CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

Meeting Type:	Regular Meeting
Meeting Location:	Council Chambers, City Hall, 288 Central Avenue, Dover NH 03820
Meeting Date:	**Tuesday, October 11, 2022**
Meeting Time:	**7:00 pm**

1. CITIZENS' FORUM

2. APPROVAL OF THE PRIOR MINUTES

- September 27, 2022 Regular Meeting Minutes

3. OLD BUSINESS

A. Public hearing and possible recommendation on the City's proposed Capital Improvements Plan (CIP) FY 2024-2029. The CIP can be found on the City website at www.dover.nh.gov and in the Library, City Clerk's office, and the Planning Department.*

4. NEW BUSINESS

A. Consideration and acceptance of a Conditional Use Permit for William C. Fisher and Chaney N. Fisher, Assessor's Map 7, Lot 2, zoned R-20, located at 1 Boston Harbor Rd. Proposal is to install a 960 sf addition, new deck stairs, an outdoor shower, replace the existing driveway with pervious pavers, install a pervious paver walkway and concrete pad for utility equipment creating 534 sf of temporary wetland impact (419 sf within the Conservation District) and 2,890 sf of permanent wetland impact (1,306 sf within the Conservation District). *(P22-58/COND-2022-0011)

B. Consideration and acceptance of a Conditional Use Permit (CUP) for White Birch Armory, (Owner: Recon Realty, LLC), Assessor's Map G, Lot 3-A-100, zoned CM, located at 80 Industrial Park Drive. Proposal is for a 20,287 sf addition with associated expanded parking, additional drainage and grading, creating 6,975 sf of wetland buffer impact. *(22-65/COND-2022-0029)

C. Consideration and acceptance of a Site Review for White Birch Armory, (Owner: Recon Realty, LLC) Assessor's Map G, Lot 3-A-100, zoned CM, located at 80 Industrial Park Drive. (Proposal is to construct a 20,287 sf addition to increase office and warehouse space on site, including additional parking, landscaping, lighting and stormwater management improvements). *(P22-63/SITE-2022-0013)

5. STAFF COMMENT

6. MEMBER COMMENTS

7. ADJOURNMENT

*Indicates that if the application is accepted for discussion, the public hearing will be held the same evening. Note that some hearings will be continued from one meeting to another and some may be postponed. Since this is only a partial description of the proposal and may change, persons with questions or wishing to see the plans are invited to visit the Planning Office, Monday through Thursday from 8:30 am to 5:30 pm and Friday 8:30 am to 4:00 pm or email Dover-Planning@dover.nh.gov. You may also view materials at www.dover.nh.gov. Follow us on Twitter @DoverNHPlanning and find us on Facebook at https://www.facebook.com/DoverNHPlanning. The public is encouraged to leave comments in advance by emailing Dover-Planning@dover.nh.gov, or mailing written comments to Planning Board, Dover City Hall, 288 Central Ave., Dover, NH 03820. Messages must be received no later than 4 p.m. the day of the meeting and should identify the name and Dover address of the person leaving the message or providing the comment.

DOVER PLANNING BOARD – MINUTES

CITY OF DOVER

Meeting Type:	Regular Meeting
Meeting Location:	City Council Chamber's 288 Central Avenue
Meeting Date:	**Tuesday, September 27, 2022**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Hayley Harmon (Vice Chair), Ken Mavrogeorge, Frank Torr, Mark Speidel, Kyle Pimental, Fergus Cullen (Councilor), George DeBoer (Alternate) and Jon Elliard (Alternate)
Members Not Present (excused): Erinn Kaspari, Tom Clark
Members Not Present (un-excused):
Staff Present: Donna Benton, Director of Planning and Development

G. Cruikshank called the meeting to order at 7 p.m. and announced George DeBoer would sit for Tom Clark and Jon Elliard would sit for Erinn Kaspari.

1. CITIZENS' FORUM

Citizens Forum Open

Jake Banaian, 11 Quail Dr spoke about the Conservation Commission and their duties, drought conditions, hours of operation, the zoning changes to the neighborhood, vegetation buffers, security, and phase II plans.

Douglas Porter, 29 Quail Dr shares the concerns expressed by Mr. Banaian. He spoke about the land as wetlands before it was zoned industrial. No one in the neighborhood expected a project to go in at that location due to the wetlands. He is concerned about property value, nearness of the structure to the homes and phase II. He encouraged more wetlands research.

Nevin Brown, 7 Quail Dr thanked the board for doing the site walk. He is in solidarity with his neighbors and is interested in what phase II will include.

Barbara Civiello, 3 Quail Dr is concerned about the slippery slope of these zoning changes. She is concerned about the wetlands. She and the other neighbors have come before boards to speak before. She requests the board discuss what will happen to this parcel of land and the adjacent land.

Kathleen Colitti, 12 Quail Dr explained she moved to that area of town in 1994 because it was a rural neighborhood. She was not in favor of the zoning change to allow for these development proposals. She is concerned about the wetlands and why this facility has to come to this neighborhood when they have land available at their property down the street.

Kerryellen Vroman, 24 Quail Dr agrees with her neighbors' concerns. She spoke about the neighborhood being changed over the years. This development needs to be looked at in the context of what comes next and what is coming on Quality Way in the future. She is concerned about the wetlands – she walked it and it is wet the whole way through.

Citizens Forum Closed

2. APPROVAL OF THE PRIOR MINUTES

September 13, 2022 Regular Meeting Minutes

Motion: F. Torr moved to approve the minutes as amended. Seconded by K. Mavrogeorge. Vote: U/A

3. OLD BUSINESS

The Vice Chair noted Items 3A, B, and C will be heard together.

A. Public hearing and possible vote of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow Self-Storage Use in the IT District.) *(P22-66/COND-2022-0018)

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B. Public hearing and possible vote of a Conditional Use Permit for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to allow 10,310 sf of wetland buffer impact.) *(P22-51/COND-2022-0003)

C. Public hearing and possible vote of a Site Review for Storage Barn, LLC, (Owners: TSB Properties, LLC) Assessor's Map D, Lot 12-2, zoned IT, located at Production Drive. (Proposal is to construct five (5) storage buildings totaling 12,000 sf) *(P22-50/SITE-2022-0004)

Motion: F. Cullen voted to remove all three items from the table. Seconded by: F. Torr. Vote: U/A

D. Benton reminded the Board and public that these items were tabled at the previous meeting to hold a site walk. She recapped the site walk and confirmed this application was submitted before the amendments were posted for this district.

D. Benton addressed public comment:

- Conservation Commission
- Hours of operation
- Adjacent lot is in front of TRC currently and information is available to the public about the project
- Though staff does try to keep a master view, each project does, by law, need to be addressed individually with the board as they are separate parcels with separate ownership.

Steve Haight, CivilWorks NE represented the application noting regulations are met. No wetlands are going to be affected by being filled for this project. There is no phase II for this project. It is a stand-alone project. All requirements have been met for regulations, intent, zoning, site review and conservation.

Discussion ensued among the board members and applicant.

Jessica Smith, owner explained the reason for 24-hour service is mostly to accommodate their contractor clients who come at 5am and load up their equipment for the day. There are quiet hours in place to prevent full move-ins in the middle of the night without prior approval.
She commented that this is a pretty low-intensity use. This property is zoned industrial, and it would be hard to find a less intensive industrial use for the abutters. They also live on site.
She answered follow up questions regarding emergencies, contact information being posted, hours, security.

Steve Haight addressed the project currently being brought for discussion before TRC. It meets all of the requirements for the zone and the use would be manufacturing or warehouse.

He addressed the proposed storm water management system that's within the wetland buffer.
He noted the applicant is willing to add the arborvitae on the west edge.

STAFF RECOMMENDATION-USE CUP:
The Zoning Table for IT indicates a CUP can be granted to allow SELF-STORAGE USE if certain criteria are met including:

-The minimum front SETBACK shall be double the SETBACKs required in the district.
-Any storage unit BUILDING visible from the STREET shall be located to be perpendicular to the STREET, with no storage unit doors facing the STREET.
-The architectural design standards of Chapter 149-14L (8) (b) shall be adhered to.

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The Planning Department Staff finds that the proposed development conforms to all applicable CUP standards of the Zoning Ordinance for the IT District.

The Planning Department recommends that the Planning Board vote to approve the Conditional Use Permit with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Approval of CUP for wetland buffer impacts (P22-51) & Site Plan (P22-50);
2. A note be added to the plan the Planning Board granted the CUP for Self Service Storage Use (P22-66) in the IT District, and
3. A Development Agreement be entered between the applicant and the Planning Board and recording at the SCRD.
4. A note be added to the plan that emergency phone number be posted and visible on site.

Motion: F. Torr moved to approve the Conditional Use Permit with the recommended conditions and finds it meets the criteria outlined. Seconded by K. Mavrogeorge. Vote: U/A

STAFF RECOMMENDATION-ENVIRONMENTAL CUP:
The Wetlands Protection District ordinance provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Staff feels that the applicant reviewed options and due to existing site conditions there were no additional design alternatives for the impacts, which have been minimized. Staff believes this proposal is consistent with the cited standards.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board vote to approve the Conditional Use Permit with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Issuance of the Conditional Permit:
1. Approval of Use CUP(P22-66) & Site Plan (P22-50);
2. Add the following notes to the plan:
   2.1. The Planning Board Granted the P22-51 CUP for Impact to a Wetland Buffer;
   2.2. The conditional use approval shall apply only to the project specified at the time of approval and shall not be transferable to a different project; and
   2.3. Indicate snow storage be located in a way that the snowmelt is directed into the deep sump catch basins with applicable signage onsite.

Motion: M. Speidel moved to approve the Conditional Use Permit with the recommended conditions and further found that the application met the criteria outlined. Seconded by F. Torr. Vote: U/A

STAFF RECOMMENDATION: SITE PLAN
§153-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

The Planning Department recommends that the Planning vote to approve the Site Plan with the following subsequent conditions, as the plans meet the standards outlined:

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Subsequent Conditions to Be Met Prior to Signing of the Plans:

1. Approval of P22-66 & P22-51;
2. Revise plan and resubmit for Final Planning Board signature with the following revisions:
   2.1. Add owner's signature; and
   2.2. Add LLS, PE, and CWS stamps and signatures to Plan Set.
   2.3. Add deer resistant arborvitae along northern edge of pavement and building 1

Subsequent Conditions to Be Met Prior to Construction:

3. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director; and
4. A pre-construction conference is held with representatives from the site excavation firm, Engineering Office, Planning Department, and Inspection Services.

Subsequent Conditions to Be Met Prior to Building Permit:

5. Payment of the water investment fees at time or request of service;

Subsequent Conditions to Be Met Prior to Occupancy:

6. Issuance of Certificate of Occupancy;
7. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
8. Surety or other form of security acceptable to the City is provide for any unfinished work.

Motion: K. Pimental moved to approve the Site Plan with the recommended conditions and further found that all applicable regulations and legal standards have been met. Seconded by F. Torr. Vote: U/A

4. NEW BUSINESS

A. Consideration and acceptance of a Conditional Use Permit for Public Service Company of New Hampshire, d/b/a Eversource Energy, Assessor's Map 24, Lot 132 & Map 25, Lots 43B & 80, zoned Gateway & R-12 and R-40, located in the utility ROW between Oak Street & Atlantic Avenue. (Proposal is to replace six deficient wooden utility poles creating 2,100 sf of temporary wetland impact and 14,900 sf of temporary impact to wetland buffers within the Wetlands Protection & Conservation Districts). *(P22-67/COND-2022-0028)

D. Benton introduced the Conditional Use Permit (CUP) request to permit 2,100 sf of temporary wetland impact and 14,900 sf of temporary impact to wetland buffers within the Wetlands Protection & Conservation Districts in order to replace deficient wooden utility poles in the Utility ROW. The wetland and wetland buffer impacts will be temporary impacts in order to position equipment and machinery to replace the existing structures.

She stated this CUP permit application was endorsed by the Conservation Commission at their September 12, 2022 meeting

Kris Wilkes, VHB represented the proposed application.

Motion: F. Torr moved to accept and declared no regional impact. Seconded by M. Speidel. Vote: U/A.

Public hearing opened.
No one spoke
Public hearing closed.

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STAFF RECOMMENDATION:
The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

The Conservation District Ordinance §170.27.C.(1) provides for Conditional Use Permits for "…utility rights-of-way, communications equipment, easements, including power lines and pipe lines, if essential to the productive use of land not so zoned and if so located and constructed as to minimize any detrimental impact of such uses upon the wetlands or other environmentally sensitive areas, where it is physically impossible to locate such ways over land not so zoned. ...".

Planning staff feels that the applicant considered the criteria and attempted to create minimal wetlands disturbance on the site. The applicant's detailed CUP application clearly demonstrates the understanding of the requirements and compliance to the criteria of §170-27.F.(1)(a)-(e) as well as, §170.27.C.

The Planning Department recommends that the Planning Board vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:
1. Copies of the NHDES Permit be submitted to the Planning Department and added to the plan set coversheet; and
2. Add the following notes and items to the final plan set:
   2.1. Utility Easement Holders:
   Name
   Street address
   Municipality, State, Zip Code
   _____
   Authorized Signature;
   2.2. The limits of construction disturbance that are located in or within the 50 ft. of Conservation and Wetland Districts shall be staked, flagged and clearly identified prior any earth disturbing activity occurs;
   2.3. File # (P22-67) to all sheets;
   2.4. The following federal and state permits have been issued for the subject property: (*List permit type, number and date of issuance.);*
   2.5. Applicant shall complete Land Use Development Tracking Form, most recently revised version, utilizing the online Pollution Tracking and Accounting Pilot Project (PTAPP) portal. https://www.unh.edu/unhsc/ptapp and provide proof to the Planning Department; and
   2.6. Provide 2" x 2" blank area for Planning Board Approval stamp in the lower right corner.

Motion: M. Speidel moved to approve the Conditional Use Permit with subsequent recommended conditions and to further find in support that all applicable regulations and legal standards have been met based off the presentation by the applicant. Seconded by J. Ellliard. Vote: U/A

B. Consideration and acceptance of a Minor Subdivision for Jahn H. & Susan G. Janetos, Assessor's Map N, Lot 13-F, zoned R-40, located at Gulf Road & Oak Street. (2 new lots) *(P22-68/SUBM-2022-0004)

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D. Benton introduced the proposal to subdivide Assessor's Map N, Lot 13-F, a 12.53 ± acre parcel into three (3) lots. The lots front on Gulf Road but it is proposed that lots 13-F-1 & 2 will access the lots through a 30' access & utility easement to avoid wetland impact. Lot 13-F will use Gulf Road for access through an existing driveway. The lots are proposed to be serviced by municipal water and on-site individual wastewater treatment systems. However, staff feels there may be a future option to tie into public sewer. As a minor subdivision, this application did not appear before the TRC.

Kevin McEneaney, McEneaney Survey represented the application and explained the details.
This is a frontage subdivision- all parcels have frontage on existing city roads.
Lot 13-F will be 1.53 ac and access off Gulf rd from an existing driveway.
Lot 13-F-1 will be 2.13 ac and will be accessed off Oak st via an existing 30' utility easement.
Lot 13-F-2 will be 8.87 ac and will be accessed off Oak st via an existing 30' utility easement.

He explained the City sewer system is not available from Gulf rd. Some discussion ensued among the board, Mr. McEneaney and Mr. Haight regarding sewer locations.

Motion: F. Torr moved to accept and declared no regional impact. Seconded by M. Speidel. Vote: U/A.

Public hearing opened.
D. Benton read into the record three emails received today to the office:

- Michael Day, 104 Gulf Rd
- George Heilshorn, 108 Gulf Rd
- Dahn Tibbett, Gulf Rd

Public hearing closed.

D. Benton addressed public comment:

- Access/easement
- 2018 distance/ building permit
- Complaint form was sent to the state so they can address if needed.
- Wetlands

Mr. McEneaney addressed public comment:

- Frontage
- Wetlands
- Addresses

K. Pimental pointed out an error in the floodplain note that should be edited. The change will be made.

STAFF RECOMMENDATION:
The plan is consistent with §157-15 of the City of Dover's Land Subdivision Regulations, which provides for subdivision of existing lots.

The Planning Department recommends that the Planning Board vote approve the minor subdivision with the following subsequent conditions:

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Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Provide a stamped memo from a PE or CWS that the each lot has sufficient area and soil types to support individual wastewater treatment systems as described in §157-41 or provide a copy of the NHDES Subdivision Permit; and
2. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford Country Registry of Deeds, which additionally shall include:
   - 2.1. The owners' signatures;
   - 2.2. Include the Planning File #P22-68;
   - 2.3. The stamp and signature of the CWS and LLS on the final plans
   - 2.4. Revision of Note 9.) on Subdivision plan to "Wetlands were delineated by Damon E. Burt, Certified Wetlands Scientist, Certification Number 163, in accordance with Chapter 170-27.1 of the Zoning Ordinance, on August 8, 2021.";
   - 2.5. Add "This property falls within the following zoning overlay districts: Wetlands Protection District." To Subdivision Plan Note 5; and
   - 2.6. Add note stating "The installation of electric power, cable television and telephone lines shall be underground throughout the site for which development is proposed. Subdivision plans shall show any easements for these services."
   - 2.7. Revise note 6 on plan regarding Flood Hazard Areas

Motion: M. Speidel moved to approve the Minor Subdivision with subsequent recommended conditions and to further find in support that all applicable regulations and legal standards have been met based off the presentation by the applicant. Seconded by G. DeBoer. Vote: U/A

The Vice Chair noted Items 4C and D will be heard together.

C. Consideration and acceptance of a Conditional Use Permit for Weave Filtration, LLC, (Owners: DBIDA) Assessor's Map D, Lot 11-7, zoned IT, located at Quality Way. (Proposal is for the construction of a 23,125 sf building creating 5,075 sf of wetland buffer impact mostly associated with the grading and drainage). *(P22-48/COND-2022-0002)

D. Consideration and acceptance of a Site Review for Weave Filtration, LLC., (Owner: DBIDA) Assessor's Map D, Lot 11-7, zoned IT, located at Quality Way. (Proposal is to construct a 23,125 sf building for manufacturing with office space) *(P22-47-SITE-2022-0003)

D. Benton introduced the proposed development for a proposed 23,125 sf light manufacturing facility / office building with associated parking on Quality Way. The development will be serviced by municipal water and sewer. This lot was created through the TDR Ordinance §170.27.2. This application was most recently before the Technical Review Committee on August 18, 2022.

A Conditional Use Permit (CUP) is requested for wetland buffer impact a total of 5,075 sf. The impact is primarily for the associated grading (2,957 sf), drainage (1,800 sf), pavement (285 sf), and the building (33 sf). This CUP permit application was endorsed by the Conservation Commission at their September 12, 2022 meeting (draft minutes attached), with the request that the Planning Board "…receive indication that vernal pools were looked for and that the existing functions and values of the wetlands will not be impaired." Staff has since received a letter from Damon Burt, certified wetlands scientist that no vernal pools or potential vernal pools were noted.

The proposed development is requesting three waivers of the City's development regulations.

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The waiver request is to allow two driveways for access to the site and allow them to be approximately 90 feet apart, a waiver request is to allow parking in the front of the building, and to allow through TDR the parking to be within 17.5 feet of the property line.

Joseph Griffin, Civilworks, presented the applications.

Motion: F. Torr moved to accept and declared no regional impact for both applications. Seconded by M. Speidel. Vote: U/A.

Public hearing opened.
Douglas Porter, 29 Quail posed a few questions about the project including distance of disturbance from his property line, where the parking lot is, concerned about light pollution, noise level, is there hazardous material and how is it disposed of, traffic and hours of operation.

Barbara Civiello, 3 Quail is concerned about the impact to the Quail Dr neighborhood, wetlands, buffers and zones. She asked some process questions for the board in relation to Conservation Commission and state approvals and how that relates to Planning Board.

Jake Banaian, 11 Quail is concerned about Quail Dr being hit from all sides by these commercial projects. He mentioned events of 2016 and comments from City officials claiming the land would not be developed. He is not pleased with the City of Dover prospering at the residents' expense.
Public hearing closed.

Mr. Griffin addressed public comment:

- From the lot line, the closest building is 240'. The closest residence is 400' from the building.
- Approx. 30 employees
- No hazardous materials onsite- producing water filtration devices.
- Anticipating two shifts of operation
- Lighting has been minimized per City recommendation. Added a couple lights to the back of the warehouse along the property line. All lighting is dark-sky/ pointed down.
- He explained the layout of the site plan including parking areas.
- Trucks would be expected between 8am-8pm, but usually during the day.

D. Benton addressed public comment:

- Conservation Commission endorses applications, sometimes with conditions. Those minutes are shared with the Planning Board along with application materials. The Planning Board is the entity to vote on the approval of the Conditional Use Permit.

F. Cullen asked about the timeline. Ideally permitting will be completed by spring and work would begin.

STAFF RECOMMENDATION: CUP
The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant considered the criteria and attempted to create minimal wetland/wetland buffer disturbance on the site.

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The Planning Department recommends that the Planning Board vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined.

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:
1. Site Plan (P22-47) be approved;
2. Copies of the NHDES Permit be submitted to the Planning Department and added to the plan set coversheet; and
3. A note be added to the Site Plan (P22-47) stating the Planning Board conditionally approved the Conditional Use Permit (P22-48) on September 27, 2022.

Motion: K. Pimental moved to approve the Conditional Use Permit with subsequent recommended conditions and to further find in support that all applicable regulations and legal standards have been met based off the presentation by the applicant. Seconded by H. Harmon. Vote: U/A

STAFF RECOMMENDATION - Waivers/Relief:
Section 153-21 of the Site Plan Review Regulations states the "Planning Board may waive specific provisions of these regulations. The Planning Board may only grant a waiver if the Planning Board finds, by majority vote, that:

(1) Strict conformity would pose an unnecessary hardship to the applicant and the waiver would not be contrary to the spirit and intent of the regulations; or
(2) Specific circumstances relative to the subdivision, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations."

Planning Staff believes that waivers identified as #1 & #2 above meet both standards above as presented in the applicant's waiver request narrative. The location of the property at the end of a cul-de-sac creates unique site characteristics and granting these waivers will not create unsafe conditions and be in general conformance with the Site Review Regulations and intent.

Regarding Waiver request #3, Section 170-27.2.F.(4) of the Zoning Ordinance states "SETBACKs for parking, paved areas, and BUILDINGs may be waived by the PLANNING BOARD, and be consistent with the intent to promote intensive development of suitable development sites. Notwithstanding, BUILDINGs shall be at least one hundred fifty (150) feet from residential STRUCTUREs that exist on the date of enactment of the IT and CM Zoning districts, and seventy five (75) feet from the LOT LINE of a disagreeing residential ABUTTER."

The area where the applicant seeks relief from the parking standard of the IT District is well in excess of 150 feet from any residential structure. Planning Staff believes that the small relief request to locate parking 7.5 feet closer than allowed in the IT District is consistent with the intent of the TDR to accommodate intensive development on suitable lands and the general intent of the IT District with no negative impact to the aesthetic quality of the IT District.

The Planning Department recommends that the Planning vote to grant the waivers with the following subsequent conditions:

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Subsequent Conditions to be Met Prior to the Signing of the Plans:

1. Add a note that the Planning Board approved waivers for: (1) §153-14.H.(1) – to allow two (2) driveways; (2) §153-15. C.; and (3) to allow front of building parking area (IT); and have found the criteria of Chapter 153-21.A. have been met; and
2. Add a note that the Planning Board approved a waiver for §170-12.09 * Parking Setback to allow a parking area within 17.5 feet of the lot line through the Industrial TDR provision of 170-27.2.F.(4).

K. Pimental wondered if there is a concern of allowing two driveways here and potentially two more at the next lot therefore having four driveways at one cul-de-sac area.
Mr. Griffin noted factors for driveway placement are speed and sight lines. This is essentially a dead end, so speeds are decreasing, and sight lines are good.
Mr. Haight noted they've done a few concepts for DBIDA and it's likely an extension will come off the cul-de-sac and additional driveways would come off the extension.

K. Pimental asked if there is a maintenance plan for the porous pavement. Yes, and there will be signs.

Motion: F. Torr moved to approve the waiver with the recommended condition and further finds it meets criteria outlined. Seconded by K. Mavrogeorge. Vote: U/A

STAFF RECOMMENDATION – Site Plan:
§153-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

§153-14.J.(2) requires easements for future connection between parcels unless the Planning Board finds per §153-14.J.(3) the requirement is not feasible. The applicant provided rational for the Planning Board to find the interconnection is not feasible due to wetland/wetland buffer impact, topography, and the fact industrial type uses are unlikely to attract the same user during their trip. The City Engineer provided a written note that the western side would not be feasible but the eastern side could connect in the future if an emergency access is needed so there is a recommended condition to add a note to the plan.

The Planning Department recommends that the Planning Board vote to approve the Site Plan with the following subsequent conditions, as the plans meet the standards outlined:
Subsequent Conditions to Be Met Prior to Signing of the Plans:

1. Approval of Conditional Use Permit (P22-48);
2. Revise plan and resubmit for Final Planning Board signature with the following additions:
   2.1. A note stating "An easement can be provided for a possible future connection to the adjacent lot if deemed necessary for emergency vehicle access to the adjacent lot.";
   2.2. A note stating "Any deed related items to the transfer of the property be reviewed by the City Attorney while still owned by DBIDA.";
   2.3. Screening of mechanicals;
   2.4. A note detailing the porous pavement maintenance requirements;
   2.5. Owner's signature; and
   2.6. All LLS, LA, PE and CWS stamps and signatures to Final Plan Set.

Subsequent Conditions to Be Met Prior to Construction:

3. A site construction sign with the contact information for the general contractor must be displayed in a location approved by the City Engineer or Planning Director.

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Subsequent Conditions to Be Met Prior to Building Permit:

4. Payment of the water and sewer investment fees at time or request of service.

Subsequent Conditions to Be Met Prior to Occupancy:

5. Issuance of Certificate of Occupancy;
6. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
7. Surety or other form of security acceptable to the City is provided for any unfinished work.

Motion: M. Speidel moved to approve the Site Plan with subsequent recommended conditions and to further find in support that all applicable regulations and legal standards have been met based off the presentation by the applicant. Seconded by J. Elliard. Vote: U/A

E. Discussion and public hearing on the City's proposed Capital Improvements (CIP) FY 2024-2029. The CIP can be found on the City Web Site at www.dover.nh.gov and in the Library, City Clerk's office, and the Planning Department. *

D. Benton noted this is the first of two public hearings and she is happy to answer any questions the Board has. The book is available online as well as the video outline.

The board members asked specific questions and made suggestions about items in the CIP document.

K. Pimental sees many CIP plans and Dover's is one of the best.

Public hearing opened.
No one spoke
Public hearing closed.

5. STAFF COMMENTS

- Rachel Blonigen will be starting Planning Office Assistant Position job offer next week. Rachel has been the Assessing Technician with the City for approximately six (6) years and the Planning Department is excited for her addition to the team.
- Vision Chapter Steering Committee kicked off last week
- Apple Harvest Day-we have two booths this year, one right by the TDR bank parking lot for our Community Trail and Vision Chapter and then also at the EV Car Show on St. Thomas St.
- Staff will be reaching out to those on the Gateway subcommittee
- No TRCs held since last meeting.
- No new TRCs currently scheduled, just follow up TRCs.

6. MEMBER COMMENTS

- Kyle Pimental
  - Lafayette trail sign
- Appoint Tess Beem to the Vision Chapter Steering Committee
- Signed plans included:
  - P22-08 - Krystin Ward/Todd Diggins – CUP – 3 Wentworth Terrace

7. ADJOURNMENT

Motion: M. Speidel moved to adjourn at 9:26 pm. Seconded by G. DeBoer. Vote: U/A

DRAFT

Please check out

https://www.dover.nh.gov/government/city-operations/planning/special-projects/cip/

For this year's Capital Improvements Program.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-58

Application Type:	Conditional Use Permit – Wetlands
Applicant(s):	William C. Fisher and Chaney N. Fisher
Owner(s):	William C. Fisher and Chaney N. Fisher
Location:	1 Boston Harbor Rd (Assessor's Map 7, Lot 2)
Meeting Date:	October 11, 2022

INTENT: To obtain a CUP for the creation of 534 sf of temporary wetland impact (419 sf within the Conservation District) and 2,890 sf of permanent wetland impact (1,306 sf within the Conservation District) to construct an addition to a single family residence.

AGENDA ITEM #: 4-A

FILE: P22-58

CURRENT AREA: 0.21 ± acres

ZONING DISTRICT: R-20, Wetlands Protection & Conservation Districts

EXISTING USE: Single Family Residence

PROPOSED USE: Single Family Residence

SURROUNDING USES: Residential

PERMITS REQUIRED: NH DES Wetlands & Shoreland Permits

WAIVERS REQUESTED: None

ZBA ACTION: None

CONSERVATION COM: September 12, 2022

TRC: N/A

NOTICES SENT: Abutter notices were sent by verified mail to all abutters for this meeting

Summary of Request and Background

The proposed Conditional Use Permit (CUP) is required to construct a 960 sf addition, new deck stairs, an outdoor shower, replace the existing driveway with pervious pavers, install a pervious paver walkway and concrete pad for utility equipment creating 534 sf of temporary wetland impact (419 sf within the Conservation District) and 2,890 sf of permanent wetland impact (1,306 sf within the Conservation District).

This CUP and NHDES permit applications were endorsed by the Conservation Commission at their September 12, 2022 meeting (minutes attached) with the following recommendation: "…with the recommendation that a dry well in incorporated to help infiltrate stormwater associated with the proposed garage…".

The applicant has amended their site plan to include two 24' in length, infiltration trench drywells along the eastern and western sides of the addition to comply with the Conservation Commission's request. The western feature is integrated into the porous paver walkway, while the eastern feature is adjacent to the addition in the lawn area.

CONSISTENCY WITH LAND USE REGULATIONS:

The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning staff feels that the applicant considered the criteria and attempted to create minimal wetlands disturbance and decrease the impermeable surfaces on the site. The applicant's detailed CUP application demonstrates the understanding of the requirements and compliance to the criteria of §170-27.F.(1)(a)-(e) as well as, §170.27.C.

STAFF RECOMMENDATION:

The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to be Met Prior to Issuance of Conditional Use Permit:

1. Copies of the NHDES Permit be submitted to the Planning Department and added to the plan set coversheet;
2. Provide a copy of the referenced plan dated November 25, 2019 by Ambit Engineering, Inc;
3. Add the following notes and items to the final plan set:
   - 3.1. Owners signatures
   - 3.2. Add note that the limits of construction disturbance that are located in or within the 50 ft. of Conservation and Wetland Districts shall be staked, flagged and clearly identified prior any earth disturbing activity occurs; and
   - 3.3. File # (P22-58) to all sheets.

P22-58/SITE-2022-0011 1 BOSTON HARBOR ROAD



Property Information

Property ID	07002-000000
Location	1 BOSTON HARBOR RD
Owner	FISHER WILLIAM CRAGG &
Land Use	101
Zoning Code	R-20

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 5/3/2021
Data updated Daily

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

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: WILLIAM C. & CHANEY N. FISHER Telephone # (339) 927-6567

Address of Applicant: 1 BOSTON HARBOR RD

E-Mail Address: WFISHER@FIAINC.COM

Name of Property Owner (if different from applicant): _____ Telephone #_____

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # 7 Lot(s) # 2

Address of Property: 1 BOSTON HARBOR RD

Zoning District(s) R-20 Overlay District(s) RIVERFRONT RESIDENTIAL

Existing Use of Property: SINGLE FAMILY RESIDENCE

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☒ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☒ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

PROPOSED USE ALIGNS WITH CURRENT USE OF THE LAND, WITH IMPACTS INSIDE THE 100' HOTL SETBACK INCLUDING THE FOLLOWING: REMOVAL OF BUILDING PORTION AND INSTALLATION OF ADDITION, REMOVAL OF ASPHALT DRIVEWAY, INSTALLATION OF PAVER WALKWAY & DRIVEWAY, REMOVAL OF DECK PORTION, INSTALLATION OF PROPANE TANKS, AND INSTALLATION OF CONCRETE PADS.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: WETLAND PERMIT - PENDING; SHORELAND PERMIT - PENDING

Name of Professional That Prepared Plans: ALEX ROSS - ROSS ENGINEERING, LLC

Address 909 ISLINGTON ST #6, PORTSMOUTH, NH 03801 Telephone #: (603) 433-7560

Professional License #: 9409 E-mail address: ALEXROSS@COMCAST.NET

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 7/28/2022

Signature of Applicant (if different from owner): _____ Date: 7/28/22

Signature of Agent: _____ Date: _____

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 7/28/2022

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
7	2	WILLIAM C. & CHANEY N FISHER	1 BOSTON HARBOR RD, DOVER

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
ALEX ROSS	ROSS ENGINEERING, LLC	909 ISLINGTON ST #6, PORTSMOUTH

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

P22-58 **COND-2022-0028** **1 BOSTON HARBOR ROAD**

Property ID	Owner 1	Owner 2	Owner Address 1	City	State	Zip
07001-000000	ENGEL ANGELA K &	SAPIENZA PAUL L SR	3 BOSTON HARBOR RD	DOVER	NH	03820
07003-000000	LEONARD MICHAEL K	WORTHINGTON LORAINE J	5 BOSTON HARBOR ROAD	DOVER	NH	03820
07004-000000	CLIFFORD KEVIN &	CLIFFORD MARGUERITE	7 BOSTON HARBOR RD	DOVER	NH	03820
07005-000000	BOSTON HARBOR CONDOMINIUM ASSOCIATION		9 1/2 BOSTON HARBOR RD	DOVER	NH	03820
07005-000001	CTFC PROPERTIES LLC		4 GREENLEAF WOODS STE 102	PORTSMOUTH	NH	03801
07005-000002	PHELPS ASHLEY		9 BOSTON HARBOR RD	DOVER	NH	03820
07006-000000	MESSIER ANDRE J III & JENNIFER S TRUSTEE	MESSIER FAMILY REVOCABLE TRUST	18 WOOD RIDGE LANE	EXETER	NH	03833
07007-000000	OZKURT HALIL &	OZKURT MELISSA	287 MARCY ST	PORTSMOUTH	NH	03801
07027-000000	CLIFFORD KEVIN &	CLIFFORD MARGUERITE	7 BOSTON HARBOR RD	DOVER	NH	03820-4645
07002-000000	FISHER WILLIAM CRAGG &	FISHER CHANEY N	1 BOSTON HARBOR RD	DOVER	NH	03820
	ROSS ENGINEERING LLC	ALEX ROSS	909 ISLINGTON STREET #6	PORTSMOUTH	NH	03820

Ross Engineering
Civil/Structural Engineering & Surveying

909 Islington Street **603-433-7560**
Portsmouth, NH 03801 **alexross@comcast.net**

September 20, 2022
Dover Planning Department
288 Central Ave
Dover, NH 03820

Project Narrative for 1 Boston Harbor Rd
CONDITIONAL USE PERMIT

RE: William C. & Chaney N. Fisher
1 Boston Harbor Rd
Dover, NH 03820
Tax Map 7, Lot 2

This project involves improvements to an existing family residence located in a previously developed tidal buffer zone. A conditional use permit is required as the work occurs within the 100' Highest Observable Tide Line (HOTL) buffer.

Proposed site improvements include:

1. Install a 30' x 32' addition replacing a part of the existing house, new deck stairs, and an outdoor shower.
2. Remove existing asphalt driveway and install a smaller footprint, pervious paver driveway. Install a pervious paver walkway. Replace remaining asphalt area with grass.
3. Remove existing deck stairs, a portion of the existing deck, and a portion of the existing house.
4. Install concrete pads for head pump condenser, generator, and propane tanks,

Conservation and Wetland Protection District concerns:

The addition is located off the northern portion of the house, in effort to have improvements as far as possible from the highest observable tide line (HOTL). The site is a small residential lot. Impacts are proposed only to the areas being improved. The asphalt driveway on site will be removed and replaced with a smaller footprint of pervious pavers, and a portion of the house and deck will be removed. The addition replaces a part of the existing house. The result is the impervious surface coverage decreases, mitigating the addition area. A siltsoxx fence is proposed to protect the Bellamy River from erosion and sedimentation. A full erosion and control plan is included as shown on sheet 4.

The entire existing house is inside the 100' setback, so constructing an addition could not be done outside the 100' setback. The addition location is the best alternative. The end result will be an improvement to the tidal buffer area. We have met with the conservation commission and they are in favor of the project and have signed the wetland permit.

Sincerely,

Alex Ross, PE, LLS

C. City of Dover Conditional Use Permit for White Birch Armory, (Owner: Recon Realty, LLC), (Agent: Civilworks New England), Assessor's Map G, Lot 3-A1, zoned CM, located at 80 Industrial Park Drive. Proposal is for a 20,287 square foot addition with associated expanded parking, additional drainage and grading, creating 6,975 square feet of wetland buffer impact.

Joe Griffin with Civilworks New England was present to explain the application.

J. Aube: What are the conditions of the buffer today?

J. Griffin: The buffer today is a wooded, brush and grass mix.

J. Aube noted that the area is currently industrial.

J. Aube: Is there any opportunity for buffer enhancement elsewhere?

J. Griffin: The buffer impacts were minimized to the greatest extent possible.

J. Griffin explained the use of the different seed mixes to K. Murphy.

K. Murphy moved to endorse the application based on the proximity of the site to existing development, the efforts to meet AOT standards, with a recommendation that the applicant indicates to the Planning Board that no vernal pools are present and that the functions and values of the wetlands will not be degraded. J. Aube seconded. Vote: 4 yes.

D. City of Dover Conditional Use Permit and NHDES Expedited Minimum Impact Wetland Permit for William C. Fisher and Chaney N. Fisher, (Agent: Ross Engineering, LLC), Assessor's Map 7, Lot 2, zoned R-20, located at 1 Boston Harbor Rd. Proposal is to install a 960 square foot addition, new deck stairs, an outdoor shower, replace the existing driveway with pervious pavers, install a pervious paver walkway and concrete pad for utility equipment creating 534 square feet of temporary wetland impact (419 square feet within the Conservation District) and 2,890 square feet of permanent wetland impact (1,306 within the Conservation District).

Alex Ross was present to explain the application.

J. Aube: Can you speak to the decrease in lot coverage?

A. Ross: It went from 39% percent to a proposed 25%.

J. Aube: Is there any opportunity for stormwater management?

A. Ross: Was considered but the site is very constrained by the lot size. With the pervious pavers it should allow stormwater to shed off and infiltrate.

DRAFT

J. Aube: Could a drywell be installed?

A. Ross: We could integrate that if it is a recommendation.

K. Murphy: Is the outdoor shower treated at all?

A. Ross: It's just a shower meant for cleaning sand off.

K. Murphy: Could you speak about the property under sea level rise scenarios?

A. Ross noted the highest water mark that the owner had ever experienced.

J. Aube motioned to endorse the project as presented because the site is already developed and that the impervious area will be significantly reduced and there is a maintenance plan with the recommendation that a dry well in incorporated to help infiltrate stormwater associated with the proposed garage and endorse that the applicant be able to submit the NHDES wetlands permit application through the expedited permitting process. K. Murphy seconded. Vote 4 yes.

E. NHDES Standard Dredge and Fill Wetlands Permit Application for Great Bay Yacht Club, Assessor's Map 8 Lot 40, zoned R-20, located at 21 Wentworth Terrace. Proposal is to conduct maintenance on an existing boulder and gravel causeway by adding trap rocks to fill in the current rip-rap creating 771 square feet of permanent impact to the Tidal Buffer Zone.

Mike Carle was present to explain the application.

J. Aube: Proposing to temporarily mitigate erosion using trap rock?

M. Carle: Yes, the trap rock fills the void spaces to help prevent leaching of the gravel.

J. Aube requested to see additional photos and the applicant presented them and indicated the impacts during storm occasions.

J. Aube requested clarification that the applicant eventually will raise the money to do a full overhaul of the site.

J. Aube: Have you sought guidance from a professional engineer who is well versed in these projects?

M. Carle: A couple professional engineers are involved with the Club who provided guidance and plans for the project.

M. Carle noted that the next step will be a full evaluation and assessment plan once the funds have been procured which is planned for around 2032.

J. Aube motioned to endorse the NHDES application with a recommendation that the applicant does their due diligence and makes a good faith effort to find a long-term solution to minimize the loss of material over time. B. Batchelder seconded. Vote 4 yes.

DRAFT

Ross Engineering, LLC
Civil / Structural Engineering
909 Islington Street
Portsmouth, NH 03801
603-433-7560
alexross@comcast.net



Figure 1 – View of existing house and driveway looking to the South. Image from city GIS. (4/2/2019)



Figure 2 – View of existing house and deck looking to the North. (12/22/2020)

Ross Engineering, LLC
Civil / Structural Engineering
909 Islington Street
Portsmouth, NH 03801
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alexross@comcast.net

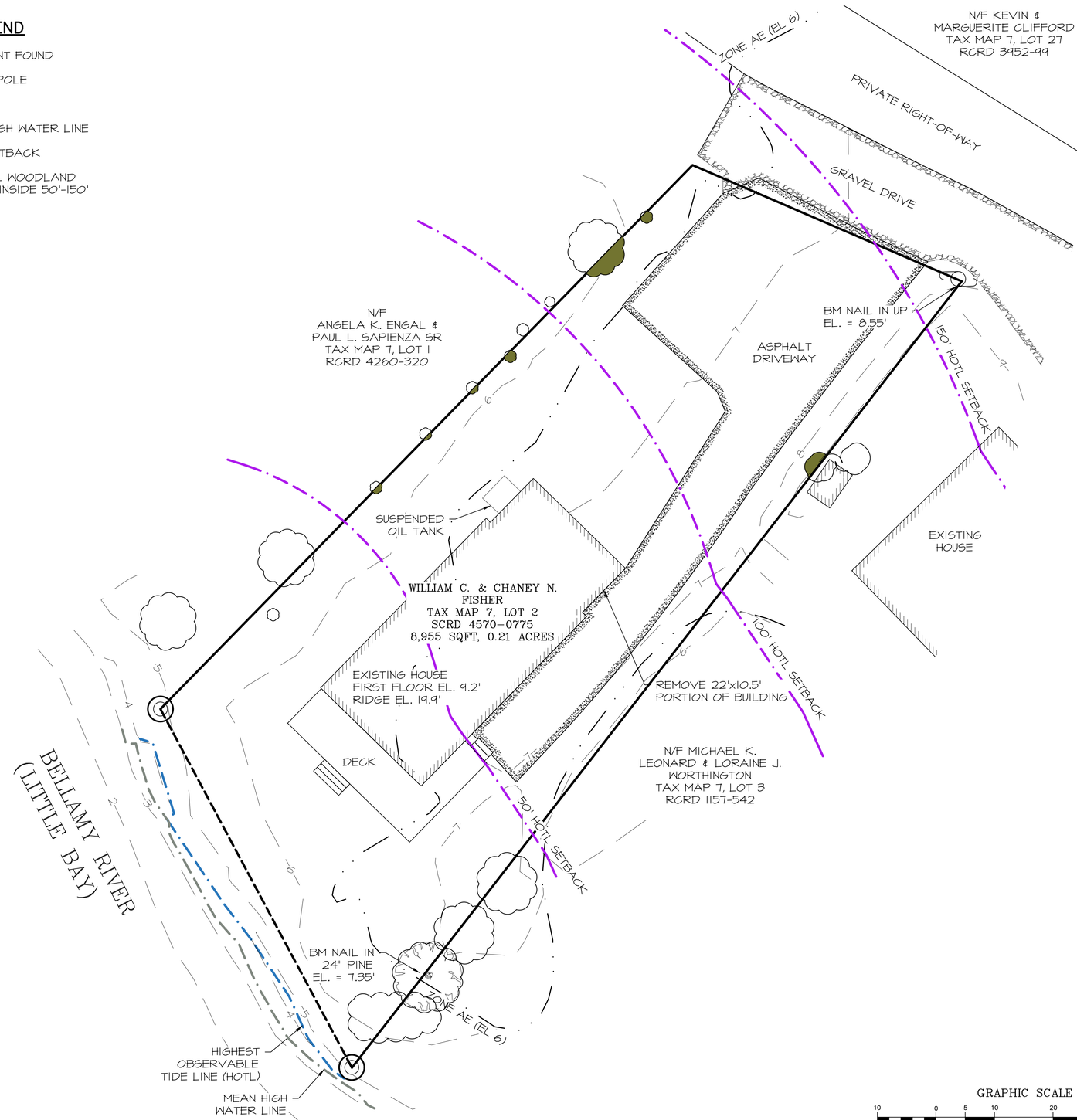


Figure 3 – View of existing house, deck and yard looking to the North. (12/22/2020)

LEGEND

- MONUMENT FOUND
- UTILITY POLE
- HOTL
- MEAN HIGH WATER LINE
- HOTL SETBACK
- NATURAL WOODLAND BUFFER INSIDE 50'-150'

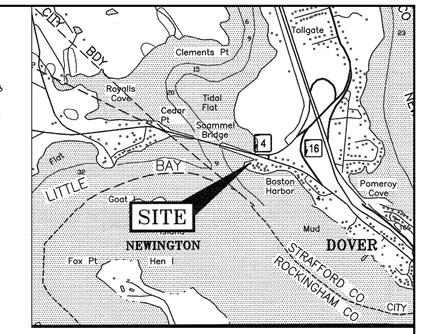
SEE NOTE 2



GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
SCALE: 1" = 10'



LOCUS PLAN
N.T.S.

NOTES

1) OWNERS OF RECORD:
WILLIAM C. & CHANEY N. FISHER
1 BOSTON HARBOR ROAD
DOVER, NH 03820
TAX MAP 7, LOT 2
SCRD: 4570-0775
AREA: 8,955 SF, 0.21 ACRES (TO MEAN HIGH WATER LINE)

2) BASIS OF BEARING HELD FROM REF. PLAN #1.

3) THIS PLOT DOES NOT REPRESENT A BOUNDARY SURVEY. ELEVATIONS WERE SURVEYED ON 12-22-20. ALL BOUNDARY INFORMATION IS APPROXIMATE AND HAS BEEN TAKEN FROM REFERENCE PLAN #1.

4) THE HIGHEST OBSERVABLE TIDE LINE IS APPROXIMATE AND HAS BEEN TAKEN FROM REFERENCE PLAN #1.

5) VERTICAL DATUM IS NAVD88. ELEVATIONS ARE FROM REFERENCE PLAN #1.

6) THE PARCEL IS PARTIALLY WITHIN FEMA FLOOD ZONE AE (EL. 6), AS PER FLOOD INSURANCE RATE MAP #33017C0340, PANEL 340 OF 681, DATED SEPTEMBER 30, 2015. VERTICAL DATUM IS NAVD 1988. LOMA CASE NO. 19-01-1301A FROM REFERENCE PLAN #1 HAS SINCE BEEN REMOVED.

REFERENCE PLANS

1) "EXISTING CONDITIONS PLAN - FISHER RESIDENCE 1 BOSTON HARBOR ROAD DOVER, N.H." BY AMBIT ENGINEERING, INC. NOVEMBER 25, 2019. NOT RECORDED.

ISS.	DATE	DESCRIPTION OF ISSUE
3	9/15/2022	PB SUBMITTAL
2	8/1/2022	CC SUBMITTAL
1	12/23/2020	FOR REVIEW

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
WILLIAM C. FISHER
1 BOSTON HARBOR ROAD
DOVER, NH 03820

TITLE

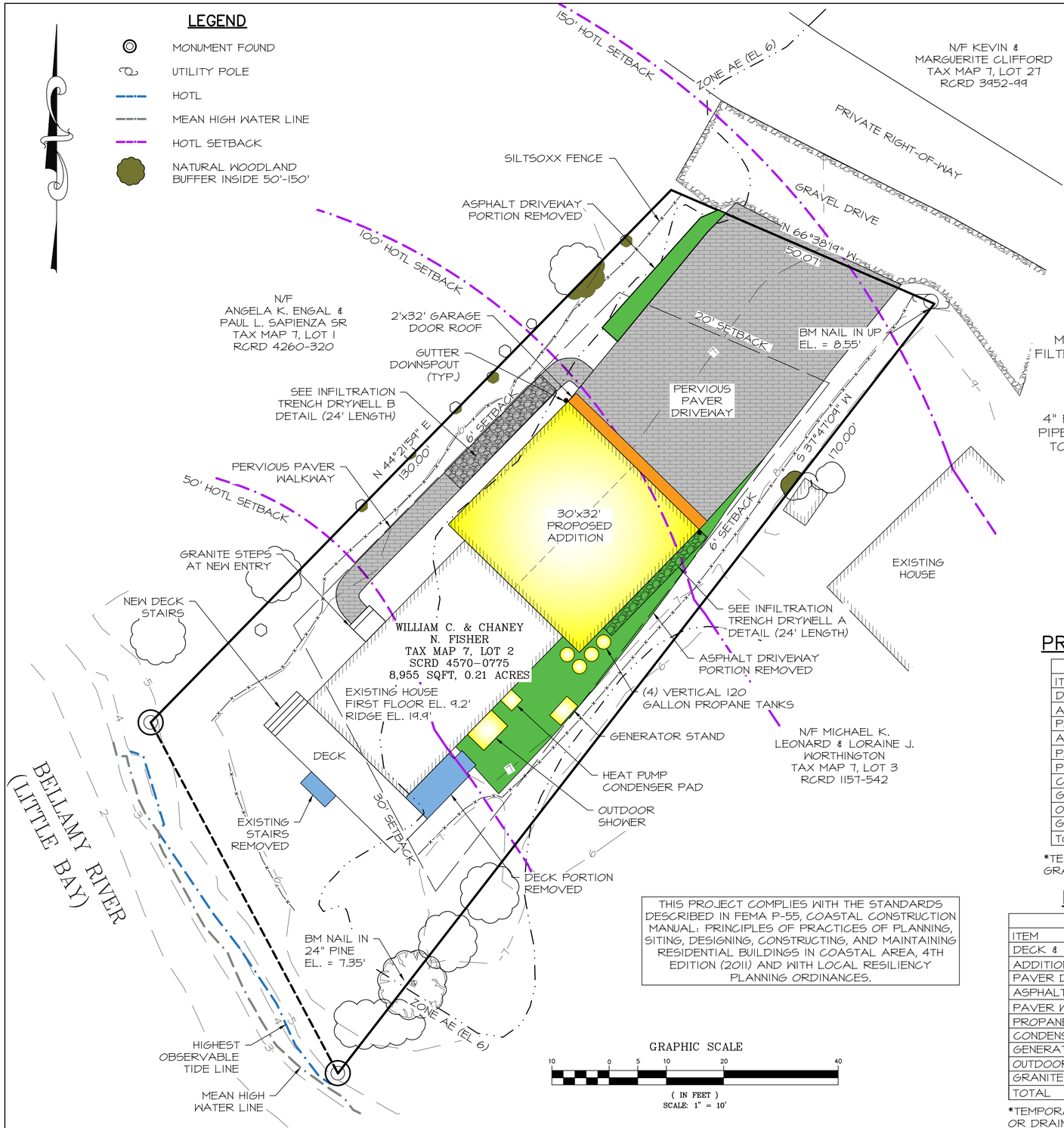
EXISTING CONDITIONS

1 BOSTON HARBOR RD
DOVER, NH 03820
TAX MAP 7, LOT 2

JOB NUMBER	DWG. NO.	ISSUE
20-148	1 OF 4	3

LEGEND

- MONUMENT FOUND
- UTILITY POLE
- HOTL
- MEAN HIGH WATER LINE
- HOTL SETBACK
- NATURAL WOODLAND BUFFER INSIDE 50'-150'



THIS PROJECT COMPLIES WITH THE STANDARDS DESCRIBED IN FEMA P-55, COASTAL CONSTRUCTION MANUAL: PRINCIPLES OF PRACTICES OF PLANNING, SITING, DESIGNING, CONSTRUCTING, AND MAINTAINING RESIDENTIAL BUILDINGS IN COASTAL AREA, 4TH EDITION (2011) AND WITH LOCAL RESILIENCY PLANNING ORDINANCES.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

SCALE: 1" = 10'

CONSTRUCTION SEQUENCE

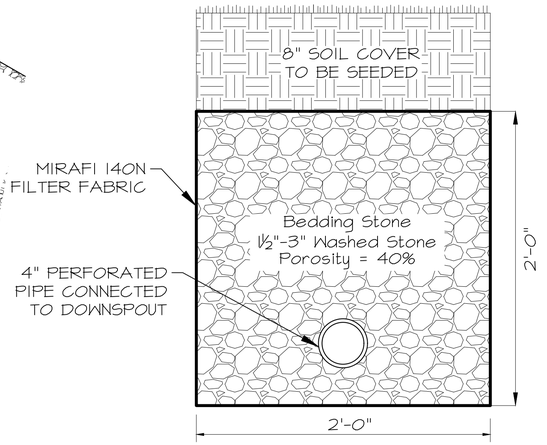
1) INSTALL SILTSOXX FENCING AND ALL EROSION AND SEDIMENT CONTROL.

2) REMOVE EXISTING HOUSE SECTION, DECK SECTION, DRIVEWAY, AND OIL TANK.

3) CONSTRUCT PROPOSED ADDITION, OUTDOOR SHOWER, CONCRETE STANDS AND STAIRS.

4) INSTALL NEW PERVIOUS PAVER WALKWAY AND DRIVEWAY.

5) SEED REMAINING OPEN AREA.



INFILTRATION TRENCH DRYWELL A

N.T.S.

PROPOSED SHORELAND DISTURBANCE

	WITHIN 250'	
ITEM	TEMPORARY	PERMANENT
DECK & STAIRS	80 SF	23 SF
ADDITION	0 SF	960 SF
PAVER DRIVEWAY	0 SF	1,570 SF
ASPHALT DRIVE PORTION	454 SF	0 SF
PAVER WALKWAY	0 SF	254 SF
PROPANE TANKS	0 SF	20 SF
CONDENSER PAD	0 SF	7 SF
GENERATOR STAND	0 SF	12 SF
OUTDOOR SHOWER	0 SF	24 SF
GRANITE STEPS	0 SF	20 SF
TOTAL	534 SF	2,890 SF

*TEMPORARY DISTURBANCE AREAS TO BE REPLACED WITH GRASS OR DRAINAGE

PROPOSED WETLAND DISTURBANCE

	TEMPORARY		PERMANENT	
ITEM	WITHIN 100'	TOTAL	WITHIN 100'	TOTAL
DECK & STAIRS	80 SF	80 SF	23 SF	23 SF
ADDITION	0 SF	0 SF	925 SF	960 SF
PAVER DRIVEWAY	0 SF	0 SF	36 SF	1,570 SF
ASPHALT DRIVE PORTION	339 SF	454 SF	0 SF	0 SF
PAVER WALKWAY	0 SF	0 SF	239 SF	254 SF
PROPANE TANKS	0 SF	0 SF	20 SF	20 SF
CONDENSER PAD	0 SF	0 SF	7 SF	7 SF
GENERATOR STAND	0 SF	0 SF	12 SF	12 SF
OUTDOOR SHOWER	0 SF	0 SF	24 SF	24 SF
GRANITE STEPS	0 SF	0 SF	20 SF	20 SF
TOTAL	419 SF	534 SF	1,306 SF	2,890 SF

*TEMPORARY DISTURBANCE AREAS TO BE REPLACED WITH GRASS OR DRAINAGE

NOTES

1) OWNER OF RECORD:
WILLIAM CRAGG & CHANEY N. FISHER
TAX MAP 7, LOT 2
1 BOSTON HARBOR RD
DOVER, NH 03820
SCRD: 4570-0775
AREA: 8,955 SF, 0.21 ACRES

2) PARCEL IS IN THE LOW-DENSITY RESIDENTIAL ZONE (R-20) & RIVERFRONT RESIDENTIAL OVERLAY DISTRICT:
MINIMUM LOT AREA.....20,000 SF
MINIMUM FRONTAGE.....125 FT
SETBACKS:
FRONT.....20 FT MIN
.....35 FT MAX
SIDE.....6 FT*
REAR.....30 FT
MAXIMUM BUILDING HEIGHT.....35 FT
MAXIMUM LOT COVERAGE.....30%

*AS PER ARTICLE V, SECTION 170-14.A.2 OF THE DOVER ZONING ORDINANCE, THE SIDE SETBACK FOR A LOT OF RECORD WITH A WIDTH OF LESS THAN 75 FT AND MORE THAN 50 FT SHALL BE 6 FT.

**AS PER 170-28.I.E, THIS LOT IS EXEMPT FROM THE PROVISIONS OF THE RIVERFRONT RESIDENTIAL OVERLAY DISTRICT.

3) LOT COVERAGES
BUILDING COVERAGE
EXISTING BUILDING COVERAGE
HOUSE 1,203 SF
COVERAGE 1,203 SF = 13.4%

PROPOSED BUILDING COVERAGE
HOUSE 1,904 SF
COVERAGE 1,904 SF = 21.3%

LOT COVERAGE
EXISTING LOT COVERAGE
BUILDING COVERAGE.....1,203 SF
ASPHALT DRIVEWAY.....1,964 SF
DECK.....320 SF
OIL TANK 20 SF
COVERAGE 3,507 SF = 39.2%

PROPOSED LOT COVERAGE
BUILDING COVERAGE.....1,904 SF
DECK W/ STAIRS.....263 SF
CONCRETE PADS.....19 SF
OUTDOOR SHOWER.....24 SF
PROPANE TANKS.....20 SF
GRANITE STEPS..... 20 SF
COVERAGE 2,250 SF = 25.1%

4) EXISTING WETLAND BUFFER AREA = 36 SF
REQUIRED WETLAND BUFFER AREA = 36 SF
PROPOSED WETLAND BUFFEREAREA = 36 SF

5) THE JURISDICTIONAL RESOURCE TO BE IMPACTED IS THE PREVIOUSLY DEVELOPED TIDAL BUFFER ZONE.

ISS.	DATE	DESCRIPTION OF ISSUE
3	9/15/2022	PB SUBMITTAL
2	8/1/2022	CC SUBMITTAL
1	12/23/2020	FOR REVIEW

SCALE 1" = 10'
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CLIENT
WILLIAM C. FISHER
1 BOSTON HARBOR ROAD
DOVER, NH 03820

TITLE

SITE PLAN

1 BOSTON HARBOR RD
DOVER, NH 03820
TAX MAP 7, LOT 2

JOB NUMBER	DWG. NO.	ISSUE
20-148	2 OF 4	3

EROSION AND SEDIMENTATION CONTROL CONSTRICTION PHASING AND SEQUENCING

1. SEE "EROSION AND SEDIMENTATION CONTROL GENERAL NOTES" WHICH ARE TO BE AN INTEGRAL PART OF THIS PROCESS.
2. INSTALL SILTSOXX FENCING AS PER DETAILS AND AT SEDIMENT MIGRATION.
3. CONSTRUCT TREATMENT SWALES , LEVEL SPREADERS AND DETENTION STRUCTURES AS DEPICTED ON DRAWINGS.
4. STRIP AND STOCKPILE TOPSOIL. STABILIZE PILES OF SOIL CONSTRUCTION MATERIAL & COVER WHERE PRACTICABLE.
5. MINIMIZE DUST THROUGH APPROPRIATE APPLICATION OF WATER OR OTHER DUST SUPPRESSION TECHNIQUES ON SITE.
6. ROUGH GRADE SITE. INSTALL CULVERTS AND ROAD DITCHES.
7. FINISH GRADE AND COMPACT SITE.
8. RE-SPREAD AND ADD TOPSOIL TO ALL ROADSIDE SLOPES. TOTAL TOPSOIL THICKNESS TO BE A MINIMUM OF FOUR TO SIX INCHES.
9. STABILIZE ALL AREAS OF BARE SOIL WITH MULCH AND SEEDING.
10. RE-SEED PER EROSION AND SEDIMENTATION CONTROL GENERAL NOTES.
11. SILT SOXX FENCING TO REMAIN AND BE MAINTAINED FOR TWENTY FOUR MONTHS AFTER CONSTRUCTION TO ENSURE ESTABLISHMENT OF ADEQUATE SOIL STABILIZATION AND VEGETATIVE COVER. ALL SILT SOXX FENCING ARE THEN TO BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
12. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
13. ALL TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC. MUST BE USED AS NECESSARY UNTIL AREAS ARE STABILIZED.
14. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE - BEFORE ROUGH GRADING THE SITE.
15. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM
16. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
17. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
18. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
19. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
20. LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

PLANTING NOTES:

1. ALL PLANT MATERIALS SHALL BE FIRST QUALITY NURSERY GROWN STOCK.
2. ALL PLANTS SHALL BE PLANTED IN ACCORDANCE WITH NEW HAMPSHIRE LANDSCAPE ASSOCIATION STANDARDS AND GUARANTEED FOR ONE YEAR BY THE LANDSCAPE CONTRACTOR.
3. ALL TREES AND SHRUBS SHALL HAVE WATER SAUCERS BUILT AROUND THEIR BASES AND THESE SHALL BE MULCHED WITH 4" OF DARK BROWN AGED BARK MULCH. MULCH MUST BE KEPT 2" AWAY FROM THEIR TRUNKS.
4. ALL TREES AND SHRUBS SHALL BE PLANTED AND MULCHED BEFORE LAWN IS SEEDED.

MAINTENANCE REQUIREMENTS:

1. ALL TREES, SHRUBS, AND PERENNIALS WILL NEED TO BE WATERED THROUGH THANKSGIVING DURING THE FIRST SEASON IN WHICH THEY ARE INSTALLED.
2. AN UNDERGROUND DRIP IRRIGATION SYSTEM IS RECOMMENDED. IF AN UNDERGROUND DRIP IRRIGATION SYSTEM IS NOT INSTALLED, SOAKER HOSES WOUND THROUGHOUT PLANTING BEDS ARE ACCEPTABLE. ALTHOUGH OVERHEAD SPRINKLERS ARE RECOMMENDED FOR LAWN AREAS, THEY ARE NOT ACCEPTABLE FOR IRRIGATING TREES AND SHRUBS.

SEEDING AND STABILIZATION FOR LOAMED SITE:

FOR TEMPORARY & LONG TERM SEEDINGS USE AGWAY'S SOIL CONSERVATION GRASS SEED OR EQUAL
COMPONENTS: ANNUAL RYE GRASS, PERENNIAL RYE GRASS, WHITE CLOVER, 2 FESCUES, SEED AT A RATE OF 100 POUNDS PER ACRE,
FERTILIZER & LIME:
NITROGEN (N) 50 LBS/ACRE, PHOSPHATE (P205) 100 LBS/ACRE, POTASH (K20) 100 LBS/ACRE, LIME 2000 LBS/ACRE
MULCH:
HAY OR STRAW 1.5-2 TONS/ACRE

A) GRADING AND SHAPING
1) SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.

B) SEED BED PREPARATION
1) SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
2) STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

1. CONDUCT ALL CONSTRUCTION IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE PHYSICAL ENVIRONMENT, BUT IN NO CASE SHALL EXCEED 2 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
3. ALL DITCHES, SWALES AND PONDS MUST BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
4. ALL GROUND AREAS OPENED UP FOR CONSTRUCTION WILL BE STABILIZED WITHIN 24 HOURS OF EARTH-DISTURBING ACTIVITIES BEING CEASED, AND WILL BE FULLY STABILIZED NO LONGER THAN 14 DAYS AFTER INITIATION, (SEE NOTE 11 FOR DEFINITION OF STABLE). ALL SOILS FINISH GRADED MUST BE STABILIZED WITHIN SEVENTY TWO HOURS OF DISTURBANCE. ALL TEMPORARY OR LONG TERM SEEDING MUST BE APPLIED TO COMPLY WITH "WINTER CONSTRUCTION NOTES" (SEE WINTER CONSTRUCTION NOTES). EMPLOY TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES AS DETAILED ON THIS PLAN AS NECESSARY UNTIL ADEQUATE STABILIZATION HAS BEEN ASSURED (SEE NOTE 11 FOR DEFINITION OF STABLE).
5. TEMPORARY & LONG TERM SEEDING: USE SEED MIXTURES, FERTILIZER, LIME AND MULCHING AS RECOMMENDED (SEE SEEDING AND STABILIZATION NOTES).
6. SILTSOXX FENCING TO BE SECURELY EMBEDDED AND STAKED AS DETAILED. WHEREVER POSSIBLE A VEGETATED STRIP OF AT LEAST TWENTY FIVE FEET IS TO BE KEPT BETWEEN SILTSOXX AND ANY EDGE OF WET AREA.
7. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO ENSURE VEGETATIVE ESTABLISHMENT.
8. SEDIMENT BASIN(S), IF REQUIRED, TO BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN DESIGN CAPACITY.
9. SILTSOXX FENCING WILL BE CHECKED REGULARLY AND AFTER EACH SIGNIFICANT RAINFALL. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER AS WELL AS CLEANING, REMOVAL AND PROPER DISPOSAL OF TRAPPED SEDIMENT.
10. TREATMENT SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATIVE COVER HAS BEEN ESTABLISHED.
11. AN AREA SHALL BE CONSIDERED FULLY STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED.
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

11. ALL EROSION AND SEDIMENTATION CONTROL MEASURES IN THE PLAN SHALL MEET THE DESIGN BASED ON STANDARDS AND SPECIFICATIONS SET FORTH IN THE STORM WATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (DECEMBER 2008 OR LATEST) PREPARED BY ROCKINGHAM COUNTY CONSERVATION DISTRICT, N.H. DES AND NRCS.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPETED IN ADVANCE OF THAW OR SPRING MELT EVENT.;
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS;
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

LONG TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	lb/ACRE	lb/1000SF
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED CLOVER (ALSIKE)	20	0.45
TOTAL	48	1.35

LIME: AT 2 TONS PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 20 20 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW, 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED.
SOD SHOULD BE TILLED TO A DEPTH OF FOUR INCHES TO PREPARE SEEDBED. FERTILIZER & LIME SHOULD BE MIXED INTO THE SOIL.
THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL..

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

SHORT TERM SEEDING

*WELL TO MODERATELY WELL DRAINED SOILS

FOR CUT AND FILL AREA AND FOR WATERWAYS AND CHANNELS

SEEDING MIXTURE C

	#/ACRE	#/1000SF
FOR APRIL 1 - AUGUST 15		
ANNUAL RYE GRASS	40	1
FOR FALL SEEDING		
WINTER RYE	112	2.5

LIME: AT 1 TON PER ACRE OR 100 LBS PER 1,000 S.F.
FERTILIZER: 10 10 10 (NITROGEN, PHOSPHATE, POTASH AT 500# PER ACRE.
MULCH: HAY OR CLEAN STRAW, 2 TONS/ACRE OR 2 BALES/1000 S.F.

GRADING AND SHAPING:
SLOPES SHALL NOT BE STEEPER THAN 2 TO 1. 3 TO 1 OR FLATTER SLOPES ARE PREFERRED.
SEEDBED PREPARATION:
SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED.
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THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

* FROM: STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE, DECEMBER 2008.

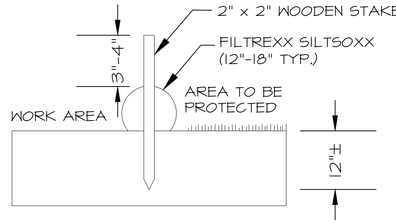
WHEN PROPOSED FOR ALTERATION DURING CONSTRUCTION AS BEING INFESTED WITH INVASIVE SPECIES SHALL BE MANAGED APPROPRIATELY USING THE DISPOSAL PRACTICES IDENTIFIED IN "NHDOT - BEST MANAGEMENT PRACTICES FOR ROADSIDE INVASIVE PLANTS -2008" AND "METHODS FOR DISPOSING NON-NATIVE INVASIVE PLANTS - UNH COOPERATIVE EXTENSION - 2010"

SEED MIXES SHALL NOT CONTAIN ANY SPECIES IDENTIFIED BY THE NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST.

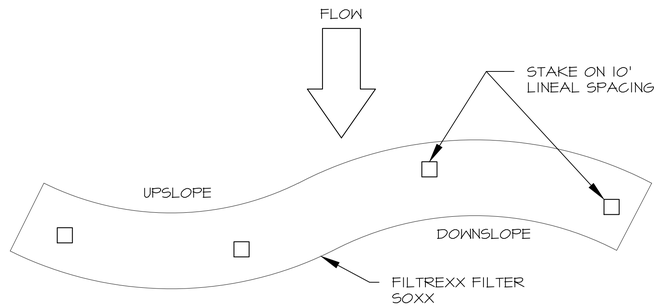
FILTREXX SILTSOXX NOTES

1) ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS

2) SILTSOXX COMPOST, SOIL, ROCK, SEED FILL TO MEET APPLICATION REQUIREMENTS



Filtrexx SiltSoxx Section
N.T.S.



Filtrexx SiltSoxx Plan View
N.T.S.

ISS.	DATE	DESCRIPTION OF ISSUE	
3	9/15/2022	PB SUBMITTAL	
2	8/1/2022	CC SUBMITTAL	
1	12/23/2020	FOR REVIEW	

SCALE 1" = 10'
CHECKED A.ROSS
DRAWN D.D.D.
CHECKED

ROSS ENGINEERING, LLC
Civil/Structural Engineering & Surveying
909 Islington St.
Portsmouth, NH 03801
(603) 433-7560

CLIENT
WILLIAM C. FISHER
1 BOSTON HARBOR ROAD
DOVER, NH 03820

TITLE
EROSION CONTROL PLAN

1 BOSTON HARBOR RD
DOVER, NH 03820
TAX MAP 7, LOT 2

JOB NUMBER	DWG. NO.	ISSUE
20-148	3 OF 4	3

TECHO-BLOC & PERVIOUS PAVER INSTALLATION
GENERAL NOTES

DATA COLLECTION

1. DETERMINE THE SIZE, SHAPE AND INTENDED USE OF FINISHED AREAS.
2. CLASSIFY SUB-GRADE SOILS.
3. DOCUMENT ALL EXISTING CONDITIONS. (FIXED POINTS, EXISTING GRADES, SITE CONTOURS, ETC)
4. DOCUMENT SOIL TYPE, LOCATION, AND ELEVATION OF BELOW GRADE AND OVERHEAD UTILITIES BOTH PUBLIC AND PRIVATE.
5. ENSURE PUBLIC UTILITIES ARE MARKED THROUGH THE USE OF LOCATING SERVICE.
6. DETERMINE THE CROSS SECTION DESIGN OF THE SYSTEM BASED ON SOIL TYPE AND APPLICATION, SHOWING PROPOSED SUB-GRADE AND FINISHED GRADE ELEVATIONS AND ALL GEOTEXTILES AND DRAINAGE DRAINAGE PIPES NEEDED FOR CONSTRUCTION.
7. ESTABLISH THE TYPE, LOCATION, AND ELEVATION OF RELIEF STRUCTURES IF REQUIRED (OVERFLOW PIPE DISCHARGING TO RAIN GARDEN, ETC).
8. DETERMINE CURB OR EDGE RESTRAINT TYPE, ELEVATION, AND LOCATION.
9. CHOOSE PATTERN APPROPRIATE TO THE APPLICATION (TRAFFIC TYPE AND LOAD).

EXCAVATION

1. BEFORE EXCAVATING, CALL ALL LOCAL UTILITY COMPANIES (E.G., PHONE, GAS, ELECTRICAL) TO ENSURE THAT THE AREA IN WHICH YOU PLAN TO DIG IS CLEAR OF UNDERGROUND CABLES OR WIRES. IF ANY ARE FOUND, PLEASE NOTIFY THE APPROPRIATE COMPANIES BEFORE YOU BEGIN.
2. EXCAVATION DEPTH IS DETERMINE FROM THE FOUNDATION THICKNESS ACCORDING TO THE PROJECT SPECIFICATIONS (FOUNDATION THICKNESS IS DETERMINED BY QUALIFIED ENGINEER BASED ON STRUCTURAL AND HYDROLOGIC ANALYSIS.)
3. THE SLOPE OF THE SUB-GRADE WILL DEPEND ON DRAINAGE DESIGN AND INFILTRATION TYPE, A MINIMUM SLOPE OF .5% (½" PER FOOT) IS REQUIRED.
4. THE DISTANCE THAT THE EXCAVATED AREA SHOULD EXTEND BEYOND THE AREA TO BE PAVED SHALL BE ONE TO 1.5 TIMES THE THICKNESS OF THE FOUNDATION. EXTRA SPACE ENSURE STABILITY OF PAVERS NEAR EDGE AND EDGE RESTRAINTS.
5. LEVEL THE BOTTOM OF THE EXCAVATED AREA WITH A RAKE.
6. COMPACTION WILL REDUCE THE PERMEABILITY OF THE SUB-GRADE. CARE SHOULD BE TAKEN TO MAINTAIN UNDISTURBED SOIL INFILTRATION DURING EXCAVATION AND CONSTRUCTION. STABILIZATION OF SUB-GRADE MAY BE REQUIRED WITH WEAK, OR CONTINUOUSLY SATURATED SOILS. REDUCED INFILTRATION MAY REQUIRE DRAINAGE PIPES WITHIN THE SUB-BASE TO CONFORM TO STORMWATER DRAINAGE REQUIREMENTS.

GEOTEXTILES, IMPERMEABLE LINERS, AND DRAIN PIPES.

1. USE A WOVEN GEOTEXTILE WITH HIGH BI-AXEL STRENGTH.
2. PLACE THE GEOTEXTILE ON THE BOTTOM AND SIDES OF THE SOIL SUB-GRADE. ELIMINATE WRINKLES IN THE GEOTEXTILE AND ENSURE IT IS NOT DAMAGED DURING CONSTRUCTION.
3. OVERLAP OF GEOTEXTILE SHALL BE A MINIMUM 2'-0" IN THE DIRECTION OF DRAINAGE. OVERLAPPING SHOULD BE "SHINGLE" STYLE WITH RESPECT TO ANY SLOPE DIRECTION AND BASE STONE DISTRIBUTION DIRECTION. KEEP PROPERLY TENSIONED, ELIMINATE WRINKLES, AND AVOID DAMAGING FABRIC (NO SPIKES).

SUB-BASE

1. USE SUB-BASE ASTM NO. 2 OR NO. 3 MEETING THE FOLLOWING REQUIREMENTS:
   A. 90% FRACTURED SYMMETRICAL PARTICALS
   B. LESS THAN 5% PASSING 200 SIEVE
   C. INDUSTRY HARDNESS TESTED
2. MOISTEN SPREAD AND COMPACT ASTM NO. 2 AGGREGATE SUB-BASE IN MINIMUM 6" LIFTS (WITHOUT DAMAGING OR DISTORTING THE GEOTEXTILE).
3. MAKE AT LEAST TWO PASSES IN VIBRATORY MODE FOLLOWED BY AT LEAST TWO PASSES IN STATIC MODE WITH A MINIMUM 10 TON VIBRATORY ROLLER, UNTIL THERE IS NOT VISIBLE MOVEMENT OF THE AGGREGATE.
4. DO NOT ALLOW COMPACTOR TO CRUSH AGGREGATE.
5. SURFACE TOLERANCE OF THE ASTM NO. 2 SUB-BASE SHOULD BE ±2½" OVER 10'.

EDGE RESTRAINT

1. INSTALL AVIGNON, BELGIK, PIETRA, TUNDRA, OR UNIVERSAL EDGE CUT UNITS. CAST-IN-PLACE CONCRETE OR PRECAST CONCRETE CURBS SHALL BE UTILIZED IN VEHICULAR APPLICATIONS.
2. EDGE RESTRAINT MAY REST ON AN OPEN-GRADED OR DENSE-GRADED AGGREGATE BASE.

BASE

1. MOISTEN, SPREAD AND COMPACT THE ASTM NO. 57 AGGREGATE BASE LAYER IN ONE 4" THICK LIFT.
2. MAKE A MINIMUM OF TWO PASSES IN VIBRATORY MODE FOLLOWED BY AT LEAST TWO STATIC MODE WITH A MINIMUM 10 TON ROLLER, UNTIL NO VISIBLE MOVEMENT OF THE AGGREGATE. ALTERNATIVELY, A 13,500 LB PLATE COMPACTOR CAN BE USED TO COMPACTER ASTM NO. 57 AGGREGATE BASE.
3. DO NOT ALLOW COMPACTOR TO CRUSH AGGREGATE.
4. SURFACE TOLERANCE OF THE ASTM NO. 57 BASE SHOULD BE ±1" OVER 10'.

BEDDING COURSE

1. MOISTEN, SPREAD AND SCREED ASTM NO 8. AGGREGATE BEDDING LAYER IN ONE 2" THICK LIFT
2. SURFACE TOLERANCE OF THE ASTM NO 8. BEDDING COURSE ±⅜" OVER 10'
3. CONSTRUCTION EQUIPMENT AND PEDESTRIAN TRAVEL ON SCREEDED BEDDING COARSE IS PROHIBITED.

PAVER

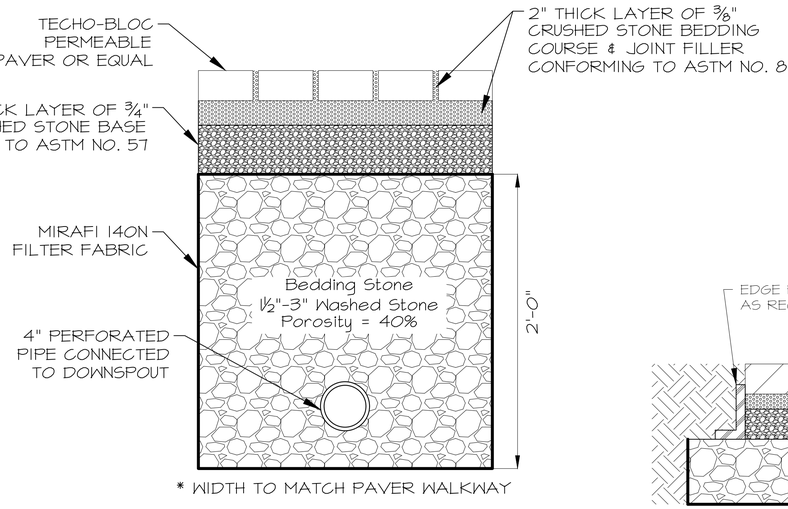
1. PAVERS SHOULD BE PLACED IN PATTERN SHOWN ON DRAWINGS. LAY UNITS TIGHT TO DESIGNATED LAYING PATTERNS. UNITS HAVE LUGS TO MAINTAIN CONSISTENT JOINT WIDTH.
2. IN SLOPED CONDITIONS START LAYING FROM THE BOTTOM IN AN UPHILL DIRECTION.
3. THE MINIMUM SLOPE FOR PERMEABLE PAVEMENT SURFACE IS 1%.
4. INFLO PAVERS CAN BE INSTALLED WITH TBI0051 (TECHO-BLOC MECHANICAL TOOL) TO EXPEDITE INSTALLATION.
5. WHEN SUBJECT IT VEHICULAR TRAFFIC, CUT UNITS SHOULD NOT BE SMALLER THEN ⅓ THE WHOLE PAVER. WHEN USING CUT PAVERS MAINTAIN JOINT.
6. IN VEHICULAR APPLICATION LAY PATTERN PERPENDICULAR TO TRAFFIC FLOW.

JOINT FILL

1. FILL PAVER JOINT OPENINGS WITH ASTM NO. 8 AGGREGATE. SWEEP STONE TO FILL JOINTS. SURFACE MUST BE SWEPT CLEAN PRIOR TO COMPACTION
2. COMPACT WITH 5,000 LB PLATE COMPACTOR (TWO PASSES MINIMUM). INSTALL OF NEOPRENE PAD TO PROTECT THE TEXTURE OF THE PAVING UNITS.
3. DO NOT COMPACT WITHIN 6' OF UNRESTRAINED EDGES OF PAVERS.
4. APPLY ADDITIONAL AGGREGATE TO FILL THE JOINT OPENINGS IF NEEDED AND COMPACT.
5. SURFACE TOLERANCE OF COMPACTED PAVERS SHOULD BE ±⅜" OVER 10'.

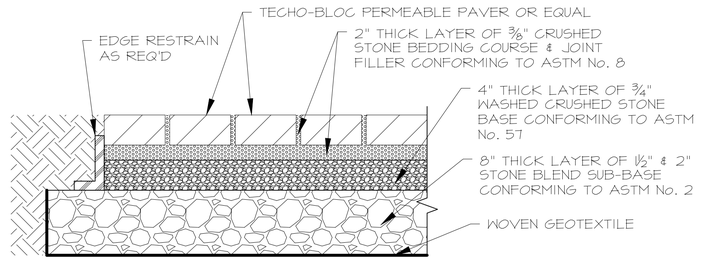
POST INSTALLATION PROTECTION

1. MAINTAIN EROSION AND SEDIMENT MEASURES AT PERIMETER TO PREVENT CONTAMINATION OF POROUS PAVEMENT SYSTEM.



INFILTRATION TRENCH DRYWELL B

N.T.S.



PERVIOUS PAVERS DETAIL

N.T.S.

MAINTENANCE NOTES

A. Maintenance of Common Facilities or Property

1. Future owners or assigns are responsible for maintenance of all stormwater infrastructure associated with the facility and the property. This includes the roof drainage system, stone infiltration beds, gravel areas, and the pervious pavers.

B. General Inspection and Maintenance Requirements

1. Permanent stormwater and sediment and erosion control facilities to be maintained on the site include but are not limited to the following:
   a. Pervious Pavers
2. Maintenance of permanent measures shall follow the following schedule:
   a. The following requirements will help assure that the pervious pavers system is maintained to preserve its effectiveness:
      i. Inspection of site shall occur monthly for the first few months after construction. Then inspections can occur on an annual basis, preferably after rain events when clogging can occur and be obvious. Permeable pavers require minimal maintenance; however maintenance is absolutely necessary to ensure a proper working system.
      ii. Asphalt seal coating is absolutely forbidden. Surface seal coating is not reversible.
      iii. Street sweepers with vacuums, water, and brushes can be used to restore permeability. Follow sweeping with high-pressure hosing of the surface pores. Surface shuld be vacuumed 4 times per year, and at any additional times sediment is spilled, eroded, or tracked onto the surface.
      iv. Planted areas adjacent to pervious pavers should be well maintained to prevent soil washout onto the pavement. If any bare spots or eroded areas are observed within the planted areas, they should be replanted and/or stabilized at once.
      v. Immediately clean any soil deposited on pavers. Superficial dirt does not necessarily clog the voids. However, dirt that is ground in repeatedly by tires can lead to clogging. Therefore, trucks or other heavy vehicles should be prevented from tracking or spilling dirt onto the pavement. Replace any damaged paving blocks.
      vi. Do not allow construction staging, soil/mulch storage, etc. on unprotected pavers surface.
      vii. No winter sanding. Mechanical snow and ice removal preferred.
      viii. Written and verbal communication to the porous paver's future owner should make clear the special purpose and special maintenance requirements such as those listed here.

FLOOD NOTES

A) In all area of special flood hazard where base flood elevation (BFE) data has been established per Subsection G.(2), the following provisions are required as per Section K in the zoning amendments for the City of Dover:

1. Residential construction, new construction and substantial improvement of any residential structure shall have the lowest floor, including the basement, elevated to at least two (2) feet above base flood elevation. Subsection K.(1)

2. For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding are permitted, provided that the enclosed areas meet the following requirements as per Subsection K.(4):

   a) The enclosed area is unfinished or flood resistant, usable solely for parking of vehicles, building access or storage.
   b) The area is not a basement.
   c) The area shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood waters. Designs for meeting this requirement must either be certified by a professional engineer or architect or must meet or exceed the following minimum criteria:
      i. A minimum of two (2) openings having a total area of not less than one (1) square inch for ever square foot of enclosed area subject to flooding shall be provided.
      ii. The bottom of all openings shall be no higher than one (1) foot above grade.
      iii. Openings may be equipped with screens, louvers orother coverings or devices, provided that they permit the automatic entry and exit of flood waters.

