b>Average=</b>	<b>7.691</b> ft/day
					or	3.85 in/hr



## APPENDIX F

### DRAINAGE MAPS

ED-1 – Existing Drainage Mapping






PD-1 – Proposed Drainage Mapping

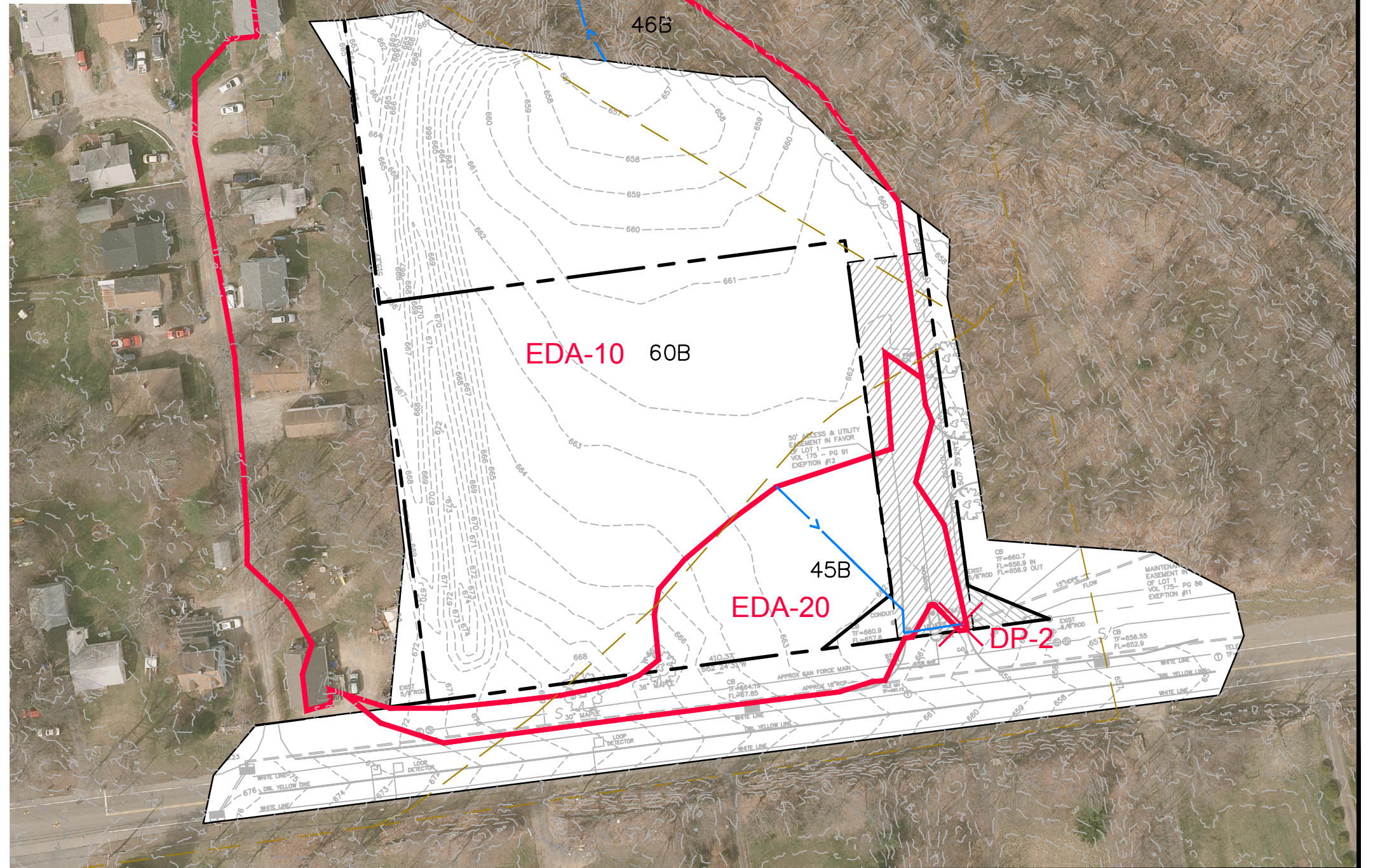
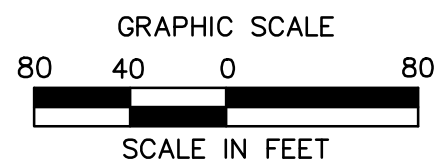
GD-1 – Grading and Drainage Plan

## EXISTING HYDROLOGY INFORMATION

DRAINAGE AREA	TOTAL AREA (S.F.)	IMPERVIOUS AREA (S.F.)	PERVIOUS AREA (S.F.)	PERCENT IMPERVIOUS (%)	CN	TIME OF CONCENTRATIONS (MIN.)
EDA-10	185,210	12,135	173,075	6.6%	72	14.5
EDA-20	29,230	4,605	24,625	15.8%	81	25.3

## HYDROLOGY LEGEND

	PROPERTY LINE
	DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	SOIL TYPE BOUNDARY
	SOIL TYPE DESIGNATION



## EXISTING DRAINAGE MAPPING

PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	J.A.B.
Scale	1"=80'
Project No.	2002032
Date	04/02/2021
CAD File	ED200203201

