

TOWN OF RAYMOND Planning Board Agenda January 4, 2024 7 p.m. - Raymond High School

Media Center - 45 Harriman Hill

Public Announcement

If this meeting is canceled or postponed for any reason the information can be found on our website, posted at Town Hall, Facebook Notification, and RCTV. *

1. Pledge of Allegiance

2. Public Hearing

- A. <u>Application # 2023-007 Meindl Road Subdivision</u>: A subdivision application is being submitted by Joseph Falzone and Beals Associates PLLC on behalf of Frances and Raymond Scanlon. The intent of this application is to subdivide a 10 +/- acre lot on Meindl Road into 3 individual lots. The parcel is Map 41/Lot 47, Zone B with associated Zone G lands and located on Meindl Road in Raymond NH. (continued from 10-12-23, 11-2-23, and 12-7-23)
- B. Application # 2022-009 Jewett Warehouse: A site plan application is being submitted by Greg DiBona of Bohler Engineers on behalf of Jewett Construction. The applicant proposes a 200,000 SF industrial warehouse with applicable access, parking, loading, landscaping, lighting, stormwater management, utilities, and erosion mitigation. The property is located on Route 27 and is identified as Raymond Tax Map 28 / Lots 9, 10, & 11. (continued from 10-5-23)
- C. Application #2022-015 White Rock Place LLA: A Lot Line Adjustment has been submitted by Joseph Coronati of Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing to adjust the lot line configuration between Tax Map 23 Lots 24, 25, 28, and 29, located at 109 Main Street in Raymond NH. Lots 24 and 25 are located within Zone D (Industrial) and Lots 28 and 29 are in Zone B (Residential). (continued from 11-16-23)
- D. Application #2021-018 White Rock Place: A Site Plan Application has been submitted by Joseph Coronati of Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing 156 market rate apartments of three 4 story buildings on slabs with elevators, mix of 1- and 2-bedroom units with an open space preserved, recreation trails and parking. Access will be from Main Street. The property is identified as Raymond Tax Map 23 Lots 25 & 29, located at 109A & C Main Street, Raymond NH, 03077 and are within Zones B & D. (continued from 11-16-23)

3. Public Comment

^{*} Note: If you require personal assistance for audio, visual or other special aid, please contact the Selectmen's Office at least 72 hours prior to the meeting. If this meeting is postponed for any reason, it will be held at a time TBD.



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4. Approval of Minutes

A. December 21, 2023

5. Other Business

- Staff Updates
- Board Member Updates
- Any other business brought before the board.

6. Adjournment (NO LATER THAN 10:00 P.M.)

Planning Board 2023/2024 Submittal and Meeting Dates

| Submittal Deadline for Completed Application & Materials | Planning Board Meeting Date | s (1st & 3rd Thursdays of the Month) |
|--|-----------------------------|--|
| December 11, 2023 | Thursday, January 11, 2024 | 2023-016 Fuel NRG Raymond 2023-017 Fuel NRG Raymond Conditional Use Permit 2023-008 Onway Lake Village Zoning Amendment/Warrant Article Public Hearing |
| December 21, 2023 | Thursday, January 18, 2024 | Site Plan Regulations Public Hearing Potential Date of Zoning Amendment / Warrant Article Public Hearing Mardon Woods (rescheduled from 12-21- 23) |
| December 28, 2023 | Thursday, January 25, 2024 | Potential Date of Zoning Amendment / Warrant Article Public Hearing |
| January 4, 2024 | Thursday, February 1, 2024 | Taft Way Special Permit Morrison Rd Driveway Permit |

^{*} Note: If you require personal assistance for audio, visual or other special aid, please contact the Selectmen's Office at least 72 hours prior to the meeting. If this meeting is postponed for any reason, it will be held at a time TBD.



TOWN OF RAYMOND

Community Development Department

4 Epping Street Raymond, NH 03077

Tel: (603) 895-7018 • Fax: (603) 895-7064

STAFF REPORT - Subdivision

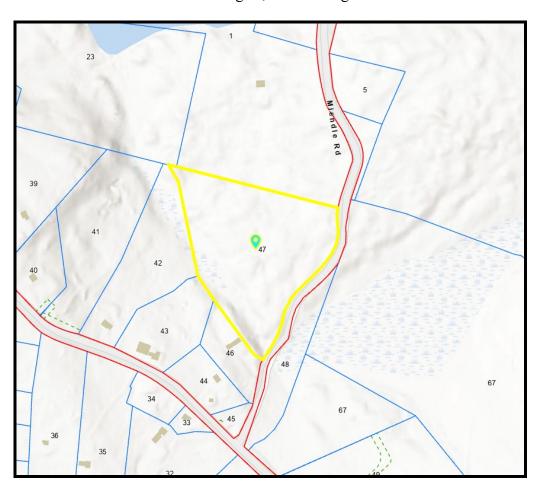
ORIGINAL PUBLIC HEARING DATE: 12/7/2023 CONTINUED PUBLIC HEARING DATE: 01/04/2024 ZBA VARIANCE APPROVAL 11/15/2023

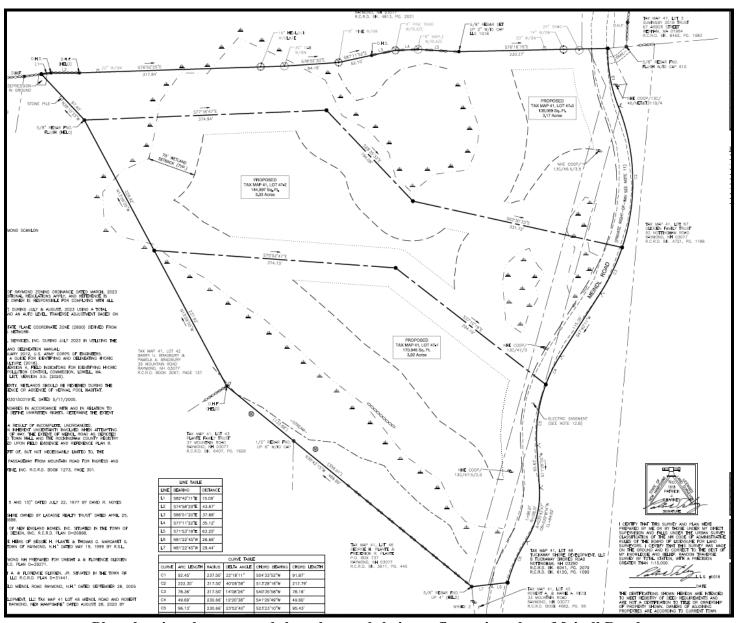
APPLICATION: 2023-007 Meindl Road Subdivision (Tax Map 41 Lot 47)

OWNER: Raymond and Francis Scanlon

AGENT: Joseph Falzone & Tim Phoenix Esq.

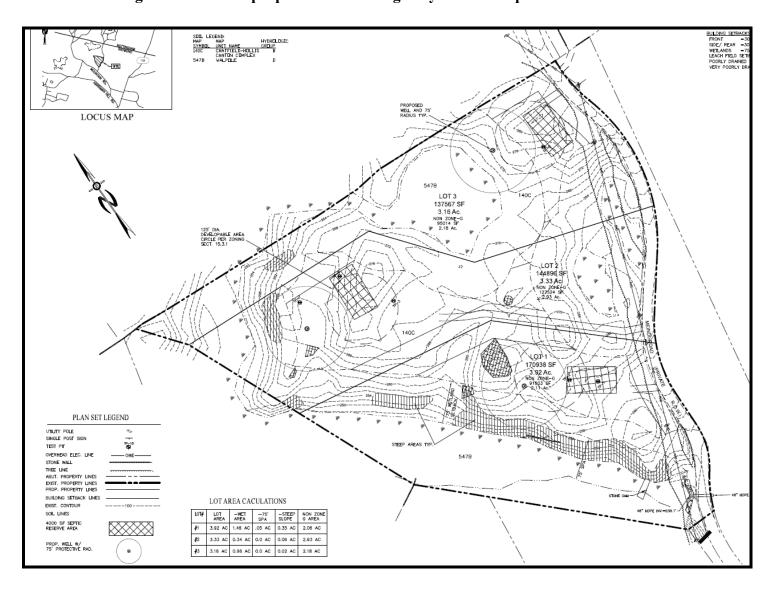
SUMMARY: The owner of properties located along Meindl Road have proposed a three (3) lot subdivision on a private road and for which the applicant received two variances for lack of frontage on a public road or thru way from the ZBA on 11-15-23 after deliberation. The lots will range in size from 3.16 acres to 3.92 acres before removal of Zone G area and after doing so, the lots range from 2.06 acres to 2.93 acres.

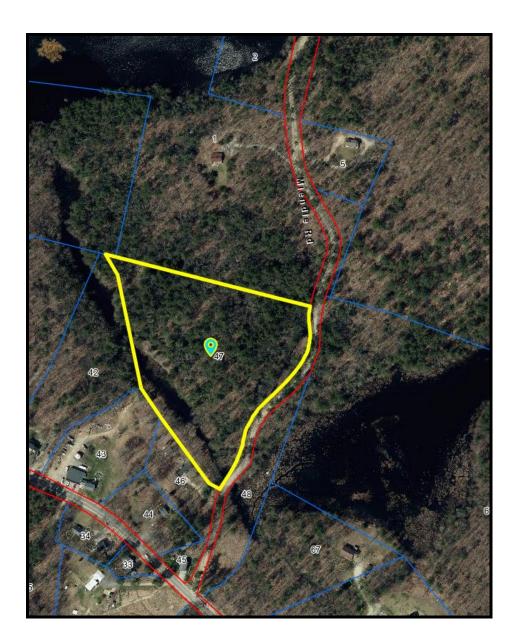




Plan showing the proposed three lots and their configuration along Meindl Road

Drainage/stormwater is proposed to be managed by well and septic as shown below.





Aerial Map

PROPERTY INFORMATION: Tax/Map 41/47

Existing Zone: Zone B

Existing and Proposed Use: Existing vacant woodlands to be converted into a three-lot single

family residential subdivision.

Sewer Available: No.

Water Available: No.

Waiver Request(s): No waivers were requested by the applicant.

PLANNING AND/OR ZONING HISTORY:

NOTICE OF DECISION GRANTED

Raymond Zoning Board of Adjustment 2023-007 Raymond and Francis Scanlon

Date of Decision: November 15, 2023

Application No: 2023-007

You are hereby notified that the Raymond Zoning Board of Adjustment has <u>GRANTED</u> two (2) variances to Raymond and Francis Scanlon, represented by Tim Phoenix, Esq. of Hoefle, Phoenix, Gormley and Roberts, PLLC for property identified as Raymond Tax 41, Lot 47 located on Meindl Road located within Zone B with associated Zone G Lands, for relief from <u>Article 15, Section 15.1 and Article 13, Section 13.1.31 requiring frontage on a public street or way, and that 200 feet of frontage is required.</u>

Finding of Facts:

The Zoning Board of Adjustment found that:

- Meindl Road has already been developed residentially and that there are existing single family residences established along the road, regardless of its ownership status;
- That the request is consistent with the spirit of the ordinance overall, and that the ZBA are empowered and authorized to provide relief for variances after testimony and deliberation;
- That substantial justice was proven given the existing development pattern of the area;
- That the granting of the variance would not diminish the value of surrounding properties, and found that it would likely increase them;
- And that literal enforcement of the ordinance would result in an unnecessary hardship given that the proposed lots exceed the requirements of the Zone B zoning district.

Conditions:

The Planning Board voted unanimously a condition of approval that a Waiver of Liability be signed with the Board of Selectmen.

Jason Cleghorn

Community Development Director

Date

RECOMMENDATIONS:

STANDARD CONDITIONS OF APPROVAL

The following conditions shall apply:

1. The conditions of approval designated as conditions precedent must be completed within six (6) months, unless otherwise specified, or this approval shall become null and void.

The following are conditions precedent:

- a. The applicant must obtain all required local, State and Federal permitting for the project, and provide copies of same to the Community Development Department;
- b. All fees authorized to be charged to the applicant pursuant to the Raymond Site Plan Review Regulations including, but not limited to application fees, costs of special studies, and legal and engineering review, shall be paid by the applicant;
- c. Deeds, easements, conservation easements, condominium documents, maintenance agreements, and any other legal documentation pertinent to this project shall be reviewed and approved by Town Counsel, and where applicable, the Board of Selectmen pursuant to RSA 41:14-a;
- d. The applicant shall address, to the satisfaction of the Town's Review Engineer, any remaining engineering issues identified during peer review. Written concurrence, from the Town's Review Engineer and the Raymond Community Development Director, with the design corrections of any identified engineering issues shall be required prior to final plan approval.
- e. A Performance Guarantee Agreement shall be executed between the Town of Raymond and the Applicant within 30 days of the plan approval date of _______. (Date of Planning Board conditional approval). Failure to execute the required agreement will result in plan approval revocation.
- 2. The following items must be completed within twenty-four (24) months of the completion of conditions precedent for this project to constitute "active and substantial development or building" pursuant to RSA 674:39:
 - a. (outline items)
- 3. The following items must be completed for this project to constitute "substantial completion of the improvements" pursuant to RSA 674:39:
 - a. (outline items)
- 4. Insert Note about Impact Fees
- 5. Estimates for all improvements shall be provided by the Applicant for review and approval by the Raymond Public Works Director or his designee. These estimates will be utilized to establish an inspection escrow account (equal to 4% of the estimated cost of improvements), which must be in place with the Town of Raymond prior to the start of any site work. Additionally, these estimates will be used as the basis for computing the Surety/Performance Bond to be provided by the Applicant in favor of the Town of Raymond prior to the issuance of a Certificate of

Occupancy by the Raymond Code Enforcement Officer. Surety/Performance Bond values shall be based upon the value of unfinished work at the time of the issuance of a Certificate of Occupancy, plus a 10% contingency.

- 6. This approval is subject to the following variances, as granted by the Raymond Zoning Board of Adjustment:
 - a. Lack of frontage on a public street and 200'
 - b. Additional Condition of Approval imposed by the ZBA regarding recordation of a Waiver of Liability with the Board of Selectmen.
- 7. Off-site improvement fees for specific deficiencies found to have a rational nexus to this project are as follows: (describe in detail and amount):
 - a. (outline, if any)
- 8. Other Conditions imposed by the Planning Board:
 - a. (outline additional conditions)



SUBDIVISION APPLICATION

Town of Raymond NH

| Map #41 Lot #47 Application Date8-15-23 | _ Application # |
|---|---|
| Project Name: 3 lot subdivision | |
| Location: Meindl Road | |
| Project Description: | |
| Zone: $\underline{\ \ B\ }$ New Industrial / Commercial Square Footage: | or Number of Residential Units:3 |
| Applicant/Agent Information: | |
| Name:Joseph Falzone | Phone:603-772-9400 |
| Company: | Fax: |
| Address: 7B Emery Lane, Stratham, NH 03885 | |
| Signed*: | Date: |
| *Requires notarized letter of permission. | |
| By signing this application, you are agreeing to all rules and agreeing to allow agents of the Town of Raymond to conduct inscompliance with all Raymond Zoning and Site Review regulational during any construction and operational phases after approx Owner Information: | spections, during normal business hours to ensure ions while your application is under consideration |
| Name: Frances & Raymond Scanlon | Phone: |
| Company: | Fax: |
| Address: 11 John McQuinn Circle, Framingham, MA 01 | .701 |
| Signed: Joseph Jagger aggle | Date: 8/14/8023 |
| Designers of Record: | |
| Engineer: Beals Associates PLLc | |
| Surveyor: Doucet Survey Inc. | 10-10-10-10-10-10-10-10-10-10-10-10-10-1 |
| Soil Scientist: Gove Environmental Services | |
| Landscape Architect:n/a | |
| Fees: See Attached Fee Schedule | |
| FOR OFFICE USE ONLY Date Application Received:Total Fees Col List Received: Check List Received: | |
| PB Application Acceptance Date:Notice Date: | |

Letter of Authorization

We, Raymond and Frances Scanlon, owners of Tax Map 41 Lot 47 on Miendl Road in Raymond, NH, do hereby authorize the following parties to act as agents on my behalf for the above-described property in order to apply for any necessary state and local applications or permits relative to the development of said lot:

Joseph Falzone and their agents to include but not limited to:

The Gove Group Real Estate, LLC, 70 Portsmouth Ave Stratham, NH 03885

Beals Associates, 70 Portsmouth Ave Stratham, NH 03885

Doucet Survey Kent Place Newmarket, NH

Gove Environmental Continental Drive Exeter, NH

GZA Environmental Bedford, NH

as agents to act on my behalf in matters to be discussed with the Town of Raymond, State Departments and other Land Use Boards concerning the property previously mentioned.

I hereby appoint the above referenced parties as my agent to act on my behalf in the review process, to include any required signatures.

| SELLER DATE/TIME Raymond Scanlon | | | SELLER DATE/TIME Frances Scanlon by her attorney in fact Raymond Scanlon | | |
|--------------------------------------|--------|-------|--|-------|-----|
| 11 John McQuinn (MAILING ADDRESS | Circle | | MAILING ADDRESS | 3 | |
| Framingham | MA | 01701 | | | |
| CITY | STATE | ZIP | CITY | STATE | ZIP |
| | | | | | |

Date: 6/12/2023

Danielle Mary Beaux Commission Expres: February 24th, 2028





Subdivision Checklist

TOWN OF RAYMOND, NH

| PROJECT NAME | 3-LOT SUBDIVISION | |
|--------------|--|--|
| MAP#_4/ | _ LOT # <u> 47</u> APPLICATION DATE <u>8~/5~23</u> APPLICATION # | |

This checklist can be used for either a major or minor subdivision. For a minor subdivision, several of the items would likely be waived by the Planning Board due to lack of relevancy (e.g., topographic or soils data) The Board, however, reserves the right to require that all items be met if, in its judgment, the data are necessary to make an informed decision.

A copy of all plans and technical reports must be sent to the Town engineer. Proof of submittal must be provided to the Community Development Department at the time of application. If proof of transmittal is not provided, the application may be delayed until the following month's Planning Board meeting. Address is: **Dubois & King, 18 Constitution Dr., Bedford NH 03110, ATTN: Jeff Adler.**

| SUBN YES | NO | | | WAI | |
|-------------|----------|-----|--|-----|--|
| <u>/</u> | | 1. | Name of subdivision; name and address of subdivider. | | |
| <u>/</u> | | 2. | Name, license number and seal of surveyor or other persons north arrow, scale and date of plan. | _ | |
| <u>/</u> | _ | 3. | Names and addresses of all abutters and all holders of conservation preservation or agricultural preservation easements (on the plat or on separate sheet.) | | |
| <u>/</u> | | 4. | Locus plan, showing zoning designations | | |
| <u>/</u> | | 5. | Signature block for Planning Board endorsement. | _ | |
| <u>/</u> | | 6. | Names of abutting subdivisions, streets, driveways, easements, building lines, parks/public spaces, notation of use of abutting land, and similar facts regarding abutting properties. | | |
| <u>/</u> | | 7. | Boundary survey and location of permanent markers. | | |
| <u>✓</u> | - | 8. | Location of property lines, lot areas in square feet and acres; lots numbered According to Town tax map system. | | |
| \int | _ | 9. | Location and amount of frontage on public right-of-way | | |
| <u>/</u> | _ | 10. | Location of building setback lines. | _ | |
| | <u>/</u> | 11. | Existing and/or proposed buildings, other structures. | | |
| | _ | 12. | Location of any existing or proposed easements, land to be dedicated to public use. | | |
| <u>i</u> / | | 13. | Existing and proposed water mains, culverts, drains, sewers; proposed connections or alternative means of providing water supply and sewage disposal. | | |

Raymond Planning Department Subdivision Checklist (updated 2017) Form Date: 07/26/2017 Updated 2017



Subdivision Checklist

TOWN OF RAYMOND, NH

| SUBM YES_ | ITTED NO | | | WAIVE YES | D NO |
|--------------|-------------|--------|--|--------------|---------|
| | | 14. | Existing and proposed streets, with names, classification, width of travel surface and rights-of-way. | | |
| | <u>/</u> | 15. | Final road profiles, centerline stationing, cross sections. | _ | |
| <u>/</u> | | 16. | Location and width of existing and proposed driveways. | _ | |
| <u>_</u> . | | 17. | Location of all surface water, wetlands, rock ledges, stone walls, open space to be preserved, and any other man-made or natural features. | _ | _ |
| <u>/</u> . | | 18. | Existing and proposed topographic contours. | | _ |
| | | 19. | Soil and wetland delineation. (see: requirements for soils and wetlands data). | | _ |
| | | 20. | Location of perc tests, test results, outline of 4,000 area, applicable septic square-foot septic setback lines. | | |
| <u></u> | | 21. | Location of existing and proposed wells, with required radius on property. | | |
| | | 22. | Base flood elevations. None. | | _ |
| OTHER | R: | 23. | Plans for stormwater management and erosion control. | | |
| | | 24. | Copy of state subdivision approval for septic system. | | |
| | <u>/</u> | 25. | Alteration of Terrain Permit. | - | _ |
| | | 26. | Town or DOT Driveway Permit | _ | _ |
| | V | 27. | Copies of any proposed or existing easements, deed restrictions, covenants, and street deeds. | _ | ***** |
| | | 28. | Such additional studies as may be required. | | _ |
| | | 29. | Six (6) full-size copies of all plans and ten (10) copies of all plans in 11 X 17 format, and digital copy of plans. * | _ | |
| _ | _ | 30. | Three (3) copies of all studies* | _ | _ |
| FEE | S | 1 An | nlication Food | | |
| | _ | | plication Fees | | |
| <u>·/</u> | | 2. Ab | utters Notice Fees (to include three (3) labels per abutter) | | |
| | | 3. Eng | gineering and Legal Review Escrow TBD | | |

Raymond Planning Department Subdivision Checklist (updated 2017)

Form Date: 07/26/2017

Updated 2017

ABUTTERS LIST

FOR

NH-1491 - Harbor Street Limited Partnership - Raymond **Tax Map # 41 Lot 47**

08/14/23

| SUBJECT PARCEL | _ |
|-----------------------|---|
| TAX MADE OF | |

OWNER OF RECORD TAX MAP/LOT

FRANCES S. SCANLON TAX MAP 41 LOT 47

RAYMOND SCANLON

11 JOHN MCQUINN CIRCLE FRAMINGHAM, MA 01701-3677

ABUTTERS

TAX MAP/LOT OWNER OF RECORD

041-000-042 **BARRY & PAMELA BRADBURY**

> 39 MOUNTAIN RD RAYMOND, NH 03077

041-000-041 DANIEL J. ST' ONGE

33 BEACH HEAD RD

NOTTINGHAM, NH 03290

041-000-043 PLANTE FAMILY TRUST

TRACY & GEORGE PLANTE TRSTEES

37 MOUNTAIN RD RAYMOND, NH 03077

FREDERICK & SHIRLEY PLANTE

041-000-046 PO BOX 737

RAYMOND, NH 03077

TUCKAWAY SHORE DEVELOPMENT, LLC.