VULNERABILITY ASSESSMENT

1) UTILIZING THE NEW HAMPSHIRE COASTAL FLOOD RISK SUMMARY PARTS 1 & 2, THE PROJECTED SEA-LEVEL RISE IS 2.5'.
2) BFE = 6'
   PROJECTED SEA-LEVEL RISE = 2.5'
   ELEVATION OF PROJECTED FLOOD ZONE = 6+2.5 = 8.5'

   ELEVATION OF PROPOSED FIRST FLOOR = 9.2'
   ELEVATION OF PROPOSED GARAGE SLAB = 7.575'

   FIRST FLOOR IS ABOVE THE PROJECTED FLOOD ZONE ELEVATION. AREA BELOW THE PROJECTED FLOOD ZONE ELEVATION TO BE USED ONLY FOR BUILDING ACCESS, PARKING OF VEHICLES, AND STORAGE. AREA ALSO TO HAVE FLOOD VENTS INSTALLED.

ANNUAL OPERATIONS & MAINTENANCE REPORT

ACTIVITY	DATE OF INSPECTION	WHO INSPECTED	SATISFACTORY: YES, NO, N/A	MAINTENANCE NEEDED	IMPLEMENTED DATE OF CORRECTIVE ACTION	FINDINGS OF INSPECTOR
PARKING LOT SWEEPING PERVIOUS PAVEMENT						

ISS.	DATE	DESCRIPTION OF ISSUE
3	9/15/2022	PB SUBMITTAL
2	8/1/2022	CC SUBMITTAL
1	12/23/2020	FOR REVIEW

SCALE 1" = 10'
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WILLIAM C. FISHER
1 BOSTON HARBOR ROAD
DOVER, NH 03820

TITLE
NOTES

1 BOSTON HARBOR RD
DOVER, NH 03820
TAX MAP 7, LOT 2

JOB NUMBER	DWG. NO.	ISSUE
20-148	4 OF 4	3

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-63

Application Type:	Site Plan Review
Applicant(s):	White Birch Armory
Owner(s):	Recon Realty, LLC
Location:	80 Industrial Park Drive (Assessor's Map G, Lot 3-A-100)
Meeting Date:	October 11, 2022

INTENT: To construct a 20,287± sf addition to increase office and warehouse space on site, including: additional parking, landscaping, lighting, and stormwater management improvements.

UNITS PROPOSED: N/A

AGENDA ITEM #: 4-C

ACREAGE: 8.09± ac / 352,425± s.f.

ZONING DISTRICT: CM

EXISTING LAND USE:
Commercial building with associated parking

PROPOSED LAND USE:
Expansion & improvements to existing commercial building

SURROUNDING LAND USE:
Vacant Land,
Commercial/Manufacturing

ZBA ACTION: None

CUP & PERMITS REQUIRED:
- Wetland Impact CUP (Pending)
- AoT (Pending)

WAIVERS REQUESTED: None requested.

TRC: September 8, 2022

CONS COM: September 12, 2022

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting.

Summary of Request and Background:
The applicant seeks site plan approval for a proposed 20,287± sf addition to the existing 19,680 sf building to increase office and warehouse space on site, including: additional parking, landscaping, lighting, and stormwater management improvements. The existing building was built in 2020. The site is serviced by municipal water and sewer.

This application was most recently before the Technical Review Committee on September 8, 2022 (minutes attached).

Consistency with Land Use Regulations – Site Plan
§153-4 of the Site Review Regulations of the City Code provides for site review by the Planning Board of new construction of various types. This plan is consistent with those regulations.

STAFF RECOMMENDATION – Site Plan:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact and vote to approve the Site Plan with the following subsequent conditions, as the plans meet the standards outlined:

Subsequent Conditions to Be Met Prior to Signing of the Plans:
1. Approval of Conditional Use Permit (P22-65);
2. Revise plan and resubmit for Final Planning Board signature to add:
   2.1. Owner's signature; and
   2.2. All required professional stamps and signatures to Final Plan Set.

Subsequent Condition to Be Met Prior to Construction:
3. A site construction sign with the contact information for the general contractor and site construction hours must be displayed in a location approved by the City Engineer or Planning Director.
4. Wetlands have been staked and flagged.

Subsequent Condition to Be Met Prior to Building Permit:
5. If required, payment of the water and sewer investment fees at time or request of service.

Subsequent Conditions to Be Met Prior to Occupancy:
6. Issuance of Certificate of Occupancy;
7. Payment of Impact Fees as noted in the invoice attached to the Decision Letter; and
8. Surety or other form of security acceptable to the City is provided for any unfinished work.

P22-63 SITE-2022-0013 80 INDUSTRIAL PARK DRIVE



Property Information

Property ID	G0003-A00100
Location	80 INDUSTRIAL PARK RD
Owner	RECON REALTY LLC
Land Use	400
Zoning Code	CM

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 5/3/2021
Data updated Daily

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

City of Dover, New Hampshire
SITE REVIEW APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: White Birch Armory Telephone # 603-330-0146 x-9050

Address of Applicant: 80 Industrial Park Drive Dover, NH 03820

E-Mail Address: sean@wbarmory.com

Name of Property Owner (*if different from applicant*): Recon Realty, LLC Telephone # 603-330-0146 x-9050

Address of Property Owner: 80 Industrial Park Drive Dover, NH 03820

PROPERTY INFORMATION

Address of Property: 80 Industrial Park Drive

Assessor's Map # G Lot(s) # ~~3-A1~~ 3-A-100

Zoning District(s) CM Overlay District(s) N/A

Size of Parcel: 352,425 sq. ft. 8.09 ac. Property Deed: Book 4713 Page: 623

Existing Use of Property: Commercial Building w/Associated Parking

SITE PLAN INFORMATION

Describe Proposed Use: Expansion & Improvements to Existing Commercial Building & Parking

Area of Parcel to be Developed: 65,000± s.f. Additional Area - 135,000± s.f. Total Area sq. ft.

If Multi-family Residential: Number of Units N/A & Buildings Proposed N/A

If lodging: Number of Units N/A & number of Buildings N/A

Number of Parking Spaces: Existing 60 Proposed 74

Highway Access (check where applicable): X City Street ____ State Highway

Number of Employees Total: 25 In Maximum Shift: 2

Disposition of Parcel:

Building Footprint 20,287 sq. ft.

Total Building Area 23,273 sq. ft.

Paved Area 14,865 sq. ft.

Building Setbacks:

Front Yard 35 ft.

Rear Yard 10 ft.

Side Yard: Right 10 ft. Left 10 ft.

City Water? X Yes ___ No How far is city water from the property? Existing on Site

City Sewer? X Yes ___ No How far is city sewer from the property? Existing on Site

TRANSFER OF DEVELOPMENT RIGHTS INFORMATION N/A

Type of TRANSFER OF DEVELOPMENT RIGHT REQUEST (Check All That Apply):

□ Residential □ Residential (reduced size) □ Industrial | □ Purchase □ Land Preservation

Relief sought (Check All That Apply):

□ Lot Size □ Frontage □ Setback □ 30' Buffer □ Increase by _____ units

Describe Proposed Use or Activity that requires TDR; describe any impacts and document mitigation:

_____

_____

_____

BUILDING INFORMATION

Type of Building to be Built: Steel Construction

Height of Building: 27'6" Finished Floor Elevation: 108.7'

Number of Seats (where applicable) N/A

Estimated value of construction: $250,000 Refuse removal: Public/(Private) (circle one)

WAIVER REQUESTS

Expansion & Improvements to Existing Commercial Building & Parking

Site Review Regulations section(s) to be waived: None Requested

Justification for waiver request(s) (*attach additional sheets as needed*):

_____

_____

_____

_____

_____

_____

_____

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) Kevin McEneaney, LLS McEneaney Survey Associates

Address 24 Chestnut Street Dover, NH 03820 Telephone #: 603-742-0911

Professional License #: Kevin McEneaney, LLS 661 E-mail address: kevin@surveynh.com

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) Stephen J. Haight, PE Civilworks New England

Address P.O. Box 1166 Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: Stephen J. Haight, PE #7978 E-mail address: shaight@civilworksne.com

ARCHITECT INFORMATION

Name of Architect and Company (Licensed in N.H.) John M. Tuttle, Architect TW Designs, LLC

Address 254 Drake Road Strafford, NH 03884 Telephone #: 603-664-2181

Professional License #: John M. Tuttle, NH Architect #4015 E-mail address: john@tw-designs.com

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) Jeffrey R. Hyland, Landscape Architect Ironwood Design Group, LLC

Address P.O. Box 873 Exeter, NH 03833 Telephone #: 603-772-0590

Professional License #: Jeffrey R. Hyland, Landscape Architect #00026 E-mail address: jhyland@fewood.com

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Bruce A. Gilday, CSS, CWS BAG Land Consultants

Address 43 Rockingham Street Concord, NH 03301 Telephone #: 603-228-5775

Professional License #: Bruce A. Gilday, CWS #88 E-mail address: bagilday@comcast.net

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: _____

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. Furthermore, I/we submit that the existing conditions sheet of the plan represents the lot in question, and that no alteration of the site shall take place during Planning Board review up to and including the pre-construction meeting. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 6/22/22

Signature of Applicant (*if different from owner*): _____ Date: _____

Signature of Agent: _____ Date: 6/22/22

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 6/22/22

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby the City of Dover or its assigns to enter my property for the purpose of completing the site work as required by the approved plan should the letter or credit or other surety be called. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 6/22/22

Signature of Applicant (*if different from owner*): _____ Date: _____

CERTIFICATION OF FEES

I, and my successors, hereby certify that I understand that the City of Dover collects impact fees, utility investment fees and inspection fees for projects developed in Dover. Said fees must be paid before a Certificate of Occupancy can be obtained for a structure, unless a different payment schedule is agreed to by the applicant and the City prior to approvals being issued by the Dover Planning Board. Additionally, should the property be in "Current Use" it will be subject to the Land Use Change Tax.

Signature of Property Owner: _____ Date: 6/22/22

Signature of Applicant (*if different from owner*): _____ Date: _____

City of Dover, New Hampshire
SITE PLAN REVIEW SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This site plan review checklist, as required by Chapter 153-6-B(2), should be completed by the applicant. It is intended to assist the applicant in the planning process of preparing a Site Plan Review application for Planning Board action. The size of the project will determine the types of information required for review, therefore, a **pre-application conference** with the Planning Department to determine the list of items that must be completed is strongly encouraged.

The first step would be to appear before the Technical Review Committee, to apply, eight (8) folded copies of the site plan with scale of not less than 1"=50' or 1" =100' for larger site plans, need to be provided, along with payment of plan review fees.

Two weeks prior to Planning Board, three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, including response to TRC comments, will be due. Abutter/Notice Fees will be invoiced and need to be paid 28 hours prior to the Planning Board meeting.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan Review Regulations for full details.

APPLICANT: White Birch Armory File Number: P22-

PROJECT TITLE: Site Plan - White Birch Armory Building Addition

PROPERTY LOCATION: 80 Industrial Park Drive Tax Map: G Lot: ~~3A-1~~3-A-100

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the engineered/surveyed plan layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	N/A	
6. Waiver requests to the Site Plan Review Regulations, with written justification	None Requested	
7. Conditional Use Permit applications	X	
8. A colored rendering of the streetscape that will be created along the existing public right-of-way	X	
9. A colored architectural plan showing all sides of buildings	X	
10. Folded copies of site plan w/scale of not less than 1"=50' or 1"=100' for larger site plans, for TRC. Plans shall contain the following items as appropriate:	1 Full Size Plan Set & 7 - 11x17 copies Delivered in Hand & via EnerGov portal	
Location map at appropriate scale	X	
Proposed Project name and title and Planning File #	X	
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners and/or applicants	X	
Signature & stamp of NH licensed land surveyor and/or engineer	X	
Zoning District boundaries, including any special or overlay districts	N/A	
Location of Conservation District areas	N/A	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Location and width of existing and proposed access/egress ways	X	

	Explain How Provided	Reviewed
Depict pedestrian walkways and accessible access	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed topographic information at two foot intervals	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	X	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	X	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	X	
Existing and proposed stormwater lines and facilities	X	
Lighting plan depicting all existing and proposed exterior light fixtures and a lighting level analysis for parking lots	X	
Location of Flood Hazard Zone	N/A	
Location of all bodies of water and watercourses	N/A	
Location of wetlands and buffers	X	
Neighborhood plan with aerial underlay showing how project relates to abutting uses within the plan set	X	
Existing natural features and/or significant vegetation on property		
Depict existing contours up to 100 ft. beyond project limits	X	
Landscape plan depicting existing and proposed landscaping, prepared by a licensed Professional Landscape Architect	X	
Location of parking layout delineating spaces and arrangement; note addressing maximum required spaces	X	
Location, material and size of existing and proposed pavement area	X	
Location of proposed fire lanes	X	
Specify finished floor elevations of buildings	X	
Location of solid waste disposal facilities (dumpster, pad and screening, etc.), including required screening	X	
Depict all service, storage, loading bays and utility areas	X	
All applicable Dover Common Site Plan notes	X	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing & proposed storm drainage system and engineered drainage analysis	X	
Stormwater Management System Operation and Maintenance Plan	X	
Letter to Serve from Public and Private Utilities	N/A	
Erosion and Sedimentation Control Plan	X	
Landscape Operation and Maintenance Plan	X	
Proposed restrictive covenants or homeowners association documents	N/A	
Dates and permit numbers of all required state and federal permits	pending (AoT)	
If wetland buffer, indicate placards locations, as applicable	N/A	
Depict test boring locations, groundwater elevations and soil profiles and/or soils types call-outs	N/A	
Location of proposed drive-in facilities	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	TBD	

REVIEWED BY: _____ DATE_____ TRC DATE_____

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #P22-65

Application Type:	Conditional Use Permit - Environmental
Applicant(s):	White Birch Armory
Owner(s):	Recon Realty, LLC
Location:	80 Industrial Park Drive (Assessor's Map G, Lot 3-A-100)
Meeting Date:	October 11, 2022

INTENT: To obtain a CUP for 6,975 sf of wetland buffer in order to construct a 20,287± sf addition to increase office and warehouse space on site, including: additional parking, landscaping, lighting, and stormwater management improvements.

UNITS PROPOSED: N/A

AGENDA ITEM #: 4-B

ACREAGE: 8.09± ac / 352,425± s.f.

ZONING DISTRICT: CM & Wetlands Protection Overlay Dist.

EXISTING LAND USE:
Commercial building with associated parking

PROPOSED LAND USE:
Expansion & improvements to existing commercial building

SURROUNDING LAND USE:
Vacant Land,
Commercial/Manufacturing

ZBA ACTION: None

CUP & PERMITS REQUIRED:
- Site Plan (Pending)
- NHDES AoT (Pending)

WAIVERS REQUESTED: None requested.

TRC: September 8, 2022

CONS COM: September 12, 2022

NOTICES SENT: Abutter notices were sent by certified mail to all abutters for this meeting.

Summary of Request and Background:
The applicant seeks a Conditional Use Permit (CUP) to impact 6,975 sf of wetland buffer for a proposed 20,287± sf addition to the existing 19,680 sf building to increase office and warehouse space on site, including: additional parking, landscaping, lighting, and stormwater management improvements.

This CUP permit application and NHDES AoT permit were endorsed by the Conservation Commission at their September 12, 2022 meeting (draft minutes attached), with the request that the Planning Board "…receive indication that vernal pools were looked for and that the existing functions and values of the wetlands will not be impaired." That notification has been provided in the Board's packets.

This application was most recently before the Technical Review Committee on September 8, 2022 (minutes attached).

CONSISTENCY WITH LAND USE REGULATIONS:
The Wetlands Protection District ordinance §170.27.1.F. provides for Conditional Use Permits to allow impacts to wetlands and wetland buffers if standards related to demonstration that no practicable alternative exists, impact avoidance was considered, impacts were minimized, and mitigation has been sought.

Planning Staff feels that the applicant considered the criteria of practical alternative, avoidance, minimization, and mitigation and propose to create minimal wetland/wetland buffer disturbance on the site.

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the application as complete, note it is not of regional impact, hold a public hearing, make the necessary and supporting findings of fact, and vote to approve the Conditional Use Permit with the following subsequent conditions, as the plans meet the standards outlined.

Subsequent Condition to Be Met Prior to Signing of the Plans:
1. Approval of Site Plan (P22-63);

P22-65/COND-2022-0029 80 INDUSTRIAL PARK DRIVE



Property Information

Property ID	G0003-A00100
Location	80 INDUSTRIAL PARK RD
Owner	RECON REALTY LLC
Land Use	400
Zoning Code	CM

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 5/3/2021
Data updated Daily

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

City of Dover, New Hampshire
CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #:		Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: White Birch Armory Telephone # 603-330-0146

Address of Applicant: 80 Industrial Park Drive Dover, NH 03820

E-Mail Address: sean@wbarmory.com

Name of Property Owner (if different from applicant): Recon Realty, LLC Telephone # 603-330-0146

Address of Property Owner: 80 Industrial Park Drive Dover, NH 03820

PROPERTY INFORMATION

Assessor's Map # G Lot(s) # ~~3-A1~~ 3-A-100

Address of Property: 80 Industrial Park Drive

Zoning District(s) CM Overlay District(s) N/A

Existing Use of Property: Commercial Building w/Associated Parking

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

☐ Conservation District	☐ RCM Use Overlay District	☐ Gateway District
☐ Groundwater Protection	☐ Off-Street Parking and Loading	☐ Alternative Treatment Center
☒ Wetland Protection District	☐ Central Business District	☐ Heritage Residential District

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

Wetland buffer impacts totaling 6,975 sf associated with expanded parking, additional drainage and necessary grading. No wetlands are being impacted.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: ~~N/A~~

NH DES Alteration of Terrain Permit - Pending

Name of Professional That Prepared Plans: Stephen J. Haight, PE - Civilworks New England

Address P.O. Box 1166, Dover, NH 03821 Telephone #: 603-749-0443

Professional License #: Stephen J. Haight, PE #7978 E-mail address: shaight@civilworksne.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of Property Owner: _____ Date: 6/22/22

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent: _____ Date: 6/22/22

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner: _____ Date: 6/22/22

CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	MAILING ADDRESS
G	3-A1	Recon Realty, LLC	80 Industrial Park Drive Dover, NH 03820

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS
	White Birch Armory	80 Industrial Park Drive Dover, NH 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS
Stephen J. Haight, PE	Civilworks New England	P.O. Box 1166 Dover, NH 03821
Kevin McEneaney, LLS	McEneaney Survey Associates	24 Chestnut Street Dover, NH 03820

Conservation Easement Holder: N/A

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

C. City of Dover Conditional Use Permit for White Birch Armory, (Owner: Recon Realty, LLC), (Agent: Civilworks New England), Assessor's Map G, Lot 3-A1, zoned CM, located at 80 Industrial Park Drive. Proposal is for a 20,287 square foot addition with associated expanded parking, additional drainage and grading, creating 6,975 square feet of wetland buffer impact.

Joe Griffin with Civilworks New England was present to explain the application.

J. Aube: What are the conditions of the buffer today?

J. Griffin: The buffer today is a wooded, brush and grass mix.

J. Aube noted that the area is currently industrial.

J. Aube: Is there any opportunity for buffer enhancement elsewhere?

J. Griffin: The buffer impacts were minimized to the greatest extent possible.

J. Griffin explained the use of the different seed mixes to K. Murphy.

K. Murphy moved to endorse the application based on the proximity of the site to existing development, the efforts to meet AOT standards, with a recommendation that the applicant indicates to the Planning Board that no vernal pools are present and that the functions and values of the wetlands will not be degraded. J. Aube seconded. Vote: 4 yes.

D. City of Dover Conditional Use Permit and NHDES Expedited Minimum Impact Wetland Permit for William C. Fisher and Chaney N. Fisher, (Agent: Ross Engineering, LLC), Assessor's Map 7, Lot 2, zoned R-20, located at 1 Boston Harbor Rd. Proposal is to install a 960 square foot addition, new deck stairs, an outdoor shower, replace the existing driveway with pervious pavers, install a pervious paver walkway and concrete pad for utility equipment creating 534 square feet of temporary wetland impact (419 square feet within the Conservation District) and 2,890 square feet of permanent wetland impact (1,306 within the Conservation District).

Alex Ross was present to explain the application.

J. Aube: Can you speak to the decrease in lot coverage?

A. Ross: It went from 39% percent to a proposed 25%.

J. Aube: Is there any opportunity for stormwater management?

A. Ross: Was considered but the site is very constrained by the lot size. With the pervious pavers it should allow stormwater to shed off and infiltrate.

DRAFT

B A G

LAND CONSULTANTS

October 4, 2022

Joseph P. Griffin, P.E.
Project Manager
Civilworks New England
181 Watson Road
PO Box 1166
Dover, NH 03821

RE: Tax Map G; Lot 3A-100 (8.0 Ac. +/-)
80 Industrial Park Drive, Dover, NH

Dear Joe:

Vernal Pool & Wetland Assessment Study

Our office identified and delineated the jurisdictional wetlands on October 4, 2021. In April of 2022, we visited the flagged wetlands on this property and we did not observe any areas that would potentially support primary and secondary vernal pool species. There are no vernal pools on this project.

This project will not be impacting any wetlands. Consequently, there will only be minor disturbances to the wetland buffer. Currently, this project's wetlands have weak to non-existent functions and values. In our professional opinion, the proposed activities and land disturbances will have no significant impact to the functions and values of the existing wetland.

Please call if you have any additional questions concerning soils or wetlands on this property.

Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Wetland Scientist

BAG:3272A

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 088
CERTIFIED WETLAND SCIENTIST

White Birch Armory
80 Industrial Park Dr.
Dover, NH 03820

June 22, 2022

City of Dover
Planning Board
288 Central Ave
Dover, NH 03820

Ref: White Birch Armory
80 Industrial Park Dr, Tax Map G, Lot 3A-1
Dover, NH 03820

Re: Letter of Authorization

Sean Manning of White Birch Armory authorizes, Civilworks New England to represent the applicant to the State of New Hampshire, the City of Dover Planning Board and any other Dover Board or Committee relative to the pursuit of permits for the development of the subject parcel.

Sincerely,

Sean Manning – White Birch Armory

RELEASE OF RESTRICTIONS

WHEREAS, the BUSINESS FINANCE AUTHORITY (a public body corporate and politic organized under the laws of the State of New Hampshire) of 2 Pillsbury Street, Suite 201, Concord, NH 03301, is the successor in interest to the Industrial Development Authority of New Hampshire ; and said Industrial Development Authority of New Hampshire, in turn, is the successor in interest to the Industrial Park Authority, which did make a restrictive covenant agreement dated November 21, 1958, recorded in Strafford County Registry of Deeds, Book 697, Page 325, and a certain Modification Agreement dated August 31, 1962, recorded in said Registry at book 759, Page 339 with respect to industrial park located at Littleworth Road and Industrial Park Road in the City of Dover; and

WHEREAS, 74 INDUSTRIAL PARK, LLC, a New Hampshire limited liability company, of 210 Commerce Way, Suite 210, Portsmouth, New Hampshire, 03801, is the owner of Lot #4 (Industrial Park Road, Dover, New Hampshire) as shown on plan entitled "Proposed Development, S.E.N.H Industrial Park Property, Dover, N.H"., C.L. Davis & Associates, Engineers, dated March 31, 1958, revised October 5, 1961, July 19, 1963, February 23, 1965, July 14, 1965, and December 15, 1965, a copy of which is recorded in the Strafford County Registry of Deeds, Pocket #6, Folder #2, as Plan #38C, which is subject to the covenants in the restrictive covenant agreement referenced above and which was conveyed to 74 Industrial Park, LLC, by Quitclaim Deed of Collins & Aikman Automotive Interiors, Inc., dated September 24, 2004, recorded at Strafford County Registry of Deeds at Book 3071, Page 131; and

WHEREAS, the Said Business Finance Authority and 74 Industrial Park, LLC have agreed to terminate the Building Set-Backs provisions as set forth in Paragraph III, C of restrictive covenant agreement recorded at Book 697, Page 325 with respect to said Lot #4, provided that any building or other improvements shall comply with City of Dover regulations and ordinances with respect to set-back requirements.

NOW THEREFORE, the undersigned hereby agrees that the building set-back provisions of the restrictive covenant agreement recorded at Book 697, Page 325 shall no longer apply to Lot #4 (Industrial Park Road, Dover, New Hampshire) in this industrial park.

Executed this 28 day of June, 2019.

Business Finance Authority

By: _____
James Key-Wallace, Executive Director

State of New Hampshire
County of Merrimack

The foregoing instrument was acknowledged before me this 28 day of June, 2019, by James Key-Wallace, Executive Director of the Business Finance Authority, a body public corporate and politic organized under the laws of the State of New Hampshire, on behalf of said Business Finance Authority.

_____
Notary Public/Justice of the Peace
My Commission expires:

BRENDA L. PELLETIER
Notary Public - New Hampshire
My Commission Expires December 6, 2022

Whereas A petition was made on the 20th day of Feb 1888 by the City of Dover to the County Commissioners for the County of Strafford to Estimate the Value of the property of the Dover Aqueduct Company otherwise the Proprietors of the Dover Aqueduct (also the property of other Aqueduct Companies) as provided for in Section 19 of the City Charter of the City of Dover (Chapter 256 of the Laws of 1881) as amended and an award was made by said Commissioners that said City of Dover should pay to said Dover Aqueduct Company the sum of Twenty Thousand Dollars $20,000 and allow said Dover Aqueduct Co. certain other considerations as more fully appears in said Com'rs finding a copy of which is hereunto annexed. Said sum and other considerations being rec'd as damages — the estimated value of the property of said Dover Aqueduct Co. which award or finding was filed with the City Clerk of said City of Dover April 13. 1888. And whereas said Twenty Thousand Dollars ($20000) has been paid to me this day & being legally authorized by said Dover Aqueduct Co to receive the same in satisfaction of said award but with the understanding that said "other considerations" shall be complied with, & do hereby acknowledge the receipt of said sum of Twenty Thousand Dollars in full payment and satisfaction of all money to be paid under said award — And the right of the said City to said property of the said Dover Aqueduct Co. has now become vested and complete in accordance with said Section 19 of said Chapter as amended — Dover N.H. April 30 1888

Witness E R Brown

Jos. H. Thayer Pres.
Treasurer of the Dover Aqueduct Co

D04

In the Matter of Assessment of damages for the taking of the property and Franchise of the Dover Aqueduct Company by the City of Dover.

The Commissioners to whom the assessment of said damages was referred in accordance with the agreement of said Dover Aqueduct Company and said City of Dover now on this 2nd day award that said City shall pay to said Aqueduct Company the sum of Twenty Thousand Dollars ($20,000) in full for all the property franchise rights and privileges of said Company except the tools, windmill pumps and Engines of said Company and such pipes as they may have on hand.

Said Company to collect and retain its rents and income for the year 1888 and to keep its works in running order and pay all running expenses thereof during said year. Said City to repair and make good any damage to the pipes of said Company occasioned during said year by any interference of said City with the pipes of said City with the pipes of said Company in the construction of the proposed new water works Dover N.H.

April 13th 1888 Signed Benjamin F Hanson
John Kimball
Joseph D Roberts
Commissioners of Strafford County.

Rec'd 25 m June 26/88 Attest Frank D Tompkins Reg

Know all Men by these Presents

THAT I, Leon H Thompson of Dover in the County of Strafford and State of New Hampshire, (single-man),

for and in consideration of the sum of one dollar and other valuable considerations to me in hand, before the delivery hereof, well and truly paid by Jesse W Bridgham and Lloyd H.Bridgham, both of Dover aforesaid, the receipt whereof I do hereby acknowledge, have granted, bargained and sold, and by these presents do give, grant, bargain, sell, alien, enfeoff, convey and confirm unto the said Jesse W Bridgham and Lloyd H.Bridgham, as joint-tenants (not tenants-in-common), their heirs and assigns forever,

(U.S.Rev.)
($2.20)
(L H T)
(6/23/42)

a certain lot of land, with the buildings thereon, situated in said Dover, on the southerly side of the Littleworth Road, so-called, and bounded and described as follows, to-wit:- Beginning at a point on the Southerly side of said Littleworth Road at the Northeast corner of land of George E Buzzell and running Southerly by said Buzzell's land as the fence now stands and by land of John Grady to an iron hub set in the ground; thence Southeasterly by said Grady's land and land of the heirs of Samuel Hanson to the Boston and Maine Railroad; thence Northeasterly by said Railroad land to land of N.C.Nutter; thence Northwesterly and thence Northeasterly along the Southwesterly and Northwesterly side lines respectively of said land of said late N.C. Nutter to said Littleworth Road; thence Westerly along said Littleworth Road to a lot about one-half(½) acre belonging to the heirs of Jonathan T Young formerly but now of the within named grantor; thence Southerly, thence Westerly and thence Northerly along the Easterly, Southerly and Westerly side line respectively of said lot, formerly of said Young heirs, now of the within named grantor, to said LittleworthRoad; thence along said road to the bounds begun at; containing seventy-six(76)acres, more or less. (For a further description see Strafford County Registry of Deeds, Book 391, Page 39 and Book 414 Page 239) Excepting from the above described premises a strip of land conveyed to The State of New Hampshire, bordering said Highway, containing one and thirty-eight one hundredths(1.38)acres, more or less, as appears of record in said Registry of Deeds; also subject to rights of City of Dover to maintain water pipe system through said premises if any such right said City of Dover may have.

The taxes assessed upon and against said premises for the year 1942 are to be paid one-fourth thereof by Leon H.Thompson and the other three-fourths thereof to be paid by the within named grantees.

TO HAVE AND TO HOLD the said granted premises, with all the privileges and appurtenances to the same belonging, to them the said grantees and the survivor of them as joint-tenants and their heirs and assigns, to them and their only proper use and benefit forever. And I the said Leon H Thompson and heirs, executors and administrators, do hereby covenant, grant and agree to and with the said grantees and the survivor of them, as joint-tenants and their heirs and assigns that until the delivery hereof I am the lawful owner of the said premises and am seized and possessed thereof in my own right in fee simple; and have full power and lawful authority to grant and convey the same in manner aforesaid; that the premises are free and clear from all and every incumbrance whatsoever except apportioned taxes for year 1942 as above stated

and that I and my heirs, executors and administrators shall and will WARRANT AND DEFEND the same to the said grantees, and the survivor of them, as joint-tenants and their heirs and assigns, against the lawful claims and demands of any person or persons whomsoever.

~~And I, wife of the said in consideration aforesaid, do hereby relinquish my right of dower in the before mentioned premises.~~

And ~~we and each of us~~ do hereby release, discharge and waive all such rights of exemption from attachment and levy, or sale on execution, and such other rights whatsoever in said premises, and in each and every part thereof, as ~~BY~~ FAMILY HOMESTEAD, as are reserved or secured ~~to us or either of us,~~ by Chapter 214, Public Laws of the State of New Hampshire, or by any other statute or statutes of said State.

IN WITNESS WHEREOF, I have hereunto set my hand and seal, this 23rd day of June A.D.1942 ~~in the year of our Lord, 19-~~

Signed, sealed and delivered in the presence of us:

Frank E Blackburn Leon Thompson SEAL

STATE OF NEW HAMPSHIRE, Strafford SS. June 23, A. D. 19 42.

Personally appeared the above named Leon Thompson and acknowledged the foregoing instrument to be his voluntary act and deed—Before me:

~~Frank~~ E Blackburn Justice of the Peace.

Received 3:40 P.M. June 23, 1942. Examined by Anna M. Brown Register.

STATE OF NEW HAMPSHIRE, SS. A. D. 19

Personally appeared the above named and acknowledged the foregoing instrument to be voluntary act and deed—Before me:

Justice of the Peace.

Received Examined by Register.

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And it is agreed that said Trust Company, its successors and assigns, or any person in their behalf, may purchase at any sale or sales made as aforesaid, and that no other purchaser shall be answerable for the application of the purchase money.

IN WITNESS WHEREOF, **we** have hereunto set **our** hands and seals the 2ND day of **February** in the year of our Lord one thousand nine hundred and **sixty two.**

Signed, sealed and delivered in the presence of

W. H. Acorn — Leroy C. Heinse
to both — Hazel M. Heinse

State of New Hampshire, Strafford, ss. February 2 1962.

Personally appearing the above ~~named~~ **Leroy C. and Hazel M. Heinse** acknowledged the foregoing instrument to be **their** free act and deed, before me,

Cynthia M Taylor *Justice of the ~~Peace~~*
Notary Public

RECEIVED 3:35 P.M. FEB 20, 1962 EXAMINED BY * * * * * * Marjorie E. Holmes REGISTER

Q U I T C L A I M D E E D

The Industrial Park Authority of the State of New Hampshire, an agency of the State of New Hampshire, duly established by law and having its principal place of business at Concord, County of Merrimack and State of New Hampshire, for consideration paid, grants to the City of Dover, a municipal corporation duly organized under New Hampshire law, with quitclaim covenants,

A strip of land 60 feet in width, for a public highway, known as "Industrial Park Road" and being shown on plan entitled "Proposed Development, S. E. N. H. Industrial Park, Property Lines, Dover, N. H." and recorded in Strafford County Register of Deeds, Pocket 6, Folder 2, Plan #38, and further described as follows:

Beginning at a concrete bound on the southwesterly side line of the Littleworth Road at a point 257.9 feet northwesterly from the northerly corner of land of Lloyd Bridgham and running S 70° 34' W 1047.1 feet by lots R-9, 9 and 8 to a concrete bound, thence continuing on a curve to the left with radius of 400 feet for a distance of 661.4 feet by said lot 8 to a concrete bound; thence continuing S 24°10'E 545.1 feet by lots 8 and 7A to a concrete bound; thence continuing on a curve to the left with radius of 100 feet for a distance of 157.1 feet by lot 7A to a concrete bound; thence continuing N 65°50'E 698.7 feet by lots 7A and 7B to a concrete bound; thence running S 25°22'E 60.0 feet by land of Tobe Realty Corp. and the southwesterly end of another street to a concrete bound; thence running S 65°50'W 700.0 feet by lot 6 to a concrete bound; thence continuing on a curve to the right with radius of 160 feet for a distance of 251.3 feet by lot 5 to a concrete bound; thence continuing N 24°10'W 545.1 feet by lots 5 and 4 to a concrete bound; thence continuing on a curve to the right with radius of 460 feet for a distance of 760.6 feet by lots 4 and 3 to a concrete bound; thence continuing N 70°34'E 831.7 feet by lots 3, 2 and 1 to a concrete bound; thence continuing on a curve to the left with radius of 50 feet for a distance 131.9 feet by lot 1 to a concrete bound; thence running easterly on a curve to the right with radius of 1009.1 feet for a distance of 169.3 feet by said Littleworth Road to a concrete bound; thence running S 59°30'E 78.4 feet by said Littleworth Road to the point of beginning; together with water mains and sewers existing in said Road, and the following water main

See Plan #309 Pocket 6 Folder 2
Right of Record recorded in Book 759 Page 141

and easement 20 feet in width, the centerline of which begins on the northwesterly side of said Road at a point about 170 feet southwesterly from the southwest corner of lot 3 and runs northerly across parts of lots 3 and 4 to a point on the southerly side line of the existing City easement at a point about 120 feet easterly from the southeast corner of land of Margaret Sowerby.

Reserving the right to cross said Road with railroad sidetracks now under construction or as may be required in the future.

Being a portion of the premises described in deed of Dover Development Corp. to Industrial Park Autnority dated March 31, 1958 and recorded in Strafford County Register of Deeds, Book 687 page 477.

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IN WITNESS WHEREOF, The Industrial Park Authority of the State of New Hampshire, through its Board of Directors has caused the within instrument to be signed by its Chairman and its official seal affixed hereto, **this 15th day of December, 1961.**

THE INDUSTRIAL PARK AUTHORITY OF THE STATE OF NEW HAMPSHIRE

By James P. Rogers, Chairman

The State of New Hampshire

County of Belknap

On this the 15th day of December, 1961, before me, the undersigned officer, personally appeared James P. Rogers who acknowledged himself to be the Chairman of The Industrial Park Authority of the State of New Hampshire and duly authorized to sign, execute and deliver the within instrument for the purpose therein stated.

Before me,

Ellen J. Martin
Justice of the Peace

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I, Stanley M. Burns, Clerk of Dover Development Corporation, a corporation organized and existing by law and having a principal place of business at Dover, County of Strafford and State of New Hampshire, do hereby certify that at a meeting of the Directors of Dover Development Corporation duly called and held on December 21, 1961, at which a quorum was present and voting throughout, the following resolution was unanimously adopted:

VOTED: That the Dover Development Corporation hereby consents to and joins with the Industrial Park Authority of the State of New Hampshire, insofar as its interest may appear and be concerned, in conveying to the City of Dover for acceptance as a public street, a certain tract of land 60 feet in width, to be known as "Industrial Park Road," and more particularly shown on plan entitled "Proposed Development, S. E. N. H. Industrial Park, Property Lines, Dover, N. H.," and recorded in Strafford County Registry of Deeds, Pocket 6, Folder 2, Plan #38, as more particularly shown on said plan and as more particularly described in a certain quitclaim deed from the Industrial Park Authority to the City of Dover, N. H., dated December 15, 1961, which plan and deed, by reference, are incorporated herein and made a part hereof for the same purposes and to the same effect as if fully set forth herein, and that said plan and deed, as submitted to this meeting, be and the same hereby are accepted, ratified, confirmed and approved, and that a copy of this vote, certified by the Clerk, be attached to and by reference incorporated in and made a part of said deed.

I further certify that the foregoing resolution is still in full force and effect and has not been altered, amended, supplemented, modified or rescinded.

Dated this 21st day of December, 1961.

Stanley M. Burns
Clerk, Dover Development Corporation

RECEIVED 8:30 A.M. FEB 21, 1962 EXAMINED BY Marjorie E. Holmes REGISTER
* * * * * *

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Refer Plan 38 A Packet 6 Folder 2

Q U I T C L A I M D E E D

The Industrial Park Authority of the State of New Hampshire, an agency of the State of New Hampshire, duly established by law and having its principal place of business at Concord, County of Merrimack and State of New Hampshire, for consideration paid, grants to the City of Dover, a municipal corporation duly organized under New Hampshire law, with quitclaim covenants,

A strip of land 60 feet in width, for a public highway, known as "Industrial Park Road" and being shown on plan entitled "Proposed Development, S. E. N. H. Industrial Park, Property Lines, Dover, N. H." and recorded in Strafford County Register of Deeds, Pocket 6, Folder 2, Plan #38, and further described as follows:

Beginning at a concrete bound on the southwesterly side line of the Littleworth Road at a point 257.9 feet northwesterly from the northerly corner of land of Lloyd Bridgham and running S 70° 34' W 1047.1 feet by lots R-9, 9 and 8 to a concrete bound, thence continuing on a curve to the left with radius of 400 feet for a distance of 661.4 feet by said lot 8 to a concrete bound; thence continuing S 24°10'E 545.1 feet by lots 8 and 7A to a concrete bound; thence continuing on a curve to the left with radius of 100 feet for a distance of 157.1 feet by lot 7A to a concrete bound; thence continuing N 65°50'E 696.7 feet by lots 7A and 7B to a concrete bound; thence running S 25°22'E 60.0 feet by land of Tobe Realty Corp. and the southwesterly end of another street to a concrete bound; thence running S 65°50'W 700.0 feet by lot 6 to a concrete bound; thence continuing on a curve to the right with radius of 160 feet for a distance of 251.3 feet by lot 5 to a concrete bound; thence continuing N 24°10'W 545.1 feet by lots 5 and 4 to a concrete bound; thence continuing on a curve to the right with radius of 460 feet for a distance of 760.6 feet by lots 4 and 3 to a concrete bound; thence continuing N 70°34'E 831.7 feet by lots 3, 2 and 1 to a concrete bound; thence continuing on a curve to the left with radius of 50 feet for a distance 131.9 feet by lot 1 to a concrete bound; thence running easterly on a curve to the right with radius of 1009.1 feet for a distance of 169.3 feet by said Littleworth Road to a concrete bound; thence running S 59°30'E 78.4 feet by said Littleworth Road to the point of beginning; together with water mains and sewers existing in said Road, and the following water main and easement 20 feet in width, the centerline of which begins on the northwesterly side of said Road at a point about 170 feet southwesterly from the southwest corner of lot 3 and runs northerly across parts of lots 3 and 4 to a point on the southerly side line of the existing City easement at a point about 120 feet easterly from the southeast corner of land of Margaret Sowerby.

Reserving the right to cross said Road with railroad sidetracks now under construction or as may be required in the future.

Being a portion of the premises described in deed of Dover Development Corp. to Industrial Park Autnority dated March 31, 1958 and recorded in Strafford County Register of Deeds, Book 687 page 477.

IN WITNESS WHEREOF, The Industrial Park Authority of the State of New Hampshire, through its Board of Directors has caused the within instrument to be signed by its Chairman and its official seal affixed hereto, **this 15th day of December, 1961.**

THE INDUSTRIAL PARK AUTHORITY OF THE STATE OF NEW HAMPSHIRE

Witness:

Thelma E. Holmes

By James P. Rogers Chairman

The State of New Hampshire.

County of Belknap

On this the 15th day of December, 1961, before me, the undersigned officer, personally appeared James P. Rogers who acknowledged himself to be the Chairman of The Industrial Park Authority of the State of New Hampshire and duly authorized to sign, execute and deliver

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the within instrument for the purpose therein stated.

Before me,

Ellen J Martin
Justice of the Peace

IN WITNESS WHEREOF, the Dover Development Corporation by vote of its Board of Directors, by its President, Fred E. Easter, duly authorized, has caused the within instrument to be signed and its official seal affixed this 1st day of March 1963.

Witness:
William E Barnes

DOVER DEVELOPMENT CORPORATION
By Fred E. Easter
Its President

THE STATE OF NEW HAMPSHIRE

STRAFFORD, SS. March 1, 1963

Personally appeared DOVER DEVELOPMENT CORPORATION by its President, Fred E. Easter, duly authorized, and acknowledged the foregoing to the b the voluntary act and deed of the said Corporation. Before me,

William E Barnes
Justice of the Peace

I, Stanley M. Burns, Clerk of Dover Development Corporation, a corporation organized and existing by law and having a principal place of business at Dover, County of Strafford and State of New Hampshire, do hereby certify that at a meeting of the Directors of Dover Development Corporation duly called and held on December 21, 1961, at which a quorum was present and voting throughout, the following resolution was unanimously adopted:

VOTED: That the Dover Development Corporation hereby consents to and joins with the Industrial Park Authority of the State of New Hampshire, insofar as its interest may appear and be concerned, in conveying to the City of Dover for acceptance as a public street, a certain tract of land 60 feet in width, to be known as "Industrial Park Road," and more particularly shown on plan entitled "Proposed Development, S. E. N. H. Industrial Park, Property Lines, Dover, N. H.," and recorded in Strafford County Registry of Deeds, Pocket 6, Folder 2, Plan #38, as more particularly shown on said plan and as more particularly described in a certain quitclaim deed from the Industrial Park Authority to the City of Dover, N. H., dated December 15, 1961, which plan and deed, by reference, are incorporated herein and made a part hereof for the same purposes and to the same effect as if fully set forth herein, and that said plan and deed, as submitted to this meeting, be and the same hereby are accepted, ratified, confirmed and approved, and that a copy of this vote, certified by the Clerk, be attached to and by reference incorporated in and made a part of said deed.

I further certify that the foregoing resolution is still in full force and effect and has not been altered, amended, supplemented, modified or rescinded.

Dated this 21st day of December, 1961.

Stanley M Burns
Clerk, Dover Development Corporation

RECEIVED 4:55 P.M. MAR 1, 1963 EXAMINED BY Marjorie C. Holmes REGIST
* * * * * *

I, Vasilike Kounas, Secretary of Industrial Development Authority, do hereby certify that at a meeting of the Industrial Development Authority duly called and held on April 23, 1969, at which a quorum was present and voting throughout, the following resolution was unanimously adopted:

VOTED: To sell Lots 4-B, 9-B and 10A-2, in the Southeastern New Hampshire Industrial Park, at Dover, New Hampshire, comprising 13.2 acres at a sale price of $2,500 per acre for Lot 4-B (5.7 acres) and $3,000 per acre for Lots 9-B and 10A-2 (4.5 and 3 acres) for a total price of $36,750 to Davidson Rubber Company; subject to a sewer easement of 20 feet through both Lots 9-B and 10A-2, and to authorize the Chairman to sign the necessary legal documents to effect the sale; and further to grant to Davidson Rubber Company a first refusal on Lot 10-B, consisting of 3 acres at a sale price of $3,000 per acre, or a total of $9,000, in the event the land is not bought by New Hampshire Distributors, Inc., of Concord, New Hampshire; and to authorize the Chairman to sign any necessary legal papers.

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I further certify that Milton Shapiro is the duly elected, qualified and acting Chairman of the Industrial Development Authority, and that the foregoing vote is still in full force and effect and has not been altered, amended, supplemented or rescinded.

Dated this 23 day of June, 1969

Vasilike Kounas
Secretary

1969 JUN 25 A 10:31

QUITCLAIM DEED

The INDUSTRIAL DEVELOPMENT AUTHORITY, a body corporate and an agency of the State of New Hampshire, having a principal place of business in Concord, County of Merrimack and State of New Hampshire (hereinafter called the Grantor), for consideration paid, grants to the DAVIDSON RUBBER COMPANY, INC., a corporation duly organized and existing under the laws of the State of Delaware and having a principal place of business in Dover, County of Strafford and State of New Hampshire (hereinafter called the Grantee), with quitclaim covenants, certain tracts of land situate in the S. E. N. H. Industrial Park, Dover, said County and State, and more particularly described as follows:

Tract No. 1, Lot No. 4B:

A certain tract of land situate in the S. E. N. H. Industrial Park in Dover, New Hampshire, known as Lot 4B, bounded and described as follows:

Beginning at a steel stake set in the ground on the westerly side of Industrial Park Road and at the southerly corner of the premises herein conveyed and at the northerly corner of Lot 4A; thence running S 65° 50' W by Lot 4A a distance of 495.8 feet to a steel stake set in the ground at the southwesterly corner of Lot 4B and at the northwesterly corner of Lot 4A at land now or formerly of Frederick E. and Ruth K. Riley; thence running N 07° 37' E by land of said Riley a distance of 831.1 feet to the southwesterly corner of Lot 4C; thence turning at an angle and running S 85° 24' E 249.9 feet; thence turning at an angle and running S 53° 59' E 140.9 feet to a steel stake set in the ground on the westerly side of said road and at the northeasterly corner of the lot herein conveyed; thence turning at an angle and running in a southerly direction by the westerly side of said road on a radius to the left of 460 feet a distance of 483.2 feet; thence running

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S 24° 10' E by the westerly side of said road a distance of 64.7 feet to the point of beginning; all of said distances being more or less and said tract of land containing 5.7 acres, more or less.

Excepting and reserving, however, from the above conveyance of Lot 4B in favor of the City of Dover, its successors and assigns, a permanent right of way 20 feet in width, extending along the westerly and northeasterly side of the above-described Lot 4B, for the purpose (at the expense of the City of Dover) of installing, maintaining, using, operating, repairing, and reconstructing a water main upon, under, over and across the above described tract of land, together with the right of ingress thereto and egress therefrom, along, on and within said 20-foot right of way for any and all purposes connected with the proper and reasonable installation, maintenance, use, operation, repair, reconstruction, and patrolling thereof for any of the purposes and uses hereinbefore specified.

Tract No. 2, Lot 9B:

A certain tract of land situate in the S. E. N. H. Industrial Park in Dover, New Hampshire, formerly known as Lot 9, now known as Lot 9B, bounded and described as follows:

Beginning at a concrete bound set in the ground on the southerly side of Industrial Park Road and at the northwesterly corner of Lot 9B herein conveyed; thence running N 70° 34' E by the southerly side of said road a distance of 554.4 feet to a point at the northwesterly corner of Lot 9A; thence turning at an angle and running S 24° 10' E a distance of 334.9 feet to a point at the southwesterly corner of Lot 9A; thence turning at an angle and running S 65° 50' W a distance of 552.5 feet to a concrete bound set in the ground at the southwesterly corner of Lot 9B herein conveyed; thence turning at an angle and running N 24° 10' W a distance of 380.6 feet to the point of beginning; all of said distances being more or less and said tract containing 4.5 acres, more or less.

Excepting and reserving an easement 20 feet in width for a sewer extending southerly from Industrial Park Road along the easterly side of Lot 9B and extending 20 feet southerly into Lot 10A-2.

Tract No. 3, Lot 10A-2:

A certain tract of land situate in S. E. N. H. Industrial Park in Dover, New Hampshire, known as Lot 10A-2, bounded and described as follows:

Beginning at a concrete bound set in the ground at the northwesterly corner of Lot 10A-2 herein conveyed and at the northeasterly corner of Lot 10A-1; thence running N 65° 50' E by Lot 9 a distance of 335.1 feet to a concrete bound set in the ground at the northeasterly corner of Lot 10A-2 herein conveyed and at the northwesterly corner of Lot 10B; thence turning at an angle and running S 24° 10' E by the westerly side of Lot 10B a distance of 394.3 feet to a concrete bound set in the ground at the southeasterly corner of Lot 10A-2 herein conveyed and at the southwesterly corner of Lot 10B and at land now or formerly of Tobe Realty Co.; thence turning at an angle and running S 67° 40' W by said Tobe land a distance of 261.7 feet; thence running S 60° 18' W by said Tobe land a distance of 64.42 feet; thence turning S 61° 36' W by said Tobe land a distance of 9.3 feet to a concrete bound set in the ground at the southwesterly corner of Lot 10A-2 herein conveyed and at the southeasterly corner of Lot 10A-1; thence turning at an angle and running N 24° 10' W by the easterly side of Lot 10A-1 a distance of 392.8 feet to the point of beginning, all of said distances being more or less, said Lot 10A-2 containing three acres, more or less.

This conveyance is made subject to a restrictive covenant agreement dated November 21, 1958, recorded in Strafford County Registry of Deeds, Book 697, Page 325, and a certain modification agreement dated August 31, 1962, recorded in said Registry, Book 759, Page 339, the provisions of which modifications are hereby specifically made applicable to the premises herein conveyed.

All of the above tracts of land are hereby conveyed subject to the terms, conditions, provisions, exceptions, reservations and restrictive covenants heretofore set forth in connection with the conveyance of any of said Lots to or from Industrial Park Authority and recorded in Strafford County Registry, including but not limited to any and all permanent rights of way in favor of the City of Dover, prior or subsequent grantees and grantors of Industrial Park Authority and Dover Development Corporation with reference to railroad, water and drainage easements, including the installation, maintenance, use, operation, repair and reconstruction of same, upon, under, over and across the above-described premises, together with the right of ingress thereto and egress therefrom along, on and within said rights of way as more particularly shown and reserved on said plans and deeds for any and all purposes connected with the proper and reasonable installation, re-

construction, maintenance, use, operation, repair and patrolling thereof for any of the purposes and uses hereinabove specified or reserved.

All of the terms, conditions, provisions, reservations, exceptions, restrictions and covenants heretofore made, as recorded in the Strafford County Registry of Deeds, with reference to the development and use of said S. E. N. H. Industrial Park shall inure to and be binding upon the successors and assigns of the parties hereto.

Meaning hereby to convey Lots 4B, 9B and 10A-2 as shown on Proposed Development, S. E. N. H. Industrial Park Property, Dover, New Hampshire, G. L. Davis & Associates, Engineers, 44 Elm Street, Dover, New Hampshire, Scale 1" = 100', March 31, 1958, revised October 5, 1961, July 19, 1963, February 23, 1965, July 14, 1965, December 15, 1965, and August 22, 1966, said plan being recorded in Strafford County Registry of Deeds, Pocket 6, Folder 2, Plan No. 38C.

Being a portion of the premises conveyed by deed of Dover Development Corporation to Industrial Park Authority, dated March 31, 1958, recorded in said Registry, Book 687, Page 477, which plan and deed by reference are incorporated herein and made a part hereof.

Witness the hand and seal of said corporation this 23rd day of June, 1969.

Witness:

INDUSTRIAL DEVELOPMENT AUTHORITY

By Milton Shapiro
Chairman

THE STATE OF NEW HAMPSHIRE

, ss. , 1969

personally appeared and acknowledged the foregoing instrument to be the voluntary act and deed of said corporation.

Before me,

STATE OF NEW HAMPSHIRE
TAX ON TRANSFER OF REAL PROPERTY
STATE TAX COMMISSION
JUN--'69
$ 36.80
R.S.A. 78-B
P.B. 10658
012201

Justice of the Peace/
Notary Public
My Com. Exp. Dec 1970

EXAMINED BY: REGISTER

Return to:
Public Service of NH
Attn: Pauline Boire
PO Box 330
Manchester, NH 03105
EBA- 25780
STORMS# 3291664
Town: 129 Dover
Tax Parcel ID: Map G Lot 3-A-100

Doc # 200006937 **05/12/2020 12:14:43 PM**
Book 4759 Page 736 **Page 1 of 2**
Catherine A. Berube
Register of Deeds, Strafford County
LCHIP STA157622 25.00
TRANS TAX ST850928 40.00

EASEMENT DEED

KNOW ALL MEN BY THESE PRESENTS that **RECON REALTY, LLC** of 18 Common Street, Rochester, New Hampshire 03867, (hereinafter the Grantor(s)), for consideration paid, grant(s) to PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE (PSNH), d/b/a Eversource Energy, a corporation duly established by law, with a mailing address of P.O. Box 330, in Manchester, in the County of Hillsborough, in the State of New Hampshire, 03105, and CONSOLIDATED COMMUNICATIONS OF NORTHERN NEW ENGLAND COMPANY, LLC, a corporation duly established by law and having a mailing address of 100 Gay Street, Manchester, New Hampshire 03103 (hereinafter the Grantee(s)), and their successors and assigns forever as tenants in common, with QUITCLAIM COVENANTS:

The RIGHT and EASEMENT to lay, install, construct, reconstruct, operate, maintain, repair, replace, patrol and remove above/underground lines which may consist of wires, cables, pipes, ducts, conduits, manholes, and such testing terminals, transformers and foundations and enclosures for the same, vaults, pedestals, repeaters, markers, poles, and towers together with foundations, crossarms, braces, anchors, guys, grounds and other equipment, for transmitting electric current and/or communications and intelligence, and to do the necessary cutting and trimming of trees and brush, over, under and across a portion of the land owned by the Grantor(s) off **Industrial Park Road** in **Dover**, County of **Strafford**, State of New Hampshire.

Said easement will be located within the following described limits:

Beginning at a point on the Grantor's easterly boundary at Industrial Park Road, said point being at or across from PSNH pole numbered 305/14, thence extending above and/or underground in various directions as necessary to provide service to the premises as may be requested by the Grantor, its successors or assigns now or in the future, to include but not limited to a padmounted transformer to be numbered 305/14T1. The final location of the easement shall be determined by the location of the facilities as installed, whenever installed.

The width of this easement shall be 20 feet, measured either 10 feet on each side of the center line of the distribution lines as constructed, or, if less than 10 feet exists on either side to the nearest adjacent boundary line, measured 20 feet from the boundary line.

This easement grants the right for guying/anchoring facilities outside the 20-foot strip, together with the right to lay, install, construct, reconstruct, operate, maintain, repair, replace and remove any service cables and related equipment extending to any buildings or structures on said land to provide electric or telephone service and/or communications and intelligence thereto. This conveyance shall include the right of access from other land of the Grantor(s) for all purposes in connection with the exercise of the within granted easement; the right to excavate, trench, and backfill by men or machines and temporarily to place excavated earth and other material on adjacent land, provided that the land shall be restored by the Grantee(s) to substantially the condition in which it was immediately prior to such excavation, trenching, and backfilling; the right to go upon adjoining land when working on said lines and associated equipment; and the right to install temporary aboveground lines for temporary periods over and across said land of the Grantor(s) to provide continuity of service thereon when only underground line rights are requested.

The Grantor(s) for itself and its heirs, executors, administrators, successors and assigns, covenant(s) and agree(s) that it will not erect or maintain, or permit to be erected or maintained, any building or structure of any kind or nature upon the land over said easement and that it will not plant or permit to be planted any trees over said easement.

Meaning and intending to describe and convey an easement over a portion of the premises described in deed to Recon Realty, LLC dated November 19, 2019 recorded in the Strafford County Registry of Deeds, Book 4713, Page 625.

Witness our hand(s) this 30th day of April, 2020.

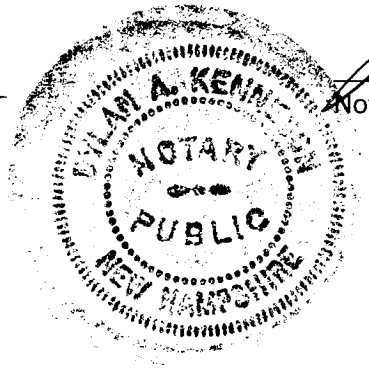
RECON REALTY, LLC

BY: _____
Sean Manning, Manager

State/Commonwealth of NEW HAMPSHIRE
County of STRAFFORD

The foregoing instrument was acknowledged before me this 30 day of APRIL, 2020, by Sean Manning, Manager of Recon Realty, LLC of Rochester, NH.

My Commission expires: 8 APR 2025



_____
Notary Public/Justice of the Peace

For recorder's use:
***Tax Stamp**: $ _____*
***Recording Fee**: $ _____*
Return to:
Devine, Millimet & Branch - Attn: RSK
111 Amherst Street
Manchester, NH 03101

E-Doc # 220013961 **09/15/2022 10:27:43 AM**
Book 5064 Page 604 **Page 1 of 24**
Catherine A. Berube
Register of Deeds, Strafford County
LCHIP STA201741 25.00
TRANS TAX ST859221 600.00

Property located in Dover, Strafford County, New Hampshire

EASEMENT DEED

RECON REALTY, LLC, a New Hampshire limited liability company with a mailing address at 80 Industrial Park Drive, Dover, New Hampshire 03820 (together with its successors and assigns, "Grantor"), for consideration paid, grants to Westfield, LLC, a New Hampshire limited liability company with a mailing address of c/o Summit Land Development, 340 Central Ave, Dover, NH, Suite 202 (together with its successors and permitted assigns, "Grantee") certain rights and easements over the Easement Area located on Grantor's Property, all as more particularly set forth below.

1. Definitions. The following terms shall have the meanings ascribed to such term as set forth below:

1.1 "Approvals" means all of the final, non-appealable approvals from all local, state and federal governmental agencies having jurisdiction over the Easement Area.

1.2 "City" means City of Dover, New Hampshire, a municipal corporation.

1.3 "Development" means the construction of the Driveway Improvements and the Grantee Underground Utilities in the Easement Area, together with the development of the Grantee Property.

1.4 "Driveway" means the access drive located in the Easement Area.

1.5 "Driveway Improvements" means any grading, paving, plowing, signage, traffic signals, and landscaping constructed in connection with the Driveway.

1.6 "Easement Area" means a fifty (50) foot wide strip of land over the Grantor Property, more particularly described as the "Proposed 50' Wide Access and Utility Easement" on the Easement Plan.

1.7 "Easement Plan" means that certain easement plan entitled "Access & Utility Easement Plan, Prepared for Recon Realty, LLC, Tax Map G, Lot No. 3-A-1, 80 Industrial Park Road, City of Dover, County of Strafford, State of New Hampshire" dated February 15, 2022, as revised, prepared by McEneaney Survey Associates of New England, recorded in the Strafford County Registry of Deeds as Plan #13739.

1.8 "Grantee Property" means a certain tract or parcel of land known as 64 Littleworth Road, Dover, New Hampshire, and being shown as "Proposed Lot 1" and "Remaining Land" on plan of land entitled Subdivision Plan of Land Prepared for Westfield, LLC, Tax Map G, Lot no. 2, NH Route 9 – Littleworth Road, City of Dover, County of Strafford, State of New Hampshire", dated June 21, 2021, prepared by McEneaney Survey Associates of New England and recorded in the Strafford County Registry of Deeds as Plan #12388-12390, containing +/- 86.52 acres known as City of Dover Tax Map G, Lot 2, being the land described in the Warranty Deed to Grantee dated February 12, 2020, recorded with the Strafford County Registry of Deeds at Book 4773, Page 471.

1.9 "Grantee Underground Utilities" means any Underground Utilities, or portions thereof, installed by Grantee in the Easement Area.

1.10 "Grantor Driveway Section" means the portion of the Driveway constructed by Grantor.

1.11 "Grantor Property" a certain tract or parcel of land containing +/- 8.09 acres shown as Map G, Lot 3A on the Subdivision Plan, as affected by the letter from the City of Dover's Assessor dated February 16, 2011, and recorded at Book 3908, Page 81, assigning to the property the new designation G-3-A-1, and as further affected by the Notice of Lot Designation Change (with acknowledgement and consent of Lot Owners) issued by the City of Dover dated September 30, 2019, recorded October 4, 2019, at Book 4696, Page 278, said Registry of Deeds, assigning to the property the new designation Map G, Lot 3-A-100.

1.11 "Grantee Underground Utilities Connections" has the meaning set forth in Section 5(iii).

1.12 "Site Plan Regulations" means Chapter 153 of the Code of the City of Dover (Site Review Regulations), as the same may be amended from time to time.

1.13 "Subdivision Plan" means a plan entitled "Subdivision Plan, 74 Industrial Park, LLC, 74 Industrial Park Road and Littleworth Road, Dover, New Hampshire," dated January 2, 2010, as revised, prepared by Tritech Engineering Corporation and recorded in the Strafford County Registry of Deeds as Plan DR99-024.

1.14 "Underground Utilities" means any underground public or private utility services and distribution systems in the Easement Area.

1.15 "Zoning Ordinances" means the Chapter 170 of the Code of the City of Dover (Zoning), as the same may be amended from time to time.

2. Grant of Easement: In consideration of Forty Thousand Dollars ($40,000), receipt of which is acknowledged by Grantor, Grantor hereby grants to Grantee the non-exclusive right and easement in perpetuity in common with others to use the Easement Area (i) for vehicular, bicycle and pedestrian ingress, egress and access over and through the Easement Area for the purposes of access to and from the Grantee Property to Industrial Park Road, (ii) to install Driveway Improvements and Grantee Underground Utilities thereon; and (iii) to maintain, repair and replace if necessary or as required by this Easement Deed the Driveway Improvements and Grantee Underground Utilities. Notwithstanding any dedication by Grantee to the City of the Easement Area or the Driveway as a public way in its plans to be approved by the City Planning Board, Grantee is hereby prohibited from assigning this Easement Deed, or any rights or interest in and to the Easement Area or the Driveway, to the City at any time in the future except upon fulfillment of each of the conditions described in Section 14 hereof. It is expressly agreed that any construction of the Driveway Improvements or Underground Utilities by Grantee, its successors and assigns, shall be constructed within the Easement Area shown on the Easement Plan solely at Grantee's or its successors and assigns cost and expense.

3. Reservation to Grantor; Use Restrictions on Grantee's Property.

(i) Reserving to Grantor, its successors and assigns, the use and enjoyment of said Easement Area for such purposes that do not interfere with the perpetual use thereof by the Grantee, its successors and assigns for the purposes contained herein, including without limitation, the right to utilize said Easement Area for access to and from the land of Grantor, the right to construct curb cuts and driveways to provide access to said Easement Area and to the portions of the Grantor Property on either side of the Easement Area and to hook into and utilize the utilities located within the Easement Area. At any time prior to the assignment of this Easement Deed to the City in compliance with Section 14 hereof (but not thereafter), Grantor shall have the right to construct roadways, sidewalks, surface curbs and other improvements in the Easement Area, provided, however, that Grantor, its successors and assigns shall not erect any building on or cause any obstruction of said Easement Area during construction or use by Grantee or Grantee's successors and assigns.

(ii) Grantee agrees, for itself and its successors and assigns that the Grantee's Property may not be used for an elementary, secondary or post-secondary school within the applicable radius pursuant to federal, state or local law (whichever is strictest) from the Grantor Property that would affect the carrying of firearms at the Grantor Property. This use restriction is appurtenant, perpetual and shall run with the land, and this use restriction is not assignable by the Grantee, its successors and assigns separately from a conveyance of title to all or a portion of the Grantee Property. This use restriction is specifically excluded from Grantee's limited assignment rights described in Section 14 hereof.

4. Runs with the Land; Conditional Severability.

(i) The easement rights and privileges granted by this instrument, together with the obligations set forth herein are appurtenant, perpetual and shall run with the land. Grantee may not assign or transfer this Easement Deed, or any of the rights or obligations of Grantee set forth herein, separately from a conveyance of title to all or a portion (subject to compliance with Section

5(i)) of the Grantee Property. Any attempted severance shall be ineffective, and Grantor shall have the rights set forth in Section 7 hereof in such event.

(ii) Notwithstanding Section 4(i), and expressly conditioned upon compliance with the provisions set forth in Section 14 hereof, and not at any time prior thereto, the easement rights and privileges granted by this instrument, the obligations set forth herein and Grantee's ownership and interest in all Grantee Underground Utilities installed by Grantee in the Easement Area, may be assigned by the Grantee to the City. Grantee may not otherwise assign or transfer this Easement Deed, or any of the rights or obligations of Grantee set forth herein, separately from a conveyance of title to all or a portion (subject to compliance with Section 5(i)) of the Grantee Property. Any attempted severance that does not comply with the express provisions of this Section 4(ii) shall be ineffective, and Grantor shall have the rights set forth in Section 7 hereof in such event.

5 Approvals. Before constructing any improvements on the Easement Area, and in addition to the requirements of Section 8:

(i) Grantee shall obtain all Approvals and all permits necessary to construct such improvements, and (a) if the Development includes a subdivision, then the Grantee shall designate one (1) lot of the subdivision to be responsible for the maintenance, repair and replacement requirements pursuant to Section 8 hereof, and such responsibility shall be set forth in the subdivision plan and the deed to said lot and (b) if the Development includes a submission of the Grantee Property to the New Hampshire Condominium Act, then the condominium association shall be made responsible for such maintenance in the declaration of condominium;

(ii) Grantee shall give Grantor satisfactory evidence from Grantee's licensed engineers that the construction of the Driveway Improvements and the installation of the Grantee Underground Utilities will not adversely affect the flow and drainage of water on, over, across, to and/or from the Easement Area or the Grantor Property; and

(iii) With respect to the Grantee Underground Utilities to be constructed, the approved Plans shall provide future connection points (but not additional wires) to the undeveloped portion of the Grantor Property, which connection points shall extend far enough so that the future connection to the Grantee Underground Utilities by the Grantor shall not require any disturbance to the pavement of the Driveway (the "Grantee Underground Utility Connections").

Grantee acknowledges that the plan entitled "Utility Plan Exhibit, White Birch Armory and Westfield, LLC", prepared by Civil Works New England, Project No. 18043 dated June 1, 2022 (said date being the last date shown on said plan, ie no revisions noted) comply with the provisions of (ii) and (iii) above.

6. Costs of Easement Recording. Any and all costs, expenses and taxes arising out of or related to the recording of this Easement Deed and the Easement Plan including, without limitation, recording fees and all payments required in connection with New Hampshire real estate transfer taxes, shall be payable solely by Grantee, and sufficient evidence of the payment of the same shall be provided to Grantor.

7. Limitations and Restrictions; Termination. Notwithstanding any other provision of this Easement Deed or the easements granted hereunder by Grantor to Grantee, at any time prior to the assignment of this Easement Deed to the City in compliance with Section 14 hereof (but not thereafter), Grantor shall be permitted to unilaterally terminate the easements granted hereunder upon the occurrence of any of the following events, and such termination shall be recorded with the Strafford County Registry of Deeds:

7.1 Prohibited Use or Development. If the Grantee Property is at any time subdivided or submitted to the New Hampshire Condominium Act without the provisions set forth in Section 5(i) being satisfied, or (b) if the use of the Grantee Property is intended to be for a use prohibited by Section 3(ii) hereof.

7.2 Assignment. If Grantee assigns this Easement Deed, or any of its rights or obligations hereunder, in violation of Section 4 hereof.

7.3 Termination Costs. Grantor shall be responsible for all costs incurred by Grantee, including reasonable attorney's fees, if the majority of the arbitrators chosen pursuant to Section 11 issues a final judgment finding that Grantor terminated this Easement in violation of the terms of this Easement, but absent such finding by the arbitrators, Grantee shall be responsible for all costs incurred and losses suffered by Grantor including reasonable attorneys' fees related to Grantor's termination of this Easement.

8. General Construction, Maintenance and Repairs.

8.1 General Construction, Maintenance and Repairs. Grantee shall maintain and repair the Driveway and any Grantee Underground Utilities, at its sole cost and expense, in a good, clean and neat condition, and shall keep the same in good repair, which shall include, without limitation:

(a) Maintaining all paved surfaces in good, smooth (subject to maintaining the overall grade thereof) and operable condition with a type of surfacing material originally installed or such substitute as shall in all material respects be equal or superior in quality, use and durability.

(b) Removing all paper, debris, filth and refuse and sweeping the area to the extent and at such intervals as are reasonably necessary to keep the area in a clean, orderly and neat condition.

(c) Keeping the area reasonably free from snow and ice.

(d) Placing, keeping in good repair and condition and replacing appropriate directional signs, markers and lines, where reasonably necessary. Any directional signs to be placed in the Easement Area by Grantee directing traffic to the Grantee Property shall be subject to the reasonable prior written approval of Grantor including, without limitation, the size, content and placement thereof. Said approval will not be withheld if required by the City of Dover, provided that, the size of such sign shall be limited to the maximum size of a directional sign under the Zoning Ordinances so that no permits or approvals from the City of Dover to construct the same

are required, the content shall be limited to the registered name(s) of the business(es), and the placement thereof shall not block or in any way interfere with Grantor's signage.

(e) Operating, keeping in good working order and condition and, when necessary, replacing such artificial lighting equipment reasonably necessary to illuminate the area.

(f) Maintaining all landscaped areas.

8.2 Construction Requirements. Any maintenance, repairs or construction on any portion of the Easement Area by Grantor or Grantee (hereinafter the "Constructing Party") shall be subject to the following terms and conditions for the benefits of the other ("Other Party").

(i) Except as otherwise set forth herein with respect to Grantee's reimbursement requirements, the construction, maintenance, repairs and use shall be without cost to the Other Party;

(ii) Once begun, the construction and maintenance shall be completed diligently, as promptly and efficiently as possible, in a manner to minimize any inconvenience or interruption of use of any business of the Other Party, including staging all construction and storage of any construction materials outside of the Driveway;

(iii) In performing all work within the Easement Area, Grantee will keep the Easement Area and the remaining portion of Grantor's property free and clear of all claims, mechanic's liens or other encumbrances in connection with or arising out of said work, will bond over, immediately at the request of Grantor, any claims, mechanics liens or other encumbrances placed against the Easement Area or the Grantor Property in connection with or arising out of said work, and will defend and indemnify Grantor, and hold it harmless against all loss, liability and expense, including attorneys' fees, which it may suffer or incur as a result of any personal injury or property damage, or other claims arising out of any acts or omissions of Grantee or its contractors, agents, employees or licensees within or related to the Easement Area;

(iv) Before performing work within the Easement Area, Constructing Party shall provide to the Other Party all plans, specifications and construction schedule for said work; said plans and specifications shall be subject to the limitations set forth herein; and Constructing Party shall give at least twenty (20) days' prior notice to the Other Party before beginning work;

(v) Constructing Party shall have in place before the commencement of any work all local, state and federal approvals and permits necessary, and all work shall be performed in accordance with such approvals and all federal, state and local laws, ordinances, rules and regulations, including, but not limited to, all environmental laws and regulations and permits;

(vi) Any work that requires the excavation or other material disturbance of the Driveway must be done during the hours of 7:00 p.m. to 7:00 a.m. Monday through Friday, or on Saturday after 2:00 p.m. or Sunday unless agreed otherwise by Constructing Party and the Other Party in writing or as required in an event of an emergency;

(vii) Any interruption of utility service to the facilities located on the Grantee Property or the Grantor Property shall be permitted only upon seven (7) business days written notice by Constructing Party to the Other Party, and shall occur only during such days and hours as shall be approved by such Other Party, in writing, except in the event of an emergency, for which notice shall be given to the Other Party as soon as reasonably practicable and prior approval shall not be required;

(viii) There shall be no blasting operations without the prior written mutual agreement of Constructing Party and Other Party;

(ix) Upon completion of the work, Constructing Party shall:

A. restore the surface of the ground in the Easement Area and any other area disturbed during the work to the condition in which it existed prior to the commencement of said work, including, but not limited to the restoration of any disturbed area of the Driveway to match its existing conditions; and

B. loam and grass seed, or replant any shrubs or trees, in the disturbed areas within the Easement Area to match the existing conditions.

(x) All construction, maintenance or other work done by Constructing Party in the Easement Area shall be completed as diligently as possible, with the work being done consecutively, including the restoration required in subsection (ix) above.

(xi) No construction vehicles shall be allowed on the Grantor Driveway Section unless and until upgrades are being made specifically to the same. Any necessary access for construction vehicles will be handled through mutually agreeable temporary construction easements.

8.3 Reimbursement. To the extent that the Grantor is required to perform any of the obligations of the Grantee pursuant to Section 8.1 or 8.2 hereof due to a failure by Grantee to timely perform the same, all such costs and expenses shall be reimbursed in full by the Grantee within twenty (20) days of receipt of an invoice for the same. To the extent that the Grantee is required to perform any of the obligations of the Grantor pursuant to Section 8.2(ix) hereof due to a failure by Grantor to timely perform the same, for a period of sixty (60) days after notice thereof is made to the Grantee, and such failure materially and adversely affects the Grantee's ability to

use the Driveway, all such costs and expenses shall be reimbursed in full by the Grantor within twenty (20) days of receipt of an invoice for the same.

8.4 Grantee's Construction Obligations. Grantee's construction, maintenance, repairs and replacement obligations of the Driveway and/or the Grantee Underground Utilities within the Easement Area, and the obtaining all necessary and required federal, state and local Approvals in connection therewith, shall be done solely at Grantee's expense. Said obligations, including, without limitation, snow plowing and removal, shall commence immediately upon recording of this Easement Deed. For purposes of clarification, Grantor shall have no obligation to perform any construction, maintenance, repairs or replacement of the Driveway and/or the Grantee Underground Utilities except as provided in Section 8.2(ix).

9. Liability and Indemnity.

9.1 Insurance. During the course of installation, construction, maintenance, repair and/or replacement of the Driveway Improvements or Underground Utilities or any other work performed in the Easement Area, the Constructing Party or its contractors, licensees or agents shall procure and maintain in effect throughout the term of construction and maintenance insurance coverage's with an insurance company or companies authorized to do business in the State of New Hampshire in coverage's and amounts reasonably satisfactory to the Other Party. The Other Party shall be named as additional insured on said Constructing Party insurance coverages and the Constructing Party shall furnish the Other Party with certificates of insurance evidencing such coverage prior to the commencement of any work in the Easement Area. The Constructing Party shall give prompt notice to the other party of all losses, damages or injuries to any persons or to the property of the Other Party or third persons which may be in any way related to the Other Party or for which a claim might be made against the Other Party. The Constructing Party shall promptly report to the Other Party all such claims of which The Constructing Party has notice with or relating to matters insured or uninsured. The carrying of any of the insurance required hereunder shall not be interpreted as relieving the Constructing Party of any responsibilities to the Other Party

9.2 Damage by Grantor. Grantor shall pay the cost of replacement, maintenance and repair of any damage done within the Easement Area which is caused by the actions, or failure to act when necessary, negligence or willful misconduct of Grantor, its managers, agents, contractors, subcontractors, employees or business invitees (but with respect to business invitees, only those over whom Grantor has authority to direct or control), which shall include, but not be limited to, any replacement, maintenance or repair to the Driveway which is necessitated by any action such as the passage of construction vehicles and equipment during any construction in the Easement Area. Grantee may bill Grantor for such replacement, maintenance and repair as soon as costs are incurred and shall furnish to Grantor financial records reflecting the cost of such replacement, maintenance and repair. Grantor shall pay such bill within twenty (20) days of receipt of such bill and financial records. Grantor shall have the right to audit such expenses at its own cost; provided, however, in the event that the results of such audit reflect a variance of more than five (5%) from the costs presented by Grantee, and either Grantee agrees with such results or such results are confirmed by a neutral third party chosen by Grantor and Grantee, then Grantee will pay the costs of the audit and the neutral third party. In the event that the neutral third party agrees with Grantee's costs, then Grantor shall pay for the costs of the neutral third party.

9.3 Damage by Grantee. Grantee shall pay the cost of replacement, maintenance and repair of any damage done within the Easement Area which is caused by the actions, or failure to act when necessary, negligence or willful misconduct of Grantee, its directors, officers, trustees, managers, agents, contractors, subcontractors, employees or business invitees (but with respect to business invitees, only those over whom Grantee has authority to direct or control), which shall include, but not be limited to, any replacement, maintenance or repair to the Driveway which is necessitated by any action such as the passage of construction vehicles and equipment during any construction in the Easement Area or any construction on the Grantee Property. Grantor may bill Grantee for such replacement, maintenance and repair as soon as costs are incurred and shall furnish to Grantee financial records reflecting the cost of such replacement, maintenance and repair. Grantee shall pay such bill within twenty (20) days of receipt of such bill and financial records. Grantee shall have the right to audit such expenses at its own cost; provided, however, in the event that the results of such audit reflect a variance of more than five (5%) from the costs presented by Grantor, and either Grantor agrees with such results or such results are confirmed by a neutral third party chosen by Grantor and Grantee, then Grantor will pay the costs of the audit and the neutral third party. In the event that the neutral third party agrees with Grantor's costs, then Grantee shall pay for the costs of the neutral third party.

9.4 Indemnity. Except for injury or damage caused by its willful act, Grantor or its successors or assigns shall not be liable for any injury or damage to any property or any person performing any construction, maintenance, repair or otherwise engaging in any activities within the Easement Area. Except for injury or damage caused as aforesaid, Grantee will defend, indemnify and hold Grantor harmless from any and all liability, damages, costs and expenses, including reasonable attorneys' fees and from any and all suits, claims and demands of any kind whatsoever based upon any incident, occurrence, injury or damage which may happen as a result of any labor or task performed by Grantee or its agents performed in the construction or maintenance, or as a result of the improvements constructed by Grantee, pursuant to such easement rights, or any other exercise of its rights hereunder.

10. No Warranty. Grantor does not warrant title to its property to Grantee.

11. Disputes. In the case of dispute, Grantor and Grantee shall submit the disputed issue to arbitration. Each party shall choose one arbitrator, both of which shall choose a third. The decision of the majority of the arbitrators shall be final. Each party shall pay the cost of its arbitrator and equally share the cost of the third, except as provided in Sections 7.3 and 14.7.

12. Governing Law. This Easement Deed shall be governed by the laws of the State of New Hampshire, without giving effect to its conflict of laws principles.

13. Amendment; Waiver. Except as provided in Section 7 hereof, this Easement Deed may not be amended or modified except by a writing of subsequent date hereto executed by Grantor and Grantee and duly recorded with the Strafford County Registry of Deeds. No failure or delay by Grantor or Grantee in exercising any right or power under this Easement Deed shall operate as a waiver thereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other

or further exercise thereof or the exercise of any other right or power. Any waiver of any provision of this Easement Deed or consent to any departure by Grantor or Grantee therefrom shall be effective only in the specific instance and for the purpose for which given.

14. Assignment to City. Grantee shall have the right to convey this Easement and all Grantee Underground Utilities to the City for use as a public way only upon the fulfillment of each of the following conditions, which satisfaction thereof must be evidenced by the amended and restated easement described in Section 14.6 below, executed and delivered by Grantor and Grantee and recorded with the Strafford County Registry of Deeds:

14.1 The Grantee or its successors and assigns (i) shall have paid in full to the Grantor or its successors and assigns all monetary obligations set forth herein including, without limitation, any obligations resulting from its indemnification obligations described herein, and (ii) otherwise complied with all of its obligations set forth in this Easement Deed up to and including the date of the acceptance of the dedication, acceptance, and assignment of this Easement Deed by the City.

14.2 The Grantee or its successors and assigns shall have constructed, or reconstructed, as applicable, the Driveway and each of the Grantee Underground Utilities to the specifications required by the City at the Grantee's or its successors and assigns' sole cost and expense, and repaired all landscaped areas to return the same to their condition prior to the Grantee or its successors and assigns construction of any improvements on the Grantor's Property.

14.3 That (i) no amendments shall be adopted to the Zoning Ordinances or Site Plan Regulations having the effect of imposing additional setbacks upon the Grantor Property as a result of the City's acceptance of the Easement Deed and/or the use of the Driveway as a public right-of-way including, without limitation, any new setbacks required from the Driveway, or (ii) the Grantor shall have been granted a variance from any such new setbacks on the Grantor Property.

14.4 The Grantee Underground Utilities have been constructed in accordance with the Approved Plans and the Grantee Underground Utilities Connections shall have been constructed.

14.5 Grantee, at its sole cost and expense, shall cause to be removed any encumbrances to which the Easement Area is subject that are required to be removed by the City.

14.6 Replacement Easement. Provided the conditions 14.1 through 14.5 above are satisfied, Grantor and Grantee (i.e. Westfield, LLC), on behalf of itself and as attorney-in-fact for any portion of Grantee Property conveyed by Grantee to another party, shall execute an Amended and Restated Easement Deed in form attached hereto as Exhibit A, provided that, such Amended and Restated Easement Deed shall be delivered by Grantor and Grantee to the City to be held in escrow, and it shall not be effective until recorded with the Strafford County Registry of Deeds. The Amended and Restated Easement Deed shall only be recorded simultaneously with the City's acceptance of the assignment of this Easement. Grantee shall provide Grantor with a copy of the Amended and Restated Easement Deed executed by Grantee to evidence Grantee's belief that the conditions set forth in 14.1 through 14.5 above have been satisfied. Grantor shall have thirty (30) days to either execute the Amended and Restated Easement Deed or provide Grantee with detailed written notice describing which conditions have not been satisfied. If Grantor and Grantee cannot resolve any dispute regarding the satisfaction, or not, of such conditions, the matter shall be submitted to the arbitrators pursuant to Section 11 above.

14.7 In the event that the majority of the arbitrators chosen pursuant to Section 11 issues a final judgment finding that the conditions of this Section 14 have been satisfied by Grantee, and that Grantor failed to execute the Amended and Restated Easement as required hereby, Grantor shall be responsible for all costs incurred and losses suffered by Grantee including reasonable attorney's fees, but absent such finding by the arbitrators, Grantee shall be responsible for all costs incurred and losses suffered by Grantor including reasonable attorneys fees related to such dispute.

For source of title see Warranty Deed of 74 Industrial Park, LLC to Recon Realty, LLC recorded November 27, 2019, at Book 4713, Page 625, in the Strafford County Registry of Deeds.

[Signature Pages Follow]

Executed as of the 12th day of September, 2022.

RECON REALTY, LLC

By: _____
Sean Manning,
Duly Authorized Manager

STATE OF NEW HAMPSHIRE
COUNTY OF Strafford

The foregoing instrument was acknowledged before me this 12 day of September 2022, by Sean Manning, manager of Recon Realty, LLC, a New Hampshire limited liability company, on behalf of said company for the purposes herein intended.

_____
Justice of the Peace / Notary Public
My commission expires:
Seal or Stamp:

JANET E. GRAY, Notary Public
My Commission Expires February 7, 2023

WESTFIELD, LLC

By: _____
Chad Kageleiry
Duly Authorized Manager

STATE OF NEW HAMPSHIRE
COUNTY OF STRAFFORD

The foregoing instrument was acknowledged before me this 29th day of August, 2022, by Chad Kageleiry, manager of Westfield, LLC, a New Hampshire limited liability company, on behalf of said limited liability company for the purposes herein intended.

_____
Justice of the Peace / Notary Public
My commission expires:

SARA E ANTONINO
Notary Public-New Hampshire
My Commission Expires
December 19, 2023

EXHIBIT A

For recorder's use:
***Tax Stamp**: $ _____*
***Recording Fee**: $ _____*
Return to:
Devine, Millimet & Branch - Attn: RSK
111 Amherst Street
Manchester, NH 03101

Property located in Dover, Strafford County, New Hampshire

AMENDED AND RESTATED EASEMENT DEED

WHEREAS: RECON REALTY, LLC granted a certain Easement Deed to Westfield, LLC on _____, recorded in the Strafford County Registry of Deeds Book ____, Page ___ ("Original Easement");

WHEREAS: The Grantee under the Original Easement desires to assign the Original Easement to the City of Dover (the "City") pursuant to Section 14 thereof;

WHEREAS: As a condition of the City's acceptance of such assignment, the parties to the Original Easement now wish to amend and restate the Original Easement with this Amended and Restated Easement Deed, which hereby modifies and replaces the Original Easement in whole solely while the City is the holder of the easement described herein, all as more particularly set forth herein.