# ED-1








ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING

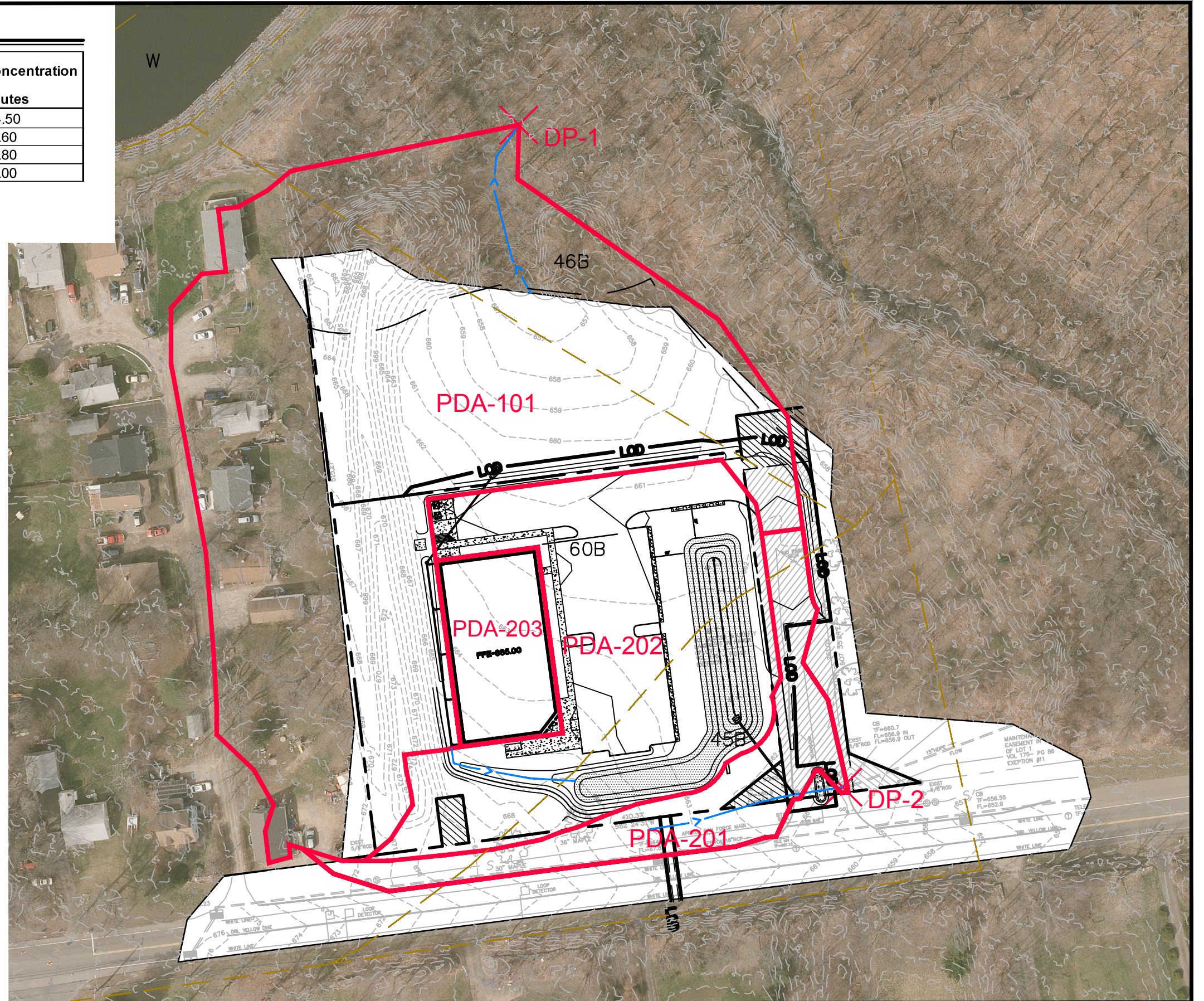
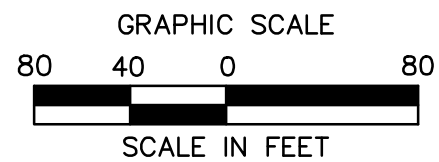
100 Constitution Plaza, 10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

## PROPOSED HYDROLOGY INFORMATION

Drainage Area	Total Area SF	Composite Curve Number	Imperviousness Cover %	Time of Concentration Minutes
PDA-101	133,070	73	10.7%	14.50
PDA-201	18,255	84	32.7%	9.60
PDA-202	52,345	84	41.5%	8.80
PDA-203	10,770	98	100.0%	5.00

## HYDROLOGY LEGEND

	PROPERTY LINE
	DRAINAGE AREA BOUNDARY
	TIME OF CONCENTRATION FLOW PATH
	SOIL TYPE BOUNDARY
	SOIL TYPE DESIGNATION



## PROPOSED DRAINAGE MAPPING

PROPOSED RETAIL DEVELOPMENT  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

Designed	S.E.L.
Drawn	S.E.L.
Reviewed	J.A.B.
Scale	1"=80'
Project No.	2002032
Date	05/04/2021
CAD File	PD200203201