041-000-048 8 TUCKAWAY SHORES RD

NOTTINGHAM, NH 03290

GLIDDEN FAMILY TRUST

041-000-067-001 FLORENCE H GLIDDEN TRSTEE

> 92 NOTTINGHAM RD RAYMOND, NH 03077

GLIDDEN FAMILY TRUST
041-000-067
DAVID GLIDDEN TRUSTEE

29 MOUNTAIN RD RAYMOND, NH 03077

SUMINSBY 2018 TRUST

J. DAVID SUMINSBY TRSTEE

047-000-003 67 ARBOR ST

WENHAM, MA 01984

UITTLEFIELD REVOCABLE TRUST JOHN F OR SYLVIA A TRSTEES

PO BOX 1

RAYMOND, NH 03077

DANIEL & SUSAN SHIELDS 046-000-023 71 MOUNTAIN RD

71 MOUNTAIN RD RAYMOND, NH 03077

DESIGN PROFESSIONALS

ENGINEERING FIRM BEALS ASSOCIATES, PLLC

CHRISTIAN O. SMITH, PE

70 PORTSMOUTH AVENUE 3RD FLOOR

STRATHAM, NH 03885

APPLICANT OFFICE ACCOUNT, LLC

7B EMERY LANE

STRATHAM, NH 03885

WETLAND SCIENTIST GOVE ENVIRONMENTAL

8 CONTINENTAL DR. UNIT H

EXETER, NH 03833

SURVEYOR DOUCET SURVEY

102 KENT PLACE

NEWMARKET, NH 03857

Town of Nottingham Policy on Declaration of Class VI Highways and Private Ways as Emergency Lanes Under RSA 231:59-a

INTRODUCTION

Individual Class VI highways and private ways may be declared as emergency lanes to allow the town to expend public funds on repair and maintenance of these ways under RSA 231:59-a.

Recently the Board of Selectmen discovered that certain ways being designated as emergency lanes may not have been properly declared as required under RSA 231:59-a. This policy has been developed to aid the Board as it considers these ways and other ways that may be declared in the future.

To facilitate the emergency lane declaration process, the following criteria must be met and the following procedures must be employed for a way to be so declared.

PROCEDURES FOR DECLARING AN EMERGENCY LANE (EL)

Step 1: Preliminary Review

Upon written request from a party or parties with a legal interest in the stated way, the Board of Selectmen, at a future regularly scheduled Selectmen's meeting, will conduct a preliminary review for acceptance based on the following information:

- A materials presented by the party or parties initiating the request
- ▲ a discussion with the party or parties initiating the request
- recommendations of the Road Agent, Town Administrator, Fire Chief, and Police Chief
- A an evaluation of the merits using the criteria below

Step 2: Public Hearing

At the same meeting or a later Board of Selectmen's meeting, the Selectmen will vote on whether to hold a public hearing. If the vote is affirmative, the Selectmen will indicate in the hearing notice the name of the way or ways that shall be considered for EL declaration. In addition, all persons known to have a legal interest in the way or ways shall be notified of the hearing by mail in the time frame allotted by law. At the hearing, the Selectmen will collect input from the public for the purpose of preparing written findings.

Step 3: Final Determination

After the written findings have been completed, the Selectmen will deliberate at a regularly scheduled Board of Selectmen's meeting and vote on declaring the way or ways listed in the hearing notice (or a portion thereof) as an emergency lane.

CRITERIA FOR INITIAL DECLARATION

For a way to be declared as an emergency lane, it must meet the following criteria.

General Requirements

- 1. The way must meet one or more of the public welfare or safety interest outlined below which "surpasses or differs from any private benefits to landowners abutting such lane", and
- 2. The way must meet the road condition requirements outlined below, and
- 3. A private way must have two or more owners, abutters, or residences under separate ownership.

Public Welfare or Safety Requirements

The way in question must benefit the "public need for keeping such lanes passable" by meeting one or more "public welfare or safety interests", such as, but not limited to:

- 1. Providing safe access for emergency personnel to public waters for water rescues
- 2. Providing access to possible forest fire areas as determined by the Chief of the Nottingham Fire Department
- 3. Providing access for emergency teams ambulance, fire/rescue and police
- 4. Providing access to significant public infrastructure

Road Condition Requirements

- 1. Minimum widths of 16 feet should exist.
- 2. Must have signage installed that is approved by the town and provided by owners/abutters indicating name of way and status as "private way"
- 3. Must have sufficient unobstructed areas to turn around. Unacceptable obstructions include the following:
 - a. Vehicles in the way or turn around areas.
 - b. Boundary markers such as rocks or posts inhibiting equipment operation.
 - c. Branches or trees obstructing views or operations of equipment.
- 4. Must not require initial upgrades or changes to allow for safe operation of road or emergency equipment. e.g.: added road base, new culverts/drainage, grading, etc.
- 5. Must not have excessive grades/slopes creating dangerous travel for equipment.

RESCINDING OF EMERGENCY LANE DECLARATION

The Board of Selectmen has the authority to rescind an EL declaration at any time. However, this will generally result either from the abutters' failure to maintain the condition of the road according to the criteria enumerated in road conditions 2 and 3 above, or when the Selectmen determine that the public benefit considerations no longer apply.

Failure to Maintain Road Conditions

If the Road Agent determines that the road conditions of an EL have not been maintained by the abutters as required, he will provide a written notice to the Selectmen. At that point:

- A Town maintenance of the EL will cease immediately if there is a safety risk to town personnel or a risk of damage to town equipment.
- A Notice will be provided to party or parties with a legal interest in the EL of the specific nature of the deficiencies in the EL, the corrective action needed, and the time period allowed to correct the deficiencies.
- A If the deficiencies are not corrected by the end of the notice period, the Board shall rescind the declaration of the way as an EL and the town will cease to maintain it.

Public Benefits No Longer Apply

If the Selectmen determine that the public welfare or safety benefit(s) of an emergency lane no longer apply, all persons known to have a legal interest in the way will be given a six-month notice that town maintenance of the way will end.

See RSA 231:59-a

Adopted August 1, 2011 by a majority vote of the Nottingham Board of Selectmen,

Gary A. Anderson, Chairman

Mary L. Bonser, Selectman

Hal W. Rafter, Selectman

Date: 8 1 11



Town of Nottingham, NH 139 Stage Road PO Box 114 Nottingham, NH 03290 603.679.5022

Road Maintenance Policy

Pursuant to NH RSA 231-232 and other statutes, the Select Board hereby establishes the following policy for road maintenance.

Part A. Policy Objective

The purpose of this policy is to set priorities and goals for road maintenance. In the absence of specific decisions by the Select Board or Town Meeting, the Public Works Director shall use this policy to make day-to-day and long-term planning decisions. It is to be used in conjunction with the Board's Winter and Inclement Weather Road Maintenance P

Part B. Classification of Local Roads

Generally, Class V roads that carry the greatest traffic and that provide access to lesser roads will be maintained more frequently, in better condition, and for higher speeds than lesser-travelled roads.

For the purposes of this Policy, Class V roads will be classified as follows:

A: Primary Local roads that carry traffic to/from Rte. 4 and Rte 125, or into the Town Center zoning district. These are the busiest town roads and they provide direct access to many properties and to lesser (B+C) local roads.

B: Secondary local roads that carry traffic to/from State Highways or Primary Local roads directly to residences or to lesser (C) roads.

C: Local Access-only streets, including loops, cul-de-sacs, and dead-ends, which provide access only to abutting properties and not to other roads.

| | Asphalt been fevery to notice | bere is no industry served for quantitative ever |
|---|---|--|
| A | McCrillis, Mill Pond, Smoke, Deerfield, Freeman Hall, Church, Flutter, Hall, Cooper Hill, Kelsey? | |
| | Ledge Farm both A | Asphalt & Gravel |
| В | Francesca, Garland, Gebig, Lucas Pond, Merry Hill, Mountain | Berry, Poor Farm |
| | Case, Gile, Kennard, Steve Both Asphalt | |
| C | Anna Lisa, Autumn, Camelot, Canton, Devonshire, Dwight, Fox Run, Friar Tuck, Gerrior, Lavoie, Lincoln, Little River, Michela, Minuteman, Nicolas, Oak Ridge, Obrien, Patriots, Revolutionary, Rocky Hill, Shadow, Shannon, Sofia, Strawberry, Sutton, Tayla, Tremblay, Washington, Fort Hill, Lake View, Nottingham, Robin Hood, Swan. East, Gerrish, Stepping Stones, West | Barderry, Beach Head, Brustle, Cahill, Cove, Dolloff Dam, Haines, Highland, Indian Run, Jampsa, Lamprey, Lookout Point, Meindl, Meindl East, Neilsen, North River Lake, Round Pond, Sachs, Seamans Point, Shore, South, Tuckaway Shores, Whites Grove |

[Type here]

| C | Extend asphalt life as long as possible, but do not allow conditions to deteriorate to the point of asphalt replacement. PCI Minimum: 45 | Maintain safe passage at low speeds (<25mph). Change existing drainage patterns only when absolutely necessary, or in conjunction with development. Repair major washouts and remove downed trees, but very slow driving conditions are acceptable for extended periods. Typically graded 2x/yr. |
|---|---|---|
|---|---|---|

| | Asphalt | Gravel |
|----------|---------|--|
| EL | n/a | Road owners responsible for overall maintenance, drainage, |
| | | and travel conditions. Town will maintain safe access for |
| | | emergency vehicles. Remove downed trees, fill major |
| 100 | | washouts if necessary. Typically graded 2x/yr. Travel speed is |
| 1381,384 | | not a concern. |

| | Asphalt | Gravel |
|-------|---------|---|
| Other | n/a | Maintain in a manner similar to Emergency Lanes |

Adopted OCT 18, 2021

Benjamin Bartlett, Chair

nthony pumas

Tiler Faton

Donna Danis

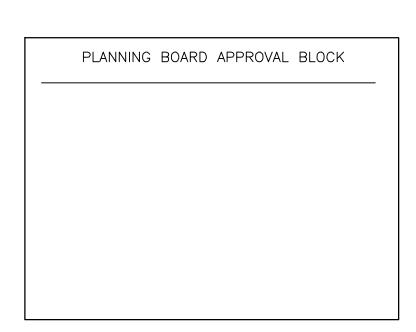
3-LOT SUBDIVISION TAX MAP 41 LOT 47 MEINDL ROAD

RECORD OWNERS:

FRANCES & RAYMOND SCANLON 11 JOHN MCQUINN CIRCLE FRAMINGHAM, MA 01701

APPLICANT:

JOSEPH FALZONE 7B EMERY LANE STRATHAM, N.H. 03885



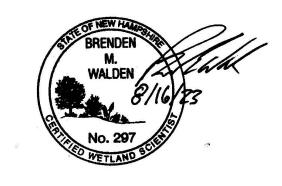
LOCATION MAP

1"=1500'

INDEX
TITLE SHEET
SUBDIVISION PLAN
EXISTING CONDITIONS PLAN
SUBDIVISION SITE PLAN
3

WETLAND/SOIL CONSULTANT:

GOVE ENVIRONMENTAL SERVICES INC. 8 CONTINENTAL DRIVE, BLDG 2 UNIT H EXETER, NH 03833 1-603-778-0644



CIVIL ENGINEERS:



LAND SURVEYORS:



REQUIRED PERMITS

NHDES SUBDIVISION APPROVAL NUMBER: SA 2023.....

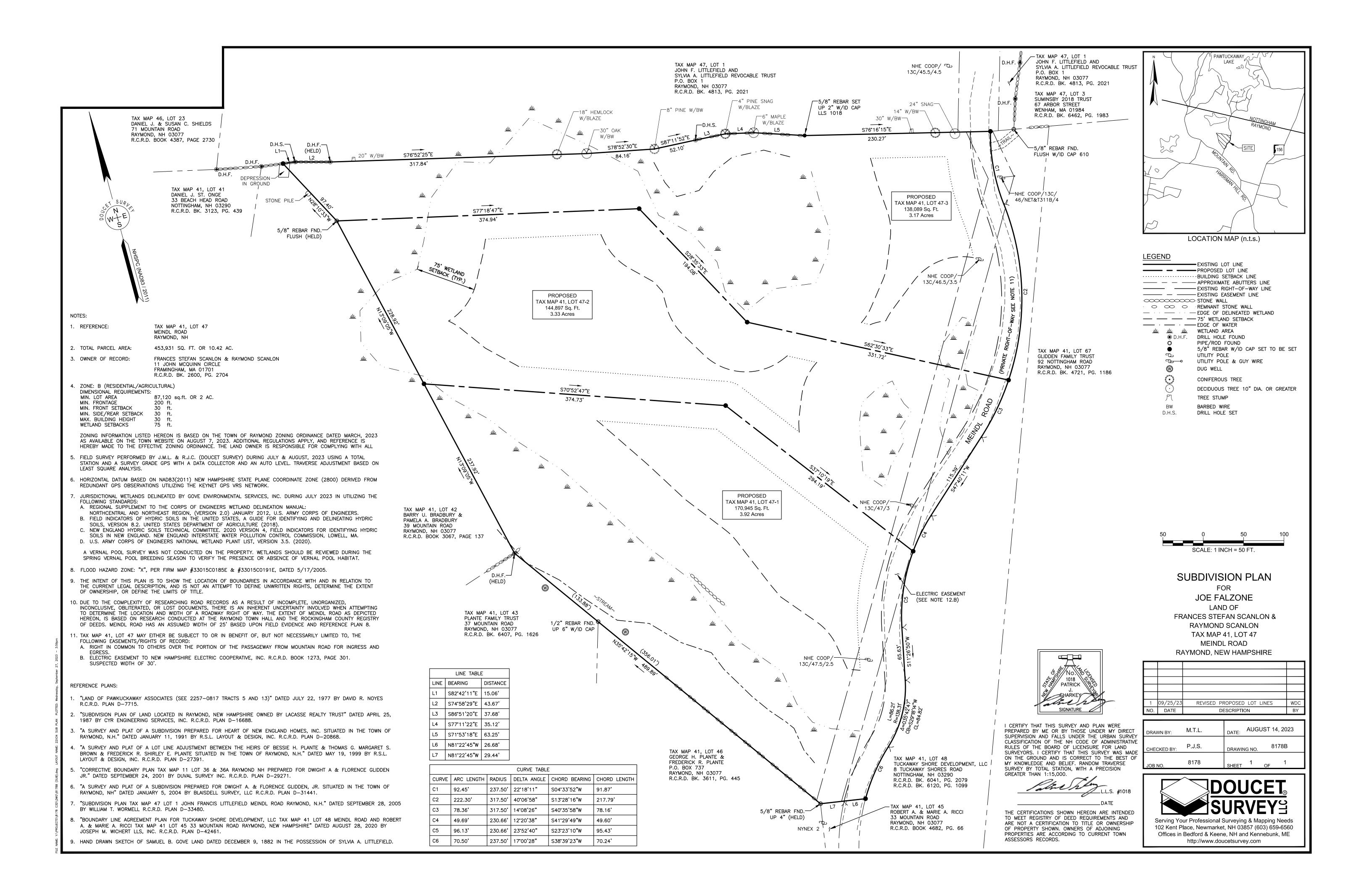
| REVISED PER REVIEW | 10-18-23 |
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| REVISIONS: | DATE: |

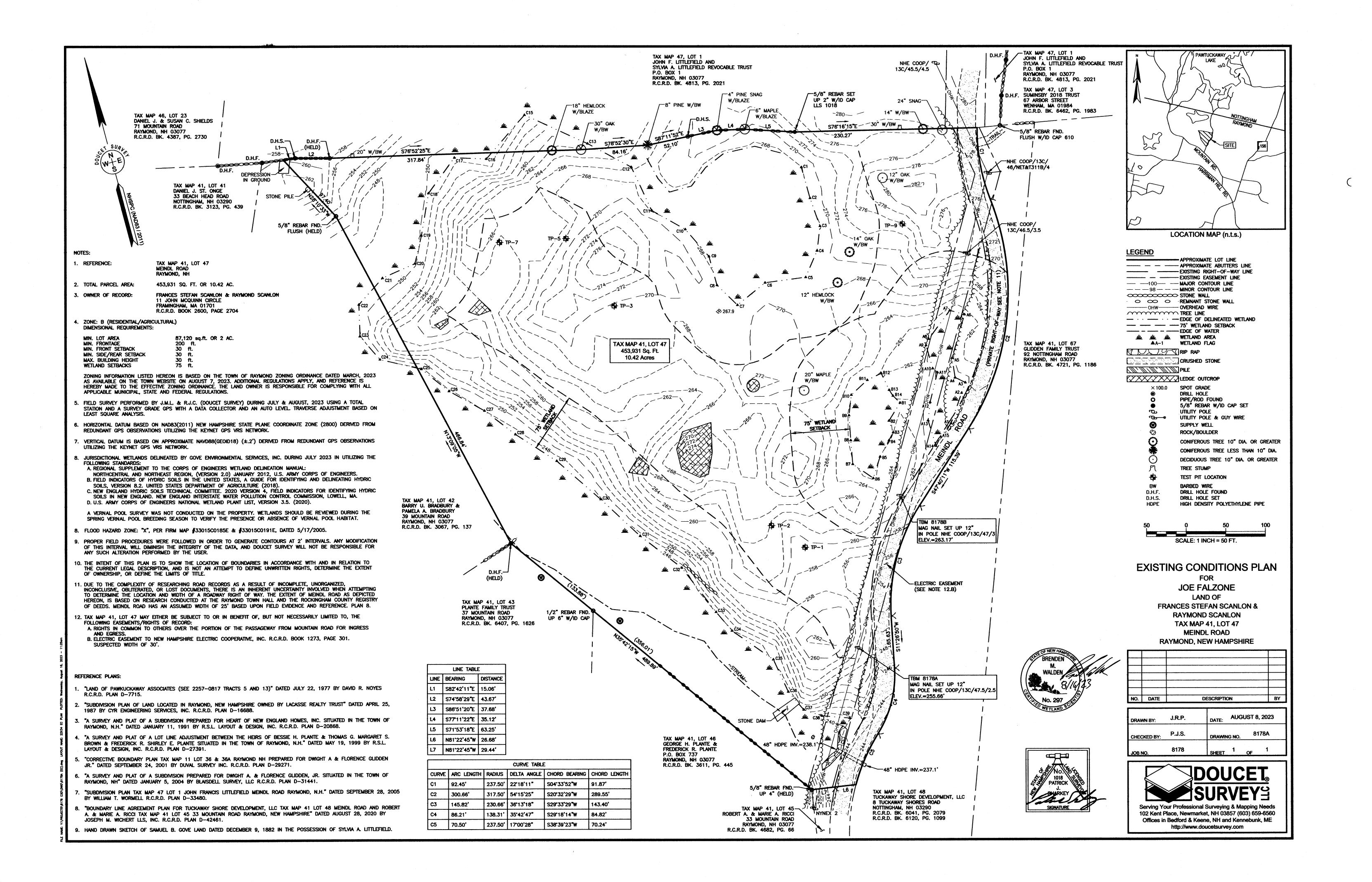
COVER SHEET

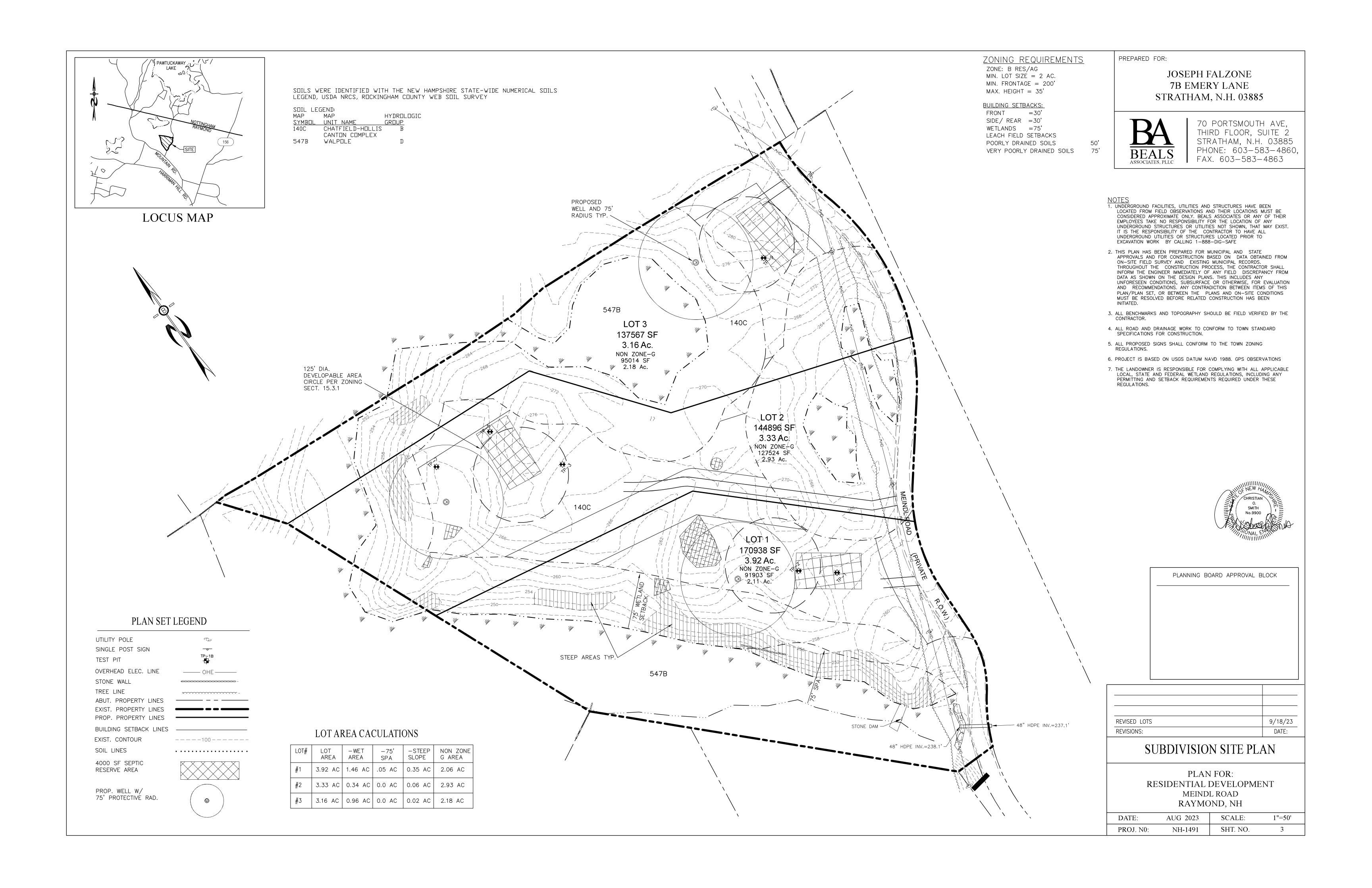
PLAN FOR:
RESIDENTIAL DEVELOPMENT
MEINDL ROAD
RAYMOND, NH

PROJ. N0: NH-1491 DATE: AUG 2023

NH-1491 MEINDL ROAD, RAYM









Zoning Board Approved Minutes November 15, 6:30 PM Room 109 Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

- 1 Zoning Board Members Present:
- 2 Keith Smith Chairman
- 3 Tom Luszcz Member
- 4 David Hall Vice Chair
- 5 Paul McCoy Member
- 6 Joyce Wood- Alternate (Seated)

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- 8 Member Absent:
- 9 None

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- 11 Staff Present:
- 12 Jason Cleghorn Community Development Director

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<u>Pledge of Allegiance</u>: recited by all in attendance.