NOW THEREFORE, RECON REALTY, LLC, a New Hampshire limited liability company with a mailing address at 80 Industrial Park Drive, Dover, New Hampshire 03820 (together with its successors and assigns, "Grantor"), for consideration paid and received, grants to Westfield, LLC, a New Hampshire limited liability company with a mailing address of c/o Summit Land Development, 340 Central Ave, Dover, NH, Suite 202 (together with its successors and permitted assigns, "Grantee") certain amended rights and easements over the Easement Area located on Grantor's Property, all as more particularly set forth below.

1. Definitions. The following terms shall have the meanings ascribed to such term as set forth below:

1.1 "Approvals" means all of the final, non-appealable approvals from all local, state and federal governmental agencies having jurisdiction over the Easement Area.

1.2 "City" means City of Dover, New Hampshire, a municipal corporation.

1.3 "Development" means the construction of the Driveway Improvements and the Grantee Underground Utilities in the Easement Area, together with the development of the Grantee Property.

1.4 "Driveway" means the access drive located in the Easement Area.

1.5 "Driveway Improvements" means any grading, paving, plowing, signage, traffic signals, and landscaping constructed in connection with the Driveway.

1.6 "Easement Area" means a fifty (50) foot wide strip of land over the Grantor Property, more particularly described as the "Proposed 50' Wide Access and Utility Easement" on the Easement Plan.

1.7 "Easement Plan" means that certain easement plan entitled "Access & Utility Easement Plan, Prepared for Recon Realty, LLC, Tax Map G, Lot No. 3-A-1, 80 Industrial Park Road, City of Dover, County of Strafford, State of New Hampshire" dated February 15, 2022, as revised, prepared by McEneaney Survey Associates of New England, recorded in the Strafford County Registry of Deeds as Plan #_____.

1.8 "Grantee Property" means a certain tract certain tract or parcel of land known as 64 Littleworth Road, Dover, New Hampshire, and being shown as remaining land on plan of land entitled Subdivision Plan of Land Prepared for Westfield, LLC, Tax Map G, Lot no. 2, NH Route 9 – Littleworth Road, City of Dover, County of Strafford, State of New Hampshire", dated June 21, 2021, prepared by McEneaney Survey Associates of New England and recorded in the Strafford County Registry of Deeds as Plan #12514, containing +/- 58.92 acres known as City of Dover Tax Map G, Lot 2, being a portion of the land described in the Warranty Deed to Grantee dated February 12, 2020, recorded with the Strafford County Registry of Deeds at Book 4773, Page 471.

1.9 "Grantee Underground Utilities" means any Underground Utilities, or portions thereof, installed by Grantee in the Easement Area.

1.10 "Grantor Driveway Section" means the portion of the Driveway constructed by Grantor.

1.11 "Grantor Property" a certain tract or parcel of land containing +/- 8.09 acres shown as Map G, Lot 3A on the Subdivision Plan, as affected by the letter from the City of Dover's Assessor dated February 16, 2011, and recorded at Book 3908, Page 81, assigning to the property the new designation G-3-A-1, and as further affected by the Notice of Lot Designation Change (with acknowledgement and consent of Lot Owners) issued by the City of Dover dated September 30, 2019, recorded October 4, 2019, at Book 4696, Page 278, said Registry of Deeds, assigning to the property the new designation Map G, Lot 3-A-100.

1.11 "Grantee Underground Utilities Connections" has the meaning set forth in Section 5(iii).

1.12 Omitted.

1.13 "Subdivision Plan" means a plan entitled "Subdivision Plan, 74 Industrial Park, LLC, 74 Industrial Park Road and Littleworth Road, Dover, New Hampshire," dated January 2, 2010, as revised, prepared by Tritech Engineering Corporation and recorded in the Strafford County Registry of Deeds as Plan DR99-024.

1.14 "Underground Utilities" means any underground public or private utility services and distribution systems in the Easement Area.

1.15 "Zoning Ordinances" means the Chapter 170 of the Code of the City of Dover (Zoning), as the same may be amended from time to time.

2. Grant of Easement: Grantor hereby grants to Grantee the exclusive right and easement in perpetuity to use the Easement Area (i) for vehicular, bicycle and pedestrian ingress, egress and access over and through the Easement Area for the purposes of access to and from the Grantee Property to Industrial Park Road, (ii) to install Driveway Improvements and Grantee Underground Utilities thereon; (iii) to maintain, repair and replace if necessary or as required by this Easement Deed the Driveway Improvements and Grantee Underground Utilities; and (iv) the right and ability of the Grantee to convey and dedicate said Easement Area to the City as a public road/highway and for the City to accept such conveyance and dedication and thereafter exercise regulatory power over, and use, the Easement Area as a public road/highway with all rights appurtenant and incident thereo and for all lawful uses, including but not limited to the public's right to make viatic or other lawful use thereof, the public's right to pass and re-pass, the right to install and/or maintain public utilities, the right to install and/or maintain surface water drainage, and the right to install and/or maintain any necessary slope and/or grading.

3. Reservation to Grantor; Use Restrictions on Grantee's Property.

i. Omitted.

ii. Grantee agrees, for itself and its successors and assigns (except the City) that the Grantee's Property may not be used for an elementary, secondary or post-secondary school within the applicable radius pursuant to federal, state or local law (whichever is strictest) from the Grantor Property that would affect the carrying of firearms at the Grantor Property. This use restriction is appurtenant, perpetual and shall run with the Grantee Property, and this use restriction is not assignable by the Grantee, its successors and assigns separately from a conveyance of title to all or a portion of the Grantee Property. This use restriction is specifically excluded from Grantee's assignment rights described in Section 14 hereof, and, irrespective of the assignment, transfer or conveyance of this easement to the City, the use restriction set forth in this paragraph shall continue to bind only the Grantee Property.

4. Omitted.

5. Omitted.

6. Costs of Easement Recording. Any and all costs, expenses and taxes arising out of or related to the recording of this Easement Deed and the Easement Plan including, without limitation, recording fees and all payments required in connection with New Hampshire real estate transfer taxes, shall be payable solely by Grantee, and sufficient evidence of the payment of the same shall be provided to Grantor.

7. Omitted.

7.1 Omitted.

7.2 Omitted.

7.3 Omitted.

8. General Construction, Maintenance and Repairs.

8.1 General Construction, Maintenance and Repairs. Grantee shall maintain and repair the Driveway and any Grantee Underground Utilities, at its sole cost and expense, in a good, clean and neat condition, and shall keep the same in good repair, which shall include, without limitation:

(a) Maintaining all paved surfaces in good, smooth (subject to maintaining the overall grade thereof) and operable condition with a type of surfacing material originally installed or such substitute as shall in all material respects be equal or superior in quality, use and durability.

(b) Removing all paper, debris, filth and refuse and sweeping the area to the extent and at such intervals as are reasonably necessary to keep the area in a clean, orderly and neat condition.

(c) Keeping the area reasonably free from snow and ice.

(d) Placing, keeping in good repair and condition and replacing appropriate directional signs, markers and lines, where reasonably necessary. Any directional signs to be placed in the Easement Area by Grantee directing traffic to the Grantee Property shall be subject to the reasonable prior written approval of Grantor including, without limitation, the size, content and placement thereof. Said approval will not be withheld if required by the City of Dover, provided that, the size of such sign shall be limited to the maximum size of a directional sign under the Zoning Ordinances so that no permits or approvals from the City of Dover to construct the same are required, the content shall be limited to the registered name(s) of the business(es), and the placement thereof shall not block or in any way interfere with Grantor's signage.

(e) Operating, keeping in good working order and condition and, when necessary, replacing such artificial lighting equipment reasonably necessary to illuminate the area.

(f) Maintaining all landscaped areas.

8.2 Construction Requirements. Any maintenance, repairs or construction on any portion of the Easement Area by Grantor or Grantee (hereinafter the "Constructing Party") shall be subject to the following terms and conditions for the benefits of the other ("Other Party").

(i) Except as otherwise set forth herein with respect to Grantee's reimbursement requirements, the construction, maintenance, repairs and use shall be without cost to the Other Party;

(ii) Once begun, the construction and maintenance shall be completed diligently, as promptly and efficiently as possible, in a manner to minimize any inconvenience or interruption of use of any business of the Other Party, including staging all construction and storage of any construction materials outside of the Driveway;

(iii) In performing all work within the Easement Area, Grantee will keep the Easement Area and the remaining portion of Grantor's property free and clear of all claims, mechanic's liens or other encumbrances in connection with or arising out of said work, will bond over, immediately at the request of Grantor, any claims, mechanics liens or other encumbrances placed against the Easement Area or the Grantor Property in connection with or arising out of said work, and will defend and indemnify Grantor, and hold it harmless against all loss, liability and expense, including attorneys' fees, which it may suffer or incur as a result of any personal injury or property damage, or other claims arising out of any acts or omissions of Grantee or its contractors, agents, employees or licensees within or related to the Easement Area;

(iv) Before performing work within the Easement Area, Constructing Party shall provide to the Other Party all plans, specifications and construction schedule for said work; said plans and specifications shall be subject to the limitations set forth herein; and Constructing Party shall give at least twenty (20) days' prior notice to the Other Party before beginning work;

(v) Constructing Party shall have in place before the commencement of any work all local, state and federal approvals and permits necessary, and all work shall be performed in accordance with such approvals and all federal, state and local laws, ordinances, rules and regulations, including, but not limited to, all environmental laws and regulations and permits;

(vi) Any work that requires the excavation or other material disturbance of the Driveway must be done during the hours of 7:00 p.m. to 7:00 a.m. Monday through Friday, or on Saturday after 2:00 p.m. or Sunday unless agreed otherwise by Constructing Party and the Other Party in writing or as required in an event of an emergency;

(vii) Any interruption of utility service to the facilities located on the Grantee Property or the Grantor Property shall be permitted only upon seven (7) business days written notice by Constructing Party to the Other Party, and shall occur only during such days and hours as shall be approved by such

Other Party, in writing, except in the event of an emergency, for which notice shall be given to the Other Party as soon as reasonably practicable and prior approval shall not be required;

(viii) There shall be no blasting operations without the prior written mutual agreement of Constructing Party and Other Party;

(ix) Upon completion of the work, Constructing Party shall:

A. restore the surface of the ground in the Easement Area and any other area disturbed during the work to the condition in which it existed prior to the commencement of said work, including, but not limited to the restoration of any disturbed area of the Driveway to match its existing conditions; and

B. loam and grass seed, or replant any shrubs or trees, in the disturbed areas within the Easement Area to match the existing conditions.

(x) All construction, maintenance or other work done by Constructing Party in the Easement Area shall be completed as diligently as possible, with the work being done consecutively, including the restoration required in subsection (ix) above.

(xi) No construction vehicles shall be allowed on the Grantor Driveway Section unless and until upgrades are being made specifically to the same. Any necessary access for construction vehicles will be handled through mutually agreeable temporary construction easements.

8.3 Reimbursement. To the extent that the Grantor is required to perform any of the obligations of the Grantee pursuant to Section 8.1 or 8.2 hereof due to a failure by Grantee to timely perform the same, all such costs and expenses shall be reimbursed in full by the Grantee within twenty (20) days of receipt of an invoice for the same. To the extent that the Grantee is required to perform any of the obligations of the Grantor pursuant to Section 8.2(ix) hereof due to a failure by Grantor to timely perform the same, for a period of sixty (60) days after notice thereof is made to the Grantee, and such failure materially and adversely affects the Grantee's ability to use the Driveway, all such costs and expenses shall be reimbursed in full by the Grantor within twenty (20) days of receipt of an invoice for the same.

8.4 Grantee's Construction Obligations. Grantee's construction, maintenance, repairs and replacement obligations of the Driveway and/or the Grantee Underground Utilities within the Easement Area, and the obtaining all necessary and required federal, state and local Approvals in connection therewith, shall be done solely at Grantee's expense. Said obligations, including, without limitation, snow plowing and removal, shall commence immediately upon recording of this Easement Deed. For purposes of clarification, Grantor shall have no obligation to perform any construction, maintenance, repairs or replacement of the Driveway and/or the Grantee Underground Utilities except as provided in Section 8.2(ix).

9. Liability and Indemnity.

9.1 Omitted.

9.2 Damage by Grantor. Grantor shall pay the cost of replacement, maintenance and repair of any damage done within the Easement Area which is caused by the actions, or failure to act when necessary, negligence or willful misconduct of Grantor, its managers, agents, contractors, subcontractors, employees or business invitees (but with respect to business invitees, only those over whom Grantor has authority to direct or control), which shall include, but not be limited to, any replacement, maintenance or repair to the Driveway which is necessitated by any action such as the passage of construction vehicles and equipment during any construction in the Easement Area. Grantee may bill Grantor for such replacement, maintenance and repair as soon as costs are incurred and shall furnish to Grantor financial records reflecting the cost of such replacement, maintenance and repair. Grantor shall pay such bill within twenty (20) days of receipt of such bill and financial records. Grantor shall have the right to audit such expenses at its own cost; provided, however, in the event that the results of such audit reflect a variance of more than five (5%) from the costs presented by Grantee, and either Grantee agrees with such results or such results are confirmed by a neutral third party chosen by Grantor and Grantee, then Grantee will pay the costs of the audit and the neutral third party. In the event that the neutral third party agrees with Grantee's costs, then Grantor shall pay for the costs of the neutral third party.

9.3 Damage by Grantee. Grantee shall pay the cost of replacement, maintenance and repair of any damage done within the Easement Area which is caused by the actions, or failure to act when necessary, negligence or willful misconduct of Grantee, its directors, officers, trustees, managers, agents, contractors, subcontractors, employees or business invitees (but with respect to business invitees, only those over whom Grantee has authority to direct or control), which shall include, but not be limited to, any replacement, maintenance or repair to the Driveway which is necessitated by any action such as the passage of construction vehicles and equipment during any construction in the Easement Area or any construction on the Grantee Property. Grantor may bill Grantee for such replacement, maintenance and repair as soon as costs are incurred and shall furnish to Grantee financial records reflecting the cost of such replacement, maintenance and repair. Grantee shall pay such bill within twenty (20) days of receipt of such bill and financial records. Grantee shall have the right to audit such expenses at its own cost; provided, however, in the event that the results of such audit reflect a variance of more than five (5%) from the costs presented by Grantor, and either Grantor agrees with such results or such results are confirmed by a neutral third party chosen by Grantor and Grantee, then Grantor will pay the costs of the audit and the neutral third party. In the event that the neutral third party agrees with Grantor's costs, then Grantee shall pay for the costs of the neutral third party.

9.4 Indemnity. Except for injury or damage caused by its willful act, Grantor or its successors or assigns shall not be liable for any injury or damage to any property or any person performing any construction, maintenance, repair or otherwise engaging in any activities within the Easement Area. Except for injury or damage caused as aforesaid, Grantee will defend, indemnify and hold Grantor harmless from any and all liability, damages, costs and expenses, including reasonable attorneys' fees and from any and all suits, claims and demands of any kind

whatsoever based upon any incident, occurrence, injury or damage which may happen as a result of any labor or task performed by Grantee or its agents performed in the construction or maintenance, or as a result of the improvements constructed by Grantee, pursuant to such easement rights, or any other exercise of its rights hereunder.

10. No Warranty. Grantor does not warrant title to its property to Grantee.

11. Disputes. In the case of dispute, Grantor and Grantee shall submit the disputed issue to arbitration. Each party shall choose one arbitrator, both of which shall choose a third. The decision of the majority of the arbitrators shall be final. Each party shall pay the cost of its arbitrator and equally share the cost of the third.

12. Governing Law. This Easement Deed shall be governed by the laws of the State of New Hampshire, without giving effect to its conflict of laws principles.

13. Amendment; Waiver. This Easement Deed may not be amended or modified except by a writing of subsequent date hereto executed by Grantor and Grantee and duly recorded with the Strafford County Registry of Deeds. No failure or delay by Grantor or Grantee in exercising any right or power under this Easement Deed shall operate as a waiver thereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other or further exercise thereof or the exercise of any other right or power. Any waiver of any provision of this Easement Deed or consent to any departure by Grantor or Grantee therefrom shall be effective only in the specific instance and for the purpose for which given.

14. Assignment to City. This easement, to include the Easement Area, all Underground Utilities, operational control of all Underground Utilities, any and all of Grantee's installed infrastructure, signs, and other property located within the Easement Area, but not the use restriction in Section 3(ii) of this Amended and Restated Easement Deed, shall be severable, assignable, and transferable by Grantee solely to the City for use and regulation as a public way with all rights stated in Section 2 above. If and once this easement is conveyed to and accepted by the City, and until such time (if any) as the City releases the Easement Area from public servitude as a public highway, then:

(i) the following sections of this Amended and Restated Easement Deed in their entirety (including subsections) shall no longer apply: Sections 6, 8, 9, and 11; and

(ii) the City's easement rights shall in no way relate to, be subject to, or in any way dependent upon or affected by the use restriction in Section 3(ii) of this Amended and Restated Easement Deed.

The City shall have no right to further convey or assign this easement. At any time in the future should the public highway within the Easement Area be legally discontinued by the process prescribed within applicable law, then the City of Dover shall thereafter terminate this easement pursuant to Section 17 below, after which the City shall have no further interest in the above-described Easement Area.

15. Invalidity. In the event the use restriction in Section 3(ii) of this Amended and Restated Easement Deed is for any reason deemed or found to be invalid or unenforceable for any reason or upon any grounds by a court of competent jurisdiction and venue, then said provision only shall be held invalid and/or unenforceable as though not contained herein and the remainder of this Amended and Restated Easement Deed shall remain operative and in full force and effect.

16. Recitals. The recitals of the Amended and Restated Easement above are incorporated herein by reference as terms.

17. Effectiveness of this Amended and Restated Easement. This Amended and Restated Easement shall not be deemed to be effective until it has been duly executed and delivered by the Grantor and the Grantee and recorded in the Strafford County Registry of Deeds simultaneously with the assignment to and acceptance by the City of this Amended and Restated Easement. Notwithstanding anything to the contrary herein, the terms and conditions of this Amended and Restated Easement shall be in full force and effect only during the period when the City exclusively holds the easement to the Easement Area. In the event that the City releases the Easement Area from public servitude as a public highway and terminates this easement by filing a termination with the Strafford County Registry of Deeds, then the terms and conditions of this Amended and Restated Easement shall automatically terminate and be of no further force and effect, and the terms and conditions of the Original Easement shall be automatically reinstated and thereafter be in full force and effect.

For source of title see Warranty Deed of 74 Industrial Park, LLC to Recon Realty, LLC recorded November 27, 2019, at Book 4713, Page 625, in the Strafford County Registry of Deeds.

[Signature Pages Follow]

Executed as of the ___ day of _____, ____.

RECON REALTY, LLC

By: _____
Sean Manning,
Duly Authorized Manager

STATE OF NEW HAMPSHIRE
COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day of _____, ____, by Sean Manning, manager of Recon Realty, LLC, a New Hampshire limited liability company, on behalf of said company for the purposes herein intended.

_____
Justice of the Peace / Notary Public
My commission expires:
Seal or Stamp:

WESTFIELD, LLC

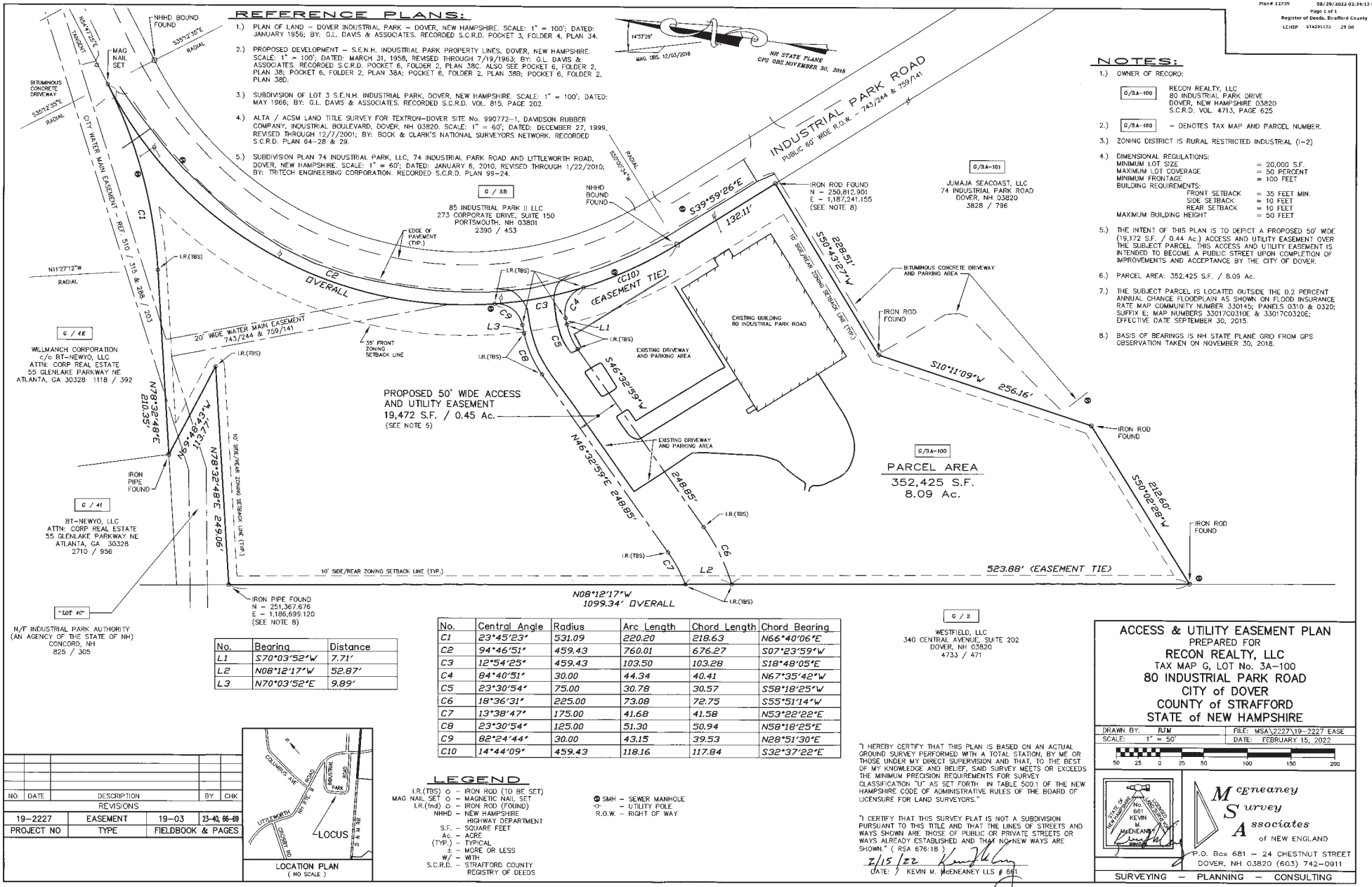
By: _____
Chad Kageleiry
Duly Authorized Manager

STATE OF NEW HAMPSHIRE
COUNTY OF STRAFFORD

The foregoing instrument was acknowledged before me this ____ day of _____, ____, by Chad Kageleiry, manager of Westfield, LLC, a New Hampshire limited liability company, on behalf of said limited liability company for the purposes herein intended.

_____
Justice of the Peace / Notary Public
My commission expires:

Plan# 12735 08/29/2022 02:34:12 PM
Page 1 of 1
Register of Deeds, Strafford County
LCHIP 97A201123 25.00



REFERENCE PLANS:

1.) PLAN OF LAND – DOVER INDUSTRIAL PARK – DOVER, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: JANUARY 1956; BY: G.L. DAVIS & ASSOCIATES. RECORDED S.C.R.D. POCKET 3, FOLDER 4, PLAN 34.

2.) PROPOSED DEVELOPMENT – S.E.N.H. INDUSTRIAL PARK PROPERTY LINES, DOVER, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: MARCH 31, 1958, REVISED THROUGH 7/19/1963; BY: G.L. DAVIS & ASSOCIATES. RECORDED S.C.R.D. POCKET 6, FOLDER 2, PLAN 38C. ALSO SEE POCKET 6, FOLDER 2, PLAN 38; POCKET 6, FOLDER 2, PLAN 38A; POCKET 6, FOLDER 2, PLAN 38B; POCKET 6, FOLDER 2, PLAN 38D.

3.) SUBDIVISION OF LOT 3 S.E.N.H. INDUSTRIAL PARK, DOVER, NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: MAY 1966; BY: G.L. DAVIS & ASSOCIATES. RECORDED S.C.R.D. VOL. 815, PAGE 202.

4.) ALTA / ACSM LAND TITLE SURVEY FOR TEXTRON-DOVER SITE No. 990772-1, DAVIDSON RUBBER COMPANY, INDUSTRIAL BOULEVARD, DOVER, NH 03820. SCALE: 1" = 60'; DATED: DECEMBER 27, 1999, REVISED THROUGH 12/7/2001; BY: BOOK & CLARK'S NATIONAL SURVEYORS NETWORK. RECORDED S.C.R.D. PLAN 64-28 & 29.

5.) SUBDIVISION PLAN 74 INDUSTRIAL PARK, LLC, 74 INDUSTRIAL PARK ROAD AND LITTLEWORTH ROAD, DOVER, NEW HAMPSHIRE. SCALE: 1" = 60'; DATED: JANUARY 6, 2010, REVISED THROUGH 1/22/2010; BY: TRITECH ENGINEERING CORPORATION. RECORDED S.C.R.D. PLAN 99-24.

NOTES:

1.) OWNER OF RECORD:
G/3A-100 RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4713, PAGE 625

2.) G/3A-100 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) ZONING DISTRICT IS RURAL RESTRICTED INDUSTRIAL (I-2)

4.) DIMENSIONAL REGULATIONS:

MINIMUM LOT SIZE	= 20,000 S.F.
MAXIMUM LOT COVERAGE	= 50 PERCENT
MINIMUM FRONTAGE	= 100 FEET
BUILDING REQUIREMENTS:	
FRONT SETBACK	= 35 FEET MIN.
SIDE SETBACK	= 10 FEET
REAR SETBACK	= 10 FEET
MAXIMUM BUILDING HEIGHT	= 50 FEET

5.) THE INTENT OF THIS PLAN IS TO DEPICT A PROPOSED 50' WIDE (19,172 S.F. / 0.44 Ac.) ACCESS AND UTILITY EASEMENT OVER THE SUBJECT PARCEL. THIS ACCESS AND UTILITY EASEMENT IS INTENDED TO BECOME A PUBLIC STREET UPON COMPLETION OF IMPROVEMENTS AND ACCEPTANCE BY THE CITY OF DOVER.

6.) PARCEL AREA: 352,425 S.F. / 8.09 Ac.

7.) THE SUBJECT PARCEL IS LOCATED OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.

8.) BASIS OF BEARINGS IS NH STATE PLANE GRID FROM GPS OBSERVATION TAKEN ON NOVEMBER 30, 2018.

No.	Bearing	Distance
L1	S70°03'52"W	7.71'
L2	N08°12'17"W	52.87'
L3	N70°03'52"E	9.89'

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	23°45'23"	531.09	220.20	218.63	N66°40'06"E
C2	94°46'51"	459.43	760.01	676.27	S07°23'59"W
C3	12°54'25"	459.43	103.50	103.28	S18°48'05"E
C4	84°40'51"	30.00	44.34	40.41	N67°35'42"W
C5	23°30'54"	75.00	30.78	30.57	S58°18'25"W
C6	18°36'31"	225.00	73.08	72.75	S55°51'14"W
C7	13°38'47"	175.00	41.68	41.58	N53°22'22"E
C8	23°30'54"	125.00	51.30	50.94	N58°18'25"E
C9	82°24'44"	30.00	43.15	39.53	N28°51'30"E
C10	14°44'09"	459.43	118.16	117.84	S32°37'22"E

LEGEND

I.R.(TBS) o – IRON ROD (TO BE SET)
MAG NAIL SET o – MAGNETIC NAIL SET
I.R.(fnd) o – IRON ROD (FOUND)
NHHD – NEW HAMPSHIRE HIGHWAY DEPARTMENT
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
W/ – WITH
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
(S) SMH – SEWER MANHOLE
-o- – UTILITY POLE
R.O.W. – RIGHT OF WAY

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

19-2227	EASEMENT	19-03
PROJECT NO	TYPE	FIELDBOOK & PAGES

LOCATION PLAN
(NO SCALE)

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

"I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN." (RSA 676:18)

7/15/22
DATE: / KEVIN M. McENEANEY LLS # 681

ACCESS & UTILITY EASEMENT PLAN
PREPARED FOR
RECON REALTY, LLC
TAX MAP G, LOT No. 3A-100
80 INDUSTRIAL PARK ROAD
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DRAWN BY: RJM
SCALE: 1" = 50'
FILE: MSA\2227\19-2227 EASE
DATE: FEBRUARY 15, 2022

50 25 0 25 50 100 150 200

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 681 KEVIN M. McENEANEY

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING

PROJECT NARRATIVE

for

White Birch Armory Building Addition

Site Plan

80 Industrial Park Drive
Tax Map G, Lot 3-A-100
August 2022
Revised: September 2022

PROJECT OVERVIEW & SITE CHARACTERISTICS

The project parcel is shown on Tax Map G as Lot 3-A-100, is located within the CM District, consists of +/- 8.09 acres, and is currently developed with an existing +/- 19,500s.f. building housing an indoor range, retail, office and warehouse areas. The property is owned by Recon Realty, LLC and is home to White Birch Armory. The project applicant is proposing a +/- 20,287 s.f. addition to increase both office and warehouse space on site. The development will also include additional parking as well as landscaping, lighting and stormwater mitigation improvements.

The site is currently serviced by public water and sewer connections, underground electric service, and natural gas service. A small portion of grading, drainage, and pavement is proposed within the 50' wetland buffer with impacts of 6,975 s.f. (See Conditional Use Permit application). There are no proposed impacts to any wetlands.

The project site consists of the following general improvements:

- Clear the limits of work for construction.
- Construction of +/- 20,287 s.f. office/warehouse addition and associated parking.
- Construction of on-site stormwater detention and treatment system, grading, and other drainage requirements.
- Site utility construction.
- Landscape the site and stabilize remaining areas with loam and seed.

DRIVEWAY AND PARKING LOT

Employee and visitor parking will continue to be associated with the existing front parking areas. The proposed parking areas will primarily be for employees of the facility. A dedicated 30' wide x 125' long truck access area will ensure continued access to the existing loading docks. The parking area will have a 24' wide drive aisle with 18' long parking stalls. Lighting for the proposed parking lot and driveway will be per the Lighting Plan and will be LED fixtures that are dark sky compliant.

For the proposed development (inclusive of both existing building and the proposed addition) the City of Dover parking maximums allow for the following (105 spaces):

	Required/Proposed:		
• Industrial / Warehouse:	1 space per 800 s.f. (24,197 s.f.)	=	30 surface spaces
• Retail:	1 space per 275 s.f. (15,400 s.f.)	=	56 surface spaces
• Office:	1 space per 300 s.f. (5,983 s.f)	=	20 surface spaces

PROJECT NARRATIVE

for

White Birch Armory Building Addition

Site Plan

80 Industrial Park Drive
Tax Map G, Lot 3-A-100
August 2022
Revised: September 2022

- Existing parking = 60 Surface Spaces (including 3 Accessible Spaces)
- Total proposed = **74 Surface Spaces (includes 3 Accessible Spaces)**

WETLAND SETBACK IMPACT TYPE

The project work requires a conditional use permit from the City of Dover. Approximately +/- 6,975 s.f. of the wetland buffer will be impacted. The project does not impact bogs, marshes, sand dunes, tidal wetlands, cedar swamps, undisturbed tidal buffer zone, or involve any work within 50 feet of a salt marsh. The project is not located within 100 feet of prime wetlands.

DRAINAGE

The parcel is located on the western side of Industrial Park Drive. The proposed development is surrounded by other commercial properties within a previously established industrial park. The site is developed and the groundcover primarily consists of grass and woody vegetation but also includes approximately +/- 1.4 acres of onsite impervious area from the existing building, driveway, and associated parking areas. The 8.32 acre watershed of the parcel includes the project site as well as a portion of Industrial Park Drive. On site soils are a mix of Udorthents, Sutton, Buxton, and Scantic soils. Portions of the Udorthents and Sutton soils are HSG B, with other portions of the Udorthents and Sutton as well as the Buxton, and Scantic soils classified as HSG C.

The project proposes +/- 65,000 s.f. of disturbance. The project will require permitting through NH DES Alteration of Terrain as the overall disturbance to the parcel within the past 10 years will meet permitting thresholds of greater than 100,000 s.f. The site has been designed in accordance with NH DES AoT requirements to treat the stormwater runoff from the full buildout of the site, including the existing building and impervious areas. The post development watershed is modeled utilizing the same points of analysis as the predevelopment watershed, allowing direct comparison of the peak runoff between the pre and post developed conditions (see drainage report).

UTILITIES

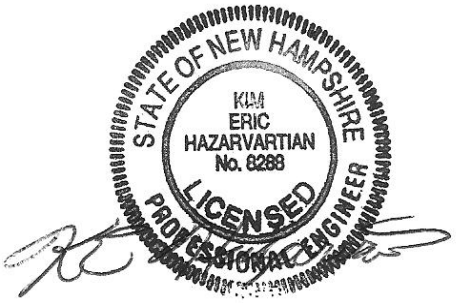
The project is currently serviced by City of Dover water and sewer as well as Unitil for natural gas, and Eversource for electricity. The project proposes minimal sewer improvements to provide sewer connection for the proposed addition. Sewer connections and any necessary upgrades will be made per the City's Community Services Utility Division and Fire Department requirements and standards.

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

MEMORANDUM

Ref: 1476
Subject: Traffic Assessment
74 Industrial Park Drive
Dover, New Hampshire
From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
Date: July 1, 2019



INTRODUCTION

Civilworks New England has retained TEPP LLC to prepare this traffic-assessment memorandum (TAM). This TAM regards 74 Industrial Park Drive in the City of Dover, New Hampshire.

This TAM includes:

- existing site description
- proposed project description
- road description
- public transit
- sight distances
- trip generation
- trip distribution/assignment
- potential traffic impacts

This TAM concludes that:

- relevant sight distances at the Industrial Park Drive/proposed driveway intersection will be adequate
- the proposed project is not anticipated to add significant new traffic to the area

EXISTING SITE DESCRIPTION

The site:

- is along the west side of Industrial Park Drive
- has an area of about eight acres
- is wooded
- has proximate industrial development and open land

PROPOSED PROJECT DESCRIPTION

The project will provide one building with a total floor area of about 24,100 square feet (sf) including:

- about 2,500 sf of floor area as warehouse
- about 2,573 sf of floor area as office
- about 2,956 sf of floor area as a showroom
- a 20-lane firing range

The project will provide one unsignalized driveway intersecting the west side of Industrial Park Drive.

ROAD DESCRIPTION

Industrial Park Drive:

- is under the jurisdiction of the City
- is a loop collector street
- at either end of the loop, connects with Littleworth Road, an arterial highway
- includes a horizontal curve along the site frontage
- has minor vertical grades near the site
- has asphalt-cement-concrete pavement in overall good condition
- has one travel lane per direction
- includes no sidewalk near the site

- has unmarked pavement
- includes utility poles along the west side near the site

PUBLIC TRANSIT

A public transit route is not available within one-quarter mile of the site.

SIGHT DISTANCES

The American Association of State Highway and Transportation Officials (AASHTO) has established authoritative policy for sight distances at unsignalized intersections in terms of:

- stopping sight distance (SSD)
- optional intersection sight distance (ISD)[1]

SSD:

- provides for safety
- enables a driver, on the major road, to perceive and react accordingly to a vehicle entering the major road from a minor road
- is conservative because it encompasses a wide range of brake-reaction times and deceleration rates[2]

Optional ISD:

- is ordinarily greater than SSD and may enhance traffic operations
- is not required for safety

Table 1 shows that relevant available sight distances for the Industrial Park Drive/proposed driveway intersection will be adequate.

[1] AASHTO, *A Policy on Geometric Design of Highways and Streets*, 6th Edition (Washington, DC, 2011), pages 9-28 to 9-29.

[2] AASHTO, pages 3-2 to 3-6.

Table 1. Sight distances.

Intersection and View	Sight Distance (feet)[a]	Provide for Speeds (miles per hour) SSD	ISD
Industrial Park Drive/Proposed Driveway			
Industrial Park Drive to/from North	400+	50+	36+
Industrial Park Drive to/from South	400±	50+	36+

[a] Provided by Civilworks New England. With roadside and vegetation maintenance.

CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual*.[3] This authoritative guide for calculating site traffic includes information for:

- warehousing, land use 150, based on floor area[4]
- small office building, land use 712, based on floor area[5]

Calculations for the showroom were based on customer transactions at a retail gun shop in the Town of Windham, New Hampshire. The transactions were over a three-day period in January 2012. The gun shop had a floor area of about 1,500 sf, with trip generation prorated to reflect the proposed 2,956 sf.

ITE information was not available for indoor firing ranges. For the 20 proposed stations, the calculations used:

- 20 vehicle-trips (total of in and out) for each peak hour
- 120 vehicle-trips (total of in and out) per day

Table 2 shows calculated vehicle trips due to the proposed development as:

[3] ITE, *Trip Generation Manual,* 10th edition (Washington DC, September 2017).

[4] ITE, *Trip Generation Manual,* Volume 2, Data, Industrial (Land Uses 100-199), pages 67 to 81.

[5] ITE, *Trip Generation Manual,* Volume 2, Data, Office (Land Uses 700-799), pages 93 to 110.

Table 2. Trip generation.

Period	Uses[b]				
	Warehouse[a]	Office[b]	Showroom[c]	Firing Range[d]	Total
Weekday Daily	4	42	154	120	320
Weekday AM Street-Peak Hour					
In	0	4	0	10	14
Out	0	1	0	10	11
Total	0	5	0	20	25
Weekday PM Street-Peak Hour					
Enter	0	2	9	10	21
Exit	0	4	8	10	22
Total	0	6	17	20	43
Saturday Daily	0	42	154	120	316
Saturday Peak Hour					
Enter	0	1	9	10	19
Exit	0	0	8	10	18
Total	0	1	17	20	37

[a] ITE, *Trip Generation Manual*, warehousing, land use 150, 2,500-sf floor area.

[b] ITE, *Trip Generation Manual*, small office building, land use 712, 2,573-sf floor area. Weekday daily used as estimate for Saturday daily.

[c] Calculations for the showroom were based on customer transactions at a retail gun shop in the Town of Windham, New Hampshire. The transactions were over a three-day period in January 2012. The gun shop had a floor area of about 1,500 sf, with trip generation prorated to reflect the proposed 2,956 sf.

[d] ITE information was not available for indoor firing ranges.

- weekday daily, 320 (total of in and out)
- weekday AM-street-peak hour, 25 (14 in and 11 out)
- weekday PM-street-peak hour, 43 (21 in and 22 out)
- Saturday daily, 316 (total of in and out)
- Saturday peak hour, 37 (19 in and 18 out)

TRIP DISTRIBUTION/ASSIGNMENT

Calculated trip generation is so low that area traffic operations are not sensitive to trip distribution/assignment. Vehicle-trips to and from the east may predominate largely due to connections with central Dover and the Spaulding Turnpike.

POTENTIAL TRAFFIC IMPACTS

The calculations show less than 100 peak-hour primary vehicle-trips, due to the proposed project. More specifically, calculated peak-hour trip generation is:

- 25 to 43 vehicle-trips
- split entering versus exiting the site
- further split by orientation to and from the north and south

Therefore, the proposed project is not anticipated to add significant new traffic to the area.

CONCLUSION

In conclusion:

- relevant sight distances at the Industrial Park Drive/proposed driveway intersection will be adequate
- the proposed project is not anticipated to add significant new traffic to the area

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TRAFFIC ASSESMENT MEMORANDUM SUPPLEMENT

INTRODUCTION

Civilworks New England has prepared this traffic-assessment memorandum supplement (supplement). This supplement is in support of a proposed 20,287 sf building addition located at 80 Industrial Park Drive in the City of Dover, NH. This supplement augments the findings associated with a Traffic Assessment Memorandum prepared by Transportation Engineering, Planning and Policy (TEPP) on July 1, 2019 in support of White Birch Armory.

This supplement includes:

- proposed project description
- trip generation in support of the building addition
- total trip generation in support of full build out

This supplement concludes that:

- The proposed addition is not anticipated to add significant new traffic to the area

PROPOSED PROJECT DESCRIPTION

The project will provide:

- one building addition with a total floor area of about 23,273 square feet (sf)
- floor area will consist of 20,287 sf as warehouse and 2,986 sf as office space
- the project does not propose any additional driveways to access Industrial Park Drive

CALCULATED TRIP GENERATION

The Institute of Transportation Engineers (ITE) compiles and publishes trip-generation information for a variety of land uses in *Trip Generation Manual.*[1] This authoritative guide for calculating site traffic includes information for warehousing (Land Use Code 150) based on floor area[2] and general office building (Land Use Code 710) based on floor area.[3] Table 1 shows calculated vehicle trip ends

[1] ITE, *Trip Generation Manual,* 11th edition (Washington DC, September 2021).

[2] ITE, *Trip Generation Manual,* Volume 3, General Urban/Suburban and Rural (Land Uses 000-399), pages 94 to 108.

[3] ITE, *Trip Generation Manual,* Volume 4, General Urban/Suburban and Rural (Land Uses 400-799), pages 707 to 726.

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due to the warehouse portion of the proposed addition while Table 2 shows the calculations for the general office building portion of the proposed addition as:

Table 1: Trip Generation - Warehousing

Weekday Period	Avg. Trips / 1,000 sf	Proposed s.f. (1,000)	Vehicle Trips* Total	In	Out
Daily	1.71	20.3	35	18	17
AM - Peak Hour of Adjacent Street Traffic	0.17	20.3	3	2	1
PM - Peak Hour of Adjacent Street Traffic	0.18	20.3	4	1	3
Saturday					
Daily	0.15	20.3	3	1	2
Peak Hour of Generator	0.05	20.3	1	1	0

* ITE, *Trip Generation Manual,* Warehousing - Land Use Code 150

Table 2: Trip Generation - General Office Building

Weekday Period	Avg. Trips / 1,000 sf	Proposed s.f. (1,000)	Vehicle Trips* Total	In	Out
Daily	10.84	3	33	16	17
AM - Peak Hour of Adjacent Street Traffic	1.52	3	5	4	1
PM - Peak Hour of Adjacent Street Traffic	1.44	3	4	1	3
Saturday					
Daily	2.21	3	7	4	3
Peak Hour of Generator	0.53	3	2	1	1

* ITE, *Trip Generation Manual,* General Office Building - Land Use Code 710

- weekday daily, 68 (total of 34 in and 34 out)
- weekday AM-street-peak hour, 8 (6 in and 2 out)
- weekday PM-street-peak hour, 8 (2 in and 6 out)
- Saturday daily, 10 (5 in and 5 out)
- Saturday peak hour of Generator, 3 (2 in and 1 out)

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CALCULATED TRIP GENERATION – TOTAL

Augmenting TEPP's calculated trip generation for White Birch Armory with those calculated in this supplement provides the following trip generation calculations:

- weekday daily, 388
- weekday AM-street-peak hour, 33 (20 in and 13 out)
- weekday PM-street-peak hour, 51 (23 in and 28 out)
- Saturday daily, 326
- Saturday peak hour of Generator, 40 (21 in and 19 out)

POTENTIAL TRAFFIC IMPACTS

The calculations show less than 100 peak-hour primary vehicle-trips, due to both, the existing building and the proposed building addition. More specifically, tabulated peak-hour trip generation is:

- 33 to 51 vehicle-trips
- split entering versus exiting the site
- further split by orientation to and from the north and south

Therefore, the proposed project is not anticipated to add significant new traffic to the area.

CONCLUSION

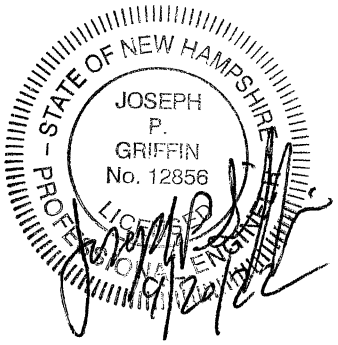
In conclusion:

- the proposed project is not anticipated to add significant new traffic to the area

CIVILWORKS NEW ENGLAND

Sincerely,

Joseph P. Griffin, PE



CIVILWORKS NEW ENGLAND

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PHONE: 603.749.0443 FAX: 603.749.7348

September 20, 2022

City of Dover
288 Central Ave
Dover, NH 03820

Attn: Donna Benton, Director of Planning

Re: Response to TRC Comments

Ref: White Birch Armory
80 Industrial Park Drive - Tax Map G, Lot 3-A-100
Dover Planning file: P22-63
Civilworks New England Reference No. 19003

Dear Ms. Benton:

On behalf of the applicant, White Birch Armory, we are pleased to resubmit the revised Site Plans based on the Technical Review Committee Minutes dated September 8, 2022. The response to each of the comments are as follows (**Responses in Bold)**:

Planning:

1. *Impact fees & possible water and sewer investment fees.*
   Owner acknowledges impact fees and possible W&S fees may be required.
2. *Restrictive Covenants in place & released June 28, 2019; See Gen. Note #3 on Sheet 4*
   Owner acknowledges the covenant has been released.
3. *Revise application for lot# from 3-A1 to 3-A-100*
   The permit applications have been updated.
4. *Confirm parking calculation*
   Parking calculations have been updated.
5. *Identify easement area on plan*
   The 50' access easement has been identified.
6. *Add the following to the plan set:*
   - *a) LLS, CWS, & LLA signatures and stamps*
     All stamps and signatures will be provided on the final plans.
   - *b) Owner's signature*
     The Owner's signature will be included on the final plan set.
   - *c) Consecutive page numbers*
     Plan numbering on the cover sheet has incorporated the Architectural Plan Set numbering and Landscape Plan Set numbering on the cover sheet.
   - *d) Planning File #P22-63*
     The file number has been added to the plan set.
   - *e) Common notes (please add or identify location of): 5, 7, 11, 24, 34*
     5: The S.C.R.D. information is identified in General Notes #1 (Sheet 4) as S.C.R.D. Vol. 4713, Page 625.
     7: The list of easements has been added as General Notes #11 (Sheet 4).
     11: Flood hazard area references are identified in General Notes #5 (Sheet 4). 24: The proposed use of the addition has been added as General Notes #12 (Sheet 4).

34: The dates the topographic survey were completed have been added as General Notes #10 (Sheet 4).

f) Screen trash enclosure or utilize alternative materials.

The proposed fence and gates are identified on the Site Plan (Sheet 6) and the chainlink fence with vinyl slats detail is located on Detail Sheet (Sheet 11).

g) No parking and stop signs

Three stop signs and two no parking signs have been identified on the Site Plan (Sheet 6) while the details are found on Detail Sheet (Sheet 11).

h) Trash enclosures and landscaping to the streetscape rendering

The Streetscape Rendering has been updated to include the trash enclosures and both existing and proposed landscaping.

Engineering:

1. *Drainage Plan: Clarify why the predevelopment analysis for this proposal differs from the analysis in the previous design. Some of the differences include:*
   a. *Number of discharge points 3 (2019) vs 2 (2022)*
   b. *D soils (2019) vs B and C (2021). Provide Soils Map*
   c. *Total areas of woods, grass, and impervious*
   d. *Total area*
   e. *Longest flow paths*
   f. *CN*
   g. *Tc*
   h. *Reaches include in 2022 but not in 2019*
   i. *Peak Rates*

   - **The 2022 predevelopment analysis incorporates additional offsite information that wasn't available in 2019, specifically the location of a drainage ditch along the western property line. This information changed the number of points of discharge, the need for reaches, and the longest flow paths.**
   - **Sometime after the 2019 analysis the abutter maintained the drainage ditches along the western property line. This maintenance provided better drainage for the site. Site specific soil mapping was performed by Bruce A. Gilday, a NH Certified Soil Scientist. A Soils map has been included in the plan set.**
   - **During the NH DES Alteration of Terrain pre application meeting it was noted that the Pre analysis would need to incorporate the existing conditions prior to the development of the existing site. Land cover use for portions of the site were determined utilizing aerials from pre 2019 development. These 2019 and 2022 aerials are included as Pre and Post Drainage Plans.**

2. *Drainage Analysis: Clarify the following.*
   a. *CB3 does not appear to receive flows in the HydroCAD model.*
   In the predevelopment watershed CB3 was located along an existing curbline and received stormwater. In the post development watershed CB3 is now located within the drive aisle/truck access. It is no longer located along a curbline and as such there is very little water that will be directed to CB3.
   b. *Recommend providing 100-year storm node listing to show pond has ability to pass 100-yr event. Is an emergency spillway required for larger evenets?*
   The 4'x4' overflow structure provides emergency overflow for the system. The inlet of the structure is located at elevation 105.5'. The peak pond elevation during the 100 yr storm event is 105.42' and the ponds overtopping elevation is 106.1'. Additionally, the 12" culvert passes 4.0 cfs of 7.7 cfs potential flow during the 100 yr storm event. The

system is designed to pass the 100 yr storm event without utilizing the emergency overflow and an emergency spillway is not required. The Wet Pond 100 yr storm node listing has been added to Appendix B1 as part of the supporting documentation for the Wet Pond BMP design.

c. *Predevelopment watershed plan shows 4 flow paths and only 2 DPs. Three match the three from the 2019 study. Please clarify which ones are applicable to this analysis and what will be submitted to AOT.*

Watersheds A2, and A3 discharge via the offsite channel, back onto the subject parcel where they combine with the discharge from Watershed A1 prior to leaving the site at the southernmost point of the site. Reaches are required to sum the runoff at this location, Discharge Point A. The drainage analysis provided to the City will be the analysis that is submitted to NH DES AoT for permitting.

3. *Survey: Limits of wetlands are noticeably different from the 2019 plan. Please clarify why wetlands along the southern corner appear to have been reduced over the past 3 years.*

Sometime after 2019 the abutter located to the west, maintained the drainage ditch along the western property line. Maintaining this drainage allowed the site to drain as originally intended. The wetlands were delineated on October 5, 2021 by a NH Certified Wetland Scientist, Bruce A Gilday.

4. *Survey: Drainage structures appear to be missing. Please clarify if they are present as shown on the grading plan.*

The drainage structures are present, as they are existing structures they are not boldly identified like proposed structures are.

5. *General Note: Provide copies of easements for utilities and access across abutting properties.*

A list of easements has been added as General Notes #11 (Sheet 4). Additionally, copies of the easements have been provided as part of this submission.

6. *General Note: Add note to reflect that an easement is provided to the City to maintain the potable drinking water quality through the hydrant flushing program.*

A note has been added as Utility Notes #19 (Sheet 4).

7. *General Note: Provide note that indicates utilities within the property are to be the responsibility of the property owner including the routine maintenance, replacement, repair, and inspection as needed.*

A note has been added as Utility Notes #18 (Sheet 4).

8. *Sheet 6: Clarify if curbing is proposed between building addition and parking.*

Curbing is not proposed between the building and the parking area. The area is separated by a 10' wide landscaped island.

9. *Sheet 6: Is a loading dock proposed? If so, indicate how trucks will utilize the site.*

The existing loading dock area has been identified on the site plan. No additional loading docks are proposed. A truck movement plan has been provided.

10. *Sheet 7: Call out the size of the rip rap apron on wet pond outlet.*

A note directing them to "see detail" has been added.

11. *Sheet 7: Call out outlet structure.*

The outlet structure has been called out.

12. *Sheet 8: Provide SMH where proposed force main ties into existing sewer service.*

A force main detail has been provided for clarification. Further discussion with engineering as necessary.

13. *Sheet 13: Recommend generator be provided for PS.*

The project proponent does not require a generator.

14. *Sheet 15: Recommend adding lighting levels from existing lights to remain on property.*

The lighting plan has been updated.

Police:

1. *Traffic Assessment Memorandum from original site plan (dated July 2019) is included in the packet and has not been updated. Is this inadvertent?*
   The Traffic Assessment Supplement has been included in this submission.
2. *What is the justification for 4 total dumpsters?*
   Two dumpsters will support garbage while two will support cardboard recycling.

Fire/Inspection Services:

1. *Clarify the future traffic pattern and vehicular pattern throughout the site.*
   The existing loading dock area has been identified on the site plan. No additional loading docks are proposed. A truck movement plan has been provided.
2. *Indicate curb cut widths.*
   The internal site curb cut widths have been provided on Sheet 6.
3. *Discuss if notes should be added to plan regarding the installation of Stop signs at curb cuts when a new road is constructed.*
   Three stop signs and two no parking signs have been identified on the Site Plan (Sheet 6) while the details are found on Detail Sheet (Sheet 11).
4. *Indicate the use of the addition such as mercantile, storage, business, etc.*
   The proposed use of the addition has been added as General Notes #12 (Sheet 4).
5. *No reloading in proposed addition.*
   The proposed use of the addition has been added as General Notes #12 (Sheet 4) and it identifies that there shall be no reloading of ammunition in the proposed addition.
6. *Where will pallets be stored?*
   Site Notes #32 (Sheet 4) indicates that pallets shall be stored in accordance with the adopted State of NH Building and Fire Codes.
7. *New overhead door is only to be used for forklift access.*
   Site Notes #33 (Sheet 4) indicates that the proposed overhead door shall be used for forklift access.

Business Development:

1. *Will the employee count increase? – WBA is hopeful additional staff will be added.*
   The Applicant is dedicated to supporting the growth of his facility to ensure the satisfaction of his clients and customers.
2. *Appreciate the business growth in Dover.*

Planning Board:

1. *No comment*

Next Steps: Submit full application material for a second unofficial TRC meeting with a one (1) week turnaround addressing all comments and questions raised by the TRC.

Sincerely,

CIVILWORKS NEW ENGLAND



Stephen J Haight PE

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES – P22-63

Application Type:	Site Plan Review
Applicant(s):	White Birch Armory
Owner(s):	Recon Realty, LLC
Location:	80 Industrial Park Drive (Assessor's Map G, Lot 3-A-100)
Date:	September 8, 2022

INTENT: To construct a 20,287± s.f. addition to increase office and warehouse space on site, including: additional parking, landscaping, lighting, and stormwater management improvements. A Wetlands Protection District CUP for wetland impact will also appear before the Planning Board.

UNITS PROPOSED: N/A

AGENDA ITEM #: 2

ACREAGE: 8.09± ac / 352,425± s.f.

ZONING DISTRICT: CM

EXISTING LAND USE: Commercial building with associated parking

PROPOSED LAND USE: Expansion & improvements to existing commercial building

SURROUNDING LAND USE: Vacant Land, Commercial/Manufacturing

ZBA ACTION: None

CUP & PERMITS REQUIRED:
- Wetland Impact CUP (Pending)
- AoT (Pending)

WAIVERS REQUESTED: None requested.

ATTENDANCE:
Members:
Donna Benton, Planning
Natasha Kypfer, Zoning
Reid Amy, Business Development
Jim Maxfield, Fire/Inspection Services
Ken Mavrogeorge, Engineering
Others:
Michael Asciola, Planning
Joe Griffin, Civilworks
Steve Haight, Civilworks
Jase Gregoire, Civilworks

PLAN REVIEW:
Planning:
- Reminder: Impact fees & possible water and sewer investment fees.
- Restrictive Covenants in place & released June 28, 2019; See Gen. Note #3 on Sheet 4
- Revise application for lot# from 3-A1 to 3-A-100
- Confirm parking calculation
- Identify easement area on plan
- Add the following to plan set:
  - LLS, CWS & LLA signatures and stamps (Landscape Plan must be stamped or request waiver)
  - Owners signature
  - Consecutive page numbers
  - Planning File # P22-63
  - Common notes (please add or identify location of): 5, 7, 11, 24, 34
  - Screen trash enclosure or utilize alternative materials
  - No parking and stop signs
  - Trash enclosures and landscaping to the streetscape rendering

Engineering:
- Drainage Plan: Clarify why the predevelopment analysis for this proposal differs from the analysis in the previous design. Some of the differences include:
  - Number of discharge points 3 (2019) vs 2 (2022)
  - D soils (2019) vs B and C (2021). Provide Soils Map
  - Total areas of woods, grass, and impervious
  - Total Area
  - Longest Flow Paths
  - CN
  - Tc
  - Reaches include in 2022 but not in 2019
  - Peak Rates
- Drainage Analysis: Clarify the following.
  - CB3 does not appear to be receiving flows in the HydroCAD Model.
  - Recommend providing 100-year storm node listing to show pond has ability to pass 100-yr event. Is an emergency spillway required for larger events?
  - Predevelopment watershed plan shows 4 flow paths and only 2 DPs. Three match the three from the 2019 study. Please clarify which ones are applicable to this analysis and what will be submitted to AOT.

DRAFT

- Survey: Limits of wetlands are noticeably different from the 2019 plan. Please clarify why wetlands along the southern corner appear to have been reduced over the past 3 years.
- Survey: Drainage structures appear to be missing. Please clarify if they are present as shown on the proposed grading plan.
- General Note: Provide copies of easements for utilities and access across abutting properties.
- General Note: Add note to reflect that an easement is provided to the City to maintain the potable drinking water quality through the hydrant flushing program.
- General Note: Provide note that indicates utilities within the property are to be the responsibility of the property owner including the routine maintenance, replacement, repair, and inspection as needed.
- Sheet 6: Clarify if curbing is proposed between building addition and parking.
- Sheet 6: Is a loading dock proposed? If so, indicate how trucks will utilize the site.
- Sheet 7: Call out size of rip rap apron on wet pond outlet.
- Sheet 7: Call out outlet structure.
- Sheet 8: Provide SMH where proposed force main ties into the existing sewer service.
- Sheet 13: Recommend generator be provided for PS.
- Sheet 15: Recommend adding lighting levels from existing lights to remain on the property.

Police:

- Traffic Assessment Memorandum from original site plan (dated July 2019) is included in the packet and has not been updated. Is this inadvertent?
- What is the justification for 4 total dumpsters?

Fire/Inspection Services:

- Clarify the future traffic pattern and vehicular patterns throughout the site
- Indicate curb cut widths
- Discuss if notes should be added to plan regarding the installation of STOP signs at curb cuts when a new road is constructed.
- Indicate the use of the addition such as mercantile, storage, business, etc.
- No reloading in proposed addition.
- Where will pallets be stored?
- New overhead door is only to be used for forklift access.

Business Development:

- Will the employee count increase? – WBA is hopeful additional staff will be added.
- Appreciate the business growth in Dover.

Planning Board: N/A

Next Steps: Submit full application materials for a second unofficial TRC meeting with a one (1) week turnaround addressing all comments and questions raised by the TRC.

Adjournment:
K. Mavrogeorge moved to adjourn at 11:40 am. Seconded by R. Amy. Vote: U/A.

DRAFT

Landscape Best Management Practices
Operations and Maintenance Plan

White Birch Armory

74 Industrial Drive
Dover, New Hampshire 03820

Prepared for
Joseph Griffin
Civilworks New England/Haight Engineering, PLLC
181 Watson Road
PO Box 1166
Dover, New Hampshire 03821

Prepared by
Ironwood Design Group, LLC
PO Box 873
Exeter, New Hampshire 03833



Ironwood
Landscape Architecture • Planning

Landscape Maintenance

Introduction

The landscape enhancements proposed for the 74 Industrial Drive building will require modest maintenance at various times throughout the year. For the site plantings, maintenance is most important during the first 1-2 years following installation when plants are becoming established. Anyone involved in the upkeep of the facility should become familiar with the landscape and its features. Identified below are basic, at minimum, maintenance tasks:

Weekly Tasks

1. Prune back any shrubs overhanging curbs or sidewalks.
2. Remove litter from plants bed.
3. Remove broken or fallen branches from trees.
4. Prune sucker growth from tree trunks.
5. Remove weeds larger than 2 inches high or wide from plant beds. Weeds 2 inches and larger must be removed, not just killed. **The application of herbicides such as Roundup is discouraged.**
6. Any invasive species seedlings observed should be removed and disposed of properly.
7. Replace bark mulch that may have been washed out of planting beds. Smooth mulch layer if it has been disturbed.
8. Check plants for signs of stress, pests or disease and notify Owner for authorization to replace.
9. If a significant decline in plant health is attributed to an insect pest, **apply an organic product and/or process** to control the pest.
10. Water plants that are dry and stressed.
11. Notify Owner for authorization to replace dead plants at the appropriate time (see annual tasks, September).
12. Identify other tasks listed on the Annual and Monthly checklist of tasks.

Annual Tasks

Early Spring

1. Prune winter damage such as broken tree branches that interfere with public safety.
2. Trim dead perennial foliage left in the fall for winter interest to within six inches of the ground.
3. Add new mulch to plant beds where the mulch depth has been reduced to less than 2 inches. Mulch depth shall not exceed two inches (top dressed). Mulch is not required where shrubs or groundcover completely hide the soil surface from view.
4. Gently prune shrubs at appropriate time of year based on species, for shape and form. **Do not shear.**
5. Energize the irrigation system, repair damaged components, test the system, adjust heads, and update programing.
6. Conduct a soil test to measure at a minimum, pH, phosphorus, potassium, calcium, and magnesium. Follow the recommendations provided with the soil test results.
7. Apply fertilizer only when required. A single application of fertilizer per year before Memorial Day is encouraged.

Monthly Tasks

June

No additional items

July

No additional items

August

No additional items

September

1. Inventory all plant materials, including an exact count of all shrubs and trees.
2. Replace any dead or missing plants.
3. Aerate lawn areas.
4. Apply pelletized lime at a rate of 80 lbs/1,000 square feet or as soil test dictates.

October

1. Winterize irrigation system.

November

1. Remove leaves from lawn areas and planting beds.
2. Remove perennial vegetation that has died back for the season.
3. Apply “WILT-PRUF” to broadleaf evergreens, according to label instructions, to protect shrubs from winter die back.

December

1. Prune any tree branches that interfere with public safety.
2. Prune street and parking lot trees yearly to encourage strong growth the following growing season. Trees adjacent to pedestrian sidewalks shall have branches pruned to 6-foot height.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Replace dead or dying plants			X				
Remove weeds	X		X	X	X		
Cut down grasses			X				
Remove accumulated leaves, litter, and plant debris		X					X

Stormwater Detention Facilities

Introduction

The stormwater facilities are used to attenuate flow and treat stormwater. The stormwater treatment areas consist of a large basin and linear swales seeded with a variety of native, adaptable, and rugged perennial grasses, and sometimes additional flowering plants. There are maintenance tasks associated with stormwater facilities.

Erosion

The soil in the facility and in areas draining to the facility shall be inspected for erosion. Eroded areas shall be filled with soil or mulch and seeded with the approved seed mix for the location.

Sediment Accumulation & Clogging

The accumulation of sediment within the facility may reduce its infiltration capacity and impair performance. The facility shall be inspected for accumulation of sediment and excessive sediment shall be removed with the area re-mulched and replanted as appropriate and necessary.

Outlet Structure Maintenance

The facility outlet structure requires monitoring. Periodically, the orifice on the outlet pipe may clog with debris. Any found debris should be removed and appropriately disposed of off-site.

Debris & Litter

Debris and litter should be removed monthly to maintain aesthetic appearance and public acceptance.

Plant Maintenance

Healthy vegetation contributes to the optimal operation of the stormwater facility. Planting area maintenance tasks include the removal of accumulated leaves, litter, and plant debris as needed. During the first 1-2 years after planting, the facility should be monitored for invasive species and weeded as needed and appropriate. Well-established facility vegetation should be mowed annually in the fall.

Snow Storage

Snow shall not be dumped directly onto the facility.

Chlorides

The stormwater facility is not suitable for treating chlorides. Chloride use on source surface areas tributary to the facility should be avoided if possible. In these locations, it would be prudent to eliminate or reduce application of chloride-containing deicing compounds, use alternative deicers, or apply clean sand as needed. Aggressive sweeping in these areas, along with pretreatment sumps and filter strips, will minimize the negative impact of the sand on the facility.

Management Task or Activity	Time or Frequency						
	Weekly	Monthly	Spring	Summer	Fall	Winter	After Major Rain Events
Inspect for erosion. Rake and redistribute/replenish any soil, rap, or mulch that has eroded		X					X
Inspect for standing water							X
Remove accumulated leaves, litter, and plant debris		X					X
Weed plant material		X					
Mow plant material					X		

Stormwater Management System Inspection & Maintenance Plan

Prepared for

WHITE BIRCH ARMORY
Map G, Lot 3-A-100

80 Industrial Park Drive
Dover, New Hampshire
Strafford County

AUGUST 2022
Revised: SEPTEMBER 2022

Owner of Record:

RECON REALTY, LLC
80 Industrial Park Drive
Dover, New Hampshire 03820

Prepared By:

CIVILWORKS NEW ENGLAND
P.O. Box 1166
181 Watson Road
Dover, New Hampshire 03821

Introduction

Civilworks NE, has prepared the following Stormwater Management System Inspection & Maintenance Plan for **White Birch Armory.** The intent of this plan is to provide a list of procedures that document the inspection and maintenance requirements of the Stormwater Management System for this site.

The following inspection and maintenance program is necessary in order to keep the Stormwater Management System functioning properly. These measures will also help to minimize potential environmental impacts to the areas surrounding the developed site. By following the enclosed procedures, the property owners and maintenance personnel will be able to maintain the functional design of the Stormwater Management System and maximize its ability to remove sediment and other contaminants from site generated stormwater runoff.

This plan also requires the Owner/Operator to prepare and implement a salt minimization plan to reduce salt usage on-site and ultimately within the watershed. This plan will allow the owner/operator to monitor and modify how much salt is needed, when it should be applied, where it needs to be applied, with the ultimate goal of reducing salt-use without compromising safety. It is expected that salt-use reduction will lead to long-term cost-savings as a result of purchasing less salt and reduced impacts on vegetation (e.g., landscaping) and corrosion of infrastructure.

The salt minimization plan should include the retention of a contractor who has completed the Green SnowPro Training course and obtained NH DES Salt Application Certification.

It is anticipated that this be a living document that will be updated at regular intervals (recommend updating annually in advance of the winter season in order to facilitate adjustments).

Owner

Recon Realty, LLC
80 Industrial Park Drive
Dover, NH 03820

In the event of a change in ownership, this Inspection and Maintenance Plan shall be transferred to the new party; transfer shall be documented to NH DES in writing.

Contact / Responsible Party

White Birch Armory
80 Industrial Park Drive
Dover, NH 03820

Sean Manning
Phone: (603) 330-0146
Email: sean@wbarmory.com

The contact information for the Contact / Responsible Party shall be kept current; transfer shall be documented to NH DES in writing.

Management Company

White Birch Armory
80 Industrial Park Drive
Dover, NH 03820

The contact information for the Management Party shall be kept current.

Inspection Schedule / Record Retention

Inspection frequency should, at a minimum, be in accordance with New Hampshire Stormwater Manual, Volume 2, latest edition, as updated by NH DES. See the Inspection and Maintenance Plan for frequency requirements. A copy of the completed Stormwater Management System's Inspection & Maintenance Log and Deicing Salt Quantity Use Log shall be maintained, kept on-site, and be made available to local, state, or federal regulators as applicable by law. All Inspection and Maintenance records must be provided to NH DES upon request.

Stormwater Management System Components

The Stormwater Management System associated with the project is designed to mitigate both the quantity and quality of site-generated stormwater runoff. As a result, its design includes the following elements:

- Pipes/Culverts
- Outlet Structures
- Energy Dissipation Structures / Sediment Forebay
- Catch Basins / Yard Drains
- Wet Pond
- Pavement
- Litter / Trash Removal

Structure callouts correlate to the design plans, a copy of which shall be maintained with this Inspection and Maintenance Plan.

Control of Invasive Species

During maintenance activities, check for the presence of invasive plants and remove in a safe manner. Invasive plants shall be controlled to prevent them from reproducing, spreading, or re-growing. See the University of New Hampshire – Cooperative Extension's "Method for Disposing Non-Native Invasive Plants", included at the end of this manual, for guidance on the removal and disposal of invasive species.

Inspection and Maintenance Plan

By implementing the following procedures, the owners will be able to maintain the functional design of the Stormwater Management System and maximize the system's ability to remove sediment and other contaminants from site generated stormwater runoff.

PIPES/CULVERTS:

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

OUTLET STRUCTURE(S):

- Inspect once per year.
- Inspect for clogging and sediment accumulation.
- Remove all debris immediately and sediment accumulations ≥ 2 inches.

ENERGY DISSIPATION STRUCTURES / SEDIMENT FOREBAY:

- Inspect the outlet protection annually for damage and deterioration. Repair damages immediately.
- If stones become displaced from the riprap areas, they should be replaced immediately and chinked in to assure stability. Add additional riprap as needed. Vegetation growing through the riprap should be eliminated at least yearly.

CATCH BASIN(S) / YARD DRAIN(S):

- Inspect once per year.
- Inspect for floatables, sediment accumulation, and hydrocarbons (oils and grease).
- Remove all floatables immediately and sediment accumulations ≥ 1 foot.
- Hydrocarbons shall be removed immediately by skimming, absorbent materials, or other methods and should be disposed of in accordance with applicable State and Federal regulations.

WET POND:

- Inspect at least once per year.
- Periodic mowing to control vegetation growth.
- Remove any woody vegetation.
- Remove any debris from pond and outlet structure.
- Remove accumulated sediment.

PAVEMENT:

- Minimize sanding.
- Minimize application of salt for ice control.
- Clean periodically (1-2 times per year) using a sweeper or vacuum sweeper. Vacuum sweeping is the preferred method.

LITTER / TRASH REMOVAL:

- Routinely patrol site for litter pick up.

DE-ICING AGENTS

- To address the concerns associated with the application of chlorides and other deicing materials, NHDES recommends that the Owner/Operator develop a Road Salt and Deicing Minimization Plan for the parking lots and roadways. The plan should develop the policies that the development will keep in place to minimize salt and other deicer use after the project has been completed. The plan should include tracking the use of salt and other deicers for each storm event and compiling salt use data annually. (See Deicing Salt Quantity Use Log).

- Use sand as primary agent for driveway and access way safety during ice and snow conditions
- Minimize the use of salt during the winter
- Use de-icing or anti-caking agents, added to enhance performance and application characteristics of sand mixtures, only as necessary and at minimum application rates.
- Recommend using a certified Winter Operator (Green SnowPro Trained) for applying de-icing agents.
- Monitor weather and apply de-icing agents based on weather conditions and temperatures.

ANTI-ICING AND SALT MINIMIZATION

- Owner to develop a Road Salt and Deicing Minimization Plan
- Provide a written policy that the "Development" will keep in place to minimize salt and other deicer use after the project has been completed.
- Use the attached form to track the use of salt and other deicers for each storm event and compiling salt use data annually.

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for sediment accumulation • Check for erosion • Check for clogging • Check for trash/debris	≥ 2 in. sediment Repair immediately Remove when noticed
Outlet Structure(s)	Annually	• Check for sediment accumulation • Check for erosion • Check for clogging • Check for trash/debris	≥ 2 in. sediment Repair immediately Remove when noticed
Energy Dissipation Structures / Sediment Forebay	Annually	• Check for displaced stones • Check for woody vegetation	Replace immediately Remove annually
Catch Basin(s) / Yard Drain(s)	Annually	• Check for sediment accumulation • Check for floatable contaminants	≥ 1 ft. sediment depth Remove all floatables
Wet Pond	Annually	• Check for sediment accumulation • Check for woody vegetation growth • Check for debris	Remove/Dispose of accordingly Mow twice per year Remove/Dispose of accordingly
Pavement • Sanding • Salt Applications • Sweep/Vacuum • Trash/Debris	Limit use As Req. 1 - 2 x's Year Periodically	• Minimize use to prevent tracking issues • RECORD APPLICATION RATES • Sweep or vacuum to prevent tracking issues • Check for trash/debris	Sweep to prevent issues Minimize as Req. Sweep/Vac as needed Remove when noticed
Litter / Trash Removal	Periodically	• Check for litter and trash	Remove when noticed

Inspection & Maintenance Checklist/Log

The following page contains a blank copy of the Stormwater Management System's Inspection & Maintenance Log and a Deicing Salt Quantity Use Log. These forms are provided to assist the owners with the inspection and maintenance of the aforementioned Stormwater Management System.

Stormwater Management System's Inspection & Maintenance Log

Date of Inspection/Maintenance: _____ Inspector: _____

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

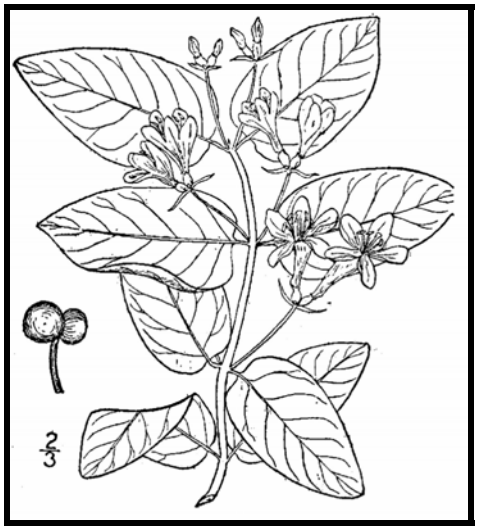
Deicing Salt Quantity Use Log

Date	Amount of Material Applied	Comments

University of New Hampshire Cooperative Extension

Methods for Disposing Non-Native Invasive Plants

Prepared by the Invasives Species Outreach Group, volunteers interested in helping people control invasive plants. Assistance provided by the Piscataquog Land Conservancy and the NH Invasives Species Committee. Edited by Karen Bennett, Extension Forestry Professor and Specialist.



Tatarian honeysuckle
Lonicera tatarica
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 3: 282.

Non-native invasive plants crowd out natives in natural and managed landscapes. They cost taxpayers billions of dollars each year from lost agricultural and forest crops, decreased biodiversity, impacts to natural resources and the environment, and the cost to control and eradicate them.

Invasive plants grow well even in less than desirable conditions such as sandy soils along roadsides, shaded wooded areas, and in wetlands. In ideal conditions, they grow and spread even faster. There are many ways to remove these non-native invasives, but once removed, care is needed to dispose the removed plant material so the plants don't grow where disposed.

Knowing how a particular plant reproduces indicates its method of spread and helps determine the appropriate disposal method. Most are spread by seed and are dispersed by wind, water, animals, or people. Some reproduce by vegetative means from pieces of stems or roots forming new plants. Others spread through both seed and vegetative means.

Because movement and disposal of viable plant parts is restricted (see NH Regulations), viable invasive parts can't be brought to most transfer stations in the state. Check with your transfer station to see if there is an approved, designated area for invasives disposal. This fact sheet gives recommendations for rendering plant parts non-viable.

Control of invasives is beyond the scope of this fact sheet. For information about control visit www.nhinvasives.org or contact your UNH Cooperative Extension office.

New Hampshire Regulations

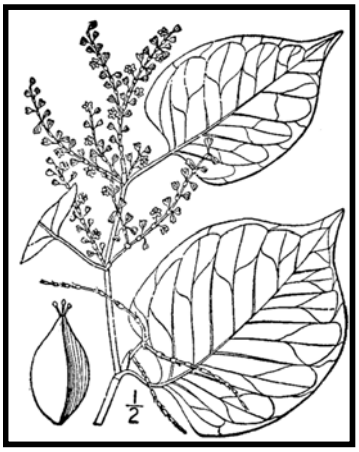
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

No person shall collect, transport, import, export, move, buy, sell, distribute, propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1 of the New Hampshire prohibited invasive species list. (Agr 3802.01)

How and When to Dispose of Invasives?

To prevent seed from spreading remove invasive plants before seeds are set (produced). Some plants continue to grow, flower and set seed even after pulling or cutting. Seeds can remain viable in the ground for many years. If the plant has flowers or seeds, place the flowers and seeds in a heavy plastic bag "head first" at the weeding site and transport to the disposal site. The following are general descriptions of disposal methods. See the chart for recommendations by species.

Burning: Large woody branches and trunks can be used as firewood or burned in piles. For outside burning, a written fire permit from the local forest fire warden is required unless the ground is covered in snow. Brush larger than 5 inches in diameter can't be burned. Invasive plants with easily airborne seeds like black swallow-wort with mature seed pods (indicated by their brown color) shouldn't be burned as the seeds may disperse by the hot air created by the fire.



Japanese knotweed
Polygonum cuspidatum
USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. Vol. 1: 676.

Bagging (solarization): Use this technique with softer-tissue plants. Use heavy black or clear plastic bags (contractor grade), making sure that no parts of the plants poke through. Allow the bags to sit in the sun for several weeks and on dark pavement for the best effect.

Tarping and Drying: Pile material on a sheet of plastic and cover with a tarp, fastening the tarp to the ground and monitoring it for escapes. Let the material dry for several weeks, or until it is clearly nonviable.

Chipping: Use this method for woody plants that don't reproduce vegetatively.

Burying: This is risky, but can be done with watchful diligence. Lay thick plastic in a deep pit before placing the cut up plant material in the hole. Place the material away from the edge of the plastic before covering it with more heavy plastic. Eliminate as much air as possible and toss in soil to weight down the material in the pit. Note that the top of the buried material should be at least three feet underground. Japanese knotweed should be at least 5 feet underground!

Drowning: Fill a large barrel with water and place soft-tissue plants in the water. Check after a few weeks and look for rotted plant material (roots, stems, leaves, flowers). Well-rotted plant material may be composted. A word of caution- seeds may still be viable after using this method. Do this before seeds are set. This method isn't used often. Be prepared for an awful stink!

Composting: Invasive plants can take root in compost. Don't compost any invasives unless you know there is no viable (living) plant material left. Use one of the above techniques (bagging, tarping, drying, chipping, or drowning) to render the plants nonviable before composting. Closely examine the plant before composting and avoid composting seeds.

Be diligent looking for seedlings for *years* in areas where removal and disposal took place.

Suggested Disposal Methods for Non-Native Invasive Plants

This table provides information concerning the disposal of removed invasive plant material. If the infestation is treated with herbicide and left in place, these guidelines don't apply. Don't bring invasives to a local transfer station, unless there is a designated area for their disposal, or they have been rendered non-viable. This listing includes wetland and upland plants from the New Hampshire Prohibited Invasive Species List. The disposal of aquatic plants isn't addressed.

<table>
<tr><th>Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">Norway maple
(Acer platanoides)
European barberry
(Berberis vulgaris)
Japanese barberry
(Berberis thunbergii)
autumn olive
(Elaeagnus umbellata)
burning bush
(Euonymus alatus)
Morrow's honeysuckle
(Lonicera morrowii)
Tatarian honeysuckle
(Lonicera tatarica)
showy bush honeysuckle
(Lonicera x bella)
common buckthorn
(Rhamnus cathartica)
glossy buckthorn
(Frangula alnus)</td><td rowspan="2">Fruit and Seeds
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Use as firewood.
▪ Make a brush pile.
▪ Chip.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip once all fruit has dropped from branches.
▪ Leave resulting chips on site and monitor.</td></tr>
<tr><td rowspan="2">oriental bittersweet
(Celastrus orbiculatus)
multiflora rose
(Rosa multiflora)</td><td rowspan="2">Fruits, Seeds, Plant Fragments
  </td><td>Prior to fruit/seed ripening
Seedlings and small plants
▪ Pull or cut and leave on site with roots exposed. No special care needed.
Larger plants
▪ Make a brush pile.
▪ Burn.</td></tr>
<tr><td>After fruit/seed is ripe
Don't remove from site.
▪ Burn.
▪ Make a covered brush pile.
▪ Chip – only after material has fully dried (1 year) and all fruit has dropped from branches. Leave resulting chips on site and monitor.</td></tr>
</table>

Non-Woody Plants	Method of Reproducing	Methods of Disposal
garlic mustard *(Alliaria petiolata)* spotted knapweed *(Centaurea maculosa)* ▪ Sap of related knapweed can cause skin irritation and tumors. Wear gloves when handling. black swallow-wort *(Cynanchum nigrum)* ▪ May cause skin rash. Wear gloves and long sleeves when handling. pale swallow-wort *(Cynanchum rossicum)* giant hogweed *(Heracleum mantegazzianum)* ▪ Can cause major skin rash. Wear gloves and long sleeves when handling. dame's rocket *(Hesperis matronalis)* perennial pepperweed *(Lepidium latifolium)* purple loosestrife *(Lythrum salicaria)* Japanese stilt grass *(Microstegium vimineum)* mile-a-minute weed *(Polygonum perfoliatum)*	**Fruits and Seeds** 	**Prior to flowering** Depends on scale of infestation Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile. (You can pile onto or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material. **During and following flowering** Do nothing until the following year or remove flowering heads and bag and let rot. Small infestation ▪ Pull or cut plant and leave on site with roots exposed. Large infestation ▪ Pull or cut plant and pile remaining material. (You can pile onto plastic or cover with plastic sheeting). ▪ Monitor. Remove any re-sprouting material.
common reed (*Phragmites australis*) Japanese knotweed *(Polygonum cuspidatum)* Bohemian knotweed *(Polygonum x bohemicum)*	**Fruits, Seeds, Plant Fragments** Primary means of spread in these species is by plant parts. Although all care should be given to preventing the dispersal of seed during control activities, the presence of seed doesn't materially influence disposal activities.	**Small infestation** ▪ Bag all plant material and let rot. ▪ Never pile and use resulting material as compost. ▪ Burn. **Large infestation** ▪ Remove material to unsuitable habitat (dry, hot and sunny or dry and shaded location) and scatter or pile. ▪ Monitor and remove any sprouting material. ▪ Pile, let dry, and burn.

January 2010

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B A G

LAND CONSULTANTS

October 4, 2022

Joseph P. Griffin, P.E.
Project Manager
Civilworks New England
181 Watson Road
PO Box 1166
Dover, NH 03821

RE: Tax Map G; Lot 3A-100 (8.0 Ac. +/-)
80 Industrial Park Drive, Dover, NH

Dear Joe:

Vernal Pool & Wetland Assessment Study

Our office identified and delineated the jurisdictional wetlands on October 4, 2021. In April of 2022, we visited the flagged wetlands on this property and we did not observe any areas that would potentially support primary and secondary vernal pool species. There are no vernal pools on this project.

This project will not be impacting any wetlands. Consequently, there will only be minor disturbances to the wetland buffer. Currently, this project's wetlands have weak to non-existent functions and values. In our professional opinion, the proposed activities and land disturbances will have no significant impact to the functions and values of the existing wetland.

Please call if you have any additional questions concerning soils or wetlands on this property.

Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Wetland Scientist

BAG:3272A

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 088
CERTIFIED WETLAND SCIENTIST

DRAINAGE ANALYSIS

WHITE BIRCH ARMORY
MAP G, LOT 3-A-100

80 Industrial Park Drive
Dover, New Hampshire
Strafford County

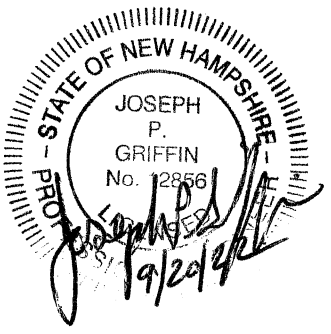
August 2022
Revised: September 2022

Prepared For:

White Birch Armory
80 Industrial Park Drive
Dover, NH 03820

Prepared By:

Civilworks NE
PO Box 1166
181 Watson Road
Dover, NH 03820



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1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel Map G/3-A-100 (8.09 AC). The site is partially developed and consists of a 19,500sf +/- building housing an indoor range, loading docks, accompanying parking areas, walkways, drainage improvements, and landscaping. The remainder of the site primarily consists of wooded and grassed areas with wetlands in the north and south and a wetland drainage ditch located just off the property to the west. The site generally slopes east to west from Industrial Park Drive to the rear property line with most of the parcel draining to the offsite drainage ditch. Wetlands on site are located along the northern and southern property lines. The proposed redevelopment of the site will include a 20,287 sf +/- building addition, accompanying parking area, and drainage improvements. The redevelopment will result in approximately 65,000 sf of additional disturbance. Overall disturbance on site is approximately 141,500 sf. The project will require permitting through NH DES Alteration of Terrain (AoT) as the overall disturbance on the parcel within the past 10 years will meet permitting thresholds.

