CITY OF DOVER

DOVER PLANNING BOARD – AGENDA

Meeting Type: Regular Meeting
Meeting Location: Council Chambers, City Hall, 288 Central Ave, Dover NH 03820
Meeting Date: **Tuesday, May 23, 2023**
Meeting Time: **7:00 pm**

1. **CITIZENS' FORUM**
2. **APPROVAL OF THE PRIOR MINUTES**
   - May 9, 2023 Regular Meeting Minutes

3. **OLD BUSINESS**
   A. Public hearing to consider and possible recommendation of amendments to Chapter 170, entitled "Zoning" of the code of the City of Dover. Amendments include re-titling, formatting, construction signs, ground mounted solar, rooftop solar, window sign definitions, CWD green roof requirements, clarifying Gateway lot coverage and screening requirements, dark sky compliance for general site lighting, moving and amending non-environmental conditional use permit criteria, wetland protection district purpose and intent, wetland CUP criteria, TDR waiver criteria, TDR criteria, window and development signs, amendment notice requirements, removing Educational Institution from CM table of uses, reducing RCM threshold area to 20 acres, solar arrays, and CUP requirements for solar arrays.*

4. **NEW BUSINESS**
   A. Public Hearing and discussion regarding noise from chickens in residential districts.*

   B. Consideration and acceptance of a Lot Line Adjustment for Norway Plains Associates, Inc (Owners: The Peter H. Russell Revocable Living Trust & Gangagi, LLC), Assessor's Map 39, Lots 93 & 76, zoned Commercial (C), located at New Rochester Road & Hotel Drive. *(LOTA-2023-0005)

   C. Consideration and acceptance of a Minor Subdivision for Norway Plains Associates, Inc (Owners: The Peter H. Russell Revocable Living Trust), Assessor's Map 39, Lot 93, zoned Commercial (C), located at New Rochester Road. (Proposal is to subdivide the land under the roadway known as Hotel Drive). *(SUBM-2023-0001)

   D. Consideration and acceptance of a Conditional Use Permit for Chinburg Development, LLC, Assessor's Map N, Lot 13-1, zoned R-40 Rural Residential (R-40), located at Gulf Road. (Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 12-lot open space subdivision, creating 11,956 square feet of impact to the Conservation District resulting from steep slopes in excess of 20%). *(COND-2023-0034)

   E. Consideration and acceptance of a Conditional Use Permit for Chinburg Development, LLC, Assessor's Map N, Lot 13-1, zoned R-40 Rural Residential (R-40), located at Gulf Road. (Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 12-lot open space subdivision, creating 32,089 square feet of impact to wetland buffers). *(COND-2023-0039)

   F. Consideration and acceptance of an Open Space Subdivision for Chinburg Development, LLC, Assessor's Map N, Lot 13-1, zoned R-40 Rural Residential (R-40), located at Gulf Road. (Proposal is subdivide the lot into 11 new lots). *(SUBD-2023-0001)

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.

CITY OF DOVER

DOVER PLANNING BOARD – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Chamber's 288 Central Avenue
Meeting Date:	**Tuesday, May 9, 2023**
Meeting Time:	**7:00 pm**

Members Present: Gina Cruikshank (Chair), Mark Speidel, Hayley Harmon (Vice Chair), Kyle Pimental, Ken Mavrogeorge, Tom Clark, Fergus Cullen (Councilor), George DeBoer (Alternate) and Jon Elliard (Alternate), Melina Gambino (Alternate)
Members Not Present (excused): Erinn Kaspari
Members Not Present (un-excused): None
Staff Present: Jackson Kaspari, Resilience Manager and Natasha Kypfer Zoning Administrator/Assistant City Planner

G. Cruikshank called the meeting to order at 7p.m. and noted that J. Elliard will sit for E. Kaspari and G. DeBoer will sit for the vacant seat.

1. **CITIZENS' FORUM**
   Citizens Forum Open
   No one spoke
   Citizens Forum Closed

2. **APPROVAL OF THE PRIOR MINUTES**
   - April 25, 2023 Regular Meeting Minutes

   Motion: T. Clark moved to approve April 25, 2023 Regular Meeting Minutes. Seconded by: J. Elliard Vote: U/A with K. Pimental abstaining.

3. **OLD BUSINESS**

4. **NEW BUSINESS**
   A. Public Hearing and consideration of a request for an excavation permit by Owner: Stephen M. Brox Revocable Indenture of Trust (Applicant: Brox Industries, Inc.), Assessor's Map C, Lots 12-A, 13 & 14, zoned R-40, located on Glen Hill Road, Rochester Neck Road/Tolend Road. *(P23-01)

   J. Kaspari explained that the applicant is requesting to continue to excavate materials from their long standing gravel pit on Rochester Neck and Tolend Roads. The Applicant has submitted excavation and reclamation plans for each of its three lots in Dover, along with an application for an excavation permit. This constitutes a renewal of the permit approved May 11, 2021 (a biennial process)

   Erik Stevenson of Brox Industries represented the application. He noted they come every two years with updated plans. He clarified for the board they've been operating there since the 1980's and there should be materials enough for 50+ more years.

   Motion: M. Speidel moved to accept the application and declare no regional impact. Seconded by: H. Harmon. Vote: U/A

   Public hearing opened
   None
   Public hearing closed

   STAFF RECOMMENDATION:
   Chapter 170-29 of the Zoning Ordinance of the City Code governs the excavation of earth in the City of Dover pursuant to the authority granted by NH RSA 155-E, and requires that earth excavations obtain a permit, which is valid for two years.

DRAFT

The Planning Department recommends that the Planning Board approve the Excavation Permit with the following subsequent conditions:

1. Confirmation from the City's Environmental Projects Manager that existing conditions are consistent with excavation plan.
2. Add a plan note stating: "The City will continue to review the SPCC and pit operation plans to ensure that they are consistent with most current ordinances and approved Source Water Protection Plans and work with the facility owners to revise if necessary."

Motion: T. Clark moved to approve the Excavation Permit, with Subsequent Conditions, as it is consistent with the regulations. Seconded by G. DeBoer.

B. Public Hearing and consideration of a request for an excavation permit by Branch Brook Holdings, LLC, Assessor's Map H, Lots 59, 60, 60A, 61 & 62, zoned IT, located on Mast Road. *(P23-02)

J. Kaspari explained that the applicant is requesting to continue to excavate materials from their long standing gravel pit on Mast Road. The subject property is located on Mast Road between Community Services/City-owned land, the Town of Madbury, and the Bellamy River. The Applicant has submitted excavation and reclamation plans for its lots along with an application for an excavation permit. This constitutes a renewal of the permit approved last approved May 211 2023 (a biennial process).

Please note that the concrete batch plant currently operated by Redimix on Map H, Lot 59 has existed in that location since 1950, does not obtain its materials from this excavation site, and cannot be considered under the Planning Board's review of an excavation permit renewal.

Furthermore, the Board should note, that in years past staff has recommended that the applicant add a notes about storage of foreign materials on the site, the hours of operations and the need to schedule regular access roadway water wash downs. These notes are all on the plan, so no conditions of approval to add them are needed.

Kevin McEneaney of McEneaney Survey Assoc. represented the application. He clarified the locations in question and noted it's been an active gravel pit since the 1950's and expect another five years of materials.

Ron Severino, owner addressed the question about managing the dust due to the drought conditions over the past years. There are no specific plans for the property when the materials will be depleted.

Motion: T. Clark moved to accept the application and declare no regional impact. Seconded by: H. Harmon. Vote: U/A

Public hearing opened
None
Public hearing closed

STAFF RECOMMENDATION:
Chapter 170-29 of the Zoning Ordinance of the City Code governs the excavation of earth in the City of Dover pursuant to the authority granted by NH RSA 155-E, and requires that earth excavations obtain a permit, which is valid for two years.

The Planning Department recommends that the Planning Board approve the Excavation Permit with the following subsequent conditions:

1. Confirmation from the City's Environmental Projects Manager that existing conditions are consistent with excavation plan.
2. Add a plan note stating: "The City will continue to review the SPCC and pit operation plans to ensure that they are consistent with most current ordinances and approved Source Water Protection Plans and work with the facility owners to revise if necessary."

Motion: T. Clark moved to approve the Excavation Permit, with Subsequent Conditions, as it is consistent with the regulations. Seconded by M. Speidel.

C. Consideration and acceptance of a Conditional Use Permit for Altus Engineering (Owner: Tina Sawtelle), Assessor's Map B, Lot 1-C, zoned R-40, located at 476 Sixth Street. (Proposal is to construct a building addition in a previously developed area creating 773 square feet of overlapped impact to the Conservation District and wetland buffer. *(COND-2023-0035

J. Kaspari explained that the applicant is requesting a Conditional Use Permit to renovate their existing garage, add on to their residence. The renovations with associated disturbance and grading to do so causes 773 square feet of both Conservation District and wetland buffer impact. The Conservation Commission endorsed this application at their April 10, 2023 meeting. The applicant provided a narrative dated April 4 which outlines how the proposal meets the criteria for granting the CUP per 170-27.1.F of the Code.

Erik Saari of Altus Engineering represented the application. He described the proposed project and the impacts to the wetland and buffer.

Motion: M. Speidel moved to accept the application and declare no regional impact. Seconded by: J. Elliard. Vote: U/A

Public hearing opened
Shane McCarthy, 470 Sixth St, asked if City sewer will be extended to the property, or if current existing septic will be used.
Public hearing closed

Mr. Saari addressed public comment:

- There is an existing septic which is in working order, but will need to be updated after the project as it will not be large enough to meet standards. That work will not impact the wetlands.

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.

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.

The Planning Department recommends the Planning Board accept the application, open the public hearing, make findings and vote to approve the Conditional Use Permit with the following subsequent condition:

Subsequent Condition to Be Met Prior to the Issuance of the Conditional Use Permit:

1. The owner shall sign the final plans before Planning Board signature.

Motion: G. DeBoer moved to approve the Conditional Use Permit with subsequent conditions, as it is consistent with the regulations. Seconded by J. Elliard. Vote: U/A

D. Consideration and acceptance of a Lot Line Adjustment for Northam Survey, LLC (Owners: Paul & Alice Gasses Co-Trustees of Gasses Farm Revocable Trust of 2009 & Portsmouth Christian Academy), Assessor's Map J, Lots 1 & 1-C, zoned R-40, located at 120 Garrison Road & 20 Seaborne Drive. *(LOTA-2023-0003)

J. Kaspari explained that the applicants are requesting to complete a lot line adjustment between two lots with 12.7353± ac. from Lot J-1 to Lot J-1-C, leaving Lot J-1 with 20.8055± ac. and Lot J-1-C with 60.4119± ac. Both lots will continue to meet the zoning dimensional requirements post adjustment. As a Lot Line Adjustment, this application did not appear before the TRC.

Eric Salovitch, of Northam Survey represented the application and explained the proposed lot line adjustment. The applicant has no issues with the conditions.

Public hearing opened
None
Public hearing closed

STAFF RECOMMENDATION:
Chapter §157-17 of the Land Subdivision Regulations of the City Code provides for the adjustment of existing lot lines between two or more lots. This plan is consistent with those regulations.

The Planning Department recommends the Planning Board make findings, and vote to approve the application with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford County Registry of Deeds which additionally shall include:
   a. Planning File Number #LOTA-2023-0003
   b. The owner's signatures
   c. The LLS stamp and signature
   d. Add Common Note #9, listing the previous variance granted by the ZBA.

Confirm and label arc length along traffic circle which previous subdivision indicates is 150'.

Motion: M. Speidel moved to approve the Lot Line Adjustment with subsequent conditions, as it is consistent with the regulations. Seconded by G. DeBoer. Vote: U/A

5. STAFF COMMENTS

- TRCs since last meeting:
  - *a.* Another TRC for the Open Space Subdivision for Chinburg Development, LLC, located at Oak Street & Gulf Road. (11 new lots.)
  - *b.* *Another TRC for the* Site Review for VC Dover Investment, LLC, located at 30 Grapevine Drive. (Proposal is to build a new 15,040 sf (footprint), 4 story mixed use building next to the Hannaford's Grocery Store on Grapevine Drive.)

- TRCs coming up:
  - *a.* Open Space Subdivision for Stonearch Development Corp. & Eugene A. and Donna L Sgrignuoli, Assessor's Map E, Lot 65-1 & 65-A, zoned R-12, located between 53 & 65 Tolend Road and 22 Sun Hawk Lane. (Proposal is for a 27 lot subdivision with 2 open space areas) (SUBD-2023-0005).
  - *b.* Another TRC for a Site Review for Brady Sullivan Properties, located at 25-26 Karolina Drive. (Proposal is to add a 4,600 s.f. building with outdoor patio, walkways, and parking restriping to add ADA spaces.) (SITE-2023-0001).
  - *c.* Site Review for Norman Kotoch, NAK Management & Consulting, LLC, agent (Owners: MHC 155 (Dover NH) LLC), located at 56 Sixth Street. (Proposal is to construct a 37,930 s.f. two story climate-controlled self-storage facility, where a 59,450 s.f. four-story storage building previously existed).
- The Vision Chapter Update is wrapping up the public comment period and the consultant is finalizing their draft chapter for the Planning Board to review and possibly adopt in May.

6. MEMBER COMMENTS

- The Chair signed the following documents:
  - Lot line adjustment on Silver St Ext.
  - CUP on Boston Harbor Rd
- The Chair read and signed Site Plan and Lot merger form from 42-44 Third St
- The Chair noted F. Torr has decided not to seek reappointment to the board following his term's expiration this past April. She read a letter he submitted and publicly thanked him for all of his outstanding service on many boards over the past 25 years.

7. ADJOURNMENT

Motion: M. Speidel moved to adjourn at 7:34pm. Seconded by G. DeBoer. Vote: U/A

DRAFT

From: Elliot Schultz <elliotaschultz@gmail.com>
Sent: Tuesday, April 11, 2023 8:20 AM
To: Planning Board - All <PlanningBoard-All@dover.nh.gov>
Cc: Joyal, Michael <M.Joyal@dover.nh.gov>
Subject: Noise Issues - Chickens

Security Notice: External sender. Use caution with hyperlinks or attachments.

Dear Members of the Planning Board,

My name is Elliot Schultz and I live at 2 Middlebrook Road, for the past 13 years, with my family.

I come to the Board seeking help due to an issue that began last June when the property at 3 Hawthorne was sold. The new residents of 3 Hawthorne came to Dover with their chickens (hens). We had no idea how noisy the chickens were going to be – but we soon found out. Typically, the chickens will begin to squawk and carry on around 6am and can continue in this manner until 1pm. The squawking/chirping/growling/etc (we had no idea how many sounds they can make) will last anywhere from 1 minute to up to 2 hours on an occasion. We do regularly reach out to the neighbors via text, phone calls, in person conversations, but it's rather clear that they no longer care what we think as they are slow to respond, if at all.

According to the zoning laws for the different types of residential properties, as amended in 2010;
Use is allowed on the portion of the lot that is behind the principal structure, provided the following standards are met: Chickens: No more than six (6) chickens and no roosters, with three (3) square feet of chicken coop and twenty (20) square feet of a fenced enclosure yard per chicken; all coops and enclosures shall be twenty (20) feet from any property line.

As 2 Middlebrook Road and 3 Hawthorne Road are designated as R-12, we understand that it is fully acceptable to have chickens, assuming that all criteria from above are met. The issue though is, both homes are on rather small lots where there is not much space in the backyards. The close quarters becomes problematic in situations like this as the noise easily travels. We find it hard during the spring, summer, and fall to leave our windows open as we are awoken to the chickens. In addition, as both my wife and I work from home due to changes from the pandemic, the sounds of the chickens are quite distracting.

With there not being a noise ordinance for chickens (only for dogs), we really have no recourse to ensure that the some level of peace is maintained. As we have spoken with both the ACO at the Police Department and the City Manager, protections to the peace as defined in Code 69-11 (Barking Dogs) or 105-3 (Public peace.) do not extend to chickens.

If possible, would the Planning Board please review this issue and possibly make an update to the Residential Zones? Some suggested remedies might be, require abutter consent if new chickens are going to be introduced to a property, include a new provision that would allow for the ACO officer to become involved in on-going noise disputes, or restrict chickens on lots under .25 of an acre.

Please feel free to contact me at 518-755-4478 to discuss further.

I appreciate your time and attention to this issue.

Thank you.
Elliot A Schultz

Medium Density Residential (R-12) District

Amended: 11-28-2012 by Ord. No. 2012-11.14-24, 08-19-2015 by Ord. No. O-2015.07.22-017, Amended:10-13-21 by O – 2021.09.08 - 006

Permitted Uses

- ACCESSORY DWELLING UNIT
- ASSEMBLY HALL
- BED and BREAKFAST
- CHILD CARE FACILITY
- CONSERVATION LOT
- CHILD CARE HOME
- Conversion of Existing Dwelling to Accommodate not more than 2 units [6]
- Dwelling, 2 Family [7]
- DWELLING, SINGLE FAMILY
- EDUCATIONAL INSTITUTION, K-12
- EDUCATIONAL INSTITUTION, POST SECONDARY
- FARM [8]
- FARM ANIMALS FOR FAMILY USE, for non-commercial purposes, on lots containing a one or two family dwelling [9]
- OFFICE [10]
- PUBLIC RECREATION
- Public Utility [11]
- ROADSIDE FARM STAND [12]

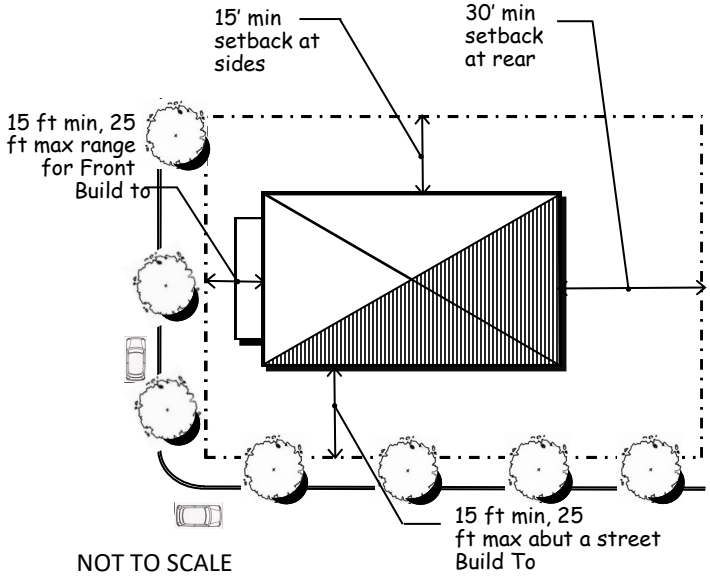
Dimensional Regulations [1] [2]

LOT	
Minimum LOT Size [3] [4]	12,000 sf
Maximum LOT COVERAGE	30%
Minimum FRONTAGE	100 ft
PRINCIPAL BUILDING	
Front BUILD TO LINE	15 ft min, 25 ft max [5]
Abut a Street BUILD TO LINE	15 ft min, 25 ft max [5]
Side SETBACK	15 ft
Rear SETBACK	30 ft
OUTBUILDING/ACCESSORY USE	
Front SETBACK	No closer than the principal BUILDING
Abut a Street SETBACK	No closer than the principal BUILDING
Side SETBACK	10 ft
Rear SETBACK	10 ft
HEIGHT OF BUILDING	
PRINCIPAL BUILDING	35 ft max
OUTBUILDING	35 ft max

Uses Permitted by Special Exception

- ELDERLY ASSISTED CARE HOME

Principal Building Placement



NOT TO SCALE

Sign Regulations

Size	R-12 District
Total SIGNS permitted	1
Total area permitted	16 sf (CUSTOMARY HOME OCCUPATION SIGN max 2 sf, development identification sign 20 sf max)
Type	
FREESTANDING	permitted (10 ft setback required)
PROJECTING	permitted
WALL/ Awning	not permitted
Temporary	not permitted

Footnotes

[1] In the case of an Open Space Subdivision, in accordance with Article IV of Chapter 157 of the Code of Dover, the dimensional requirements shall be as specified in 157-21 of the Code of the City of Dover, 1983.

[2] Refer to 170-13, 170-14 and 170-27D for exceptions to lot size, frontage and setback requirements.

[3] All land containing wetlands shall not be counted in determining the gross land area of a lot for the purposes of minimum lot size or minimum density requirements for residential uses. The minimum non-wetland portion of any newly created lot shall be contiguous. For the purposes of this calculation, wetlands shall include areas that meet the definition of wetland in the NH Code of Administrative Rules – Wt. 101.87 and the 1987 Federal Manual For Identifying Jurisdictional Wetlands. Wetland buffers shall only be allowed to count for 40 percent of the minimum lot size required.

[4] Refer to Chapter 157, Subdivision of Land, Article IV for the minimum lot size for a major Subdivision. Any major subdivision in an R-12 district, must follow the procedures for an OSS if the original lot meets the minimum lot size required.

[5] Expansions to, or renovations of, STRUCTURES on existing lots have a five (5) foot SETBACK.

[6] Any dwelling unit may be converted, not replaced, provided that the lot shall contain at least four thousand (4,000) square feet per dwelling unit and a minimum floor area of five hundred (500) square feet per dwelling unit.

2 family dwellings shall be designed to look like single family dwellings (i.e. the 2 family dwelling should not look like it was designed to occupy more than one family). At a minimum, this shall mean that only one entrance shall be visible from a public street, and only one driveway shall exist with no on street parking required for residents.

[7] Two family dwellings are permitted on lots with a density of nine thousand (9,000) square feet per dwelling unit. The structures shall be designed to look like single family dwellings (i.e. the 2 family dwelling should not look like it was designed to occupy more than one family). At a minimum, this shall mean that only one entrance shall be visible from a public street, and only one driveway shall exist with no on street parking required for residents. Single family density shall be used for TDR. If two family density is used, a two family unit shall be built.

[8] Shall not include the raising and sale of FARM ANIMALS; the breeding, boarding, and training of equines, and equine riding instruction; the commercial raising, harvesting, and sale of fresh water fish or other aquaculture products; and/or the breeding of poultry or game birds.

[9] Use is allowed on the portion of the lot that is behind the principal structure, provided the following standards are met: Chickens: No more than six (6) chickens and no roosters, with three (3) square feet of chicken coop and twenty (20) square feet of a fenced enclosure yard per chicken; all coops and enclosures shall be twenty (20) feet from any property line. Sheep or goats: one animal per 10,000 square feet of lot area, with a maximum of six (6) animals; ten (10) square feet of shelter and thirty (30) square feet of a fenced enclosure yard per animal; all shelters and enclosures shall be thirty (30) feet from any property line.

[10] Permitted only if operated as a CUSTOMARY HOME OCCUPATION (Refer to definition in 170-6B).

[11] The Utility Facility shall be appropriately fenced to protect the public. Landscaping materials shall be required to provide a visual screen from any structures and storage within.

[12] ROADSIDE FARM STANDS shall be set back a minimum of twenty (20) feet from all abutting vehicular rights-of-way. The area of any BUILDING associated with the ROADSIDE FARM STAND shall not be greater than two hundred (200) square feet in area, and shall be considered an accessory structure if a residence is also located on the property. The total of the display area, including the building, shall not exceed four hundred (400) sq. ft. Off-street parking shall be provided in the amount of one (1) off-street parking space per 250 sq. ft. of display and building area, and all required parking spaces shall have safe access to and from a public street. A certificate of use issued by the Zoning Administrator and a driveway permit shall be required in all cases."

Special Exception Criteria **(see 170-52(C)(3) for additional regulations)**

ELDERLY ASSISTED CARE HOME:

ELDERLY ASSISTED CARE HOME is allowed by Special Exception in accordance with the densities and provisions stated below:

A. ELDERLY ASSISTED CARE HOME Is larger than 6 bedrooms shall meet the following density requirements: In the R-12 District at a density of one bedroom per 3,000 sq. ft.

B. Provided that parking and service areas are screened from abutting residential uses.

C. Notwithstanding the above requirements, the maximum number of bedrooms and residents allowed in a facility may be increased provided the increase is found not to be detrimental to the surrounding properties and conforms with parking standards in Chapter 170-44 (Off Street Parking). Furthermore, any increase to an existing structure must be contained within or contiguous to the original structure.

Urban Density Multi Residential (RM-U) District

Amended: 11-28-12 by Ord. No. 2012-11.14-24, 08-19-2015 by Ord. No. O-2015.07.22-017, Amended:10-13-21 by O – 2021.09.08 - 006

Permitted Uses

- ACCESSORY DWELLING UNIT
- ADULT DAY CARE
- ASSEMBLY HALL
- CHILD CARE FACILITY
- CHILD CARE HOME
- CONSERVATION LOT
- Conversion of Existing Dwelling to Accommodate not more than 2 units [4]
- Dwelling, 2 Family
- DWELLING, SINGLE FAMILY
- EDUCATIONAL INSTITUTION, K-12
- FARM ANIMALS FOR FAMILY USE, for non-commercial purposes, on lots containing a one or two family dwelling [5]
- Funeral Parlor
- OFFICE [6]
- PUBLIC RECREATION
- Public Utility [7]
- ROOMING HOUSE

Uses Permitted by Special Exception

- ASSISTED LIVING FACILITY
- Beauty and barbershop
- CONGREGATE CARE FACILITY
- CONTINUING CARE COMMUNITY FACILITY
- Conversion of Existing Dwelling to accommodate not more than 4 units
- Dwelling, 3 to 4 Family
- ELDERLY ASSISTED CARE HOME
- GROUP HOME FOR MINORS
- NURSING HOME
- Retail Store

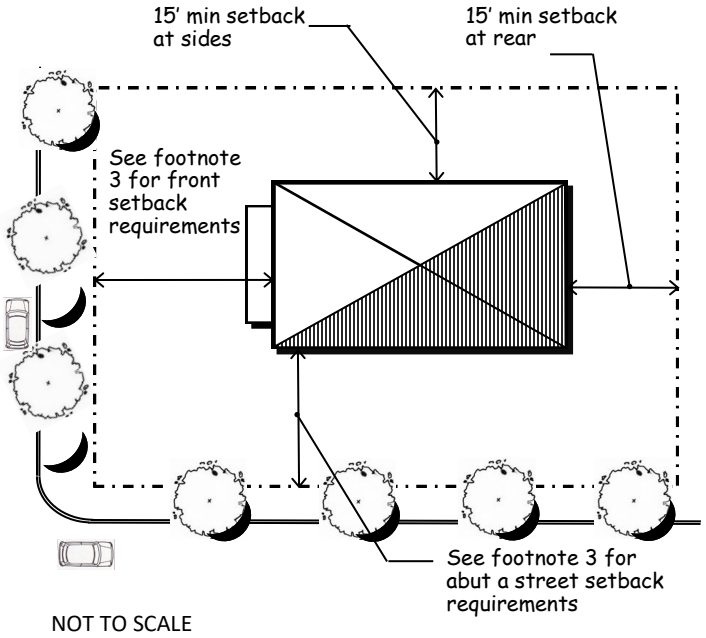
Sign Regulations

Size	RM-U District
Total signs permitted	1
Total area permitted	16 sf (CUSTOMARY HOME OCCUPATION SIGN 2 sf max, development identification sign 20 sf max)
Type	
FREESTANDING	permitted (10 ft setback required)
PROJECTING	permitted
WALL/ Awning	not permitted
Temporary	not permitted

Dimensional Regulations [1] [2]

LOT	
Minimum LOT Size	10,000 sf
Maximum LOT Coverage	40%
Minimum FRONTAGE	80 ft
PRINCIPAL BUILDING	
Front SETBACK	[3]
Abut a Street SETBACK	[3]
Side SETBACK	15 ft
Rear SETBACK	15 ft
OUTBUILDING/ACCESSORY USE	
Front SETBACK	No closer than the principal BUILDING
Abut a Street SETBACK	No closer than the principal BUILDING
Side SETBACK	10 ft
Rear SETBACK	10 ft
HEIGHT OF BUILDING	
PRINCIPAL BUILDING	40 ft max
OUTBUILDING	40 ft max

Principal Building Placement



NOT TO SCALE

Footnotes

[1] Refer to 170-13, 170-14 and 170-27D for exceptions to lot size, frontage and setback requirements.

[2] All land containing wetlands shall not be counted in determining the gross land area of a lot for the purposes of minimum lot size or minimum density requirements for residential uses. The minimum non-wetland portion of any newly created lot shall be contiguous. For the purposes of this calculation, wetlands shall include areas that meet the definition of wetland in the NH Code of Administrative Rules – Wt. 101.87 and the 1987 Federal Manual For Identifying Jurisdictional Wetlands. Wetland buffers shall only be allowed to count for 40 percent of the minimum lot size required.

[3] The property owner shall calculate the average front SETBACKs of all LOTs within the same zone located on the same side of the STREET, two hundred fifty (250) feet in each direction from the center of the front LOT LINE. This front SETBACK dimension shall be considered to be a BUILD TO LINE. STRUCTUREs may be constructed within five (5) feet plus or minus of the average. Porches or steps may be located an additional five (5) feet beyond the front façade of the STRUCTURE. Expansions to existing STRUCTUREs shall be subject to a minimum SETBACK equal to the calculated average SETBACK minus five (5) feet.

[4] Provided that the lot contains at least two thousand (2,000) square feet for each dwelling unit plus an additional five hundred (500) square feet for every bedroom contained in such multiunit residence. A maximum of four (4) units per lot is allowed.

[5] Use is allowed on the portion of the lot that is behind the principal structure, provided the following standards are met: Chickens: No more than six (6) chickens and no roosters, with three (3) square feet of chicken coop and twenty (20) square feet of a fenced enclosure yard per chicken; all coops and enclosures shall be twenty (20) feet from any property line. Sheep or goats: one animal per 10,000 square feet of lot area, with a maximum of six (6) animals; ten (10) square feet of shelter and thirty (30) square feet of a fenced enclosure yard per animal; all shelters and enclosures shall be thirty (30) feet from any property line.

[6] Permitted only if operated as a customary home occupation (Refer to definition in 170-6B).

[7] The utility facility shall be appropriately fenced to protect the public. Landscaping materials shall be required to provide a visual screen from any structures and storage within.

Special Exception Criteria **(see 170-52(C)(3) for additional regulations)**

ASSISTED LIVING FACILITY:

A. The facility shall be serviced by municipal sewer.
B. The density per unit requirement is 2,500 square feet of lot area in the RM -U District.
C. Parking lots and service areas are screened from abutting residential uses.
D. The facility shall obtain a license from the State of New Hampshire.

Barber and Beauty Shops: Barber and beauty shops shall be subject to the following regulations:

A. No more than one (1) operator's chair is permitted.
B. No assistants are to be employed.
C. All operators are to be members of the immediate family who reside in the home.
D. All such uses shall conform to the regulations governing customary home occupations in 170-18.

CONGREGATE CARE FACILITY:

CONGREGATE CARE FACILITY is allowed as a Special Exception in accordance with the density and provisions stated below:

A. In the RM-U District at one unit per 2,500 sq. ft. of land;
B. Provided that parking and service areas are screened from abutting residential uses.

CONTINUING CARE COMMUNITY FACILITY:

A. The facility shall be serviced by municipal sewer.
B. Parking lots and service areas are screened from abutting residential uses.
C. The facility shall obtain a license from the State of New Hampshire.

Conversion to, or creation of Dwelling, 3-4 Family: Three- or four-family dwellings and conversions of existing dwellings to three (3) or four (4) units shall be subject to the following regulations:

A. The specific site must have an amount of open space, either landscaped or left natural, at least equal to the average amount of open space on all developed lots in the RM-U District that are wholly or partly within two hundred (200) feet of the subject parcel. Existing parking areas, either gravel, paved or unpaved, shall not be considered to be open space.
B. Off-street parking, in accordance with Chapter 153, Site Review, shall be provided as to avoid vehicles backing into the street. Two (2) parking spaces per unit shall be required.
C. Parking lots shall be at least five (5) feet from a side property line and ten (10) feet from a front property line.
D. Parking areas shall be screened from the street and from abutting lots.
E. Structures shall be at least twenty (20) feet from a front property line, fifteen (15) feet from a rear property line and fifteen (15) from a side property line unless abutting a street, in which case, the distance from the side property line shall be twenty (20) feet.
F. If the units generated are restricted to the HUD Fair Market Rent rates, for Dover, criteria A and E do not apply.

ELDERLY ASSISTED CARE FACILITY:

ELDERLY ASSISTED CARE HOME is allowed by Special Exception in accordance with the densities and provisions stated below:

A. ELDERLY ASSISTED CARE HOMES larger than 6 bedrooms shall meet the following density requirements: In the RM-U District at a density of one bedroom per 2,500 sq. ft.
B. Provided that parking and service areas are screened from abutting residential uses.
C. Notwithstanding the above requirements, the maximum number of bedrooms and residents allowed in a facility may be increased provided the increase is found not to be detrimental to the surrounding properties and conforms with parking standards in Chapter 170-44 (Off Street Parking). Furthermore, any increase to an existing structure must be contained within or contiguous to the original structure.

GROUP HOME FOR MINORS:

GROUP HOME FOR MIORS shall be subject to the following conditions:

A. The group home site shall be compatible with abutting uses.
B. The group home shall be located in areas of transitional land use or mixed land uses.
C. Parking and service areas shall be screened from abutting residential uses, unless the abutter chooses to not want said screening.
D. Open space shall be maintained on the property in an amount comparable to the neighborhood.
E. The planned occupancy of the group home shall be compatible with the permitted density of the surrounding neighborhood.

NURSING HOME:

NURSING HOME is allowed as a Special Exception in accordance with the density and provisions stated below:

A. In the RM-U District at one unit per 2,000 sq. ft. of land;
B. Provided that parking and service areas are screened from abutting residential uses.

Retail Store:

A Retail Store shall be subject to the following regulations:

A. The store shall contribute to a NEIGHBORHOOD feel and be pedestrian friendly.
B. The store shall be no larger than 2,000 square feet.
C. No more than half of the required parking necessary shall be on-site parking, which shall be screened from abutting residential LOTS.
D. Any loading or unloading of products shall not disrupt NEIGHBORHOODS or traffic flow.
E. The proposed use shall be compatible with the surrounding NEIGHBORHOOD.
F. Hours of operation shall be limited to 6 am to 9 pm Sunday – Thursday, and 6 am to 10 pm Friday and Saturday.

Low Density Residential (R-20) District

Amended: 12-08-10 by Ord. No. 2010-10.27-13, 11-28-12 by Ord. No. 2012-11.14-24, 08-19-2015 by Ord. No. O-2015.07.22-017

Permitted Uses

- ACCESSORY DWELLING UNIT
- ADULT DAY CARE [5]
- ASSEMBLY HALL
- Bank [5]
- Beauty and Barber Shop [5]
- BED and BREAKFAST
- CHILD CARE FACILITY
- CHILD CARE HOME
- CONSERVATION LOT
- Conversion of Existing Dwelling to Accommodate not more than 2 units [6]
- Dwelling, 2 Family [7]
- Dwelling, 3 To 4 family [7]
- DWELLING, SINGLE FAMILY
- EDUCATIONAL INSTITUTION, K-12
- FARM [8]
- FARM ANIMALS FOR FAMILY USE, for non-commercial purposes, on lots containing a one or two family dwelling [9]
- OFFICE [10] [5]
- PERSONAL SERVICE ESTABLISHMENT [5]
- PUBLIC RECREATION
- Public Utility [11]
- Retail Sale of Agricultural or Farm Products Raised on Site
- ROADSIDE FARM STAND [12]
- Theater [5]
- Veterinary Office, Animal Hospital or KENNEL [13]

Uses Permitted by Special Exception

- ASSISTED LIVING FACILITY
- CONGREGATE CARE FACILITY
- CONTINUING CARE COMMUNITY FACILITY
- EDUCATIONAL INSTITUTION, POST SECONDARY
- ELDERLY ASSISTED CARE HOME
- Helicopter Take Offs & Landings
- NURSING HOME

Sign Regulations

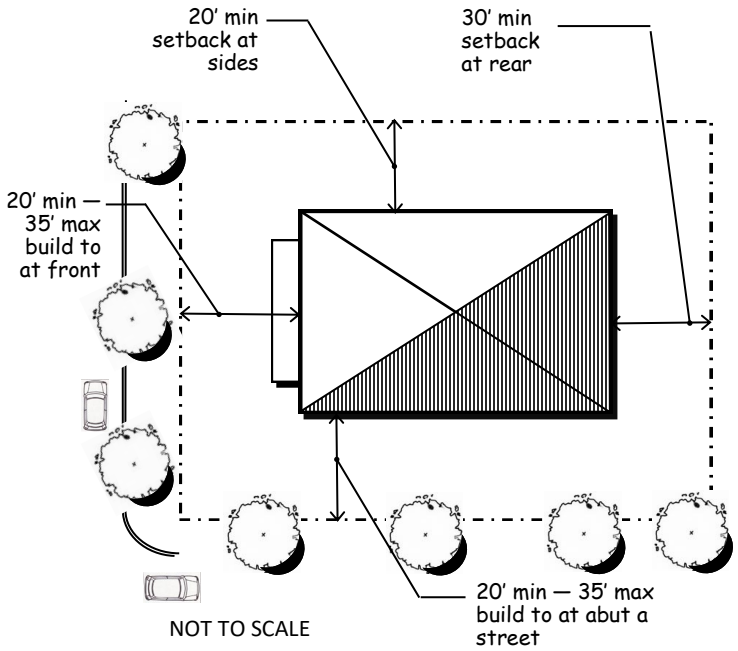
Size	R-20 District
Total signs permitted	1
Total area permitted	16 sf (CUSTOMARY HOME OCCUPATION SIGN 2 sf max, development identification SIGN 20 sf max)
Type	
FREESTANDING	permitted (10 ft SETBACK required)
PROJECTING	permitted
WALL/ Awning	not permitted
Temporary	not permitted

Dimensional Regulations [1] [2]

LOT	
Minimum LOT Size [3]	20,000 sf
Maximum LOT COVERAGE	30%
Minimum FRONTAGE	125 ft
PRINCIPAL BUILDING	
Front BUILD TO LINE	20 ft min, 35 ft max*
Abut a Street BUILD TO LINE	20 ft min, 35 ft max*
Side SETBACK	20 ft
Rear SETBACK	30 ft
OUTBUILDING/ACCESSORY USE	
Front SETBACK	No closer than the principal BUILDING or 35 feet whichever is less
Abut a Street SETBACK	No closer than the principal BUILDING or 35 feet whichever is less
Side SETBACK	10 ft
Rear SETBACK	10 ft
HEIGHT OF BUILDING	
PRINCIPAL BUILDING	35 ft max
OUTBUILDING	35 ft max

*Expansions to, or renovations of, existing structures have a twenty (20) foot setback.

Principal Building Placement



Footnotes

[1] In the case of an Open Space Subdivision, in accordance with Article IV of Chapter 157 of the Code of Dover, the dimensional requirements shall be as specified in 157-21 of the Code of the City of Dover, 1983.

[2] Refer to 170-13, 170-14 and 170-27D for exceptions to lot size, frontage and setback requirements.

[3] All land containing wetlands shall not be counted in determining the gross land area of a lot for the purposes of minimum lot size or minimum density requirements for residential uses. The minimum non-wetland portion of any newly created lot shall be contiguous. For the purposes of this calculation, wetlands shall include areas that meet the definition of wetland in the NH Code of Administrative Rules – Wt. 101.87 and the 1987 Federal Manual For Identifying Jurisdictional Wetlands. Wetland buffers shall only be allowed to count for 40 percent of the minimum lot size required.

[4] Refer to Chapter 157, Subdivision of Land, Article IV for the minimum lot size for a major Subdivision. Any major subdivision in an R-20 district, must follow the procedures for an OSS if the original lot meets the minimum lot size required.

[5] Use is allowed as a commercial component to an Open Space Subdivision. (See 155.22 section 7).

[6] Any dwelling unit may be converted, provided that the lot shall contain at least four thousand (4,000) square feet per dwelling unit and a minimum floor area of five hundred (500) square feet per dwelling unit.

2 family dwellings shall be designed to look like single family dwellings (i.e. the 2 family dwelling should not look like it was designed to occupy more than one family). At a minimum, this shall mean that only one entrance shall be visible from a public street, and only one driveway shall exist with no on street parking required for residents.

[7] 2 family dwellings are permitted on lots with a density of fifteen thousand (15,000) square feet per dwelling unit. The structures shall be designed to look like single family dwellings (i.e. the 2 family dwelling should not look like it was designed to occupy more than one family). At a minimum, this shall mean that only one entrance shall be visible from a public street, and only one driveway shall exist with no on street parking required for residents. Single family density shall be used for TDR. If 2 family density is used, a two family unit shall be built.

[8] FARM ANIMALS permitted, provided that the tract upon which such animals are kept shall support a minimum land area of one hundred thousand (100,000) square feet. In no instance shall the shelters and pens or runs used to contain said animals be closer than one hundred (100) feet from any property boundary.

[9] Use is allowed on the portion of the lot that is behind the principal structure, provided the following standards are met: Chickens: No more than six (6) chickens and no roosters, with three (3) square feet of chicken coop and twenty (20) square feet of a fenced enclosure yard per chicken; all coops and enclosures shall be twenty (20) feet from any property line. Sheep or goats: one animal per 10,000 square feet of lot area, with a maximum of six (6) animals; ten (10) square feet of shelter and thirty (30) square feet of a fenced enclosure yard per animal; all shelters and enclosures shall be thirty (30) feet from any property line.

[10] Permitted only if operated as a customary home occupation.

[11] The utility facility shall be appropriately fenced to protect the public. Landscaping materials shall be required to provide a visual screen from any structures and storage within.

[12] ROADSIDE FARM STANDs shall be set back a minimum of twenty (20) feet from all abutting vehicular rights-of-way. The area of any BUILDING associated with the ROADSIDE FARM STAND shall not be greater than two hundred (200) square feet in area, and shall be considered an accessory structure if a residence is also located on the property. The total of the display area and BUILDING area shall not exceed six hundred (600) square feet Off-street parking shall be provided in the amount of one (1) off-street parking space per 250 sq. ft. of display and BUILDING area, and all required parking spaces shall have safe access to and from a public street. A certificate of use issued by the Zoning Administrator and a driveway permit shall be required in all cases.

[13] Veterinary Office, Animal Hospital uses are allowed as a commercial component to an Open Space Subdivision. (See 155.22 section 7) [Added 1-22-2003 by Ord. No. 35]. Shelters and runs used to house and/or contain animals shall be no closer than one hundred (100) feet from any property line and must support a minimum tract size of one hundred thousand (100,000) square feet.

Special Exception Criteria **(see 170-52(C)(3) for additional regulations)**

ASSISTED LIVING FACILITY:

A. The facility shall be serviced by municipal sewer.
B. The density per unit requirement is 5,000 square feet of lot area in the R-20 District.
C. Parking lots and service areas are screened from abutting residential uses.
D. The facility shall obtain a license from the State of New Hampshire.

CONGREGATE CARE FACILITY:

CONGREGATE CARE FACILITY is allowed as a Special Exception in accordance with the density and provisions stated below:

A. In the R-20 District at one unit per 5,000 sq. ft. of land;
B. Provided that parking and service areas are screened from abutting residential uses.

CONTINUING CARE COMMUNITY FACILITY:

A. The facility shall be serviced by municipal sewer.
B. The density per unit requirement is 5,000 square feet of lot area in the R-20 District.
C. Parking lots and service areas are screened from abutting residential uses.
D. The facility shall obtain a license from the State of New Hampshire.

ELDERLY ASSISTED CARE HOME : ELDERLY ASSISTED CARE HOME is allowed by Special Exception in accordance with the densities and provisions stated below:

A. ELDERLY ASSISTED CARE HOME is larger than 6 bedrooms shall meet the following density requirements: In the R-20 District at a density of one bedroom per 5,000 sq. ft.
B. Provided that parking and service areas are screened from abutting residential uses.
C. Notwithstanding the above requirements, the maximum number of bedrooms and residents allowed in a facility may be increased provided the increase is found not to be detrimental to the surrounding properties and conforms with parking standards in Chapter 170-44 (OFF STREET PARKING). Furthermore, any increase to an existing structure must be contained within or contiguous to the original structure.

Helicopter Take-offs and Landings: Helicopter Take-offs and Landings are allowed as a special exception subject to the following conditions:

A. There shall be a distance of one thousand (1,000) feet between any existing residential structure and any proposed helicopter landing pad.
B. Except in the case of an emergency, no helicopter take offs or landings shall occur between the hours of 9:00 p.m. and 7:00 a.m.
C. The facility shall be accessory to the principal use located on the lot.
D. All facilities shall be located and designed so that the operation thereof will not adversely affect adjacent residential areas, particularly with respect to noise levels.
E. The conditions for granting a Special Exception, contained in Chapter 170-52-C(3), must also be satisfied.

NURSING HOME: NURSING HOME is allowed as a Special Exception in accordance with the density and provisions stated below:

A. In the R-20 District at one unit per 5,000 sq. ft. of land;
B. Provided that parking and service areas are screened from abutting residential uses.

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #LOTA-2023-0005

Application Type:	Lot Line Adjustment
Applicant(s):	Norway Plains Associates, Inc
Owner(s):	The Peter H. Russell Revocable Living Trust and Gangagi, LLC
Location:	Located at New Rochester Rd. & 9 Hotel Dr. (Assessor's Map 39, Lots 93 & 76)
Meeting Date:	May 23, 2023

INTENT: To revise the lot lines between two parcels, conveying 0.14± ac. to Lot 93 and 0.07± ac. to Lot 76, leaving Lot 93 with 1.20± ac. and Lot 76 with 2.04± ac. A separate application for a minor subdivision is congruently before the Planning Board.

LOTS/UNITS PROPOSED: N/A

AGENDA ITEM #: 4-B

FILE: LOTA-2023-0005

ACREAGE: **Existing/Proposed:**
93: 1.13± ac. / 1.20± ac.
76: 2.12± ac. / 2.04± ac.

ZONING DISTRICT: C

ZONING DISTRICT: C

EXISTING USE: Commercial

PROPOSED USE: Commercial (No change)

SURROUNDING: Commercial, Residential, Cemetery

ZBA ACTION:
Lot 93 (#Z04-03 on 2/19/2004); Variance granted for relief for off-site advertising and to install signage exceeding allowed maximum sign area.

ATTACHMENTS: Application, Lot Line Adjustment Plan, Narrative

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

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

PERMITS / WAIVERS REQ.: None

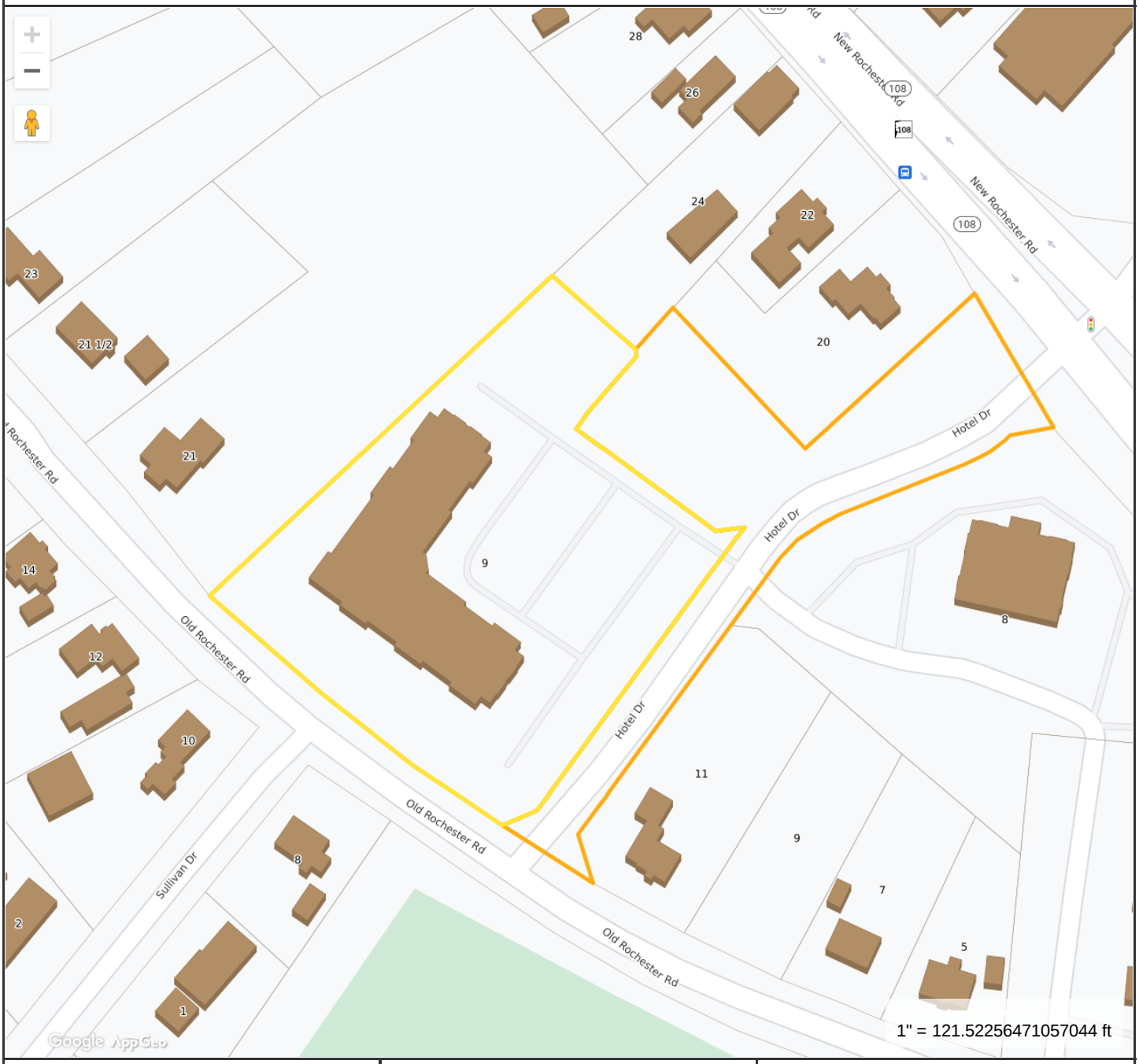
Summary of Request and Background
The applicants are requesting to complete a lot line adjustment between two lots, conveying 6,234 sq. ft. / 0.14± ac. to Lot 93 and 2,952 sq. ft. / 0.07± ac. to Lot 76, ultimately leaving Lot 93 with 52,333 sq. ft. / 1.20± ac. and Lot 76 with 89,067 sq. ft. / 2.04± ac. A separate application for a minor subdivision is also before the Planning Board. As a Lot Line Adjustment, this application did not appear before the TRC.

Consistency with Land Use Regulations
Chapter §157-17 of the Land Subdivision Regulations of the City Code provides for the adjustment of existing lot lines between two or more lots. This plan is consistent with those regulations.

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board accept the application, open the public hearing, make findings, and vote to approve the application with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:
1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford Country Registry of Deeds, which additionally shall include:
   1.1. The owners' signatures;
   1.2. Include the Planning File # on bottom right of plan sheet: LOTA-2023-0005;
   1.3. The stamp and signature of the LLS on the final plans.

LOTA-2023-0005 New Rochester Rd & Hotel Dr



Property Information

Property ID	39076-000000
Location	9 HOTEL DR
Owner	GANGAGI LLC
Land Use	300
Zoning Code	C

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 12/16/2022
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
MINOR LOT LINE ADJUSTMENT APPLICATION

[Revision Date: June 4, 2019]

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

APPLICANT INFORMATION

Name of Applicant: THE PETER H. RUSSELL REV. LIVING TRUST Telephone # 603-686-5327

Address of Applicant: 500 MARKET STREET, UNIT 15L, PORTSMOUTH, NH 03801

FIRST PROPERTY OWNER AND PARCEL INFORMATION

Name of 1st Property Owner (*if different from applicant*): PH RUSSELL REV TRT Telephone # 603-686-5327

Address of 1st Property Owner: 500 MARKET STREET, UNIT 15L, PORTSMOUTH, NH 03801

Address of Property: NEW ROCHESTER ROAD, DOVER NH 03820

Assessor's Map # 39 Lot(s) # 93

Property Deed: Book 2768 Page: 1010

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

Size of Existing Parcel (sq. ft.): 49,046 Size of Proposed Parcel (sq. ft.): 26,801

SECOND PROPERTY OWNER AND PARCEL INFORMATION

Name of 2nd Property Owner (*if different from applicant*): GANGAGI LLC Telephone # 603-265-7770

Address of 2nd Property Owner: 9 HOTEL DRIVE, DOVER NH 03820

Address of Property: 9 HOTEL DRIVE, DOVER NH 03820

Assessor's Map # 39 Lot(s) # 76

Property Deed: Book 4227 Page: 450

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

Size of Existing Parcel (sq. ft.): 92,353 Size of Proposed Parcel (sq. ft.): 89,067

THIRD PROPERTY OWNER AND PARCEL INFORMATION

Name of 3rd Property Owner (*if different from applicant*): N/A Telephone # _____

Address of 3rd Property Owner: _____

Address of Property: _____

Assessor's Map # _____ Lot(s) # _____

Property Deed: Book _____ Page: _____

Zoning District(s) _____ Overlay District(s) _____

Size of Existing Parcel (sq. ft.): _____ Size of Proposed Parcel (sq. ft.): _____

[Use additional application form if more than two lots are being adjusted]

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) RANDOLPH TETREAULT OF NORWAY PLAINS ASSOC.

Address PO BOX 249, ROCHESTER NH 03866 Telephone #: 603-335-3948

Professional License #: NH LLS 729 E-mail address: RTETREAULT@NORWAYPLAINS.COM

CONSERVATION EASEMENT HOLDER (s)

Name of Easement Holder: _____ Telephone #_____

Address Easement Holder: _____

Name of 2nd Easement Holder: _____ Telephone #_____

Address 2nd 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. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

Signature of First Property Owner: _____ Date: _____

Signature of Second Property Owner: _____ Date: _____

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

Signature of Agent: _____ Date: 5/1/2023

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I 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: _____

CITY OF DOVER MINOR LOT LINE ADJUSTMENT 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

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

Norway Plains Associates, Inc.
2 Continental Blvd., PO Box 249
Rochester, NH 03866

Abutters List

November 11, 2020

Applicant:

The Peter H. Russell
Revocable Living Trust

Subject Properties:

Tax Map 39, Lots 93 & 76

MAP	LOT	Property Owner:	Mailing Address
39	93	THE PETER H. RUSSELL REVOCABLE LIVING TRUST	500 MARKET STREET, UNIT 15L PORTSMOUTH, NH 03801
39	76	GANGAGI LLC	9 HOTEL DRIVE, DOVER, NH 03820

SURVEYOR	Norway Plains Associates, Inc. Randolph R. Tetreault, LLS	PO Box 249 Rochester, NH 03866-0249
AGENT	Norway Plains Associates, Inc. Ashley F. Rowe	PO Box 249 Rochester, NH 03866-0249

NPA Project# 18083

City of Dover, New Hampshire
LOT LINE ADJUSTMENT SUBMISSION CHECKLIST

[Revision Date: June 4, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision 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.

Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, 3 weeks prior to the Planning Board meeting. Abutter/Notice Fees will be invoiced and are due 28 hours prior to Planning Board.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: THE PETER H. RUSSELL REV. LIVING TRUST File Number: _____

PROPERTY LOCATION: NEW ROCHESTER ROAD Tax Map: 39 Lot: 93 and Lot: 76

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the surveyed plat layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Fifteen copies of LLA plan w/scale of not less than 1"=50' or 1"=100' for larger adjustments. Plans shall contain the following items as appropriate:	FIVE COPIES PROVIDED PER J. GLIDDEN	
Location map at appropriate scale	X	
Planning File #		
Date, north arrow and scale	X	
Names of all abutting property owners	X	
Name and address of owners	X	
Signature & stamp of NH licensed land surveyor	X	
Zoning District boundaries, including any special or overlay districts	X	
Location of Conservation District areas	X	
Location, names and widths of existing and streets, including pavement widths, grades, curbs and crosswalks	X	
Location and widths of existing & proposed easements & right of ways	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed buildings and structure locations	X	
Minimum building setbacks or build to lines on all lots	X	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location, material and size of existing and proposed permanent monuments	X	
All applicable Dover Common Subdivision notes	X	

REVIEWED BY: _____ DATE_____

LOTA-2023-0005 **NEW ROCHESTER ROAD & HOTEL DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
39009-000000	INDIAN BROOK DR	RICHMOND DOVER REALTY LLC	C/O STOP AND SHOP SUPMKT CO/AFS	PO BOX 6500	CARLISLE	PA	17013
39011-000000	NEW ROCHESTER RD	RICHMOND DOVER REALTY LLC	C/O STOP AND SHOP SUPMKT CO/AFS	PO BOX 6500	CARLISLE	PA	17013
39011-B00000	2 WILLAND POND RD	WDC INC		17 NEW ROCHESTER RD	DOVER	NH	03820
39016-000000	17 NEW ROCHESTER RD	WDC INC		17 NEW ROCHESTER RD	DOVER	NH	03820
39017-000000	19 NEW ROCHESTER RD	ROMBOT RAMON D G &	ROMBOT DEBBIE D L	65-11 108TH ST APT 1D	FOREST HILLS	NY	11375
39075-000000	21 OLD ROCHESTER RD	DEMERS LYNDA S		21 OLD ROCHESTER ROAD	DOVER	NH	03820-2009
39075-A00000	21 1/2 OLD ROCHESTER RD	POMERLEAU JEAN		21 1/2 OLD ROCHESTER RD	DOVER	NH	03820
39079-000000	11 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39080-000000	9 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39081-000000	7 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39094-000000	8 HOTEL DR	RICHMOND 99 DEVELOPMENT LLC	C/O THE RICHMOND COMPANY INC	23 CONCORD ST	WILMINGTON	MA	01887-2131
39095-000000	20 NEW ROCHESTER RD	FRECHETTE JOHN J TRUSTEE	FRECHETTE RITA M IRREVOCABLE TRUST	20 NEW ROCHESTER RD	DOVER	NH	03820
39096-000000	22 NEW ROCHESTER RD	FELIZ EVELIN &	GIPSON JESSICA &	22 NEW ROCHESTER RD	DOVER	NH	03820
39097-000000	24 NEW ROCHESTER RD	CORMIER GERALD CJ TRUSTEE	CORMIER GERALD CLOVIS JOSEPH REV TRUST	24 NEW ROCHESTER ROAD	DOVER	NH	03820
39099-000000	26 NEW ROCHESTER RD	LACHANCE OLIVA V	LACHANCE CLAUDETTE	26 NEW ROCHESTER ROAD	DOVER	NH	03820
39100-000000	28 NEW ROCHESTER RD	MERCIER CHRISTOPHER M		28 NEW ROCHESTER RD	DOVER	NH	03820
39101-000000	30 NEW ROCHESTER RD	WEEDEN RONALD J	WEEDEN JUANITA A	145 DURHAM RD	DOVER	NH	03820-4396
39110-000000	16 OLD ROCHESTER RD	MCDONOUGH THOMAS W JR		16 OLD ROCHESTER RD	DOVER	NH	03820-2018
39111-000000	14 OLD ROCHESTER RD	DODGE MICHAEL		14 OLD ROCHESTER RD	DOVER	NH	03820
39112-000000	12 OLD ROCHESTER RD	RAY RICHARD D &	RAY KATHERINE E	12 OLD ROCHESTER RD	DOVER	NH	03820
D0003-000000	OLD ROCHESTER RD	ROMAN CATHOLIC BISHOP	ST CHARLES PARISH RECTORY	153 ASH ST	MANCHESTER	NH	03104
D0004-000000	10 OLD ROCHESTER RD	CHALIFOUR ROBERT W &	CHALIFOUR RHIANNA	10 OLD ROCHESTER RD	DOVER	NH	03820-2018
D0004-A00000	8 OLD ROCHESTER RD	LEPAGE JACQUELINE P TRUSTEE	LEPAGE FAMILY REVOCABLE TRUST	8 OLD ROCHESTER RD	DOVER	NH	03820
D0004-B00000	1 SULLIVAN DR	COUGLER TONYA LEE		1 SULLIVAN DR	DOVER	NH	03820
39076-000000	9 HOTEL DR	GANGAGI LLC		9 HOTEL DR	DOVER	NH	03820
39093-000000	NEW ROCHESTER RD	RUSSELL PETER H TRUSTEE	RUSSELL PETER H REV LIV TRUST	500 MARKET ST 15L	PORTSMOUTH	NH	03801
		NORWAY PLAINS ASSOC.	RANDOLPH TETREAULT	PO BOX 249	ROCHESTER	NH	03866

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (0367)
Rochester, NH 03866-0249
Phone: (603) 335-3948 / (800) 479-3948
Fax: (603) 332-0098
arowe@norwayplains.com

P. O. Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948
www.norwayplains.com
rtetreault@norwayplains.com

April 13, 2023

Donna Benton, AICP
Director of Planning and Community Development
The City of Dover
288 Central Avenue
Dover, NH 03820

NARRATIVE:
Re: Proposed Subdivision & Lot Line Adjustment

Owner: The Peter H. Russell Revocable Living Trust
Tax Map 39, Lot 93, New Rochester Road, Dover, NH 03820

Owner: Gangagi, LLC
Tax Map 39, Lot 76, 9 Hotel Drive, Dover, NH 03820

Dear Ms. Benton:

Peter Russell & Gangagi LLC are applying for Lot Line Adjustment for their properties located on New Rochester Road and Hotel Drive. Mr. Russell is also applying for a Minor Subdivision for the same property located on New Rochester Road.

The intent of the Lot Line Adjustment is to reverse a Lot Line Adjustment performed by this office in March of 2007 (See SCRD Plan 92-55). In 2007 this lot line revision was performed to provide the hotel located on Map 39, Lot 76 with an area on which they could construct additional parking spaces. As the parking area was never constructed, and the spaces are no longer needed by the current owner of the hotel, the parties wish to reverse this Lot Line Adjustment and return the boundary lines to their previous configuration. The adjustment would convey 0.07 acres from Tax Map 39, lot 93 to Tax Map 39, lot 76. In addition, 0.14 acres would be conveyed from Tax Map 39, Lot 76 to Tax Map 39, Lot 93.

As previously Mentioned, Mr. Russell is also proposing a Minor Subdivision of Tax Map 39, Lot 93. As it is currently configured, Lot 93 includes a portion of land westerly of Hotel Drive that is suitable for development, as well as the private roadway known as Hotel Drive itself. The roadway of Hotel Drive currently exists as a right of way across Tax Map 39, Lot 93. Mr. Russell intends to retain ownership of Hotel Drive; however, he would like it to reside on its own parcel rather than for it to be intertwined with the portion of land suitable for development, with the intent being that he could convey the portion of land to the west of Hotel Drive to a third party for development without encumbering the parcel with the ownership and maintenance of Hotel Drive. The plans presented simply convert the westerly limits of the right of way for Hotel Drive from right of way lines to property lines. As a combined result of the proposed subdivision and Lot Line Adjustment, Tax Map 39, Lot 93 would be reduced from 1.13 acres to 0.67 acres and would have 221.14' of frontage along Hotel Drive. The proposed lot 93-1, upon which the roadway of Hotel Drive is located would be 0.59 acres and have 125' of frontage along New Rochester Road.

Please do not hesitate to reach out to me if you have any questions regarding this matter,

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: _____
Ashley F. Rowe, NH Designer of Disposal Systems #1857

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / 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.

Property Owner Name: ASHOK PATEL

Signature(s) of Property Owner(s): _____ Date: 2023-04-26

Signature of Applicant: _____ Date: 2023-04-14
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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..

Property Owner Name: ASHOK PATEL

Signature(s) of Property Owner(s): _____ Date: 2023-04-26

Signature of Applicant: _____ Date: 2023-04-14
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / 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.

Property Owner Name: PETER H. RUSSELL

Signature(s) of Property Owner(s): Peter H. Russell Rev Liv Trust Date:

Signature of Applicant: Date: 2023-04-14
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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..

Property Owner Name: PETER H. RUSSELL

Signature(s) of Property Owner(s): Peter H. Russell Rev Liv Trust Date:

Signature of Applicant: Date: 2023-04-14
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (0367)
Rochester, NH 03866-0249
Phone: (603) 335-3948 / (800) 479-3948
Fax: (603) 332-0098
arowe@norwayplains.com

P. O. Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948
www.norwayplains.com
rtetreault@norwayplains.com

April 13, 2023

Donna Benton, AICP
Director of Planning and Community Development
The City of Dover
288 Central Avenue
Dover, NH 03820

Waiver Request:
Re: Proposed Subdivision & Lot Line Adjustment

Owner: The Peter H. Russell Revocable Living Trust
Tax Map 39, Lot 93, New Rochester Road, Dover, NH 03820

Owner: Gangagi, LLC
Tax Map 39, Lot 76, 9 Hotel Drive, Dover, NH 03820

Dear Ms. Benton:

On behalf of The Peter H. Russell Revocable Living Trust and Gangagi LLC, we wish to request the following waivers from the City of Dover Subdivision regulations:

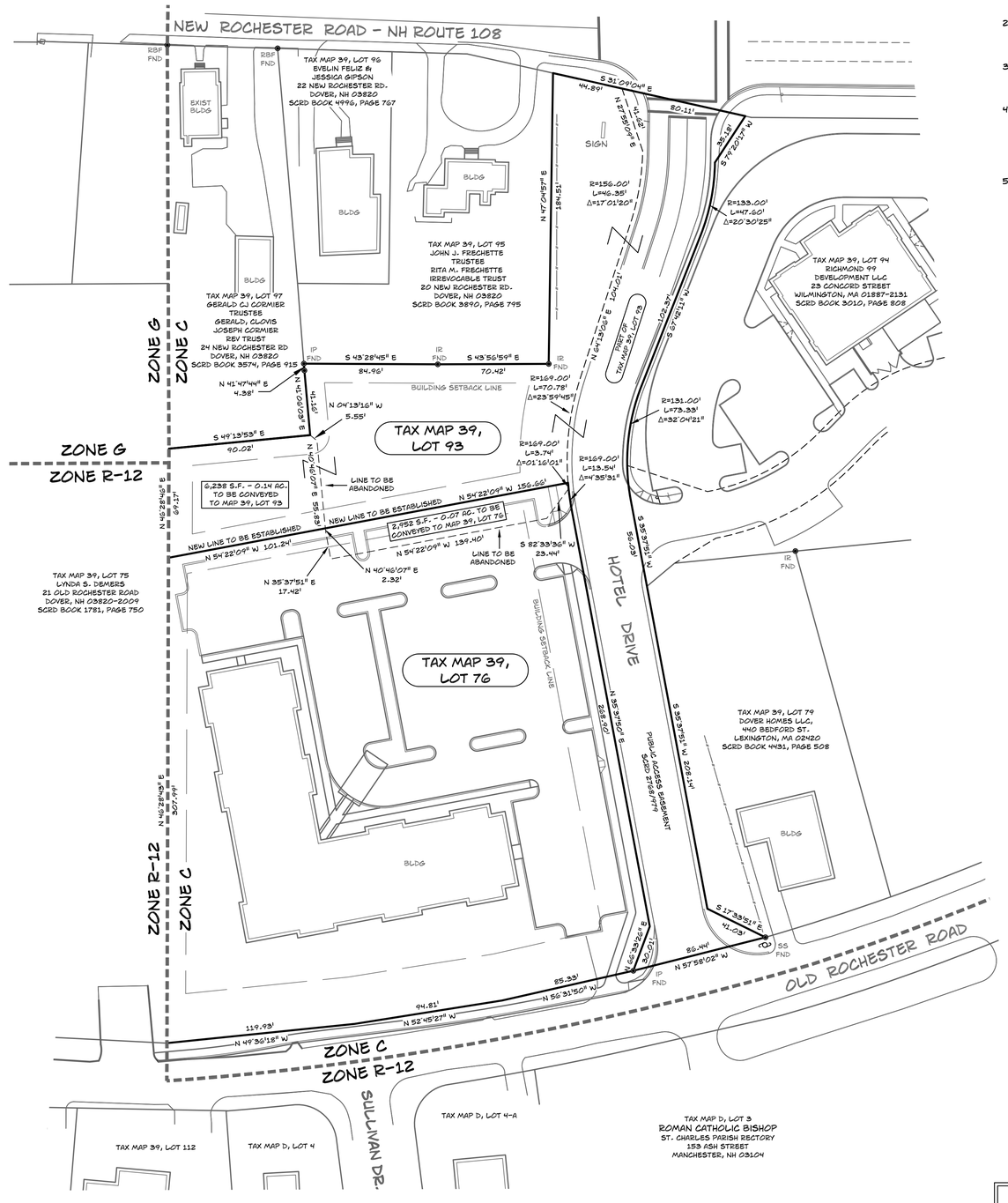
Section 157-27(H)
We respectfully request a waiver as to not require plans to depict contour data. The site has been thoroughly reviewed by the Planning board over the course of previous development, the intent of this application is simply to make a minor adjustment to the boundary lines between Lots 93 & 76, as well as create a new lot encompassing the private road known as Hotel Drive. It is our belief that the Planning Board's ability to render a decision would in no way be affected by not providing contour data on the plan set, and including this information on the plan set would in actuality make the plan set more visually confusing.

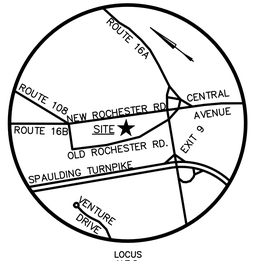
Please do not hesitate to reach out to me if you have any questions regarding this matter,

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: _____
Ashley F. Rowe, NH Designer of Disposal Systems #1857





LOCUS
N.T.S.

NAD 83
DOVER GIS

ADDITIONAL ABUTTERS:

TAX MAP D, LOT 4-A
THE LEPAGE FAMILY REVOCABLE TRUST
JACQUELINE LEPAGE, TRUSTEE
8 OLD DOVER ROAD
DOVER, NH 03820
SCRD BOOK 3705, PAGE 749

TAX MAP D, LOT 4
ROBERT W. & SHANNA CHALIFOUR
10 OLD ROCHESTER ROAD
DOVER, NH 03820-2018
SCRD BOOK 3650, PAGE 942

TAX MAP 39, LOT 112
RICHARD D. & KATHERINE E. RAY
12 OLD DOVER ROAD
DOVER, NH 03820
SCRD BOOK 4411, PAGE 950

(OTHER SIDE OF NEW ROCHESTER ROAD)

TAX MAP 39, LOT 16
WDC, INC.
17 NEW ROCHESTER ROAD
DOVER, NH 03820
SCRD BOOK 1775, PAGE 777

TAX MAP 39, LOT 11
RICHMOND DOVER REALTY, LLC
C/O STOP AND SHOP SUPERMARKET
C/O RFS
PO BOX 6500
CARLISLE, PA 17013
SCRD BOOK 2290, PAGE 796

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO ADJUST THE AREAS BETWEEN MAP 39 LOT 93 AND MAP 39 LOT 76.

2. THE SUBDIVISION PLAN SHALL BE SUBMITTED IN A DIGITAL DXF FORMAT ON A DISK TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF THE PROJECT.

3. BASIS OF BEARING: PER THE REFERENCE PLANS THE CITY OF DOVER GIS SYSTEM WAS USED TO DETERMINE POSITION AND ORIENTATION.

4. THIS SURVEY PERFORMED ACCORDING TO STANDARDS FOR REAL PROPERTY SURVEYS, CLASSIFICATION U, SET FORTH IN ADMINISTRATIVE RULES LAN 502 AND 503 ADOPTED 8/23/01, AMENDED 9/9/03 BY THE STATE OF NEW HAMPSHIRE UNDER RSA 310-A:58 AND RSA 541-A.

5. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:

ZONE: C - COMMERCIAL DISTRICT

MINIMUM LOT SIZE	=	20,000 SQ.FT.
MAXIMUM COVERAGE	=	50%
MINIMUM LOT FRONTAGE	=	125 FEET

PRINCIPAL BUILDING SETBACKS

FRONT SETBACK	=	30 FEET
ABUT A STREET SETBACK	=	30 FEET
SIDE SETBACK	=	12 FEET
REAR SETBACK	=	15 FEET

OUTBUILDING / ACCESSORY USE SETBACKS

FRONT SETBACK	=	50 FEET
ABUT A STREET SETBACK	=	50 FEET
SIDE SETBACK	=	10 FEET
REAR SETBACK	=	10 FEET

HEIGHT OF BUILDING

PRINCIPAL BUILDING	=	40 FEET MAX.
OUTBUILDING	=	40 FEET MAX.

REFERENCE PLANS:

1. "LOT LINE ADJUSTMENT HOTEL DRIVE OLD ROCHESTER ROAD, NEW ROCHESTER ROAD- NH ROUTE 108, DOVER, NH FOR PETER H. RUSSELL AND SEAN R. LAFRANCE" DATED: JULY 2013 BY NORWAY PLAINS ASSOCIATES INC RECORDED: SCRD PLAN 106-14

2. "LOT LINE REVISION HOTEL DRIVE DOVER N.H. FOR PETER H. RUSSELL AND LAFRANCE BOWDEN HOSPITALITY, LLC" DATED: MARCH 2007 BY NORWAY PLAINS ASSOCIATES INC RECORDED: SCRD PLAN 92-55

3. "LOT MERGER AND LOT LINE ADJUSTMENT PLAN - PROPERTY OWNED BY PETER H. RUSSELL (TAX MAP 39 LOT 93 & TAX MAP 39 LOT 76) - LAFRANCE BOWDEN HOSPITALITY, LLC (TAX MAP 39 LOT 77 & TAX MAP 39 LOT 77A) - GERALD CORMIER (TAX MAP 39 LOT 97) - HOTEL DR. - NEW ROCHESTER ROAD - OLD ROCHESTER ROAD - STRAFFORD COUNTY - DOVER, NEW HAMPSHIRE". DATED: JUNE 13, 2006 REVISED: JULY 5, 2006 - JULY 12, 2006 - AUGUST 3, 2006 RECORDED: SCRD PLAN 87-51

ABBREVIATION LEGEND:

IP - IRON PIPE
IR - IRON ROD
RBF - REBAR FOUND
SS - STEEL STAKE
SCRD - STRAFFORD COUNTY REGISTRY OF DEEDS

PLAN NOTES:

1. OWNER OF RECORD (TAX MAP 39, LOT 93)
THE PETER H. RUSSELL REVOCABLE LIVING TRUST
PETER H. RUSSELL, TRUSTEE
500 MARKET STREET, 15L
PORTSMOUTH, NH 03801

OWNER OF RECORD (TAX MAP 39, LOT 76)
GANGAGI, LLC
9 HOTEL DRIVE
DOVER, NH 03820

3. LOT INFORMATION:
TAX MAP 39, LOT 93
EXISTING = 49,046 SF. 1.13 ACRES
PROPOSED = 52,333 SF. 1.20 ACRES
FRONTAGE ALONG NEW ROCHESTER ROAD = 125.00'

TAX MAP 39, LOT 76
EXISTING = 92,353 SF. 2.12 ACRES
PROPOSED = 89,067 SF. 2.04 ACRES
FRONTAGE ALONG HOTEL DRIVE = 312.45'

4. EASEMENTS AND ROWS:
CITY OF DOVER ASSESSOR'S MAP 39, LOT 93 MAY BE SUBJECT BUT NOT LIMITED TO THE FOLLOWING EASEMENTS DEPICTED IN THE REFERENCE PLANS AND DESCRIBED IN THE FOLLOWING:

SCRD PLAN # 69-35
SCRD DEED BK. 1371, PG. 212
SCRD DEED BK. 2270, PG. 440
SCRD PLAN # 92-55
SCRD DEED BK. 3592, PG. 879
SCRD DEED BK. 3592, PG. 881

5. THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0310D, EFFECTIVE DATE: MAY 17, 2005.)

6. SOILS INFORMATION:
THE SUBJECT PARCELS ARE ENTIRELY COMPRISED OF WdA - WINDSOR LOAMY SAND, 0-3 PERCENT SLOPES PER NRCS WEB SOIL SURVEY.

7. SEE CITY OF DOVER PLANNING FILE LOTA-2023-0005 (LLA)

8. TAX MAP 39, LOT 93 WAS GRANTED A VARIANCE BY THE CITY OF DOVER ZONING BOARD OF ADJUSTMENT ON FEBRUARY 19, 2004 (#ZOH-03) FOR RELIEF FOR OFF-SITE ADVERTISING AND TO INSTALL SIGNAGE EXCEEDING THE ALLOWED MAXIMUM SIGN AREA.

PLANNING BOARD APPROVAL

OWNERS SIGNATURES:

SIGNATURE TAX MAP 39, LOT 93 DATE

SIGNATURE TAX MAP 39, LOT 76 DATE

TM 39-93
OWNER OF RECORD:
PETER H. RUSSELL REVOCABLE LIVING TRUST
500 MARKET STREET, UNIT 15L
PORTSMOUTH, NH 03801
SCRD: BK. 2768, PG. 1010

TM 39-76
OWNER OF RECORD:
GANGAGI LLC
9 HOTEL DRIVE
DOVER, NH 03820
SCRD: BK. 4227, PG. 450

LOT LINE ADJUSTMENT PLAN
HOTEL DRIVE
DOVER
STRAFFORD COUNTY, NH
FOR:
PETER H. RUSSELL
1" = 40' MARCH 2023

GRAPHIC SCALE
40 0 20 40 80 120

REVISIONS:

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 729 RANDOLPH R. TETREAULT SIGNATURE

05/17/2023
RANDOLPH R. TETREAULT, LLS #729 DATE

FILE NO. 503
PLAN NO.# C-2391-LLA
DWG. NO.# 18083 LLA-1
DRAWN BY: AFR

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SUBM-2023-0001

Application Type:	Minor Subdivision
Applicant(s):	Norway Plains Associates, Inc
Owner(s):	The Peter H. Russell Revocable Living Trust
Location:	Located at New Rochester Rd. & 9 Hotel Dr. (Assessor's Map 39, Lots 93 & 76)
Meeting Date:	May 23, 2023

INTENT: The applicant proposes to one lot into two (one being Hotel Drive right-of-way), by creating a new lot. A separate application for an LLA is congruently before the Planning Board.

LOTS PROPOSED: 2 (1 new lot)

AGENDA ITEM #: 4-C

ACREAGE: Existing/Proposed:
93: 52,333± sq. ft. / 26,801± sq. ft.
93-1: 0 sq. ft. / 25,532± sq. ft.
76: 92,353± sq. ft. / 89,067± sq. ft.

ZONING DISTRICT: C

EXISTING USE: Commercial

PROPOSED USE: Commercial (No change)

SURROUNDING: Commercial, Residential, Cemetery

ZBA ACTION:
Lot 93 (#Z04-03 on 2/19/2004); Variance granted for relief for off-site advertising and to install signage exceeding allowed maximum sign area.

ATTACHMENTS: Application, Subdivision Plan, Narrative, Waiver Request

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: No

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

PERMITS REQUIRED: None

WAIVERS REQUESTED:
§157-27(H) – Depiction of contour data

Summary of Request and Background:
The applicant is proposing to subdivide Hotel Drive from Lot 93 into its own separate lot, resulting in the creation of one (1) new lot. This follows a lot line adjustment with abutting Lot 76. Hotel Drive currently serves as a right-of-way, and whilst it is a private roadway, there is a public access easement in place. All lots will retain adequate frontage and parcel size as required by zoning. As a minor subdivision, this application did not appear before the TRC.

Waiver Summary:
The applicant is requesting a waiver from §157-27(H) to allow for the submittal of plans without depiction of contour data.

Section 157-51.A. of the Land Subdivision Regulations states: "The Planning Board may waive specific provisions of this chapter. 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 subdivision, indicate that the waiver will properly carry out the spirit and intent of the regulations."

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

STAFF RECOMMENDATION – Waiver:
Staff feels the request for relief from demarcating the contours is reasonable and that criterion 2 has been met.

Therefore, Planning Department recommends that the Planning Board vote to accept the application and determine it not to have regional impact, open a public hearing, close the public hearing, make the necessary and supporting findings of fact, and vote to approve the waiver with the following subsequent conditions:

Subsequent Conditions to be Met Prior to Signing of Plans:

1. Add note that a waiver from Section 157-27(H) has been approved by the Planning Board and that the Board found Section 157-51.A. has been met.

STAFF RECOMMENDATION – Minor Subdivision:
The Planning Department recommends that the Planning Board vote to make the necessary and supporting findings of fact, and vote to approve the minor subdivision with the following subsequent conditions:

Subsequent Conditions to Be Met Prior to Signing of Plans:

1. Provide physical and digital copies (including CAD) of complete plan set for recording at Strafford Country Registry of Deeds, which additionally shall include:
   - 1.1. The owners' signatures;
   - 1.2. Include the Planning File # on bottom right of plan sheet: SUBM-2023-0001;
   - 1.3. The stamp and signature of the LLS on the final plans.

SUBM-2023-0001 New Rochester Rd



Property Information

Property ID	39093-000000
Location	NEW ROCHESTER RD
Owner	RUSSELL PETER H TRUSTEE
Land Use	390
Zoning Code	C

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 12/16/2022
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
MINOR SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

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

APPLICANT AND OWNER INFORMATION

Name of Applicant: THE PETER H. RUSSELL REV. LIVING TRUST Telephone # 603-686-5327

Address of Applicant: 500 MARKET STREET, UNIT 15L, PORTSMOUTH NH 03801

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

Address of Property Owner: _____

E-Mail Address: PRUSSELL411@GMAIL.COM

PROPERTY INFORMATION

Address of Property: NEW ROCHESTER ROAD, DOVER NH 03820

Assessor's Map # 39 Lot(s) # 93

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

Size of Parcel: 1.13 ACRES Property Deed: Book 2768 Page: 1010

Existing Use of Property: UNDEVELOPED PROPERTY AS WELL AS ROADWAY OF HOTEL DRIVE

SUBDIVISION INFORMATION

Existing Number of Lots: 1 Proposed Number of Lots: 2

TDR Relief sought (Check All That Apply): □ Lot Size □ Frontage □ Setback □ 30' Buffer □ Purchase ____ units

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

_____

_____

_____

Circle one for each category:

Water: City/Well (circle one) How far is city water from the property? 0 FEET

Sewer: City/Septic (circle one) How far is city sewer from the property? 0 FEET

Highway Access City Street/State Highway (circle one) | Roadway Public or Private Road (circle one)

Refuse removal: Public/Private (circle one) | Estimated Length of Proposed Road: 0 FEET feet

Estimated value of construction: _____ New impervious area (in s.f.): 0 FEET

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: SECTION 157-27(H)

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

SEE ATTACHED WAIVER REQUEST

SURVEYOR INFORMATION

Name of Surveyor and Company (Licensed in N.H.) RANDOLPH R. TETREAULT OF NORWAY PLAINS ASSOC.

Address PO BOX 249, ROCHESTER NH 03866 Telephone #: 603-335-3948

Professional License #: 729 E-mail address: RTETREAULT@NORWAYPLAINS.COM

ENGINEER INFORMATION

Name of Engineer and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

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: _____

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

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: _____

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby authorize the City of Dover and 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: _____

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: _____

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

I, and my successors, hereby certify that I understand that the acceptance of a roadway as a public road is an action of the City Council in its sole and complete discretion. In order for the City Council to consider accepting a road as public, it must be free of encumbrances. No roadway with private utility easements shall be accepted as a public road by the City unless the easements are expunged prior to the transfer of land to the City. License agreements for any and all private utilities within the right of way may be granted by the City upon acceptance of the unencumbered roadway consistent with applicable state law.

Signature of Property Owner: _____ Date: _____

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

CITY OF DOVER SUBDIVISION
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

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	MAILING ADDRESS

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

Norway Plains Associates, Inc.
2 Continental Blvd., PO Box 249
Rochester, NH 03866

Abutters List

November 11, 2020

Applicant:

The Peter H. Russell
Revocable Living Trust

Subject Properties:

Tax Map 39, Lots 93 & 76

MAP	LOT	Property Owner:	Mailing Address
39	93	THE PETER H. RUSSELL REVOCABLE LIVING TRUST	500 MARKET STREET, UNIT 15L PORTSMOUTH, NH 03801
39	76	GANGAGI LLC	9 HOTEL DRIVE, DOVER, NH 03820

SURVEYOR	Norway Plains Associates, Inc. Randolph R. Tetreault, LLS	PO Box 249 Rochester, NH 03866-0249
AGENT	Norway Plains Associates, Inc. Ashley F. Rowe	PO Box 249 Rochester, NH 03866-0249

NPA Project# 18083

City of Dover, New Hampshire
MINOR SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision 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.

Plan Review Fees are due along with three (3) full size and twelve (12) half size (11x17), folded, copies of the plan set and materials, 3 weeks prior to the Planning Board meeting. Abutter/Notice Fees will be invoiced and are due 28 hours prior to Planning Board.

The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: THE PETER H. RUSSELL REV. LIVING TRUST File Number: _____

PROJECT TITLE: PETER H. RUSSELL (HOTEL DRIVE)

PROPERTY LOCATION: NEW ROCHESTER ROAD Tax Map: 39 Lot: 93

	Where/How Provided	Reviewed
1. Completed and signed Application form	X	
2. Plan Review Fees are provided	X	
3. Electronic copy of the surveyed plat layout	X	
4. Electronic copy of supplementary materials and application	X	
5. Waiver requests to the Subdivision Regulations, with written justification	X	
6. Conditional Use Permit applications	N/A	
7. Fifteen folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	5 COPIES PER J. GLIDDEN	
Location map at appropriate scale	X	
Proposed subdivision 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	X	
Location of Conservation District areas	X	
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 widths of existing and proposed sidewalks	X	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	X	
Existing and proposed lot areas in square feet	X	
Existing and proposed topographic information at two foot intervals	WAIVER REQUESTED	
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	

	Explain How Provided	Reviewed
Existing and proposed water lines and fire hydrants, including materials and capacity needed	N/A	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	N/A	
Existing and proposed septic system, including test pit locations and results and NHDES subdivision permit number	N/A	
Existing and proposed stormwater lines and facilities	N/A	
Location of Flood Hazard Zone	X	
Location of all bodies of water and watercourses		
Location of wetlands and buffers	N/A	
Existing natural features and/or significant vegetation on property	N/A	
Soil types		
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	X	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	N/A	
Location, material and size of existing and proposed permanent monuments	X	
Existing railroad lines	N/A	
Note regarding solid waste disposal	N/A	
All applicable Dover Common Subdivision notes	X	
8. Construction Detail Sheets shall contain the following information (if appropriate):	N/A	
Profiles showing existing & proposed elevations along the center lines of proposed streets & within 100' of intersections with existing streets		
Profiles showing the locations & a typical cross-section detail of streets		
Location of street trees, street lighting poles and street signs		
Location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants		
Location and size of all water, gas and other underground utilities		
9. Additional Information if appropriate	N/A	
Stormwater Management Plan depicting the existing and proposed storm drainage system and engineered drainage analysis		
Stormwater Management System Operation and Maintenance Plan		
Letter to Serve from Public and Private Utilities		
Erosion and Sedimentation Control Plan		
Proposed restrictive covenants or homeowners association documents		
Dates and permit numbers of all required state and federal permits		
If wetland buffer, indicate placards locations, as applicable		
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required		

REVIEWED BY: _____ DATE_____

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (0367)
Rochester, NH 03866-0249
Phone: (603) 335-3948 / (800) 479-3948
Fax: (603) 332-0098
arowe@norwayplains.com

P. O. Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948
www.norwayplains.com
rtetreault@norwayplains.com

April 13, 2023

Donna Benton, AICP
Director of Planning and Community Development
The City of Dover
288 Central Avenue
Dover, NH 03820

NARRATIVE:
Re: Proposed Subdivision & Lot Line Adjustment

Owner: The Peter H. Russell Revocable Living Trust
Tax Map 39, Lot 93, New Rochester Road, Dover, NH 03820

Owner: Gangagi, LLC
Tax Map 39, Lot 76, 9 Hotel Drive, Dover, NH 03820

Dear Ms. Benton:

Peter Russell & Gangagi LLC are applying for Lot Line Adjustment for their properties located on New Rochester Road and Hotel Drive. Mr. Russell is also applying for a Minor Subdivision for the same property located on New Rochester Road.

The intent of the Lot Line Adjustment is to reverse a Lot Line Adjustment performed by this office in March of 2007 (See SCRD Plan 92-55). In 2007 this lot line revision was performed to provide the hotel located on Map 39, Lot 76 with an area on which they could construct additional parking spaces. As the parking area was never constructed, and the spaces are no longer needed by the current owner of the hotel, the parties wish to reverse this Lot Line Adjustment and return the boundary lines to their previous configuration. The adjustment would convey 0.07 acres from Tax Map 39, lot 93 to Tax Map 39, lot 76. In addition, 0.14 acres would be conveyed from Tax Map 39, Lot 76 to Tax Map 39, Lot 93.

As previously Mentioned, Mr. Russell is also proposing a Minor Subdivision of Tax Map 39, Lot 93. As it is currently configured, Lot 93 includes a portion of land westerly of Hotel Drive that is suitable for development, as well as the private roadway known as Hotel Drive itself. The roadway of Hotel Drive currently exists as a right of way across Tax Map 39, Lot 93. Mr. Russell intends to retain ownership of Hotel Drive; however, he would like it to reside on its own parcel rather than for it to be intertwined with the portion of land suitable for development, with the intent being that he could convey the portion of land to the west of Hotel Drive to a third party for development without encumbering the parcel with the ownership and maintenance of Hotel Drive. The plans presented simply convert the westerly limits of the right of way for Hotel Drive from right of way lines to property lines. As a combined result of the proposed subdivision and Lot Line Adjustment, Tax Map 39, Lot 93 would be reduced from 1.13 acres to 0.67 acres and would have 221.14' of frontage along Hotel Drive. The proposed lot 93-1, upon which the roadway of Hotel Drive is located would be 0.59 acres and have 125' of frontage along New Rochester Road.

Please do not hesitate to reach out to me if you have any questions regarding this matter,

Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: _____
Ashley F. Rowe, NH Designer of Disposal Systems #1857

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / 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.

Property Owner Name: PETER H. RUSSELL

Signature(s) of Property Owner(s): Peter H. Russell Rev Liv Trust Date:

Signature of Applicant: Date: 2023-04-14
if different from owner

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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..

Property Owner Name: PETER H. RUSSELL

Signature(s) of Property Owner(s): Peter H. Russell Rev Liv Trust Date:

Signature of Applicant: Date: 2023-04-14
if different from owner

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

NORWAY PLAINS ASSOCIATES, INC.

LAND SURVEYORS • SEPTIC SYSTEM DESIGNERS • CIVIL ENGINEERS

P.O. Box 249
Continental Blvd. (0367)
Rochester, NH 03866-0249
Phone: (603) 335-3948 / (800) 479-3948
Fax: (603) 332-0098
arowe@norwayplains.com

P. O. Box 268
31 Mooney Street
Alton, NH 03809
Phone & Fax: (603) 875-3948
www.norwayplains.com
rtetreault@norwayplains.com

April 13, 2023

Donna Benton, AICP
Director of Planning and Community Development
The City of Dover
288 Central Avenue
Dover, NH 03820

Waiver Request:
Re: Proposed Subdivision & Lot Line Adjustment

Owner: The Peter H. Russell Revocable Living Trust
Tax Map 39, Lot 93, New Rochester Road, Dover, NH 03820

Owner: Gangagi, LLC
Tax Map 39, Lot 76, 9 Hotel Drive, Dover, NH 03820

Dear Ms. Benton:

On behalf of The Peter H. Russell Revocable Living Trust and Gangagi LLC, we wish to request the following waivers from the City of Dover Subdivision regulations:

Section 157-27(H)
We respectfully request a waiver as to not require plans to depict contour data. The site has been thoroughly reviewed by the Planning board over the course of previous development, the intent of this application is simply to make a minor adjustment to the boundary lines between Lots 93 & 76, as well as create a new lot encompassing the private road known as Hotel Drive. It is our belief that the Planning Board's ability to render a decision would in no way be affected by not providing contour data on the plan set, and including this information on the plan set would in actuality make the plan set more visually confusing.