# PD-1



ARCHITECTURE  
ENGINEERING  
ENVIRONMENTAL  
LAND SURVEYING

100 Constitution Plaza, 10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

**GRADING AND DRAINAGE LEGEND**

- PROPERTY LINE
  - LOD
  - LIMIT OF DISTURBANCE AND SITEWORK CONTRACT LIMIT LINE
  - SAWCUT LINE
  - STORM LINE
  - MANHOLE
  - CATCH BASIN
  - PROPOSED CONTOUR LINE
  - ×(100.00) PROPOSED SPOT GRADE
- SPOT GRADE ABBREVIATIONS**
- BC BOTTOM OF CURB
  - TC TOP OF CURB
  - BW BOTTOM OF WALL
  - TW TOP OF WALL
  - MEX MEET EXISTING CONDITION

ENCROACHMENT EXEPTION #3

N/F ARLES & MARIE  
DL-41- PG.95  
5 NORTH RD

N/F AR ANDREW  
VOL.53- PG.792  
11 NORTH RD

N/F DREW & HARRY  
182- PG.1074  
7 NORTH RD

N/F LORETTA GRACE  
VOL.147- PG.102  
184 BOSTON TPKE

BOSTON TURNPIKE

**PROPOSED RETAIL BUILDING**  
10,640 S.F.  
22 SPACES REQUIRED  
33 SPACES PROPOSED

FFE-665.00

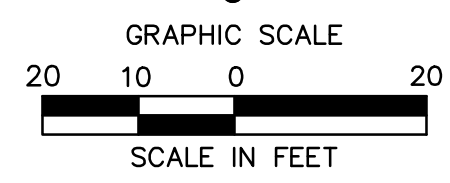
**BOLTON PLANNING AND ZONING COMMISSION, BOLTON, CT**

DATE APPROVED \_\_\_\_\_ DATE OF EXPIRATION \_\_\_\_\_

CHAIRMAN

THE STATUTORY FIVE-YEAR PERIOD FOR COMPLETION OF ALL PHYSICAL IMPROVEMENTS EXPIRES ON \_\_\_\_\_

**FOR PERMITTING PURPOSES ONLY**  
**NOT RELEASED FOR CONSTRUCTION**



100 Constitution Plaza  
10th Floor  
Hartford, CT 06103  
(860) 249-2200  
(860) 249-2400 Fax

**PROPOSED RETAIL DEVELOPMENT**  
1100 BOSTON TURNPIKE  
BOLTON, CONNECTICUT

REVISIONS

No.	Date	Desc.	REVISED PER TOWN COMMENTS
1.	05/14/2021		

Designed by S.E.L.  
Drawn by S.E.L.  
Reviewed by  
Scale 1"=20'  
Project No. 2002032  
Date 04/02/2021  
CAD File: GD200203201

Title **GRADING AND DRAINAGE PLAN**

Sheet No. **GD-1**

5/20/2021, 10:42:11 AM, C:\Users\jdoyle\OneDrive\Documents\GD200203201.dwg, GD-1, 24x36, 200%

APPENDIX G

STORMWATER SYSTEM  
OPERATION AND MAINTENANCE MANUAL

**Appendix G:**

**Stormwater System  
Operations and Maintenance Plan**

*For the Proposed:*  
**Retail Development**

*Located at:*  
1100 Boston Turnpike  
Bolton, Connecticut

*Prepared for Submission to:*  
**Town of Bolton, Connecticut**

April 2, 2021  
*Revised May 1, 2021*

*Prepared for:*  
**Garrett Homes, LLC**  
59 Field Street  
Torrington, Connecticut

*Prepared by:*



**BL Companies**

100 Constitution Plaza, 10<sup>th</sup> Floor  
Hartford, Connecticut 06103  
Phone: (860) 249-2200  
Fax: (860) 249-2400

BL Project Number: 2002032

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## General Overview

The site is located at 1100 Boston Turnpike. The property is approximately 1.85 acres in size and is currently an undeveloped parcel. The property is located on the northern side of Boston Turnpike and is roughly bordered by residential properties to the west and south and a dentist office on the previously subdivided parcel to the east. The site is bordered by undeveloped woodland and Bolton Lake to the north. The subject parcel described in this report is proposed to be subdivided from “Parcel 2” to the north.

The proposed site improvements will include a 10,640 square foot retail building, paved parking areas, landscaped areas, pedestrian sidewalks, site utilities and lighting, and a stormwater management system.

The following Operations and Maintenance Plan was prepared specifically for this proposed development in the Town of Bolton, Connecticut. The Plan was developed to satisfy the requirements of the Connecticut Department of Energy and Environmental Protection’s 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

### Purpose & Goals

The purpose of this Manual is to ensure that the stormwater management components are operated in accordance with all approvals and permits. The primary goal is to inform all the property managers about how the system operates and what maintenance items are necessary to protect downstream wetlands and watercourses. The secondary goal is to provide a practical, efficient means of maintenance planning and record keeping to verify permit compliance.

### Responsible Parties

The Property Owner will be responsible for implementing the Plan on the property.

Maintenance inspections shall be performed by a qualified professional.

Some utilities located on the site will be owned and maintained by various utility companies in accordance with their standards. The property owner may maintain the service connections.