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- Roll Call: David Hall, Vice Chair, Paul McCoy, Member, Keith Smith, Chair, Joyce Wood, Alternate, Tom Luszcz, Member, Jason Cleghorn, Planning and Community Development
- 18 Director

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Public Hearing:

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Mr. Smith noted that they would be doing the hearing under RSA 673:15 asking to confirm that they will tell the truth, the whole truth and nothing but the truth.

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Application 2023-006 Raymond and Francis Scanlon/Falzone/Hoefle, Phoenix, Gormley and Roberts, PLLC

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- This application was continued from October 25, 2023.
- An application for Administrative Appeal has been submitted by Tim Phoenix and Joseph Falzone, representing property owners Raymond and Frances Scanlon, owners of Tax Map 41 Lot 47 on Meindl Road. The Town of Raymond Zoning Ordinance Section 9.1.1 provides for an applicant's review and decision on an alleged error in administrative finding or decision.
- The applicant is appealing the decision of the Community Development Director's decision related to Article 15, Section 15.1 Dimensions, Frontage and Article 13, Definition 13.1.31 of
- frontage. The property is located within the Residential B Zoning District with associated Zone G lands.

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- Joseph Falzone, the applicant, and Tim Phoenix of Hoefle, Phoenix, Gormley and Roberts introduced themselves and swore to tell the truth. Mr. Phoenix explained that Mr. Falzone has contracted to purchase a little over 10 acres and wants to turn it into 3 compliant lots. Meindl Road was considered by the Community Development Director to be a private road and he has interpreted the ordinance to be saying that it needs to be on a Town approved road. The
- applicant does not agree with that interpretation however they suggested that the Board
- consider the variance application first before discussion the administrative appeal, and if the



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variance is granted, they would continue the administrative appeal for 30 days and if no one appeals the variance, he would withdraw the administrative appeal.

Mr. McCoy had concerns that this should be before the Board of Selectmen to grant one lot, so the town is no involved in any maintenance. This road is definitely a private road and in Nottingham. It is considered an emergency lane and Nottingham is responsible for flow plowing and general maintenance. The residents are responsible for the maintenance of the road. Mr. McCoy feels that this should be referred back to the Selectmen and if they want to put a 3-lot subdivision in they are going to have to petition the Selectmen.

Mr. Cleghorn explained at the time this application came in there was no building inspector and no counsel available to staff. Mr. Cleghorn had reached out to New Hampshire Municipal to weigh in but that was not to be considered legal advice. The application was originally submitted to the Planning Board for the 3-lot subdivision. Tonight's decision does not have anything to do with a release of liability. That will be covered in a note, the discussion of liability will be discussed during the conditions of approval if this were approved by the Planning Board. Tonight's decision will be either an appeal of his decision for frontage on a public way or to hear their variance request. If we think it is a private way but they want relief from that provision.

The Board agreed that they would consider the variance first.

<u>Application 2023-007 Raymond and Francis Scanlon/Falzone/Hoefle, Phoenix, Gormley and Roberts, PLLC</u>

Also continued from October 25, 2023.

An application for Variance for property owned by Raymond and Francis Scanlon, represented by Joseph Falzone and Tim Phoenix, described as Tax Map 41, Lot 47 on Meindl Road. The two requested variances are related to the Town of Raymond Zoning Ordinance Article 15, Section 15.1 specifying that two hundred (200) feet of frontage is required and Article 13, Section 13.1.31 permits three (3) lots on a private road. The property is located within the Residential B Zoning District with associated Zone G lands.

Tim Phoenix from Hoefle, Phoenix, Gormley and Roberts in Portsmouth, reintroduced himself, Joseph Falzone, the applicant, and Alex Monastiero from the development team. Tim Phoenix said they believe that Meindl Road is a public road but for purposes of the variance they are going to assume that it is a private road. There are some documents that say it is public access and others that say it is not. It is important to note that there are a number of homes that are on the road and there are roughly 4 dozen lots in Nottingham that you can't get to without going over Meindl Road. Mr. Phoenix's submission 11 is the Town of Nottingham's Road Listing which lists Meindl Road as a Class 5 road. Mr. Phoenix said you could not put any houses on any of these lots without a variance. They believe it is safe because Nottingham residents are accessing it. Police and Fire have access to the road, and it is maintained by the Town of Nottingham.

The Variance Requests:



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Criteria responses for variances:

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There are two variances that are being requested for the purposes of this consideration. They have 200 feet of frontage but for this argument the frontage is not on a public approved street. Mr. Phoenix said the variances are not contrary to the public interest and the spirit of the ordinance is observed. Mr. Phoenix cited Malachy Glen Associates, Inc. v. Town of Chichester, 155 N.H. 102 (2007) that decided that those are related and are often considered together. "Mere conflict with the zoning ordinance is not enough". It's their position that allowing variances for three lots that meet all the dimensional requirements, and have frontage, but on a private road does not violate the essential character of the locality. It fits in with the character of the locality because there are already several lots on Meindl Road that exist even though the road is private. Similarly, the public health, safety, or welfare will not be harmed because it is maintained, and it is a Class 5 road maintained by Nottingham including the culvert. The fact that it is private is not going to threaten the public health, safety, or welfare. The third requirement for variances is that granting the variance will not diminish surrounding property values. The Town of Raymond has established the uses permissible on Meindl Road, by the existence of homes with frontage only on Meindl by giving a variance back in 2006. The question is whether the fact that the that the road is a private road is going to diminish property values, and everyone on Meindl Road is on a private road. This is a classic hardship/special condition situation. They cannot build or develop on this lot if they cannot access it. There are houses on this road, which leads to dozens of house slots in Nottingham. There's two-way traffic on it. Nottingham is maintaining it. It is quiet and is built to proper standards. Nottingham considers it as exhibit 11 shows, as a Class 5 road. Emergency services can get to it if necessary. It will all be vetted by the planning board. So, there's no reason to disallow this subdivision and development on a private road simply because it's private under these circumstances. These are all going to be residential lots, so they are all going to be reasonable. Their position is even if it's technically private, it's been used by the public, including people in Nottingham, for decades. A denial would result in harm to the existing owners of the sale of the property to Mr. Falzone. It could also potentially cause harm to families that might want to buy one of these lots because they would be unable to do it under circumstances where it would make the land nearly valueless other than for recreation or hunting or whatever.

Mr. McCoy said that Meindl Road was considered an emergency land and never viewed by 122 123 the Town of Raymond as anything. However, they do not have a hardship because the Selectmen has a rule to allow one house on a Class 6 or a private road after signing a waiver 124 of liability for that lot. In Mr. McCoy's opinion, they do not have a hardship because they can 125 126

go in and get a permit for one building on that lot.



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- 127 Tim Phoenix explained that he has worked with the Selectmen on numerous occasions and
- that it's usually through the Planning Board process that the waiver of liability comes up.
- Mr. Falzone said the fire department has been up there and there is no issue servicing the lots.
- 130 Mr. Smith read a letter from Nottingham about the status of the Road. (See attached).
- Nottingham's letter said that there is no formal agreement between the towns.
- 132 Mr. Cleghorn said that he has reached out to the Town Administrator of Nottingham and
- requested to make this a more formal agreement but for the time being it is what it is.

Public Comment:

- 135 Chris Evans said he owns a property on Meindl Road in Raymond, Lot 48, and has an interest
- as an abutter. Mr. Evans said he has a great deal of history about Meindl Road, and he does
- live in Nottingham at the end of the road. Mr. Evans said that there are a variety of vehicles
- going up and down that road every day and would like to know if it is not public then who is not
- included to be able to drive down this road. So, the question about public is publicly owned,
- publicly used, publicly maintained. There's a lot of different questions that might be there. It is
- really a public used road. There is no one that is restricted from going down the road. Mr.
- Evans said he would love the road to be paved but his neighbors disagree. Mr. Evans gave a
- 143 history of the emergency lane situation and said that he got a variance from the Town of
- Raymond in 2020. Mr. Evans said that he is for the application, and this is a public road. Mr.
- Evans does agree there is a hardship and a benefit to the public.
- Mr. Cleghorn said that they need to limit the testimony to what is germane to this application.
- 147 It needs to be tailored toward specific characteristics or expectations of how this variance
- affects his property as an abutter.

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Deliberative:

- 152 **Motion:**
- Ms. Wood made a motion to close the public and enter deliberative; Mr. Hall
- seconded the motion.

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A vote was taken by show of hands and the motion passed unanimously.

- Mr. Hall said that they have heard testimony that the applicant is saying that it is a private road.
- 159 They have certainly heard testimony that is a private road and that is privately owned by each



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- lot that's on there. The ordinance requires them to come to the Board for a three-lot subdivision
- or to create additional lots on a private road. They presented their argument well for the criteria.
- Mr. Hall said he would be inclined to approve it.
- Mr. McCoy said that he has no issue as far as the lots go but has concern for the Town as far
- as the road is concerned. The road is an emergency lane not a town road. They can pull that
- emergency lane at any time. They can stop plowing that road if the people don't maintain it. As
- far as the Town of Raymond goes, it is the Selectmen's job as far as private and Class 6 roads
- 167 are concerned.
- 168 Mr. Luszcz commented that the variance is granted based on their presentation that it is a
- 169 private road.
- 170 Mr. Hall said that they were asked to make a decision about allowing (3) lots on Meindl Road.
- 171 **Motion**:

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- Ms. Wood made a motion to grant relief from the ordinance requirement that lots
- have frontage on a public road.
- No second was made, and the motion did not go forward.

Findings of Fact:

Did the applicant provide proof that granting a variance would not be contrary to the public interest because:

- Mr. Hall said the applicant gave them a detailed summary in their presentation that there
 are already lots of houses on that road in the town agreeing to continue that is not
 detrimental.
- Mr. McCoy said he agreed with that.
- Mr. Smith said that yes that he agrees and for the same reason it is not contrary to public interest because there are houses up and down that road.
- Ms. Wood said, "Since I live on a private road, in order to get a mortgage, the homeowner has to show that there's adequate maintenance of the road". Ms. Wood indicated that yes it would not be contrary to the public interest.
- Mr. Luszcz said, "Yes."



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Did the applicant provide proof that granting a variance would be consistent with the spirit of the ordinance because:

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 Mr. Hall commented that the spirit of the ordinances is in fact supported in that we are authorized to grant the variance for a lot on a private road. I agree.

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• Mr. McCoy said he agreed.

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• Mr. Smith said he agreed.

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• Ms. Wood said "I don't see anything here that is contrary to the spirit of the ordinance. The ordinance purpose of the ordinance is to prevent overcrowding and to provide adequate light fare in space. Yes, so there's nothing in this question variance that is contrary to the spirit of the ordinance."

210211

Mr. Luszcz said "Yes"

212213

214 Did the applicant provide proof that granting a variance would do substantial justice because:

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Mr. Luszcz said "Yes"

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Ms. Wood said "Yes"

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Mr. Hall said that substantial justice has provided the fact again, that there are already
houses on the road. We've already established that the road is maintained to some
level. Substantial justice is granted based on that reason.

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Mr. McCoy said he would have to say no the hardship is not proven because they can
get one house without any of this one house on a private road without any issue.

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Mr. Smith said he was going to agree with David.

228229

Did the applicant provide proof that demonstrated that granting a variance would not diminish the values of surrounding properties because

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Mr. Hall said, "We heard from an abutter who is a real estate broker who stated that he
felt that this would help the area and will not diminish the value of the houses around
their site".

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• Mr. McCoy said he agreed.

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• Mr. Smith said that he agrees, and it will not diminish the value of the properties.



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• Ms. Wood said she agrees that there's no diminution of surrounding property values.

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Mr. Luszcz said "Yes."

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The applicant was to provide proof that literal enforcement of the provision of the ordinance would result in a non-necessary hardship. Did the applicant demonstrate that special conditions of the property exist that distinguish it from other properties in the area?

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• Mr. Hall said, "The applicant did discuss his hardship that if this variance was not granted, that would limit the use of his property. It could be seen as "taking" a cut. I am not sure that I agree with that, but I understand how you're phrasing it that way. So, I think the hardship is granted and the fact that he's looking for three lots that all meet our dimensional requirements".

252253254

• Mr. McCoy said again, "I disagree. Same reason before that they can build one house without subdivision."

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• Mr. Smith said, "I'm gonna agree that they did prove that it would be a hardship if it wasn't granted. So, I'm gonna say yes."

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Ms. Wood said yes because this is the only existing access to that land.

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Mr. Luszcz said as David has stated.

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B. Did the applicant demonstrate that no fair and substantial relationship exists between the general-purpose public purpose of the ordinance provision and the special application of that provision to the property yes and no.

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 Ms. Wood said, "Yes because I don't see how a requirement that a lot have frontage on a public road serves the purpose of the ordinance."

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• Mr. Smith said, "Yes because there have been existing homes down there."

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Mr. Luszcz said "Yes"

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• Mr. McCoy said he already did that.



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• Mr. Hall said, "I agree. But I'm going to lift their testimony here that the minimum requirements for the lots on public roads are still being met. They have adequate provisions and municipal services to get to those houses, or to those lots."

C. Did the applicant demonstrate the proposed use and is a reasonable one?

Mr. Smith said, "I'll say yes. Because the frontage of the lots is allowed, and they are all
over 200 feet."

• Mr. Hall said that single family homes are allowed in that zoning district. Then again these are for the lots only.

Mr. McCoy said he would agree.

• Ms. Wood said she would agree. It's an area that is zoned for residential. And they're going to meet all the other dimensional requirements.

• Mr. Luszcz said "Yes."

In discussing the motion Mr. McCoy said he wanted as a condition that all lots must be signed by the Selectmen for non-liability. Mr. Cleghorn advised that should be part of the subdivision review by the Planning Board and this Board could recommend that it be considered by the Planning Board. Mr. McCoy wanted to make it a condition that they sign a Waiver of Liability.

Motion:

Mr. McCoy made a motion that when they grant the variance that one condition be that they sign a Waiver of Liability with the Selectmen form liability form emergency vehicles or any town facility that can't get to the home if there is some issue; Mr. Luszcz seconded for discussion.

- Discussion:
- Mr. Smith suggested amending the motion so that it would just be a recommendation to the planning board as a recommendation.
- Mr. McCoy said, "We've always put a condition, if we did a Class 6 road or private road, we always put a condition that they put it, that they sign the waiver of liability, like the one they were talking about his waiver liabilities in his deed. And he also, in that particular one where they own, we made we put the condition in that they had to give him 50 foot right away. So, if that road ever got built, for some reason that they would have to, they would have the 50 feet."



| | 45 Harriman Hill Road, Raymond, NH 03077 |
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| 315 316 | Mr. Luszcz said that he is just not comfortable with something like that it is out of their jurisdiction. |
| 317 318 | Ms. Wood suggested that they make it as a recommendation to the Planning Board. |
| 319 320 | Mr. Smith asked Mr. McCoy if he wanted to change the motion to say recommend rather than make it a condition. Mr. McCoy did not want to change the motion. |
| 321 | Mr. McCoy repeated his motion. |
| 322 323 | A vote was taken by indicating "aye" if in favor or opposed. The motion failed with 2 votes in favor and 3 votes against. |
| 324 | Motion: |
| 325 | Mr. McCoy made a motion to recommend to the Planning Board that a Waiver |
| 326 | Liability be signed with the Board of Selectmen as a Condition of Approval. |
| 327 | Mr. Smith seconded the motion for discussion. |
| 328 | |
| 329 | A unanimous vote was taken by a show of hands. Motion passed. |
| 330 | |
| 331 | Motion: |
| 332 | Mr. Hall made a motion for a three-lot subdivision on Meindl Road, a private road |
| 333 | that already has safety and Fire, PD access, though there is no formal |
| 334 | documentation with the town of Nottingham. Each lot will provide 200 feet of |
| 335 | frontage along with proper dimensional requirements. "I vote to make a |
| 336 | recommendation that we heard testimony also that they meet the criteria that |
| 337 | supports the issuance of a variance and move to approve." Mr. Smith |
| 338 | seconded the motion for discussion. |
| 339 | |
| 340 | Discussion: |
| 341 | Mr. Hall corrected his motion to say they are approving 3 lots on a private road. |
| 342 | |
| 343 | Mr. Smith said that because specified by 200 feet is frontage. It satisfies the 15.1. |
| 344 | And we're granting the variance for 13.1.31. |
| 345 | |
| 346 | A unanimous vote was taken by a show of hands. Motion passed. |
| 347 | |
| 348 349 | Tim Phoenix said, "I would like to make a formal request to postpone their application regarding the administrative appeal. If the variances are not appealed, but with a request for rehearing |
| 350 | by someone else in the next 30 days. On day 31, I will withdraw the administrative appeal." |

Public Hearing:



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<u>Application 2023-008 Dugan – 37 Governors Drive</u>

Application for variance has been submitted by Promised Land Survey, LLC on behalf of Casey A. Dugan, owner of 37 Governors Drive at Map 34, Lot 37. The request is for relief from Article 15, Section 1 of the Town of Raymond Zoning Ordinance which requires setbacks of 30 feet on the side, rear and front and 75 feet (rear); where 5.0 feet (southern side), 26.3 feet (northern side), 19.4 (front) and 50.4 feet (rear) are proposed by the applicant. The property is located within Residential B Zoning District.

- Mr. Cleghorn confirmed that the abutters had been notified.
- Tim Peloquin of Promised Land Survey, LLC along with Casey Dugan and her mother Doreen Dugan, introduced himself. Mr. Peloquin said that he would like to read the points into the record and then have Ms. Dugan speak. Mr. Peloquin said that they are asking for a variance from Article 15, Section 1 in order to raise the existing dwelling at the existing property and construct a new dwelling. The new dwelling is proposed at a distance of 5.0 feet from the Southern Lake property line 19.4. From the right of way of Governors Drive and 50.4 feet from the reference line of the Governor's Lake. It's small, and it's preexisting non-conforming.
 - * Granting the variance would not be contrary to the public interest because many of the existing dwellings within the immediate area have a similar distance of the right way and property lines. This proposed layout is consistent with the immediate area.
 - * Granting a variance would be consistent with the spirit of the ordinance because the proposed use aligns with the allowed use within the zone. And specifically, the layout of the proposed dwelling meets the NHDES Shore Land Protection Program, primary structure setback of 50 feet, providing even more of a buffer. When we're saying that providing more of a buffer than the existing dwelling, and the dwelling on the property for the protection of Governor's Lake.
 - * Granting a variance would do substantial justice because otherwise the size of the preexisting non-conforming lot of record is too small to construct a dwelling. Granting a variance for relief of the setbacks as requested allows for the dwelling to be constructed, whereas observing the dimensional requirements of Article 15 deprives the landowner from constructing a dwelling on the property
 - * And before granting a variance would not diminish the values of the surrounding properties because the land use would not change, and the structure will be newly constructed dwelling that conforms to the local building code. Removing the older



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structure, constructing a new one, along with the associated landscaping and other improvements, will add both aesthetic and economic value to the neighborhood.