Please do not hesitate to reach out to me if you have any questions regarding this matter,

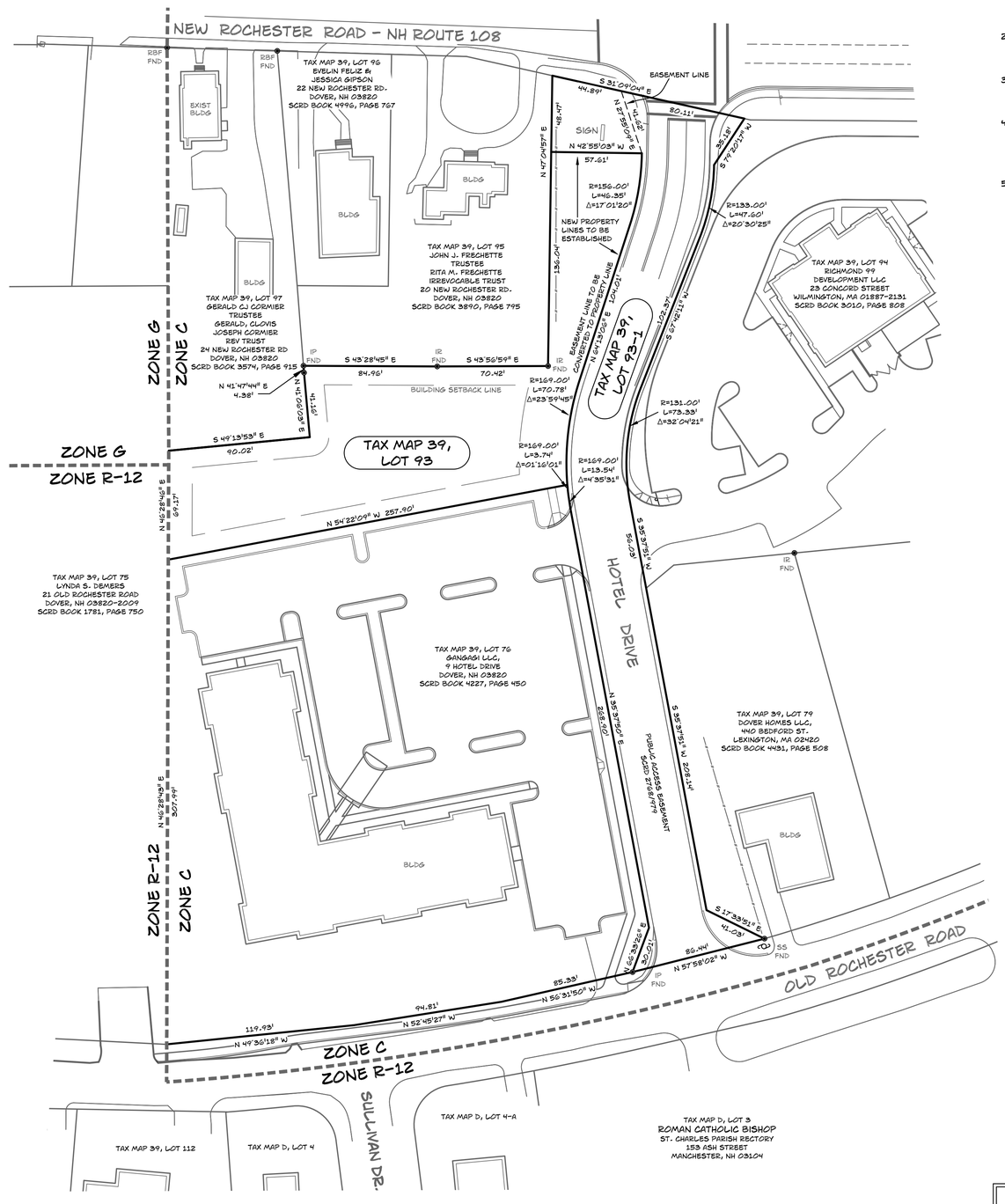
Sincerely,

NORWAY PLAINS ASSOCIATES, INC.

By: _____
Ashley F. Rowe, NH Designer of Disposal Systems #1857

SUBM-2023-0001 **NEW ROCHESTER ROAD & HOTEL DRIVE**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
39009-000000	INDIAN BROOK DR	RICHMOND DOVER REALTY LLC	C/O STOP AND SHOP SUPMKT CO/AFS	PO BOX 6500	CARLISLE	PA	17013
39011-000000	NEW ROCHESTER RD	RICHMOND DOVER REALTY LLC	C/O STOP AND SHOP SUPMKT CO/AFS	PO BOX 6500	CARLISLE	PA	17013
39011-B00000	2 WILLAND POND RD	WDC INC		17 NEW ROCHESTER RD	DOVER	NH	03820
39016-000000	17 NEW ROCHESTER RD	WDC INC		17 NEW ROCHESTER RD	DOVER	NH	03820
39017-000000	19 NEW ROCHESTER RD	ROMBOT RAMON D G &	ROMBOT DEBBIE D L	65-11 108TH ST APT 1D	FOREST HILLS	NY	11375
39075-000000	21 OLD ROCHESTER RD	DEMERS LYNDA S		21 OLD ROCHESTER ROAD	DOVER	NH	03820-2009
39076-000000	9 HOTEL DR	GANGAGI LLC		9 HOTEL DR	DOVER	NH	03820
39079-000000	11 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39080-000000	9 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39081-000000	7 OLD ROCHESTER RD	DOVER HOMES LLC		10 HOTEL DR	DOVER	NH	03820
39094-000000	8 HOTEL DR	RICHMOND 99 DEVELOPMENT LLC	C/O THE RICHMOND COMPANY INC	23 CONCORD ST	WILMINGTON	MA	01887-2131
39095-000000	20 NEW ROCHESTER RD	FRECHETTE JOHN J TRUSTEE	FRECHETTE RITA M IRREVOCABLE TRUST	20 NEW ROCHESTER RD	DOVER	NH	03820
39096-000000	22 NEW ROCHESTER RD	FELIZ EVELIN &	GIPSON JESSICA &	22 NEW ROCHESTER RD	DOVER	NH	03820
39097-000000	24 NEW ROCHESTER RD	CORMIER GERALD CJ TRUSTEE	CORMIER GERALD CLOVIS JOSEPH REV TRUST	24 NEW ROCHESTER ROAD	DOVER	NH	03820
39099-000000	26 NEW ROCHESTER RD	LACHANCE OLIVA V	LACHANCE CLAUDETTE	26 NEW ROCHESTER ROAD	DOVER	NH	03820
39100-000000	28 NEW ROCHESTER RD	MERCIER CHRISTOPHER M		28 NEW ROCHESTER RD	DOVER	NH	03820
D0003-000000	OLD ROCHESTER RD	ROMAN CATHOLIC BISHOP	ST CHARLES PARISH RECTORY	153 ASH ST	MANCHESTER	NH	03104
D0004-A00000	8 OLD ROCHESTER RD	LEPAGE JACQUELINE P TRUSTEE	LEPAGE FAMILY REVOCABLE TRUST	8 OLD ROCHESTER RD	DOVER	NH	03820
39093-000000	NEW ROCHESTER RD	RUSSELL PETER H TRUSTEE	RUSSELL PETER H REV LIV TRUST	500 MARKET ST 15L	PORTSMOUTH	NH	03801
		ASHLEY ROWE	NORWAY PLAINS ASSOCIATES	PO BOX 249	ROCHESTER	NH	03866



ADDITIONAL ABUTTERS:

TAX MAP D, LOT 4-A
THE LEPAGE FAMILY REVOCABLE TRUST
JACQUELINE LEPAGE, TRUSTEE
8 OLD DOVER ROAD
DOVER, NH 03820
SCRD BOOK 3705, PAGE 749

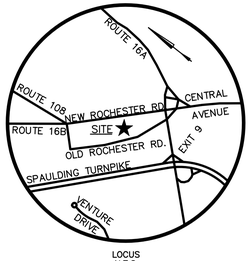
TAX MAP D, LOT 4
ROBERT W. & SHANNA CHALIFOUR
10 OLD ROCHESTER ROAD
DOVER, NH 03820-2018
SCRD BOOK 3650, PAGE 942

TAX MAP 39, LOT 112
RICHARD D. & KATHERINE E. RAY
12 OLD DOVER ROAD
DOVER, NH 03820
SCRD BOOK 4411, PAGE 950

(OTHER SIDE OF NEW ROCHESTER ROAD)

TAX MAP 39, LOT 16
WDC, INC.
17 NEW ROCHESTER ROAD
DOVER, NH 03820
SCRD BOOK 1775, PAGE 777

TAX MAP 39, LOT 11
RICHMOND DOVER REALTY, LLC
C/O STOP AND SHOP SUPERMARKET
C/O RFS
PO BOX 6500
CARLISLE, PA 17013
SCRD BOOK 2290, PAGE 796



LOCUS
N.T.S.

GENERAL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE HOTEL DRIVE FROM TAX MAP 39, LOT 93, BY CREATING THE PROPOSED LOT 93-1 AS A NON BUILDING LOT.
2. THE SUBDIVISION PLAN SHALL BE SUBMITTED IN A DIGITAL DXF FORMAT ON A DISK TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF THE PROJECT.
3. BASIS OF BEARING: PER THE REFERENCE PLANS THE CITY OF DOVER GIS SYSTEM WAS USED TO DETERMINE POSITION AND ORIENTATION.
4. THIS SURVEY PERFORMED ACCORDING TO STANDARDS FOR REAL PROPERTY SURVEYS, CLASSIFICATION U, SET FORTH IN ADMINISTRATIVE RULES LAN 502 AND 503 ADOPTED 8/23/01, AMENDED 9/9/03 BY THE STATE OF NEW HAMPSHIRE UNDER RSA 310-A:58 AND RSA 541-A.
5. DIMENSIONAL REGULATIONS PER ZONING ORDINANCE:

ZONE: C - COMMERCIAL DISTRICT

MINIMUM LOT SIZE	=	20,000 SQ.FT.
MAXIMUM COVERAGE	=	50%
MINIMUM LOT FRONTAGE	=	125 FEET

PRINCIPAL BUILDING SETBACKS

FRONT SETBACK	=	30 FEET
ABUT A STREET SETBACK	=	30 FEET
SIDE SETBACK	=	12 FEET
REAR SETBACK	=	15 FEET

OUTBUILDING / ACCESSORY USE SETBACKS

FRONT SETBACK	=	50 FEET
ABUT A STREET SETBACK	=	50 FEET
SIDE SETBACK	=	10 FEET
REAR SETBACK	=	10 FEET

HEIGHT OF BUILDING

PRINCIPAL BUILDING	=	40 FEET MAX.
OUTBUILDING	=	40 FEET MAX.

REFERENCE PLAN:

1. "LOT LINE ADJUSTMENT HOTEL DRIVE OLD ROCHESTER ROAD, NEW ROCHESTER ROAD- NH ROUTE 108, DOVER, NH FOR PETER H. RUSSELL AND SEAN R. LAFRANCE" DATED: JULY 2013 BY NORWAY PLAINS ASSOCIATES INC RECORDED: SCRD PLAN 106-14
2. "LOT LINE REVISION HOTEL DRIVE DOVER N.H. FOR PETER H. RUSSELL AND LAFRANCE BOWDEN HOSPITALITY, LLC" DATED: MARCH 2007 BY NORWAY PLAINS ASSOCIATES INC RECORDED: SCRD PLAN 92-55
3. "LOT MERGER AND LOT LINE ADJUSTMENT PLAN - PROPERTY OWNED BY PETER H. RUSSELL (TAX MAP 39 LOT 93 & TAX MAP 39 LOT 76) - LAFRANCE BOWDEN HOSPITALITY, LLC (TAX MAP 39 LOT 77 & TAX MAP 39 LOT 77A) - GERALD CORMIER (TAX MAP 39 LOT 97) - HOTEL DR. - NEW ROCHESTER ROAD - OLD ROCHESTER ROAD - STRAFFORD COUNTY - DOVER, NEW HAMPSHIRE". DATED: JUNE 13, 2006 REVISED: JULY 5, 2006 - JULY 12, 2006 - AUGUST 3, 2006 RECORDED: SCRD PLAN 87-51

ABBREVIATION LEGEND:

IP - IRON PIPE
IR - IRON ROD
RBF - REBAR FOUND
SS - STEEL STAKE
SCRD - STRAFFORD COUNTY REGISTRY OF DEEDS

NOTES:

1. OWNER OF RECORD (TAX MAP 39, LOT 93)
   THE PETER H. RUSSELL REVOCABLE LIVING TRUST
   PETER H. RUSSELL, TRUSTEE
   500 MARKET STREET, 15L
   PORTSMOUTH, NH 03801
3. LOT INFORMATION:
   TAX MAP 39, LOT 93
   EXISTING = 52,333 SF. 1.20 ACRES
   PROPOSED = 26,801 SF. 0.62 ACRES
   PROPOSED FRONTAGE ALONG HOTEL DRIVE = 192.07'

   PROPOSED TAX MAP 39, LOT 93-1
   EXISTING = 0 SF. 0 ACRES
   PROPOSED = 25,532 SF. 0.59 ACRES
   PROPOSED FRONTAGE ALONG NEW ROCHESTER ROAD = 125.00'
4. EASEMENTS AND ROWS:
   CITY OF DOVER ASSESSOR'S MAP 39, LOT 93 MAY BE SUBJECT BUT NOT LIMITED TO THE FOLLOWING EASEMENTS DEPICTED IN THE REFERENCE PLANS AND DESCRIBED IN THE FOLLOWING:

   SCRD PLAN # 69-35
   SCRD DEED BK. 1371, PG. 212
   SCRD DEED BK. 2270, PG. 440
   SCRD PLAN # 92-55
   SCRD DEED BK. 3592, PG. 879
   SCRD DEED BK. 3592, PG. 881
5. THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FEDERALLY DESIGNATED FLOOD HAZARD AREA (COMMUNITY PANEL NUMBER 33017C0310D, EFFECTIVE DATE: MAY 17, 2005.)
6. SOILS INFORMATION:
   THE SUBJECT PARCELS ARE ENTIRELY COMPRISED OF WjA - WINDSOR LOAMY SAND, 0-3 PERCENT SLOPES PER NRCS WEB SOIL SURVEY.
7. SEE CITY OF DOVER PLANNING FILE LOTA-2023-0005 (LLA)
8. TAX MAP 39, LOT 93 WAS GRANTED A VARIANCE BY THE CITY OF DOVER ZONING BOARD OF ADJUSTMENT ON FEBRUARY 19, 2004 (#Z04-03) FOR RELIEF FOR OFF-SITE ADVERTISING AND TO INSTALL SIGNAGE EXCEEDING THE ALLOWED MAXIMUM SIGN AREA.

PLANNING BOARD APPROVAL

TM 39-93
OWNER OF RECORD:
PETER H. RUSSELL REVOCABLE LIVING TRUST
500 MARKET STREET, UNIT 15L
PORTSMOUTH, NH 03801
SCRD: BK. 2768, PG. 1010

SUBDIVISION PLAN
HOTEL DRIVE
DOVER
STRAFFORD COUNTY, NH
FOR:
PETER H. RUSSELL

1" = 40' MARCH 2023

GRAPHIC SCALE
40 0 20 40 80 120

REVISIONS:

STATE OF NEW HAMPSHIRE — No. 729 — RANDOLPH R. TETREAULT — LICENSED LAND SURVEYOR

Randolph R. Tetreault
SIGNATURE

05/17/2023
RANDOLPH R. TETREAULT, LLS #729 — DATE

FILE NO. 503
PLAN NO.# C-2391-S3
DWG. NO.# 18083 S-3
DRAWN BY: AFR

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2023-0034

Application Type: Conditional Use Permit
Applicant(s): Chinburg Development, LLC
Owner(s): Chinburg Development, LLC
Location: Off Gulf Road and Oak Street (Assessor's Map N, Lot 13-1)
Meeting Date: May 23, 2023

INTENT: To obtain a Conditional Use Permit (CUP) to construct a road and driveways and install drainage infrastructure as part of the 12-lot Open Space Subdivision creating 11,956 s.f. of impact to steep slopes.

LOTS/UNITS PROPOSED: 12 via OSS

AGENDA ITEM: # 4-D

ACREAGE: 34.53 acres

ZONING DISTRICT: Rural Residential (R-40), Wetlands Protection & Conservation Overlay Districts

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Residential

SURROUNDING: Residential, City Boundary, Commercial, Vacant

ZBA ACTION: N/A

ATTACHMENTS:

- Conditional Use Permit Application Materials including plans and Conservation Commission minutes from 5/8/2023

APPLICATION IS COMPLETE: Yes

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

PERMITS REQUIRED:
-Dover CUP
-NHDES Subdivision Permit

WAIVERS REQUESTED: None for this case

DECLARE REGIONAL IMPACT: Yes due to subdivision

Summary of Request and Background
The applicant is requesting a Conditional Use Permit associated with a 12-lot Open Space Subdivision to allow for 11,956 s.f. of impact to steep slopes.

The Conservation Commission endorsed this application at their May 8, 2023 meeting. The applicant provided a narrative included with their application which outlines how the proposal meets the criteria for granting the CUP per 170-27.C of the Code.

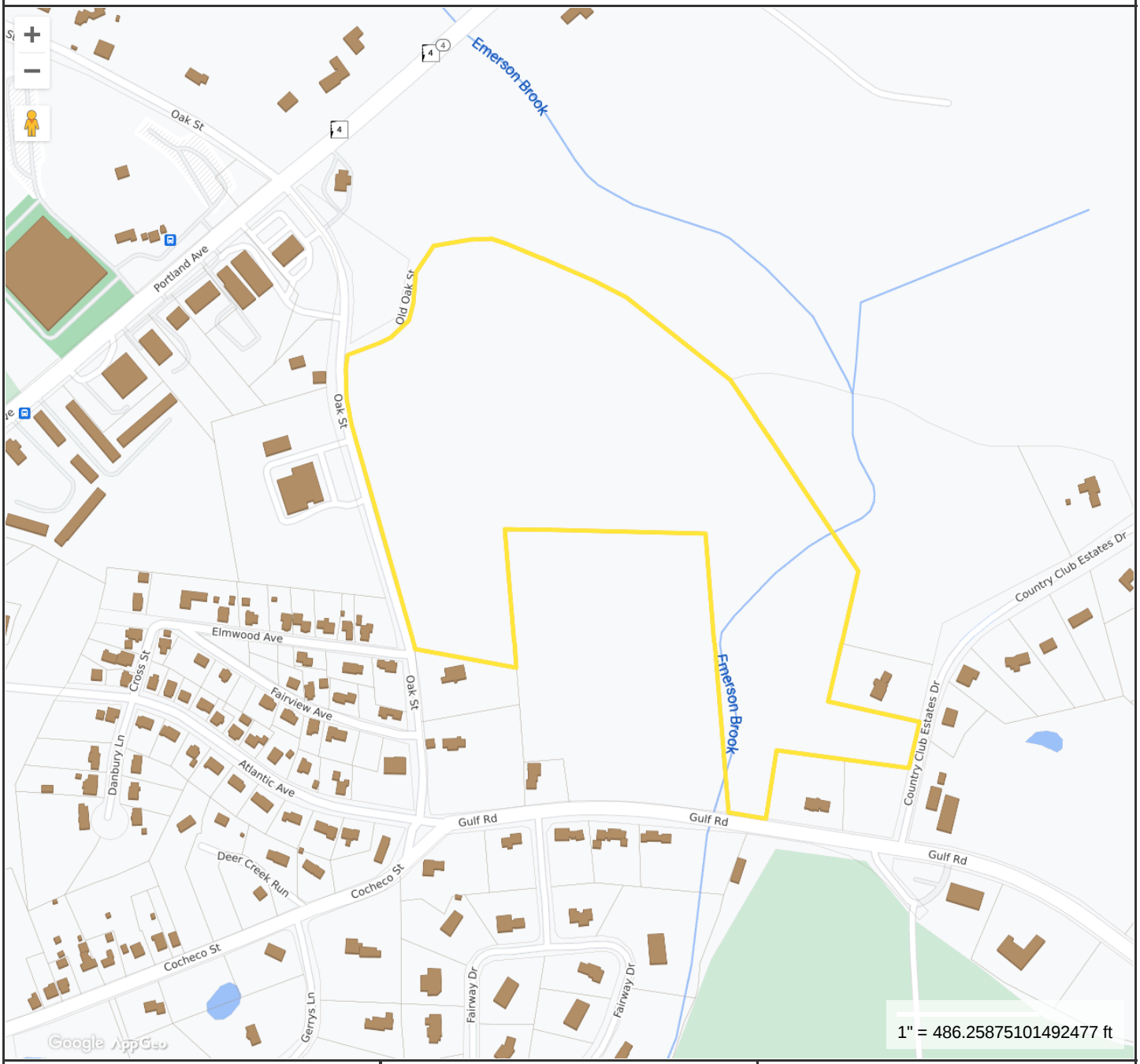
Staff recommends that the Planning Board determine the subdivision is of Regional Impact per RSA 36:54.

Consistency with Land Use Regulations
The Conservation District ordinances provide for Conditional Use Permits to allow impacts to the Conservation District if standards related to demonstration that the use is essential to the productive use of land, a soil erosion and sedimentation control plan is submitted, state and federal approvals have been applied for, and a written review by the Conservation Commission has been sought.

Planning Staff feels that the applicant considered the criteria of streets being essential to the productive use of land, soil stabilization, erosion control, water management, runoff control, land clearing, stabilization of drainage ways, perimeter controls, sediment trapping devices, storm drain inlet protection, state permits are applied for, and a written narrative was provided and Conservation Commission endorsement provided have been met in the applicant's narrative as part of their CUP application.

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board accept the application, declare regional impact, and vote to table the Conditional Use Permit to June 13, 2023.

COND-2023-0034 Gulf Road



Property Information

Property ID	N0013-001000
Location	GULF RD
Owner	CHINBURG DEVELOPMENT LLC
Land Use	130
Zoning Code	R-40

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 12/16/2022
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 #:	COND-2023-0034	Date Received:	
	Amount Paid:		Time Received:	

APPLICANT AND OWNER INFORMATION

Name of Applicant: Chinburg Development, LLC Telephone # 603-868-5995

Address of Applicant: 3 Penstock Way Newmarket, NH 03857

E-Mail Address: massia@chinburg.com

Name of Property Owner (if different from applicant): SAME AS APPLICANT Telephone #

Address of Property Owner:

PROPERTY INFORMATION

Assessor's Map # N Lot(s) # 13-1

Address of Property: Oak Street & Gulf Road

Zoning District(s) R-40 Overlay District(s) Conservation District

Existing Use of Property: Residential - Vacant

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:

Impacts will be made to the 20% Steep Slope Areas to allow disturbances for road contruction and associated grading and drainage design. Total impacts to steep slope areas will be 11,956 s.f., of which 3,086 s.f. overlaps into the wetland buffer.

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

NH DES Subdivision Approval - 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 #: NH 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: 22 FEB 2023

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

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: 22 FEB 2023

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
N	13-1	Chinburg Development, LLC 3	Penstock Way Newmarket, NH 03857

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

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
Damon Burt, CWS	Fraggle Rock Environmental, Inc.	38 Garland Road Strafford, NH 03884

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

CONDITIONAL USE PERMIT CRITERIA – CONSERVATION DISTRICT

20% Steep Slope Impacts

(a) *The applicant shall demonstrate that the proposed use is essential to the productive use of land not in the district; is located and constructed to minimize any detrimental impact of such use upon the surface waters of other environmental sensitive areas, where it is physically impossible to locate such use on land not in the district; and economic advantage alone shall not be deemed a sufficient reason for such proposed use.*

Due to the unique topography of the parcel impacts are unavoidable. The total proposed impacts to 20% steep slopes is 11,956 sf (note: 3,086 sf of steep slopes are also encompassed within the 50' wetland buffer) and limited to the improvements required for safe site access (upgrades to "Old Oak Street" a class VI gravel roadway), enhanced sight distance along Oak Street, stormwater management facilities and proposed home driveways.

All impacts have been designed to disturb as little of the 20% slopes as to the most practicable extent possible. The roadway and drainage systems use the slopes to minimize impacts with areas limited to just what is necessary for the construction of roadways, driveways, and stormwater management facilities. Detailed and extensive sediment and erosion control BMP's are incorporated into the plan set for construction and when construction is completed.

The Project Proponent and design team worked closely with the Planning Department and Technical Review Committee to balance the lot layout and roadway design with the unique topography of the parcel. Although the density calculations indicated that the parcel would support up to 14 house lots, through the extensive collaborative effort between Staff and the project team, the number of lots was reduced to 11 to best suit the property.

The applicant has demonstrated that the proposed use is essential to the productive use of land and is in general conformance with the Subdivision Regulations and Zoning Ordinance.

(b) *A soil erosion and sedimentation control plan is submitted and followed to verify the planned avoidance of sediment pollutant runoff to bodies of water. This plan will address the following (if applicable), but not limited to:*

- *(i) Stabilization of exposed soils and soil stockpiles;*
  Detailed erosion and sedimentation control BMP's have been designed into the plan and are shown on the plan set.
- *(ii) Protection of steep slopes from erosion.*

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

Impacts to steep slopes has been minimized as much as practicable with the design and erosion control BMP's are detailed on the drawings to mitigate erosion during and after construction.

(iii) *Construction site water management.*
A comprehensive and robust stormwater management and migration system has been designed to mitigate stormwater from the developed site.

(iv) *Inspection and maintenance of runoff control measures (BMPS).*
A comprehensive stormwater inspection and maintenance plan has been prepared and has been submitted along with the design plans.

(v) *Minimization of land clearing.*
This parcel is predominately a mowed hay field. Tree cutting where required has been minimized as much as has been practicable.

(vi) *Stabilization of drainage ways.*
The stormwater management system has been designed to mitigate impacts to the existing drainage ways after construction.

(vii) *Installation of perimeter controls.*
Erosion control BMP's (Silt Soxx TM) are shown throughout the project area and around proposed disturbed areas.

(viii) *Installation of sediment trapping devices; and*
Deep sump catch basins are the first sediment trapping BMP incorporated into the overall design along with pre-treatment swales and sediment forebay's at the detention ponds.

(ix) *Storm drain inlet protection*
Inlet protection is shown on the design plans.

The subdivision design plans have been completed. The plans include locations and details for sediment and erosion control devices. Notes outlining construction sequencing, inspection maintenance and inspection procedures of erosion control and sediment controls, timing of control devices, spill prevention and control practices, winter construction notes, and typical City of Dover and NH Alteration of Terrain blasting notes (blasting is not anticipated, this is common when ledge is present).

(c) *Necessary state and federal approvals have been applied for. Said permits shall be received prior to issuance of Conditional Use Permit by the Planning and Community Development Department.*

A NHDES State Subdivision is required. No other state permits are required. approval.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

(d) A written review by the Conservation Commission of the environmental effects of the proposed use upon the area in question has been submitted. The Commission's review shall address the following, but is not limited to:

- *(i) Attempted avoidance of the impact.*
- *(ii) Minimization of the impact.*
- *(iii) Planned mitigation of the effects of the impact; and*
- *(iv) Efficacy of the soil erosion and sedimentation control plan*

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, May 8, 2023
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Kristen Murphy, Abigail Lyon, Jay Aube, Bruce Batchelder (Alternate), Jake Geddes (Alternate)
Absent (Excused): Robert Atwood (Secretary), Amy Kramer-Perry, Steve Fellows (Vice Chair)
STAFF PRESENT: Jackson Kaspari – Resilience Manager
OTHERS PRESENT: Councilor Lindsey Williams, Steve Height, Kathleen Blake

1. **CALL TO ORDER AND ROLL CALL**

The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM:** No citizens were present to speak during the forum.

3. **APPROVAL OF THE PRIOR MEETING MINUTES** – April 10, 2023

K. Murphy moved to approve the April 10, 2023 minutes, A. Lyon seconded. Vote: 5 yes. 1 abstention.

4. **OLD BUSINESS:** None

5. **NEW BUSINESS:**

A. City of Dover Conditional Use Permit for Chinburg Development, LLC, (Agent: Civilworks New England), Assessor's Map N, Lot 13-1, zoned R-40, located off of Oak Street and Gulf Road. Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 11-lot open space subdivision, creating 11,956 square feet of impact to the Conservation District resulting from steep slopes in excess of 20%.

Steve Height with Civilworks New England presented information for Items A and B under New Business.

He reviewed the locations of the steep slope impacts and the reason for them. He walked the Commission through how the information addresses the CUP criteria for the Conservation District speaking to the sediment and erosion controls.

A. Lyon: Would the HOA hold the stormwater management permit?

S. Height: Yes, the HOA would have to be the holder of the permit.

A. Lyon: Could you please speak to the 100-year flood zone?

S. Height pointed to the location of the zone in proximity to an identified house lot.

A. Lyon moved to endorsed the conditional use permit application given the avoidance and minimization of impacts. J. Aube seconded. Vote: 6 yes.

DRAFT

B. City of Dover Conditional Use Permit for Chinburg Development, LLC, (Agent: Civilworks New England), Assessor's Map N, Lot 13-1, zoned R-40, located off of Oak Street and Gulf Road. Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 11-lot open space subdivision, creating 32,089 square feet of impact to wetland buffers.

Steve reviewed the proposed wetland buffer impacts, noting locations and how the CUP criteria had been addressed per the CUP memo. He emphasized the design of the stormwater management system.

B. Hunt: Will there be modifications to the existing swale?

S. Height: No, the geometry of the swale will not be impacted.

B. Hunt: Will the HOA be involved with management of the swale and turf areas?

S. Height: Yes, they have to in accordance with the stormwater management plan.

K. Murphy: When were the wetlands delineated on the property?

S. Height: Last delineated on August 8, 2021.

J. Aube: Is there opportunity for buffer enhancement?

S. Height: There are areas that will be allowed to revegetate in accordance with the stormwater management plan which is approximately 1/3 of the buffer.

A. Lyon: Will signage be placed along property boundaries to ensure property owners are not mowing into the wetland areas?

S. Height: There is a note that requires wetland buffer placards to be installed.

J. Aube moved to endorse the conditional use permit application with a recommendation that some of the historically mowed fielded areas are allowed to revegetate. K. Murphy seconded. Vote: 6 yes.

C. Dover Community Garden Group – Update and Funding Request

Annie Macadam, one of the leaders of the Community Garden Group, presented an update on the group status to the Conservation Commission and explained the funding request.

A. Lyon: Do you have a sense for the demographics of the people that utilize the garden?

A. Macadam: There are a good number of renters which was anticipated. A lot of people in the 20 – 40-year-old range.

DRAFT

B. Hunt: Have there been issues with vandalism?

A. Macadam: Not many issues other than the gate being messed with some.

B. Batchelder: How many people are on the wait list?

A. Macadam: There are five people on the wait list for the Garrison Hill Tower location.

J. Kaspari: Where is the DCGG with the 501(c)3 status?

A. Macadam: Recognized as such with the IRS but not with the state of New Hampshire. Still need to complete the State forms and plan to complete those within the next couple of months.

J. Kaspari explained that while the garden is definitely a great asset for the community, he reminded the Commission that there is no formal partnership and that the plots are used for private benefit. While funding these requests does fall within the scope of the Conservation Commission, he cautioned the Commission that processing purchase orders requires staff time.

Discussion ensued on this.

B. Hunt: Have you investigated any grant funding?

A. Macadam: There is a grant opportunity we could pursue through the New England Grassroots Fund.

The Commission discussed that authorization of this request will allow for the DCGG to get more established and pursue other funding sources in the future.

A. Lyon moved to authorize the use of $5,300 from the Conservation Fund for the installation of a pergola and payment of utility expenses for one year. J. Geddes seconded. Vote: 5 yes. 1 no.

K. Murphy who voted no stated that she is not opposed to the garden but has discomfort about the use of Conservation Fund monies being used to cover utility costs.

D. Discussion on Indigenous Foraging Policy

Kathleen Blake was present to explain the concept and introduce the policy that was adopted by the Town of Durham's Conservation Commission.

A. Lyon pointed out that the Commission should learn from the process that Durham went through and discuss any concerns.

J. Kaspari explained that the staff recommendation surrounding this would be to adopt a policy regarding responsible foraging and that it's difficult to adopt an overarching indigenous policy due to pending supreme court litigation and specific provisions for each conservation tract.

DRAFT

K. Murphy discussed how NH has laws that protect landowners from liability if the land is open to public access. She stated her support.

B. Hunt stated that he is behind the intent philosophically but is concerned about the oversite and application.

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

J. Kaspari reported that there was no correspondence to share.

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

S. Fellows was not present for the update. The Subcommittee will be meeting later in the month.

A. Lyon asked if the installation of the new street trees could be celebrated through an event.

K. Murphy shared that the Open lands Committee is hosting a pollinator garden event off of Tolend Rd. at Riverside Gardens on May 20th from 9 am – 11 am.

8. ADJOURNMENT

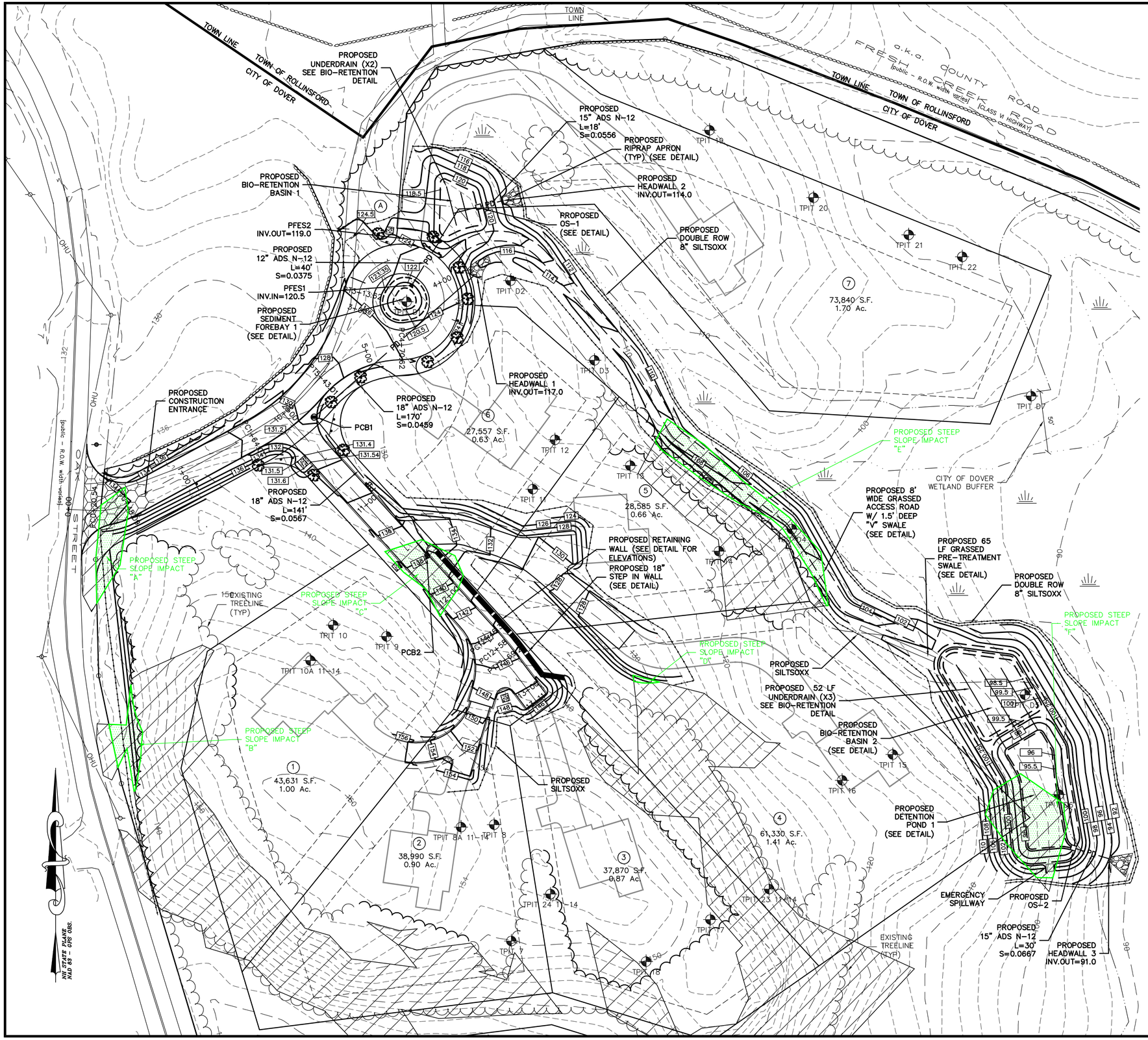
A. Lyon motioned to adjourn. J. Aube seconded. Vote: 6 yes.

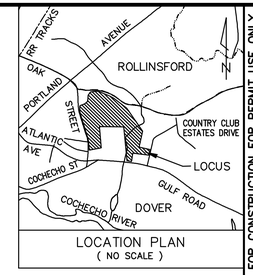
The meeting was adjourned at 7:05 PM.

DRAFT

COND-2023-0034 **GULF ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
25027-000000	22 FAIRVIEW AV	MAATTALA JOHN P &	MAATTALA JENNIFER A	22 FAIRVIEW AV	DOVER	NH	03820
25029-000000	21 ELMWOOD AV	CLARK CHRISTOPHER R &	CLARK JEANNE C P	21 ELMWOOD AVENUE	DOVER	NH	03820-3512
25030-000000	19 ELMWOOD AV	PADIAL ISABEL N		19 ELMWOOD AVE	DOVER	NH	03820
25040-000000	16 ELMWOOD AV	ROCHE JANE TRUSTEE	ROCHE JANE REVOCABLE TRUST OF 2010	16 ELMWOOD AVENUE	DOVER	NH	03820
25040-A00000	18 ELMWOOD AV	HOWARD ROBERT & PHYLLIS REVOCABLE TRUST	HOWARD ROBERT AND PHYLLIS TRUSTEES	18 ELMWOOD AVENUE	DOVER	NH	03820
25041-000000	20 ELMWOOD AV	DALKE BRIAN M	DALKE KELLY A	20 ELMWOOD AVENUE	DOVER	NH	03820
25043-000000	165 PORTLAND AV	NET LEASE REALTY I INC		450 SOUTH ORANGE AVE STE 900	ORLANDO	FL	32801
25043-A00000	99 OAK ST	HOT ROD CITY LLC		390 SIXTH ST	DOVER	NH	03820
25043-D00000	87 89 OAK ST	HUBBARD-LEARY LLC		89 OAK ST	DOVER	NH	03820
25080-000000	1 OAK ST	CRE JV MIXED FIVE NH BRANCH HOLDINGS LLC	ATTN: PM DEPT 9038	11995 EL CAMINO REAL	SAN DIEGO	CA	92130
N0012-K00000	2 COUNTRY CLUB ESTATES DR	COOPER KEVIN R JR		PO BOX 2213	DOVER	NH	03821
N0012-N00000	1 COUNTRY CLUB ESTATES DR	GILBERT CLIFFORD M & MARGARET LIFE ESTAT	CARTER MARGARET & FORCILLO ROSEMARY L	1 COUNTRY CLUB ESTATES DR	DOVER	NH	03820
N0013-000000	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00000	130 GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00001	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-C00001	COUNTRY CLUB ESTATES DR	MURPHY EDWARD J JR &	MURPHY AHN C	35 BELANGER DR	DOVER	NH	03820
N0013-E00000	2 A COUNTRY CLUB ESTATES DR	ANDRESS JEFFREY D &	ANDRESS AMIE K	2A COUNTRY CLUB ESTATES	DOVER	NH	03820
N0013-F00000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
N0013-G00000	104 GULF RD	DAY AHN MARIE &	DAY MICHAEL ALAN	104 GULF RD	DOVER	NH	03820
N0014-A00000	117 GULF RD	TOWNSEND EDWARD M &	TOWNSEND SARAH L	117 GULF ROAD	DOVER	NH	03820
N0015-000000	145 GULF RD	COCHECO COUNTRY CLUB		145 GULF RD	DOVER	NH	03820
N0013-001000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY, LLS	24 CHESTNUT STREET	DOVER	NH	03820
		CIVILWORKS NEW ENGLAND	STEPHEN J HAIGHT, PE	PO BOX 1166	DOVER	NH	03821
		FRAGGLE ROCK ENVIRONMENTAL, INC	DAMON E BURT, CWS	38 GARLAND ROAD	STRAFFORD	NH	03884





LOCATION PLAN
(NO SCALE)

NOTES:
1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 20% STEEP SLOPE IMPACTS:

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	11,956 SF

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

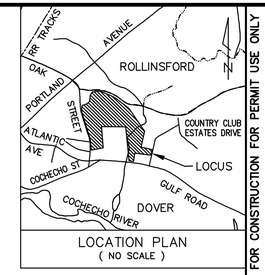
APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

PROPOSED STEEP SLOPE EXHIBIT

EX-4





LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 20% STEEP SLOPE IMPACTS:

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**11,956 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO:21074
FILE: SITE

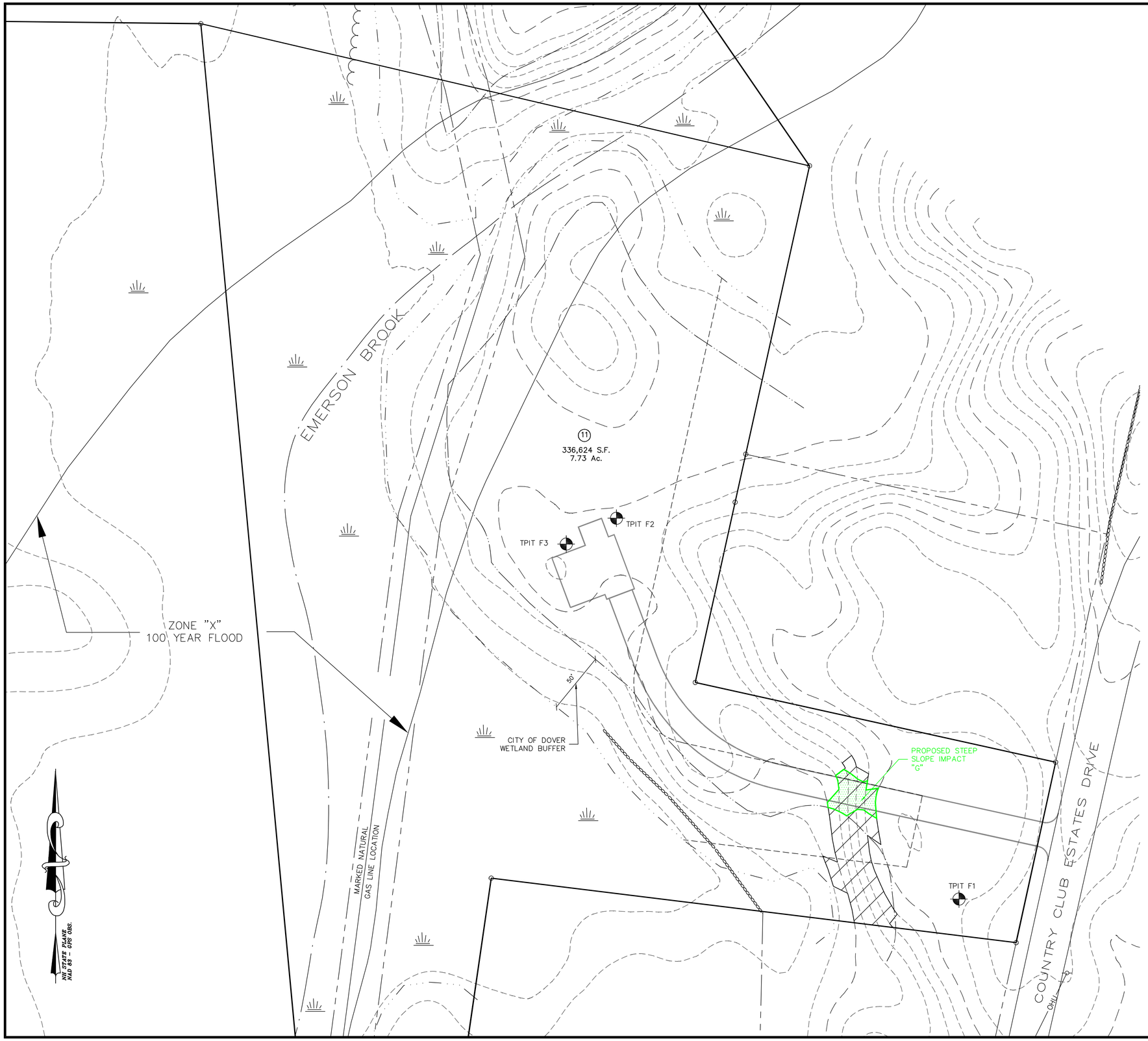
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

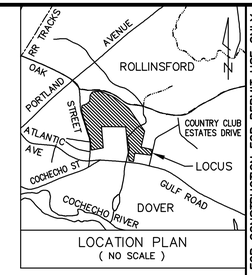
PROPOSED STEEP SLOPE EXHIBIT

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

EX-5





LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 20% STEEP SLOPE IMPACTS:

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**11,956 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO:21074
FILE: SITE

PROPOSED STEEP SLOPE EXHIBIT

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

EX-6

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #COND-2023-0039

Application Type: Conditional Use Permit
Applicant(s): Chinburg Development, LLC
Owner(s): Chinburg Development, LLC
Location: Off Gulf Road and Oak Street (Assessor's Map N, Lot 13-1)
Meeting Date: May 23, 2023

INTENT: To obtain a Conditional Use Permit (CUP) to construct a road and driveways and install drainage infrastructure as part of the 12-lot Open Space Subdivision creating 32,089 s.f. of impact to wetland buffers

LOTS/UNITS PROPOSED: 12 via OSS

AGENDA ITEM: # 4-E

ACREAGE: 34.53 acres

ZONING DISTRICT: Rural Residential (R-40), Wetlands Protection & Conservation Overlay Districts

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Residential

SURROUNDING: Residential, City Boundary, Commercial, Vacant

ZBA ACTION: N/A

ATTACHMENTS:

- Conditional Use Permit Application Materials including plans and Conservation Commission minutes from 5/8/2023

APPLICATION IS COMPLETE: Yes

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

PERMITS REQUIRED:
-Dover CUP
-NHDES Subdivision Permit

WAIVERS REQUESTED: None for this case

DECLARE REGIONAL IMPACT: Yes due to the subdivision

Summary of Request and Background
The applicant is requesting a Conditional Use Permit associated with a 12-lot Open Space Subdivision to allow for a disturbance of 32,089 s.f. to wetland buffers of which 3,086 s.f. overlaps with the 20% steep slope area. There are no direct impacts to wetlands.

The Conservation Commission endorsed this application at their May 8, 2023 meeting with the condition that some of the historically mowed fielded areas are allowed to revegetate. The applicant provided a narrative which outlines how the proposal meets the criteria for granting the CUP per 170-27.1.F of the Code.

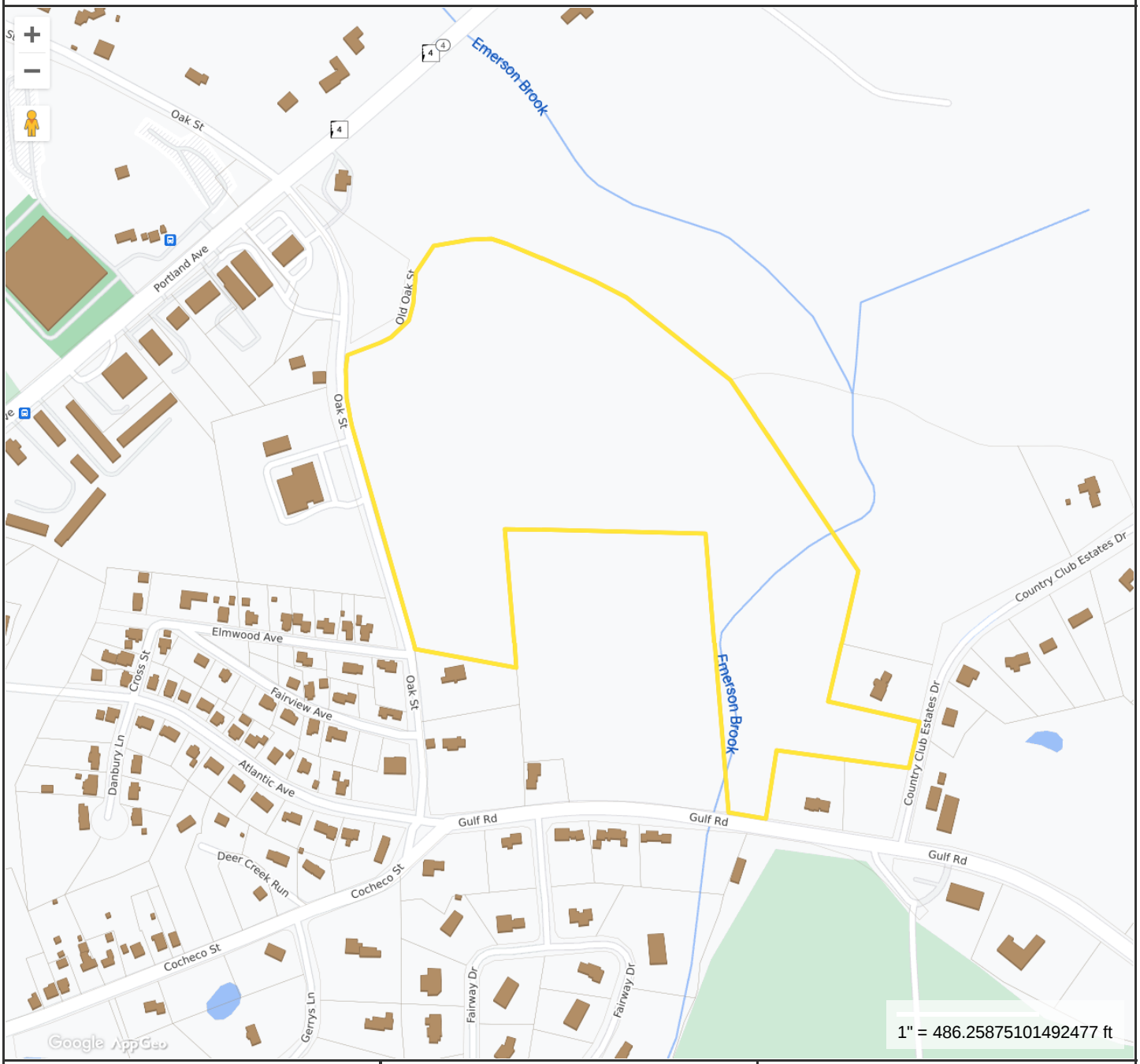
Staff recommends that the Planning Board determine the subdivision is of Regional Impact per RSA 36:54.

Consistency with Land Use Regulations
The Conservation 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 as described in the narrative in the application materials.

STAFF RECOMMENDATION:
The Planning Department recommends the Planning Board accept the application, declare regional impact and vote to table the Conditional Use Permit to June 13, 2023.

COND-2023-0039 Gulf Road



Property Information

Property ID	N0013-001000
Location	GULF RD
Owner	CHINBURG DEVELOPMENT LLC
Land Use	130
Zoning Code	R-40

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 12/16/2022
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 #: COND-2023-0039	Date Received:
	Amount Paid:	Time Received:

APPLICANT AND OWNER INFORMATION

Name of Applicant: Chinburg Development, LLC Telephone # 603-868-5995

Address of Applicant: 3 Penstock Way Newmarket, NH 03857

E-Mail Address: massia@chinburg.com

Name of Property Owner (if different from applicant): SAME AS APPLICANT Telephone #

Address of Property Owner:

PROPERTY INFORMATION

Assessor's Map # N Lot(s) # 13-1

Address of Property: Oak Street & Gulf Road

Zoning District(s) R-40 Overlay District(s) Conservation District

Existing Use of Property: Residential - Vacant

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:

Impacts will be made to the 50' Wetland Buffers to allow disturbances for road contruction and associated grading and drainage design. Total impacts to wetland buffers will be 32,089 s.f., of which 3,086 s.f. overlaps the 20% Steep Slope Area. There will be no direct impacts to wetlands.

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

NH DES Subdivision Approval - 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 #: NH 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: 22 FEB 2023

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

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: 22 FEB 2023

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
N	13-1	Chinburg Development, LLC 3	Penstock Way Newmarket, NH 03857

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	MAILING ADDRESS

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
Damon Burt, CWS	Fraggle Rock Environmental, Inc.	38 Garland Road Strafford, NH 03884

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	MAILING ADDRESS

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

CONDITIONAL USE PERMIT CRITERIA – WETLAND PROTECTION DISTRICT

50' Wetland Buffer Impacts

(a) *Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area*.

Due to the unique topography of the parcel impacts are unavoidable. The total proposed impacts to the 50' wetland buffer is 32,089 sf (note: 3,086 sf of steep slopes are also encompassed within the 20% steep slope) and limited to the improvements required for proposed stormwater management facilities and a proposed home driveway. All impacts have been designed to disturb as little of the 50' wetland buffer as to the most practicable extent possible.

The Project Proponent and design team worked closely with the Planning Department and Technical Review Committee to balance the lot layout and roadway design with the unique topography of the parcel. Although the density calculations indicated that the parcel would support up to 14 house lots, through the extensive collaborative effort between Staff and the project team, the number of lots was reduced to 11 to best suit the property.

(b) *Avoidance: The potential impacts have been avoided to the maximum extent practicable. The APPLICANT will demonstrate by plan and example that the proposed construction represents the least impacting alternative.*

There are no wetland impacts proposed. Wetland buffers impacts are limited to grading and stormwater management and a section of 1 house driveway. The Project Proponent and design team worked closely with the Planning Department and Technical Review Committee to balance the lot layout and roadway design with the unique topography of the parcel. Although the density calculations indicated that the parcel would support up to 14 house lots, through the extensive collaborative effort between Staff and the project team, the number of lots was reduced to 11 to best suit the property.

(c)*Minimization: Any unavoidable impacts have been minimized. No reasonable Alternative to the proposed construction exists which does not impact a wetland or which has less detrimental impact on a wetland. Design, construction and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and will include restoration of the site as nearly as possible to its original grade.*

All wetland impacts have been avoided. Due to the unique topography of the parcel impacts are unavoidable. The total proposed impacts to the 50' wetland

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

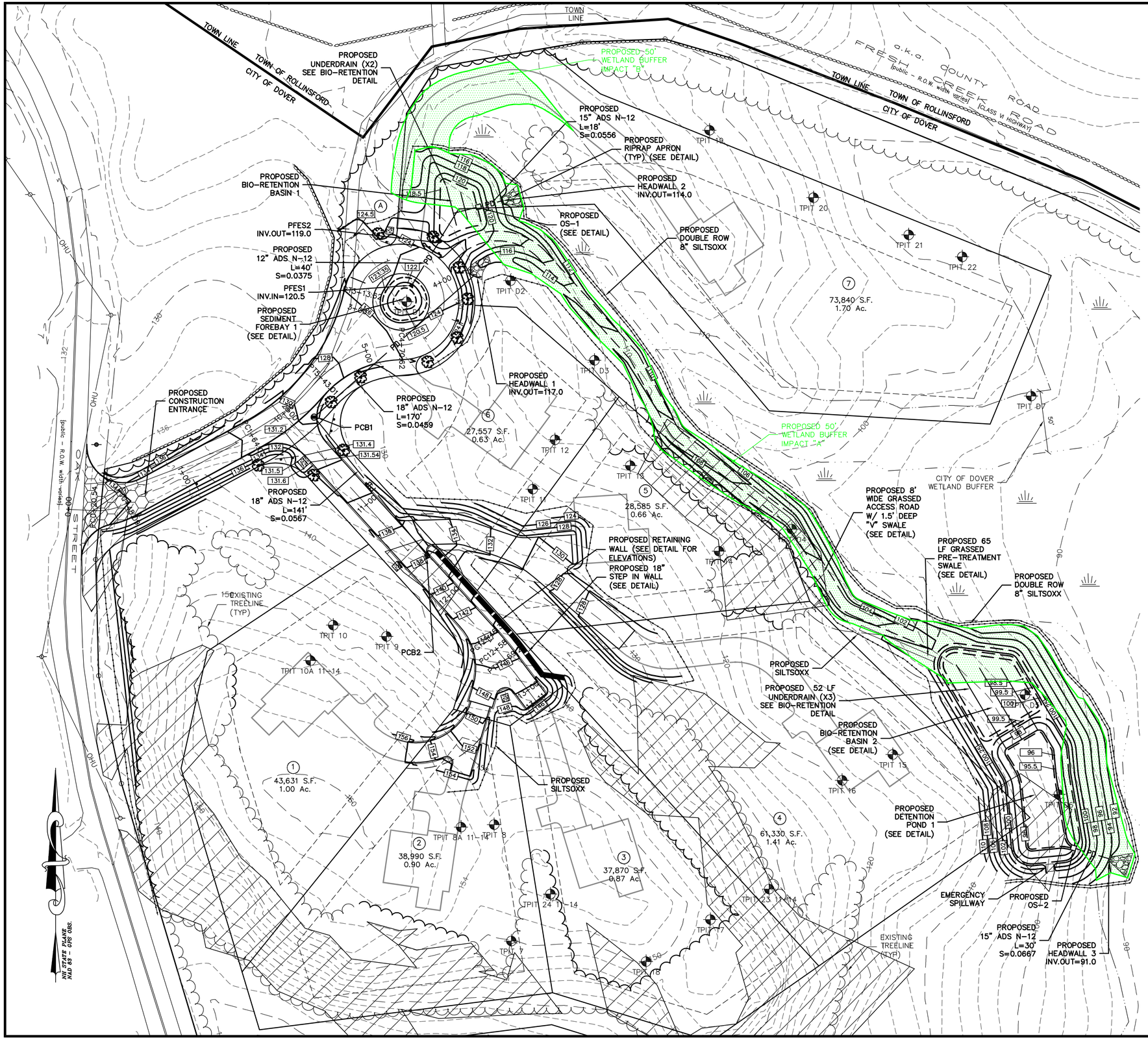
buffer is 32,089 sf (note: 3,086 sf of steep slopes are also encompassed within the 20% steep slope) and limited to the improvements required for proposed stormwater management facilities and a proposed home driveway. All impacts have been designed to disturb as little of the 50' wetland buffer as to the most practicable extent possible.

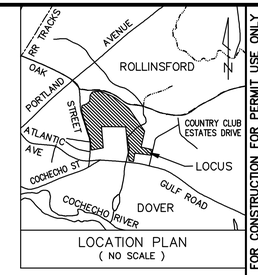
Sediment and erosion control devices will be installed down slope of all disturbed areas during construction. Added protection, such as, double row siltsoxx ™ will be installed along disturbed areas adjacent to wetlands and wetland buffers. The design plans outline these locations.

All disturbed areas within the 50' wetland buffer will be loamed and seeded with a native meadow seed mix (conservation mix).

(d) *Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy each of said plan for their review.*
Mitigation is not required as there are no proposed wetland impacts.

(e)
Approval for the wetlands impact has been received from the NHDES Wetlands Bureau pursuant to Section G (3), below.
A wetland permit is not required as there are no proposed wetland impacts.





LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 50' WETLAND BUFFER IMPACTS:

50' WETLAND BUFFER IMPACT "A": (3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	26,524 SF
50' WETLAND BUFFER IMPACT "B": (DRIVEWAY CONSTRUCTION FOR LOT 7)	5,028 SF
50' WETLAND BUFFER IMPACT "C": (DRIVEWAY CONSTRUCTION FOR LOT 11)	537 SF
TOTAL:	**32,089 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

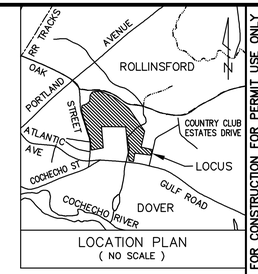
PROPOSED 50' WETLAND BUFFER EXHIBIT

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EX-1





LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 50' WETLAND BUFFER IMPACTS:

50' WETLAND BUFFER IMPACT "A": (3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	26,524 SF
50' WETLAND BUFFER IMPACT "B": (DRIVEWAY CONSTRUCTION FOR LOT 7)	5,028 SF
50' WETLAND BUFFER IMPACT "C": (DRIVEWAY CONSTRUCTION FOR LOT 11)	537 SF
TOTAL:	**32,089 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

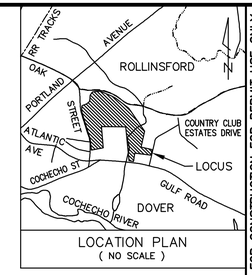
PROPOSED 50' WETLAND BUFFER EXHIBIT

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EX-2





LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER 50' WETLAND BUFFER IMPACTS:

50' WETLAND BUFFER IMPACT "A": (3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	26,524 SF
50' WETLAND BUFFER IMPACT "B": (DRIVEWAY CONSTRUCTION FOR LOT 7)	5,028 SF
50' WETLAND BUFFER IMPACT "C": (DRIVEWAY CONSTRUCTION FOR LOT 11)	537 SF
TOTAL:	**32,089 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 5-2-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO:21074
FILE: SITE

PROPOSED 50' WETLAND BUFFER EXHIBIT

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

EX-3

CIVILWORKS NEW ENGLAND
181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

CONDITIONAL USE PERMIT NARRATIVE

Emerson Ridge at Janetos Farm is a proposed Open Space Subdivision off of Oak St. We have endeavored to create a balance and harmony between the existing site conditions, development of eleven homes, and the preservation of the key characteristics of the parcel. The proposed subdivision would successfully conserve more than 15 acres of land with a focus on preserving field areas, wetlands, and viewsheds. This project has been collaborative with the City of Dover from the start, and we have had many revisions to the plan set that you see before you in an effort to minimize our disturbance to the natural landscape. Our yield plan for this parcel would have allowed for 14 homes on conventional lots. For this open space subdivision, we have reduced the number of homes proposed to 11 to create a balance between the development and the conservation areas. This proposed development has no impact to wetlands but does have three impacts to the 50' wetland buffer which are described in more detail below. This proposed development also has impacts to steep slopes in different areas of the subdivision which are described in more detail below. The applicant and engineer have carefully evaluated and mitigated each impact as much as possible. These plans have been revised 19 times via input from the City of Dover Planning Staff and the Technical Review Committee.

Narrative for Steep Slope Impacts

- **Impact A & Impact B**: The steep slope impact for Area A is 1,505 sq ft and the steep slope impact for Area B is 929 sq ft which both involve alteration of steep slopes along Oak Street on this parcel to create sight distance for the proposed upgraded roadway. Using this area for road access allows us to use an existing disturbed area and have a minimized impact on other areas of steep slopes that exist on the parcel. These impacts have been minimized as much as possible and have been carefully curated to only cause impacts where necessary for the upgraded road entrance and the necessary sight distance. These impacts to the slopes will be properly designed and stabilized to minimize impact.
- **Impact C**: Proposed Impact C is a 1,896 sq ft impact to steep slopes for the shared private drive. Rather than individual driveways for each individual lot we carefully selected and combined shared driveways where applicable. We placed these shared driveways purposefully to minimize impact to the steep slope areas and combined driveways where applicable to ensure that impact was minimized. We have added a retaining wall to the shared driveway to reduce the potential grading impact in the steep slopes for these shared driveways. We have carefully placed this shared driveway to allow roadway infrastructure and future homesites to sit on the areas of the land that are most appropriate while protecting natural viewsheds along the ridge.
- **Impact D**: Proposed impact D is a 68 sq ft impact at the end of the shared driveway which is caused by driveway grading. This driveway has been placed to carefully cause the least impact. The small impact caused here is only for

projected grading around the driveway area not for driveway construction. This minimal impact is projected for proper stabilization of the future driveway.

- **Impacts E & F**: Proposed impacts E & F are impacts caused by the proposed drainage system. The drainage options for this site have been carefully considered to provide the most effective treatment for this area while conscientiously minimizing impacts to the natural character of the land. Using the natural topography of the land to properly design the drainage areas, we selected an area that would have a minimized impact on the steep slopes and wetland buffers but a maximum impact on stormwater treatment and detention. The proposed drainage system near these impacts consists of open drainage of bioretention pond, a drainage swale underneath a 8' wide grassed access road, and second bioretention pond. These drainage areas have been artfully designed to provide stabilization of drainage areas, reduce erosion, and provide sediment control while avoiding impacts to wetlands and reducing impact to steep slopes through purposeful design.
    - **Impact E** is 3,086 sq ft and is in the area of the proposed swale and grassed access road. Though the steep slopes will be impacted in this location it is on the edge of the steep slope area and the majority of the steep slopes will be maintained, there will be restoration of grass planting in this area as well. Placing the drainage swale and access area in this location provides the minimum disturbance to the steep slope areas while still allowing us to have no impact in the man-made wetland.
    - **Impact F** is 3,530 sq ft and is an impact within the larger proposed bioretention pond on site. Placing the bioretention pond in this area allows us capture the drainage at the low point where the water naturally flows and treat it before it enters into the wetland system. Placing the drainage in this area is the best place suitable for drainage that allows for no disturbance of the wetland and minimized disturbance to the steep slope area.
- **Impact G**: Impact G is a 942 sq ft impact to steep slopes to allow for the driveway to proposed Lot 11 which will be off of Country Club Estates. This area for the driveway will provide the least impact to the 50' wetland buffer and the 20% steep slopes while still providing driveway access to the proposed home at this location.

Narrative for Wetland Buffer Impacts

- **Impact A**: Impact A constitutes a 26,524 sq ft impact to the 50' wetland buffer. This impact is primarily along the man-made portion of the wetland which is a narrow farm drainage swale. This impact is necessary to provide for the swale and access area for the proposed drainage system and will not cause any impact to the wetland area itself. This impact will ensure proper care of the stormwater and runoff onsite so that it can be treated properly prior to entering into the

ground water and wetland system. This impact will be temporary as this area will be reclaimed with grass and used only occasionally for access and maintenance of the proposed bioretention pond. Using this area provides for a minimized impact to the wetland and instead impacts the wetland buffer while working with the natural topography of the land to minimize additional impacts to steep slopes.

- **Impact B**: Impact B is a 5,028 sq ft impact to allow for the driveway to proposed Lot 7. We have worked to place this driveway in an area that will have the least impact to wetland buffer and have avoided wetland impacts entirely for the driveway. This impact is at the very end of the manmade farm swale and the location of this buffer impact has been studied and designed specifically to minimize the impact to the wetland buffer while working with the constraints of the lot lines in this area.
- **Impact C**: Impact C is a 537 sq ft impact to allow for the driveway to proposed Lot 11 which will be off of Country Club Estates this area for the driveway will provide the least impact to the 50’ wetland buffer and the 20% steep slopes while still providing driveway access to the proposed home at this location.

CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type:	Regular Meeting
Meeting Location:	City Council Conference Room - 288 Central Avenue, Dover, NH
Meeting Date:	Monday, May 8, 2023
Meeting Time:	**5:30 pm**

MEMBERS PRESENT: Bill Hunt (Chair), Kristen Murphy, Abigail Lyon, Jay Aube, Bruce Batchelder (Alternate), Jake Geddes (Alternate)
Absent (Excused): Robert Atwood (Secretary), Amy Kramer-Perry, Steve Fellows (Vice Chair)
STAFF PRESENT: Jackson Kaspari – Resilience Manager
OTHERS PRESENT: Councilor Lindsey Williams, Steve Height, Kathleen Blake

1. **CALL TO ORDER AND ROLL CALL**

The meeting was convened at 5:30 PM.

2. **CITIZENS' FORUM:** No citizens were present to speak during the forum.

3. **APPROVAL OF THE PRIOR MEETING MINUTES** – April 10, 2023

K. Murphy moved to approve the April 10, 2023 minutes, A. Lyon seconded. Vote: 5 yes. 1 abstention.

4. **OLD BUSINESS:** None

5. **NEW BUSINESS:**

A. City of Dover Conditional Use Permit for Chinburg Development, LLC, (Agent: Civilworks New England), Assessor's Map N, Lot 13-1, zoned R-40, located off of Oak Street and Gulf Road. Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 11-lot open space subdivision, creating 11,956 square feet of impact to the Conservation District resulting from steep slopes in excess of 20%.

Steve Height with Civilworks New England presented information for Items A and B under New Business.

He reviewed the locations of the steep slope impacts and the reason for them. He walked the Commission through how the information addresses the CUP criteria for the Conservation District speaking to the sediment and erosion controls.

A. Lyon: Would the HOA hold the stormwater management permit?

S. Height: Yes, the HOA would have to be the holder of the permit.

A. Lyon: Could you please speak to the 100-year flood zone?

S. Height pointed to the location of the zone in proximity to an identified house lot.

A. Lyon moved to endorsed the conditional use permit application given the avoidance and minimization of impacts. J. Aube seconded. Vote: 6 yes.

DRAFT

B. City of Dover Conditional Use Permit for Chinburg Development, LLC, (Agent: Civilworks New England), Assessor's Map N, Lot 13-1, zoned R-40, located off of Oak Street and Gulf Road. Proposal is to construct a road and driveways, as well as the installation of drainage structures and systems with associated grading as part of a 11-lot open space subdivision, creating 32,089 square feet of impact to wetland buffers.

Steve reviewed the proposed wetland buffer impacts, noting locations and how the CUP criteria had been addressed per the CUP memo. He emphasized the design of the stormwater management system.

B. Hunt: Will there be modifications to the existing swale?

S. Height: No, the geometry of the swale will not be impacted.

B. Hunt: Will the HOA be involved with management of the swale and turf areas?

S. Height: Yes, they have to in accordance with the stormwater management plan.

K. Murphy: When were the wetlands delineated on the property?

S. Height: Last delineated on August 8, 2021.

J. Aube: Is there opportunity for buffer enhancement?

S. Height: There are areas that will be allowed to revegetate in accordance with the stormwater management plan which is approximately 1/3 of the buffer.

A. Lyon: Will signage be placed along property boundaries to ensure property owners are not mowing into the wetland areas?

S. Height: There is a note that requires wetland buffer placards to be installed.

J. Aube moved to endorse the conditional use permit application with a recommendation that some of the historically mowed fielded areas are allowed to revegetate. K. Murphy seconded. Vote: 6 yes.

C. Dover Community Garden Group – Update and Funding Request

Annie Macadam, one of the leaders of the Community Garden Group, presented an update on the group status to the Conservation Commission and explained the funding request.

A. Lyon: Do you have a sense for the demographics of the people that utilize the garden?

A. Macadam: There are a good number of renters which was anticipated. A lot of people in the 20 – 40-year-old range.

DRAFT

B. Hunt: Have there been issues with vandalism?

A. Macadam: Not many issues other than the gate being messed with some.

B. Batchelder: How many people are on the wait list?

A. Macadam: There are five people on the wait list for the Garrison Hill Tower location.

J. Kaspari: Where is the DCGG with the 501(c)3 status?

A. Macadam: Recognized as such with the IRS but not with the state of New Hampshire. Still need to complete the State forms and plan to complete those within the next couple of months.

J. Kaspari explained that while the garden is definitely a great asset for the community, he reminded the Commission that there is no formal partnership and that the plots are used for private benefit. While funding these requests does fall within the scope of the Conservation Commission, he cautioned the Commission that processing purchase orders requires staff time.

Discussion ensued on this.

B. Hunt: Have you investigated any grant funding?

A. Macadam: There is a grant opportunity we could pursue through the New England Grassroots Fund.

The Commission discussed that authorization of this request will allow for the DCGG to get more established and pursue other funding sources in the future.

A. Lyon moved to authorize the use of $5,300 from the Conservation Fund for the installation of a pergola and payment of utility expenses for one year. J. Geddes seconded. Vote: 5 yes. 1 no.

K. Murphy who voted no stated that she is not opposed to the garden but has discomfort about the use of Conservation Fund monies being used to cover utility costs.

D. Discussion on Indigenous Foraging Policy

Kathleen Blake was present to explain the concept and introduce the policy that was adopted by the Town of Durham's Conservation Commission.

A. Lyon pointed out that the Commission should learn from the process that Durham went through and discuss any concerns.

J. Kaspari explained that the staff recommendation surrounding this would be to adopt a policy regarding responsible foraging and that it's difficult to adopt an overarching indigenous policy due to pending supreme court litigation and specific provisions for each conservation tract.

DRAFT

K. Murphy discussed how NH has laws that protect landowners from liability if the land is open to public access. She stated her support.

B. Hunt stated that he is behind the intent philosophically but is concerned about the oversite and application.

6. REPORT FROM THE CHAIR

A. Review of Correspondence Received from NH Department of Environmental Services

J. Kaspari reported that there was no correspondence to share.

7. OTHER BUSINESS

A. Update from Forest Management Subcommittee

S. Fellows was not present for the update. The Subcommittee will be meeting later in the month.

A. Lyon asked if the installation of the new street trees could be celebrated through an event.

K. Murphy shared that the Open lands Committee is hosting a pollinator garden event off of Tolend Rd. at Riverside Gardens on May 20th from 9 am – 11 am.

8. ADJOURNMENT

A. Lyon motioned to adjourn. J. Aube seconded. Vote: 6 yes.

The meeting was adjourned at 7:05 PM.

DRAFT

COND-2023-0039 **GULF ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
25027-000000	22 FAIRVIEW AV	MAATTALA JOHN P &	MAATTALA JENNIFER A	22 FAIRVIEW AV	DOVER	NH	03820
25029-000000	21 ELMWOOD AV	CLARK CHRISTOPHER R &	CLARK JEANNE C P	21 ELMWOOD AVENUE	DOVER	NH	03820-3512
25030-000000	19 ELMWOOD AV	PADIAL ISABEL N		19 ELMWOOD AVE	DOVER	NH	03820
25040-000000	16 ELMWOOD AV	ROCHE JANE TRUSTEE	ROCHE JANE REVOCABLE TRUST OF 2010	16 ELMWOOD AVENUE	DOVER	NH	03820
25040-A00000	18 ELMWOOD AV	HOWARD ROBERT & PHYLLIS REVOCABLE TRUST	HOWARD ROBERT AND PHYLLIS TRUSTEES	18 ELMWOOD AVENUE	DOVER	NH	03820
25041-000000	20 ELMWOOD AV	DALKE BRIAN M	DALKE KELLY A	20 ELMWOOD AVENUE	DOVER	NH	03820
25043-000000	165 PORTLAND AV	NET LEASE REALTY I INC		450 SOUTH ORANGE AVE STE 900	ORLANDO	FL	32801
25043-A00000	99 OAK ST	HOT ROD CITY LLC		390 SIXTH ST	DOVER	NH	03820
25043-D00000	87 89 OAK ST	HUBBARD-LEARY LLC		89 OAK ST	DOVER	NH	03820
25080-000000	1 OAK ST	CRE JV MIXED FIVE NH BRANCH HOLDINGS LLC	ATTN: PM DEPT 9038	11995 EL CAMINO REAL	SAN DIEGO	CA	92130
N0012-K00000	2 COUNTRY CLUB ESTATES DR	COOPER KEVIN R JR		PO BOX 2213	DOVER	NH	03821
N0012-N00000	1 COUNTRY CLUB ESTATES DR	GILBERT CLIFFORD M & MARGARET LIFE ESTAT	CARTER MARGARET & FORCILLO ROSEMARY L	1 COUNTRY CLUB ESTATES DR	DOVER	NH	03820
N0013-000000	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00000	130 GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00001	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-C00001	COUNTRY CLUB ESTATES DR	MURPHY EDWARD J JR &	MURPHY AHN C	35 BELANGER DR	DOVER	NH	03820
N0013-E00000	2 A COUNTRY CLUB ESTATES DR	ANDRESS JEFFREY D &	ANDRESS AMIE K	2A COUNTRY CLUB ESTATES	DOVER	NH	03820
N0013-F00000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
N0013-G00000	104 GULF RD	DAY AHN MARIE &	DAY MICHAEL ALAN	104 GULF RD	DOVER	NH	03820
N0014-A00000	117 GULF RD	TOWNSEND EDWARD M &	TOWNSEND SARAH L	117 GULF ROAD	DOVER	NH	03820
N0015-000000	145 GULF RD	COCHECO COUNTRY CLUB		145 GULF RD	DOVER	NH	03820
N0013-001000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY, LLS	24 CHESTNUT STREET	DOVER	NH	03820
		CIVILWORKS NEW ENGLAND	STEPHEN J HAIGHT, PE	PO BOX 1166	DOVER	NH	03821
		FRAGGLE ROCK ENVIRONMENTAL, INC	DAMON E BURT, CWS	38 GARLAND ROAD	STRAFFORD	NH	03884

CITY OF DOVER

PLANNING BOARD - STAFF MEMO FILE #SUBD-2023-0001

Application Type:	Major Open Space Subdivision
Applicant(s):	Chinburg Development, LLC
Owner(s):	Chinburg Development, LLC
Location:	Oak S. and Gulf Rd (Assessor's Map N, Lot 13)
Meeting Date:	May 23, 2023

INTENT: To subdivide one parcel into 12 lots via an Open Space Subdivision. One waiver for sidewalks and two CUPs will also be reviewed by Planning Board.

LOTS PROPOSED: 11 new

AGENDA ITEM #: 4-F

ACREAGE: 34.53 acres

ZONING DISTRICT: R-40

EXISTING USE: Vacant

PROPOSED USE: Residential

SURROUNDING: Residential, City Boundary, Commercial, Vacant

ZBA ACTION: N/A

ATTACHMENTS: Application and materials, Subdivision Plan, Narrative, Waiver Request

APPLICATION IS COMPLETE: Yes

REGIONAL IMPACT: Yes

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

PERMITS REQUIRED: NHDES Subdivision

WAIVERS REQUESTED:
157-45 Sidewalks

Summary of Request and Background:
The applicant is proposing to subdivide one lot into 12 lots using the Open Space subdivision regulations. The lots would be serviced by onsite septics and municipal water. Lot access varies depending on the lot-some are accessed directly on frontage along Oak St. others via frontage on the upgraded, others via an internal private drive, and renamed Old Oak Street and one via Country Club Estates.

The Board may recall a previous application for a waiver request to their yield plan which provides the density for the project and which was granted on April 26, 2022.

This item came before to TRC for a couple unofficial/concept TRCs as well as official TRCs on March 16, 2023 and April 27, 2023.

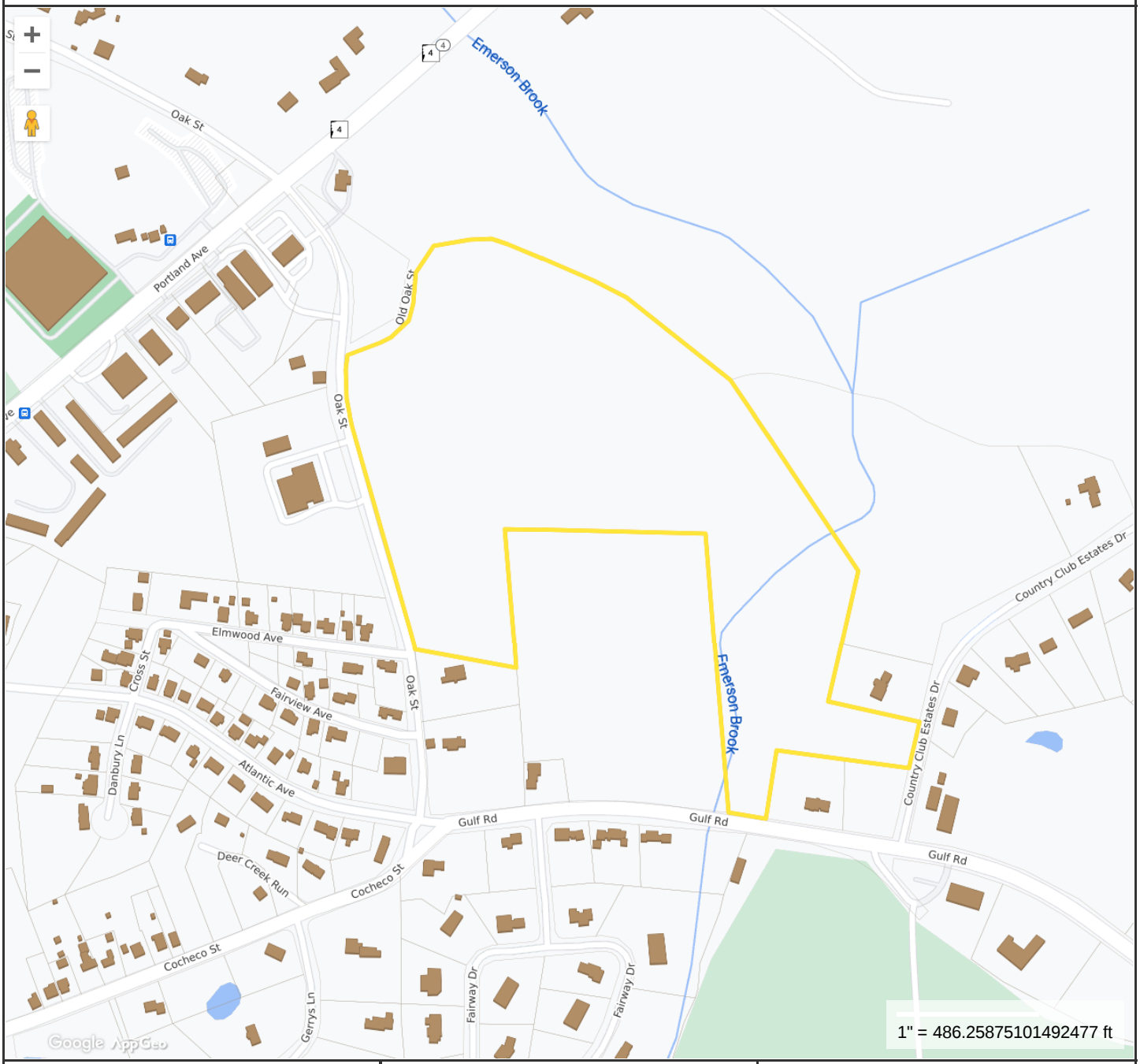
As part of this application, the applicant will be upgrading the current Class VI road known as "Old Oak Street" in Dover to a Class V road with a cul-de-sac in Dover and the Class VI status would continue into Rollinsford. The applicant met with Town of Rollinsford staff on March 27, 2023 and minutes of that meeting are provided in the packets along with an email exchange between the Dover Planning Director and Rollinsford's Town Administrator. The applicant has also notified another abutter about the removal of part of the stone wall within the proposed area where the roadway would be upgraded. The stonewall stones will be used elsewhere onsite and do not demark a property line.

Staff recommends that the Planning Board determine this is of Regional Impact per RSA 36:54.

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

STAFF RECOMMENDATION:
The Planning Department recommends that the Planning Board accept the applications for review, declare regional impact, and vote to table to June 13, 2023.

SUBD-2023-0001 Gulf Road



Property Information

Property ID	N0013-001000
Location	GULF RD
Owner	CHINBURG DEVELOPMENT LLC
Land Use	130
Zoning Code	R-40

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 12/16/2022
Data updated Daily

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

CIVILWORKS NEW ENGLAND

181 WATSON ROAD
P.O. BOX 1166
DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

May 2, 2022

City of Dover
288 Central Ave
Dover, NH 03820

Donna Benton, Director of Planning and Community Development

Subject: Subdivision and Conditional Use Permit Applications
Oak Street - Tax Map N, Lot 13-1
Civilworks New England Reference No. 21074

Dear Ms. Benton:

On behalf of Chinburg Development, LLC we are pleased to submit the revised application(s) and associated materials for the May 23, 2023, Planning Board Meeting. One (1) copy of all material listed are attached, two (2) full size (22x34) and one (1) half size (11x17) copy of the plan set, and one (1) copy of the drainage report. All materials will also be provided electronically (PDF) to the Planning Department:

1) Cover Letter
2) Response Narrative to TRC comments
3) Subdivision Application
4) Project Narrative
5) Waiver Request (sidewalk)
6) Owner Authorization
7) CUP Narrative
8) CUP Application for Wetland Buffer Impacts
9) CUP Application for Steep Slopes Impacts
10) P22-21 Waiver NOD 2022.04.26
11) Eversource Ability to Serve Letter
12) Abutter Notification for Stonewall removal
13) Rollinsford Board of Selectman 2023.03.27 meeting minutes
14) Class VI Road Upgrade Narrative
15) Traffic Memorandum
16) HOA Documents
17) Drainage Report
18) Subdivision Plan Set

Please do not hesitate to contact our office should you have any questions.
Sincerely,

CIVILWORKS NEW ENGLAND



Stephen J Haight, PE

SJH/JG

City of Dover, New Hampshire
SUBDIVISION APPLICATION

[Revision Date: July 1, 2021]

Office Use Only	Project #: SUBD-2023-0001	Date Received:
	Amount Paid:	Time Received:

APPLICANT AND OWNER INFORMATION

Name of Applicant: Chinburg Development, LLC Telephone # 603-868-5995

Address of Applicant: 3 Penstock Way Newmarket, NH 03857

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

Address of Property Owner:

E-Mail Address: massia@chinburg.com

PROPERTY INFORMATION

Address of Property: Oak Street (& Gulf Road)

Assessor's Map # N Lot(s) # 13-1

Zoning District(s) R-40 Overlay District(s)

Size of Parcel: 34.53 ac Property Deed: Book 5037 Page: 903

Existing Use of Property: VACANT

SUBDIVISION INFORMATION

Subdivision Type: Conventional: _____ Open Space: ✓ TDR: _____

Existing Number of Lots: 1 Proposed Number of Lots: 11

TDR Relief sought (Check All That Apply): □ Lot Size □ Frontage □ Setback □ 30' Buffer □ Purchase ____ units

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

Circle one for each category:

Water City/Well (circle one) How far is city water from the property? at street(s)

Sewer: City/Septic (circle one) How far is city sewer from the property? N/A

Highway Access City Street/State Highway (circle one) | Roadway Public or Private Road (circle one)

Refuse removal: Public/Private (circle one) | Estimated Length of Proposed Road: 387± feet

Estimated value of construction: $400,000 New impervious area (in s.f.): 27,717 s.f.

WAIVER REQUESTS

Subdivision Regulations section(s) to be waived: Section 157-45 Sidewalks

Justification for waiver request(s) (*attach additional sheets as needed*): See attached Waiver request.

Also, previously obtained waivers, for road length, see attached NOD.

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

LANDSCAPE ARCHITECT INFORMATION

Name of Landscape Architect and Company (Licensed in N.H.) N/A

Address _____ Telephone #: _____

Professional License #: _____ E-mail address: _____

SOIL SCIENTIST INFORMATION

Name of Soil Scientist and Company (Licensed in N.H.) Damon E. Burt, CWS - Fraggle Rock Environmental, Inc.

Address 38 Garland Road Strafford, NH 03884 Telephone #: 603-969-5574

Professional License #: Damon E. Burt, CWS #163 E-mail address: frenvironmental@gmail.com

CONSERVATION EASEMENT HOLDER

Name of Easement Holder: N/A Telephone #_____

Address Easement Holder: _____

SIGNATURES shaight@civilworksne.com

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: 22 FEB 2023

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

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: 22 FEB 2023

AUTHORIZATION TO COMPLETE THE PROJECT ON SUBJECT PROPERTY

I, and my successors, hereby authorize the City of Dover and 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: 22 FEB 2023

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: 22 FEB 2023

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

CERTIFICATION OF PUBLIC ROADWAY ACCEPTANCE

I, and my successors, hereby certify that I understand that the acceptance of a roadway as a public road is an action of the City Council in its sole and complete discretion. In order for the City Council to consider accepting a road as public, it must be free of encumbrances. No roadway with private utility easements shall be accepted as a public road by the City unless the easements are expunged prior to the transfer of land to the City. License agreements for any and all private utilities within the right of way may be granted by the City upon acceptance of the unencumbered roadway consistent with applicable state law.

Signature of Property Owner: _____ Date: 22 FEB 2023

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

City of Dover, New Hampshire
SUBDIVISION SUBMISSION CHECKLIST

[Revision Date: May 18, 2019]

This review checklist is intended to assist the applicant in the planning process of preparing a Subdivision 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 subdivision requirements. Please refer to the Subdivision Regulations for full details.

APPLICANT: Chinburg Development, LLC File Number: P23-___

PROJECT TITLE: Emerson Ridge - An Open Space Subdivision

PROPERTY LOCATION: Oak Street & Gulf Road Tax Map: N Lot: 13-1

	Where/How Provided	Reviewed
1. Completed and signed Application form	SEE ATTACHED	
2. Plan Review Fees are provided	SEE ATTACHED	
3. Electronic copy of the surveyed plat layout	EMAILED & UPLOADED TO CITY PORTAL	
4. Electronic copy of supplementary materials and application	EMAILED & UPLOADED TO CITY PORTAL	
5. Traffic Impact Assessment and Analysis (Standard or Advanced)	SEE ATTACHED, EMAILED & UPLOADED TO CITY PORTAL	
6. Waiver requests to the Subdivision Regulations, with written justification	PREVIOSLY OBTAINED, SEE ATTACHED NOD	
7. Conditional Use Permit applications	SEE ATTACHED	
8. Narrative describing yield plan and cost analysis	SEE ATTACHED	
9. Folded copies of subdivision plan w/scale of not less than 1"=50' or 1"=100' for larger subdivisions. Plans shall contain the following items as appropriate:	SEE ATTACHED , 8 FULL SIZE SETS (TRC)	
Location map at appropriate scale	SHOWN ON PLANS	
Proposed subdivision name and title and Planning File #	SHOWN ON PLANS	
Date, north arrow and scale	SHOWN ON PLANS	
Names of all abutting property owners	SHOWN ON PLANS	
Name and address of owners and/or applicants	SHOWN ON PLANS	
Signature & stamp of NH licensed land surveyor and/or engineer	SHOWN ON PLANS	
Zoning District boundaries, including any special or overlay districts	N/A	
Location of Conservation District areas	SHOWN ON PLANS	
Location, names and widths of existing and proposed streets, including pavement widths, grades, curbs and crosswalks	SHOWN ON PLANS	
Location and widths of existing & proposed easements & right of ways	SHOWN ON PLANS	
Location and widths of existing and proposed sidewalks	N/A	
Existing and proposed property lines with dimensions and bearings tied into Dover's Geographic Information System coordinate system	SHOWN ON PLANS	
Existing and proposed lot areas in square feet	SHOWN ON PLANS	
Existing and proposed topographic information at two foot intervals	SHOWN ON PLANS	
Minimum building setbacks or build to lines on all lots	SHOWN ON PLANS	

	Explain How Provided	Reviewed
Existing and proposed buildings and structure locations	N/A	
Location and size of existing and proposed electric, telephone, gas cable and other underground utilities	SHOWN ON PLANS	
Existing and proposed water lines and fire hydrants, including materials and capacity needed	SHOWN ON PLANS	
Location and materials of sanitary sewage facilities within project site and projected additional peak hour sewer load	N/A	
Existing and proposed septic system, including test pit locations and results and NHDES subdivision permit number	SHOWN ON PLANS	
Existing and proposed stormwater lines and facilities	SHOWN ON PLANS	
Existing and proposed streetlights	SHOWN ON PLANS	
Location of Flood Hazard Zone	SHOWN ON PLANS	
Location of all bodies of water and watercourses	SHOWN ON PLANS	
Location of wetlands and buffers	SHOWN ON PLANS	
Neighborhood plan with aerial underlay showing how project relates to abutting uses	SHOWN ON PLANS	
Existing natural features and/or significant vegetation on property	SHOWN ON PLANS	
Depict existing contours up to 100 ft. beyond project limits	SHOWN ON PLANS	
Soil types	SHOWN ON PLANS	
Map and lot numbers for existing and proposed lots as assigned by Tax Assessor	SHOWN ON PLANS	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	SHOWN ON PLANS	
Location of all land offered for dedication for public use or land to be held in common by property owners of the subdivision	SHOWN ON PLANS	
Location, material and size of existing and proposed permanent monuments	SHOWN ON PLANS	
Existing railroad lines	N/A	
Note regarding solid waste disposal	SEE PLAN NOTES	
All applicable Dover Common Subdivision notes	SEE PLAN NOTES	
10. Construction Detail Sheets shall contain the following:		
Profiles showing existing & proposed elevations along the center lines of proposed streets & within 100' of intersections with existing streets	SEE DETAIL SHEETS	
Profiles showing the locations & a typical cross-section detail of streets	SEE DETAIL SHEETS	
Location of street trees, street lighting poles and street signs	SHOWN ON PLANS	
Location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants		
Location and size of all water, gas and other underground utilities	SHOWN ON PLANS	
11. Additional Information if appropriate		
Stormwater Management Plan depicting the existing and proposed storm drainage system and engineered drainage analysis	SEE ATTACHED	
Stormwater Management System Operation and Maintenance Plan	SEE ATTACHED	
Letter to Serve from Public and Private Utilities	SEE ATTACHED	
Erosion and Sedimentation Control Plan	SEE ATTACHED	
Perimeter Landscaping Plan	PENDING	
Proposed restrictive covenants or homeowners association documents	PENDING	
Dates and permit numbers of all required state and federal permits	PENDING	
If wetland buffer, indicate placards locations, as applicable	PENDING	
Hydrogeologic study if located in Groundwater Protection Zone	N/A	
Provide additional exhibits/technical data determined appropriate by the Planning Board or its staff as required	TBD	

REVIEWED BY: _____ DATE_____ TRC DATE_____

PROJECT NARRATIVE

for
EMERSON RIDGE AT JANETOS FARM
Open Space Subdivision
Oak Street & Gulf Road, Dover, NH
Tax Map N, Lot 13-1

PROJECT OVERVIEW

The proposed project, "Emerson Ridge at Janetos Farm" is a 34.5 +/- acre parcel, shown on Tax Map N, Lot 13-1. This proposal is for the development of eleven (11) single family lots, some with frontage on Oak Street and along a section of Old Oak Street (to be renamed) and Country Club Estates Road. The lots range in size from 0.63 acres to 7.73 acres. Old Oak Street (to be renamed) is currently a class 6 road within a public right of way that extends into Rollinsford. The project proponent met with the Rollinsford Selectboard on March 27, 2023 to review the proposed improvements and to confirm that access to Rollinsford will be maintained. The section of Old Oak Street within the City of Dover will be upgraded to current City of Dover road standards with a city standard cul-de-sac at the end. This section of Old Oak Street will continue to be a public right of way. Several gravel parking spaces will be provided at the end of the cul-de-sac to allow for access to the remainder of the class 6 roadway for walking and biking. The upgraded section of Old Oak Street will provide access to seven (7) of the house lots. Two (2) house lots will have direct access off Old Oak Street, five (5) house lots will have access off an internal private drive, "Prosperity Drive" that extends off Old Oak Street, three (3) lots will have frontage directly on Oak Street, and one (1) lot will have access from Country Club Estates Drive. Site improvements will include the installation of underground utilities, connection to the existing city water service in Oak Street, and a comprehensive stormwater mitigation and management system and the associated site grading. All lots will be serviced by individual septic systems.