### List of Permits & Special Conditions

The project will receive several permits, which may contain special conditions that require compliance by the property owner and maintenance contractors. This permit may include the following:

- Town of Bolton Permits –Site Plan Special Permit, Subdivision Permit, Building Permit
- State of Connecticut – Encroachment Permit



### Maintenance Logs and Checklists

The property owner will keep a record of all maintenance procedures performed, date of inspection/ cleanings, etc. Copies of inspection reports and maintenance records shall be kept on-site.

### Forms

The following forms will be developed for annual maintenance. Copies of the forms will be kept on-site as part of the Storm Water Management Plan.

- Annual Checklist
- Quarterly Checklist
- Monthly Checklist

### Employee Training

The property owner will have an employee-training program, with annual up-dates, to ensure that the qualified employees charged with maintaining the buildings and grounds do so in accordance with the approved permit conditions. All employees that have maintenance duties will be adequately informed of their responsibilities.

### Spill Control

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean-up:

- Manufacturer's recommended methods for spill clean-up will be clearly posted and site personnel will be made aware of the procedures and the location of the information and clean-up supplies.
- Materials and equipment necessary for spill clean-up will be kept in the material storage area on-site. Equipment and materials will include but not be limited to: absorbent booms or mats, brooms, dust pans, mops, rags, gloves, goggles, sand, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned immediately after discovery.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substance.
- Spills of toxic or hazardous material, regardless of size, will be reported to the appropriate State or local government agency.
- If a spill occurs, this plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean the spill if there is another one. A description of the spill, the cause, and the remediation measures will also be included.

A spill report shall be prepared by the property owner following each occurrence. The spill report shall present a description of the release, including quantity and type of material, date of spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

The property owner shall identify an appropriately qualified and trained site employee involved with day-to-day site operations to be the spill prevention and clean-up coordinator. The name(s) of responsible spill personnel shall be posted on-site. Each employee shall be instructed that all spills are to be reported to the spill prevention and clean-up coordinator.

## **Storm Water Management**

### System Components

The storm water management system has several components that are shown on the Grading and Drainage Plan (GD-1), that performs various functions in treating storm water runoff:

### Infiltration Basin

The Infiltration basin is designed to infiltrate and retain stormwater runoff from contributing watersheds. Wet meadow environments are proposed within the basins to provide biological and physical filtration of runoff prior to discharge. Runoff storage capacity for flood flows is also provided in the system by means of a control outlet structure. The basins are planted to provide soil stabilization, filtration and wildlife habitat.

Management actions include the following measures:

1. For the first few months after construction basins should be inspected after every major storm. Inspections should focus on the duration of standing water in a basin.
2. Replacement of any diseased or dead vegetation within the basin with native species, as per the approved plan;
3. Removal of any invasive plants, as identified by the current listing of Invasive Species compiled by the CT Invasive Plant Working Group. These shall include, but not be limited to, purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and multiflora rose (*Rosa multiflora*). Removal shall be by hand, shovel or pulling, treatment of cut stump within 20 minutes of cutting or spraying of foliage with a 1-2% solution of Rodeo™ or an aquatic solution of Imazypr™;
4. Inspection and clearing of debris from the basin floor, inlet and outlet locations when necessary. To be inspected quarterly for the first two years and adjusted as necessary, but no less frequently than biennially. Remove sediment from basin floor as needed.
5. Sediment should be removed from Biofiltration basins by hand when the sediment is dry (visible cracks) and readily separates from the floor of the basin to minimize smearing the basin floor.
6. The Infiltration Basin should be drain within 72 hours of a storm event. If ponding is realized more than 72 hours after the end of the rain event, the engineered soil may be clogged and should be hand ranted to restore the infiltration capabilities of the soil.

7. See attached additional Regular Inspection and Maintenance Guidance for Infiltration Systems and Checklist for Inspection of Infiltration Systems.

### Vegetative Filter Strip

A vegetative filter strip is designed to accept stormwater runoff from the riprap energy dissipation trenches. The system is created to trap sediment, infiltrate runoff, provide a natural floral transition from paved surfaces to the downstream stormwater management practice. The system is planted with a dense stand of water tolerant grass to provide for long-term soil stabilization, seasonal nutrient uptake by plants and maintain the soil's infiltration capacity. The plans should be able to withstand prolonged periods of wet and dry. Management actions include the following measures:

1. For the first three growing seasons inspect the system twice per year (late spring and early fall). Replace any diseased or dead vegetation within the system with native species, as per the approved plan;
2. Long-term management requires control of invasive plants, as identified by the current listing of Invasive Species compiled by the CT Invasive Plant Working Group. These shall include, but not be limited to, purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), and multiflora rose (*Rosa multiflora*). Removal shall be by hand, shovel or pulling, treatment of cut stump within 20 minutes of cutting or spraying of foliage with a 1-2% solution of Rodeo™ or an aquatic solution of Imazypr™;
3. Repair any obvious soil erosion (i.e., rills, gullies). Pack rills with sandy till, compact and apply 4-6" of settled top soil, reseed with appropriate seed mix, mulch and water, as needed, until grass is established (70% coverage).
4. Only organic slow release fertilizers shall be applied based on the results of soil fertility tests.

## **Site Maintenance**

### Parking Lots

Parking lots and sidewalks shall be swept as necessary by the property owner, or at least every 6 months, to clean sediment, trash, and other debris. The property owner will sweep parking lots on the property in the spring to remove winter accumulations of road sand.