- * Owing to the special conditions of the property that distinguish it from other properties in the area. Little enforcement of the provision of the ordinance would result in unnecessary hardship because the parcel is too small to fully observe the setback requirements for the zoning district. Observing the setback requirements provides an unusable building envelope that is approximately 10 feet by 17 feet. But whereas the modest dwelling that is proposed with this application is 22 feet by 36 feet.
 - * The proposed use is a reasonable one because the proposed project uses the lot in the normal and expected way that is consistent with both the allowed use prescribed in the zoning ordinance. And also, within the immediate area, a modest dwelling of similar size to other dwellings in the area, and a driveway.
- As part of their application, they have a signed permission to represent from Casey. That's not germane any longer. And then also provided you with a detailed plot plan, showing where the proposed building is the lot lines, various structures on the property and abutting structures. And that was based on the survey by Mr. Peloquin's firm.
- Casey Dugan introduced herself and her mother, Doreen, saying that her grandparents were Helen and Henry Romboli residents of New Hampshire even though she is a resident of Massachusetts. Ms. Dugan spent every summer in New Hampshire and wants to make sure that her kids can spend summers here too. They currently have a tiny footprint, 13 by 26 square footage, and it will be a full-time home. Currently, it is in much need of repair and is not currently occupied.
- Mr. Peloquin said there is a lot of history to the neighborhood and the 26 by 32 footprint is very reasonable. They know that they will have to meet all the criteria with DES in terms of landscaping and various things to protect the lake. They have confidence that they can make the septic work. They will have to have a drilled artesian well. This is an example of it being an improvement. This is a small, modest home. If they can't justify a well and septic on the lot, then it can't be constructed.

Public Comment:

Eileen Fitzgerald of 16 Governor's Drive about 4 doors up from Casey's lot. She has been here since her grandparents built their cottage 65 years ago. Ms. Fitzgerald gave a history of the area. Ms. Fitzgerald explained that Doreen has health issues, and the purpose of this house is to provide a safe and independent home. The house will be an open concept on the first floor where she will have her bedroom, an ADA bathroom, and functional kitchen designed for



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- 419 a person with some disability. The house will be wheelchair and walker accessible. Ms.
- Fitzgerald wanted the Board to know there is a purpose to this house.
- Lynne Romboli, 35 Governor's Drive said she is in favor of all that her family is proposing to
- do. They know what the process is. And are very, very supportive of Casey through this whole
- 423 process.

424 **Deliberative:**

- 425 **Motion**:
- Mr. McCoy made a motion to go into deliberative; Mr. Luszcz seconded the
- 427 **motion**.
- A unanimous vote was taken by a show of hands. Motion passed.
- Ms. Wood said that Governors Lake is considered an impaired water body by the State of New
- 430 Hampshire because the phosphorus levels are high. Ms. Wood is pleased that they are
- increasing the setback from the lake.
- 432 Mr. Luszcz said it is more than just the water, it's about wildlife and everything like that
- 433 protecting it.

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Did the applicant provide proof that demonstrates the variance will be will not be contrary to the public interest? Yes. And no.

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Mr. Luszcz said he believes it will not. It is part of the existing neighborhood. It's
consistent with the houses in the neighborhood. It's actually improving the property with
the septic design. Yes.

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• Ms. Wood said yes because of the setback and to bring the septic up to current standards.

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Mr. Smith said yes because of the improvements that will be taking place.

445 446

Mr. McCoy agrees with Tom.

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 Mr. Hall said he agrees, and that the applicant filled out their application for a variance since they are just going to repeat what is on the worksheet the Board should accept this as their input.

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Motion:



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Mr. McCoy made a motion to accept the variance as requested with the conditions that they meet DES approvals and water protection for septic, well and shoreline protection.

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- Mr. Hall said the findings of fact, the variance is not contrary to public interest because of similar sizes to all the other houses in the neighborhood. The area was already properly zoned for residential use. And that's all they're asked to do within the confines of the setbacks and asking for in the it allows for them to have a new house for substantial justice.
- 463 Mr. Luszcz seconded the motion.
- A unanimous vote was taken by a show of hands. Motion passed.

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Approval of Minutes:

- 467 **8/23/23**
- 468 **Motion**:
- Ms. Wood made motion to approve the minutes from August 23, 2023, as written;
- 470 Mr. Hall seconded the motion.
- A unanimous vote was taken by a show of hands. Motion passed.
- 472 **10/25/23**
- 473 **Motion**:
- 474 Ms. Wood made motion to approve the minutes from October 25, 2023, as written;
- 475 Mr. Hall seconded the motion.
- 476 A unanimous vote was taken by a show of hands. Motion passed.

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Staff Update:

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- 480 Mr. Cleghorn said that as of last Monday we are considered fully staffed. The Planning 481 Technician just started her second week. Her name is Christine. Mr. Cleghorn said that his
- vision long term is that she will be supporting the Board. Additionally, Dana Dinsmore, the
- building inspector, is now working 4 days a week and is now in the office between Monday and
- 484 Thursday.

485

486 Mr. Smith asked when they would be doing the 2024 ZBA Calendar.

487

Mr. Cleghorn said he would take a stab at producing the calendar. The Board does not have any current applications right now.

490



Zoning Board Approved Minutes November 15, 6:30 PM Room 109 Raymond High School

45 Harriman Hill Road, Raymond, NH 03077

Ms. Wood asked if the Planning Board had any zoning ordinance changes in the pipeline. 491

492 493

Mr. Cleghorn said that they do and will be discussing those changes at the upcoming joint meeting between the Conservation Commission and Planning Board.

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Update on the Appointments:

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Mr. Smith said the Board got a notice that Joyce and Chris Long had received emails on 11/3 for a notice to appear before the Board of Selectmen for the appointments. Then, they received email about an hour later on 11/3, that the appointments for the ZBA will be removed from the agenda on the sixth and that they would be rescheduled. He has not heard anything back as of today.

502

Email Discussion:

Mr. Smith said he reached out to Steve Buckley because he wanted to know if they should put 504 it in the rules and procedures. (See attached). Steve Buckley said that someone could request 505 your emails relative to ZBA but cannot mandate it. He suggested they keep it out of the rules 506 of procedure and there are no RSA's speaking directly to it. There are only suggestions. It is 507 up to the individual, whatever you are comfortable with. 508

Adjournment:

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Motion:

Ms. Wood made motion to adjourn; Mr. Hall seconded the motion.

A unanimous vote was taken by a show of hands. Motion passed.

514 515

The meeting adjourned at approximately 9:14 pm.

516 517

Attachments:

518 519 520

Letter from the Town of Nottingham and email from Stephen C. Buckley

521 522

524

From: Ellen White <TA@notngham-nh.gov>

Sent: Thursday, June 29, 2023 4:11:11 PM 523

To: Christina McCarthy <cmccar Ty@raymondnh.gov> **Cc:** Plan. Zone <plan.zone@notngham-nh.gov>

Subject: RE: Miendl Road 525

526

Hi Christina,

527 528

156 Water Street | Exeter, NH 03833 603-778-0885 | www.therpc.org



Zoning Board Approved Minutes November 15, 6:30 PM Room 109 Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

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530 531 532

533 534 I searched our files, checked with our past Public Works Director, and found that there is no agreement in place for Miendl Road between the towns of Nottingham and Raymond. I probably a result of an old handshake agreement. Please let me know if you have any other questions.

535 536 537

Thank you,

538 539

Ellen White

Town Administrator 540

541 542

Town of Nottingham

P.O. Box 114 543

Nottingham, NH 03290 Phone (603) 679-5022

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From: Christina McCarthy <cmccarthy@raymondnh.gov>

Sent: Wednesday, June 28, 2023 10:40 AM

To: Public Works Director <smclean@nottingham-nh.gov>; Plan. Zone <plan.zone@nottingham-549

nh.gov>

Subject: Miendl Road 551

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553

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Hello,

I am the Planning/Zoning admin for the Town of Raymond, I was wondering 554 if there was a written agreement between the Town of Nottingham and the Town of Raymond for the maintenance of Miendl Road. If so, could I get a 556 copy please?

557 558 559

560

561

Christina McCarthy Tax Collector Town of Raymond 4 Epping Street Raymond NH 03077 603-895-7016

562

cmccarthy@raymondnh.gov 563

564 565 566

567

Legal Inquiries <legalinquiries@nhmunicipal.org> 10/31/2023 4:04 PM

Raymond: Stephen C. Buckley - Keith Smith Raymond ZBA REF Board Email

Address 568



Zoning Board Approved Minutes November 15, 6:30 PM Room 109 Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

Good afternoon, Keith:Here is a summary of or

Here is a summary of our basic tips on how municipal boards and commissions should handle email communications:

- Never use email or other communication outside a meeting to express ideas, concerns, opinions, etc. on matters related to the business and duties of your public body.
- Use an administrative person (*i.e.*, someone who is not a member of the public body) to send an email to members of a public body, if you have that option.
- Put the recipients' email addresses in the BCC line of the email to prevent the possibility of "Reply All" and a discussion ensuing among a quorum of the public body.
- If at all possible, always use official email addresses issued by the municipality, school district, or other governmental entity for communicating town business, because such communications constitute governmental records that will be subject to possible disclosure.
- Leave discussion and deliberation of official matters for a public meeting, a properly held nonpublic session, or a proper "non-meeting," as discussed later in this chapter.
- When individual board members send and receive email communications about municipal matters, it is recommended they should use an email account separate from their regular, personal email account. It suggested that the member establish a separate Gmail account for board or committee business.
- It is not necessary nor required that these suggestions be included in the ZBA's Rules of Procedure.

585 • It is not necessary nor rec 586 Stephen C. Buckley 587 Legal Services Counsel 588 NH Municipal Association 589 25 Triangle Park Drive 590 Concord, NH 03301 591 603-224-7447 592

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- Note: Video Supplement to Minutes can be found @ RCTV on Demand (5 years)
- 595 https://cloud.castus.tv/vod/rctv?page=HOME

596

597 Respectfully submitted,

598 599

Jill A. Vadeboncoeur



TOWN OF RAYMOND

Community Development
Department Office of Planning &
Zoning

4 Epping Street Raymond, NH 03077 Tel: (603) 895-7018 Fax: (603) 895-7064 http://www.raymondnh.gov

NOTICE OF DECISION GRANTED

Raymond Zoning Board of Adjustment 2023-007 Raymond and Francis Scanlon

Date of Decision: November 15, 2023

Application No: 2023-007

You are hereby notified that the Raymond Zoning Board of Adjustment has **GRANTED** two (2) variances to Raymond and Francis Scanlon, represented by Tim Phoenix, Esq. of Hoefle, Phoenix, Gormley and Roberts, PLLC for property identified as Raymond Tax 41, Lot 47 located on Meindl Road located within Zone B with associated Zone G Lands, for relief from <u>Article 15, Section 15.1 and Article 13, Section 13.1.31 requiring frontage on a public street or way, and that 200 feet of frontage is required.</u>

Finding of Facts:

The Zoning Board of Adjustment found that:

- Meindl Road has already been developed residentially and that there are existing single family residences established along the road, regardless of its ownership status;
- That the request is consistent with the spirit of the ordinance overall, and that the ZBA are empowered and authorized to provide relief for variances after testimony and deliberation;
- That substantial justice was proven given the existing development pattern of the area;
- That the granting of the variance would not diminish the value of surrounding properties, and found that it would likely increase them;
- And that literal enforcement of the ordinance would result in an unnecessary hardship given that the proposed lots exceed the requirements of the Zone B zoning district.

Conditions:

The Planning Board voted unanimously a condition of approval that a Waiver of Liability be signed with the Board of Selectmen.

Jason Cleghorn

Community Development Director

Date

NOTE: In accordance with the Raymond Zoning Ordinance, Section 9.5.2, this variance shall only be valid for a period of four (4) years from the date of this decision. If this time period is to lapse with substantial completion of any improvements, modifications, alterations, or other changes in the property for which this approval was granted not having taken place, then the applicant may seek an extension to this time period per Section 9.5.3.

The Selectmen, any party to the action or any person directly affected has a right to appeal this decision within thirty (30) days of the date of decision. See *New Hampshire Revised Statutes Annotated, Chapter 677*, available at the Town Clerk's Office during regular business hours. This notice has been placed on file and made available for public inspection in the records of the Zoning Board of Adjustment.





December 20, 2023 Via Hand Delivery

Town of Raymond c/o Jason Cleghorn 4 Epping Street Raymond, NH 03077 Application# 2022-009

> RE: Application to the Planning Board Jewett Industrial Development Route 27 (Map 28, Lots 9,10,11) Town of Raymond Rockingham County, New Hampshire BEMA # W211232

Dear Mr. Cleghorn,

Since our last Planning Board meeting held on November 9th, the project team has worked to prepare responses related to comments noted by the board at the meeting and following correspondence that has been shared via email with the project team. Enclosed please find the following documents prepared by the application team that addresses those open items. We look forward to furthering our conversation with the Board on the upcoming January 4th meeting.

Seven document packages have been enclosed for distribution to the board members. <u>Enclosed Documents in each package:</u>

- One (1) copy of the Submittal Letter from Jewett Construction Co. including appendix reports from JTC, Elevated Design Inc., Hydro-Geochemical Solutions LLC, and Bohler Engineering;
- One (1) copy of the DTC Letter to the Planning Board Members dated 12/19/2023, including a copy
 of the updated Special Permit application;
- One (1) copy of the Functions and Values Analysis, prepared by Gove Environmental Services, Inc. last revised 12/19/2023;
- One (1) copy of the Wetland Disturbance Exhibit EX-3, prepared by Bohler dated 12/11/2023
- One (1) DRAFT copy of the Conservation Area Exhibit EX-4, prepared by Bohler dated 12/11/2023

Should you have any questions or require additional information, please do not hesitate to contact us at (603) 441-2900. Thank you.

Sincerely,

BOHLER//

Greg DiBona

Austin F. Turner



Dear Mr. Cleghorn -

We hope this finds you well and thank you, as always for your attention and coordination. Since our last Planning Board meeting on the approve referenced Project, was held on November 9th, the Project team has been working to address comments raised by the Planning Board and provides the below information in response to same.

- 1. During the November hearing, the Applicant's environmental consultant, John Turner Consulting ("JTC") provided testimony to the Board regarding additional environmental testing results which were obtained by JTC immediately before the November hearing.
 - To supplement this testimony, and the rest of the environmental analysis already provided to the Board, please find enclosed herewith a letter from JTC.
- Over the last few Planning Board meetings, the issue of Project water usage and demand has been discussed and a question was raised regarding the Applicant's calculations for usage.
 During the November meeting, Mark Schow, PE of Elevated Design, Inc., provided testimony regarding the basis for the Applicant's projections.
 - To further clarify this issue, the Applicant provides the enclosed letter from Mr. Schow dated December 15,2023 which elaborated on the water demand calculations.
- 3. At the November hearing a question was posed regarding the nature of the Applicant's proposed "warehouse" use.
 - In response to that series of questions, the Applicant provides the enclosed analysis Target End User Narrative dated December 14, 2023.
- 4. At the November hearing, there was a question regarding MS4 implications and whether the Project will be adding any stormwater to the Town's infrastructure.
 - Town of Raymond is covered by an active MS4 permit. The requirements of this permit state that the Town must establish stormwater management plan requirements. Our project is following the applicable local and state guidelines regarding stormwater management and groundwater protection criteria. The proposed stormwater system will provide the necessary volume and rate reductions and will not provide an increase to the municipal system.
- 5. The Applicant and Planning Board have had a continuing discussion of the location and Project-implications regarding the location of a municipal well on school-owned property. The Applicant provides the following analysis regarding same and welcomes any additional comments or questions from the Board.
 - Per the permit documents that were provided to us by Mr. Unger we have been able to
 locate the new Well #4 and evaluate information presented with that application. It is
 understood that the municipal well was approved with a 360,000 GPD capacity and that
 the source water supplying this well includes areas approximately 1,500'-2,000' from
 the well. The well has a sanitary protective are radius of 400' and notes a wellhead



protection area as defined within the Figure 15 they supplied with the report. It is worth noting that this well head protection area noted on figure 15 does encroach onto our lot, but terminates around the vernal pool area. The proposed well that is depicted on the Bohler plans is located outside this well head protection limit and will be designed with a capacity of only 1,430 GPD.

- 6. In recent hearings, a question has come up regarding the hydrogeologic implications of the Project.
 - In response to these questions, the Applicant provides the following memo from Hydro-Geochemical Solutions, LLC. The Applicant also provides the enclosed Blasting Plan document and corresponding plan prepared by Maine Drilling & Blasting, Inc., for Severino Trucking.
- 7. At the November hearing, a question regarding the Traffic Impact Analysis prepared by Vanesse & Associates and the potential for a dedicated turn lane into the Project was raised. That specific question appears to have been fully addressed at the last hearing, but by this letter, the Applicant wanted to acknowledge the comment and reintroduce Vanesse & Associates as its traffic engineer, who is available to answer any questions the Board may have. It is worth noting that VAi is still coordinating with NHDOT for the driveway access permit and we do anticipate the permit being issued this Spring.
- 8. At the November hearing, the Applicant indicated that it would submit an updated Wetlands Impact Plan and corresponding Special Permit and Special Permit and Conditional Use Permit narrative analysis.
 - In response, please find attached a letter from DTC Lawyers dated December 14, 2023 and its enclosures.
- 9. At the last hearing, the Planning Board raised the question of whether the Applicant would be willing to consider the permanent conservation of areas of the Property which will not be required for the Project.
 - In response, the Applicant is happy to consider conveying to the Town, for management by the Town's Conservation Commission, several acres of land which will not be disturbed by the Project, and which could be permanently conserved. In that context, and to begin the discussion with the Board, the Applicant provides the enclosed DRAFT Conservation Area Exhibit from Bohler to begin the discussion.
- 10. With regard to the status of the Applicant's various state permits, the Applicant received a Request for More Information from New Hampshire Figh & Game regarding the Applicant's Dredge & Fill Application as well as an Army Corps of Engineers/New Hampshire Division of Historical Resources inquiry regarding the Project.
 - The project team is working on the additional studies that have been requested by the
 agencies noted above. These evaluations will carry into the spring as the climate will
 impact the habitat evaluations required.



Offices in New Hampshire and Maine (603) 895-2412 • www.jewettconstruction.com

- 11. Finally, you and the Board requested a chart regarding the status of all permits/approvals needed for the Project.
 - Enclosed please find the Permitting Outline prepared by Bohler Engineering that notes the outstanding permit that the Applicant is current pursuing for the project.

We trust the enclosed materials are suitable for your needs at this time and will prove helpful as we continue to move this process towards completion. We appreciate your continued support of the project and look forward to our discussion with the Planning Board at their January 04, 2024 meeting. As always, please do not hesitate to contact us should you have any questions or wish to discuss further in advance of our upcoming meeting.

Sincerely,

Dan Ray

Jewett Construction



603-812-1694

BGRIGAS@CONSULTJTC.COM ■

WWW.CONSULTJTC.COM

19 DOVER STREET, DOVER, NH 03820

■

November 20th, 2023

Doug Reymore Planning & Development Manager Jewett Construction

Mobile: 603-706-7130 Direct Line: 603-895-7544 Office: 603-895-2412

dreymore@JewettConstruction.com

Re: Supplemental Site Investigations

Route 27

Raymond, New Hampshire

Dear Mr. Reymore:

John Turner Consulting, Inc. (JTC) has conducted supplemental investigation work at the above-referenced property in relation to the historic gasoline fueling station and surface water quality at the site. JTC was contracted by Jewett Construction to perform environmental observation and soil sampling at the former gasoline fueling station, and to perform surface water sampling for laboratory analysis to determine if surface water on the site was contaminated with perfluoroalkyl and polyfluoroalkyl substances (PFAs).

On October 23rd, 2023, JTC mobilized to the site to perform surface water sampling for laboratory analysis. Six surface water/wetland sampling locations were pre-determined by Greg DiBona, L.L.A. of Boehler Engineering on October 10th, 2023. JTC reviewed the conditions at each proposed location. Samples were obtained using laboratory provided bottles from Absolute Resource Associates (Portsmouth, NH). Surface water samples were obtained from selected sampling locations 1 through 4, and 6. Sample location 5 was dry, and no water was present; as such, no sample was taken. Samples were transported to Absolute Resource Associates under chain-of-custody for PFAs analysis. There were detections of perfluorobutanoic acid (PFBA), perfluorodecane sulfonic acid (PFDS), and perfluoroheptane sulfonic acid (PFHPS). These detections were below the laboratory detection limit of 10 ng/L. NHDES does not have current Ambient Groundwater Quality Standards for these detected analytes. All other compounds were non-detect. A complete table of detections as compared to the NHDES Ambient Groundwater Quality standard is provided in Table 1.

On October 27th, 2023, JTC returned to the site to oversee several test pits in the area of the former gasoline fueling station. Severino Trucking Co. of Candia, NH was on-site with a mini excavator to perform the test pit excavations. Locations were determined based on the underground storage tank (UST) closure reporting documentation obtained from the NHDES OneStop database. Four test pits were performed excavated in the area where the former USTs were located. One test pit was completed approximately 20-feet to the west of the former USTs to confirm that the UST grave was in the correct location. Test Pits 1

through 5 were completed and excavated to approximately 6 to 8 feet below ground surface. No visual or olfactory contamination was observed during soil screening. Soil samples collected from the five test pits were field screened for the presence of photo ionizable compounds using a MiniRae 300 PID. Readings above background concentrations were not recorded and neither visual nor olfactory evidence of a release of petroleum was noted in the samples. The table below summarizes the PID screening results from each test pit.