Subdivision approval for the proposed house lots and a conditional use permit for proposed impacts to wetland buffers and steep slopes (Dover Conservation District) are required. These proposed impacts are limited to road and driveway construction and the installation of grading and drainage structures. There are no wetland impacts from the proposed development. A State of NH subdivision approval is also required.

On April 26, 2022, the Dover Planning Board approved the yield plan and granted the waiver for a road length of less than 500' (P22-21), (See attached Notice of Decision)

This project consists of the following outline of general construction:

- Select clearing and grubbing of land area required to construct the proposed roadway and private driveway while maintaining as much natural buffer as is practicable;
- Upgrading "Old Oak Street" to a 24' paved public roadway;
- Installation of underground utilities and a comprehensive stormwater mitigation and management system and the associated site grading;
- Installation of a common mail kiosk and site landscaping.

PROJECT NARRATIVE

for

EMERSON RIDGE AT JANETOS FARM
Open Space Subdivision
Oak Street & Gulf Road, Dover, NH
Tax Map N, Lot 13-1

PROJECT LOCATION AND SITE CHARACTERISTICS

The subject parcel project site has frontage along the west side of Oak Street, along a section of Old Oak Street, frontage along Country Club Estates Drive (east), and along Gulf Road (south). The parcel is within the Rural Residential (R-40) District and is approximately 34.5 +/- acres in size, and is currently undeveloped,

PASSIVE AND ACTIVE OPEN SPACE

Emerson Ridge at Janetos Farm will offer future residents both active and passive recreational activities in the community and in its connectivity to other amenities in the City of Dover. This project will preserve 15.8 acres of open space and each homesite will have direct access from their land to the open space. This preserved natural area is intended to be used for passive recreational activities like walking, wildlife and nature viewing, and picnicking. This open space area can also be used for more active recreational opportunities including snowshoeing, cross country skiing, and other recreation activities as allowed. On each homeowner's lot they will have the opportunity to create recreation areas that fit their lifestyle. Some examples include playsets, pools, patios, and other activities to provide unique and individualized recreation. In addition to onsite recreation, residents can enjoy walking/jogging, biking, cross country skiing, and more along the remaining portion of the Class VI road which is directly connected to this development. These homesites will be in close proximity to the many passive and active recreation opportunities in the City of Dover including the Ice Arena, Indoor and Outdoor Pools, and Local Parks and Playgrounds.

WETLAND BUFFER AND 20% STEEP SLOPE IMPACTS

There are no wetland impacts for this project. The proposed wetland buffer and steep slope impacts are limited to road and driveway construction and the construction of a comprehensive stormwater mitigation and management system and the associated site grading. The proposed site design consists of 32,089 s.f. of impact to the wetland buffer and 11,956 s.f. of impacts to the 20% steep slopes, 3,086 s.f. of the overall impacts overlap between the two districts.

DRAINAGE

The project has been designed to treat and mitigate stormwater on site. All site drainage will flow overland or be captured by a closed drainage system which will direct runoff to 1 of 2 bio-retention basins. The drainage mitigation system has been designed to mitigate post development flows to less than existing conditions and provides mitigation of both stormwater quantity and quality. A Stormwater Inspection and Maintenance Plan has been prepared and has been submitted to the City for review along with the supporting data.

PROJECT NARRATIVE

for
EMERSON RIDGE AT JANETOS FARM
Open Space Subdivision
Oak Street & Gulf Road, Dover, NH
Tax Map N, Lot 13-1

TRAFFIC

Civilworks New England prepared a traffic analysis and issued a traffic memorandum which is included as an attachment to this application. The analysis concludes that the development will have little impact to the existing traffic stream on Oak Street and the surrounding road network.

UTILITIES

The proposed house lots along Oak Street will connect to existing City water located within the Oak Street right of way and will have on-site septic systems. Electric service will be provided by the existing power poles owned by Eversource also located in the Oak Street right-of-way. A new water line and underground utilities will be installed in the upgraded section of Old Oak Street and will extend up the private drive “Prosperity Drive”. All house lots will be serviced by individual on-site septic systems.

SOLID WASTE

For house lots on the private drive, solid waste will be managed on site by the Homeowners Association with a private waste removal company. For house lots located along a public right of way, these house lots will be served by City provided curb side trash pickup.

POSTAL SERVICES

A mail kiosk will be located at the back of curb on the inbound side of Prosperity Drive and will service only the lots located on Prosperity Drive. The proposed lots located along a public right of way will have curb side mailboxes.

CITY OF DOVER, NEW HAMPSHIRE
PLANNING APPLICATION OWNER AUTHORIZATION

OWNER AUTHORIZATION

I/We hereby submit this application to the City of Dover / 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.

Property Owner Name: Chinburg Development, LLC

Signature(s) of Property Owner(s): _____ Date: 2023-02-21

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

AUTHORIZATION TO ENTER SUBJECT PROPERTY

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..

Property Owner Name: Chinburg Development, LLC

Signature(s) of Property Owner(s): _____ Date: 2023-02-21

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

IF SIGN PERMIT, SIGN PERMIT APPLICATION INFORMATION

If the sign permit applicant is not the property owner, this form must be completed and included as part of application submission.

I have read this application and state that, to the best of my knowledge, the information provided is true and that the proposed sign(s) will comply with all applicable regulations in Section 170-32 of the Zoning Ordinance of the City of Dover and shall conform to the submitted materials and designs. Furthermore, after 90 days, any application still waiting information will be denied.

Address of Sign Location: _____

Sign Permit Application Type:
(check one)

- ☐ Permanent Sign
- ☐ Temporary Sign
- ☐ Community Sign

WAIVER REQUEST

for
EMERSON RIDGE AT JANETOS FARM
Open Space Subdivision
Oak Street & Gulf Road, Dover, NH
Tax Map N, Lot 13-1

As part of this subdivision application, the applicant is seeking relief from the following regulation:

§ 157-45 Sidewalks.

A sidewalk is required on at least one side of a street in the urban core and may be required by the Planning Board on both sides of the street where it is deemed appropriate. Sidewalks shall be of bituminous concrete or portland cement concrete. Bituminous concrete shall not be less than 2 1/2 inches in thickness and placed over a six-inch gravel base. Portland cement concrete sidewalks shall not be less than four inches in thickness, reinforced by eight-by-eight, six-by-six wire mesh and placed on a suitable base not less than 12 inches thick. Portland cement concrete sidewalks that cross driveways shall be not less than six inches thick and meet all the standards listed above. All sidewalks shall be five feet in width and constructed adjacent to the property line within the street right-of-way. Sidewalks shall be designed to be free from obstruction; all streetlights, street trees, mailboxes, newspaper bins, trash receptacles, or any other type of obstruction shall be placed in the grass area between the sidewalk and the curb.

The majority of the lots proposed for this subdivision are accessed from a proposed private road off of Oak Street, with three lots fronting directly on Oak Street and one lot fronting Gulf Road but having access from Country Club Estates Drive.

There are currently no sidewalks present along Oak Street, Gulf Road or Country Club Estates Drive. As such, all newly proposed lots that front directly on these streets would blend with the other properties on these streets without sidewalks.

The proposed private road is a (dead end) cul-de-sac containing only seven lots making sidewalks relatively unnecessary given what little foot traffic would be associated with these few lots.

Granting this waiver is in general conformance and intent of the subdivision regulations.

WAIVER REQUEST

for
EMERSON RIDGE AT JANETOS FARM
Open Space Subdivision
Oak Street & Gulf Road, Dover, NH
Tax Map N, Lot 13-1

As part of this subdivision application, the applicant is seeking relief from the following regulation:

§ 157-45 Sidewalks.

A sidewalk is required on at least one side of a street in the urban core and may be required by the Planning Board on both sides of the street where it is deemed appropriate. Sidewalks shall be of bituminous concrete or portland cement concrete. Bituminous concrete shall not be less than 2 1/2 inches in thickness and placed over a six-inch gravel base. Portland cement concrete sidewalks shall not be less than four inches in thickness, reinforced by eight-by-eight, six-by-six wire mesh and placed on a suitable base not less than 12 inches thick. Portland cement concrete sidewalks that cross driveways shall be not less than six inches thick and meet all the standards listed above. All sidewalks shall be five feet in width and constructed adjacent to the property line within the street right-of-way. Sidewalks shall be designed to be free from obstruction; all streetlights, street trees, mailboxes, newspaper bins, trash receptacles, or any other type of obstruction shall be placed in the grass area between the sidewalk and the curb.

The majority of the lots proposed for this subdivision are accessed from a proposed private road off of Oak Street, with three lots fronting directly on Oak Street and one lot fronting Gulf Road but having access from Country Club Estates Drive.

There are currently no sidewalks present along Oak Street, Gulf Road or Country Club Estates Drive. As such, all newly proposed lots that front directly on these streets would blend with the other properties on these streets without sidewalks.

The proposed private road is a (dead end) cul-de-sac containing only seven lots making sidewalks relatively unnecessary given what little foot traffic would be associated with these few lots.

Granting this waiver is in general conformance and intent of the subdivision regulations.

CITY OF DOVER

TECHNICAL REVIEW COMMITTEE MINUTES #SUBD-2023-0001

Application Type:	Subdivision, Open Space Subdivision
Applicant(s):	Chinburg Development, LLC
Owner(s):	Chinburg Development, LLC
Location:	Oak Street & Gulf Road (Tax Map N, Lot 13-1)
Date:	April 27, 2023

INTENT: Proposal is to create an open space subdivision with 11 lots.

UNITS PROPOSED: 11 lots

AGENDA ITEM #: 1

ACREAGE: 34.53± acres

ZONING DISTRICT: R-40

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Residential

SURROUNDING LAND USE: Residential, Gateway

ZBA ACTION: None

RELIEF/PERMITS REQUIRED:
(3) CUPs for Wetland Buffer Impacts
(6) CUPs for >20% Steep Slopes

RELIEF/WAIVERS REQUESTED:
- Previously obtained - #P22-21, Yield plan with a cul-de-sac less than 500'
- NHDES Subdivision Permit
- Pedestrian connection on Oak St.

PREVIOUS TRC: 3/16/2023

ATTENDANCE:
Members: Donna Benton, Planning
Natasha Kypfer, Zoning
James Burdin, Business Development
Jim Maxfield, Fire & Inspection Services
Marn Speidel, Police
Ken Mavrogeorge, Engineering
Tom Clark, Planning Board
Other:
Jace Gregoire, Civilworks NE
Shawna Sammis, Chinburg
Ryan Pope, Planning
Matt Assia, Chinberg
Colton Gove, Gove
Alexx Monastiero, Gove

Approval of minutes from April 6, 2023:
T. Clark moved to approve the April 6, 2023 minutes. Seconded by J. Burdin. Vote: U/A.

PLAN REVIEW
Planning:
- *Impact fees*
- *Water investment fees; Proposed individual septic (+ Sewer fees if change to public sewer option) – City prefers tying into sewer*
- *Regional Impact - Subject property directly abuts Rollinsford* – Will also notify SRPC
- *Old Oak Street (Settlers Road):*
  - *Conditional acceptance by City Council*
  - *Removal of stonewall will require written consent from Rollinsford and owner of lot 25/80* – Met on 3/27/2023 with Rollinsford Select Board. Email or letter from Rollinsford forthcoming?
  - *Calculation for uplands on each lot*
  - Frontage of 13-1-7, driveway would need a CUP, house location?
  - Verify lot numbering with Assessing
  - Revised current use plan and land use fee required
  - Confirm septic systems are 75' from wetlands
  - Add sidewalk along Oak St if possible
- *Fire Department to comment on Fire truck backing out.*
- Thank you for all revisions to plan set
- Revise street names per PD and IS please
- Traffic study should be stamped by PE and discuss pedestrian connectivity feasibility
- Discuss speed limit assumptions
- Will review HOA documents-thanks for submitting now
- Revise reserve calculation per City Engineer

Engineering:
- General Comment: Please set pins along the westerly edge of the proposed ROW to define the limits of City property.
- General Comment: Waiver request provided for sidewalks under the 157 of the code. Clarify if waiver is required from 153-13(C)(1) of the code as well.
- Sheet 34: Lighting plan provided. Please add note that the light should meet City standards and the contractor shall coordinate lighting within the public right of way with Community Services.
- Sheet 13: Reduce the number of no parking signs from 4 to 2.

Application Type:	Subdivision, Open Space Subdivision
Applicant(s):	Chinburg Development, LLC
Owner(s):	Chinburg Development, LLC
Location:	Oak Street & Gulf Road (Tax Map N, Lot 13-1)
Date:	April 27, 2023

- Sheet 13: Show the proposed fence on top of the retaining in plan view or add note to call out the limits of the fence.
- Sheet 18: Recommend individual water shut offs be located outside of paved surfaces and in grass. All shut offs in City ROWs must be in grass at the edge of the ROW. If shut offs on the private road remain in the paved surface, a road box should be provided.
- Sheet 28: Please identify materials for gravel access road in cross section
- HOA Documents (page 7): Stormwater Management and Inspection and Maintenance Plan is referenced as Exhibit B but is not provided. Please update documents to include this document.
- HOA Documents (page 33): Applicant to note where fees for private utilities, pavement, street sweeping, and curbing are on accounted for in the chart or they should be added to the cost breakdown for lots on the private drive.
- Project Narrative: septic permit review will be required for each proposed system.

Fire & Inspections Services:

- McEneaney plan set shall be signed.
- Civilworks plan set shall be stamped and signed
- Provide alternative street name to Settlers proposed street name. Prosperity shall have a Drive suffix to comply with private street name ordinance.
- Clarify the location and access to the mail structure
- Locate reference to site design compliance with NH RSA 155-A:5.
- Indicate accessible parking area for public parking and compliance with minimum standards for surface material
- Sheet 12, note 15 to indicate no federal holiday hours for site work.
- Sheet 12, Note 31 clarify the driveway length over 150' and compliance with NFPA 1.
- Sheet 18 Fire Hydrant shall have a minimum of 36" circumference clearance. 60" where larger than 2 ½" connection

Police Department:

- Proposed street name alternates (Fresh Creek Road)
- Sight distance based off 30 mph needs to be re-reviewed

Business Development:

- Landscape plan, particularly sheet L1.0, is acknowledged and satisfies prior comments regarding buffering
- Note 30 on sheet 12 is acknowledged and satisfies prior comments regarding proximity to commercial zoning for the purposes of TRC. Continued communication with realtors and/or buyers at the point of sale is encouraged.

Planning Board: All addressed

Next steps: Address remaining comments (possibly meet with IS, PD, and CS offline if needed). Submit TRC narrative and submit for Conservation Commission and Planning Board.

Paused TRC at: 11:00 am.

CIVILWORKS NEW ENGLAND

181 WATSON ROAD P.O. BOX 1166 DOVER, NH 03821-1166
PHONE: 603.749.0443 FAX: 603.749.7348

May 2, 2022

City of Dover
288 Central Ave
Dover, NH 03820

Attn: Donna Benton, Director of Planning

Re: Response to TRC Comments

Ref: Emerson Ridge Subdivision
Oak Street & Gulf Road (Accessor's Map N, Lot 13-1)
Dover Planning file: SUBD-2023-0001

Civilworks New England Reference No. 21074

On behalf of the applicant, Chinburg Development, LLC, we are pleased to resubmit the revised Subdivision Plan in response to the Technical Review Committee comments dated April 27, 2023. The response to each of the comments are as follows (**Responses in Bold)**:

PLAN REVIEW
Planning:

- Impact fees
  Acknowledged.

- Water investment fees; Proposed individual septic (+ Sewer fees if change to public sewer option) – City prefers tying into sewer
  Acknowledged.

- Regional Impact – Subject property directly abuts Rollinsford – Will also notify SRPC.
  Acknowledged.

- Old Oak Street: (**Fresh Creek Road)**
  - Conditional acceptance by City Council
    Acknowledged

  - Removal of stonewall will require written consent from Rollinsford and owner of lot 25/80
    On Monday, March 27, 2023, the project team met with the Rollinsford Select Board and presented the project to them. They reviewed the status of Old Oak Street and went over the proposed upgrades in Dover and pointed out that all the work will be in Dover and stops short of the Dover/Rollinsford Town Line. The Select Board thanked the project team for attending their meeting and they did not have any questions. The stonewall section being relocated is in Dover and is on the side of the ROW

on the Chinburg parcel. Rollinsford BOS meeting minutes are attached.

- Calculation for uplands on each lot
  Sheet 5 has been updated to show contiguous upland areas for each lot.

- Frontage of 13-1-7, driveway would need a CUP, house location?
  The CUP application includes impacts areas to the wetland buffer for driveway construction on lot 13-1-7.

- Verify lot numbering with Accessing.
  Acknowledged, the applicant will verify lot numbering prior to final approval.

- Revised current use plan and land use fee required.
  Acknowledged.

- Confirm septic systems are 75' from wetlands.
  Individual septic systems will comply with City and State regulations, designs will be completed prior to applying for a building permit.

- Fire Department to Comment on Fire truck backing out.
  Acknowledged.

- Revise street names per PD and IS please.
  The street names have been revised, Fresh Creek Road for the public roadway, and Prosperity Drive for the private roadway.

- Traffic study should be stamped by PE and discuss pedestrian connectivity feasibility.
  The traffic study has been updated accordingly.

- Discuss speed limit assumptions.
  The assumed speed limit used in the traffic memorandum for Oak Street has been updated from 35 mph to 40 mph as suggested by the Police Department. The traffic memorandum has been updated accordingly.

- Revise reserve calculation per City Engineer
  The reserve calculations will be provided prior to final approval.

Engineering:

- General Comment: Please set pins along the westerly edge of the proposed ROW to define the limits of City property.
  Acknowledged.

- General comment: Waiver request provide for sidewalks under the 157 of the code. Clarify if waiver is required from 153-13(C)(1) of the code as well.

As discussed at the TRC meeting a waiver from 153-13(C)(1) is not applicable.

- Sheet 34: Lighting plan provided. Please add note that the light should meet City standards and the contractor shall coordinate lighting within the public right of way with Community Services.
  The lighting plan has been updated accordingly.

- Sheet 13: Reduce the number of no parking signs from 4 to 2.
  The site plan has been updated accordingly.

- Sheet 13: Show the proposed fence on top of the retaining plan view or add note to call out the limits of the fence.
  The plan has been updated to call out the retaining wall as "Proposed retaining wall with fence".

- Sheet 18: Recommend individual water shut offs be located outside of paved surfaces and in grass. All shut offs in City ROWs must be in grass at the edge of the ROW. If shut offs on the private road remain in the paved surface, a road box should be provided.
  Acknowledged, individual water shut offs have been updated accordingly. A note has been added to the "Utility Notes" paragraph on the note sheet indicating road boxes shall be used if water shutoffs are locating in pavement.

- Sheet 28: Please identify material for gravel access road in cross section.
  The detail has been updated accordingly.

- HOA Documents (page 7): Stormwater Management and Inspection and Maintenance Plan is referenced as Exhibit B but is not provided. Please update documents to include this document.
  HOA Documents have been updated accordingly.

- HOA Documents (page 33): Applicant to note where fees for private utilities, pavement, street sweeping, and curbing are on accounted for in the chart or they should be added to the cost breakdown for lots on the private drive.
  Will be provided prior to final approval.

- Project narrative: septic permit review will be required for each proposed system.
  Acknowledged.

Fire & Inspections Services:

- McEneaney plan set shall be signed.
  Acknowledged, the final plan set will be stamped.

- Civilworks plan set shall be stamped and signed.

Acknowledged, the final plan set will be stamped.

- Provide alternative street name to Settlers proposed street name. Prosperity shall have a Drive suffix to comply with private street name ordinance.
  The street names have been revised, Fresh Creek Road for the public roadway, and Prosperity Drive for the private roadway.

- Clarify the location and access to the mail structure.
  The plan has been updated to depict the mail kiosk structure. The structure has been revised to meet ADA accessibility requirements.

- Locate reference to site design compliance with NH RSA 155-A:5.
  See note 32 under the "Subdivision" paragraph on the notes sheet.

- Indicate accessible parking are for public parking and compliance with minimum standards for surface material.
  The plans have been revised to call out the public parking area on sheet 13. The proposed grades and surface material have been updated to meet ADA accessibility requirements.

- Sheet 12, note 15 to indicate no federal holiday hours for site work.
  The note has been updated accordingly.

- Sheet 12, Note 31 clarify the driveway length over 150' and compliance with NFPA 1.
  The note has been updated to clarify individual and shared driveways.

- Sheet 18 Fire Hydrant shall have a minimum of 36" circumference clearance. 60" where larger than 2 ½" connection.
  Acknowledged, the fire hydrant locations have been updated to allow for a 60" circumference clearance.

Police Department:

- Proposed street name alternates (Fresh Creek Road)
  The proposed street name has been updated to Fresh Creek Road.

- Sight distance based off 35 mph needs to be re-reviewed.
  The traffic memo has been updated to clarify a 40 mph assumed speed on Oak Street.

Business Development:

- Landscape plan, particularly sheet L1.0, is acknowledged and satisfies prior comments regarding buffering.
  Acknowledged.

- Note 30 on sheet 12 is acknowledged and satisfies prior comments regarding proximity to commercial zoning for the purposes of TRC. Continued communication with realtors and/or buyers at the point of sale is encouraged.
  Acknowledged.

Planning Board:

- All addressed.
  Acknowledged.

Please do not hesitate to contact our office should you have any questions.

Sincerely,

CIVILWORKS NEW ENGLAND



SJH/JRG
Stephen J Haight PE

DONNA P. BENTON, AICP
Director of Planning and
Community Development
d.benton@dover.nh.gov

288 Central Avenue
Dover, New Hampshire 03820-4169
(603) 516-6008
Fax: (603) 516-6049
www.dover.nh.gov

City of Dover, New Hampshire

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

NOTICE OF DECISION

April 28, 2022

Chinburg Properties
3 Penstock Way
Newmarket, NH 03857

Re: Review of a proposed yield plan requiring a road length waiver for Chinburg Properties, (Owners: Dahn H. & Norma M. Tibbett and Jahn H. & Susan G. Janetos), Assessor's Map N, Lot 13-1, zoned R-40, located at Oak Street. (12 new lots) (P22-21)

Dear Chinburg Properties:

Please be advised that on Tuesday, April 26, 2022, the Dover Planning Board approved the waiver to allow a yield plan with a cul-de-sac less than 500'. A full TRC and Planning Board review of the major subdivision is still required.

If you have any questions, please do not hesitate to contact my office.

Sincerely,

Donna P. Benton

Donna P. Benton, AICP
Director of Planning & Community Development

EC: Building Inspection Office
Engineering Office
Assessing Office
McEneaney Survey Associates
Civilworks, NE
Dahn H. & Norma M. Tibbett
Jahn H. & Susan G. Janetos

EVERSOURCE ENERGY

February 22, 2023

1700 Lafayette Road
Portsmouth, NH 03801

Trevor S Emmons
603-332-7515
Trevor.emmons@eversource.com

Shawna Sammis
Chinburg Development
3 Penstock Way
Newmarket, NH 03857

Dear Shawna:

I am responding to your request to confirm the availability of electric service for the proposed Emerson Ridge at Janetos Farm Subdivision project being constructed for/by Chinburg Development.

The proposed project consists of an 11 new Single-Family Homes that will be constructed along Oak Street in Dover, NH.

The developer will be responsible for the installation of all underground/overhead facilities and infrastructure required to service the new building. The service will need to be as shown on a future Utility Plan and be approved by Eversource. The proposed building service will be fed from ***..... to be determined by Eversource Engineering.*** The developer will work with Eversource to obtain all necessary easements and licenses for the proposed underground/overhead facilities listed above.

This letter serves as confirmation that Eversource has sufficient capacity in the area to provide service to these proposed homes. The cost of extending service to the aforementioned location and any associated infrastructure improvements necessary to provide service will be borne by the developer unless otherwise agreed upon.

Eversource approves the locations shown; assuming the final installed locations meet all clearances, physical protection, and access requirements as outlined in Eversource's "Information & Requirements For Electric Supply" (https://www.eversource.com/content/docs/default-source/pdfs/requirements-for-electric-service-connections.pdf?sfvrsn=2).

If you require additional information or I can be of further assistance please do not hesitate to contact me at our Rochester Office, 603-332-7515

Respectfully.

Trevor Emmons
Eastern Regional Engineer, Eversource

cc: Michael J. Busby, PE, Eastern Regional Engineering and Design Manager, Eversource
Thomas Boulter, Eastern Region Operations Manager, Eversource
Nickolai Kosko, Field Supervisor, Electric Design, Eversource

CHINBURG
DEVELOP. BUILD. MANAGE.

Chinburg Development, LLC
3 Penstock Way
Newmarket, NH 03857

April 4, 2023

CRE JV Mixed Five NH Branch Holdings LLC
ATTN: PM DEPT 9038
11995 El Camino Real
San Diego, CA 92130

To Whom It May Concern:

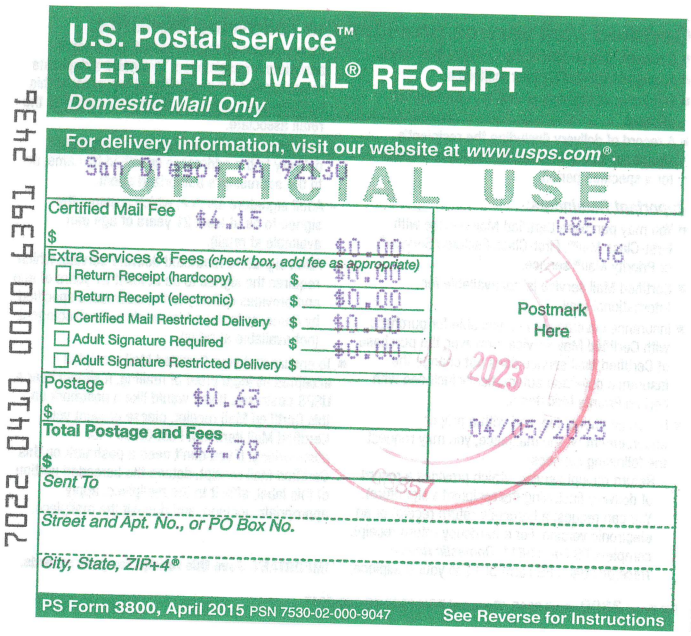
This letter serves to inform you that we have purchased an abutting lot to yours in Dover, NH (Tax Map N, Lot 13-1). Your lot and our lot front on opposite sides of the existing Class VI public road and ROW of Old Oak Street. The development of our parcel requires that we expand the width of the ROW to provide for an upgrade to the Class VI road to City of Dover standards. The expansion of the ROW will be onto our property and will not affect your property. The existing ROW is bounded by stonewall on both sides. The stonewall wall on our side will be removed and those stones will be incorporated into our project.

This notification is a courtesy made at the request of the City of Dover. No action is required.

If you wish to discuss the development plan or removal of the stonewall, please contact me at ssammis@chinburg.com.

Sincerely,

Shawna A. Sammis
Asst Land Development Manager, Chinburg Development



U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

San Diego, CA 92130

OFFICIAL USE

Certified Mail Fee $4.15
$0.00
Extra Services & Fees (check box, add fee as appropriate)
☐ Return Receipt (hardcopy) $0.00
☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $
Postage $0.63
Total Postage and Fees $4.78

0857
06

Postmark Here

2023
04/05/2023

Sent To
Street and Apt. No., or PO Box No.
City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 0410 0000 6391 2436

UNITED STATES POSTAL SERVICE.

NEWMARKET
126 MAIN ST
NEWMARKET, NH 03857-1643
(800)275-8777

04/05/2023 03:01 PM

Product	Qty	Unit Price	Price
First-Class Mail® Letter San Diego, CA 92130 Weight: 0 lb 0.30 oz Estimated Delivery Date Mon 04/10/2023	1		$0.63
Certified Mail® Tracking #: 70220410000063912436			$4.15
Total			$4.78
Grand Total:			$4.78
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX9380 Approval #: 03010D Transaction #: 360 AID: A0000000031010 Contactless AL: VISA CREDIT CHASE VISA			$4.78

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 325790-0857
Receipt #: 840-50300207-2-3789819-1
Clerk: 06

Jase Gregoire

From: Steve Haight
Sent: Tuesday, May 2, 2023 7:16 AM
To: Benton, Donna
Cc: Jase Gregoire
Subject: FW: Oak Street proposed subdivision meeting with Rollinsford Selectboard
Attachments: 2023.03.27 SB Minutes .pdf

Donna

Here is the email from the Town of Rollinsford regarding the Oak Street Subdivision

Steve

Stephen J. Haight, P.E.
President
Civilworks New England/Haight Engineering, PLLC
181 Watson Road
P.O. Box 1166
Dover, New Hampshire 03821
O: 603.749-0443
C: 603.817.6651
F: 603.749.7348
shaight@civilworksne.com
www.civilworksne.com

From: Cary Boyle <cary.boyle@rollinsford.nh.us>
Sent: Tuesday, April 11, 2023 5:21 PM
To: Steve Haight <shaight@civilworksne.com>
Cc: Kim StHilaire <kim.sthilaire@rollinsford.nh.us>; Tom Clark <tom.clark@rollinsford.nh.us>; Jase Gregoire <jgregoire@civilworksne.com>
Subject: Re: Oak Street proposed subdivision meeting with Rollinsford Selectboard

Steve,

Attached are the meeting minutes from the 3/27/23 Select Board meeting. The Board does not have any questions or concerns regarding the plan presented.

Please let me know if you have any questions.

Thanks.
Cary

On Fri, Apr 7, 2023 at 11:14 AM Steve Haight <shaight@civilworksne.com> wrote:

Town of Rollinsford

Select Board Meeting
March 27, 2023
Kim St.Hilaire, Jack Boyle, Denise Knowles
Paul Toussaint, Town Administrator
Cary Boyle, Administrative Assistant
Minutes recorded by Salme Perry

6:30 p.m. Call to Order

At 6:30, K StHilaire called the meeting to order.

1. Election of Officers, Ex-officio Assignments, Appointments

Ex-officio assignments:

Budget Committee: D Knowles is the primary ex-officio. KS/JB All in favor.
J Boyle is the alternate ex-officio. KS/DK All in favor.
K StHilaire noted that P Toussaint will offer administrative assistance.

Planning Board: K StHilaire volunteered to be the primary ex-officio.
J Boyle will be the alternate. DK/JB All in favor.

CIP (Capital Improvement Plan): J Boyle will be the primary ex-officio. D Knowles will be the alternate. KS/JB All in favor.

Stormwater Committee: The primary contact will be P Toussaint, along with the yet to be hired consultant. K StHilaire will be the primary ex-officio, with D Knowles as alternate. JB/KS All in favor.

Recreation Committee: Primary contact is Kate Sanderson. D Knowles will be the primary ex-officio. J Boyle will be the alternate. KS/DK All in favor.

Energy Commission: J Boyle will be the primary ex-officio. K StHilaire will be the alternate. DK/KS All in favor.

Highway Safety Committee: J Boyle will be the primary ex-officio. K StHilaire will be the alternate. DK/JB All in favor.

The Select Board officers are as follows:

Chair	Kim StHilaire	DK/JB All in favor.
Vice Chair	Jack Boyle	KS/DK All in favor.
Clerk	Denise Knowles	KS/JB All in favor

Department Liaisons are as follows:

Kim StHilaire: Finance, Welfare, Building Inspector, Police
Jack Boyle: Highway, Transfer Station, Fire
Denise Knowles: Recreation, Town Clerk, Tax Collector

The Following appointments were made:
Jon Uraskevich, Police Chief KS/DK All in favor.
Mark Rutherford, Fire Chief KS/JB All in favor
Andrea Cass, Tax Collector KS/DK All in favor.
George Guilmette, Road Agent KS/DK All in favor
Tom Clark, Building Inspector,
Health Officer, Code Enforcement KS/DK All in favor.
Mark Rutherford, Emergency Management Director KS/JB All in favor
Ralph Phipps, Marc Couture, Surveyors of Wood and Lumber KS/DK All in favor.
John Hinsman, Fence Viewer KS/JB All in favor.
Ed Charpentier, Tree Warden KS/DK All in favor

C Boyle will confirm acceptance of appointment with M Couture. K StHilaire will confirm acceptance with R Phipps, J Hinsman and E Charpentier.

2. Community Input - None

3. Consent Calendar

a. Approval of Minutes: 3/13

The minutes of 3.13.23 were approved. KS/JB All in favor.

4. Department Head Business (as needed for new business and updates)

a. Building Inspector/Code Enforcement/Land Use - Tom Clark, Building Inspector

i. Proposed Subdivision Intersection of Oak Street and Gulf Road in Dover (abuts property in Rollinsford) - Stephen Haight from Civil Works on behalf of the City of Dover's Planning Dept

Stephen Haight, Civil Works engineer, along with three colleagues came, as a courtesy, to inform the Board about a planned 11 lot development on Oak St. and Gulf Rd abutting the Rollinsford town line. S Haight expects the traffic impact to be minimal. K StHilaire had received an email about Emerson Brook. S Haight said it had nothing to do with this development.

T Clark reported that there was no change regarding the non-public topic.

T Clark had each Board member sign the MS32 form.

b. Tax Collector, Town Clerk, Finance Administrator

Last week, Dan Cullity was sworn in as Deputy Tax Collector.

c. Recreation Director - Kate Sanderson

Fund raising: K Sanderson provided the Board with a copy of a fundraising letter from the Rec Committee. She spoke about plans for a fundraising event, Bonco. P Toussaint said it sounded like a gambling event, one which would require approval. He and Chief Uraskevich will investigate. K Sanderson will remove the event from a FaceBook posting until the issue is resolved.

Programming plans: Two one hour karate classes will be offered at the school for 9 weeks, one for 4-12 year olds and the other for 13 to adults. The cost will be $60 for residents and $75 for non residents.

The hiring process was discussed. K Sanderson will provide the Board with a summary of the proposed instructor's credentials; the Board will make the final decision. P Toussaint will check into insurance coverage.

A weekly yoga class is planned to start the middle to end of May to be held at the Library. The instructor will be paid $20 per class.

K Sanderson will consult with Chuck Goeller, Finance Director, about the best way to pay part-time instructors. Collected fees will go into the Rec budget.

Camp Rolly planning is coming together. Employment ads are posted. Registration has begun. The cost will be $165/wk for residents with a shortened, TWTh option, for $125. The camp will start July 5th, assuming full staffing.

Mike Blough, School Board Chair, wants to have a discussion with the Board to resolve the issue of the use of the school building for recreation. Shawn Glidden noted that having untrained people accessing the school may pose a safety issue. The Board will require someone from the Rec Committee to be present during classes at RGS. Summer scheduling may pose an issue as school staff will not be present . K StHilaire suggested the use of the Library.

The next Rec meeting is on April 11.

d. Facilities Management - Ed Walsh, Facilities Director

E Walsh reported that all the air conditioners at Town hall are working and that the heating issues have improved with the replacement of the thermostats.

e. Transfer Station - Ed Walsh, Manager

E Walsh reported that the new baler is in the building awaiting electrical hook-up.

I. Quonset Hut

While moving a bale of plastic, the flimsy back wall was accidentally knocked out. Primex approved its rebuilding ($1k deductible.) E Walsh has received two quotes for rebuilding a sturdier wall - Blaine Glidden from Dover $7,000 and Roy Small from Rollinsford $7,570. As the price differential was not too great, the Board chose to have the local contractor do the work.

PO #2093 Small's improvement $7,750.00

Replace damaged Quonset Hut wall

KS/DK All in favor.

Paul Martel will be leaving his Transfer Station Attendant position. P Toussaint will advertise the open position.

f. Highway - George Guilmette, Road Agent

Due to Front Street being a state road, an engineering study and granite curbing will be required to rebuild the sidewalk by the mill leading to the South Berwick bridge. Brox estimates the cost to be $48k, in addition to the engineering study.

Brox estimated the cost of reclaiming the Mill Road to be $86k.

At the Select Board meeting of April 10th, the priority of road repair will be discussed to develop a plan for this year's road work.

G Guilmette reported that there is a lot of storm damage to trees in the right of way between Kelwyn and Pinecrest. K StHilaire said the Town received an email about possible problem trees on the Town owned lot on Silver St. Liability was discussed.

g. Police - Chief Uraskevich

PO # 2099 Strafford County Sheriff $1,500.

Annual SWAT dues

KS/JB All in favor.

PO #2100 McFarland Ford $44,000.

Cruiser purchase (Warrant Article 8)

KS/JB All in favor.

The radio from the Chief's car will be installed in the new cruiser. Chief Uraskevich estimates the cost to equip the cruiser will cost between $4-5k.

The increased salaries for the RPD will be retroactive to January 1, 2023.

JB/DK All in favor.

Chief Uraskevich reported that the radar signs are portable.

h. Fire - Chief Rutherford, Shawn Glidden

PO # 2134 Perkins Fire Pumps $1,375.

Repair of gate valves on Tanker 1.

KS/JB All in favor

PO # 2135 Air Vac Corporation Not to exceed $40,000.

Exhaust system for the Fire Station (Warrant Article #6)

JB/DK All in favor

Chief Rutherford and S Glidden described the clean up efforts on Willey St resulting from a spill into a stream of a milky white substance that was later identified as 5 gallons of floor wax poured into the sump pump drain at the school. All departments, Fire, Highway and Police worked for 6 hours damming the substance and then having Dover use their vacuum truck to remove the substance. It is now stored in a 1,500 gallon container awaiting DES testing so proper protocol will be used to dispose of it.

The School assumed responsibility. There may be DES fines. P Toussaint said this is a case of illicit discharge that will be reported on the Stormwater permit.

The need for public education was discussed. It will be mentioned in the spring newsletter.

5. Town Administrator Update - Paul Toussaint

a. Personnel Policy

P Toussaint explained that he changed the Town of New Durham personnel policy to reflect Rollinsford, as a starting point for the Board to edit and adopt for the Town. He described it as a comprehensive document that covers governing for foreseeable possibilities. The document will be shared as a Google doc that can be redlined and commented on by the Board. The sections are alphabetized. The Board will review A-E by the next meeting on April 10th.

6. Select Board - Administration

a. Performance Evaluations

K StHilaire asked the Board to think about performance evaluations, saying evaluations must be done or then removed from the policy. D Knowles noted that evaluations are an important way to provide feedback.

K StHilaire will check with C Goeller about which/all? Board members can sign checks. J Boyle agreed to review and approve bills.

7. Community Input

Charlie Dionne, 44 Rollins, asked about and was told that Doug Starling has already started the janitorial position at Town Hall.

K StHilaire responded to Nancy Dionne's question about Fresh Creek Road. It is a class 6 road subject to gates and bars, open for public use.

8. Any other business to come before the Board

Cary Boyle reported:

Avitar is working on abatements.

Joe Desch, Chair of the Conservation Commission, asked to be placed on the agenda in May to present the revised Scoutland Management Plan.

The DRA audit went well. There are some action items. The report will be available in a year.

In response to K StHilaire, P Toussaint said the inventory (Town owned vehicles and equipment) process has begun.

9. Adjournment

At 9:15, the meeting was adjourned. KS/JB All in favor.

<u>FUTURE AND/OR TABLED</u>

FB Environmental - April 24th

Flood Smart

From: Paul Toussaint <paul.toussaint@rollinsford.nh.us>
Sent: Tuesday, May 2, 2023 10:37 AM
To: Benton, Donna <d.benton@dover.nh.gov>
Subject: Re: Dover Oak Street Subdivision

Security Notice: External sender. Use caution with hyperlinks or attachments.

Donna,

The Town of Rollinsford is aware of the planned subdivision project in Dover and has no questions or concerns.

Paul Toussaint

Town Administrator

Town of Rollinsford

PO Box 309

667 Main Street

Rollinsford, NH 03869

Email: paul.toussaint@rollinsford.nh.us

Phone: (603) 742-2510 Ext. 313

Mobile: (603) 817-4734

Fax:: (603) 740-0254

On Tue, May 2, 2023 at 10:16 AM Benton, Donna <d.benton@dover.nh.gov> wrote:

Hello Mr. Toussaint,

I know Steve Haight, Tom Clark, and others came to discuss the Oak Street subdivision with the Select Board on March 27th. I wanted to reach out to see if you had any questions about them upgrading the Class VI road in Dover, removing one of the stone walls in Dover, adding public parking in Dover, or anything else. If you could send me an email saying that you are aware of the project, upgrades in Dover, and that Rollinsford has no issue that would be great. Rollinsford will also be receiving an abutter notice when this comes to Planning Board in the coming weeks.

Thanks,

Donna

Donna Benton, AICP

Director of Planning and Community Development

City of Dover, NH

288 Central Avenue

Dover, NH 03820-4169

e: d.benton@dover.nh.gov

p: 603.516.6008 f: 603.516.6049

We're updating our Vision Chapter. Find out more by clicking the logo above.

Dover: First in New Hampshire, First with you!

www.dover.nh.gov

http://dovernhplanning.tumblr.com/

Facebook: https://www.facebook.com/DoverNHPlanning

Twitter: @DoverNHPlanning

Please consider conserving our natural resources before printing this e-mail and/or any attachments.

This electronic message and any attachments may contain information that is confidential and/or legally privileged in accordance with NH RSA 91-A and other applicable laws or regulations. It is intended only for the use of the person and/or entity identified as recipient(s) in the message. If you are not an intended recipient of this message, please notify the sender immediately and delete the material. Do not print, deliver, distribute or copy this message, and do not disclose its contents or take any action in reliance on the information it contains unless authorized to do so. Thank you.

Please consider conserving our natural resources before printing this e-mail and/or any attachments.

This electronic message and any attachments may contain information that is confidential and/or legally privileged in accordance with NH RSA 91-A and other applicable laws or regulations. It is intended only for the use of the person and/or entity identified as recipient(s) in the message. If you are not an intended recipient of this message, please notify the sender immediately and delete the material. Do not print, deliver, distribute or copy this message, and do not disclose its contents or take any action in reliance on the information it contains unless authorized to do so. Thank you.

AMC Law Group, PLLC

59 Deer Street 3B ▪ Portsmouth ▪ NH 03801
Phone ▪ 603.380.0748 ▪ acrotty@amclawgroup.com

April 4, 2022

Technical Review Committee
City of Dover
46 Chestnut Street
Dover, NH 03820

Re: Technical Review Committee for the Subdivision of Lot Tax Map N, Parcel 13-1

To Whom It May Concern:

This letter is written in response to your request that the applicant, Chinburg Development, LLC, confirm a petition to City Council is sufficient to upgrade a Class VI road to a Class V road.

There are two processes described in state statutes regarding upgrading Class VI roadways:

231:22a allows a Class VI highway to be reclassified to a Class V highway by warrant article and majority affirmative town vote. This RSA goes on to state "This section **shall not be deemed to limit the authority of the selectmen** to layout an existing class VI highway as a class IV or V highway upon petition pursuant to RSA 231:28"

231:28 allows the selectman to reclassify a Class VI roadway to Class V "Whenever, pursuant to the provisions of this chapter, the selectmen receive a petition to lay out roads over existing private rights-of-way or to lay out a class V highway over an existing class VI highway and such private right-of-way or class VI highway does not conform to construction standards and requirements currently in effect in the town, the selectmen may conditionally lay out roads upon compliance with betterment assessments as provided in this section and in RSA 231:29-33. **Prior to commencement of conditional layout, however, a public hearing shall be held, written notice of which shall be given by the appropriate governing board to all owners of property abutting or served by the private right-of-way or class VI highway, at least 14 days before the hearing**…"

These RSA's are not mutually exclusive. The property owner will make petition to the City Council to upgrade the existing Class VI with respect to the provisions in RSA 231:28

Very truly yours,

Anne Crotty

Anne M. Crotty

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

STANDARD TRAFFIC IMPACT ASSESSMENT AND ANALYSIS

prepared for

EMERSON RIDGE SUBDIVISION
Tax Map N, Lot 13-1
Oak Street, Gulf Road, Country Club Estates Drive
Dover, New Hampshire
February 15, 2023
Revised: March 30, 2023
Revised: May 2, 2023

1. Description of Site

The proposed project calls for construction of eleven (11) single family detached homes on a 34.5 acre parcel of land located and accessed primarily along Oak Street with secondary frontages on Gulf Road as well as Country Club Estates Drive. The parcel is shown as Lot 3-1 on Tax Map N and is located along the easterly side of Oak Street in the Residential (R-40) District. The opposite side of Oak Street, or westerly side, consists of commercial uses located in the Gateway (G) District as well as a residential neighborhood consisting of about 25 homes accessed via Elmwood and Fairview Avenues and located in the Medium Density Residential (R-12) District.

2. Description of Roadways

A. Oak Street

Oak Street serves as a connector roadway running between Central Avenue at the westerly terminus and Atlantic Avenue / Gulf Road at the easterly terminus. The segment of interest in this analysis lies between NH Route 4 (a.k.a. Portland Avenue) and the easterly terminus at Atlantic Avenue/Gulf Road.

The segment adjacent to the project is comprised of two (2) travel lanes with a total pavement width of 24 ft. Pavement markings include a double-yellow centerline. There are no fog lines. There is no curbing and shoulder widths are variable. The posted speed limit is 30 miles per hour. There is presently only one (1) minor driveway (primarily agricultural use) accessing Oak Street to the south of the project limit on the easterly side. In addition, there are three (3) curb cuts on the opposite, or westerly side, of Oak Street for commercial uses including two (2) for the former armory building and one (1) for a small sign company. There are no pedestrian amenities within this roadway segment.

B. Country Club Estates Drive

This city street provides two-way access to an existing subdivision that includes 18 single-family homes. The pavement width of the street at the proposed Lot 11 access drive is 32 feet and there is bituminous concrete curbing on both sides. Speed limit does not appear to be posted but is assumed to be 30 miles per hour (NH RSA 265:60). There are no pedestrian amenities within this roadway segment and there are no lane markings. The nearest driveway on the westerly side of the street is located approximately 125 feet to the north of the proposed driveway to Lot 11.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

3. Sight Distance

The following presentation of available sight distance at each proposed access drive to Oak Street and Country Club Estates Drive is based on measurements obtained on February 13, 2023. Methodology was based on the requirements of Section 157-60, Definitions, for All-Season Sight Distance. Driver's "eye" was set back 14 ft. from the edge of pavement.

Stopping Sight Distance standards were obtained from "A Policy on Geometric Design of Highways and Streets", prepared by AASHTO. The observed travel speed for traffic on the subject segment of Oak Street on February 13, 2023 was approximately 40 miles per hour. For this analysis, the travel speed on Country Club Estates Drive is assumed to be 30 miles per hour, especially given that the terminus of this street at its intersection with Gulf Road is approximately 350 feet south of the proposed driveway for Lot 11.

TABLE 1
Sight Distance Analysis

		Stopping Sight Distance (ft.)	
Lot Number(s)	Accessed Via	AASHTO Recommended	Available
1-7	Oak Street	275 – 325	400 LT, 300 RT[(1)]
8	Oak Street	275 – 325	400 LT, 400 RT
9	Oak Street	275 – 325	400 LT, 400 RT
10	Oak Street	275 – 325	275 LT, 400 RT
11	Country Club Estates Drive	200	350 LT, 350 RT[(2)]

Note:
(1) Sight distance to left (LT) reflects proposed grading and vegetation removal as shown on plans.
(2) Sight distance extends to the terminus of Country Club Estates Drive at Gulf Road.

Currently, under Section 157-50, Driveways, of the Dover Code, specifically subsection C(1), the language refers to an "all-season sight distance of 400 feet in both directions" as a requirement for permitting of more than one access to a single parcel. This language appears to be an application of the requirements for a driveway permit for access to a State (NHDOT jurisdiction) highway under NH RSA 236:13. It should be noted that NH RSA 236:13 applies to access to Class I or Class III highways, which are part of the primary state highway system (i.e. typically number routes) or recreational roads within state reservations, as well as Class II highways or highways in the secondary state highway system (unless within compact sections of cities or towns per NH RSA 229:5, V).

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

It should be noted that the NHDOT driveway permit guidelines contained in NH RSA 236:13 specify a sight distance of 400 feet based on AASHTO stopping sight distance calculations for vehicle speeds of 45 to 50 miles per hour. Oak Street is not a Class I, II or III highway, as mentioned above, but rather a Class V highway maintained by the City of Dover with a posted speed limit of 30 miles per hour. Accordingly, application of AASHTO stopping sight distance calculations is a more reasonable standard for the subject points of access to Oak Street and Country Club Estate Drive.

In summary, all proposed access points meet or exceed AASHTO design recommendations based on observed travel speeds.

4. Trip Generation

The estimated trip generation for the proposed 11-lot subdivision is presented in Table 2 below. The trip generation rate data was derived from the ITE Trip Generation Manual, 11th edition and copies of the data sheets are included in Attachment A.

The cluster of lot 1 through 7, which will be served by the "Old Oak Street" cul-de-sac is broken out separately from the remaining individual lots, 8 through 11, which will be served by individual driveways accessing either Oak Street (Lots 8, 9, 10) or Country Club Estates Drive (Lot 11). Data presented includes average weekday vehicle trip ends as well as A.M. and P.M. peak hour of adjacent street and average Saturday vehicle trip ends.

TABLE 2
Estimated Average Vehicle Trip Ends [(1)]

Lot Number(s)	Average Weekday	AM Peak Hour Adjacent Street	PM Peak Hour Adjacent Street	Average Saturday
1 – 7	66 (33 in / 33 out)	4.9 (1.3 in / 3.6 out)	6.6 (4.2 in / 2.4 out)	66.4 (33.2 in / 33.2 out)
8	9.4 (4.7 in / 4.7 out)	0.7 (0.2 in / 0.5 out)	0.9 (0.6 in / 0.3 out)	9.5 (4.75 in / 4.75 out)
9	9.4 (4.7 in / 4.7 out)	0.7 (0.2 in / 0.5 out)	0.9 (0.6 in / 0.3 out)	9.5 (4.75 in / 4.75 out)
10	9.4 (4.7 in / 4.7 out)	0.7 (0.2 in / 0.5 out)	0.9 (0.6 in / 0.3 out)	9.5 (4.75 in / 4.75 out)
11	9.4 (4.7 in / 4.7 out)	0.7 (0.2 in / 0.5 out)	0.9 (0.6 in / 0.3 out)	9.5 (4.75 in / 4.75 out)
PROJECT TOTALS	103.6 (51.8 in / 51.8 out)	7.7 (2.1 in / 5.6 out)	10.2 (6.6 in / 3.6 out)	104.4 (52.2 in / 52.2 out)

[(1)] A trip end is a single or one-direction vehicle movement either entering or entering a study site.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

5. Trip Distribution

Based on the availability of services and attractions, including shopping, restaurants, recreational activities, schools, and health care, it is assumed that 85 percent of the trip ends are directed to or from Oak Street / NH Route 4 / Portland Avenue intersection and points to the north or west of the project site. The remaining 15 percent of trip ends are assumed to be directed away from Dover, towards Maine and points east, via Gulf Road.

Using the total estimated trip generation figures in Table 2, the trip ends are approximately distributed as follows:

TABLE 3
Estimated Total Trip End Distribution

	Weekday	AM Peak Hour	PM Peak Hour	Saturday
To/From NH Route 4 or Dover	88	7	9	89
To/From Gulf Road or Points East	16	1	1	16

6. Public Transit

The closest available public transit is provided by COAST. Route 33, according to the schedule/map published on the COAST website, appears to provide service to the Dover Arena / Outdoor pool complex on Saturdays only with stops at Shaw's Supermarket and the Dover Transport Center via downtown Dover.

7. Pedestrian Connectivity

The closest sidewalk in relation to "Old Oak Street" is located on Portland Avenue and terminates at the Dover Ice Arena. There are no sidewalks located on Oak Street and there is no pedestrian signaling at the intersection of Portland Avenue and Oak Street. "Old Oak Street" is currently a public unmaintained Class VI roadway. People currently enjoy walking and biking along "Old Oak Street", Fresh Creek Road, and other trails that are accessed from these two roads. The proposed project will continue the existing connectivity to Fresh Creek Road and other trail systems by including two public parking spaces at the end of the proposed cul-de-sac (public right-of-way) where the existing gravel path is located.

CIVILWORKS NEW ENGLAND
181 WATSON ROAD - P.O. BOX 1166
DOVER, NEW HAMPSHIRE 03821-1166

PHONE: 603.749.0443 FAX: 603.749.7348

ATTACHMENT A

ITE Trip Generation Manual, 11th edition
Data Sheets

Land Use Code 210
Single-Family Detached Housing

Single-Family Detached Housing
(210)

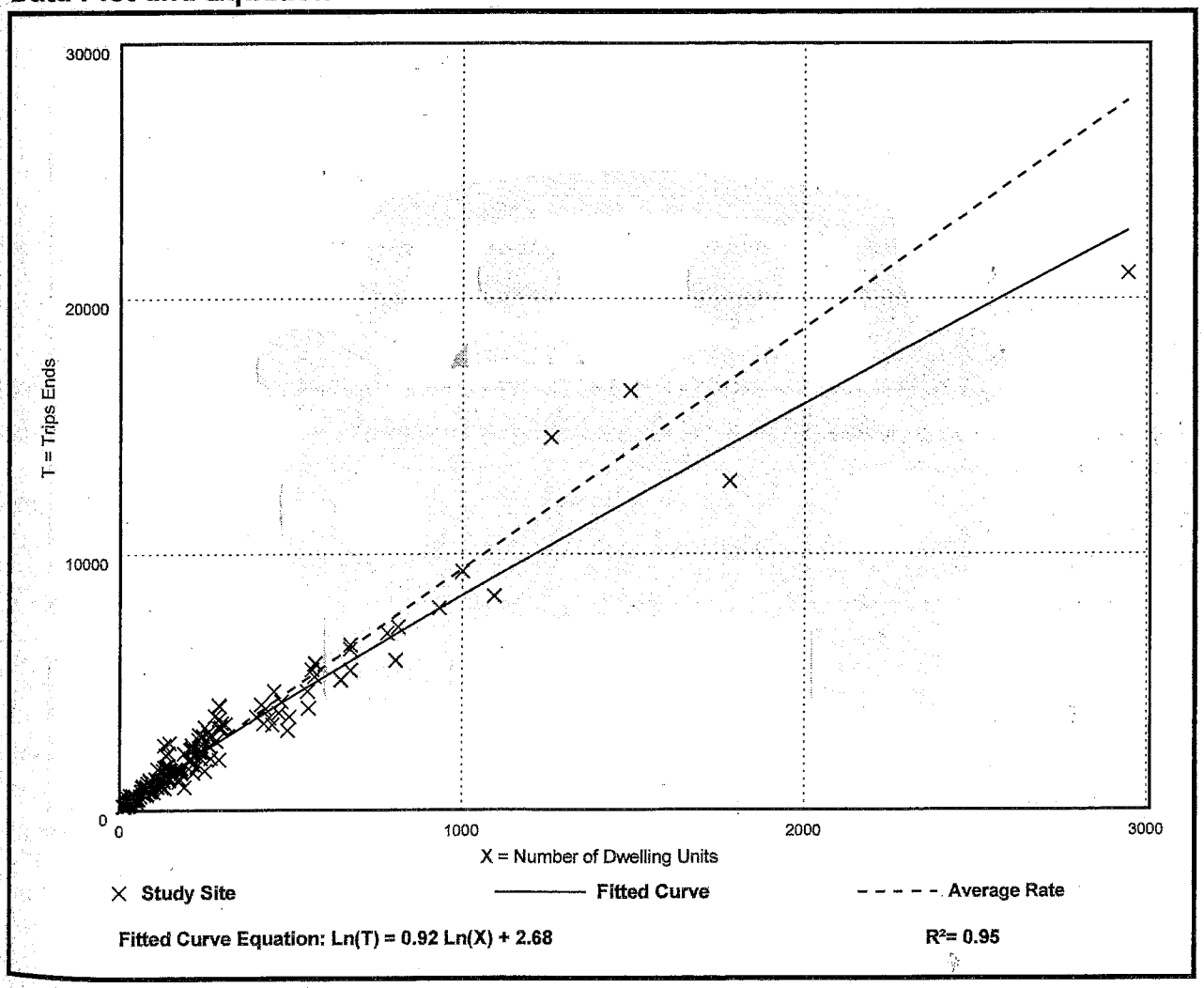
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68

R^2= 0.95

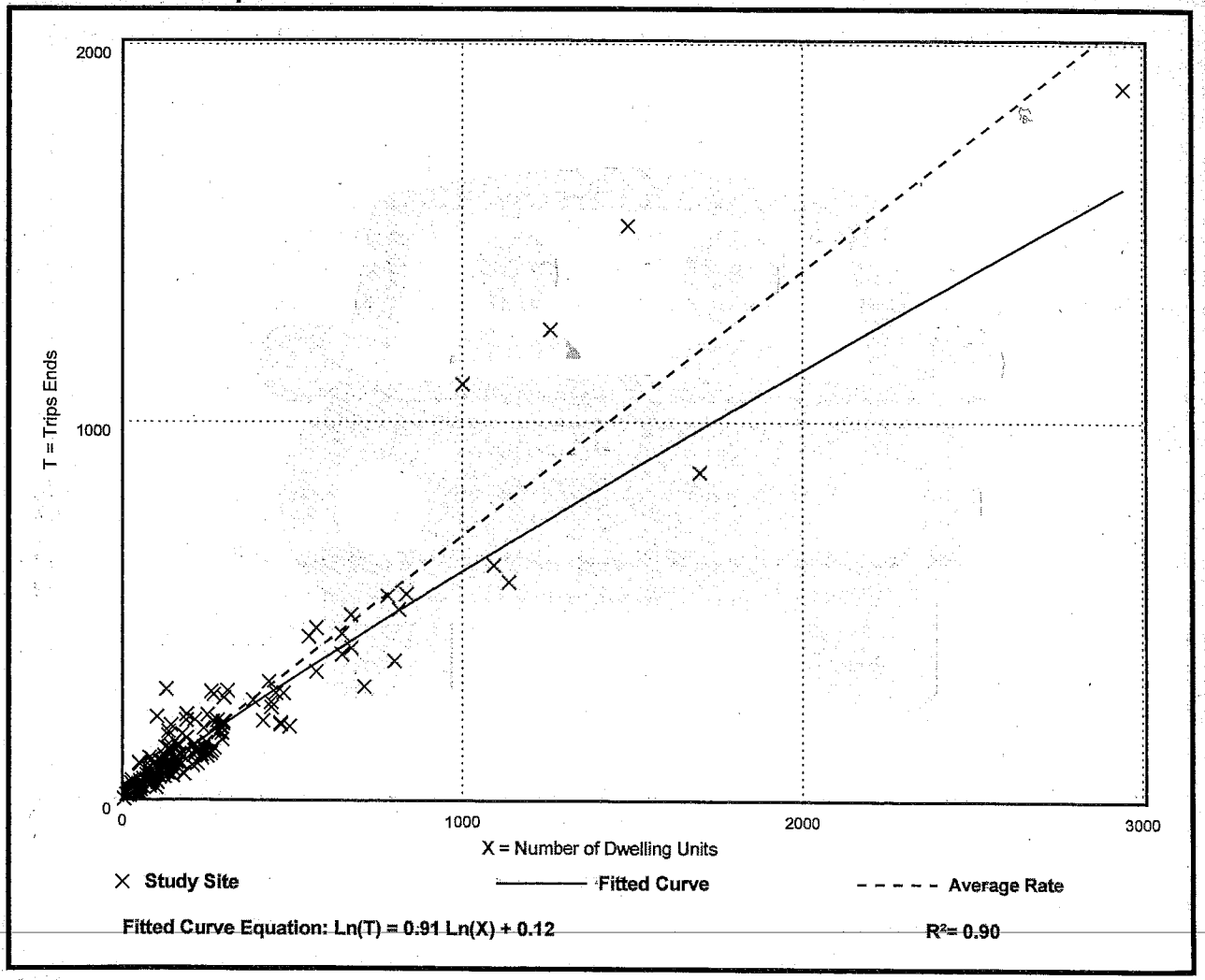
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



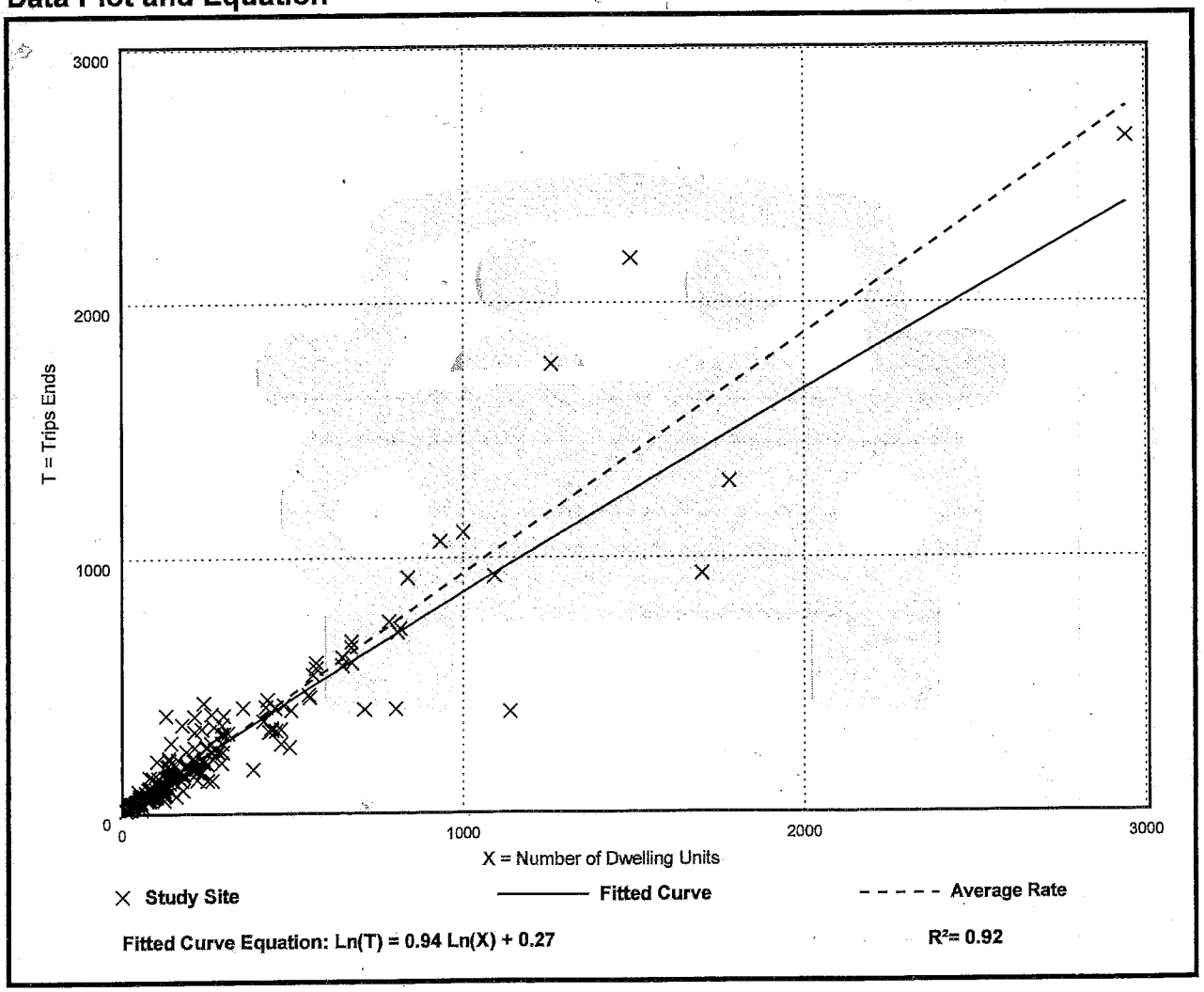
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.94 Ln(X) + 0.27

R^2= 0.92

Single-Family Detached Housing
(210)

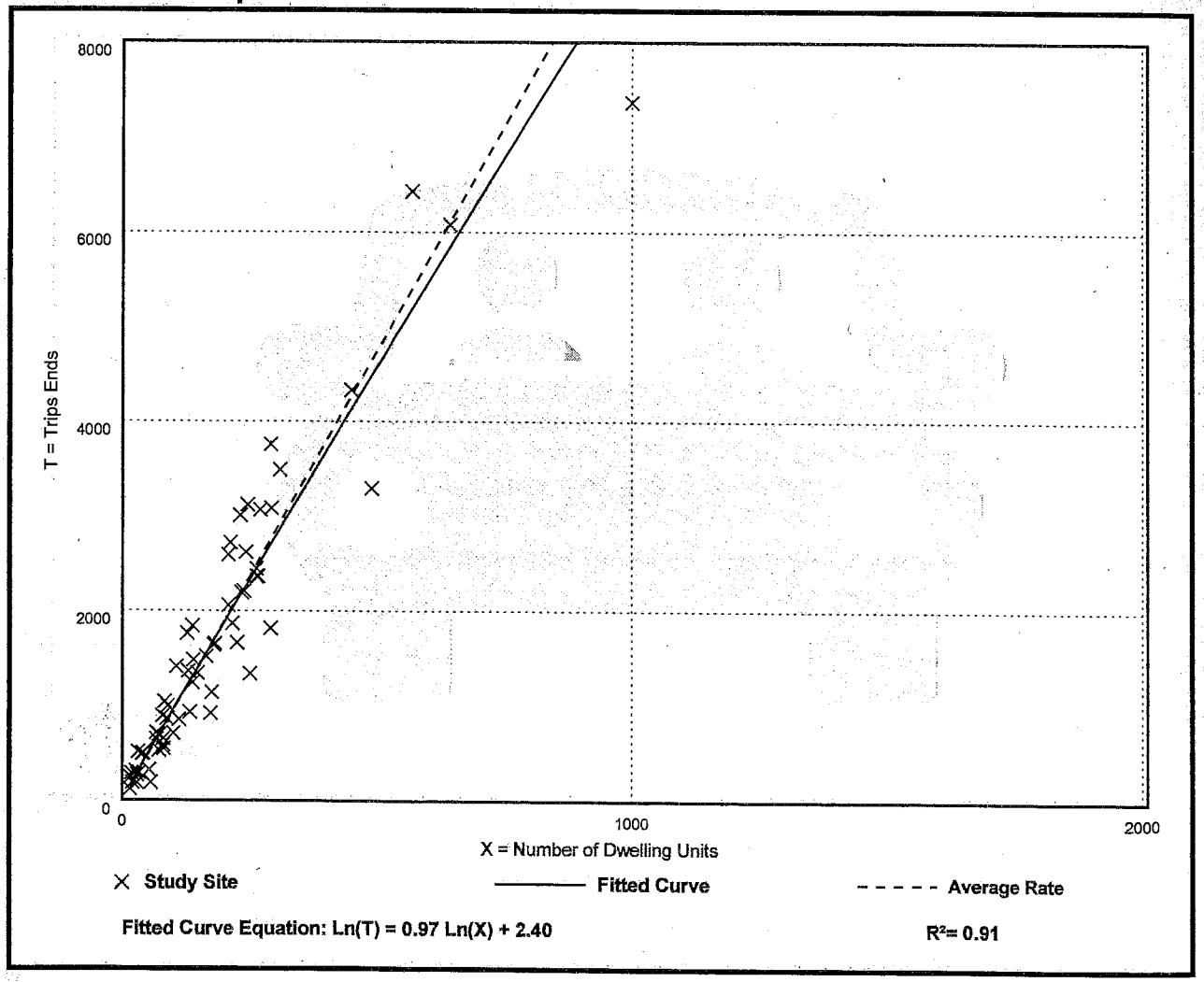
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 63
Avg. Num. of Dwelling Units: 179
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.48	3.36 - 16.52	2.26

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.97 Ln(X) + 2.40

R^2= 0.91

SHARED DRIVEWAY DECLARATION
AND
MAINTENANCE AGREEMENT

This Shared Driveway Declaration and Maintenance Agreement (this "Agreement") is made this ____ day of _____, 2023 by Chinburg Development, LLC, a New Hampshire Limited Liability Company, with an address of 3 Penstock Way, Newmarket, NH 03857 (hereinafter referred to as the "Declarant") is by and on behalf of the Lot Owners specified herein.

WHEREAS, Declarant is the owner of certain real property consisting of a certain lots of land shown as Lots 1 through 5 inclusive, on plan of land entitled "Open Space Subdivision of Emerson Ridge, prepared for Chinburg Development, LLC, Tax Map N, Lot No. 13-1, Gulf Road, Oak Street & Country Club Estates Drive, City of Dover, County of Strafford, State of New Hampshire," prepared by McEneaney Survey Associates of New England, dated _____ ___, 2023 and recorded at the Strafford County Registry of Deeds as Plan #D-_____ (the "Plan").

WHEREAS, Lots 1 through 5 inclusive (hereinafter referred to as a "Lot" or the "Lots") share a driveway (the "Shared Driveway") of which as shown and depicted on the Plan to provide pedestrian and vehicular ingress and egress to Lots 1-5 inclusive via the Shared Driveway as more particularly shown on the Plan.

WHEREAS, as Declarant sells the Lots, each Lot shall be conveyed a 1/5 interest in the Shared Driveway and subject to the terms and conditions of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual terms and conditions contained herein, and Ten Dollars ($10.00) and other good and valuable consideration, Declarant hereby declares, grants, covenants and agrees as follows:

1. Driveway Easements.

Declarant hereby establishes and grants a non-exclusive perpetual access easement over the Shared Driveway to provide unobstructed vehicular and pedestrian ingress and egress over the Shared Driveway to each respective Lot, which shall inure to the benefit of the Lots, including the respective owner(s) therefore from time to time, and their respective successors and assigns as shown the Plan. The access easement shall benefit each Lot respectively and burden each Lot respectively, and all such easements, covenants, rights, benefits, obligations and

liabilities created in this Agreement shall be deemed covenants and easements running with and binding upon the land as appurtenances to the dominant estates. The estate of the fees and easements created herein shall not be merged by reason of the same person or entity acquiring, owning or holding title to Lots which share a common driveway. The Shared Drive shall be kept open and unobstructed at all times, and nothing shall allow any lot owner or invitee thereof any right to obstruct access within said Access Easement.

2. Construction, Maintenance and Repair.

(i) Each owner of a Lot benefitted and burdened hereby shall be responsible for one-sixth of the cost of all expenses incurred in connection with the repair, replacement, and maintenance of the Shared Driveway (collectively, the "Maintenance"), provided that if any such lot owner causes damages to the Shared Driveway the lot owner shall be responsible for all repair resulting from such damage.

(ii) All work done in connection with the installation, maintenance or repair of any improvements, shall be performed in a good and workmanlike manner, and such work shall be done expeditiously so as not to unreasonably interfere with or hinder the use and enjoyment of the applicable Shared Driveway by any person or entity having a right to use the easements.

(iii) Declarant hereby grants and establishes temporary easements for the installation of improvements and for incidental encroachments upon the Lots which may occur as a result of any construction work performed in the development, repair or maintenance of the Shared Driveway, so long as such encroachments are kept within the reasonable requirements of construction work which is expeditiously pursued, and so long as customary insurance is maintained protecting each lot owner on which work is being performed from the risks involved.

(iv) Declarant may create Bylaws for the maintenance and operation of the Shared Driveway in accordance with the terms of this Agreement.

3. **Default**.

(i) In the event that any lot owner fails to perform any provision in accordance with the requirements set forth herein, or provide insurance as required herein, or fail to pay or to perform any other obligation set forth within ten (10) days following written notice thereof, the remaining owner(s) shall have the right, but not the obligation, to enter upon such other lot and perform said maintenance, repair or replacement and acquire said insurance, make payment or perform such obligation for the account of the non-performing party (the "Defaulting Party"). Within ten (10) days following written demand, including copies of paid invoice, the Defaulting Party shall reimburse the Non- Defaulting Party any sum reasonably expended by the Non-Defaulting Party to cure the default. If such amounts are not paid within thirty (30) days of billing, then such amounts, shall accrue interest at the annual rate of 9% per annum until paid, and the Defaulting Party shall be responsible for reasonable attorneys' fees and costs in the enforcement and collection thereof. The parties hereto shall also have the right to restrain by injunction any violation or threatened violation

by the other party hereto of any of the terms, covenants, or conditions hereof, or to obtain a decree to compel performance if any such term, covenant, or condition is not adequate. All remedies are cumulative and shall be deemed additional to any and all other remedies to which any Owner may have at law or in equity.

(ii) In the event a lien is filed against all or any portion of a Lot in connection with any Maintenance, the lien must be bonded, satisfied or removed by the Owner responsible for the Maintenance within thirty (30) days following the filing thereof.

(iii) If any party or person benefited hereby, institutes any litigation to enforce any of the terms, covenants, conditions, easements and set out in this Agreement, the prevailing party in such litigation shall be entitled to collect court costs and reasonable attorneys' fees from the non-prevailing party.

4. Insurance.

Each owner shall obtain and maintain during the term of this Agreement general liability insurance including public liability and property damage in commercially reasonable amounts covering the Access Easement which names the other lot owners as additional insureds on a primary and noncontributing basis. All insurance required by this agreement shall contain a provision that coverage may not be canceled or materially changed in the scope or amount of coverage unless thirty (30) days advance written notice is given to the additional insured at their address as set forth above or such other address as the additional insured shall specify.

5. Notices.

All notices, requests, claims, demands, and other communications hereunder shall be in writing and shall be personally delivered or mailed (registered or certified mail, postage prepaid, return receipt requested) at their addresses as set forth above, or such other address or such additional recipient as any party may have furnished to the others in writing in accordance herewith. All notices shall only be effective upon receipt.

6. **Modifications: Cancellation**.

This Agreement may be amended, modified or terminated (in whole or in part) from time to time by written documents executed and acknowledged by all owners of each Lot and duly recorded in the Strafford County Registry of Deeds, provided that the Planning Board of the City of Dover consents to such amendment, modification or termination.

7. **Binding**.

This Agreement shall be binding upon and inure to the benefit of Declarant, and the owners of the Lots, and their respective successors and assigns.

8. Governing Law.

This Agreement shall be governed by the laws of the State of New Hampshire.

9. **Severability**.

If any term or provision of this Agreement or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

10. **Mortgages**.

Any mortgages encumbering all or any portion of the Lots shall at all times be subordinate to the terms of this Agreement and any party foreclosing any such mortgage, or acquiring title by deed in lieu of foreclosure or trustee's sale, shall acquire title subject to all of the terms and provisions of this Agreement.

11. **Deed Reference**. For deed reference see deed dated June 2, 2022 and recorded at Strafford County Registry of Deeds at Book 5037, Page 903

IN WITNESS WHEREOF, we have hereunto set our hands and seals the day and year first above-written

DECLARANT:
Chinburg Development, LLC

_____
Eric J. Chinburg, Manager

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS

The instrument was acknowledged before me on _____ ___, 2023, by Eric J. Chinburg, Manager of Chinburg Development, LLC.

_____
Notary Public
My Commission Expires:

WARRANTY DEED
[Lots 1-5]

KNOW ALL PERSONS BY THESE PRESENTS, that **Chinburg Development, LLC**, a New Hampshire limited liability company with a mailing address of 3 Penstock Way, Newmarket, Rockingham County, New Hampshire 03857 ("Grantor"), for consideration received, with Warranty Covenants, grants to _____, with a mailing address of _____ ("Grantee"), the following:

Open Space Subdivision of Emerson Ridge, prepared for Chinburg Development, LLC, Tax Map N, Lot No. 13-1, Gulf Road, Oak Street & Country Club Estates Drive, City of Dover, County of Strafford, State of New Hampshire," prepared by McEneaney Survey Associates or New England, dated _____ ___, 2023 recorded at the Strafford County Registry of Deeds as Plan #D-_____ (the "Plan").

Further, Grantor conveys to Grantee a 1/5th interest in and to the roadway parcel identified on the Plan subject to the terms and conditions set forth in the Shared Driveway Declaration and Maintenance Agreement (the "Agreement") dated_____ and recorded with Strafford County Registry of Deeds to in Book _____, Page _____.

Subject to all matters, easement and notes as shown and stated on the Plan.

Meaning and intending to describe and convey a portion of the land conveyed to the grantor by Jahn H. Janetos and Susan G. Janetos and Dahn H. Tibbett and Norma M. Tibbertt and Janetos in deed dated June 2, 2022 and recorded at Strafford County Registry of Deeds at Book 5037, Page 903.

[The signatures follow on the next page.]

Executed this ___ day of _____, 2023

Chinburg Development, LLC

By:_____
Eric J. Chinburg, Manager

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS

The instrument was acknowledged before me on _____ ___, 2023, by Eric J. Chinburg, as the duly authorized Manager of Chinburg Development, LLC.

_____
Notary Public
My Commission Expire

DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS
FOR
EMERSON RIDGE AT JANETOS FARM SUBDIVISION
DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE

1 DEFINITIONS. 1
2 HOMEOWNERS' ASSOCIATION. 2
3 LAND USE AND STRUCTURE TYPE. 3
4 DWELLING SIZE; APPROVAL BY DEVELOPER. 3
5 BUILDING AND LANDSCAPING REQUIREMENTS. 4
6 LOT GRADING. 4
7 DRIVEWAYS. 4
8 BUILDING EXTERIOR. 4
9 PROTECTION DURING CONSTRUCTION. 5
10 CONSTRUCTION COMPLETION. 5
11 OCCUPANCY AND USE RESTRICTIONS 5
12 COMMON LAND, COMMON PROPERTY AND EASEMENTS. 6
13 OPEN SPACE 7
14 DRAINAGE AND STORMWATER MANAGEMENT. 7
15 SUBDIVISION ENTRANCE SIGNAGE AND LANDSCAPING 7
16 SHARED PRIVATE DRIVE - LOTS 1 THROUGH 6 INCLUSIVE. 8
17 EROSION CONTROL. 8
18 RESERVATIONS AND EASEMENTS. 8
19 AMENDMENT, MODIFICATION OR WAIVER BY DECLARANT. 9
20 TERM. 10
21 ENFORCEMENT. 10
22 SEVERABILITY. 10
23 NOTICE OF RESTRICTIONS AND COVENANTS. 10
24 TITLE REFERENCE. 10

Exhibit A By-Laws

Exhibit B Stormwater Management/BMP Inspection and Maintenance Plan

DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS

FOR

EMERSON RIDGE AT JANETOS FARM SUBDIVISION

DOVER, STRAFFORD COUNTY, NEW HAMPSHIRE

This Declaration of Covenants and Restrictions is made this ___th day of _____ 2023, by Chinburg Development, LLC, a New Hampshire limited liability company, its successors and assigns (the "Declarant"), of 3 Penstock Way, Newmarket, New Hampshire 03857 being the current owner of real property which is the subject of these covenants, conditions and restrictions situated at Gulf Road, Oak Street & Country Club Estates Drive, Dover, Strafford County, New Hampshire. The Declaration does hereby adopt the following covenants, conditions and restrictions that are specifically applicable to Lots 1-11 inclusive, and the Open Space within the Emerson Ridge at Janetos Farm Subdivision (hereinafter "Subdivision" or "Development") as shown on the approved subdivision plan entitled "Open Space Subdivision of Emerson Ridge, prepared for Chinburg Development, LLC, Tax Map N, Lot No. 13-1, Gulf Road, Oak Street & Country Club Estates Drive, City of Dover, County of Strafford, State of New Hampshire," prepared by McEneaney Survey Associates or New England, dated _____ ___, 2023 recorded at the Strafford County Registry of Deeds as Plan #D-_____ (hereinafter the "Plan").

This Declaration shall apply to the Emerson Ridge at Janetos Farm Subdivision and to all present and future owners, tenants, and occupants of any Lots in the Development and to all other persons who shall at any time use the Development or any portion thereof. The acquisition or rental of any Lot or the act of occupancy of any Lot will signify that this Declaration is accepted, ratified and will be complied with. This Declaration shall run with the land and each lot comprising the Development and shall be binding thereon.

This Declaration is made for the purposes of ensuring the most appropriate development of the Lots; to protect Owners of the Lots against the improper use of Lots so as to preserve the values of their property; to reserve, so far as practical, the natural beauty and open space of the Subdivision; to guard against the erection of poorly designed or proportioned dwellings and structures built of unsuitable or improper materials and in general, to provide adequately for a predictable quality of improvement within the development and thereby increase the value of investments made in homes within the Development.

1 Definitions.

1.1 "Association" or "Homeowners' Association shall mean and refer to Emerson Ridge at Janetos Farm Homeowners' Association, a New Hampshire nonprofit corporation to be formed.

1.2 "Board of Directors" or "Board" shall be the elected body of the Association having its normal meaning under New Hampshire corporate law.

1.3 "By-Laws" shall mean the By-Laws of the Association attached as **Exhibit A**.

1.4 "City" shall mean the City of Dover.

1.5 “Common Expenses" shall mean and include the actual and estimated expenses of operating the Association, including any reasonable reserve, all as may be found to be necessary and appropriate by the Board pursuant to this Declaration and the By-Laws of the Association.

1.6 "Common Land" shall mean that area designated as the Open Space as shown on the Plan, related facilities, property and easement rights as set forth in the Declaration.

1.7 “Common Property” shall mean the sign, central mailbox area, and landscaping on the Open Space and any other equipment acquired or owned by the Association.

1.8 “Declarant” shall have the meaning set forth in the recitals above.

1.9 "Development" shall have the meaning set forth in the recitals above.

1.10 “Exhibits” shall mean **Exhibit A**, the Bylaws, and **Exhibit B**, Stormwater Management/BMP Inspection and Maintenance Plan attached hereto.

1.11 “Lot” or “Lots” shall mean one or more of the Lots shown on the Plan permitted for a single-family home.

1.12 “Lot Owner” shall mean the Owner of a Lot in the Subdivision.

1.13 "Owner" shall mean and refer to the record Owner, whether one or more persons or entities, of a Lot, but excluding in all cases any party holding an interest merely as security for the performance of an obligation.

1.14 “Plan” shall have the meaning set forth in the recitals above.

1.15 “Subdivision” shall have the meaning set forth in the recitals above.

2 Homeowners’ Association.

2.1 Upon the sale of the last Lot, or sooner if the Declarant so decides, the Declarant shall establish a Homeowners’ Association designated as Emerson Ridge at Janetos Farm Homeowners’ Association. The Association shall be governed in accordance with this Declaration and the terms of the By-Laws of the Association when formed. Membership in said Association shall be mandatory for all Owners of Lots in the Subdivision. Until all Lots are sold, or sooner if the Declarant gives voluntary written notice in an acceptable form to the then Owners of record that the Declarant has relinquished its powers hereunder, control of the Association shall be vested with the Declarant subject to the terms of this Declaration and By-Laws. Until such time the Association is formed, the Declarant shall exercise the duties of the Association.

2.2 During September of each year, and after the Association has been turned over to the Lot Owners, there shall be a meeting of the Association, at which time the Owners shall elect a Board of Directors with a minimum of three (3) directors and no more than a total of five (5) directors. The elected Board of Directors shall elect a President, Vice President, Treasurer and Secretary in accordance with the Bylaws. Each Lot shall have one vote regardless of the number of Owners of the Lot or whether the Lot has a duplex on it. The owner of a Condominium Unit shall each have one vote. The Board of Directors shall prepare an annual budget and assess each Lot Owner a 1/11th share of the cost of

maintaining the Common Land and such other items deemed necessary for the proper operation of the Association to each Lot Owner as a Common Expense. The Board of Directors shall determine the method and frequency of payment and may record a lien against any Lot Owner whose assessment is not paid within thirty (30) days of due date.

3 Land Use and Structure Type.

3.1 No building or other structure of any kind shall be erected, placed or allowed to stand on any individual building Lot, except one detached dwelling house for the use of one family. No fences will be allowed within the Subdivision unless approved in accordance with Paragraph 4. Only single-family residential use shall be allowed on a Lot. An "in-law" apartment is permissible if allowed by zoning. No bed and breakfast, food service, kennel, or pet breeder shall be conducted from any dwelling erected on any Lot. Business and commercial enterprises shall not be conducted from any dwelling erected on any Lot except as permitted by the then existing zoning ordinance and regulations for the City without application for any variance therefrom; and further provided that not more than one (1) additional person be employed and that such use does not require any client/patient/customer contact at the dwelling. No such home business may display external evidence of the business, e.g., signage, nor shall any client/patient/customer/employee be allowed to park on the street.

3.2 No structure, other than the principal dwelling referred to above (other than a moveable trailer or shelter, incidental to construction), shall be used even temporarily as a place of habitation. All house locations and other structures, construction, excavation, sewage disposal and water supply, and storm water drainage must otherwise be in compliance with the applicable City ordinances and applicable local, federal and state laws, codes and regulations. In addition to the foregoing, each Lot shall be and hereby is made subject to all applicable "notes" and other matters as shown on the Plan.

4 Dwelling Size; Approval by Developer.

4.1 No dwelling shall have less than (i) 1800 minimum of square feet of finished living area if a one (i) story home and (ii) 2400 square feet of finished living area if a two (2) story home.

4.2 No carports shall be erected, placed or allowed to stand on any Lot without prior approval of Declarant. All improvements, including driveways, must be determined to: (i) meet all the terms and conditions of these covenants; (ii) ensure the optimal use of a Lot with the least intrusion upon the privacy, views of neighboring Lot Owners, and (iii) ensure harmony of scale of dwellings within the Subdivision.

4.3 Prior to seeking construction approval from the Declarant, each Owner shall submit plans, including building plans, specifications and plan showing the precise location and setback of all improvements, including driveways. Plans shall also specify the nature, kind, shape, height, orientation, color, composition, and material for all such improvements as well as showing finish grade elevations in relation to existing elevations. All plans must be agreed upon and approved by the Declarant and Owner prior to commencement of construction.

4.4 No dwelling, building, structure, alteration, addition or improvement of any sort, other than interior alterations not affecting the external appearance of the dwelling, building or structure, shall be placed, erected or constructed upon any Lot until such plans shall have been approved in writing by the Declarant, which plans the Declarant shall have the right to approve or disapprove. The Declarant reserves the right to approve all landscaping as well. Notwithstanding the foregoing, the Declarant shall have no liability or responsibility for the enforcement of the within covenants and restrictions, nor for the exercise of its discretion in approving or in disapproving any plans submitted as a consequence hereof.

4.5 Once the Declarant no longer owns a Lot in the Subdivision and providing all homes are constructed, no approval will be necessary unless the Board of Directors establishes an Architectural Review Committee pursuant to the By-Laws of the Association. During the first one hundred twenty days (120) after Declarant has relinquished control and transferred the operation of the Association to the Association, the Board of Directors shall have the power and authority to enforce the approval requirements under this Section 4. This right shall expire if an Architectural Review Committee is established or the one hundred twenty-day (120) period expires.

5 Building and Landscaping Requirements.

5.1 Each Lot shall have a single-family dwelling. All structures shall have exterior wall surfaces covered with redwood or cedar clapboards or shingles, composition clapboards (HardiPlank or equivalent), brick or stone, vinyl, or a combination of any of the aforesaid, painted or natural sealed and must be maintained in a good condition. The use of simulated or artificial brick or stone or aluminum siding or any similar materials shall not be allowed, unless specifically agreed to by the Declarant. All dwellings shall be constructed on poured concrete foundations with a maximum of twenty-four (24) inches of exposure unless approved by Declarant. All Lots shall have attractive landscaping. Landscaping shall include, but not be limited to, front and side lawns, shrubs and plantings. All landscaping shall be approved by the Declarant as set forth in Section 4.

6 Lot Grading.

Once the Declarant no longer owns a Lot, the Lot grading shall not be changed in such a way as to divert the natural flow of water onto adjoining Lots or the Subdivision streets or rights-of-way.

7 Driveways.

All driveways, dwellings, or other structures built on a Lot shall be constructed to provide for proper water runoff and to prevent the formation of any unnatural accumulation or discharge of water and/or ice onto any other Lot, except for such approved drainage as may be shown on the Plans. A driveway permit shall be obtained from the City prior to the construction of a driveway. All driveways shall have a stone or asphalt apron.

8 Building Exterior.

No dwelling or structure shall be left with an unfinished exterior. The exterior of every structure on the Lot shall be kept in a proper state of repair, appearance and maintenance. Oil tanks or propane tanks for domestic uses must be stored underground, shielded from view in the rear, or in the cellar of the residential dwelling. No solar panels or wind turbines are allowed unless

approved by the Declarant or Board of Directors, and only if in compliance with the applicable zoning.

9 Protection During Construction.

9.1 Prior to the commencement of, and at all times during construction of any dwelling or structure, the Owner of said Lot shall also execute an agreement which provides that:

a. All construction shall be in accordance with this Declaration the NHDES Extension Permit _____ and the applicable conditions set by the City Planning Board;

b. At all times during construction, each Lot Owner shall take all reasonable and necessary steps to ensure that no dirt, silt, material or debris of any kind is placed on drainage systems of the roadways. Each Lot Owner shall insure that no trucks, equipment or vehicles of any kind in any way drive over, damage any berms, or roadway improvements of any abutting property.

c. Any and all damage to such improvements shall be repairable at Owner's expense to the full satisfaction of the Declarant and/or the City.

d. No material of any kind shall be off-loaded, placed or in any way stored for any period on the roadways in the Subdivision. All construction activities, delivery and storage of materials and equipment of any kind, and all activities in any way relating to said construction shall be conducted entirely within the confines of the owner's property.

10 Construction Completion.

Construction of a dwelling or any other approved structure on a Lot, including finished landscaping, shall be completed within twelve (12) months from the commencement of said construction. Commencement shall be on the date on which a building permit is issued for the construction of a dwelling on a Lot.

11 Occupancy and Use Restrictions

11.1 *Open Fires*. No open fires shall be permitted, except as allowed by City ordinance.

11.2 *Signs*. No sign shall be displayed for the public view on any Lot except one sign of not more than 6" in height and 24" in length denoting the Lot Owner's name and address. Temporary real estate agency signs indicating a dwelling for sale shall be permitted. The restriction shall not apply to any sign erected by Developer at the entrance or within the Subdivision.

11.3 *Animals*. No animals, livestock or poultry of any kind shall be raised, bred or kept on any Lot, except domestic household pets, which shall be maintained and cared for in accordance with City Ordinances. All dogs shall be leashed when outside the boundary of an Owner's Lot.

11.4 *Garbage and Refuse Disposal*. Garbage, trash and other refuse shall be removed by Lot Owners at regular intervals, and no dumping or burning of garbage, trash or other refuse shall be done on the lots and all containers for such garbage, trash and other refuse shall be kept undercover, hidden from view, except for a reasonable time before removal

11.5 *Vehicles, Campers, Trailers or Boats*. Unregistered motor vehicles and motor vehicles under repair shall be stored in a garage. No all-terrain vehicles, off road vehicles or snowmobiles shall be used on the premises nor shall any such vehicles nor any commercial vehicles, pleasure or commercial boats, motor homes, campers, trailers, powered or non-powered, be outside of a dwelling or garage permanently for more than five (5) days, unless otherwise approved by the Declarant or Board of Directors. Unregistered or uninspected automobiles or automobiles being repaired or refurbished shall be stored in a garage.

11.6 *Clotheslines*. Clotheslines shall be prohibited, unless they are in back of the house and not visible from the road or other Lot(s).

11.7 *Materials*. No loam, sand or gravel, or other such material, except that resulting from landscaping or from construction, shall be removed from or stored on a Lot.

11.8 *Antennas*. Antennas or satellite dishes with diameters larger than 24 inches shall be prohibited, unless approved by the Declarant or Association in accordance with Section 207 of the Telecommunications Act of 1996, which prohibits restrictions that impair a viewer's ability to receive video programming through devices designed for over-the-air reception of direct broadcast satellite service ("DBS"), multichannel multipoint distribution service ("MMDS" or "wireless cable") or television broadcast signals.

11.9 *Restricted Uses*. No hunting or trapping is allowed on any Lot, or other portion of the Subdivision. No noxious, unlawful, or offensive activity shall be carried on in any dwelling, nor shall anything be done therein, whether willfully or negligently. No Owner shall make or permit any disturbing noises by himself, his family, servants, employees, agents, visitors and permitted occupants and guests, nor do or permit anything by such persons that will interfere with the peaceful possession and rights or other property owned by the Declarant or his successors and assigns.