### Landscaping

The management company retained by the property owner will maintain landscaped areas. Normally the landscaping maintenance will consist of pruning, mulching, planting, mowing lawns, raking leaves, etc. Use of fertilizers and pesticides will be controlled and limited to minimal amounts necessary for healthy landscape maintenance.

The lawn areas, once established, will be maintained at a typical height of 3 ½". This will allow the grass to be maintained with minimal impact from weeds and/or pests. The low-maintenance areas will be maintained as a meadow or allowed to revert back to natural

conditions. Topsoil, brush, leaves, clippings, woodchips, mulch, equipment, and other material shall be stored off site.

#### Outdoor Storage

There will be no outdoor storage of hazardous chemicals, de-icing agents, fertilizer, pesticides, or herbicides anywhere around the building or on site.

#### Deicing and Snow Removal & Storage

The use of clean sand may be used to aid traction in conjunction with salt and/or chemicals for deicing, snow melting and other related winter weather management. Snow shall be shoveled and plowed from sidewalk and parking areas as soon as practical during and after winter storms. Sand accumulation shall be removed from the site at the end of the winter season or appropriate time when seasonal snow has melted. Alternative deicing methods must be submitted prior to use onsite for review to the Town of Bolton for approval.

## Regular Inspection and Maintenance Guidance for Infiltration Systems / Tree Filters

Maintenance of infiltration systems and tree filters can typically be performed as part of standard landscaping. Regular inspection and maintenance is critical to the effective operation of infiltration systems and tree filters to insure they remain clear of leaves and debris and free draining. This page provides guidance on maintenance activities that are typically required for these systems, along with the suggested frequency for each activity. Individual systems may have more, or less frequent maintenance needs depending on a variety of factors including but not limited to: the occurrence of large storm events, overly wet or dry periods, regional hydrologic conditions, and the upstream land use.

### ACTIVITIES

The most common maintenance activity is the removal of sediment and organic debris from the system and bypass structures. Visual inspections are routine for system maintenance. This includes looking for standing water, accumulated leaves, holes in the soil media, signs of plant distress, and debris and sediment accumulation in the system. Vegetation coverage is integral to the performance of the system, including infiltration rate and nutrient uptake. Vegetation care is important to system productivity and health.

#### ACTIVITY

#### FREQUENCY

### CLOGGING AND SYSTEM PERFORMANCE

A record should be kept of the time to drain for the system completely after a storm event. The system should drain completely within 72 hours.

Check to insure the filter surface remains well draining after storm events.

**Remedy:** If filter bed is clogged, draining poorly, or standing water covers more than 50% of the surface 48 hours after a precipitation event, then remove top few inches of discolored material. Till, or rake remaining material as needed.

After every major storm in the first few months, then annually at minimum.

Check inlets and outlets for leaves and debris.

**Remedy:** Rake in and around the system to clear it of debris. Also, clear the inlet and overflow if obstructed.

Check for animal burrows and short-circuiting in the system.

**Remedy:** Soil erosion from short circuiting or animal borrows should be repaired when they occur. The holes should be filled and lightly compacted

Inspect inlets and outlets to ensure good condition and no evidence of deterioration. Check to see if high-flow bypass is functioning.

**Remedy:** Repair or replace any damaged structural parts, inlets, outlets, sidewalls.

Quarterly initially, annually as a minimum thereafter.

### VEGETATION

Check for robust vegetation coverage throughout the system and dead or dying plants.

**Remedy:** Vegetation should cover > 75% of the system and should be cared for as needed.

Annually or as needed

## CHECKLIST FOR INSPECTION OF INFILTRATION SYSTEM / TREE FILTERS

Location:  
 Inspector:  
 Date:  
 Time:  
 Site Conditions:  
 Days Since Last Rain Event:

Inspection Items	Satisfactory (S) or Unsatisfactory (U)	Comments/Corrective Action
<b>1. Initial Inspection After Planting and Mulching</b>		
Plants are stable, roots not exposed	S      U	
Surface is at design level, no evidence of preferential flow/shoving	S      U	
Inlet and outlet/bypass are functional	S      U	
<b>2. Debris Cleanup (1 time/year minimum, Spring/Fall)</b>		
Litter, leaves, and dead vegetation removed from the system	S      U	
Prune/mow vegetation	S      U	
<b>3. Standing Water (1 time/year and/or after large storm events)</b>		
No evidence of standing water after 72 hours since rainfall	S      U	
<b>4. Vegetation Condition and Coverage</b>		
Vegetation condition good with good coverage (typically > 75%)	S      U	
<b>5. Other Issues</b>		
Note any additional issues not previously covered.	S      U	
<b>Corrective Action Needed</b>		<b>Due Date</b>
1.		
2.		
3.		
Inspector Signature		Date



## Bolton Lakes Regional Water Pollution Control Authority

222 Bolton Center Rd • Bolton, CT 06043 • <http://www.blrwpc.com>

Phone (860) 649-8066 • Fax (860) 643-0021

5/4/21

To: Bolton PZC

Subject: sewer connection 1100 Boston Turnpike

Dear Bolton Planning and Zoning Commission,

At the April meeting of the BLWPCA the application for connection to the sewer for the project located at 1100 Boston Turnpike was discussed. BLWPCA requested additional details be provided regarding the connection so they did not act on the request. On their behalf I have been requested to provide this memo to outline conditions the BLWPCA is requesting so that PZC may approve the application. BLWPCA does anticipate holding a special meeting in May to review and act on this application. Please consider approving the application with the following conditions.