PID Screening Results

| Location | Final Depth | PID Screening Result |
|----------|-------------|-------------------------|
| TP-1 | 6.0-feet | 0.0 ppm |
| TP-2 | 8.0-feet | 0.0 ppm |
| TP-3 | 8.0-feet | 0.0 ppm |
| TP-4 | 8.0-feet | 0.0 ppm |
| TP-5 | 8.0-feet | 0.0 ppm |

One sample per test pit was selected for further analysis of RCRA 8 Metals and Volatile Organic Compounds (VOCs). There were low-level detections of VOCs which included Ethylbenzene, and Xylene's. These ranged from 0.30 to 1.9 mg/Kg, well below the NHDES Env-Or 600 Soil Remediation Standards. RCRA 8 Metal detections ranged from background levels to 160 mg/Kg of lead in the TP-5. This is below the NHDES soil remediation standard of 400 mg/Kg. A complete table of detections as compared to the NHDES soil remediation standard is provided in Table 2. A site plan of sampling locations is provided below. A photolog of conditions is provided in Appendix A. Complete laboratory analysis reports are provided in Appendix B.

None of the selected surface water samples or test pit soil samples resulted in detections above NHDES standards. If you have any additional questions or require further assistance, please do not hesitate to contact either of the undersigned.

Matthew Pellerin

Operations Manager, Professional Services

Cell: 603-475-5376 matthewp@consultjtc.com

Natthew Wellerin

Benjamin J. Grigas, PG, CG

Senior Vice President, Professional Services

Cell: 603-812-1694 bgrigas@consultjtc.com



Table 1: PFAs Detections

| Sample Point 1 ng/L | Sample Point 2 ng/L | Sample Point 3 ng/L | Sample Point 4 ng/L | Sample Point 5 ng/L | Sample Point 6 ng/L | NH MCLs/AGQS ng/L |
|------------------------|---|---|--|---|--|---|
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | 1 | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | 11.0 |
| ND (< 10.0) | 4.30 J | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | 12.0 |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | 1 | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | 1 | ND (< 10.0) | NS |
| 2.80 J | 4.80 J | 2.72 J | ND (< 10.0) |] | 4.18 J | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | 1.58 J | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | 1 | ND (< 10.0) | 15.0 |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | 1.83 J | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | NA/-Alamada din Na | ND (< 10.0) | 18.0 |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ' | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | - | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | | ND (< 10.0) | NS |
| ND (< 10.0) | ND (< 10.0) | ND (< 10.0) | ND (< 10.0) |] | ND (< 10.0) | NS |
| | ND (< 10.0) | ng/L ng/L ND (< 10.0) | ng/L ng/L ng/L ND (< 10.0) | ng/L ng/L ng/L ng/L ND (< 10.0) | ng/L ng/L ng/L ng/L ng/L ND (< 10.0) | ng/L nd (< 10.0) nd (< 10 |

ND: This compound was analyzed for, but not detected above the associated method detection limit.

NS: No Standard

J: The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.

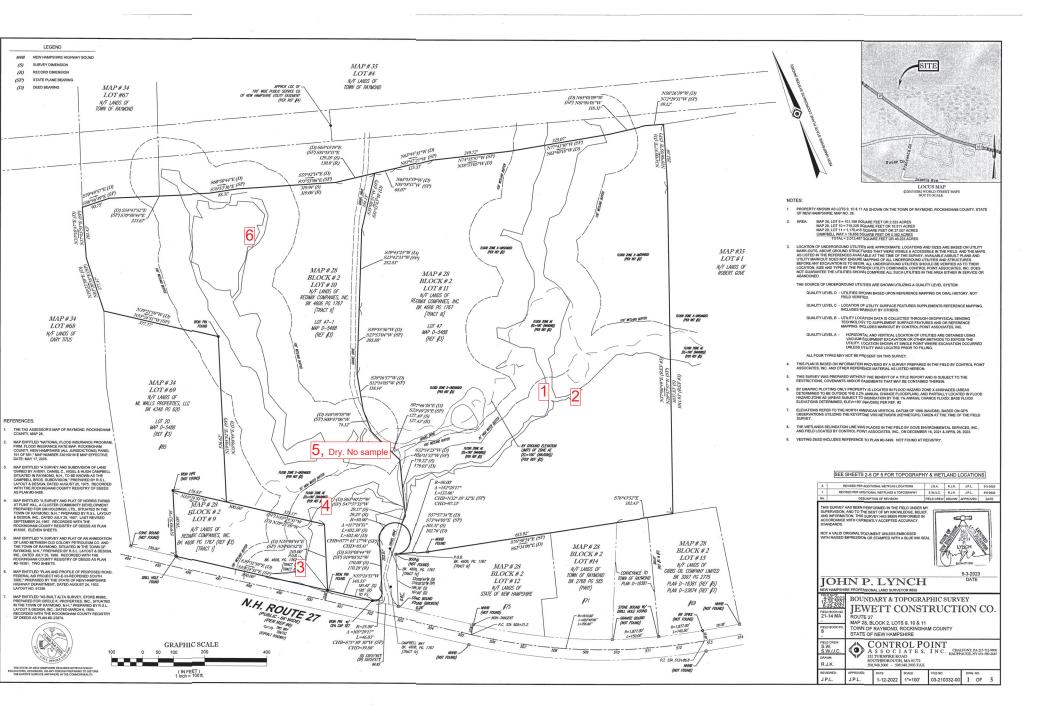


Table 2: Test Pit Soil Detections

| Compound | TP-1 (mg/Kg) | TP-2 (mg/Kg) | TP-3 (mg/Kg) | TP-4 (mg/Kg) | TP-5 (mg/Kg) | NHDES Env-Or 600 Soil Remedation Standard |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|---|
| Arsenic | 8.1 | 8.4 | 7.3 | 9.2 | 11 | 11 |
| Barium | 14 | 27 | 18 | 15 | 40 | 1,000 |
| Cadmium | ND (< 0.5) | 33 |
| Chromium | 4.5 | 8.4 | 5.0 | 4.6 | 9.7 | 130 |
| Lead | 16 | 30 | 52 | 25 | 160 | 400 |
| Lead (TCLP) | - | - | - | - | | 5.0 |
| Mercury | ND (< 0.1) | 7 |
| Selenium | ND (< 0.5) | 180 |
| Silver | ND (< 0.5) | 89 |
| Compound | TP-1 (mg/Kg) | TP-2 (mg/Kg) | TP-3 (mg/Kg) | TP-4 (mg/Kg) | TP-5 (mg/Kg) | NHDES Env-Or 600 Soil Remedation Standard |
| Ethylbenzene | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | 0.30 | 120 |
| mp-Xylene | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | 1.9 | 500 |
| o-Xylene | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | ND (< 0.05) | 1.4 | 500 |



Notes:

- 1. Explorations were performed on October 27th, 2023, under the observation of JTC.
- 2. Exploration locations should be considered approximate.
- 3. Basemap source: Google Maps, 2020.
- 4. Not to scale.

Jewett Construction
Attn: Mr. Doug Reymore & Craig Jewett
25 Spaulding Road, Suite #17-2
Fremont, New Hampshire 03044

JTC #: 23-03-031 NH-Route 27/107 Raymond, New Hampshire 03077



TEST PIT LOCATION PLAN

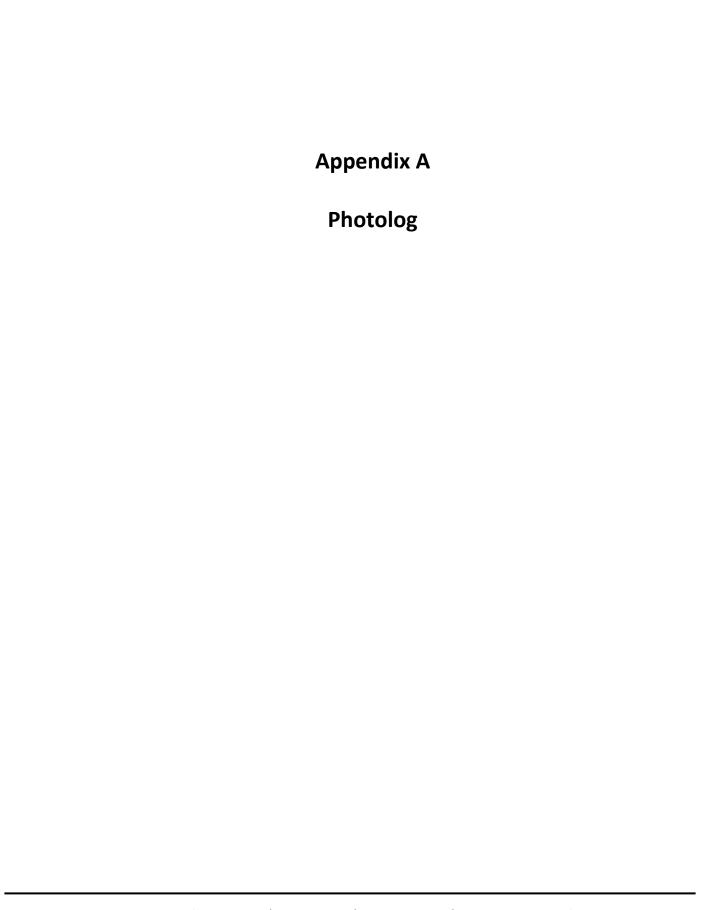


PHOTO LOG





Location name. ** Date: 10/20/2021 11-49. Asimuth: 0.0.1.01/ucis* 40.00274/2650278. Longhustr. 71,1715350605100

Photo 1: Surface Water #3 Sampling Location.

Photo 2: Surface Water #4 Sampling Location.



Photo 3: Surface Water #5 Sampling Location. No standing water. No sample taken.



Photo 4: Surface Water #5 Sampling Location. No standing water. No sample taken.





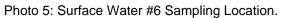




Photo 6: Surface Water #1 Sampling Location.



Photo 7: Surface Water #2 Sampling Location.



PHOTO LOG

John Turner Consulting, Inc.

Site Location: NH-Route 27/107, Raymond, NH





Description: Test Pit Locations.



Photo No. Date: 10/27/23



Description: Test Pit 1 soils.

Photo No. Date: 10/27/23

Description: Test Pit 1.



Description: Test Pit 2.



John Turner Consulting, Inc.

Site Location: NH-Route 27/107, Raymond, NH

| Photo No. | Date: |
|-----------|----------|
| 5 | 10/27/23 |



Photo No. Date: 10/27/23



Description: Test Pit 3.

Photo No. Date: 10/27/23

Description: Test Pit 2 soils.



Description: Test Pit 3 soils and groundwater at 8.0-feet bgs.

Photo No. Date: 10/27/23



Description: Test Pit 4, directly north of Test Pit 3.



John Turner Consulting, Inc.

Site Location: NH-Route 27/107, Raymond, NH

| Photo No. | Date: |
|-----------|----------|
| 9 | 10/27/23 |



Photo No. Date: 10/27/23



Description: Test Pit 5.

Photo No. Date: 10/27/23



Photo No. Date: 10/27/23



Description: Test Pit 5 Soils, fill material (dark brown) an native sand (Tan).

Appendix B Analytical Laboratory Reports

Laboratory Report

Absolute Resource associates

124 Heritage Avenue Portsmouth NH 03801

Matthew Pellerin
John Turner Consulting
44 Lafayette Rd
North Hampton, NH 03862

PO Number: None

Job ID: 67597 Date Received: 10/23/23

Project: Raymond 23-03-031

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full, without written approval of the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,

Absolute Resource Associates

Willie Stone

Authorized Signature

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Absolute Resource Associates Certifications

New Hampshire 1732 Massachusetts M-NH902

Maine NH902

Isotope Dilution

SOP-5317r0 is an isotope dilution method. As such, isotopically labelled analogues and performance standards are used to account for variability that may arise from the extraction process or analytical instrumentation. Compounds labelled as "SUR" are utilized as extracted internal standards, meaning that they are subject to all steps of the extraction process. Compounds labelled as "IS" are used as performance standards and are added to samples following extraction. Isotope dilution analogue concentrations are calculated based upon the response of internal standards. In turn, the concentration of a target analyte is calculated in relation to the recovery of its associated analogue.

Direct analogues are used whenever possible, as they will behave identically to their analogous target analyte during the extraction process. However, not all the reported analytes have direct analogues commercially available. In instances where no direct analogue is available, an analogue with similar structure and chemistry to the target analyte is employed.

Refer to the included "Isotope Dilution Association Table" for the specific analogue (SS) and performance standard (IS) associated with each target compound.



124 Heritage Avenue Unit 16 Portsmouth, NH 03801 www.absoluteresourceassociates.com

Isotope Dilution Association Table

| | | Performance |
|-------------|------------------|---------------|
| Analyte | Analogue (SS) | Standard (IS) |
| PFTEA | 13C2-PFTeA SUR | 13C2-PFOA IS |
| PFTRIA | 13C2-PFTeA SUR | 13C2-PFOA IS |
| PFDOA | 13C-PFDoA SUR | 13C2-PFOA IS |
| PFUNA | 13C7-PFUnA SUR | 13C2-PFOA IS |
| PFDA | 13C6-PFDA SUR | 13C2-PFOA IS |
| PFNA | 13C9-PFNA SUR | 13C2-PFOA IS |
| PFOA | 13C8-PFOA SUR | 13C2-PFOA IS |
| PFHPA | 13C4-PFHpA SUR | 13C2-PFOA IS |
| PFHXA | 13C5-PFHxA SUR | 13C2-PFOA IS |
| PFPA | 13C5-PFPeA SUR | 13C3-PFBA IS |
| PFBA | 13C-PFBA SUR | 13C3-PFBA IS |
| PFDS | 13C8-PFOS SUR | 13C4-PFOS IS |
| PFNS | 13C8-PFOS SUR | 13C4-PFOS IS |
| PFOS | 13C8-PFOS SUR | 13C4-PFOS IS |
| PFHPS | 13C8-PFOS SUR | 13C4-PFOS IS |
| PFHXS | 13C3-PFHxS SUR | 13C4-PFOS IS |
| PFPES | 13C3-PFHxS SUR | 13C4-PFOS IS |
| PFBS | 13C3-PFBS SUR | 13C4-PFOS IS |
| 82FTS | 13C2-8:2FTSA SUR | 13C4-PFOS IS |
| 62FTS | 13C2-6:2FTSA SUR | 13C4-PFOS IS |
| 42FTS | 13C2-4:2FTSA SUR | 13C4-PFOS IS |
| FOSA | 13C8-FOSA SUR | 13C4-PFOS IS |
| NMEFOSA | D3-NMeFOSA SUR | 13C4-PFOS IS |
| NETFOSAA | D5-NEtFOSAA SUR | 13C2-PFOA IS |
| NMEFOSAA | D3-NMeFOSAA SUR | 13C2-PFOA IS |
| HFPODA | 13C3-HFPO-DA SUR | 13C2-PFOA IS |
| ADONA | 13C4-PFHpA SUR | 13C2-PFOA IS |
| 11CLPF3OUDS | 13C8-PFOS SUR | 13C4-PFOS IS |
| 9CLPF3ONS | 13C8-PFOS SUR | 13C4-PFOS IS |



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Job ID: 67597

Sample#: 67597-001 Sample ID: SW-1 Matrix: Water

Sampled: 10/23/23 12:35

| Method Reference: SOP-5317r1 | Reporting | | | Dil'n | | | Dres | | Analysis | |
|---|-----------|--------|---------|-------|-----------------|---------|--------------|-------|----------|--------------|
| Parameter | Result | Limit | g DL | Units | Dil'n Factor | Analyst | Prep Date | Batch | | ysis Time |
| perfluorotetradecanoic acid (PFTEA) | 10.0 U | 10.0 | 2.63 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorotridecanoic acid (PFTRIA) | 10.0 U | 10.0 | 4.73 | ng/L | 1 | ACA | | | 11/6/23 | 18:56 |
| perfluorododecanoic acid (PFDOA) | 10.0 U | 10.0 | 2.98 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluoroundecanoic acid (PFUNA) | 10.0 U | 10.0 | 4.84 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorodecanoic acid (PFDA) | 10.0 U | 10.0 | 3.57 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorononanoic acid (PFNA) | 10.0 U | 10.0 | 3.04 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorooctanoic acid (PFOA) | 10.0 U | 10.0 | 3.10 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluoroheptanoic acid (PFHPA) | 10.0 U | 10.0 | 2.66 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorohexanoic acid (PFHXA) | 10.0 U | 10.0 | 3.15 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluoropentanoic acid (PFPA) | 10.0 U | 10.0 | 5.59 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorobutanoic acid (PFBA) | 2.80 J | 10.0 | 1.88 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorodecane sulfonic acid (PFDS) | 10.0 U | 10.0 | 1.27 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorononanesulfonic acid (PFNS) | 10.0 U | 10.0 | 2.23 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorooctane sulfonic acid (PFOS) | 10.0 U | 10.0 | 2.81 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluoroheptane sulfonic acid (PFHPS) | 10.0 U | 10.0 | 1.55 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorohexane sulfonic acid (PFHXS) | 10.0 U | 10.0 | 3.45 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluoropentane sulfonic acid (PFPES) | 10.0 U | 10.0 | 2.13 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorobutane sulfonic acid (PFBS) | 10.0 U | 10.0 | 3.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 8:2 fluorotelomer sulfonic acid (82FTS) | 10.0 U | 10.0 | 2.94 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 6:2 fluorotelomer sulfonic acid (62FTS) | 10.0 U | 10.0 | 5.18 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 4:2 fluorotelomer sulfonic acid (42FTS) | 10.0 U | 10.0 | 2.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| perfluorooctane sulfonamide (PFOSA) (FOSA) | 10.0 U | 10.0 | 5.72 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| n-methyl perfluorooctane sulfonamide (NMEFOSA) | 10.0 U | 10.0 | 3.42 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| n-ethyl perfluorooctanesulfonamido acetic acid (NETFOSAA) | 10.0 U | 10.0 | 4.34 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| n-methylperfluorooctane sulfonamido acetic acid (NMEFOSAA) | 10.0 U | 10.0 | 3.75 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid (GenX acid) (HFPODA) | 10.0 U | 10.0 | 2.58 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 4,8-dioxa-3h-perfluorononanoic acid (ADONA acid) (ADONA) | 10.0 U | 10.0 | 3.96 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CLPF3OUDS) | 10.0 U | 10.0 | 2.39 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CLPF3ONS) | 10.0 U | 10.0 | 2.05 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |
| Surrogate Recovery | | Limits | | | | | | | | |
| 13C2-PFTeA SUR | 83 | 50-200 |) | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 |

 $[\]mbox{U} = \mbox{This compound was analyzed for, but not detected above the associated method detection limit.}$

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



Job ID: 67597

Sample#: 67597-001 Sample ID: SW-1 Matrix: Water

Sampled: 10/23/23 12:35
Method Reference: SOP-5317r1

| Method Reference: SOP-5317r1 | | Reporting | | | Dil'n | | Prep | | Anal | ysis | |
|------------------------------|--------|-----------|----|-------|--------|---------|---------|-------|---------|-------|--|
| Parameter | Result | Limit | DL | Units | Factor | Analyst | Date | Batch | Date | Time | |
| Surrogate Recovery | | Limits | | | | | | | | | |
| 13C2-PFDoA SUR | 96 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C7-PFUnA SUR | 90 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C6-PFDA SUR | 83 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C9-PFNA SUR | 85 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C8-PFOA SUR | 94 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C4-PFHpA SUR | 90 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C5-PFHxA SUR | 89 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C5-PFPeA SUR | 108 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C4-PFBA SUR | 97 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C8-PFOS SUR | 99 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C3-PFHxS SUR | 98 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C3-PFBS SUR | 103 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C2-8:2FTSA SUR | 99 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C2-6:2FTSA SUR | 127 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C2-4:2FTSA SUR | 124 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C8-FOSA SUR | 74 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| D3-NMeFOSA SUR | 42 | 10-100 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| D5-NEtFOSAA SUR | 81 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| D3-NMeFOSAA SUR | 83 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |
| 13C3-HFPO-DA SUR | 72 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 18:56 | |

Note: Sample was extracted at reduced volume due to the presence of sediment in the sample container.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



 $[\]mbox{U} = \mbox{This compound was analyzed for, but not detected above the associated method detection limit.}$

Job ID: 67597

Sample#: 67597-002 Sample ID: SW-2 Matrix: Water

Sampled: 10/23/23 12:40

| Method Reference: SOP-5317r1 | Reporting | | | | Dil'n | | Prep | | Analysis | |
|---|-----------|-------|---------|-------|-------|---------|---------|-------|----------|-------|
| Parameter | Result | Limit | 9 DL | Units | | Analyst | Date | Batch | | Time |
| perfluorotetradecanoic acid (PFTEA) | 10.0 U | 10.0 | 2.63 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorotridecanoic acid (PFTRIA) | 10.0 U | 10.0 | 4.73 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorododecanoic acid (PFDOA) | 10.0 U | 10.0 | 2.98 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluoroundecanoic acid (PFUNA) | 10.0 U | 10.0 | 4.84 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorodecanoic acid (PFDA) | 10.0 U | 10.0 | 3.57 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorononanoic acid (PFNA) | 10.0 U | 10.0 | 3.04 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorooctanoic acid (PFOA) | 4.30 J | 10.0 | 3.10 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluoroheptanoic acid (PFHPA) | 10.0 U | 10.0 | 2.66 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorohexanoic acid (PFHXA) | 10.0 U | 10.0 | 3.15 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluoropentanoic acid (PFPA) | 10.0 U | 10.0 | 5.59 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorobutanoic acid (PFBA) | 4.80 J | 10.0 | 1.88 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorodecane sulfonic acid (PFDS) | 10.0 U | 10.0 | 1.27 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorononanesulfonic acid (PFNS) | 10.0 U | 10.0 | 2.23 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorooctane sulfonic acid (PFOS) | 10.0 U | 10.0 | 2.81 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluoroheptane sulfonic acid (PFHPS) | 10.0 U | 10.0 | 1.55 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorohexane sulfonic acid (PFHXS) | 10.0 U | 10.0 | 3.45 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluoropentane sulfonic acid (PFPES) | 10.0 U | 10.0 | 2.13 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorobutane sulfonic acid (PFBS) | 10.0 U | 10.0 | 3.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 8:2 fluorotelomer sulfonic acid (82FTS) | 10.0 U | 10.0 | 2.94 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 6:2 fluorotelomer sulfonic acid (62FTS) | 10.0 U | 10.0 | 5.18 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 4:2 fluorotelomer sulfonic acid (42FTS) | 10.0 U | 10.0 | 2.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| perfluorooctane sulfonamide (PFOSA) (FOSA) | 10.0 U | 10.0 | 5.72 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| n-methyl perfluorooctane sulfonamide (NMEFOSA) | 10.0 U | 10.0 | 3.42 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| n-ethyl perfluorooctanesulfonamido acetic acid (NETFOSAA) | 10.0 U | 10.0 | 4.34 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| n-methylperfluorooctane sulfonamido acetic acid (NMEFOSAA) | 10.0 U | 10.0 | 3.75 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid (GenX acid) (HFPODA) | 10.0 U | 10.0 | 2.58 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 4,8-dioxa-3h-perfluorononanoic acid (ADONA acid) (ADONA) | 10.0 U | 10.0 | 3.96 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CLPF3OUDS) | 10.0 U | 10.0 | 2.39 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CLPF3ONS) | 10.0 U | 10.0 | 2.05 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |

U = This compound was analyzed for, but not detected above the associated method detection limit.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.