11.10 *Maintenance and Repair*. Each homeowner shall maintain all structures and yard areas in a good state of preservation and cleanliness. No weeds, underbrush or other unsightly growth shall be permitted to grow or remain. No structure shall be allowed to exist in a state of disrepair, and disrepair or damage to any structure due to any cause shall be repaired to its original condition or similar thereto within three (3) months.

11.11 *Leasing*. Any Owner may lease his property for a period of not less than twelve (12) months and shall be responsible to ensure compliance with these covenants by his/her tenant.

11.12 *Easements*. Certain Lots in the Subdivision may be subject to easements or restrictions as shown on the Plan and or Easement Plan. Acceptance of a deed to any such Lot by an Owner shall be subject to such easement whether or not referenced in such deed and each Lot Owner agrees not to utilize the Lot in a manner which will interfere with the reasonable intent of the easement as referenced on the Plan or Easement Plan.

12 Common Land, Common Property and Easements.

12.1 The Proposed Open Space Lot, sewer easement and drainage easements shown on the Plan and as reserved for the benefit of the Association in Sections 16 and 17 shall be held by the

Association as Common Land. Common Property shall include the subdivision sign and landscaping as located on the Proposed Open Space.

12.2 The repair and operation costs of the Common Land and Common Property shall be paid and performed by Declarant and then the Association once formed. Such cost whether incurred by the Declarant or the Association shall be a Common Expense. These maintenance obligations shall remain the responsibility of the Association in perpetuity unless the City agrees to change these maintenance obligations.

13 Open Space

The Open Space shown on the Plan shall be conveyed to the Association as Common Land by the Declarant no later than the sale of the last Lot. The Association and Lot Owners shall have the right to use the Open Space for non-motorized passive and active outdoor recreation in accordance with the approved subdivision plans. Areas shown on the subdivision plans as wetlands and their respective buffers are to be kept in a natural and non-disturbed state in accordance with restrictions set forth in the Subdivision Approvals. The Open Space fields shall be mowed twice per year (once prior to April 15 and once after September 15). The Open Space shall be subject to drainage easements to the City for drainage and stormwater management as shown on the Plan. The Open Space shall be maintained and managed in accordance with the Stormwater Management/BMP Inspection and Maintenance Plan attached hereto as **Exhibit B**. The Open Space is subject to an access easement reserved for the benefit of the owners of those lots identified Lots N/13F, N/13F-1 and N/13F-2 (collectively the "Property, individually a "lot" or the "lots") on the plan entitled "Subdivision Plan for Jahn H. and Susan G. Janetos, Tax Map N, Lot 13F, Gulf Road, City of Dover, County of Strafford, State of New Hampshire," prepared by McEneaney Survey Associates of New England, dated August 23, 2022, and recorded in the Strafford County Registry of Deeds as Plan #12813 (the "Plan") with the right to use Open Space for passive recreational use for passive recreational use subject to such reasonable rules and regulations that the Declarant or its successor assign.

14 Drainage and Stormwater Management.

The Declarant hereby reserves for the benefit of the Association certain easements over certain Lots for drainage and stormwater management as shown on the Plan. In the event the Association fails to properly maintain and repair the stormwater management system, the City shall have the right, after reasonable notice to the Association to enter onto these Lots to maintain and repair the drainage and stormwater treatment areas and other parts of the stormwater management system and to charge the Association the reasonable cost incurred by the City to do so. An easement for access to and use of the easements and stormwater treatment areas as shown on the Plan shall be granted to the City. The Association shall maintain the Stormwater Management System throughout the Subdivision in accordance with the Stormwater Management/BMP Inspection and Maintenance Plan attached hereto as **Exhibit B.**

15 Subdivision Entrance Signage and Landscaping.

The Association shall maintain the sign, central mailbox area, and landscaping on the Open Space located at the entrance to the Subdivision and the cost shall be a Common Expense.

16 Shared Private Drive - Lots 1 through 6 inclusive.

The private drive shown on the Plan shall be owned by the owners of Lots 1 through 6 inclusive in equal shares and shall be deeded to each Owner at time of purchase. The plowing maintenance and repair of the private drive shall be the responsibility of the owners of Lots 1-through 6 inclusive pursuant to a Shared Driveway Agreement of even date recorded prior hereto. The Association shall have no responsibility for the maintenance or repair of private driveway.

17 Solid Waste Management

Lots 8-11 have frontage on City roads and therefore will have access to the City of Dover's bag and tag curbside trash collection service. The Declarant will contract trash collection for Lots 1-7. Upon the City of Dover accepting the new public cul de sac, Lots 6 and 7 will be able to utilize the City of Dover's trash collection service.

18 Snow Removal

The Declarant will privately contract snow removal for the new cul de sac and private drive (until the cul de sac is accepted as a public road). In the event snow accumulation exceeds snow storage areas, the excess will be trucked offsite. Upon acceptance of the cul de sac, the City of Dover will take over snow removal responsibilities for the cul de sac.

19 Erosion Control.

19.1 To implement effective and adequate erosion control and protect the beauty of the Subdivision, the Declarant or the Association shall have the right to enter upon any Lot before or after a building or structure has been constructed for the purpose of performing corrective grading or landscaping work necessary to protect adjoining Lots or to alleviate any unsightly condition or to construct or maintain erosion prevention devices.

19.2 Prior to exercising its right to enter upon a Lot, the Declarant or the Association shall give the Owner the opportunity to take corrective action by giving the Owner written notice indicating what type of corrective action is required and specifying in that notice that immediate corrective action must be taken by such Owner. If the Owner fails to take the corrective action specified within fifteen (15) days after having been notified, the Declarant or the Association may exercise its right to enter upon the property in order to take the necessary corrective action.

19.3 The cost of such corrective action or erosion prevention measures shall be paid by the Owner within thirty (30) days after receipt by Owner of an invoice for the cost of such work. Any expense incurred in taking the above action shall be considered a Common Expense assessed to the Lot Owner for which Declarant or the Association shall be entitled to record a lien upon the Lot for such Common Expense.

20 Reservations and Easements.

There is hereby excepted and reserved to the Declarant, for so long as it owns any of the Lots, and thereafter to the Association, when formed, the following:

20.1 A right of way for all purposes over, across and through the roadways, together with the right to install and maintain utilities within or under the traveled portion of said roadways.

20.2 The right to grant easements for drainage and utility purposes to enter onto any Lot within twenty (20) feet of the Lot line for the purpose of constructing, reconstructing, installing, replacing, and maintaining drainage flow and underground or an aboveground utility therein and to extent, connect to, and use in common any previously installed utility by the Lot Owner providing that promptly after such entry, the surface of the ground shall be restored to substantially the same condition as it was in prior to such entry.

20.3 A non-exclusive easement is reserved for the Declarant, its successors and assigns, in, upon, over, under, across, and through the Subdivision for the purpose of installing, maintaining, repairing and replacing utility lines and any other equipment and machinery necessary or incidental for the proper function of any utility systems serving the Subdivision, which easements may be specifically conveyed to a public utility or municipality supplying the service. The easements created by this section shall include, without limitation, rights of the Declarant or the appropriate utility or service company or governmental agency or authority to install, lay, maintain, repair, relocate and replace gas lines, pipes and conduits, water mains and pipes, sewer and drain lines, drainage ditches and pump stations, telephone wires and equipment, television equipment and facilities (cable or otherwise), electrical wires, conduits, equipment, ducts and vents over, under, through, along and on the Lots and Common Land. Notwithstanding the foregoing, any such easement shall not be exercised as to materially interfere with the use or occupancy of any residence on a Lot.

20.4 A non-exclusive easement is reserved for the Declarant, its successors and assigns, in, upon, over, under, through and across the Development as long as the Declarant, its successors and assigns, shall be engaged in the construction, development and sale of Lots within the Subdivision and on any contiguous land now or hereafter owned by the Declarant, for the purpose of construction, installation, maintenance and repair of existing and future building and related activities, including extension of and connection with subdivision roads and utility system for such development.

21 Amendment, Modification or Waiver by Declarant.

This Declaration may be amended by a two-thirds vote of the Unit Owners, with the exception of the restrictions referenced in Section ____, and the easements reserved or to be granted in Section ____ and which amendment affecting these Sections will require the additional consent of the City and/or Declarant. In addition, any change to the Stormwater Management/BMP Inspection and Maintenance Plan attached as **Exhibit B** shall require the consent of both the City. No amendment may alter or terminate any requirements in any City or State approval issued for the Subdivision.

Any waiver by the Declarant or Association on any one occasion or for any individual Lot shall not be deemed to constitute a waiver on any future occasion with respect to any other Lot.

22 Term.

These covenants shall run with the land and shall be for the benefit of the Lots shown on the Plans and shall be binding on the Lots and purchasers of the Lots for a period of twenty-five (25) years from the date of this Declaration. Provided however that Section ___, to the extent that approvals are required, shall terminate in accordance with Section ___, unless an Architectural Review Committee has been established under the By-Laws of the Association. This Declaration shall automatically extend for successive periods of ten (10) years unless an instrument signed by two-thirds of the Lot Owners has been recorded repealing said covenant. Failure to specifically refer to and/or incorporate these covenants, conditions and restrictions in deeds to the Lots shall not in any manner affect the validity and effectiveness of these restrictions upon any such Lot. Notwithstanding the foregoing, any covenants, conditions and restrictions dictated by state or local approval shall remain in force and effect in perpetuity.

23 Enforcement.

Proceedings may be maintained irrespective of the waiver of any prior violation or attempt by the same or other Owners, and the failure to enforce on any one occasion shall in no event be deemed to be a waiver of the right to do so thereafter as to the original breach or as to any breach subsequent thereto. The violation or attempted violations of any covenant or restriction in this Declaration is hereby declared a nuisance, which may be remedied by any appropriate legal proceeding. If any Owner shall attempt to violate, shall violate or shall permit on his/her lot any violation of the covenants, restrictions or reservations described herein, the Declarant, Association or any Lot Owner may commence proceedings at law or in equity to recover damages or other awards for such attempts, violations or permitting of the same, or to enjoin the furtherance or continuation of such attempts or violations, or both.

24 Severability.

Invalidation of any covenant by court order or judgment shall not affect any of the other covenants or provisions herein, all of which shall remain in full force and effect.

25 Notice of Restrictions and Covenants.

A copy of these covenants, conditions and restrictions shall be recorded in the Strafford County Registry of Deeds.

26 Title Reference.

Being the property conveyed to the Declarant by deed from Jahn H. Janetos and Susan G. Janetos and Dahn H. Tibbett and Norma M. Tibbett dated June 2, 2022 and recorded at Strafford County Registry of Deeds at Book 5037, Page 903.

[Signatures continue on the next page.]

IN WITNESS WHEREOF, we have hereunto set our hands and seals the day and year first above-written.

DECLARANT:
Chinburg Development, LLC

By:_____
Eric J. Chinburg, Manager

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS

The instrument was acknowledged before me on _____ ___, 2023, by Eric J. Chinburg, Manager of Chinburg Development, LLC.

_____
Notary Public
My Commission Expires:

Exhibit A

See attached By-Laws

Exhibit B

See attached Stormwater Management/BMP Inspection and Maintenance Plan

Stormwater Management System Inspection & Maintenance Plan

Prepared for

EMERSON RIDGE AT JANETOS FARM
TAX MAP N, LOT 13-1

Oak Street
Dover, New Hampshire
Strafford County

February 2023
Revised: March 29, 2023

Owner of Record:

CHINBURG DEVELOPMENT, LLC
3 Penstock Way
Newmarket, New Hampshire 03857

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 **Chinburg Development, LLC.** 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 while at the same time ensuring the recharge of groundwater resources through continued infiltration.

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

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

Contact / Responsible Party

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

Shawna Sammis
Phone: (603) 868-5995x31
Email: ssammis@chinburg.com

Management Company

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

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.

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 (Rip Rap)
- Catch Basins
- Detention Pond
- Bio-Retention Basins
- Grassed Lined Conveyance Swale & Pre-Treatment Swale
- Pavement
- Litter / Trash Removal
- 8' Wide Access Road

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 $\geq$ 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 (RIP RAP):

- 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):

- 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.

DETENTION POND:

- Inspection, by a **qualified professional**, of detention ponds at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or conducted as warranted by such inspection.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as “berms” or “dams” that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

BIO-RETENTION BASINS:

- Inspection, by a **qualified professional**, of the Bio-Retention Basins at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection. If the Bio-Retention Basin systems do not drain within 72-hours following a rainfall event, a qualified professional should assess the condition and determine measures required to restore filtration practice (as applicable).
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the

embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.

- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen Bio-Retention Basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as "berms" or "dams" that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the basin and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

GRASS LINED CONVEYANCE SWALE & PRE-TREATMENT SWALE:

- Inspect once per year
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4" stand of vegetative growth.

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 Anti-Icing Data Form in the appendix).
- 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.
- See attached "Winter Maintenance Guidelines for Porous Pavements" for de-icing agent recommendations.

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.

8' WIDE ACCESS ROAD:

- Inspect once per year
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of road (at least once annually).

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structure(s)	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Energy Dissipation (ED) Structures (Rip Rap)	Annually	• Check for damage/deterioration • Check for displaced stones • Check for woody vegetation	Repair immediately Replace immediately Remove annually
Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 1 ft. sediment depth Remove all floatables Remove immediately
Detention Pond • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation	Bi-Annually “ “ “ “ Periodically “ “ “ “ Bi-Annually	• See Outlet Structure (OS), required • Check for erosion, settlement, seepage, etc. • Check for sediment accumulation in pond • Check for trash (in pond and structures) • Maintain 95% vegetation (pond & slopes) • Maintain healthy stand of vegetation	See OS Requirement Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore vegetation in-kind Mow when ≥ 6 in
Bio-Retention Basins • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation (Veg.)	Bi-Annually “ “ “ “ Periodically “ “ “ “	• See Outlet Structure (OS) Req. • Check for erosion, settlement, seepage, etc. • Check for sediment accumulation in pond • Check for trash (in pond and structures) • Maintain 95% veg. (pond & slopes) • Maintain healthy stand of veg.	See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Grass Lined Conveyance Swale & Pre-Treatment Swale	Annually	• Check for sediment accumulation • Check for erosion • Ensure Swale is stabilized • Maintain healthy stand of veg., 4” minimum • Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind 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
8’ Wide Access Road	Annually	• Check for erosion • Maintain healthy vegetation • Inspect for invasive species	Repair immediately Mow once per year Remove/Dispose of accordingly

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

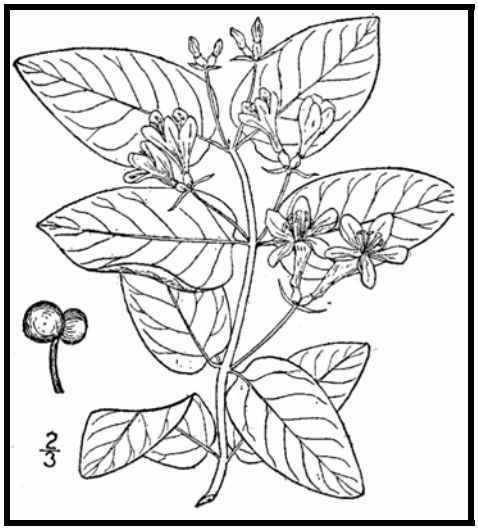
Deicing Salt Quantity Use Log

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

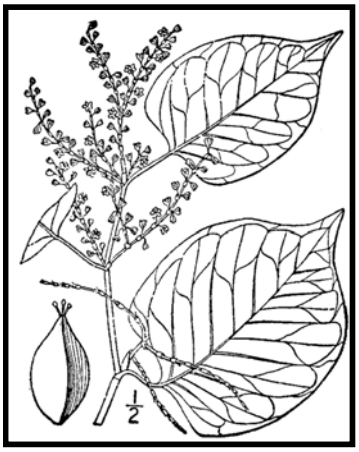
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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

UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations, and prohibits discrimination in its programs, activities and employment on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sex, sexual orientation, or veteran's, marital or family status. College of Life Sciences and Agriculture, County Governments, NH Dept. of Resources and Economic Development, Division of Forests and Lands, NH Fish and Game ,and U.S. Dept. of Agriculture cooperating.

EXHIBIT B

EMERSON RIDGE AT JANETOS FARM

BY-LAWS

These By-Laws are dated this __th day of _____, 2023 and executed by Chinburg Development, LLC, a New Hampshire limited liability company, of 3 Penstock Way, Newmarket, New Hampshire 03857, who is the Declarant under a Declaration of Covenants, Conditions and Restriction for Emerson Ridge at Janetos Farm of even date recorded herewith in the Strafford County Registry of Deeds (hereinafter called the "Declaration"). These By-Laws shall apply to the Emerson Ridge at Janetos Farm Subdivision as described and created by the Declaration and to all present and future owners, tenants, and occupants of any lots in the development and to all other persons who shall at any time use the development or any portion thereof. The acquisition or rental of any lot or the act of occupancy of any lot will signify that these By-Laws are accepted, ratified and will be complied with. These By-Laws shall run with the land and each lot comprising the development and shall be binding thereon.

ARTICLE I

INTRODUCTORY PROVISIONS

(a) Definitions. The terms used herein shall have the same meaning as given to them in the Declaration, except as expressly otherwise provided in the Declaration, or the application of such meaning would be contrary to the clear intent of the statement. The term "rules and regulations" refers to the rules and regulations for the conduct of the occupants of the development, adopted by the Association as hereafter provided.

(b) Purpose. Emerson Ridge at Janetos Farm Homeowners' Association ("Association") is a non-profit private mutual benefit corporation pursuant to the State of NH. Title 13-B for the purpose of administering the Common Land of the Subdivision in order to preserve property values and amenities in the Subdivision and for the preservation, maintenance and improvement of the Common Land held by the Association in the Subdivision now or in the future.

(c) Conflicts. These By-Laws are intended to comply with the requirements of the Declaration. If there is an inadvertent conflict between the provisions of these By-Laws and the Declaration, the provisions of the Declaration shall control.

ARTICLE II

MEMBERS

(a) Class of Members: The Association shall have one class of members. The qualifications and rights shall be as follows:

(1) Every beneficial owner, as distinguished from a security owner, of a lot or a condominium unit in the Subdivision shall become a member of the Association.

(2) Membership shall include an undertaking to comply with and be bound by the Declaration of Covenants and Restrictions, these By-Laws and amendments thereto, and the policies, rules, and regulations at any time adopted by the Association in accordance with these By-Laws. Members shall pay the first year's dues in advance on a pro rata basis based on a calendar year beginning in January of each year.

(3) Membership in this Association shall terminate when a member ceases to be a beneficial owner of a lot in the Subdivision.

(b) Voting Rights: Each member in good standing (current in payment of Common Expenses and incompliance with the Declaration) shall be entitled to vote on each matter submitted to a vote of the members; provided, however, that each member shall be the sole beneficial owner of a lot in the subdivision. A member shall have one vote for each lot or condominium unit which member is a beneficial owner. Where two or more owners own a lot or condominium unit, only one vote for such lot or condominium unit owned shall be allowed, and such joint owners shall designate and register with the Secretary of the Association the name of that owner entitled to cast such single vote.

(1) At membership meetings all votes shall be cast in person, or by proxy registered with the Secretary.

(2) The Board of Directors is authorized to establish regulations providing for voting by mail.

(c) Assignment of Rights: A beneficial owner who is the member of the Association may assign his membership rights to the tenant residing in or on the beneficial owner's lot or condominium unit. Such assignment shall be completed by filing with the Secretary of the Association a written notice of assignment signed by the beneficial owner.

ARTICLE III

MEETINGS OF MEMBERS

(a) Annual Meeting: An annual meeting of the members for the purpose of hearing reports from all officers and standing committees and for electing directors shall be held in Dover, Strafford County, New Hampshire in September of each year. The time and place shall be fixed by the Directors.

(b) Regular Meetings: In addition to the annual meetings, regular meetings of the members shall be held at such time and place as shall be determined by the Board of Directors.

(c) Special Meetings: A special meeting of the members may be called by the Board of Directors. A special meeting of the members must be called within ten (10) days by the

President, or the Board of Directors, if requested by not less than seven (7) of the members having voting rights.

(d) Notice of Meetings: Written notice stating the place, day, and hour of any meeting of members shall be delivered either personally, by email or by mail to each member entitled to vote at such meeting, not less than five (5) days before the date of such meeting.

(e) Quorum: The members holding fifty (50%) percent of the votes that may be cast at any meeting shall constitute a quorum at any meeting of the members. In the absence of a quorum, a majority of the members present may adjourn the meeting from time to time without further notice.

(f) Proxies: At any meeting of the members, a member entitled to vote may vote by proxy executed in writing by the member. No proxy shall be valid after six months from the date of its execution, unless otherwise provided in the proxy.

(g) Voting by Mail: When Directors or Officers are to be elected by members, or when there is an act requiring the vote of the members, such election or vote on such proposed action may be conducted by mail in such manner as the Board of Directors shall determine.

ARTICLE IV

BOARD OF DIRECTORS

(a) General Powers: The affairs of the Association shall be managed by the Board of Directors, subject to instructions of the members of the Association at a regular meeting, or subject to the approval of the membership as expressed by a vote of the membership.

(b) Number, Tenure, and Qualifications: The number of Directors shall be not less than three (3) but not more than five (5). Each Director shall be a member of the Association, and shall hold office until two (2) annual meetings of the members following Director's original qualification shall have been held, and until his successor shall have been elected and qualified. Exceptions to the provision for the two (2) year tenure shall be in the case of the Directors first taking office following the organizational meeting of the Association. Of the first three (3) Directors, one (1) shall hold office only for a term of one year, one (1) shall hold office until the second subsequent annual meeting, one (1) shall hold office until the third subsequent meeting. The determination of the respective terms shall be by the flip of a coin. When possible, any increase in the number of Directors shall be in units of two (2) members, and their initial terms shall be one for one (1) year and the other one for two (2) years, with the determination to be by lot.

(c) Regular Meetings: The Board of Directors shall meet regularly at least every six (6) months, at a time and place it shall select.

(d) Special Meetings: A special meeting of the Board of Directors may be called by or at the request of the President or of any three (3) Directors.

(e) Notices: Notice of any special meeting of the Board of Directors shall be given at least five (5) days prior thereto, by written notice delivered personally, by email or sent by mail to each Director. Any director may waive notice of any meeting.

(f) Quorum: A majority of the duly authorized Board of Directors shall constitute a quorum for the transaction of business at any meeting of the Board, but if less than a majority of the Directors are present at said meeting, a majority of the Directors present may adjourn the meeting from time to time, and without further notice.

(g) Manner of Acting: The act of a majority of the Directors present at a meeting at which a quorum is present shall be the act of the Board of Directors, unless the act of a greater number is required by law or by these By-Laws.

(h) Vacancies: Any vacancy occurring in the Board of Directors, and any directorship to be filled by reason of the increase in the number of directors, shall be filled by election of the Board of Directors. A Director elected to fill a vacancy shall be elected for the unexpired term of Director's predecessor in office.

ARTICLE V

OFFICERS

(a) Officers: The officers of the Association shall be a President, Vice President a Secretary and a Treasurer.

(b) Qualifications and Method of Election: The officers shall be members of the Association, shall be elected by the Board of Directors, and shall serve for a term of one (1) year. The President and Vice-President shall be members of the Board of Directors.

(c) President: The President shall preside at the meetings of the Association and of the Board of Directors at which President is present, shall exercise general supervision of the affairs and activities of the Association, and shall serve as a member ex officio of all standing committees.

(d) Vice President: The Vice President shall preside at meetings of the Association and the Board of Directors when the President is absent and shall exercise the powers of the President when the President is absent or disabled.

(e) Secretary: The Secretary shall keep the minutes of all of the meetings of the Association and of the Board of Directors, which shall be an accurate and official record of all business transacted. The Secretary shall be custodian of all corporate records.

(f) Treasurer: The Treasurer shall receive all Association funds, keep them in a bank approved by the Board of Directors, and pay out funds only on notice signed by Treasurer and by one (1) other officer. The Treasurer shall be a member ex officio of the Finance Committee.

(g) Vacancy: A vacancy in any office because of death, resignation, removal, disqualification, or otherwise, may be filled by the Board of Directors for the unexpired portion of the term.

ARTICLE VI

POWERS

Powers and Duties**.** The Association will have all of the powers and duties necessary for the administration of the affairs of the Development. Said powers and duties shall include, but not be limited to, the following:

(a) Operation, care, upkeep and maintenance of the Common Land and Common Property;

(b) Operation, care and enforcement of any use and conservation restrictions imposed upon the Subdivision;

(c) The employment, dismissal and replacement of agents and employees to facilitate the operation, care, upkeep and maintenance of the Common Land and Common Property;

(d) To make or cause to be made additional improvements on and as part of the Common Land or Common Property;

(e) To acquire, hold, manage, convey and encumber title to real property (including but not limited to development lots conveyed to or acquired by the Association) in the name of and on behalf of the Association;

(f) The assessment and collection of the Common Expenses from the Lot Owners, and the enforcement of liens to secure unpaid assessments;

(g) The adoption and amendment of rules and regulations covering the details of the operation and use of the development, the Common Land, Common Property or any portion thereof;

(h) Opening of bank accounts on behalf of the Association and designating the signatories required therefor;

(i) Obtaining and administering insurance for the Subdivision if determined necessary and in the best interest of the Association;

(j) Repairing, restoring or replacing Common Land or Common Property after damage or destruction by fire or other casualty, or as a result of eminent domain proceedings, as provided in the By-Laws;

(k) Procuring legal and accounting services necessary or proper in the operation of the Subdivision or the enforcement of these By-Laws;

(l) The assessment of costs or damages against any lot owner whose actions have proximately caused damages to the Common Land or Common Property;

(m) Payment of any amount necessary to discharge any lien or encumbrance levied against the entire development or any part thereof which may in the opinion of the Association constitute a lien against the development or against the Common Land, rather than merely against the interests of particular Owners (where one or more owners are responsible for the existence of such lien, they shall be jointly and severally liable for the cost of discharging it and also the costs incurred by the Association by reason of said lien or liens);

(n) Enforcement of the terms of the Declaration.

(o) All other powers granted by the Declaration or these By-Laws, permitted by law or enjoyed by associations of this kind.

(q) The formation, purpose, modification and dissolution of any Committee, such as but not limited to an Architectural Review Committee, the Directors deems necessary for the proper administration of the Association. In any matter where the Declaration and/or By-Laws calls for review or action by a committee and said committee has not yet been or is not formed by the Board of Directors, the duties and requirements of the Committee shall be vested in the Board of Directors.

ARTICLE VII

INTERIM MANAGEMENT BY DECLARANT

From and after the date of the recording of these By-Laws, the Declarant shall exercise all powers and responsibilities assigned by these By-Laws and the Declaration to the Association and the Officers until such time as it turns over said powers and responsibilities to the Lot Owners. Said transfer of said powers and responsibilities shall occur upon the first to occur of: (1) the time of four (4) months after all of the Lots in the Development have been conveyed to Lot Owners; or (2) the date the Declarant gives voluntary written notice in a recordable form to the then lot owners of record that lot owner has relinquished its powers hereunder. No contract binding the Association, or the Lot Owners as a group, which shall have been entered into during the period of Declarant's control, as described in this Article shall be binding after the termination of the Declarant's control unless ratified or renewed with the consent or affirmative vote of lot owners of a majority of the residential lots in the Development.

ARTICLE VIII

COMMON EXPENSES

(a) Common Expenses. The Owner of each Lot shall be liable for and shall pay as and when assessed an equal share of Common Expenses in accordance with the terms of the Declaration. Common Expenses shall include all charges, costs and expenses of every kind incurred by or on behalf of the Association for and in connection with the administration of the development, including without limitation all charges for taxes (except real property taxes or other such taxes which are or may hereafter be assessed separately on each Lot and the common interest appurtenant thereto or the personal property or any other interest of a Lot Owner), assessments, insurance, liability for loss or damage arising out of or in connection with the Common Land and or conservation restrictions or any fire, accident or nuisance thereon, the cost of repair, reinstatement, rebuilding and replacement of facilities and improvements in the Common Land and enforcement of use and conservation restrictions, maintenance, and similar services, wages, accounting and legal fees, management fees and all other necessary expenses of upkeep, maintenance, improvements, management and operation incurred on or for the Common Land and of any conservation restrictions. The common expenses may also include such amounts as the Association may deem proper to make up any deficit in the Capital Fund (defined below in paragraph (c)). Common Expenses will also include all Common Expense assessments against all lots, title to which is held by the Association. The Board of Directors shall determine the method and frequency of payment of the common expenses.

(b) Capital Improvements. Whenever in the judgment of the Association the Common Land should be improved by new construction or alteration of existing facilities in excess of One Thousand ($1,000.00) Dollars, any such additions, alterations or new construction may be made by the Association only after obtaining approval a two-third vote of the Lot Owners and Town approval, if necessary. If such approval is so obtained, the cost thereof shall constitute a part of the common expenses.

(c) Capital Funds**.** The Association shall assess as a Common Expense an amount or amounts on a monthly basis for the purpose of establishing and maintaining a general operating reserve and general replacement reserve together known as the Capital Fund, against anticipated future outlays for operations or for maintenance or replacement of facilities within the Common Land or equipment or other property held by the Association in connection with the Subdivision. The proportionate interest of each owner in said Capital Fund shall not be withdrawn or assigned separately but shall be deemed to be transferred with each lot even though not mentioned or described expressly in the instrument of transfer.

(d) Books. The Association will maintain books of account for common expenses for the Common Land, general operating reserves and replacement reserves, in accordance with generally recognized accounting practices. The Association will, not less frequently than annually, render or cause to be rendered, a statement to each owner of all receipts and disbursements during the preceding year and the balances of the various accounts. The current copies of the Declaration, Articles of Incorporation, By-Laws and other rules concerning the subdivision, as well as books, records and financial statements shall be available for inspection by lot owners or by holders, insurers and guarantors of first mortgages that are secured by lots in the project. These documents shall be available during normal daytime business hours.

(e) Enforcement**.** The Association shall have a lien on every lot for unpaid assessments of Common Expenses levied against the lot, which may be applicable to said Lot.

Each periodic assessment and each special assessment shall be a separate, distinct and personal debt and obligation of the Lot Owner against whom the same are assessed. If a Lot Owner shall fail to pay this assessment when due, then the Lot Owner shall pay an additional assessment of $50.00 for each such failure, and all delinquent assessments shall bear interest at the rate of eighteen percent (18%) per year from the assessment due date. The lien may be enforced in the same manner as a lien for assessments under NH RSA 356-B, the Condominium Act.

(f) Resale Certificate**.** In the event of any resale of a lot by any person other than the Declarant, the prospective purchaser shall have a right to obtain from the Association pursuant to NH RSA 356-A:9-b, as amended, prior to the contract date of disposition, the following:

(1) A statement of any capital expenditures and major maintenance expenditures anticipated by the Association within the current or succeeding 2 fiscal years.

(2) A statement of the status and amount of any reserve for the major maintenance or replacement fund and any portion of such fund earmarked for any specified project by the Board of Directors.

(3) A copy of the income statement and balance sheet of the Association for the last fiscal year for which such statement is available.

(4) A statement of the status of any pending suits or judgments in which the Association is a party defendant.

(5) A statement setting forth what insurance coverage is provided for all property owners by the Association and what additional insurance coverage would normally be secured by each individual property owner.

(6) A statement that any improvements or alterations made to the lot by the prior property owner are not known to be in violation of any restrictions and covenants imposed upon the lot.

(7) The principal officer of the Association shall furnish the statements prescribed by this paragraph upon the written request of any prospective purchaser within 10 days of the receipt of such request.

ARTICLE IX

GENERAL PROVISIONS

(a) Abatement of Violations**.** The violation of any rule or regulation adopted by the Association, the breach of any By-Law contained herein, or the breach of any provision in the Declaration shall give the Association the right, in addition to any other rights set forth in these By-Laws or in the Declaration, to enjoin, abate or remedy by appropriate legal proceedings, either at law or in equity, the continuance of any such breach, and all costs thereof, including attorney's fees, shall be borne by the defaulting lot owner.

(b) Waiver**.** The failure of the Association to insist in any one or more instances upon strict performance of or compliance with any of the covenants of the owner hereunder, or to exercise any right or option herein contained or to serve any notice, or to institute any action or summary proceeding, shall not be construed as a waiver or a relinquishment for the future, of such covenant or option or right, but such covenant or option or right shall continue and remain in full force and effect.

(c) Notices**.** All notices to lot owners shall be deemed given if hand delivered or sent by Registered or Certified Mail, Return Receipt Requested, to the owner, addressed to the owner's address appearing on the records of the Association. Any notice given or mailed to one co-owner shall be presumed to have been properly given to any other co-owner, regardless of whether a separate notice was given or sent to said other co-owner.

(d) Amendment**.** These By-Laws may be amended in the same fashion as the Declaration, the provisions for which are contained within the Declaration at Paragraph 21.

Executed as of the date and year first above written.

[Signatures follow on the next page.]

DECLARANT:
Chinburg Development, LLC

By:_____
Eric J. Chinburg, Manager

STATE OF NEW HAMPSHIRE
ROCKINGHAM, SS

The instrument was acknowledged before me on March ___, 2022, by Eric J. Chinburg, Manager of Chinburg Development, LLC.

_____
Notary Public
My Commission Expires:

Emerson Ridge at Janetos Farm

2023 Budget

4/4/2023	2023			2024			2025	
Item	**Lots 1-5**	**Lots 6-7**	**Lots 8-11**	**Lots 1-5**	**Lots 6-7**	**Lots 8-11**	**Lots 1-5**	**Lots 6-11**
Operating								
Snow Removal	$ 2,500	$ 1,000	$ -	$ 3,500	$ 1,400	$ -	$ 4,000	$ -
Landscape Maintenance	$ 1,400	$ 550	$ 1,100	$ 2,500	$ 1,000	$ 2,000	$ 3,000	$ 3,600
Trash/Recycling Pick Up	$ 330	$ 330	$ -	$ 990	$ 660	$ -	$ 3,300	$ -
SW Management Inspect	$ -	$ -	$ -	$ -	$ -	$ -	$ 450	$ 550
Insurance	$ 250	$ 100	$ 200	$ 250	$ 100	$ 200	$ 350	$ 400
Admin/Accounting	$ 175	$ 75	$ 150	$ 250	$ 100	$ 200	$ 350	$ 400
Total Operating Fees	$ 4,655	$ 2,055	$ 1,450	$ 7,490	$ 3,260	$ 2,400	$ 11,450	$ 4,950
Reserve								
Captial Reserve	$ 500	$ 200	$ 200	$ 750	$ 350	$ 300	$ 1,200	$ 500
Annual Total	$ 5,155	$ 2,255	$ 1,650	$ 8,240	$ 3,610	$ 2,700	$ 12,650	$ 5,450
Per Lot Annual	$ 1,031	$ 1,128	$ 413	$ 1,648	$ 1,805	$ 675	$ 2,530	$ 908
Per Lot Quarterly Fee	**$ 258**	**$ 282**	**$ 103**	**$ 412**	**$ 451**	**$ 169**	**$ 633**	**$ 227**

Notes:

Fee to be assessed quarterly

Lots 1-5 on private road responsible for road maintenance, repair, and replacement

Lots 6-11 on public road not responsible for private road maintenance, repair, and replacement

Landscape scope includes entrance landscape bed, cul de sac, and twice a year mowing of the open space

Snow scope includes the road and around the mailbox. Snow removal line item is temporary for the upgraded section of Oak St to be public until the City accepts the road

Lots 1-7 are responsible for snow removal of the upgraded portion of Oak St prior to the City's acceptance

If the City charges a hydrant fee for hydrants on a private road, the fee will be added to this budget as a responsibility of the HOA

2024 and 2025 budgets are estimates only and will be revised

2024- assumes the upgraded portion of Oak St has not yet been accepted by the City

2025- assumes upgraded portion of Oak St has been accepted by the City

Lots 1-5 (private road)	5
Lots 6-7 (upgraded Oak St, public)	2
Lots 8-11 (existing Oak St)	4

DRAINAGE ANALYSIS

EMERSON RIDGE AT JANETOS FARM
TAX MAP N, LOT 13-1

Oak Street
Dover, New Hampshire
Strafford County

February 2023
Revised: March 29, 2023

Prepared For:

Chinburg Development, LLC
3 Penstock Way
Newmarket, NH 03857

Prepared By:

Civilworks NE
PO Box 1166
181 Watson Road
Dover, NH 03820

CONTENTS

1.0 INTRODUCTION

2.0 DRAINAGE ANALYSIS

2.1 DRAINAGE DESIGN PARAMETERS
- 2.1.1 Watersheds
- 2.1.2 Soils
- 2.1.3 Rainfall Data
- 2.1.4 Runoff Curve Numbers

2.2 EXISTING CONDITIONS
- 2.2.1 Table A – Existing Conditions Hydrology

2.3 DEVELOPED CONDITIONS
- 2.3.1 Table B – Developed Conditions Hydrology

2.4 HYDROLOGIC COMPARISON
- 2.4.1 Table C – Existing vs. Developed Conditions Hydrology

2.5 STORMWATER DESIGN
- 2.5.1 Stormwater Best Management Practices
- 2.5.2 Pollutant Removal
- 2.5.3 Outlet Protection

3.0 APPENDIX A – HYDROLOGIC CALCULATIONS

A Extreme Precipitation Table

A-1 Existing Watersheds
- Drainage Diagram
- Area and Soil Listings
- Node Listing – 2-yr
- Node Listing – 10-yr
- 10-yr Storm Summary Hydrographs
- Node Listing – 25-yr
- Node Listing – 50-yr

A-2 Developed Watersheds
- Drainage Diagram
- Area and Soil Listings
- Node Listing – 2-yr
- Node Listing – 10-yr
- 10-yr Storm Summary Hydrographs
- Node Listing – 25-yr
- Node Listing – 50-yr

4.0 APPENDIX B – DESIGN
- B-1 Stormwater Best Management Practices
- B-2 Pollutant Removal
- B-3 Outlet Protection

5.0 APPENDIX C – INSPECTION AND MAINTENANCE
C-1 Stormwater Management System Inspection & Maintenance Plan

6.0 APPENDIX D – WATERSHED PLANS
D-1 Pre-Development Conditions
D-2 Post-Development Conditions

1.0 INTRODUCTION

This is a hydrologic analysis of the subject parcel located on Oak Street in Dover, NH. The 34.53± acre lot is identified as Tax Map N, Lot 13-1. This hydrologic analysis only includes the development area (28.630 ac.). The analysis ends at the large wetlands located on-site and on the abutting property. The site is undeveloped, and the groundcover primarily consists of grassed fields and wooded vegetation. Emerson Brook flows through the southeast section of the parcel, approximately 600' from the proposed development. A majority of the parcel drains to the south/southeast while a small portion of the site along Oak Street drains to the north. All drainage from the site discharges to a large inter-connected wetlands that ultimately drains to Emerson Brook. The site is bounded by the Fresh Creek Road and Old Oak Street right-of-way to the north, developed and undeveloped residential lots to the east, developed residential lots and Gulf Road to the south, and Oak Street to the west.

To effectively analyze the pre development conditions, the 34.53± acre parcel has been subdivided into three (3) watersheds. The three watersheds are identified as discharge points A, B, and C. Watersheds A, B, and C drain from a localized high point located on-site. Watershed A drains to the north westerly corner of the site adjacent to Oak Street. Watershed B drains south and south westerly towards the interconnected wetlands. Watershed C drains south and south easterly towards the interconnected wetlands which ultimately drains to Emerson Brook.

The project proposes ±850 LF of roadway for the construction of seven (7) single family house lots, on-site mail kiosks, drainage improvements and utility construction. The proposed drainage system incorporates two (2) bio-retention basins, and one (1) detention pond. Closed and open drainage systems consisting of pipes, catch basins, swales, and existing drainage swales, are utilized for the conveyance of post condition stormwater. The proposed development incorporates outlet protection at all outlets of drainage structures to mitigate flow velocities. The proposed stormwater drainage structures (catch basins, pipes, basins, outlet structures, energy dissipation, etc.) will be maintained by the project proponent as outlined within the Stormwater Management System Inspection & Maintenance Manual (Stormwater I&M Manual) in Appendix C.

Post development analyzes runoff to the same three (3) discharge points as the pre-development model (Watersheds A, B, and C). Watershed C is further divided into eight (8) subcatchments to model the proposed stormwater drainage system. This provides a direct comparison to the pre-development model. This analysis indicates that the proposed stormwater measures and stormwater management plan will treat and mitigate runoff in accordance with ENV-Wq 1500 of the New Hampshire Code of Administrative Rules and the City of Dover's Subdivision Regulations. The proposed development of the site in conjunction with the implementation of the Stormwater I&M Manual will have minimal 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 Damon E. Burt, Wetland Scientist (CWS) #163 on August 28, 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.

Hydrologic Drainage Class A:

Map Unit Symbol	Slopes	Map Unit Name
WfC	8 to 15 percent	Windsor Loamy Fine Sand

Hydrologic Drainage Class C:

Map Unit Symbol	Slopes	Map Unit Name
BzB	3 to 8 percent	Buxton Silt Loam

ScA	0 to 3 percent	Scantic Silt Loam

Hydrologic Drainage Class D:

Map Unit Symbol	Slopes	Map Unit Name
HcB	3 to 8 percent	Hollis-Charlton Fine Sandy Loams
HcC	8 to 15 percent	Hollis-Charlton Fine Sandy Loams
HdB	3 to 8 percent	Hollis-Charlton Very Rocky Fine Sandy Loams
HdC	8 to 15 percent	Hollis-Charlton Very Rocky Fine Sandy Loams
HdD	8 to 15 percent	Hollis-Charlton Very Rocky Fine Sandy Loams

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 3.16”, 4.76”, 6.02”, and 7.19” rainfall depths respectively.

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 CONDITIONS

For purposes of this analysis, the subject parcel was analyzed with three (3) discharge points (Watershed A, B, and C).

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)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.06	0.5	1.0	1.3	1.6
B	0.52	6.1	12.4	17.7	22.2
C	2.12	11.8	22.9	31.9	39.8

2.3 DEVELOPED CONDITIONS

The post development analyzes runoff to the same three (3) discharge points as the pre-development model (Watershed A, B, and C).

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)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.01	0.1	0.1	0.2	0.2
B	0.52	6.0	12.3	17.5	22.0
C	2.32	10.9	22.3	31.4	39.0

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)**			
Discharge Point	**2-yr**	**2-yr**	**10-yr**	**25-yr**	**50-yr**
A	0.06/**0.01**	0.5/**0.1**	1.0/**0.1**	1.3/**0.2**	1.6/**0.2**
B	0.52/**0.52**	6.1/**6.0**	12.4/**12.3**	17.7/**17.5**	22.2/**22.0**
C	2.12/**2.32**	11.8/**10.9**	22.9/**22.3**	31.9/**31.4**	39.8/**39.0**

2.5 STORMWATER DESIGN

The project incorporates best management practices to mitigate runoff as well as treat and convey stormwater.

2.5.1 Stormwater Best Management Practices

The project incorporates two bio-retention basins to mitigate flow and water quality from the proposed development. Pre-treatment for the bio-retention basins includes a sediment forebay and a grassed pre-treatment swale.

2.5.2 Pollutant Removal

The site stormwater design captures 100% of the proposed onsite impervious area and directs it to the best management practices that provide pollutant removal. The project incorporates the following practices and associated pollutant removal efficacies as identified in the New Hampshire Stormwater Management Manual Volume 1, Appendix E:

	TSS	TN	TP
Bio-Retention Basin:	90%	65%	65%

The pollutant removal meets or exceeds The City of Dover's, Site Review Regulations.

2.5.3 Outlet Protection

BMP's, conveyance structures, and outlet protection have been sized to convey the 25-year, 24 hour storm event. All proposed rip-rap applications 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.

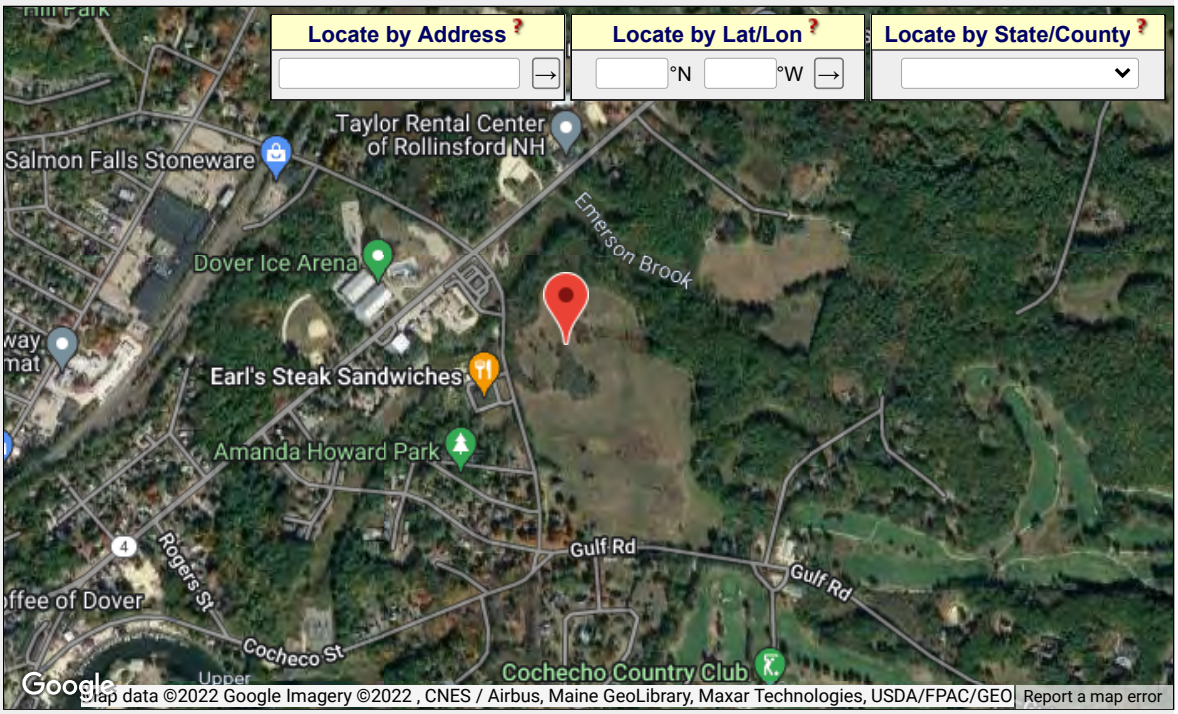
APPENDIX A

HYDROLOGIC CALCULATIONS

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
No	Popup

Submit

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	No
State	New Hampshire
Location	
Longitude	70.857 degrees West
Latitude	43.203 degrees North
Elevation	0 feet
Date/Time	Tue, 26 Jul 2022 12:02:42 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.49	0.66	0.81	1.00	**1yr**	0.70	0.98	1.13	1.58	2.02	2.61	2.88	**1yr**	2.31	2.77	3.17	3.90	4.46	**1yr**
2yr	0.32	0.49	0.61	0.82	1.02	1.20	**2yr**	0.88	1.17	1.39	1.86	2.41	3.16	3.53	**2yr**	2.80	3.39	3.88	4.62	5.26	**2yr**
5yr	0.37	0.57	0.70	0.97	1.23	1.48	**5yr**	1.06	1.45	1.72	2.32	2.96	3.99	4.52	**5yr**	3.53	4.34	4.97	5.83	6.59	**5yr**
10yr	0.41	0.64	0.79	1.10	1.42	1.74	**10yr**	1.23	1.70	2.02	2.73	3.47	4.76	5.45	**10yr**	4.22	5.24	5.99	6.96	7.82	**10yr**
25yr	0.49	0.74	0.92	1.32	1.73	2.15	**25yr**	1.49	2.10	2.51	3.39	4.28	6.02	6.99	**25yr**	5.33	6.72	7.68	8.80	9.82	**25yr**
50yr	0.55	0.83	1.04	1.49	2.01	2.52	**50yr**	1.74	2.47	2.95	3.99	5.01	7.19	8.44	**50yr**	6.36	8.12	9.26	10.51	11.67	**50yr**
100yr	0.62	0.94	1.18	1.71	2.34	2.97	**100yr**	2.02	2.90	3.48	4.71	5.88	8.59	10.20	**100yr**	7.60	9.81	11.18	12.56	13.87	**100yr**
200yr	0.71	1.06	1.35	1.95	2.72	3.49	**200yr**	2.35	3.42	4.10	5.56	6.89	10.26	12.33	**200yr**	9.08	11.85	13.50	15.02	16.49	**200yr**
500yr	0.84	1.25	1.61	2.34	3.33	4.34	**500yr**	2.88	4.24	5.09	6.93	8.52	12.99	15.84	**500yr**	11.50	15.23	17.32	19.03	20.75	**500yr**

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	0.60	0.74	0.89	**1yr**	0.64	0.87	0.92	1.26	1.58	2.18	2.44	**1yr**	1.93	2.35	2.86	3.37	4.02	**1yr**
2yr	0.31	0.49	0.60	0.81	1.00	1.18	**2yr**	0.86	1.16	1.36	1.83	2.35	3.05	3.41	**2yr**	2.70	3.28	3.76	4.48	5.05	**2yr**
5yr	0.35	0.54	0.67	0.91	1.16	1.40	**5yr**	1.00	1.37	1.61	2.14	2.77	3.72	4.13	**5yr**	3.29	3.97	4.64	5.42	6.12	**5yr**
10yr	0.38	0.59	0.73	1.02	1.31	1.60	**10yr**	1.13	1.57	1.81	2.43	3.12	4.27	4.79	**10yr**	3.78	4.60	5.33	6.24	7.01	**10yr**
25yr	0.44	0.66	0.83	1.18	1.55	1.91	**25yr**	1.34	1.87	2.11	2.83	3.63	4.88	5.78	**25yr**	4.32	5.56	6.49	7.53	8.40	**25yr**
50yr	0.48	0.73	0.91	1.31	1.76	2.19	**50yr**	1.52	2.14	2.35	3.17	4.07	5.55	6.65	**50yr**	4.91	6.40	7.53	8.67	9.63	**50yr**
100yr	0.54	0.81	1.01	1.47	2.01	2.51	**100yr**	1.73	2.45	2.63	3.55	4.54	6.30	7.65	**100yr**	5.57	7.36	8.73	9.99	11.02	**100yr**
200yr	0.59	0.89	1.13	1.64	2.29	2.87	**200yr**	1.97	2.81	2.93	3.97	5.06	7.13	8.80	**200yr**	6.31	8.47	10.10	11.52	12.63	**200yr**
500yr	0.69	1.03	1.32	1.92	2.73	3.45	**500yr**	2.36	3.38	3.39	4.58	5.85	8.39	10.58	**500yr**	7.43	10.17	12.24	13.92	15.08	**500yr**

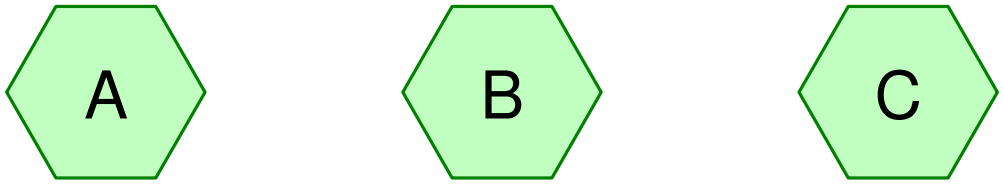
Upper Confidence Limits

	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	1.24	1.74	2.21	2.90	3.11	**1yr**	2.57	2.99	3.47	4.26	4.85	**1yr**
2yr	0.33	0.51	0.63	0.85	1.04	1.25	**2yr**	0.90	1.22	1.48	1.96	2.51	3.32	3.66	**2yr**	2.94	3.52	4.03	4.78	5.49	**2yr**
5yr	0.39	0.61	0.75	1.03	1.31	1.59	**5yr**	1.13	1.55	1.86	2.50	3.21	4.26	4.90	**5yr**	3.77	4.71	5.31	6.28	7.04	**5yr**
10yr	0.46	0.70	0.87	1.22	1.58	1.93	**10yr**	1.36	1.88	2.24	3.05	3.87	5.23	6.13	**10yr**	4.63	5.89	6.75	7.71	8.59	**10yr**
25yr	0.56	0.85	1.06	1.51	1.99	2.49	**25yr**	1.71	2.43	2.89	3.97	4.98	7.15	8.25	**25yr**	6.33	7.93	9.07	10.16	11.20	**25yr**
50yr	0.65	0.98	1.22	1.76	2.37	3.01	**50yr**	2.05	2.94	3.51	4.84	6.06	8.84	10.35	**50yr**	7.82	9.95	11.37	12.50	13.70	**50yr**
100yr	0.75	1.14	1.43	2.06	2.83	3.64	**100yr**	2.44	3.56	4.26	5.93	7.38	10.93	12.99	**100yr**	9.67	12.49	14.24	15.41	16.76	**100yr**
200yr	0.88	1.32	1.67	2.42	3.37	4.42	**200yr**	2.91	4.32	5.18	7.26	8.97	13.55	16.31	**200yr**	11.99	15.69	17.87	18.99	20.53	**200yr**
500yr	1.07	1.60	2.06	2.99	4.25	5.68	**500yr**	3.67	5.55	6.70	9.50	11.66	18.01	22.06	**500yr**	15.94	21.22	24.13	25.05	26.87	**500yr**

Powered by ACIS Northeast Regional Climate Center

A – 1

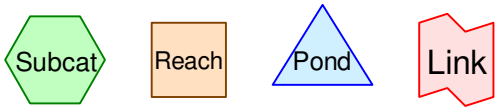
EXISTING WATERSHEDS



A

B

C



Routing Diagram for 21074 - Pre
Prepared by {enter your company name here}
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.656	39	>75% Grass cover, Good, HSG A (B, C)
3.559	74	>75% Grass cover, Good, HSG C (B, C)
14.155	80	>75% Grass cover, Good, HSG D (A, B, C)
0.015	96	Gravel surface, HSG D (A)
0.373	98	Paved parking, HSG D (A, B, C)
0.005	30	Woods, Good, HSG A (B)
0.685	70	Woods, Good, HSG C (C)
8.182	77	Woods, Good, HSG D (A, B, C)
28.630	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.661	HSG A	B, C
0.000	HSG B	
4.244	HSG C	B, C
22.725	HSG D	A, B, C
0.000	Other	
28.630		**TOTAL AREA**

A – 1

NODE LISTING – 2-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=23,582 sf 12.14% Impervious Runoff Depth=1.37"
Flow Length=388' Tc=16.0 min CN=80 Runoff=0.5 cfs 0.06 af

Subcatchment B: B Runoff Area=286,514 sf 3.29% Impervious Runoff Depth=0.96"
Flow Length=629' Tc=7.5 min CN=73 Runoff=6.1 cfs 0.52 af

Subcatchment C: C Runoff Area=937,040 sf 0.42% Impervious Runoff Depth=1.18"
Flow Length=1,646' Tc=37.5 min CN=77 Runoff=11.8 cfs 2.12 af

Total Runoff Area = 28.630 ac Runoff Volume = 2.71 af Average Runoff Depth = 1.13"
98.70% Pervious = 28.258 ac 1.30% Impervious = 0.373 ac

A – 1

NODE LISTING – 10-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=23,582 sf 12.14% Impervious Runoff Depth=2.68"
Flow Length=388' Tc=16.0 min CN=80 Runoff=1.0 cfs 0.12 af

Subcatchment B: B Runoff Area=286,514 sf 3.29% Impervious Runoff Depth=2.09"
Flow Length=629' Tc=7.5 min CN=73 Runoff=12.4 cfs 1.15 af

Subcatchment C: C Runoff Area=937,040 sf 0.42% Impervious Runoff Depth=2.42"
Flow Length=1,646' Tc=37.5 min CN=77 Runoff=22.9 cfs 4.34 af

Total Runoff Area = 28.630 ac Runoff Volume = 5.61 af Average Runoff Depth = 2.35"
98.70% Pervious = 28.258 ac 1.30% Impervious = 0.373 ac

A – 1

10-YR STORM SUMMARY

Summary for Subcatchment A: A

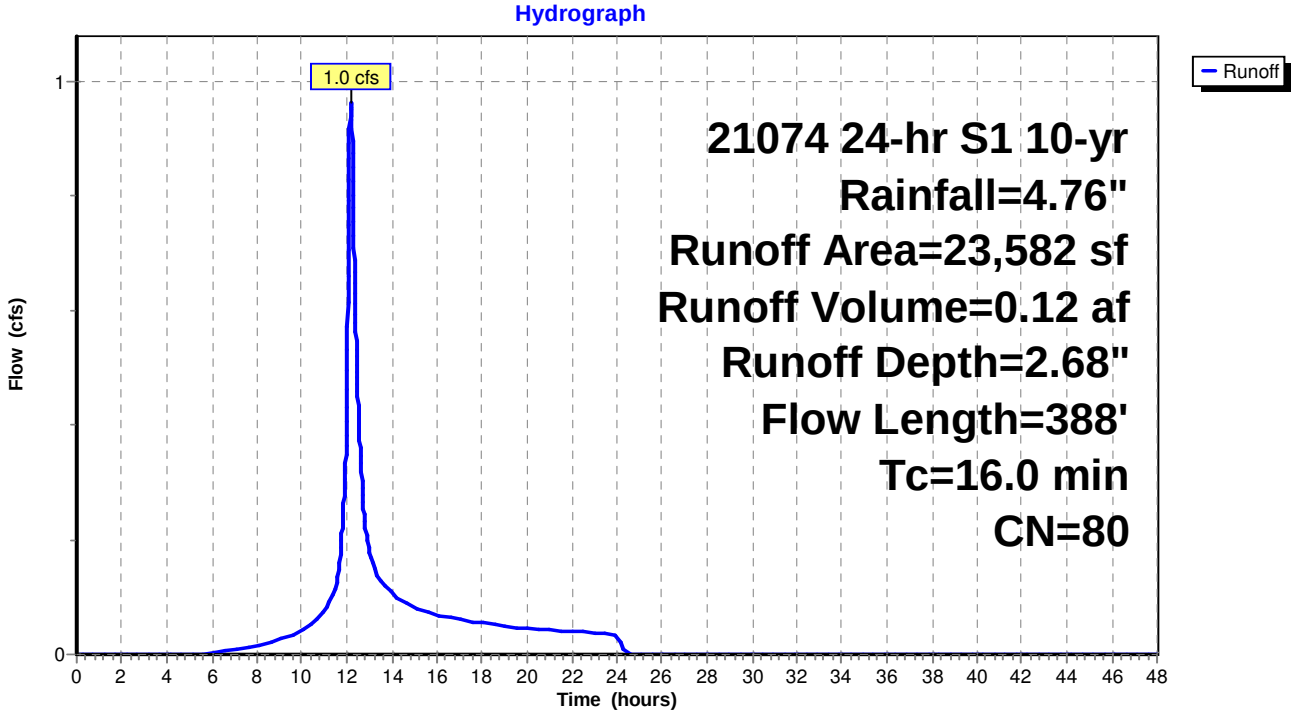
Runoff = 1.0 cfs @ 12.18 hrs, Volume= 0.12 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
18,969	77	Woods, Good, HSG D
1,115	80	>75% Grass cover, Good, HSG D
634	96	Gravel surface, HSG D
2,864	98	Paved parking, HSG D
23,582	80	Weighted Average
20,718		87.86% Pervious Area
2,864		12.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	60	0.0330	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.6	94	0.2340	2.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
7.4	234	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.0	388	Total			

Subcatchment A: A



Summary for Subcatchment B: B

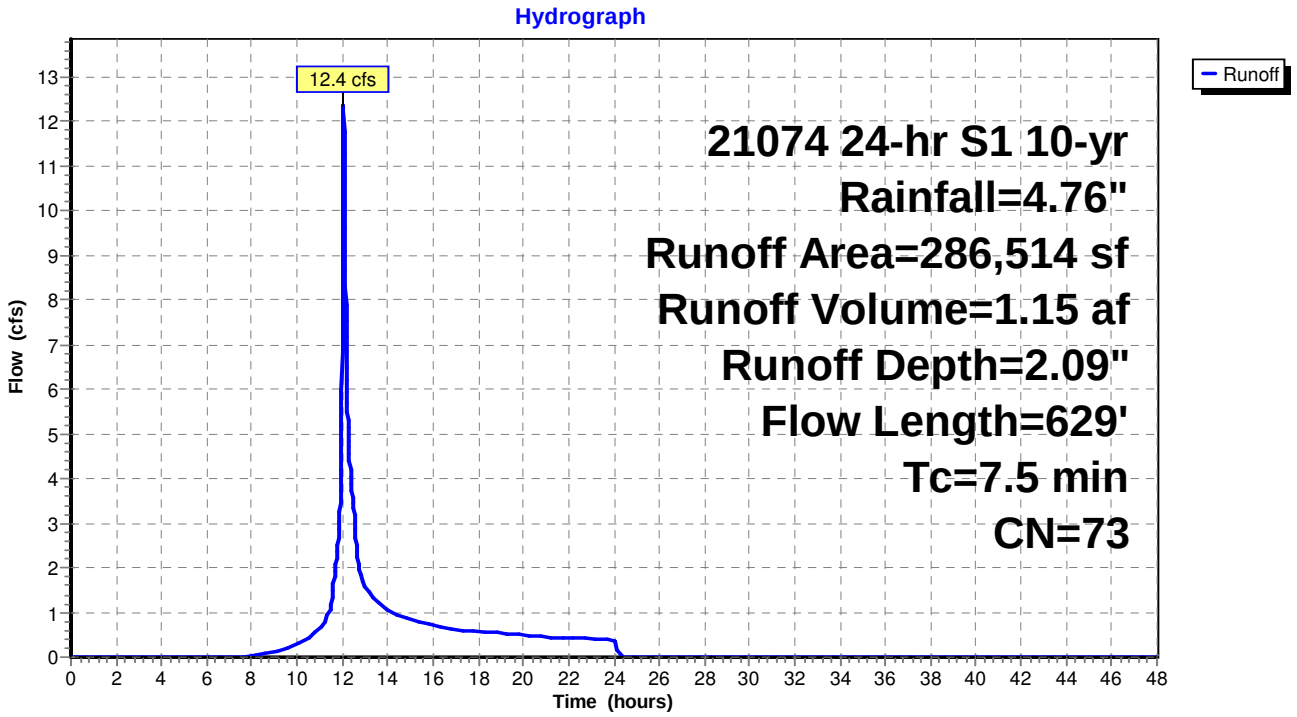
Runoff = 12.4 cfs @ 12.06 hrs, Volume= 1.15 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
233	30	Woods, Good, HSG A
47,498	39	>75% Grass cover, Good, HSG A
837	74	>75% Grass cover, Good, HSG C
64,775	77	Woods, Good, HSG D
163,743	80	>75% Grass cover, Good, HSG D
9,428	98	Paved parking, HSG D
286,514	73	Weighted Average
277,086		96.71% Pervious Area
9,428		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	48	0.4170	0.33		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
2.3	21	0.0950	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
1.5	256	0.1560	2.76		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	304	0.0657	3.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.5	629	Total			

Subcatchment B: B



Summary for Subcatchment C: C

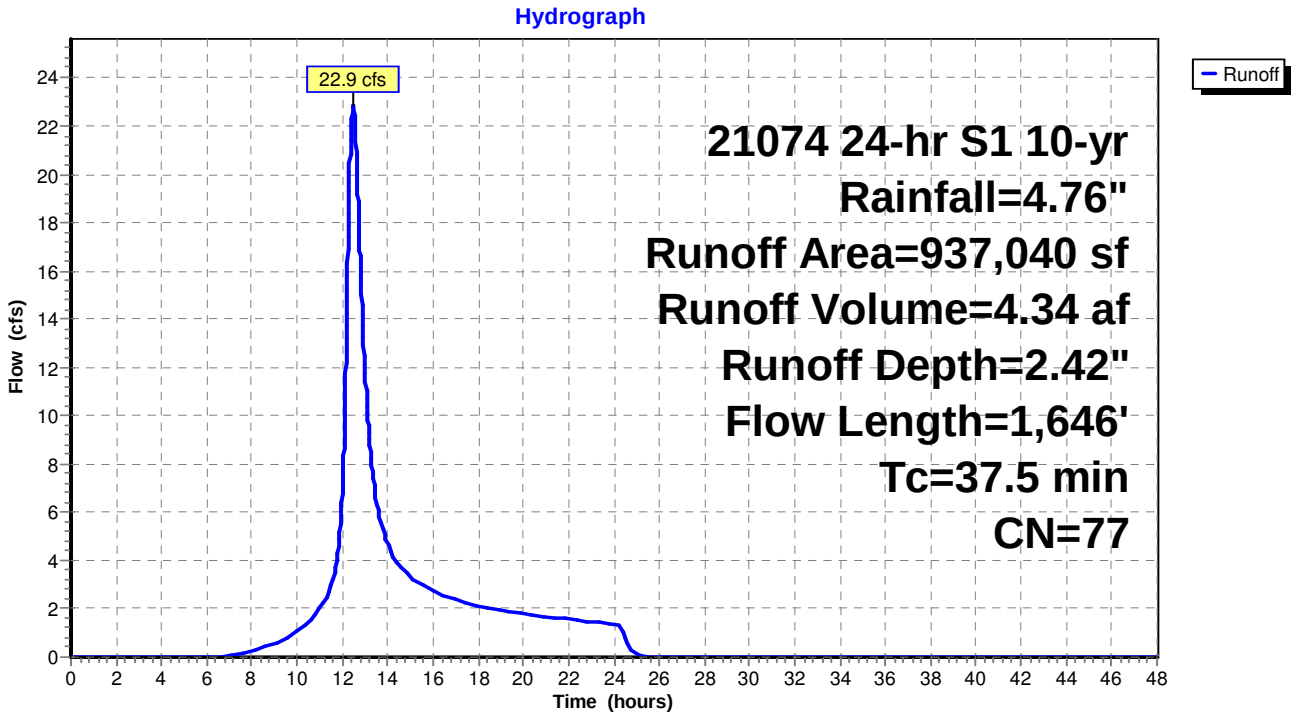
Runoff = 22.9 cfs @ 12.46 hrs, Volume= 4.34 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
24,637	39	>75% Grass cover, Good, HSG A
29,844	70	Woods, Good, HSG C
154,195	74	>75% Grass cover, Good, HSG C
272,680	77	Woods, Good, HSG D
451,737	80	>75% Grass cover, Good, HSG D
3,947	98	Paved parking, HSG D
937,040	77	Weighted Average
933,093		99.58% Pervious Area
3,947		0.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	55	0.0360	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
4.3	45	0.0880	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
3.1	430	0.1070	2.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	180	0.0550	3.52		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.1	308	0.0324	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.9	628	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
37.5	1,646	Total			

Subcatchment C: C



A – 1

NODE LISTING – 25-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=23,582 sf 12.14% Impervious Runoff Depth=3.80"
Flow Length=388' Tc=16.0 min CN=80 Runoff=1.3 cfs 0.17 af

Subcatchment B: B Runoff Area=286,514 sf 3.29% Impervious Runoff Depth=3.11"
Flow Length=629' Tc=7.5 min CN=73 Runoff=17.7 cfs 1.70 af

Subcatchment C: C Runoff Area=937,040 sf 0.42% Impervious Runoff Depth=3.50"
Flow Length=1,646' Tc=37.5 min CN=77 Runoff=31.9 cfs 6.27 af

Total Runoff Area = 28.630 ac Runoff Volume = 8.14 af Average Runoff Depth = 3.41"
98.70% Pervious = 28.258 ac 1.30% Impervious = 0.373 ac

A – 1

NODE LISTING – 50-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=23,582 sf 12.14% Impervious Runoff Depth=4.87"
Flow Length=388' Tc=16.0 min CN=80 Runoff=1.6 cfs 0.22 af

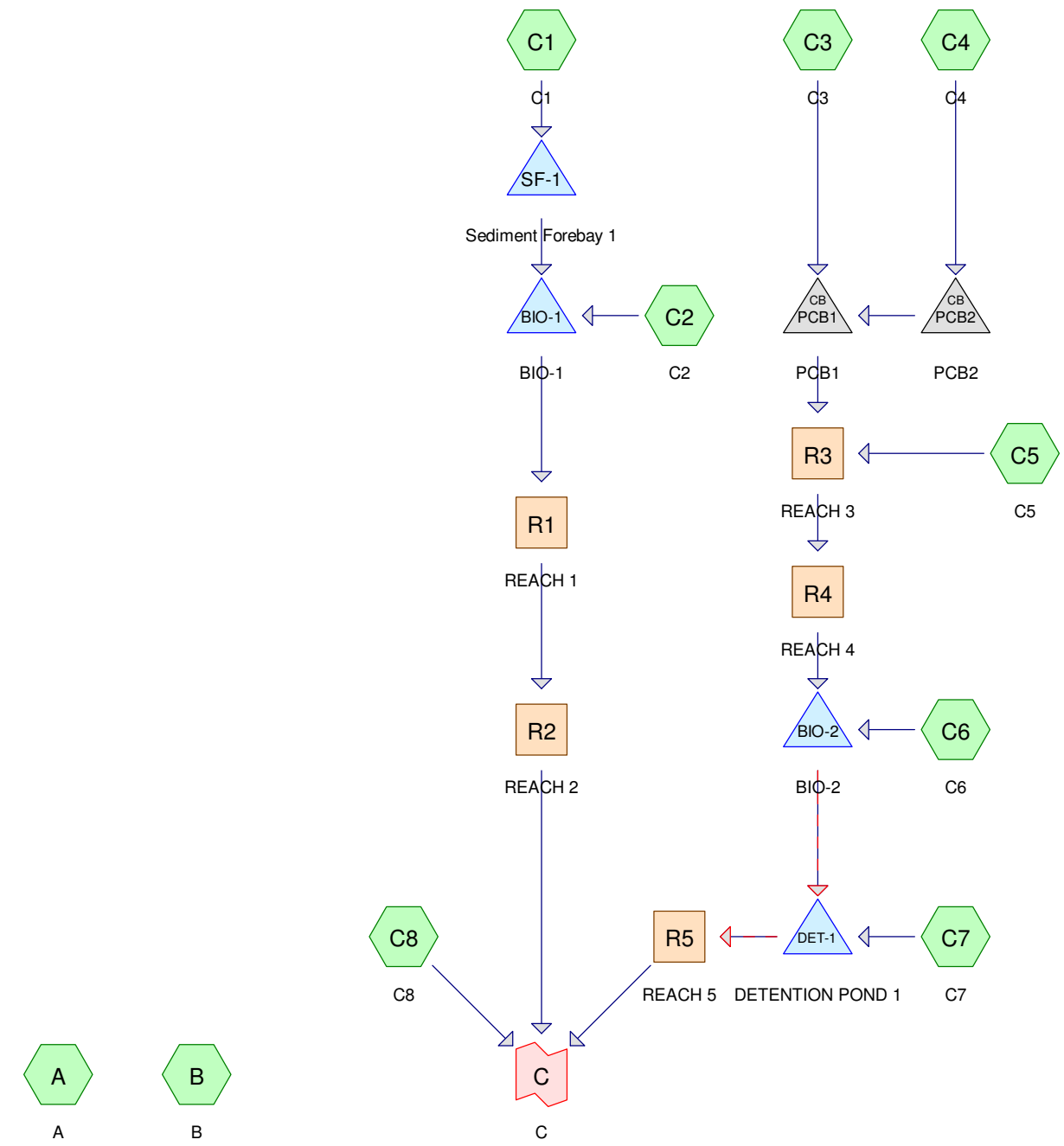
Subcatchment B: B Runoff Area=286,514 sf 3.29% Impervious Runoff Depth=4.10"
Flow Length=629' Tc=7.5 min CN=73 Runoff=22.2 cfs 2.25 af

Subcatchment C: C Runoff Area=937,040 sf 0.42% Impervious Runoff Depth=4.54"
Flow Length=1,646' Tc=37.5 min CN=77 Runoff=39.8 cfs 8.13 af

Total Runoff Area = 28.630 ac Runoff Volume = 10.60 af Average Runoff Depth = 4.44"
98.70% Pervious = 28.258 ac 1.30% Impervious = 0.373 ac

A – 2

DEVELOPED WATERSHEDS



Routing Diagram for 21074 - Post
Prepared by {enter your company name here}
HydroCAD® 10.10-5a s/n 03240 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.656	39	>75% Grass cover, Good, HSG A (B, C8)
3.559	74	>75% Grass cover, Good, HSG C (B, C8)
14.619	80	>75% Grass cover, Good, HSG D (A, B, C1, C2, C3, C4, C5, C6, C7, C8)
1.170	98	Paved parking, HSG D (A, B, C1, C3, C4, C5)
0.377	98	Roofs, HSG D (C3, C4, C5)
0.005	30	Woods, Good, HSG A (B)
0.685	70	Woods, Good, HSG C (C8)
6.558	77	Woods, Good, HSG D (A, B, C5, C8)
28.630	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.661	HSG A	B, C8
0.000	HSG B	
4.244	HSG C	B, C8
22.725	HSG D	A, B, C1, C2, C3, C4, C5, C6, C7, C8
0.000	Other	
28.630		**TOTAL AREA**

A – 2

NODE LISTING – 2-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=1,855 sf 50.40% Impervious Runoff Depth=1.96"
Flow Length=38' Slope=0.1180 '/' Tc=6.0 min CN=88 Runoff=0.1 cfs 0.01 af

Subcatchment B: B Runoff Area=284,057 sf 3.32% Impervious Runoff Depth=0.96"
Flow Length=629' Tc=7.5 min CN=73 Runoff=6.0 cfs 0.52 af

Subcatchment C1: C1 Runoff Area=52,134 sf 31.65% Impervious Runoff Depth=1.80"
Flow Length=642' Tc=13.1 min CN=86 Runoff=1.8 cfs 0.18 af

Subcatchment C2: C2 Runoff Area=2,662 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=9' Slope=0.3300 '/' Tc=6.0 min CN=80 Runoff=0.1 cfs 0.01 af

Subcatchment C3: C3 Runoff Area=26,456 sf 28.44% Impervious Runoff Depth=1.72"
Flow Length=242' Tc=7.8 min CN=85 Runoff=1.1 cfs 0.09 af

Subcatchment C4: C4 Runoff Area=33,666 sf 39.92% Impervious Runoff Depth=1.88"
Flow Length=321' Tc=9.1 min CN=87 Runoff=1.4 cfs 0.12 af

Subcatchment C5: C5 Runoff Area=126,038 sf 15.54% Impervious Runoff Depth=1.51"
Flow Length=636' Tc=9.7 min CN=82 Runoff=4.1 cfs 0.36 af

Subcatchment C6: C6 Runoff Area=15,050 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=206' Tc=7.3 min CN=80 Runoff=0.5 cfs 0.04 af

Subcatchment C7: C7 Runoff Area=12,255 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=94' Slope=0.1530 '/' Tc=6.8 min CN=80 Runoff=0.4 cfs 0.03 af

Subcatchment C8: C8 Runoff Area=692,963 sf 0.00% Impervious Runoff Depth=1.12"
Flow Length=1,430' Tc=33.4 min CN=76 Runoff=8.8 cfs 1.49 af

Reach R1: REACH 1 Avg. Flow Depth=0.06' Max Vel=2.14 fps Inflow=0.6 cfs 0.18 af
n=0.022 L=373.0' S=0.0429 '/' Capacity=485.5 cfs Outflow=0.6 cfs 0.18 af

Reach R2: REACH 2 Avg. Flow Depth=0.10' Max Vel=2.16 fps Inflow=0.6 cfs 0.18 af
n=0.022 L=197.0' S=0.0401 '/' Capacity=429.5 cfs Outflow=0.6 cfs 0.18 af

Reach R3: REACH 3 Avg. Flow Depth=0.63' Max Vel=5.32 fps Inflow=6.5 cfs 0.57 af
n=0.022 L=459.0' S=0.0309 '/' Capacity=63.9 cfs Outflow=6.4 cfs 0.57 af

Reach R4: REACH 4 Avg. Flow Depth=0.78' Max Vel=1.27 fps Inflow=6.4 cfs 0.57 af
n=0.150 L=65.0' S=0.0362 '/' Capacity=23.1 cfs Outflow=6.3 cfs 0.57 af

Reach R5: REACH 5 Avg. Flow Depth=0.25' Max Vel=0.78 fps Inflow=1.9 cfs 0.64 af
n=0.150 L=15.0' S=0.0667 '/' Capacity=8.2 cfs Outflow=1.9 cfs 0.64 af

Pond BIO-1: BIO-1 Peak Elev=119.53' Storage=2,088 cf Inflow=1.8 cfs 0.19 af
Outflow=0.6 cfs 0.18 af

Pond BIO-2: BIO-2 Peak Elev=99.57' Storage=5,761 cf Inflow=6.7 cfs 0.61 af
Primary=0.9 cfs 0.55 af Secondary=2.7 cfs 0.06 af Outflow=3.6 cfs 0.61 af

Pond DET-1: DETENTION POND 1 Peak Elev=96.36' Storage=2,567 cf Inflow=3.7 cfs 0.64 af
Primary=1.9 cfs 0.64 af Secondary=0.0 cfs 0.00 af Outflow=1.9 cfs 0.64 af

Pond PCB1: PCB1 Peak Elev=125.53' Inflow=2.5 cfs 0.21 af
18.0" Round Culvert n=0.012 L=170.0' S=0.0459 '/' Outflow=2.5 cfs 0.21 af

Pond PCB2: PCB2 Peak Elev=133.44' Inflow=1.4 cfs 0.12 af
18.0" Round Culvert n=0.012 L=141.0' S=0.0567 '/' Outflow=1.4 cfs 0.12 af

Pond SF-1: Sediment Forebay 1 Peak Elev=121.21' Storage=229 cf Inflow=1.8 cfs 0.18 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0375 '/' Outflow=1.7 cfs 0.18 af

Link C: C Inflow=10.9 cfs 2.32 af
Primary=10.9 cfs 2.32 af

Total Runoff Area = 28.630 ac Runoff Volume = 2.85 af Average Runoff Depth = 1.19"
94.60% Pervious = 27.083 ac 5.40% Impervious = 1.547 ac

A – 2

NODE LISTING – 10-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=1,855 sf 50.40% Impervious Runoff Depth=3.44"
Flow Length=38' Slope=0.1180 '/' Tc=6.0 min CN=88 Runoff=0.1 cfs 0.01 af

Subcatchment B: B Runoff Area=284,057 sf 3.32% Impervious Runoff Depth=2.09"
Flow Length=629' Tc=7.5 min CN=73 Runoff=12.3 cfs 1.14 af

Subcatchment C1: C1 Runoff Area=52,134 sf 31.65% Impervious Runoff Depth=3.24"
Flow Length=642' Tc=13.1 min CN=86 Runoff=2.8 cfs 0.32 af

Subcatchment C2: C2 Runoff Area=2,662 sf 0.00% Impervious Runoff Depth=2.68"
Flow Length=9' Slope=0.3300 '/' Tc=6.0 min CN=80 Runoff=0.2 cfs 0.01 af

Subcatchment C3: C3 Runoff Area=26,456 sf 28.44% Impervious Runoff Depth=3.15"
Flow Length=242' Tc=7.8 min CN=85 Runoff=1.7 cfs 0.16 af

Subcatchment C4: C4 Runoff Area=33,666 sf 39.92% Impervious Runoff Depth=3.34"
Flow Length=321' Tc=9.1 min CN=87 Runoff=2.2 cfs 0.22 af

Subcatchment C5: C5 Runoff Area=126,038 sf 15.54% Impervious Runoff Depth=2.87"
Flow Length=636' Tc=9.7 min CN=82 Runoff=6.9 cfs 0.69 af

Subcatchment C6: C6 Runoff Area=15,050 sf 0.00% Impervious Runoff Depth=2.68"
Flow Length=206' Tc=7.3 min CN=80 Runoff=0.9 cfs 0.08 af

Subcatchment C7: C7 Runoff Area=12,255 sf 0.00% Impervious Runoff Depth=2.68"
Flow Length=94' Slope=0.1530 '/' Tc=6.8 min CN=80 Runoff=0.7 cfs 0.06 af

Subcatchment C8: C8 Runoff Area=692,963 sf 0.00% Impervious Runoff Depth=2.34"
Flow Length=1,430' Tc=33.4 min CN=76 Runoff=17.3 cfs 3.10 af

Reach R1: REACH 1 Avg. Flow Depth=0.15' Max Vel=3.49 fps Inflow=2.6 cfs 0.33 af
n=0.022 L=373.0' S=0.0429 '/' Capacity=485.5 cfs Outflow=2.5 cfs 0.33 af

Reach R2: REACH 2 Avg. Flow Depth=0.18' Max Vel=3.34 fps Inflow=2.5 cfs 0.33 af
n=0.022 L=197.0' S=0.0401 '/' Capacity=429.5 cfs Outflow=2.5 cfs 0.33 af

Reach R3: REACH 3 Avg. Flow Depth=0.76' Max Vel=6.02 fps Inflow=10.6 cfs 1.07 af
n=0.022 L=459.0' S=0.0309 '/' Capacity=63.9 cfs Outflow=10.5 cfs 1.07 af

Reach R4: REACH 4 Avg. Flow Depth=1.01' Max Vel=1.46 fps Inflow=10.5 cfs 1.07 af
n=0.150 L=65.0' S=0.0362 '/' Capacity=23.1 cfs Outflow=10.4 cfs 1.07 af

Reach R5: REACH 5 Avg. Flow Depth=0.34' Max Vel=0.95 fps Inflow=3.5 cfs 1.21 af
n=0.150 L=15.0' S=0.0667 '/' Capacity=8.2 cfs Outflow=3.5 cfs 1.21 af

Pond BIO-1: BIO-1 Peak Elev=119.62' Storage=2,238 cf Inflow=2.7 cfs 0.34 af
Outflow=2.6 cfs 0.33 af

Pond BIO-2: BIO-2 Peak Elev=99.67' Storage=6,158 cf Inflow=11.1 cfs 1.14 af
Primary=0.9 cfs 0.85 af Secondary=10.0 cfs 0.29 af Outflow=10.9 cfs 1.14 af

Pond DET-1: DETENTION POND 1 Peak Elev=97.73' Storage=7,840 cf Inflow=11.5 cfs 1.21 af
Primary=3.5 cfs 1.21 af Secondary=0.0 cfs 0.00 af Outflow=3.5 cfs 1.21 af

Pond PCB1: PCB1 Peak Elev=125.74' Inflow=3.8 cfs 0.37 af
18.0" Round Culvert n=0.012 L=170.0' S=0.0459 '/' Outflow=3.8 cfs 0.37 af

Pond PCB2: PCB2 Peak Elev=133.58' Inflow=2.2 cfs 0.22 af
18.0" Round Culvert n=0.012 L=141.0' S=0.0567 '/' Outflow=2.2 cfs 0.22 af

Pond SF-1: Sediment Forebay 1 Peak Elev=121.49' Storage=347 cf Inflow=2.8 cfs 0.32 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0375 '/' Outflow=2.7 cfs 0.32 af

Link C: C Inflow=22.3 cfs 4.64 af
Primary=22.3 cfs 4.64 af

Total Runoff Area = 28.630 ac Runoff Volume = 5.79 af Average Runoff Depth = 2.43"
94.60% Pervious = 27.083 ac 5.40% Impervious = 1.547 ac

A – 2

10-YR STORM SUMMARY

Summary for Subcatchment A: A

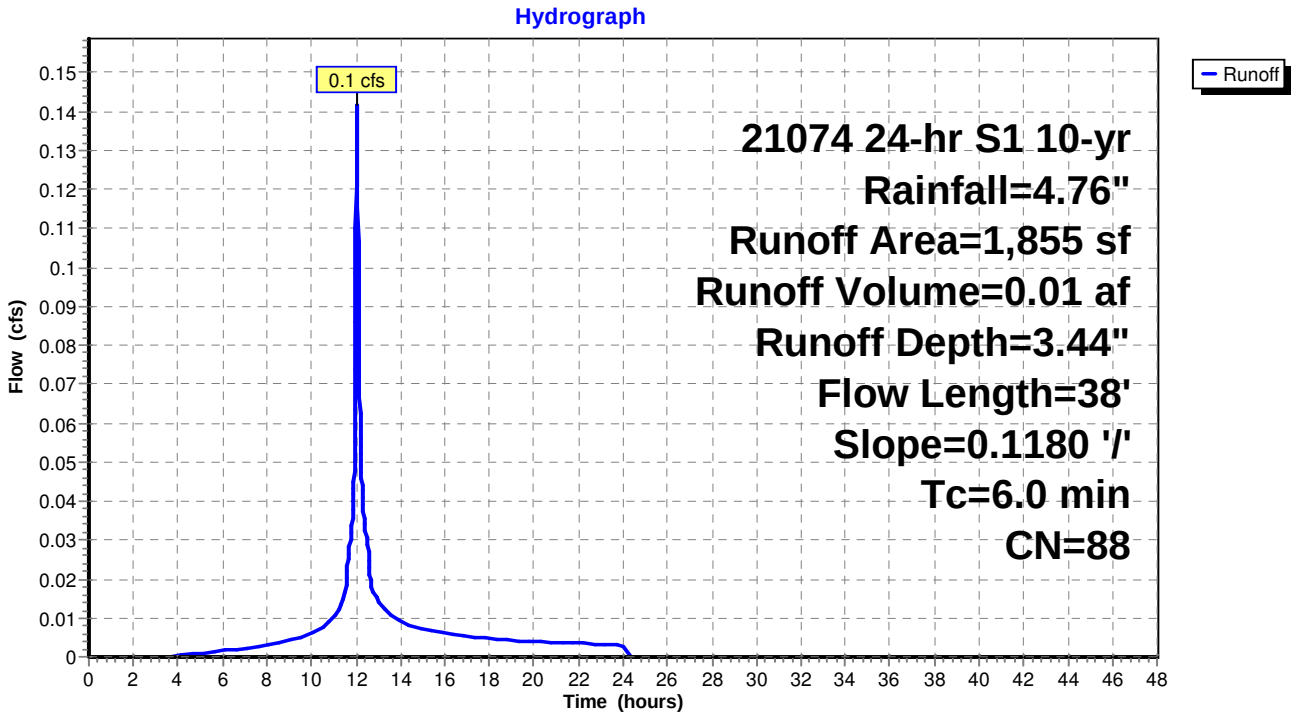
Runoff = 0.1 cfs @ 12.04 hrs, Volume= 0.01 af, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
690	77	Woods, Good, HSG D
230	80	>75% Grass cover, Good, HSG D
935	98	Paved parking, HSG D
1,855	88	Weighted Average
920		49.60% Pervious Area
935		50.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	4	0.1180	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
4.6	34	0.1180	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.01"
5.2	38	Total, Increased to minimum Tc = 6.0 min			

Subcatchment A: A



Summary for Subcatchment B: B

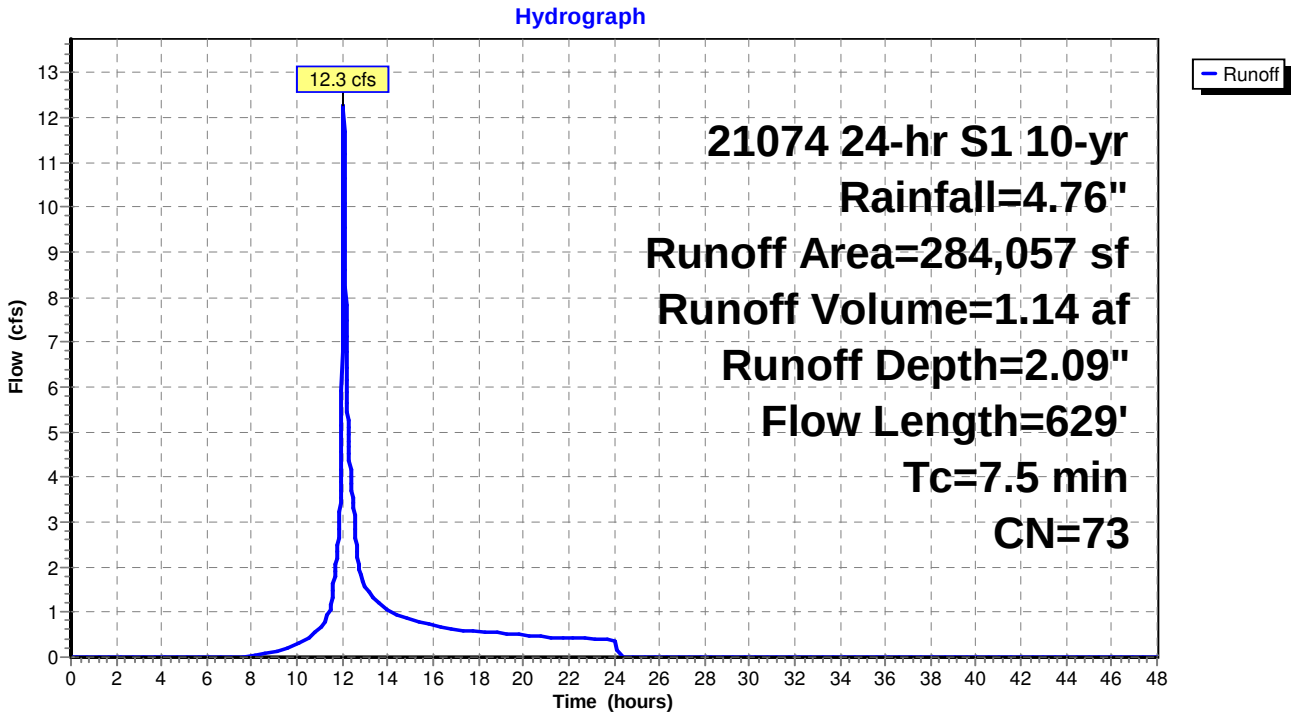
Runoff = 12.3 cfs @ 12.06 hrs, Volume= 1.14 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
233	30	Woods, Good, HSG A
47,498	39	>75% Grass cover, Good, HSG A
837	74	>75% Grass cover, Good, HSG C
54,408	77	Woods, Good, HSG D
171,653	80	>75% Grass cover, Good, HSG D
9,428	98	Paved parking, HSG D
284,057	73	Weighted Average
274,629		96.68% Pervious Area
9,428		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	48	0.4170	0.33		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
2.3	21	0.0950	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
1.5	256	0.1560	2.76		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	304	0.0657	3.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.5	629	Total			

Subcatchment B: B



Summary for Subcatchment C1: C1

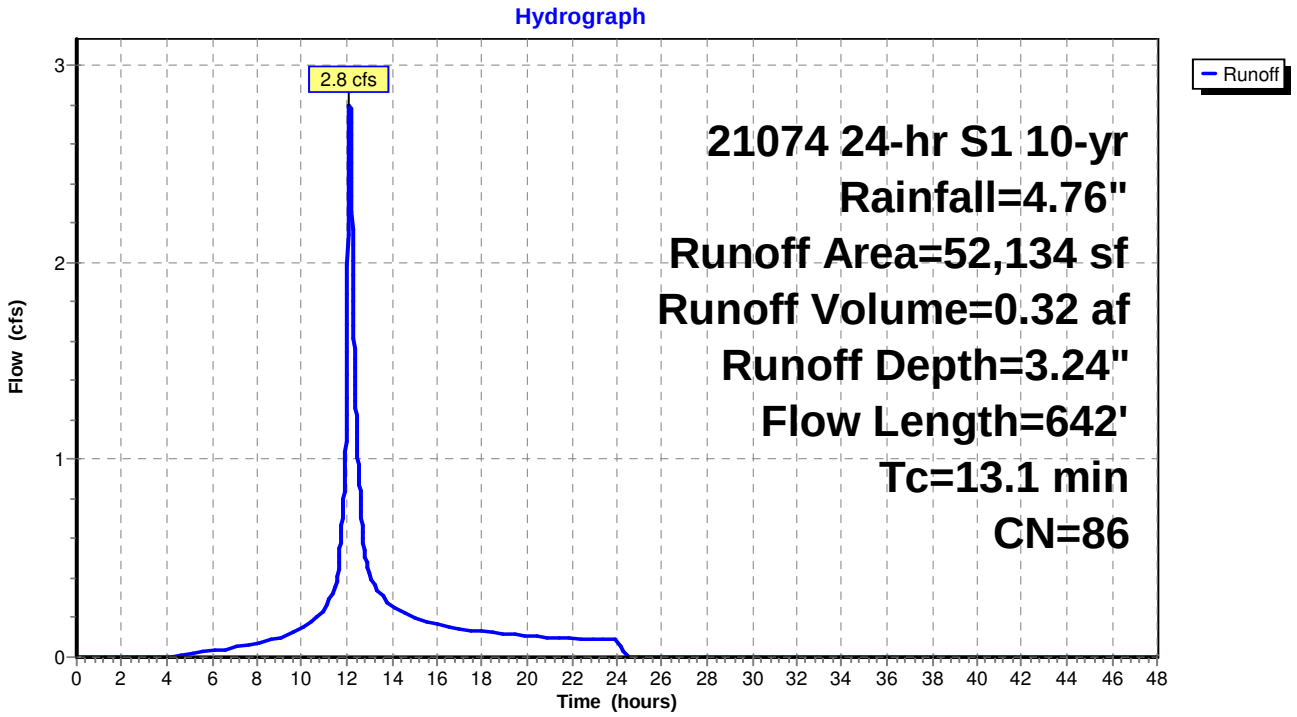
Runoff = 2.8 cfs @ 12.13 hrs, Volume= 0.32 af, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
35,635	80	>75% Grass cover, Good, HSG D
16,499	98	Paved parking, HSG D
52,134	86	Weighted Average
35,635		68.35% Pervious Area
16,499		31.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	60	0.0330	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.4	57	0.2340	2.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.0	12	0.3300	4.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	195	0.0205	1.00		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	312	0.0304	3.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.0	6	0.1600	2.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.1	642	Total			