To effectively analyze the pre-development subject parcel, the site has been divided into two (2) watersheds. The 8.32 ac +/- model incorporates 0.23 ac +/- of offsite area that drains directly onsite and that will be incorporated into the proposed onsite drainage improvements. These points of discharge are identified as Watershed A and B. Watershed A is subdivided into three sub-catchments (A1, A2, and A3). Watershed A discharges through the southernmost wetlands by way of the offsite wetland drainage ditch that flows southerly along the western property line. Watershed B discharges to the west into a wetland drainage ditch that continues flowing to the west. The pre-development conditions were modeled as undisturbed and do not include the previous development of the site. Modeling the area as undisturbed ensures that the existing conditions are indicative of the previous natural state of the site as required under NH DES AoT permitting.

The post development analysis has been divided into twelve (12) sub-catchments that discharge to the same points of analysis developed for the pre-development model. Sub-catchments model the areas of the site that are directed through proposed drainage structures, conveyances, and water quality practices. Stormwater conveyance consists of overland flow, a closed drainage system, and roof drains. The project proposes a wet extended detention pond to meet water quality criteria and plunge pools and a stone outlet apron for channel protection. In addition to treating the onsite impervious runoff, the project also proposes to treat 3,720 sf +/- of impervious area from Industrial Park Drive. The system has been designed to capture, treat, and attenuate stormwater flows from the full build out of the site. The analysis shows that with the mitigation measures proposed the development of this site will have negligible impact on the watersheds.

2.0 DRAINAGE ANALYSIS

A comprehensive hydrologic study of this site has been performed utilizing nationally recognized runoff estimating techniques developed by the USDA, Soil Conservation

Services (SCS). The technique and runoff models are described in various SCS publications and references as follows:

“Stormwater Management and Erosion Sediment Control Handbook for Urban and Developing Areas in New Hampshire”

“New Hampshire Stormwater Manual Volume 2 - Post-Construction Best Management Practices Selection & Design”

“Civil Engineering Reference Manual, Fifth Edition”

“Open-Channel Hydraulics” Chow.

“Stormwater Modeling System” HydroCAD Ver. 10.10

2.1 DRAINAGE DESIGN PARAMETERS

A brief review of the procedures and parameters used in the drainage study follows:

2.1.1 Watersheds

The watersheds and sub-catchment areas were delineated using wetland data provided by Bruce A. Gilday, Wetland Scientist (CWS) #088, of BAG Land Consultants on October 5, 2021, and field located by McEneaney Survey Associates of New England.

2.1.2 Soils

Soil types were determined utilizing the NRCS Web Soil Survey (WSS) mapping tool at http://websoilsurvey.nrcs.usda.gov which references the Strafford County, New Hampshire Soil Survey Area, Version 22, August 31, 2021, and a site specific soils map prepared by Bruce A. Gilday, Soil Scientist (CSS) #012, of BAG Land Consultants on June 9, 2022. The soil drainage classifications used for this analysis are Class B and C.

Hydrologic Drainage Class B:

68	Sutton, Moderately Well Drained
299	Udorthents, Moderately Well Drained
BzB	Buxton, Silt Loam (Offsite)

Hydrologic Drainage Class C:

100	Udorthents, Somewhat Poorly Drained
233/P	Scantic, Poorly Drained
924	Sutton, Somewhat Poorly Drained

2.1.3 Rainfall Data

Extreme precipitation estimate values from the Northeast Regional Climate Center were utilized in this analysis. The analysis has been performed for the 2-year, 10-year, 25-year, and 50-year storm events with 3.61", 5.44", 6.89", and 8.22" rainfall depths respectively. The rain fall data has been peaked by 15% in accordance with NH DES Alteration of Terrain requirements as the site is located within the Coastal Region.

2.1.4 Runoff Curve Numbers

The SCS runoff curve numbers were used and are summarized within each sub-catchment drainage summary in Appendix A.

2.2 EXISTING CONDTIONS

For purposes of this analysis the subject parcel was analyzed with two points of discharge.

2.2.1 Table A – Existing Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Pre-Development Volume (af)**	**Pre Development Peak Flows (cfs)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.353	1.5	4.5	7.2	9.7
B	0.139	0.8	1.7	2.5	3.2

2.3 DEVELOPED CONDITIONS

The post development watershed was analyzed utilizing the same summing points as the pre-development analysis.

2.3.1 Table B – Developed Conditions (2, 10, 25, and 50-year storm events)

Watershed	**Post-Development Volume (af)**	**Post Development Peak Flows (cfs)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.840	1.5	4.5	7.2	9.7
B	0.139	0.8	1.7	2.5	3.2

2.4 HYDROLOGIC COMPARISON

The analysis indicates that the proposed project will have negligible impact on the watershed.

2.4.1 Table C – Pre/Post Development Comparison (2, 10, 25, and 50-year storm events)

Watershed	Pre/**Post-Development Volume (af)**	Pre/**Post Development Peak Flows (cfs)**			
Point of Analysis	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.353/**0.840**	1.5/**1.5**	4.5/**4.5**	7.2/**7.2**	9.7/**9.7**
B	0.139/**0.139**	0.8/**0.8**	1.7/**1.7**	2.5/**2.5**	3.2/**3.2**

2.5 STORMWATER DESIGN

The project incorporates best management practices to mitigate runoff as well as treat and infiltrate stormwater.

2.5.1 Stormwater Best Management Practices

The project incorporates an extended detention wet pond to mitigate flow and water quality from the proposed development. Pre-treatment for the wet pond includes two sediment forebays.

2.5.2 Groundwater Recharge

Site characteristics and drainage patterns are not conducive to groundwater recharge. The fairly level slope of the existing grades, the long distances required to convey stormwater across the site, and the issues associated with having to hammer rock to install the closed drainage system during initial site construction prevent the recharge of groundwater on site.

2.5.3 Pollutant Removal

The site stormwater design captures 100% of the existing and proposed onsite impervious area (86,700 sf ±) as well as 3,720 sf ± of stormwater runoff from Industrial Park Drive and directs it to best management practices that provide pollutant removal. The project incorporates the following practice and associated pollutant removal efficacies as identified in the New Hampshire Stormwater Management Manual Volume 1, Appendix E:

	TSS	TN	TP
Wet Extended Detention Pond:	80%	55%	68%

The pollutant removal meets or exceeds The City of Dover's, Site Review Regulations.

2.5.4 Outlet Protection

BMP's, conveyance structures, and outlet protection have been sized to convey the 50-year, 24 hour storm event. All proposed rip-rap applications (aprons and plunge pools) shall consist of min. d50 = 6" stone with a stone layer thickness of 12" (min) on a filter fabric layer over a 6" thick (min) gravel base. See the plan set for rip-rap locations and the drainage details for additional information.

APPENDIX A

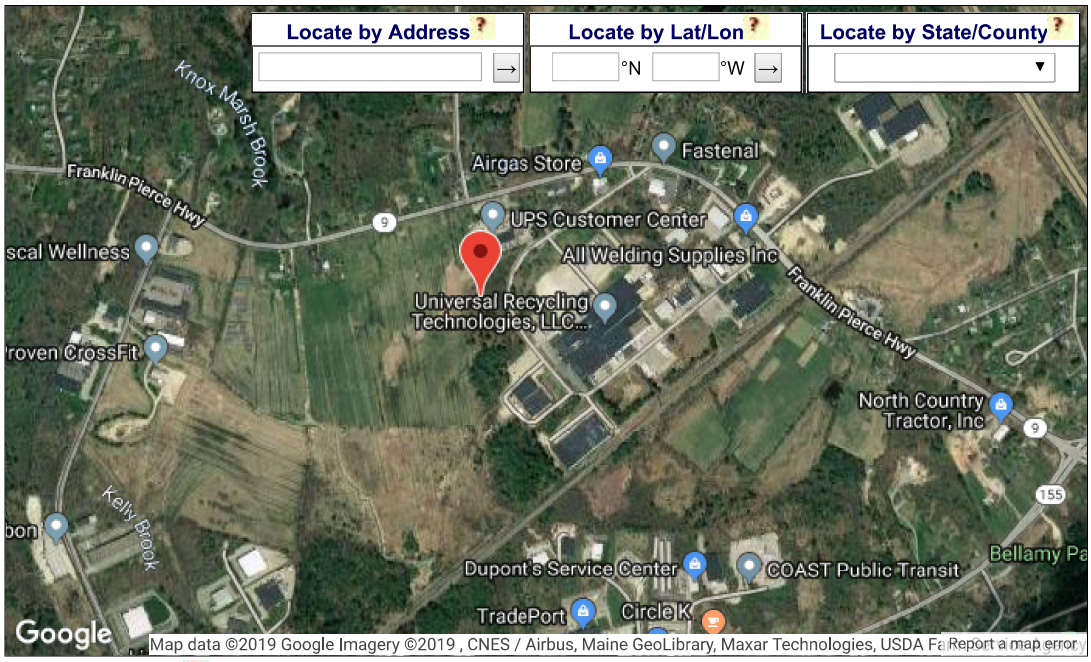
HYDROLOGIC CALCULATIONS

About this Project **Data & Products** **Daily Monitoring** **Documentation**

Select Product

- Extreme Precipitation Tables - HTML
- Extreme Precipitation Tables - Text/CSV
- Partial Duration Series - by Point
- Partial Duration Series - by Station
- Distribution Curves - Graphical
- Distribution Curves - Text/TBL
- Intensity Frequency Duration Graphs
- Precipitation Frequency Duration Graphs
- GIS Data Files
- Regional/State Maps

Select Location *Double-click the map to place a marker, or enter address or latitude/longitude.*



Select Options

Smoothing	Delivery
Yes	Popup

Submit

Version 1.12 Copyright 2010-2019.
This project is a joint collaboration between:

Northeast Regional Climate Center (NRCC) Cornell University

Natural Resources Conservation Service (NRCS) USDA NRCS

Contact: precip@cornell.edu

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.907 degrees West
Latitude	43.187 degrees North
Elevation	0 feet
Date/Time	Sat, 03 Aug 2019 21:16:33 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day		+15%
1yr	0.26	0.40	0.50	0.65	0.81	1.03	**1yr**	0.70	0.98	1.20	1.54	1.99	2.60	2.85	**1yr**	2.30	2.74	3.14	3.87	4.44	**1yr**	2.99
2yr	0.32	0.49	0.61	0.81	1.01	1.28	**2yr**	0.87	1.17	1.50	1.91	2.44	3.14	3.49	**2yr**	2.78	3.35	3.85	4.58	5.22	**2yr**	3.61
5yr	0.37	0.57	0.72	0.96	1.23	1.58	**5yr**	1.06	1.44	1.85	2.38	3.07	3.96	4.47	**5yr**	3.51	4.30	4.91	5.79	6.54	**5yr**	4.55
10yr	0.40	0.63	0.80	1.09	1.42	1.84	**10yr**	1.22	1.69	2.18	2.82	3.65	4.73	5.39	**10yr**	4.19	5.18	5.92	6.91	7.77	**10yr**	5.44
25yr	0.46	0.74	0.94	1.29	1.72	2.26	**25yr**	1.48	2.09	2.69	3.52	4.59	5.99	6.91	**25yr**	5.30	6.65	7.56	8.73	9.76	**25yr**	6.89
50yr	0.51	0.83	1.06	1.48	1.99	2.66	**50yr**	1.72	2.45	3.17	4.17	5.47	7.15	8.35	**50yr**	6.33	8.03	9.11	10.44	11.61	**50yr**	8.22
100yr	0.58	0.93	1.20	1.70	2.31	3.11	**100yr**	2.00	2.88	3.73	4.94	6.51	8.55	10.09	**100yr**	7.57	9.70	10.98	12.47	13.81	**100yr**	9.83
200yr	0.64	1.04	1.35	1.95	2.69	3.66	**200yr**	2.32	3.39	4.41	5.87	7.77	10.23	12.19	**200yr**	9.05	11.72	13.23	14.92	16.43	**200yr**	11.76
500yr	0.75	1.24	1.61	2.34	3.29	4.52	**500yr**	2.84	4.21	5.48	7.35	9.79	12.97	15.67	**500yr**	11.48	15.06	16.95	18.91	20.70	**500yr**	14.92

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.61	0.74	0.90	**1yr**	0.64	0.88	0.91	1.25	1.55	2.07	2.47	**1yr**	1.83	2.38	2.92	3.36	4.05	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.15	1.36	1.83	2.36	3.04	3.39	**2yr**	2.69	3.26	3.74	4.46	5.06	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.15	2.78	3.70	4.12	**5yr**	3.28	3.96	4.59	5.40	6.10	**5yr**
10yr	0.38	0.59	0.73	1.02	1.32	1.60	**10yr**	1.14	1.56	1.82	2.45	3.13	4.26	4.78	**10yr**	3.77	4.59	5.31	6.24	7.00	**10yr**
25yr	0.44	0.67	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.85	3.66	5.02	5.79	**25yr**	4.44	5.57	6.48	7.55	8.41	**25yr**
50yr	0.48	0.73	0.91	1.31	1.77	2.19	**50yr**	1.52	2.14	2.35	3.20	4.12	5.75	6.68	**50yr**	5.09	6.42	7.53	8.72	9.65	**50yr**
100yr	0.54	0.81	1.02	1.47	2.02	2.51	**100yr**	1.74	2.46	2.63	3.59	4.60	6.58	7.71	**100yr**	5.82	7.41	8.75	10.06	11.05	**100yr**
200yr	0.60	0.90	1.14	1.65	2.30	2.88	**200yr**	1.98	2.81	2.93	4.02	5.15	7.52	8.89	**200yr**	6.65	8.55	10.16	11.62	12.67	**200yr**
500yr	0.70	1.04	1.34	1.94	2.76	3.46	**500yr**	2.38	3.39	3.40	4.66	5.99	8.93	10.73	**500yr**	7.91	10.31	12.39	14.07	15.13	**500yr**

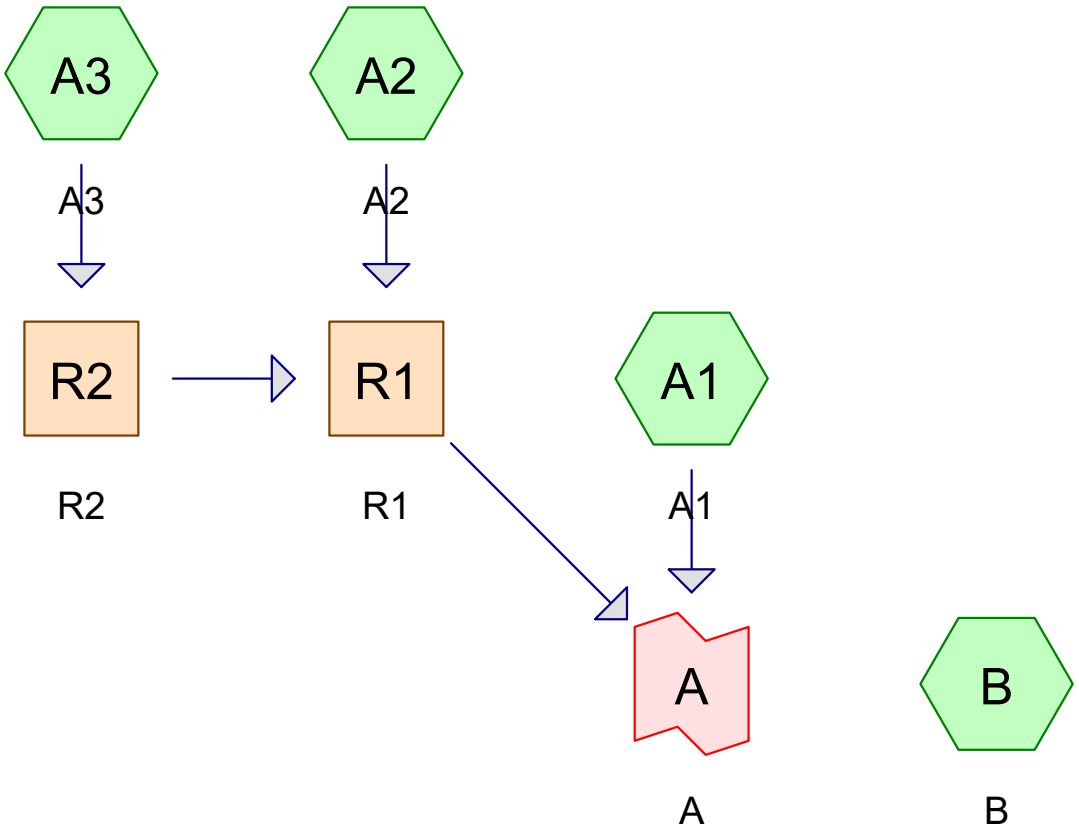
Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.87	1.08	**1yr**	0.75	1.05	1.23	1.74	2.21	2.84	3.06	**1yr**	2.51	2.94	3.39	4.19	4.77	**1yr**
2yr	0.33	0.51	0.62	0.84	1.04	1.24	**2yr**	0.90	1.22	1.48	1.95	2.50	3.25	3.60	**2yr**	2.88	3.46	3.97	4.73	5.40	**2yr**
5yr	0.39	0.60	0.75	1.03	1.31	1.58	**5yr**	1.13	1.54	1.85	2.49	3.19	4.22	4.81	**5yr**	3.74	4.63	5.25	6.19	6.96	**5yr**
10yr	0.46	0.70	0.87	1.21	1.57	1.92	**10yr**	1.35	1.87	2.23	3.04	3.84	5.19	6.00	**10yr**	4.60	5.77	6.59	7.60	8.48	**10yr**
25yr	0.55	0.84	1.05	1.50	1.97	2.47	**25yr**	1.70	2.41	2.87	3.95	4.93	6.95	8.06	**25yr**	6.15	7.75	8.79	10.00	11.04	**25yr**
50yr	0.64	0.97	1.21	1.74	2.34	2.98	**50yr**	2.02	2.91	3.48	4.81	5.98	8.57	10.08	**50yr**	7.59	9.70	10.96	12.29	13.50	**50yr**
100yr	0.74	1.12	1.41	2.03	2.79	3.60	**100yr**	2.40	3.52	4.22	5.88	7.26	10.58	12.62	**100yr**	9.36	12.14	13.65	15.13	16.51	**100yr**
200yr	0.86	1.29	1.64	2.37	3.31	4.36	**200yr**	2.86	4.26	5.13	7.19	8.80	13.09	15.82	**200yr**	11.59	15.21	17.02	18.61	20.23	**200yr**
500yr	1.05	1.56	2.01	2.92	4.15	5.59	**500yr**	3.58	5.47	6.62	9.40	11.38	17.38	21.33	**500yr**	15.38	20.51	22.79	24.52	26.47	**500yr**

Powered by ACIS Northeast Regional Climate Center

A-1

EXISTING WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 19003A - Pre_2019
Prepared by Civilworks New England, Printed 8/15/2022
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.044	61	>75% Grass cover, Good, HSG B (A1, A2, A3, B)
2.286	74	>75% Grass cover, Good, HSG C (A1, A2, A3, B)
0.105	98	Paved roads w/curbs & sewers, HSG C (A1, A2)
3.655	55	Woods, Good, HSG B (A1, A2, A3, B)
0.235	70	Woods, Good, HSG C (A1, B)
8.324	**63**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
5.699	HSG B	A1, A2, A3, B
2.625	HSG C	A1, A2, A3, B
0.000	HSG D	
0.000	Other	
8.324		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	2.044	2.286	0.000	0.000	4.330	>75% Grass cover, Good	A1, A2, A3, B
0.000	0.000	0.105	0.000	0.000	0.105	Paved roads w/curbs & sewers	A1, A2
0.000	3.655	0.235	0.000	0.000	3.889	Woods, Good	A1, A2, A3, B
0.000	**5.699**	**2.625**	**0.000**	**0.000**	**8.324**	**TOTAL AREA**	

A – 1

NODE LISTING – 2-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=124,223 sf 2.79% Impervious Runoff Depth=0.54"
Flow Length=804' Tc=34.1 min CN=59 Runoff=0.4 cfs 0.128 af

Subcatchment A2: A2 Runoff Area=62,690 sf 1.73% Impervious Runoff Depth=0.58"
Flow Length=488' Tc=23.3 min CN=60 Runoff=0.3 cfs 0.070 af

Subcatchment A3: A3 Runoff Area=100,428 sf 0.00% Impervious Runoff Depth=0.81"
Flow Length=351' Tc=19.3 min CN=65 Runoff=0.9 cfs 0.156 af

Subcatchment B: B Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=527' Tc=26.1 min CN=68 Runoff=0.8 cfs 0.139 af

Reach R1: R1 Avg. Flow Depth=0.31' Max Vel=1.68 fps Inflow=1.1 cfs 0.225 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=1.1 cfs 0.225 af

Reach R2: R2 Avg. Flow Depth=0.37' Max Vel=1.17 fps Inflow=0.9 cfs 0.156 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=0.8 cfs 0.156 af

Link A: A Inflow=1.5 cfs 0.353 af
Primary=1.5 cfs 0.353 af

Total Runoff Area = 8.324 ac Runoff Volume = 0.492 af Average Runoff Depth = 0.71"
98.74% Pervious = 8.219 ac 1.26% Impervious = 0.105 ac

A – 1

NODE LISTING – 10-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=124,223 sf 2.79% Impervious Runoff Depth=1.49"
Flow Length=804' Tc=34.1 min CN=59 Runoff=1.5 cfs 0.354 af

Subcatchment A2: A2 Runoff Area=62,690 sf 1.73% Impervious Runoff Depth=1.57"
Flow Length=488' Tc=23.3 min CN=60 Runoff=1.0 cfs 0.188 af

Subcatchment A3: A3 Runoff Area=100,428 sf 0.00% Impervious Runoff Depth=1.95"
Flow Length=351' Tc=19.3 min CN=65 Runoff=2.3 cfs 0.375 af

Subcatchment B: B Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=527' Tc=26.1 min CN=68 Runoff=1.7 cfs 0.317 af

Reach R1: R1 Avg. Flow Depth=0.50' Max Vel=2.30 fps Inflow=3.2 cfs 0.563 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=3.1 cfs 0.563 af

Reach R2: R2 Avg. Flow Depth=0.57' Max Vel=1.56 fps Inflow=2.3 cfs 0.375 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=2.2 cfs 0.375 af

Link A: A Inflow=4.5 cfs 0.917 af
Primary=4.5 cfs 0.917 af

Total Runoff Area = 8.324 ac Runoff Volume = 1.234 af Average Runoff Depth = 1.78"
98.74% Pervious = 8.219 ac 1.26% Impervious = 0.105 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A1: A1

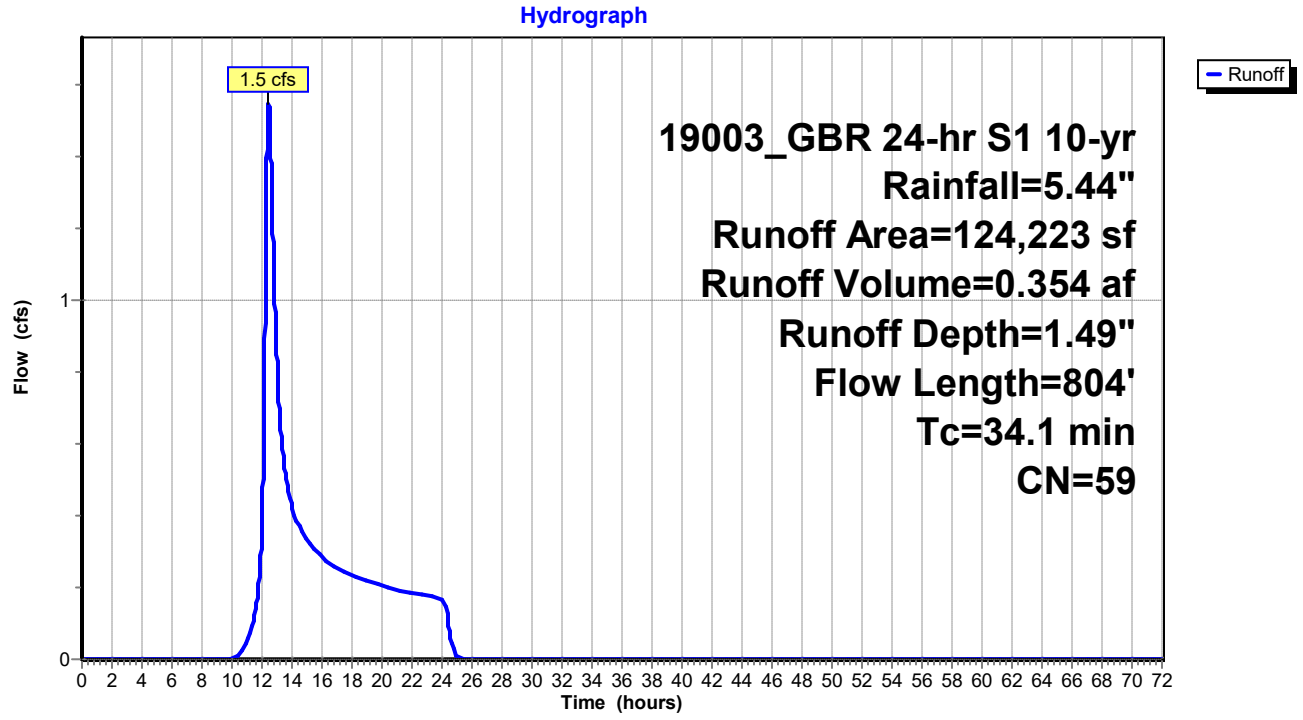
Runoff = 1.5 cfs @ 12.46 hrs, Volume= 0.354 af, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
99,311	55	Woods, Good, HSG B
538	61	>75% Grass cover, Good, HSG B
3,500	70	Woods, Good, HSG C
17,402	74	>75% Grass cover, Good, HSG C
3,472	98	Paved roads w/curbs & sewers, HSG C
124,223	59	Weighted Average
120,751		97.21% Pervious Area
3,472		2.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	100	0.0250	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
13.5	587	0.0210	0.72		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.1	117	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.1	804	Total			

Subcatchment A1: A1



Summary for Subcatchment A2: A2

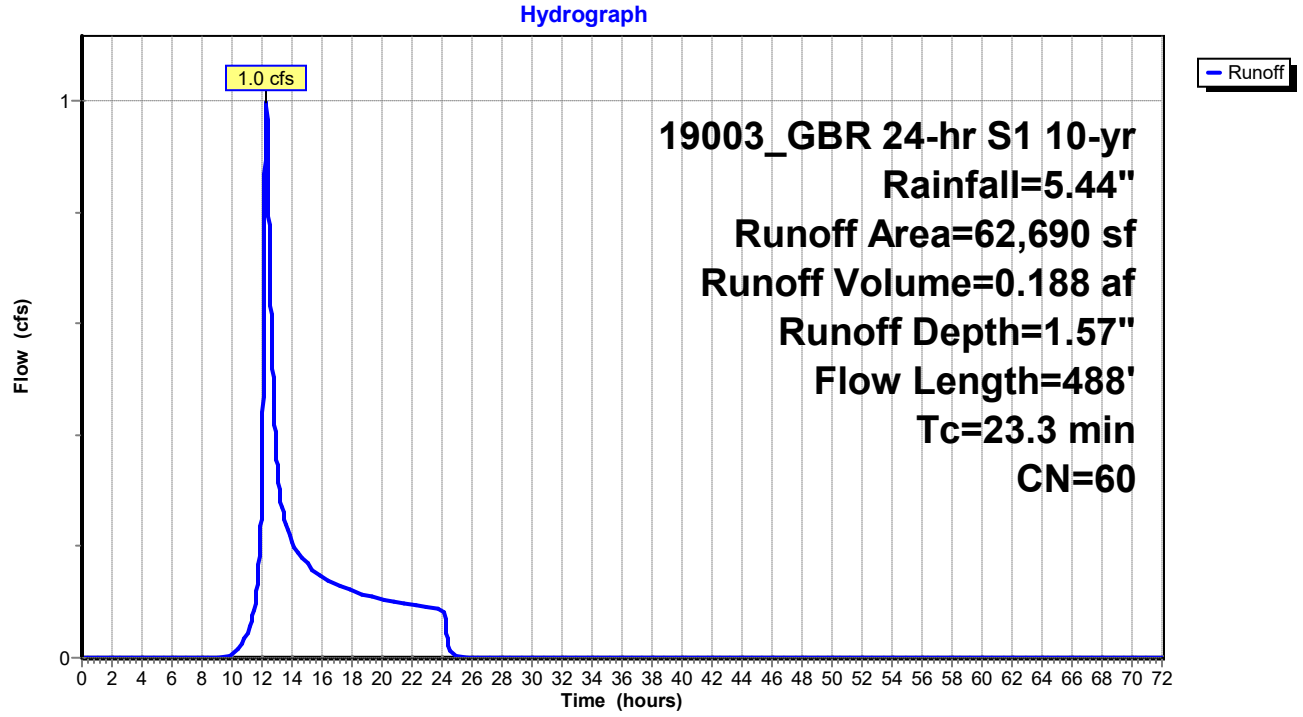
Runoff = 1.0 cfs @ 12.30 hrs, Volume= 0.188 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
20,690	55	Woods, Good, HSG B
39,508	61	>75% Grass cover, Good, HSG B
1,407	74	>75% Grass cover, Good, HSG C
1,085	98	Paved roads w/curbs & sewers, HSG C
62,690	60	Weighted Average
61,605		98.27% Pervious Area
1,085		1.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	51	0.0290	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
6.4	49	0.0310	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
6.7	388	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
23.3	488	Total			

Subcatchment A2: A2



Summary for Subcatchment A3: A3

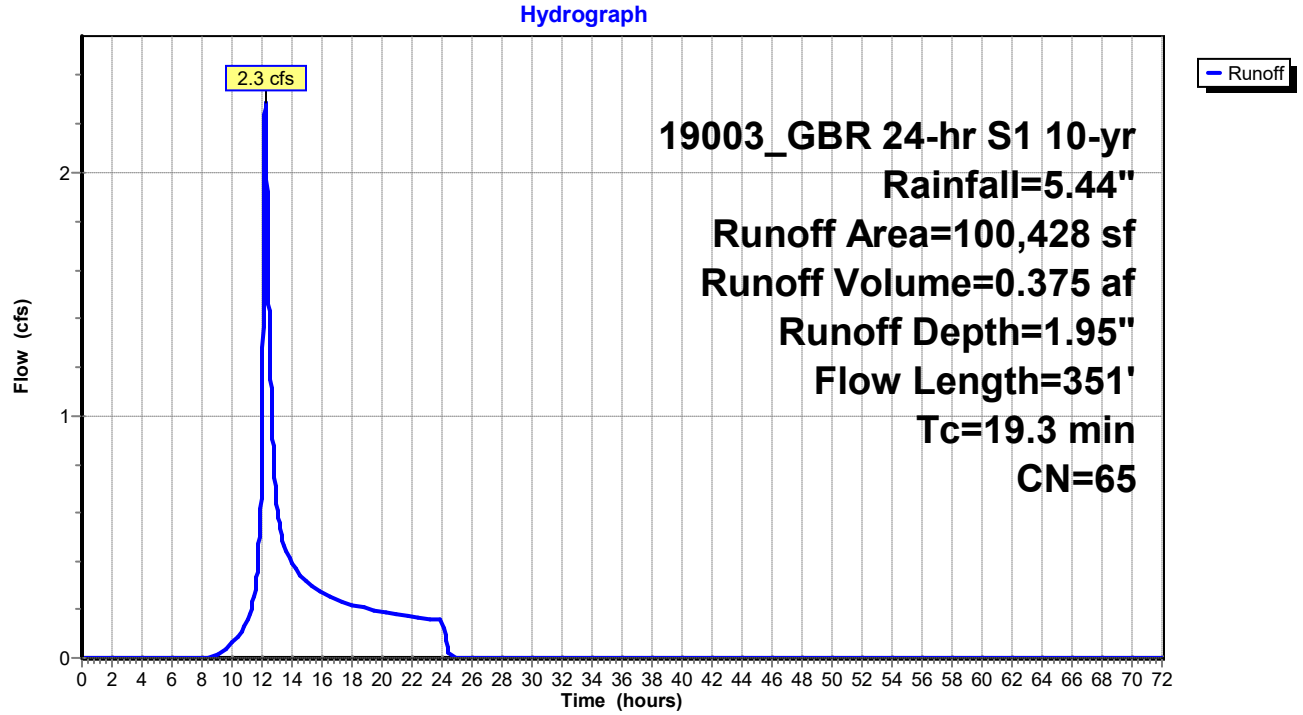
Runoff = 2.3 cfs @ 12.22 hrs, Volume= 0.375 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
20,806	55	Woods, Good, HSG B
40,723	61	>75% Grass cover, Good, HSG B
38,899	74	>75% Grass cover, Good, HSG C
100,428	65	Weighted Average
100,428		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0380	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
1.3	65	0.0270	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.4	186	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.3	351	Total			

Subcatchment A3: A3



Summary for Subcatchment B: B

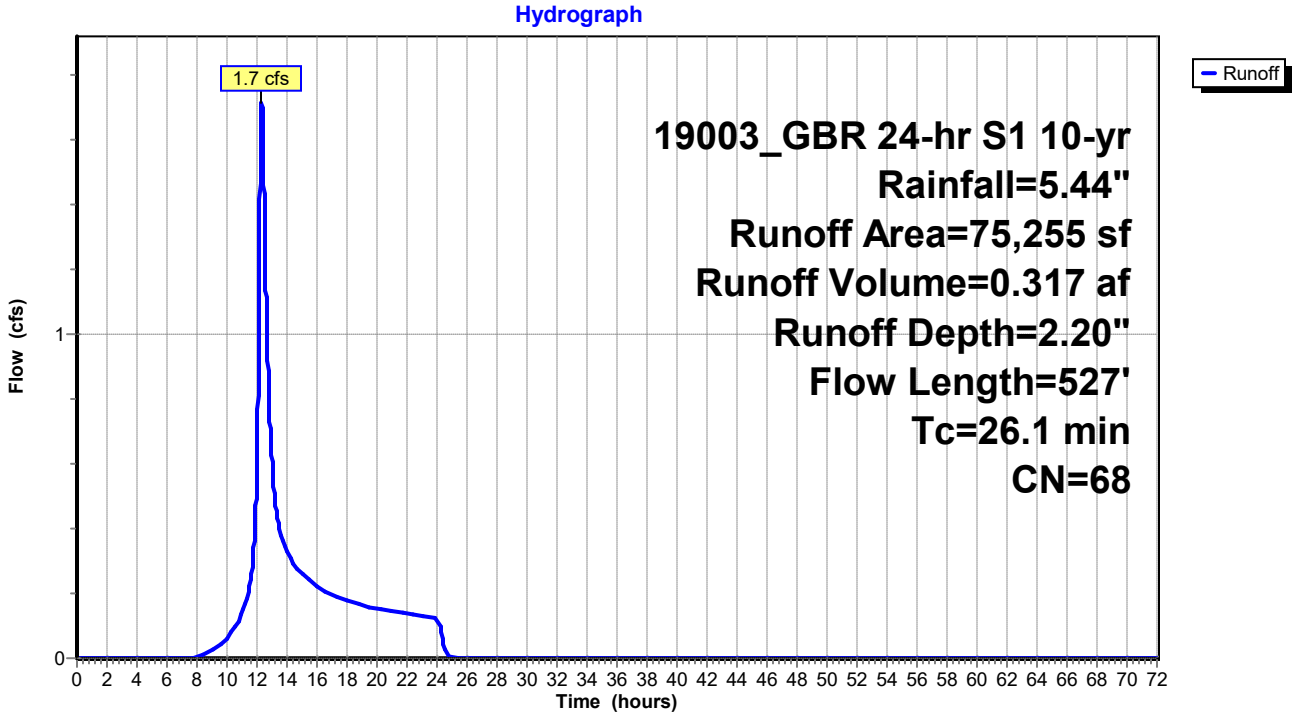
Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.317 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
18,396	55	Woods, Good, HSG B
8,282	61	>75% Grass cover, Good, HSG B
6,720	70	Woods, Good, HSG C
41,857	74	>75% Grass cover, Good, HSG C
75,255	68	Weighted Average
75,255		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0280	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
1.9	118	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	309	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.1	527	Total			

Subcatchment B: B



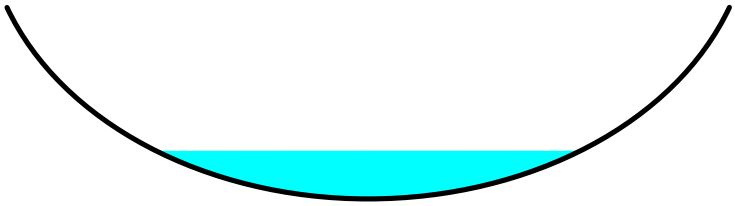
Summary for Reach R1: R1

Inflow Area = 3.745 ac, 0.67% Impervious, Inflow Depth = 1.80" for 10-yr event
Inflow = 3.2 cfs @ 12.28 hrs, Volume= 0.563 af
Outflow = 3.1 cfs @ 12.33 hrs, Volume= 0.563 af, Atten= 3%, Lag= 2.9 min

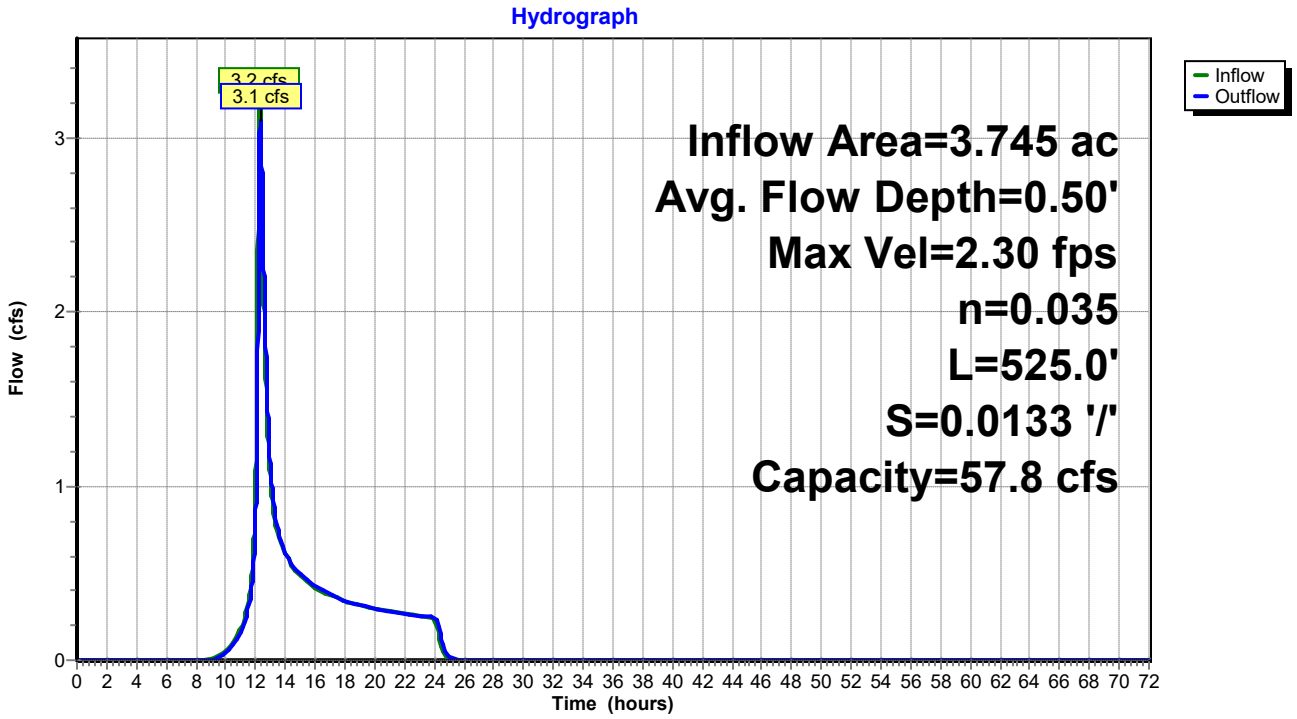
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.30 fps, Min. Travel Time= 3.8 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 9.0 min

Peak Storage= 706 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.50' , Surface Width= 4.01'
Bank-Full Depth= 2.00' Flow Area= 10.7 sf, Capacity= 57.8 cfs

8.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 525.0' Slope= 0.0133 '/'
Inlet Invert= 102.00', Outlet Invert= 95.00'



Reach R1: R1



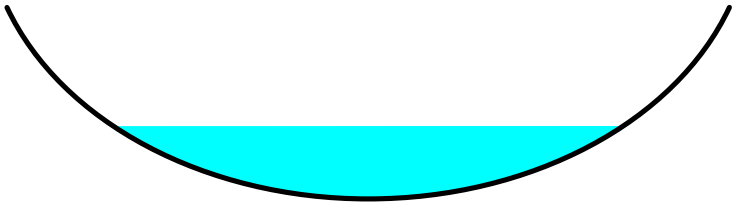
Summary for Reach R2: R2

Inflow Area = 2.306 ac, 0.00% Impervious, Inflow Depth = 1.95" for 10-yr event
Inflow = 2.3 cfs @ 12.22 hrs, Volume= 0.375 af
Outflow = 2.2 cfs @ 12.28 hrs, Volume= 0.375 af, Atten= 4%, Lag= 3.1 min

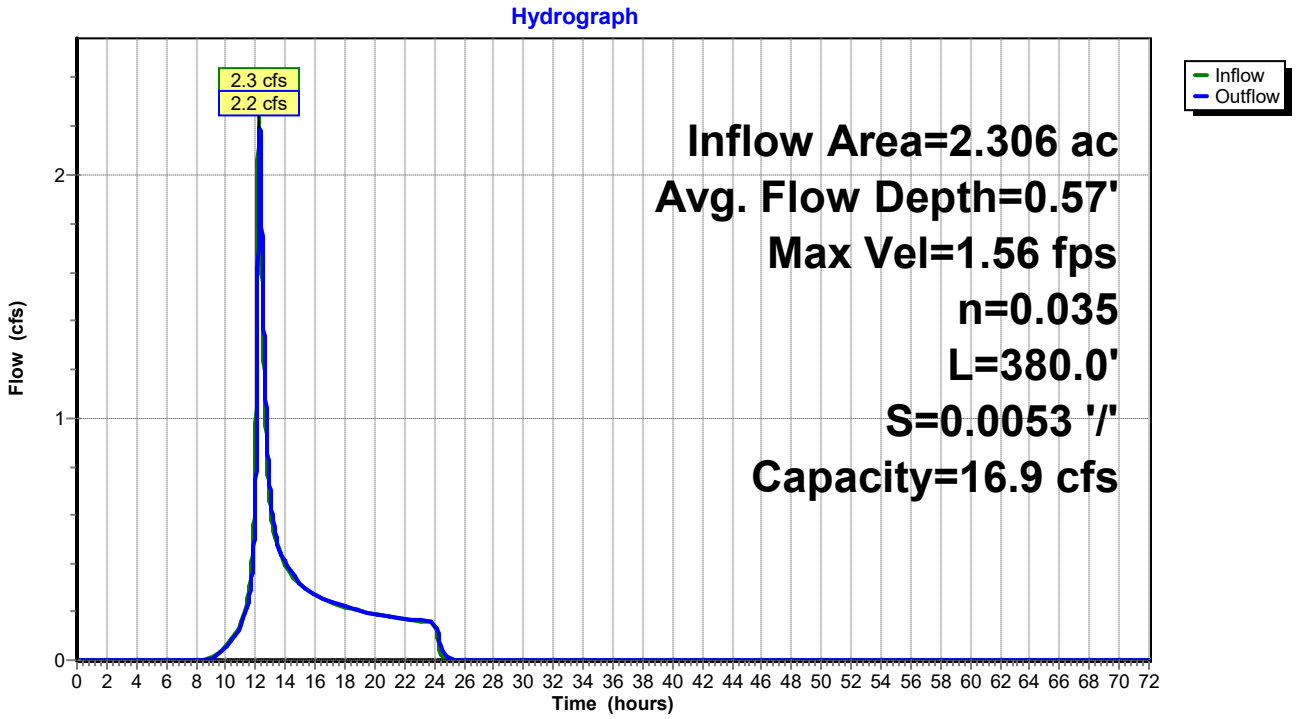
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.56 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.65 fps, Avg. Travel Time= 9.8 min

Peak Storage= 537 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 3.71'
Bank-Full Depth= 1.50' Flow Area= 6.0 sf, Capacity= 16.9 cfs

6.00' x 1.50' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 380.0' Slope= 0.0053 '/'
Inlet Invert= 104.00', Outlet Invert= 102.00'



Reach R2: R2

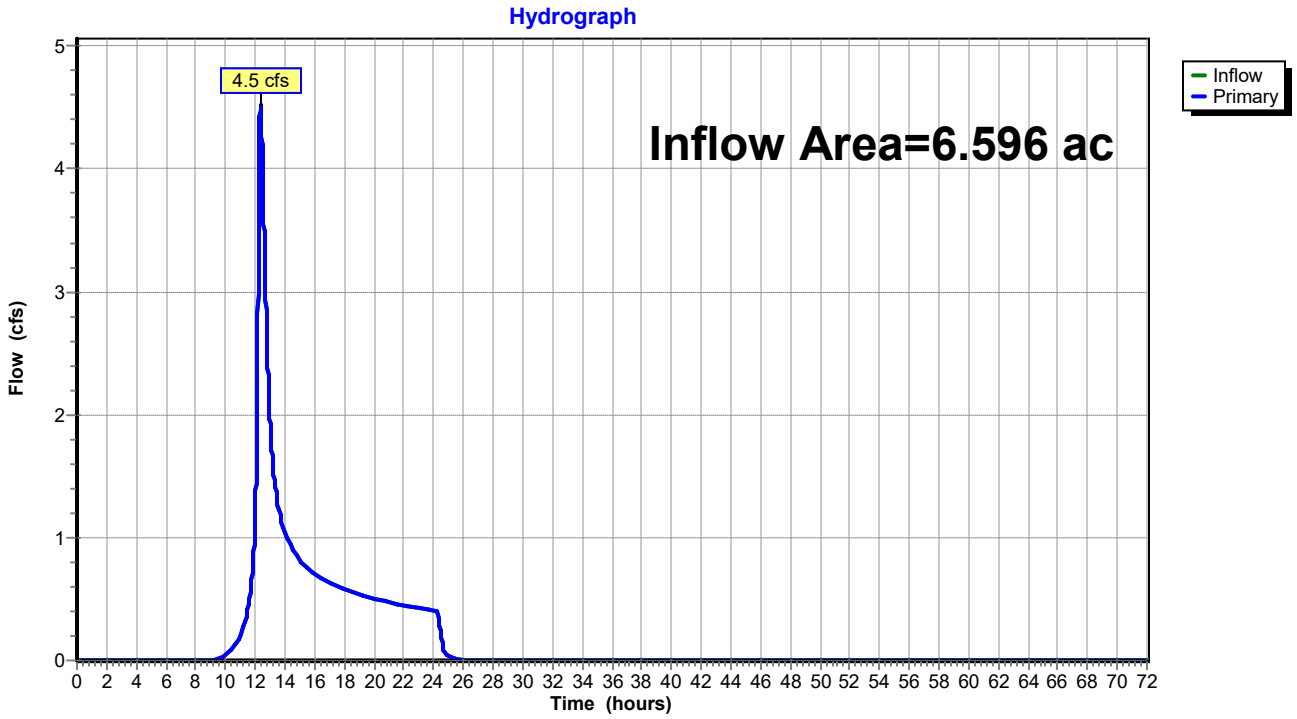


Summary for Link A: A

Inflow Area = 6.596 ac, 1.59% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 4.5 cfs @ 12.35 hrs, Volume= 0.917 af
Primary = 4.5 cfs @ 12.35 hrs, Volume= 0.917 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link A: A



A – 1

NODE LISTING – 25-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=124,223 sf 2.79% Impervious Runoff Depth=2.43"
Flow Length=804' Tc=34.1 min CN=59 Runoff=2.5 cfs 0.577 af

Subcatchment A2: A2 Runoff Area=62,690 sf 1.73% Impervious Runoff Depth=2.53"
Flow Length=488' Tc=23.3 min CN=60 Runoff=1.6 cfs 0.303 af

Subcatchment A3: A3 Runoff Area=100,428 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=351' Tc=19.3 min CN=65 Runoff=3.4 cfs 0.580 af

Subcatchment B: B Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=3.32"
Flow Length=527' Tc=26.1 min CN=68 Runoff=2.5 cfs 0.478 af

Reach R1: R1 Avg. Flow Depth=0.62' Max Vel=2.63 fps Inflow=4.9 cfs 0.883 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=4.8 cfs 0.883 af

Reach R2: R2 Avg. Flow Depth=0.70' Max Vel=1.76 fps Inflow=3.4 cfs 0.580 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=3.3 cfs 0.580 af

Link A: A Inflow=7.2 cfs 1.460 af
Primary=7.2 cfs 1.460 af

Total Runoff Area = 8.324 ac Runoff Volume = 1.938 af Average Runoff Depth = 2.79"
98.74% Pervious = 8.219 ac 1.26% Impervious = 0.105 ac

A – 1

NODE LISTING – 50-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A1: A1 Runoff Area=124,223 sf 2.79% Impervious Runoff Depth=3.39"
Flow Length=804' Tc=34.1 min CN=59 Runoff=3.5 cfs 0.805 af

Subcatchment A2: A2 Runoff Area=62,690 sf 1.73% Impervious Runoff Depth=3.50"
Flow Length=488' Tc=23.3 min CN=60 Runoff=2.2 cfs 0.420 af

Subcatchment A3: A3 Runoff Area=100,428 sf 0.00% Impervious Runoff Depth=4.07"
Flow Length=351' Tc=19.3 min CN=65 Runoff=4.5 cfs 0.783 af

Subcatchment B: B Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=4.42"
Flow Length=527' Tc=26.1 min CN=68 Runoff=3.2 cfs 0.636 af

Reach R1: R1 Avg. Flow Depth=0.71' Max Vel=2.87 fps Inflow=6.6 cfs 1.202 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=6.4 cfs 1.202 af

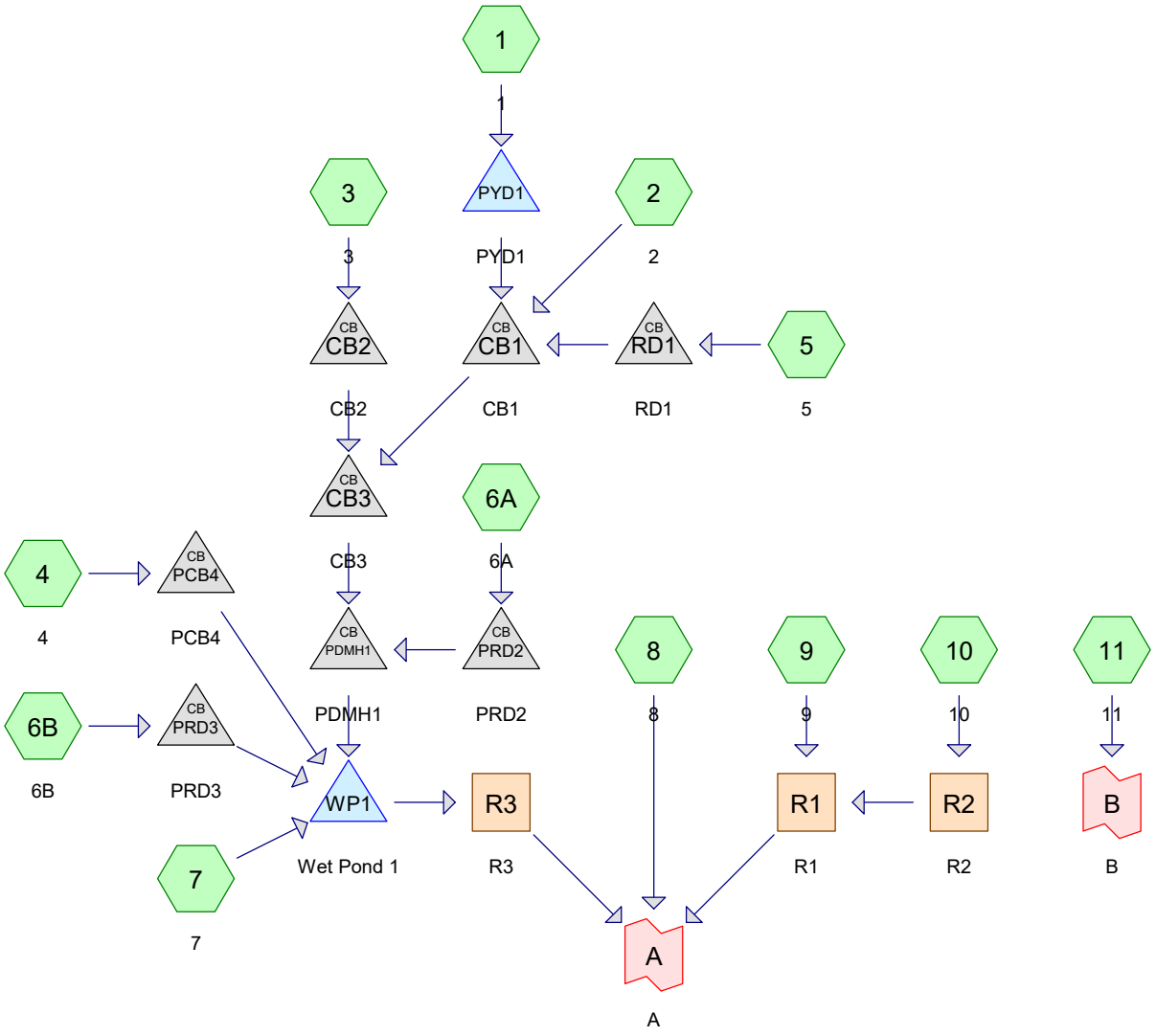
Reach R2: R2 Avg. Flow Depth=0.79' Max Vel=1.91 fps Inflow=4.5 cfs 0.783 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=4.4 cfs 0.783 af

Link A: A Inflow=9.7 cfs 2.007 af
Primary=9.7 cfs 2.007 af

Total Runoff Area = 8.324 ac Runoff Volume = 2.643 af Average Runoff Depth = 3.81"
98.74% Pervious = 8.219 ac 1.26% Impervious = 0.105 ac

A-2

DEVELOPED WATERSHEDS



Subcat Reach Pond Link

Routing Diagram for 19003A - Post
Prepared by Civilworks New England, Printed 8/15/2022
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.609	61	>75% Grass cover, Good, HSG B (1, 2, 3, 4, 7, 8, 9, 10, 11)
1.710	74	>75% Grass cover, Good, HSG C (1, 3, 8, 10, 11)
0.015	96	Gravel surface, HSG B (8)
0.022	98	Paved parking, HSG B (1)
1.026	98	Paved roads w/curbs & sewers, HSG B (2, 3, 4)
0.124	98	Paved roads w/curbs & sewers, HSG C (1, 3, 8)
0.923	98	Roofs, HSG B (1, 5, 6A, 6B)
1.139	55	Woods, Good, HSG B (8, 10, 11)
0.159	70	Woods, Good, HSG C (8)
0.965	58	Woods/grass comb., Good, HSG B (9, 10, 11)
0.631	72	Woods/grass comb., Good, HSG C (10, 11)
8.324	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
5.699	HSG B	1, 2, 3, 4, 5, 6A, 6B, 7, 8, 9, 10, 11
2.625	HSG C	1, 3, 8, 10, 11
0.000	HSG D	
0.000	Other	
8.324		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.609	1.710	0.000	0.000	3.319	>75% Grass cover, Good	1, 2, 3, 4, 7, 8, 9, 10, 11
0.000	0.015	0.000	0.000	0.000	0.015	Gravel surface	8
0.000	0.022	0.000	0.000	0.000	0.022	Paved parking	1
0.000	1.026	0.124	0.000	0.000	1.150	Paved roads w/curbs & sewers	1, 2, 3, 4, 8
0.000	0.923	0.000	0.000	0.000	0.923	Roofs	1, 5, 6A, 6B
0.000	1.139	0.159	0.000	0.000	1.298	Woods, Good	8, 10, 11
0.000	0.965	0.631	0.000	0.000	1.597	Woods/grass comb., Good	9, 10, 11
0.000	**5.699**	**2.625**	**0.000**	**0.000**	**8.324**	**TOTAL AREA**	

A – 2

NODE LISTING – 2-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=13,718 sf 27.41% Impervious Runoff Depth=1.38"
Flow Length=209' Tc=12.8 min CN=75 Runoff=0.3 cfs 0.036 af

Subcatchment 2: 2 Runoff Area=17,914 sf 88.45% Impervious Runoff Depth=2.94"
Flow Length=137' Tc=3.6 min CN=94 Runoff=1.3 cfs 0.101 af

Subcatchment 3: 3 Runoff Area=8,151 sf 95.13% Impervious Runoff Depth=3.15"
Flow Length=228' Tc=3.0 min CN=96 Runoff=0.6 cfs 0.049 af

Subcatchment 4: 4 Runoff Area=27,937 sf 82.61% Impervious Runoff Depth=2.74"
Flow Length=233' Tc=5.6 min CN=92 Runoff=1.7 cfs 0.147 af

Subcatchment 5: 5 Runoff Area=19,697 sf 100.00% Impervious Runoff Depth=3.38"
Tc=1.2 min CN=98 Runoff=1.6 cfs 0.127 af

Subcatchment 6A: 6A Runoff Area=10,147 sf 100.00% Impervious Runoff Depth=3.38"
Tc=1.2 min CN=98 Runoff=0.8 cfs 0.066 af

Subcatchment 6B: 6B Runoff Area=10,148 sf 100.00% Impervious Runoff Depth=3.38"
Tc=1.2 min CN=98 Runoff=0.8 cfs 0.066 af

Subcatchment 7: 7 Runoff Area=16,551 sf 0.00% Impervious Runoff Depth=0.62"
Flow Length=56' Slope=0.0530 '/' Tc=5.7 min CN=61 Runoff=0.2 cfs 0.020 af

Subcatchment 8: 8 Runoff Area=60,476 sf 1.38% Impervious Runoff Depth=0.71"
Flow Length=720' Tc=26.6 min CN=63 Runoff=0.4 cfs 0.083 af

Subcatchment 9: 9 Runoff Area=8,023 sf 0.00% Impervious Runoff Depth=0.58"
Flow Length=149' Tc=15.8 min CN=60 Runoff=0.0 cfs 0.009 af

Subcatchment 10: 10 Runoff Area=94,577 sf 0.00% Impervious Runoff Depth=0.76"
Flow Length=351' Tc=19.2 min CN=64 Runoff=0.8 cfs 0.138 af

Subcatchment 11: 11 Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=527' Tc=26.1 min CN=68 Runoff=0.8 cfs 0.139 af

Reach R1: R1 Avg. Flow Depth=0.25' Max Vel=1.48 fps Inflow=0.8 cfs 0.147 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=0.7 cfs 0.147 af

Reach R2: R2 Avg. Flow Depth=0.34' Max Vel=1.12 fps Inflow=0.8 cfs 0.138 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=0.7 cfs 0.138 af

Reach R3: R3 Avg. Flow Depth=0.23' Max Vel=0.74 fps Inflow=0.5 cfs 0.611 af
n=0.080 L=249.0' S=0.0201 '/' Capacity=13.2 cfs Outflow=0.5 cfs 0.611 af

Pond CB1: CB1 Peak Elev=107.31' Inflow=3.0 cfs 0.264 af
12.0" Round Culvert n=0.012 L=66.0' S=0.0152 '/' Outflow=3.0 cfs 0.264 af

Pond CB2: CB2 Peak Elev=106.27' Inflow=0.6 cfs 0.049 af
12.0" Round Culvert n=0.012 L=75.0' S=0.0093 '/' Outflow=0.6 cfs 0.049 af

Pond CB3: CB3 Peak Elev=106.04' Inflow=3.6 cfs 0.313 af
15.0" Round Culvert n=0.012 L=128.0' S=0.0047 '/' Outflow=3.6 cfs 0.313 af

Pond PCB4: PCB4 Peak Elev=104.47' Inflow=1.7 cfs 0.147 af
12.0" Round Culvert n=0.012 L=88.0' S=0.0085 '/' Outflow=1.7 cfs 0.147 af

Pond PDMH1: PDMH1 Peak Elev=104.92' Inflow=4.4 cfs 0.379 af
18.0" Round Culvert n=0.012 L=88.0' S=0.0102 '/' Outflow=4.4 cfs 0.379 af

Pond PRD2: PRD2 Peak Elev=105.06' Inflow=0.8 cfs 0.066 af
12.0" Round Culvert n=0.012 L=8.0' S=0.0125 '/' Outflow=0.8 cfs 0.066 af

Pond PRD3: PRD3 Peak Elev=104.52' Inflow=0.8 cfs 0.066 af
12.0" Round Culvert n=0.012 L=185.0' S=0.0054 '/' Outflow=0.8 cfs 0.066 af

Pond PYD1: PYD1 Peak Elev=111.85' Storage=10 cf Inflow=0.3 cfs 0.036 af
Outflow=0.3 cfs 0.036 af

Pond RD1: RD1 Peak Elev=108.03' Inflow=1.6 cfs 0.127 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0090 '/' Outflow=1.6 cfs 0.127 af

Pond WP1: Wet Pond 1 Peak Elev=103.68' Storage=16,720 cf Inflow=6.9 cfs 0.611 af
Outflow=0.5 cfs 0.611 af

Link A: A Inflow=1.5 cfs 0.840 af
Primary=1.5 cfs 0.840 af

Link B: B Inflow=0.8 cfs 0.139 af
Primary=0.8 cfs 0.139 af

Total Runoff Area = 8.324 ac Runoff Volume = 0.979 af Average Runoff Depth = 1.41"
74.83% Pervious = 6.229 ac 25.17% Impervious = 2.095 ac

A – 2

NODE LISTING – 10-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=13,718 sf 27.41% Impervious Runoff Depth=2.81"
Flow Length=209' Tc=12.8 min CN=75 Runoff=0.6 cfs 0.074 af

Subcatchment 2: 2 Runoff Area=17,914 sf 88.45% Impervious Runoff Depth=4.74"
Flow Length=137' Tc=3.6 min CN=94 Runoff=1.7 cfs 0.163 af

Subcatchment 3: 3 Runoff Area=8,151 sf 95.13% Impervious Runoff Depth=4.97"
Flow Length=228' Tc=3.0 min CN=96 Runoff=0.8 cfs 0.078 af

Subcatchment 4: 4 Runoff Area=27,937 sf 82.61% Impervious Runoff Depth=4.52"
Flow Length=233' Tc=5.6 min CN=92 Runoff=2.4 cfs 0.242 af

Subcatchment 5: 5 Runoff Area=19,697 sf 100.00% Impervious Runoff Depth=5.20"
Tc=1.2 min CN=98 Runoff=2.0 cfs 0.196 af

Subcatchment 6A: 6A Runoff Area=10,147 sf 100.00% Impervious Runoff Depth=5.20"
Tc=1.2 min CN=98 Runoff=1.0 cfs 0.101 af

Subcatchment 6B: 6B Runoff Area=10,148 sf 100.00% Impervious Runoff Depth=5.20"
Tc=1.2 min CN=98 Runoff=1.0 cfs 0.101 af

Subcatchment 7: 7 Runoff Area=16,551 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=56' Slope=0.0530 '/' Tc=5.7 min CN=61 Runoff=0.5 cfs 0.052 af

Subcatchment 8: 8 Runoff Area=60,476 sf 1.38% Impervious Runoff Depth=1.79"
Flow Length=720' Tc=26.6 min CN=63 Runoff=1.1 cfs 0.208 af

Subcatchment 9: 9 Runoff Area=8,023 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=149' Tc=15.8 min CN=60 Runoff=0.2 cfs 0.024 af

Subcatchment 10: 10 Runoff Area=94,577 sf 0.00% Impervious Runoff Depth=1.87"
Flow Length=351' Tc=19.2 min CN=64 Runoff=2.1 cfs 0.339 af

Subcatchment 11: 11 Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=527' Tc=26.1 min CN=68 Runoff=1.7 cfs 0.317 af

Reach R1: R1 Avg. Flow Depth=0.41' Max Vel=2.03 fps Inflow=2.1 cfs 0.363 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=2.0 cfs 0.363 af

Reach R2: R2 Avg. Flow Depth=0.54' Max Vel=1.51 fps Inflow=2.1 cfs 0.339 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=2.0 cfs 0.339 af

Reach R3: R3 Avg. Flow Depth=0.37' Max Vel=1.03 fps Inflow=1.5 cfs 1.005 af
n=0.080 L=249.0' S=0.0201 '/' Capacity=13.2 cfs Outflow=1.5 cfs 1.005 af

Pond CB1: CB1 Peak Elev=107.82' Inflow=4.0 cfs 0.432 af
12.0" Round Culvert n=0.012 L=66.0' S=0.0152 '/' Outflow=4.0 cfs 0.432 af

Pond CB2: CB2 Peak Elev=106.50' Inflow=0.8 cfs 0.078 af
12.0" Round Culvert n=0.012 L=75.0' S=0.0093 '/' Outflow=0.8 cfs 0.078 af

Pond CB3: CB3 Peak Elev=106.36' Inflow=4.8 cfs 0.510 af
15.0" Round Culvert n=0.012 L=128.0' S=0.0047 '/' Outflow=4.8 cfs 0.510 af

Pond PCB4: PCB4 Peak Elev=104.72' Inflow=2.4 cfs 0.242 af
12.0" Round Culvert n=0.012 L=88.0' S=0.0085 '/' Outflow=2.4 cfs 0.242 af

Pond PDMH1: PDMH1 Peak Elev=105.13' Inflow=5.9 cfs 0.611 af
18.0" Round Culvert n=0.012 L=88.0' S=0.0102 '/' Outflow=5.9 cfs 0.611 af

Pond PRD2: PRD2 Peak Elev=105.27' Inflow=1.0 cfs 0.101 af
12.0" Round Culvert n=0.012 L=8.0' S=0.0125 '/' Outflow=1.0 cfs 0.101 af

Pond PRD3: PRD3 Peak Elev=104.64' Inflow=1.0 cfs 0.101 af
12.0" Round Culvert n=0.012 L=185.0' S=0.0054 '/' Outflow=1.0 cfs 0.101 af

Pond PYD1: PYD1 Peak Elev=111.89' Storage=25 cf Inflow=0.6 cfs 0.074 af
Outflow=0.6 cfs 0.074 af

Pond RD1: RD1 Peak Elev=108.34' Inflow=2.0 cfs 0.196 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0090 '/' Outflow=2.0 cfs 0.196 af

Pond WP1: Wet Pond 1 Peak Elev=104.34' Storage=21,943 cf Inflow=9.5 cfs 1.005 af
Outflow=1.5 cfs 1.005 af

Link A: A Inflow=4.5 cfs 1.576 af
Primary=4.5 cfs 1.576 af

Link B: B Inflow=1.7 cfs 0.317 af
Primary=1.7 cfs 0.317 af

Total Runoff Area = 8.324 ac Runoff Volume = 1.892 af Average Runoff Depth = 2.73"
74.83% Pervious = 6.229 ac 25.17% Impervious = 2.095 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment 1: 1

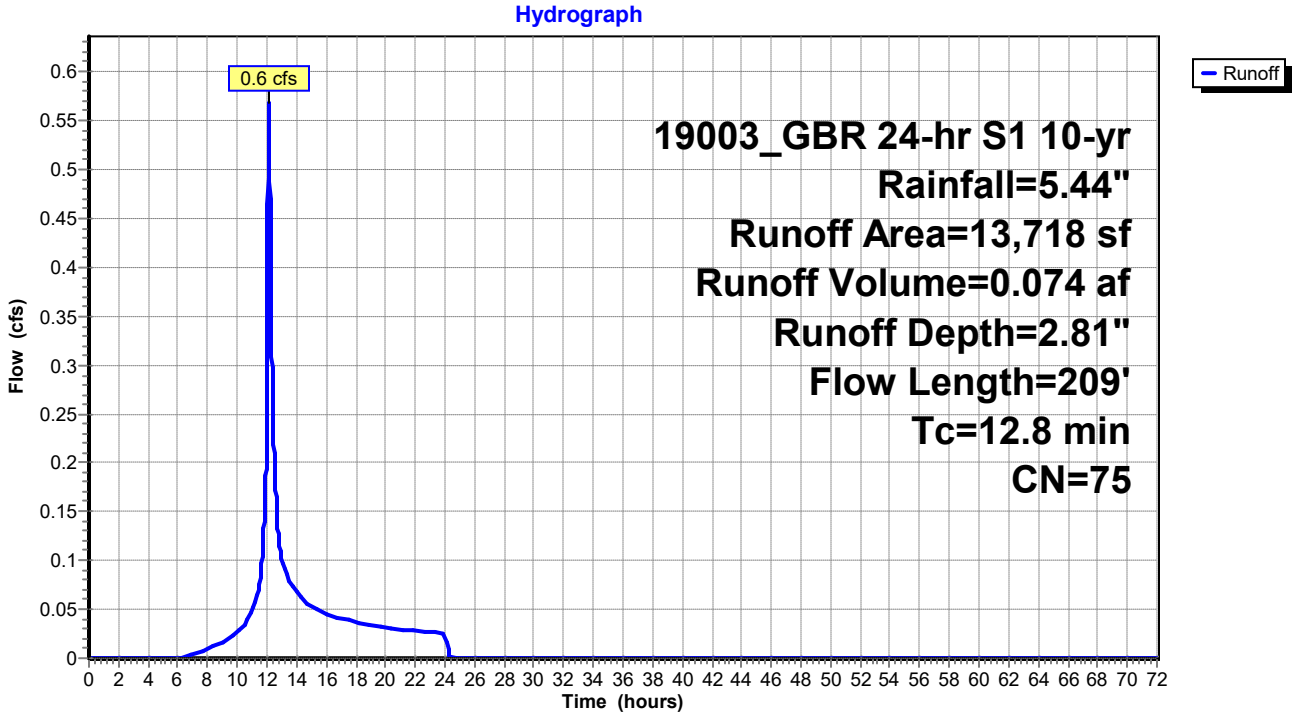
Runoff = 0.6 cfs @ 12.13 hrs, Volume= 0.074 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
6,412	61	>75% Grass cover, Good, HSG B
958	98	Paved parking, HSG B
203	98	Roofs, HSG B
3,546	74	>75% Grass cover, Good, HSG C
2,599	98	Paved roads w/curbs & sewers, HSG C
13,718	75	Weighted Average
9,958		72.59% Pervious Area
3,760		27.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	100	0.0400	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
2.6	109	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.8	209	Total			

Subcatchment 1: 1



Summary for Subcatchment 2: 2

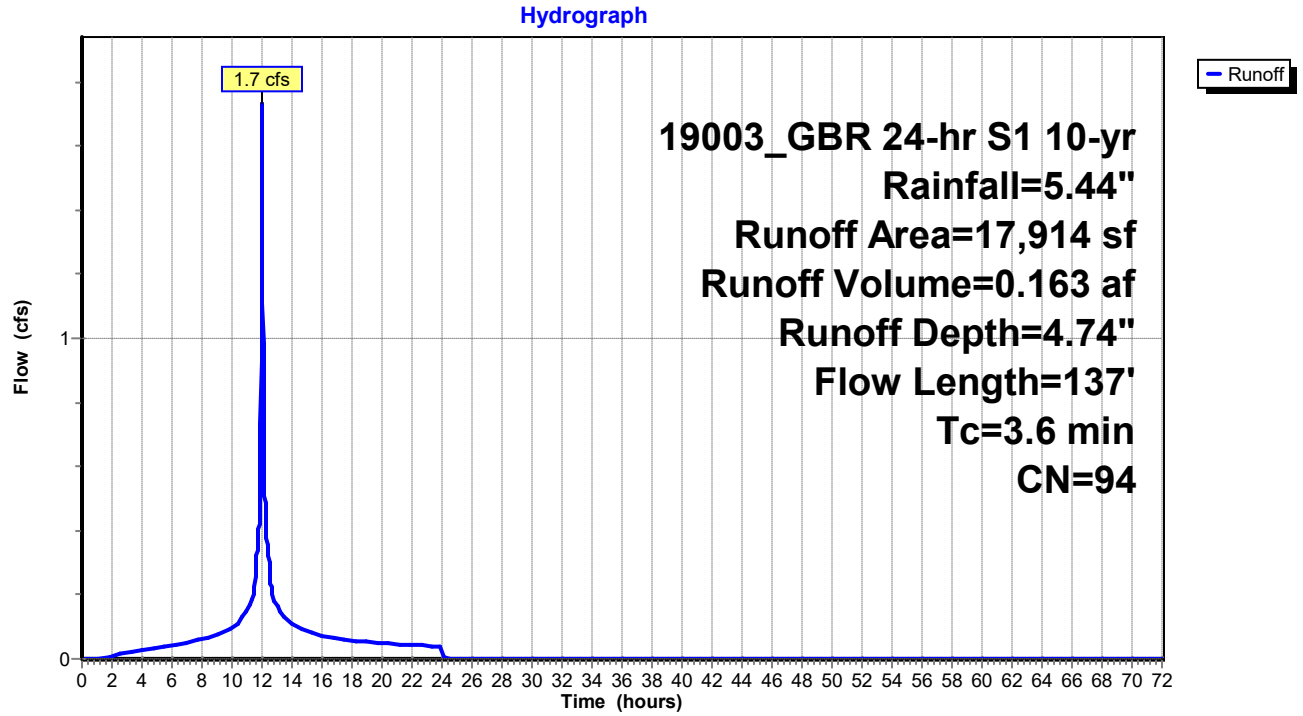
Runoff = 1.7 cfs @ 12.01 hrs, Volume= 0.163 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
2,069	61	>75% Grass cover, Good, HSG B
15,845	98	Paved roads w/curbs & sewers, HSG B
17,914	94	Weighted Average
2,069		11.55% Pervious Area
15,845		88.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	28	0.0640	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
0.6	109	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.6	137	Total			

Subcatchment 2: 2



Summary for Subcatchment 3: 3

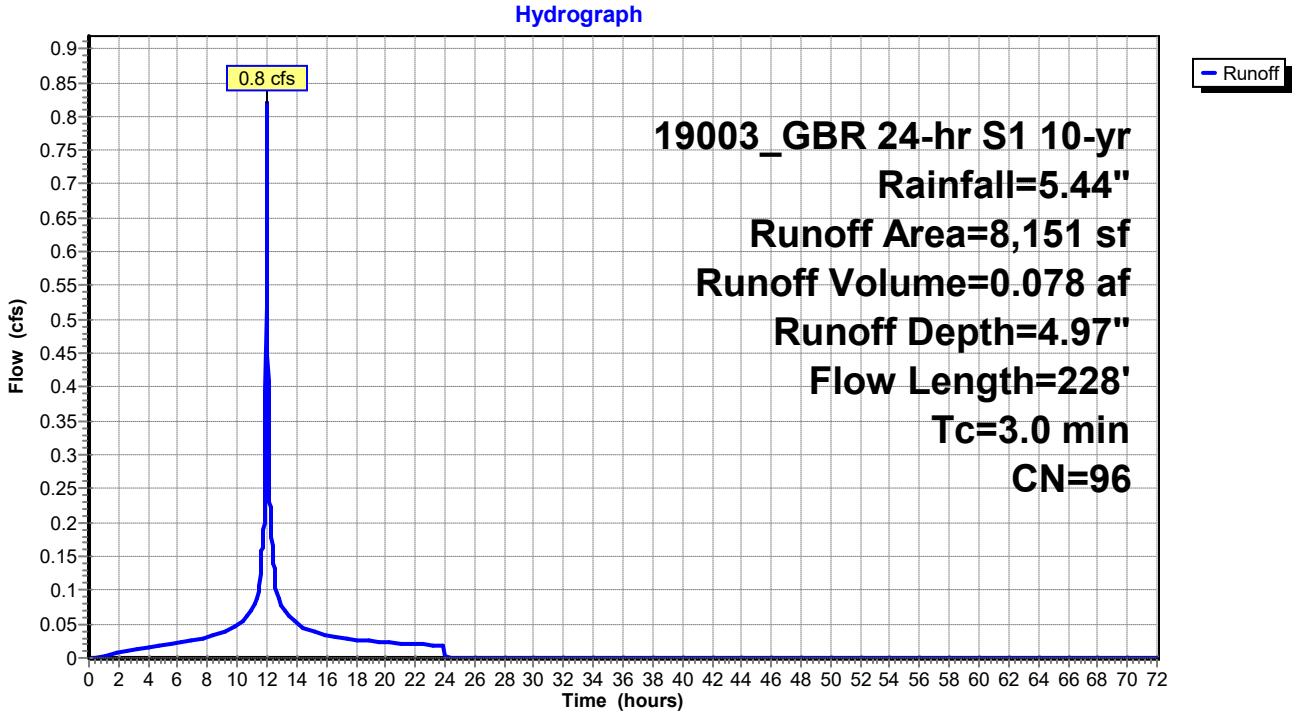
Runoff = 0.8 cfs @ 12.01 hrs, Volume= 0.078 af, Depth= 4.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
389	61	>75% Grass cover, Good, HSG B
5,774	98	Paved roads w/curbs & sewers, HSG B
8	74	>75% Grass cover, Good, HSG C
1,980	98	Paved roads w/curbs & sewers, HSG C
8,151	96	Weighted Average
397		4.87% Pervious Area
7,754		95.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	16	0.0720	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
1.1	212	0.0260	3.27		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.0	228	Total			

Subcatchment 3: 3



Summary for Subcatchment 4: 4

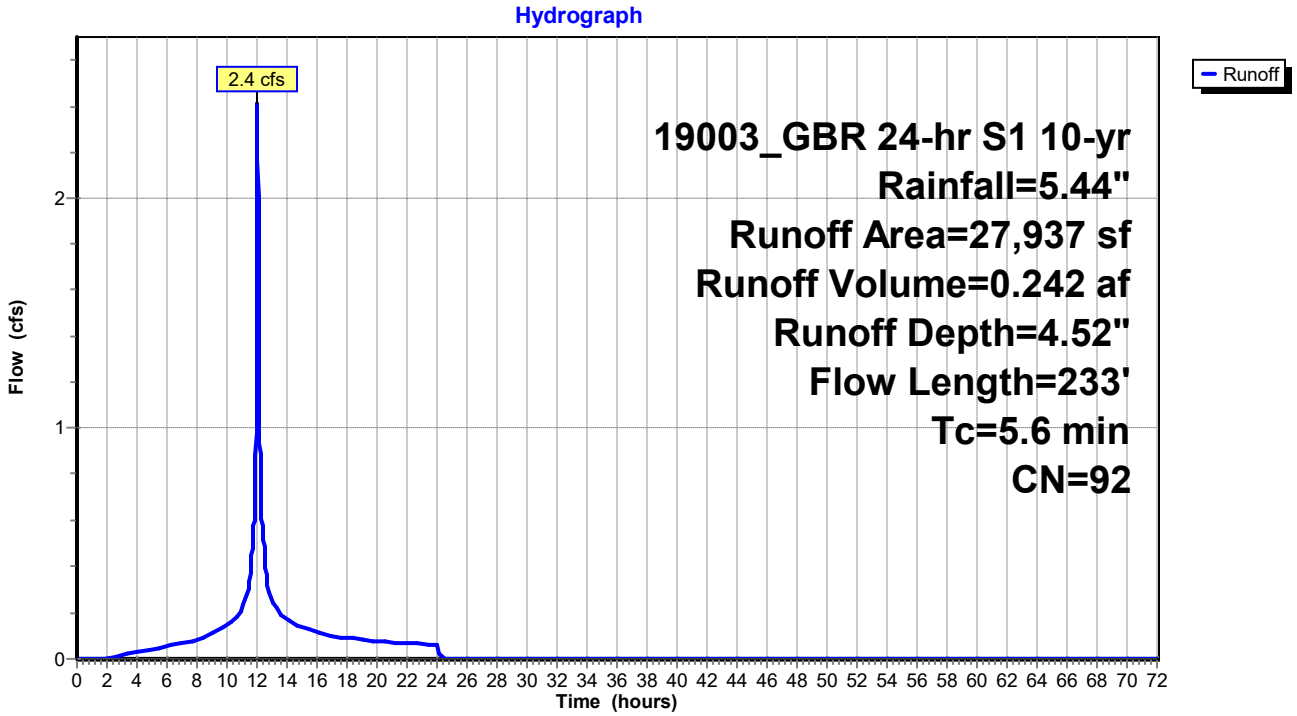
Runoff = 2.4 cfs @ 12.03 hrs, Volume= 0.242 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
4,857	61	>75% Grass cover, Good, HSG B
23,080	98	Paved roads w/curbs & sewers, HSG B
27,937	92	Weighted Average
4,857		17.39% Pervious Area
23,080		82.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	31	0.0350	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
1.4	202	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.6	233	Total			

Subcatchment 4: 4



Summary for Subcatchment 5: 5

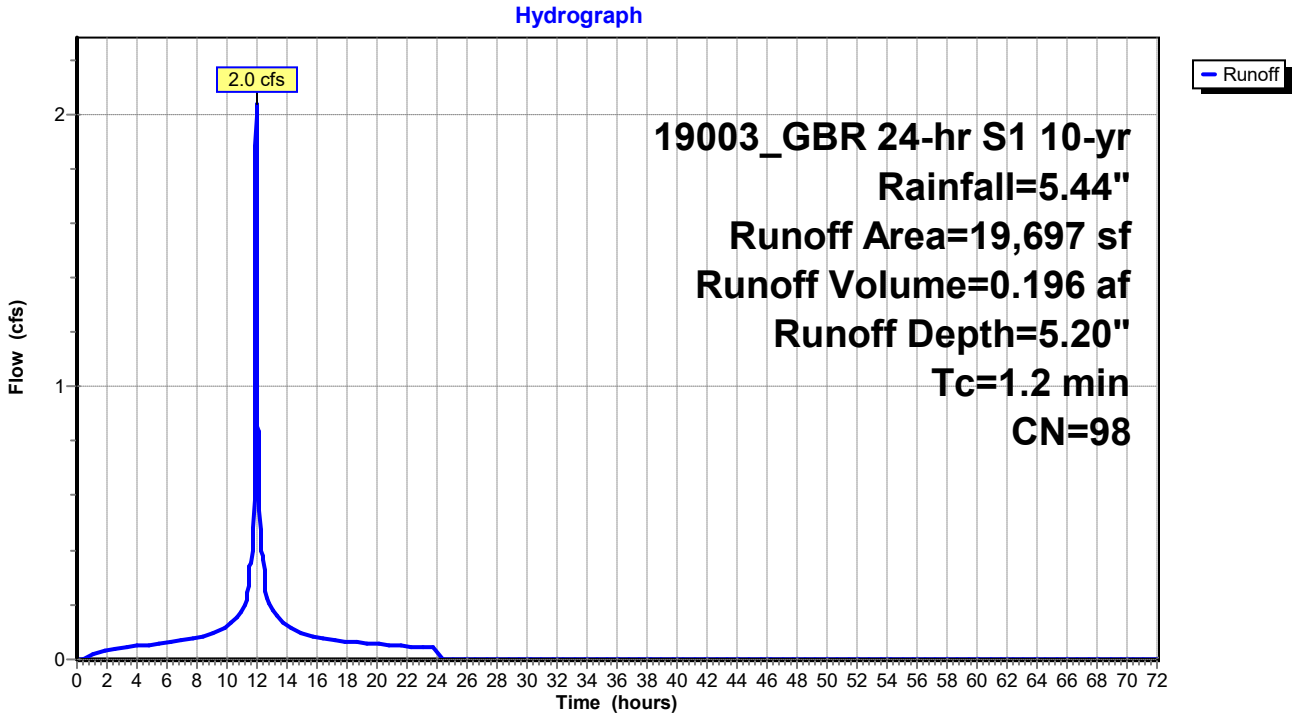
Runoff = 2.0 cfs @ 11.99 hrs, Volume= 0.196 af, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
19,697	98	Roofs, HSG B
19,697		100.00% Impervious Area