Job ID: 67597

Sample#: 67597-002 Sample ID: SW-2 Matrix: Water

Sampled: 10/23/23 12:40

| Method Reference: SOP-5317r1 | | Reporting | | | Dil'n | | Prep | | Anal | vsis |
|---|------------|-------------|-------|---------|----------|-----------|-----------|---------|---------|-------|
| Parameter | Result | Limit | DL | Units | | Analyst | Date | Batch | | Time |
| Surrogate Recovery | | Limits | | | | | | | | |
| 13C2-PFTeA SUR | 34 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| * This analogue showed recovery outside of the accep | tance crit | eria. | | | | | | | | |
| 13C2-PFDoA SUR | 54 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C7-PFUnA SUR | 60 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C6-PFDA SUR | 72 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C9-PFNA SUR | 88 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C8-PFOA SUR | 91 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C4-PFHpA SUR | 84 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C5-PFHxA SUR | 80 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C5-PFPeA SUR | 110 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C4-PFBA SUR | 92 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C8-PFOS SUR | 88 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C3-PFHxS SUR | 95 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C3-PFBS SUR | 99 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C2-8:2FTSA SUR | 119 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C2-6:2FTSA SUR | 213 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| * This analogue showed recovery outside of the accep quantitation limit, no impact to the data is suspected. | tance crit | eria. Since | the a | associa | ated tar | get was r | ot detect | ed abov | e the | |
| 13C2-4:2FTSA SUR | 234 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| * This analogue showed recovery outside of the accep quantitation limit, no impact to the data is suspected. | tance crit | eria. Since | the a | associa | ated tar | get was r | ot detect | ed abov | e the | |
| 13C8-FOSA SUR | 46 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| * This analogue showed recovery outside of the accep | tance crit | eria. | | | | | | | | |
| D3-NMeFOSA SUR | 7 * | 10-100 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| * This analogue showed recovery outside of the accep | | | | | | | | | | |
| D5-NEtFOSAA SUR | 62 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| D3-NMeFOSAA SUR | 64 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |
| 13C3-HFPO-DA SUR | 56 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:12 |

Note: Sample was extracted at reduced volume due to the presence of sediment in the sample container.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



U = This compound was analyzed for, but not detected above the associated method detection limit.

Job ID: 67597

Sample#: 67597-003 Sample ID: SW-3 Matrix: Water

Sampled: 10/23/23 11:35

| Method Reference: SOP-5317r1 | Reporting | | | | Dil'n | | Prep | | Analysis | |
|---|-----------|-------|---------|-------|-------|---------|---------|-------|----------|-------|
| Parameter | Result | Limit | 9 DL | Units | | Analyst | Date | Batch | | Time |
| perfluorotetradecanoic acid (PFTEA) | 10.0 U | 10.0 | 2.63 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorotridecanoic acid (PFTRIA) | 10.0 U | 10.0 | 4.73 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorododecanoic acid (PFDOA) | 10.0 U | 10.0 | 2.98 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluoroundecanoic acid (PFUNA) | 10.0 U | 10.0 | 4.84 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorodecanoic acid (PFDA) | 10.0 U | 10.0 | 3.57 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorononanoic acid (PFNA) | 10.0 U | 10.0 | 3.04 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorooctanoic acid (PFOA) | 10.0 U | 10.0 | 3.10 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluoroheptanoic acid (PFHPA) | 10.0 U | 10.0 | 2.66 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorohexanoic acid (PFHXA) | 10.0 U | 10.0 | 3.15 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluoropentanoic acid (PFPA) | 10.0 U | 10.0 | 5.59 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorobutanoic acid (PFBA) | 2.72 J | 10.0 | 1.88 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorodecane sulfonic acid (PFDS) | 10.0 U | 10.0 | 1.27 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorononanesulfonic acid (PFNS) | 10.0 U | 10.0 | 2.23 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorooctane sulfonic acid (PFOS) | 10.0 U | 10.0 | 2.81 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluoroheptane sulfonic acid (PFHPS) | 10.0 U | 10.0 | 1.55 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorohexane sulfonic acid (PFHXS) | 10.0 U | 10.0 | 3.45 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluoropentane sulfonic acid (PFPES) | 10.0 U | 10.0 | 2.13 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorobutane sulfonic acid (PFBS) | 10.0 U | 10.0 | 3.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 8:2 fluorotelomer sulfonic acid (82FTS) | 10.0 U | 10.0 | 2.94 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 6:2 fluorotelomer sulfonic acid (62FTS) | 10.0 U | 10.0 | 5.18 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 4:2 fluorotelomer sulfonic acid (42FTS) | 10.0 U | 10.0 | 2.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| perfluorooctane sulfonamide (PFOSA) (FOSA) | 10.0 U | 10.0 | 5.72 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| n-methyl perfluorooctane sulfonamide (NMEFOSA) | 10.0 U | 10.0 | 3.42 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| n-ethyl perfluorooctanesulfonamido acetic acid (NETFOSAA) | 10.0 U | 10.0 | 4.34 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| n-methylperfluorooctane sulfonamido acetic acid (NMEFOSAA) | 10.0 U | 10.0 | 3.75 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid (GenX acid) (HFPODA) | 10.0 U | 10.0 | 2.58 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 4,8-dioxa-3h-perfluorononanoic acid (ADONA acid) (ADONA) | 10.0 U | 10.0 | 3.96 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CLPF3OUDS) | 10.0 U | 10.0 | 2.39 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CLPF3ONS) | 10.0 U | 10.0 | 2.05 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |

U = This compound was analyzed for, but not detected above the associated method detection limit.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.

Job ID: 67597

Sample#: 67597-003 Sample ID: SW-3 Matrix: Water

Sampled: 10/23/23 11:35

| Method Reference: SOP-5317r1 | I | Reporting | | | Dil'n | | Prep | | Anal | ysis |
|---|-------------|-----------|----|-------|--------|---------|---------|-------|---------|-------|
| Parameter | Result | Limit | DL | Units | Factor | Analyst | Date | Batch | Date | Time |
| Surrogate Recovery | | Limits | | | | | | | | |
| 13C2-PFTeA SUR | 48 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| * This analogue showed recovery outside of the accept | tance crite | eria. | | | | | | | | |
| 13C2-PFDoA SUR | 71 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C7-PFUnA SUR | 79 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C6-PFDA SUR | 80 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C9-PFNA SUR | 85 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C8-PFOA SUR | 93 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C4-PFHpA SUR | 86 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C5-PFHxA SUR | 83 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C5-PFPeA SUR | 109 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C4-PFBA SUR | 94 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C8-PFOS SUR | 92 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C3-PFHxS SUR | 91 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C3-PFBS SUR | 96 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C2-8:2FTSA SUR | 108 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C2-6:2FTSA SUR | 193 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C2-4:2FTSA SUR | 194 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C8-FOSA SUR | 59 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| D3-NMeFOSA SUR | 11 | 10-100 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| D5-NEtFOSAA SUR | 70 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| D3-NMeFOSAA SUR | 74 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |
| 13C3-HFPO-DA SUR | 62 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 19:59 |

Note: Sample was extracted at reduced volume due to the presence of sediment in the sample container.

U = This compound was analyzed for, but not detected above the associated method detection limit.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.

Job ID: 67597

Sample#: 67597-004 Sample ID: SW-4 Matrix: Water

Sampled: 10/23/23 11:50

| Sampled: 10/23/23 11:50 | | | | | | | | | | |
|---|--------|-----------|------|-------|--------|---------|---------|-------|---------|-------|
| Method Reference: SOP-5317r1 | | Reporting | g | | Dil'n | | Prep | | Anal | ysis |
| Parameter | Result | Limit | DL | Units | Factor | Analyst | Date | Batch | Date | Time |
| perfluorotetradecanoic acid (PFTEA) | 10.0 U | 10.0 | 2.63 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorotridecanoic acid (PFTRIA) | 10.0 U | 10.0 | 4.73 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorododecanoic acid (PFDOA) | 10.0 U | 10.0 | 2.98 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluoroundecanoic acid (PFUNA) | 10.0 U | 10.0 | 4.84 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorodecanoic acid (PFDA) | 10.0 U | 10.0 | 3.57 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorononanoic acid (PFNA) | 10.0 U | 10.0 | 3.04 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorooctanoic acid (PFOA) | 10.0 U | 10.0 | 3.10 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluoroheptanoic acid (PFHPA) | 10.0 U | 10.0 | 2.66 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorohexanoic acid (PFHXA) | 10.0 U | 10.0 | 3.15 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluoropentanoic acid (PFPA) | 10.0 U | 10.0 | 5.59 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorobutanoic acid (PFBA) | 10.0 U | 10.0 | 1.88 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorodecane sulfonic acid (PFDS) | 10.0 U | 10.0 | 1.27 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorononanesulfonic acid (PFNS) | 10.0 U | 10.0 | 2.23 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorooctane sulfonic acid (PFOS) | 10.0 U | 10.0 | 2.81 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluoroheptane sulfonic acid (PFHPS) | 10.0 U | 10.0 | 1.55 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorohexane sulfonic acid (PFHXS) | 10.0 U | 10.0 | 3.45 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluoropentane sulfonic acid (PFPES) | 10.0 U | 10.0 | 2.13 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorobutane sulfonic acid (PFBS) | 10.0 U | 10.0 | 3.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 8:2 fluorotelomer sulfonic acid (82FTS) | 10.0 U | 10.0 | 2.94 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 6:2 fluorotelomer sulfonic acid (62FTS) | 10.0 U | 10.0 | 5.18 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 4:2 fluorotelomer sulfonic acid (42FTS) | 10.0 U | 10.0 | 2.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| perfluorooctane sulfonamide (PFOSA) (FOSA) | 10.0 U | 10.0 | 5.72 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| n-methyl perfluorooctane sulfonamide (NMEFOSA) | 10.0 U | 10.0 | 3.42 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| n-ethyl perfluorooctanesulfonamido acetic acid (NETFOSAA) | 10.0 U | 10.0 | 4.34 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| n-methylperfluorooctane sulfonamido acetic acid (NMEFOSAA) | 10.0 U | 10.0 | 3.75 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid (GenX acid) (HFPODA) | 10.0 U | 10.0 | 2.58 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 4,8-dioxa-3h-perfluorononanoic acid (ADONA acid) (ADONA) | 10.0 U | 10.0 | 3.96 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CLPF3OUDS) | 10.0 U | 10.0 | 2.39 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CLPF3ONS) | 10.0 U | 10.0 | 2.05 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |
| Surrogate Recovery | | Limits | | | | | | | | |
| 13C2-PFTeA SUR | 51 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 |

U = This compound was analyzed for, but not detected above the associated method detection limit.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



Job ID: 67597

Sample#: 67597-004 Sample ID: SW-4 Matrix: Water

Sampled: 10/23/23 11:50

| Method Reference: SOP-5317r1 | | Reporting | | | Dil'n | | Prep | | Anal | vsis | |
|--|-----------|--------------|-------|---------|----------|-----------|-----------|---------|---------|-------|--|
| Parameter | Result | Limit | DL | Units | Factor | Analyst | Date | Batch | | Time | |
| Surrogate Recovery | | Limits | | | | | | | | | |
| 13C2-PFDoA SUR | 70 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C7-PFUnA SUR | 72 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C6-PFDA SUR | 72 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C9-PFNA SUR | 82 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C8-PFOA SUR | 87 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C4-PFHpA SUR | 80 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C5-PFHxA SUR | 80 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C5-PFPeA SUR | 110 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C4-PFBA SUR | 90 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C8-PFOS SUR | 90 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C3-PFHxS SUR | 90 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C3-PFBS SUR | 92 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C2-8:2FTSA SUR | 102 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C2-6:2FTSA SUR | 177 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C2-4:2FTSA SUR | 214 ' | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| * This analogue showed recovery outside of the accept quantitation limit, no impact to the data is suspected. | tance cri | teria. Since | the a | associa | ated tar | get was r | ot detect | ed abov | e the | | |
| 13C8-FOSA SUR | 57 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| D3-NMeFOSA SUR | 10 | 10-100 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| D5-NEtFOSAA SUR | 68 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| D3-NMeFOSAA SUR | 68 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |
| 13C3-HFPO-DA SUR | 56 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 20:31 | |

Note: Sample was extracted at reduced volume due to the presence of sediment in the sample container.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



 $[\]mbox{U} = \mbox{This compound was analyzed for, but not detected above the associated method detection limit.}$

Job ID: 67597

Sample#: 67597-005 Sample ID: SW-6 Matrix: Water

Sampled: 10/23/23 12:10

| Method Reference: SOP-5317r1 | | Reportin | α | | Dil'n | | Prep | | Analy | vsis |
|---|--------|----------|------|-------|-------|---------|---------|-------|---------|-------|
| Parameter | Result | Limit | DL | Units | | Analyst | Date | Batch | | Time |
| perfluorotetradecanoic acid (PFTEA) | 10.0 U | 10.0 | 2.63 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorotridecanoic acid (PFTRIA) | 10.0 U | 10.0 | 4.73 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorododecanoic acid (PFDOA) | 10.0 U | 10.0 | 2.98 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluoroundecanoic acid (PFUNA) | 10.0 U | 10.0 | 4.84 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorodecanoic acid (PFDA) | 10.0 U | 10.0 | 3.57 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorononanoic acid (PFNA) | 10.0 U | 10.0 | 3.04 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorooctanoic acid (PFOA) | 10.0 U | 10.0 | 3.10 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluoroheptanoic acid (PFHPA) | 10.0 U | 10.0 | 2.66 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorohexanoic acid (PFHXA) | 10.0 U | 10.0 | 3.15 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluoropentanoic acid (PFPA) | 10.0 U | 10.0 | 5.59 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorobutanoic acid (PFBA) | 4.18 J | 10.0 | 1.88 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorodecane sulfonic acid (PFDS) | 1.58 J | 10.0 | 1.27 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorononanesulfonic acid (PFNS) | 10.0 U | 10.0 | 2.23 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorooctane sulfonic acid (PFOS) | 10.0 U | 10.0 | 2.81 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluoroheptane sulfonic acid (PFHPS) | 1.83 J | 10.0 | 1.55 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorohexane sulfonic acid (PFHXS) | 10.0 U | 10.0 | 3.45 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluoropentane sulfonic acid (PFPES) | 10.0 U | 10.0 | 2.13 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorobutane sulfonic acid (PFBS) | 10.0 U | 10.0 | 3.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 8:2 fluorotelomer sulfonic acid (82FTS) | 10.0 U | 10.0 | 2.94 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 6:2 fluorotelomer sulfonic acid (62FTS) | 10.0 U | 10.0 | 5.18 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 4:2 fluorotelomer sulfonic acid (42FTS) | 10.0 U | 10.0 | 2.09 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| perfluorooctane sulfonamide (PFOSA) (FOSA) | 10.0 U | 10.0 | 5.72 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| n-methyl perfluorooctane sulfonamide (NMEFOSA) | 10.0 U | 10.0 | 3.42 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| n-ethyl perfluorooctanesulfonamido acetic acid (NETFOSAA) | 10.0 U | 10.0 | 4.34 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| n-methylperfluorooctane sulfonamido acetic acid (NMEFOSAA) | 10.0 U | 10.0 | 3.75 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoic acid (GenX acid) (HFPODA) | 10.0 U | 10.0 | 2.58 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 4,8-dioxa-3h-perfluorononanoic acid (ADONA acid) (ADONA) | 10.0 U | 10.0 | 3.96 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CLPF3OUDS) | 10.0 U | 10.0 | 2.39 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CLPF3ONS) | 10.0 U | 10.0 | 2.05 | ng/L | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |
| Surrogate Recovery | | Limits | | | | | | | | |
| 13C2-PFTeA SUR | 52 | 50-200 |) | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 |

U = This compound was analyzed for, but not detected above the associated method detection limit.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



Job ID: 67597

Sample#: 67597-005 Sample ID: SW-6 Matrix: Water

Sampled: 10/23/23 12:10

| Method Reference: SOP-5317r1 | | Reporting | | | Dil'n | | Prep | | Anal | ysis | |
|--|-----------|-------------|-------|---------|----------|-----------|-----------|---------|---------|-------|--|
| Parameter | Result | Limit | DL | Units | Factor | Analyst | Date | Batch | Date | Time | |
| Surrogate Recovery | | Limits | | | | | | | | | |
| 13C2-PFDoA SUR | 75 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C7-PFUnA SUR | 84 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C6-PFDA SUR | 81 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C9-PFNA SUR | 85 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C8-PFOA SUR | 91 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C4-PFHpA SUR | 84 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C5-PFHxA SUR | 84 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C5-PFPeA SUR | 119 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C4-PFBA SUR | 95 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C8-PFOS SUR | 95 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C3-PFHxS SUR | 96 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C3-PFBS SUR | 97 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C2-8:2FTSA SUR | 116 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C2-6:2FTSA SUR | 190 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C2-4:2FTSA SUR | 237 * | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| * This analogue showed recovery outside of the accept quantitation limit, no impact to the data is suspected. | ance crit | eria. Since | the a | associa | ated tar | get was r | ot detect | ed abov | e the | | |
| 13C8-FOSA SUR | 71 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| D3-NMeFOSA SUR | 25 | 10-100 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| D5-NEtFOSAA SUR | 73 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| D3-NMeFOSAA SUR | 76 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |
| 13C3-HFPO-DA SUR | 59 | 50-200 | | % | 1 | ACA | 11/6/23 | 17074 | 11/6/23 | 21:03 | |

Note: Sample was extracted at reduced volume due to the presence of sediment in the sample container.

J = The analytical result was below the instrument calibration range, but above the method detection limit. The reported concentration is an estimate.