Subcatchment C1: C1



Summary for Subcatchment C2: C2

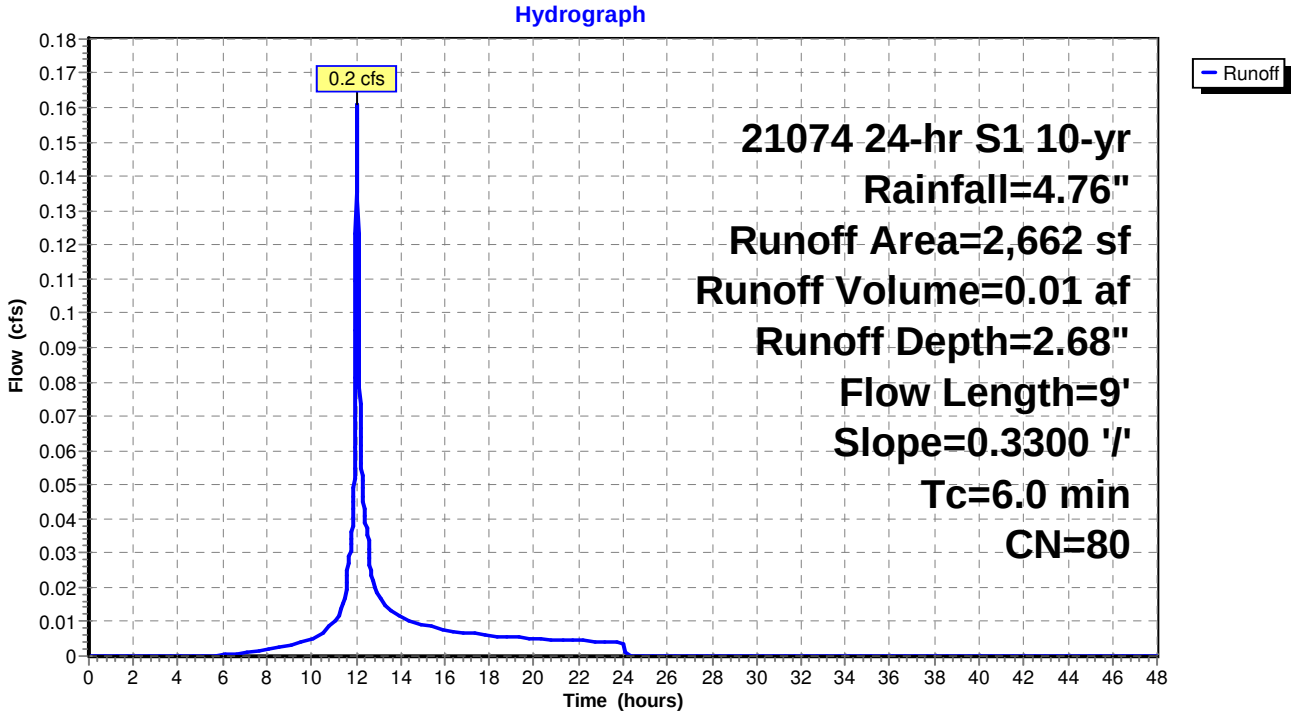
Runoff = 0.2 cfs @ 12.04 hrs, Volume= 0.01 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
2,662	80	>75% Grass cover, Good, HSG D
2,662		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	9	0.3300	0.21		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.7	9	Total, Increased to minimum Tc = 6.0 min			

Subcatchment C2: C2



Summary for Subcatchment C3: C3

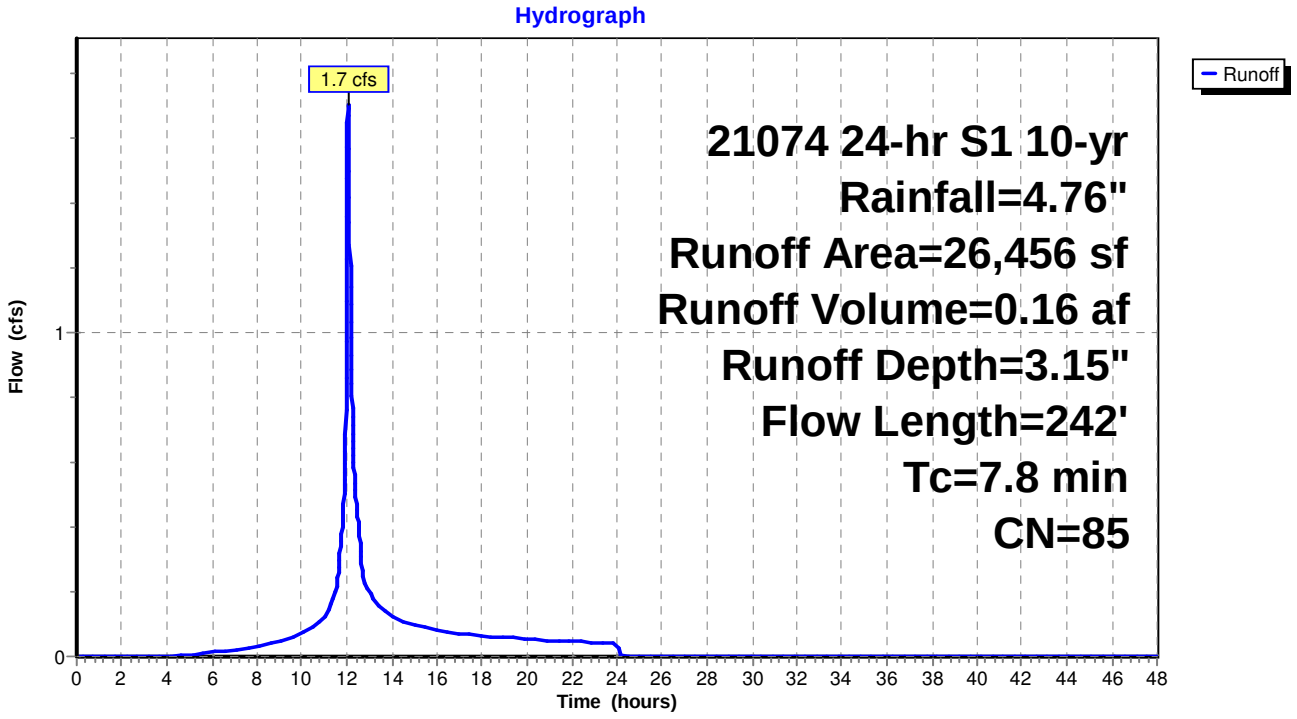
Runoff = 1.7 cfs @ 12.06 hrs, Volume= 0.16 af, Depth= 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
18,932	80	>75% Grass cover, Good, HSG D
4,786	98	Paved parking, HSG D
2,738	98	Roofs, HSG D
26,456	85	Weighted Average
18,932		71.56% Pervious Area
7,524		28.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	100	0.1270	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.6	92	0.1270	2.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	50	0.0560	4.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.8	242	Total			

Subcatchment C3: C3



Summary for Subcatchment C4: C4

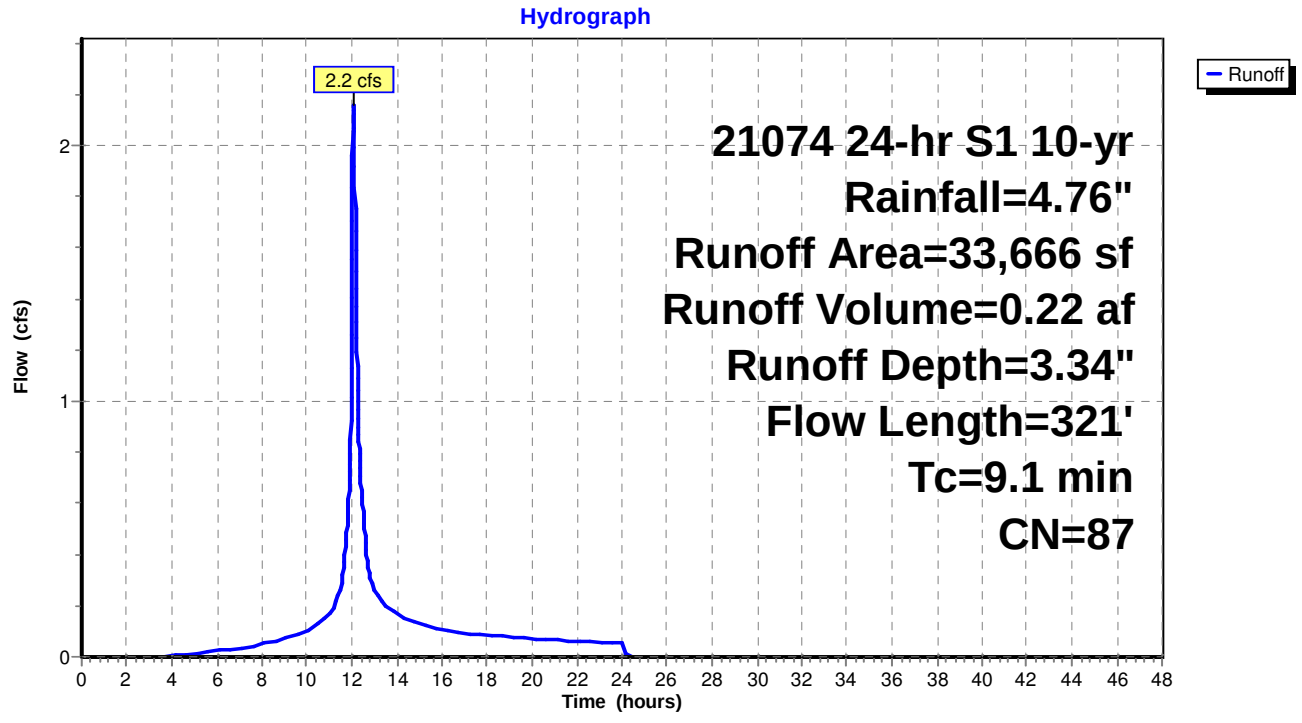
Runoff = 2.2 cfs @ 12.07 hrs, Volume= 0.22 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
20,226	80	>75% Grass cover, Good, HSG D
10,702	98	Paved parking, HSG D
2,738	98	Roofs, HSG D
33,666	87	Weighted Average
20,226		60.08% Pervious Area
13,440		39.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	63	0.0330	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.8	258	0.0710	5.41		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.1	321	Total			

Subcatchment C4: C4



Summary for Subcatchment C5: C5

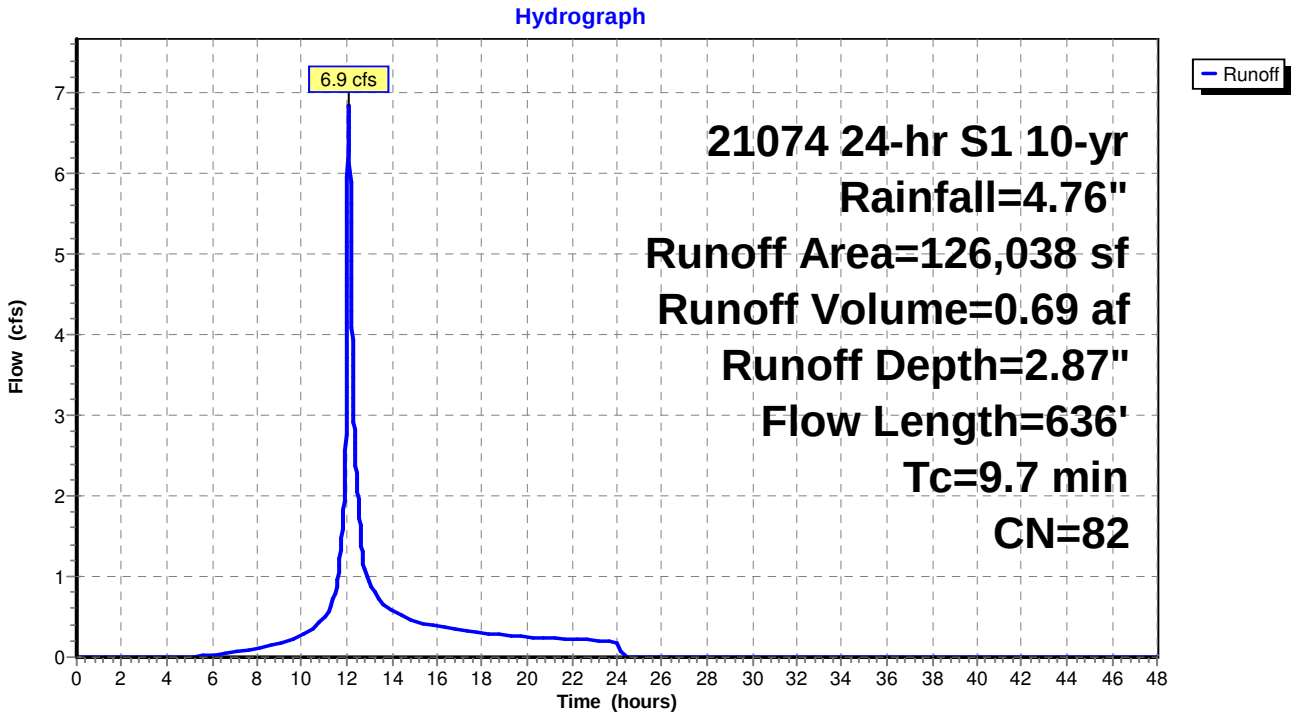
Runoff = 6.9 cfs @ 12.08 hrs, Volume= 0.69 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
13,325	77	Woods, Good, HSG D
93,132	80	>75% Grass cover, Good, HSG D
8,629	98	Paved parking, HSG D
10,952	98	Roofs, HSG D
126,038	82	Weighted Average
106,457		84.46% Pervious Area
19,581		15.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	42	0.0500	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.1	18	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	150	0.0990	2.20		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.5	362	0.0249	2.37		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	64	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.7	636	Total			

Subcatchment C5: C5



Summary for Subcatchment C6: C6

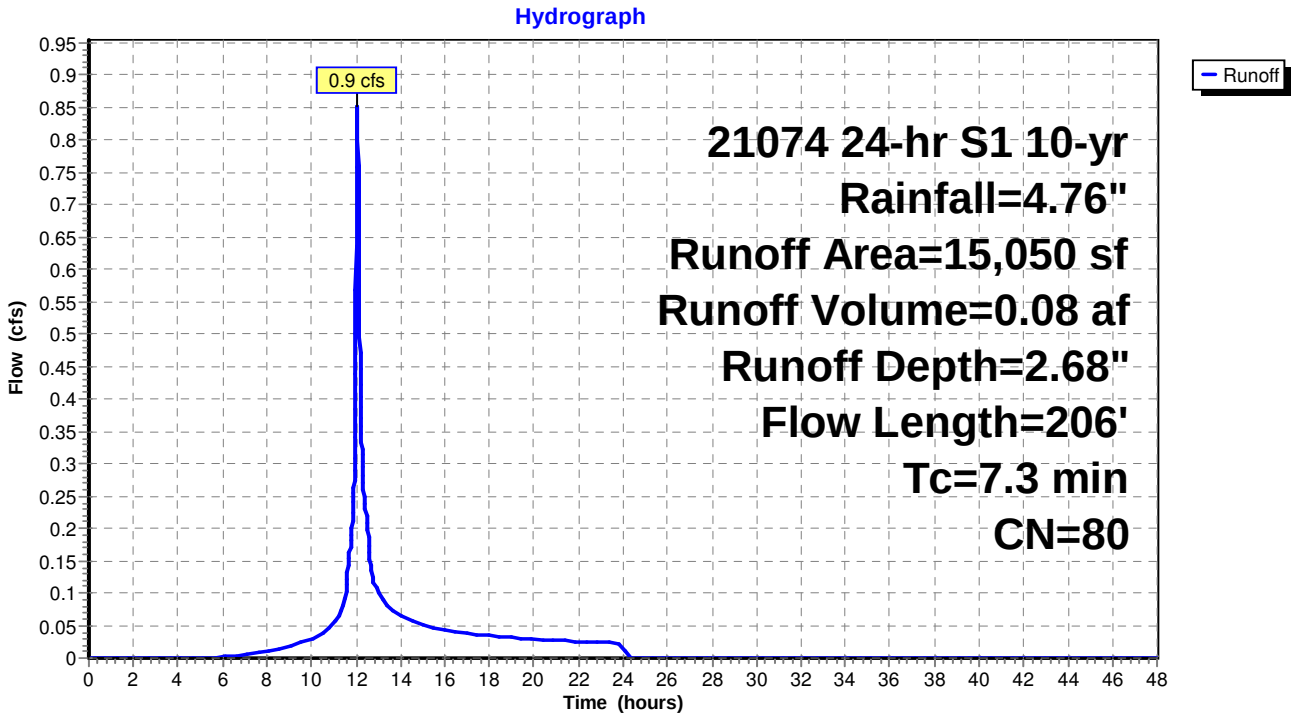
Runoff = 0.9 cfs @ 12.05 hrs, Volume= 0.08 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
15,050	80	>75% Grass cover, Good, HSG D
15,050		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.1440	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
0.6	99	0.1440	2.66		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	7	0.5000	4.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	206	Total			

Subcatchment C6: C6



Summary for Subcatchment C7: C7

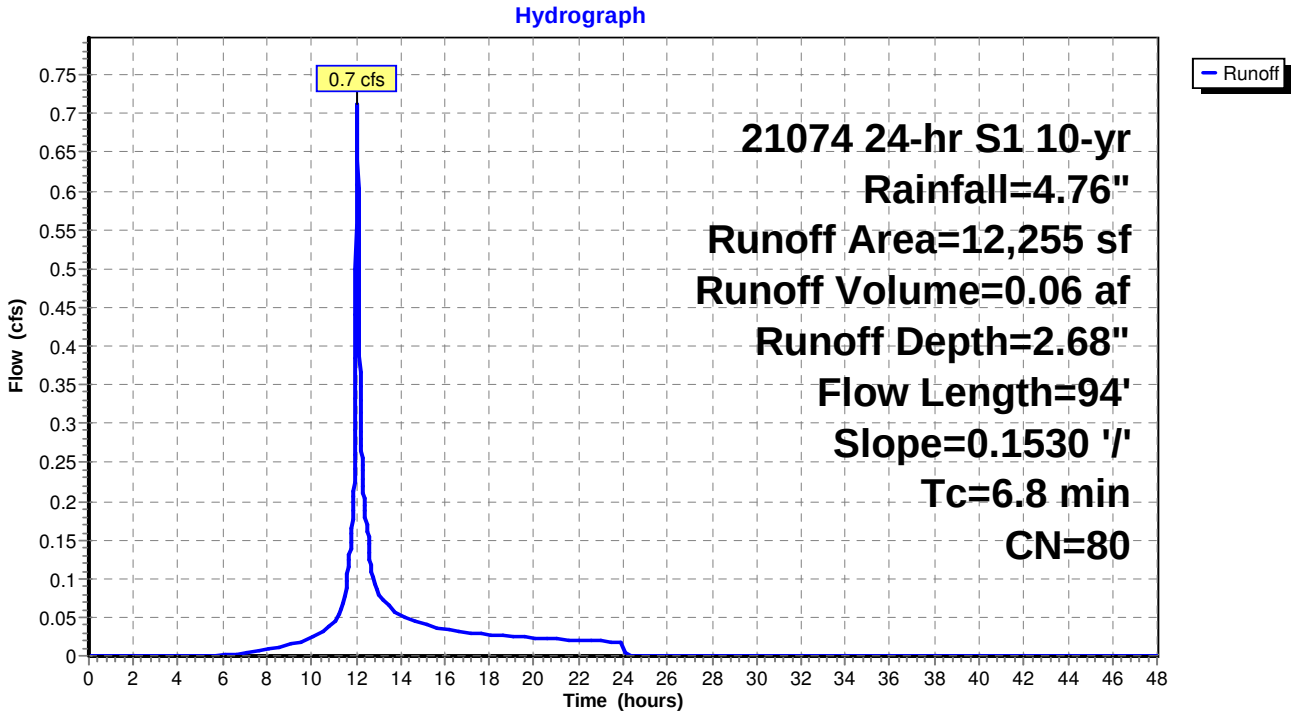
Runoff = 0.7 cfs @ 12.05 hrs, Volume= 0.06 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
12,255	80	>75% Grass cover, Good, HSG D
12,255		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	82	0.1530	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
1.2	12	0.1530	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
6.8	94	Total			

Subcatchment C7: C7



Summary for Subcatchment C8: C8

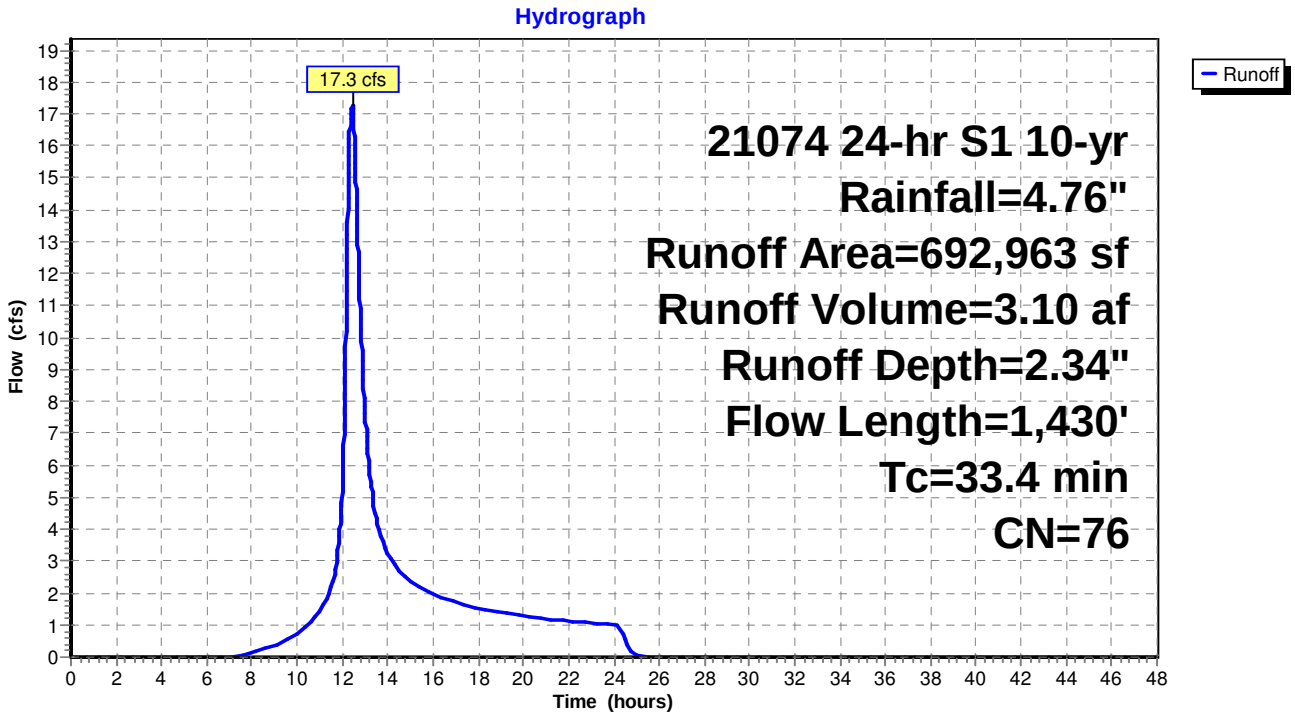
Runoff = 17.3 cfs @ 12.43 hrs, Volume= 3.10 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
21074 24-hr S1 10-yr Rainfall=4.76"

Area (sf)	CN	Description
24,637	39	>75% Grass cover, Good, HSG A
29,844	70	Woods, Good, HSG C
154,195	74	>75% Grass cover, Good, HSG C
217,244	77	Woods, Good, HSG D
267,043	80	>75% Grass cover, Good, HSG D
692,963	76	Weighted Average
692,963		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	33	0.0763	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.01"
4.1	39	0.0763	0.16		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.01"
2.0	422	0.0550	3.52		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.1	308	0.0324	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.9	628	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.4	1,430	Total			

Subcatchment C8: C8



Summary for Reach R1: REACH 1

Inflow Area = 1.258 ac, 30.11% Impervious, Inflow Depth = 3.19" for 10-yr event
Inflow = 2.6 cfs @ 12.21 hrs, Volume= 0.33 af
Outflow = 2.5 cfs @ 12.24 hrs, Volume= 0.33 af, Atten= 4%, Lag= 1.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.49 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 5.1 min

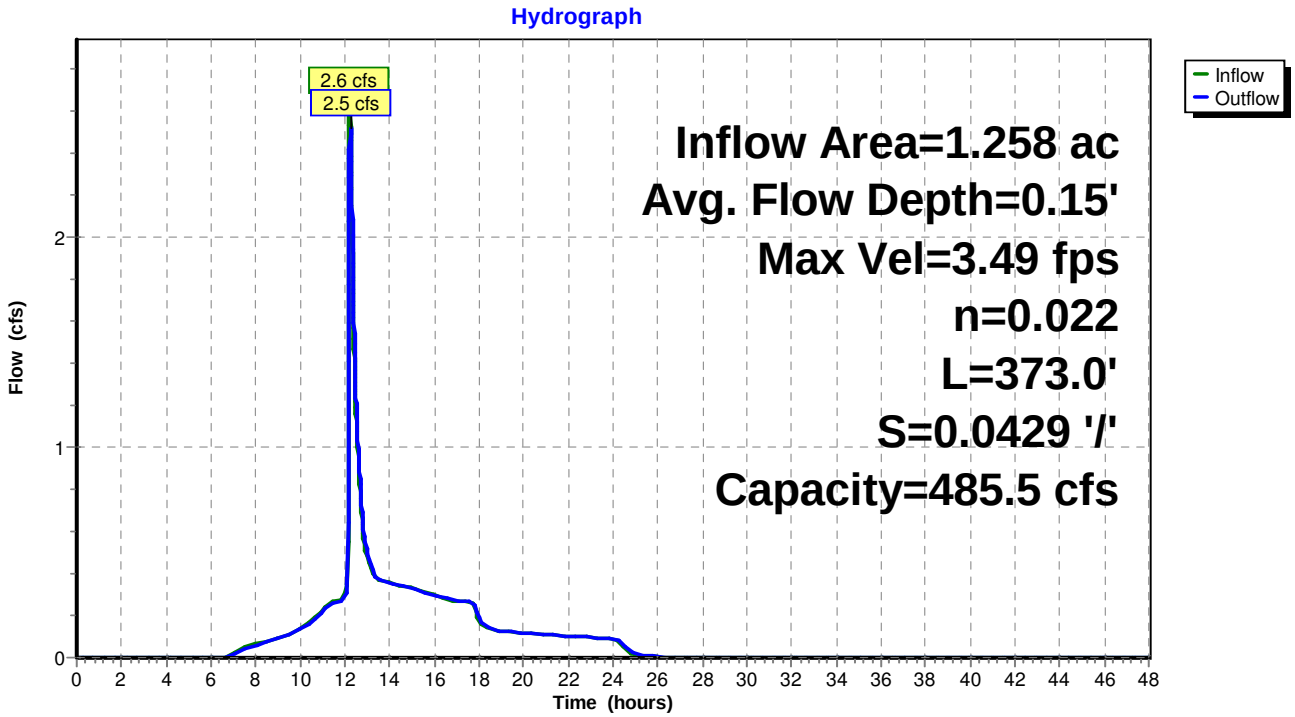
Peak Storage= 269 cf @ 12.24 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 5.77'
Defined Flood Depth= 116.00' Flow Area= 3,210.3 sf, Capacity= 64,891.6 cfs
Bank-Full Depth= 2.00' Flow Area= 32.0 sf, Capacity= 485.5 cfs

4.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 6.0 '/' Top Width= 28.00'
Length= 373.0' Slope= 0.0429 '/'
Inlet Invert= 114.00', Outlet Invert= 98.00'



‡

Reach R1: REACH 1



Summary for Reach R2: REACH 2

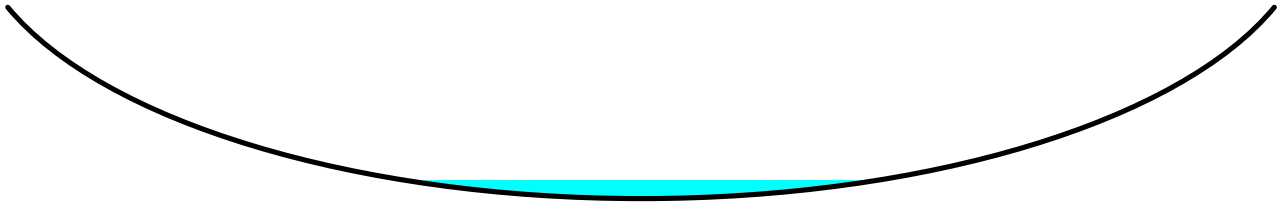
[61] Hint: Exceeded Reach R1 outlet invert by 0.08' @ 12.26 hrs

Inflow Area = 1.258 ac, 30.11% Impervious, Inflow Depth = 3.19" for 10-yr event
Inflow = 2.5 cfs @ 12.24 hrs, Volume= 0.33 af
Outflow = 2.5 cfs @ 12.26 hrs, Volume= 0.33 af, Atten= 1%, Lag= 0.8 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.34 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.13 fps, Avg. Travel Time= 2.9 min

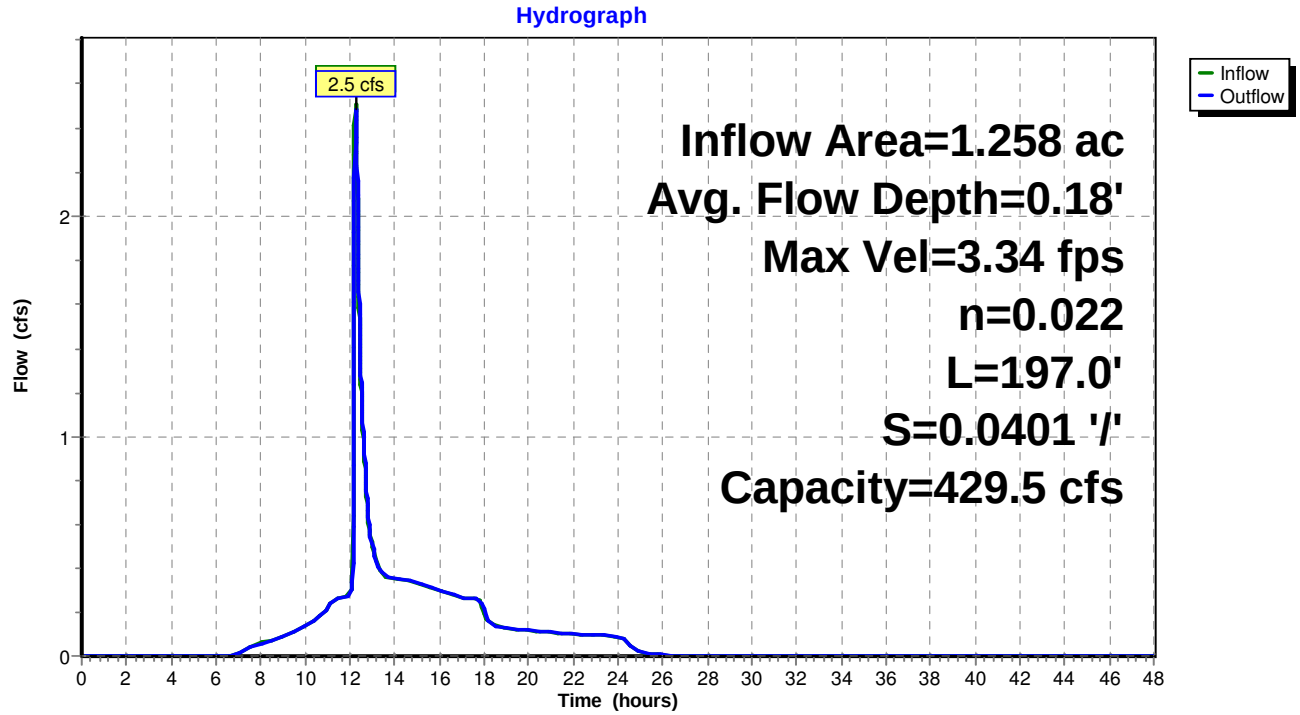
Peak Storage= 147 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 6.07'
Defined Flood Depth= 100.00' Flow Area= 1,981.8 sf, Capacity= 45,423.8 cfs
Bank-Full Depth= 2.00' Flow Area= 26.7 sf, Capacity= 429.5 cfs

20.00' x 2.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 197.0' Slope= 0.0401 '/'
Inlet Invert= 97.90', Outlet Invert= 90.00'



‡

Reach R2: REACH 2



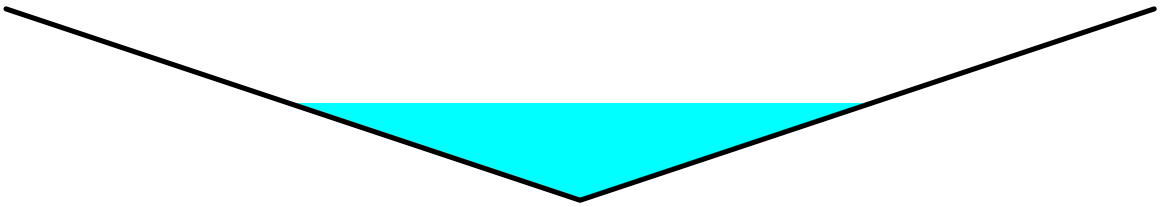
Summary for Reach R3: REACH 3

Inflow Area = 4.274 ac, 21.78% Impervious, Inflow Depth = 2.99" for 10-yr event
Inflow = 10.6 cfs @ 12.08 hrs, Volume= 1.07 af
Outflow = 10.5 cfs @ 12.09 hrs, Volume= 1.07 af, Atten= 2%, Lag= 1.0 min

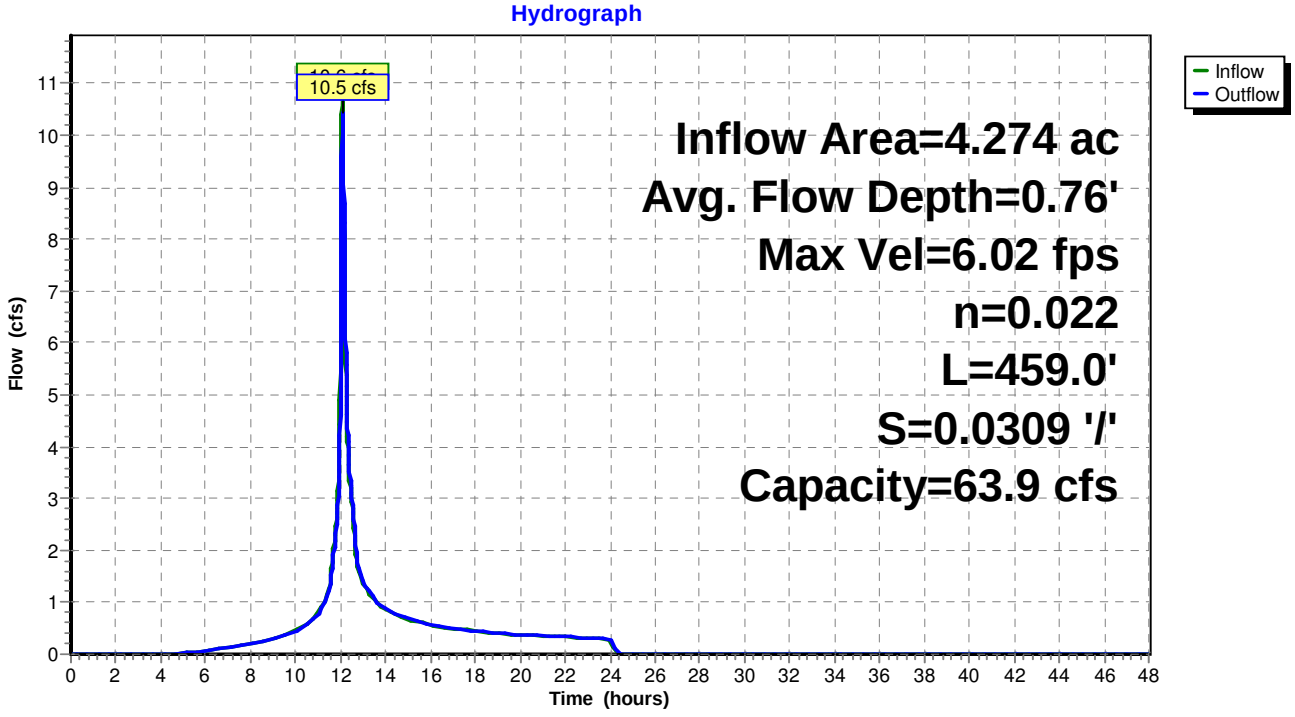
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.02 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 2.51 fps, Avg. Travel Time= 3.0 min

Peak Storage= 797 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.76' , Surface Width= 4.56'
Bank-Full Depth= 1.50' Flow Area= 6.8 sf, Capacity= 63.9 cfs

0.00' x 1.50' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 3.0 '/' Top Width= 9.00'
Length= 459.0' Slope= 0.0309 '/'
Inlet Invert= 117.00', Outlet Invert= 102.80'



Reach R3: REACH 3



Summary for Reach R4: REACH 4

[62] Hint: Exceeded Reach R3 OUTLET depth by 0.15' @ 12.11 hrs

Inflow Area = 4.274 ac, 21.78% Impervious, Inflow Depth = 2.99" for 10-yr event
Inflow = 10.5 cfs @ 12.09 hrs, Volume= 1.07 af
Outflow = 10.4 cfs @ 12.10 hrs, Volume= 1.07 af, Atten= 1%, Lag= 0.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.46 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 0.49 fps, Avg. Travel Time= 2.2 min

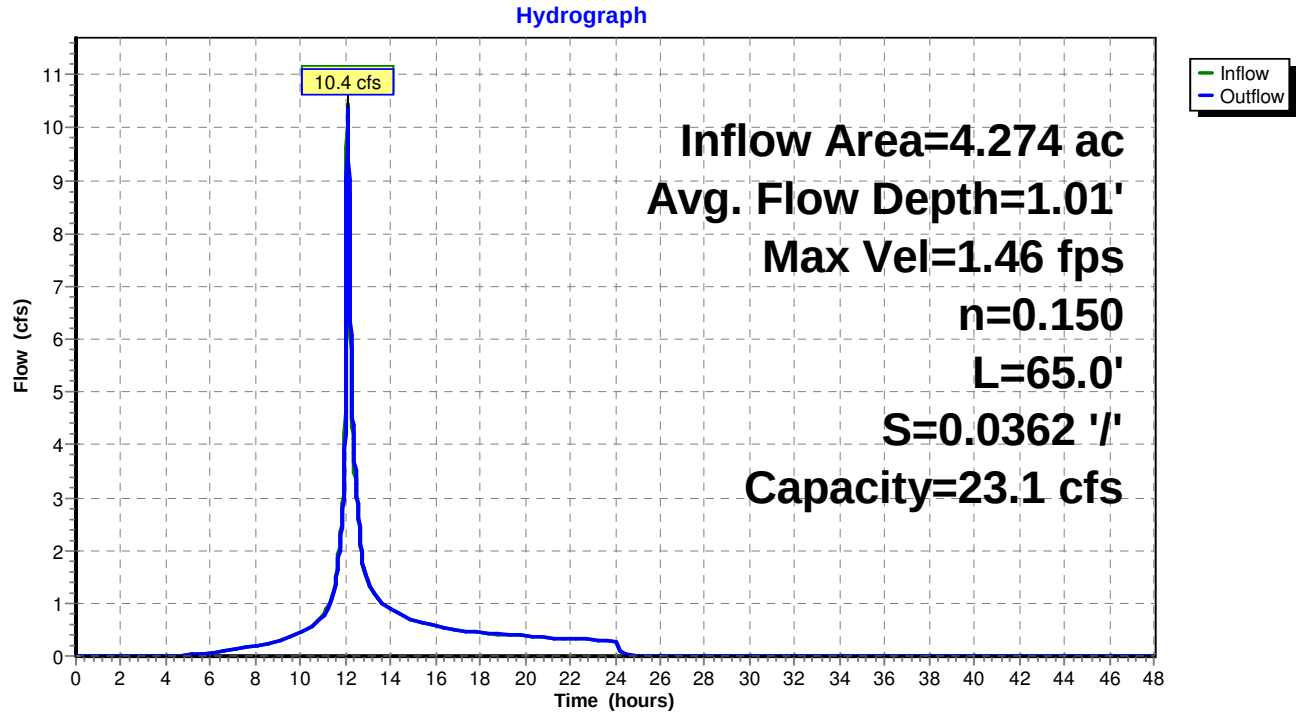
Peak Storage= 462 cf @ 12.10 hrs
Average Depth at Peak Storage= 1.01' , Surface Width= 10.06'
Bank-Full Depth= 1.50' Flow Area= 12.8 sf, Capacity= 23.1 cfs

4.00' x 1.50' deep channel, n= 0.150
Side Slope Z-value= 3.0 '/' Top Width= 13.00'
Length= 65.0' Slope= 0.0362 '/'
Inlet Invert= 102.70', Outlet Invert= 100.35'



‡

Reach R4: REACH 4



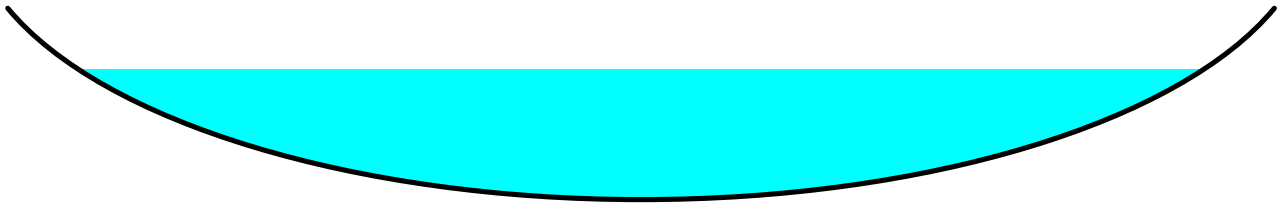
Summary for Reach R5: REACH 5

Inflow Area = 4.900 ac, 18.99% Impervious, Inflow Depth = 2.96" for 10-yr event
Inflow = 3.5 cfs @ 12.50 hrs, Volume= 1.21 af
Outflow = 3.5 cfs @ 12.51 hrs, Volume= 1.21 af, Atten= 0%, Lag= 0.2 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.95 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 0.9 min

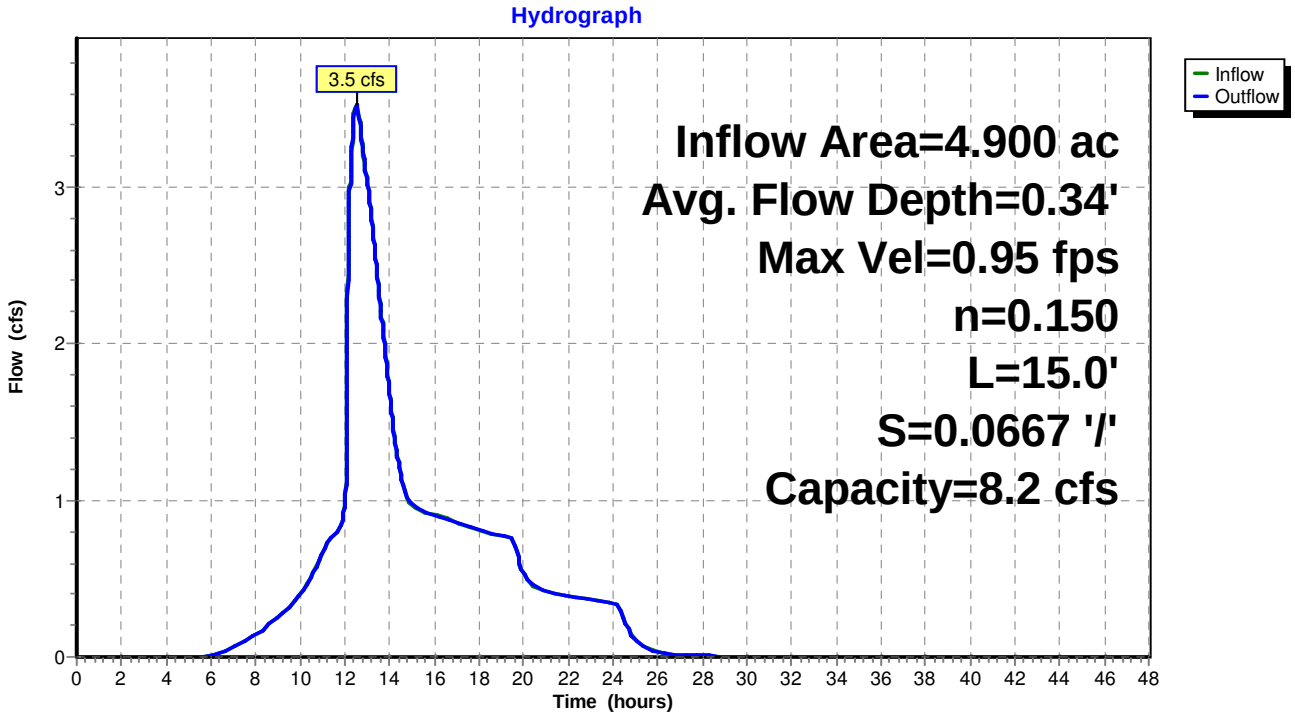
Peak Storage= 56 cf @ 12.51 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 16.46'
Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 8.2 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.150
Length= 15.0' Slope= 0.0667 '/'
Inlet Invert= 91.00', Outlet Invert= 90.00'



‡

Reach R5: REACH 5



Summary for Pond BIO-1: BIO-1

Inflow Area = 1.258 ac, 30.11% Impervious, Inflow Depth = 3.22" for 10-yr event
Inflow = 2.7 cfs @ 12.16 hrs, Volume= 0.34 af
Outflow = 2.6 cfs @ 12.21 hrs, Volume= 0.33 af, Atten= 4%, Lag= 2.9 min
Primary = 2.6 cfs @ 12.21 hrs, Volume= 0.33 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 119.62' @ 12.21 hrs Surf.Area= 1,625 sf Storage= 2,238 cf
Flood Elev= 120.25' Surf.Area= 2,143 sf Storage= 3,378 cf

Plug-Flow detention time= 50.5 min calculated for 0.33 af (99% of inflow)
Center-of-Mass det. time= 44.5 min (885.2 - 840.6)

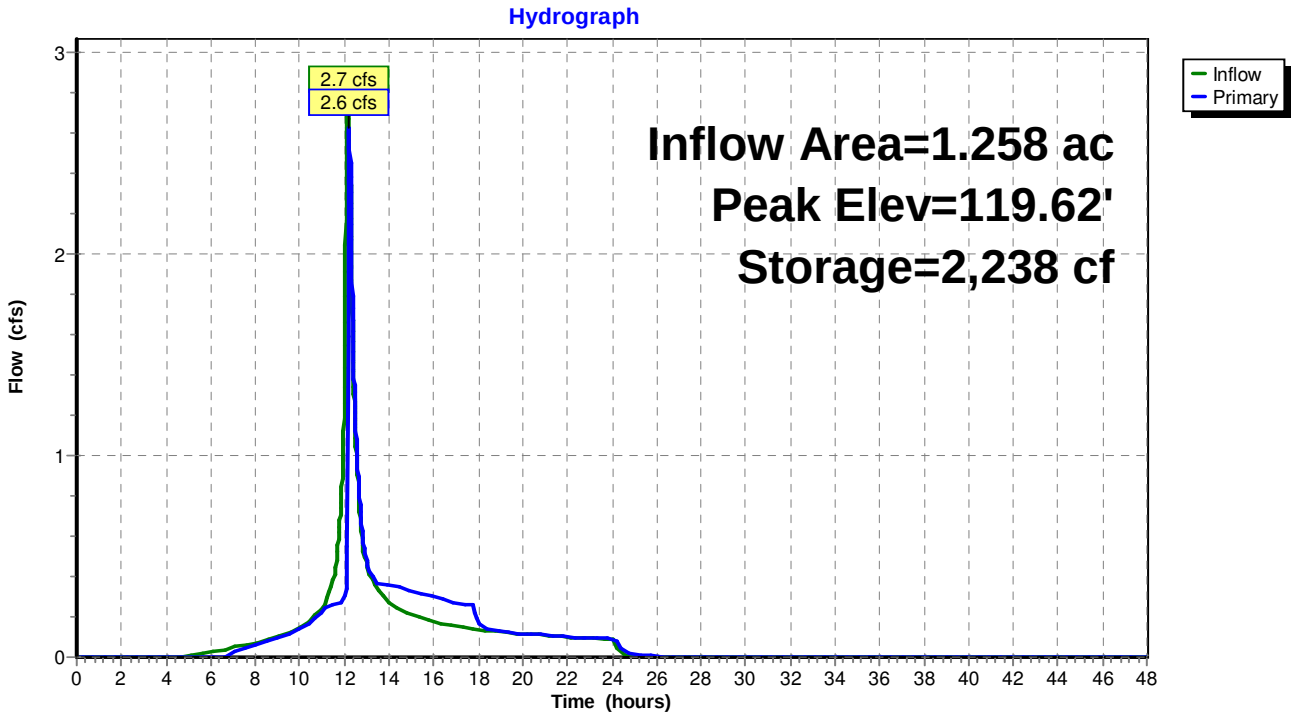
Volume	Invert	Avail.Storage	Storage Description
#1	115.58'	3,378 cf	**BIO (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.58	1,138	134.2	0.0	0	0	1,138
116.75	1,138	134.2	35.0	466	466	1,295
117.00	1,138	134.2	20.0	57	523	1,329
118.50	1,138	134.2	10.0	171	694	1,530
119.00	1,346	143.6	100.0	620	1,314	1,749
119.50	1,569	153.1	100.0	728	2,042	1,985
120.00	1,805	162.5	100.0	843	2,885	2,234
120.25	2,143	175.1	100.0	493	3,378	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 115.00' / 114.00' S= 0.0556 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	115.92'	**6.0" Round Culvert** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.92' / 115.92' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#3	Device 2	115.58'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	119.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.6 cfs @ 12.21 hrs HW=119.62' TW=114.14' (Dynamic Tailwater)
↑**1=Culvert** (Passes 2.6 cfs of 11.8 cfs potential flow)
↑**2=Culvert** (Passes 0.4 cfs of 1.3 cfs potential flow)
↑**3=Exfiltration** (Exfiltration Controls 0.4 cfs)
4=Orifice/Grate (Weir Controls 2.2 cfs @ 1.15 fps)

Pond BIO-1: BIO-1



Summary for Pond BIO-2: BIO-2

Inflow Area = 4.619 ac, 20.15% Impervious, Inflow Depth = 2.97" for 10-yr event
Inflow = 11.1 cfs @ 12.10 hrs, Volume= 1.14 af
Outflow = 10.9 cfs @ 12.12 hrs, Volume= 1.14 af, Atten= 1%, Lag= 1.0 min
Primary = 0.9 cfs @ 12.12 hrs, Volume= 0.85 af
Secondary = 10.0 cfs @ 12.12 hrs, Volume= 0.29 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 96.00' Surf.Area= 3,193 sf Storage= 469 cf
Peak Elev= 99.67' @ 12.12 hrs Surf.Area= 4,015 sf Storage= 6,158 cf (5,689 cf above start)
Flood Elev= 100.25' Surf.Area= 4,862 sf Storage= 8,660 cf (8,190 cf above start)

Plug-Flow detention time= 49.6 min calculated for 1.13 af (99% of inflow)
Center-of-Mass det. time= 39.9 min (887.3 - 847.4)

Volume	Invert	Avail.Storage	Storage Description
#1	95.58'	8,660 cf	**Surface Bowl Area (Irregular)** Listed below (Recalc)

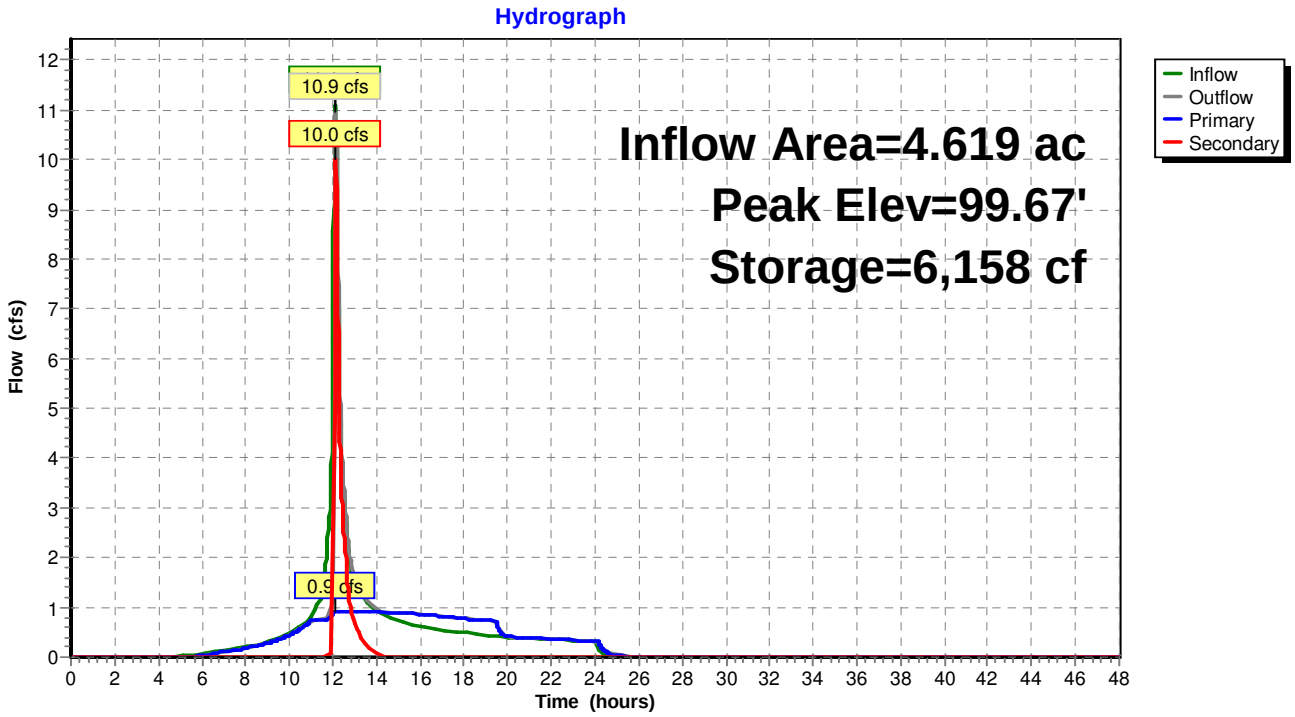
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.58	3,193	223.4	0.0	0	0	3,193
96.75	3,193	223.4	35.0	1,308	1,308	3,454
97.00	3,193	223.4	20.0	160	1,467	3,510
98.50	3,193	223.4	10.0	479	1,946	3,845
99.00	3,536	232.9	100.0	1,682	3,628	4,209
99.50	3,892	242.3	100.0	1,856	5,484	4,583
100.00	4,257	257.2	100.0	2,037	7,521	5,189
100.25	4,862	272.6	100.0	1,139	8,660	5,841

Device	Routing	Invert	Outlet Devices
#1	Primary	95.92'	**6.0" Round Culvert X 3.00** L= 52.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.92' / 95.92' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#2	Device 1	95.58'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	99.50'	**56.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.9 cfs @ 12.12 hrs HW=99.67' TW=96.57' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.9 cfs of 3.6 cfs potential flow)
↑—**2=Exfiltration** (Exfiltration Controls 0.9 cfs)

Secondary OutFlow Max=10.0 cfs @ 12.12 hrs HW=99.67' TW=96.57' (Dynamic Tailwater)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 10.0 cfs @ 1.05 fps)

Pond BIO-2: BIO-2



Summary for Pond DET-1: DETENTION POND 1

Inflow Area = 4.900 ac, 18.99% Impervious, Inflow Depth = 2.96" for 10-yr event
Inflow = 11.5 cfs @ 12.11 hrs, Volume= 1.21 af
Outflow = 3.5 cfs @ 12.50 hrs, Volume= 1.21 af, Atten= 69%, Lag= 23.4 min
Primary = 3.5 cfs @ 12.50 hrs, Volume= 1.21 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.00 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 97.73' @ 12.50 hrs Surf.Area= 4,415 sf Storage= 7,840 cf
Flood Elev= 100.25' Surf.Area= 7,419 sf Storage= 21,948 cf

Plug-Flow detention time= 28.3 min calculated for 1.21 af (100% of inflow)
Center-of-Mass det. time= 28.1 min (913.7 - 885.6)

Volume	Invert	Avail.Storage	Storage Description
#1	95.50'	21,948 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

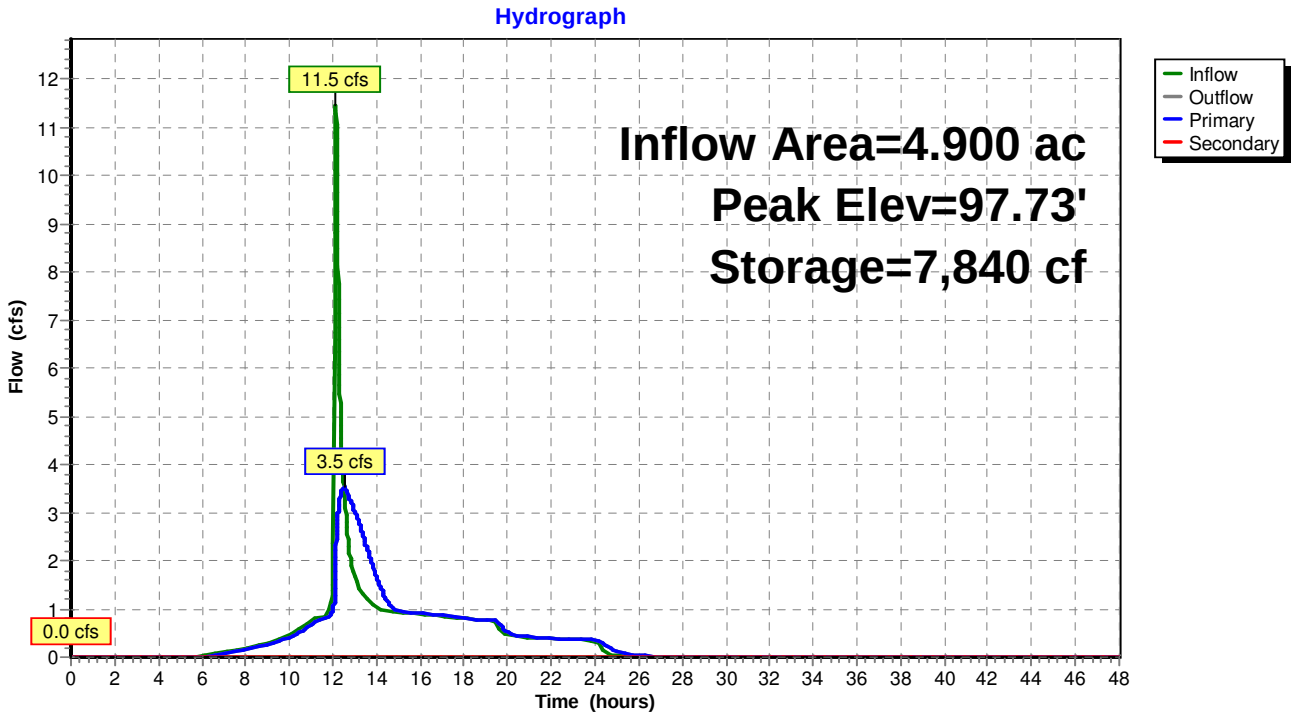
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.50	2,683	239.3	0	0	2,683
96.00	3,049	248.7	1,432	1,432	3,068
98.00	4,654	286.0	7,647	9,079	4,743
99.00	5,542	305.3	5,092	14,170	5,698
99.50	6,007	314.7	2,886	17,057	6,187
100.00	6,572	337.2	3,144	20,200	7,365
100.25	7,419	352.7	1,748	21,948	8,221

Device	Routing	Invert	Outlet Devices
#1	Primary	93.00'	**15.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.00' / 91.00' S= 0.0667 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	95.50'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	99.60'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	99.80'	**6.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.5 cfs @ 12.50 hrs HW=97.73' TW=91.34' (Dynamic Tailwater)
└─**1=Culvert** (Passes 3.5 cfs of 12.0 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 3.4 cfs @ 6.76 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.1 cfs @ 1.62 fps)
  └─**4=Orifice/Grate** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=95.50' TW=91.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond DET-1: DETENTION POND 1



Summary for Pond PCB1: PCB1

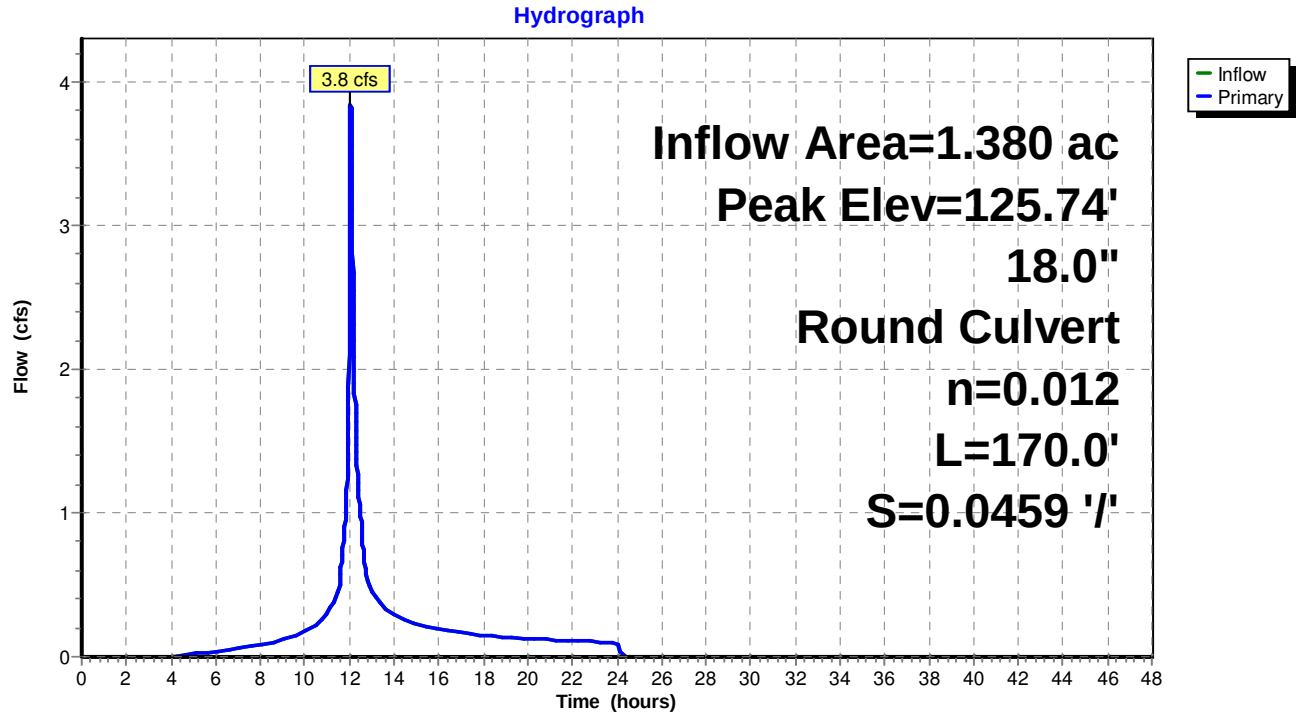
Inflow Area = 1.380 ac, 34.87% Impervious, Inflow Depth = 3.26" for 10-yr event
Inflow = 3.8 cfs @ 12.07 hrs, Volume= 0.37 af
Outflow = 3.8 cfs @ 12.07 hrs, Volume= 0.37 af, Atten= 0%, Lag= 0.0 min
Primary = 3.8 cfs @ 12.07 hrs, Volume= 0.37 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 125.74' @ 12.07 hrs
Flood Elev= 129.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	124.80'	**18.0" Round Culvert** L= 170.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 124.80' / 117.00' S= 0.0459 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.8 cfs @ 12.07 hrs HW=125.74' TW=117.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.8 cfs @ 3.30 fps)

Pond PCB1: PCB1



Summary for Pond PCB2: PCB2

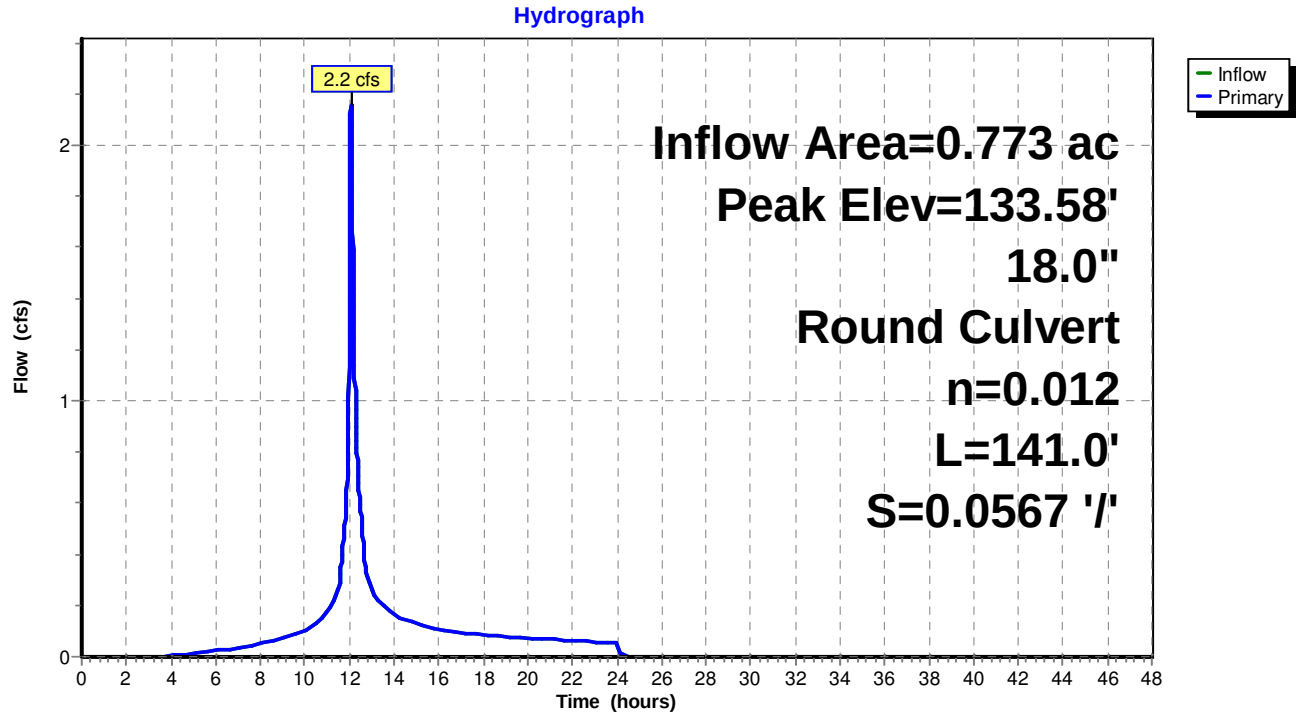
Inflow Area = 0.773 ac, 39.92% Impervious, Inflow Depth = 3.34" for 10-yr event
Inflow = 2.2 cfs @ 12.07 hrs, Volume= 0.22 af
Outflow = 2.2 cfs @ 12.07 hrs, Volume= 0.22 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.07 hrs, Volume= 0.22 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 133.58' @ 12.07 hrs
Flood Elev= 137.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	132.90'	**18.0" Round Culvert** L= 141.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 132.90' / 124.90' S= 0.0567 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.2 cfs @ 12.07 hrs HW=133.57' TW=125.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.2 cfs @ 2.80 fps)

Pond PCB2: PCB2



Summary for Pond SF-1: Sediment Forebay 1

Inflow Area = 1.197 ac, 31.65% Impervious, Inflow Depth = 3.24" for 10-yr event
Inflow = 2.8 cfs @ 12.13 hrs, Volume= 0.32 af
Outflow = 2.7 cfs @ 12.17 hrs, Volume= 0.32 af, Atten= 5%, Lag= 2.4 min
Primary = 2.7 cfs @ 12.17 hrs, Volume= 0.32 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 121.49' @ 12.17 hrs Surf.Area= 453 sf Storage= 347 cf
Flood Elev= 123.35' Surf.Area= 975 sf Storage= 1,642 cf

Plug-Flow detention time= 4.6 min calculated for 0.32 af (100% of inflow)
Center-of-Mass det. time= 4.5 min (840.1 - 835.5)

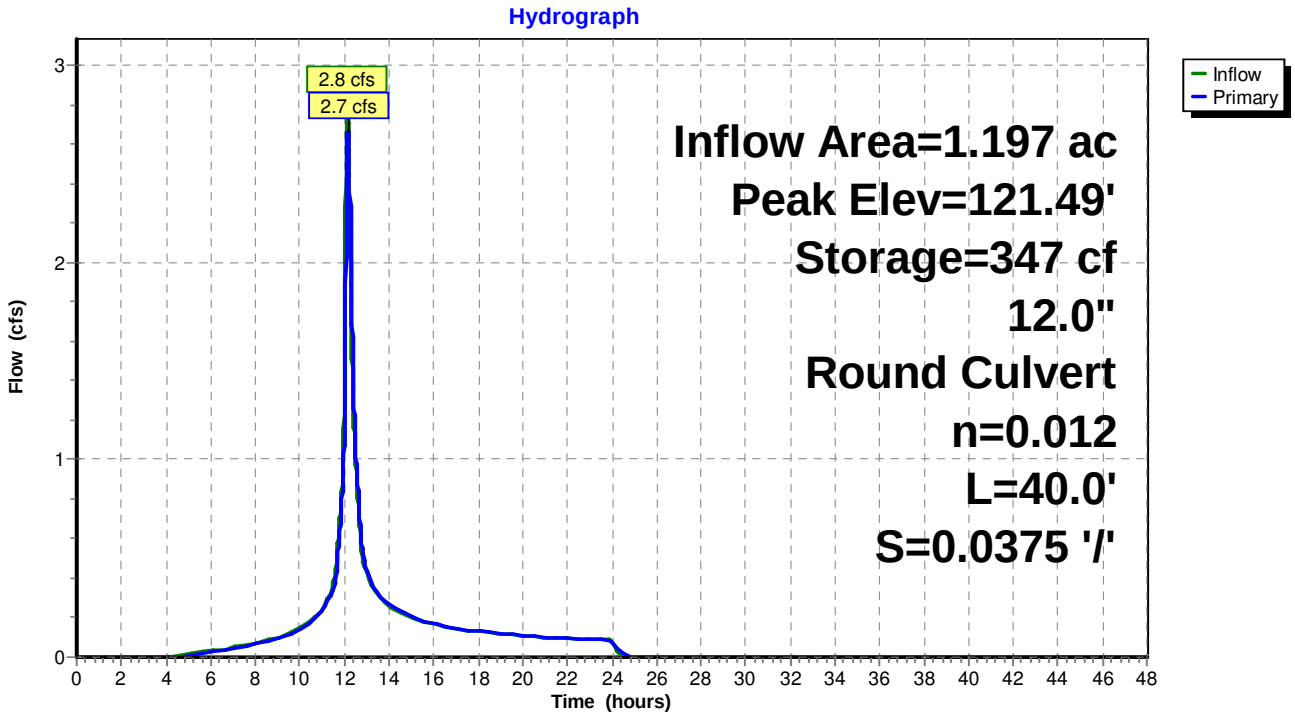
Volume	Invert	Avail.Storage	Storage Description
#1	120.50'	1,642 cf	**Detention (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
120.50	254	57.4	0	0	254
121.00	348	66.8	150	150	352
122.00	576	85.6	457	607	592
123.35	975	111.1	1,035	1,642	1,013

Device	Routing	Invert	Outlet Devices
#1	Primary	120.50'	**12.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 120.50' / 119.00' S= 0.0375 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.7 cfs @ 12.17 hrs HW=121.49' TW=119.60' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.7 cfs @ 3.39 fps)

Pond SF-1: Sediment Forebay 1

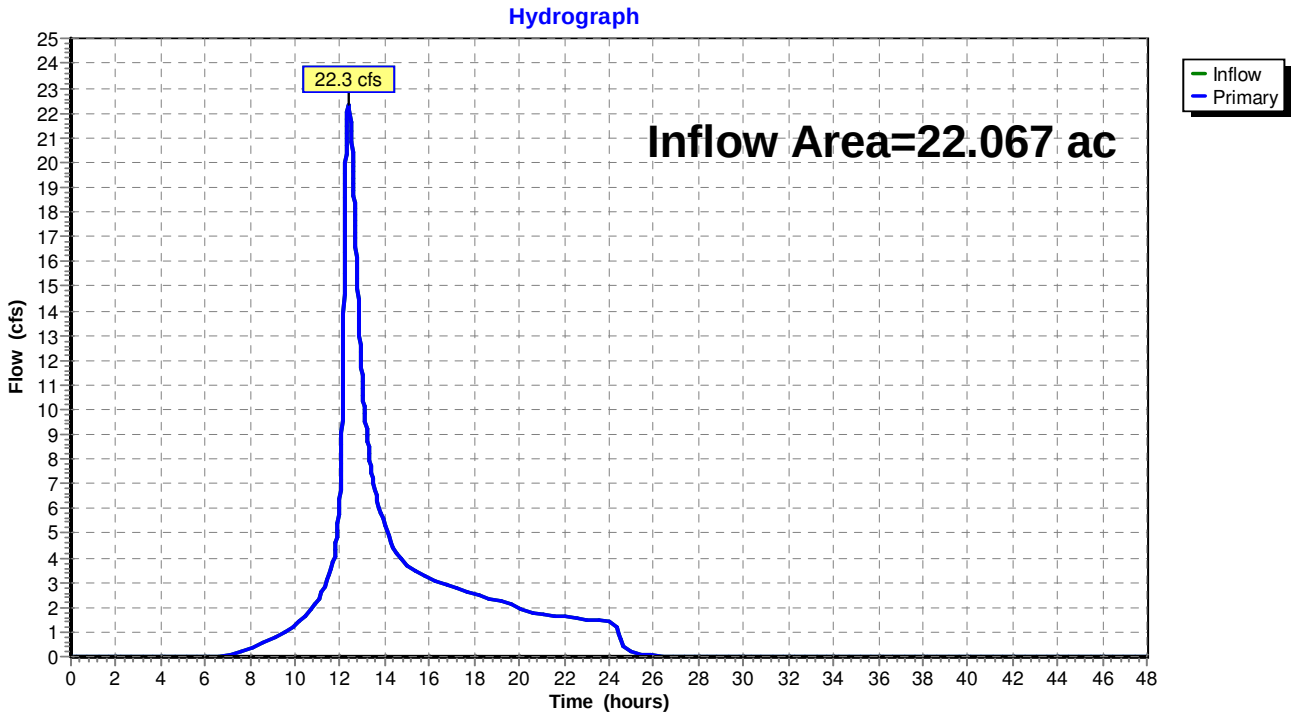


Summary for Link C: C

Inflow Area = 22.067 ac, 5.93% Impervious, Inflow Depth = 2.52" for 10-yr event
Inflow = 22.3 cfs @ 12.40 hrs, Volume= 4.64 af
Primary = 22.3 cfs @ 12.40 hrs, Volume= 4.64 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link C: C



A – 2

NODE LISTING – 25-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=1,855 sf 50.40% Impervious Runoff Depth=4.65"
Flow Length=38' Slope=0.1180 '/' Tc=6.0 min CN=88 Runoff=0.2 cfs 0.02 af

Subcatchment B: B Runoff Area=284,057 sf 3.32% Impervious Runoff Depth=3.11"
Flow Length=629' Tc=7.5 min CN=73 Runoff=17.5 cfs 1.69 af

Subcatchment C1: C1 Runoff Area=52,134 sf 31.65% Impervious Runoff Depth=4.43"
Flow Length=642' Tc=13.1 min CN=86 Runoff=3.6 cfs 0.44 af

Subcatchment C2: C2 Runoff Area=2,662 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=9' Slope=0.3300 '/' Tc=6.0 min CN=80 Runoff=0.2 cfs 0.02 af

Subcatchment C3: C3 Runoff Area=26,456 sf 28.44% Impervious Runoff Depth=4.32"
Flow Length=242' Tc=7.8 min CN=85 Runoff=2.2 cfs 0.22 af

Subcatchment C4: C4 Runoff Area=33,666 sf 39.92% Impervious Runoff Depth=4.54"
Flow Length=321' Tc=9.1 min CN=87 Runoff=2.8 cfs 0.29 af

Subcatchment C5: C5 Runoff Area=126,038 sf 15.54% Impervious Runoff Depth=4.01"
Flow Length=636' Tc=9.7 min CN=82 Runoff=9.1 cfs 0.97 af

Subcatchment C6: C6 Runoff Area=15,050 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=206' Tc=7.3 min CN=80 Runoff=1.1 cfs 0.11 af

Subcatchment C7: C7 Runoff Area=12,255 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=94' Slope=0.1530 '/' Tc=6.8 min CN=80 Runoff=1.0 cfs 0.09 af

Subcatchment C8: C8 Runoff Area=692,963 sf 0.00% Impervious Runoff Depth=3.40"
Flow Length=1,430' Tc=33.4 min CN=76 Runoff=24.2 cfs 4.50 af

Reach R1: REACH 1 Avg. Flow Depth=0.17' Max Vel=3.85 fps Inflow=3.4 cfs 0.46 af
n=0.022 L=373.0' S=0.0429 '/' Capacity=485.5 cfs Outflow=3.4 cfs 0.46 af

Reach R2: REACH 2 Avg. Flow Depth=0.21' Max Vel=3.67 fps Inflow=3.4 cfs 0.46 af
n=0.022 L=197.0' S=0.0401 '/' Capacity=429.5 cfs Outflow=3.4 cfs 0.46 af

Reach R3: REACH 3 Avg. Flow Depth=0.84' Max Vel=6.44 fps Inflow=13.9 cfs 1.48 af
n=0.022 L=459.0' S=0.0309 '/' Capacity=63.9 cfs Outflow=13.7 cfs 1.48 af

Reach R4: REACH 4 Avg. Flow Depth=1.16' Max Vel=1.58 fps Inflow=13.7 cfs 1.48 af
n=0.150 L=65.0' S=0.0362 '/' Capacity=23.1 cfs Outflow=13.6 cfs 1.48 af

Reach R5: REACH 5 Avg. Flow Depth=0.40' Max Vel=1.06 fps Inflow=5.0 cfs 1.68 af
n=0.150 L=15.0' S=0.0667 '/' Capacity=8.2 cfs Outflow=5.0 cfs 1.68 af

Pond BIO-1: BIO-1 Peak Elev=119.65' Storage=2,283 cf Inflow=3.4 cfs 0.46 af
Outflow=3.4 cfs 0.46 af

Pond BIO-2: BIO-2 Peak Elev=99.71' Storage=6,311 cf Inflow=14.6 cfs 1.59 af
Primary=0.9 cfs 1.06 af Secondary=13.5 cfs 0.53 af Outflow=14.5 cfs 1.59 af

Pond DET-1: DETENTION POND 1 Peak Elev=98.65' Storage=12,310 cf Inflow=15.2 cfs 1.68 af
Primary=5.0 cfs 1.68 af Secondary=0.0 cfs 0.00 af Outflow=5.0 cfs 1.68 af

Pond PCB1: PCB1 Peak Elev=125.90' Inflow=4.9 cfs 0.51 af
18.0" Round Culvert n=0.012 L=170.0' S=0.0459 '/' Outflow=4.9 cfs 0.51 af

Pond PCB2: PCB2 Peak Elev=133.67' Inflow=2.8 cfs 0.29 af
18.0" Round Culvert n=0.012 L=141.0' S=0.0567 '/' Outflow=2.8 cfs 0.29 af

Pond SF-1: Sediment Forebay 1 Peak Elev=121.78' Storage=486 cf Inflow=3.6 cfs 0.44 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0375 '/' Outflow=3.3 cfs 0.44 af

Link C: C Inflow=31.4 cfs 6.64 af
Primary=31.4 cfs 6.64 af

Total Runoff Area = 28.630 ac Runoff Volume = 8.34 af Average Runoff Depth = 3.50"
94.60% Pervious = 27.083 ac 5.40% Impervious = 1.547 ac

A – 2

NODE LISTING – 50-YR

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 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 A: A Runoff Area=1,855 sf 50.40% Impervious Runoff Depth=5.78"
Flow Length=38' Slope=0.1180 '/' Tc=6.0 min CN=88 Runoff=0.2 cfs 0.02 af

Subcatchment B: B Runoff Area=284,057 sf 3.32% Impervious Runoff Depth=4.10"
Flow Length=629' Tc=7.5 min CN=73 Runoff=22.0 cfs 2.23 af

Subcatchment C1: C1 Runoff Area=52,134 sf 31.65% Impervious Runoff Depth=5.55"
Flow Length=642' Tc=13.1 min CN=86 Runoff=4.3 cfs 0.55 af

Subcatchment C2: C2 Runoff Area=2,662 sf 0.00% Impervious Runoff Depth=4.87"
Flow Length=9' Slope=0.3300 '/' Tc=6.0 min CN=80 Runoff=0.3 cfs 0.02 af

Subcatchment C3: C3 Runoff Area=26,456 sf 28.44% Impervious Runoff Depth=5.43"
Flow Length=242' Tc=7.8 min CN=85 Runoff=2.6 cfs 0.28 af

Subcatchment C4: C4 Runoff Area=33,666 sf 39.92% Impervious Runoff Depth=5.66"
Flow Length=321' Tc=9.1 min CN=87 Runoff=3.2 cfs 0.36 af

Subcatchment C5: C5 Runoff Area=126,038 sf 15.54% Impervious Runoff Depth=5.09"
Flow Length=636' Tc=9.7 min CN=82 Runoff=10.9 cfs 1.23 af

Subcatchment C6: C6 Runoff Area=15,050 sf 0.00% Impervious Runoff Depth=4.87"
Flow Length=206' Tc=7.3 min CN=80 Runoff=1.4 cfs 0.14 af

Subcatchment C7: C7 Runoff Area=12,255 sf 0.00% Impervious Runoff Depth=4.87"
Flow Length=94' Slope=0.1530 '/' Tc=6.8 min CN=80 Runoff=1.2 cfs 0.11 af

Subcatchment C8: C8 Runoff Area=692,963 sf 0.00% Impervious Runoff Depth=4.43"
Flow Length=1,430' Tc=33.4 min CN=76 Runoff=30.4 cfs 5.87 af

Reach R1: REACH 1 Avg. Flow Depth=0.19' Max Vel=4.03 fps Inflow=4.0 cfs 0.57 af
n=0.022 L=373.0' S=0.0429 '/' Capacity=485.5 cfs Outflow=3.9 cfs 0.57 af

Reach R2: REACH 2 Avg. Flow Depth=0.23' Max Vel=3.84 fps Inflow=3.9 cfs 0.57 af
n=0.022 L=197.0' S=0.0401 '/' Capacity=429.5 cfs Outflow=3.9 cfs 0.57 af

Reach R3: REACH 3 Avg. Flow Depth=0.90' Max Vel=6.73 fps Inflow=16.6 cfs 1.87 af
n=0.022 L=459.0' S=0.0309 '/' Capacity=63.9 cfs Outflow=16.4 cfs 1.87 af

Reach R4: REACH 4 Avg. Flow Depth=1.26' Max Vel=1.65 fps Inflow=16.4 cfs 1.87 af
n=0.150 L=65.0' S=0.0362 '/' Capacity=23.1 cfs Outflow=16.3 cfs 1.87 af

Reach R5: REACH 5 Avg. Flow Depth=0.43' Max Vel=1.11 fps Inflow=5.9 cfs 2.12 af
n=0.150 L=15.0' S=0.0667 '/' Capacity=8.2 cfs Outflow=5.9 cfs 2.12 af

Pond BIO-1: BIO-1 Peak Elev=119.67' Storage=2,311 cf Inflow=4.0 cfs 0.58 af
Outflow=4.0 cfs 0.57 af

Pond BIO-2: BIO-2 Peak Elev=99.74' Storage=6,423 cf Inflow=17.5 cfs 2.01 af
Primary=0.9 cfs 1.22 af Secondary=16.4 cfs 0.79 af Outflow=17.3 cfs 2.01 af

Pond DET-1: DETENTION POND 1 Peak Elev=99.45' Storage=16,757 cf Inflow=18.2 cfs 2.12 af
Primary=5.9 cfs 2.12 af Secondary=0.0 cfs 0.00 af Outflow=5.9 cfs 2.12 af

Pond PCB1: PCB1 Peak Elev=126.02' Inflow=5.8 cfs 0.64 af
18.0" Round Culvert n=0.012 L=170.0' S=0.0459 '/' Outflow=5.8 cfs 0.64 af

Pond PCB2: PCB2 Peak Elev=133.75' Inflow=3.2 cfs 0.36 af
18.0" Round Culvert n=0.012 L=141.0' S=0.0567 '/' Outflow=3.2 cfs 0.36 af

Pond SF-1: Sediment Forebay 1 Peak Elev=122.04' Storage=628 cf Inflow=4.3 cfs 0.55 af
12.0" Round Culvert n=0.012 L=40.0' S=0.0375 '/' Outflow=3.9 cfs 0.55 af

Link C: C Inflow=39.0 cfs 8.57 af
Primary=39.0 cfs 8.57 af

Total Runoff Area = 28.630 ac Runoff Volume = 10.82 af Average Runoff Depth = 4.53"
94.60% Pervious = 27.083 ac 5.40% Impervious = 1.547 ac

APPENDIX B

DESIGN

B – 1

STORMWATER BEST MANAGEMENT PRACTICES

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **BIO-RETENTION BASIN 1 (BIO-1)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
1.26	ac	A = Area draining to the practice	
0.38	ac	A_I = Impervious area draining to the practice	
0.30	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.32	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
0.40	ac-in	WQV= 1" x Rv x A	
1,463	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
366	cf	25% x WQV (check calc for sediment forebay volume)	
1,097	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment Forebay		Method of Pretreatment? (not required for clean or roof runoff)	
1,642	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
119.46	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.40	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
2.03	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
117.00	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
116.00	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
113.50	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
111.00	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
6.00	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
3.50	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
119.67	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
120.25	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
1,519	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	30	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Summary for Pond SF-1: Sediment Forebay 1

Inflow Area = 1.197 ac, 31.65% Impervious, Inflow Depth = 5.55" for 50-yr event
Inflow = 4.3 cfs @ 12.13 hrs, Volume= 0.55 af
Outflow = 3.9 cfs @ 12.19 hrs, Volume= 0.55 af, Atten= 10%, Lag= 3.5 min
Primary = 3.9 cfs @ 12.19 hrs, Volume= 0.55 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 122.04' @ 12.19 hrs Surf.Area= 585 sf Storage= 628 cf
Flood Elev= 123.35' Surf.Area= 975 sf Storage= 1,642 cf

Plug-Flow detention time= 4.0 min calculated for 0.55 af (100% of inflow)
Center-of-Mass det. time= 3.8 min (820.0 - 816.1)

Volume	Invert	Avail.Storage	Storage Description
#1	120.50'	1,642 cf	**Detention (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
120.50	254	57.4	0	0	254
121.00	348	66.8	150	150	352
122.00	576	85.6	457	607	592
123.35	975	111.1	1,035	1,642	1,013

Device	Routing	Invert	Outlet Devices
#1	Primary	120.50'	**12.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 120.50' / 119.00' S= 0.0375 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.8 cfs @ 12.19 hrs HW=122.04' TW=119.67' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.8 cfs @ 4.90 fps)

Summary for Pond BIO-1: BIO-1

Inflow Area = 1.258 ac, 30.11% Impervious, Inflow Depth = 5.52" for 50-yr event
Inflow = 4.0 cfs @ 12.18 hrs, Volume= 0.58 af
Outflow = 4.0 cfs @ 12.20 hrs, Volume= 0.57 af, Atten= 0%, Lag= 0.9 min
Primary = 4.0 cfs @ 12.20 hrs, Volume= 0.57 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 119.67' @ 12.20 hrs Surf.Area= 1,646 sf Storage= 2,311 cf
Flood Elev= 120.25' Surf.Area= 2,143 sf Storage= 3,378 cf

Plug-Flow detention time= 44.8 min calculated for 0.57 af (99% of inflow)
Center-of-Mass det. time= 41.4 min (861.9 - 820.5)

Volume	Invert	Avail.Storage	Storage Description
#1	115.58'	3,378 cf	**BIO (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.58	1,138	134.2	0.0	0	0	1,138
116.75	1,138	134.2	35.0	466	466	1,295
117.00	1,138	134.2	20.0	57	523	1,329
118.50	1,138	134.2	10.0	171	694	1,530
119.00	1,346	143.6	100.0	620	1,314	1,749
119.50	1,569	153.1	100.0	728	2,042	1,985
120.00	1,805	162.5	100.0	843	2,885	2,234
120.25	2,143	175.1	100.0	493	3,378	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 115.00' / 114.00' S= 0.0556 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	115.92'	**6.0" Round Culvert** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.92' / 115.92' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#3	Device 2	115.58'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	119.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.0 cfs @ 12.20 hrs HW=119.67' TW=114.19' (Dynamic Tailwater)
└─**1=Culvert** (Passes 4.0 cfs of 11.9 cfs potential flow)
  └─**2=Culvert** (Passes 0.4 cfs of 1.3 cfs potential flow)
    └─**3=Exfiltration** (Exfiltration Controls 0.4 cfs)
  └─**4=Orifice/Grate** (Weir Controls 3.6 cfs @ 1.34 fps)

171+620+728=
1,519 CF > 1,463 (WQV)

Stage-Area-Storage for Pond BIO-1: BIO-1 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
118.82	1,269	1,079
118.83	1,273	1,091
118.84	1,278	1,104
118.85	1,282	1,117
118.86	1,286	1,130
118.87	1,290	1,143
118.88	1,294	1,155
118.89	1,299	1,168
118.90	1,303	1,181
118.91	1,307	1,194
118.92	1,312	1,208
118.93	1,316	1,221
118.94	1,320	1,234
118.95	1,324	1,247
118.96	1,329	1,260
118.97	1,333	1,274
118.98	1,337	1,287
118.99	1,342	1,300
119.00	1,346	1,314
119.01	1,350	1,327
119.02	1,355	1,341
119.03	1,359	1,354
119.04	1,363	1,368
119.05	1,368	1,382
119.06	1,372	1,395
119.07	1,376	1,409
119.08	1,381	1,423
119.09	1,385	1,437
119.10	1,389	1,451
119.11	1,394	1,465
119.12	1,398	1,479
119.13	1,402	1,493
119.14	1,407	1,507
119.15	1,411	1,521
119.16	1,416	1,535
119.17	1,420	1,549
119.18	1,424	1,563
119.19	1,429	1,577
119.20	1,433	1,592
119.21	1,438	1,606
119.22	1,442	1,621
119.23	1,446	1,635
119.24	1,451	1,649
119.25	1,455	1,664
119.26	1,460	1,679
119.27	1,464	1,693
119.28	1,469	1,708
119.29	1,473	1,723
119.30	1,478	1,737
119.31	1,482	1,752
119.32	1,487	1,767
119.33	1,491	1,782
119.34	1,496	1,797
119.35	1,500	1,812
119.36	1,505	1,827
119.37	1,509	1,842
119.38	1,514	1,857
119.39	1,518	1,872
119.40	1,523	1,887
119.41	1,528	1,903
119.42	1,532	1,918
119.43	1,537	1,933
119.44	1,541	1,949
119.45	1,546	1,964
119.46	1,551	1,980
119.47	1,555	1,995
119.48	1,560	2,011
119.49	1,564	2,026
119.50	1,569	2,042
119.51	1,574	2,058
119.52	1,578	2,073
119.53	1,583	2,089
119.54	1,587	2,105
119.55	1,592	2,121
119.56	1,596	2,137
119.57	1,601	2,153
119.58	1,606	2,169
119.59	1,610	2,185
119.60	1,615	2,201
119.61	1,620	2,217
119.62	1,624	2,234
119.63	1,629	2,250
119.64	1,633	2,266
119.65	1,638	2,282
119.66	1,643	2,299
119.67	1,647	2,315
119.68	1,652	2,332
119.69	1,657	2,348
119.70	1,661	2,365
119.71	1,666	2,382
119.72	1,671	2,398
119.73	1,676	2,415
119.74	1,680	2,432
119.75	1,685	2,449
119.76	1,690	2,465
119.77	1,694	2,482
119.78	1,699	2,499
119.79	1,704	2,516
119.80	1,709	2,533
119.81	1,713	2,551
119.82	1,718	2,568
119.83	1,723	2,585
119.84	1,728	2,602
119.85	1,732	2,619
119.86	1,737	2,637
119.87	1,742	2,654
119.88	1,747	2,672
119.89	1,752	2,689