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

Subcatchment 5: 5



Summary for Subcatchment 6A: 6A

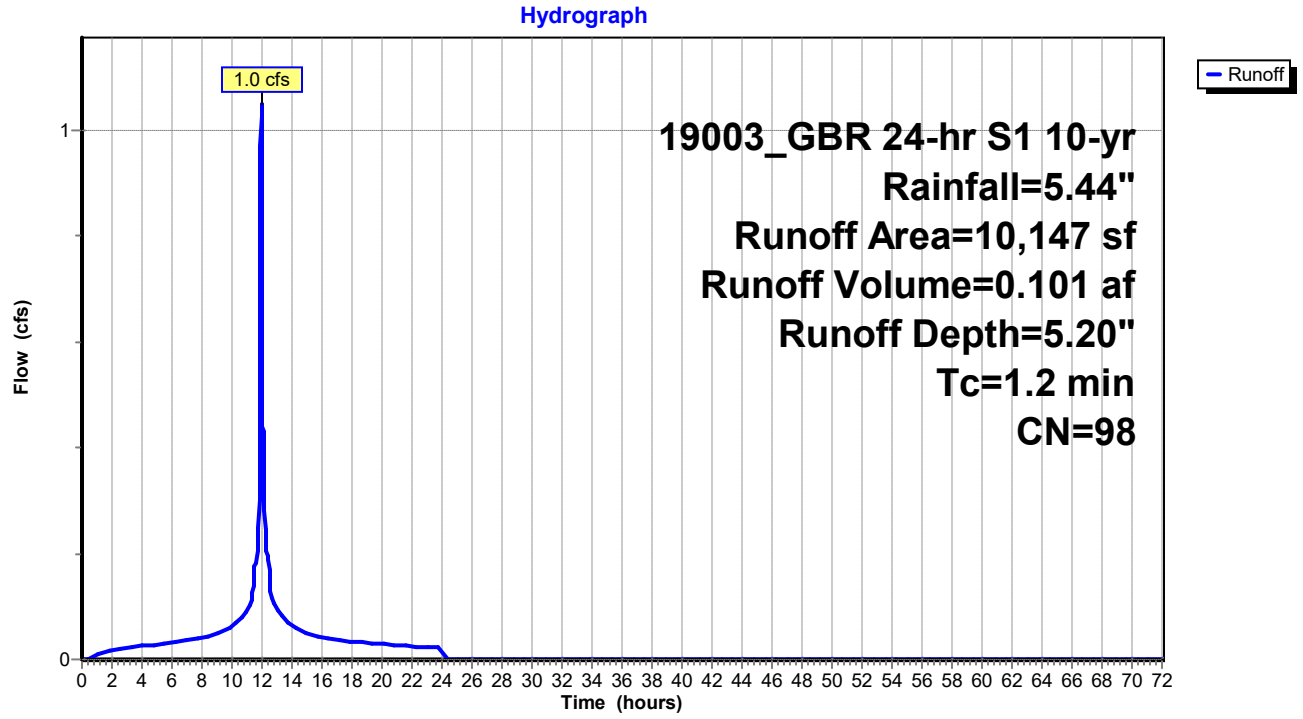
Runoff = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
10,147	98	Roofs, HSG B
10,147		100.00% Impervious Area

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

Subcatchment 6A: 6A



Summary for Subcatchment 6B: 6B

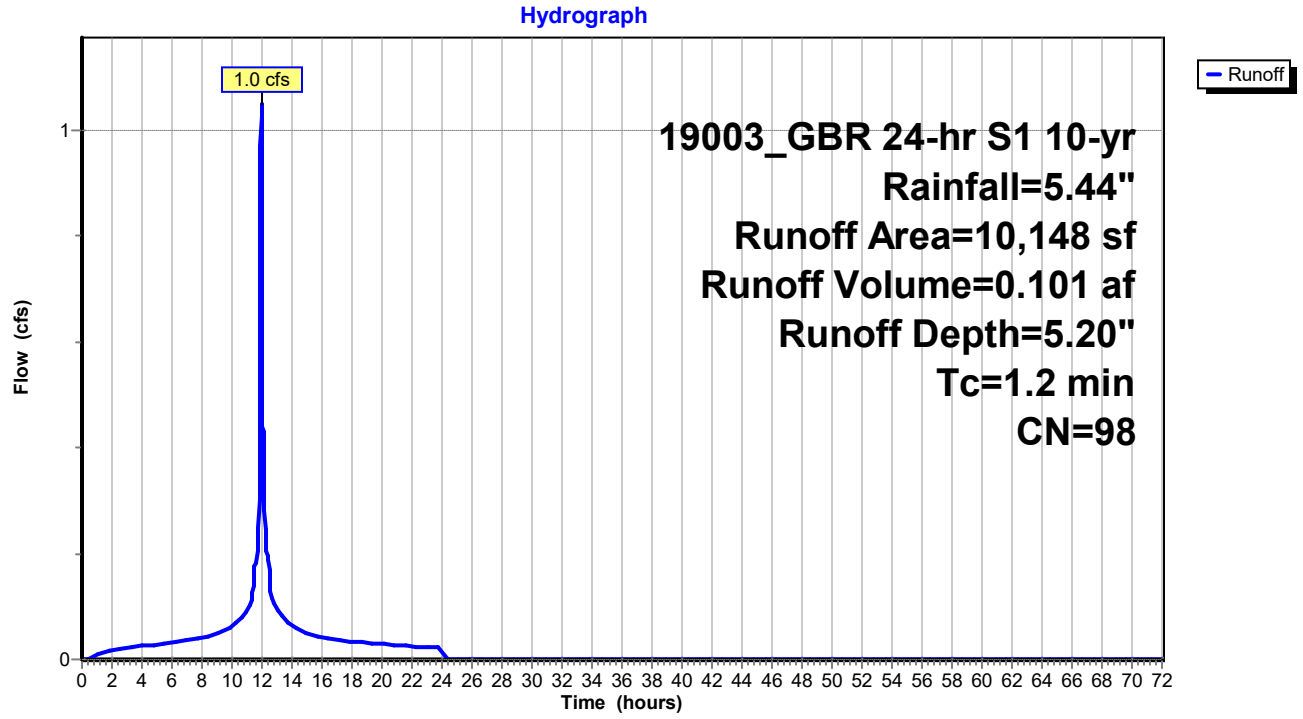
Runoff = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af, Depth= 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
10,148	98	Roofs, HSG B
10,148		100.00% Impervious Area

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

Subcatchment 6B: 6B



Summary for Subcatchment 7: 7

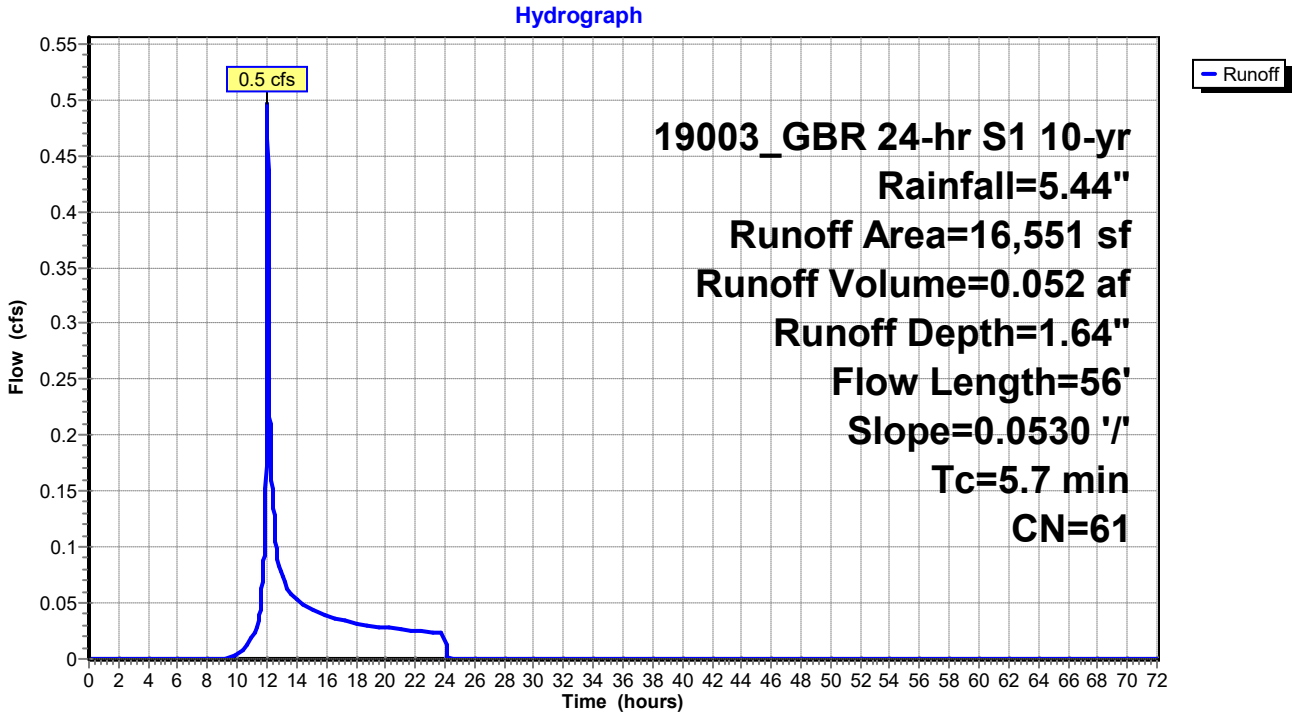
Runoff = 0.5 cfs @ 12.04 hrs, Volume= 0.052 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
16,551	61	>75% Grass cover, Good, HSG B
16,551		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	56	0.0530	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"

Subcatchment 7: 7



Summary for Subcatchment 8: 8

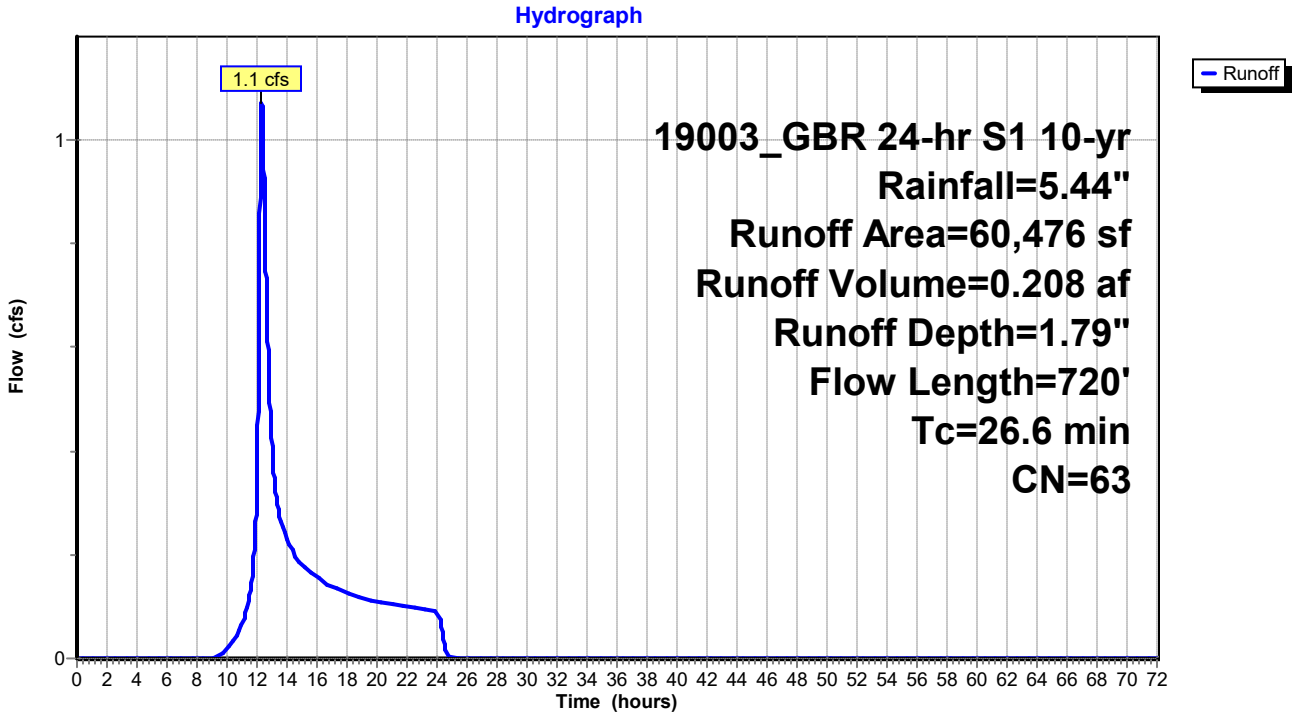
Runoff = 1.1 cfs @ 12.33 hrs, Volume= 0.208 af, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
21,715	55	Woods, Good, HSG B
19,606	61	>75% Grass cover, Good, HSG B
632	96	Gravel surface, HSG B
6,930	70	Woods, Good, HSG C
10,757	74	>75% Grass cover, Good, HSG C
836	98	Paved roads w/curbs & sewers, HSG C
60,476	63	Weighted Average
59,640		98.62% Pervious Area
836		1.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0150	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
0.6	31	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	32	0.0300	8.51	6.69	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.0	122	0.0220	1.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	330	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.5	105	0.0290	1.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.6	720	Total			

Subcatchment 8: 8



Summary for Subcatchment 9: 9

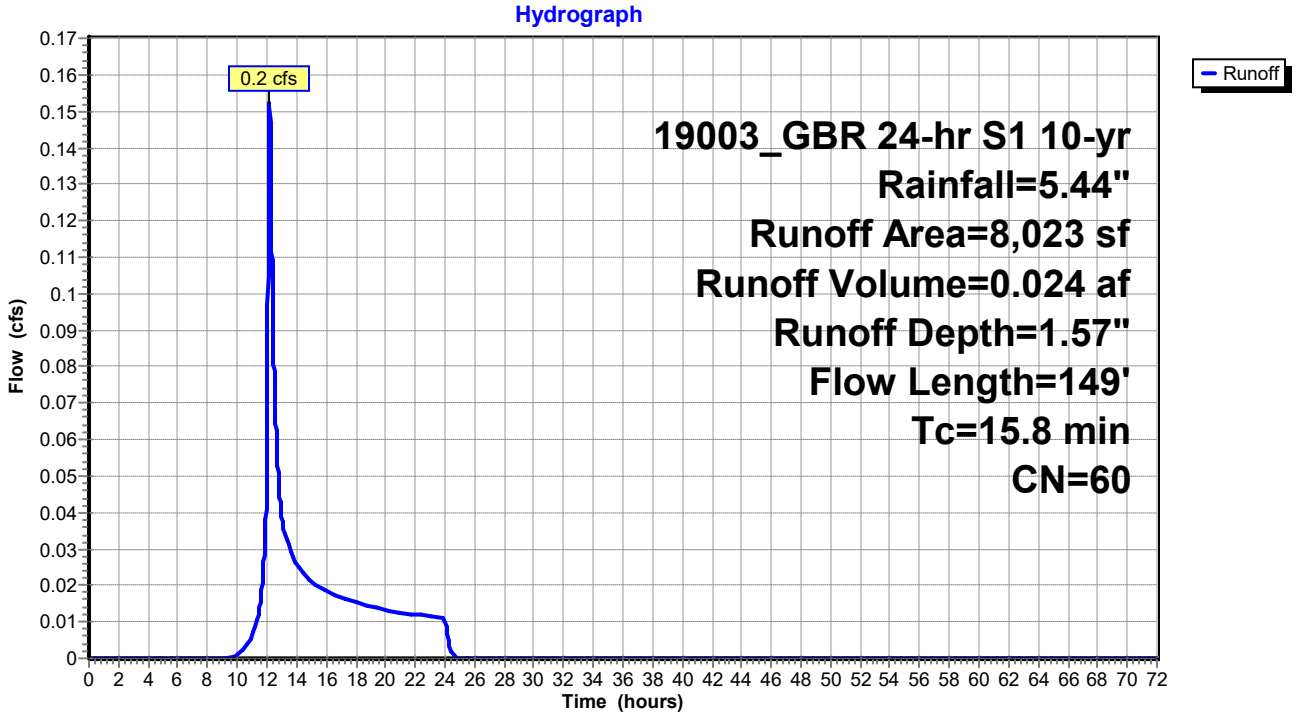
Runoff = 0.2 cfs @ 12.18 hrs, Volume= 0.024 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
3,122	58	Woods/grass comb., Good, HSG B
4,901	61	>75% Grass cover, Good, HSG B
8,023	60	Weighted Average
8,023		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0150	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.61"
0.7	49	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.8	149	Total			

Subcatchment 9: 9



Summary for Subcatchment 10: 10

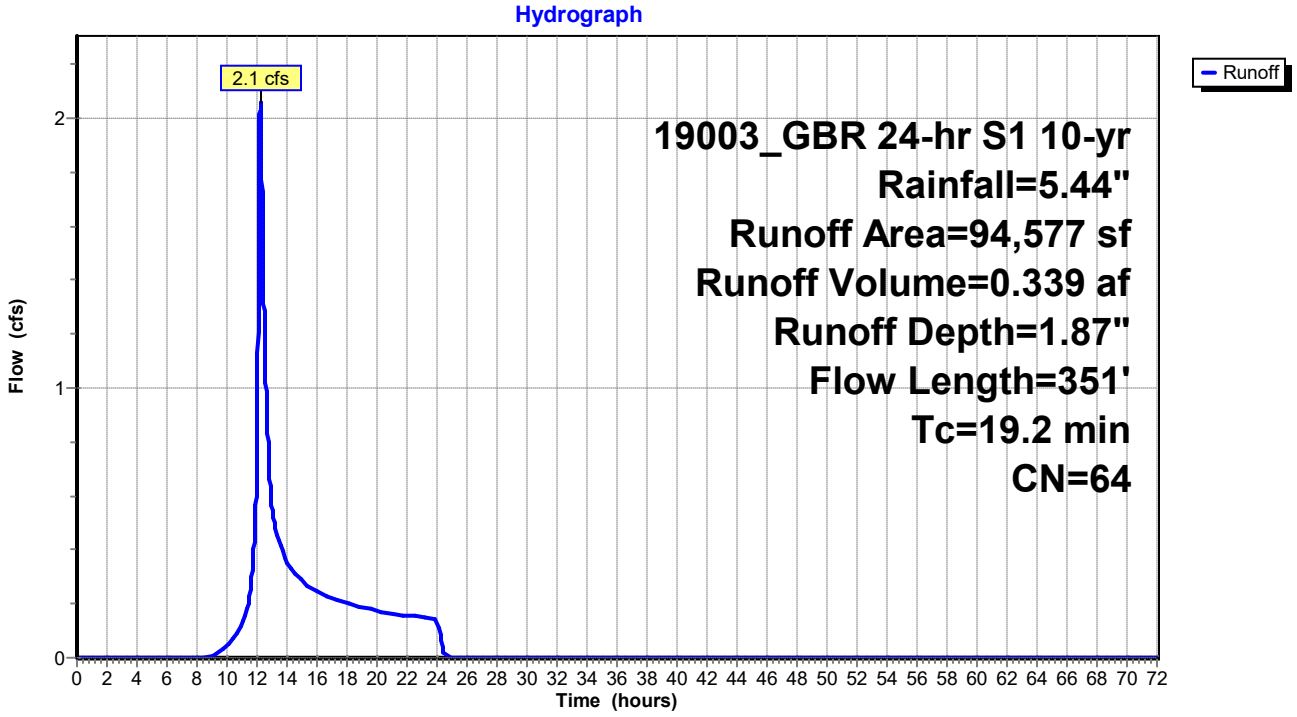
Runoff = 2.1 cfs @ 12.22 hrs, Volume= 0.339 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
21,078	55	Woods, Good, HSG B
25,077	58	Woods/grass comb., Good, HSG B
9,324	61	>75% Grass cover, Good, HSG B
25,489	72	Woods/grass comb., Good, HSG C
13,609	74	>75% Grass cover, Good, HSG C
94,577	64	Weighted Average
94,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0380	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
1.0	50	0.0270	0.82		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.6	201	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.2	351	Total			

Subcatchment 10: 10



Summary for Subcatchment 11: 11

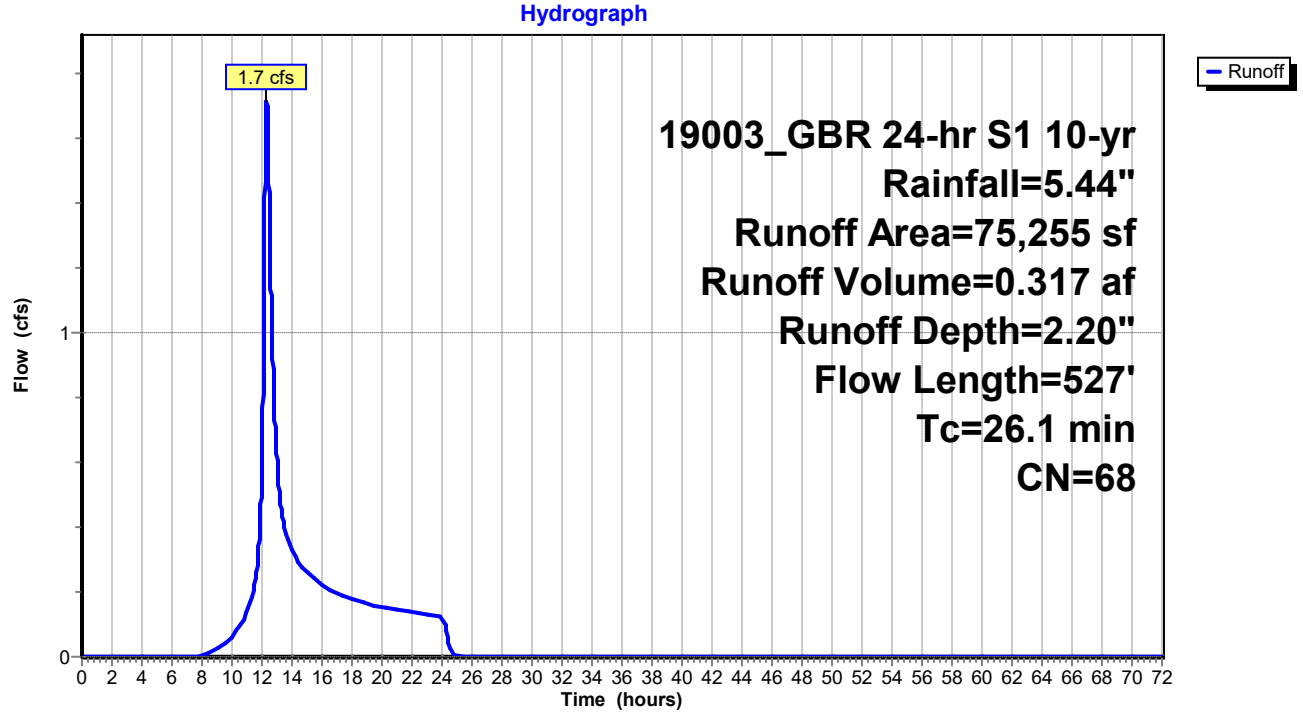
Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.317 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
19003_GBR 24-hr S1 10-yr Rainfall=5.44"

Area (sf)	CN	Description
6,839	55	Woods, Good, HSG B
13,856	58	Woods/grass comb., Good, HSG B
5,986	61	>75% Grass cover, Good, HSG B
2,003	72	Woods/grass comb., Good, HSG C
46,571	74	>75% Grass cover, Good, HSG C
75,255	68	Weighted Average
75,255		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	100	0.0280	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.61"
1.9	118	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	309	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.1	527	Total			

Subcatchment 11: 11



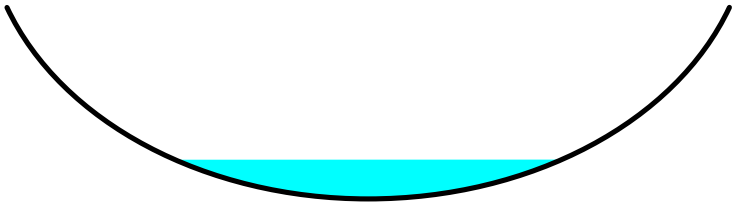
Summary for Reach R1: R1

Inflow Area = 2.355 ac, 0.00% Impervious, Inflow Depth = 1.85" for 10-yr event
Inflow = 2.1 cfs @ 12.27 hrs, Volume= 0.363 af
Outflow = 2.0 cfs @ 12.33 hrs, Volume= 0.363 af, Atten= 4%, Lag= 3.3 min

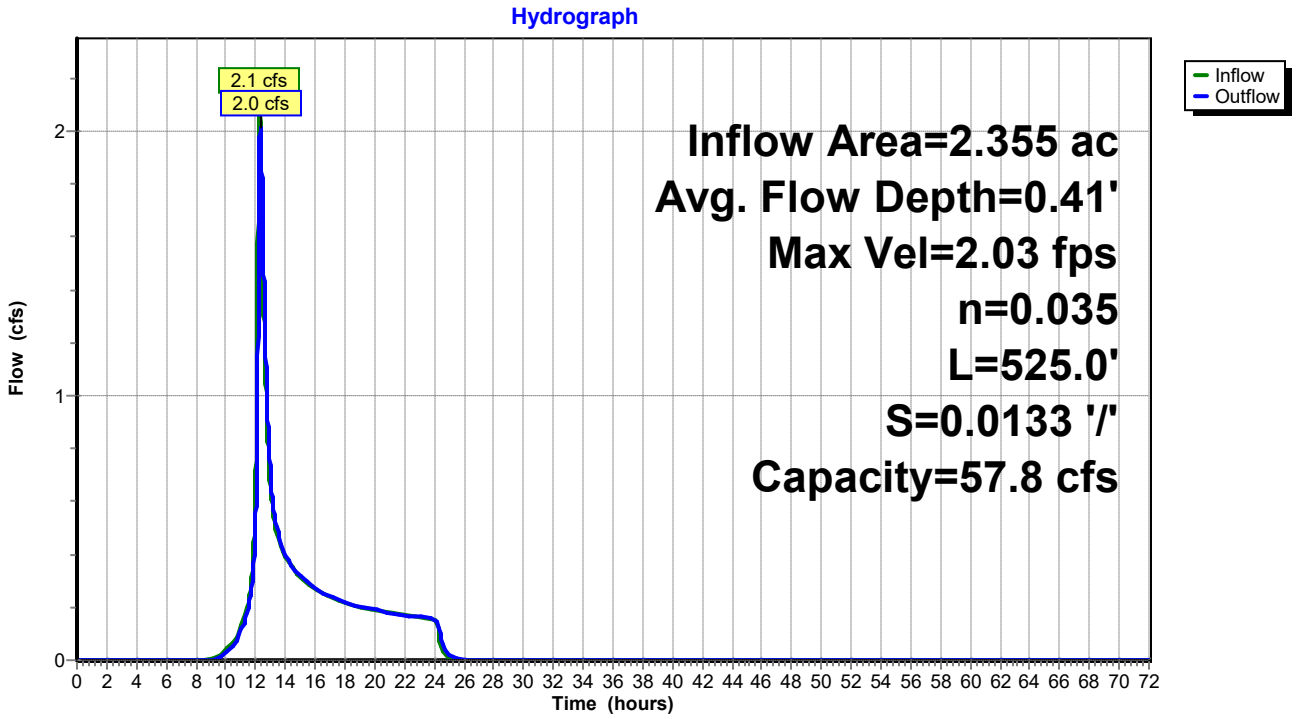
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.03 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 10.1 min

Peak Storage= 523 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.41' , Surface Width= 3.63'
Bank-Full Depth= 2.00' Flow Area= 10.7 sf, Capacity= 57.8 cfs

8.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 525.0' Slope= 0.0133 '/'
Inlet Invert= 102.00', Outlet Invert= 95.00'



Reach R1: R1



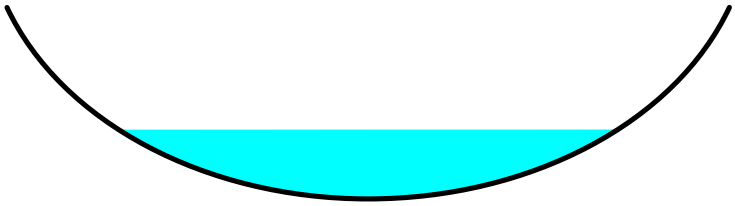
Summary for Reach R2: R2

Inflow Area = 2.171 ac, 0.00% Impervious, Inflow Depth = 1.87" for 10-yr event
Inflow = 2.1 cfs @ 12.22 hrs, Volume= 0.339 af
Outflow = 2.0 cfs @ 12.28 hrs, Volume= 0.339 af, Atten= 4%, Lag= 3.2 min

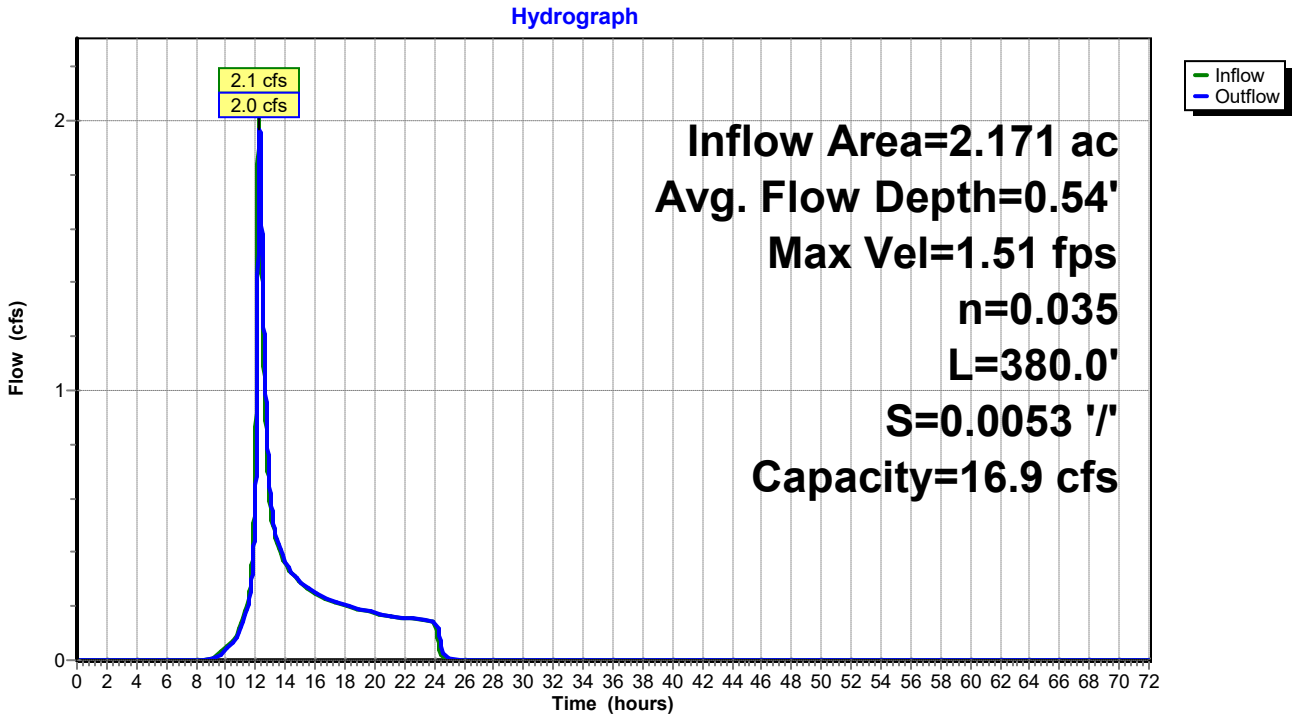
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 10.0 min

Peak Storage= 497 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.54' , Surface Width= 3.61'
Bank-Full Depth= 1.50' Flow Area= 6.0 sf, Capacity= 16.9 cfs

6.00' x 1.50' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 380.0' Slope= 0.0053 '/'
Inlet Invert= 104.00', Outlet Invert= 102.00'



Reach R2: R2



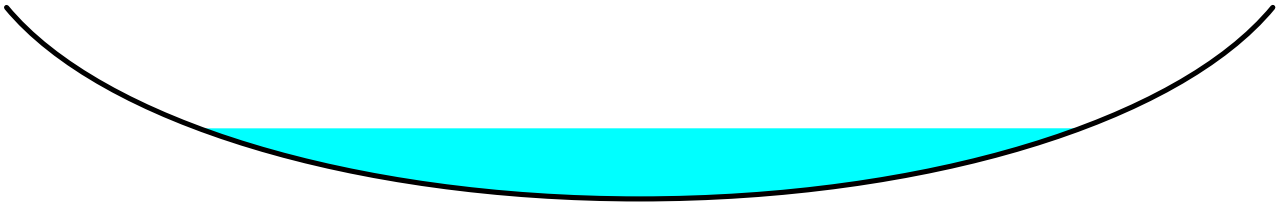
Summary for Reach R3: R3

Inflow Area = 2.853 ac, 72.77% Impervious, Inflow Depth > 4.23" for 10-yr event
Inflow = 1.5 cfs @ 12.58 hrs, Volume= 1.005 af
Outflow = 1.5 cfs @ 12.64 hrs, Volume= 1.005 af, Atten= 0%, Lag= 3.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.03 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 10.5 min

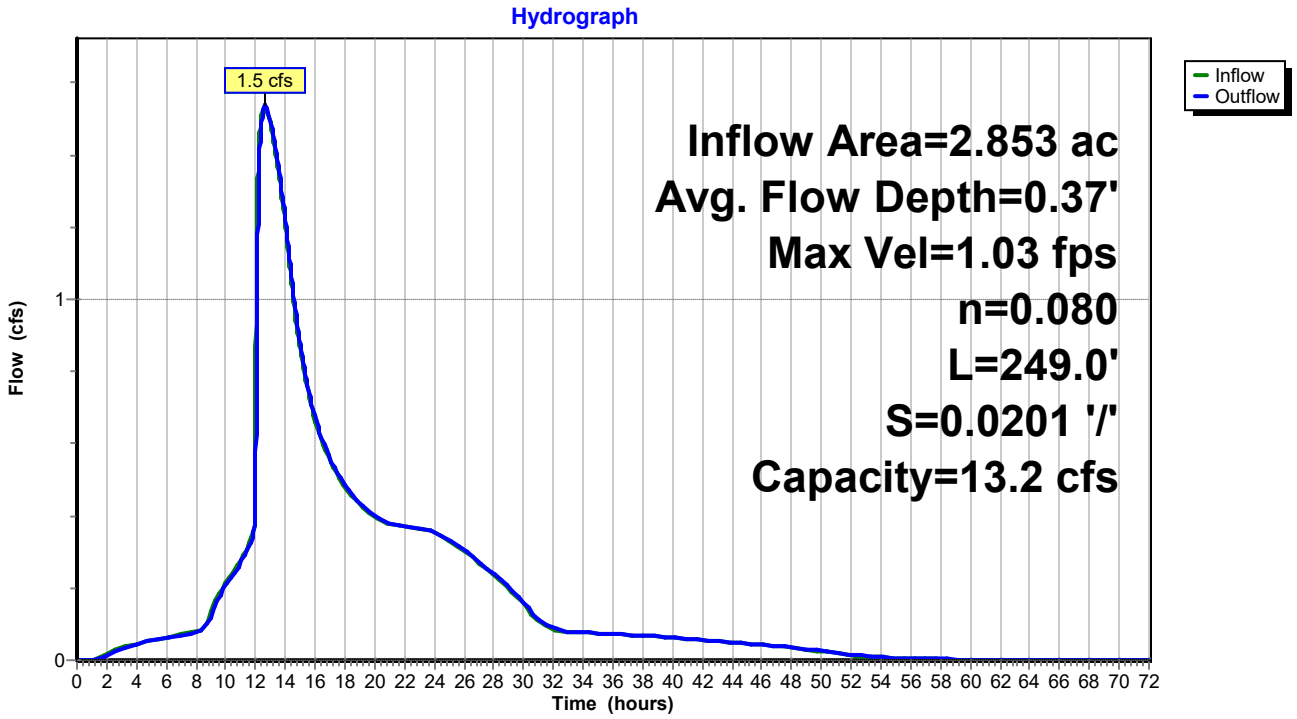
Peak Storage= 372 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 6.08'
Bank-Full Depth= 1.00' Flow Area= 6.7 sf, Capacity= 13.2 cfs

10.00' x 1.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 249.0' Slope= 0.0201 '/'
Inlet Invert= 100.00', Outlet Invert= 95.00'



‡

Reach R3: R3



Summary for Pond CB1: CB1

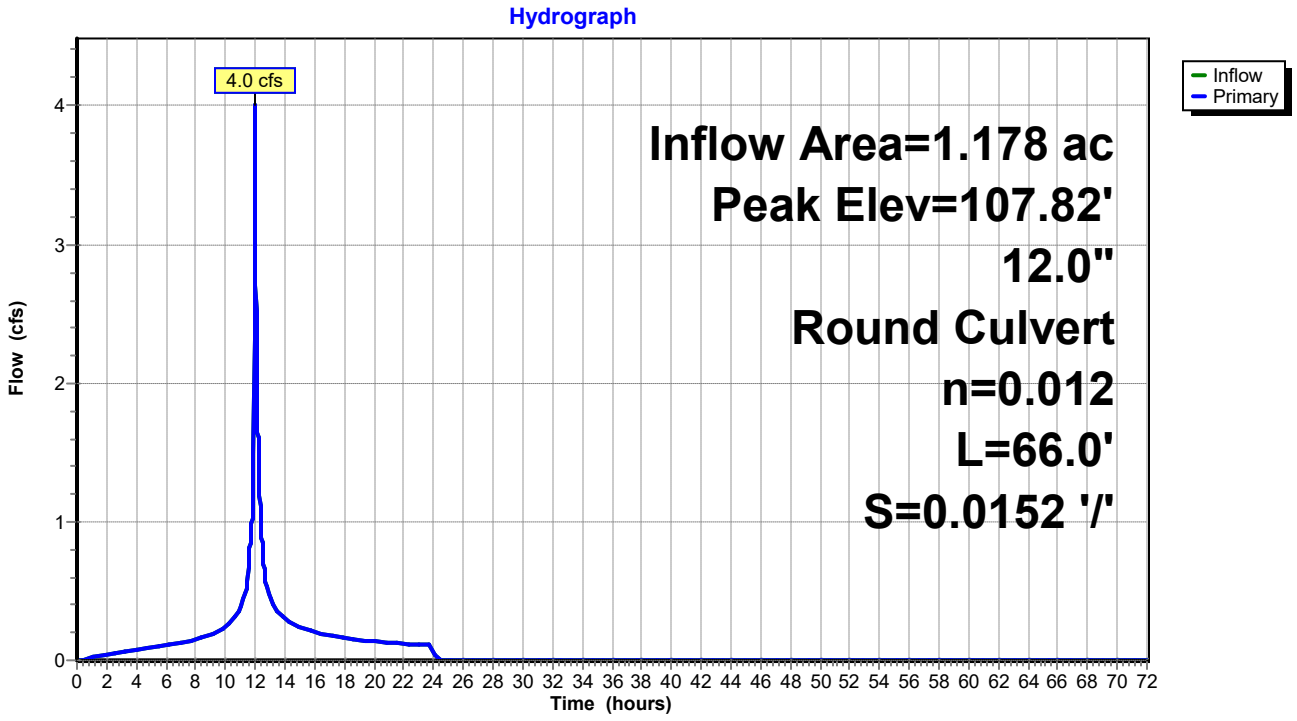
Inflow Area = 1.178 ac, 76.57% Impervious, Inflow Depth = 4.40" for 10-yr event
Inflow = 4.0 cfs @ 12.00 hrs, Volume= 0.432 af
Outflow = 4.0 cfs @ 12.00 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min
Primary = 4.0 cfs @ 12.00 hrs, Volume= 0.432 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 107.82' @ 12.00 hrs
Flood Elev= 110.35'

Device	Routing	Invert	Outlet Devices
#1	Primary	106.20'	**12.0" Round Culvert** L= 66.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 106.20' / 105.20' S= 0.0152 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.0 cfs @ 12.00 hrs HW=107.81' TW=106.36' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.0 cfs @ 5.08 fps)

Pond CB1: CB1



Summary for Pond CB2: CB2

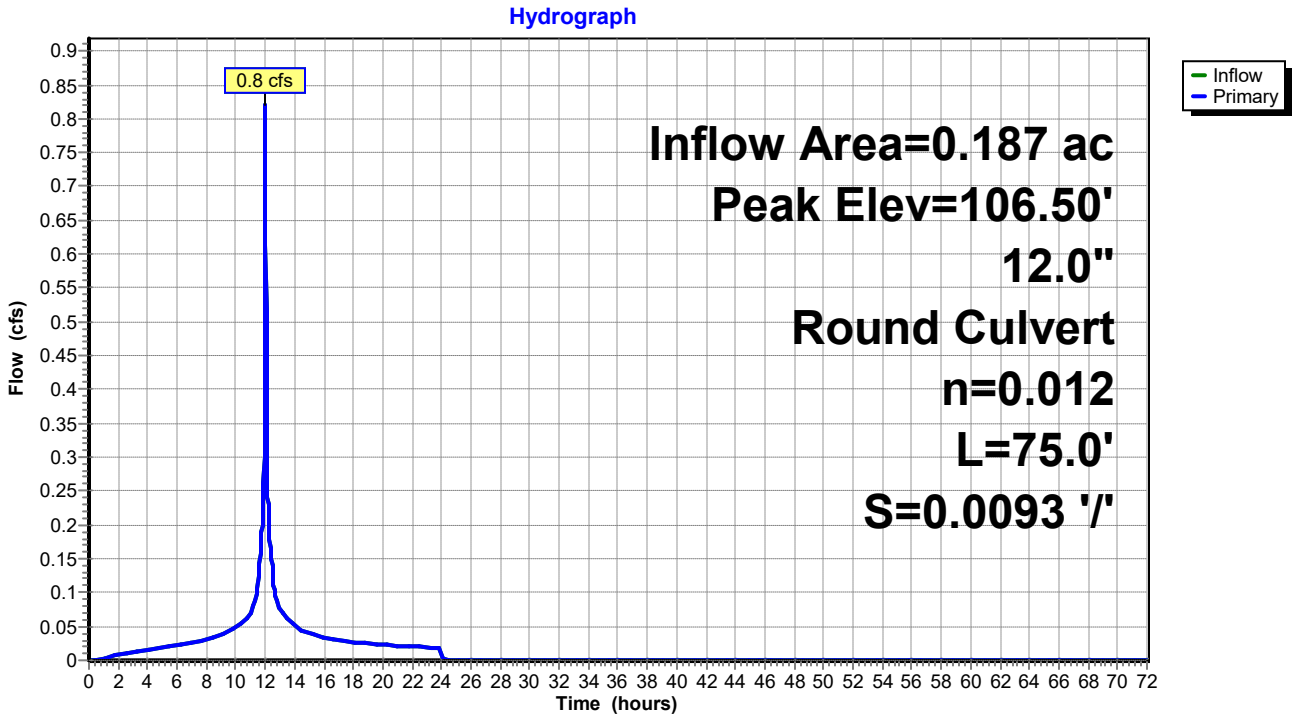
Inflow Area = 0.187 ac, 95.13% Impervious, Inflow Depth = 4.97" for 10-yr event
Inflow = 0.8 cfs @ 12.01 hrs, Volume= 0.078 af
Outflow = 0.8 cfs @ 12.01 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.01 hrs, Volume= 0.078 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 106.50' @ 12.01 hrs
Flood Elev= 109.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	105.70'	**12.0" Round Culvert** L= 75.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 105.70' / 105.00' S= 0.0093 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.9 cfs @ 12.01 hrs HW=106.49' TW=106.33' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.9 cfs @ 1.78 fps)

Pond CB2: CB2



Summary for Pond CB3: CB3

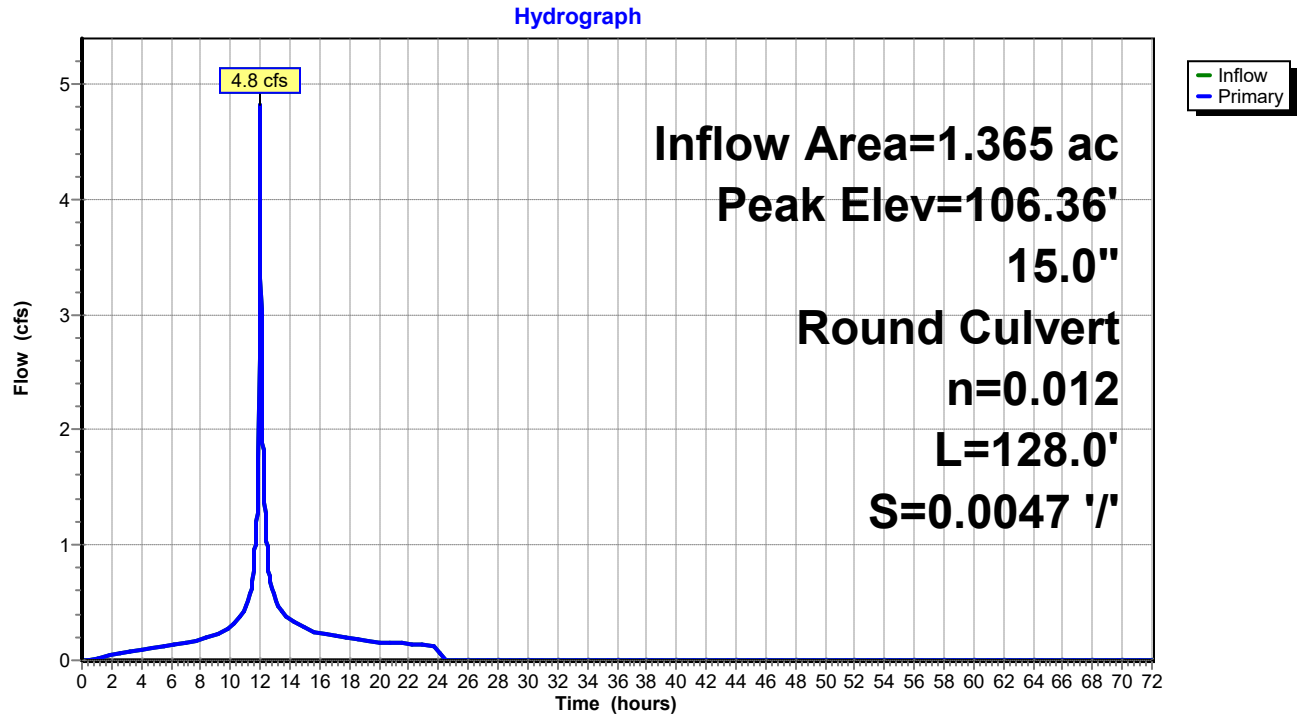
Inflow Area = 1.365 ac, 79.11% Impervious, Inflow Depth = 4.48" for 10-yr event
Inflow = 4.8 cfs @ 12.00 hrs, Volume= 0.510 af
Outflow = 4.8 cfs @ 12.00 hrs, Volume= 0.510 af, Atten= 0%, Lag= 0.0 min
Primary = 4.8 cfs @ 12.00 hrs, Volume= 0.510 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 106.36' @ 12.00 hrs
Flood Elev= 108.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.90'	**15.0" Round Culvert** L= 128.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 104.90' / 104.30' S= 0.0047 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.8 cfs @ 12.00 hrs HW=106.36' TW=105.13' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.8 cfs @ 4.22 fps)

Pond CB3: CB3



Summary for Pond PCB4: PCB4

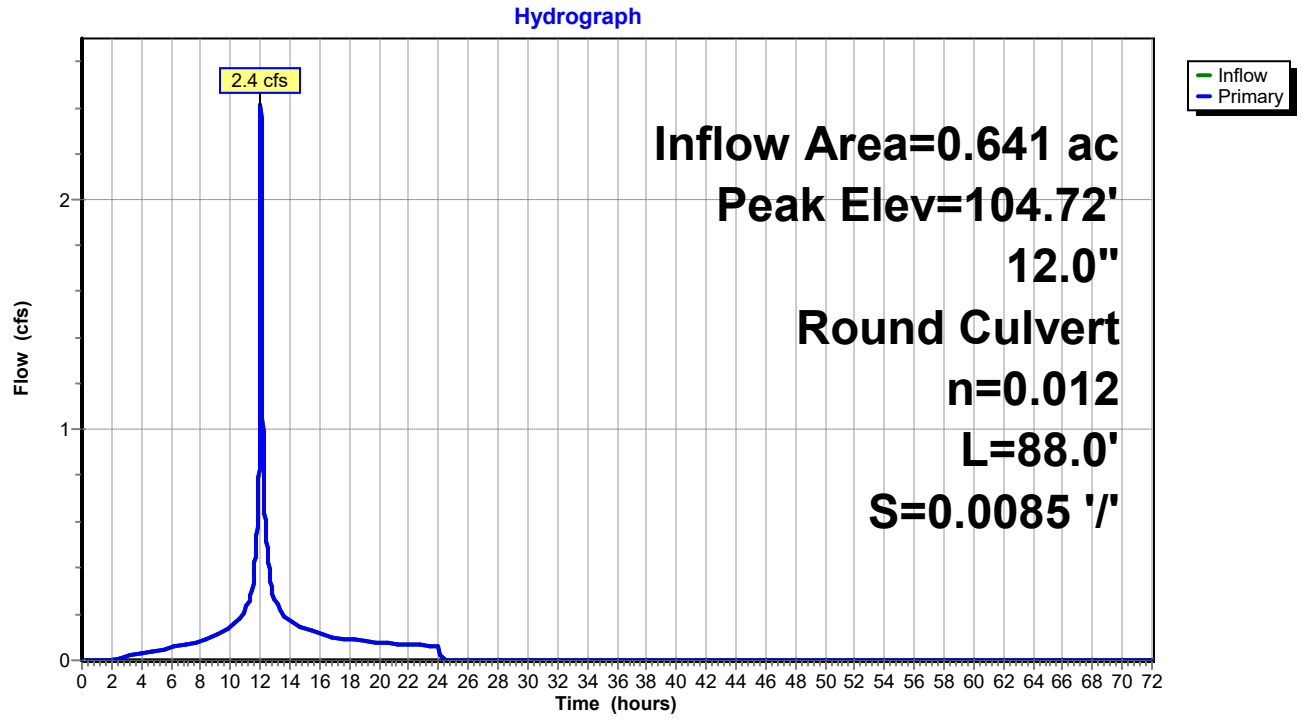
Inflow Area = 0.641 ac, 82.61% Impervious, Inflow Depth = 4.52" for 10-yr event
Inflow = 2.4 cfs @ 12.03 hrs, Volume= 0.242 af
Outflow = 2.4 cfs @ 12.03 hrs, Volume= 0.242 af, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.03 hrs, Volume= 0.242 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 104.72' @ 12.04 hrs
Flood Elev= 106.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.75'	**12.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.75' / 103.00' S= 0.0085 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.4 cfs @ 12.03 hrs HW=104.71' TW=103.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.4 cfs @ 3.89 fps)

Pond PCB4: PCB4



Summary for Pond PDMH1: PDMH1

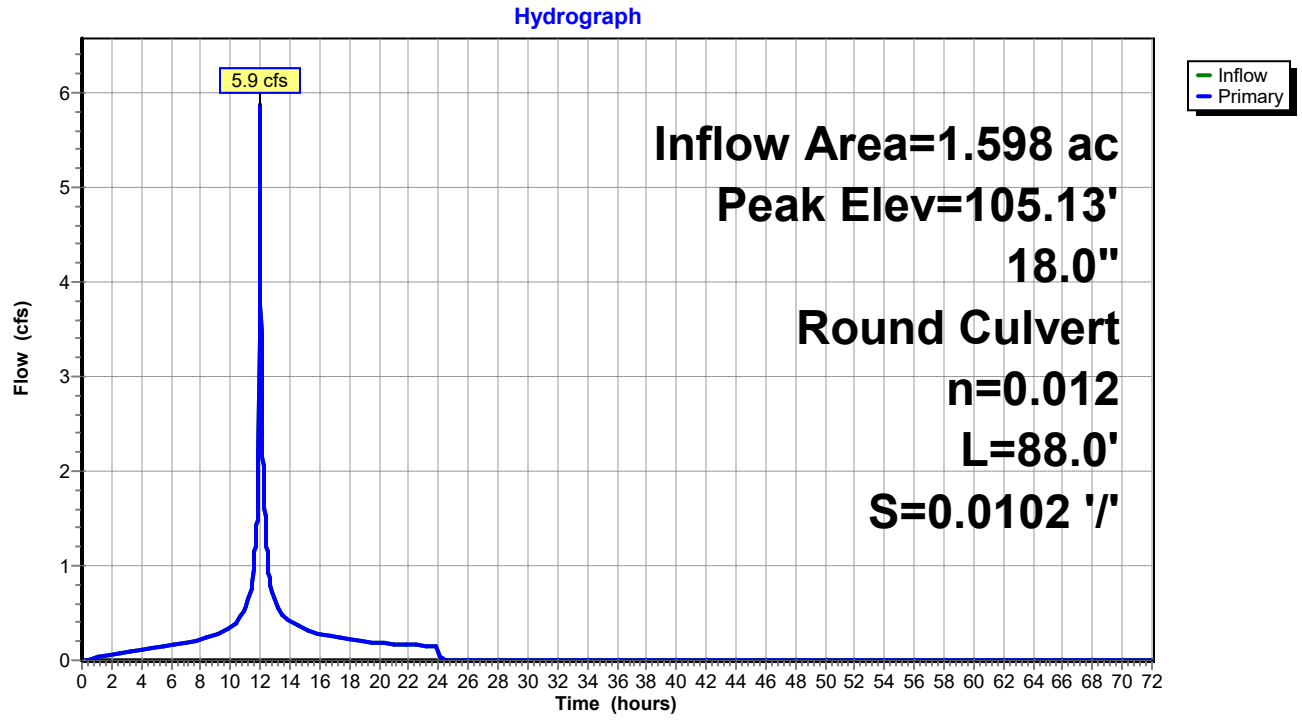
Inflow Area = 1.598 ac, 82.16% Impervious, Inflow Depth = 4.59" for 10-yr event
Inflow = 5.9 cfs @ 12.00 hrs, Volume= 0.611 af
Outflow = 5.9 cfs @ 12.00 hrs, Volume= 0.611 af, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.00 hrs, Volume= 0.611 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 105.13' @ 12.00 hrs
Flood Elev= 107.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	103.90'	**18.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 103.90' / 103.00' S= 0.0102 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=5.8 cfs @ 12.00 hrs HW=105.13' TW=103.80' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.8 cfs @ 3.77 fps)

Pond PDMH1: PDMH1



Summary for Pond PRD2: PRD2

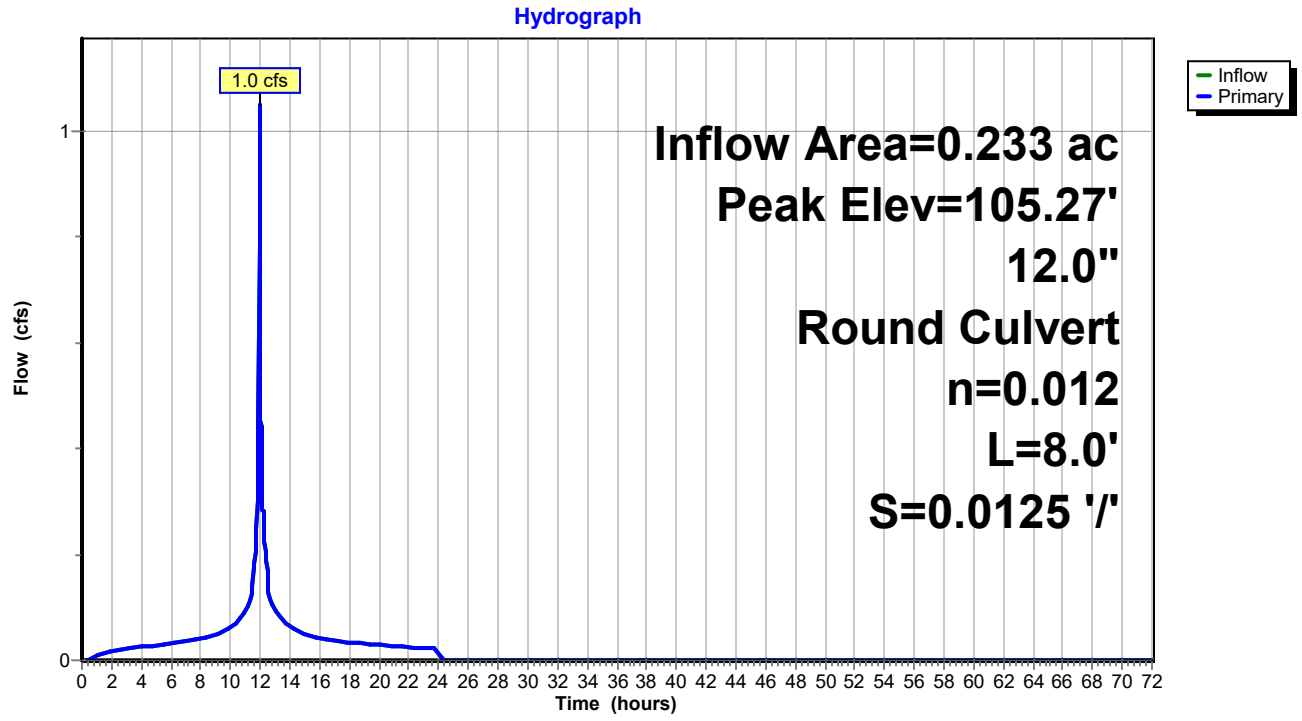
Inflow Area = 0.233 ac,100.00% Impervious, Inflow Depth = 5.20" for 10-yr event
Inflow = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af
Outflow = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 105.27' @ 12.00 hrs
Flood Elev= 108.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.40'	**12.0" Round Culvert** L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 104.40' / 104.30' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.0 cfs @ 11.99 hrs HW=105.26' TW=105.12' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.0 cfs @ 1.39 fps)

Pond PRD2: PRD2



Summary for Pond PRD3: PRD3

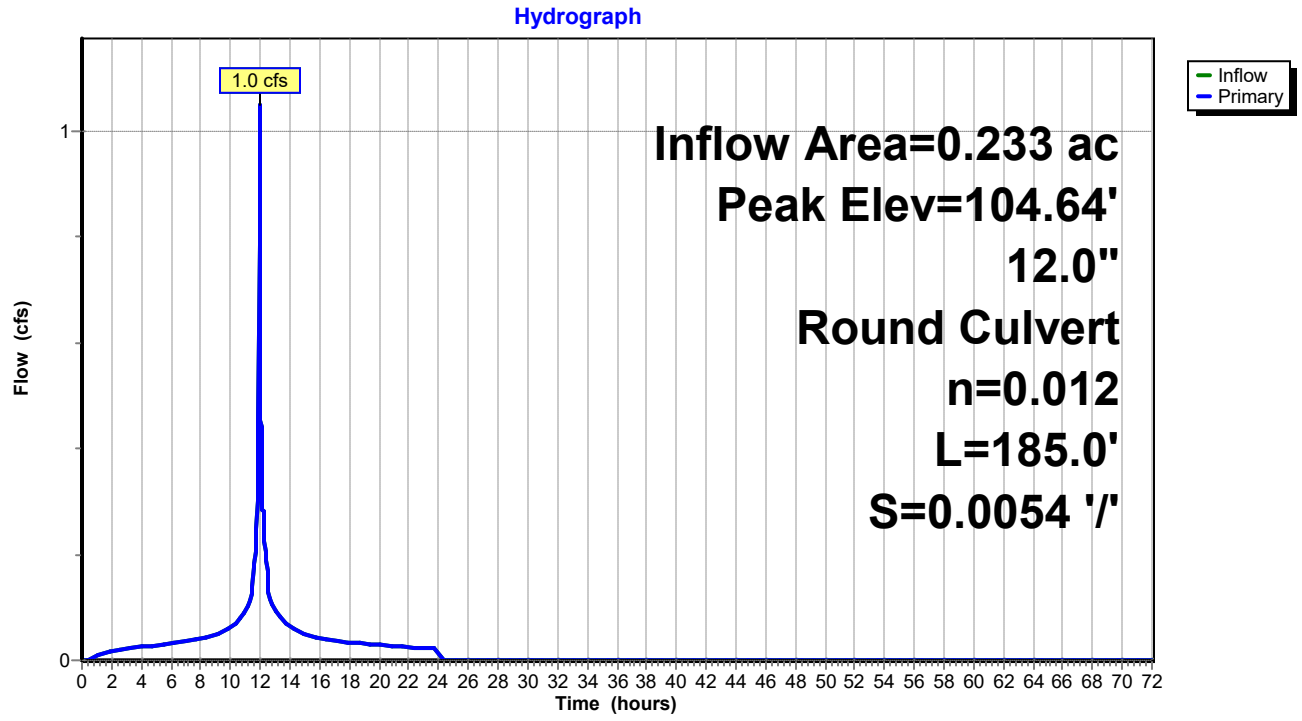
Inflow Area = 0.233 ac,100.00% Impervious, Inflow Depth = 5.20" for 10-yr event
Inflow = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af
Outflow = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 11.99 hrs, Volume= 0.101 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 104.64' @ 12.00 hrs
Flood Elev= 108.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	104.00'	**12.0" Round Culvert** L= 185.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 104.00' / 103.00' S= 0.0054 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.0 cfs @ 11.99 hrs HW=104.63' TW=103.77' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.0 cfs @ 2.80 fps)

Pond PRD3: PRD3



Summary for Pond PYD1: PYD1

Inflow Area = 0.315 ac, 27.41% Impervious, Inflow Depth = 2.81" for 10-yr event
Inflow = 0.6 cfs @ 12.13 hrs, Volume= 0.074 af
Outflow = 0.6 cfs @ 12.15 hrs, Volume= 0.074 af, Atten= 1%, Lag= 1.1 min
Primary = 0.6 cfs @ 12.15 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 111.89' @ 12.15 hrs Surf.Area= 410 sf Storage= 25 cf
Flood Elev= 112.50' Surf.Area= 3,159 sf Storage= 1,091 cf

Plug-Flow detention time= 0.4 min calculated for 0.074 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (879.7 - 879.3)

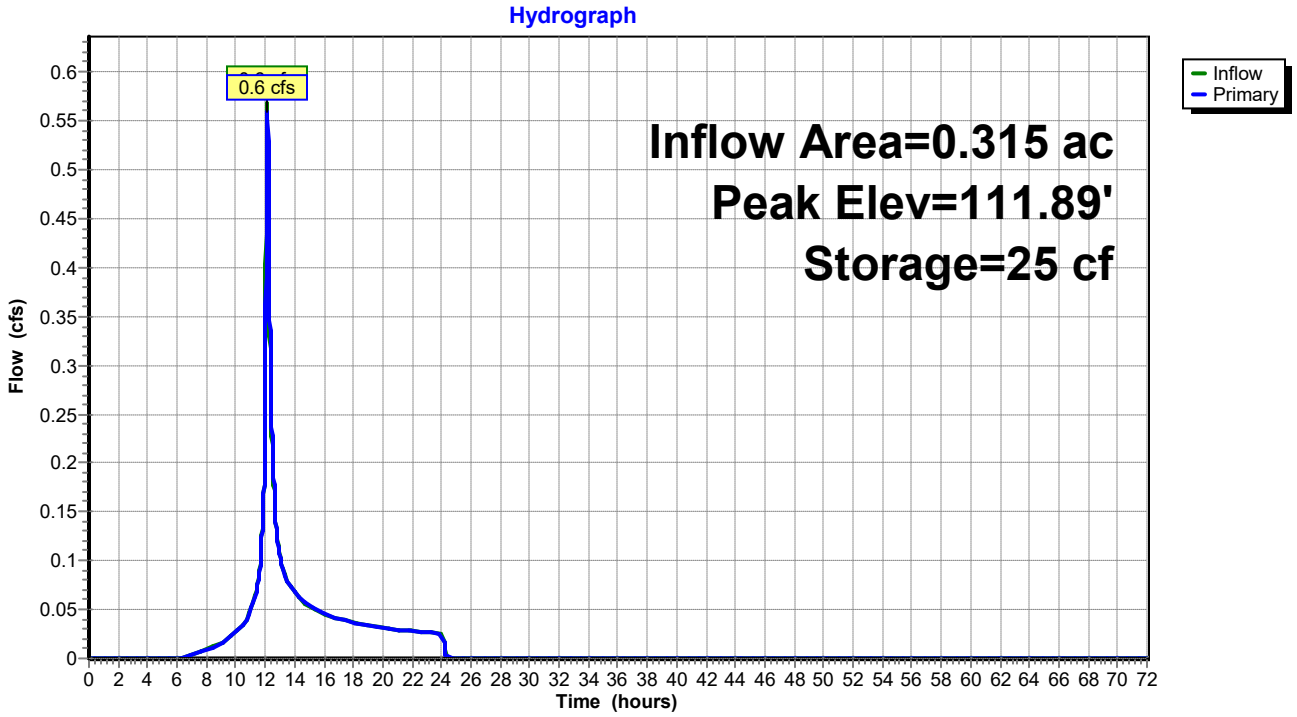
Volume	Invert	Avail.Storage	Storage Description
#1	111.75'	1,091 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
111.75	21	18.4	0	0	21
112.00	1,012	184.7	98	98	2,709
112.50	3,159	245.2	993	1,091	4,781

Device	Routing	Invert	Outlet Devices
#1	Primary	107.50'	**6.0" Round Culvert** L= 292.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.50' / 106.80' S= 0.0024 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Device 1	111.75'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.6 cfs @ 12.15 hrs HW=111.89' TW=106.92' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.6 cfs of 0.7 cfs potential flow)
↑**2=Orifice/Grate** (Weir Controls 0.6 cfs @ 1.24 fps)

Pond PYD1: PYD1



Summary for Pond RD1: RD1

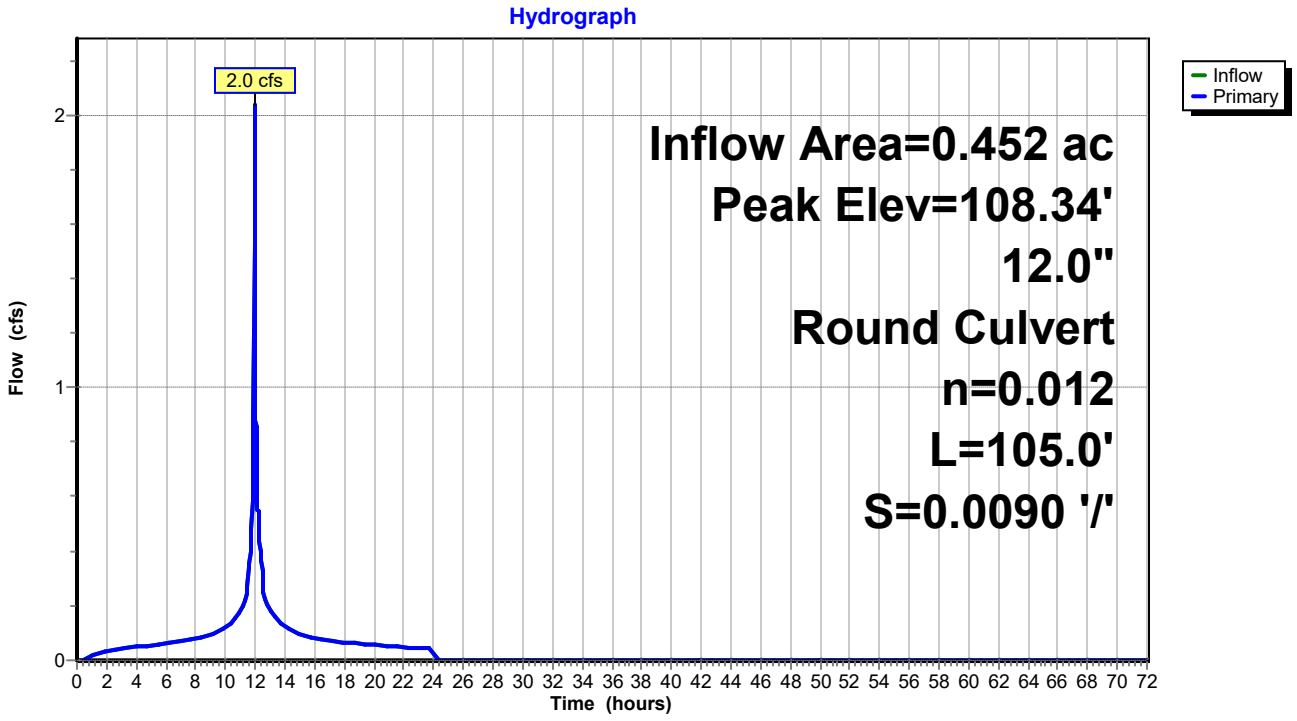
Inflow Area = 0.452 ac,100.00% Impervious, Inflow Depth = 5.20" for 10-yr event
Inflow = 2.0 cfs @ 11.99 hrs, Volume= 0.196 af
Outflow = 2.0 cfs @ 11.99 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 11.99 hrs, Volume= 0.196 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 108.34' @ 12.00 hrs
Flood Elev= 112.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	107.25'	**12.0" Round Culvert** L= 105.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 107.25' / 106.30' S= 0.0090 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.0 cfs @ 11.99 hrs HW=108.32' TW=107.79' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 2.90 fps)

Pond RD1: RD1



Summary for Pond WP1: Wet Pond 1

Inflow Area = 2.853 ac, 72.77% Impervious, Inflow Depth = 4.23" for 10-yr event
Inflow = 9.5 cfs @ 12.00 hrs, Volume= 1.005 af
Outflow = 1.5 cfs @ 12.58 hrs, Volume= 1.005 af, Atten= 84%, Lag= 34.8 min
Primary = 1.5 cfs @ 12.58 hrs, Volume= 1.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.00' Surf.Area= 1,776 sf Storage= 3,948 cf
Peak Elev= 104.34' @ 12.58 hrs Surf.Area= 9,496 sf Storage= 21,943 cf (17,995 cf above start)
Flood Elev= 106.10' Surf.Area= 13,764 sf Storage= 39,785 cf (35,837 cf above start)

Plug-Flow detention time= 501.7 min calculated for 0.914 af (91% of inflow)
Center-of-Mass det. time= 385.1 min (1,168.1 - 783.0)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	746 cf	**Sediment Forebay 1 (Irregular)** Listed below (Recalc)
#2	101.00'	173 cf	**Sediment Forebay 2 (Irregular)** Listed below (Recalc)
#3	97.00'	38,866 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		39,785 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
102.00	82	50.8	0	0	82
103.00	364	100.7	206	206	688
104.00	738	130.5	540	746	1,249

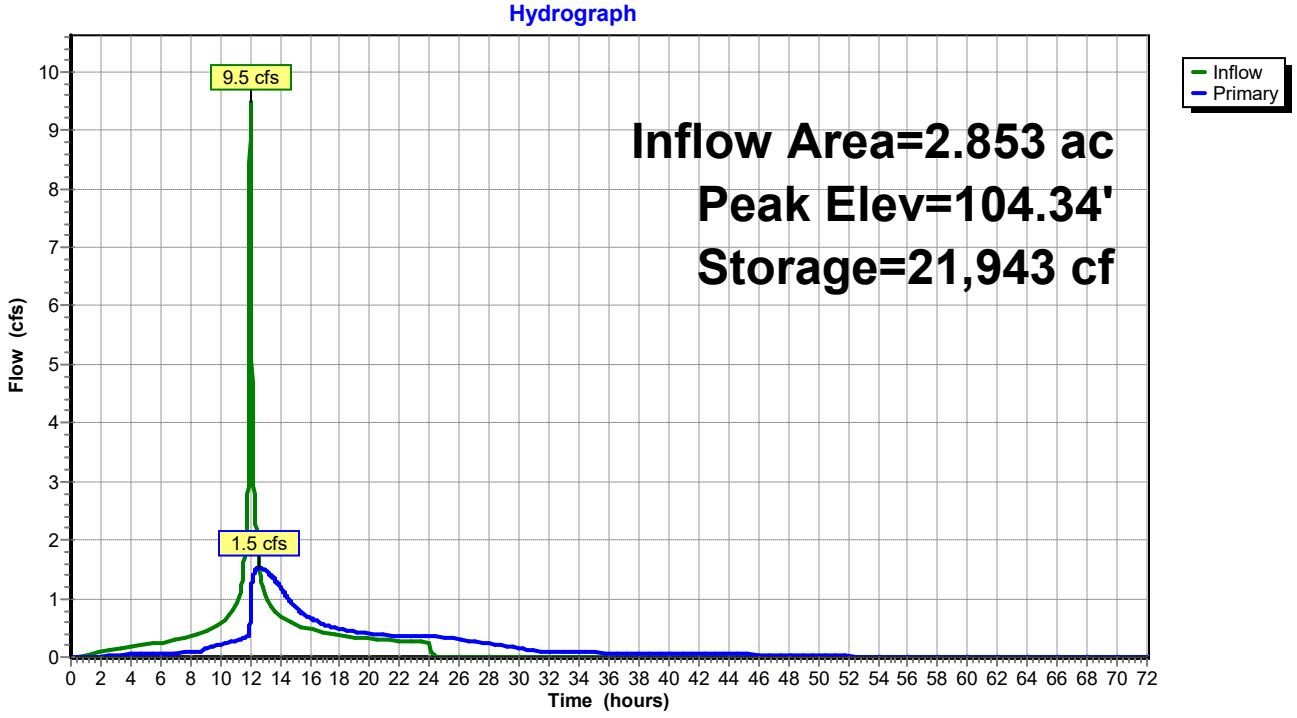
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.00	9	11.7	0	0	9
102.00	76	32.3	37	37	84
103.00	206	52.9	136	173	230

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.00	362	79.4	0	0	362
98.00	628	98.3	489	489	644
100.00	1,331	136.0	1,916	2,404	1,385
101.00	1,767	154.8	1,544	3,948	1,843
102.00	4,262	390.4	2,924	6,873	12,069
102.10	4,380	392.3	432	7,305	12,193
103.00	5,462	409.2	4,420	11,725	13,330
103.10	6,066	428.6	576	12,301	14,624
104.00	7,246	431.6	5,983	18,283	15,062
104.10	8,170	559.9	770	19,054	25,185
106.00	11,500	603.3	18,597	37,650	29,352
106.10	12,820	631.0	1,215	38,866	32,073

Device	Routing	Invert	Outlet Devices
#1	Primary	100.75'	**12.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.75' / 100.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	101.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	102.20'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	103.50'	**7.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	104.40'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	105.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.5 cfs @ 12.58 hrs HW=104.34' TW=100.37' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.5 cfs of 6.6 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.1 cfs @ 8.71 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.3 cfs @ 6.83 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 1.1 cfs @ 3.66 fps)
  ├─**5=Orifice/Grate** (Controls 0.0 cfs)
  └─**6=Orifice/Grate** (Controls 0.0 cfs)

Pond WP1: Wet Pond 1

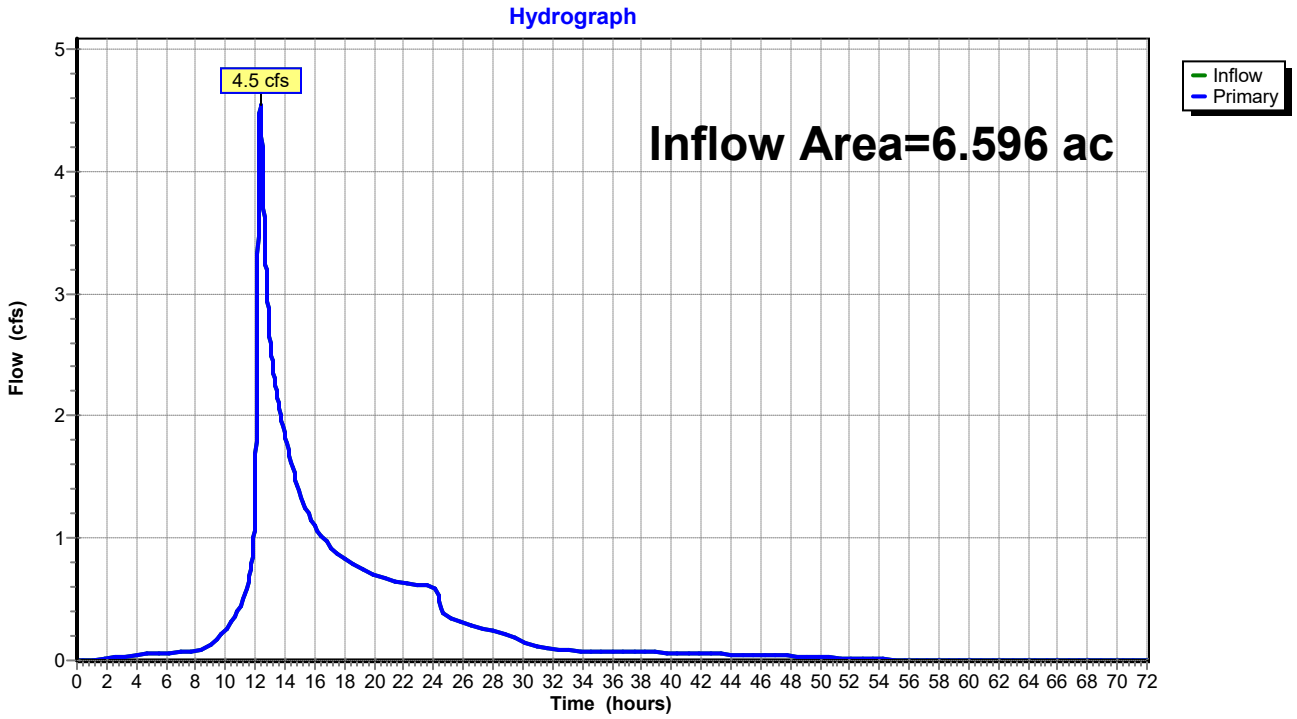


Summary for Link A: A

Inflow Area = 6.596 ac, 31.76% Impervious, Inflow Depth = 2.87" for 10-yr event
Inflow = 4.5 cfs @ 12.33 hrs, Volume= 1.576 af
Primary = 4.5 cfs @ 12.33 hrs, Volume= 1.576 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link A: A

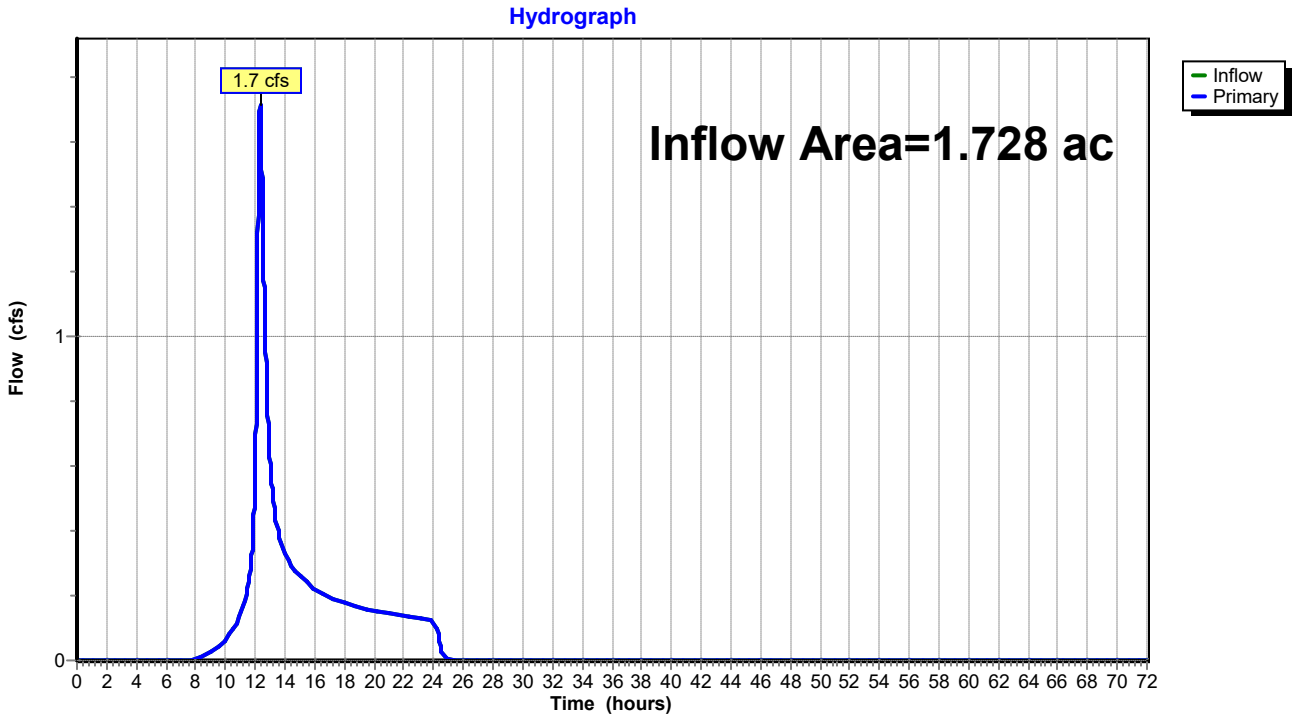


Summary for Link B: B

Inflow Area = 1.728 ac, 0.00% Impervious, Inflow Depth = 2.20" for 10-yr event
Inflow = 1.7 cfs @ 12.32 hrs, Volume= 0.317 af
Primary = 1.7 cfs @ 12.32 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link B: B



A – 2

NODE LISTING – 25-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=13,718 sf 27.41% Impervious Runoff Depth=4.05"
Flow Length=209' Tc=12.8 min CN=75 Runoff=0.8 cfs 0.106 af

Subcatchment 2: 2 Runoff Area=17,914 sf 88.45% Impervious Runoff Depth=6.18"
Flow Length=137' Tc=3.6 min CN=94 Runoff=2.1 cfs 0.212 af

Subcatchment 3: 3 Runoff Area=8,151 sf 95.13% Impervious Runoff Depth=6.41"
Flow Length=228' Tc=3.0 min CN=96 Runoff=1.0 cfs 0.100 af

Subcatchment 4: 4 Runoff Area=27,937 sf 82.61% Impervious Runoff Depth=5.95"
Flow Length=233' Tc=5.6 min CN=92 Runoff=2.9 cfs 0.318 af

Subcatchment 5: 5 Runoff Area=19,697 sf 100.00% Impervious Runoff Depth=6.65"
Tc=1.2 min CN=98 Runoff=2.4 cfs 0.251 af

Subcatchment 6A: 6A Runoff Area=10,147 sf 100.00% Impervious Runoff Depth=6.65"
Tc=1.2 min CN=98 Runoff=1.2 cfs 0.129 af

Subcatchment 6B: 6B Runoff Area=10,148 sf 100.00% Impervious Runoff Depth=6.65"
Tc=1.2 min CN=98 Runoff=1.2 cfs 0.129 af

Subcatchment 7: 7 Runoff Area=16,551 sf 0.00% Impervious Runoff Depth=2.62"
Flow Length=56' Slope=0.0530 '/' Tc=5.7 min CN=61 Runoff=0.8 cfs 0.083 af

Subcatchment 8: 8 Runoff Area=60,476 sf 1.38% Impervious Runoff Depth=2.82"
Flow Length=720' Tc=26.6 min CN=63 Runoff=1.7 cfs 0.326 af

Subcatchment 9: 9 Runoff Area=8,023 sf 0.00% Impervious Runoff Depth=2.53"
Flow Length=149' Tc=15.8 min CN=60 Runoff=0.2 cfs 0.039 af

Subcatchment 10: 10 Runoff Area=94,577 sf 0.00% Impervious Runoff Depth=2.92"
Flow Length=351' Tc=19.2 min CN=64 Runoff=3.1 cfs 0.528 af

Subcatchment 11: 11 Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=3.32"
Flow Length=527' Tc=26.1 min CN=68 Runoff=2.5 cfs 0.478 af

Reach R1: R1 Avg. Flow Depth=0.51' Max Vel=2.31 fps Inflow=3.2 cfs 0.567 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=3.1 cfs 0.567 af

Reach R2: R2 Avg. Flow Depth=0.66' Max Vel=1.71 fps Inflow=3.1 cfs 0.528 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=3.0 cfs 0.528 af

Reach R3: R3 Avg. Flow Depth=0.46' Max Vel=1.19 fps Inflow=2.5 cfs 1.327 af
n=0.080 L=249.0' S=0.0201 '/' Capacity=13.2 cfs Outflow=2.5 cfs 1.327 af

Pond CB1: CB1 Peak Elev=108.77' Inflow=4.8 cfs 0.569 af
12.0" Round Culvert n=0.012 L=66.0' S=0.0152 '/' Outflow=4.8 cfs 0.569 af

Pond CB2: CB2 Peak Elev=107.01' Inflow=1.0 cfs 0.100 af
12.0" Round Culvert n=0.012 L=75.0' S=0.0093 '/' Outflow=1.0 cfs 0.100 af

Pond CB3: CB3 Peak Elev=106.93' Inflow=5.8 cfs 0.669 af
15.0" Round Culvert n=0.012 L=128.0' S=0.0047 '/' Outflow=5.8 cfs 0.669 af

Pond PCB4: PCB4 Peak Elev=105.21' Inflow=2.9 cfs 0.318 af
12.0" Round Culvert n=0.012 L=88.0' S=0.0085 '/' Outflow=2.9 cfs 0.318 af

Pond PDMH1: PDMH1 Peak Elev=105.33' Inflow=7.0 cfs 0.798 af
18.0" Round Culvert n=0.012 L=88.0' S=0.0102 '/' Outflow=7.0 cfs 0.798 af

Pond PRD2: PRD2 Peak Elev=105.48' Inflow=1.2 cfs 0.129 af
12.0" Round Culvert n=0.012 L=8.0' S=0.0125 '/' Outflow=1.2 cfs 0.129 af

Pond PRD3: PRD3 Peak Elev=104.82' Inflow=1.2 cfs 0.129 af
12.0" Round Culvert n=0.012 L=185.0' S=0.0054 '/' Outflow=1.2 cfs 0.129 af

Pond PYD1: PYD1 Peak Elev=111.93' Storage=43 cf Inflow=0.8 cfs 0.106 af
Outflow=0.7 cfs 0.106 af

Pond RD1: RD1 Peak Elev=109.36' Inflow=2.4 cfs 0.251 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0090 '/' Outflow=2.4 cfs 0.251 af

Pond WP1: Wet Pond 1 Peak Elev=104.78' Storage=25,926 cf Inflow=11.5 cfs 1.328 af
Outflow=2.5 cfs 1.327 af

Link A: A Inflow=7.2 cfs 2.220 af
Primary=7.2 cfs 2.220 af

Link B: B Inflow=2.5 cfs 0.478 af
Primary=2.5 cfs 0.478 af

Total Runoff Area = 8.324 ac Runoff Volume = 2.699 af Average Runoff Depth = 3.89"
74.83% Pervious = 6.229 ac 25.17% Impervious = 2.095 ac

A – 2

NODE LISTING – 50-YR

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 Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: 1 Runoff Area=13,718 sf 27.41% Impervious Runoff Depth=5.24"
Flow Length=209' Tc=12.8 min CN=75 Runoff=0.9 cfs 0.138 af

Subcatchment 2: 2 Runoff Area=17,914 sf 88.45% Impervious Runoff Depth=7.50"
Flow Length=137' Tc=3.6 min CN=94 Runoff=2.3 cfs 0.257 af

Subcatchment 3: 3 Runoff Area=8,151 sf 95.13% Impervious Runoff Depth=7.74"
Flow Length=228' Tc=3.0 min CN=96 Runoff=1.1 cfs 0.121 af

Subcatchment 4: 4 Runoff Area=27,937 sf 82.61% Impervious Runoff Depth=7.26"
Flow Length=233' Tc=5.6 min CN=92 Runoff=3.3 cfs 0.388 af

Subcatchment 5: 5 Runoff Area=19,697 sf 100.00% Impervious Runoff Depth=7.98"
Tc=1.2 min CN=98 Runoff=2.7 cfs 0.301 af

Subcatchment 6A: 6A Runoff Area=10,147 sf 100.00% Impervious Runoff Depth=7.98"
Tc=1.2 min CN=98 Runoff=1.4 cfs 0.155 af

Subcatchment 6B: 6B Runoff Area=10,148 sf 100.00% Impervious Runoff Depth=7.98"
Tc=1.2 min CN=98 Runoff=1.4 cfs 0.155 af

Subcatchment 7: 7 Runoff Area=16,551 sf 0.00% Impervious Runoff Depth=3.61"
Flow Length=56' Slope=0.0530 '/' Tc=5.7 min CN=61 Runoff=1.0 cfs 0.114 af

Subcatchment 8: 8 Runoff Area=60,476 sf 1.38% Impervious Runoff Depth=3.84"
Flow Length=720' Tc=26.6 min CN=63 Runoff=2.2 cfs 0.445 af

Subcatchment 9: 9 Runoff Area=8,023 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=149' Tc=15.8 min CN=60 Runoff=0.3 cfs 0.054 af

Subcatchment 10: 10 Runoff Area=94,577 sf 0.00% Impervious Runoff Depth=3.96"
Flow Length=351' Tc=19.2 min CN=64 Runoff=4.1 cfs 0.716 af

Subcatchment 11: 11 Runoff Area=75,255 sf 0.00% Impervious Runoff Depth=4.42"
Flow Length=527' Tc=26.1 min CN=68 Runoff=3.2 cfs 0.636 af

Reach R1: R1 Avg. Flow Depth=0.58' Max Vel=2.52 fps Inflow=4.3 cfs 0.770 af
n=0.035 L=525.0' S=0.0133 '/' Capacity=57.8 cfs Outflow=4.2 cfs 0.770 af

Reach R2: R2 Avg. Flow Depth=0.76' Max Vel=1.86 fps Inflow=4.1 cfs 0.716 af
n=0.035 L=380.0' S=0.0053 '/' Capacity=16.9 cfs Outflow=4.0 cfs 0.716 af

Reach R3: R3 Avg. Flow Depth=0.53' Max Vel=1.30 fps Inflow=3.4 cfs 1.628 af
n=0.080 L=249.0' S=0.0201 '/' Capacity=13.2 cfs Outflow=3.3 cfs 1.628 af

Pond CB1: CB1 Peak Elev=109.75' Inflow=5.5 cfs 0.695 af
12.0" Round Culvert n=0.012 L=66.0' S=0.0152 '/' Outflow=5.5 cfs 0.695 af

Pond CB2: CB2 Peak Elev=107.45' Inflow=1.1 cfs 0.121 af
12.0" Round Culvert n=0.012 L=75.0' S=0.0093 '/' Outflow=1.1 cfs 0.121 af

Pond CB3: CB3 Peak Elev=107.34' Inflow=6.6 cfs 0.816 af
15.0" Round Culvert n=0.012 L=128.0' S=0.0047 '/' Outflow=6.6 cfs 0.816 af

Pond PCB4: PCB4 Peak Elev=105.79' Inflow=3.3 cfs 0.388 af
12.0" Round Culvert n=0.012 L=88.0' S=0.0085 '/' Outflow=3.3 cfs 0.388 af

Pond PDMH1: PDMH1 Peak Elev=105.58' Inflow=8.0 cfs 0.971 af
18.0" Round Culvert n=0.012 L=88.0' S=0.0102 '/' Outflow=8.0 cfs 0.971 af

Pond PRD2: PRD2 Peak Elev=105.77' Inflow=1.4 cfs 0.155 af
12.0" Round Culvert n=0.012 L=8.0' S=0.0125 '/' Outflow=1.4 cfs 0.155 af

Pond PRD3: PRD3 Peak Elev=105.11' Inflow=1.4 cfs 0.155 af
12.0" Round Culvert n=0.012 L=185.0' S=0.0054 '/' Outflow=1.4 cfs 0.155 af

Pond PYD1: PYD1 Peak Elev=112.02' Storage=122 cf Inflow=0.9 cfs 0.138 af
Outflow=0.7 cfs 0.138 af

Pond RD1: RD1 Peak Elev=110.49' Inflow=2.7 cfs 0.301 af
12.0" Round Culvert n=0.012 L=105.0' S=0.0090 '/' Outflow=2.7 cfs 0.301 af

Pond WP1: Wet Pond 1 Peak Elev=105.09' Storage=28,890 cf Inflow=13.2 cfs 1.628 af
Outflow=3.4 cfs 1.628 af

Link A: A Inflow=9.7 cfs 2.842 af
Primary=9.7 cfs 2.842 af

Link B: B Inflow=3.2 cfs 0.636 af
Primary=3.2 cfs 0.636 af

Total Runoff Area = 8.324 ac Runoff Volume = 3.479 af Average Runoff Depth = 5.02"
74.83% Pervious = 6.229 ac 25.17% Impervious = 2.095 ac

APPENDIX B

DESIGN

B – 1

STORMWATER BEST MANAGEMENT PRACTICES

STORMWATER POND DESIGN CRITERIA
Env-Wq 1508.03

Type/Node Name: **Wet Pond 1 (WP1)**

Enter the type of stormwater pond (e.g., Wet Pond) and the node name in the drainage analysis, if applicable

2.85	ac	A = Area draining to the practice	
2.08	ac	A_I = Impervious area draining to the practice	
0.73	decimal	I = percent impervious area draining to the practice, in decimal form	
0.70	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
2.01	ac-in	WQV= 1" x Rv x A	
7,301	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
730	cf	10% x WQV (check calc for sediment forebay and micropool volume)	
3,650	cf	50% x WQV (check calc for extended detention volume)	
700	cf	V_{SED} = sediment forebay volume	← ≥ 10%WQV
3,948	cf	V_{PP} = permanent pool volume (volume below the lowest invert of the outlet structure) Attach stage-storage table.	
yes	cf	Extended Detention?[1]	← ≤ 50% WQV
3,353		V_{ED} = Volume of Extended detention (if "yes is given in box above)	
102.10		E_{ED} = elevation of WQV if "yes" is given in box above[2]	
0.08	cfs	$2Q_{avg}$ = 2* V_{ED} / 24 hrs * (1hr / 3600 sec) (used to check against Q_{EDmax} below)	
0.08	cfs	Q_{EDmax} = discharge at the E_{ED} (attach stage-discharge table)	← <$2Q_{avg}$
24.31	hours	T_{ED} = drawdown time of extended detention = $2V_{ED}/Q_{EDmax}$	← ≥ 24-hrs
3.00	:1	Pond side slopes	← ≥3:1
99.50	ft	Elevation of seasonal high water table	
101.00	ft	Elevation of lowest pond outlet	
94.50	ft	Max floor = maximum elevation of pond bottom (ft)	
91.50	ft	Minimum floor (to maintain depth at less than 8')	← ≤ 8 ft
97.00	ft	Elevation of pond floor[3]	← ≤ Max floor and > Min floor
216.00	ft	Length of the flow path between the inlet and outlet at mid-depth	
47.00	ft	Average Width ([average of the top width + average bottom width]/2)	
4.60	:1	Length to Average Width ratio	← ≥ 3:1
yes	Yes/No	The perimeter should be curvilinear.	
yes	Yes/No	The inlet and outlet should be located as far apart as possible.	
No	Yes/No	Is there a manually-controlled drain to dewater the pond over a 24hr period?	
If no state why:		Pond will be pumped if necessary	
Grate		What mechanism is proposed to prevent the outlet structure from clogging (applicable for orifices/weirs with a dimension of <6")?	
105.09	ft	Peak elevation of the 50-year storm event	
106.10	ft	Berm elevation of the pond	
YES		50 peak elevation ≤ the berm elevation?	← yes

1. If the entire WQV is stored in the perm. pool, there is no extended det., and the following five lines do not apply.
2. This is the elevation of WQV if the hydrologic analysis is set up to include the permanent pool storage in the node description.
3. If the pond floor elevation is above the max floor elev., a hydrologic budget must be submitted to demonstrate that a minimum depth of 3 feet can be maintained. (First check whether a revised "lowest pond outlet" elev. will resolve the issue.)