- 01) Install a water meter to be read by a representative of BLWPCA at or about the time of CO issuance and at intervals as determined by BLWPCA
- 02) Purchase EDU's as determined by the BLWPCA
- 03) Apply for and gain approval for permits to install a new sewer connection as approved by the BLWPCA
- 04) Pay all associated fees and post the required bonds for the sewer connection
- 05) Execute an easement in favor of BLWPCA for the purposes of access, maintenance and repair of sewer equipment

Respectfully,

James Rupert  
BLWPCA Administrator



# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

Date: May 3, 2021 - **REVISED June 3, 2021**

To: Planning & Zoning Commission

From: Patrice L. Carson, AICP, Consulting Director of Community Development

**Subject: Garrett Homes, LLC's 2-Lot Subdivision appl. at 1100 Boston Turnpike**

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## INFORMATION

**Application No.:** VP#PL-21-6  
**Application Date:** April 2, 2021      **Wetlands Permit:** #2021-3  
**Receipt Date:** April 14, 2021      **Wetlands Permit Approved:** April 27, 2021  
**Public Notification:** Sign Posted 04/23/21  
**Public Hearing Date(s):** n/a  
**Applicant(s):** Garrett Homes, LLC  
**Owner(s):** 1100 Boston Turnpike LLC c/o Joel Rosenlicht

## PROPOSAL/EXISTING CONDITIONS/BACKGROUND

Applicant Garrett Homes, LLC, of 59 Field Street, Torrington, CT, is seeking approval of a 2-lot Subdivision of 5.44 acres at 1100 Boston Turnpike. This Subdivision is for retail development and not housing.

Located east of North Road, the property is zoned RMUZ and is surrounded by R-1 and R3 Zones on all sides except directly east where it abuts another RMUZ zoned property. Currently the property is vacant but has had some improvements made to it with the installation of a berm along the west side of the property. There was a commercial development proposal previously approved for the site. Since then a second Unified Village style development was proposed and a free cut was made from the site on the east side where a dentist office was approved. There are wetlands on the property, both existing and man-made. Bolton Pond Brook also runs along the western border of the property. A conservation easement that blankets the east side of the property encompassing the Bolton Pond Brook area was granted to the Town and serves as the open space dedication to meet the Open Space requirement. The Inland Wetlands Agency has reviewed a permit for the project and has issued its decision and permit approval.



On June 14, 2017, the Commission held an informal discussion with the previous applicant Dr. Ilies, owner Dr. Rosenlicht, and their design professionals. An Overall Concept Plan was discussed showing three lots to be developed in the unified village-style design. Parking, landscaping, and drainage seemed to be the only discussion items. The application has addressed those concerns. All parcels meet the current Zoning Requirements for frontage and acreage.

A shared directory sign is now proposed on frontage of lot 2 which is next to the northeast corner of lot 3. The original location for the sign was in the island in the common accessway and the Commission will have to review and act on the new location.

#### **REPORTS RECEIVED**

- Site Plan Checklist - completed
- 04/28/21 approval letter from Barbara Kelly, Wetlands Agent - no issues
- 05/03/21 review email from Joseph Dillon, PE - 3 issues

#### **ADDITIONAL INFORMATION RECEIVED**

- 05/20/21 Revised Site Plans
- Application with Owner Signature
- 05/14/21 Signed Owner Authorization Letter
- Signed Purchase and Sale Agreement
- 05/20/21 Response to Staff Comments Letter
- Abutters List within 500 feet
- 04/02/21 Stormwater Management Report - Revised 05/20/21
- 04/23/21 Proof of Posted Sign
- Engineering Review Fee - \$1000
- Legal Review Fee - \$1000

#### **INFORMATION STILL NEEDED:**

- Fire Marshal/Fire Chief Review
- EHHD Subdivision Review - 05/05/21 Comments below
- Street Numbers as Approved by the Town - Have been added to the Revised Plans
- Proposed Easements for Maintenance, Access and Utility should be submitted for review
- BLRWPCA comments re: approval conditions and any remaining Sewer Assessment Fee

#### **STAFF ANALYSIS**

- PZC determined no Public Hearing would be held and was not required by CGS.
- A feasibility plan needs to be shown for lot #2 which would include proposed locations of a building, parking, and general site layout. - Has been submitted. The lots are served by sewer and well. There does not appear to be well locations on the plans.

- Once Street Numbers are assigned and approved by the Town, they should be shown on the Plan. – **Have been added to the Revised Plans**
- Section 16A.3.x. – Buildings and Structures: Architectural and Design Requirements & Section 16B.4.l. – Architectural Character, Historic Preservation, Site Design. The Commission needs to determine if the design of the proposed building is adequate to meet these standards. If the Commission’s intention along this corridor is to preserve the residential-type character and create transitions to existing residential neighborhoods, this proposal seems to accomplish that. Staff feels the applicant has paid particular attention to keeping all activity (no lighting, windows, etc.) away from the west side of the building to keep from interfering with the residences on North Road. – **The applicant also notes that additional brick banding and faux windows have been added to the northern side of the building in an effort to increase visual aesthetics while mitigating disturbance to the residential abutters.**
- Subdivision Regulations Section 4 – Open Space – The Commission needs to declare on the record that the conservation easement on the west side of the property satisfies the Open Space requirement of the Subdivision Regulations.