 $[\]mbox{U} = \mbox{This compound was analyzed for, but not detected above the associated method detection limit.}$

Absolute Resource

124 Heritage Avenue #16 Portsmouth, NH 03801 603-436-2001

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

67597

| ADSO | luter | resou | ICE | absoluteresourceassociates.com | | | | | | | | | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | | |
|---|------------------|----------------------|--------------|--------------------------------|----------|-------|---|-----------------------------------|--------------------------------|------------------------------------|------|------|---|-----------|---------------------------|-----------------------|--------------|-------------------|---|-------------------------------|-----------------------------------|----------------|-------------------------------|---------------------------|-----------------------------|----------------|----------|----------------------|--------------------------|-----------------|-------------------------------|---------------------|---------------------------|------------------|------------------|-----|
| Company Nan | | | ies | | 9 | _ | Droi | - | | | | _ | - April 10 | ciates.co | וווט | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | | |
| Company Nan | J. | TC | | | | | | ect Na ect #: | | | | | -031 | | | | | | | print | | | | olor | | 0 | | | | ☐ Ferrous Iro | rococci | Phenois | □ riuoride | ticide | | |
| Company Add | lress: | tte Ra, | Ned | m | Han | 1pts, | Project Location: NH MA ME VT | | | | | | | | | O MADEP | □ VOC 8021VT | | .ist: | TPH Finger | 000 | lution | | ☐ Apparent Color | ☐ Acidity | ☐ TAL Metals | | | | | O E | | D bromide | □ TCLP Pesticide | ☐ Asbestos | |
| Report To: | natt | Pella | 261 | ~ | | | Protocol: RCRA SDWA NPDES MCP NHDES DOD | | | | | | | | | S 🗆 VOC 8260 MADEP | | ☐ 1,4-Dioxane | □ VOC 524.2 □ VOC 524.2 NH List □ Gases-List: | □ EPH MADEP □ TPH Fingerprint | 5.1 □ EDB | | 364 | Turbidity | □ Alkalinity □ | | | | | NOT I NT | □ Bacteria | + Nitrite | Surrate | D TCLP SVOC | ☐ Herbicides ☐ A | |
| Phone #: 603 - 475 - 537(| | | | | | | | y ARA ication orting ts: | | r samp complia QAPP EPA D | | GV | uire specific methods, otocol. GW-1 S-1 Other | | VOC 8260 NHDES | ☐ VOC BTEX MtBE, only | GRO 8015 | OC 524.2 NH | □ 0R0 8015 □ E | □ 8270ABN □ 625 | PFAS 533 | lineral 0&G 16 | Conductivity | SVT D ST D | ☐ Priority Pollutant Metals | | | | D TKN | Bacteria P// | de U Nitrate + Nitrite | chioride | D TCLP VOC | Grain Size 🗆 H | | |
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| Sample ID (Lab Use Only) | 1 | eld D | # CONTAINERS | WATER | SOLID | ОТНЕВ | #EI G. | HNO3 | H ₂ SO ₄ | NaOH | МеОН | DATE | a lea | TIME | SAMPLER | □ VOC 8260 | □ VOC 624.1 | U VPH MADEP | □ VOC 524.2 | □ TPH 8100 | □ 8270PAH □ 8270ABN □ 625.1 □ EDB | D PFAS 537 | □ 0&G 1664 □ Mineral 0&G 1664 | □ pH □ BOD □ Conductivity | SOT D SST D | ☐ RCRA Metals | Hardness | ☐ Total Metals-list: | ☐ Dissolved Metals-list: | ☐ Ammonia ☐ COD | □ T-Phosphorus □ Bacteria P/A | □ Cyanide □ Sulfide | Correction Contribition | TCLP Metals | Subcontract: | |
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| Preservation | | | | D-441- C: / | /T | °- O | | | Chas | k pH for ALL applicable* | |
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| ZnAc-NaOH | 125mL(P) | 250mL(P) | | | | | | | | | |
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| Compliance sa | mples have no di | screpancies/requ | ire no | flags? | 1 | | × | (Or must be reject | ed) | | |
| Compliance samples have no discrepancies/require no flags? Log-in Supervisor notified immediately of following items: | | | | | | | × | The state of the s | | mples (NHDES, MADEP, Dol | |
| Log-in Supervi | isor notified imm | ediately of follow | ving it | ems: | | | - | etc.) or uncommon | | | |
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| | Inspected ar | nd Received By | : | (AMA) | | | Da | ite/Time: 10123 | 123 | 15:58 | |
| Peer Review | Checklist | | | | | No. | | | | | |
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15 of 15



15-December-2023

Attention: Dan Ray Jewett Construction Co., LLC 25 Spaulding Road Suite #17-2 Fremont, New Hampshire 03044

Subject: Campbell Mills – Jewett Construction Warehouse, Raymond NH – Water Consumption

On 10/18/2022, the Jewett team provided a calculation of expected employees at this facility with 71 employees times 2 shifts/day equaling 142 total occupants/day. A further analysis of water use showed an expected water consumption of 788 GPD (gallons per day). The analysis by Underwood Engineers, dated 4/18/2023, accepted this value as the average daily demand and then applied a rule-of-thumb peaking factor of 1.7 to determine a peak load of 1,340 GPD. Based on these calculations and further analysis, Jewett proposes to provide a 1,430 GPD well. During the meeting on 11/9/23 the board inquired about whether this well would have enough capacity to accommodate the truck drivers that do not work at the site but are present at the site during deliveries. During the meeting, Mark Schow, from Elevated Design Inc., noted that the truck drivers are included within the well's capacity and Underwood's peaking factor. Of the 1430 GPD available, the employees will use 788 GPD, which leaves 642 GPD of capacity. A typical bathroom trip uses less than 2 gallons between flushing and hand washing. So this would be 321 bathroom trips, which is far more than the expected 120 truck trips per day. The 321 additional bathroom trips allows for an additional 20 bathroom uses per hour above the average daily demand.

Within the Underwood analysis it was also observed that NHDES Env-Wq 1000 requirement for 10 gpd/pp "are known to be very conservative". The 142 occupants/day at 10 gpd/pp requires a 1420 GPD well, which the project intends to provide. Based on the analysis above, it is confirmed that the 1420 GPD will be sufficient for both the employees and truck drivers.

Please feel free to reach out if you have any guestions.

Yours sincerely,

Mark Schow, PE

Principle

Elevated Design Inc.

Mark.Schow@edi.boston

1212 Hancock Street Suite 300 Quincy, MA 02169

Phone: 724-561-6329



JEWETT WAREHOUSE - TARGET END USER NARRATIVE

December 14, 2023

RE: Application #2022-009

Jewett Industrial Development

Route 27 (Map 28, Lots 9,10,11)

Town of Raymond

Rockingham County, New Hampshire

BEMA # W211232

Introduction:

The proposed Jewett Warehouse project has been designed on a 'speculative' basis, in order to provide a site that fills a specific demand that has been identified in the southern New Hampshire industrial market. As such, we reasonably have received curiosity from the Board as to who the ultimate end-user of the property would be, and how that user would operate the site and building. This narrative attempts to provide clarity and general distinction between what the intent is of the proposed project, and what is not included in that intent. While this narrative does reference specific design decisions as evidence of the design intent of the project, this narrative should not be interpreted as a complete and exclusive definition of the future usage or specifications of the development. We hope that this narrative provides additional context to the project, and provides a small level of comfort as to what type of business will (and will not) be drawn to Raymond due to this development. We also acknowledge that to the extent that any end user proposes a use of the site which is not consistent with our representations, and with the use contemplated, for example, by the Traffic Impact Analysis provided to the Board by Vanasse & Associates, that user would have to return to the Planning Board for amended site plan review.

"Speculative":

In the real estate and development world, building on a speculative basis, or building "on spec", is understood to mean that the developer is undertaking the cost and burden of the design and permitting of a project, prior to signing any lease agreements or purchases with an end user. Buildings designed and/or built on spec are intended to fill a demand in a specific market. This is very common on the residential side, where entire subdivisions or apartment complexes are regularly permitted by a developer for a specific use-case (i.e. 55+community, workforce housing, etc.) long before anyone actually buys or rents the space. The concept is the same in the commercial/industrial market context. In both cases, the developer and end user understand that the permitted development is restricted to what was reviewed and approved, and any future modifications requested by the end-user may result in re-permitting or even denial.

End User Business:

The proposed end-user is intended to be flexible, in order to maximize marketability and minimize vacancy. The end user could be a local/regional business that is in need of a new headquarters for its warehousing operation. The end user could also be a larger brand that operates warehouses nationally. However, the usage of the property is intended to remain the same, a warehouse. Hours of operation in the Jewett Warehouse are



proposed at 24-hour operation, as the warehousing/trucking industry at large does not operate 9a-5p, and the end user may want the flexibility to run multiple and/or off-hour shifts. Note that the end user or users may be subject to multiple uses within the building. Market demand for leasable warehouse space can fluctuate from 50,000 SF tenants, to a single tenant who may require the entire space. The building has been designed with loading docks on both the North and South building façade so that flexibility is there for future partitioning of the interior warehouse spaces to accommodate multiple tenants as needed.

Site Design:

As insight as to what the utilization of this speculative development will be like, the site has been designed specifically for this Warehousing usage, in contrast to Fulfillment or "Last Mile Delivery". First of all, a common feature of Fulfillment/Last-Mile facilities are provisions for smaller delivery vehicles such as vans. These provisions might look like large multi-lane canopies for loading, and/or large parking areas for vans. Another common feature of Fulfillment/Last-Mile facilities would be large trailer storage areas opposite the loading dock positions, which facilitates efficient loading/unloading of trailers for shipment. Neither of these common features are found in our proposed site design, as those elements ultimately reduce gross building *storage* space, the primary draw to our proposed design.

Building Design:

Much like the site, the proposed building features can provide context as to the proposed end user of the facility. Building height is proposed at 40' maximum, complying with existing zoning regulations. New developments for uses such as Fulfillment, Cold Storage, or High-Cube Automated, desire much higher building height, even over 100' height in some cases. We have not requested any relief on height for this facility. The lack of available utilities such as public water or gas, further reduce the viability of more 'demanding' uses such as cold storage or some automated facilities, at this location.

Traffic Generation:

Perhaps the most specific indicator to the intent of a speculative development is what Land Use Code is utilized by the traffic engineer for traffic study and design. These codes usually are much more specific than land uses defined in many local zoning regulations. In the case of the Jewett Warehouse development, our Traffic Impact Report is based on ITE Land Use Code 150 (Warehousing). In terms of how this definition differs in general terms from a "Fulfillment Center" (Code 155); the primary point of a Warehouse is the *storage* of goods for one or multiple businesses, whereas the primary point of a Fulfillment Center is the *shipment* of goods to customers. This is consistent with Raymond's definition of "Warehouse Establishment" in Section 13.1.86 of the Zoning Ordinance which reads; "A building or other structure used principally for the storage of products, including finished goods, fuels, lumber, food, and chemicals, whether or not involving the wholesaling or retailing of such products principally off the premises."



The

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

hereby issues

LARGE GROUNDWATER WITHDRAWAL PERMIT

NO. LGWP-2018-0002

to the permittee

TOWN OF RAYMOND PUBLIC WORKS 4 EPPING STREET RAYMOND, NH 03077 (603-895-4735)

for the withdrawal of the following volumes of groundwater from the following well for the purpose of community water supply:

Production Well RBW-6K: 360,000 gallons over any 24-hour period

Date of Issuance:
Date of Expiration:

May 10, 2018 May 10, 2028

Pursuant to authority in N.H. RSA 485-C:21, the New Hampshire Department of Environmental Services (NHDES), hereby grants this permit to withdraw groundwater from Production Well RBW-6K subject to the following conditions:

- 1. The permittee shall comply with the requirements of Env-Wq 403 and RSA 485-C at all times.
- 2. Water Conservation: The permittee shall implement and maintain compliance with the approved Water Conservation Plan, dated April 25, 2018, in accordance with Env-Wq 2101 and NHDES' approval dated May 8, 2018.
- 3. Metering Requirements: Withdrawals from the well must be metered at all times. All meters must be selected, installed, tested, and maintained in accordance with Env-Wq 2101. The permittee shall read source water meters to adequately report the following volumes to the reporting program referenced in condition No. 7 of this permit:
 - a) The 24-hour peak day volume withdrawn from the well during each month and the date the water use occurred; and
 - b) The cumulative total volume withdrawn from the well during each month.
- 4. Groundwater Level Monitoring and Reporting Requirements: The permittee shall establish and maintain the monitoring and reporting program as described below:
 - a) Production well: The permittee shall install a pressure transducer and data logger and measure water levels at a frequency of at least once every four hours in production well RBW-6K. Water level monitoring shall commence upon initiating a withdrawal from the well and shall continue indefinitely as a condition of this permit.
 - b) On-site monitoring wells: The permittee shall install pressure transducers and data logger and measure water levels at a frequency of at least once every four hours in monitoring well RBW-6G and piezometer 6P1. Water level monitoring shall commence upon initiating a withdrawal from the well and shall continue indefinitely as a condition of this permit.

All water level monitoring shall be completed by a person who can demonstrate, by education or experience, competency in collecting and reporting hydrogeologic measurements.

Monitoring well locations and frequencies may be added or changed if the data obtained contradict the information provided in the permittee's application, or if additional data points are required to assess the potential for adverse impacts to occur.

An annual monitoring report and all monitoring data shall be submitted to NHDES by January 31 of each year. The annual monitoring report shall provide text, tables or figures that present a summary of all previously collected data and note any relevant observations that may affect the measurements made from the preceding year inclusive of pertinent field notes or observations that document the annual monitoring activities undertaken to comply with this permit.

The annual monitoring report shall be submitted in an electronic format and hard copy format. All water level monitoring data collected shall be submitted in an electronic format only.

- 5. Wetland Assessment Requirement: The permittee shall coordinate completion of the following assessment.
 - a) The permittee shall conduct a Functions and Values wetlands assessment in the wetland area east-northeast of RBW-6K, within the wetland in which piezometers 6P1 and 6P2 are installed.
 - b) The assessment above shall be completed by a NH-certified wetlands scientist prior to initiation of groundwater withdrawal from production well RBW-6K.
 - c) The assessment report shall be submitted with the first annual monitoring report for the withdrawal's water level monitoring program referenced in Condition No. 4. above.

6. Mitigation Requirements

- a) In the event that an adverse impact occurs, the permittee shall comply with all of the requirements below and with the impact mitigation and source replacement requirements of Env-Wq 403.
- b) Prior to initiating a withdrawal from the RBW-6K well field, the permittee shall notify in writing via certified mail the owners of all properties shown that are served by private wells or public wells not owned by the permittee within the area estimated to be the influence area of the well, as illustrated on Figure 14, titled "Projected Pumping-Induced Groundwater Levels after 180 Days of Pumping Proposed Production Well RBW-6K at 250 GPM" prepared by Emery & Garrett Groundwater Investigations, Inc. (EGGI), dated December 8, 2015. The permittee shall provide a copy of the notification letter and copies of the certified return mail receipts to NHDES. The notification letter shall explain to property owners with wells in the identified area that their well may be influenced by the withdrawal at RBW-6K, and provide the property owners with contact information for both the permittee and NHDES in the event they believe they may be adversely impacted by the withdrawal.
- c) Where the status of an unanticipated impact is not clear, the permittee shall gather information needed to quantify the impact and determine its status relative to the adverse impact criteria defined under RSA 485-C:21, V-c and provide this information to NHDES within 48 hours of being notified by NHDES about a reported impact. A verified adverse impact shall be mitigated in accordance with Env-Wq 403.
- d) NHDES will routinely review the results of all monitoring data, and if water level monitoring data indicates that groundwater is being extracted at a rate that exceeds natural recharge on average, then NHDES will modify the permit in accordance with Env-Wq 403 in order to prevent adverse impacts from occurring.

- 7. The permittee shall register its new source of water with the NHDES Water Use Registration and Reporting Program and maintain the water use reporting requirements established by RSA 488, Env-Wq 2102 and this permit.
- 8. The permittee shall apply for renewal of this permit at least 365 days prior to its expiration date in accordance with Env-Wq 403. The permittee shall continue to comply with all conditions in this permit until the permit is renewed or the facility is closed in accordance with all applicable requirements, regardless of whether a renewal application is filed.

Any person aggrieved by any terms or conditions of this permit may appeal in accordance with RSA 21-O:7, IV within 30 days.

Eugene J. Forbes, P.E., Director Water Division



The State of New Hampshire

Department of Environmental Services

Robert R. Scott, Commissioner



May 10, 2018

Stephen Brewer Town of Raymond Public Works 4 Epping Street Raymond, NH 03077

RE: Large Well Siting Approval/Large Groundwater Withdrawal Permit LGWP-2018-0002 Raymond Public Works, PWS ID 1971010 High School Well RBW-6K Raymond, New Hampshire

Dear Mr. Brewer:

The New Hampshire Department of Environmental Services (NHDES) has conditionally issued to the Raymond Public Works Department (RPW) the following: 1) an approval of one new large community production well (RBW-6K) in accordance with New Hampshire Administrative Rules Env-Dw 302, *Large Production Wells and Wells for Large Community Water Systems*; and 2) a large groundwater withdrawal permit for RBW-6K in accordance with RSA 485-C:21, *Approval for Large Groundwater Withdrawals* and New Hampshire Administrative Rules Env-Wq 403, *Large Groundwater Withdrawals*. The approval and permit are based on information prepared for RPW by Emery & Garrett Groundwater, Inc. (EGGI).

RPW is seeking large well siting approval for one new bedrock production well, designated RBW-6K, at a production rate of 360,000 gallons per day (gpd), or 250 gallons per minute (gpm) over a 24-hour period. RBW-6K is located proximate to the athletic fields at the Raymond High School. The purpose of developing RBW-6K is to: 1) provide additional water supply capacity, particularly during summer months when system demand is highest; 2) accommodate potential increases in water demand based on historic water use trends and projected future growth in areas served by the system; and 3) help address existing distribution system pressure issues.

CONDITIONAL APPROVAL

This decision to conditionally approve RBW-6K is based on information contained in the following documents plus associated supplemental submittals:

- 1. Preliminary application report titled "Preliminary Hydrogeologic Investigation, Town of Raymond, Groundwater Development, Raymond Production Well RBW-6K" (Preliminary Application) prepared for RPW by EGGI, dated December 22, 2014.
- 2. Final report titled "Final Hydrogeologic Investigation, Town of Raymond, Groundwater Development, Raymond Production Well RBW-6K" (Final Report) prepared for RPW by EGGI, dated December 8, 2015.

The following requirements are associated with the approval of the RBW-6K for use as a large production well for a community water system and **shall be complied with as a condition of approval:**

1) RPW must maintain a Wellhead Protection Program (WHPP) for the Wellhead Protection Area (WHPA) of RBW-6K, in accordance with Env-Dw 302.25. The WHPP shall include:

Steve Brewer, RPW Large Well Siting Approval/LGWP-20180002 Raymond Public Works High School Well RBW-6K

- a. Updating the inventories required by Env-Dw 302.23 at intervals no greater than three years as required by Env-Dw 302.25(a)(1) starting 90 days from the date of this letter;
- b. Completing written notification requirements to the owner of each known and potential contamination source listed in the inventories at intervals no greater than three years as required by Env-Dw 302.25(a)(2) starting 90 days from the connection of RBW-6K to the water system; and
- c. Submiting a request to conduct site visits to survey all potential contamination sources (except for pesticide application and agricultural operations) located within the WHPA to ascertain compliance with best management practices (BMPs) for preventing groundwater contamination (Env-Wq 401, *Best Management Practices for Groundwater Protection*) at intervals no greater than three years, starting within one year of the date of this letter.

Sample WHPP materials for large community water systems are available on NHDES' website at http://des.nh.gov/organization/divisions/water/dwgb/dwspp/well_siting/index.htm under "Technical Assistance."

- 2) RPW must implement and adhere to the conditions of Large Groundwater Withdrawal Permit No. LGWP-2018-0002, which is attached to this document.
- 3) RPW must implement the approved Water Conservation Plan, received April 25, 2018, in accordance with Env-Wq 2101, *Water Conservation* and NHDES' approval dated May 8, 2018.
- 4) Within 30 days of placing RBW-6K in service and providing water to the public, RPW shall collect a raw water sample from the well and have the sample analyzed for per- and polyfluoroalkyl Substances (PFAS). NHDES recommends coordinating this analysis with your primary lab so they can arrange for subcontracting the analysis, as necessary.
 - RPW shall notify Stephen Roy of the Drinking Water and Groundwater Bureau via email to stephen.roy@des.nh.gov when the sampling has been completed. Samples shall be submitted to the laboratory as General System Evaluation Samples (GSES).
- 5) Approval for RBW-6K shall lapse 6 years from the date of this letter if the well is not connected to the water system within that time, in accordance with Env-Dw 302.31(a), unless an extension is granted by NHDES. If approval lapses, RPW must satisfy the requirements of Env-Dw 302.31(b) to regain approval.

SOURCE SPECIFICATIONS

Table 1, below, summarizes specifications for RBW-6K. The Permitted Production Volume is the maximum volume of groundwater allowed by NHDES to be pumped from the water supply production well in any 24-hour period. The Sanitary Protective Area is a circle, centered on the well, with the radius listed in Table 1. The location of the well and the WHPA delineated for the well are illustrated on the attached map titled "Figure 14. Projected Pumping Induced Groundwater Levels after 180 Days of Pumping Proposed Production Well RBW-6K at 250 GPM" included in the Final Report.

Table 1

| Source Name | Well Status | Permitted Production Volume | Sanitary Protective Area Radius | Wellhead Protection Area | Source Description | |
|----------------|-------------|--|--|--------------------------------|-----------------------------|--|
| RBW-6K | New | 360,000 gallons per 24-hour period | 400 feet | As shown on Figure 14 | BRW 1 / HIGH SCHOOL WELL | |

CONNECTION REQUIREMENTS

Please note that the connection of the well to the water system and treatment facilities must comply with the requirements of New Hampshire Administrative Rules Env-Dw 404, *Design Standards for Large Public Water Systems*. Prior to connecting the well to the water system, provide a schematic depicting the chemical monitoring program sampling locations and any required treatment system, including the storage location of chemicals, chemical feed equipment, motor controls, and instrumentation. Please forward this information and any questions you may have regarding connecting the well to the water system to the attention of Richard Skarinka of the Drinking Water and Groundwater Bureau at (603) 271-2948 or richard.skarinka@des.nh.gov. Please be advised that RPW is not approved to connect the new well to the water system without first obtaining written approval for the design and connection from the Drinking Water and Groundwater Bureau engineering section in accordance with Env-Dw 404.02.

CHEMICAL MONITORING PROGRAM

A water quality sampling program was conducted as part of the well siting approval of RBW-6K. A total of three laboratory water quality samples were collected from RBW-6K during the well's pumping test program over the period July 14 through July 21, 2015. Results of this water quality sampling program indicate that each parameter was below the applicable Maximum Contaminant Level (MCL) or Secondary Maximum Contaminant Level (SMCL).

You must notify NHDES when RBW-6K becomes active by contacting Richard Skarinka of the Drinking Water and Groundwater Bureau at (603) 271-2948 or richard.skarinka@des.nh.gov. Once you notify NHDES that the well is active, Chemical Monitoring staff will contact you with a Master Sampling schedule. If you have any questions about the Chemical Monitoring requirements, contact Tricia Madore of the Drinking Water and Groundwater Bureau at (603) 271-3907 or tricia.madore@des.nh.gov. Please note that NHDES may initiate enforcement action if the system fails to implement a chemical monitoring program when the well becomes active.

RECOMMENDATION FOR THE DECOMMISSIONING AND SEALING OF MONITORING WELLS

NHDES strongly recommends that RPW consider decommissioning and sealing monitoring wells that are no longer needed by the water system. These wells could provide a direct potential pathway for contaminants to enter the aquifer. NHDES recommends that RPW consult with EGGI on which monitoring wells should be decommissioned and sealed. Please note, well sealing is required to be performed by a NH-licensed water well contractor in accordance with Water Well Board regulations; any inactive wells not sealed must be maintained in accordance with Water Well Board regulations. The Water Well Board's rules are available on NHDES' web site at http://www.des.nh.gov/organization/commissioner/legal/rulemaking/documents/we300-1000-adptdpstd.pdf.