Designer's Notes:

Summary for Pond WP1: Wet Pond 1

Inflow Area = 2.853 ac, 72.77% Impervious, Inflow Depth = 6.85" for 50-yr event
Inflow = 13.2 cfs @ 12.00 hrs, Volume= 1.628 af
Outflow = 3.4 cfs @ 12.41 hrs, Volume= 1.628 af, Atten= 75%, Lag= 24.5 min
Primary = 3.4 cfs @ 12.41 hrs, Volume= 1.628 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.00' Surf.Area= 1,776 sf Storage= 3,948 cf
Peak Elev= 105.09' @ 12.41 hrs Surf.Area= 10,781 sf Storage= 28,890 cf (24,942 cf above start)
Flood Elev= 106.10' Surf.Area= 13,764 sf Storage= 39,785 cf (35,837 cf above start)

Plug-Flow detention time= 372.2 min calculated for 1.537 af (94% of inflow)
Center-of-Mass det. time= 298.8 min (1,072.8 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	746 cf	**Sediment Forebay 1 (Irregular)** Listed below (Recalc)
#2	101.00'	173 cf	**Sediment Forebay 2 (Irregular)** Listed below (Recalc)
#3	97.00'	38,866 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		39,785 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
102.00	82	50.8	0	0	82
103.00	364	100.7	206	206	688
104.00	738	130.5	540	746	1,249

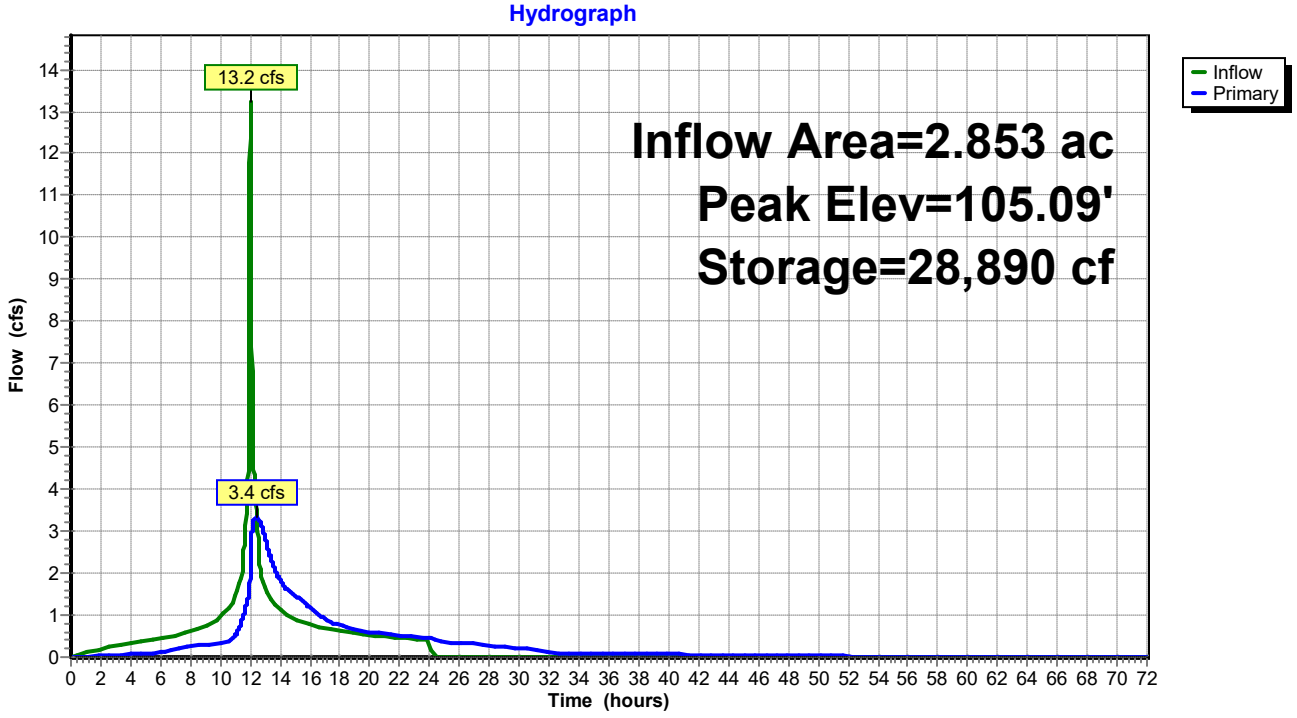
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.00	9	11.7	0	0	9
102.00	76	32.3	37	37	84
103.00	206	52.9	136	173	230

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.00	362	79.4	0	0	362
98.00	628	98.3	489	489	644
100.00	1,331	136.0	1,916	2,404	1,385
101.00	1,767	154.8	1,544	3,948	1,843
102.00	4,262	390.4	2,924	6,873	12,069
102.10	4,380	392.3	432	7,305	12,193
103.00	5,462	409.2	4,420	11,725	13,330
103.10	6,066	428.6	576	12,301	14,624
104.00	7,246	431.6	5,983	18,283	15,062
104.10	8,170	559.9	770	19,054	25,185
106.00	11,500	603.3	18,597	37,650	29,352
106.10	12,820	631.0	1,215	38,866	32,073

Device	Routing	Invert	Outlet Devices
#1	Primary	100.75'	**12.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.75' / 100.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	101.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	102.20'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	103.50'	**7.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	104.40'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	105.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.4 cfs @ 12.41 hrs HW=105.09' TW=100.53' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.4 cfs of 7.4 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.2 cfs @ 9.67 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.4 cfs @ 8.01 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 1.6 cfs @ 5.57 fps)
  ├─**5=Orifice/Grate** (Orifice Controls 1.2 cfs @ 3.15 fps)
  └─**6=Orifice/Grate** (Controls 0.0 cfs)

Pond WP1: Wet Pond 1



Stage-Area-Storage for Pond WP1: Wet Pond 1

Elevation (feet)	Storage (cubic-feet)
97.00	0
97.10	37
97.20	77
97.30	119
97.40	164
97.50	211
97.60	261
97.70	314
97.80	369
97.90	428
98.00	489
98.10	553
98.20	620
98.30	691
98.40	764
98.50	840
98.60	920
98.70	1,002
98.80	1,089
98.90	1,178
99.00	1,271
99.10	1,367
99.20	1,467
99.30	1,571
99.40	1,679
99.50	1,790
99.60	1,905
99.70	2,024
99.80	2,146
99.90	2,273
100.00	2,404
100.10	2,540
100.20	2,679
100.30	2,822
100.40	2,970
100.50	3,122
100.60	3,278
100.70	3,439
100.80	3,604
100.90	3,774
101.00	3,948
101.10	4,136
101.20	4,345
101.30	4,576
101.40	4,830
101.50	5,109
101.60	5,413
101.70	5,744
101.80	6,103
101.90	6,491
102.00	6,910
102.10	7,359
102.20	7,823
102.30	8,302
102.40	8,796
102.50	9,306
102.60	9,832
102.70	10,374
102.80	10,933
102.90	11,510
103.00	12,104
103.10	12,718
103.20	13,372
103.30	14,042
103.40	14,728
103.50	15,431
103.60	16,151
103.70	16,888
103.80	17,642
103.90	18,413
104.00	19,203
104.10	19,973
104.20	20,798
104.30	21,639
104.40	22,497
104.50	23,371
104.60	24,262
104.70	25,169
104.80	26,094
104.90	27,035
105.00	27,994
105.10	28,971
105.20	29,965
105.30	30,976
105.40	32,006
105.50	33,054
105.60	34,120
105.70	35,204
105.80	36,307
105.90	37,429
106.00	38,569
106.10	**39,785**

Summary for Pond WP1: Wet Pond 1

Inflow Area = 2.853 ac, 72.77% Impervious, Inflow Depth = 8.40" for 100-yr event
Inflow = 15.2 cfs @ 12.00 hrs, Volume= 1.996 af
Outflow = 4.0 cfs @ 12.44 hrs, Volume= 1.996 af, Atten= 74%, Lag= 26.6 min
Primary = 4.0 cfs @ 12.44 hrs, Volume= 1.996 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.00' Surf.Area= 1,776 sf Storage= 3,948 cf
Peak Elev= 105.42' @ 12.44 hrs Surf.Area= 11,362 sf Storage= 32,187 cf (28,238 cf above start)
Flood Elev= 106.10' Surf.Area= 13,764 sf Storage= 39,785 cf (35,837 cf above start)

Plug-Flow detention time= 328.1 min calculated for 1.905 af (95% of inflow)
Center-of-Mass det. time= 267.3 min (1,037.5 - 770.2)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	746 cf	**Sediment Forebay 1 (Irregular)** Listed below (Recalc)
#2	101.00'	173 cf	**Sediment Forebay 2 (Irregular)** Listed below (Recalc)
#3	97.00'	38,866 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		39,785 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
102.00	82	50.8	0	0	82
103.00	364	100.7	206	206	688
104.00	738	130.5	540	746	1,249

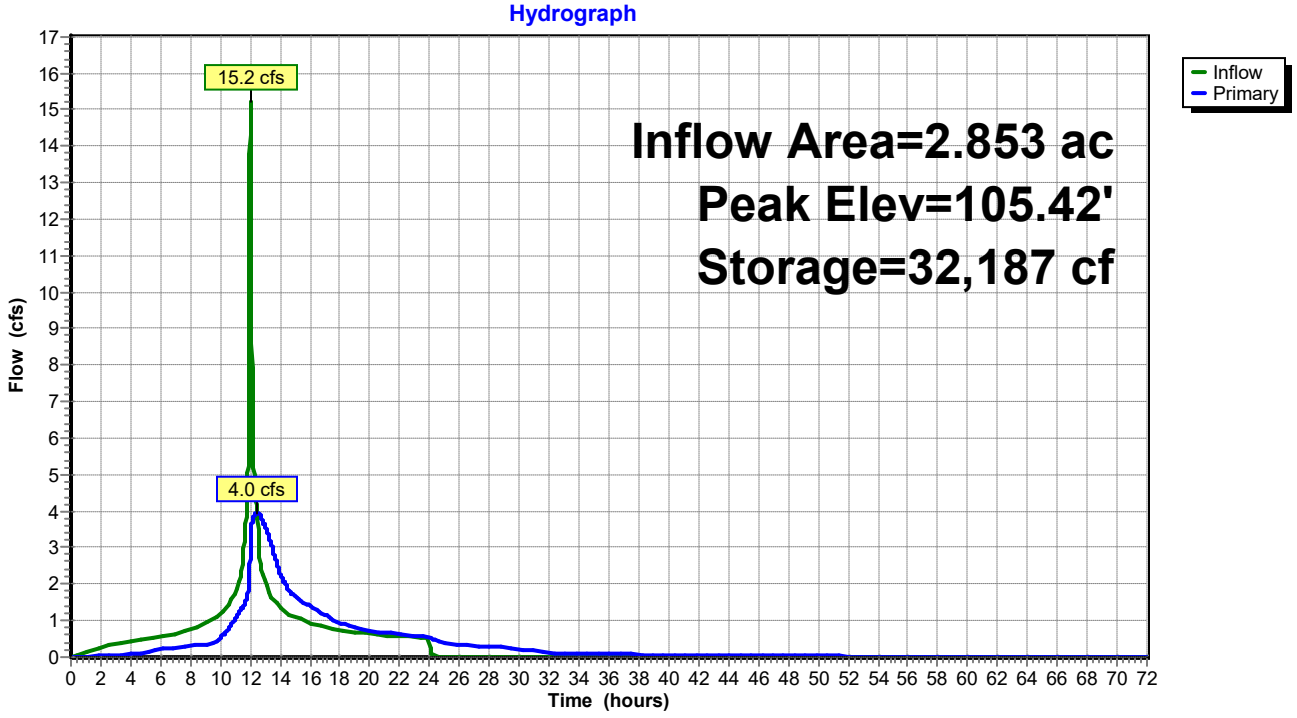
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.00	9	11.7	0	0	9
102.00	76	32.3	37	37	84
103.00	206	52.9	136	173	230

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.00	362	79.4	0	0	362
98.00	628	98.3	489	489	644
100.00	1,331	136.0	1,916	2,404	1,385
101.00	1,767	154.8	1,544	3,948	1,843
102.00	4,262	390.4	2,924	6,873	12,069
102.10	4,380	392.3	432	7,305	12,193
103.00	5,462	409.2	4,420	11,725	13,330
103.10	6,066	428.6	576	12,301	14,624
104.00	7,246	431.6	5,983	18,283	15,062
104.10	8,170	559.9	770	19,054	25,185
106.00	11,500	603.3	18,597	37,650	29,352
106.10	12,820	631.0	1,215	38,866	32,073

Device	Routing	Invert	Outlet Devices
#1	Primary	100.75'	**12.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.75' / 100.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	101.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	102.20'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	103.50'	**7.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	104.40'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	105.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.0 cfs @ 12.44 hrs HW=105.42' TW=100.57' (Dynamic Tailwater)
└─**1=Culvert** (Passes 4.0 cfs of 7.7 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.2 cfs @ 10.05 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.4 cfs @ 8.47 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 1.8 cfs @ 6.21 fps)
  ├─**5=Orifice/Grate** (Orifice Controls 1.6 cfs @ 4.20 fps)
  └─**6=Orifice/Grate** (Controls 0.0 cfs)

Pond WP1: Wet Pond 1



B – 2

OUTLET PROTECTION

OUTLET PROTECTION DESIGN CALCS

DEFINED CHANNEL

Job #: 19003
Date: 8/15/2022
Structure: Outlet from WP1

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of outlet pipe (ft)
D= Width of channel (ft)
z= Channel side slope (H:V ft/ft)
Tw= Tailwater depth above the invert of the pipe (ft)
La= Apron length
w_1= Apron width at pipe outlet
w_2= Apron width at downstream end of apron

Input:

Outlet elev:	100
Tailwater elev:	100.53
Tw:	0.53
Q:	3.4
D_0:	1.00
D:	3
z:	3

Apron Dimensions

w_1=	**9**	(ft)
w_2=	**3**	(ft)
La=	**18**	(ft)

Apron Length:

$Tw > .5D_0$	$Tw < .5D_0$
La: 17.200	La: 13.120

Apron Width:

w_2: 3

w_1: 9

w_1=	9.00
w_2=	3.00
La=	17.2

RipRap Sizing

d_{50}=	0.19	(ft)
d_{50}=	2.32	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.29	TO	0.39	100
0.25	TO	0.35	85
0.19	TO	0.29	50
0.06	TO	0.10	15

Minimum Depth of Rock= 0.58 (ft)

Summary for Pond WP1: Wet Pond 1

Inflow Area = 2.853 ac, 72.77% Impervious, Inflow Depth = 6.85" for 50-yr event
Inflow = 13.2 cfs @ 12.00 hrs, Volume= 1.628 af
Outflow = 3.4 cfs @ 12.41 hrs, Volume= 1.628 af, Atten= 75%, Lag= 24.5 min
Primary = 3.4 cfs @ 12.41 hrs, Volume= 1.628 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 101.00' Surf.Area= 1,776 sf Storage= 3,948 cf
Peak Elev= 105.09' @ 12.41 hrs Surf.Area= 10,781 sf Storage= 28,890 cf (24,942 cf above start)
Flood Elev= 106.10' Surf.Area= 13,764 sf Storage= 39,785 cf (35,837 cf above start)

Plug-Flow detention time= 372.2 min calculated for 1.537 af (94% of inflow)
Center-of-Mass det. time= 298.8 min (1,072.8 - 774.0)

Volume	Invert	Avail.Storage	Storage Description
#1	102.00'	746 cf	**Sediment Forebay 1 (Irregular)** Listed below (Recalc)
#2	101.00'	173 cf	**Sediment Forebay 2 (Irregular)** Listed below (Recalc)
#3	97.00'	38,866 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		39,785 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
102.00	82	50.8	0	0	82
103.00	364	100.7	206	206	688
104.00	738	130.5	540	746	1,249

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
101.00	9	11.7	0	0	9
102.00	76	32.3	37	37	84
103.00	206	52.9	136	173	230

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.00	362	79.4	0	0	362
98.00	628	98.3	489	489	644
100.00	1,331	136.0	1,916	2,404	1,385
101.00	1,767	154.8	1,544	3,948	1,843
102.00	4,262	390.4	2,924	6,873	12,069
102.10	4,380	392.3	432	7,305	12,193
103.00	5,462	409.2	4,420	11,725	13,330
103.10	6,066	428.6	576	12,301	14,624
104.00	7,246	431.6	5,983	18,283	15,062
104.10	8,170	559.9	770	19,054	25,185
106.00	11,500	603.3	18,597	37,650	29,352
106.10	12,820	631.0	1,215	38,866	32,073

Device	Routing	Invert	Outlet Devices
#1	Primary	100.75'	**12.0" Round Culvert** L= 33.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 100.75' / 100.00' S= 0.0227 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	101.00'	**1.5" W x 1.5" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	102.20'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	103.50'	**7.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	104.40'	**9.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	105.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.4 cfs @ 12.41 hrs HW=105.09' TW=100.53' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.4 cfs of 7.4 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.2 cfs @ 9.67 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.4 cfs @ 8.01 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 1.6 cfs @ 5.57 fps)
  ├─**5=Orifice/Grate** (Orifice Controls 1.2 cfs @ 3.15 fps)
  └─**6=Orifice/Grate** (Controls 0.0 cfs)

APPENDIX C

WATERSHED PLANS

C – 1

PRE-DEVELOPMENT CONDITIONS



LOCATION PLAN
(NO SCALE)

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EX EDGE OF PAVEMENT
- EX 2019 BING MAPS TREELINE
- SSSS BOUNDARY
- WETLAND DELINEATION/ SSSS BOUNDARY
- 68B SOIL SYMBOL
- **PROPERTY LINE**
- **SUBCATCHMENT BOUNDARY**
- **LONGEST FLOW PATH WITH DIRECTION OF FLOW**
- A1 **SUBCATCHMENT DESIGNATION**

SITE SPECIFIC SOIL MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	DRAINAGE CLASS	HYDROLOGIC SOIL GROUP
68	SUTTON	0–8%	MODERATELY WELL DRAINED	B
100	UDORTHENTS	0–8%	SOMEWHAT POORLY DRAINED	C
233/P	SCANTIC	0–8%	POORLY DRAINED	C
299	UDORTHENTS	0–8%	MODERATELY WELL DRAINED	B
924	SUTTON	0–8%	SOMEWHAT POORLY DRAINED	C

OFFSITE WEB SOIL SURVEY MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	HYDROLOGIC SOIL GROUP
BzB	BUXTON, SILT LOAM	0–3%	C

SITE SPECIFIC SOIL SURVEY MAPPING WAS PREPARED BY BRUCE A. GILDAY, NH CERTIFIED SOIL SCIENTIST #012, ON JUNE 9TH, 2022.

OFFSITE SOILS FROM THE NRCS WEB SOIL SURVEY, SOIL SURVEY DATA: STRAFFORD COUNTY, NEW HAMSHIRE; SURVEY AREA DATA: VERSION 22, AUG 31, 2021. https: //websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

ONSITE WETLANDS WERE IDENTIFIED BY BRUCE A. GILDAY, NH CERTIFIED WETLAND SCIENTIST #088, ON OCTOBER 5TH, 2021.

AERIAL PHOTO FROM BING MAPS ON 6–20–2019, COPYRIGHT "2019 DIGITAL GLOBE" AND "2019 HERE".

PRE–DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A1	2.85	804	34.1
A2	1.44	488	23.3
A3	2.31	351	19.3
B	1.73	527	26.1

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–63

CIVILWORKS NEW ENGLAND
Civil Engineering
191 Watson Road, PO Box 1166
Dover, New Hampshire 03820
(603) 749-9443

DATE: 8–15–22			
SCALE: 1"=50'			
DRAWN BY: SRD			
DESIGN BY: JPG			
APPROVED BY: SJH			
PROJECT NO: 19003	1	REV PER TRC	SJH 9–20–22
FILE: DRN_PRE–2019	NO.	REVISION	APP'D DATE

PRE–DEVELOPMENT WATERSHED PLAN – 2019 AERIAL

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

W–1

NH STATE PLANE
GPS OBS:NOVEMBER 30, 2018

G / 3B
85 INDUSTRIAL PARK II LLC
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
2390 / 453

INDUSTRIAL PARK DRIVE
PUBLIC 66' WIDE R.O.W. - 743/244 & 759/141

G / 3A
JUMALIA SEACOAST, LLC
74 INDUSTRIAL PARK ROAD
DOVER, NH 03820
3828 / 796

G / 4E
WILLMANCH CORPORATION
c/o TAX DEPT.
P.O. Box 28606
ATLANTA, GA 30358-0606
1118 / 392

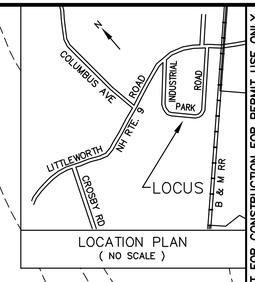
G / 41
BTI-NEWYO, LLC
P.O. Box 28606
ATLANTA, GA 30358-0606
2710 / 956

"LOT 4C"
N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

G / 3A-1
PARCEL AREA
352,425 S.F.
8.09 Ac.

G / 2
FRED E. RILEY 1991 TRUST, FRED E. RILEY, TRUSTEE
RUTH K. RILEY 1991 TRUST, RUTH K. RILEY, TRUSTEE
201 TOLEND ROAD
BARRINGTON, NH 03825-3708
1853 / 181

100B/deabb
233B/P
299B/dbhde
BzB
68B
924B
A1
A2
A3
B
REACH R1
REACH R2
DISCHARGE PT. A
DISCHARGE PT. B



LOCATION PLAN
(NO SCALE)

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EX EDGE OF PAVEMENT
- EX 2019 BING MAPS TREELINE
- SSSS BOUNDARY
- WETLAND DELINEATION/ SSSS BOUNDARY
- 68B SOIL SYMBOL
- **PROPERTY LINE**
- **SUBCATCHMENT BOUNDARY**
- **LONGEST FLOW PATH WITH DIRECTION OF FLOW**
- A1 **SUBCATCHMENT DESIGNATION**

SITE SPECIFIC SOIL MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	DRAINAGE CLASS	HYDROLOGIC SOIL GROUP
68	SUTTON	0-8%	MODERATELY WELL DRAINED	B
100	UDORTHENTS	0-8%	SOMEWHAT POORLY DRAINED	C
233/P	SCANTIC	0-8%	POORLY DRAINED	C
299	UDORTHENTS	0-8%	MODERATELY WELL DRAINED	B
924	SUTTON	0-8%	SOMEWHAT POORLY DRAINED	C

OFFSITE WEB SOIL SURVEY MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	HYDROLOGIC SOIL GROUP
BzB	BUXTON, SILT LOAM	0-3%	C

SITE SPECIFIC SOIL SURVEY MAPPING WAS PREPARED BY BRUCE A. GILDAY, NH CERTIFIED SOIL SCIENTIST #012, ON JUNE 9TH, 2022.

OFFSITE SOILS FROM THE NRCS WEB SOIL SURVEY, SOIL SURVEY DATA: STRAFFORD COUNTY, NEW HAMSHIRE; SURVEY AREA DATA: VERSION 22, AUG 31, 2021. https: //websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

ONSITE WETLANDS WERE IDENTIFIED BY BRUCE A. GILDAY, NH CERTIFIED WETLAND SCIENTIST #088, ON OCTOBER 5TH, 2021.

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A1	2.85	804	34.1
A2	1.44	488	23.3
A3	2.31	351	19.3
B	1.73	527	26.1

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-63

CIVILWORKS NEW ENGLAND
Civil Engineering
191 Water Street, PO Box 1166
Dover, New Hampshire 03820
(603) 749-0443

DATE: 8-15-22			
SCALE: 1"=50'			
DRAWN BY: SRD			
DESIGN BY: JPG			
APPROVED BY: SJH			
PROJECT NO: 19003	1	REV PER TRC	SJH 9-20-22
FILE: DRN_PRE-2019	NO.	REVISION	APP'D DATE

PRE-DEVELOPMENT WATERSHED PLAN

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

W-2

C – 2

POST-DEVELOPMENT CONDITIONS



LOCATION PLAN
(NO SCALE)

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- 104 PROPOSED EDGE OF PAVEMENT
- EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPERTY LINE
- EXISTING TREELINE
- 2022 GOOGLE MAP TREE/GRASS LINE
- PROPOSED TREELINE
- WETLAND DELINEATION/ SSSS BOUNDARY
- 68B SOIL SYMBOL
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (1) SUBCATCHMENT DESIGNATION

SITE SPECIFIC SOIL MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	DRAINAGE CLASS	HYDROLOGIC SOIL GROUP
68	SUTTON	0–8%	MODERATELY WELL DRAINED	B
100	UDORTHENTS	0–8%	SOMEWHAT POORLY DRAINED	C
233/P	SCANTIC	0–8%	POORLY DRAINED	C
299	UDORTHENTS	0–8%	MODERATELY WELL DRAINED	B
924	SUTTON	0–8%	SOMEWHAT POORLY DRAINED	C

OFFSITE WEB SOIL SURVEY MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	HYDROLOGIC SOIL GROUP
BzB	BUXTON, SILT LOAM	0–3%	C

SITE SPECIFIC SOIL SURVEY MAPPING WAS PREPARED BY BRUCE A. GILDAY, NH CERTIFIED SOIL SCIENTIST #012, ON JUNE 9TH, 2022.

OFFSITE SOILS FROM THE NRCS WEB SOIL SURVEY, SOIL SURVEY DATA: STRAFFORD COUNTY, NEW HAMSHIRE; SURVEY AREA DATA: VERSION 22, AUG 31, 2021. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

ONSITE WETLANDS WERE IDENTIFIED BY BRUCE A. GILDAY, NH CERTIFIED WETLAND SCIENTIST #088, ON OCTOBER 5TH, 2021.

AERIAL PHOTO FROM GOOGLE MAPS ON 8–10–2022, COPYRIGHT "2022 MAINE GEOLIBRARY, MAXAR TECHNOLOGIES, USDA/FPAC/GEO, MAPDATA 2022".

POST–DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.31	209	12.8
2	0.41	137	3.6
3	0.19	228	3.0
4	0.64	233	5.6
5	0.45	50	1.2
6A	0.23	50	1.2
6B	0.23	50	1.2
7	0.38	56	5.7
8	1.39	720	26.6
9	0.18	149	15.8
10	2.17	351	19.2
11	1.73	527	26.1

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–63

DATE:	8–15–22
SCALE:	1"=50'
DRAWN BY:	SRD
DESIGN BY:	JPG
APPROVED BY:	SJH
PROJECT NO:	19003
FILE:	DRN_ADDITION

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9–20–22

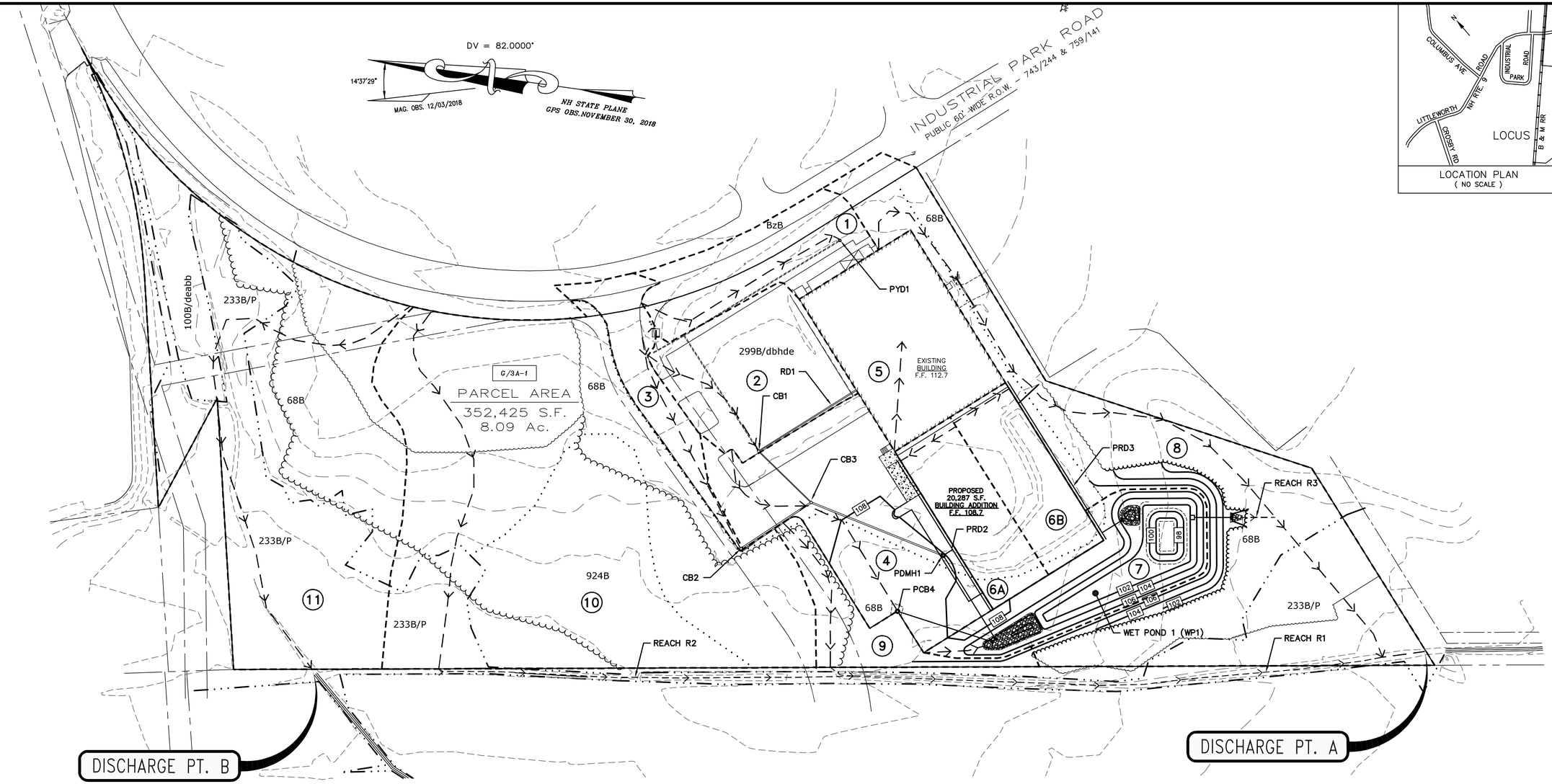
CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

POST–DEVELOPMENT WATERSHED PLAN – 2022 AERIAL

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

WS–3



LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- 104 — PROPOSED EDGE OF PAVEMENT
- EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPERTY LINE
- EXISTING TREELINE
- 2022 GOOGLE MAP TREE/GRASS LINE
- PROPOSED TREELINE
- WETLAND DELINEATION/ SSSS BOUNDARY
- 68B — SOIL SYMBOL
- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH WITH DIRECTION OF FLOW
- (1) — SUBCATCHMENT DESIGNATION

SITE SPECIFIC SOIL MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	DRAINAGE CLASS	HYDROLOGIC SOIL GROUP
68	SUTTON	0–8%	MODERATELY WELL DRAINED	B
100	UDORTHENTS	0–8%	SOMEWHAT POORLY DRAINED	C
233/P	SCANTIC	0–8%	POORLY DRAINED	C
299	UDORTHENTS	0–8%	MODERATELY WELL DRAINED	B
924	SUTTON	0–8%	SOMEWHAT POORLY DRAINED	C

OFFSITE WEB SOIL SURVEY MAP LEGEND

SYMBOL	SOIL UNIT NAME	SLOPE	HYDROLOGIC SOIL GROUP
BzB	BUXTON, SILT LOAM	0–3%	C

SITE SPECIFIC SOIL SURVEY MAPPING WAS PREPARED BY BRUCE A. GILDAY, NH CERTIFIED SOIL SCIENTIST #012, ON JUNE 9TH, 2022.

OFFSITE SOILS FROM THE NRCS WEB SOIL SURVEY, SOIL SURVEY DATA: STRAFFORD COUNTY, NEW HAMSHIRE; SURVEY AREA DATA: VERSION 22, AUG 31, 2021. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

ONSITE WETLANDS WERE IDENTIFIED BY BRUCE A. GILDAY, NH CERTIFIED WETLAND SCIENTIST #088, ON OCTOBER 5TH, 2021.

EXISTING DRAINAGE STRUCTURE SCHEDULE

CB 1
RIM = 110.35
INV. IN 12" PVC = 106.3 BUILDING
INV. OUT 12" HDPE = 106.2 CB 3
SUMP = 103.35

CB 2
RIM = 109.51
INV. OUT = 105.7 CB3
SUMP = 102.8

CB 3
RIM = 108.50
INV. IN = 105.0 CB 2
INV. IN = 105.2 CB 1
INV. OUT = 104.9 FES 1
SUMP = 101.6

POST–DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
1	0.31	209	12.8
2	0.41	137	3.6
3	0.19	228	3.0
4	0.64	233	5.6
5	0.45	50	1.2
6A	0.23	50	1.2
6B	0.23	50	1.2
7	0.38	56	5.7
8	1.39	720	26.6
9	0.18	149	15.8
10	2.17	351	19.2
11	1.73	527	26.1

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–63

		SJH	9–20–22
		REV PER TRC	1
DATE: 8–15–22		REVISION	APP'D DATE
SCALE: 1"=50'			
DRAWN BY: SRD			
DESIGN BY: JPG			
APPROVED BY:SJH			
PROJECT NO:19003			
FILE: DRN_ADDITION			NO.

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

POST–DEVELOPMENT WATERSHED PLAN

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

WS–4

SITE PLAN
WHITE BIRCH ARMORY
BUILDING ADDITION
80 INDUSTRIAL PARK

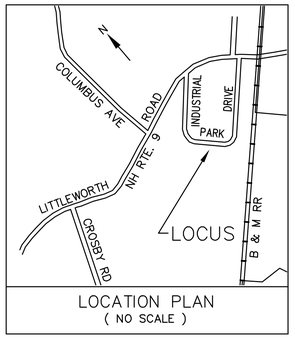
TAX MAP G, LOT 3-A-100

INDUSTRIAL PARK DRIVE

DOVER, NH

AUGUST 15, 2022

REVISED: SEPTEMBER 20, 2022



LOCATION PLAN
(NO SCALE)

White Birch ARMORY

_____ _____
DATE

OWNER
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH

APPLICANT
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

SITE CIVIL ENGINEER
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

LAND SURVEYOR
MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND
P.O. BOX 681
24 CHESTNUT STREET
DOVER, NH 03820
(603) 742–0911

ARCHITECT
JOHN M. TUTTLE, ARCHITECT #04015
TW DESIGNS, LLC
254 DRAKE ROAD
STRAFFORD, NH 03884
(603) 664–2181

LANDSCAPE ARCHITECT
JEFFERY R. HYLAND, LANDSCAPE ARCHITECT #00026
IRONWOOD DESIGN GROUP, LLC
55 MAIN STREET
NEWMARKET, NH 03857

WETLAND SCIENTIST
BRUCE A. GILDAY, CWS #088
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301

SOIL SCIENTIST
BRUCE A. GILDAY, CSS #012
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301

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PLANNING FILE NO.: P22–63



ABUTTERS LIST
(WITHIN 200 FT)

TAX MAP	LOT NO.	NAME & ADDRESS
G	G-3-A-101	JUMAJA SEACOAST LLC 74 INDUSTRIAL PARK ROAD DOVER, NH 03820
G	G-3-B-0	85 INDUSTRIAL PARK II LLC 273 CORPORATE DRIVE, SUITE 150 PORTSMOUTH, NH 03801
G	G-4-E-0	WILLMANCH CORP C/O/ BT-MEWYO LLC ATTN: CORP REAL ESTATE 55 GLENLAKE PARKWAY NE ATLANTA, GA 30328
G	G-41-0-0	BT-NEWYO LLC ATTNE CORP REAL ESTATE DEPT TAX MRG 55 GLENLAKE RARKWAY NE ATLANTA, GA 03028
G	G-2-0-0	WESTFIELD LLC 340 CENTRAL AVE, SUITE 202 DOVER, NH 03820

H / 33-E — TAX MAP / LOT NUMBER

W — N — E

MAGNETIC

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-63

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

DATE: 8-15-22
SCALE: 1"=100'
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

NEIGHBORHOOD PLAN

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

2

REFERENCE PLANS:

1.) SUBDIVISION PLAN 74 INDUSTRIAL PARK, LLC, 74 INDUSTRIAL PARK ROAD AND LITTLEWORTH ROAD, DOVER, NEW HAMPSHIRE. SCALE: 1" = 60'; DATED: JANUARY 6, 2010, REVISED THROUGH 1/22/2010; BY: TRITECH ENGINEERING CORPORATION. RECORDED S.C.R.D. PLAN 99-24.

2.) TOPOGRAPHIC PLAN – EXISTING CONDITIONS PLAN PREPARED FOR 74 INDUSTRIAL PARK, LLC TAX MAP G, LOT No. 3A-100 INDUSTRIAL PARK ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 50'; DATED: MAY 20, 2019; BY: McENEANEY SURVEY ASSOCIATES.

3.) AS-BUILT SITE PLAN PREPARED FOR WHITE BIRCH ARMORY, LLC TAX MAP G, LOT No. 3A-100 80 INDUSTRIAL PARK ROAD CITY of DOVER COUNTY of STRAFFORD STATE of NEW HAMPSHIRE. SCALE: 1" = 20'; DATED: JULY 14, 2020, REVISED THROUGH 7/30/21; BY: McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND.

4.) ACCESS & UTILITY EASEMENT PLAN PREPARED FOR RECON REALTY, LLC, TAX MAP G, LOT No. 3A-100, 80 INDUSTRIAL PARK ROAD, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 50'; DATED: FEBRUARY 15, 2022; BY THIS OFFICE. RECORDED S.C.R.D. PLAN 12739.

14°37'29" W
MAG. OBS. 12/03/2018
NH STATE PLANE GPS OBS. NOVEMBER 30, 2018

INDUSTRIAL PARK ROAD
PUBLIC 60' WIDE R.O.W. – 743/244 & 759/141

CB RIM = 115.9'
15" RCP CULVERT INV. = 112.6'
MAG NAIL SET
S35°12'35"E RADIAL
NHHD BOUND FOUND
BITUMINOUS CONCRETE DRIVEWAY
S35°12'35"E RADIAL
SMH RIM = 115.1'
18" RCP CULVERT INV. = 110.0'
15" RCP CULVERT INV. = 112.1'
SMH RIM = 115.0'
8" PVC CULVERT INV. = 112.1'
CITY WATER MAIN EASEMENT – REF. 640 / 115 & 288 / 403
C1
C2
EDGE OF PAVEMENT (TYP.)
S00°00'34"W RADIAL
SMH D
NHHD BOUND FOUND
S39°59'26"E 132.11'
IRON ROD FOUND
N – 250,812.901
E – 1,187,241.155
(SEE NOTE 8)
S50°43'27"W 228.51'
WATER SERVICE:
6" FIRE PROTECTION
1" DOMESTIC
BITUMINOUS CONCRETE DRIVEWAY AND PARKING AREA
HEADWALL
12" HDPE
INV. IN = 110.4
INV. OUT = 109.5
IRON ROD FOUND
SMH C
UD
STEEL FRAME BUILDING
19,680 S.F.
F.F. ELEVATION = 112.7
20' WIDE WATER MAIN EASEMENT
743/244 & 759/141
35' FRONT ZONING SETBACK LINE
RD 12" HDPE
CB
CB 3
D 12"HDPE
D 15"HDPE
CB 2
FES 1
INV. = 104.3
4" PVC INV. OUT = 104.0
OS 1
FES 2
INV. = 101.8
256.16'
S10°11'09"W
10' SIDE/REAR ZONING SETBACK LINE (TYP.)
SMH
RIM = 104.3'
IRON ROD FOUND
36" CULVERT
INV. = 97.1'
212.60'
S50°02'29"W
IRON ROD FOUND
SMH
RIM = 102.4'
GROUND = 97.4'
SHELF @ IN = 93.7' (CONCRETE)
SHELF @ OUT = 93.3' (CONCRETE)
INV. IN = 93.2' 12" SDR
INV. OUT = ~~92.7'~~ 12" SDR

18" CMP CULVERT INV. = 107.9'
N78°32'48"E 210.35'
N69°49'43"W 113.77'
50' WETLAND BUFFER (TYP.)
IRON PIPE FOUND
N78°32'48"E 249.05'
EDGE OF WETLAND (TYP.)
ACCESS AND UTILITY EASEMENT S.C.R.D. 5064 / 604
10' SIDE/REAR ZONING SETBACK LINE (TYP.)
20' WIDE WATER MAIN EASEMENT
859 / 63
N08°12'17"W 1099.34'
IRON PIPE FOUND
N – 251,367.676
E – 1,186,699.120
(SEE NOTE 8)
APPROXIMATE WATER MAIN LOCATION
24" HDPE CULVERT
INV. IN = 102.7'
INV. OUT = 102.6'

G / 3B
85 INDUSTRIAL PARK II LLC
273 CORPORATE DRIVE, SUITE 150
PORTSMOUTH, NH 03801
2390 / 453

G / 4E
WILLMANCH CORPORATION
c/o BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328 1118 / 392

G / 3A-1
PARCEL AREA
352,425 S.F.
8.09 Ac.

G / 3C
SOLVETA SALES, INC
44 INDUSTRIAL PARK ROAD
DOVER, NH 03820
4459 / 516

G / 41
BT-NEWYO, LLC
ATTN: CORP REAL ESTATE
55 GLENLAKE PARKWAY NE
ATLANTA, GA 30328
2710 / 956

"LOT 4C"
N/F INDUSTRIAL PARK AUTHORITY
(AN AGENCY OF THE STATE OF NH)
CONCORD, NH
825 / 305

G / 2
WESTFIELD, LLC
340 CENTRAL AVENUE, SUITE 202
DOVER, NH 03820
4733 / 471
906,049 S.F. / 20.80 Ac.

No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	23°45'23"	531.09	220.20	218.63	N66°40'06"E
C2	94°46'51"	459.43	760.01	676.27	S07°23'59"W

SANITARY SEWER STRUCTURE SCHEDULE

SMH A (NOT SHOWN)
RIM = 115.2
INV. IN 8" PVC = 110.0 (ROADWAY NORTH)
INV. IN 8" PVC = 110.0 (U.P.S. SMH)
INV. OUT 8" PVC = 110.0 SMH B

SMH B (NOT SHOWN)
RIM = 116.3
INV. IN 8" PVC = 108.7 SMH A
INV. OUT 8" PVC = 108.7 SMH C

SMH C
RIM = 114.6
INV. IN 8" PVC = 108.1 SMH B
INV. OUT 8" PVC = 108.0 SMH D

SMH D
RIM = 115.0
INV. IN 8" PVC = 107.5 SMH C
INV. OUT 8" PVC = 107.4 (ROADWAY SOUTH)

NOTES:

1.) OWNER OF RECORD:
G/3A-100 RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NEW HAMPSHIRE 03820
S.C.R.D. VOL. 4713, PAGE 625

2.) G/3A-100 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) ZONING DISTRICT IS RURAL RESTRICTED INDUSTRIAL (I-2)

4.) DIMENSIONAL REGULATIONS:
MINIMUM LOT SIZE = 20,000 S.F.
MAXIMUM LOT COVERAGE = 50 PERCENT
MINIMUM FRONTAGE = 100 FEET
BUILDING REQUIREMENTS:
FRONT SETBACK = 35 FEET MIN.
SIDE SETBACK = 10 FEET
REAR SETBACK = 10 FEET
MAXIMUM BUILDING HEIGHT = 50 FEET

PER AGREEMENT BETWEEN THE INDUSTRIAL PARK AUTHORITY AND DOVER DEVELOPMENT CORPORATION RECORDED AT S.C.R.D. VOL. 697, PAGE 325 AND AMENDED IN VOL. 759, PAGE 339 THE FOLLOWING RESTRICTIVE COVENANTS ARE IN PLACE:
BUILDING SETBACKS:
FRONT TO A RIGHT OF WAY = 50 FEET
SIDE = 30 FEET
REAR = 50 FEET
RATIO OF LAND TO BUILDING = AT LEAST 5 TO 1

5.) THE INTENT OF THIS PLAN IS TO DEPICT AND DESCRIBE THE SUBJECT PARCEL "EXISTING CONDITIONS". INFORMATION SHOWN IS BASED ON SURVEY FIELD DATA TAKEN DURING APRIL AND MAY 2019 BY THIS OFFICE.

6.) PARCEL AREA: 352,425 S.F. / 8.09 Ac.

7.) THE SUBJECT PARCEL IS LOCATED WITHIN AREAS DETERMINED TO BE OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.

8.) BASIS OF BEARINGS IS NH STATE PLANE GRID FROM GPS OBSERVATION TAKEN ON NOVEMBER 30, 2018.

9.) VERTICAL DATUM IS NAVD88 FROM GPS OBSERVATION TAKEN ON NOVEMBER 30, 2018.

10.) WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED ON OCTOBER 5, 2021 BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS); 43 ROCKINGHAM STREET, CONCORD, NH 03301 AND FIELD LOCATED BY McENEANEY SURVEY ASSOCIATES, INC..

11.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DURING APRIL AND MAY 2019 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

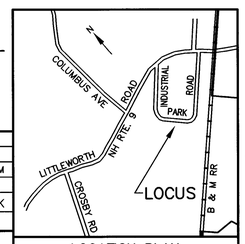
12.) SEE REFERENCE No. 3 FOR EXISTING BUILDING INFORMATION.

ATTENTION:

HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF INDUSTRIAL PARK ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		
1	9/19/22	ADD DOVER PLANNING NUMBER & ACCESS AND UTILITY EASEMENT DEED REFERENCE	RJM	KMM

19-2227	EXIST. COND.	19-03	66-69
PROJECT NO	TYPE	FIELDBOOK & PAGES	



LOCATION PLAN
(NO SCALE)

LEGEND

GAS – GAS MAIN AND / OR SERVICE
UGU – UNDERGROUND UTILITIES (POWER, TELECOMMUNICATIONS, CABLE TELEVISION)
UGE – UNDERGROUND ELECTRIC LINE
UGT – UNDERGROUND TELECOMMUNICATIONS
UP – UTILITY POLE
INV. – INVERT
RIM – STRUCTURE RIM
N –247,351.744 – NORTHING
E – 1,199,437.985 – EASTING
ELEV. – ELEVATION
56 – CONTOUR LINE – 2' INTERVAL
HDPE – HIGH DENSITY POLYETHYLENE
RIP RAP – STONE RIP RAP OUTLET PROTECTION
W 6"DI – WATER MAIN, MATERIAL AND PIPE SIZE
DI – DUCTILE IRON
T – ELECTRICAL TRANSFORMER
– POLE MOUNTED LUMINAIRE W/ 2'ø CONC. BASE
WSO – WATER SHUT-OFF (CURB STOP)
HYD – FIRE HYDRANT
WV – WATER GATE VALVE

SMH – SEWER MANHOLE AND ID
DMH – DRAIN MANHOLE AND ID
CB – CATCH BASIN AND ID
– SIGN ON POST
SGC – SLOPED GRANITE CURB
CCB – CAPE COD BERM
EOP – EDGE OF PAVEMENT
PVC – POLYVINYL CHLORIDE
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
OS – OUTLET STRUCTURE
I.R. – IRON ROD
– BOLLARD
UD – UNDER DRAIN
FD – FOUNDATION DRAIN
RD – ROOF DRAIN
D 12"HDPE – DRAINAGE PIPE SIZE & TYPE
– HC PARKING

DRAINAGE STRUCTURE SCHEDULE

CB 1
RIM = 110.35
INV. IN 12" PVC = 106.3 BUILDING
INV. OUT 12" HDPE = 106.2 CB 3
SUMP = 103.35

CB 2
RIM = 109.51
INV. OUT = 105.7 CB3
SUMP = 102.8

CB 3
RIM = 108.50
INV. IN = 105.0 CB 2
INV. IN = 105.2 CB 1
INV. OUT = 104.9 FES 1
SUMP = 101.6

OS 1
INV. IN = 103.4 POND
INV. IN = 104.7 POND
INV. IN = 105.6 POND
INV. OUT = 102.8 FES

"I HEREBY CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL GROUND SURVEY PERFORMED WITH A TOTAL STATION, BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, SAID SURVEY MEETS OR EXCEEDS THE MINIMUM PRECISION REQUIREMENTS FOR SURVEY CLASSIFICATION "U" AS SET FORTH IN TABLE 500.1 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES OF THE BOARD OF LICENSURE FOR LAND SURVEYORS."

EXISTING CONDITIONS PLAN OF LAND
PREPARED FOR
RECON REALTY, LLC
TAX MAP G, LOT No. 3A-100
80 INDUSTRIAL PARK DRIVE
CITY of DOVER
COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 22-63

DRAWN BY: RJM | FILE: \2227\Dwgs\22-2227 EC
SCALE: 1" = 50' | DATE: APRIL 22, 2022

50 25 0 25 50 100 150 200

STATE OF NEW HAMPSHIRE No. 661 KEVIN M. McENEANEY LICENSED LAND SURVEYOR SIGNATURE

McEneaney Survey Associates of NEW ENGLAND
P.O. Box 681 – 24 CHESTNUT STREET
DOVER, NH 03820 (603) 742-0911
SURVEYING – PLANNING – CONSULTING

9/20/2022 09:37:36 File: \\CNE\Server1\MSA Projects\2227 CNE 19003 White Birch\Dwgs\22-2227 EC.dwg Layout: 22-2227 EC 2022

GENERAL NOTES:

1. OWNER OF RECORD:

   C/3A-100 — RECON REALTY, LLC
   80 INDUSTRIAL PARK DRIVE
   DOVER, NEW HAMPSHIRE 03820
   S.C.R.D. VOL. 4713, PAGE 625

2. C/3A-100 — DENOTES TAX MAP AND PARCEL NUMBER.

3. ZONING DISTRICT IS COMMERICAL MANUFACTURING (CM)

DIMENSIONAL REGULATIONS:	REQUIRED	PROPOSED
MINIMUM LOT SIZE	= 20,000 S.F.	352,425 S.F.
MAXIMUM LOT COVERAGE	= 50 PERCENT	11.3%
MINIMUM FRONTAGE	= 100 FEET	±892'
BUILDING REQUIREMENTS:		
FRONT SETBACK	= 35 FEET MIN.	45.72' (EX)
SIDE SETBACK	= 10 FEET	32.51' (EX)
REAR SETBACK	= 10 FEET	52.62'
MAXIMUM BUILDING HEIGHT	= 50 FEET	27.5'

   * PER AGREEMENT BETWEEN THE INDUSTRIAL PARK AUTHORITY AND DOVER DEVELOPMENT CORPORATION RECORDED AT S.C.R.D. VOL. 697, PAGE 325 AND AMENDED IN VOL. 759, PAGE 339 THE FOLLOWING RESTRICTIVE COVENANTS ARE IN PLACE:

BUILDING SETBACKS:	REQUIRED
FRONT TO A RIGHT OF WAY	= 50 FEET
SIDE	= 30 FEET
REAR	
RATIO OF LAND TO BUILDING	= AT LEAST 5 TO 1

   * RESTRICTIONS ON THIS LOT WERE RELEASED JUNE 28, 2019.
4. PARCEL AREA: 352,425 S.F. / 8.09 Ac.
5. THE SUBJECT PARCEL IS LOCATED WITHIN AREAS DETERMINED TO BE OUTSIDE THE 0.2 PERCENT ANNUAL CHANCE FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 330145; PANELS 0310 & 0320; SUFFIX E; MAP NUMBERS 33017C0310E & 33017C0320E; EFFECTIVE DATE SEPTEMBER 30, 2015.
6. BASIS OF BEARINGS IS NH STATE PLANE GRID FROM GPS OBSERVATION TAKEN ON NOVEMBER 30, 2018.
7. VERTICAL DATUM IS NAVD88 FROM GPS OBSERVATION TAKEN ON NOVEMBER 30, 2018.
8. WETLANDS ONSITE WERE IDENTIFIED UTILIZING THE 1987 FEDERAL TECHNICAL REPORT. THE DELINEATION WAS PERFORMED ON OCTOBER 5, 2021 BY BAG LAND CONSULTANTS (BRUCE A. GILDAY, CWS); 43 ROCKINGHAM STREET, CONCORD, NH 03301 AND FIELD LOCATED BY MCENEANEY SURVEY ASSOCIATES, INC..
9. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DURING APRIL AND MAY 2019 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
10. DATE OF FIELD TOPOGRAPHY:
    APRIL / MAY 2019 – ORIGINAL SITE
    JUNE 2020 – AS–BUILD FROM SITE PLAN
    JULY 2020 – DETAIL FOR DRAINAGE AT FRONT LEFT OF BUILDING
    OCTOBER 2021 – WETLANDS AND DITCHES ON NORTH AND WEST SIDES (WESTFIELD)
11. EASEMENTS ON PARCEL INCLUDE:
    a. 20' WIDE WATER MAIN EASEMENT S.C.R.D.743/244 & 759/141
    b. CITY WATER MAIN EASEMENT – REF. S.C.R.D. 510 / 315 & 288 / 203
    c. 20' WIDE WATER MAIN EASEMENT S.C.R.D. 859 / 63
    d. 50' WIDE EASEMENT TO WESTFIELD, LLC S.C.R.D. 5064 / 604
    e. 20' WIDE FROM UPOLE 305/14 TO TRANSFORMER 305/14T1 – PSNH\ (dba EVERSOURCE ENERGY) & CONSOLIDATED COMMUNICATIONS OF NORTHERN NEW ENGLAND COMPANY, LLC S.C.R.D. 4759 / 736.
12. THE PROPOSED USE FOR THE SITE (STRUCTURE) IS ADDITIONAL WAREHOUSE (20,287 S.F.) AND OFFICE (2,986 S.F.) SPACE IN SUPPORT OF THE EXISTING BUSINESS. THERE SHALL BE NO RELOADING OF AMMUNITION IN THE PROPOSED ADDITION.
13. THE PROPOSED OVERHEAD DOOR SHALL BE USED FOR FORKLIFT ACCESS TO THE FACILITY.

DEMOLITION NOTES:

1. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
2. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY DEMOLITION/ CONSTRUCTION ACTIVITIES. (811).
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, UTILITIES AND PAVEMENT ON THE SITE TO THE LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN.
5. IT IS THE CONTRACTORS RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS NOT ALREADY OBTAINED BY THE OWNER AND ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF–SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
8. THE LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
9. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF–SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES, AND CODES.
10. ALL EROSION CONTROL NOTES SHALL INCLUDE PROVISIONS FOR CONSTRUCTION SEQUENCING, TEMPORARY EROSION CONTROL MEASURES, AND PERMANENT STANDARDS SUCH AS LOAM SPREAD RATE FOR DISTURBED AREAS, RATES OF LIME, TYPE AND RATES FOR FERTILIZER, AND SEED AND MULCH MIXTURE WITH RATES OF APPLICATION.

PERMIT SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:

   ALTERATION OF TERRAIN: PENDING

2. LIST ANY VARIANCES OR SPECIAL EXCEPTIONS GRANTED BY THE ZONING BOARD OF ADJUSTMENT OR CONDITIONAL USE PERMITS GRANTED BY THE PLANNING BOARD FOR THE PROPOSED USE OR STRUCTURE, INCLUDING THE CASE NUMBER AND DATE OF DECISION AND ANY CONDITIONS.

   CONDITIONAL USE PERMIT: P22–63XX PENDING

SITE NOTES:

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, INC. DURING APRIL AND MAY 2019 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
2. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF A COMMERCIAL BUILDING, SURFACE PARKING, DRIVE AISLES, DRAINAGE IMPROVEMENTS, AND UTILITIES.
3. EXTERIOR LIGHTING SHALL BE CUT–OFF TYPE FIXTURES PER CHAPTER 153–14–E AND SHALL PROVIDE LIGHTING DIRECTED ON–SITE ONLY.
4. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13.
5. ALL ON–SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
7. STRIPE PARKING AREAS AS SHOWN INCLUDING HANDICAP SYMBOLS AND PAINTED ISLANDS. ALL MARKINGS SHALL BE CONSTRUCTED USING WHITE TRAFFIC PAINT, MEETING THE REQUIREMENTS OF AASHTO M–248–TYPE N.
8. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS, AND THE AMERICAN WITH DISABILITIES ACT, LATEST EDITIONS.
9. PAINTED ISLANDS SHALL BE 4 INCHES WIDE DIAGONAL LINES 3 FEET ON CENTER.
10. ON–SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
11. ALL LAYOUT SHALL BE PERFORMED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
12. SEE DETAILS FOR SIGN LEGENDS.
13. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE THE SAFETY OF THE FACILITIES AND THEIR COMPONENTS DURING DEMOLITION AND CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE OWNERS REPRESENTATIVE. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE–DOWNS. SUCH MATERIALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AT THE COMPLETION OF THE PROJECT.
14. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTORS' RESPONSIBILITY TO PROVIDE AND MAINTAIN ENVIRONMENTAL CONTROLS AS REQUIRED BY FEDERAL, STATE AND MUNICIPAL REGULATIONS AND PERMITS. ENVIRONMENTAL CONTROLS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO DUST CONTROL AND SILT BARRIERS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES OR UTILITIES OR INJURIES TO THE PUBLIC DURING THE CONSTRUCTION PHASE CAUSED BY HIMSELF, HIS EMPLOYEES, HIS SUBCONTRACTORS OR EMPLOYEES OF SAME. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY FACILITIES FOR THE PROTECTION OF THE WORK, WORKERS AND PUBLIC SAFETY.
16. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
17. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS NH RSA 155–A:5. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED IN ACCORDANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS.
18. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
19. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM WITH DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
20. THE SUBJECT PARCEL(S) IS SERVED BY MUNICIPAL WATER AND SEWER.
21. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURRING.
22. AS–BUILT PLANS OF THE SITE SHALL BE SUBMITTED ON PAPER AND IN A DIGITAL FORMAT IN PDF AND AUTOCAD DWG, AUTOCAD DXF OR AN ESRI FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF PROJECT. AS–BUILT PLANS SHALL BE PREPARED AND CERTIFIED CORRECT BY A L.L.S. OR P.E. DIGITAL FILES SHALL BE GEO–REFERENCED TO NEW HAMPSHIRE STATE PLANE COORDINATES NAD83 AND SHALL BE EXPRESSED IN FEET.
23. A SECURITY SYSTEM SHALL BE INSTALLED AS REQUIRED BY CHAPTER 45, ARTICLE I, SECTION 45–2 OF THE CODE OF THE CITY OF DOVER.
24. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY–FRIDAY 7 AM–6 PM, SATURDAY AND SUNDAY WORK HOURS 9 AM–4 PM. HOURS OF CONSTRUCTION MUST BE DOCUMENTED ON A SITE CONSTRUCTION SIGN ALONG WITH THE CONTACT INFORMATION FOR THE GENERAL CONTRACTOR. SAID SIGNAGE MUST BE LOCATED AND APPROVED BY THE CITY ENGINEER OR ASSISTANT CITY MANAGER.
25. A PRE–CONSTRUCTION CONFERENCE WITH THE DEVELOPER, THE DESIGN ENGINEER, THE EARTHWORK CONTRACTOR AND THE CITY ENGINEER SHALL OCCUR PRIOR TO ANY EARTH DISTURBING ACTIVITY.
26. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND WITH THE CITY OF DOVER COMMUNITY SERVICES REGULATIONS AND STANDARD SPECIFICATION FOR CONSTRUCTION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
27. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURRING.
28. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
29. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
30. APPLICANT SHALL COMPLETE LAND USE DEVELOPMENT TRACKING FORM, MOST RECENTLY REVISED VERSION, UTILIZING THE ONLINE POLLUTION TRACKING AND ACCOUNTING PILOT PROJECT (PTAPP) PORTAL. HTTPS: //WWW.UNH.EDU/UNHSC/PTAPP
31. THE OWNER OF RECORD SHALL RECORD AT THE REGISTRY OF DEEDS DOCUMENTATION SUFFICIENT TO PROVIDE NOTICE TO ALL PERSONS/ENTITIES THAT MAY ACQUIRE ANY PROPERTY SUBJECT TO THE REQUIREMENTS AND RESPONSIBILITIES DESCRIBED IN THE APPROVED STORMWATER MANAGEMENT PLAN. THE NOTICE SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS FOR RECORDING CONTAINED IN RSA 477 AND 478. THE NOTICE NEED NOT SET FORTH THE REQUIREMENTS AT LENGTH, SO LONG AS IT IS SUFFICIENT TO PROVIDE NOTICE TO PROSPECTIVE PURCHASERS TO THE REQUIREMENTS FOR MAINTENANCE AND REPORTING.
32. PALLETS SHALL BE STORED IN ACCORDANCE WITH THE ADOPTED STATE OF NEW HAMPSHIRE BUILDING AND FIRE CODES.
33. THE PROPOSED OVERHEAD DOOR SHALL BE USED FOR FORKLIFT ACCESS TO THE FACILITY.

GRADING NOTES:

1. ALL ROAD (INCLUDING PARKING LOT AND DRAINAGE) WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR CONSTRUCTION OF THE CITY OF DOVER, N.H. AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION", LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEERING CONSULTANT APPROVED BY THE OWNER, TO CONDUCT COMPACTION TESTING AND FILL GRADATION MONITORING PER THE ABOVE REFERENCED "STANDARD SPECIFICATIONS".
3. SEE EROSION CONTROL NOTES & DETAIL SHEET FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES.
4. ALL DRAINAGE PIPES SHALL BE HDPE OR APPROVED EQUAL UNLESS OTHERWISE NOTED.
5. ALL DISTURBED AREAS NOT OTHERWISE CALLED FOR SURFACE TREATMENT SHALL RECEIVE 6" OF HIGH QUALITY LOAM AND SHALL BE SEEDED WITH GRASS.
6. ALL SITEWORK CONSTRUCTION SHALL BE ADVANCED USING "BEST MANAGEMENT PRACTICES" SANCTIONED BY THE USDA SCS AND NHDES.
7. TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED, UTILIZED AND MAINTAINED UNTIL BASE MATERIALS ARE CONSTRUCTED.
8. CONTRACTOR SHALL PROVIDE A FINISH GRADED SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE AND UNDER RAISED STRUCTURES.
9. DENSITY REQUIREMENTS:

LOCATION	MINIMUM DENSITY
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREA	90%

   *ALL PERCENTAGES SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH AASHTO STANDARD 180, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO STANDARD T–191, T–204, OR T–238 AND T–239.

10. SEE GENERAL EROSION CONTROL NOTES ON DETAIL SHEET.
11. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND AS SHOWN ON PLAN. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND UPSTREAM AREAS HAVE BEEN STABILIZED.
12. INSPECT SILT BARRIERS AFTER EACH RAIN STORM OF 1/4 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.
13. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR THIS PROJECT. THE SWPPP MUST INCLUDE THE APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THE SITE. PARTIES RESPONSIBLE FOR DEVELOPING THE SWPPP SHOULD REFER TO THE EPA NPDES CONSTRUCTION GENERAL PERMITS NOTICE OF INTENT FOR A COMPLETE OUTLINE OR REQUIRED ELEMENTS. THESE PLANS AND THE STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN PREPARED FOR THIS PROJECT MAY BE UTILIZED IN FULFILLING THE REQUIREMENTS.
14. THE LIMITS OF CONSTRUCTION DISTURBANCE THAT ARE LOCATED IN OR WITHIN THE 50 FT. OF CONSERVATION AND WETLAND DISTRICTS SHALL BE STAKED, FLAGGED AND CLEARLY IDENTIFIED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
15. ALL TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
16. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE AND APPROVED CONSTRUCTION SIGN SHALL BE IN PLACE PRIOR TO ANY EARTH DISTURBING ACTIVITY.
17. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
18. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND PRIOR TO CONSTRUCTION.

UTILITY NOTES:

1. THE PROJECT SITE IS SERVED BY CITY WATER AND SEWER.
2. THE BEST AVAILABLE INFORMATION WAS USED TO DETERMINE THE LOCATION AND SIZE OF EXISTING UTILITIES. THE LOCATION IS NOT GUARANTEED BY THE OWNER OR THE ENGINEER. THE EXACT SIZE AND LOCATION OF UTILITIES SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO COMMENCING WORK. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO ANTICIPATE CONFLICTS AND REPAIR EXISTING UTILITIES AS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.
3. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AS SHOWN. THE CONTRACTOR SHALL VERIFY THEIR EXACT LOCATIONS WITH THE RESPECTIVE UTILITY OWNERS PRIOR TO WORK BEING PERFORMED. CALL DIGSAFE AT 1–888–388–7233 OR "811".
4. ALL PROPOSED UTILITY SERVICES SHALL BE UNDERGROUND WITHIN THE SITE.
5. UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE TV CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH/PER EVERSOURCE, VERIZON, COMCAST, AND UNITIL STANDARDS.
6. PROPOSED INSTALLATION OF UNDERGROUND CONDUITS FOR TELEPHONE, ELECTRIC AND GAS SERVICE SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY.
7. SEE ELECTRICAL DRAWINGS AND DETAILS FOR OUTDOOR LIGHTING CONDUIT LOCATIONS.
8. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.
9. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.
10. SEWAGE LOADING (PER ENV. – Wq 1008.03 TABLE 1008–1)
    OFFICE SPACE/UNSPECIFIED =
    2,986 S.F. X 5 GALS./DAY/100 S.F = 150 GPD
    PLUS
    FACTORIES/WAREHOUSES =
    10 GPD/EMPLOYEE (6) = 60 GPD
    TOTAL = 210 GPD
11. THE PROPOSED STRUCTURES SHALL BE SERVED BY A SPRINKLER SYSTEM AS REQUIRED UNDER CHAPTER 81–30 OF THE CODE OF THE CITY OF DOVER AND THE ADOPTED STATE OF NH BUILDING AND FIRE CODES.
12. SPRINKLER CONNECTIONS MUST BE FLUSHED IN ACCORDANCE WITH NFPA 24 AND A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM MUST BE COMPLETED AND APPROVED BY INSPECTION SERVICES PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.
13. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED ON THE STREET SIDE OF THE BUILDING PER NFPA 13. ACCESS TO THE FDC SHALL MAINTAIN A CLEAR AND UNOBSTRUCTED PATH AT ALL TIMES.
14. ALL ON–SITE UTILITIES SHALL BE INSTALLED UNDERGROUND.
15. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
16. APPROVED BACKFLOW PREVENTORS SHALL BE INSTALLED ON BOTH FIRE AND DOMESTIC WATER LINES.
17. ALL UNUSED WATER SERVICES SHALL BE REMOVED BACK TO THE CORPORATION AT THE MAIN.
18. THE OWNER SHALL BE RESPONSIBLE FOR THE ROUTINE MAINTENANCE, REPAIR, REPLACEMENT, AND INSPECTION (AS NEEDED) OF THE PRIVATE UTILITIES SERVICING THE BUILDING.
19. THE CITY OF DOVER SHALL BE GRANTED ACCESS TO THE SITE TO MAINTAIN POTABLE DRINKING WATER QUALITY THROUGH THE HYDRANT FLUSHING PROGRAM.