**STAFF RECOMMENDATION**

Currently, the staff has determined that:

- the application is complete;
- the application complies with Town Regulations subject to conditions set forth in the staff analysis and reports received to date; comments from the Fire Marshal/Fire Chief, EHHD and the BLRWPCA are still forthcoming;
- the use is compatible with other uses in the neighborhood, and is in keeping with the zone in which it is located.



# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

## INLAND WETLANDS COMMISSION OF THE TOWN OF BOLTON INLAND WETLANDS APPLICATION #2021-3 (C-21-3)

April 28, 2021

Ms. Kimberly Masiuk, PE  
B.L. Companies  
100 Constitution Plaza, 10th Floor  
Hartford, CT 06103

Re: Inland Wetlands Application #2021-3 (C-21-3)  
2-Lot Subdivision at 1100 Boston Turnpike, Route 44, Bolton, CT

Dear Ms. Masiuk,,

On behalf of the Inland Wetlands Commission of the Town of Bolton, I am writing in response to Inland Wetlands Application #2021-3 (C-21-3), for a 2-Lot Subdivision at 1100 Boston Turnpike, Route 44, in Bolton.

At its meeting on April 27, 2021, the Inland Wetlands Commission approved the Application for Subdivision as shown on the "2-Lot Subdivision Plan" (Plan) dated 03-18-2021. The Plan was prepared for Calitto Development LLC and approved by Carmine J. Matrascia – L.S. #70219.

Feel free to call 860.649.8066, extension 6113, if you have any questions.

Sincerely,

  
Barbara Kelly, Agent  
Inland Wetlands Commission  
Town of Bolton  
bkelly@boltonct.org

cc: Planning & Zoning Commission, Town of Bolton  
Inland Wetlands Commission files

**From:** Joseph M. Dillon, P.E. [mailto:jdillon@nlja.com]  
**Sent:** Monday, May 03, 2021 12:32 PM  
**To:** Carson, Patrice <pcarson@boltonct.org>  
**Cc:** Rupert, Jim <jrupert@boltonct.org>  
**Subject:** RE: 1100 Boston Tpke - comments on Applications for Subdivision and Special Permit

Patrice,

I have reviewed the submitted information with regards to the Subdivision Application. The proposed development is in conformance with the dimensional requirements of the Rural Mixed Use Zone (RMUZ), and is in general conformance with the concept plan proposed during the application process for the Bolton Dental development. I have the following comments:

- The planting plan for the earthen berm differs slightly from the original proposed concept plan but still provides screening that is equal to or better than the concept plan.
  
- The Subdivision Plan should show a proposed building location and general site layout to demonstrate feasibility of the lot to the north.
  
- The Subdivision Plan should identify the location of the BLRWPCA easement.

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

Regards,

Joe

---

**From:** Thad King, Health Comments, May 5, 2021:

**For the 10640 SQ FT retail building,**

- The attached Public Water Screening form should be filled out and submitted to CTDPH and the Town of Bolton to better determine the use and status of the proposed water system.
- The proposed well location appears to be 2 FT from the proposed building. A minimum distance of 10 FT of clearance should be considered for construction and maintenance of the water supply well.
- No drainage is proposed around the building. 25 FT is the minimum separation from drainage to the well for withdrawals less than 10 GPM.
- An alternate approvable well site should be shown.

June 7, 2021

Patrice L. Carson, AICP, Director of Community Development  
Town of Bolton  
222 Bolton Center Road  
Bolton, CT 06043

Re: Special Permit Application  
2-Lot Subdivision Application  
Proposed Retail Development  
1100 Boston Turnpike

Dear Ms. Carson:

We are in receipt of engineering comments dated June 3, 2021, from Nathan L. Jacobson & Associates, Inc. regarding the project referenced above. Our responses below are shown in ***bold italic*** text.

1. The roof leaders from the proposed building have been directed to a riprap apron to the north of the building. The proposed apron and swale are located on Lot 2, to the north. We would recommend that the discharge point for the roof leaders be located on Lot 3 where the building is proposed. If this cannot be accomplished, the subdivision plan will require a modification to create an easement for discharge rights or an adjustment of the property line between Lots 2 & 3.

***Response: Acknowledged. Please refer to revised subdivision plan for added drainage easement in favor of Lot 3.***

2. For the purposes of continuity between the drawings, the proposed well should be shown on all of the site plan sheets.

***Response: Acknowledged. The well has been added to the rest of the site plan sheets.***

3. The data included for DP-2 in Table 2 – Pre-Development Conditions Peak Flows does not match the Existing DP-2 data provided in Table 5 – Existing vs. Proposed Peak Rates of Runoff. It appears that the existing peak flows for DP-2 were copied in error from DP-1 existing peak flows. This discrepancy should be rectified.

***Response: Acknowledged. The typo has been corrected. Please refer to the revised Stormwater Management Report.***

4. The Subdivision Plan should show a proposed building location and general site layout to demonstrate feasibility of Lot 2 to the north.