WQV = 1,463
1,463+466+57=
1,986 CF

Stage-Discharge for Pond BIO-1: BIO-1

Elevation (feet)	Primary (cfs)
115.58	0.0
115.63	0.0
115.68	0.0
115.73	0.0
115.78	0.0
115.83	0.0
115.88	0.0
115.93	0.0
115.98	0.0
116.03	0.0
116.08	0.0
116.13	0.0
116.18	0.1
116.23	0.1
116.28	0.1
116.33	0.2
116.38	0.2
116.43	0.2
116.48	0.3
116.53	0.3
116.58	0.3
116.63	0.3
116.68	0.3
116.73	0.3
116.78	0.3
116.83	0.3
116.88	0.3
116.93	0.3
116.98	0.3
117.03	0.3
117.08	0.3
117.13	0.3
117.18	0.3
117.23	0.3
117.28	0.3
117.33	0.3
117.38	0.3
117.43	0.3
117.48	0.3
117.53	0.3
117.58	0.3
117.63	0.3
117.68	0.3
117.73	0.3
117.78	0.3
117.83	0.3
117.88	0.3
117.93	0.3
117.98	0.3
118.03	0.3
118.08	0.3
118.13	0.3
118.18	0.3
118.23	0.3
118.28	0.3
118.33	0.3
118.38	0.3
118.43	0.3
118.48	0.3
118.53	0.3
118.58	0.3
118.63	0.3
118.68	0.3
118.73	0.3
118.78	0.3
118.83	0.3
118.88	0.3
118.93	0.3
118.98	0.3
119.03	0.3
119.08	0.3
119.13	0.3
119.18	0.3
119.23	0.3
119.28	0.3
119.33	0.3
119.38	0.4
119.43	0.4
119.48	0.4
119.53	0.6
119.58	1.6
119.63	2.8
119.68	4.4
119.73	6.2
119.78	8.1
119.83	10.3
119.88	12.2
119.93	12.3
119.98	12.3
120.03	12.4
120.08	12.5
120.13	12.5
120.18	12.6
120.23	**12.7**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

FILTRATION PRACTICE DESIGN CRITERIA (Env-Wq 1508.07)

Type/Node Name: **BIO-RETENTION BASIN 2 (BIO-2)**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

Yes		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
4.61	ac	A = Area draining to the practice	
0.93	ac	A_I = Impervious area draining to the practice	
0.20	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.23	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
1.07	ac-in	WQV= 1" x Rv x A	
3,875	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
969	cf	25% x WQV (check calc for sediment forebay volume)	
2,906	cf	75% x WQV (check calc for surface sand filter volume)	
Swale		Method of Pretreatment? (not required for clean or roof runoff)	
N/A	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
	sf	A_{SA} = Surface area of the practice	
	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
-	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
99.46	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
0.90	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
2.39	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
97.00	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
96.00	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
94.83	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
92.17	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
1.00	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
4.83	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
2.17	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
99.74	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
100.25	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
YES	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
YES	ac	Drainage Area no larger than 5 ac?	**← yes**
4,017	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	30	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet		Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

Summary for Pond BIO-2: BIO-2

Inflow Area = 4.619 ac, 20.15% Impervious, Inflow Depth = 5.22" for 50-yr event
Inflow = 17.5 cfs @ 12.10 hrs, Volume= 2.01 af
Outflow = 17.3 cfs @ 12.11 hrs, Volume= 2.01 af, Atten= 1%, Lag= 0.7 min
Primary = 0.9 cfs @ 12.11 hrs, Volume= 1.22 af
Secondary = 16.4 cfs @ 12.11 hrs, Volume= 0.79 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 96.00' Surf.Area= 3,193 sf Storage= 469 cf
Peak Elev= 99.74' @ 12.11 hrs Surf.Area= 4,062 sf Storage= 6,423 cf (5,953 cf above start)
Flood Elev= 100.25' Surf.Area= 4,862 sf Storage= 8,660 cf (8,190 cf above start)

Plug-Flow detention time= 46.6 min calculated for 2.00 af (100% of inflow)
Center-of-Mass det. time= 40.7 min (867.3 - 826.6)

Volume	Invert	Avail.Storage	Storage Description
#1	95.58'	8,660 cf	**Surface Bowl Area (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
95.58	3,193	223.4	0.0	0	0	3,193
96.75	3,193	223.4	35.0	1,308	1,308	3,454
97.00	3,193	223.4	20.0	160	1,467	3,510
98.50	3,193	223.4	10.0	479	1,946	3,845
99.00	3,536	232.9	100.0	1,682	3,628	4,209
99.50	3,892	242.3	100.0	1,856	5,484	4,583
100.00	4,257	257.2	100.0	2,037	7,521	5,189
100.25	4,862	272.6	100.0	1,139	8,660	5,841

Device	Routing	Invert	Outlet Devices
#1	Primary	95.92'	**6.0" Round Culvert X 3.00** L= 52.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.92' / 95.92' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#2	Device 1	95.58'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Secondary	99.50'	**56.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=0.9 cfs @ 12.11 hrs HW=99.74' TW=98.22' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.9 cfs of 2.5 cfs potential flow)
└**2=Exfiltration** (Exfiltration Controls 0.9 cfs)

Secondary OutFlow Max=16.4 cfs @ 12.11 hrs HW=99.74' TW=98.22' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 16.4 cfs @ 1.24 fps)

479+1,682+1,856 =
4,017 CF > 3,875 (WQV)

Stage-Area-Storage for Pond BIO-2: BIO-2 (continued)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
98.82	3,411	3,003
98.83	3,417	3,037
98.84	3,424	3,071
98.85	3,431	3,105
98.86	3,438	3,139
98.87	3,445	3,174
98.88	3,452	3,208
98.89	3,459	3,243
98.90	3,466	3,278
98.91	3,473	3,312
98.92	3,480	3,347
98.93	3,487	3,382
98.94	3,494	3,417
98.95	3,501	3,452
98.96	3,508	3,487
98.97	3,515	3,522
98.98	3,522	3,557
98.99	3,529	3,592
99.00	3,536	3,628
99.01	3,543	3,663
99.02	3,550	3,699
99.03	3,557	3,734
99.04	3,564	3,770
99.05	3,571	3,805
99.06	3,578	3,841
99.07	3,585	3,877
99.08	3,592	3,913
99.09	3,599	3,949
99.10	3,606	3,985
99.11	3,613	4,021
99.12	3,620	4,057
99.13	3,627	4,093
99.14	3,634	4,130
99.15	3,641	4,166
99.16	3,648	4,202
99.17	3,655	4,239
99.18	3,662	4,275
99.19	3,669	4,312
99.20	3,676	4,349
99.21	3,683	4,386
99.22	3,691	4,423
99.23	3,698	4,459
99.24	3,705	4,496
99.25	3,712	4,534
99.26	3,719	4,571
99.27	3,726	4,608
99.28	3,733	4,645
99.29	3,740	4,683
99.30	3,748	4,720
99.31	3,755	4,758
99.32	3,762	4,795
99.33	3,769	4,833
99.34	3,776	4,871
99.35	3,783	4,908
99.36	3,791	4,946
99.37	3,798	4,984
99.38	3,805	5,022
99.39	3,812	5,060
99.40	3,819	5,098
99.41	3,827	5,137
99.42	3,834	5,175
99.43	3,841	5,213
99.44	3,848	5,252
99.45	3,856	5,290
99.46	3,863	5,329
99.47	3,870	5,368
99.48	3,877	5,406
99.49	3,885	5,445
99.50	3,892	5,484
99.51	3,899	5,523
99.52	3,906	5,562
99.53	3,913	5,601
99.54	3,921	5,640
99.55	3,928	5,679
99.56	3,935	5,719
99.57	3,942	5,758
99.58	3,949	5,798
99.59	3,956	5,837
99.60	3,964	5,877
99.61	3,971	5,916
99.62	3,978	5,956
99.63	3,985	5,996
99.64	3,993	6,036
99.65	4,000	6,076
99.66	4,007	6,116
99.67	4,014	6,156
99.68	4,022	6,196
99.69	4,029	6,236
99.70	4,036	6,277
99.71	4,043	6,317
99.72	4,051	6,358
99.73	4,058	6,398
99.74	4,065	6,439
99.75	4,072	6,479
99.76	4,080	6,520
99.77	4,087	6,561
99.78	4,094	6,602
99.79	4,102	6,643
99.80	4,109	6,684
99.81	4,116	6,725
99.82	4,124	6,766
99.83	4,131	6,808
99.84	4,138	6,849
99.85	4,146	6,890
99.86	4,153	6,932
99.87	4,161	6,973
99.88	4,168	7,015
99.89	4,175	7,057

WQV = 3,875
3,875+160+1308=
5,343 CF

Stage-Discharge for Pond BIO-2: BIO-2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
95.58	0.0	0.0	0.0
95.63	0.0	0.0	0.0
95.68	0.0	0.0	0.0
95.73	0.0	0.0	0.0
95.78	0.0	0.0	0.0
95.83	0.0	0.0	0.0
95.88	0.0	0.0	0.0
95.93	0.0	0.0	0.0
95.98	0.0	0.0	0.0
96.03	0.0	0.0	0.0
96.08	0.1	0.1	0.0
96.13	0.1	0.1	0.0
96.18	0.2	0.2	0.0
96.23	0.3	0.3	0.0
96.28	0.3	0.3	0.0
96.33	0.4	0.4	0.0
96.38	0.5	0.5	0.0
96.43	0.6	0.6	0.0
96.48	0.7	0.7	0.0
96.53	0.7	0.7	0.0
96.58	0.7	0.7	0.0
96.63	0.7	0.7	0.0
96.68	0.7	0.7	0.0
96.73	0.7	0.7	0.0
96.78	0.7	0.7	0.0
96.83	0.7	0.7	0.0
96.88	0.7	0.7	0.0
96.93	0.7	0.7	0.0
96.98	0.7	0.7	0.0
97.03	0.7	0.7	0.0
97.08	0.7	0.7	0.0
97.13	0.7	0.7	0.0
97.18	0.7	0.7	0.0
97.23	0.7	0.7	0.0
97.28	0.7	0.7	0.0
97.33	0.7	0.7	0.0
97.38	0.7	0.7	0.0
97.43	0.7	0.7	0.0
97.48	0.7	0.7	0.0
97.53	0.7	0.7	0.0
97.58	0.7	0.7	0.0
97.63	0.7	0.7	0.0
97.68	0.7	0.7	0.0
97.73	0.7	0.7	0.0
97.78	0.7	0.7	0.0
97.83	0.7	0.7	0.0
97.88	0.7	0.7	0.0
97.93	0.7	0.7	0.0
97.98	0.7	0.7	0.0
98.03	0.7	0.7	0.0
98.08	0.7	0.7	0.0
98.13	0.7	0.7	0.0
98.18	0.7	0.7	0.0
98.23	0.7	0.7	0.0
98.28	0.7	0.7	0.0
98.33	0.7	0.7	0.0
98.38	0.7	0.7	0.0
98.43	0.7	0.7	0.0
98.48	0.7	0.7	0.0
98.53	0.7	0.7	0.0
98.58	0.8	0.8	0.0
98.63	0.8	0.8	0.0
98.68	0.8	0.8	0.0
98.73	0.8	0.8	0.0
98.78	0.8	0.8	0.0
98.83	0.8	0.8	0.0
98.88	0.8	0.8	0.0
98.93	0.8	0.8	0.0
98.98	0.8	0.8	0.0
99.03	0.8	0.8	0.0
99.08	0.8	0.8	0.0
99.13	0.8	0.8	0.0
99.18	0.8	0.8	0.0
99.23	0.9	0.9	0.0
99.28	0.9	0.9	0.0
99.33	0.9	0.9	0.0
99.38	0.9	0.9	0.0
99.43	0.9	0.9	0.0
99.48	0.9	0.9	0.0
99.53	1.6	0.9	0.7
99.58	4.1	0.9	3.2
99.63	7.6	0.9	6.7
99.68	11.8	0.9	10.9
99.73	16.7	0.9	15.8
99.78	22.3	0.9	21.3
99.83	28.4	1.0	27.4
99.88	35.1	1.0	34.1
99.93	42.2	1.0	41.2
99.98	49.6	1.0	48.6
100.03	57.4	1.0	56.4
100.08	65.6	1.0	64.6
100.13	74.1	1.1	73.0
100.18	82.9	1.1	81.8
100.23	**92.0**	**1.1**	**90.9**

B – 2

POLLUTANT REMOVAL

Pollutant Removal Efficiencies for Best Management Practices for Use in Pollutant Loading Analysis				Values Accepted for Loading Analyses		
BMP Type	**BMP**	**Notes**	**Lit. Ref.**	**TSS**	**TN**	**TP**
Stormwater Ponds	Wet Pond		B, F	70%	35%	45%
	Wet Extended Detention Pond		A, B	80%	55%	68%
	Micropool Extended Detention Pond	TBA				
	Multiple Pond System	TBA				
	Pocket Pond	TBA				
Stormwater Wetlands	Shallow Wetland		A, B, F, I	80%	55%	45%
	Extended Detention Wetland		A, B, F, I	80%	55%	45%
	Pond/Wetland System	TBA				
	Gravel Wetland		H	95%	85%	64%
Infiltration Practices	Infiltration Trench (≥75 ft from surface water)		B, D, I	90%	55%	60%
	Infiltration Trench (<75 ft from surface water)		B, D, I	90%	10%	60%
	Infiltration Basin (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Infiltration Basin (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Dry Wells			90%	55%	60%
	Drip Edges			90%	55%	60%
Filtering Practices	Aboveground or Underground Sand Filter that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Aboveground or Underground Sand Filter that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Aboveground or Underground Sand Filter with underdrain		A, I, F, G, H	85%	10%	45%
	Tree Box Filter	TBA				
	Bioretention System		I, G, H	90%	65%	65%
	Permeable Pavement that infiltrates WQV (≥75 ft from surface water)		A, F, B, D, I	90%	60%	65%
	Permeable Pavement that infiltrates WQV (<75 ft from surface water)		A, F, B, D, I	90%	10%	65%
	Permeable Pavement with underdrain		Use TN and TP values for sand filter w/ underdrain and outlet pipe	90%	10%	45%

B – 3

OUTLET PROTECTION

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 21074
Date: 2/15/2023
Structure: Outlet from BIO1

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (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:	114
Tailwater elev:	114.17
Tw:	0.17
Q:	3.4
D_0:	1.25

Apron Dimensions

w_1=	**4**	(ft)
w_2=	**17**	(ft)
La=	**14**	(ft)

Apron Length:

Tw > .5D_0		Tw < .5D_0	
La:	16.049	La:	13.129

Apron Width:

Tw > .5D_0		Tw < .5D_0	
w_2:	10.17	w_2:	16.88

w_1: 3.75

w_1=	3.75
w_2=	16.8791155
La=	13.1291155

RipRap Sizing

d_{50}=	0.48	(ft)
d_{50}=	5.77	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.72	TO	0.96	100
0.63	TO	0.87	85
0.48	TO	0.72	50
0.14	TO	0.24	15

Minimum Depth of Rock= 1.44 (ft)

Summary for Pond BIO-1: BIO-1

Inflow Area = 1.258 ac, 30.11% Impervious, Inflow Depth = 4.40" for 25-yr event
Inflow = 3.4 cfs @ 12.17 hrs, Volume= 0.46 af
Outflow = 3.4 cfs @ 12.19 hrs, Volume= 0.46 af, Atten= 0%, Lag= 0.9 min
Primary = 3.4 cfs @ 12.19 hrs, Volume= 0.46 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 119.65' @ 12.19 hrs Surf.Area= 1,638 sf Storage= 2,283 cf
Flood Elev= 120.25' Surf.Area= 2,143 sf Storage= 3,378 cf

Plug-Flow detention time= 46.5 min calculated for 0.46 af (99% of inflow)
Center-of-Mass det. time= 42.0 min (871.1 - 829.0)

Volume	Invert	Avail.Storage	Storage Description
#1	115.58'	3,378 cf	**BIO (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
115.58	1,138	134.2	0.0	0	0	1,138
116.75	1,138	134.2	35.0	466	466	1,295
117.00	1,138	134.2	20.0	57	523	1,329
118.50	1,138	134.2	10.0	171	694	1,530
119.00	1,346	143.6	100.0	620	1,314	1,749
119.50	1,569	153.1	100.0	728	2,042	1,985
120.00	1,805	162.5	100.0	843	2,885	2,234
120.25	2,143	175.1	100.0	493	3,378	2,575

Device	Routing	Invert	Outlet Devices
#1	Primary	115.00'	**15.0" Round Culvert** L= 18.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 115.00' / 114.00' S= 0.0556 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	115.92'	**6.0" Round Culvert** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 115.92' / 115.92' S= 0.0000 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf
#3	Device 2	115.58'	**10.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	119.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.4 cfs @ 12.19 hrs HW=119.65' TW=114.17' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 3.4 cfs of 11.9 cfs potential flow)
↑—**2=Culvert** (Passes 0.4 cfs of 1.3 cfs potential flow)
↑—**3=Exfiltration** (Exfiltration Controls 0.4 cfs)
—**4=Orifice/Grate** (Weir Controls 3.0 cfs @ 1.27 fps)

OUTLET PROTECTION DESIGN CALCS

NON DEFINED CHANNEL

Job #: 21074
Date: 2/15/2023
Structure: Outlet from Det-1

Variables:

Q= Discharge from the pipe (cfs)
$D_{0=}$ Diameter of the pipe (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:	91
Tailwater elev:	91.4
Tw:	0.4
Q:	5
D_0:	1.25

Apron Dimensions

w_1=	**4**	(ft)
w_2=	**19**	(ft)
La=	**16**	(ft)

Apron Length:

Tw > .5D_0		Tw < .5D_0
La: 19.483		La: 15.190

Apron Width:

Tw > .5D_0		Tw < .5D_0
w_2: 11.54		w_2: 18.94

w_1: 3.75

w_1=	3.75
w_2=	18.9398758
La=	15.1898758

RipRap Sizing

d_{50}=	0.34	(ft)
d_{50}=	4.10	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.51	TO	0.68	100
0.44	TO	0.62	85
0.34	TO	0.51	50
0.10	TO	0.17	15

Minimum Depth of Rock= 1.03 (ft)

Summary for Pond DET-1: DETENTION POND 1

Inflow Area = 4.900 ac, 18.99% Impervious, Inflow Depth = 4.10" for 25-yr event
Inflow = 15.2 cfs @ 12.11 hrs, Volume= 1.67 af
Outflow = 5.0 cfs @ 12.45 hrs, Volume= 1.67 af, Atten= 67%, Lag= 20.8 min
Primary = 5.0 cfs @ 12.45 hrs, Volume= 1.67 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.00 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 98.66' @ 12.45 hrs Surf.Area= 5,233 sf Storage= 12,348 cf
Flood Elev= 100.25' Surf.Area= 7,419 sf Storage= 21,948 cf

Plug-Flow detention time= 29.3 min calculated for 1.67 af (100% of inflow)
Center-of-Mass det. time= 29.2 min (902.8 - 873.6)

Volume	Invert	Avail.Storage	Storage Description
#1	95.50'	21,948 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)
95.50	2,683	239.3	0	0	2,683
96.00	3,049	248.7	1,432	1,432	3,068
98.00	4,654	286.0	7,647	9,079	4,743
99.00	5,542	305.3	5,092	14,170	5,698
99.50	6,007	314.7	2,886	17,057	6,187
100.00	6,572	337.2	3,144	20,200	7,365
100.25	7,419	352.7	1,748	21,948	8,221

Device	Routing	Invert	Outlet Devices
#1	Primary	93.00'	**15.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 93.00' / 91.00' S= 0.0667 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#2	Device 1	95.50'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	97.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	99.60'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	99.80'	**6.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.0 cfs @ 12.45 hrs HW=98.66' TW=91.40' (Dynamic Tailwater)
└─**1=Culvert** (Passes 5.0 cfs of 13.3 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 4.1 cfs @ 8.21 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 0.9 cfs @ 4.60 fps)
  └─**4=Orifice/Grate** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=95.50' TW=91.00' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

OUTLET PROTECTION DESIGN CALCS

DEFINED CHANNEL

Job #: 21074
Date: 2/15/2023
Structure: Outlet from PCB1

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:	117
Tailwater elev:	117.83
Tw:	0.83
Q:	4.9
D_0:	1.50
D:	6
z:	3

Apron Dimensions

w_1=	**15**	(ft)
w_2=	**6**	(ft)
La=	**19**	(ft)

Apron Length:

$Tw > .5D_0$	$Tw < .5D_0$
La: 18.502	La: 15.301

Apron Width:

w_2: 6

w_1: 15

w_1=	15.00
w_2=	6.00
La=	18.5016665

RipRap Sizing

d_{50}=	0.13	(ft)
d_{50}=	1.60	(in)

RipRap Gradation

Stone Size			% of Weight Smaller Then the Given Size
0.20	TO	0.27	100
0.17	TO	0.24	85
0.13	TO	0.20	50
0.04	TO	0.07	15

Minimum Depth of Rock= 0.40 (ft)

Summary for Pond PCB1: PCB1

Inflow Area = 1.380 ac, 34.87% Impervious, Inflow Depth = 4.44" for 25-yr event
Inflow = 4.9 cfs @ 12.07 hrs, Volume= 0.51 af
Outflow = 4.9 cfs @ 12.07 hrs, Volume= 0.51 af, Atten= 0%, Lag= 0.0 min
Primary = 4.9 cfs @ 12.07 hrs, Volume= 0.51 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 125.90' @ 12.07 hrs
Flood Elev= 129.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	124.80'	**18.0" Round Culvert**
			L= 170.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 124.80' / 117.00' S= 0.0459 '/' Cc= 0.900
			n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.9 cfs @ 12.07 hrs HW=125.89' TW=117.83' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.9 cfs @ 3.56 fps)

APPENDIX C

INSPECTION AND MAINTENANCE

C – 1

STORMWATER MANAGEMENT SYSTEM INSPECTION & MAINTENANCE PLAN

Stormwater Management System Inspection & Maintenance Plan

Prepared for

EMERSON RIDGE AT JANETOS FARM
TAX MAP N, LOT 13-1

Oak Street
Dover, New Hampshire
Strafford County

February 2023
Revised: March 29, 2023

Owner of Record:

CHINBURG DEVELOPMENT, LLC
3 Penstock Way
Newmarket, New Hampshire 03857

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 **Chinburg Development, LLC.** 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 while at the same time ensuring the recharge of groundwater resources through continued infiltration.

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

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

Contact / Responsible Party

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

Shawna Sammis
Phone: (603) 868-5995x31
Email: ssammis@chinburg.com

Management Company

Chinburg Development, LLC
3 Penstock Street
Newmarket, NH 03857

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.

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 (Rip Rap)
- Catch Basins
- Detention Pond
- Bio-Retention Basins
- Grassed Lined Conveyance Swale & Pre-Treatment Swale
- Pavement
- Litter / Trash Removal
- 8' Wide Access Road

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 $\geq$ 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 (RIP RAP):

- 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):

- 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.

DETENTION POND:

- Inspection, by a **qualified professional**, of detention ponds at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or conducted as warranted by such inspection.
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.
- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen detention basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as “berms” or “dams” that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the pond and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

BIO-RETENTION BASINS:

- Inspection, by a **qualified professional**, of the Bio-Retention Basins at least twice annually, and following any rainfall event exceeding 2.5 inches in a 24 hour period, with maintenance or rehabilitation conducted as warranted by such inspection. If the Bio-Retention Basin systems do not drain within 72-hours following a rainfall event, a qualified professional should assess the condition and determine measures required to restore filtration practice (as applicable).
- Embankments and spillways should be inspected by a **qualified professional** for settlement, erosion, seepage, animal burrows, woody vegetation, and other conditions that could degrade the

embankment and reduce its stability for impounding water. Immediate corrective action should be implemented if any such conditions are found.

- Inlet and outlet pipes, inlet and outlet structures, energy dissipation structures or practices, and other structural appurtenances should be inspected by a **qualified professional**, and corrective action implemented (e.g., maintenance, repairs, or replacement) as indicated by such inspection.
- The bottoms, interior and exterior side slopes, and crest of earthen Bio-Retention Basins should be mowed, and the vegetation maintained in healthy condition, as appropriate to the function of the facility and type of vegetation.
- Vegetated embankments that serve as "berms" or "dams" that impound water should be mowed at least once annually to prevent the establishment of woody vegetation.
- Trash and debris should be removed from the basin and any inlet or outlet structures whenever observed.
- Accumulated sediment should be removed when it significantly affects pond capacity.

GRASS LINED CONVEYANCE SWALE & PRE-TREATMENT SWALE:

- Inspect once per year
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of swale (at least twice annually), maintain a 4" stand of vegetative growth.

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 Anti-Icing Data Form in the appendix).
- 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.
- See attached "Winter Maintenance Guidelines for Porous Pavements" for de-icing agent recommendations.

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.

8' WIDE ACCESS ROAD:

- Inspect once per year
- Inspect for erosion, sediment accumulation, vegetation loss, and presence of invasive species.
- Remove debris and accumulated sediment, based on inspection.
- Repair eroded areas as needed; remove invasive species and dead vegetation.
- Perform periodic mowing of road (at least once annually).

Inspection & Maintenance Table

System Component / BMP	Minimum Inspection Frequency	Minimum Inspection Requirements	Maintenance / Cleanout Threshold
Pipes/Culverts	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Outlet Structure(s)	Annually	• Check for clogging • Check for sediment accumulation	Remove when noticed Clean when necessary
Energy Dissipation (ED) Structures (Rip Rap)	Annually	• Check for damage/deterioration • Check for displaced stones • Check for woody vegetation	Repair immediately Replace immediately Remove annually
Catch Basins	Annually	• Check for sediment accumulation • Check for floatable contaminants • Check for hydrocarbons (oils and grease)	≥ 1 ft. sediment depth Remove all floatables Remove immediately
Detention Pond • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation	Bi-Annually “ “ “ “ Periodically “ “ “ “ Bi-Annually	• See Outlet Structure (OS), required • Check for erosion, settlement, seepage, etc. • Check for sediment accumulation in pond • Check for trash (in pond and structures) • Maintain 95% vegetation (pond & slopes) • Maintain healthy stand of vegetation	See OS Requirement Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore vegetation in-kind Mow when ≥ 6 in
Bio-Retention Basins • Outlet Structure • Inlet/Outlet Piping • Embankments • Pond Sediment • Trash/Debris • Vegetation (Veg.)	Bi-Annually “ “ “ “ Periodically “ “ “ “	• See Outlet Structure (OS) Req. • Check for erosion, settlement, seepage, etc. • Check for sediment accumulation in pond • Check for trash (in pond and structures) • Maintain 95% veg. (pond & slopes) • Maintain healthy stand of veg.	See OS Req. Repair immediately ≥ 2 in. sediment Remove all trash/debris Restore veg. in-kind Mow when ≥ 6 in
Grass Lined Conveyance Swale & Pre-Treatment Swale	Annually	• Check for sediment accumulation • Check for erosion • Ensure Swale is stabilized • Maintain healthy stand of veg., 4” minimum • Inspect for invasive species	≥ 1 in. sediment Repair immediately Restore vegetation in-kind 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
8’ Wide Access Road	Annually	• Check for erosion • Maintain healthy vegetation • Inspect for invasive species	Repair immediately Mow once per year Remove/Dispose of accordingly

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

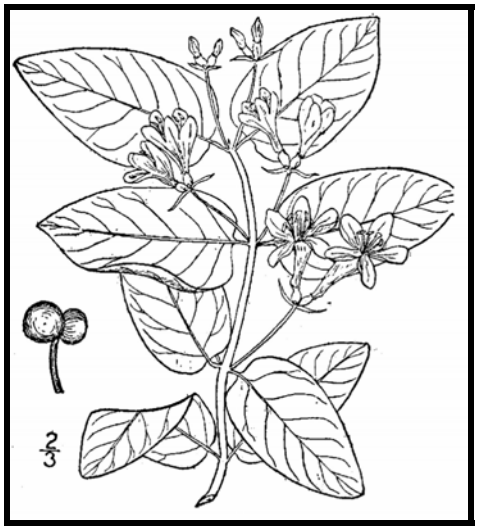
Deicing Salt Quantity Use Log

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

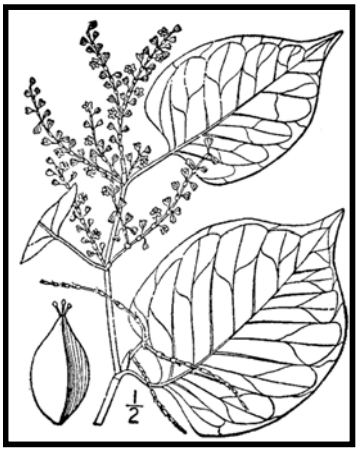
Prohibited invasive species shall only be disposed of in a manner that renders them nonliving and nonviable. (Agr. 3802.04)

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>

<table>
<tr><th>Non-Woody Plants</th><th>Method of Reproducing</th><th>Methods of Disposal</th></tr>
<tr><td rowspan="2">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)</td><td rowspan="2">Fruits and Seeds
  </td><td>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.</td></tr>
<tr><td>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.</td></tr>
<tr><td>common reed
(Phragmites australis)
Japanese knotweed
(Polygonum cuspidatum)
Bohemian knotweed
(Polygonum x bohemicum)</td><td>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.</td><td>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.</td></tr>
</table>

January 2010

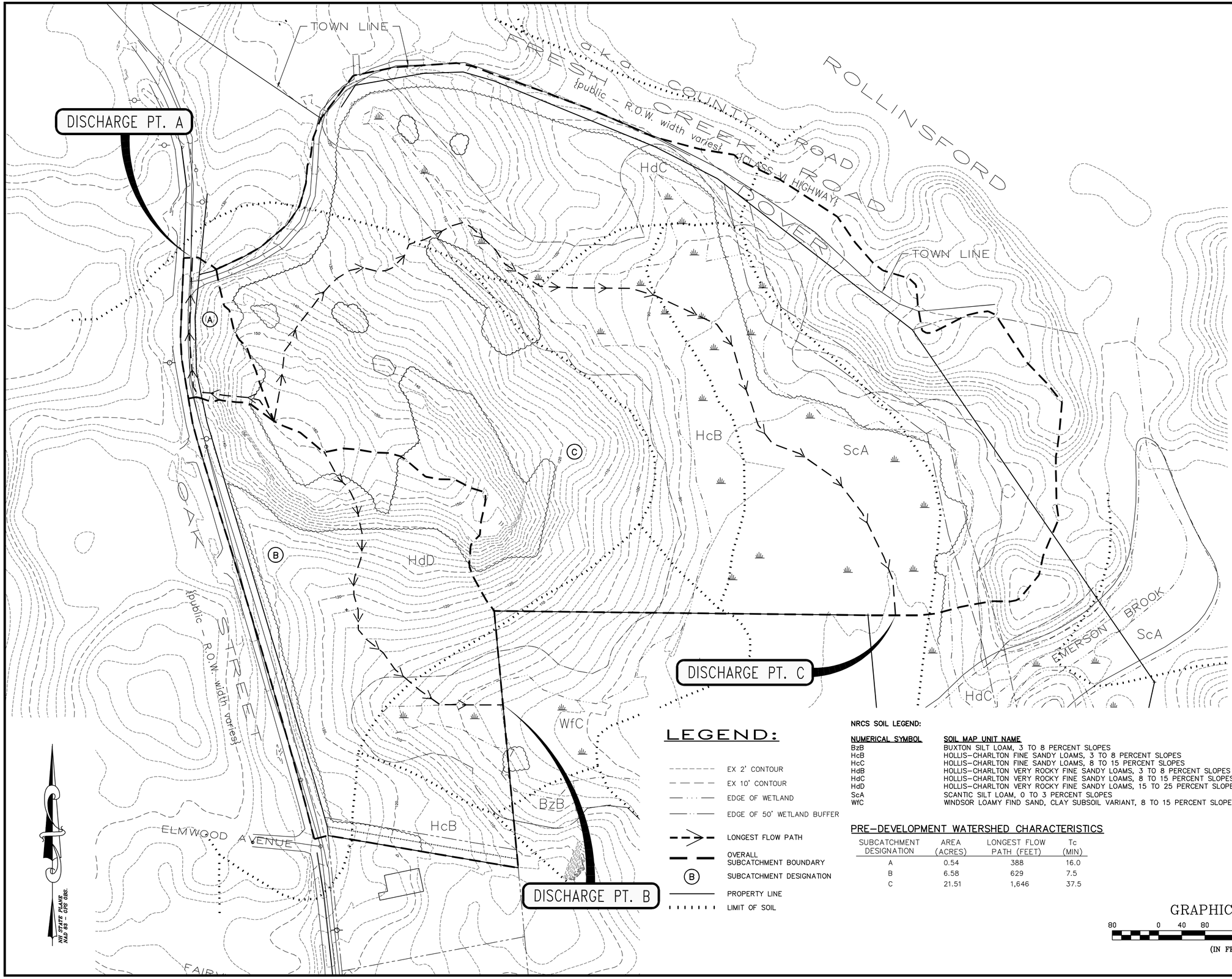
UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations, and prohibits discrimination in its programs, activities and employment on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sex, sexual orientation, or veteran’s, marital or family status. College of Life Sciences and Agriculture, County Governments, NH Dept. of Resources and Economic Development, Division of Forests and Lands, NH Fish and Game ,and U.S. Dept. of Agriculture cooperating.

APPENDIX D

WATERSHED PLANS

D – 1

PRE-DEVELOPMENT CONDITIONS



LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.54	388	16.0
B	6.58	629	7.5
C	21.51	1,646	37.5

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

NO.	REVISION	APP'D	DATE

DATE: 2-16-23
SCALE: 1"=80'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO: 21074
FILE: DRN

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

PRE-DEVELOPMENT WATERSHED PLAN

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-1

DISCHARGE PT. A

EAST a.k.a. COUNTY ROAD
{public - R.O.W. width varies}

ROLLINSFORD ROAD

DOVER

TOWN LINE

CLASS VI HIGHWAY

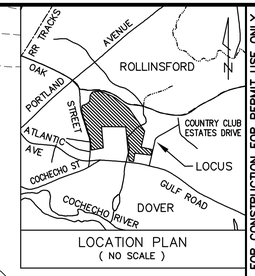
HdC

HcB

ScA

MATCHLINE WS-2

WS-3



LOCATION PLAN
(NO SCALE)

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL

NH STATE PLANE NAD 83 - US FEET

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.54	388	16.0
B	6.58	629	7.5
C	21.51	1,646	37.5

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

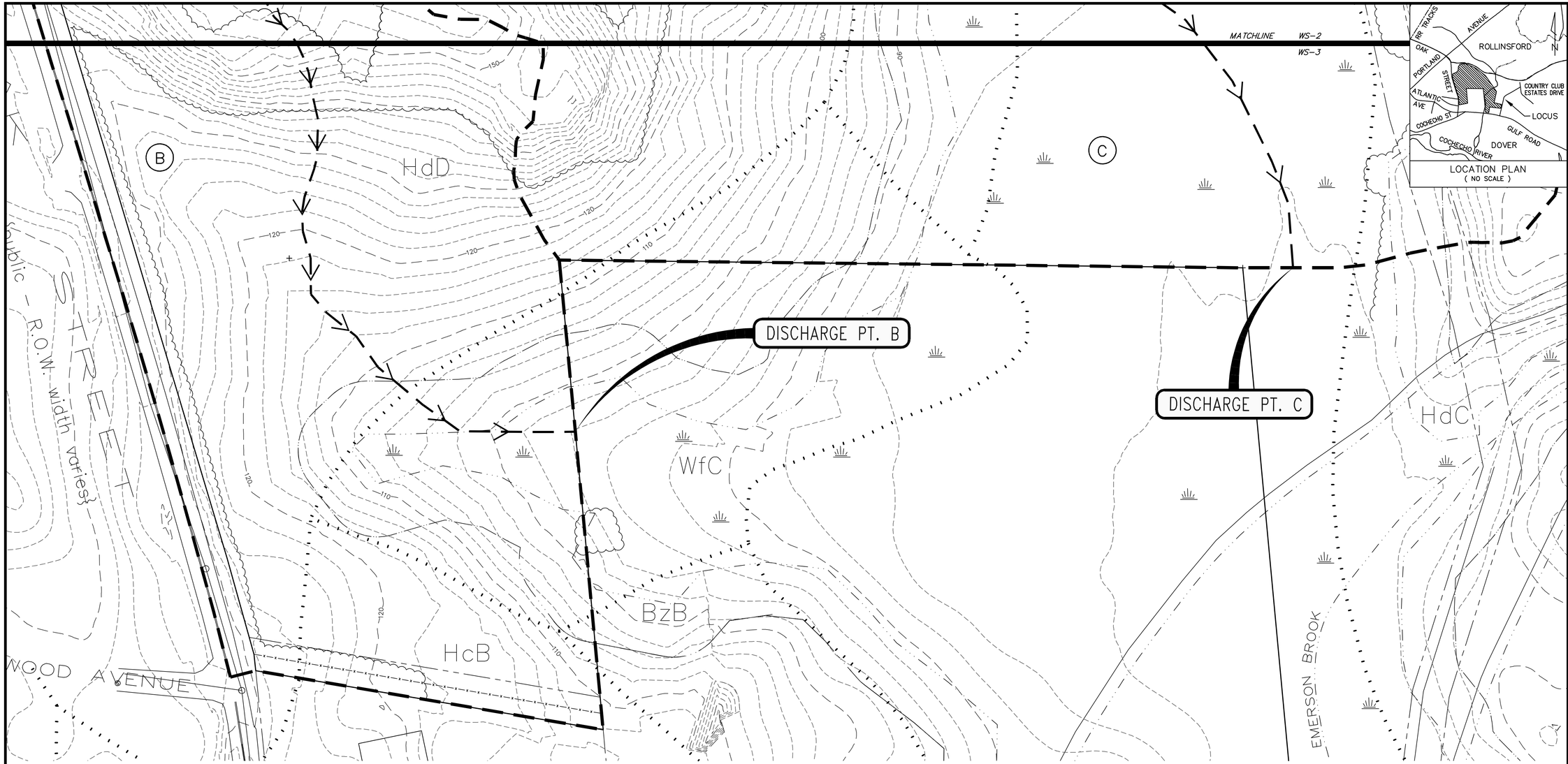
DATE: 2-16-23
SCALE: 1"=50'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 21074
FILE: DRN

PRE-DEVELOPMENT WATERSHED PLAN

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-2



NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 2-16-23
SCALE: 1"=50'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO: 21074
FILE: DRN

PRE-DEVELOPMENT WATERSHED PLAN

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-3

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL

NH STATE PLANE NAD 83 - US FEET

PRE-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.54	388	16.0
B	6.58	629	7.5
C	21.51	1,646	37.5

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

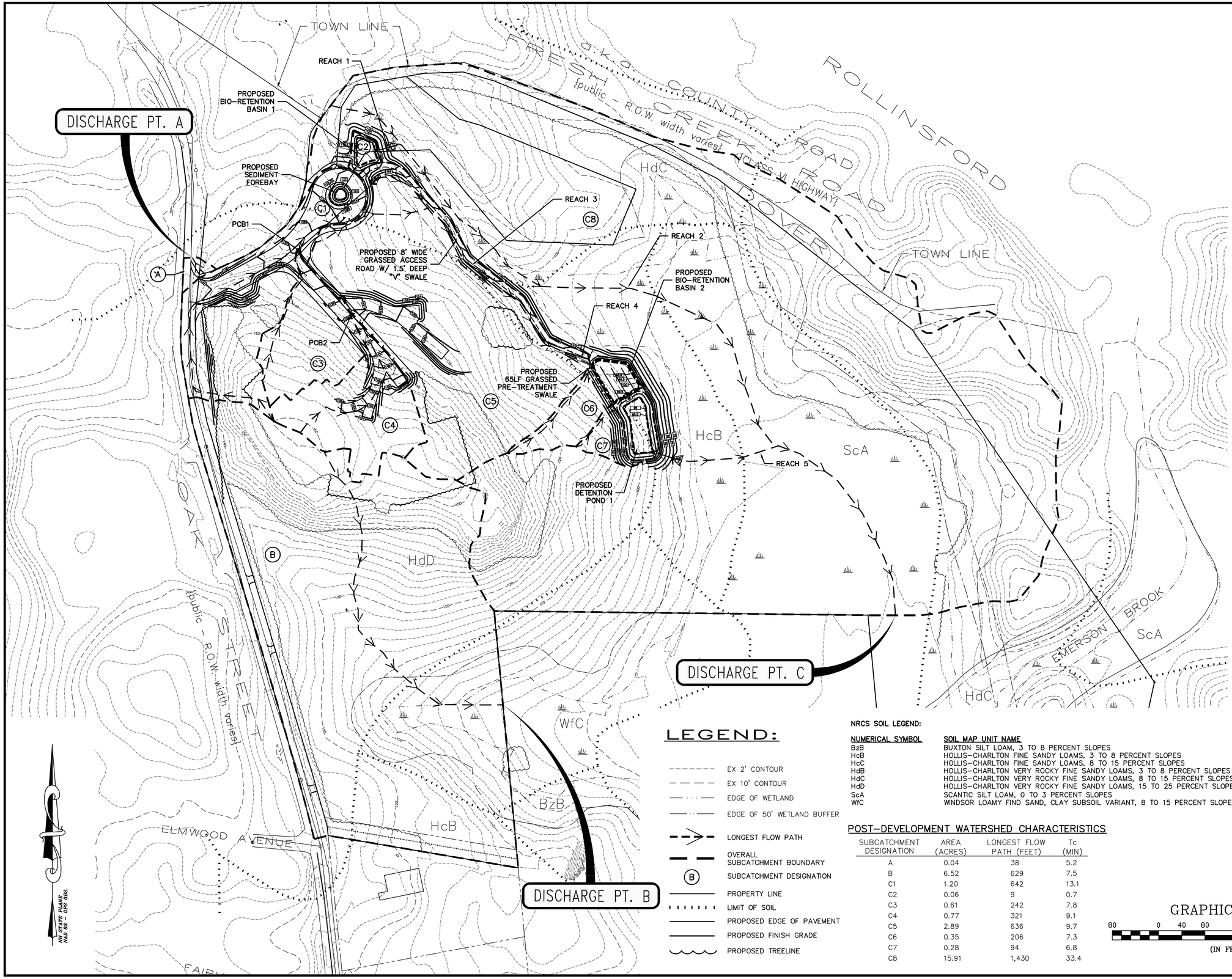
GRAPHIC SCALE

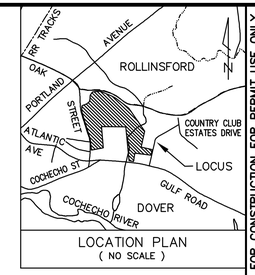
50 0 25 50 100 200

(IN FEET)

D – 2

POST-DEVELOPMENT CONDITIONS





LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERSHED ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 2-16-23
SCALE: 1"=80'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO: 21074
FILE: DRN

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL
- PROPOSED EDGE OF PAVEMENT
- PROPOSED FINISH GRADE
- PROPOSED TREELINE

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.04	38	5.2
B	6.52	629	7.5
C1	1.20	642	13.1
C2	0.06	9	0.7
C3	0.61	242	7.8
C4	0.77	321	9.1
C5	2.89	636	9.7
C6	0.35	206	7.3
C7	0.28	94	6.8
C8	15.91	1,430	33.4

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)

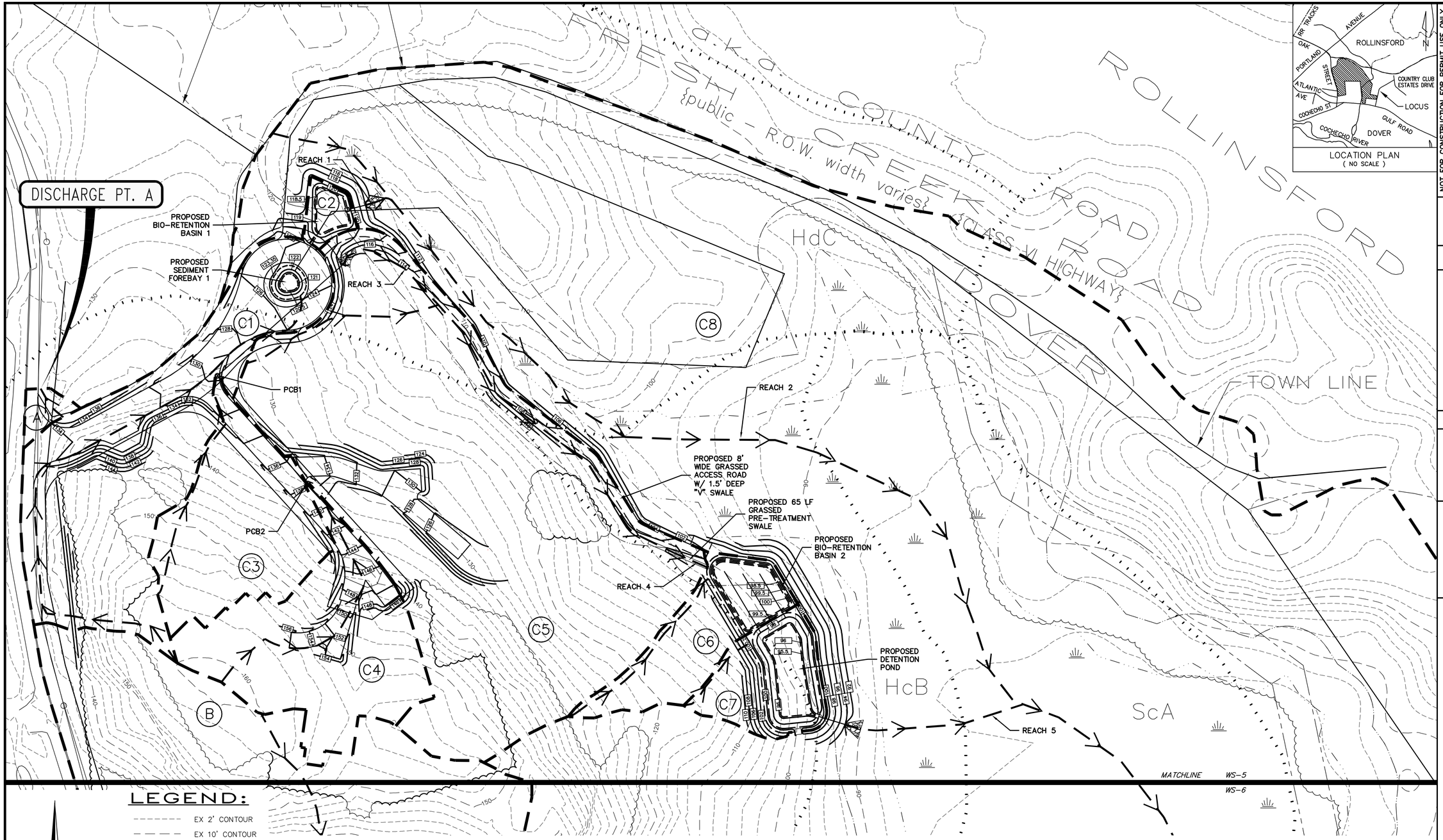
NH STATE PLANE
NAD 83 - US SURVEY FEET

POST-DEVELOPMENT WATERSHED PLAN

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-4



LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 2-16-23
SCALE: 1"=50'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO: 21074
FILE: DRN

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL
- PROPOSED EDGE OF PAVEMENT
- PROPOSED FINISH GRADE
- PROPOSED TREELINE

NH STATE PLANE NAD 83 - US FEET

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.04	38	5.2
B	6.52	629	7.5
C1	1.20	642	13.1
C2	0.06	9	0.7
C3	0.61	242	7.8
C4	0.77	321	9.1
C5	2.89	636	9.7
C6	0.35	206	7.3
C7	0.28	94	6.8
C8	15.91	1,430	33.4

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

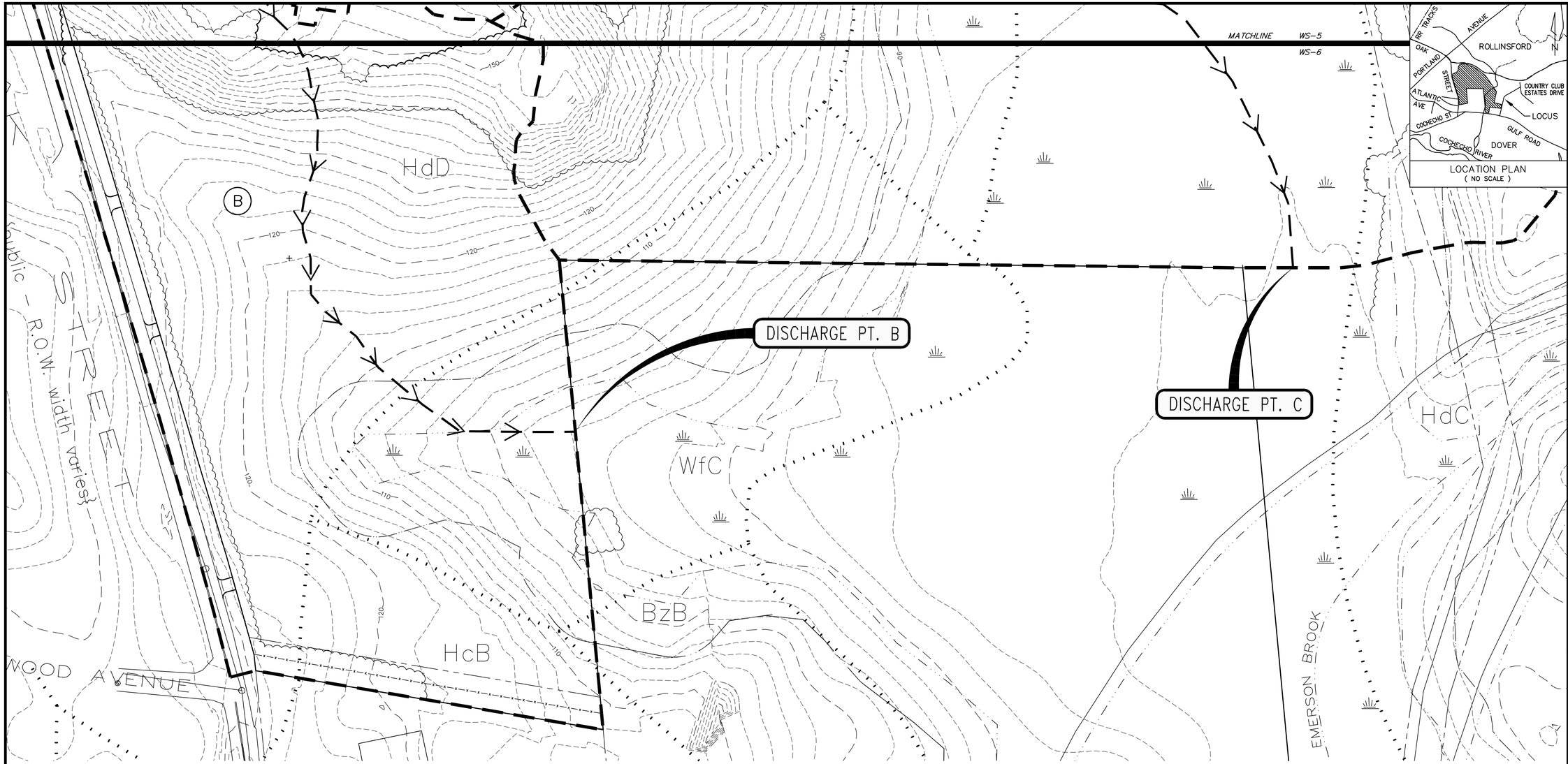
GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

POST-DEVELOPMENT WATERSHED PLAN

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-5



NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE

DATE: 2-16-23
SCALE: 1"=50'
DRAWN BY: GMS
DESIGN BY: JRG
APPROVED BY:JH
PROJECT NO: 21074
FILE: DRN

LEGEND:

- EX 2' CONTOUR
- EX 10' CONTOUR
- EDGE OF WETLAND
- EDGE OF 50' WETLAND BUFFER
- LONGEST FLOW PATH
- OVERALL SUBCATCHMENT BOUNDARY
- (B) SUBCATCHMENT DESIGNATION
- PROPERTY LINE
- LIMIT OF SOIL
- PROPOSED EDGE OF PAVEMENT
- PROPOSED FINISH GRADE
- PROPOSED TREELINE

NH STATE PLANE NAD 83 - US FEET

POST-DEVELOPMENT WATERSHED CHARACTERISTICS

SUBCATCHMENT DESIGNATION	AREA (ACRES)	LONGEST FLOW PATH (FEET)	Tc (MIN)
A	0.04	38	5.2
B	6.52	629	7.5
C1	1.20	642	13.1
C2	0.06	9	0.7
C3	0.61	242	7.8
C4	0.77	321	9.1
C5	2.89	636	9.7
C6	0.35	206	7.3
C7	0.28	94	6.8
C8	15.91	1,430	33.4

NRCS SOIL LEGEND:

NUMERICAL SYMBOL	SOIL MAP UNIT NAME	HSG
BzB	BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES	C/D
HcB	HOLLIS-CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HcC	HOLLIS-CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdB	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	D
HdC	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES	D
HdD	HOLLIS-CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES	D
ScA	SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES	C/D
WfC	WINDSOR LOAMY FIND SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES	A

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

POST-DEVELOPMENT WATERSHED PLAN

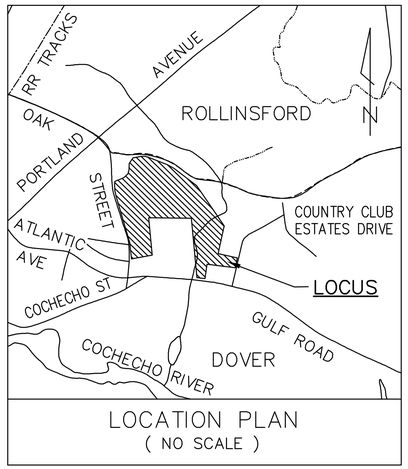
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

EMERSON RIDGE
OAK STREET
DOVER, NH

WS-6

SUBD-2023-0001 **GULF ROAD**

Property ID	Location	Owner 1	Owner 2	Owner Address 1	City	State	Zip
25027-000000	22 FAIRVIEW AV	MAATTALA JOHN P &	MAATTALA JENNIFER A	22 FAIRVIEW AV	DOVER	NH	03820
25029-000000	21 ELMWOOD AV	CLARK CHRISTOPHER R &	CLARK JEANNE C P	21 ELMWOOD AVENUE	DOVER	NH	03820-3512
25030-000000	19 ELMWOOD AV	PADIAL ISABEL N		19 ELMWOOD AVE	DOVER	NH	03820
25040-000000	16 ELMWOOD AV	ROCHE JANE TRUSTEE	ROCHE JANE REVOCABLE TRUST OF 2010	16 ELMWOOD AVENUE	DOVER	NH	03820
25040-A00000	18 ELMWOOD AV	HOWARD ROBERT & PHYLLIS REVOCABLE TRUST	HOWARD ROBERT AND PHYLLIS TRUSTEES	18 ELMWOOD AVENUE	DOVER	NH	03820
25041-000000	20 ELMWOOD AV	DALKE BRIAN M	DALKE KELLY A	20 ELMWOOD AVENUE	DOVER	NH	03820
25043-000000	165 PORTLAND AV	NET LEASE REALTY I INC		450 SOUTH ORANGE AVE STE 900	ORLANDO	FL	32801
25043-A00000	99 OAK ST	HOT ROD CITY LLC		390 SIXTH ST	DOVER	NH	03820
25043-D00000	87 89 OAK ST	HUBBARD-LEARY LLC		89 OAK ST	DOVER	NH	03820
25080-000000	1 OAK ST	CRE JV MIXED FIVE NH BRANCH HOLDINGS LLC	ATTN: PM DEPT 9038	11995 EL CAMINO REAL	SAN DIEGO	CA	92130
N0012-K00000	2 COUNTRY CLUB ESTATES DR	COOPER KEVIN R JR		PO BOX 2213	DOVER	NH	03821
N0012-N00000	1 COUNTRY CLUB ESTATES DR	GILBERT CLIFFORD M & MARGARET LIFE ESTAT	CARTER MARGARET & FORCILLO ROSEMARY L	1 COUNTRY CLUB ESTATES DR	DOVER	NH	03820
N0013-000000	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00000	130 GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-B00001	GULF RD	TIBBETT DAHN H & NORMA M TRUSTEES	THE DAHN H & NORMA M TIBBETT REV LIV TRU	130 GULF RD	DOVER	NH	03820
N0013-C00001	COUNTRY CLUB ESTATES DR	MURPHY EDWARD J JR &	MURPHY AHN C	35 BELANGER DR	DOVER	NH	03820
N0013-E00000	2 A COUNTRY CLUB ESTATES DR	ANDRESS JEFFREY D &	ANDRESS AMIE K	2A COUNTRY CLUB ESTATES	DOVER	NH	03820
N0013-F00000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
N0013-G00000	104 GULF RD	DAY AHN MARIE &	DAY MICHAEL ALAN	104 GULF RD	DOVER	NH	03820
N0014-A00000	117 GULF RD	TOWNSEND EDWARD M &	TOWNSEND SARAH L	117 GULF ROAD	DOVER	NH	03820
N0015-000000	145 GULF RD	COCHECO COUNTRY CLUB		145 GULF RD	DOVER	NH	03820
N0013-001000	GULF RD	CHINBURG DEVELOPMENT LLC		3 PENSTOCK WAY	NEWMARKET	NH	03857
		MCENEANEY SURVEY ASSOCIATES	KEVIN MCENEANEY, LLS	24 CHESTNUT STREET	DOVER	NH	03820
		CIVILWORKS NEW ENGLAND	STEPHEN J HAIGHT, PE	PO BOX 1166	DOVER	NH	03821
		FRAGGLE ROCK ENVIRONMENTAL, INC	DAMON E BURT, CWS	38 GARLAND ROAD	STRAFFORD	NH	03884



LOCATION PLAN
(NO SCALE)

EMERSON RIDGE AT JANETOS FARM
OPEN SPACE SUBDIVISION PLAN

TAX MAP N, LOT 13-1
OAK STREET
DOVER, NH
FEBRUARY 22, 2023
REVISED: APRIL 5, 2023
REVISED: MAY 2, 2023

OWNER/APPLICANT
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

_____ DATE

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

LANDSCAPE ARCHITECT
IRONWOOD DESIGN GROUP LLC
55 MAIN STREET #129
NEWMARKET, NH 03857
(603) 772-0590

WETLAND SCIENTIST
DAMON E. BURT, CWS #00163
FRAGGLE ROCK ENVIRONMENTAL
38 GARLAND ROAD
STRAFFORD, NH 03884
(603) 969-5574

SHEET INDEX

	SHEET
COVER SHEET	1
NEIGHBORHOOD PLAN	2
OPEN SPACE SUBDIVISION YIELD PLAN (BY MCENEANEY SURVEY)	3
EXISTING CONDITIONS PLAN (BY MCENEANEY SURVEY)	4
OPEN SPACE SUBDIVISION PLAN (BY MCENEANEY SURVEY)	5-8
NHDES SUBDIVISION PLAN (BY MCENEANEY SURVEY)	9-11
NOTE SHEET	12
SITE LAYOUT PLAN A & B	13-14
GRADING, DRAINAGE, & EROSION CONTROL PLAN A, B, & C	15-17
UTILITY PLAN A, B, & C	18-20
PROPOSED FRESH CREEK ROAD PROFILE	21
PROPOSED PROSPERITY DRIVE PROFILE	22
ALL SEASON SAFE SIGHT DISTANCE (@ OLD OAK STREET)	23
EROSION CONTROL NOTES	24
EROSION CONTROL DETAILS	25-26
DETAILS	27-33
LIGHTING PLAN AND DETAILS	34
TEST PIT DATA	35-36
DOVER LADDER FIRETRUCK MOVEMENT PLAN	37
LANDSCAPE PLANS	
LANDSCAPE PLAN	L1.0
LANDSCAPE PLAN, DETAILS, & NOTES	L1.1
LANDSCAPE DETAILS	L2.0

PLANNING FILE NO.: SUBD-2023-0001



ABUTTERS LIST

TAX MAP	LOT NO.	NAME & ADDRESS
25	43-D-0	HUBBARD-LEARY LLC 89 OAK STREET DOVER, NH 03820
25	43-A-0	HOT ROD CITY LLC 390 SIXTH STREET DOVER, NH 03820
25	41-0-0	BRIAN M. DALKE KELLY A. DALKE 20 ELMWOOD AVENUE DOVER, NH 03820
25	29-0-0	CLARK CHRISTOPHER R & CLARK JEANNE C P 21 ELMWOOD AVENUE DOVER, NH 03820
25	27-0-0	MAATTALA JOHN P & MAATTALA JENNIFER A 22 FAIRVIEW AVENUE DOVER, NH 03820
25	1-0-0	ST LAURENT JUSTIN & MORGAN TRUSTEES ST LAURENT FAMILY REVOCABLE TRUST 44 ATLANTIC AVENUE DOVER, NH 03820
N	13-G-0	DAY ANN MARIE & DAY MICHEAL ANN 104 GULF ROAD DOVER, NH 03820
N	13-F-0	CHINBURG DEVELOPMENT, LLC 3 PENSTOCK WAY NEWMARKET, NH 03857
N	14-A-0	TOWNSEND EDWARD M & TOWNSEND SARAH L 117 GULF ROAD DOVER, NH 03820
N	15-0-0	COCHECO COUNTRY CLUB 145 GULF ROAD DOVER, NH 03820
N	13-B-0	TIBBETT NORMA & TIBBETT DAHN 130 GULF ROAD DOVER, NH 03820
N	13-B-1	TIBBETT NORMA & TIBBETT DAHN 130 GULF ROAD DOVER, NH 03820
N	12-N-0	GILBERT CLIFFORD M & MARGARET LIFE ESTAT CARTER MARGARET & FORCILLO ROSEMARY L 1 COUNTRY CLUB ESTATES DRIVE DOVER, NH 03820
N	13-E-0	ANDRESS JEFFERY D & ANDRESS AMIE K 2A COUNTRY CLUB ESTATES DOVER, NH 03820
N	13-C-1	MURPHY EDWARD J JR. & MURPHY AHN C 35 BELANGER DRIVE DOVER, NH 03820
25	80-0-0	CRE JV MIXED FIVE NH BRANCH HOLDINGS LLC C.O RYAN P.O. BOX 460049 HOUSTON, TX 77056
N	13-0-0	DAHN H. TIBBETT NORMA M. TIBBETT 130 GULF ROAD DOVER, NH 03820

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

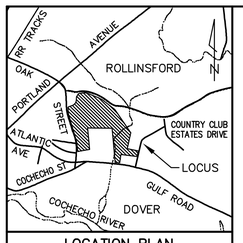
DATE: 2-22-23
SCALE: 1"=150'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NEIGHBORHOOD PLAN

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857



LOCATION PLAN
(NO SCALE)

LEGEND

I.R.(set) – IRON ROD SET
I.R.(fnd) – IRON ROD FOUND
S.S.(fnd) – STEEL STAKE FOUND
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
– STONE WALL
– EDGE OF WETLAND
– WETLAND
– SLOPES IN EXCESS OF 20 PERCENT

NH STATE PLANE NAD 83 – GPS OBS.

S.S. (fnd)
N – 257,453.86
E – 1,199,667.93

TOWN LINE

FRESH CREEK ROAD a.k.a. COUNTY ROAD {public – R.O.W. width varies} {CLASS VI HIGHWAY}

ROLLINSFORD

DOVER

TOWN LINE

TOWN BOUND – ROLLINSFORD / DOVER #29

DOVER BOUND #29
GRANITE BOUND WITH DRILL HOLE IN TOP
0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE OF A WHITE PINE
VIEW LOOKING SOUTHERLY FROM ROADWAY.
THIS BOUND IS NOT LOCATED ON THE TOWN LINE. IT IS AN OFFSET WITNESS MONUMENT TO AN ANGLE POINT IN THE TOWN LINE.

RD 1899

3 / 23
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

25 / 80
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

3 / 21
MARK P. BARLOW
10 NORDIC LANE
ROLLINSFORD, NH 03869
4416 / 660

3 / 10
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820

25 / 43D
HUBBARD–LEARY, LLC
89 OAK STREET
DOVER, NH 03820
3245 / 2

25 / 43A
HOT ROD CITY, LLC
390 SIXTH STREET
DOVER, NH 03820
4184 / 143

35' WIDE EASEMENT TO GRANITE STATE GAS TRANSMISSION, INC.
REF. SCRD 666/341

50' WETLAND BUFFER

EDGE OF WETLAND

OAK STREET {public – R.O.W. width varies}

I.R.(set)
N – 256,955.318
E – 1,200,196.775

I.R.(set)
N – 256,947.966
E – 1,200,842.036

EMERSON BROOK

N / 13C–1
EDWARD J. MURPHY, JR.
AHN C. MURPHY
35 BELANGER DRIVE
DOVER, NH 03820
1019 / 622

25 / 41
BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 463

N / 13F–2
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

ELMWOOD AVENUE

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

WIRE FENCE LINE

30' WIDE ACCESS & UTILITY EASEMENT.

I.R. (set)

I.R. (fnd)

BARN

N / 13

25 / 27
JOHN P. MAATTALA
JENNIFER A. MAATTALA
22 FAIRVIEW AVENUE
DOVER, NH 03820
4490 / 276

N / 13F–1
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

FAIRVIEW AVENUE

GARAGE

HOUSE

DRIVEWAY

N / 13F
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

ZONE "X" 100 YEAR FLOOD

N / 13C
AHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

25 / 1

N / 13A

N / 13E
JEFFREY D. ANDRESS
AMIE K. ANDRESS
2A COUNTRY CLUB ESTATES
DOVER, NH 03820
4800 / 502

N / 12N
MARGARET A. CARTER
ROSEMARY L. FORCILLO
ESTATES DRIVE
1 COUNTRY CLUB
DOVER, NH 03820
4635 / 411

COUNTRY CLUB ESTATES DRIVE

N / 13B
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 321

N / 13B–1
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 320
S.S. (fnd)

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

ATLANTIC AVENUE

GULF ROAD {public – 66' wide R.O.W.} a.k.a. ELIOT BRIDGE ROAD

COCHECHO STREET

N / 14A
EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

THE SOIL TYPES ON THE SITE ARE:
BzB BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES
HcB HOLLIS–CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
HcC HOLLIS–CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
HdB HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
HdC HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
HdD HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES
ScA SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES
WfC WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx\

NO.	DATE	DESCRIPTION	BY	CHK
1	2/2/23	UPDATE PLAN INFORMATION	KJF	KMM
REVISIONS				

21–1734	SUBDIVISION	–	–
PROJECT NO	TYPE	FIELDBOOK & PAGES	

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2–16–17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113–033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN C. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTATES DRIVE, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: OCTOBER 18, 2021, REVISED THROUGH 1/3/22; BY THIS OFFICE.

YIELD LOT CALCULATIONS

LOT	FTG	AREA S.F.	Ac.	NON–WET NON–SLOPE	NON–BUFFER NON–SLOPE
1	150.0	66888.0	1.54	64597	53196
2	150.0	49883.6	1.15	40746	24103
3	150.0	40086.6	0.92	40086	40087
4	150.0	55476.4	1.27	43515	43513
5	157.8	43346.0	1.00	41449	41449
6	245.0	59179.8	1.36	40005	40005
7	150.0 SB	68301.0	1.57	43575	43575
8	150.0	54373.1	1.25	43098	43098
9	150.0	53614.5	1.23	47682	40319
10	167.6	97568.1	2.24	48653	27081
11	150.0	824714.0	18.93	113850	84530
12	575.2	50926.1	1.17	49239	36140

ROAD CL TO THROAT = 502.2'

1.) ZONING DISTRICT IS R40

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE	= 40,000 S.F. = 40,000 S.F. NON–WETLAND NON–SLOPE = 24,000 S.F. OUTSIDE BUFFER (60%)
MINIMUM LOT COVERAGE	= 10 PERCENT
MINIMUM FRONTAGE	= 150 FEET
BUILDING SETBACK REQUIREMENTS:	
FRONT SETBACK	= 40 FEET
SIDE SETBACK	= 25 FEET
REAR SETBACK	= 30 FEET
MAXIMUM BUILDING HEIGHT	= 35 FEET MAXIMUM

SHEET 3 OF 37

OPEN SPACE SUBDIVISION YIELD PLAN
OF
EMERSON RIDGE
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13–1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. P 23–___

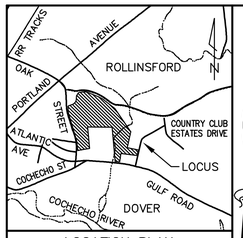
DRAWN BY: RJM | FILE: 1734\DWGS\22–1734 OSS
SCALE: 1" = 100' | DATE: FEBRUARY 10, 2022

100 50 0 50 100 200 300 400

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



LOCATION PLAN
(NO SCALE)

LEGEND

I.R.(set) – IRON ROD SET
I.R.(fnd) – IRON ROD FOUND
S.S.(fnd) – STEEL STAKE FOUND
S.F. – SQUARE FEET
Ac. – ACRE
(TYP.) – TYPICAL
± – MORE OR LESS
ø – DIAMETER
S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
– STONE WALL
– EDGE OF WETLAND
– WETLAND
62 – CONTOUR (2FT INTERVAL)
WfC – SOIL DELINEATION
– SEWER MANHOLE
– WATER GATE VALVE
– FIRE HYDRANT
– UTILITY POLE

NH STATE PLANE NAD 83 – GPS OBS:
S.S. (fnd)
N – 257,453.86
E – 1,199,667.93

THE SOIL TYPES ON THE SITE ARE:
BzB BUXTON SILT LOAM, 3 TO 8 PERCENT SLOPES
HcB HOLLIS–CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
HcC HOLLIS–CHARLTON FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
HdB HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
HdC HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
HdD HOLLIS–CHARLTON VERY ROCKY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES
ScA SCANTIC SILT LOAM, 0 TO 3 PERCENT SLOPES
WfC WINDSOR LOAMY FINE SAND, CLAY SUBSOIL VARIANT, 8 TO 15 PERCENT SLOPES
THE SOURCE FOR THE SOIL TYPE DATA IS USDA NRCS WEB SOIL SURVEY
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx\

No.	Bearing	Distance
L1	N05°48'59"W	15.56'
L2	N15°41'21"W	94.61'
L3	N11°56'49"W	89.55'
L4	N01°27'45"W	94.54'
L5	N05°37'49"E	45.27'
L6	N68°12'33"E	111.97'
L7	N64°51'29"E	39.96'
L8	N46°36'13"E	78.90'
L9	N12°35'19"E	58.12'
L10	N03°44'27"E	99.80'
L11	N32°56'01"E	102.59'
L12	N80°09'31"E	120.00'
L13	N87°56'29"E	67.76'
L14	S73°55'09"E	55.67'
L15	S62°54'16"E	119.42'
L16	S12°28'08"W	40.00'
L17	N81°47'06"W	122.02'

NO.	DATE	DESCRIPTION	BY	CHK
		REVISIONS		

22–1734	EC	21–09	34–74
PROJECT NO	TYPE	FIELDBOOK & PAGES	

TOWN LINE
a.k.a. FRESH CREEK ROAD
{public – R.O.W. width varies} CLASS VI HIGHWAY
OLD OAK STREET (CLASS VI R.O.W.)
{public – R.O.W. width varies}
OAK STREET
ELMWOOD AVENUE
FAIRVIEW AVENUE
ATLANTIC AVENUE
GULF ROAD
{public – 66' wide R.O.W.}
a.k.a. ELIOT BRIDGE ROAD
COCHECHO STREET
COUNTRY CLUB ESTATES DRIVE
EMERSON BROOK
DOVER
ROLLINSFORD
HdC
HdD
HcB
ScA
BzB
WfC
HcC
STEEP SLOPES
BARN
HOUSE
GARAGE
DRIVEWAY
SMH
RIM = 137.76
INV. OUT = 132.18
SMH
RIM = 132.09
INV. OUT = 123.09
SMH
RIM = 107.20
INV. OUT = 100.04
I.R.(set)
I.R.(fnd)
50' WETLAND BUFFER
EDGE OF WETLAND (SEE NOTE 10)
30' WIDE ACCESS & UTILITY EASEMENT
ZONE "X" 100 YEAR FLOOD SEE NOTE 5
35' WIDE EASEMENT TO GRANITE STATE GAS TRANSMISSION, INC. REF. SCRD 666/341
TOWN BOUND ROLLINSFORD/DOVER DOVER BOUND #29 GRANITE BOUND WITH DRILL HOLE IN TOP 0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE OF A WHITE PINE VIEW LOOKING SOUTHERLY FROM ROADWAY. THIS BOUND IS NOT LOCATED ON THE TOWN LINE. IT IS AN OFFSET WITNESS MONUMENT TO AN ANGLE POINT IN THE TOWN LINE.
BD 1899
S73°43'10"E 301.75'
S52°12'25"E 425.97'
S34°29'32"E 138.23'
N16°39'58"W 693.51'
S05°19'55"E 445.70'
N89°20'50"W 645.30'
N80°19'51"W 332.84'
N0°55'61"S 900.00'
S08°12'54"W 221.43'
S12°28'08"W 240.00'
S12°28'08"W 150.00'
S17°31'52"E 300.00'
N82°59'31"W 429.88'
S12°21'40"W 156.18'
N81°47'06"W 122.02'
LOT AREA
1,503,926 S.F.
34.53 Ac.

25 / 80 — CRE JV MIXED FIVE BRANCH HOLDINGS LLC, P.O. Box 460049, HOUSTON, TX 77056, 3419 / 809
3 / 23 — CRE JV MIXED FIVE BRANCH HOLDINGS LLC, P.O. Box 460049, HOUSTON, TX 77056, 3419 / 809
3 / 21 — MARK P. BARLOW, 10 NORDIC LANE, ROLLINSFORD, NH 03869, 4416 / 660
3 / 10 — NORMA TIBBETT, DAHN TIBBETT, 130 GULF ROAD, DOVER, NH 03820
25 / 43D — HUBBARD–LEARY, LLC, 89 OAK STREET, DOVER, NH 03820, 3245 / 2
25 / 43A — HOT ROD CITY, LLC, 390 SIXTH STREET, DOVER, NH 03820, 4184 / 143
25 / 41 — BRIAN DALKE, KELLY A. DALKE, 20 ELMWOOD AVENUE, DOVER, NH 03820, 4977 / 763
25 / 29 — CHRISTOPHER R. CLARK, JEANNE C. P. CLARK, 21 ELMWOOD AVENUE, DOVER, NH 03820, 1806 / 403
25 / 27 — JOHN P. MAATTALA, JENNIFER A. MAATTALA, 22 FAIRVIEW AVENUE, DOVER, NH 03820, 4490 / 276
N / 13 — DAHN H.TIBBETT, NORMA M. TIBBETT, 130 GULF ROAD, DOVER, NH 03820, 5037 / 899
N / 13F — JAHN H. & SUSAN G. JANETOS, 55 CARLTON WAY, HALES LOCATION, NH 03860, 3655 / 154
N / 13C — AHN MARIE DAY, MICHAEL ALAN DAY, 104 GULF ROAD, DOVER, NH 03820, 4805 / 587
25 / 1
N / 13A
N / 14A — EDWARD M. TOWNSEND, SARAH L. TOWNSEND, 117 GULF ROAD, DOVER, NH 03820, 2124 / 659
N / 15 — COCHECHO COUNTRY CLUB, 145 GULF ROAD, DOVER, NH 03820, 781 / 279
N / 13C-1 — EDWARD J. MURPHY, JR., AHN C. MURPHY, 35 BELANGER DRIVE, DOVER, NH 03820, 1019 / 622
N / 13E — JEFFREY D. ANDRESS, AMIE K. ANDRESS, 24 COUNTRY CLUB ESTATES, DOVER, NH 03820, 4800 / 502
N / 13B — NORMA TIBBETT, DAHN TIBBETT, 130 GULF ROAD, DOVER, NH 03820, 3984 / 321
N / 13B-1 — NORMA TIBBETT, DAHN TIBBETT, 130 GULF ROAD, DOVER, NH 03820, 3984 / 320, S.S. (fnd)
N / 12N — MARGARET A. CARTER, ROSEMARY L. FORCILLO, ESTATES DRIVE, 1 COUNTRY CLUB, DOVER, NH 03820, 4635 / 411
N / 15 — COCHECHO COUNTRY CLUB, 145 GULF ROAD, DOVER, NH 03820, 781 / 279

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2–16–17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113–033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN G. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTAES DRIVE, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE; SCALE: 1" = 100'; DATED: OCTOBER 18, 2021 & REVISED THROUGH 1/3/22; BY: THIS OFFICE; RECORDED S.C.R.D. PLAN 12673.

NOTES:

1.) OWNER OF RECORD:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NEW HAMPSHIRE 03857
S.C.R.D. VOLUME 4465, PAGE 298

2.) N / 13–1 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) TOTAL PARCEL AREA = 1,503,926 S.F. / 34.53 Ac.

4.) ZONING DISTRICT IS RURAL RESIDENTIAL (R40)
DIMENSIONAL REQUIREMENTS:
MINIMUM LOT SIZE = 40,000 S.F.
MINIMUM LOT COVERAGE = 10 PERCENT
MINIMUM FRONTAGE = 150 FEET
BUILDING SETBACK REQUIREMENTS:
FRONT SETBACK = 40 FEET
SIDE SETBACK = 25 FEET
REAR SETBACK = 30 FEET
MAXIMUM BUILDING HEIGHT = 35 FEET MAXIMUM

5.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE X AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; EFFECTIVE DATE SEPTEMBER 30, 2015.

6.) THE INTENT OF THIS PLAN IS TO DEPICT THE EXISTING CONDITIONS OF THE SUBJECT PARCEL AS OF THE DATE OF THE SURVEY.

7.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY McENEANEY SURVEY ASSOCIATES OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) THIS PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE, IS NOT INTENDED OR IMPLIED.

10.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S. #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) VERTICAL DATUM IS U.S.G.S. NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS DURING JUNE 2022.

EXISTING CONDITIONS PLAN
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13–1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.

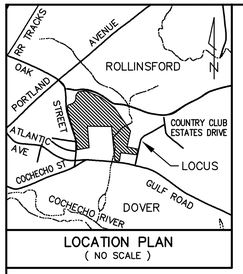
DRAWN BY: KJF	FILE: 1734\DWGS\22–1734
SCALE: 1" = 100'	DATE: JULY 5, 2022

100 50 0 50 100 200 300 400

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



LOCATION PLAN
(NO SCALE)

NH STATE PLANE NAD 83 - CRS OBS.

25 / 80
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

3 / 23
CRE JV MIXED FIVE BRANCH HOLDINGS LLC
P.O. Box 460049
HOUSTON, TX 77056
3419 / 809

3 / 21
MARK P. BARLOW
10 NORDIC LANE
ROLLINSFORD, NH 03869
4416 / 660

3 / 10
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820

25 / 43D
HUBBARD–LEARY, LLC
89 OAK STREET
DOVER, NH 03820
3245 / 2

25 / 43A
HOT ROD CITY, LLC
390 SIXTH STREET
DOVER, NH 03820
4184 / 143

7 — 73,840 S.F. 1.70 Ac.
6 — 27,557 S.F. 0.63 Ac.
5 — 28,585 S.F. 0.66 Ac.
1 — 43,631 S.F. 1.00 Ac.
4 — 61,330 S.F. 1.41 Ac.
2 — 38,990 S.F. 0.90 Ac.
3 — 37,870 S.F. 0.87 Ac.
8 — 46,807 S.F. 1.07 Ac.
9 — 44,081 S.F. 1.01 Ac.
10 — 44,757 S.F. 1.03 Ac.
11 — 336,624 S.F. 7.73 Ac.

REMAINING LAND
688,230 S.F.
15.80 Ac.

GAS TRANSMISSION EASEMENT
50' WETLAND BUFFER
WETLAND LIMITS
EMERSON BROOK
APPROXIMATE LIMITS OF SPECIAL FLOOD HAZARD AREA (SEE NOTE 5)

OAK STREET {public – R.O.W. width varies}

25 / 41
BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 463

ELMWOOD AVENUE

25 / 29
CHRISTOPHER R. CLARK
JEANNE C. P. CLARK
21 ELMWOOD AVENUE
DOVER, NH 03820
1806 / 403

N / 13
DAHN H. TIBBETT
NORMA M. TIBBETT
130 GULF ROAD
DOVER, NH 03820
5037 / 899

FAIRVIEW AVENUE

N / 13C
AHN MARIE DAY
MICHAEL ALAN DAY
104 GULF ROAD
DOVER, NH 03820
4805 / 587

N / 13F–2
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N / 13F–1
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N / 13F
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N / 13A
GEORGE HEILSHORN, III
108 GULF ROAD
DOVER, NH 03820
4745 / 541

N / 13C–1
EDWARD J. MURPHY, JR.
AHN C. MURPHY
35 BELANGER DRIVE
DOVER, NH 03820
1019 / 622

N / 13E
JEFFREY D. ANDRESS
AMIE K. ANDRESS
2A COUNTRY CLUB ESTATES
DOVER, NH 03820
4800 / 502

N / 12N
MARGARET A. CARTER
ROSEMARY L. FORCILLO
ESTATES DRIVE
1 COUNTRY CLUB
DOVER, NH 03820
4635 / 411

COUNTRY CLUB ESTATES DRIVE

N / 13B
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 321

N / 13B–1
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 320

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

ATLANTIC AVENUE
GULF ROAD a.k.a. ELIOT BRIDGE ROAD
COCHECHO STREET

N / 14A
EDWARD M. TOWNSEND
SARAH L. TOWNSEND
117 GULF ROAD
DOVER, NH 03820
2124 / 659

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

CONTIGUOUS UPLAND LOT AREAS EXCLUSIVE OF WETLAND BUFFER AND CONSERVATION AREAS:

LOT	AREA
1	38,819 S.F.
2	25,226 S.F.
3	25,070 S.F.
4	48,521 S.F.
5	20,825 S.F.
6	27,458 S.F.
7	47,809 S.F.
8	46,142 S.F.
9	36,970 S.F.
10	38,051 S.F.
11	108,788 S.F.

"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."

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM
		REVISIONS		

23–1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

ZONING REQUIREMENTS

ZONING DISTRICT IS R40
OPEN SPACE SUBDIVISION

GENERAL REQUIREMENTS:

NO STRUCTURES OR SEPTIC SYSTEMS WILL BE ALLOWED TO BE BUILT IN:
- SLOPE GREATER THAN 20 PERCENT
- AREAS WITHIN CONSERVATION DISTRICTS
- ALL FLOOD HAZARD AREAS
- WETLANDS

DIMENSIONAL REQUIREMENTS:

MINIMUM LOT SIZE SUBDIV. LOTS	= 20,000 S.F.
MINIMUM FRONTAGE SUBDIV. LOTS	= 40 FEET
MINIMUM BUFFER ALONG FRONTAGE	= 100 FEET
MINIMUM DISTANCE AROUND INDIVIDUAL UNITS IN CLUSTERS	
STREET SIDE UNITS	= 20 FEET
BETWEEN UNITS	= 30 FEET
MINIMUM BUILDING SETBACKS FOR SUBDIVISION LOTS	
ABUTTING A STREET	= 20 FEET
ABUTTING A LOT LINE	= 20 FEET
MINIMUM DISTANCE FROM EXISTING STRUCTURES OR DWELLING UNITS	= 100 FEET
MINIMUM DISTANCE FROM EXTERNAL BOUNDARIES	= 50 FEET

EXTERNAL BOUNDARY BUFFERS SHALL BE CONSIDERED AN UNDISTURBED NATURAL AREA FOR THE PURPOSE OF SHIELDING ABUTTERS.

OPEN SPACE REQUIREMENTS:

THE AREA OF THE OPEN SPACE SHALL EQUAL OR EXCEED THE TOTAL ALLOWED REDUCTION IN THE LOT SIZES WITHIN THE OPEN SPACE SUBDIVISION AND SHALL BE PERMANENTLY DEDICATED AS OPEN SPACE OR FOR MUNICIPAL USE, AS AGREED UPON. A MINIMUM OF 50% OF THE TOTAL OPEN SPACE LAND MUST BE USABLE UPLANDS AND REASONABLY ACCESSIBLE TO ALL PROPERTY OWNERS IN THE PROJECT.

OPEN SPACE REQUIREMENTS FOR 11 LOTS
11 * 20,000 S.F. = 220,000 S.F. MINIMUM OPEN SPACE
= 110,000 S.F. MINIMUM CONTIGUOUS UPLANDS

PROPOSED OPEN SPACE = 688,230 S.F. (15.80 Ac.)
114,555 S.F. USABLE UPLANDS

SHEET 5 OF 37

OPEN SPACE SUBDIVISION
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13–1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

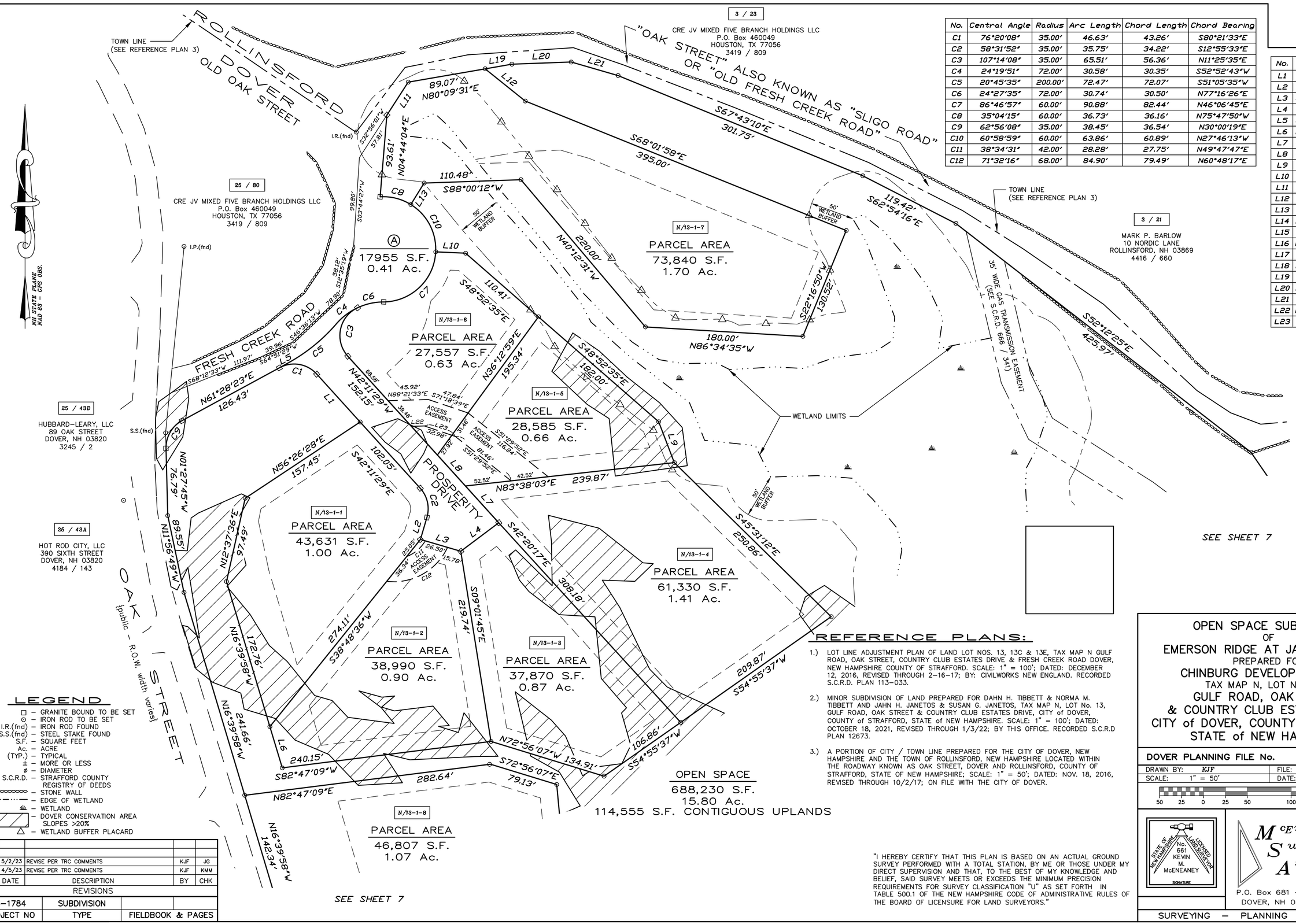
DOVER PLANNING FILE No.	SUBD–2023–0001
DRAWN BY: KJF	FILE: MSA\1734\D\23–1734SUB
SCALE: 1" = 100'	DATE: FEBRUARY 1, 2023

100 50 0 50 100 200 300 400

STATE OF NEW HAMPSHIRE — No. 661 — LICENSED LAND SURVEYOR — KEVIN M. McENEANEY — SIGNATURE

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

SURVEYING – PLANNING – CONSULTING



No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	76°20'08"	35.00'	46.63'	43.26'	S80°21'33"E
C2	58°31'52"	35.00'	35.75'	34.22'	S12°55'33"E
C3	107°14'08"	35.00'	65.51'	56.36'	N11°25'35"E
C4	24°19'51"	72.00'	30.58'	30.35'	S52°52'43"W
C5	20°45'35"	200.00'	72.47'	72.07'	S51°05'35"W
C6	24°27'35"	72.00'	30.74'	30.50'	N77°16'26"E
C7	86°46'57"	60.00'	90.88'	82.44'	N46°06'45"E
C8	35°04'15"	60.00'	36.73'	36.16'	N75°47'50"W
C9	62°56'08"	35.00'	38.45'	36.54'	N30°00'19"E
C10	60°58'59"	60.00'	63.86'	60.89'	N27°46'13"W
C11	38°34'31"	42.00'	28.28'	27.75'	N49°47'47"E
C12	71°32'16"	68.00'	84.90'	79.49'	N60°48'17"E

No.	Bearing	Distance
L1	S42°11'29"E	73.71'
L2	S16°20'23"W	26.17'
L3	S73°39'37"E	48.00'
L4	N53°03'07"E	54.23'
L5	S61°28'23"W	10.21'
L6	N16°39'58"W	49.15'
L7	N42°12'16"W	56.65'
L8	N42°11'29"W	47.73'
L9	S21°01'30"E	50.00'
L10	S87°16'43"E	34.13'
L11	N32°56'01"E	44.77'
L12	S51°09'36"E	58.66'
L13	S31°44'17"W	28.87'
L14	N16°39'58"W	65.64'
L15	S12°28'08"W	40.00'
L16	N05°48'59"W	15.56'
L17	N15°41'21"W	16.60'
L18	N16°39'58"W	41.49'
L19	N80°09'31"E	30.93'
L20	N87°56'29"E	67.76'
L21	S73°55'09"E	55.67'
L22	N88°21'33"E	14.87'
L23	S71°18'39"E	37.22'

LEGEND

- □ – GRANITE BOUND TO BE SET
- ⊙ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- STONE WALL
- EDGE OF WETLAND
- WETLAND
- DOVER CONSERVATION AREA SLOPES >20%
- △ – WETLAND BUFFER PLACARD

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM
REVISIONS				

23-1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2-16-17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113-033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN G. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTATES DRIVE, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: OCTOBER 18, 2021, REVISED THROUGH 1/3/22; BY THIS OFFICE. RECORDED S.C.R.D PLAN 12673.

3.) A PORTION OF CITY / TOWN LINE PREPARED FOR THE CITY OF DOVER, NEW HAMPSHIRE AND THE TOWN OF ROLLINSFORD, NEW HAMPSHIRE LOCATED WITHIN THE ROADWAY KNOWN AS OAK STREET, DOVER AND ROLLINSFORD, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE; SCALE: 1" = 50'; DATED: NOV. 18, 2016, REVISED THROUGH 10/2/17; ON FILE WITH THE CITY OF DOVER.