LEGEND

S.F.	SQUARE FEET	OHW	OVERHEAD WIRES
Ac.	ACRE	E	EXISTING ELECTRIC
±	MORE OR LESS	W	EXISTING WATER LINE
(TYP.)	TYPICAL	S	EXISTING SEWER LINE
S.C.R.D.	STRAFFORD REGISTRY OF DEEDS	D	EXISTING DRAINAGE LINE
NHHD	NEW HAMPSHIRE HIGHWAY DEPT.	G	EXISTING GAS LINE
TBR	TO BE REMOVED		PROPOSED SIGN
ELEV.	ELEVATION	74	PROPOSED FINISH GRADE
INV.	INVERT	x 74.00	PROPOSED SPOT GRADE
R.O.W.	RIGHT–OF–WAY		PAVEMENT WITH CURB
	EXISTING UTILITY POLE		SILT BARRIER
	EXISTING SIGN	PG	PROPOSED GAS
	EXISTING WATER SHUT–OFF	PW	PROPOSED WATER
W	EXISTING WATER VALVE		PROPOSED FENCE
GV	EXISTING GAS VALVE	PE	PROPOSED ELECTRIC
	EXISTING HYDRANT	PD	PROPOSED DRAIN LINE
	EXISTING LIGHT/SIGNAL POLE	RD	PROPOSED ROOF DRAIN
S	EXISTING SEWER MANHOLE	PUD	PROPOSED UNDERDRAIN LINE
D	EXISTING DRAINAGE MANHOLE		PROPOSED CATCHBASIN
	EXISTING CATCHBASIN		INLET PROTECTION
5'R	PAVEMENT RADIUS		HANDICAP PARKING SYMBOL
SGC	SLOPE GRANITE CURB		PROPOSED CONCRETE
VGC	VERTICAL GRANITE CURB		PROPOSED SIDEWALK
x 74.00	EXISTING SPOT GRADE		
—94—	EXISTING GRADE		
BSC	BITUMINOUS SLOPED CURB		

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–63

DATE	REVISION	APP'D
9–20–22	REV PER TRC	SJH
1		

DATE: 8–15–22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE–ADDITION

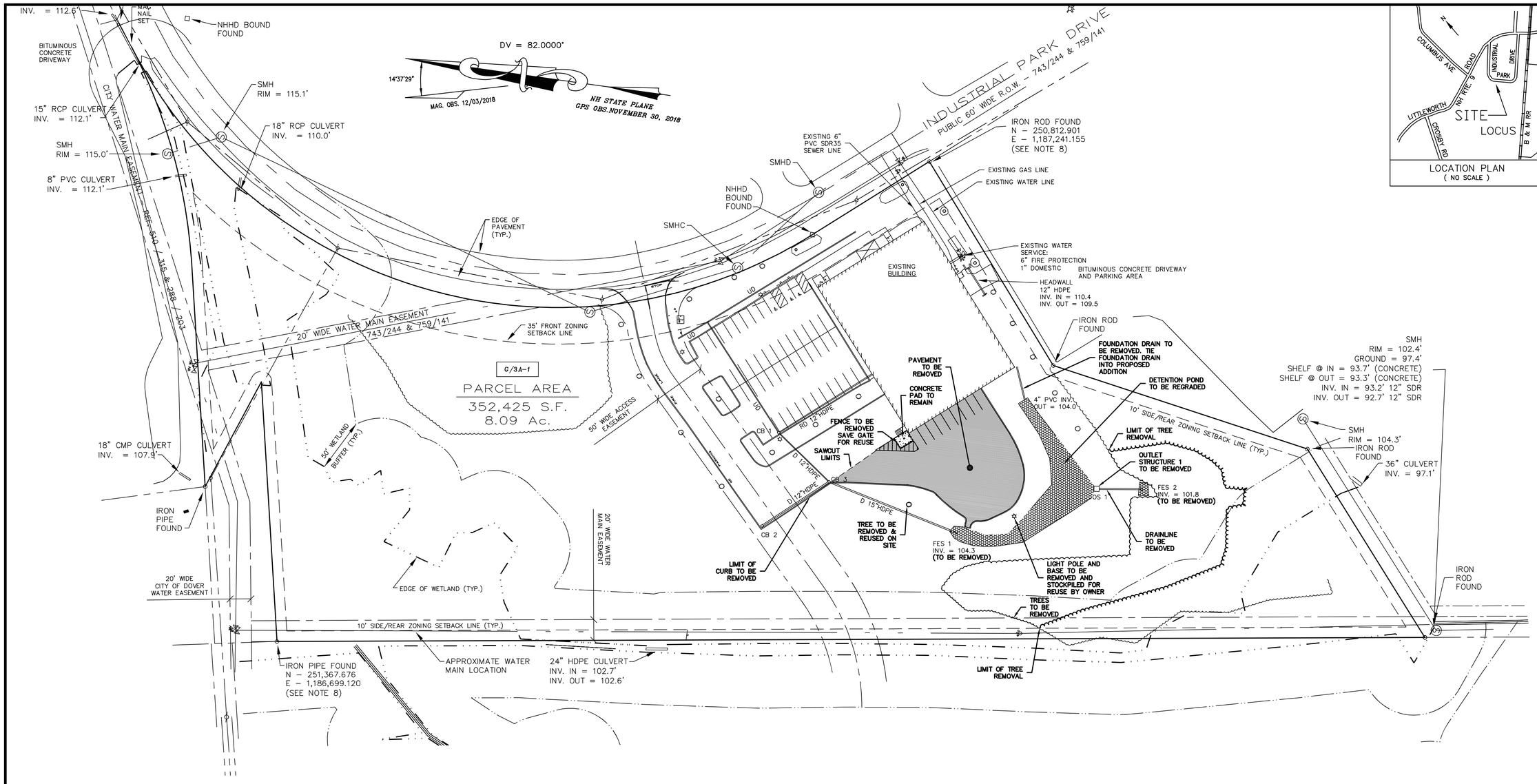
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

NOTE SHEET

4



LOCATION PLAN
(NO SCALE)

SANITARY SEWER
STRUCTURE SCHEDULE

SMH C
RIM = 114.6
INV. IN 8" PVC = 108.1 SMH B
INV. OUT 8" PVC = 108.0 SMH D

SMH D
RIM = 115.0
INV. IN 8" PVC = 107.5 SMH C
INV. OUT 8" PVC = 107.4 (ROADWAY SOUTH)

DRAINAGE STRUCTURE
SCHEDULE

CB 1
RIM = 110.35
INV. IN 12" PVC = 106.3 BUILDING
INV. OUT 12" HDPE = 106.2 CB 3
SUMP = 103.35

CB 2
RIM = 109.51
INV. OUT = 105.7 CB3
SUMP = 102.8

CB 3
RIM = 108.50
INV. IN = 105.0 CB 2
INV. IN = 105.2 CB 1
INV. OUT = 104.9 FES 1
SUMP = 101.6

OS 1 (TO BE REMOVED)
INV. IN = 103.4 POND
INV. IN = 104.7 POND
INV. IN = 105.6 POND
INV. OUT = 102.8 FES

ATTENTION:

HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF INDUSTRIAL PARK ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1–888–344–7233 TO VERIFY LOCATION.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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PLANNING FILE NO.: P22-63

NO.	REVISION	APP'D	DATE
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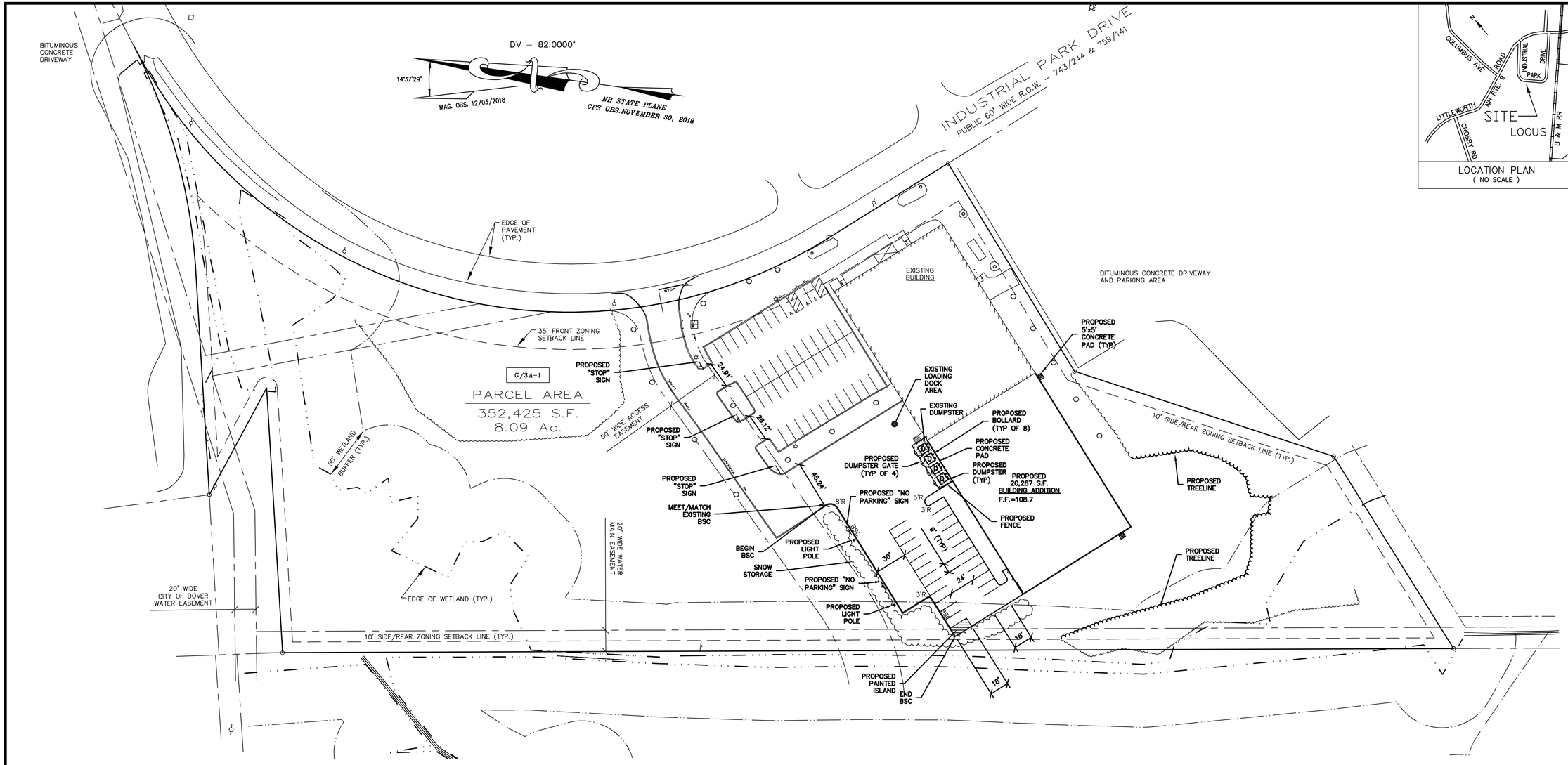
DATE: 8-15-22
SCALE: 1"=50'
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

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DEMOLITION PLAN

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820



LOCATION PLAN
(NO SCALE)

PROPOSED PARKING CALCULATIONS:

	REQUIREMENT	AREA	MAX ALLOWED	PROPOSED
INDUSTRIAL/WAREHOUSE	1 SP/800 S.F.	24,197 S.F.	30	14
RETAIL	1 SP/275 S.F.	15,400 S.F.	56	46
OFFICE:	1 SP/300 S.F.	5,983 S.F.	20	14
TOTAL PARKING:			106	74

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GRAPHIC SCALE

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(IN FEET)

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80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

SITE PLAN

6

INV. = 112.6'

BITUMINOUS CONCRETE DRIVEWAY

15" RCP CULVERT
INV. = 112.1'

8" PVC CULVERT
INV. = 112.1'

18" RCP CULVERT
INV. = 110.0'

18" CMP CULVERT
INV. = 107.9'

DV = 82.0000°
14°37'29"
MAG. OBS. 12/03/2018
NH STATE PLANE
GPS OBS.NOVEMBER 30, 2018

INDUSTRIAL PARK DRIVE
PUBLIC 60' WIDE R.O.W. - 743/244 & 759/141

EDGE OF PAVEMENT (TYP.)

35' FRONT ZONING SETBACK LINE

C/3A-1

PARCEL AREA
352,425 S.F.
8.09 Ac.

50' WETLAND BUFFER (TYP.)

50' WIDE ACCESS EASEMENT

20' WIDE CITY OF DOVER WATER EASEMENT

EDGE OF WETLAND (TYP.)

10' SIDE/REAR ZONING SETBACK LINE (TYP.)

24" HDPE CULVERT
INV. IN = 102.7'
INV. OUT = 102.6'

GRADE TO DRAIN

EXISTING BUILDING

PYD1
RIM=111.75
CONNECT TO EXISTING 6" UNDER DRAIN

BITUMINOUS CONCRETE DRIVEWAY AND PARKING AREA

HEADWALL
12" HDPE
INV. IN = 110.4
INV. OUT = 109.5

INV.=104.0

PROPOSED SILTSOXX SEDIMENT FOREBAY 2 (SEE DETAIL)

PROPOSED 12" HDPE

10' SIDE/REAR ZONING SETBACK LINE (TYP.)

PROVIDE INLET PROTECTION

CB 1

RD 12" HDPE

CB 3

D 12" HDPE

D 15" HDPE

INV=104.9

PROPOSED 20,287 S.F. BUILDING ADDITION
F.F.=108.7

INV.OUT=100.0

INV.OUT=103.0
INV=103.1
INV=103.2

RIP-RAP OUTLET (SEE DETAIL)

36" CULVERT
INV. = 97.1'

PROPOSED SILTSOXX
PROVIDE INLET PROTECTION

CB 2
RDMH1
RIM=107.9
INV.IN=104.3 (CB3)
INV.IN=104.3 (RD)
INV.OUT=103.9

PROPOSED 12" HDPE
INV=104.4

PROPOSED 88 LF
18" HDPE
S=0.010
INV.OUT=103.0

INV. =104.75

PROPOSED 33 LF
12" HDPE
S=0.023

OUTLET STRUCTURE
WET POND 1
(SEE DETAIL)

PERMANENT POOL

BUFFER IMPACT
B=1,572

PCB4
RIM=106.90
INV.OUT=103.75

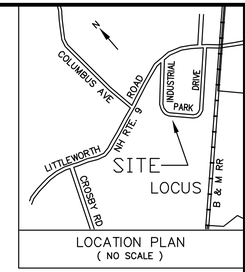
PROPOSED 88 LF
12" HDPE
S=0.009
INV.OUT=103.0

SEDIMENT FOREBAY 1
(SEE DETAIL)

WET POND 1
(SEE DETAIL)

BUFFER IMPACT
A=5,403 S.F.

20' WIDE WATER MAIN EASEMENT



LOCATION PLAN
(NO SCALE)

DRAINAGE STRUCTURE SCHEDULE

CB 1
RIM = 110.35
INV. IN 12" PVC = 106.3 BUILDING
INV. OUT 12" HDPE = 106.2 CB 3
SUMP = 103.35

CB 2
RIM = 109.51
INV. OUT = 105.7 CB3
SUMP = 102.8

CB 3
RIM = 108.50
INV. IN = 105.0 CB 2
INV. IN = 105.2 CB 1
INV. OUT = 104.9 FES 1
SUMP = 101.6

OS 1 (TO BE REMOVED)
INV. IN = 103.4 POND
INV. IN = 104.7 POND
INV. IN = 105.6 POND
INV. OUT = 102.8 FES

ATTENTION:

HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF INDUSTRIAL PARK ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

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PLANNING FILE NO.: P22-63

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

DATE: 8-15-22
SCALE: 1"=50'
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

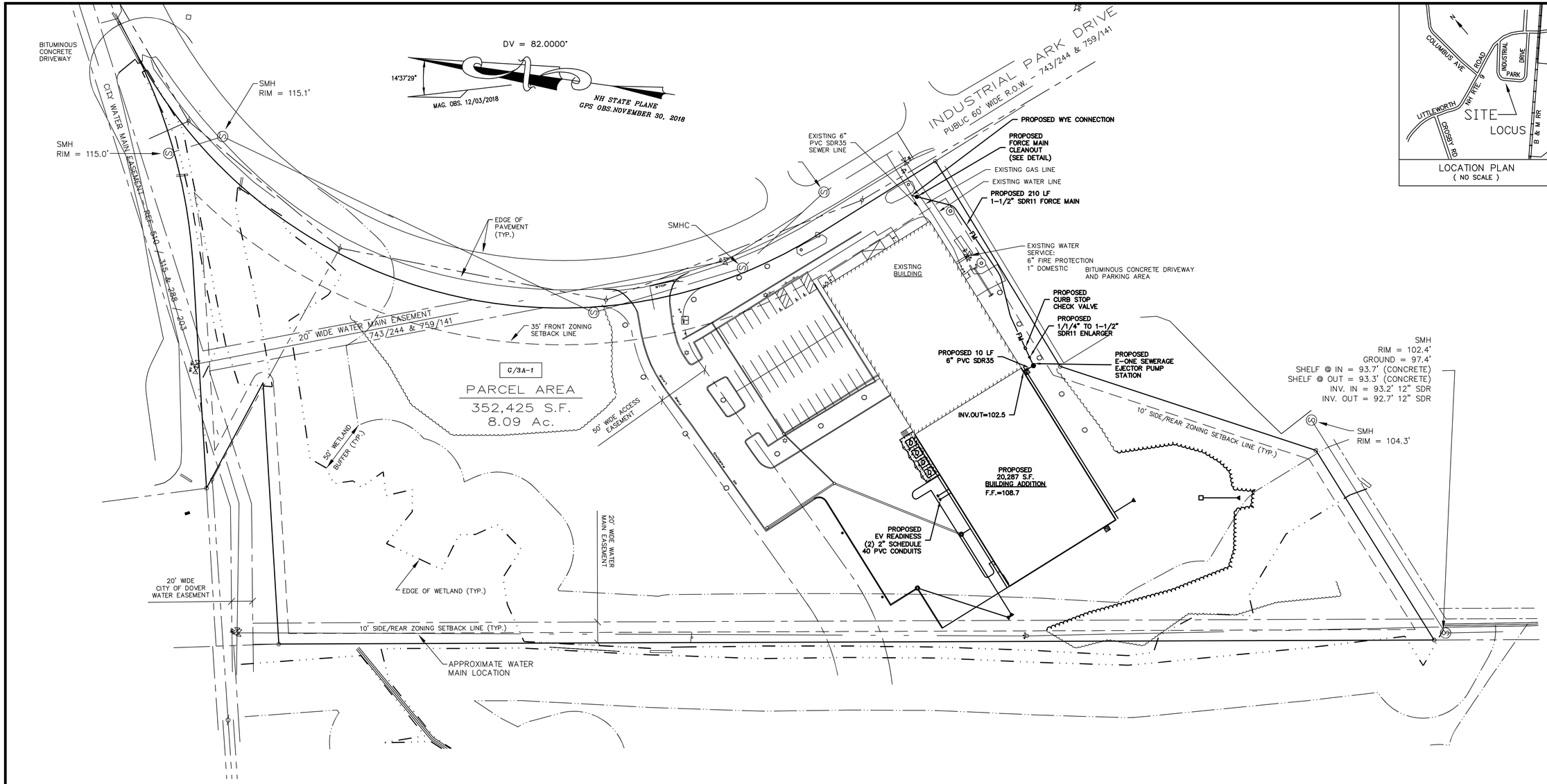
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CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
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GRADING, DRAINAGE & EROSION CONTROL PLAN

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

7



LOCATION PLAN
(NO SCALE)

SANITARY SEWER
STRUCTURE SCHEDULE

SMH C
RIM = 114.6
INV. IN 8" PVC = 108.1 SMH B
INV. OUT 8" PVC = 108.0 SMH D

SMH D
RIM = 115.0
INV. IN 8" PVC = 107.5 SMH C
INV. OUT 8" PVC = 107.4 (ROADWAY SOUTH)

ATTENTION:

HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF INDUSTRIAL PARK ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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PLANNING FILE NO.: P22-63

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UTILITY PLAN

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

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DESCRIPTION

1. THE PURPOSE OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF A 20,287 SF ADDITION. THE SITE IMPROVEMENTS INCLUDE LIGHTING, SIGNAGE, UTILITIES, ACCESS, PARKING, GRADING, AND STORMWATER MITIGATION.

PROJECT NAME AND LOCATION

WHITE BIRCH ARMORY — LATITUDE N43° 11' 10"
80 INDUSTRIAL PARK DRIVE — LONGITUDE W70° 54' 24"
DOVER, NH

DISTURBED AREA

±65,000 S.F.

NOTES:

1. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

SEQUENCE OF MAJOR ACTIVITIES

1. CONTRACTOR SHALL PREPARE THE SWPPP, FILE FOR AND OBTAIN THE NOI A MINIMUM OF 2 WEEKS PRIOR TO COMMENCEMENT OF SITE WORK.
2. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING ACTIVITIES.
3. ALL EROSION CONTROL AND PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCING EARTH MOVING OPERATIONS.
4. SELECTIVE DEMOLITION.
5. REGRADE SITE TO SUBGRADE.
6. TEMPORARY WATER DIVERSION (SWALES, BASINS) MUST BE USED AS NECCESSARY UNTIL AREAS ARE STABILIZED.
7. SWALES AND PONDS (AS APPLICABLE) SHALL BE CONSTRUCTED EARLY ON IN THE CONSTRUCTION SEQUENCE AND BEFORE ROUGH GRADING OF THE SITE AND ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. INSTALL DRAINAGE STRUCTURES AND CONTROLS.
9. INSTALL FOUNDATION FOOTINGS AND WALLS.
10. INSTALL UTILITIES.
11. PLACE GRAVELS AND FINE GRADE.
12. STABILIZE ROADWAYS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
14. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY 1/2" OF RAINFALL.
15. IN ALL CASES THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION AND IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
16. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND FILE THE EPA – N.O.T.

DEFINITIONS

AN AREA SHALL BE CONSIDERED STABLE OF ONE OF THE FOLLOWING HAS OCCURRED.

1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED; OR
4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE, AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. SILT BARRIER

1. INSTALLATION
   a. USE SILT BARRIER AS PERIMETER CONTROLS, PARTICULARLY AT THE LOWER OR DOWN SLOPE EDGE OF A DISTURBED AREA.
   b. LEAVE SPACE FOR MAINTENANCE BETWEEN TOE AND SLOPE OF SILT BARRIER.
   c. TRENCH IN THE SILT BARRIER ON THE UPHILL SIDE (6 INCHES DEEP BY 6 INCHES WIDE).
   d. INSTALL STAKES ON THE DOWNHILL SIDE OF THE SILT BARRIER.
   e. CURVE THE END OF THE SILT BARRIER UP-GRADIENT TO HELP IT CONTAIN RUNOFF.
2. SEQUENCE OF INSTALLATION
   a. SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
3. MAINTENANCE
   a. SILT BARRIERS SHOULD BE INSPECTED AND MAINTAINED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
   b. SILT BARRIERS HAVE A USEFUL LIFE OF ONE SEASON, ON LONGER CONSTRUCTION PROJECTS, SILT BARRIERS SHOULD BE REPLACED PERIODICALLY TO MAINTAIN EFFECTIVENESS.
   c. REMOVE SEDIMENT WHEN IT REACHES ONE-THIRD (1/3) THE HEIGHT OF THE SILT BARRIER.
   d. REPLACE THE SILT BARRIERS WHERE THEY ARE TORN, WORN, OR OTHERWISED DAMAGED AND MONITOR PERFORMANCE TO ENSURE EFFECTIVE PERFORMANCE.
   e. RETRENCH OR REPLACE ANY SILT BARRIER THAT IS NOT PROPERLY ANCHORED TO THE GROUND.
   f. IF THERE IS EVIDENCE OF END FLOW ON PROPERLY INSTALLED BARRIERS, EXTEND BARRIERS UPHILL OR CONSIDER REPLACING THEM WITH OTHER MEASURES, SUCH AS TEMPORARY DIVERSIONS AND SEDIMENT TRAPS.
   g. SILT BARRIERS SHOULD BE REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES OF THE BARRIER, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SILT BARRIERS SHOULD BE REPLACED WITH A TEMPORARY CHECK DAM.

B. MULCHING

1. TIMING
   a. APPLY MULCH PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   b. IN OTHER AREAS, THE TIME PERIOD CAN RANGE FROM 14 TO 30 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
   c. WITHIN 100 FEET OF RIVERS, STREAMS, WETLANDS, AND IN LAKE AND POND WATERSHEDS, THE TIME PERIOD OF WHICH MULCHING SHOULD TAKE OCCUR SHOULD BE NO GREATER THAN SEVEN (7) DAYS. THIS SEVEN DAY LIMIT SHOULD BE REDUCED FURTHER DURING WET WEATHER PERIODS.
2. APPLICATION RATE
   a. MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 70 TO 90 POUNDS PER 1000 SQUARE FEET.
   b. GUIDELINES FOR WINTER MULCH APPLICATION. WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 150-200 POUNDS OF HAY OR STRAW PER ACRE WITH ABOUT 4 INCHES IN DEPTH. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
   a. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS. CHECK FOR SIGNS OF EROSION OR DISPLACEMENT OF THE MULCH. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.
   b. NETS MUST BE INSPECTED AFTER RAIN EVENTS FOR DISLOCATION OR FAILURE AND SHOULD BE REPAIRED AS NECCESSARY.
   c. INSPECTIONS SHOULD TAKE PLACE UNTIL THE SITE IS ESTABLISHED.
   d. EROSION CONTROL MIX MULCH USED FOR TEMPORARY STABILIZATION SHOULD BE LEFT IN PLACE. VEGETATION ADDS STABILITY AND SHOULD BE PROMOTED.

C. TEMPORARY SEEDING

1. SEEDBED PREPARATION
   a. STONES AND TRASH SHOULD BE REMOVED SO AS NOT TO INTERFERE WITH THE SEEDING AREA.
   b. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   c. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS.
      i) APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER OR EQUIVALENT.
      ii) APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE OR 138 POUNDS PER 1,000 SQUARE FEET.
2. SEEDING
   a. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SUMMARY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   b. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
   c. TEMPORARY SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH, ACCORDING TO THE "TEMPORARY AND PERMANENT MULCHING" PRACTICE.
   d. VEGETATED GROWTH COVERING 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH.
3. MAINTENANCE
   a. TEMPORARY SEEDING SHALL BE INSPECTED PERIODICALLY. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER FABRICS, CHECK DAMS, ETC.).

D. PERMANENT SEEDING

1. BEDDING – STONES LARGER THAN 2 INCHES, TRASH, ROOTS, AND OTHER DEBRIS INTERFERRING WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.
2. FERTILIZER
   a. LIME AND FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 4 INCHES USING A DISC, SPRING TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT PRIOR TO OR AT THE SAME TIME OF SEEDING.
   b. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITORGEN FERTILIZER WHEN APPLIED TO AREAS BETWEEN 25 FEET AND 250 FEET FROM A SURFACE WATER BODY. NO FERTILIZER EXCEPT LIMESTONE SHOULD BE APPLIED WITHIN 25 FEET OF THE SURFACE WATER.
   c. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE @ 138 LBS. PER 1,000 S.F.
      LOW PHOSPHATE (N-P205-K20) FERTILIZER @ 13.8 LBS. PER 1,000 S.F.
3. SEED MIXTURE (RECOMMENDED)
   RATE:

TYPE	LBS. PER ACRE	LBS. PER 1,000 S.F.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

4. SEEDING
   a. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST.
   b. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER) WITH A SEEDING DEPTH FROM A QUARTER (1/4) TO A HALF (1/2) INCH.
   c. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
5. HYDROSEEDING
   a. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF STRAW MULCH ON CRITICAL AREAS IS PREFERRED SINCE IT GRANTS BETTER SLOPE PROTECTION BY USING ADHESIVE MATERIALS.
   b. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY).
   c. SEEDING RATES MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
6. MAINTENANCE
   a. PERMANENT SEEDED AREAS SHOULD BE INSPECTED AT LEAST MONTHLY DURING THE COURSE OF CONSTRUCTION. INSPECTIONS, MAINTENANCE, AND CORRECTIVE ACTIONS SHOULD CONTINUE UNTIL THE OWNER ASSUMES PERMANENT OPERATION OF THE SITE.
   b. SEEDED AREAS SHOULD BE MOWED AS REQUIRED TO MAINTAIN A HEALTHY STAND OF VEGETATION, WITH MOWING HEIGHT AND FREQUENCY DEPENDENT ON TYPE OF GRASS COVER.
   c. BASED ON INSPECTION, AREAS SHOULD BE RESEEDED TO ACHIEVE FULL STABALIZATION OF EXPOSED SOILS.
   d. IF EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS RESEEDED. WITH OTHER TEMPORARY MEASURES USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.
   e. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION.

E. STORM DRAIN INLET PROTECTION

1. SPECIFICATIONS
   a. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE BARRIER SHOULD BE LESS THAN ONE ACRE.
   b. ANY RESULTANT PONDING OF STORMWATER MUST NOT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT AREAS OR STRUCTURES.
2. INSTALLATION
   a. INSTALL INLET PROTECTION AS SOON AS STORM DRAIN INLETS ARE INSTALLED AND BEFORE LAND-DISTURBANCE ACTIVITIES BEGIN IN AREAS WITH EXISTING STORM DRAIN SYSTEMS.
   b. PROTECT ALL INLETS THAT COULD RECEIVE STORMWATER FROM YOUR CONSTRUCTION PROJECT.
   c. USE IN CONJUNCTION WITH OTHER EROSION PREVENTION AND SEDIMENT CONTROL BMPS.
   d. DESIGN YOUR INLET PROTECTION TO HANDLE THE VOLUME OF WATER FROM THE AREA BEING DRAINED. ENSURE THAT THE DESIGN IS SIZED APPROPRIATELY.
3. MAINTENANCE
   a. INSPECT INLETS BARRIERS FREQUENTLY, BEFORE AND AFTER EACH RAINFALL EVENT AND REPAIR WHEN NECESSARY.
   b. SEDIMENT SHOULD BE REMOVED AND THE STORM DRAIN SEDIMENT BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE BARRIER.
   c. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   d. SWEEP STREETS, SIDEWALKS, AND OTHER PAVED AREAS REGULARLY.
   e. ALL CATCH BASINS AND STORM DRAIN INLETS MUST BE CLEANED AT THE END OF CONSTRUCTION AND AFTER THE SITE HAS BEEN FULLY STABILIZED

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT BARRIERS SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.

WASTE DISPOSAL

a. WASTE MATERIALS
   ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
b. HAZARDOUS WASTE
   ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
c. SANITARY WASTE
   ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PORPERTY OWNER IS RESPONSIBLE AFTER CONSTRUCTION IS COMPLETE.

CATCH BASINS & STORMWATER TREATMENT STRUCTURES

1. CATCH BASINS & STORMWATER TREATMENT STRUCTURES SHOULD BE INSPECTED ON A MONTHLY BASIS AND/OR AFTER A MAJOR RAINFALL EVENT TO ASSURE THAT DEBRIS OR SEDIMENTS DO NOT REDUCE THE EFFECTIVENESS OF THE SYSTEM.

SPILL PREVENTION

A. MATERIAL MANAGEMENT PRACTICES
   THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL SANITARY EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES THAT WILL BE FOLLOWED ON SITE DURING
   1. THE CONSTRUCTION PROJECT:
      a. AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
      b. ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
      c. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
      d. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
      e. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
      f. WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
   2. HAZARDOUS PRODUCTS:
      a. THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
      b. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
      c. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
      d. SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
   1. PETROLEUM PRODUCTS:
      a. ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENACE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
   2. FERTILIZERS:
      a. FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
   3. PAINTS:
      a. ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   4. CONCRETE TRUCKS:
      a. CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.

C. SPILL CONTROL PRACTICES
   IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   a. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   b. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   c. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   d. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   e. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OF LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
   f. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT OCCURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
   g. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

THE PROJECT PROPONENT IS REQUIRED TO MANAGE CONSTRUCTION TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO CONTROLLING INVASIVE SPECIES AND CONTROLLING FUGITIVE DUST IN ACCORDANCE WITH ENV-A 1002.

AGR 3800 PROHIBITED INVASIVE PLANT SPECIES RULES

THE RULE, AGR 3800, STATES: "NO PERSON SHALL COLLECT, TRANSPORT, IMPORT, EXPORT, MOVE, BUY SELL, DISTRIBUTE, PROPAGATE OR TRANSPLANT ANY LIVING AND VIABLE PORTION OF ANY PLANT SPECIES, WHICH INCLUDED ALL OF THEIR CULTIVARS AND VARIETIES, LISTED IN TABLE 3800.1, NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST". A COMPLETE COPY OF THE RULES CAN BE ACCESSED ON THE INTERNET AT HTTP://AGRICULTURE.NH.GOV/TOPICS/PLANTS_INSECTS.HTM.

ENV-A 1002 FUGITIVE DUST: PRECAUTIONS TO PREVENT, ABATE, AND CONTROL FUGITIVE DUST.

a. ANY PERSON ENGAGED IN ANY ACTIVITY WITHIN THE STATE EMITS FUGITIVE DUST, OTHER THAT THOSE LISTED IN ENV-A 1002.02 (b), SHALL TAKE PRECAUTIONS THROUGHOUT THE DURATION OF THE ACTIVITY IN ORDER TO PREVENT, ABATE, AND CONTROL THE EMISSION OF FUGITIVE DUST.
b. PRECAUTIONS REQUIRED BY (a) ABOVE, SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   i) THE USE OF WATER OR HYDROPHILIC MATERIAL ON OPERATIONS OR SURFACES, OR BOTH;
   ii) THE APPLICATION OF ASPHALT, WATER, OR HYDROPHILIC MATERIAL, OR TARPS OR OTHER SUCH COVERS TO MATERIAL STOCKPILES;
   iii) THE USE OF HOODS, FANS, FABRIC FILTERS, OR OTHER DEVICES TO ENCLOSE AND VENT AREAS WHERE MATERIALS PRONE TO PRODUCING FUGITIVE DUST ARE HANDLED;
   iv) THE USE OF CONTAINMENT METHODS FOR SANDBLASTING OR SIMILAR OPERATIONS; AND
   v) THE USE OF VACUUMS OR OTHER SUCTION DEVICES TO COLLECT AIRBORNE PARTICULATE MATTER.

WINTER CONSTRUCTION NOTES

1. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 403.3.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-63

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

DATE: 8-15-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY: SJH
PROJECT NO: 19003
FILE: SITE-ADDITION

CIVILWORKS NEW ENGLAND
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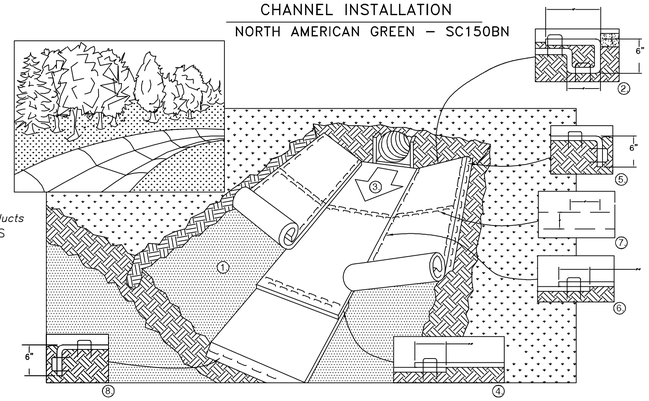
EROSION CONTROL NOTES

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

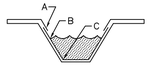
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

CHANNEL INSTALLATION
NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" – 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" – 5" (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



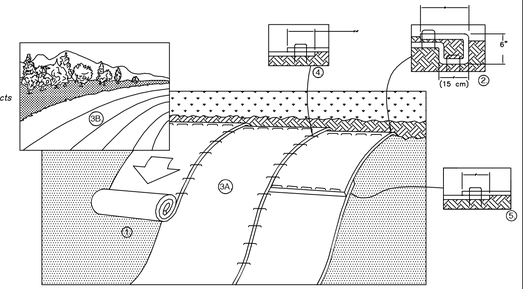
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

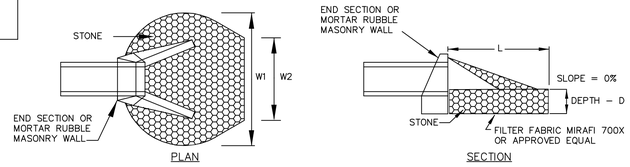
SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



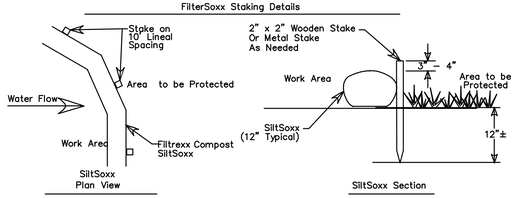
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM® , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

NOTE: THE USE OF WELDED PLASTIC OR BIODEGRADABLE PLASTIC NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED. THE USE OF WILDLIFE FRIENDLY ORGANIC MATERIALS IS RECOMMENDED.



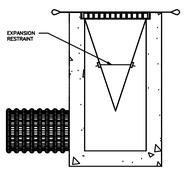
Notes:
1. All material to meet Filtrexx specifications
2. FilterSoxx compost/soil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site, as determined by Engineer.

FilterSoxx Staking Details



Notes:
1. All material to meet Filtrexx specifications
2. SiltSoxx compost/soil/rock/seed fill to meet application requirements.
3. SiltSoxx depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer.
4. Compost material to be dispersed on site, as determined by Engineer.

SiltSoxx Details
NOT TO SCALE



INSTALLATION DETAIL

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS AS SUPPLIED BY AM HARRIS OF PORTSMOUTH OR APPROVED EQUAL

REGULAR FLOW SILTSACK®
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

HI-FLOW SILTSACK®
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

OIL-ABSORBANT SILTSACK®

(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK® CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.

DETAIL OF INLET SEDIMENT CONTROL DEVICE
NOT TO SCALE

STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO DEFINED CHANNEL

STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO FLAT AREA, NON DEFINED CHANNEL

MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

STONE GRADATION

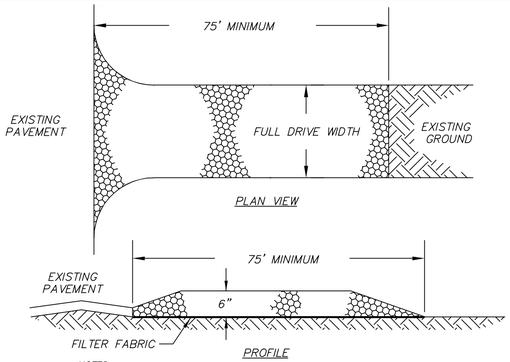
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET FROM	W1(ft)	W2(ft)	L(ft)	D (ft)	D50(IN)	CHANNEL TYPE
WP1	9	3	18	1	6	DEFINED

RIP RAP OUTLET PROTECTION
NOT TO SCALE



NOTES:

1. SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

2. TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.

STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS
   A. AGGREGATE SIZE: USE THREE (3) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
   B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
   C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
   D. LENGTH: AS REQUIRED, BUT NOT LESS THAN SEVENTY–FIVE (75) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
   E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE.
   F. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUAL.
2. MAINTENANCE
   THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

SEEKING REPORTS OF RARE TURTLES

The NH Fish & Game Department is collecting observations of four turtle species:



Blanding's turtle (state endangered)
- Large, dark/black domed shell with lighter speckles
- Distinct yellow throat/chin
- Aquatic but often moves on land



Wood turtle (special concern)
- Sculpted, pyramidal brownish shell
- Orange around neck and limbs
- River/stream turtle spending many months on land



Eastern box turtle (state endangered)
- Small terrestrial turtle with highly domed shell
- Irregular yellow or orange markings over brown/black base



Spotted turtle (state threatened)
- Small, mostly aquatic with black or dark brown with yellow spots.
- Fairly flat shell compared to Blanding's turtle

Report sightings to RAARP@wildlife.nh.gov or 603-271-2461 *Please report promptly, noting specific location and date – Photographs strongly encouraged*

ALL OUTSIDE CONSTRUCTION PERSONNEL SHALL RECEIVE TRAINING IN THE IDENTIFICATION OF RARE TURTLE SPECIES AND MADE AWARE OF THEIR PROTECTED STATUS.

THE USE OF WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED

THE USE OF EROSION CONTROL BERM, WHITE FILTREXX DEGRADABLE WOVEN SILT SOCK, OR 'WILDLIFE FRIENDLY' WOVEN ORGANIC MATERIAL (E.G. COCO OR JUTE MATTING SUCH AS NORTH AMERICAN GREEN SC150BN OR EQUIVALENT) ARE ACCEPTABLE FOR USE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22–63

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9–20–22

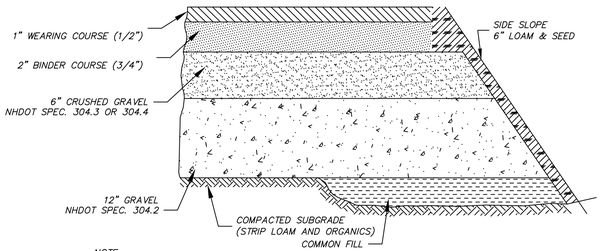
DATE: 8–15–22
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DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY: SJH
PROJECT NO: 19003
FILE: SITE–ADDITION

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

EROSION CONTROL DETAILS

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

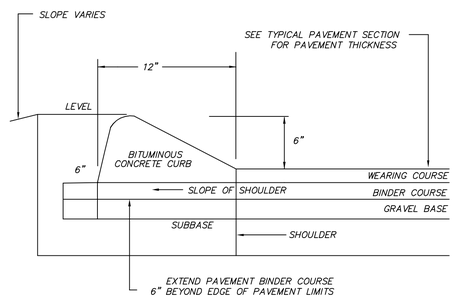
BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820



NOTE:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. GEOTEXTILE FABRIC MAYBE REQUIRED UNDER THE ROADWAY AND /OR THE PARKING AREAS AS REQUIRED BY THE ENGINEER BASED UPON SITE CONDITIONS.

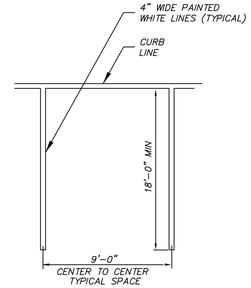
TYPICAL PAVEMENT SECTION

NOT TO SCALE



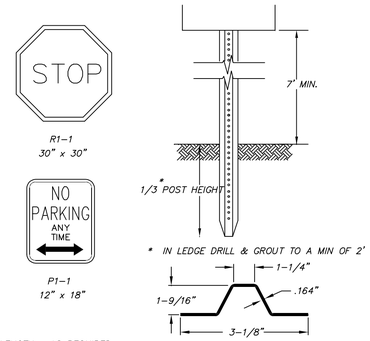
BITUMINOUS SLOPED CURB

NOT TO SCALE



STANDARD PARKING STALL

NOT TO SCALE



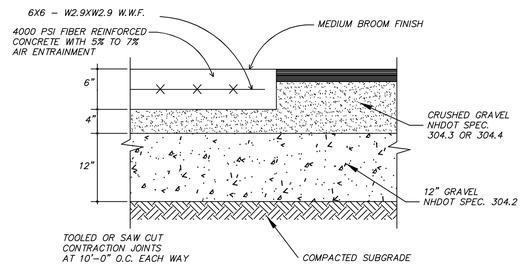
LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN

BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY.
ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

SIGN LEGEND & SIGN POST

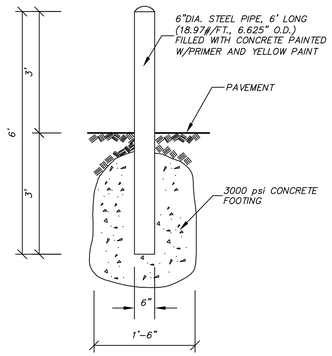
NOT TO SCALE



NOTE: PITCH CONCRETE PAD GRADING TO CENTER

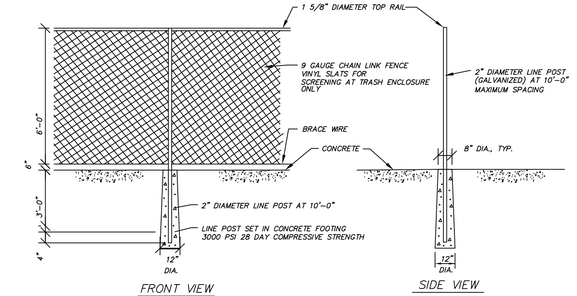
DUMPSTER PAD DETAIL

NOT TO SCALE



BOLLARD DETAIL

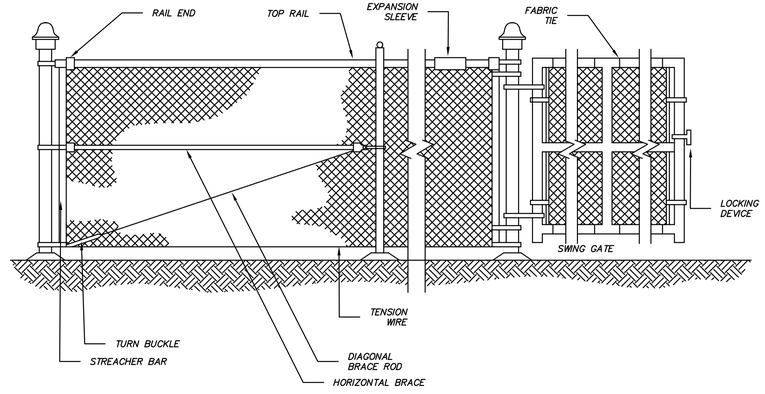
NOT TO SCALE



NOTES:
1. DUMPSTER CHAINLINK FENCE SHALL HAVE GREEN VINYL PRIVACY SLATS.

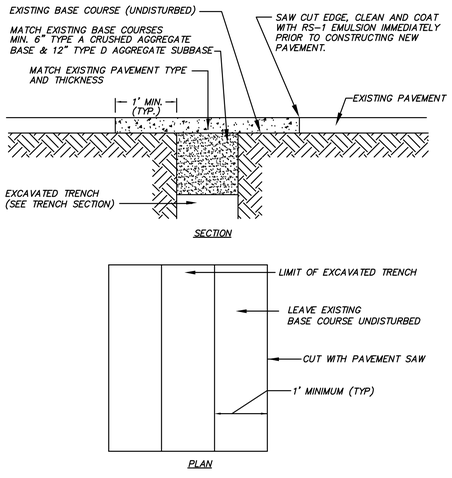
CHAINLINK FENCE DETAIL & DUMPSTER ENCLOSURE

NOT TO SCALE



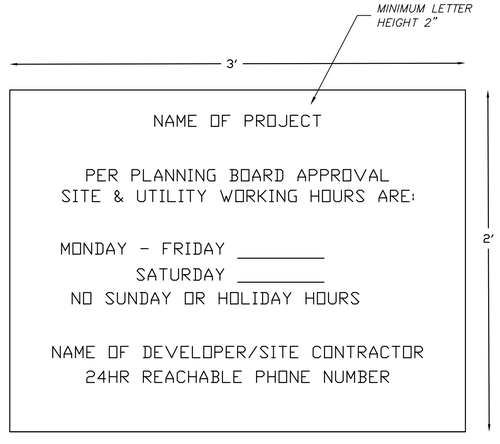
CHAINLINK FENCE WITH GATE

NOT TO SCALE



ROADWAY TRENCH PATCH DETAIL

NOT TO SCALE



NOTES:
1. SIGN SHALL HAVE BLACK LETTERS ON A WHITE BACKGROUND
2. SIGN SHALL BE WEATHER RESISTANT AND SECURED TO THE GROUND

CITY OF DOVER CONSTRUCTION SIGN D-2

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-63

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

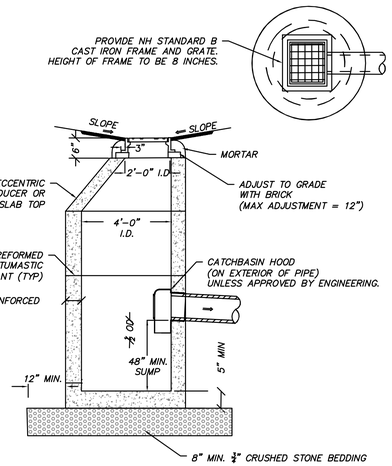
DATE: 8-15-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

DETAIL SHEET

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

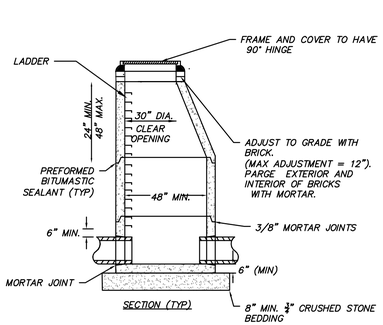


NOTES:

1. ENTIRE STRUCTURE SHALL BE H-20 LOAD RATED. PROVIDE MANUFACTURER REINFORCEMENT DETAILS TO THE CITY ENGINEER UPON REQUEST.

CITY OF DOVER D-19
CATCHBASIN DETAIL

NOT TO SCALE

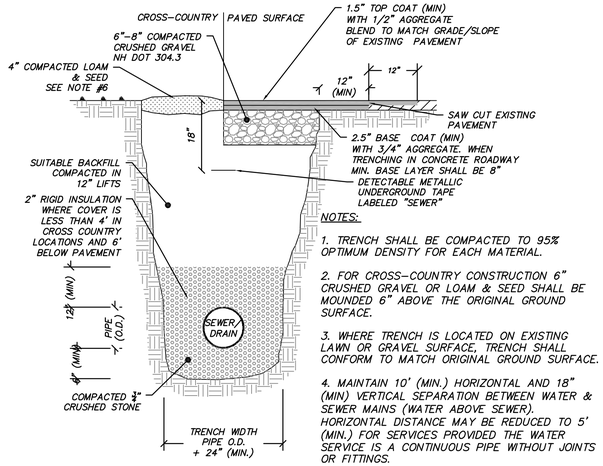


NOTES:

1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

CITY OF DOVER D-20
DRAIN MANHOLE DETAIL

NOT TO SCALE



NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY FOR EACH MATERIAL.
2. FOR CROSS-COUNTRY CONSTRUCTION 6" CRUSHED GRAVEL OR LOAM & SEED SHALL BE MOUNDED 6" ABOVE THE ORIGINAL GROUND SURFACE.
3. WHERE TRENCH IS LOCATED ON EXISTING LAWN OR GRAVEL SURFACE, TRENCH SHALL CONFORM TO MATCH ORIGINAL GROUND SURFACE.
4. MAINTAIN 10' (MIN.) HORIZONTAL AND 18" (MIN) VERTICAL SEPARATION BETWEEN WATER & SEWER MAINS (WATER ABOVE SEWER). HORIZONTAL DISTANCE MAY BE REDUCED TO 5' (MIN.) FOR SERVICES PROVIDED THE WATER SERVICE IS A CONTINUOUS PIPE WITHOUT JOINTS OR FITTINGS.
5. BACKFILL MATERIAL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE; DEBRIS, PAVEMENT, ORGANIC MATTER, TOP SOIL, MUCK, PEAT AND ROCKS OVER 6" IN LARGEST DIMENSION
6. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER D-3
SEWER TRENCH DETAIL

NOT TO SCALE

SPECIFICATIONS

1. ALL CONSTRUCTION SHALL CONFORM WITH THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION"; HEREINAFTER REFERRED TO AS THE "STANDARD SPECIFICATIONS".
2. STORM DRAINS SHALL BE ADS N12 OR APPROVED EQUAL, AND SHALL BE JOINTED WITH NEOPRENE "O" RINGS.
3. CATCH BASINS AND MANHOLES SHALL BE PRE-CAST REINFORCED CONCRETE DESIGNED BY AN ENGINEER REGISTERED IN NEW HAMPSHIRE, AND ABLE TO WITHSTAND LOADINGS OF 8 TONS (H20 LOADING).
4. MANHOLES SHALL HAVE CAST IRON FRAMES AND COVERS WITH 30" INSIDE DIAMETER OPENINGS. A 3-INCH (MINIMUM) LETTER "D" FOR DRAIN SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
5. CATCH BASINS AND MANHOLES SHALL BE ADJUSTED TO GRADE WITH COURSES OF BRICK. MAXIMUM ADJUSTMENT TO GRADE SHALL BE 12 INCHES. FRAMES SHALL BE SET ON A FULL BED OF MORTAR, TRUE TO GRADE AND CONCENTRIC WITH THE MASONRY. ALL VOIDS BETWEEN THE TOP OF THE STRUCTURE AND THE BOTTOM FLANGE OF THE FRAME SHALL BE COMPLETELY FILLED TO MAKE A WATERTIGHT FIT. A RING OF MORTAR AT LEAST ONE INCH THICK AND PITCHED TO SHED WATER AWAY FROM THE FRAME, SHALL BE PLACED OVER AND AROUND THE OUTSIDE OF THE BOTTOM FLANGE. THE MORTAR SHALL EXTEND TO THE OUTER EDGE OF THE MASONRY ALL AROUND ITS CIRCUMFERENCE AND SHALL BE FINISHED SMOOTH. NO VISIBLE LEAKAGE WILL BE PERMITTED.
6. INVERT CHANNELS OF SEWER MANHOLES SHALL BE FORMED SMOOTHLY TO THE LARGEST PIPE RADIUS. CHANGES IN GRADE SHALL BE FORMED SMOOTHLY AND EVENLY. THE FLOOR OF THE STRUCTURE OUTSIDE THE CHANNELS SHALL BE SLOPED TOWARDS THE CHANNELS AT APPROXIMATELY 1/2 INCH PER FOOT. THE FLOOR AT THE CHANNEL SHALL MATCH THE CROWN OF THE LARGEST PIPE.
7. TRENCH CONSTRUCTION WILL CONFORM WITH SECTION 603.3.1 OF THE STANDARD SPECIFICATIONS (1974).
8. WOOD SHEETING OR A SUITABLE TRENCH BOX SHALL BE USED TO SUPPORT THE TRENCH AS NECESSARY. IF WOOD SHEETING IS USED, IT SHALL BE DRIVEN AT A DISTANCE OF 1 FOOT FROM THE OUTSIDE DIAMETER OF THE PIPE TO A DEPTH 6 INCHES BELOW THE INVERT OF THE PIPE. WOOD SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE, BUT NOT GREATER THAN 3 FEET BELOW THE FINISHED GRADE.
9. BEDDING SHALL CONFORM WITH SECTION 603.3.2 OF THE STANDARD SPECIFICATIONS (1974).
10. BACKFILL MATERIAL WILL CONFORM WITH SECTION 603.3.5 OF THE STANDARD SPECIFICATIONS (1974) AND, IN ADDITION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, FROZEN MATERIAL, ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. BACKFILL SHALL NOT BE PLACED ON FROZEN OR PREVIOUSLY FROZEN MATERIAL.
11. ALL BACKFILL AND BEDDING COMPACTION SHALL MEET THE REQUIREMENTS OF AASHO T 99 METHOD C. DENSITY SHALL BE 95 PERCENT. COMPACTION SHALL BE 6 INCH LIFTS FOR BEDDING AND BACKFILL TO A PLANE 1 FOOT ABOVE THE PIPE AND IN 12 INCH LIFTS THEREAFTER BY AN APPROVED MECHANICAL COMPACTOR.
12. SHOULD FROZEN MATERIAL BE ENCOUNTERED, IT SHALL NOT BE PLACED IN THE BACKFILL NOR SHALL BACKFILL BE PLACED UPON FROZEN MATERIAL. PREVIOUSLY FROZEN MATERIAL SHALL BE REMOVED AS REQUIRED BEFORE NEW BACKFILL IS PLACED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO FRAMES AND GRATES DURING AND FROM THE TIME OF REMOVAL FROM THE EXISTING STRUCTURE TO AND DURING THE TIME OF RESETTING, AND SHALL REPLACE IN KIND ANY DAMAGED FRAMES OR GRATES AT NO ADDITIONAL COMPENSATION.
14. ALL TRENCHES WILL BE COVERED AND DEBRIS, INCLUDING ANY REJECTED MATERIALS, SHALL BE REMOVED DAILY. STRICT SAFETY PRECAUTIONS SHALL BE MAINTAINED AT ALL TIMES.
15. LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE.
    A) THE CONTRACTOR SHALL, 48 HOURS PRIOR TO CONSTRUCTION, NOTIFY THE UTILITY COMPANIES AND HAVE ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION MARKED IN THE FIELD.
    B) AFTER THE UTILITIES HAVE BEEN LOCATED AND PRIOR TO CONSTRUCTION, THE CONTRACTOR WITH THE ENGINEER, SHALL LAYOUT THE PROPOSED DRAINAGE SYSTEM IN THE FIELD AND RECTIFY ANY UTILITY CONFLICTS WHICH MAY BE FOUND.
    C) ANY CONFLICTS WITH UTILITIES FOUND DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND THE UTILITY COMPANY AND PROPERLY RECTIFIED.
    D) THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIR FOR ANY UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANY TO REPAIR ANY DAMAGES, HOWEVER, THE CONTRACTOR MAY MAKE APPROPRIATE REPAIRS WITH THE UTILITY COMPANY'S PERMISSION.
16. COMPLETE SHOP DRAWINGS FOR PIPE, MANHOLES, CATCH BASINS, FRAMES, GRATES AND COVERS SHALL BE SUBMITTED IN TRIPLICATE FOR APPROVAL BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. EACH SHOP DRAWING SHALL BE CHECKED AND INITIALIZED BY THE CONTRACTOR TO INDICATE APPROVAL BEFORE IT IS SUBMITTED TO THE ENGINEER.
17. SHOP DRAWINGS FOR FLAT CONCRETE COVERS SHALL BE STAMPED PRIOR TO SUBMISSION FOR APPROVAL BY A NEW HAMPSHIRE REGISTERED PROFESSIONAL ENGINEER.
18. BRICK MASONRY FOR SETTING FRAMES AND BRICK AND MORTAR PLUGS SHALL CONFORM TO THE STANDARD SPECIFICATION SECTION 604.2.4.

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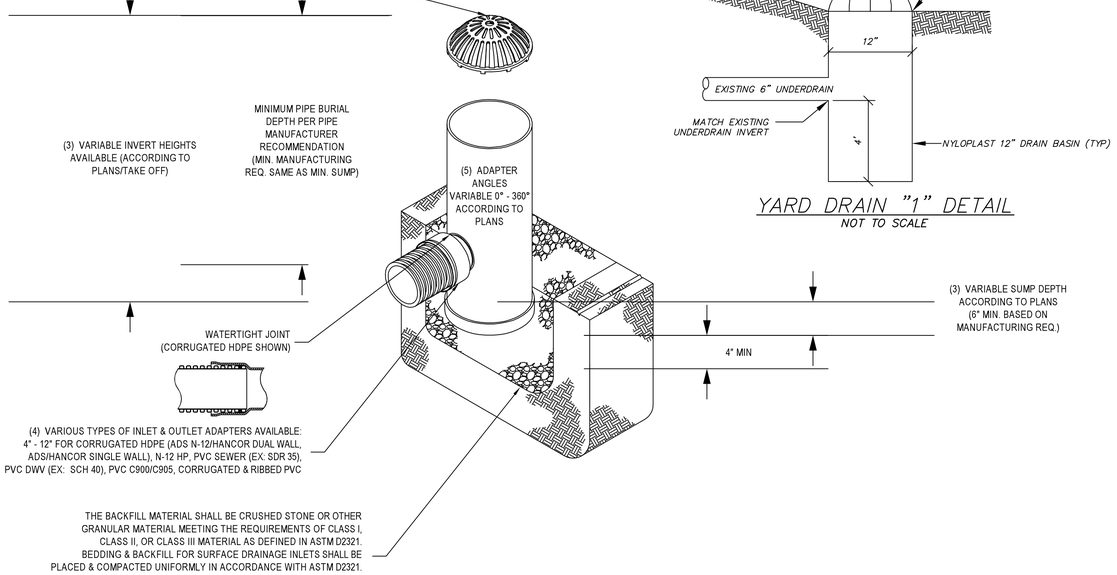
PLANNING FILE NO.: P22-63

CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

		S.H	9-20-22
	REV PER TRC		
1	REVISION	APP'D	DATE

DATE: 8-15-22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:S.H
PROJECT NO:19003
FILE: SITE-ADDITION

NYLOPLAST 12" DRAIN BASIN: 2812AG



YARD DRAIN "1" DETAIL

NOT TO SCALE

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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DRAWN BY	EBC	MATERIAL	
DATE	03-29-06		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	03-11-16		
DWG SIZE	A	SCALE NTS	SHEET 1 OF 1

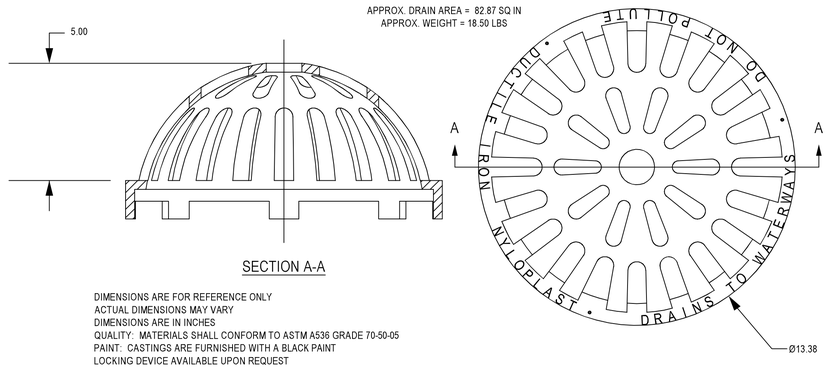
Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: 12 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-189 REV E

1299CGD

APPROX. DRAIN AREA = 82.87 SQ.IN
APPROX. WEIGHT = 18.50 LBS



SECTION A-A

DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST

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DRAWN BY	EBC	MATERIAL	DUCTILE IRON
DATE	3-6-06		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-10-11		
DWG SIZE	A	SCALE NTS	SHEET 1 OF 1

Nyloplast
3130 VERONA AVE
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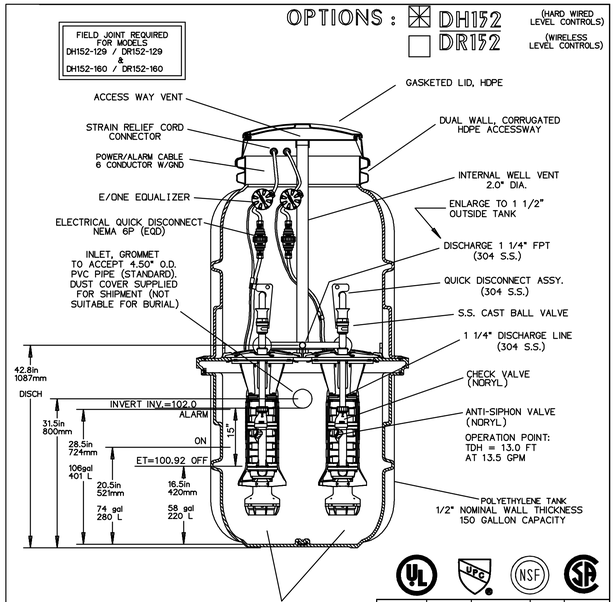
TITLE: 12 IN DOME GRATE

DWG NO. 7001-110-206 REV D

DETAIL SHEET

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820



KC	PD	09/30/19	F	
DR BY	CHK'D	DATE	ISSUE	SCALE

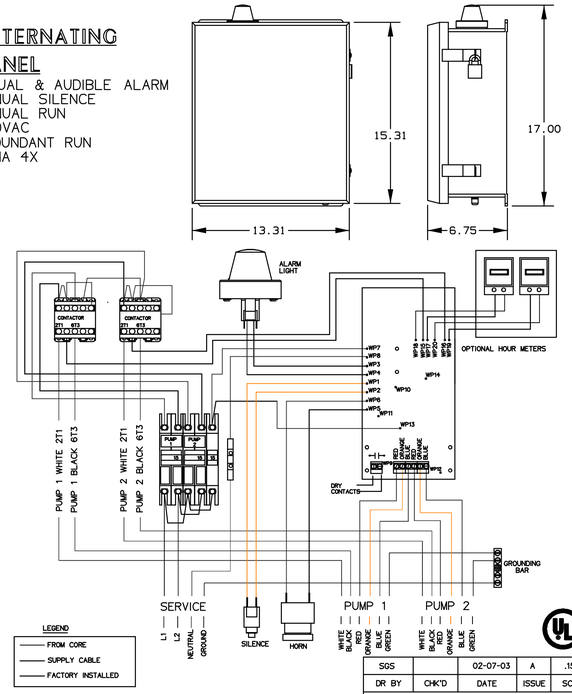
SEWER SYSTEMS

MODEL DH152 / DR152
DETAIL SHEET

NA0052P02

ALTERNATING PANEL

VISUAL & AUDIBLE ALARM
MANUAL SILENCE
MANUAL RUN
240VAC
REDUNDANT RUN
NEMA 4X

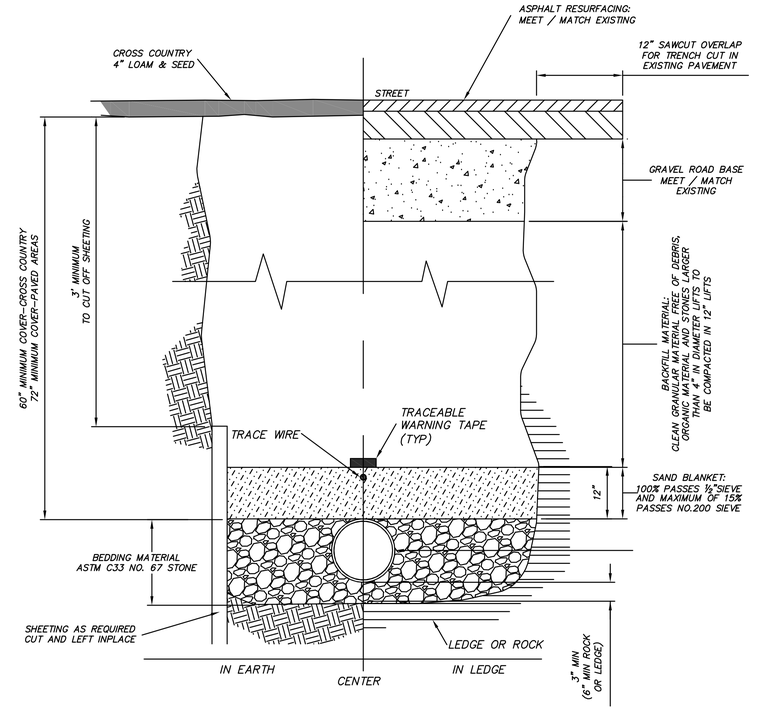


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DR BY	CHK'D	DATE	ISSUE	SCALE

SEWER SYSTEMS

DUPLEX
SPLIT TIME ALTERNATING PANEL

LM000270

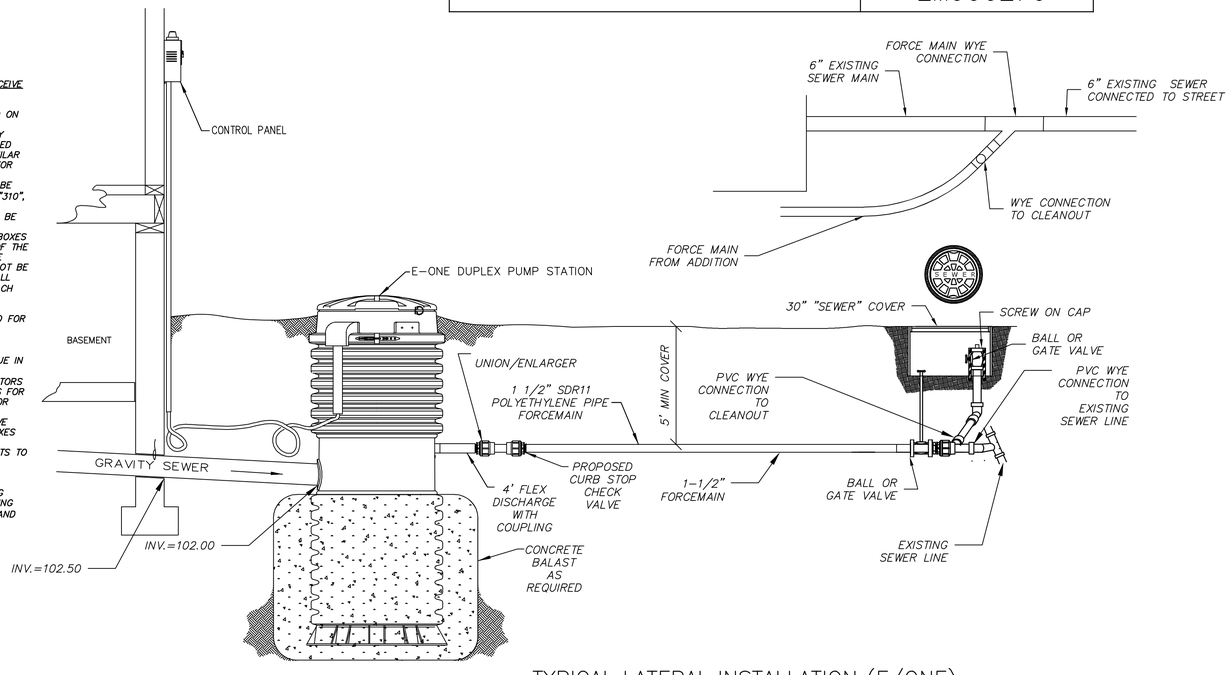


SEWER FORCEMAIN TRENCH

NOT TO SCALE

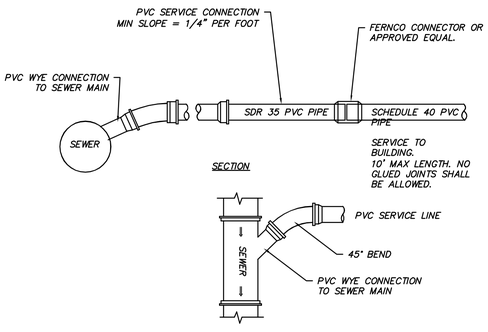
BURIED NON-METALLIC UTILITIES SHALL RECEIVE A TRACER WIRE.

1. THE TRACER WIRE SHALL BE INSTALLED ON TOP OF THE BURIED UTILITY CROWN.
2. THE TRACER WIRE SHALL BE POSITIVELY ATTACHED TO THE NON-METALLIC BURIED UTILITIES BY PLASTIC WIRE TIES OF SIMILAR TYPE OF ATTACHMENT EVERY 6 FEET FOR STRAIGHT RUN OF UTILITY AND AT ALL CHANGES OF DIRECTION. TAPE SHALL BE POLYKEN "930-35," PROTECTO-WRAP "310", OR EQUAL.
3. THE ENDS OF THE TRACER WIRE SHALL BE EXPOSED ABOVE THE FINISHED GRADE.
4. INSTALL APPROVED CAST IRON VALVE BOXES AT ALL LOCATIONS WHERE THE ENDS OF THE TRACER WIRE ARE EXPOSED ABOVE THE FINISHED GRADE. THE BOXES SHALL NOT BE MORE THAN 200 FEET APART AND SHALL CONTAIN A 24" COIL OF WIRE FROM EACH END OF THE TRACER WIRE.
5. TRACER WIRE SHALL BE CONTINUOUS BETWEEN BOXES AND SHALL BE TESTED FOR CONTINUITY IN THE PRESENCE OF THE INSPECTOR.
6. TRACER WIRE SHALL BE NO. 10 AWG, COPPER WIRE WITH TW INSULATION (BLUE IN COLOR FOR USE WITH POTABLE WATER, GREEN FOR USE WITH SEWER). CONNECTORS SHALL BE DRY-CON TYPE CONNECTORS FOR SPECIFIED WIRE GAGE AND SUITABLE FOR USE WITH BURIED TRACER WIRE.
7. TRACER WIRE SHALL BE EXPOSED ABOVE FINISHED GRADE IN THE CAST IRON BOXES AT THE TRANSITION WHERE THE NON-METALLIC BURIED UTILITY CONNECTS TO THE EXISTING METALLIC UTILITY.
8. EXTEND WIRE INTO VALVE BOXES AND TERMINATE WITH A WIRE CONNECTOR. TERMINATE WIRE FROM LINES EXTENDING FROM MAINS TO FIRE RISERS OR BUILDING SERVICES 12" (300MM) ABOVE GRADE AND CAP WITH A WIRE CONNECTOR.



TYPICAL LATERAL INSTALLATION (E/ONE)

NOT TO SCALE



NOTES:

1. TRENCHING AND BEDDING REQUIREMENTS PER CITY SEWER TRENCH DETAIL (D-3).
2. SERVICE LATERAL DIAMETER VARIES PER APPLICATION. REVIEW SIZE WITH CITY ENGINEER PRIOR TO INSTALLATION.
3. SDR 35 SHALL NOT EXTEND INTO THE BUILDING

CITY OF DOVER D-17
SEWER SERVICE DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: P22-63

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

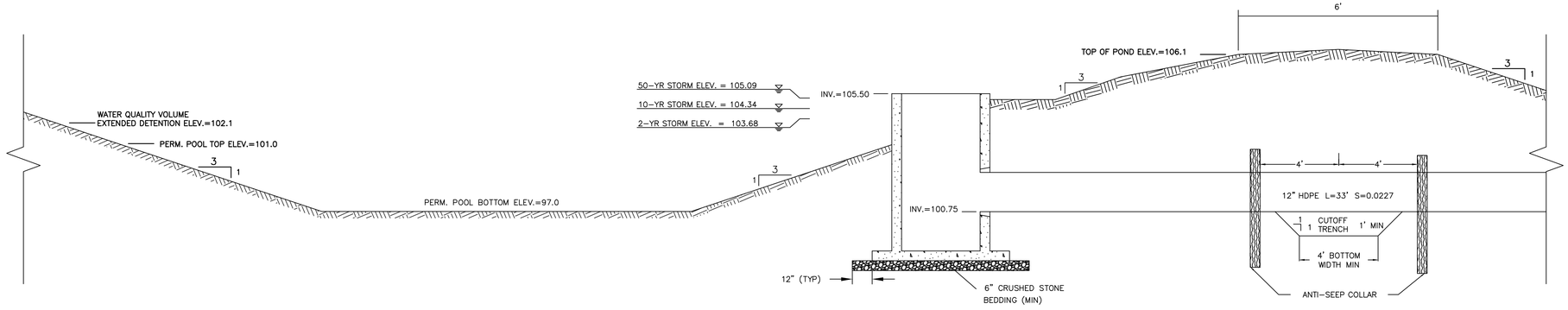
PROJECT NO:19003
APPROVED BY:SJH
DESIGN BY: JPG
DRAWN BY: SRD
SCALE: AS SHOWN
DATE: 8-15-22
FILE: SITE-ADDITION

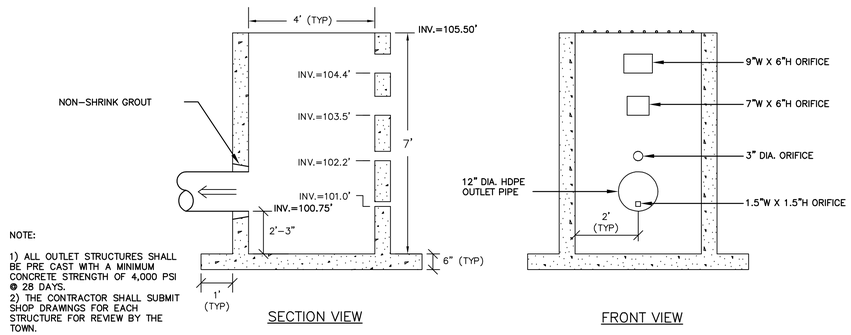
DETAIL SHEET

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

13



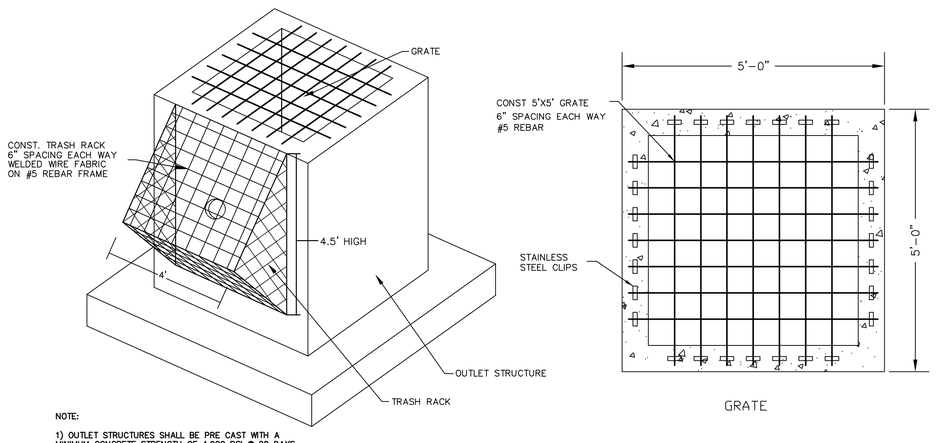


NOTE:

1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

OUTLET STRUCTURE WET POND 1 (OS1) DETAIL

NOT TO SCALE

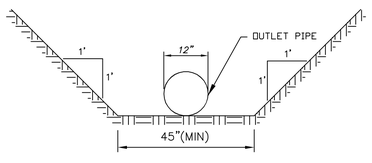


NOTE:

1) OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

TYPICAL INLET TRASH RACKS

NOT TO SCALE



OUTLET PIPE TRENCH DETAIL

NOT TO SCALE

WET POND 1 (WP1)

NOT TO SCALE

DETENTION POND CONSTRUCTION NOTES

DETENTION AREA EARTH EMBANKMENT:
1 SEE GRADING PLAN FOR BERM WIDTHS.
2 SIDE SLOPES – THREE HORIZONTAL TO ONE VERTICAL (3:1) OR UNLESS OTHERWISE NOTED.
3 FILL MATERIALS SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.
4 FILL MATERIALS SHALL BE A MIXTURE OF STONES (NOT EXCEEDING 6" IN DIAMETER) AND A FINE SANDY SILT MATERIAL.
5 THE SOIL USED FOR THE SEDIMENT FOREBAY BERM SHALL HAVE A MINIMUM PERCOLATION RATE OF 10 MINUTES AN INCH.
6 SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

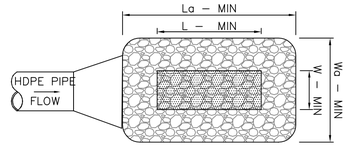
DETENTION AREA BERM BASE PREPARATION:
1 THE BASE AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED BERM. THE BASE AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF MATERIAL.
2 REMOVE ALL SOFT ORGANIC MATTER, PEAT, DEBRIS AND FOREIGN MATERIAL TO A DEPTH AS NEEDED (1' MIN) TO REACH AN UNYIELDING BASE OF VIRGIN SOIL.

EXECUTION:
1 FILL MATERIALS SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
2 FILL MATERIALS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
3 ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
4 FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. PLACE THE MORE IMPERVIOUS SOIL (HIGHER PERCENTAGE PASSING THE #200 SIEVE) IN THE UPSTREAM TWO-THIRDS (2/3) OF THE BERM. THE MORE GRANULAR SOIL MATERIAL SHOULD BE PLACED IN THE REMAINING DOWNSTREAM ONE-THIRD PORTION OF THE BERM.
5 INSTALL ANTI-SEEP COLLARS CONCURRENTLY WITH FILL MATERIAL PLACEMENT.
6 INSTALL CUT-OFF TRENCH CONCURRENTLY WITH FILL MATERIAL PLACEMENT. THE CUT OFF TRENCH SHALL BE LOCATED AT OR SLIGHTLY UPSTREAM OF THE CENTER LINE OF THE BERM. IT SHALL EXTEND UP THE ABUTMENTS AS REQUIRED AND BE DEEP ENOUGH TO EXTEND INTO A RELATIVELY IMPERVIOUS LAYER.
7 THE CUTOFF TRENCH SHALL HAVE A BOTTOM WIDTH ADEQUATE TO ACCOMMODATE THE EQUIPMENT USED FOR EXCAVATION, BACKFILL AND COMPACTION OPERATIONS. CUTOFF TRENCH TO BE EXCAVATED AND BACKFILLED PRIOR TO PLACING PIPE.
8 CUTOFF TRENCH SIDE SLOPES SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL.

MOISTURE CONTROL
THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.

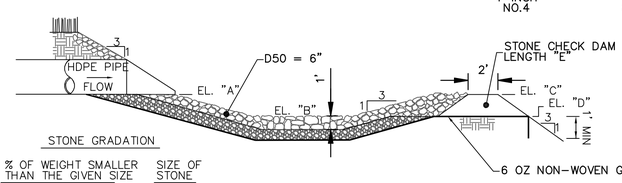
COMPACTION
FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTI-SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS.

MAINTENANCE:
MAINTENANCE IS NECESSARY TO ENSURE THAT THE DETENTION BASINS WILL CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. THE "HOMEOWNERS ASSOCIATION" IS RESPONSIBLE FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA.
1 EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE. IF SUCH ISSUES ARE NOTED THEY SHALL BE RECTIFIED AS SOON AS PRACTICAL.
2 VEGETATION – THE VEGETATED AREAS OF THE BERM SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES SHOULD BE KEPT OFF THE BERM AREA.
3 INLETS AND OUTLETS – SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED.
4 SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE STRUCTURE INLET ELEVATION 89.5' THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.



STONE CHECK DAM GRADATION

SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE
12–INCH	100%
6–INCH	84%–100%
3–INCH	68%–83%
1–INCH	42%–55%
NO.4	8%–12%



STONE GRADATION

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

DIMENSIONS AND ELEVATIONS

	L	La	W	Wa	EL. "A"	EL. "B"	EL. "C"	EL. "D"	LENGTH "E"
SEDIMENT FOREBAY 1	5'	17'	5'	17'	103.0'	102.0'	104.0'	102.0'	10' MIN
SEDIMENT FOREBAY 2	3'	15'	2'	14'	103.0'	101.0'	103.0'	101.0'	10' MIN

SEDIMENT FOREBAY / PLUNGE POOL DETAIL

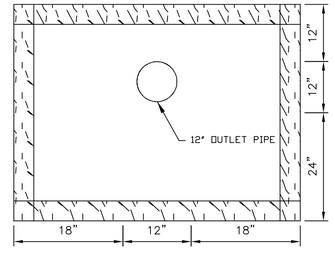
(NOT TO SCALE)

MAINTENANCE

THE SEDIMENT FOREBAY SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE AREA IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM DRAINAGE SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE SEDIMENT FOREBAY.

CONSTRUCTION SPECIFICATIONS

1. FORBAY AREAS AND EXTENTS OF RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. STONE FOR THE SEDIMENT FOREBAY MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. SEDIMENT FOREBAY SHALL BE CONSTRUCTED ON A 6" THICK (MIN) CRUSHED GRAVEL BASE.



ANTI–SEEP COLLAR DETAIL

NOT TO SCALE

NOTES:
1. ANTI–SEEP COLLARS SHALL BE WATERPROOF AND HAVE A WATERPROOF CONNECTION TO THE PIPE.
2. ANTI–SEEP COLLARS TO BE AGRI DRAIN OR APPROVED EQUAL.

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PLANNING FILE NO.: P22–63

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603.749.0443

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9–20–22

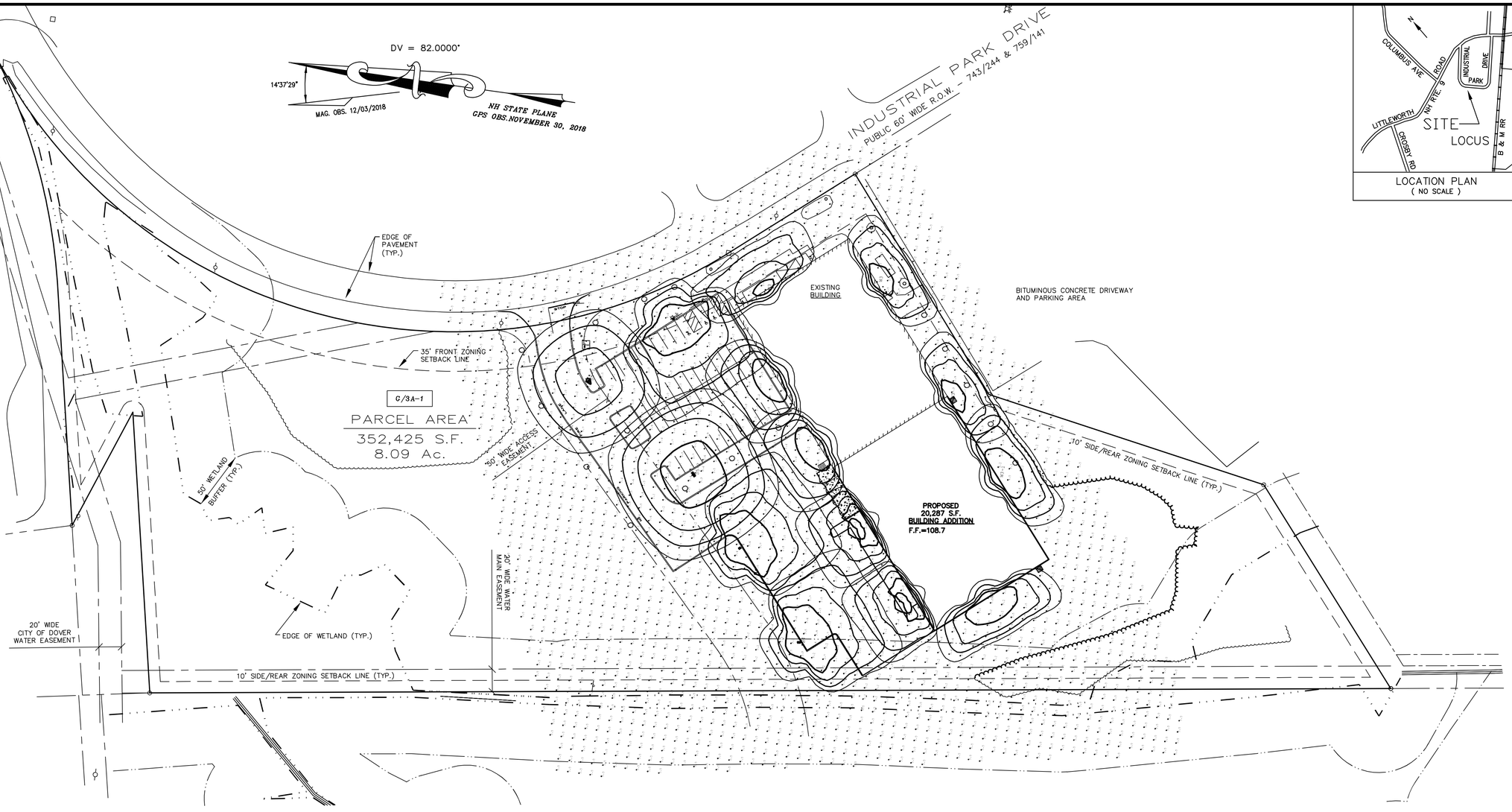
DATE: 8–15–22
SCALE: AS SHOWN
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE–ADDITION

DETAIL SHEET

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

14



LOCATION PLAN
(NO SCALE)

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	Tag
	1	P4	Single	GLEON-SA2C-740-U-T4FT / SSS4A20SFN1 (20' AFG)	PROPOSED ASSEMBLY
	2	S4	Single	GLEON-AF-02-LED-E1-T4FT / SSS4A20SFN1 (20' AFG)	EXISTING RELOCATED ASSEMBLY
	1	S5-1	Single	GLEON-AF-02-LED-E1-5WQ / SSS4A20SFN1 (20' AFG)	EXISTING FIXTURE
	1	S5-2	Back-Back	GLEON-AF-02-LED-E1-5WQ / SSS4A20SFN2 (20' AFG)	EXISTING FIXTURE
	2	W	Single	GWC-SA1C-740-U-T4FT-HSS / WALL MTD 16' AFG	PROPOSED FIXTURE
	3	W3	Single	GWC-AF-01-LED-E1-SL3-600 / WALL MTD 16' AFG	EXISTING FIXTURE
	2	W3-1	Single	GWC-SA1C-740-U-SL3 / WALL MTD 16' AFG	PROPOSED FIXTURE
	2	W4	Single	GWC-AF-01-LED-E1-SL4 / WALL MTD 16' AFG	EXISTING FIXTURE

StatArea_1
PARKING LOT AREAS
Illuminance (Fc)
Average = 1.63
Maximum = 4.8
Minimum = 0.6
Avg/Min Ratio = 2.72
Max/Min Ratio = 8.00

ATTENTION:

HIGH PRESSURE GAS MAIN EXISTS WITHIN THE RIGHT OF WAY OF INDUSTRIAL PARK ROAD; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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PLANNING FILE NO.: P22-63

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Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
1	REV PER TRC	SJH	9-20-22

DATE: 8-15-22
SCALE: 1"=50'
DRAWN BY: SRD
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

LIGHTING PLAN

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

15

Project		Catalog #		Type	
Prepared by		Notes		Date	



McGraw-Edison

GLEON Galleon

Area / Site Luminaire

Typical Applications

Outdoor • Parking Lots • Walkways • Roadways • Building Areas

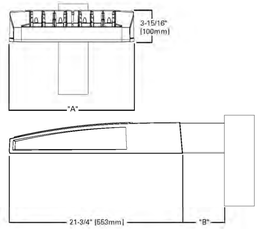
Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 9

Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt

Dimensional Details



Product Certifications

DLC · DLC Premium · 3G VIB · IP66 · UL Certified · ida · 5 YEAR

Product Features

LuminAire Technology · EcoSpeed · WaveLinx · Light-Miz-Miser™

Connected Systems

- WaveLinx
- Enlighted

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length [1]	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	--
9-10	33-3/4"	7"	16"	--	--

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

Project		Catalog #		Type	
Prepared by		Notes		Date	



McGraw-Edison

GWC Galleon Wall

Wall Mount Luminaire

Typical Applications

Exterior Wall • Walkway

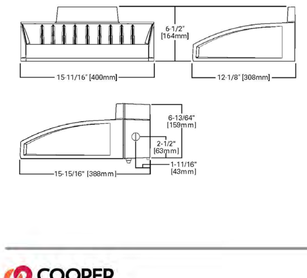
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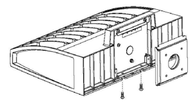
- Ordering Information page 2
- Product Specifications page 2
- Optical Configurations page 3
- Energy and Performance Data page 4
- Control Options page 6

Quick Facts

- Choice of thirteen high-efficiency, patented AccuLED Optics™
- Downward and inverted wall mounting configurations
- Eight lumen packages from 3,215 up to 17,056
- Efficacies up to 154 lumens per watt

Dimensional Details





Product Certifications

DLC Premium · DLC Premium · UL Certified · FC Classified · IP66 · ida · 5 YEAR · Light-Miz-Miser™

Connected Systems

- WaveLinx
- Enlighted

Steel Poles

Catalog #		Type	
Project			
Comments		Date	
Prepared by			



SSS SQUARE
STRAIGHT STEEL

FEATURES
- ASTM Grade steel base plate with ASTM A366 base cover
- Hand hole assembly 3" x 5" on 5" and 6" pole; and 2" x 4" on 4" pole
- 10'-39' mounting heights
- Drilled or tenon (specify)

DESIGN CONSIDERATIONS

Wind induced vibrations resulting from steady, unidirectional winds and other aerodynamic forces, as well as vibration and coefficient of height factors for non-grounded mounted installations (e.g., installations on bridges or buildings) are not included in this document. The information contained herein is for general guidance only and is not a replacement for professional judgement. Consult with a professional, and local and federal standards, before ordering to ensure product is appropriate for the intended purpose and installation location. Also, please review Eaton's Light Pole White Paper for risk factors and design considerations. Learn more.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Eaton or visit www.eaton.com/lighting for available options, accessories and ordering information.