***Response: Acknowledged. Please refer to the master plan on sheet MP-1.***

We trust this addresses your concerns. Should you require additional information, please contact me at 860-760-1908.

Sincerely,

A handwritten signature in black ink that reads 'Kimberly M. Masiuk'.

Kimberly M. Masiuk, P.E.  
Senior Project Manager



# Town of Bolton

222 BOLTON CENTER ROAD • BOLTON, CT 06043

## INLAND WETLANDS COMMISSION OF THE TOWN OF BOLTON INLAND WETLANDS APPLICATION #2021-3 (C-21-3)

April 28, 2021

Ms. Kimberly Masiuk, PE  
B.L. Companies  
100 Constitution Plaza, 10th Floor  
Hartford, CT 06103

Re: Inland Wetlands Application #2021-3 (C-21-3)  
2-Lot Subdivision at 1100 Boston Turnpike, Route 44, Bolton, CT

Dear Ms. Masiuk,,

On behalf of the Inland Wetlands Commission of the Town of Bolton, I am writing in response to Inland Wetlands Application #2021-3 (C-21-3), for a 2-Lot Subdivision at 1100 Boston Turnpike, Route 44, in Bolton.

At its meeting on April 27, 2021, the Inland Wetlands Commission approved the Application for Subdivision as shown on the "2-Lot Subdivision Plan" (Plan) dated 03-18-2021. The Plan was prepared for Calitto Development LLC and approved by Carmine J. Matrascia – L.S. #70219.

Feel free to call 860.649.8066, extension 6113, if you have any questions.

Sincerely,

  
Barbara Kelly, Agent  
Inland Wetlands Commission  
Town of Bolton  
bkelly@boltonct.org

cc: Planning & Zoning Commission, Town of Bolton  
Inland Wetlands Commission files

**From:** Joseph M. Dillon, P.E. [mailto:jdillon@nlja.com]  
**Sent:** Tuesday, June 08, 2021 3:25 PM  
**To:** Carson, Patrice <pcarson@boltonct.org>  
**Cc:** Masiuk, Kimberly <kmasiuk@Blcompanies.com>  
**Subject:** 1100 Boston Turnpike

Patrice,

Attached is my follow-up review for 1100 Boston Turnpike. My only concern is that the location of the roof leader outlet will be an issue for the person developing lot 2. My suggestion is to extend the easement and outlet to the north.

Feel free to contract me if you have any questions.

Regards,  
Joe

---

Joseph M. Dillon, P.E.



**Nathan L. Jacobson & Associates**

*Consulting Civil and Environmental Engineers Since 1972*

86 Main Street, P.O. Box 337, Chester, Connecticut 06412-0337  
Tel: 860.526.9591 • Fax: 860.526.5416  
[www.nlja.com](http://www.nlja.com) • [jdillon@nlja.com](mailto:jdillon@nlja.com)





June 8, 2021

Ms. Patrice Carson, AICP  
Director of Community Development Bolton  
Town Hall  
222 Bolton Center Road  
Bolton, CT 06043

Re: Proposed Retail Development  
1100 Boston Turnpike  
Bolton, Connecticut  
NLJ #0968-0037

Dear Ms. Carson:

As requested, we have reviewed the following information received via e-mail for the subject project at our office through June 7, 2021:

Item 1: Letter to Patrice L. Carson, AICP, Director of Community Development, from Kimberly M. Masiuk, P.E. dated June 7, 2021.

Item 2: Set of twenty-six (26) drawings titled "Land Development Plans for Planning and Zoning Special Permit Application, Proposed Retail Development, 1100 Boston Turnpike, Bolton, Connecticut", prepared by BL Companies, scale as noted, dated: April 2, 2021, revised June 7, 2021.

Item 3: Report titled "Stormwater Management Report for the Proposed Retail Development located at 1100 Boston Turnpike, Bolton, Connecticut", dated April 2, 2021, revised June 7, 2021, prepared by BL Companies.

The submitted information has adequately addressed the comments noted in our June 3, 2021, engineering review letter.

We have the following comment:

1. The location of the roof leader discharge for Lot 3 will likely impact the parking area for Lot 2 based on the subdivision Master Plan. Consideration should be given to extending the discharge point and corresponding easement to the north to reduce the impact on the developable portion of Lot

Should you have any questions, please feel free to contact me.

Very truly  
yours,

---

**Nathan L. Jacobson & Associates, Inc.**  
Nathan L. Jacobson & Associates, P.C. (NY)  
86 Main Street P.O. Box 337 Chester, Connecticut 06412-0337  
Tel 860.526.9591 Fax 860.526.5416

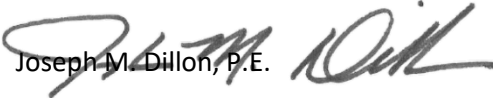


Jacobson

Ms. Patrice Carson, AICP  
Director of Community Development  
Re: Proposed Retail Development  
1100 Boston Turnpike  
NJL #0968-0037

June 8, 2021  
Page 2 of 2

NATHAN L. JACOBSON & ASSOCIATES, INC.

Joseph M. Dillon, P.E. 

JMD:jmd

cc: Jim Rupert  
Barbara Kelly  
BL Companies