"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."

OPEN SPACE SUBDIVISION
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No.	SUBD-2023-0001
DRAWN BY: KJF	FILE: MSA\1734\D\23-1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

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

LEGEND

- □ – GRANITE BOUND TO BE SET
- ○ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – DOVER CONSERVATION AREA SLOPES >20%
- – WETLAND BUFFER PLACARD

No.	Bearing	Distance
L14	N16°39'58"W	65.64'
L15	S12°28'08"W	40.00'
L16	N05°48'59"W	15.56'
L17	N15°41'21"W	16.60'
L18	N16°39'58"W	41.49'

S.(fnd)

N01°27'45"W 79.79'

N11°56'49"W 89.55'

N12°37'36"E 97.49'

N16°39'58"W 172.76'

N16°39'58"W 241.66'

L6

240.15'

S82°47'09"W

282.64'

N82°47'09"E

N16°39'58"W 142.34'

OAK STREET

(public – R.O.W. width varies)

N16°39'58"W 142.38'

S82°47'09"W 327.85'

S82°47'09"W 299.86'

L18

L14

N15°41'21"W 78.01'

L17

L16

I.P.(fnd)

I.R.(fnd)

ELMWOOD AVENUE

NH STATE PLANE NAD 83 – GPS OBS.

SEE SHEET 6

N/13-1-8

PARCEL AREA
46,807 S.F.
1.07 Ac.

N/13-1-9

PARCEL AREA
44,081 S.F.
1.01 Ac.

N/13-1-10

PARCEL AREA
44,757S.F.
1.03 Ac.

OPEN SPACE
688,230 S.F.
15.80 Ac.
114,555 S.F. CONTIGUOUS UPLANDS

N72°56'07"W 134.91'

S72°56'07"E 79.13'

S05°19'55"E 107.93'

S05°19'55"E 140.53'

S05°19'55"E 445.70'

S05°19'55"E 185.82'

209.87'

S54°55'37"W

106.86'

S54°55'37"W

50' WETLAND BUFFER

WETLAND LIMITS

N89°48'00"E 292.71'

N80°19'51"W 273.95'

30' WIDE ACCESS & UTILITY EASEMENT (S.C.R.D. 3655 / 154)

62.12'

15.53'

N80°19'51"W 332.84'

15.53'

I.R.(fnd)

645.30'

N89°20'50"W

50.0' WETLAND BUFFER

25 / 41

BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 463

N / 13

DAHN H. TIBBETT
NORMA M. TIBBETT
130 GULF ROAD
DOVER, NH 03820
5037 / 899

N/ 13F-1

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N/ 13F-2

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

ROLLINSFORD
DOVER

I.R.(fnd)

TOWN LINE
(SEE REFERENCE PLAN 3)

RD
1899

DOVER BOUND #29
GRANITE BOUND WITH DRILL HOLE IN TOP
0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE
OF A WHITE PINE
VIEW LOOKING SOUTHERLY FROM ROADWAY.
THIS BOUND IS NOT LOCATED ON THE TOWN
LINE. IT IS AN OFFSET WITNESS MONUMENT
TO AN ANGLE POINT IN THE TOWN LINE.

WETLAND LIMITS

35' WIDE GAS TRANSMISSION EASEMENT
(SEE S.C.R.D. 666 / 341)

S34°29'32"E 738.23'

S76°51'45"E 508.06'

SEE SHEET 8

SHEET 7 OF 37

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM

REVISIONS

23-1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

"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."

OPEN SPACE SUBDIVISION
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13–1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. SUBD–2023–0001

DRAWN BY: KJF	FILE: MSA\1734\D\23-1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

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

SEE SHEET 7

645.30'
N89°20'50"W

I.R.(fnd)

S76°51'45"E
508.06'

SEE SHEET 7

NH STATE PLANE
NAD 83 - GPS OBS.

APPROXIMATE LIMITS OF SPECIAL FLOOD HAZARD AREA (SEE NOTE 5)

WETLAND LIMITS

N/13-1-11

PARCEL AREA
336,624 S.F.
7.73 Ac.

N05°19'55"W
900.00'

35' WIDE GAS TRANSMISSION EASEMENT (SEE S.C.R.D. 666 / 341)

50' WETLAND BUFFER

I.R.(fnd)

D.H.(fnd)

L15

S12°28'08"W
240.00'

S12°28'08"W
150.00'

I.R.(fnd)

S77°31'52"E
300.00'

I.R.(fnd)

S12°21'40"W
150.18'

I.R.(fnd)

N82°59'31"W 429.86'

I.R.(fnd)

S08°12'54"W
221.45'

I.R.(fnd)

N81°47'06"W
122.02'

I.R.(fnd)

GULF ROAD a.k.a. ELIOT BRIDGE ROAD

COUNTRY CLUB ESTATES DRIVE

N / 13F-2
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N / 13F-1
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N / 13C-1
EDWARD J. MURPHY, JR.
AHN C. MURPHY
35 BELANGER DRIVE
DOVER, NH 03820
1019 / 622

N / 13E
JEFFREY D. ANDRESS
AMIE K. ANDRESS
2A COUNTRY CLUB ESTATES
DOVER, NH 03820
4800 / 502

N / 12N
MARGARET A. CARTER
ROSEMARY L. FORCILLO
ESTATES DRIVE
1 COUNTRY CLUB
DOVER, NH 03820
4635 / 411

N / 13B
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 321

N / 13B-1
NORMA TIBBETT
DAHN TIBBETT
130 GULF ROAD
DOVER, NH 03820
3984 / 320

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

N / 15
COCHECHO COUNTRY CLUB
145 GULF ROAD
DOVER, NH 03820
781 / 279

LEGEND

- □ – GRANITE BOUND TO BE SET
- ⊙ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – DOVER CONSERVATION AREA SLOPES >20%
- – WETLAND BUFFER PLACARD

ATTENTION:

HIGH PRESSURE GAS MAIN; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

OWNER SIGNATURES

NOTES:

1.) OWNER OF RECORD AND APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NEW HAMPSHIRE 03857
S.C.R.D. VOLUME 4465, PAGE 298

2.) N / 13-1 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA: 1,503,926 S.F.± / 34.53 Ac.±

4.) ZONING DISTRICT IS RURAL RESIDENTIAL R-40 – OPEN SPACE SUBDIVISION. SEE SHEET 5 FOR ZONING REQUIREMENTS

5.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE X; AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; DATE SEPTEMBER 30, 2015.

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.

7.) VERTICAL DATUM IS U.S.G.S. NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 AND TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS DURING JUNE 2022. CONTOUR INTERVAL IS TWO FEET.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONE AREAS WITHIN SLOPES GREATER THAN 20%.

10.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE PARCEL IS SUBJECT TO A 35' WIDE GAS TRANSMISSION EASEMENT, SEE S.C.R.D. VOLUME 666, PAGE 341.

12.) THE PARCEL IS SUBJECT TO A 30' WIDE ACCESS AND UTILITY EASEMENT FOR THE BENEFIT OF PARCELS N/13F, N/13F-1 & N/13F-2, SEE S.C.R.D. VOLUME 3655, PAGE 154.

13.) AS-BUILT PLANS OF THE SUBDIVISION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT IN PDF AND AUTOCAD DWG FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF THE PROJECT.

14.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE.

15.) THE SUBDIVISION LOTS ARE TO BE SERVICED BY MUNICIPAL WATER AND ONSITE SEWAGE DISPOSAL SYSTEMS.

16.) STREET ADRESSES FOR EACH LOT SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

17.) THE PROPOSED USE FOR THE SITE IS SINGLE FAMILY RESIDENTIAL.

18.) PARCEL Ⓐ IS TO BE GRANTED TO THE CITY OF DOVER AS PART OF THE OLD OAK STREET RIGHT OF WAY.

19.) NHDES SUBDIVISION APPROVAL: PENDING

OPEN SPACE SUBDIVISION
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. SUBD-2023-0001

DRAWN BY: KJF	FILE: MSA\1734\D\23-1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

50 25 0 25 50 100 150 200

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM

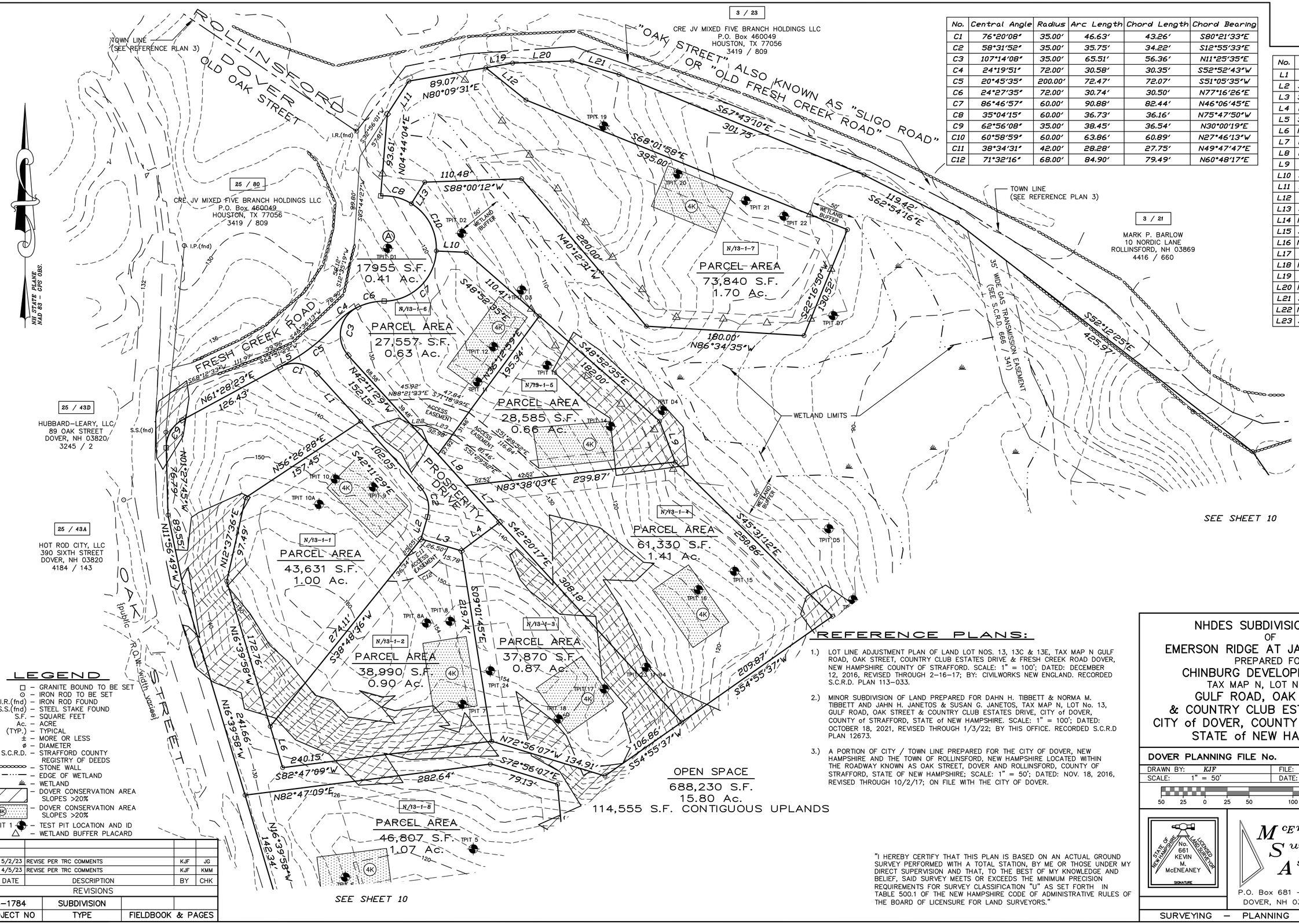
REVISIONS

23-1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

"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."

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



No.	Central Angle	Radius	Arc Length	Chord Length	Chord Bearing
C1	76°20'08"	35.00'	46.63'	43.26'	S80°21'33"E
C2	58°31'52"	35.00'	35.75'	34.22'	S12°55'33"E
C3	107°14'08"	35.00'	65.51'	56.36'	N11°25'35"E
C4	24°19'51"	72.00'	30.58'	30.35'	S52°52'43"W
C5	20°45'35"	200.00'	72.47'	72.07'	S51°05'35"W
C6	24°27'35"	72.00'	30.74'	30.50'	N77°16'26"E
C7	86°46'57"	60.00'	90.88'	82.44'	N46°06'45"E
C8	35°04'15"	60.00'	36.73'	36.16'	N75°47'50"W
C9	62°56'08"	35.00'	38.45'	36.54'	N30°00'19"E
C10	60°58'59"	60.00'	63.86'	60.89'	N27°46'13"W
C11	38°34'31"	42.00'	28.28'	27.75'	N49°47'47"E
C12	71°32'16"	68.00'	84.90'	79.49'	N60°48'17"E

No.	Bearing	Distance
L1	S42°11'29"E	73.71'
L2	S16°20'23"W	26.17'
L3	S73°39'37"E	48.00'
L4	N53°03'07"E	54.23'
L5	S61°28'23"W	10.21'
L6	N16°39'58"W	49.15'
L7	N42°12'16"W	56.65'
L8	N42°11'29"W	47.73'
L9	S21°01'30"E	50.00'
L10	S87°16'43"E	34.13'
L11	N32°56'01"E	44.77'
L12	S51°09'36"E	58.66'
L13	S31°44'17"W	28.87'
L14	N16°39'58"W	65.64'
L15	S12°28'08"W	40.00'
L16	N05°48'59"W	15.56'
L17	N15°41'21"W	16.60'
L18	N16°39'58"W	41.49'
L19	N80°09'31"E	30.93'
L20	N87°56'29"E	67.76'
L21	S73°55'09"E	55.67'
L22	N88°21'33"E	14.87'
L23	S71°18'39"E	37.22'

SHEET 9 OF 37

LEGEND

- □ – GRANITE BOUND TO BE SET
- ⊙ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – DOVER CONSERVATION AREA SLOPES >20%
- 4K – DOVER CONSERVATION AREA SLOPES >20%
- TPIT 1 – TEST PIT LOCATION AND ID
- △ – WETLAND BUFFER PLACARD

REFERENCE PLANS:

1.) LOT LINE ADJUSTMENT PLAN OF LAND LOT NOS. 13, 13C & 13E, TAX MAP N GULF ROAD, OAK STREET, COUNTRY CLUB ESTATES DRIVE & FRESH CREEK ROAD DOVER, NEW HAMPSHIRE COUNTY OF STRAFFORD. SCALE: 1" = 100'; DATED: DECEMBER 12, 2016, REVISED THROUGH 2–16–17; BY: CIVILWORKS NEW ENGLAND. RECORDED S.C.R.D. PLAN 113–033.

2.) MINOR SUBDIVISION OF LAND PREPARED FOR DAHN H. TIBBETT & NORMA M. TIBBETT AND JAHN H. JANETOS & SUSAN G. JANETOS, TAX MAP N, LOT No. 13, GULF ROAD, OAK STREET & COUNTRY CLUB ESTATES DRIVE, CITY of DOVER, COUNTY of STRAFFORD, STATE of NEW HAMPSHIRE. SCALE: 1" = 100'; DATED: OCTOBER 18, 2021, REVISED THROUGH 1/3/22; BY THIS OFFICE. RECORDED S.C.R.D PLAN 12673.

3.) A PORTION OF CITY / TOWN LINE PREPARED FOR THE CITY OF DOVER, NEW HAMPSHIRE AND THE TOWN OF ROLLINSFORD, NEW HAMPSHIRE LOCATED WITHIN THE ROADWAY KNOWN AS OAK STREET, DOVER AND ROLLINSFORD, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE; SCALE: 1" = 50'; DATED: NOV. 18, 2016, REVISED THROUGH 10/2/17; ON FILE WITH THE CITY OF DOVER.

"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."

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM
REVISIONS				

23–1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

NHDES SUBDIVISION PLAN
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13–1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. SUBD–2023–0001

DRAWN BY: KJF	FILE: MSA\1734\D\23–1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

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

LEGEND

- □ – GRANITE BOUND TO BE SET
- ⊙ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – DOVER CONSERVATION AREA SLOPES >20%
- (4K) – DOVER CONSERVATION AREA SLOPES >20%
- TPIT 1 – TEST PIT LOCATION AND ID
- △ – WETLAND BUFFER PLACARD

No.	Bearing	Distance
L14	N16°39'58"W	65.64'
L15	S12°28'08"W	40.00'
L16	N05°48'59"W	15.56'
L17	N15°41'21"W	16.60'
L18	N16°39'58"W	41.49'

SEE SHEET 9

S.(fnd)

N01°27'45"W 76.29'

N12°37'36"E 97.49'

N16°39'58"W 89.55'

N16°39'58"W 172.76'

N16°39'58"W 241.66'

L6 240.15'

S82°47'09"W 282.64'

N82°47'09"E 126

N/13-1-8

PARCEL AREA
46,807 S.F.
1.07 Ac.

TPIT 5

TPIT 6

N72°56'07"W 134.91'

S72°56'07"E 79.13'

S05°19'55"E 107.93'

S54°55'37"W 106.86'

S54°55'37"W 209.87'

TPIT 7

TPIT 18

TPIT 17

TPIT 23 11-14

TPIT 25 11-14

TPIT 26

4K

OPEN SPACE
688,230 S.F.
15.80 Ac.
114,555 S.F. CONTIGUOUS UPLANDS

N16°39'58"W 142.34'

OAK STREET
Public R.O.W. width varies

NH STATE PLANE NAD 83 – GPS OBS.

S82°47'09"W 327.85'

S05°19'55"E 140.53'

N/13-1-9

PARCEL AREA
44,081 S.F.
1.01 Ac.

TPIT 4

TPIT 3

N16°39'58"W 142.38'

S82°47'09"W 299.86'

50' WETLAND BUFFER

WETLAND LIMITS

L18

N89°48'00"E 292.71'

S05°19'55"E 445.70'

N/13-1-10

PARCEL AREA
44,757 S.F.
1.03 Ac.

TPIT 2

TPIT 1

N80°19'51"W 273.95'

30' WIDE ACCESS & UTILITY EASEMENT (S.C.R.D. 3655 / 154)

S05°19'55"E 185.82'

62.12'

15.53'

15.53'

I.R.(fnd)

N80°19'51"W 332.84'

L17

L16

I.P.(fnd)

N15°41'21"W 78.81'

ELMWOOD AVENUE

25 / 41

BRIAN M. DALKE
KELLY A. DALKE
20 ELMWOOD AVENUE
DOVER, NH 03820
4977 / 463

N / 13

DAHN H. TIBBETT
NORMA M. TIBBETT
130 GULF ROAD
DOVER, NH 03820
5037 / 899

N/ 13F-1

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

N/ 13F-2

CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857
5084 / 899

50' WETLAND BUFFER

WETLAND LIMITS

645.30'
N89°20'50"W

I.R.(fnd)

S76°51'45"E 508.06'

ROLLINSFORD
DOVER

I.R.(fnd)

TOWN LINE
(SEE REFERENCE PLAN 3)

RD
1899

DOVER BOUND #29
GRANITE BOUND WITH DRILL HOLE IN TOP
0.9'W x 0.75'D x 1.66' EXPOSED, AT BASE
OF A WHITE PINE
VIEW LOOKING SOUTHERLY FROM ROADWAY.
THIS BOUND IS NOT LOCATED ON THE TOWN
LINE. IT IS AN OFFSET WITNESS MONUMENT
TO AN ANGLE POINT IN THE TOWN LINE.

35' WIDE GAS TRANSMISSION EASEMENT (SEE S.C.R.D. 666 / 341)

WETLAND LIMITS

S34°29'32"E 798.23'

SEE SHEET 11

SHEET 10 OF 37

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM

REVISIONS

23-1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

NHDES SUBDIVISION PLAN
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. SUBD-2023-0001

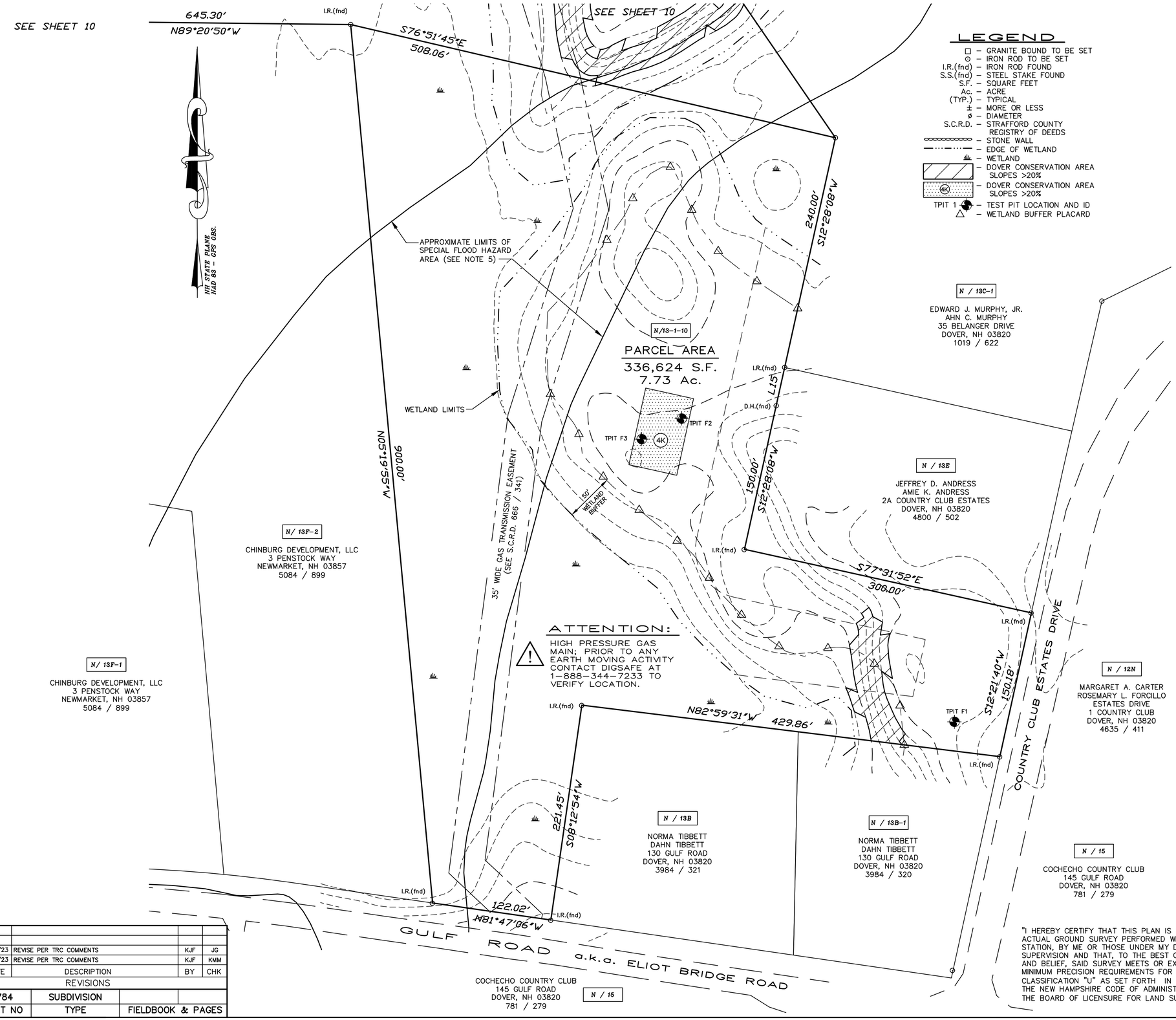
DRAWN BY: KJF	FILE: MSA\1734\D\23-1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

50 25 0 25 50 100 150 200

"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."

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
No. 661
KEVIN M. McENEANEY
SIGNATURE

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



LEGEND

- □ – GRANITE BOUND TO BE SET
- ○ – IRON ROD TO BE SET
- I.R.(fnd) – IRON ROD FOUND
- S.S.(fnd) – STEEL STAKE FOUND
- S.F. – SQUARE FEET
- Ac. – ACRE
- (TYP.) – TYPICAL
- ± – MORE OR LESS
- ø – DIAMETER
- S.C.R.D. – STRAFFORD COUNTY REGISTRY OF DEEDS
- – STONE WALL
- – EDGE OF WETLAND
- – WETLAND
- – DOVER CONSERVATION AREA SLOPES >20%
- (4K) – DOVER CONSERVATION AREA SLOPES >20%
- TPIT 1 – TEST PIT LOCATION AND ID
- – WETLAND BUFFER PLACARD

ATTENTION:

HIGH PRESSURE GAS MAIN; PRIOR TO ANY EARTH MOVING ACTIVITY CONTACT DIGSAFE AT 1-888-344-7233 TO VERIFY LOCATION.

NOTES:

1.) OWNER OF RECORD AND APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NEW HAMPSHIRE 03857
S.C.R.D. VOLUME 4465, PAGE 298

2.) N / 13-1 – DENOTES TAX MAP AND PARCEL NUMBER.

3.) PARCEL AREA: 1,503,926 S.F.± / 34.53 Ac.±

4.) ZONING DISTRICT IS RURAL RESIDENTIAL R-40 – OPEN SPACE SUBDIVISION. SEE SHEET 5 FOR ZONING REQUIREMENTS

5.) A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE X; AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; DATE SEPTEMBER 30, 2015.

6.) BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.

7.) VERTICAL DATUM IS U.S.G.S. NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 AND TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS DURING JUNE 2022. CONTOUR INTERVAL IS TWO FEET.

8.) PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.

9.) THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONE AREAS WITHIN SLOPES GREATER THAN 20%.

10.) WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

11.) THE PARCEL IS SUBJECT TO A 35' WIDE GAS TRANSMISSION EASEMENT, SEE S.C.R.D. VOLUME 666, PAGE 341.

12.) THE PARCEL IS SUBJECT TO A 30' WIDE ACCESS AND UTILITY EASEMENT FOR THE BENEFIT OF PARCELS N/13F, N/13F-1 & N/13F-2, SEE S.C.R.D. VOLUME 3655, PAGE 154.

13.) AS-BUILT PLANS OF THE SUBDIVISION SHALL BE SUBMITTED ON PAPER AND IN DIGITAL FORMAT IN PDF AND AUTOCAD DWG FORMAT TO THE CITY OF DOVER ENGINEER'S OFFICE UPON COMPLETION OF THE PROJECT.

14.) THE INSTALLATION OF ELECTRIC POWER, CABLE TELEVISION AND TELEPHONE LINES SHALL BE UNDERGROUND THROUGHOUT THE SITE.

15.) THE SUBDIVISION LOTS ARE TO BE SERVICED BY MUNICIPAL WATER AND ONSITE SEWAGE DISPOSAL SYSTEMS.

16.) STREET ADRESSES FOR EACH LOT SHALL BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.

17.) THE PROPOSED USE FOR THE SITE IS SINGLE FAMILY RESIDENTIAL.

18.) PARCEL A IS TO BE GRANTED TO THE CITY OF DOVER AS PART OF THE OLD OAK STREET RIGHT OF WAY.

19.) NHDES SUBDIVISION APPROVAL: PENDING

NHDES SUBDIVISION PLAN
OF
EMERSON RIDGE AT JANETOS FARM
PREPARED FOR
CHINBURG DEVELOPMENT, LLC
TAX MAP N, LOT No. 13-1
GULF ROAD, OAK STREET
& COUNTRY CLUB ESTATES DRIVE
CITY of DOVER, COUNTY of STRAFFORD
STATE of NEW HAMPSHIRE

DOVER PLANNING FILE No. SUBD-2023-0001

DRAWN BY: KJF	FILE: MSA\1734\D\23-1734SUB
SCALE: 1" = 50'	DATE: FEBRUARY 1, 2023

50 25 0 25 50 100 150 200

NO.	DATE	DESCRIPTION	BY	CHK
2	5/2/23	REVISE PER TRC COMMENTS	KJF	JG
1	4/5/23	REVISE PER TRC COMMENTS	KJF	KMM

REVISIONS

23-1784	SUBDIVISION	
PROJECT NO	TYPE	FIELDBOOK & PAGES

"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."

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

GENERAL NOTES

1. OWNER OF RECORD AND APPLICANT:
   CHINBURG DEVELOPMENT, LLC
   3 PENSTOCK WAY
   NEWMARKET, NEW HAMPSHIRE 03857
   S.C.R.D. VOLUME 4465, PAGE 298
2. N / 13-1 – DENOTES TAX MAP AND PARCEL NUMBER.
3. PARCEL AREA: 1,503,926 S.F.± / 34.53 Ac.±
4. ZONING DISTRICT IS RURAL RESIDENTIAL R-40 (OPEN SPACE SUBDIVISION)

DIMENSIONAL REQUIREMENTS:	REQUIRED	PROVIDED
MINIMUM LOT SIZE	= 20,000 S.F.	27,557 S.F.
MINIMUM FRONTAGE	= 40 FEET	40 FEET
MINIMUM OPEN SPACE	= 220,000 S.F.	688,230 S.F.
BUILDING SETBACK REQUIREMENTS:		
ABUTTING A STREET	= 20 FEET	>20 FEET
ABUTTING A LOT LINE	= 20 FEET	>20 FEET

5. A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1 PERCENT ANNUAL CHANCE FLOOD, ZONE A (BASE FLOOD ELEVATIONS NOT DETERMINED); AS SHOWN ON FLOOD INSURANCE RATE MAP, COMMUNITY NUMBER 330145; PANEL 0330; SUFFIX E; MAP NUMBER 33017C0330E; DATE SEPTEMBER 30, 2015.
6. BASIS OF BEARING IS NH STATE PLANE (NAD83) BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021.
7. VERTICAL DATUM IS U.S.G.S. NAVD88 BASED ON GPS OBSERVATION DATED SEPTEMBER 15, 2021 AND TOPOGRAPHY DEPICTED IS BASED ON FIELD OBSERVATIONS DURING JUNE 2022. CONTOUR INTERVAL IS TWO FEET.
8. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A SURVEY PERFORMED BY MCENEANEY SURVEY ASSOCIATES, OF NEW ENGLAND ON NOVEMBER 15, 2021 WITH AN ERROR NOT GREATER THAN 1 IN 10,000.
9. THIS PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF THE SURVEY. THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. FROM THIS PLAN, BUT IN EXISTENCE, IS NOT INTENDED OR IMPLIED.
10. THE PARCEL IS SUBJECT TO THE CITY OF DOVER CONSERVATION ZONE AREAS WITHIN SLOPES GREATER THAN 20%.
11. WETLANDS FLAGGED LINE SHOWN WERE DELINEATED BY DAMON E. BURT, N.H.C.W.S #163 OF FRAGGLE ROCK ENVIRONMENTAL SERVICES AUGUST 8, 2021 IN ACCORDANCE WITH THE 1987 CORPS. OF ENGINEERS WETLANDS DELINEATION MANUAL AND LOCATED BY THIS OFFICE.

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. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT AND POLES.
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. EXISTING ("OLD") WATER SERVICES TO THE SUBJECT SITE SHALL BE DISCONNECTED AND SHUT-OFF AT THE WATER MAIN.
11. EXISTING SEWER SERVICES TO BE CUT AND PERMANENTLY CAPPED AT PROPERTY LINE AS APPLICABLE.
12. 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.
13. ALL STONEWALLS THAT NEED TO BE REMOVED FOR CONSTRUCTION SHALL BE STOCKPILED AND REUSED ON SITE.

PERMIT SUMMARY:

1. THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY:

   NHDES SUBDIVISION APPROVAL: 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.

   YIELD PLAN WITH ROAD LENGTH WAIVER: P22-21; APPROVED APRIL 26, 2022

   CONDITIONAL USE PERMIT: PENDING

WAIVER SUMMARY:

1. A WAIVER REQUEST FROM SECTION 157-45 TO NOT CONSTRUCT SIDEWALKS ALONG ONE SIDE OF THE PROPOSED ROADWAYS WHERE A SIDEWALK WOULD BE REQUIRED. PENDING

SUBDIVISION NOTES:

1. PROPERTY LINE INFORMATION HAS BEEN OBTAINED FROM A PLAN REFERENCED AND PREPARED BY MCENEANEY SURVEY ASSOCIATES OF NEW ENGLAND (SEE EXISTING CONDITIONS PLAN IN THIS PLAN SET).
2. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 357 LF OF PUBLIC ROADWAY, 311 LF OF PRIVATE ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 11 LOT SINGLE FAMILY SUBDIVISION.
3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
4. 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.
5. ON-SITE SNOW STORAGE SHALL OCCUR ALONG THE EDGES OF PROPOSED PAVEMENT.
6. ALL CONSTRUCTION LAYOUT SHALL BE DONE BY A LICENSED SURVEYOR UNDER CONTRACT WITH THE CONTRACTOR.
7. SEE DETAILS FOR SIGN LEGENDS.
8. 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 OWNER'S 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.
9. METHODS OF DEMOLITION, CONSTRUCTION AND ERECTION ARE THE CONTRACTOR'S RESPONSIBILITY UNLESS OTHERWISE SPECIFIED. IT IS THE CONTRACTOR'S 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.
10. 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.
11. BUILDING ADDRESSES TO BE ASSIGNED BY THE BUILDING OFFICIAL AT THE TIME OF ISSUANCE OF A BUILDING PERMIT.
12. THE SITE SHALL BE MAINTAINED TO PROVIDE ACCESSIBILITY IN ALL WEATHER CONDITIONS.
13. 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 DISTURBANCE ACTIVITY OCCURS.
14. 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.
15. SITE CONSTRUCTION HOURS SHALL BE LIMITED TO MONDAY-FRIDAY 7 AM-6 PM, SATURDAY HOURS 9 AM-4 PM, AND NO SUNDAY AND NO FEDERAL HOLIDAY WORK HOURS. 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.
16. 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.
17. 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.
18. A LETTER OF CREDIT FOR THE COST OF REVEGETATING ALL DISTURBED AREAS ON THE SITE SHALL BE SUBMITTED AND THE APPROVED CONSTRUCTION SIGN INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITY OCCURS.
19. 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.
20. PRIOR TO CONVEYING THE OWNERSHIP AND MAINTENANCE OBLIGATIONS FROM THE DEVELOPER TO THE ASSOCIATION, THE ENGINEER OF RECORD SHALL MEET WITH THE ASSOCIATION AND REVIEW MAINTENANCE OBLIGATIONS, INCLUDING STORMWATER, OPENSPACE AND ROADWAY MAINTENANCE.
21. PRIOR TO THE LAST C.O. BEING ISSUED, THE ENGINEER OF RECORD SHALL MEET WITH THE ASSOCIATION AND REVIEW THE AS-BUILT FOR THE PROJECT.
22. REFUSE PICKUP WILL BE BY PRIVATE CONTRACTOR.
23. ANY RETAINING WALL TALLER THAN FOUR FEET (4') REQUIRES ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
24. ANY FENCE TALLER THAN SEVEN FEET (7') REQUIRES THE ISSUANCE OF A BUILDING PERMIT FROM INSPECTION SERVICES.
25. FIRE DEPARTMENT ACCESS ROAD(S) SHALL BE INSTALLED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS IN ALL WEATHER CONDITIONS AT ALL TIMES.
26. COMMERCIAL VEHICLE ROUTE DURING CONSTRUCTION SHALL CONFORM TO DOVER CITY CODE OR BE COORDINATED WITH THE COMMUNITY SERVICES DIRECTOR.
27. 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)
28. NO ROADWAY WITH PRIVATE UTILITY EASEMENTS SHALL BE ACCEPTED AS A PUBLIC ROAD BY THE CITY UNLESS THE EASEMENTS ARE EXPUNGED PRIOR TO THE TRANSFER OF LAND TO THE CITY. LICENSE AGREEMENTS FOR ANY AND ALL PRIVATE UTILITIES WITHIN THE RIGHT OF WAY MAY BE GRANTED BY THE CITY UPON ACCEPTANCE OF THE UNENCUMBERED ROADWAY CONSISTENT WITH APPLICABLE STATE LAW.
29. IF SNOW EXCEEDS SNOW STORAGE AREAS, THE HOA SHALL BE RESPONSIBLE TO HIRE A CONTRACTOR TO TRUCK AND DISPOSE THE SNOW OFFSITE.
30. LOTS 1-2 AND 6-10 ARE ADJACENT TO THE GATEWAY DISTRICT WHICH PERMITS A MIXTURE OF COMMERCIAL AND RESIDENTIAL USES AND PRINCIPAL BUILDINGS OF UP TO 4 STORIES.
31. INDIVIDUAL AND SHARED DRIVEWAYS THAT ARE LONGER THAN 150 LF SHALL BE A MINIMUM OF 20' WIDE.
32. THE SITE LAYOUT IS DESIGNED IN COMPLIANCE WITH APPLICABLE ACCESSIBILITY REGULATIONS. THE PROPOSED STRUCTURE WILL ALSO BE DESIGNED WITH APPLICABLE ACCESSIBILITY REGULATIONS. (I.E. IBC, ANSI-117.1) AND NH RSA 155-A:5.

GRADING NOTES:

1. ALL ROAD 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. ALL TREATMENT AND PRE-TREATMENT SWALES TO BE CONSTRUCTED SHALL HAVE SOD BOTTOMS.
15. LIMIT TREE CLEARING TO ONLY THE EXTENT NECESSARY FOR CONSTRUCTION.
16. PLACARDS SHALL BE INSTALLED ALONG THE EDGE OF WETLAND PRIOR TO CONSTRUCTION.

UTILITY NOTES:

1. THE PROJECT SITE IS SERVED BY CITY WATER AND ON-SITE 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. 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.
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 CONTACTS ARE AS FOLLOWS:
   ELECTRIC: EVERSOURCE 1.800.362.7764
   CABLE: COMCAST 603.334.3615
   GAS: UNITIL 866.933.3821
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)
    11 NEW HOMES – 4 BEDROOM
    44 BDRMS x 150 GALS./DAY/BDRM = 6,600 GPD
11. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO APPLICABLE CITY AND STATE CODES.
12. APPROVED BACKFLOW PREVENTORS SHALL BE INSTALLED ON BOTH FIRE AND DOMESTIC WATER LINES. AS APPLICABLE
13. ALL UNUSED WATER SERVICES SHALL BE REMOVED BACK TO THE CORPORATION AT THE MAIN.
14. TAPPING SLEEVE AND GATES SHALL BE STAINLESS STEEL.
15. USE FOSTER GATES TO TEES WHERE ANCHOR TEE'S ARE NOT USED.
16. CURB BOXES SHALL BE PLACED AT RIGHT OF WAY AND OUT OF PAVEMENT AS POSSIBLE. IF IN PAVEMENT USE ROAD BOX.

LEGEND

S.F.	SQUARE FEET
Ac.	ACRE
±	MORE OR LESS
(TYP)	TYPICAL
S.C.R.D.	STRAFFORD COUNTY REGISTRY OF DEEDS
TBR	TO BE REMOVED
D.I.	DUCTILE IRON
DIA.	DIAMETER
R.O.W.	RIGHT OF WAY
TPIT	TEST PIT
V.I.F.	VERIFY IN FIELD
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING WATER SHUT-OFF
W	EXISTING WATER VALVE
	EXISTING GAS VALVE
	EXISTING HYDRANT
	EXISTING LIGHT/SIGNAL POLE
S	EXISTING SEWER MANHOLE
D	EXISTING DRAINAGE MANHOLE
	EXISTING CATCHBASIN
5'R	PAVEMENT RADIUS
SGC	SLOPED GRANITE CURB
SBC	SLOPED BITUMINOUS CURB
T.O.W.	TOP OF WALL
x 74.00	EXISTING SPOT GRADE
—94—	EXISTING GRADE
OHU	OVERHEAD UTILITY
E	EXISTING ELECTRIC
W	EXISTING WATER LINE
S	EXISTING SEWER LINE
D	EXISTING DRAINAGE LINE
G	EXISTING GAS LINE
	SOIL BOUNDARY
	EDGE OF WET
	50' WETLAND BUFFER
	EMERSON BROOK
	PROPOSED SIGN
74	PROPOSED FINISH GRADE
x 74.00	PROPOSED SPOT GRADE
	PAVEMENT WITH CURB
	SILT BARRIER
PG	PROPOSED GAS
PW	PROPOSED WATER
PE	PROPOSED ELECTRIC
PD	PROPOSED DRAIN LINE
PUD	PROPOSED UNDERDRAIN LINE
PFES	PROPOSED FLARED END SECTION
	PROPOSED CATCHBASIN
	EXISITNG STEEP SLOPE AREAS
	PROPOSED RIPRAP
	PROPOSED CONCRETE
	PROPOSED STEEP SLOPE IMPACT
	PROPOSED 50' WETLAND BUFFER IMPACT

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE.DWG

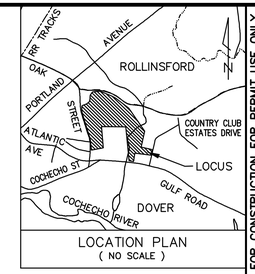
CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT: CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT: EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

NOTE SHEET

TOWN LINE
TOWN OF ROLLINSFORD
CITY OF DOVER
TOWN LINE
TOWN OF ROLLINSFORD
CITY OF DOVER
TOWN LINE
TOWN OF ROLLINSFORD
CITY OF DOVER
a.k.a. COUNTY ROAD
FRESH CREEK ROAD
[public - R.O.W. width varies] [CLASS VI HIGHWAY]
OAK STREET
[public - R.O.W. width varies]
OHU
PROPOSED DO NOT ENTER SIGN
EXISTING GRAVEL PATH
PROPOSED RELOCATED CLASS VI ROAD SIGN
PROPOSED TRAIL HEAD PARKING SIGN
PROPOSED 20'x18' PAVED PARKING AREA
END SGC
PROPOSED PRIVATE DRIVE SIGN
PROPOSED BIO-RETENTION BASIN 1
PROPOSED DO NOT ENTER SIGN
PROPOSED STREET TREE (TYP) SEE LANDSCAPE PLAN FOR LOCATION & TYPE OF TREE
47' RADIUS
4+00
3+00
PT3+13.62
5+00
PC4+70.62
23' RADIUS
FRESH CREEK ROAD
165'R
4' SGC 85'R
BEGIN SGC
60' RADIUS
35' RADIUS
PROPOSED NO PARKING SIGN
VARIABLE WIDTH PUBLIC R.O.W
STATION EQUATION
STA. 1+95.3 = STA. 10+00
PROPOSED STREET SIGN AND STOP SIGN W/ STOP BAR
PROPOSED UTILITY POLE WITH LIGHT
BEGIN SGC
PC1+64.07
30'R
30.00'
10'
24' SGC
30'R
PROPOSED COMMUNITY SIGN
END SGC BEGIN SBC
PROPOSED COMMUNITY SIGN
END SGC TIP DOWN
PROPOSED MAIL KIOSK
BEGIN SBC TIP DOWN
PROPOSED NO PARKING SIGN
BEGIN SGC
SGC 1+00
8'R
8'R
30'R
PT1+48.09
30'R
PC0+20.54
0+00
40' PRIVATE R.O.W
END SBC
PROSPERITY DRIVE
SBC
12.00'
SBC
11.00'
PROPOSED SHARED DRIVEWAY EASEMENT
EXISTING TREELINE (TYP)
PROPOSED CONCRETE TRANSFORMER PAD (TYP)
PROPOSED RETAINING WALL WITH FENCE
PROPOSED CONCRETE TRANSFORMER PAD
END SBC
BEGIN SBC
PROPOSED TREELINE (TYP)
PC12+46.58
PC12+55.08
PT12+69.58
5'R
13.00'
BEGIN SBC
END SBC
PROPOSED SHARED DRIVEWAY EASEMENT
20' BUILDING SETBACK (TYP)
PROPOSED BIO-RETENTION BASIN 2
PROPOSED DETENTION POND
EXISTING TREELINE (TYP)
1
43,631 S.F.
1.00 Ac.
2
38,990 S.F.
0.90 Ac.
3
37,870 S.F.
0.87 Ac.
4
61,330 S.F.
1.41 Ac.
5
28,585 S.F.
0.66 Ac.
6
27,557 S.F.
0.63 Ac.
7
73,840 S.F.
1.70 Ac.
CITY OF DOVER WETLAND BUFFER
50'
OPEN SPACE
688,230 S.F.
15.80 Ac.
(114,555 S.F. USABLE UPLANDS)
NH STATE PLANE NAD 83 - US FEET
GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)



LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

SITE LAYOUT PLAN A

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

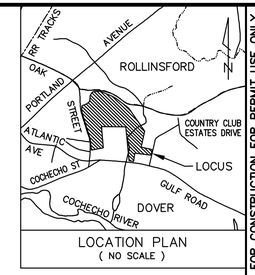
PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

13 OF 37

END SBC
BEGIN SBC
END SBC
BEGIN SBC
PROPOSED SHARED DRIVEWAY EASEMENT
END SBC
20' BUILDING SETBACK (TYP)
20' BUILDING SETBACK (TYP)
PROPOSED DETENTION POND
EXISTING TREELINE (TYP)
PROPOSED TREELINE (TYP)
PROPOSED UTILITY POLE
PROPOSED UTILITY POLE
PROPOSED UTILITY POLE
20' BUILDING SETBACK (TYP)
OAK STREET
[public - R.O.W. width varies]
50'
CITY OF DOVER WETLAND BUFFER
ELMWOOD AVENUE
EXISTING SMH
RIM: 137.76
WIRE FENCE LINE
30' WIDE ACCESS & UTILITY EASEMENT.

1	43,631 S.F.	1.00 Ac.
2	38,990 S.F.	0.90 Ac.
3	37,870 S.F.	0.87 Ac.
4	61,330 S.F.	1.41 Ac.
8	46,807 S.F.	1.07 Ac.
9	44,081 S.F.	1.01 Ac.
10	44,757 S.F.	1.03 Ac.

OPEN SPACE
750,657 S.F.
17.23 Ac.
(157,415 S.F. USABLE UPLANDS)



LOCATION PLAN
(NO SCALE)

NH STATE PLANE
NAD 83 - 1996 OBS.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

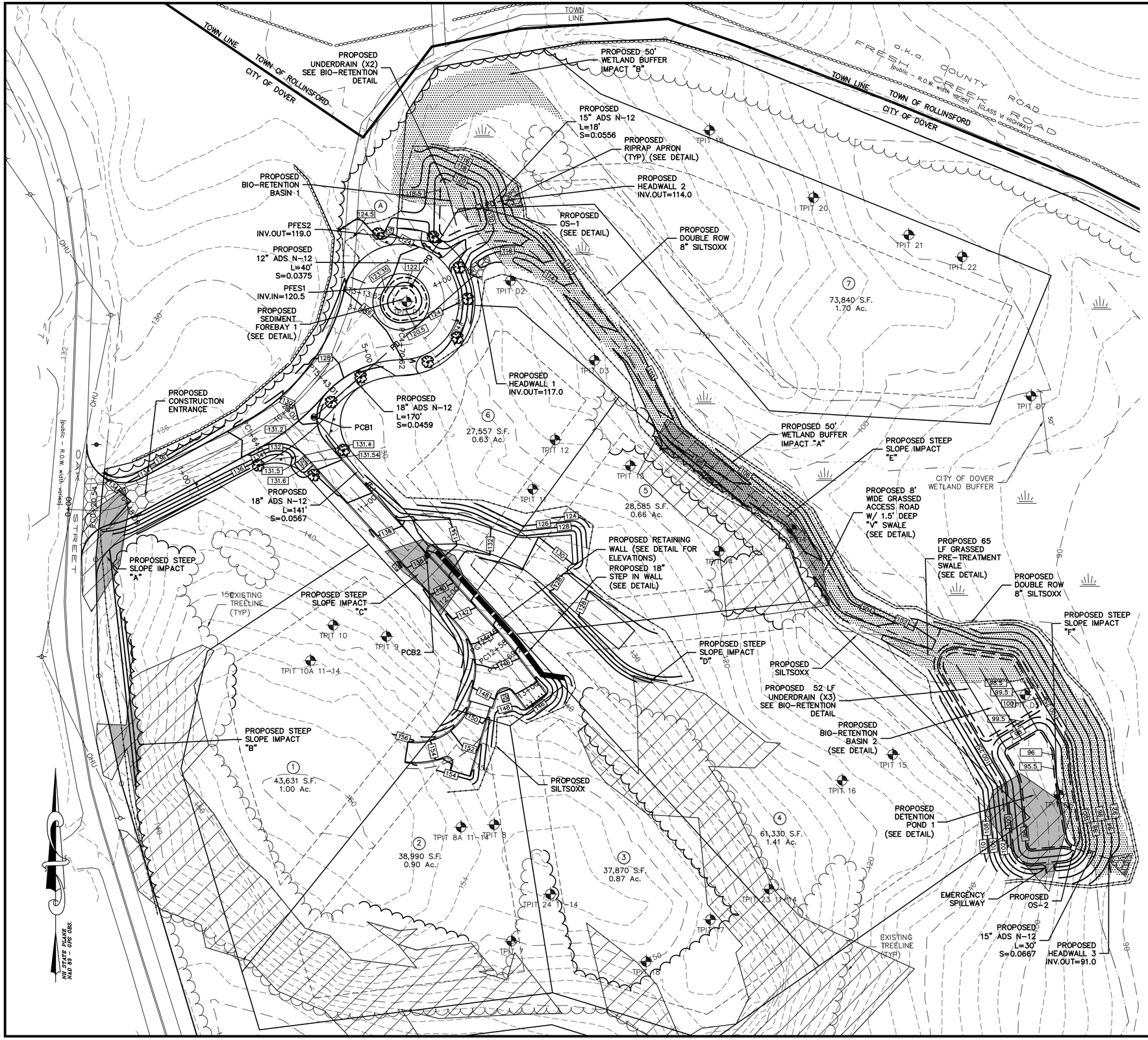
DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

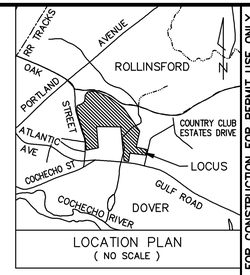
SITE LAYOUT PLAN B

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

14 OF 37





NOTES:
1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER CONSERVATION DISTRICT IMPACTS:

50' WETLAND BUFFER IMPACT "A":	26,524 SF
(3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	
50' WETLAND BUFFER IMPACT "B":	5,028 SF
(DRIVEWAY CONSTRUCTION FOR LOT 7)	
50' WETLAND BUFFER IMPACT "C":	537 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**32,089 SF**

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**11,956 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

GRADING, DRAINAGE, & EROSION CONTROL PLAN A

APPLICANT: CHINBURG DEVELOPMENT, LLC 3 PENSTOCK WAY NEWMARKET, NH 03857

PROJECT: EMERSON RIDGE AT JANETOS FARM OAK STREET DOVER, NH

PROPOSED STEEP SLOPE IMPACT "B"

PROPOSED SILTSOXX

PROPOSED BIO-RETENTION BASIN 2 (SEE DETAIL)

PROPOSED DETENTION POND 1 (SEE DETAIL)

EMERGENCY SPILLWAY

PROPOSED OS-2

PROPOSED 15" ADS N-12 L=30' S=0.0667

PROPOSED HEADWALL 3 INV.OUT=91.0

EXISTING TREELINE (TYP)

CITY OF DOVER WETLAND BUFFER

30' WIDE ACCESS & UTILITY EASEMENT

WIRE FENCE LINE

OAK STREET

(public - R.O.W. width varies)

ELMWOOD AVENUE

1 — 43,631 S.F. 1.00 Ac.

2 — 38,990 S.F. 0.90 Ac.

3 — 37,870 S.F. 0.87 Ac.

4 — 61,330 S.F. 1.41 Ac.

8 — 46,807 S.F. 1.07 Ac.

9 — 44,081 S.F. 1.01 Ac.

10 — 44,757 S.F. 1.03 Ac.

TPIT 1 11-14

TPIT 2 11-14

TPIT 3 11-14

TPIT 4 11-14

TPIT 5 11-14

TPIT 6 11-14

TPIT 7 11-14

TPIT 8A 11-14

TPIT 8 11-14

TPIT 15 11-14

TPIT 16 11-14

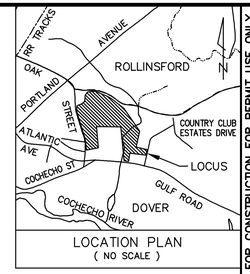
TPIT 17 11-14

TPIT 18 11-14

TPIT 23 11-14

TPIT 24 11-14

TPIT 25 11-14



LOCATION PLAN
(NO SCALE)

NOTES:
1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER CONSERVATION DISTRICT IMPACTS:

50' WETLAND BUFFER IMPACT "A":	26,524 SF
(3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	
50' WETLAND BUFFER IMPACT "B":	5,028 SF
(DRIVEWAY CONSTRUCTION FOR LOT 7)	
50' WETLAND BUFFER IMPACT "C":	537 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**32,089 SF**

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**11,956 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NH STATE PLANE
NAD 83 - 1996 OBS.

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	DATE	APP'D
2	PER TRC COMMENTS	5-2-23	SJH
1	PER TRC COMMENTS	4-5-23	SJH

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

GRADING, DRAINAGE, & EROSION CONTROL PLAN B

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

EMERSON BROOK

(11)
336,624 S.F.
7.73 Ac.

TPIT F2

TPIT F3

ZONE "X"
100 YEAR FLOOD

50'

CITY OF DOVER
WETLAND BUFFER

MARKED NATURAL
GAS LINE LOCATION

PROPOSED STEEP
SLOPE IMPACT
"G"

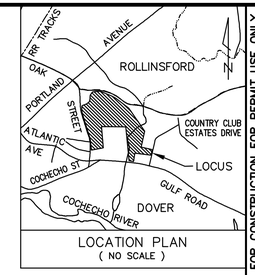
PROPOSED 50'
WETLAND BUFFER
IMPACT "C"

TPIT F1

COUNTRY CLUB ESTATES DRIVE

NH STATE PLANE
NAD 83 - GRID BRG.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)



LOCATION PLAN
(NO SCALE)

NOTES:

1. 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.
2. NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES (SEE DETAIL).
3. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

CITY OF DOVER CONSERVATION DISTRICT IMPACTS:

50' WETLAND BUFFER IMPACT "A":	26,524 SF
(3,086 SF OVERLAPS WITH 20% STEEP SLOPES)	
50' WETLAND BUFFER IMPACT "B":	5,028 SF
(DRIVEWAY CONSTRUCTION FOR LOT 7)	
50' WETLAND BUFFER IMPACT "C":	537 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**32,089 SF**

20% STEEP SLOPES IMPACT "A":	1,505 SF
20% STEEP SLOPES IMPACT "B":	929 SF
20% STEEP SLOPES IMPACT "C":	1896 SF
20% STEEP SLOPES IMPACT "D":	68 SF
20% STEEP SLOPES IMPACT "E":	3,086 SF
(OVERLAPS WITH 50' WETLAND BUFFER)	
20% STEEP SLOPES IMPACT "F":	3530 SF
20% STEEP SLOPES IMPACT "G":	942 SF
(DRIVEWAY CONSTRUCTION FOR LOT 11)	
TOTAL:	**11,956 SF**

DRAINAGE SCHEDULE:

PCB1 (5' DIA./DOUBLE GRATE)
RIM=129.6
INV.IN=124.9
INV.OUT=124.8

PCB2 (4' DIA.)
RIM=137.7
INV.OUT=132.9

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

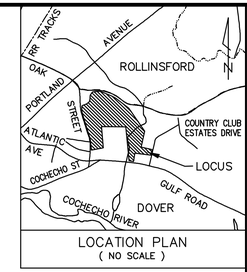
GRADING, DRAINAGE, & EROSION CONTROL PLAN C

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

17 OF 37

TOWN LINE
TOWN LINE
TOWN OF ROLLINSFORD
CITY OF DOVER
TOWN LINE
TOWN OF ROLLINSFORD
CITY OF DOVER
o.k.a. COUNTY ROAD
FRESH CREEK
[public - R.O.W. width varies] [CLASS VI HIGHWAY]
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED BIO-RETENTION BASIN 1
PROPOSED TRANSFORMER PAD (TYP)
PROPOSED FIRE HYDRANT (SEE DETAIL)
PROPOSED 6" REDUCER WITH GATE VALVE
PROPOSED THRUST BLOCK (TYP)
PROPOSED 8X6 TEE WITH GATE VALVE AND THRUST BLOCK
PROPOSED UTILITY POLE
PROPOSED 8" D.I. WATER MAIN
PROPOSED 6" D.I. WATER MAIN
PROPOSED WATER SHUTOFF (TYP)
PROPOSED TRANSFORMER PAD (TYP)
PROPOSED 12X8 SADDLE WITH GATE VALVE
EXISTING TREELINE (TYP)
PROPOSED GATE VALVE
PROPOSED WATER MAIN STUB
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED FIRE HYDRANT (SEE DETAIL)
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE
PROPOSED BIO-RETENTION BASIN 2
PROPOSED DETENTION POND
CITY OF DOVER WETLAND BUFFER
EXISTING TREELINE (TYP)
OAK STREET
OHU
PE
PW
PD
PCO
TPIT 1
TPIT 2
TPIT 3
TPIT 4
TPIT 5
TPIT 6
TPIT 7
TPIT 8
TPIT 8A 11-14
TPIT 9
TPIT 10
TPIT 10A 11-14
TPIT 11
TPIT 12
TPIT 13
TPIT 14
TPIT 15
TPIT 16
TPIT 17
TPIT 18
TPIT 19
TPIT 20
TPIT 21
TPIT 22
TPIT 23 11-14
TPIT 24 11-14
TPIT D1
TPIT D2
TPIT D3
TPIT D4
TPIT D5
TPIT D6
TPIT D7
PROPOSED 4K AREA
1 43,631 S.F. 1.00 Ac.
2 38,990 S.F. 0.90 Ac.
3 37,870 S.F. 0.87 Ac.
4 61,330 S.F. 1.41 Ac.
5 28,585 S.F. 0.66 Ac.
6 27,557 S.F. 0.63 Ac.
7 73,840 S.F. 1.70 Ac.
PCO 20.54
PT 0+48.39
PC 0+64.01
PT 3+13.62
PC 5+43.01
PT 6+28.62
PCO 12+44.45
PT 12+55.45
PT 12+69.45
NH STATE PLANE NAD 83 - GRID BRG.
GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)



LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

UTILITY PLAN A

PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE

1
43,631 S.F.
1.00 Ac.

2
38,990 S.F.
0.90 Ac.

3
37,870 S.F.
0.87 Ac.

4
61,330 S.F.
1.41 Ac.

TPIT 8A 11-14

TPIT 8

TPIT 24 11-14

TPIT 23 11-14

TPIT 15

TPIT 16

TPIT 17

TPIT 7

TPIT 18

TPIT D6

PROPOSED 4K AREA

PROPOSED 4K AREA

PROPOSED 4K AREA

PROPOSED DETENTION POND

PD

EXISTING TREELINE (TYP)

TPIT 25 11-14

PROPOSED UTILITY POLE

PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE

8
46,807 S.F.
1.07 Ac.

TPIT 5

PROPOSED 4K AREA

TPIT 6

PROPOSED WATER SHUTOFF (TYP)

PE

OAK STREET

(public - R.O.W. width varies)

9
44,081 S.F.
1.01 Ac.

TPIT 4

PROPOSED 4K AREA

TPIT 3

PROPOSED UTILITY POLE

PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE

50'

CITY OF DOVER WETLAND BUFFER

PROPOSED 1" COPPER TYPE K DOMESTIC SERVICE

WV

10
44,757 S.F.
1.03 Ac.

TPIT 1

PROPOSED 4K AREA

TPIT 2

PROPOSED UTILITY POLE

ELMWOOD AVENUE

WV

WIRE FENCE LINE

EXISTING SMH
RIM: 137.76

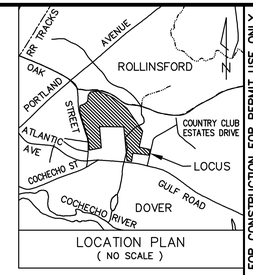
30' WIDE ACCESS & UTILITY EASEMENT.

NH STATE PLANE
NAD 83 - GPS OBS.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)



LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

UTILITY PLAN B

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

19 OF 37

EMERSON BROOK

(11)
336,624 S.F.
7.73 Ac.

PROPOSED
4K AREA

TPIT F2

TPIT F3

ZONE "X"
100 YEAR FLOOD

50'

CITY OF DOVER
WETLAND BUFFER

MARKED NATURAL
GAS LINE LOCATION

EXISTING WATERLINE
(V.I.F.)

PROPOSED 1"
COPPER TYPE K
DOMESTIC SERVICE
WITH SHUTOFF
(TYP)

TPIT F1

COUNTRY CLUB ESTATES DRIVE

EXISTING UTILITY
POLE (V.I.F.)

NH STATE PLANE
NAD 83 - US Ft.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

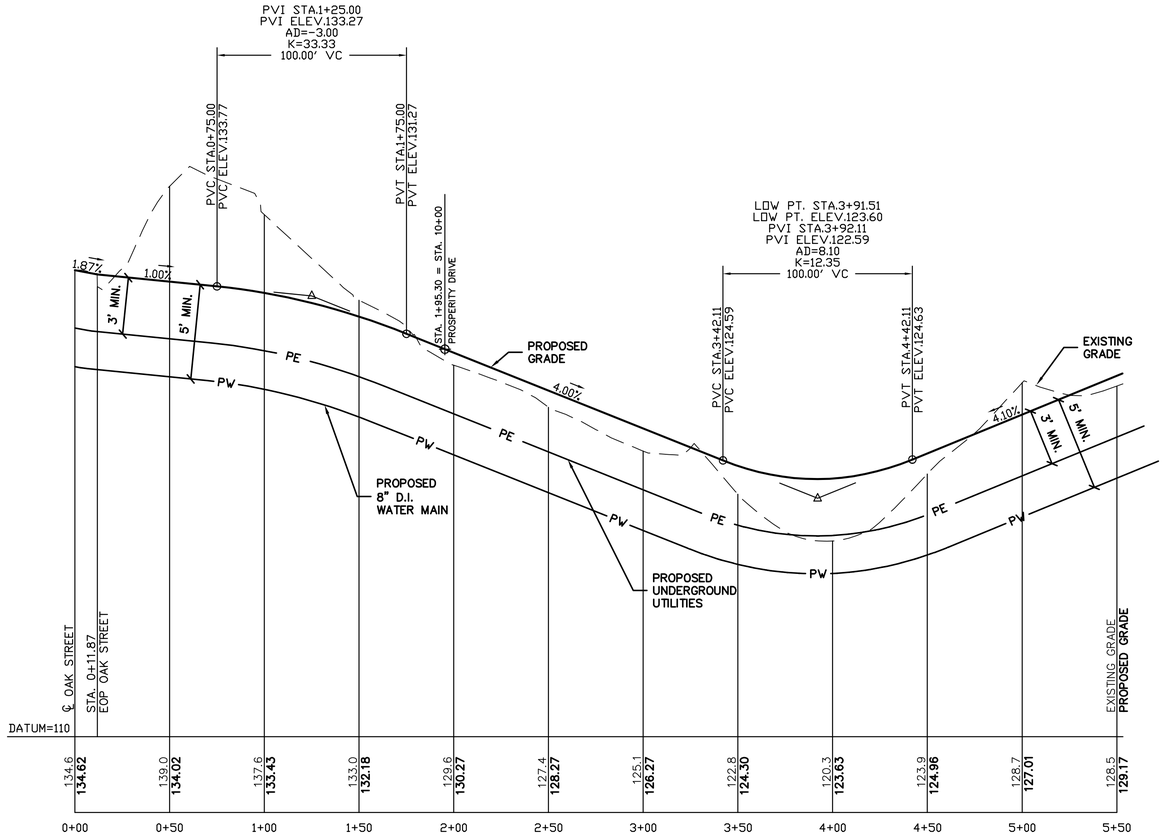
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

UTILITY PLAN C

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH



PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'
(PROPOSED FRESH CREEK ROAD)

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

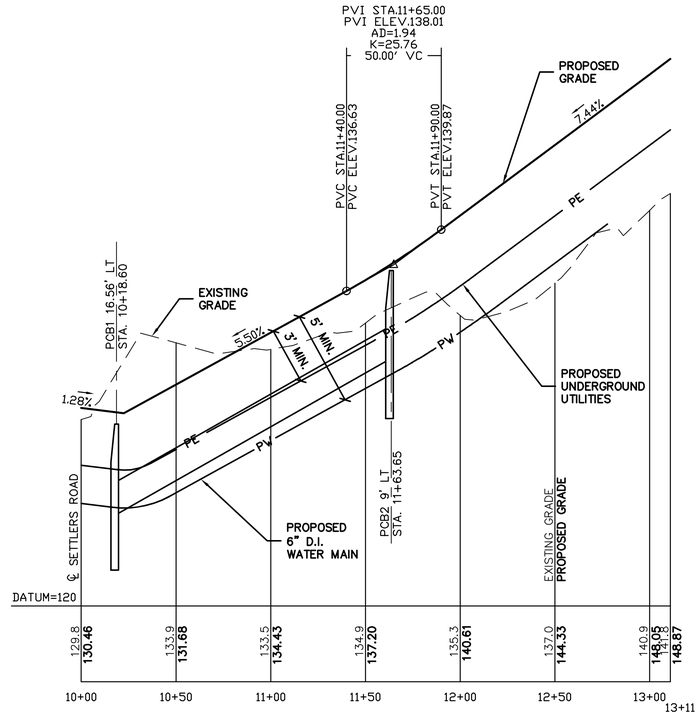
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

PROPOSED FRESH CREEK ROAD PROFILE

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857



PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'
(PROPOSED PROSPERITY DRIVE)

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

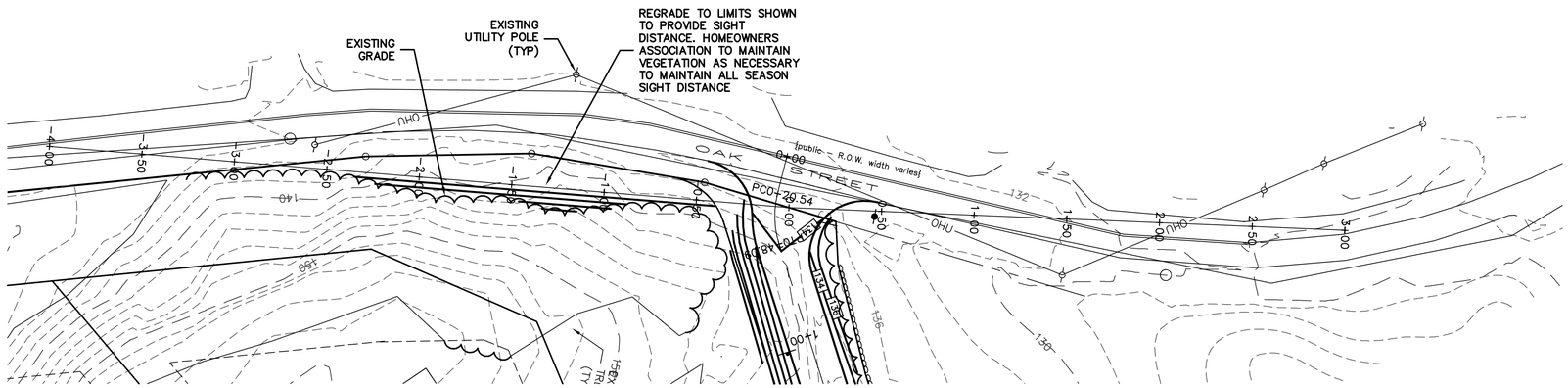
DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

PROPOSED PROSPERITY DRIVE PROFILE

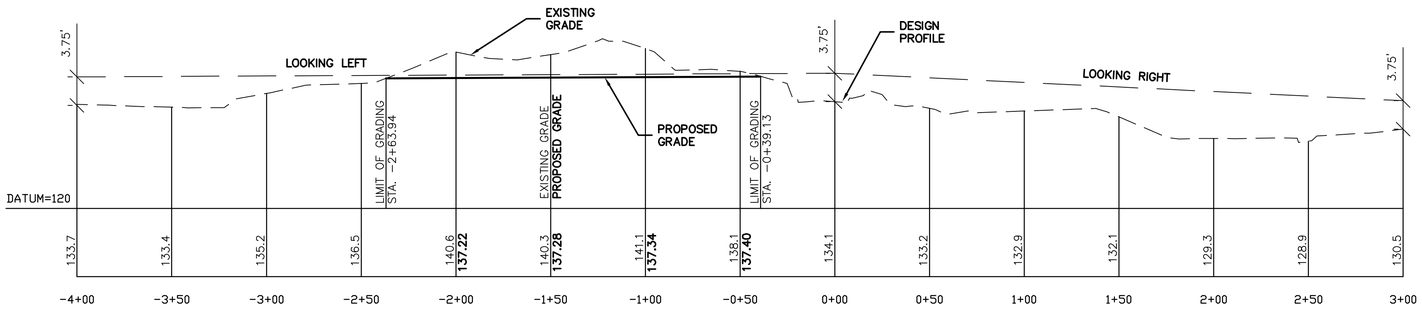
PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STRBET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

NH STATE PLANE
NAD 83 - GPS OBS.

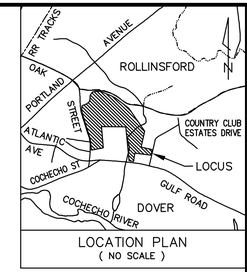


PLAN VIEW
HORIZONTAL SCALE: 1"=40'



PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE" 1"=10'

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)



LOCATION PLAN
(NO SCALE)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHWON
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

ALL SEASON SAFE SIGHT DISTANCE
(@ OAK STREET)

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STRBET
DOVER, NH

DESCRIPTION

1. THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH THE CONSTRUCTION OF 357 LF OF PUBLIC ROADWAY, AND 311 LF OF PRIVATE ROADWAY, DRAINAGE IMPROVEMENTS, AND UTILITIES FOR A 11 LOT SINGLE FAMILY SUBDIVISION.

PROJECT NAME AND LOCATION

EMERSON RIDGE
TAX MAP N, LOT 13-1 — LATITUDE N43° 12' 09"
OAK STREET — LONGITUDE W70° 51' 25"
DOVER, NH

DISTURBED AREA

±96,000 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 AND PARKING AREAS 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 IF ONE OF THE FOLLOWNG 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 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.

MAINTENACE OF STORMWATER MANAGEMENT FACILITIES

THE PROJECT PROPONENT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL STORMWATER FACILITIES DURING CONSTRUCTION AND THE PROPERTY 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.

PER 153-10 F:
ALL SITE IMPROVEMENTS WHICH REQUIRE BLASTING OF LAND SHALL MEET THE FOLLOWING REQUIRMENTS PRIOR TO ANY BLASTING OCCURING.

1. THE APPLICANT SHALL PREPARE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN FIVE HUNDRED (500) FEET OF THE EXTERNAL BOUNDARIES OF THE PROPOSED LOT TO BE DEVELOPED. THIS SURVEY, ALONG WITH A MONITORING PLAN, SHALL BE ON FILE WITH THE DOVER FIRE AND RESCUE. UPON RECOMMENDATIONS OF THE CHIEF, THE PLANNING BOARD MAY REQUIRE A PRE-BLAST SURVEY OF ALL STRUCTURES WITHIN ONE THOUSAND (1000) FEET.
2. THE APPLICANT SHALL HOLD A NEIGHBORHOOD MEETING TO REVIEW THE BLASTING PLAN AND PRE-BLAST SURVEY WITH REPRESENTATIVES OF THE FIRE AND RESCUE AND THE BLASTING COMPANY IN ATTENDANCE, PRIOR TO ANY ON-SITE BLASTING. ABUTTERS WITHIN ONE THOUSAND (1000) FEET OF THE EXTERNAL BOUNDARY OF THE PROJECT PARCEL SHALL BE NOTIFIED BY THE CERTIFIED MAIL (PAID FOR BY THE APPLICANT) OF THE MEETING NO LESS THAN TEN (10) DAYS PRIOR TO THE MEETING AND NO MORE THAN FIFTEEN (15) DAYS PRIOR TO THE MEETING. THE NOTICE SHALL STATE THE TIME AND DATE OF THE BLASTING AND CONTAIN A MAP SHOWING THE BLASTING AREA, THE 1,000-FOOT-RADIUS AREA, AND THE 500-FOOT-RADIUS AREA.
3. PERMIT HOLDERS SHALL BE IN COMPLIANCE WITH NFPA 495, EXPLOSIVE MATERIALS CODE. IN ADDITION TO ALL OTHER ORDINANCES AND CODES SET FORTH IN THE CITY OF DOVER CODE, § 153-14A, STORMWATER MANAGEMENT, EROSION CONTROL AND FLOOD HAZARDS, OF THIS CHAPTER AND THE CITY OF DOVER FIRE PREVENTION CODE, WHICH SPECIFICALLY PROHIBITS THE OVERNIGHT STORAGE OF EXPLOSIVES OR BLASTING AGENTS. FURTHER, ALL STORAGE MAGAZINES SHALL BE LOCKED IN THE OPEN POSITION AT THE END OF THE DAY'S OPERATION FOR EASY INSPECTION BY CITY OFFICIALS.
4. BLASTING PERMITS MAY BE OBTAINED BY CALLING THE DOVER FIRE AND RESCUE DURING NORMAL BUSINESS HOURS. THE PERMITS ARE ONLY ACTIVE FOR THE DATES AND TIME SPECIFIED ON THE PERMIT.
5. PERMIT HOLDERS SHALL HOLD INSURANCE AGAINST CLAIMS FOR DAMAGES FOR PERSONAL INJURY AND PROPERTY WHICH MAY ARISE FROM THE PERFORMANCE OF THE WORK.
6. HOURS OF OPERATION FOR THE BLASTING SHALL BE NO EARLIER THAN 8:00AM AND NO LATER THAN 6:00PM, MONDAY THROUGH FRIDAY, EXCLUDING FEDERAL HOLIDAYS.

WINTER CONSTRUCTION NOTES

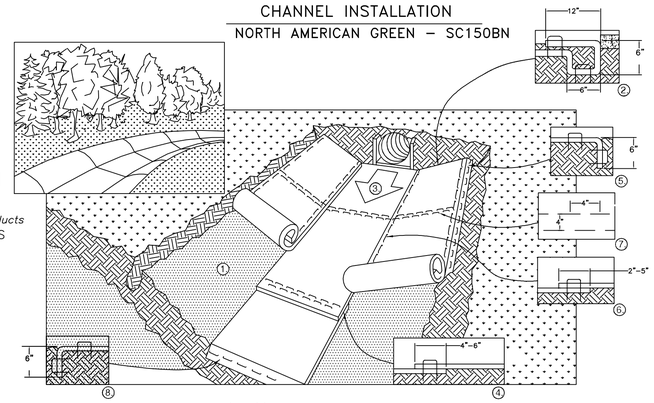
1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT 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.
2. ALL DITCHES & SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD AND PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.

ENV-WQ 1510: BEST MANAGEMENT PRACTICES FOR BLASTING

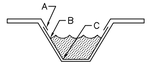
1) ALL ACTIVITIES ASSOCIATED WITH BLASTING NEED TO BE OPTIMIZED TO PREVENT THE RELEASE OF CHEMICALS ASSOCIATED WITH BLASTING ACTIVITIES TO THE ENVIRONMENT.
2) IF MORE THAN 5,000 CY OF ROCK REMOVAL IS REQUIRED DRINKING WATER WELLS MUST BE IDENTIFIED AND LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.
3) THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
   (1) LOADING PRACTICES. THE FOLLOWING BOREHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
      (A) DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHAL

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.



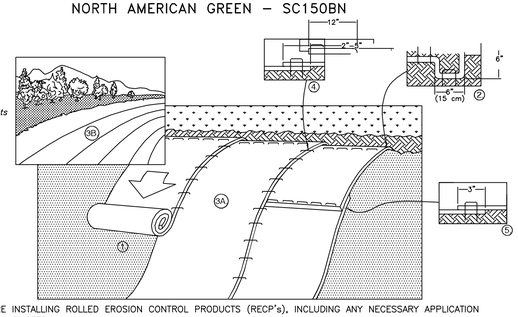
CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES
BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

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

SLOPE INSTALLATION
NORTH AMERICAN GREEN – SC150BN

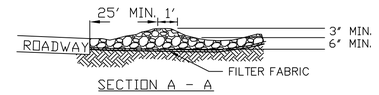
NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS



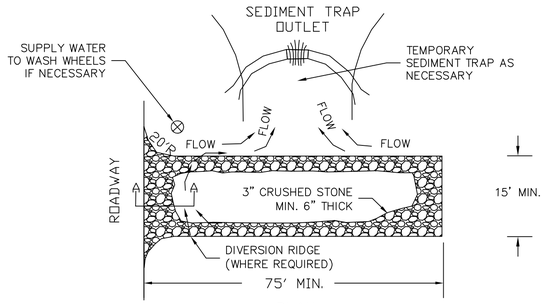
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL–O–SEED DO NOT SEED PREPARED AREA. CELL–O–SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE 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:
1. 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.
2. ALL EROSION CONTROL MATS SHALL BE INSTALLED ON ALL CUT & FILL SLOPES.

DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%



SECTION A – A



PLAN

A. GENERAL NOTES:

1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORM WATER RUNOFF FROM ROADS
2. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE IS REQUIRED TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
3. LOCATE THE CONSTRUCTION ENTRANCES AND EXITS, A MINIMUM OF 100 FEET FROM INTERSECTIONS, TO LIMIT SEDIMENT LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID ENTRANCES THAT HAVE STEEP GRADES AND ENTRANCES AT CURVES IN ROADS.
4. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.

B. SPECIFICATIONS (TEMPORARY CONSTRUCTION ENTRANCE/EXITS SHOULD MEET THE FOLLOWING REQUIREMENTS).

1. STONE SIZE MINIMUM: USE SHOULD BE 3" CRUSHED STONE.
2. THE MINIMUM LENGTH OF THE PAD SHOULD BE 75 FEET.
3. THE MINIMUM WIDTH OF THE PAD SHOULD BE 15 FEET OR THE WIDTH OF THE ENTRANCE, WHICHEVER IS GREATER
4. THE PAD SHOULD SLOPE AWAY FROM THE EXISTING ROADWAY.
5. THE PAD SHOULD BE AT LEAST 6" THICK.
6. A GEOTEXTILE FILTER FABRIC SHOULD BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
7. THE PAD SHOULD BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF–SITE.
8. NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHOULD BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.

C. MAINTENANCE REQUIREMENTS (THE ENTRANCE/EXIT SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT).

1. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHOULD BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHOULD THEN BE RECONSTRUCTED.
2. THE CONTRACTOR SHOULD SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT–OF–WAY. WHEN WHEEL WASHING IS REQUIRED, IT SHOULD BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT–TRAPPING DEVICE. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES OR WATERWAYS.

TEMPORARY CONSTRUCTION ENTRANCE/EXIT

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*

NOTES:
1. *ALL OUTSIDE CONSTRUCTION PERSONNEL SHALL RECEIVE TRAINING IN THE IDENTIFICATION OF RARE TURTLE SPECIES AND MADE AWARE OF THEIR PROTECTED STATUS.*
2. *THE USE OF WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD IN EROSION CONTROL MATTING IS PROHIBITED*
3. *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*
4. *IF WOOD, SPOTTED, OR BLANDING'S TURTLES ARE FOUND LAYING EGGS IN THE WORK AREA, PLEASE CONTACT MELISSA DOPERALSKI AT 271–1738 or JOSH MEGYESY AT 271–1125 FOR FURTHER INSTRUCTIONS.*

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD–2023–0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

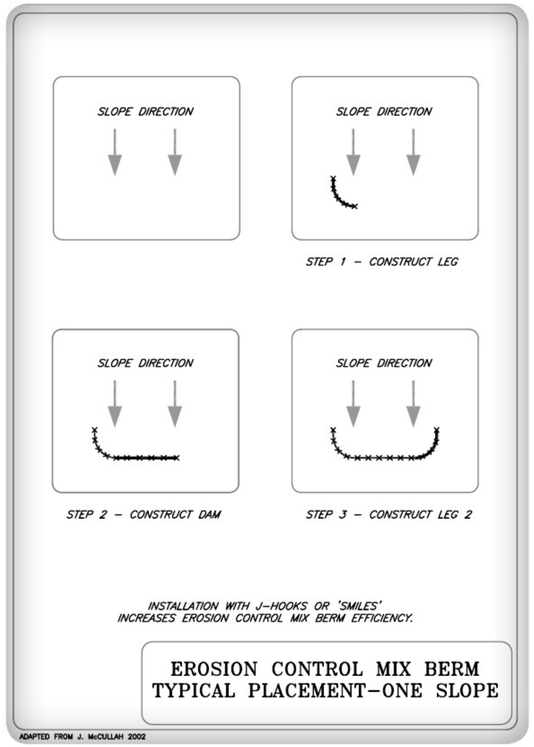
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5–2–23
1	PER TRC COMMENTS	SJH	4–5–23

DESIGN BY: JRG
DRAWN BY: CAD
SCALE: AS SHOWN
DATE: 2–22–23
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE

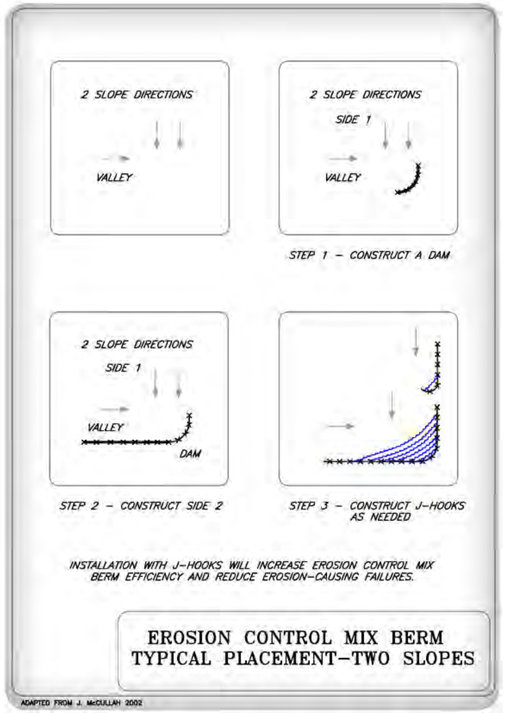
EROSION CONTROL DETAILS

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

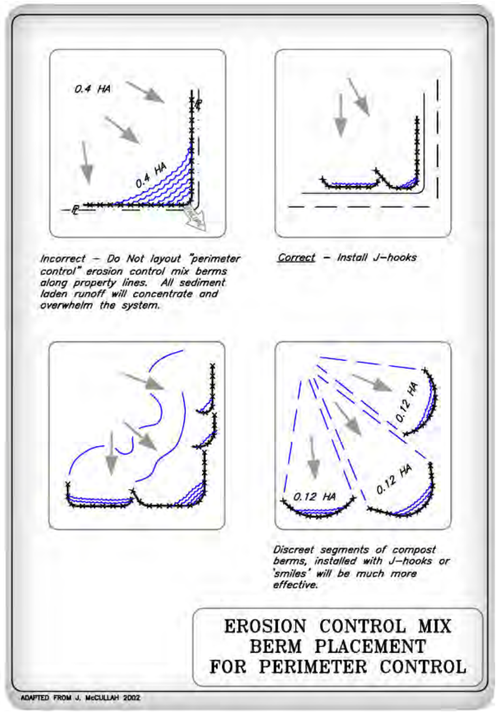
PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH



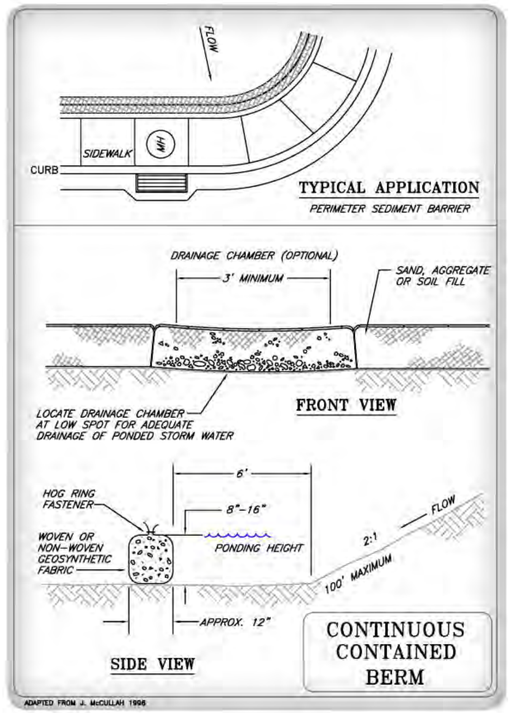
DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



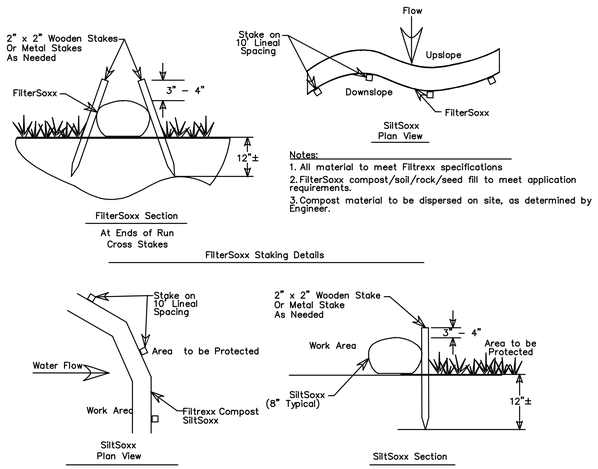
DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



DETAIL FROM NHDES STORMWATER MANUAL VOLUME 3



Notes:

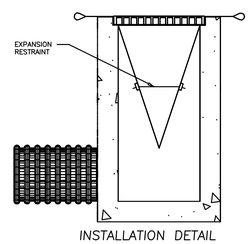
1. All material to meet Filtrexx specifications
2. FilterSoxx compost/soil/rock/seed fill to meet application requirements.
3. Compost material to be dispersed on site, as determined by Engineer.

Notes:

1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. SILTSOXX COMPOST/JSOIL/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.
5. SILT BARRIERS SHALL BE INSTALLED AROUND THE PERIMETER OF EACH BUILDING LOT PRIOR TO COMMENCING EXCAVATION AND MAINTAINED UNTIL THE SITE IS STABILIZED.

SILTSOXX DETAILS

NOT TO SCALE



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.

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS. AS SUPPLIED BY AH 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

DETAIL OF INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

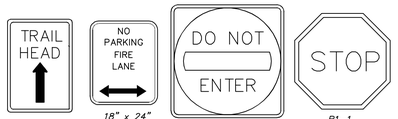
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

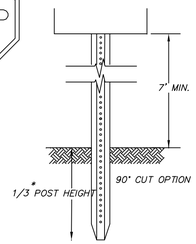
DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE

EROSION CONTROL DETAILS

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH





UNMAINTAINED CLASS VI ROAD BEYOND THIS POINT

* RELOCATE EXISTING SIGN LOCATED AT ENTRANCE OF "OLD OAK STREET" TO ENTRANCE OF TRAIL HEAD PARKING. SEE PLAN FOR LOCATION.

NOTE:
1. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

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.

SIGN LEGEND & SIGN POST
NOT TO SCALE

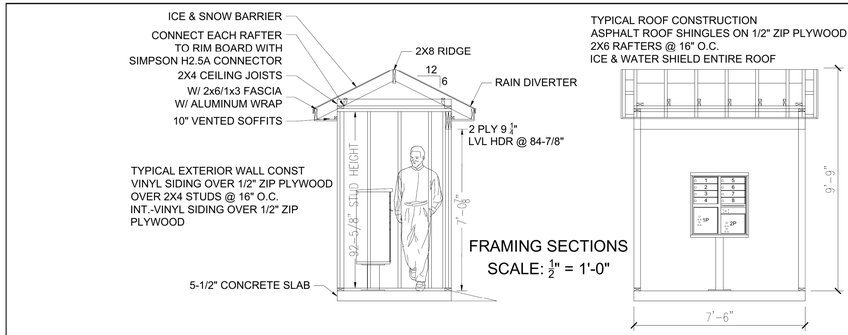
LENGTH AS REQUIRED (SEE SITE PLAN)

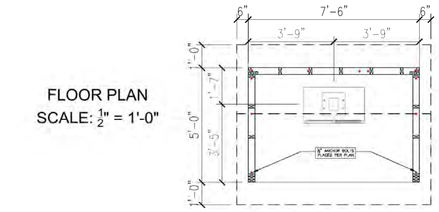


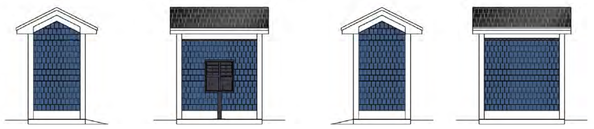
NOTE: PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS. APPLY TWO COATS.

STOP BAR & LEGEND

PAVEMENT MARKINGS
NOT TO SCALE

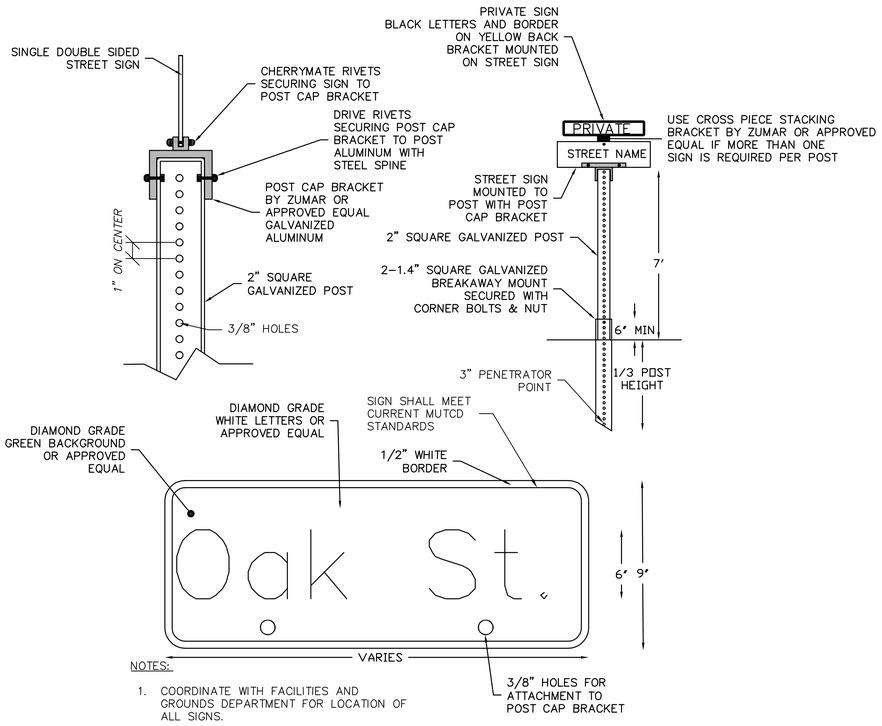






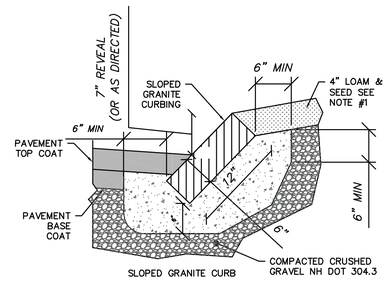
SIDING COLOR:
Pacific Blue Cedar Impressions

PROJECT: ADDRESS:	WEST MEADOW SUBDIVISION MAILBOX STATION
DWG:	Mailbox Station West Meadow.dwg
CHINBURG PROPERTIES, 3 Penstock Way, Newmarket, NH 03857	WWW.CHINBURG.COM
	SCALE: AS NOTED
	DATE: 4/28/2022
	MAILBOX STATION
	DRAWN: GGM
	SHEET NO. A-1



NOTES:
1. COORDINATE WITH FACILITIES AND GROUNDS DEPARTMENT FOR LOCATION OF ALL SIGNS.