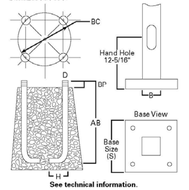
ORDERING INFORMATION

SAMPLE NUMBER: SSA5A20SFM1XG

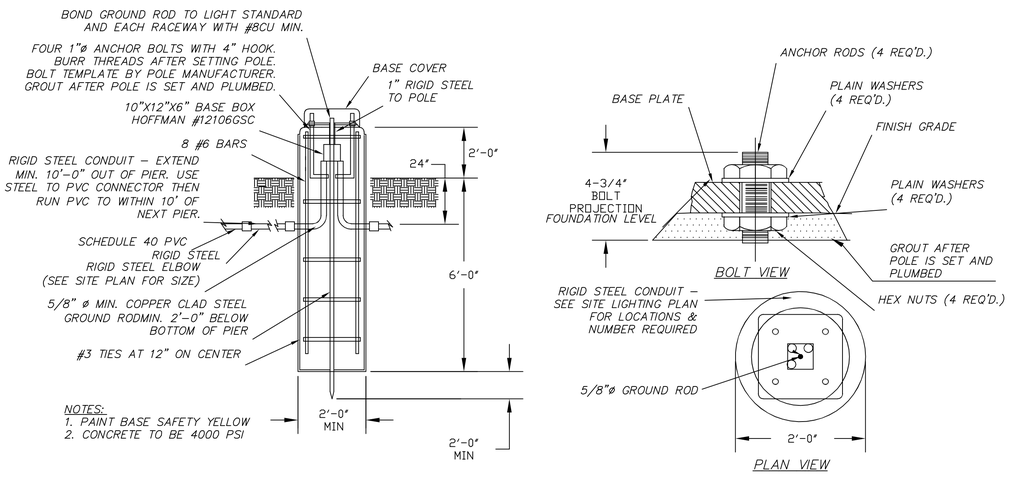
Product Family	Shaft Size (inches)[1]	Wall Thickness (inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Arm Lengths (Feet)	Options (Add as Suffix)
SSS=Square Straight Steel	**4**=4" **5**=5" **6**=6"	**A**=0.120" **M**=0.188" **X**=0.250"	**10**=10' **15**=15' **20**=20' **25**=25' **30**=30' **35**=35' **39**=39'	**S**=Square Steel Base	**F**=Dark Bronze **G**=Galvanized Steel **J**=Summit White **K**=Carbon Bronze **L**=Dark Platinum **R**=Hartford Green **S**=Silver **T**=Graphite Metallic **V**=Grey **W**=White **X**=Custom Color **Y**=Black	**2**=2-3/8" O.D. Tenon (4" Long) **3**=3-1/2" O.D. Tenon (6" Long) **4**=4" O.D. Tenon (6" Long) **9**=3" O.D. Tenon (4" Long) **6**=2-3/8" O.D. Tenon (6" Long) **7**=4" O.D. Tenon (10" Long) **A**=Type A Drilling **C**=Type C Drilling **E**=Type E Drilling **F**=Type F Drilling **G**=Type G Drilling **J**=Type J Drilling **K**=Type K Drilling **M**=Type M Drilling **N**=Type N Drilling **R**=Type R Drilling **S**=Standard Upsweep Arm **Z**=Type Z Drilling	**1**=Single **2**=2 at 180° **3**=Triple[3] **4**=4 at 90° **5**=2 at 90° **X**=None	**X**=None **2**=2' **3**=2.5' **4**=4' **6**=6' **8**=8'	**A**=1/2" Tapped Hub[2] **B**=3/4" Tapped Hub[2] **C**=Convenience Outlet[4] **E**=GFCI Convenience Outlet[4] **G**=Ground Lug **H**=Additional Hand Hole[5] **Va**=Vibration Dampener

NOTES: 1. All shaft sizes nominal. **2.** Square poles are 3 at 90°, round poles are 3 at 120°. **3.** Tapped Hub is located 5' below the pole top and on the same side of pole as hand hole, unless specified otherwise. **4.** Outlet is located 4' above base and on same side of pole as hand hole, unless specified otherwise. Receptacle not included, provision only. **5.** Additional hand hole is located 12" below pole top and 90° from standard hand hole location, unless otherwise specified.

DIMENSIONS



See technical information.



LIGHT POLE BASE

NOT TO SCALE

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PLANNING FILE NO.: P22-63

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
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NO.	REVISION	APP'D	DATE
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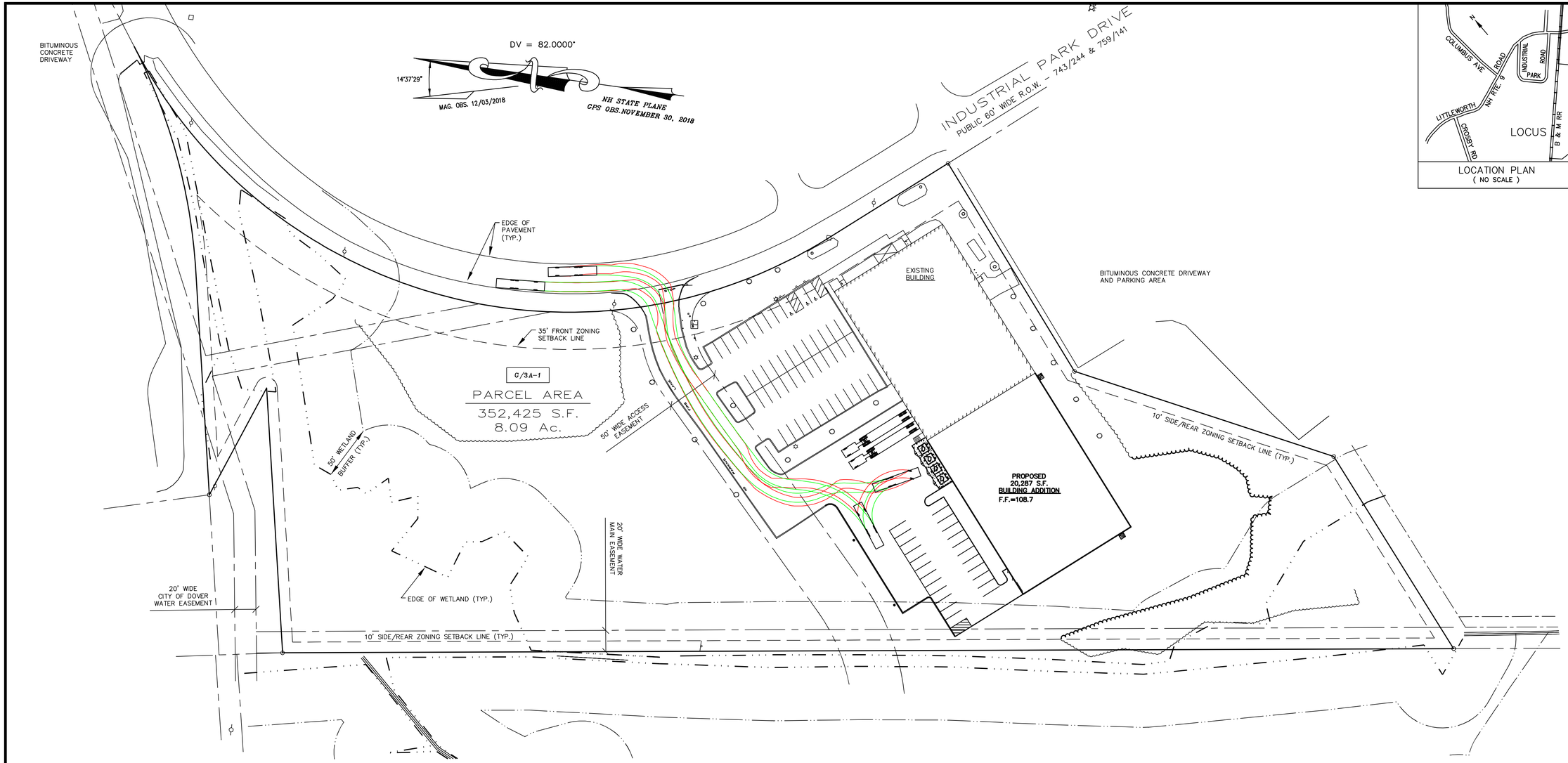
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SCALE: AS SHOWN
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DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

LIGHTING DETAILS

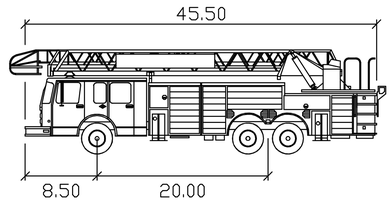
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

16



LOCATION PLAN
(NO SCALE)



Dover ladder feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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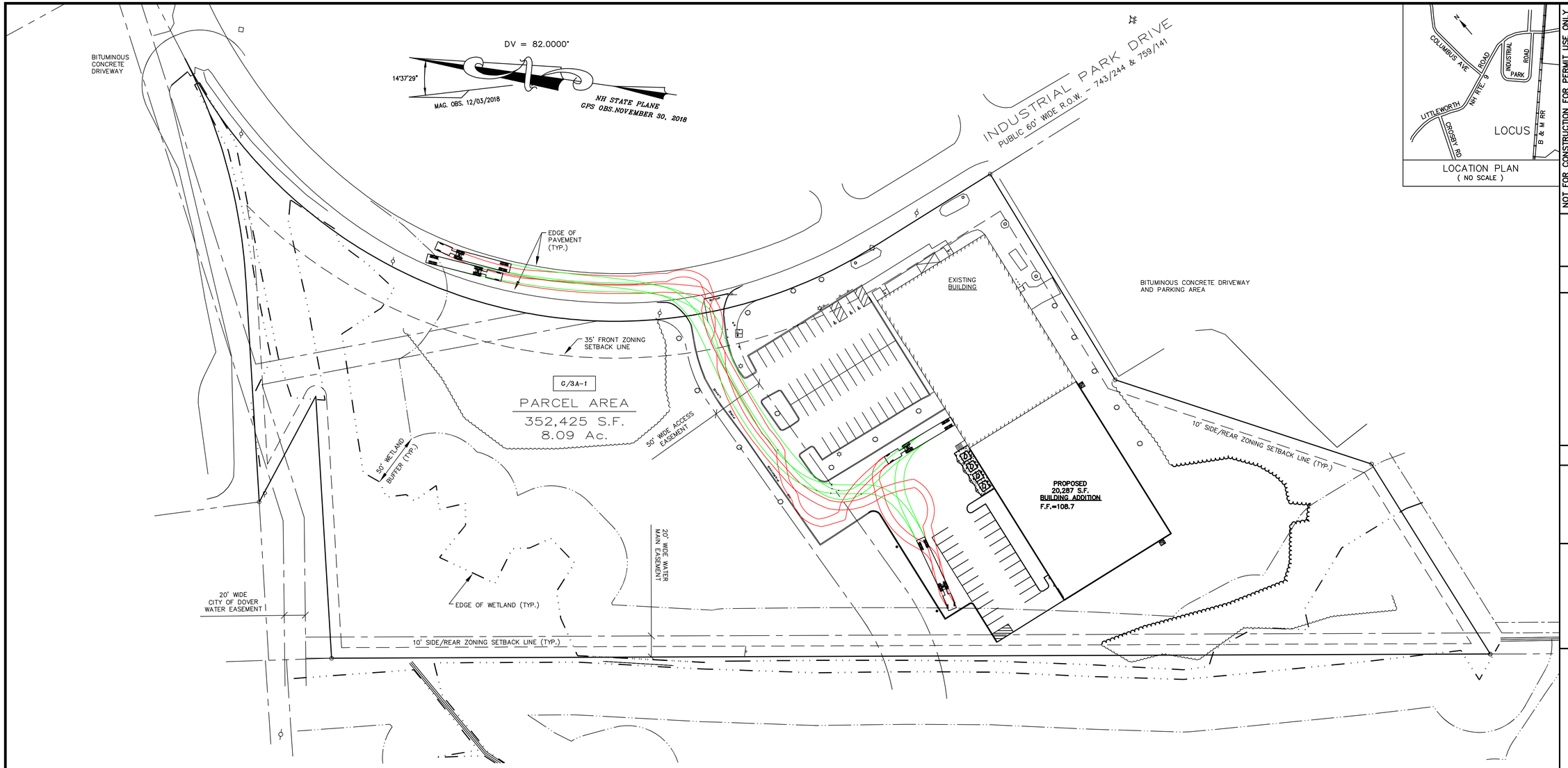
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APPROVED BY:SJH
PROJECT NO:19003
FILE: SITE-ADDITION

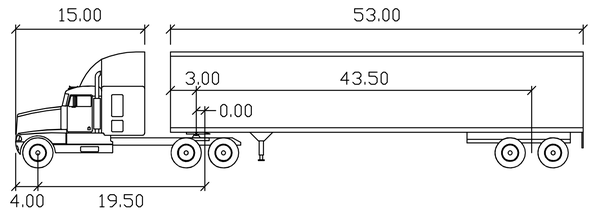
DOVER LADDER TRUCK MOVEMENT PLAN

BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

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WB-65 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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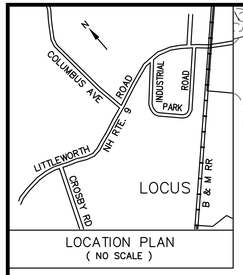
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FILE: SITE-ADDITION
DESIGN BY: JPG
DRAWN BY: SRD
SCALE: 1"=50'
DATE: 8-15-22
APPROVED BY:SJH

TRUCK MOVEMENT PLAN

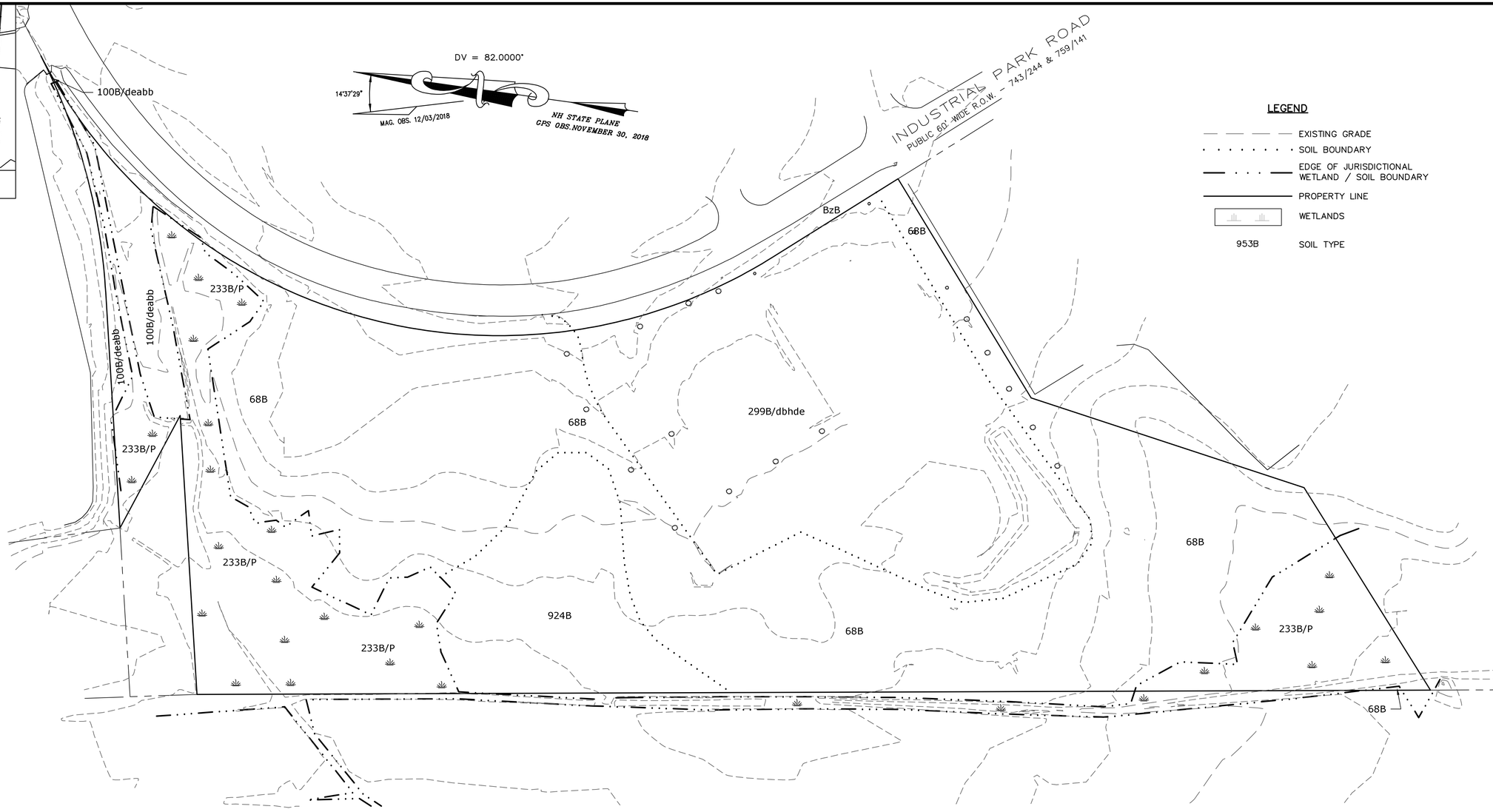
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BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

18



LOCATION PLAN
(NO SCALE)



LEGEND

- EXISTING GRADE
- SOIL BOUNDARY
- EDGE OF JURISDICTIONAL WETLAND / SOIL BOUNDARY
- PROPERTY LINE
- WETLANDS
- 953B SOIL TYPE

SITE-SPECIFIC SOIL MAP NOTES

1. The criteria under which the soil map was prepared is the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 5.0, December 2017. The standards apply the very latest knowledge of soils and provide the public with the most advanced soil resource information available today. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey.
2. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS).
3. The Site-specific Soil Map Units identified on this property come from the NEw Hampshire State-wide Numerical Soils Legend, Issue #10, January 2011.
5. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.
6. The site specific soil survey was produced 7-25-22, and was prepared by Bruce A. Gilday, CSS #012.

SSSM SYMBOL	SOIL MAP UNT NAME	HSG	ALPHA SLOPE SYMBOL
68B	SUTTON	B	B 0-8%
100B	UDORTHENTS	C	C 8-15%
233B/P	SCANTIC	C	D 15-25%
299B	UDORTHENTS	B	E 25-35%
924B	SUTTON	C	

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

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DATE: 8-15-22
SCALE: 1"=50'
DRAWN BY: GMS
DESIGN BY: JPG
APPROVED BY:SJH
PROJECT NO:19003
FILE: SSSM.DWG

SITE SPECIFIC SOIL MAP

PROJECT:
BUILDING ADDITION
WHITE BIRCH ARMORY
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

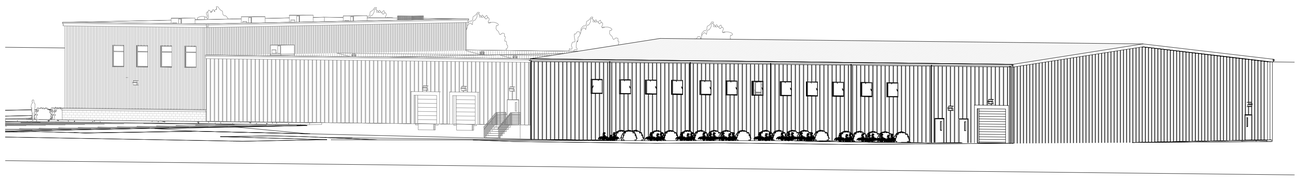
APPLICANT:
RECON REALTY, LLC
80 INDUSTRIAL PARK DRIVE
DOVER, NH 03820

19

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

PLANNING BOARD SET
07/12/2022 (N.F.C.)

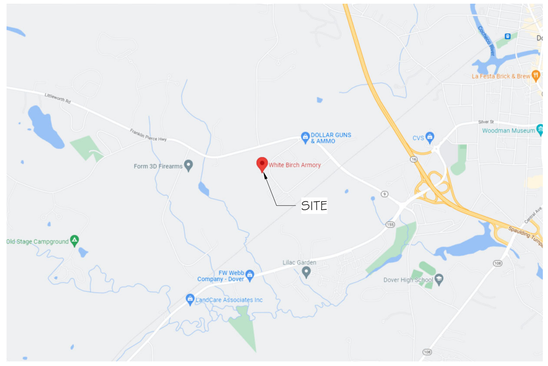


T | W DESIGNS
254 Drake Hill Rd. Strafford, NH
TW-Designs.com | 603.664.2181

Revision Schedule

No.	Description	Date

LOCUS MAP: (N.T.S.)



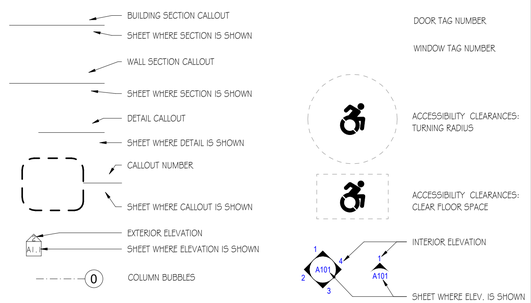
MASTER ABBREVIATION KEY:

AB	ANCHOR BOLT			LAM	LAMINATE	S	SOUTH
AC	AIR CONDITIONER	E	EAST	LAV	LAVATORY	S-TRAP	SEDIMENT TRAP
ACI	AMERICAN CONCRETE INSTITUTE	EJ	EXPANSION JOINT			SC	SOLID CORE
ACOUST	ACOUSTIC	EJC	EXPANSION JOINT COVER	MAS	MASONRY	SCED	SCHEDULE
AFF	ABOVE FINISH FLOOR	EL	ELEVATION	MAT	MATERIAL	SD	STORM DRAIN
ALT	ALTERNATE	ELEC	ELECTRICAL	MAX	MAXIMUM	SF	SQUARE FOOT
ALUM	ALUMINUM	ELEV	ELEVATOR	MECH	MECHANICAL	SH	SHOWER
ANCH	ANCHOR	EQ	EQUAL	MEM	MEMBRANE	SHT	SHEET
ANOD	ANODIZED	EQUIP	EQUIPMENT	MEP	MECHANICAL, ELECTRICAL, PLUMBING	SIM	SIMILAR
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	ER	EMERGENCY ROOM	METTP	METAL TOILET PARTITION	SL	SLIDING
		EST	ESTIMATE	MFR	MANUFACTURER	SMR	SINGLE PLY MEMBRANE ROOF
BD	BOARD	EWC	ELECTRICAL WATER COOLER	MH	MANHOLE	SP/PT/FIN	SPECIAL PAINT FINISH
BIT	BITUMINOUS	EXH	EXHAUST	MIN	MINIMUM	SPEC	SPECIFICATION
BL	BUILDING LINE	EXIST	EXISTING	MISC	MISCELLANEOUS	SPKR	SPEAKER
BLDG	BUILDING	EXP	EXPANSION	MO	MASONRY OPENING	SQ	SQUARE
BLK	BLOCK	EXPD	EXPANDED	MTL	METAL	SS	STAINLESS STEEL
BLKG	BLOCKING	EXT	EXTERIOR	MULL	MULLION	STA	STATION
BM	BEAM					STD	STANDARD
BOC	BOTTOM OF CURB	F/F	FACE OF FOUNDATION WALL	N	NORTH	STL	STEEL
BOF	BOTTOM OF FOOTING ELEVATION	FA	FRESH AIR	NAT	NATURAL	STOR	STORAGE
		FAP	FIRE ALARM PANEL	NEC	NECESSARY	STRG	STRINGER
BOT	BOTTOM	FD	FLOOR DRAIN	NIC	NOT IN CONTRACT	STRUCT	STRUCTURAL
BRG	BEARING	FE	FIRE EXTINGUISHER	NOM	NOMINAL	SU	SITE UTILITY
BRK	BRICK	FEC	FIRE EXTINGUISHER CABINET	NRC	NOISE REDUCTION COEFFICIENT	SUSP	SUSPEND (SUSPENDED)
BSMT	BASEMENT					SYMM	SYMMETRICAL
BTW	BETWEEN	FIN	FINISH	NTS	NOT TO SCALE	SYS	SYSTEM
BUR	BUILT-UP ROOF	FL	FLOW LINE				
		FLR	FLOOR	OC	ON CENTER	T	TREAD
CAB	CABINET	FND	FOUNDATION	OD	OUTSIDE DIAMETER	TAG	TONGUE & GROOVED
CB	CATCH BASIN	FOF	FACE OF FINISH	OF/C	OUTSIDE FACE OF CONCRETE	T/FRM	TOP OF FRAME
CER	CERAMIC	FOM	FACE OF MASONRY	OH	OVERHEAD	T/SLB	TOP OF SLAB
CF	CUBIC FOOT	FOS	FACE OF STUD	OPG	OPENING	TB	TACKBOARD
CI	CAST IRON	FR	FIRE RATED	OPP	OPPOSITE	TEL	TELEPHONE
CJ	CONTROL JOINT	FS	FULL SIZE	OR	OPERATING ROOM	TEMP	TEMPORARY
CL	CLOSET	FT	FOOT			TERR	TERRAZZO
CLCB	CURBLESS CATCH BASIN	FTG	FOOTING	PBD	PARTICLE BOARD	THK	THICK
CLG	CEILING	FUR	FURRED (FURRING)	PCF	POUNDS PER CUBIC FOOT	THLD	THRESHOLD
CM	CONTRACT MANAGER	FVC	FIRE VALVE CABINET			TOC	TOP OF CURB
CMU	CONCRETE MASONRY UNIT			PL	PROPERTY LINE	TOF	TOP OF FOUNDATION
		GA	GAUGE	PLAM	PLASTIC LAMINATE	TOS	TOP OF SLAB
CO	CLEAN OUT	GALV	GALVANIZED	PLAS	PLASTER	TOW	TOP OF WALL ELEVATION
COL	COLUMN	GC	GENERAL CONTRACTOR	PLYWD	PLYWOOD	TR	TO REMAIN
COMP	COMPACTED (COMPOSITION)	GEN	GENERAL	PNL	PANEL	TYP	TYPICAL
		GL	GLASS	PSF	POUNDS PER SQUARE FOOT	UH	UNIT HEATER
CONC	CONCRETE	GLZ	GLAZING	PSI	POUNDS PER SQUARE INCH	UL	UNDERWRITERS LABORATORIES, INC.
CONST	CONSTRUCTION	GRD	GRADE	PT	PAINT	UOD	UNDERSIDE OF DECK
CONT	CONTINUOUS	GYP	GYPSUM	PTD	PAINTED	UON	UNLESS OTHERWISE NOTED
CONTR	CONTRACTOR			PTN	PARTITION	UR	URINAL
CORR	CORRUGATED	H/V	HEATING & VENTILATING	PVC	POLYVINYL CHLORIDE	UV	UNIT VENTILATOR
CP	CONTROL PANEL	HC	HANDICAP			VAR	VARIES OR VARIABLE
CSG	CASING	HDWD	HARDWOOD	QT	QUARRY TILE	VB	VINYL BASE
CSMT	CASEMENT	HGT	HEIGHT			VCT	VINYL COMPOSITION TILE
CT	CERAMIC TILE	HM	HOLLOW METAL	R	RADIUS	VERT	VERTICAL
CTR	CENTER	HP	HIGH POINT	R/A	RETURN AIR	VEST	VESTIBULE
CY	CUBIC YARD	HVAC	HEATING, VENTILATION, AIR CONDITIONING	RC	REINFORCED CONCRETE	VIF	VERIFY IN FIELD
		HWH	HOT WATER HEATER	RD	ROOF DRAIN	VNR	VENEER
DF	DRINKING FOUNTAIN			REF	REFERENCE	VOL	VOLUME
DIA	DIAMETER	ID	INSIDE DIAMETER	REFR	REFRIGERATOR		
DIAG	DIAGONAL	IN	INCH	REINF	REINFORCE	W	WEST
DIM	DIMENSION	INSUL	INSULATION	REQD	REQUIRED	W/	WITH
DL	DEAD LOAD	INT	INTERIOR	RGH	ROUGH	WC	WATER CLOSET
DN	DOWN	INV	INVERT	RL	RAIN LEADER	WD	WOOD
DR	DOOR			RM	ROOM	WDW	WINDOW
DS	DOWNSPOUT	JC	JANITORS CLOSET	RO	ROUGH OPENING	WGL	WIRE GLASS
DSIC	DRIVE SIDE OF CURB	JST	JOIST	ROW	RIGHT OF WAY	WP	WEATHERPROOF (WATERPROOFING)
DTL	DETAIL	JT	JOINT	RQMT	REQUIREMENT		
DWG	DRAWING					WWF	WELDED WIRE FABRIC

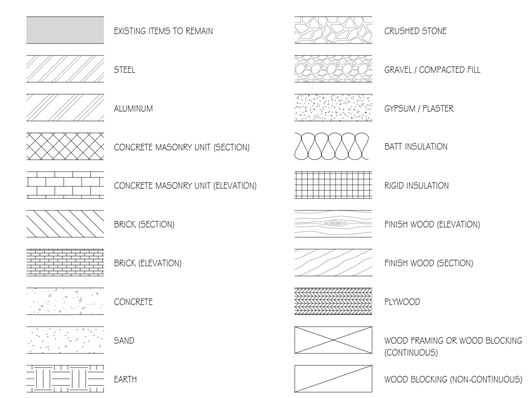
DRAWING SHEET INDEX:

Sheet	Sheet Name	Issued	Rev
PCS	*PROJECT COVER SHEET*	*N.F.C.*	
R-1	*3D RENDER*	*N.F.C.*	
A1.1	*FLOOR PLANS*	*N.F.C.*	
A3.1	*EXTERIOR ELEVATIONS*	*N.F.C.*	
A4.2	*SECTIONS*	*N.F.C.*	

GRAPHIC SYMBOLS LEGEND



MATERIAL LEGEND



GENERAL NOTES:

1. DO NOT SCALE DRAWING OR DIMENSIONS. FOR MISSING DIMENSIONS OR DIMENSIONS IN CONFLICT, CONTACT THE CONTRACTOR IMMEDIATELY BEFORE CONTINUING WITH WORK.
2. ANY DISCREPANCIES IN THESE PLANS WILL BE BROUGHT TO THE CONTRACTOR'S ATTENTION IN WRITING IMMEDIATELY
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DESIGN-BUILD PLANS AND SPECIFICATION FOR LOCATIONS OF ALL BLOCK OUTS, INSERTS, OPENINGS, CURBS, BASES, & PADS THAT ARE NOT DIMENSIONED OR SHOWN ON CONTRACTOR'S DWG'S. OR STRUCTURAL DWG'S.
4. STRUCTURAL STEEL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION PLANS AND SPECIFICATION SHALL BE PROVIDED AND ARE THE RESPONSIBILITY OF THERE RESPECTIVE SUBCONTRACTORS IF NOT CARRIED IN ARCHITECTURAL SERVICES
5. ALL CONSTRUCTION SHALL CONFORM TO AND BE IN ACCORDANCE WITH THE REGULATOR REQUIREMENTS MANDATED BY ALL FEDERAL, STATE AND LOCAL AUTHORITIES HAVING JURISDICTION IN ACCORDANCE TO THE STATE IN WHICH THE WORK IS PERFORMED (STATE BUILDING CODE, STATE LIFE SAFETY & FIRE CODE ETC.)
6. THE CONTRACTOR SHALL REVIEW ALL DOCUMENTS AND VERIFY ALL DIMENSIONS AND FIELD CONDITIONS, AND SHALL CONFIRM WORK IS BUILDABLE AS SHOWN. ANY CONFLICTS OR OMISSIONS, ETC. SHALL BE IMMEDIATELY REPORTED IN WRITING TO THE ARCHITECT FOR CLARIFICATION
7. DIMENSIONS ARE FROM EXTERIOR FACE OF FOUNDATION, VENEER, OR WALL STUD AND TO CENTER OF ALL INTERIOR STUD WALLS OR FACE OF INTERIOR MASONRY. UNLESS NOTED OTHERWISE.
8. CLEAR DIMENSIONS ARE FROM FACE TO FACE OF WALL FINISH. UNLESS NOTED OTHERWISE
9. REFER TO MECHANICAL DRAWINGS / SPEC. FOR ALL SIZES AND LOCATIONS OF MECHANICAL DUCT WORK.
10. UNLESS OBVIOUSLY SHOWN OTHERWISE, DOOR LOCATIONS NOT DESIGNATED BY WRITTEN DIMENSION SHALL BE CENTERED IN THE WALL OR SHALL BE LOCATED FOUR (4) INCHES FROM FINISH WALL TO EDGE OF DOOR JAMB. PER PLAN.
11. PROVIDE METAL CORNER BEAD AT ALL OUTSIDE CORNERS OF PLASTERED OR DRYWALL SURFACES, UNLESS NOTED OTHERWISE.
12. PENETRATIONS OF ALL FIRE RATED ASSEMBLIES SHALL BE PROTECTED BY LIKE RATED CONSTRUCTION DAMPERS, SEALANTS, COLLARS, ETC., TYPICAL.
13. CONTRACTOR SHALL FURNISH, LOCATE AND INSTALL ALL ACCESS PANELS AS REQUIRED AFTER INSTALLATION OF MECHANICAL DUCTS, PLUMBING AND ELECTRICAL WORK, FIRE RATED AS REQUIRED.
14. FURNISH AND INSTALL SOLID BLOCKING BEHIND ALL WALL HUNG MILLWORK ITEMS, RAILS, FIXTURES,GRAB BARS, ETC., WHERE INDICATED OR REQUIRED.
15. CONTRACTOR SHALL LAYOUT OR MARK, ALL EQUIPMENT, SYSTEMS AND MILLWORK ON THE FLOOR FOR ARCHITECT OR OWNER'S APPROVAL PRIOR TO BEGINNING CEILING / OVER HEAD WORK.
16. ALL SPRINKLER HEAD LOCATIONS, MAINS, BRANCHES AND RISER PIPE LOCATIONS MUST BE COORDINATED WITH THE DESIGN / BUILD CONTRACTOR PRIOR TO WORK.
17. FURNISH AND INSTALL FIRE EXTINGUISHERS IN TYPE, QUANTITY, AND LOCATION PER LOCAL FIRE DEPARTMENT. TYPICAL
18. CONTRACTOR SHALL VERIFY, COORDINATE LOCATION WITH THE ARCHITECT ANY SMOKE, CARBON MONOXIDE DETECTOR OR FIRE ALARM DEVICE AS REQUIRED BY THE LOCAL FIRE DEPARTMENT.
19. FURNISH & INSTALL FIRE DAMPERS WITH FUSIBLE LOUVER WHEREVER DUCT WORK PENETRATES ONE OR TWO HOUR CEILINGS OR WALLS. TYPICAL UNLESS NOTED OTHERWISE.
20. PROVIDE PLASTER AND GYPSUM WALL BOARD CONTROL JOINTS AT 30'-0" ON CENTER FROM FLOOR TO CEILING, OR AS NOTED ON THE CONSTRUCTION DOCUMENTS. VERIFY IN FEILD WITH ARCHITECT PRIOR TO WORK.

Architect of Record:
T | W Designs, LLC
254 Drake Hill Rd.
Strafford, NH 03884
603-664-2181

Civil Engineer:
XXX

Structural Engineer:
XXX

Electrical Engineer:
XXX

Mechanical Engineer:
XXX

Fire Protection Eng.:
XXX

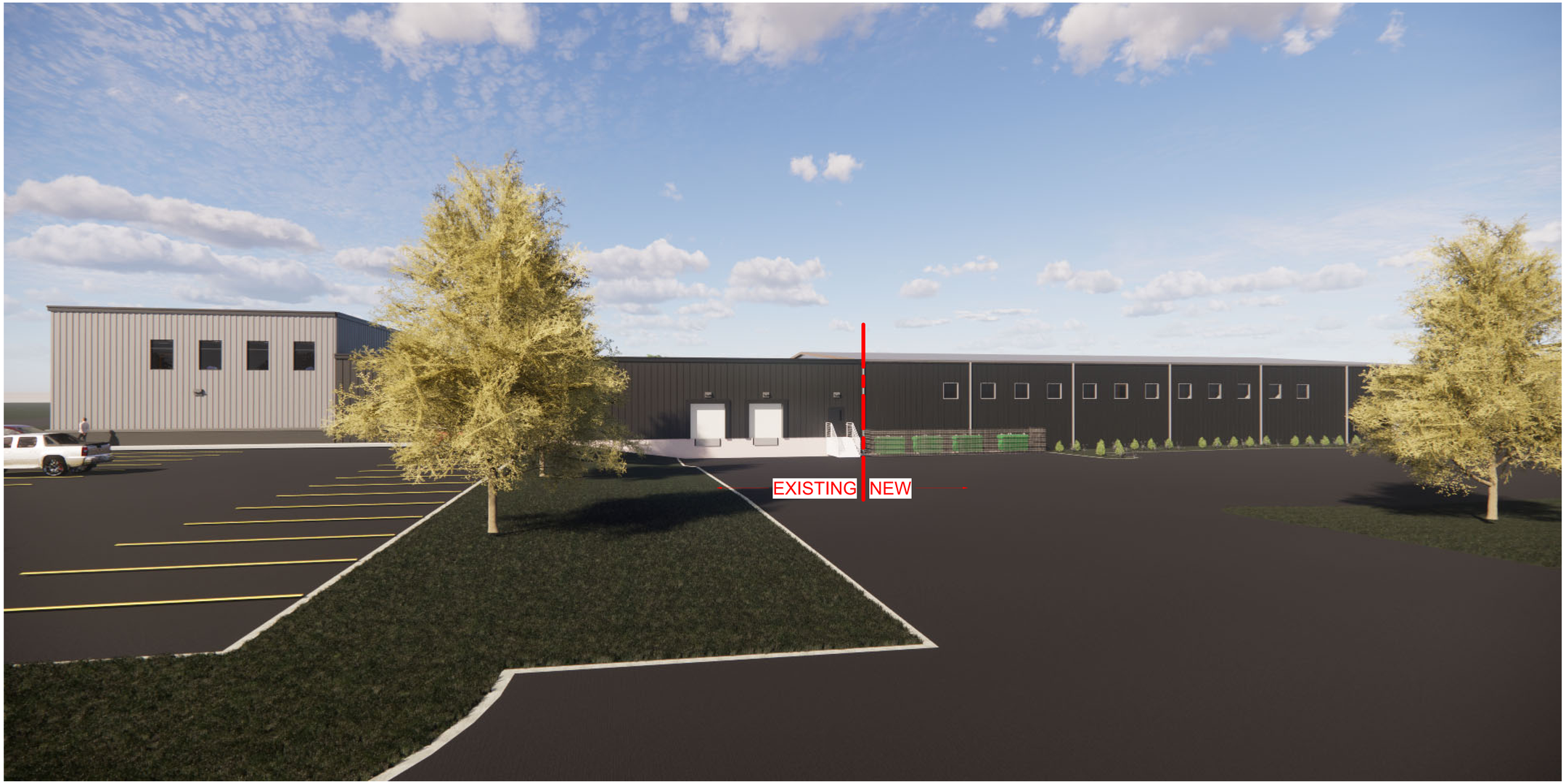
General Contractor:
XXX

Project Info:
White Birch Armory
80 Industrial Park Dr.
Dover, NH 03820

22017
PROJECT COVER SHEET

SHEET NUMBER
PCS

TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



No. Description Date

Revision Schedule

Project Info:

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

Sheet Status:

Latest Release:
Issued For: PLANNING BOARD
Org. Issue Date: SET2/2022 (N.F.C.)

JOB NO: 22017
DRAFTED: Author
CHECKED: Checker

SCALE:

Sheet Title:

3D RENDER

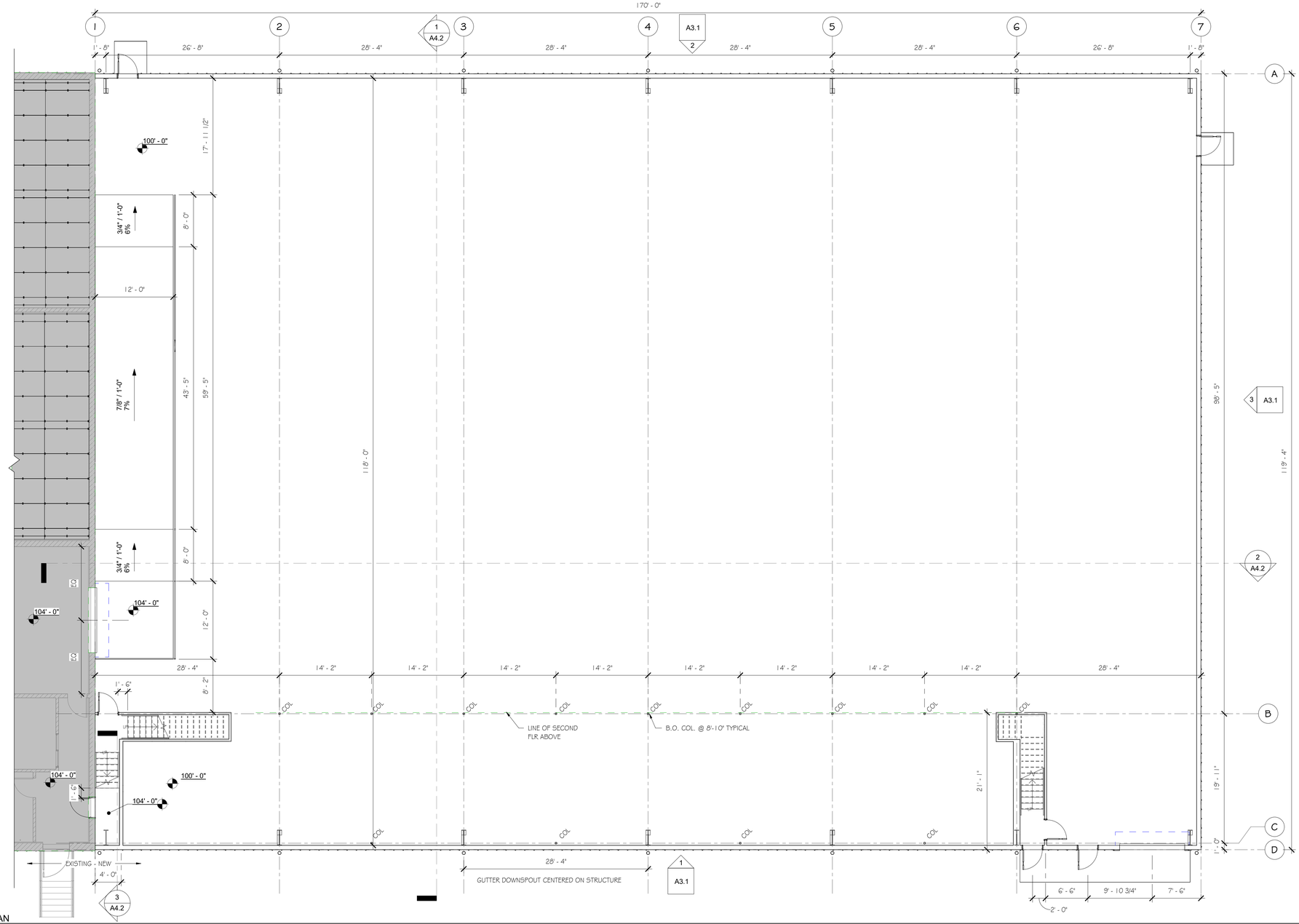
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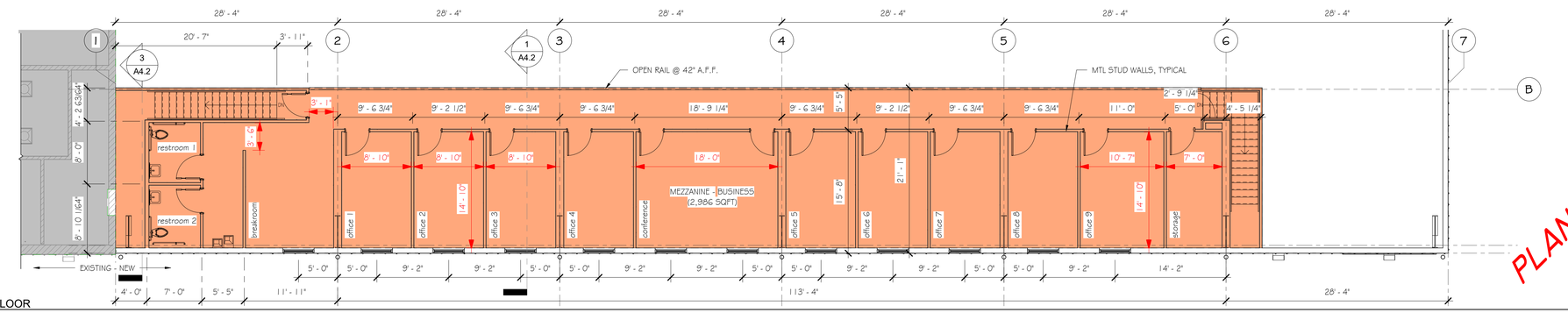
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TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



1 FLOOR PLAN
1/8" = 1'-0"



2 SECOND FLOOR
1/8" = 1'-0"

SQ FOOTAGE
1ST FLOOR = 20,287 SQFT
2ND FLOOR = 2,986 SQFT

TOTAL SQFT = 23,273

No. Description Date

Revision Schedule

Project Info:

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

Sheet Status:

Latest Release:
Issued For: PLANNING BOARD SET2/2022 (N.F.C.)
Org. Issue Date:

JOB NO: 22017
DRAFTED: SMP
CHECKED: JMT
SCALE: 1/8" = 1'-0"

Sheet Title:

FLOOR PLANS

Sheet Number:

A1.1

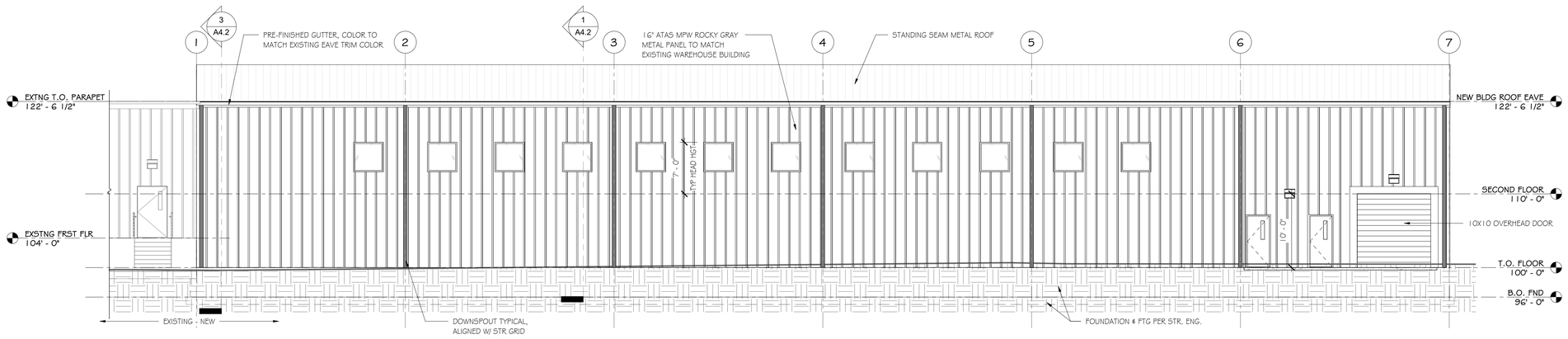
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PLANNING BOARD SET
7/12/2022

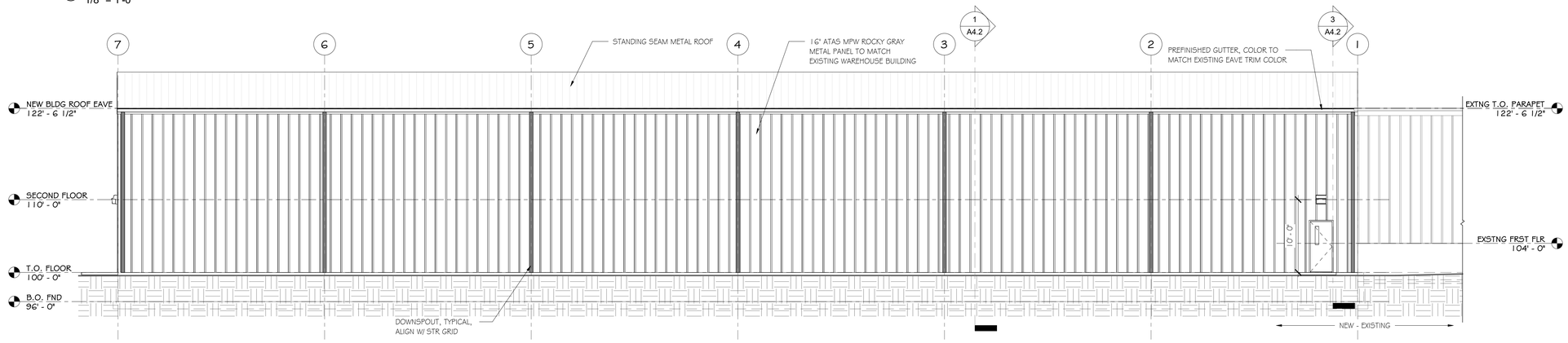
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PROJECT NORTH

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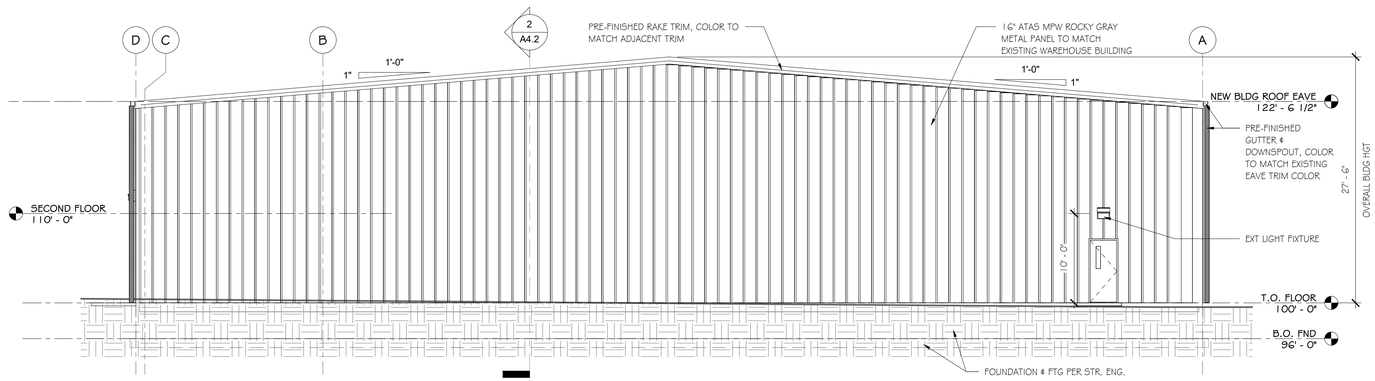
TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



1 FRONT ELEVATION
1/8" = 1'-0"



2 BACK ELEVATION
1/8" = 1'-0"



3 SIDE ELEVATION
1/8" = 1'-0"

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No. Description Date

Revision Schedule

Project Info:

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

Sheet Status:

Latest Release:
Issued For: PLANNING BOARD SET
Org. Issue Date: 2/2022 (N.F.C.)

JOB NO. 22017
DRAFTED: SMP
CHECKED: JMT

SCALE: 1/8" = 1'-0"

Sheet Title:

EXTERIOR ELEVATIONS

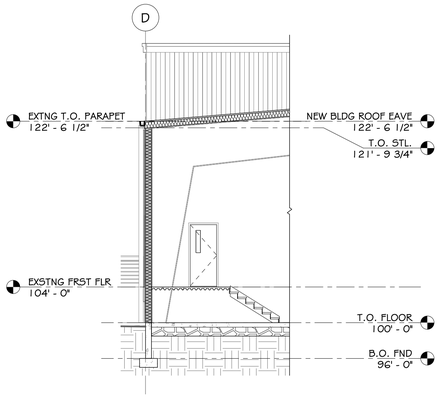
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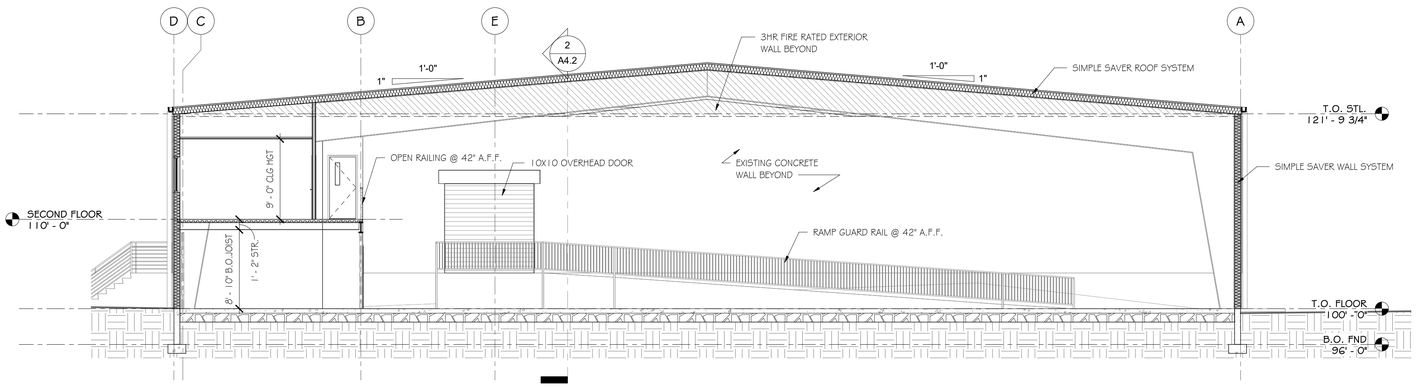
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7/12/2022

Printed on: 7/12/2022

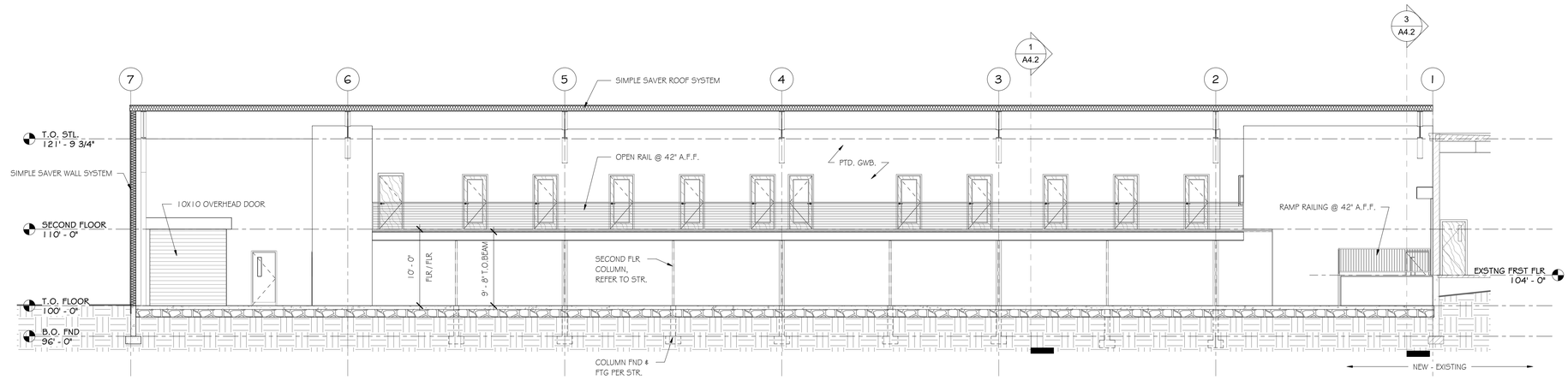
TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
P: 603.664.2181 | F: 603.664.9508



3 SECTION 'A'
1/8" = 1'-0"



1 CROSS SECTION
1/8" = 1'-0"



2 LONGITUDINAL SECTION
1/8" = 1'-0"

PLANNING BOARD SET
7/12/2022

T:\3 Projects\22023-WBA Addition\22023c_WBA Addition.rvt

No. Description Date

Revision Schedule

Project Info:

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

Sheet Status:

Latest Release:
Issued For: PLANNING BOARD SET
Org. Issue Date: 7/2022 (N.F.C.)

JOB NO: 22017
DRAFTED: SMP
CHECKED: JMT

SCALE: 1/8" = 1'-0"

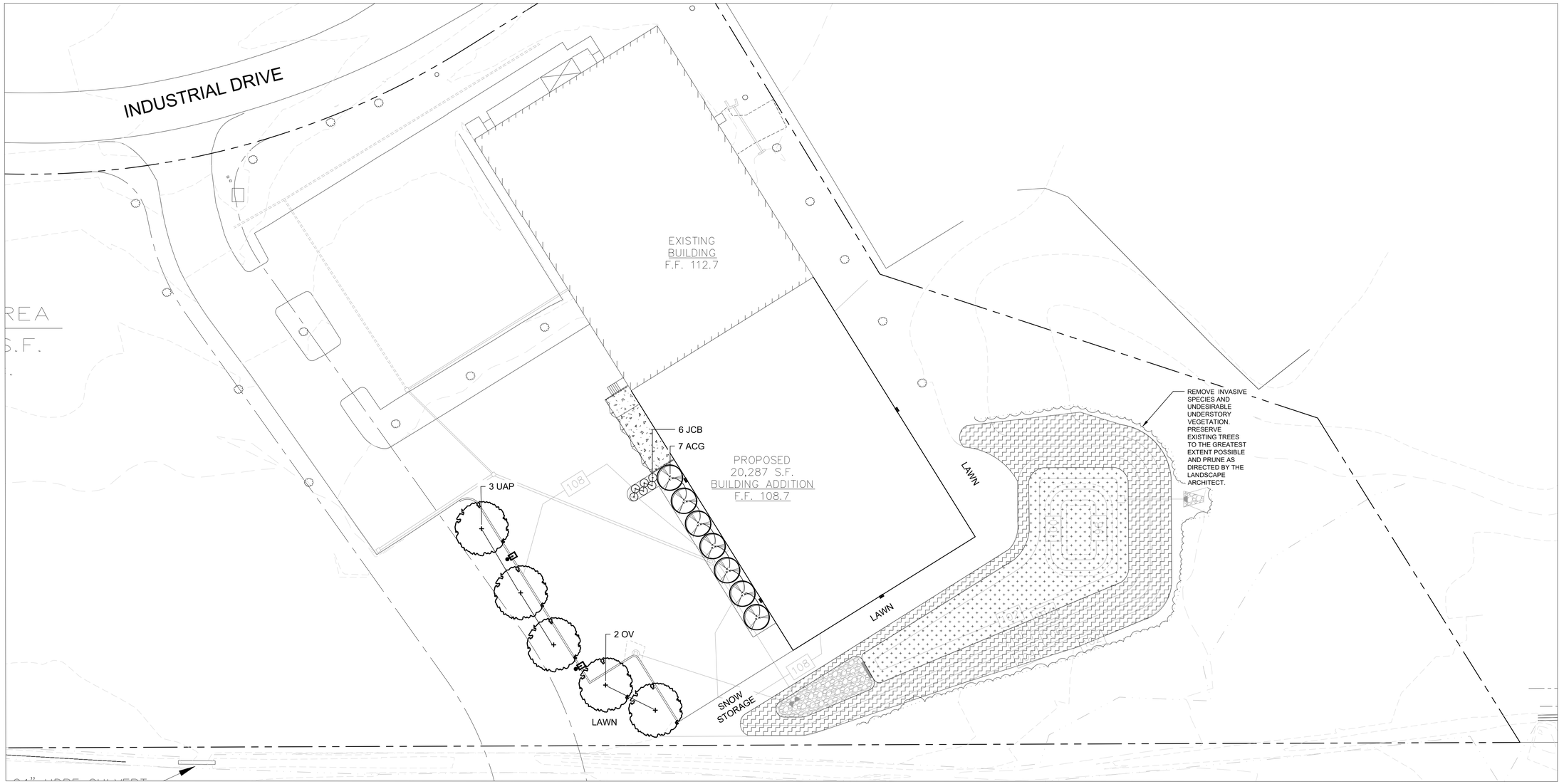
Sheet Title:

SECTIONS

Sheet Number:

A4.2

Printed on: 7/12/2022



GENERAL NOTES:

1. SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
2. EXISTING VEGETATION SHALL BE PROTECTED DURING SITE CLEARING AND CONSTRUCTION THROUGH THE USE OF CONSTRUCTION FENCING OR OTHER ADEQUATE PROTECTIVE BARRIERS.
3. PLANT LOCATIONS SHOWN ON THE PLANTING PLAN ARE SUBJECT TO FIELD MODIFICATION TO ACCOMMODATE EXISTING CONDITIONS. FIELD ADJUSTMENTS SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT.
4. WITHIN THE LIMIT OF WORK, ANY INVASIVE PLANT SPECIES ENCOUNTERED SHALL BE REMOVED FOLLOWING NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES.
5. SEE SHEET L2.0 FOR LANDSCAPE DETAILS.
6. CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

Legend

- DECIDUOUS SINGLE-STEMMED TREE PLANTING, SEE 1/L2.0
- DECIDUOUS MULTI-STEMMED TREE PLANTING, SEE 2/L2.0
- LAWN — LOAM AND LAWN SEED MIX, SEE 3/L2.0
- LOAM AND WET MEADOW / POND SEED MIX, SEE 4/L2.0
- LOAM AND DRY SITE EROSION / RESTORATION SEED MIX, SEE 5/L2.0

Plant Schedule

DECIDUOUS TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE	APPROX. SIZE AT MATURITY	REMARKS
7	ACG	AMELANCHIER CANADENSIS 'GLENFORM'	RAINBOW PILLAR SERVICEBERRY	5'-6" HT	15' HT x 10' SPD	MULTI, B&B
2	OV	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	3"-3 1/2" CAL	25' HT x 30' SPD	B&B
3	UAP	ULMUS AMERICANA "PRINCETON"	PRINCETON AMERICAN ELM	3"-3 1/2" CAL	60' HT x 40' SPD	B&B
12						

SHRUBS

6	JCB	JUNIPERUS COMMUNIS 'BLUEBERRY DELIGHT'	BLUEBERRY DELIGHT JUNIPER	18"-24" HT	2' HT x 5' SPD	CONTAINER
6						

DRAWING SUBMITTED FOR CITY REVIEW

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Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.IWood.com

WHITE BIRCH ARMORY

74 INDUSTRIAL PARK
DOVER, NEW HAMPSHIRE

SHEET TITLE

LANDSCAPE PLAN

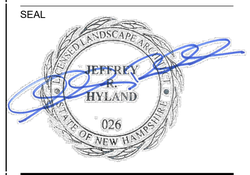
REVISION LOG

REV#	DATE	DESCRIPTION

PROJECT NO.	19040.1
DESIGN BY	J. HYLAND / K.OSGOOD
DRAWN BY	K.OSGOOD
CHECKED BY	J. HYLAND
DATE	JULY 6, 2022
SCALE	

0' 30' 60'
SCALE: 1" = 30'-0"

SEAL



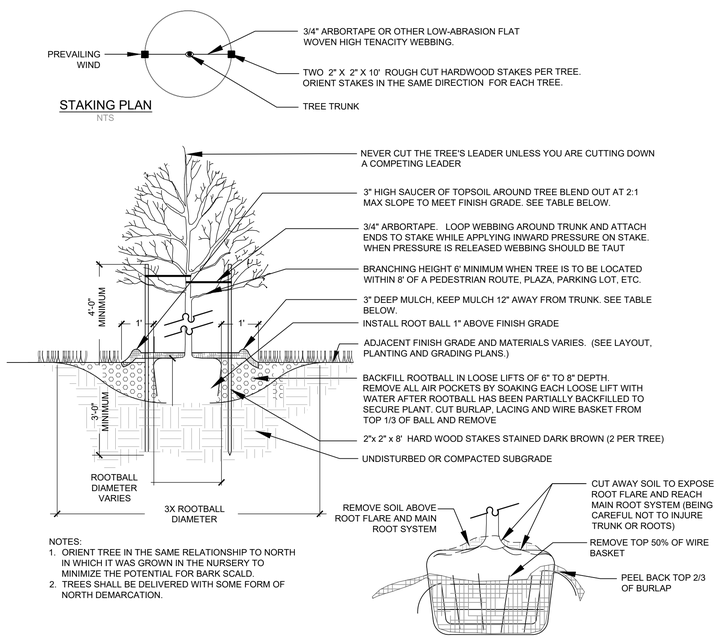
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PLANTING NOTES:

1. PLEASE REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN.
2. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING AND NEW UTILITY LINE LOCATIONS PRIOR TO PLANTING, AND SHALL REPORT ANY CONFLICT TO THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
3. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE "AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN SOCIETY OF NURSERY MEN, INC. LATEST EDITION.
4. THE CONTRACTOR SHALL STAKE THE LOCATION OF ALL THE PROPOSED PLANT MATERIAL FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. NO PLANTS SHALL BE PLANTED BEFORE THE ACCEPTANCE OF ROUGH GRADING. THE BASE OF THE FLARE OF THE TREE TRUNK SHALL BE EXPOSED, IF NECESSARY, AND PLACED 2" ABOVE FINISH GRADE.
5. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES WILL BE PLANTS WITH EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER COLOR, LEAF COLOR, FRUIT COLOR, AND TIME OF BLOOM, AS APPROVED BY THE LANDSCAPE ARCHITECT.
6. EXISTING LOAM: STOCKPILING OF EXISTING LOAM IS SPECIFIED ELSEWHERE. REMOVE CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND OTHER FOREIGN MATERIALS.
7. ADDITIONAL LOAM: IF STOCKPILED LOAM QUANTITY IS INSUFFICIENT, PROVIDE LOAM, WHICH IS A "FINE SANDY LOAM", OR A "SANDY LOAM" DETERMINED BY MECHANICAL ANALYSIS AND BASED ON THE "U.S.D.A. CLASSIFICATION SYSTEM." IT SHALL BE OF UNIFORM COMPOSITION, WITHOUT ADMIXTURE OF SUBSOIL. LOAM SHALL HAVE AN ACIDITY RANGE OF PH 5.8 TO PH 7.0 AND SHALL CONTAIN NOT LESS THAN 4% NOR MORE THAN 10% ORGANIC MATTER AS DETERMINED BY THE LOSS OF IGNITION OF OVEN-DRIED SAMPLES. PROVIDE LOAM WHICH IS FERTILE, FRIABLE, NATURAL LOAM FREE FROM SUBSOIL, CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1" AND LARGER, AND ANY FOREIGN MATERIALS.
8. PINE MULCH: PROVIDE PARTIALLY DECOMPOSED MINIMUM SIX MONTH AGED FINELY SHREDDED PINE BARK MULCH WITH DARK BROWN COLOR AND FREE OF WEEDS, EXCESSIVE FINE PARTICLES, STRINGY MATERIAL, AND CHUNKS OF WOOD THICKER THAN ¼". PROVIDE BARK MULCH APPROVED BY THE LANDSCAPE ARCHITECT. APPLY TACKIFIED MULCH TO ALL SEEDED AREAS.
9. ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING.
10. ALL PLANT MATERIAL SHALL BE MULCHED AFTER PLANTING.
11. LESS OTHERWISE INDICATED, DICTATED BY CONDITIONS AT THE SITE, AND DIRECTED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE, BACKFILL SHALL CONSIST OF UNAMENDED SOIL EXCAVATED FROM THE PLANTING PIT. BACKFILL IN 3-4" LAYERS AND CONSOLIDATE EACH LAYER WITH WATER TO ELIMINATE VOIDS AND ARE POCKETS BEFORE PLACING SUBSEQUENT LAYERS. CONTINUE UNTIL BACKFILL HAS REACHED FINISHED GRADE. WATER THOROUGHLY WHEN EXCAVATION IS BACK FILLED AND CONTINUE WATERING UNTIL SATURATED. IF EXISTING UNAMENDED SOIL IS NOT ACCEPTED. PROVIDE PLANTING SOIL MIXTURE CONSISTING OF 7 PARTS LOAM AND 1 PART HUMUS. MIX QUANTITY OF FERTILIZER AND SOIL AMENDMENTS AS RECOMMENDED BY SOIL ANALYSIS AND APPROVED BY THE LANDSCAPE ARCHITECT.
12. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
13. LOAMING: LOOSEN SUBGRADE AND EXISTING LOAM AREAS BY DISCING OR ROTOTILLING TO MINIMUM DEPTH OF 6". REMOVE STONES GREATER THAN 2" AND ALL RUBBISH AND DEBRIS. PLACE LOAM IN TWO EQUAL LIFTS MIXING FIRST APPLICATION INTO LOOSENED SUBGRADE THEN PLACE SECOND LIFT TO BRING LOAM AFTER SETTLING AND COMPACTING TO THE LINES AND GRADES SHOWN IN THE CONTRACT DOCUMENTS, 6" DEEP MINIMUM. DO NOT HANDLE LOAM OR SUBSOIL IF IT IS WET OR FROZEN.
14. AFTER LOAM HAS BEEN SPREAD, IT SHALL BE CAREFULLY PREPARED BY SCARIFYING AND HAND RAKING. ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, STUMPS, LITTER AND FOREIGN MATTER, AND STONES OVER ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE LOAM. LOAM SHALL ALSO BE FREE OF SMALLER STONES IN EXCESSIVE QUANTITIES AS DETERMINED BY THE LANDSCAPE ARCHITECT.
15. FINE GRADING: SET SUFFICIENT GRADE STAKES FOR CHECKING THE FINISHED GRADES. STAKES MUST BE SET AT THE BOTTOM AND TOP OF SLOPES. GRADES SHALL BE ESTABLISHED THAT ARE ACCURATE TO 1/10TH OF A FOOT EITHER WAY. CONNECT CONTOURS AND SPOT ELEVATIONS WITH AN EVEN SLOPE. ALL GRADING WILL INSURE DRAINAGE AWAY FROM STRUCTURES.
16. FINE GRADE LAWN AREAS TO SMOOTH, FREE DRAINING, EVEN SURFACES WITH FINE TEXTURE. ROLL, RAKE AND DRAW LAWN AREAS TO FLATTEN RIDGES AND FILL DEPRESSIONS, EXCEPT AT SELECT AREAS SHOW ON THE DRAWINGS. CONTROL MOISTURE CONTENT TO MAINTAIN OPTIMUM CONDITIONS, BUT DO NOT CREATE A MUDDY CONDITION.
17. ROLLING - TYPICAL: ROLL THE ENTIRE AREA WITH A HAND ROLLER WEIGHTING NOT MORE THAN 100 POUNDS. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM AND THE SURFACE SHALL BE REGARDED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE OR TO THE SHAPES AND CONFIGURATIONS AS SHOWN ON THE DETAILS.
18. THE SILT FENCE SHALL BE LIMIT OF SEEDING UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL AREAS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE SEEDED AS INDICATED ON THE DRAWINGS.
19. IN CASE OF DISCREPANCIES BETWEEN THE QUANTITIES SHOWN ON THE PLANT SCHEDULE AND THE QUANTITIES SHOWN ON THE PLANTING PLAN, THE QUANTITIES ON THE PLANTING PLAN SHALL BE PROVIDED BY THE CONTRACTOR.

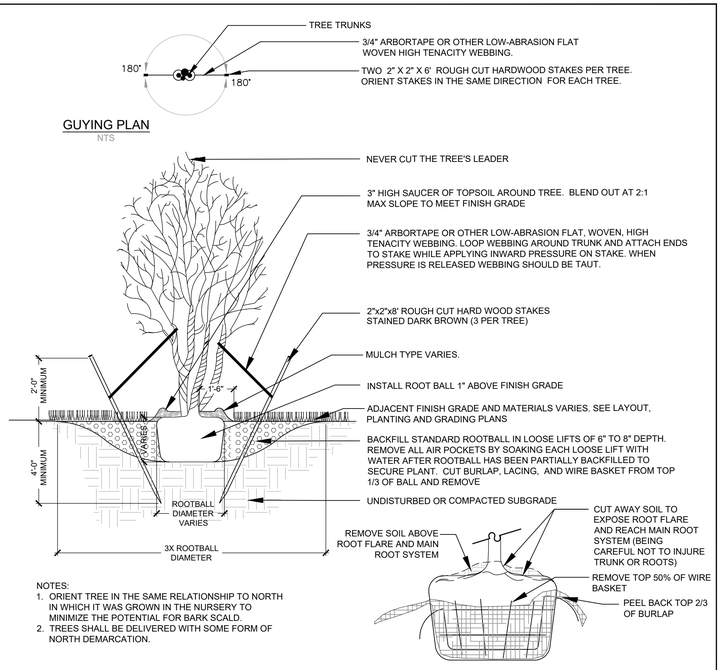


NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

Deciduous Tree Planting
Not to Scale

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1 L2.0

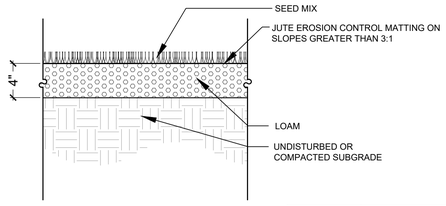


NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
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Deciduous Multi-Stemmed Tree Planting
Not to Scale

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2 L2.0



Type I Lawn Percent by weight	Common Name	Scientific Name
40%	Celmfine, Rebel II or Tribute Tall Fescue	
15%	Palmer II Perennial Ryegrass	
10%	Jamestown Chewings Fescue	
10%	Reliant Hard Fescue	
10%	Bridsfoot Trefoil	*Arvents* variety
5%	Switchgrass	
5%	White Clover	
5%	Redtop	*Streaker* variety

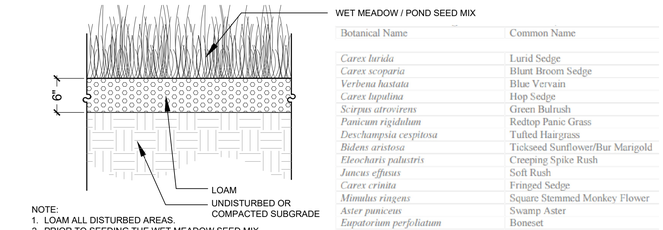
Apply at a rate of 265/lbs/acre

NOTE:
1. LOAM ALL DISTURBED AREAS.
2. PRIOR TO SEEDING THE LAWN SEED MIX PROPERLY PREPARE THE SEED BED.

Loam and Lawn Seed Mix
Not to Scale

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3 L2.0



Botanical Name	Common Name
Carex lurida	Lurid Sedge
Carex scoparia	Blunt Broom Sedge
Verbena hastata	Blue Vervain
Carex lupulina	Hop Sedge
Scirpus atrovirens	Green Bulrush
Panicum rigidulum	Redtop Panic Grass
Deschampsia cespitosa	Tufted Hairgrass
Bidens aristosa	Tickseed Sunflower/Bur Marigold
Eleocharis palustris	Creeping Spike Rush
Juncus effusus	Soft Rush
Carex crinita	Fringed Sedge
Mimulus ringens	Square Stemmed Monkey Flower
Aster puniceus	Swamp Aster
Eupatorium perfoliatum	Boneset
Glyceria canadensis	Rattlesnake Grass
Asclepias incarnata	Swamp Milkweed
Helenium autumnale	Common Sneezeweed
Penthorum sedoides	Ditch Stonecrop

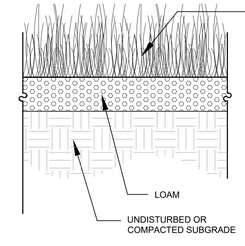
Apply at rate of 231bs/acre. New England Wildflower Mix available at New England Wetland Plants, Ma: www.newp.com . Approved equal may be substituted.

NOTE:
1. LOAM ALL DISTURBED AREAS.
2. PRIOR TO SEEDING THE WET MEADOW SEED MIX PROPERLY PREPARE THE SEED BED.
3. INSTALL JUTE MATTING ON POND SIDE SLOPES GREATER THAN 3:1.
4. FOLLOW MFG INSTRUCTIONS FOR SEEDING. AVAILABLE AT NEW ENGLAND WETLAND PLANTS, MA: WWW.NEWP.COM. APPROVED EQUAL MAY BE SUBSTITUTED.

Loam and Wet Meadow / Pond Seed Mix
Not to Scale

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4 L2.0



New England Erosion Control/Restoration Mix for Dry Sites

Botanical Name	Common Name	Indicator
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Lolium multiflorum	Annual Ryegrass	
Lolium perenne	Perrenial Ryegrass	
Schizachyrium scoparium	Little Bluestem	FACU
Panicum virgatum	Switch Grass	FAC
Sorghastrum nutans	Indian Grass	UPL

Apply at rate of 231bs/acre. New England Wildflower Mix available at New England Wetland Plants, Ma: www.newp.com . Approved equal may be substituted.

NOTE:
1. LOAM ALL DISTURBED AREAS.
2. PRIOR TO SEEDING THE EROSION CONTROL SEED MIX, PROPERLY PREPARE THE SEED BED.
3. INSTALL JUTE MATTING ON SLOPES GREATER THAN 3:1.
4. FOLLOW MFG INSTRUCTIONS FOR SEEDING. AVAILABLE AT NEW ENGLAND WETLAND PLANTS, MA: WWW.NEWP.COM. APPROVED EQUAL MAY BE SUBSTITUTED.

Dry Site Erosion / Restoration Seed Mix
Not to Scale

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5 L2.0

DRAWING SUBMITTED FOR CITY REVIEW

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Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.FeWood.com

WHITE BIRCH ARMORY

74 INDUSTRIAL PARK
DOVER, NEW HAMPSHIRE

SHEET TITLE

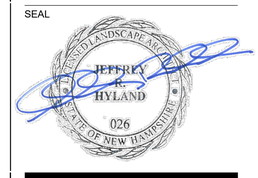
LANDSCAPE PLAN DETAILS

REVISION LOG

REV#	DATE	DESCRIPTION

PROJECT NO.	19040.1
DESIGN BY	J. HYLAND / K.OSGOOD
DRAWN BY	K.OSGOOD
CHECKED BY	J. HYLAND
DATE	JULY 6, 2022
SCALE	

SEAL

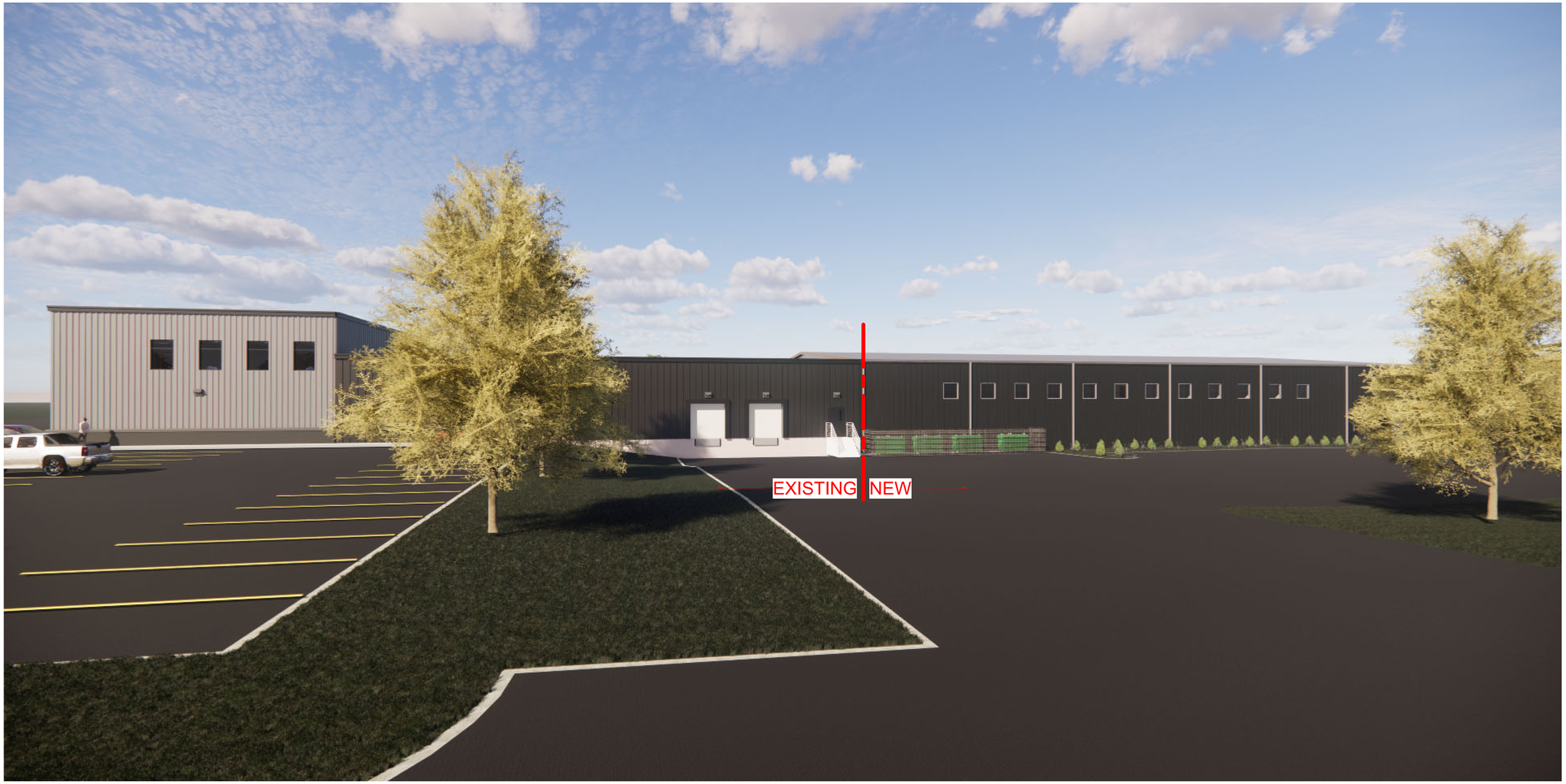


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TW DESIGNS LLC
254 DRAKE HILL RD. STRAFFORD, NH
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No. Description Date

Revision Schedule

Project Info:

White Birch Armory

80 Industrial Park Dr.
Dover, NH 03820

Sheet Status:

Latest Release:
Issued For: PLANNING BOARD
Org. Issue Date: SET2/2022 (N.F.C.)

JOB NO: 22017
DRAFTED: Author
CHECKED: Checker

SCALE:

Sheet Title:

3D RENDER

Sheet Number:

R-1

Printed on: 9/19/2022

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