CITY OF DOVER D-1 STREET SIGN DETAIL
NOT TO SCALE

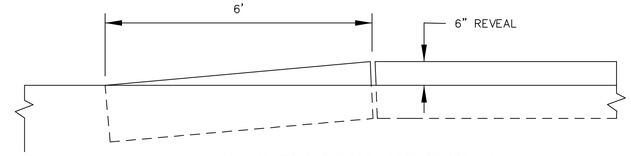


RADIUS	MAX LENGTH
< 21'	USE CURVED CURB
12'	3'
22' - 28'	4'
29' - 35'	5'
36' - 42'	6'
43' - 49'	7'
50' - 56'	8'
57' - 60'	9'
OVER 60'	10'

NOTES:
1. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

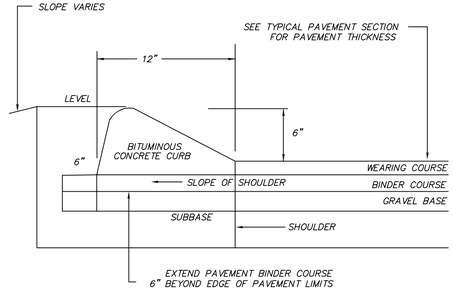
CITY OF DOVER D-8 GRANITE CURB DETAIL
NOT TO SCALE

GRANITE CURB & MORTAR JOINTS SLOPE LAST SECTION TO MEET PROPOSED GRADE



SIMILAR TREATMENT BOTH SIDES OF OPENING

"TIP-DOWN" CURB DETAIL
NOT TO SCALE



BITUMINOUS SLOPED CURB
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

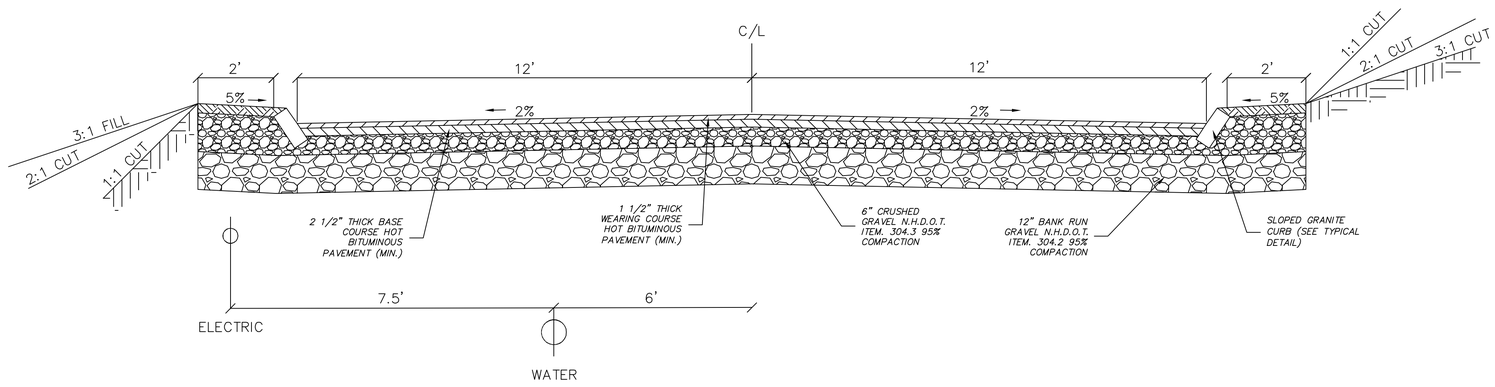
NO.	REVISION	DATE	APP'D
2	PER TRC COMMENTS	5-2-23	SJH
1	PER TRC COMMENTS	4-5-23	SJH

DESIGN BY: JRG
DRAWN BY: CAD
SCALE: AS SHOWN
DATE: 2-22-23
FILE: SITE
PROJECT NO: 21074
APPROVED BY: SJH

DETAIL SHEET

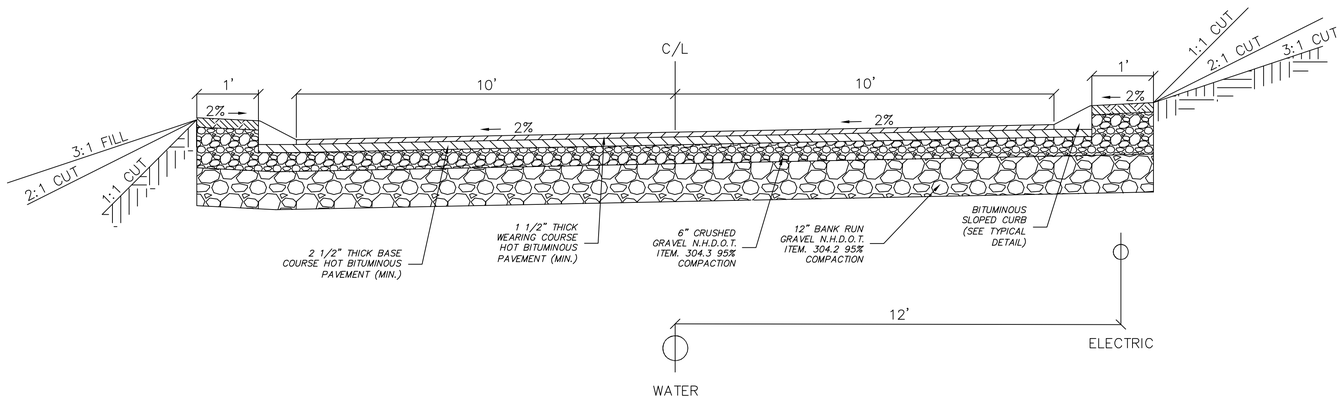
APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH



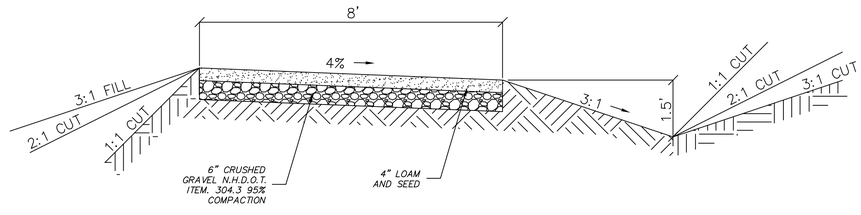
PROPSOED FRESH CREEK ROAD
"OLD OAK STREET" CROSS SECTION TYPICAL

NOT TO SCALE



PROPSOED PROSPERITY DRIVE
PRIVATE ROAD CROSS SECTION TYPICAL

NOT TO SCALE



EARTH REINFORCED ACCESS ROAD TO DRAINAGE POND

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

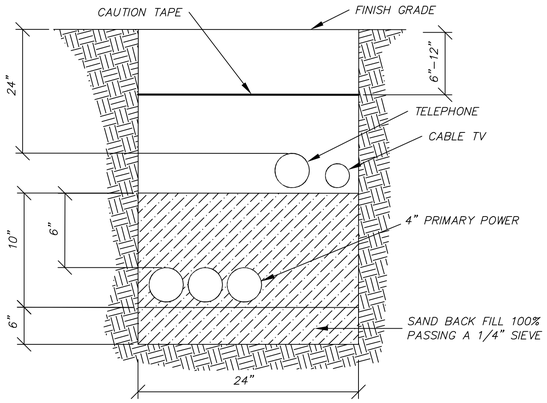
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

DETAIL SHEET

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

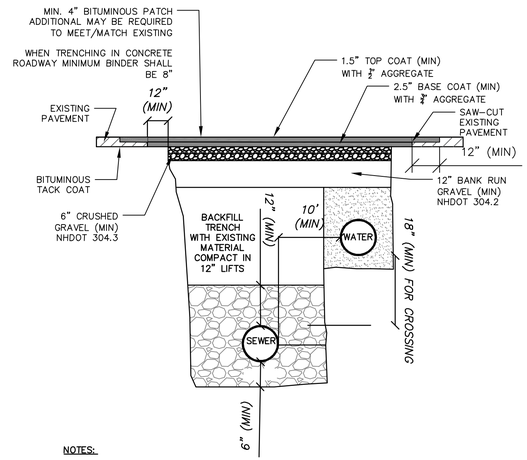
PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH



1. TELEPHONE CONDUIT SHALL BE 3" SCHEDULE 40 PVC, WITH STEEL SWEEPS AT RISER POLE, 90° BENDS AND AT BUILDING.
2. LEAVE PULL ROPE IN ALL CONDUITS FOR CABLE INSTALLATION.
3. FOR COMPLETE SPECIFICATIONS SEE "PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND CONDUIT SYSTEMS".
4. CONTRACTOR SHOULD VERIFY THE NUMBER & SIZE OF CONDUIT WITH THE APPROPRIATE UTILITIES.

UTILITY TRENCH

NOT TO SCALE

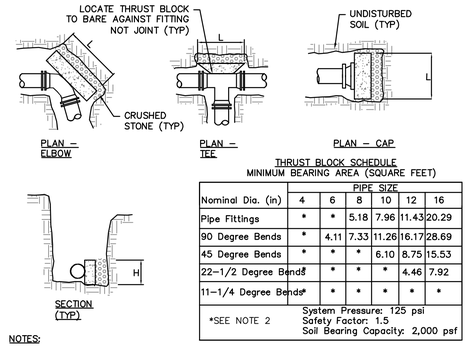


NOTES:

1. TRENCH SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
2. ALL WORK SHALL COMPLY WITH THE CITY OF DOVER CONSTRUCTION GUIDELINES AND PROCEDURES
3. 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.

CITY OF DOVER
TYPICAL TRENCH DETAIL

NOT TO SCALE



THRUST BLOCK SCHEDULE
MINIMUM BEARING AREA (SQUARE FEET)

	PIPE SIZE					
Nominal Dia. (in)	4	6	8	10	12	16
Pipe Fittings	*	*	5.18	7.96	11.43	20.29
90 Degree Bends	*	4.11	7.33	11.26	16.17	28.69
45 Degree Bends	*	*	*	6.10	8.75	15.53
22-1/2 Degree Bends	*	*	*	*	4.46	7.92
11-1/4 Degree Bends	*	*	*	*	*	*

*SEE NOTE 2

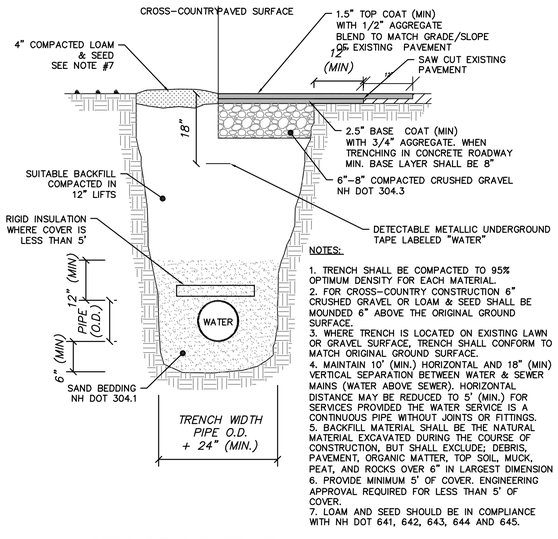
System Pressure: 125 psi
Safety Factor: 1.5
Soil Bearing Capacity: 2,000 psf

NOTES:

1. ALL THRUST BLOCKS SHALL BE PRE-CAST CONCRETE UNLESS APPROVED BY THE CITY ENGINEER.
2. 2'X2'X2' MINIMUM THRUST BLOCK REQUIRED, ANY BEARING AREA OVER 4SF REQUIRES THRUST BLOCKS, RESTRAINED JOINTS AND CALCULATIONS ASSOCIATED WITH THE JOINT.
3. THE MINIMUM BEARING AREAS SHOWN IN THE THRUST BLOCK SCHEDULE ARE BASED ON A SYSTEM PRESSURE OF 125 PSI. IF THE SYSTEM PRESSURE IS ABOVE 125 PSI, INCREASE THE NOTED AREAS PROPORTIONALLY TO THE ACTUAL SYSTEM PRESSURE.
4. FOR MINIMUM BEARING AREAS OVER 4 SF, THE LENGTH (L) OF THE BLOCK IS APPROXIMATELY TWICE AS LONG AS THE HEIGHT (H).
5. PLACE CRUSHED STONE BEHIND THRUST BLOCK AGAINST UNDISTURBED SOIL.
6. PLACE THRUST BLOCK ALONG MAXIMUM LENGTH OF THE FITTING TO MAXIMIZE BEARING AREA.
7. CONCRETE COMPRESSIVE STRENGTH: 2,000 PSI MINIMUM.
8. USE OF THRUST BLOCKS DOES NOT ELIMINATE THE REQUIREMENT OF OTHER RESTRAINTS OR VICE VERSA.

CITY OF DOVER D-15
THRUST BLOCK DETAIL

NOT TO SCALE

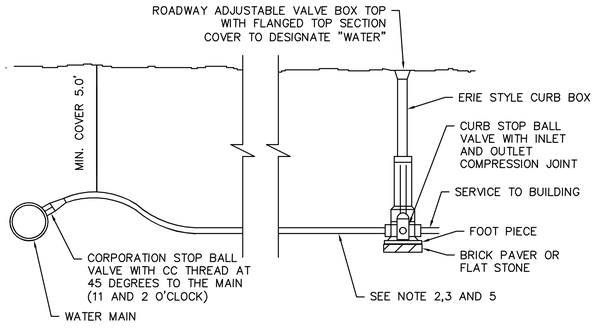


NOTES:

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. PROVIDE MINIMUM 5' OF COVER. ENGINEERING APPROVAL REQUIRED FOR LESS THAN 5' OF COVER.
7. LOAM AND SEED SHOULD BE IN COMPLIANCE WITH NH DOT 641, 642, 643, 644 AND 645.

CITY OF DOVER D-4
WATER TRENCH DETAIL

NOT TO SCALE

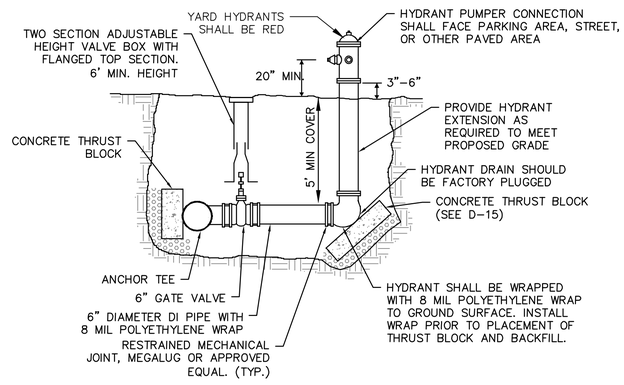


NOTES:

1. ALL WATER LINES 4" OR GREATER SHALL BE DUCTILE IRON WITH AN 8 MIL POLYETHYLENE WRAP, INCLUDING TEE AND OTHER CONNECTIONS.
2. WATER SERVICE LINES SHALL BE COPPER TUBING (TYPE K) BETWEEN MAIN AND CURB STOP.
3. SERVICE BETWEEN CURB STOP AND BUILDING MAY BE (BLUE OR BLACK) CTS SDR 9 PLASTIC POLYETHYLENE RATED FOR 250 psi.
4. CAM-LOCK REQUIRED FOR CTS OR IPS, MJ ADAPTER REQUIRED FOR HDPE
5. ¾"- COPPER, CTS
   1"- COPPER, CTS
   2"- CTS, HDPE, IPS

CITY OF DOVER D-13
WATER SERVICE CONNECTION DETAIL

NOT TO SCALE



NOTES:

1. FIRE HYDRANTS SHALL BE FACTORY SEALED EDDY STYLE 2641.
2. HYDRANT SHALL BE PAINTED RED WITH EPOXY PAINT AS RECOMMENDED BY THE HYDRANT MANUFACTURER.
3. HYDRANT SHALL OPEN LEFT.

CITY OF DOVER D-14
FIRE HYDRANT DETAIL

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

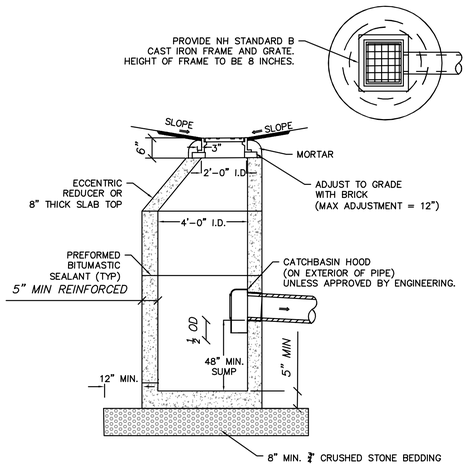
NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STRBET
DOVER, NH

DETAIL SHEET

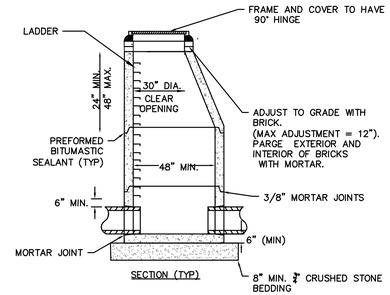


NOTES:

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:

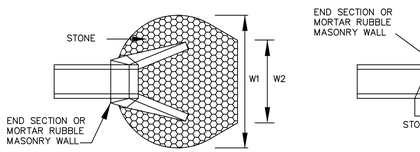
1. CORINGS TO BE SEPARATED BY 6" (MINIMUM) OF MONOLITHIC SECTION

CITY OF DOVER D-20
DRAIN MANHOLE DETAIL

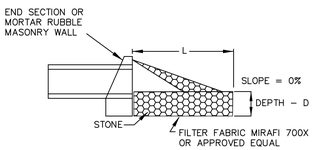
NOT TO SCALE

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.

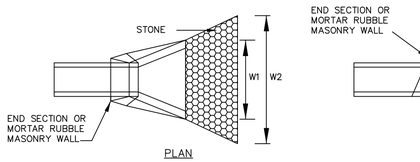


PLAN

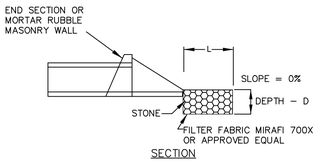


SECTION

STONE APRON OUTLET PROTECTION DETAIL
OUTLET TO DEFINED CHANNEL



PLAN



SECTION

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

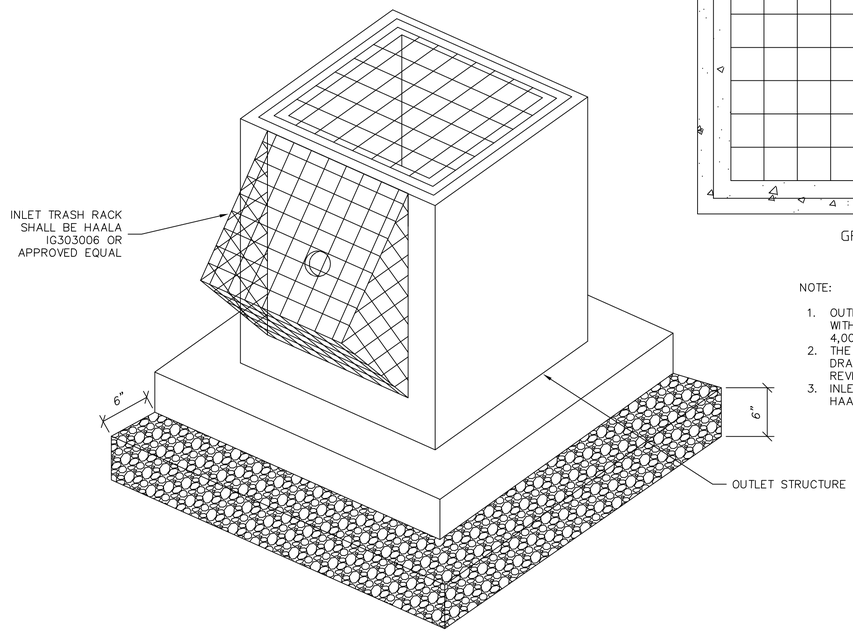
% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

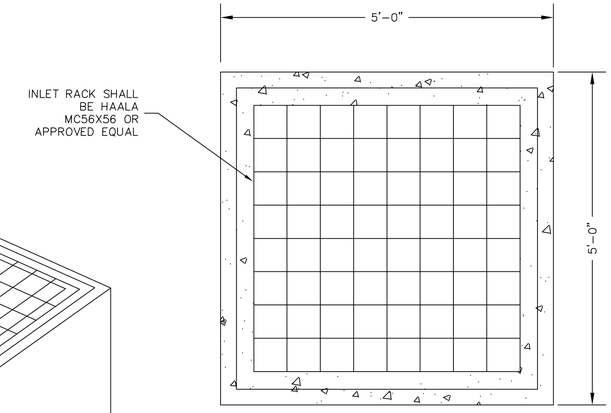
1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT 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
DS-1	4	17	14	1	6	UNDEFINED
DS-2	4	19	16	1	6	UNDEFINED
PCB1	15	6	19	1	6	DEFINED

RIP RAP OUTLET PROTECTION
NOT TO SCALE



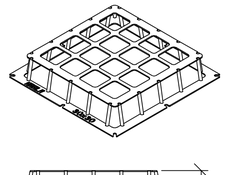
TYPICAL INLET TRASH RACKS
NOT TO SCALE

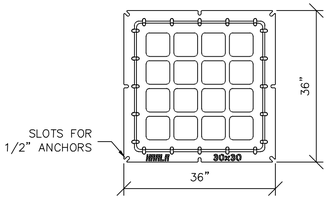


GRATE

NOTE:

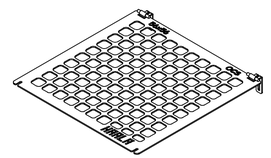
1. OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.
3. INLET GRATES AND TRASH RACKS SHALL BE HAALA PRODUCTS OR APPROVED EQUAL.

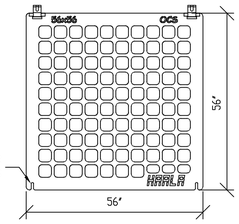




NOTES:
1. UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

HAALA IG303006
NOT TO SCALE





NOTES:
1. UNIT IS MADE FROM A36 STEEL AND IS HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.

HAALA MC56X56
NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

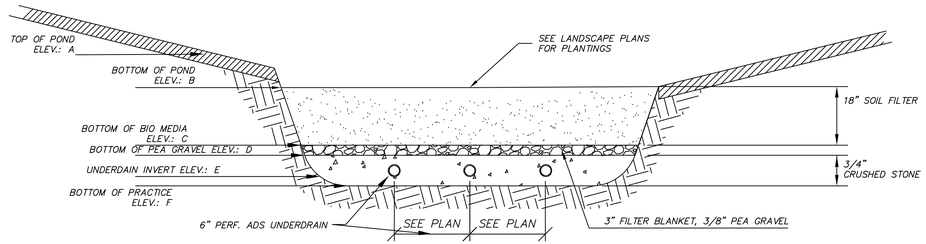
DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

DETAIL SHEET



SEE GRADING PLAN FOR LAYOUT

NOTES:

1. DO NOT BEGIN CONSTRUCTION OF THE BIORETENTION AREAS UNTIL LAWN AREA ON THE ENTIRE SITE AREA ESTABLISHED WITH AT LEAST 80 PERCENT TURF. FILTER ALL DRAIN INLETS IN THE SEDIMENT FOREBAYS TO PREVENT SILTATION INTO THE BIORETENTION AREA.
2. THE RAIN GARDEN SUBGRADE SHALL BE EXCAVATED TO THE DESIGN DEPTH PLUS TWO (2) INCHES. AT THAT DEPTH FOUR (4) INCHES OF COMPOST SHALL BE TILLED INTO THE EXISTING SOILS SUCH THAT THE SOILS ARE WELL MIXED.
3. DO NOT DRIVE CONSTRUCTION EQUIPMENT ON FILTER SUBGRADE NOR ON THE FILTER MATERIAL. INSTALL FILTER MATERIAL BY MEANS OF AN EXCAVATOR LOCATED ADJACENT TO THE FILTER AREA.
4. MATERIALS: CRUSHED STONE LAYER SHALL MEET NHDOT 304.4. PEA STONE SHALL CONTAIN NO MORE THAN 5% FINES PASSING THE #200 SIEVE. TOPSOIL SHALL CONTAIN 15 TO 25% FINES PASSING THE #200 SIEVE. MULCH SHALL BE SHREDDED HARDWOOD, AGES IN A STOCKPILE OR STORED FOR AT LEAST 12 MONTH. NON-WOVEN GEOTEXTILE BE 4 TO 6 OZ. PER SQUARE YARD WITH A.O.S. OF #70 SIEVE OR LOWER, AND A MINIMUM FLOW RATE OF 125 GAL PER SQUARE FEET. UNDERDRAIN SHALL BE PERFORATED 6" PVC OR TRIPLE WALL PE PIPE.
5. REFER TO LANDSCAPE DRAWINGS FOR GRASS SEED MIXES AND PLANTINGS. FERTILIZATION OF THE FILTER AREA SHALL BE AVOIDED UNLESS ABSOLUTELY NECESSARY TO ESTABLISH VEGETATION.
6. INITIAL ESTABLISHMENT: DURING THE FIRST 2-3 MONTHS OF ESTABLISHMENT WATER THE GRASS ON A WEEKLY BASIS (TO SUPPLEMENT RAINFALL FOR TOTAL OF 1 INCH PER WEEK).
7. ANNUAL MAINTENANCE: IN THE SPRING OF EACH YEAR, ANY DEAD VEGETATION SHALL BE REMOVED TO ALLOW FOR NEW GROWTH, AND ANY ACCUMULATED SEDIMENT (NORMALLY AT THE ENTRANCE TO THE GARDEN) SHALL ALSO BE REMOVED. DURING THE GROWING SEASON THE RAIN GARDEN SHALL BE WEEDED TWO (2) TIMES. TURF AT FILTER SHALL BE MOWED NO MORE THAN 3 TIMES PER GROWING SEASON. IF WATER PONDS ON THE SURFACE FOR MORE THAN 24 HOURS DURING THE FIRST YEAR OR 72 HOURS THEREAFTER, THE FILTER SURFACE SHALL BE AERATED WITH DEEP TINES OR THE SURFACE REPLACED.
8. GRASS SEED SHALL BE NATIVE NON-INVASIVE SPECIES, SEE LANDSCAPE ARCHITECT DRAWINGS.
9. ALL MATERIALS SHALL BE SUBMITTED TO, AND APPROVED BY, THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

PROPOSED TYPICAL BIO-RETENTION BASIN DETAIL

(SEE GRADING PLAN FOR LOCATION)

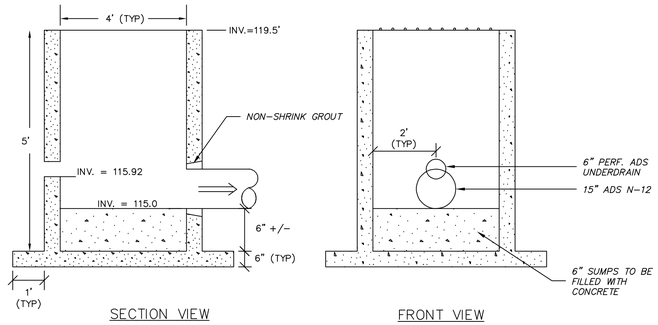
NOT TO SCALE

BIORETENTION FILTER MEDIA SPECIFICATIONS

COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	< 5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	< 5
LOAMY COARSE SAND	70 TO 80	10	85 TO 100
		20	70 TO 100
		60	15 TO 40
		200	8 TO 15

BIO-RETENTION SYSTEM CHART

POND	POND ELEVATION					
	A	B	C	D	E	F
BIO1	120.25	118.5	117.0	116.75	115.92	115.58
BIO2	100.25	98.5	97.0	96.75	95.92	95.58



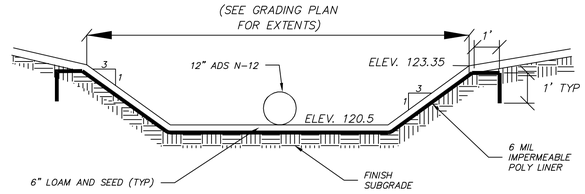
SECTION VIEW FRONT VIEW

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.

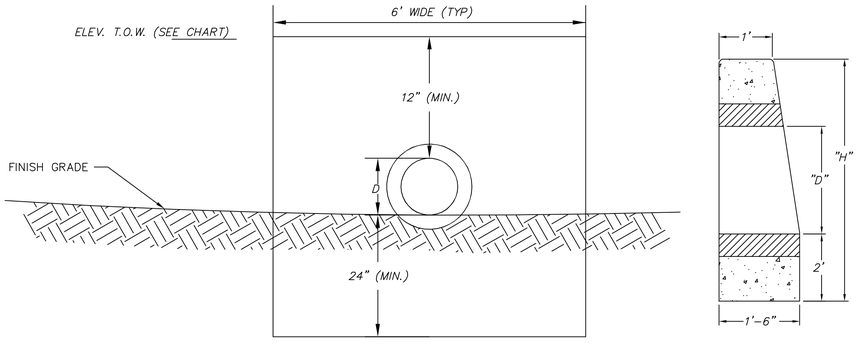
OS-1 OUTLET STRUCTURE DETAIL

NOT TO SCALE



PROPOSED SEDIMENT FOREBAY 1 (SF-1)

NOT TO SCALE

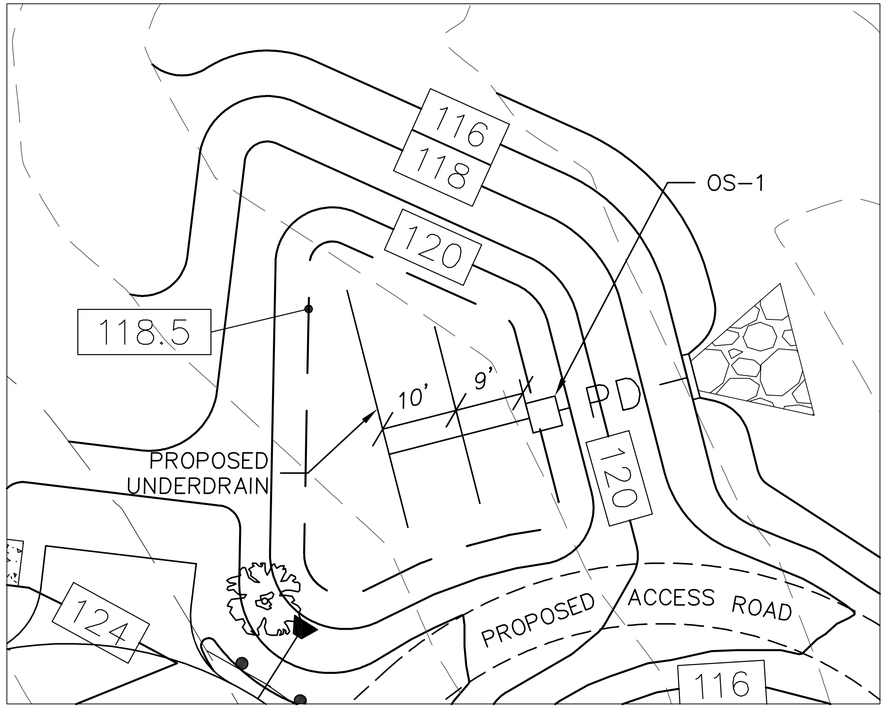


HEADWALL DETAIL CHART

HEADWALL	T.O.W.	D	INV.	H
HW-1	119.5	18"	117.0	4.5'
HW-2	116.5	15"	114.0	4.5'
HW-3	93.5	15"	91.0	4.5'

HEADWALL DETAIL TYPICAL

NOT TO SCALE



PLAN VIEW
BIO-RETENTION BASIN-1
SCALE: 1"=10'

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

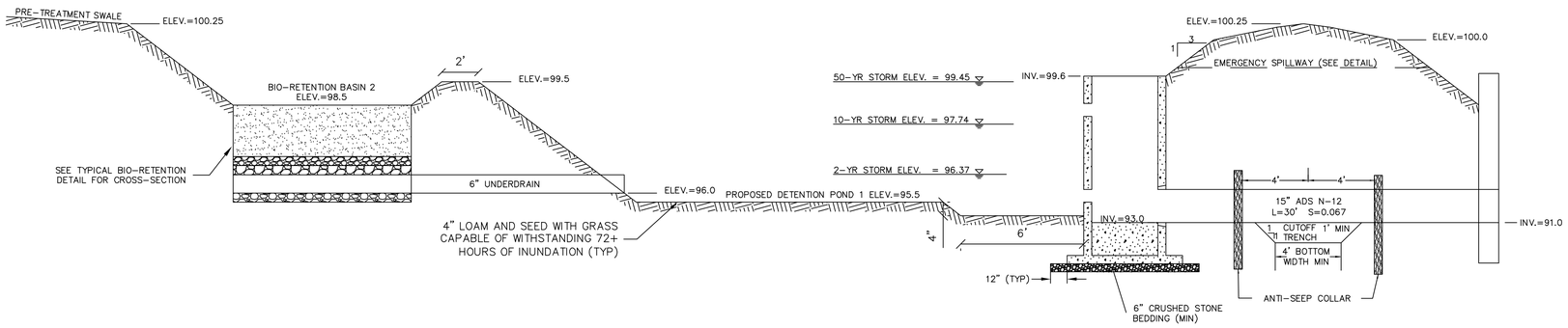
NO.	REVISION	DATE	APP'D
2	PER TRC COMMENTS	5-2-23	SJH
1	PER TRC COMMENTS	4-5-23	SJH

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

DETAIL SHEET

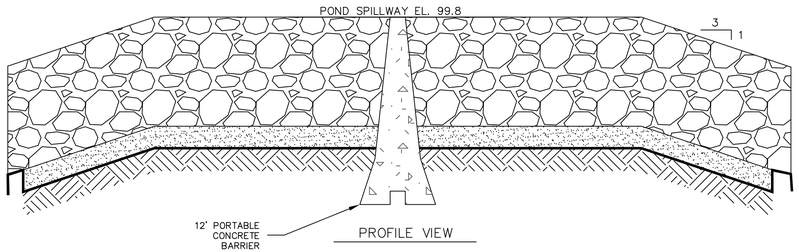
APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

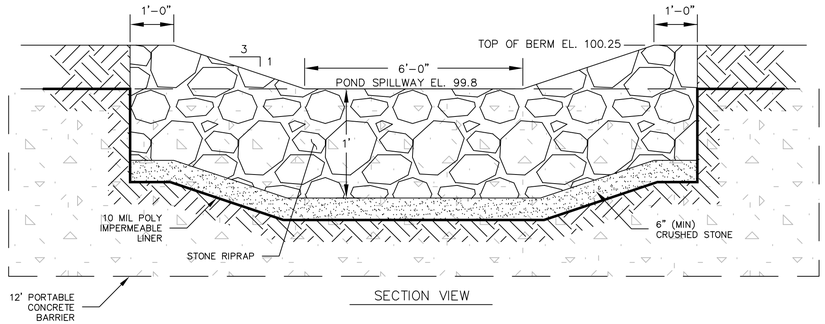


PROPOSED BIO-RETENTION BASIN 2 & DETENTION POND 1

NOT TO SCALE



PROFILE VIEW



SECTION VIEW

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

PROPOSED EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

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. 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.

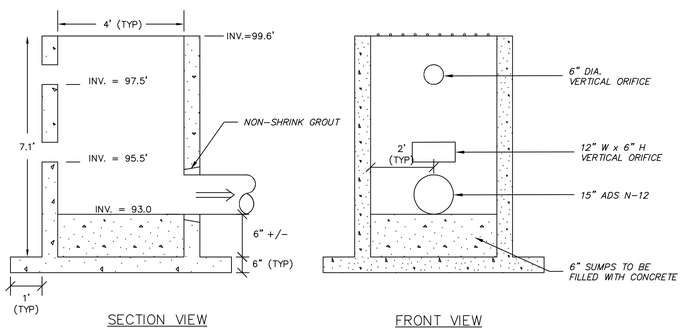
EXECUTION:
1. FILL MATERIALS SHALL BE PLACED IN HORIZONTAL 12" (MAX.) LIFTS TO FULL WIDTHS AS SHOWN ON THE DESIGN PLAN.
2. FILL MATERIALS SHALL BE FRESHLY PLACED PRIOR TO COMPACTION.
3. ALL FILLS SHALL BE COMPACTED BY MECHANICAL VIBRATORY COMPACTION TO 95% PROCTOR DENSITY.
4. FILL SHALL BE CONSTRUCTED 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 POND 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. THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

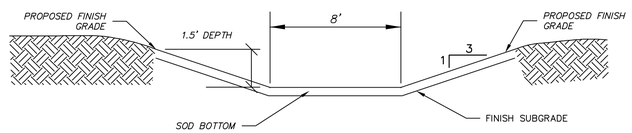


SECTION VIEW FRONT VIEW

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.

OS-2 OUTLET STRUCTURE DETAIL

NOT TO SCALE



PRE TREATMENT SWALE

NOTES:

1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.

2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.

3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.

4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.

5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.

6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.

7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.

STRUCTURE	LENGTH (FT)	WIDTH	DEPTH	INV.IN	INV.OUT	SLOPE (FT/FT)
PTS	65	4.0'	1.5'	102.0	100.35	0.025

PRE TREATMENT SWALE

NOT TO SCALE

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

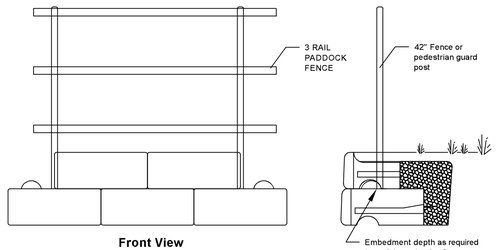
DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

DETAIL SHEET

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

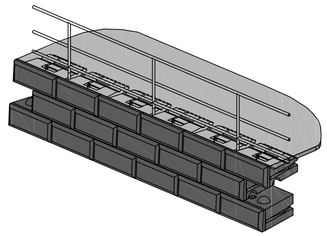
Fence or Pedestrian Guard Connection Locations



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Fence or Pedestrian Guard Connection Locations
FILE:	6 Fence or Pedestrian Guard Connection Locations 062215.dwg

Fence or Pedestrian Guard Connection Options

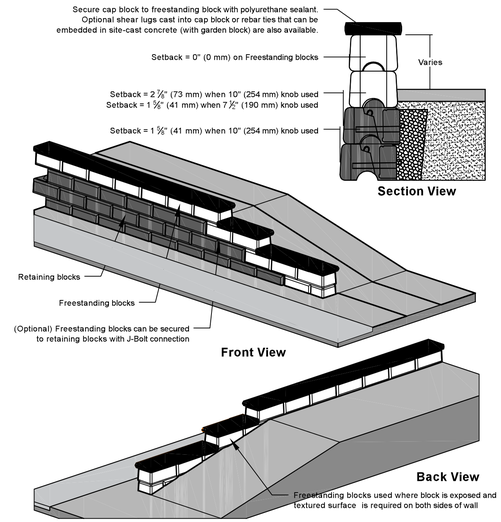


These generic pedestrian guard and fence details show a few potential options for their installation on the top of a Redi-Rock retaining wall. It is the design engineer's responsibility to fully design and detail the connection of the guard posts to the retaining wall blocks and assure acceptable resistance to the applied forces. Redi-Rock blocks are plain concrete, without steel reinforcement.

This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Fence or Pedestrian Guard Connection Options
FILE:	5 Fence or Pedestrian Guard Connection Options 062215.dwg

Freestanding Blocks with Cap at Top of Wall



One-component, highly flexible, non-priming, gun grade, high performance elastomeric polyurethane sealant shall have movement of plus or minus 25% per ASTM C719, tensile strength greater than 200 psi (1.4 MPa) per ASTM D412, and adhesion to peel on concrete greater than 20 PLI per ASTM C794. Apply sealant in one and one half-inch (1.5") (38 mm) diameter round "hersey kiss" shaped dollops located in two rows at the top of the Freestanding blocks at 8" (203 mm) on center.

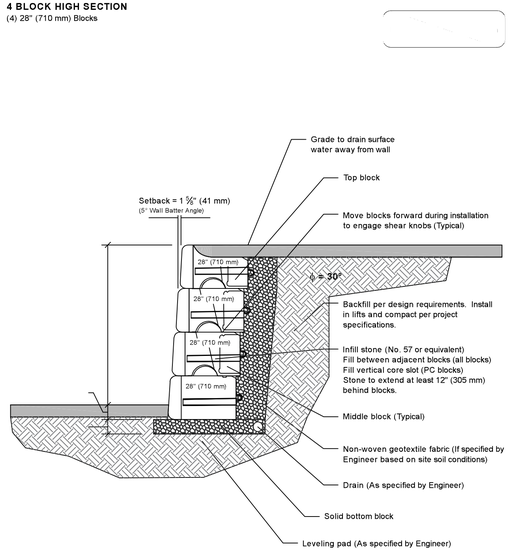
This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	JRJ
APPROVED BY:	JRJ
DATE:	06-22-2015
SHEET:	1 of 1
TITLE:	Freestanding Blocks with Cap at Top of Wall
FILE:	3 Freestanding Blocks with Cap at Top of Wall 062215.dwg

ϕ = 30° | FINE TO MEDIUM SAND or SILTY SAND

LOAD CONDITION A | NO LIVE LOAD SURCHARGE, NO BACK SLOPE, NO TOE SLOPE

4 BLOCK HIGH SECTION
(4) 28" (710 mm) Blocks



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site. Final wall design must address both internal and external drainage and all modes of wall stability.

DRAWN BY:	C. Kruger
APPROVED BY:	J. Johnson
DATE:	June 8, 2015
SHEET:	1 of 1
TITLE:	**Preliminary Wall Section** Fine to Medium Sand or Silty Sand, ϕ = 30° No Live Load Surcharge, No Back Slope, No Toe Slope
FILE:	A_30_B_28_72_cad.dwg

CONTRACTOR TO COORDINATE WITH OWNER FOR FENCE STYLE

GENERAL NOTES

1. SEGMENTAL CONCRETE UNIT RETAINING WALL SHALL BE PROVIDED BY redi-rock ™ OR SHEA WALL SYSTEMS OR APPROVED EQUAL.
2. RETAINING WALL DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
3. STRIP VEGETATION AND ORGANIC SOIL FROM WALL AND GEOSYNTHETIC ALIGNMENT.
4. BENCH CUT ALL EXCAVATED SLOPES.
5. DO NOT OVER EXCAVATE UNLESS DIRECTED BY SITE SOIL ENGINEER TO REMOVE UNSUITABLE SOIL.
6. SITE SOILS ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
7. LEVELING PAD SHALL CONSIST OF COMPACTED COARSE SAND OR CRUSHED GRAVEL, 6" THICK MIN. AS STIPULATED BY THE MANUFACTURER.
8. CONTRACTOR MAY OPT FOR A LEAN CONCRETE PAD. CONCRETE PAD SHALL BE UNREINFORCED, 3" THICK MAXIMUM.
9. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE 6" FOR WALL HEIGHTS UNDER 4 FT. AND 12" FOR WALLS OVER 4 FT. UNLESS SHOWN DIFFERENTLY.
10. FOR UNITS TO BE EMBEDDED, COMPACT FILL IN FRONT OF UNITS AT THE SAME TIME FILL BEHIND UNITS IS COMPACTED.
11. DRAINAGE AGGREGATE SHALL BE INSTALLED DIRECTLY BEHIND THE WALL WITHIN 12" OF THE TOP OF THE WALL. DRAINAGE AGGREGATE SHALL NOT EXTEND BELOW FINAL GRADE IN FRONT OF WALL.
12. COMPACTION SHALL BE TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.(ASTM D-698)
13. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF 3 TESTS PER WALL AND/OR AS DETERMINED BY THE SITE SOILS ENGINEER.
14. COMPACTION WITHIN 3 FT. OF WALL SHALL BE LIMITED TO HAND OPERATED EQUIPMENT.
15. IF REQUIRED SEE ELEVATION DRAWINGS FOR GEOSYNTHETIC TYPE, LENGTH AND LOCATION.
16. IF REQUIRED GEOSYNTHETIC SHALL BE PLACED WITH STRONGEST DIRECTION PERPENDICULAR TO WALL. FOLLOW GEOSYNTHETIC MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
17. CONTRACTOR SHALL DIRECT SURFACE RUNOFF TO AVOID DAMAGING WALL WHILE UNDER CONSTRUCTION.
18. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT, OR TURF SHALL BE INSTALLED IMMEDIATELY AFTER WALL IS COMPLETED.
19. FOLLOW APPLICABLE PROVISIONS AS DICTATED BY THE MANUFACTURER.

1.4 REQUIREMENTS FOR CONTRACTOR PREPARED DESIGN AND PLANS

A. THE FINAL DESIGN TO BE SUBMITTED PRIOR TO AWARD OF CONTRACT AND SHALL INCLUDE DETAILED DESIGN COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE WALL. THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS OUTLINED IN SECTION 1.3 ABOVE. THE FULLY DETAILED PLANS SHALL BE ON PERMANENT, ARCHIVAL QUALITY, 24" X 36" DOUBLE MATTE MYLAR WITH PROJECT NAME, NUMBER AND DESIGN FIRM. THE PLANS TO BE SUBMITTED SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

1. A PLAN AND ELEVATION SHEET OR SHEETS FOR EACH WALL, CONTAINING THE FOLLOWNG:
   A. AN ELEVATION VIEW OF THE WALL WHICH SHALL INDICATE THE ELEVATION AT THE TOP OF THE WALL, AT ALL HORIZONTAL AND VERTICAL BREAK POINTS AND AT LEAST EVERY FIFTY (50) FEET ALONG THE WALL, ELEVATIONS AT THE TOP OF LEVELING PADS, THE DESIGNATION AS TO THE TYPE OF UNIT, AND THE LOCATION OF THE ORIGINAL AND FINAL GROUND LINE.
   B. A PLAN VIEW OF THE WALL WHICH SHALL INDICATE THE OFFSET FROM THE CONSTRUCTION CENTERLINE OR BASELINE TO THE FACE OF THE WALL AT ALL CHANGES IN HORIZONTAL ALIGNMENT AND THE LIMIT OF THE WIDEST UNIT.
   C. ANY GENERAL NOTES REQUIRED FOR DESIGN AND CONSTRUCTION OF THE WALL.
   D. ALL HORIZONTAL AND VERTICAL CURVE DATA AFFECTING WALL CONSTRUCTION.
2. ALL DETAILS FOR LEVELING PADS, AS WELL AS ALLOWABLE AND CALCULATED MAXIMUM BEARING PRESSURES.
3. DETAILED DESIGN COMPUTATIONS.
4. THE PLANS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
5. FENCE HEIGHT TO BE 42".

RETAINING WALL SYSTEM

PART 1.0 – GENERAL

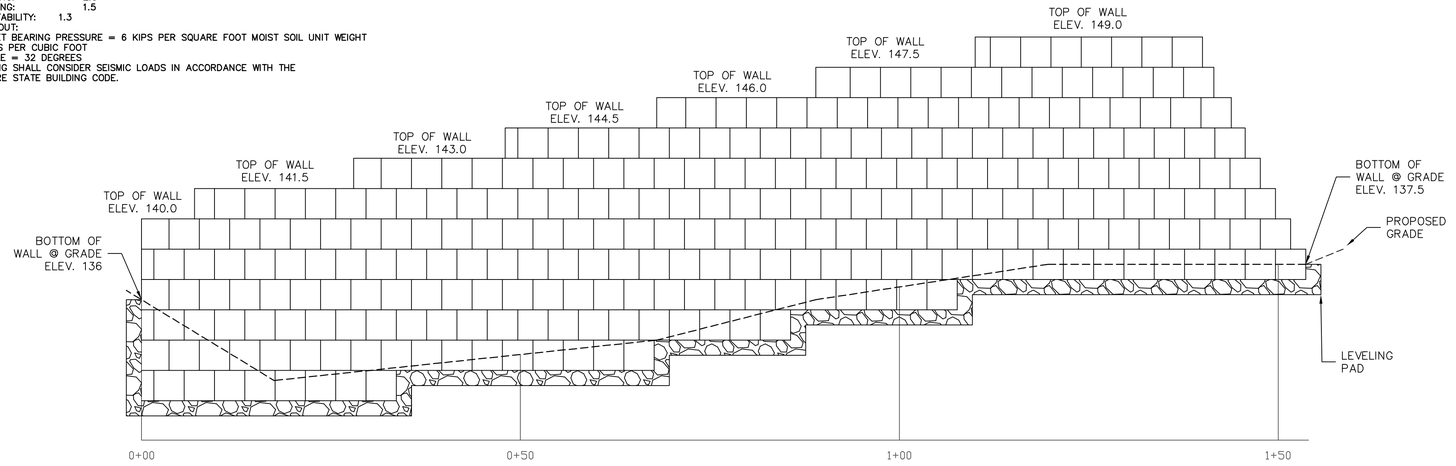
1.1 THIS WORK SHALL CONSIST OF FURNISHING ALL COMPONENTS AND ERECTING A RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON THE PLANS OR AS ORDERED.

1.2 THIS FOLLOWING TYPE OF RETAINING WALL SYSTEMS ARE ACCEPTABLE TO BE USED ON THIS PROJECT:

REDI-ROCK	(603) 428-3218
SHEA WALL SYSTEMS	(800) 696-7432

1.3 STRUCTURAL AND GEOTECHNICAL DESIGN REQUIREMENTS

A. THE DESIGN OF THE WALL SYSTEM SHALL BE BY THE MANUFACTURER.
B. MINIMUM SAFETY FACTORS SHALL BE AS FOLLOWS:
   1. OVERTURNING: 2.0
   2. BASE SLIDING: 1.5
   3. GLOBAL STABILITY: 1.3
   4. GRID PULLOUT:
C. ALLOWABLE NET BEARING PRESSURE = 6 KIPS PER SQUARE FOOT MOIST SOIL UNIT WEIGHT = 125 POUNDS PER CUBIC FOOT FRICTION ANGLE = 32 DEGREES
D. DESIGN LOADING SHALL CONSIDER SEISMIC LOADS IN ACCORDANCE WITH THE NEW HAMPSHIRE STATE BUILDING CODE.



PROFILE VIEW
NOT TO SCALE
(RETAINING WALL)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

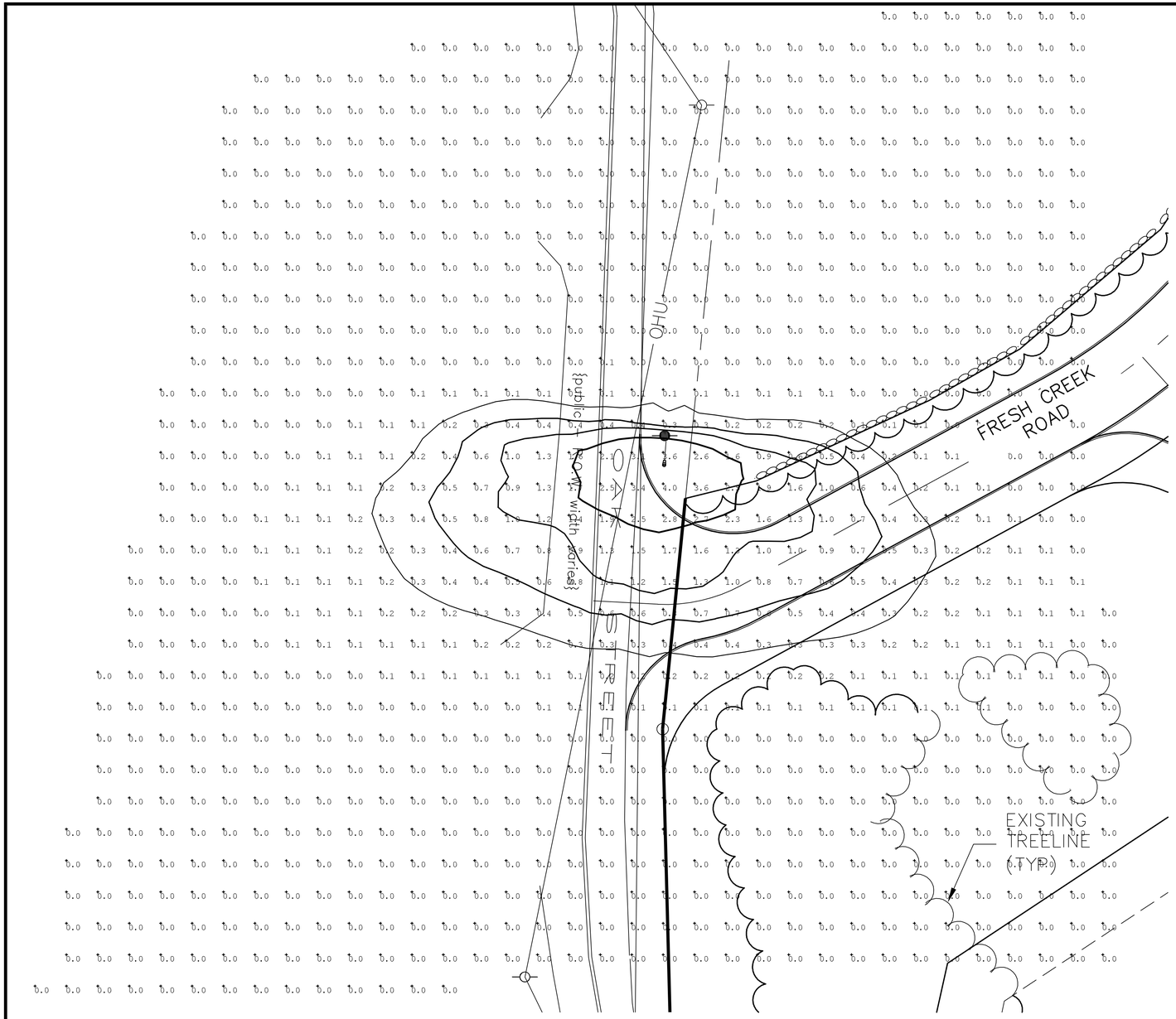
DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STRBET
DOVER, NH

DETAIL SHEET

33 OF 37



EVOLVE

ERLH Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____
PROJECT NAME _____
DATE _____ TYPE _____
CATALOG NUMBER _____



The Evolve® LED Roadway ERLH Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant powder paint, ≥ 2.0 mil thickness (RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	15.15 lbs (6.9 kgs) w/ 2 Bolt Slipfitter 15.85 lbs (7.2 kgs) w/ 4 Bolt Slipfitter

Optical System

Lumens:	10,000-16,000
Distribution:	Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back Light
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
☐ 10kV/5kA	☐ Secondary 10kV/5kA (R Option) or ☐ Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2015

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX@10K) @ HOURS 25,000 HR	50,000 HR	60,000 HR
A3, B3, C3, D3, E3	10,11	L97	L96	L96
A3, B3, C3, D3, E3	13,14	L95	L93	L92
A3, B3, C3, D3, E3	15,16	L94	L91	L91

Ratings

Operating Temperature:	ERLH Lumen outputs 10-11, 13 (-40°C to 50°C) ERLH Lumen outputs 14-16 (-40°C to 45°C)
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	Standard - 0-10V ☐ Optional - DALI (Option U) ☐
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

☐ 5 Year (Standard) ☐ 10 Year (Optional)

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

© 2022 Current Lighting Solutions, LLC. All rights reserved. GE and the GE monogram are trademarks of the General Electric Company and are used under license. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

LIGHTING NOTES:

1. LIGHTING SHOULD MEET CITY STANDARDS AND THE CONTRACTOR SHALL COORDINATE LIGHTING WITHIN THE PUBLIC RIGHT OF WAY WITH COMMUNITY SERVICES.

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
——○	1	SL	Single	ERLH014C330 / 6' ARM / MTD 25' AFG	GE LIGHTING SOLUTIONS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: 1"=20'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

LIGHTING PLAN AND DETAILS

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE AT JANETOS FARM
OAK STREET
DOVER, NH

34 OF 37

TEST PIT #	DATE	PERC RATE MIN/INCH	TOP SOIL	SHWT	WATER	RESTRICTIVE	LEDGE	DESCRIPTION
1	11-11-22	8	12"	30" ROOTS @ 14"	NONE OBSERVED	30"	NONE TO 60"	0-12" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-30" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-44" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 44"-60" 2.5Y5/3 OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
2	11-11-22	8	10"	30" ROOTS @ 16"	NONE OBSERVED	30"	NONE TO 60"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-30" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-40" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 40"-60" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
3	11-11-22	8	12"	28" ROOTS @ 16"	NONE OBSERVED	NONE OBSERVED	NONE TO 64"	0-12" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-28" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 28"-38" 2.5Y4/3 OLIVE BROWN, VERY FINE SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 38"-64" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
4	11-11-22	24	12"	20" ROOTS @ 16"	NONE OBSERVED	32"	NONE TO 60"	0-12" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-20" 10YR5/4 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 20"-32" 2.5Y4/3 OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 32"-60" 5Y5/2 OLIVE GRAY, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
5	11-11-22	8	10"	32" ROOTS @ 18"	NONE OBSERVED	32"	NONE TO 64"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-16" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-32" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 32"-64" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
6	11-11-22	8	12"	30" ROOTS @ 16"	NONE OBSERVED	30"	NONE TO 62"	0-12" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-18" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-30" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-62" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
7	11-11-22	8	12"	32" ROOTS @ 32"	NONE OBSERVED	32"	56"	0-12" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-32" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 32"-56" 2.5Y5/3 LIGHT OLIVE GRAY, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
8	11-11-22	6	10"	36" ROOTS @ 16"	NONE OBSERVED	36"	NONE TO 60"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-20" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 20"-36" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 36"-60" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
9	11-11-22	7	10"	42" ROOTS @ 16"	NONE OBSERVED	42"	60"	0-10" 10YR3/3 DARK BROWN, LOAMY FINE SAND, GRANULAR, FRIABLE 10"-16" 10YR4/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-42" 10YR5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 42"-60" 2.5Y5/3 SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
10	11-11-22	8	8"	32" ROOTS @ 26"	NONE OBSERVED	32"	50"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-16" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-32" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 32"-50" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
11	11-11-22	8	14"	28" ROOTS @ 18"	NONE OBSERVED	28"	NONE TO 60"	0-14" 10YR3/3 DARK OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 14"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-28" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 28"-60" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
12	11-11-22	8	12"	30" ROOTS @ 16"	NONE OBSERVED	30"	NONE TO 62"	0-12" 10YR3/3 DARK OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 12"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-30" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-60" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
13	11-11-22	8	10"	30" ROOTS @ 16"	NONE OBSERVED	30"	NONE TO 62"	0-10" 10YR3/3 DARK OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-20" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 20"-30" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-62" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
14	11-11-22	8	10"	30" ROOTS @ 30"	NONE OBSERVED	30"	NONE TO 64"	0-10" 10YR3/3 DARK OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-30" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-64" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
15	11-11-22	9	10"	28"	NONE OBSERVED	28"	NONE TO 62"	0-10" 10YR3/3 DARK OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-14" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 14"-28" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 28"-62" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
16	11-11-22	6	10"	NONE ROOTS @ 18"	NONE OBSERVED	NONE OBSERVED	46"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-46" 10YR4/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
17	11-11-22	6	FOREST MAT	NONE ROOTS @ 32"	NONE OBSERVED	NONE OBSERVED	32"	2"-0 FOREST MAT 0-6" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 6"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-32" 10YR4/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 32" BEDROCK
18	11-11-22	6	FOREST MAT	NONE ROOTS @ 16"	NONE OBSERVED	NONE OBSERVED	40"	2"-0 FOREST MAT 0-6" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 6"-18" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-40" 10YR4/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
19	11-11-22	36	10"	18" ROOTS @ 16"	NONE OBSERVED	18"	NONE TO 61"	0-10" 2.5Y3/3 DARK OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 10"-18" 2.5Y3/3 LIGHT OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 18"-61" 2.5Y5/2 GRAYISH BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM
20	11-11-22	36	10"	16" ROOTS @ 16"	60"	16"	NONE TO 60"	0-10" 2.5Y3/3 DARK OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 10"-16" 2.5Y5/3 LIGHT OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 16"-60" 2.5Y5/2 GRAYISH BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

TEST PIT DATA

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

TEST PIT #	DATE	PERC RATE MIN/INCH	TOP SOIL	SHWT	WATER	RESTRICTIVE	LEDGE	DESCRIPTION
21	11-11-22	30	8"	16" ROOTS @ 16"	58"	16"	NONE TO 62"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-16" 2.5Y5/4 LIGHT OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 16"-62" 2.5Y5/3 LIGHT OLIVE BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
22	11-11-22	30	8"	18" ROOTS @ 16"	NONE OBSERVED	18"	NONE TO 60"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-18" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-60" 2.5Y5/3 LIGHT OLIVE BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
23	11-11-22	8	10"	36" ROOTS @ 36"	NONE OBSERVED	36"	52"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-18" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-36" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, ANGULAR BLOCKY, FIRM 36"-52" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
24	11-11-22	NONE	FOREST MAT	NONE	NONE OBSERVED	NONE OBSERVED	20"	2"-0 FOREST MAT 0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-20" 10YR4/6 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE
25	11-11-22	8	8"	32" ROOTS @ 32"	NONE OBSERVED	32"	48"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-16" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-32" 2.5Y5/3 LIGHT OLIVE BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 32"-48" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D1	11-11-22	8	8"	28" ROOTS @ 28"	NONE OBSERVED	28"	50"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-16" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-28" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 28"-50" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D2	11-11-22	8	10"	30" ROOTS @ 16"	60"	30"	NONE TO 64"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-16" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 16"-30" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 30"-64" 2.5Y5/3 LIGHT OLIVE BROWN, SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D3	11-11-22	20	10"	26" ROOTS @ 16"	60"	26"	NONE TO 66"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-18" 10YR5/4 YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 18"-26" 10YR5/3 BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 26"-66" 2.5Y5/2 GRAYISH BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D4	11-11-22	20	10"	20" ROOTS @ 20"	NONE OBSERVED	20"	NONE TO 66"	0-10" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 10"-20" 10YR4/4 DARK YELLOWISH BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 20"-46" 2.5Y4/3 OLIVE BROWN, FINE SANDY LOAM, MASSIVE, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 46"-66" 5Y5/2 OLIVE GRAY, SILT, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D5	11-11-22	36	10"	16" ROOTS @ 14"	NONE OBSERVED	14"	NONE TO 62"	0-10" 2.5Y3/3 DARK OLIVE BROWN, SILTY LOAM, GRANULAR, FRIABLE 10"-16" 2.5Y5/3 LIGHT OLIVE BROWN, SILTY LOAM, GRANULAR, FRIABLE 16"-32" 2.5Y4/2 DARK GRAYISH BROWN, SILTY CLAY, ANGULAR BLOCKY; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 32"-62" 5Y5/2 OLIVE GRAY, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D6	11-11-22	36	10"	16" ROOTS @ 16"	58"	16"	NONE TO 66"	0-10" 2.5Y3/3 DARK OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 10"-16" 2.5Y5/4 LIGHT OLIVE BROWN, SILT LOAM, ANGULAR BLOCKY, FIRM 16"-30" 2.5Y4/3 OLIVE BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES 30"-66" 5Y4/2 OLIVE GRAY, SILT LOAM, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
D7	11-11-22	36	8"	18" ROOTS @ 16"	NONE OBSERVED	18"	NONE TO 60"	0-8" 10YR3/3 DARK BROWN, FINE SANDY LOAM, GRANULAR, FRIABLE 8"-18" 2.5Y4/3 OLIVE BROWN, SILT LOAM, GRANULAR, FRIABLE 18"-60" 2.5Y5/2 GRAYISH BROWN, SILTY CLAY, ANGULAR BLOCKY, FIRM; 2.5Y6/2 LIGHT BROWNISH GRAY AND 7.5YR4/6 STRONG BROWN REDOXIMORPHIC FEATURES
F-1	9-8-22	NONE	N/A	N/A	NONE OBSERVED	NONE OBSERVED	<12"	<12" LEDGE
F-2	9-8-22	NONE	8"	8"	NONE OBSERVED	20"	NONE TO 60"	0-8" 10YR4/4 DARK YELLOWISH BROWN, LOAM, GRANULAR, FRIABLE 8"-20" 2.5Y4/4 OLIVE BROWN, SILT LOAM, BLOCKY, FRIABLE, REDOX 20"-60" 5Y4/3 OLIVE, SILTY CLAY LOAM, PRISMATIC, FIRM
F-3	9-8-22	NONE	8"	16"	NONE OBSERVED	16"	NONE TO 54"	0-8" 10YR4/4 DARK YELLOWISH BROWN, LOAM, GRANULAR, FRIABLE 8"-16" 2.5Y4/4 OLIVE BROWN, SILT LOAM, BLOCKY, FRIABLE 16"-54" 5Y4/3 OLIVE, SILTY CLAY LOAM, PRISMATIC, FIRM

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

DATE: 2-22-23
SCALE: AS SHOWN
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY:SJH
PROJECT NO:21074
FILE: SITE

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

APPLICANT:
CHINBURG DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STREET
DOVER, NH

TEST PIT DATA

NH STATE PLANE NAD 83 GRID (BRG.)

Dover ladder feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 44.0

PROFILE VIEW
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=10'
(FIRE TRUCK TRANSITION ANALYSIS)

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

NOT FOR CONSTRUCTION FOR PERMIT USE ONLY

PLANNING FILE
NO.: SUBD-2023-0001

CIVILWORKS NEW ENGLAND
CIVIL & WATERFRONT ENGINEERING
181 Watson Road, PO Box 1166
Dover, New Hampshire 03821
603.749.0443

NO.	REVISION	APP'D	DATE
2	PER TRC COMMENTS	SJH	5-2-23
1	PER TRC COMMENTS	SJH	4-5-23

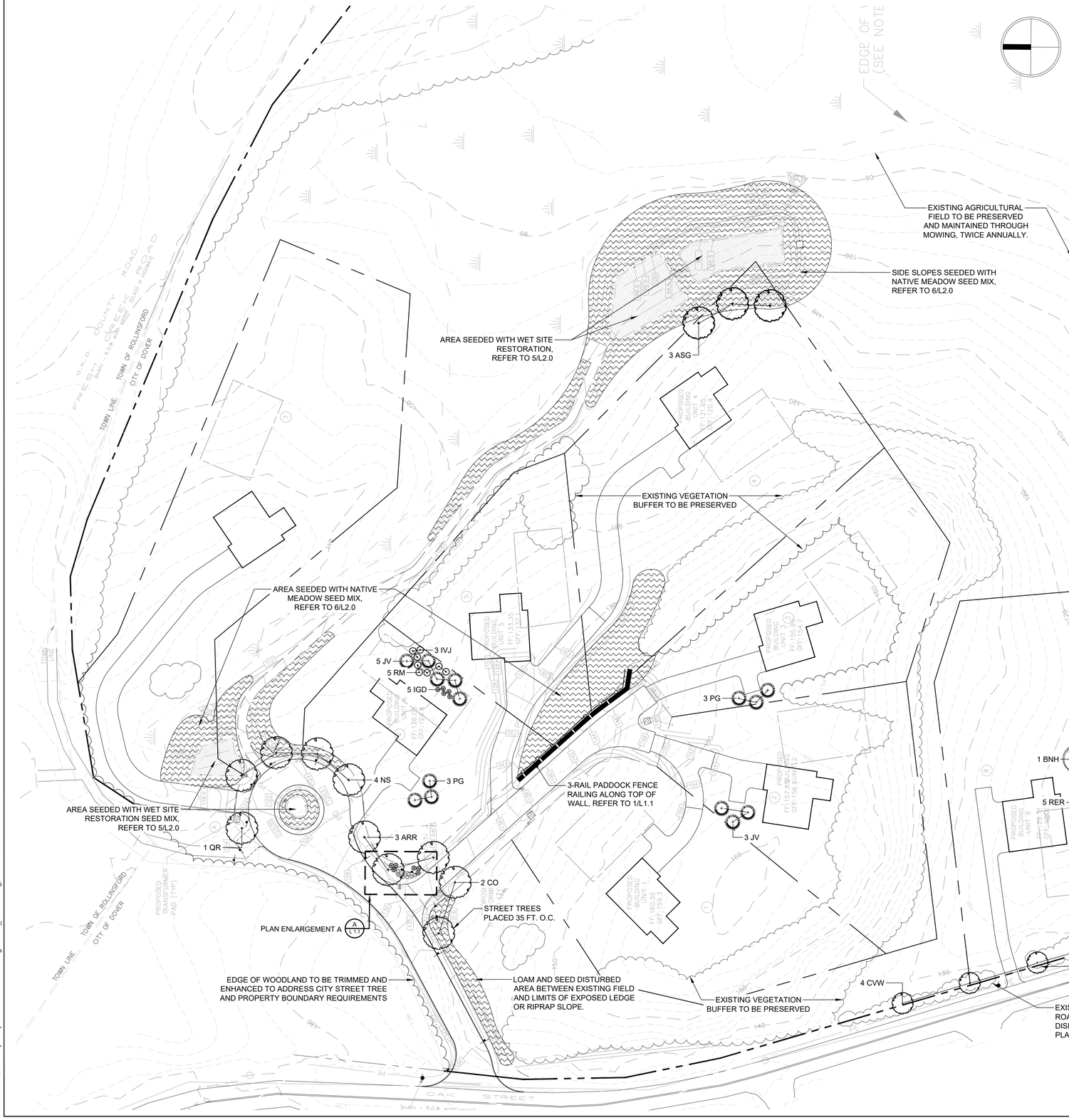
DATE: 2-22-23
SCALE: 1"=40'
DRAWN BY: CAD
DESIGN BY: JRG
APPROVED BY: SJH
PROJECT NO: 21074
FILE: SITE

DOVER LADDER FIRETRUCK MOVEMENT PLAN

PROJECT:
EMERSON RIDGE
AT JANETOS FARM
OAK STRBET
DOVER, NH

APPLICANT:
CHINBURG
DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

37 OF 37



Legend

- DECIDUOUS SINGLE-STEMMED TREE PLANTING, SEE 1/L2.0 AND 2/L2.0
- DECIDUOUS MULTI-STEMMED TREE PLANTING
- EVERGREEN TREE PLANTING, SEE 3/L2.0
- SHRUB PLANTING, SEE 4/L2.0
- LAWN — LAWN SEEDING, SEE 7/L2.0
- MEADOW SEEDING, SEE 6/L2.0

GENERAL NOTES:

1. SEE CIVIL DRAWINGS FOR INFORMATION NOT DEPICTED ON THE LANDSCAPE DRAWINGS.
2. COORDINATE WITH THE LANDSCAPE ARCHITECT ANY ADJUSTMENTS OF PLANT LOCATIONS.
3. PRESERVE AND PROTECT EXISTING VEGETATION TO REMAIN AS FEASIBLE UNLESS FOUND TO BE DISEASED, DYING, OR POSE A SAFETY CONCERN.
4. REMOVE INVASIVE TREE AND PLANT SPECIES ACCORDING TO HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT BEST MANAGEMENT PRACTICES WITHIN THE LIMIT OF WORK.
5. SEE SHEET L1.1 AND L2.0 FOR LANDSCAPE DETAILS AND NOTES.
6. SEE SHEET L1.1 FOR THE PLANT SCHEDULE.
7. ALL DISTURBED AREAS NOT IDENTIFIED TO RECEIVE A SPECIFIC LANDSCAPE TREATMENT SHALL BE LOAMED AND SEEDED, SEE 7/L2.0.
8. CONTACT DIGSAFE PRIOR TO BEGINNING WORK.

City of Dover Street Tree Requirements	Spacing	Road (LF)	Required	Provided
1. Deciduous street tree (3"-3 1/2" Cal.)	35' Maximum	350 linear feet	10	10

DRAWING SUBMITTED FOR CITY REVIEW

Ironwood
Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.FeWood.com

EMERSON RIDGE AT JANETOS FARM
RESIDENTIAL DEVELOPMENT

OAK STREET
DOVER, NEW HAMPSHIRE

SHEET TITLE

LANDSCAPE PLAN

REVISION LOG

REV#	DATE	DESCRIPTION
PROJECT NO.		21076.0
DESIGN BY		J.HYLAND, S.WRIGHT
DRAWN BY		S.WRIGHT
CHECKED BY		J. HYLAND, D.JENSEN
DATE		APRIL 5, 2023

SCALE

0' 50' 100'

SCALE: 1" = 50'-0"

SEAL

NEW HAMPSHIRE LANDSCAPE ARCHITECT — JEFFREY R. HYLAND — 026 — STATE OF NEW HAMPSHIRE

L1.0

©2023 Ironwood Design Group, LLC

S:\21076.0 - Oak St Open Space Subdivision\Drawings\ID-LP_230404.dwg, JRH 4/5/2023 8:47:27 AM

Plant Schedule:

DECIDUOUS TREES

QTY.	ABRV.	SCIENTIFIC NAME	COMMON NAME	SIZE	REMARKS
3	ARR	ACER RUBRUM 'RED SUNSET'	RED SUNSET' RED MAPLE	3"-3 1/2" CAL	B&B
6	ASG	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	3"-3 1/2" CAL	B&B
1	AGA	AMELANCHIER x GRANDIFLORA 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SERVICEBERRY	8'-10' HT	MULTI-STEM / B&B
4	BNH	BETULA NIGRA 'HERITAGE' CLUMP	CLUMP 'HERITAGE BIRCH	10'-12' HT	MULTI-STEM / B&B
2	CO	CARYA OVATA	SHAGBARK HICKORY	3"-3 1/2" CAL.	B&B
4	CVW	CRATAEGUS VIRIDIS 'WINTER KING'	WINTER KING HAWTHORN	2"-2 1/2" CAL*	B&B
5	MHG	MALUS 'HARVEST GOLD'	HARVEST GOLD CRABAPPLE	2"-2 1/2" CAL*	B&B
4	NS	NYSSA SYLVATICA 'WILDFIRE'	WILDFIRE TUPELO	3"-3 1/2" CAL	B&B
1	QR	QUERCUS RUBRA	RED OAK	3"-3 1/2" CAL	B&B
30					

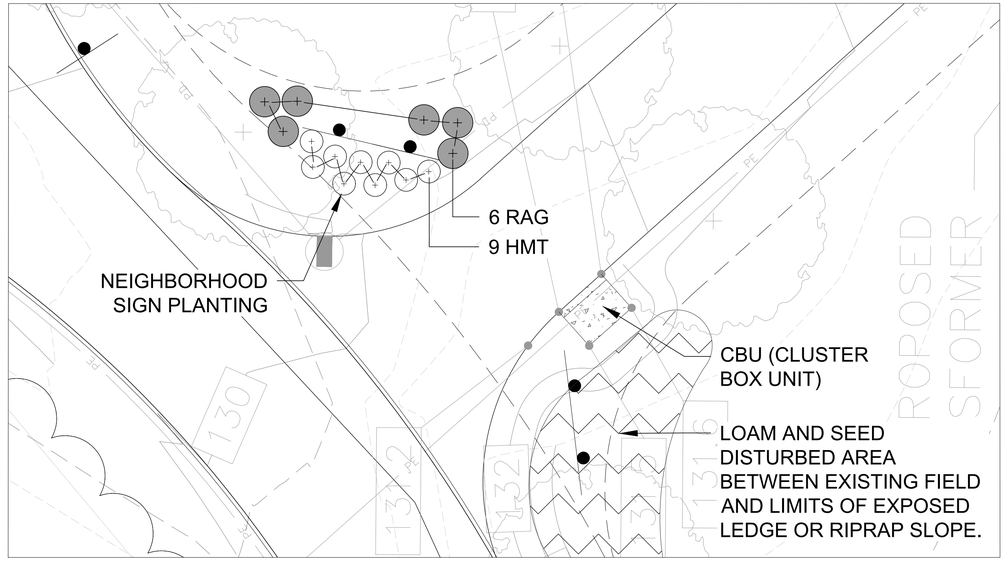
EVERGREEN TREES

6	AC	ABIES CONCOLOR	WHITE FIR	7'-8" HT	B&B
7	JV	JUNIPERUS VIRGINIA	EASTERN RED CEDAR	6'-7' HT	B&B
9	PG	PICEA GLAUCA	WHITE SPRUCE	7'-8' HT	B&B
3	PS	PINUS STROBUS	WHITE PINE	7'-8' HT	B&B
25					

SHRUBS AND PERENNIALS

3	AV	AZALEA VESEYI	PINKSHELL AZALEA	#3	CONTAINER
3	CO	CEPPHALANTHUS OCCIDENTALIS	BUTTON BUSH	#3	CONTAINER
6	CSI	CORNUS SERICEA 'ISANTII'	ISANTI RED OSIER DOGWOOD	#5	CONTAINER
9	HMT	HYDRANGEA ENDLESS SUMMER 'TWIST AND SHOUT'	HYDRANGEA TWIST AND SHOUT	#5	CONTAINER
10	IGD	ILEX GLABRA 'DENSA'	DENSA INKBERRY	#5	CONTAINER
6	IVJ	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY WINTERBERRY	#5	CONTAINER
6	RAG	RHUS AROMATICA 'GRO LOW'	GROUNDCOVER SUMAC	#3	CONTAINER
8	RER	RHODODENDRON 'ENGLISH ROSEUM'	ENGLISH ROSEUM RHODODENDRON	#5	CONTAINER
8	RM	RHODODENDRON MAXIMUM	ROSEBAY RHODODENDRON	#5	CONTAINER
59					

*TREES SPECIFIED ABOVE LESS THAN 3"-3 1/2" CAL ARE SMALL FLOWERING TREES, NOT SHADE TREES
THEY HAVE BEEN INCLUDED TO PROVIDE VISUAL AND SEASONAL INTEREST.

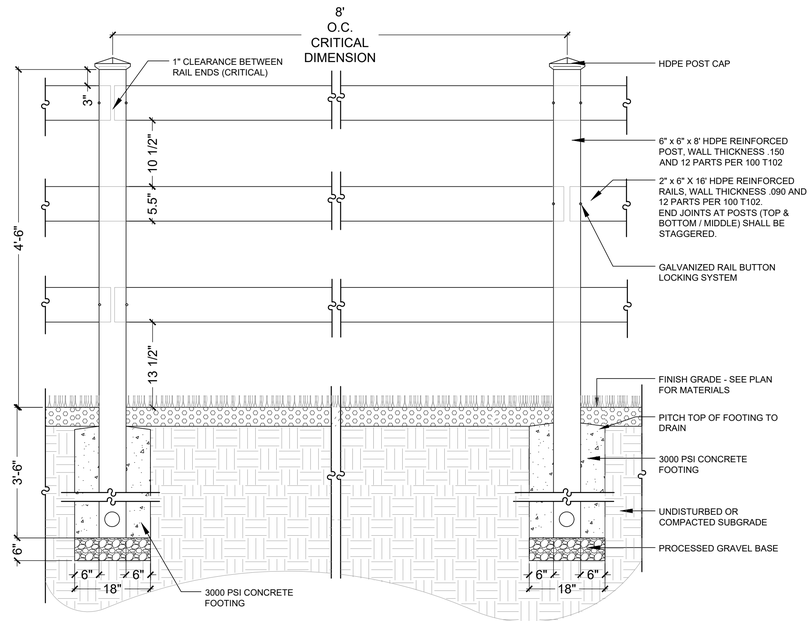


Plan Enlargement A: Neighborhood Sign Planting

0' 10' 20'
SCALE: 1" = 10'

PLANTING NOTES:

1. PLEASE REVIEW AND BECOME FULLY ACQUAINTED WITH THESE NOTES, CONSTRUCTION DETAILS, AND THE PLANTING PLAN(S).
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 .
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 PLANT SUBSTITUTION MUST BE OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER COLOR, LEAF COLOR, FRUIT COLOR, AND TIME OF BLOOM. SUBSTITUTION REQUESTS MUST BE MADE IN WRITING AND APPROVED BY THE LANDSCAPE ARCHITECT.
6. EXISTING LOAM: STOCKPILING OF EXISTING LOAM IS SPECIFIED ELSEWHERE. REMOVE CLAY LUMPS, BRUSH, LITTER, ROOTS, STONES 1/2" AND LARGER, AND OTHER FOREIGN MATERIALS BY SCREENING.
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 ALL PLANTS SHALL BE PLUM VERTICALLY AFTER SETTLING AND ALL PLANT MATERIAL SHALL BE MULCHED AFTER INSTALLATION.
9. 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 1/2". PROVIDE BARK MULCH APPROVED BY THE LANDSCAPE ARCHITECT.
10. 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 COMPOST. MIX QUANTITY OF FERTILIZER CONTAINING MYCORRHIZAL FUNGI AND SOIL AMENDMENTS AS RECOMMENDED BY SOIL ANALYSIS AND APPROVED BY THE LANDSCAPE ARCHITECT.
11. WATERING: FLOOD ALL PLANTS WITH WATER TWICE WITHIN THE FIRST 24 HOURS AFTER PLANTING.
12. 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.
13. 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 1/2" 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.
14. 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.
15. 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.
16. 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.
17. APPLY TACKIFIER AND MULCH TO ALL SEEDED AREAS.
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. ALL FENCING SHALL BE REINFORCED HDPE MANUFACTURED BY LAKELAND PLASTICS AKA, DERBY FENCE CO. OR APPROVED EQUAL.
2. FENCE COLOR: WEATHERED WOOD
3. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL INFORMATION.

3 Rail Paddock Fence

Not to Scale

©IRONWOOD 2023

1
L1.1

DRAWING SUBMITTED FOR CITY REVIEW

Ironwood
Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.FeWood.com

EMERSON RIDGE AT JANETOS FARM
RESIDENTIAL DEVELOPMENT

OAK STREET
DOVER, NEW HAMPSHIRE

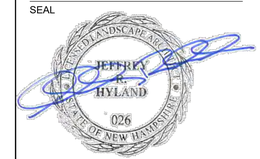
SHEET TITLE

LANDSCAPE PLAN, DETAILS, & NOTES

REVISION LOG

REV#	DATE	DESCRIPTION
PROJECT NO.		21076.0
DESIGN BY		J.HYLAND, S.WRIGHT
DRAWN BY		S.WRIGHT
CHECKED BY		J. HYLAND, D.JENSEN
DATE		APRIL 5, 2023
SCALE		AS SHOWN

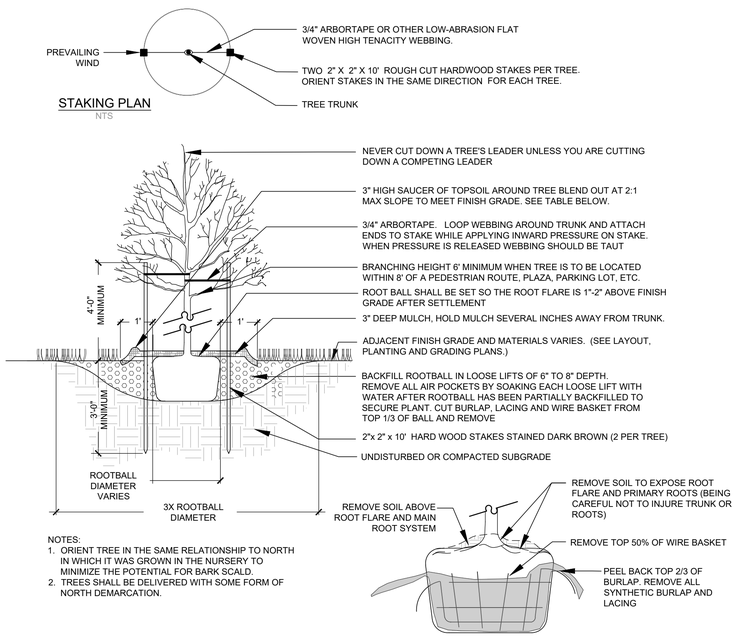
SEAL



L1.1

©2023 Ironwood Design Group, LLC

S:\21076.0 - Oak St Open Space Subdivison\Drawings\SD-LP _230404.dwg; JRH 4/5/2023 8:37:18 AM



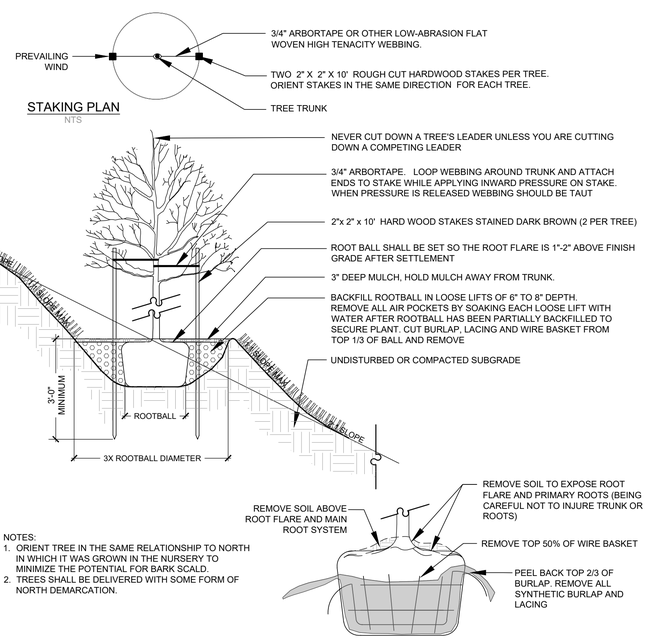
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

Deciduous Tree Planting

Not to Scale

©IRONWOOD 2023

1 L2.0



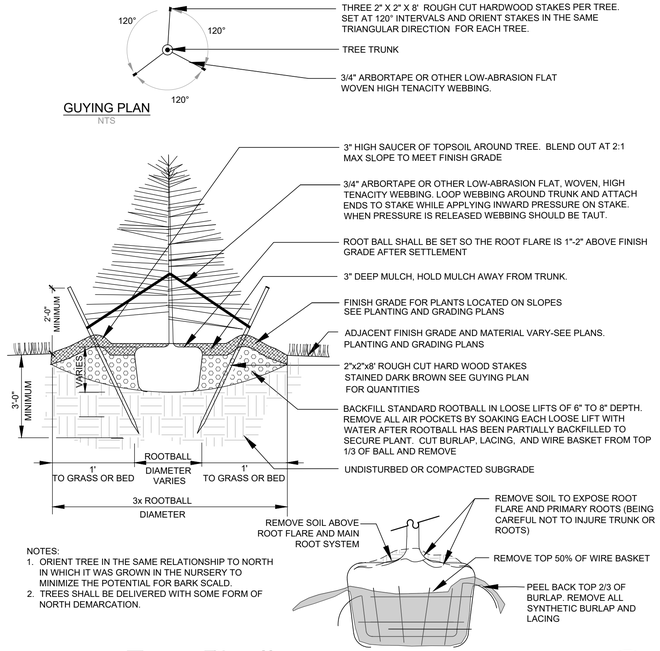
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

Deciduous Tree Planting on Slope

Not to Scale

©IRONWOOD 2023

2 L2.0



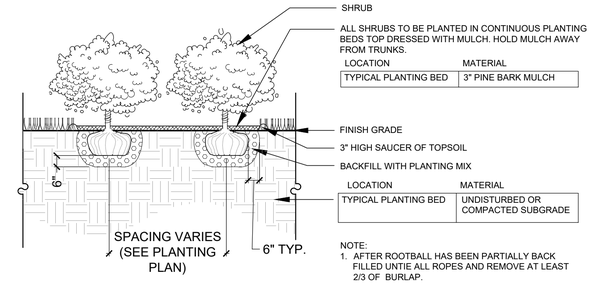
NOTES:
1. ORIENT TREE IN THE SAME RELATIONSHIP TO NORTH IN WHICH IT WAS GROWN IN THE NURSERY TO MINIMIZE THE POTENTIAL FOR BARK SCALD.
2. TREES SHALL BE DELIVERED WITH SOME FORM OF NORTH DEMARCATION.

Evergreen Tree Planting

Not to Scale

©IRONWOOD 2023

3 L2.0



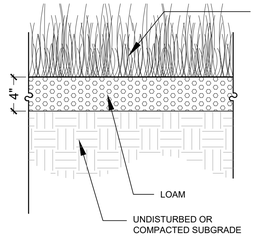
NOTE:
1. AFTER ROOTBALL HAS BEEN PARTIALLY BACK FILLED UNTIE ALL ROPES AND REMOVE AT LEAST 2/3 OF BURLAP.

Shrub Planting

Not to Scale

©IRONWOOD 2023

4 L2.0



Botanical Name	Common Name
Elymus riparius	Riverbank Wild Rye
Schizachyrium scoparium	Little Bluestem
Festuca rubra	Red Fescue
Andropogon gerardii	Big Bluestem
Panicum virgatum	Switch Grass
Vernonia noveboracensis	New York Ironweed
Agrostis perennans	Upland Bentgrass
Bidens frondosa	Beggar Ticks
Eupatorium maculatum (Eutrochium maculatum)	Spotted Joe Pye Weed
Eupatorium perfoliatum	Boneset
Aster novae-angliae (Symphyotrichum novae-anglia	New England Aster
Scirpus cyperinus	Wool Grass
Juncus effusus	Soft Rush

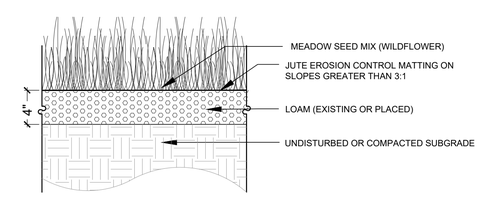
NOTES:
1. THE SEED MIX ABOVE REPRESENTS A BLEND AVAILABLE THRU NEW ENGLAND WETLAND PLANTS - SOUTH HADLEY, MA - WWW.NEWP.COMLOAM ALL DISTURBED AREAS AS SHOWN ON THE PLANS.
2. AREAS TO BE SEEDED SHALL RECEIVE A MINIMUM 4" LOAM (MEASURED AFTER COMPACTION). THE SEED BED SHALL BE PROPERLY PREPARED TO PROMOTE MAXIMUM GERMINATION.
3. APPLY SEE AT A RATE OF- 5 LBS/ACRE :1250 sq ft/lb
4. INSTALL JUTE MATTING ON SLOPES GREATER THAN 3:1.
5. SEE PLANS FOR AREAS DESIGNATED TO RECEIVE THIS SEED MIX.

Wet Site Restoration Seeding

Not to Scale

©IRONWOOD 2023

5 L2.0



Botanical Name	Common Name	Indicator
Schizachyrium scoparium	Little Bluestem	FACU
Sorghastrum nutans	Indian Grass	UPL
Chamaecrista fasciculata	Partridge Pea	FACU
Elymus virginicus	Virginia Wild Rye	FACW-
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Asclepias tuberosa	Butterfly Milkweed	NI
Vernonia noveboracensis	New York Ironweed	FACW+
Oenothera biennis	Evening Primrose	FACU-
Aster novae-angliae (Symphyotrichum novae-anglia	New England Aster	FACW-
Rudbeckia hirta	Black Eyed Susan	FACU-
Solidago juncea	Early Goldenrod	
Eupatorium fistulosum (Eutrochium fistulosum)	Hollow-Stem Joe Pye Weed	FACW
Aster lateriflorus (Symphyotrichum lateriflorum)	Starved/Calico Aster	FACW

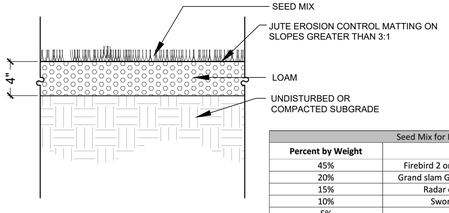
NOTES:
1. THE SEED MIX ABOVE REPRESENTS A BLEND AVAILABLE THRU NEW ENGLAND WETLAND PLANTS - SOUTH HADLEY, MA - WWW.NEWP.COM
2. AREAS TO BE SEEDED SHALL HAVE A MINIMUM 4" LOAM (MEASURED AFTER COMPACTION), EITHER PLACED OR EXISTING. THE SEED BED SHALL BE PROPERLY PREPARED TO PROMOTE MAXIMUM GERMINATION.
3. APPLY SEED AT THE SUPPLIERS RECOMMENDED RATE.
4. INSTALL JUTE MATTING ON SLOPES GREATER THAN 3:1.
5. SEE PLANS FOR AREAS DESIGNATED TO RECEIVE THIS SEED MIX.

Meadow Seeding

Not to Scale

©IRONWOOD 2023

6 L2.0



Seed Mix for Lawns	
Percent by Weight	**Common Name**
45%	Firebird 2 or Rebel IV or Firecracker SL fescue
20%	Grand slam GLD or Confetti II perennial ryegrass
15%	Radar or Compass chewings fescue
10%	Sword or Gladiator hard fescue
5%	Side Oats Grama
5%	White Dutch clover

Apply this seed mix at a rate of 305 lbs/acre (7lbs per 1000sf)

NOTES:
2. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM 4" LOAM (MEASURED AFTER COMPACTION). THE SEED BED SHALL BE PROPERLY PREPARED TO PROMOTE MAXIMUM GERMINATION.
3. SEE PLANS FOR AREAS DESIGNATED TO RECEIVE THIS SEED MIX.

Lawn Seeding

Not to Scale

©IRONWOOD 2023

7 L2.0

DRAWING SUBMITTED FOR CITY REVIEW

Ironwood
Landscape Architecture • Planning
Newmarket, NH | Portland, ME | 603.772.0590 | www.FeWood.com

EMERSON RIDGE AT JANETOS FARM
RESIDENTIAL DEVELOPMENT

OAK STREET
DOVER, NEW HAMPSHIRE

SHEET TITLE

LANDSCAPE DETAILS

REVISION LOG

REV#	DATE	DESCRIPTION

PROJECT NO.	21076.0
DESIGN BY	J.HYLAND, S.WRIGHT
DRAWN BY	S.WRIGHT
CHECKED BY	J. HYLAND, D.JENSEN
DATE	APRIL 5, 2023
SCALE	AS SHOWN

SEAL



L2.0

©2023 Ironwood Design Group, LLC

S:\21076.0 - Oak St Open Space Subdivision\Drawings\ID-LP_230404.dwg, JRH 4/5/2023 9:09:07 AM