Steve Brewer, RPW Large Well Siting Approval/LGWP-20180002 Raymond Public Works High School Well RBW-6K

EMERGENCY PLAN

RPW shall update its emergency plan for the water system in accordance with New Hampshire Administrative Rule Env-Dw 503.21. This plan shall continue to be updated and submitted to NHDES once every 6 years and shall be reviewed annually by the system and updated as needed. NHDES' records indicate that RPW is due to submit an updated Emergency Plan by March 2021. Additionally, the plan will be a checklist item during each sanitary survey of the water system and lack of one will be a survey deficiency. Guidance documents and other emergency planning information are available on NHDES' website at http://des.nh.gov/organization/divisions/water/dwgb/index.htm [see 'Programs']. You may contact Johnna McKenna at (603) 271-7017 or johnna.mckenna@des.nh.gov for more information or assistance in completing emergency planning for the water system.

ELECTRONIC DATA REPORTING PROGRAM

Please note that groundwater level data collected as a condition of the attached large groundwater withdrawal permit, as specified in condition No. 4 titled "Groundwater Level Monitoring and Reporting Requirements," shall be submitted annually to NHDES in an electronic format. The requirements and specifications of the electronic data reporting program are summarized in the attached letter and associated guidelines document.

If you have any questions about this approval or the attached permit or any other groundwater permitting issues, please contact me at (603) 271-3918 or stephen.roy@des.nh.gov.

Sincerely,

Stephen Roy, P.G.

Drinking Water and Groundwater Bureau

Attachment: Figure 15 – Wellhead Protection Area Map

Enclosures: Large Groundwater Withdrawal Permit No. LGWP-2018-0002

Project Narrative

Electronic Data Reporting Program Letter and Guidelines Document

cc: Daniel Tinkham; EGGI (email)

Ellen Small, SAU 33 (email)

Board of Selectmen, Town of Raymond

Brandon Kernen, Stacey Herbold, Kelsey Vaughn, Richard Skarinka, George Hastings, Kaitlin Murphy;

NHDES (email)

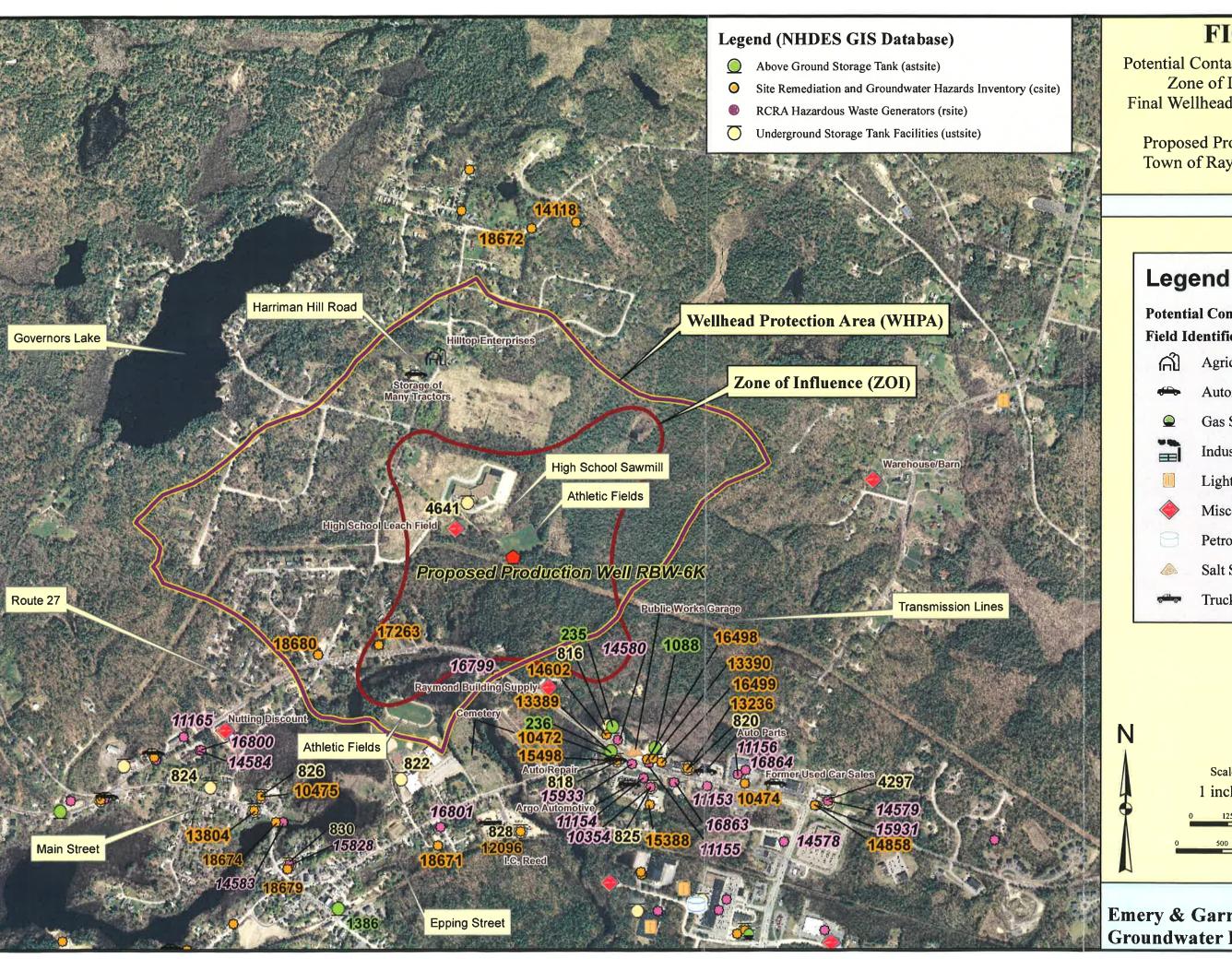
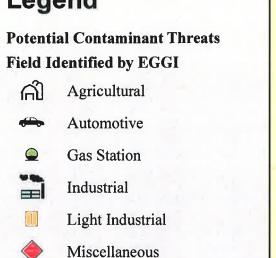


FIGURE 15

Potential Contaminant Threats Inventory, Zone of Influence (ZOI), and Final Wellhead Protection Area (WHPA)

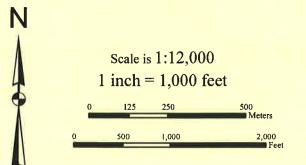
Proposed Production Well RBW-6K Town of Raymond, New Hampshire



Petroleum Storage

Truck/Transportation Storage

Salt Storage



Emery & Garrett FIGURE 15

Emery & Garrett Groundwater Investigations, LLC





December 19, 2023

Mr. Dan Ray Vice President of Reconstruction and Design Jewett Construction 25 Spaulding Road Suite #17-2 Fremont, New Hampshire 03044

Subject: Proposed Industrial Development

New Hampshire Route 27 - Campbell Mills

Raymond, New Hampshire

Dear Mr. Ray:

It is Hydro-Geochemical Solutions, LLC understanding that the Town of Raymond (herein referred to as "Town") is concerned that the proposed construction activities north of Route 27 (Campbell Mills), across from its intersection with Epping Road in Raymond, New Hampshire (i.e., Industrial Development) will impact the on-site wetland resource areas. The Industrial Development property is a large, wooded parcel with topography generally trending upward to the north varying from elevation 185 to 250 feet (project datum) including several isolated high knobs.

The following discussion is provided in an attempt to alleviate some of the Town's concerns with the proposed construction activities.

- Based on a review of available information, Jewett Construction (herein referred as "Jewett") has
 prepared several submittals (reports and applications) in accordance with applicable New
 Hampshire Rules and Regulations and have submitted the documents to the New Hampshire
 Department of Environmental Services (herein referred to as "NHDES") for review and comment.
 Documents prepared have included:
 - A NHDES Wetlands Bureau Minor Impact Dredge and Fill Application (dated July 2023).
 - An Alteration of Terrain (AOT) Permit Application (dated September 2023).
 - In addition, Maine Drilling & Blasting, Inc. (a qualified blasting company) has prepared a Blasting Plan for the project to minimize potential issues during the construction activities.

These documents/submittals provide detailed information on the proposed work activities, areas to be potentially impacted, assessments that have been performed, and information required to obtain approval and from the NHDES. These documents are currently being reviewed by the NHDES.

- During the construction project, Jewett will following Best Management Practices (BMP) to ensure a successful completion of the project. The proposed commercial warehouse project has been designed to be the least practicable impacting alternative. As identified in the NHDES Wetlands Bureau Minor Impact Permit, a permanent wetland impacts on the site are unavoidable to gain access to the proposed building location (suitable uplands for this project). Jewett has designed this project to impact the lowest functioning man-made wetland identified on the property in an effort to effectively maintain the continued environmental benefits of the other on-site wetland resource areas as well as have minimal impacts to their identified functions and values.
 - Additionally, the overall proposed development has been designed to take special



precautions in terms of stormwater management, and distance to the surrounding wetlands on site that have been identified to have more significant functions and values on the property. This method of project design has ensured that there will be no direct or indirect observable negative impacts to any marsh areas on the subject property.

- S.W. Cole Engineering, Inc. (herein referred to as SW Cole) and Gove Environmental Services, Inc. (herein referred to as "Gove") have excavated numerous test pits to obtain soil and construction information for the proposed construction activities.
- A site-specific Soil Survey was prepared for the project area by Gove. The Soil Survey was
 prepared in accordance with NHDES Administrative Rule Env-Wq 1504.09. The Soil Survey
 indicated that most of the on-site soils are classified as Hydrology Soil Group (HSG) "B" while the
 existing wetland resource areas were classified as HSG "C" and "D."
 - > HSG "B" soils are classified as silt loam or loam.
 - ➤ HSG "C" soils typically have between 20 percent (%) and 40% clay and less than 50% sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures.
 - ➤ HSG "D" soils are clay loam, silty loam, sandy clay, silty clay or clay. These soils have low infiltration rates and consist of clay soils with high swelling potential and are nearly impervious. These soils typically have greater than 40% clay, less than 50% sand, and have clayey textures.
- S.W. Cole Engineering, Inc. (herein referred to as SW Cole) and Gove excavated test pits to assess and characterize the on-site soil conditions. Based on a review of information, the following provides a summary of the on-site soil conditions:
 - > Over 50 tests were excavated at the site with total depths ranging between approximately 1.0 and 8.0 feet below grade. Refusal (assumed to be the top of bedrock) was encountered at over 40 test pit locations. Groundwater was only encountered at one (1) test pit location at a depth of approximately 6 feet below grade (i.e., water was seeping into the excavation). Evidence of groundwater (i.e., oxidized soil-reddish brown staining) was observed at approximately five (5) test pit locations. However, groundwater was not observed.
 - ➤ The soils encountered are considered glacial till consisting of silt, sand, clay, cobbles, and gravel.
 - ➤ The thickness of the overburden soil is thin (generally less than eight feet thick). The overburden soil and is not considered to be a major source of groundwater (i.e., thin saturated thickness) and is most likely dry/damp most of the year.
 - Groundwater present in the overburden soil would most likely be considered perched. Perched groundwater on some portions of the site is most likely water from precipitation events trapped on top of impervious soil layers (silt and/or clay) or bedrock.
 - > Groundwater is most likely at depth in the bedrock.
- The wetland resource areas contain low permeability soils such as sandy clay loam, clay loam, silty loam, sandy clay, silty clay or clay. These soils have low infiltration rates and consist of soils with high swelling potential and are nearly impervious.
- Based on information collected to date, the wetland appears to exhibit characteristics of a surface water flow wetland. In general, this type of wetland is predominantly dominated by surface water runoff and precipitation events with minimal groundwater outflow due to the low permeability soils.



The major source of water appears to be the result of surface water runoff (snowmelt runoff and precipitation events. Surface water losses would be the result of evapotranspiration.

Based on the information reviewed, it believed that the proposed construction activities will have minimal impacts on the wetland resource areas located on the site, except for those mentioned above and in the permit applications currently being reviewed by the NHDES.

LIMITATIONS

This letter was prepared for the use of Jewett Construction. The discussion provided by Hydro-GeoChemical Solutions, LLC are based solely on the information reviewed and provided by Jewett Construction. Additional information regarding the Site may result in a modification of the conclusions stated above.

If you have any questions or require additional information, please do not hesitate to contact me.

Respectfully Submitted,

John Kubiczki, P.G. Hydrogeochemist

Telephone 603.502.5181

Email: johnk@hydro-geochemicalsolutions.com



Blasting Plan

for

Campbell Mills

Route 27

Raymond, NH **Date: 12/07/23**

Prepared For:

P.O. Box 202 Candia, NH 03034

Prepared By:

Maine Drilling & Blasting, Inc.
Northeast Division
88 Gold Ledge Ave
Auburn, NH 03032
Telephone: 603-647-0299



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General

Maine Drilling & Blasting, Inc. considers safety as the priority during all phases of blasting operations. We are knowledgeable of and will follow all local, state and federal regulations related to transportation and use of explosives. The project specifications and conditions have been reviewed. Details of procedures for pre-blast surveys, explosives use, blast security, monitoring and documentation are enclosed and permit will be acquired through the town of Raymond Fire Department.

Pre-Blast Surveys / Notifications

Pre-blast surveys will be offered to all property owners within 250 foot radius of the blast site. Appropriate notices will be given and appointments arranged for those owners who desire a survey. Pre-blast surveys will be conducted by a Company Representative. Results of those surveys will be documented through video or still photographs and appropriate narration or written reports.

Blast Monitoring

A representative of Maine Drilling & Blasting, Inc. who has been properly trained in the setup and use of seismic monitoring equipment will monitor all blasts. At least one seismograph will be in use at all times. Placement of monitoring equipment will be at the nearest structure to the blast site. Maine Drilling & Blasting, Inc. monitoring equipment will consist of White Industrial Mini-Seis type seismographs. Details are enclosed. Results of blast monitoring will typically be available before the next blast, usually immediately following a blast. Results can be reviewed and modifications can be made to the blast design for the next blast if necessary

Sequence of Blasting

All blasting operations will be strictly coordinated with Severino, Raymond Fire Department, all subcontractors, engineers, and state/local jurisdictions. Emphasis will be on the safe and efficient removal of the rock existing on this project without impact to surrounding structures. Blasts will be developed so as to create adequate relief which will minimize ground vibrations per blast design below and offer the greatest protection possible to the surrounding structures.

Blasting Procedures

- 1. Blasting operations shall commence after 8:00 AM and cease before 4:00 PM, Monday through Friday.
- 2. Blasting cannot be conducted at times different from those announced in the blasting schedule except in emergency situations, such as electrical storms or public safety required unscheduled detonation.
- 3. Warning and all-clear signals of different character that are audible within a range of one-quarter mile from the point of the blast shall be given. All persons within the permit area shall be notified of the meaning of the signals through appropriate instructions and signs posted.
- 4. Access to blasting area shall be regulated to protect the public from the effects of blasting. Access to the blasting are shall be controlled to prevent unauthorized entry before each blast and until the perimeter's authorized representative has determined that no unusual circumstances exist after the blast. Access to and travel in or through the area can then safely resume.
- 5. Areas in which charged holes are awaiting firing shall be guarded, barricaded and posted, or flagged against unauthorized entry.



- 6. All blasts shall be made in the direction of the stress relieved face previously marked out or previously blasted.
- 7. All stemming shall be a minimum as specified using clean, dry 3/8" crushed stone.
- 8. Blasting mats shall be used as necessary to cover blasts.
- 9. The Blasting Contractor shall insure that extra safety and judgment is exercised by his blaster to prevent the simultaneous blasting of numerous holes.

Blasting Mats

Blasting mats and backfill will be used to control excessive amounts of rock movement on this project. Placement of mats are typically determined by the blaster. Mats will be placed so as to protect all people and structures on, or surrounding the blast site and property. Twenty rubber tire type blasting mats will be utilized on this project and will be approximately 12' x 24' in size; Rubber mat @ 12' x 24' 38 lbs./s.f. = 10,944 lbs./ea.

Blast Security and Warning Whistles

Each blast will be preceded by a security check of the affected area and then a series of warning whistles. Communications will be made with job site supervisors and local officials as required to ensure the safest possible operation. All personnel in the vicinity closest to the blast area will be warned. The warning whistles will follow the following sequence:

3 Audible Signal Pulses - 5 Minutes to Blast

2 Audible Signal Pulses - 1 Minute to Blast

1 Audible Signal Pulses - All Clear

No blast will be fired until the area has been secured and determined safe. The blast site will be examined by the blaster prior to the all-clear signal to determine that it is safe to resume work.

Explosives

All explosives will be delivered to the job site on a daily basis and transported following applicable federal, state, and local laws and regulations. Only the amount of explosives required to perform the day's work will be brought to the site. All explosives will be stored in approved magazines when not in use.

Enclosed are Technical Data and SDS sheets for the explosive products proposed for use on this project. Any one of, or a combination of these products may be in use at any one time on the site.



Blaster Qualifications

All Maine Drilling & Blasting, Inc. blasters on this job will be licensed in the State of New Hampshire and have received various amounts of training in the safe use and handling of explosives. Their licenses are enclosed. Additionally, Maine Drilling & Blasting, Inc. blasters are familiar with all OSHA Regulations, State Regulations, and Federal Regulations regarding construction site safety, including transportation, use, and handling of explosive materials. Weekly safety meetings are to be held on site by the Maine Drilling & Blasting, Inc. job foreman, with a record of that meeting returned to the Maine Drilling & Blasting, Inc. office.

Blasting Personnel

All blasting operations shall be conducted by experienced, trained and competent persons who understand the hazards involved. Persons working with explosive materials shall:

- 1. Have demonstrated knowledge of, and a willingness to comply with, safety and security requirements.
- 2. Be capable of using mature judgment in all situations.
- 3. Be of good physical condition and not addicted to intoxicants, narcotics, or other similar type of drugs.
- 4. The person(s) responsible for the explosives shall possess current knowledge of the local, State and Federal laws and regulations applicable to his work.
- 5. The person(s) responsible for the explosives shall have obtained a Certificate of Competency or a license as required by State law.

Licenses and Permits

Maine Drilling & Blasting, Inc. is fully licensed and insured for the transportation, use, and handling of explosives. Evidence of insurance is available. Maine Drilling & Blasting NH Explosives use permit, and all other required permits have been enclosed below. All NH Dig safes will be issued 48 hours prior to drilling or blasting.

Blast Vibration

Blast vibration will be monitored at the blast site, typically at the structure(s) closet to the blast site. Vibration limits will closely follow industry limits and the State and Local Regulations. Blast designs will be modified as required to stay within the guidelines and meet project schedules as well. Blasting operations will be modified accordingly when approaching buildings and utilities. Enclosed are preliminary vibrations calculations based on known distances to the structures of concern and anticipated initial blast designs.

Ground vibration peak particle velocity limits shall not exceed USBM Alternative Blasting Criteria

- US Bureau of Mines (USBM) RI 8507 Appendix B
- * Standard, and applicable State Regulations

Air blast overpressure level not to exceed 133 peak dB (linear) two Hertz high -pass system.

Blast Reports

Enclosed is a sample of a Maine Drilling & Blasting, Inc. Blast Report. This report will be filled out for each blast and copies supplied as needed.



Typical Blast Design

Enclosed is what would be considered typical blast designs for any close proximity blasting to structures, utilities, gas lines, or dry waterbody crossings. Hole sizes, depths, spacing and loading information is provided. These designs are to be considered a good starting point. Modifications are usually made, if necessary, following the first blasts to meet control and seismic considerations.



Blaster's Licenses / Qualifications

State of New Hampshire Department of Safety State Police

Certificate of Competancy For Blasting Operations

JEREMY R. HOPKINS

Certificate #: 1301

Restrictions: NONE

DOB:1/30/1981 Sex: M

Height: 5'11" Weight: 230

Hair: Brown Eyes: Blue

Director of State Police Characteristics: 4/9/2023

JEAN



Blaster Profile

Jeremy Hopkins Northeast Division

I. Work History

Maine Drilling & Blasting-Project Superintendent – June 2009 to present

II. Training and Education

Maine Drilling and Blasting

- o EOP Training 06/10/2009
 - Todd Larain, Quarry Blasting Supervisor
- o Driller I & II Training 7/1/2009
 - Dave Bijolle, Drill Training Superintendent
 - Hazmat General Awareness Training 01/09/2015
 - Bruce Lawler, Compliance Supervisor
- o Hazmat In-Depth Security Awareness Training 01/09/2015
 - Bruce Lawler, Compliance Supervisor
- o Hazmat Transport Security Training 01/09/2015
 - Bruce Lawler, Compliance Supervisor
- o Defensive Driving Training 01/09/2015
 - Bruce Lawler, Compliance Supervisor
- MSHA Annual Refresher 03/04/2022
 - Michael Weider, Safety Manager

AGC of America Supervisor Training Program

o Equipment & Methods- 03/19/2017

III. Project Recognition

S.U.R. Construction Waste Management Phase 15A – Approx. 270,000 CY Rochester, NH

NH DOT/ Audley Construction I-93 Highway Expansion- Approx. 400,000 CY Derry/Londonderry/Windham, NH

NH DOT/ Weaver Construction I-93 Highway Expansion- Approx. 80,000 CY Derry/Londonderry, NH

Associated Pipeline MXP Pipeline Spread 3&4 – 35.7 Miles Doddridge and Ritchie County, West Virginia

R.J. Grondin Construction York Toll Plaza – Approx. 65,000 CY York, ME

IV. Explosive Product Type Experience

Class 1, 1.1 Detonators: electric, non-electric

Class 1, 1.4 High Explosives; Dynamite, Unimax, Cast Boosters

Class 1, 1.5 Blasting Agents; Emulsions, Hydromite, Anfo, Bulk Emulsions

V. Additional Information

Blasting License NH – 1301 Blasting License MA – BL7049 CDL C with Hazmat Endorsement ATFE Employee Possessor Clearance OSHA 10 Current MSHA Part 46 Certification



Blasting Location Sketch





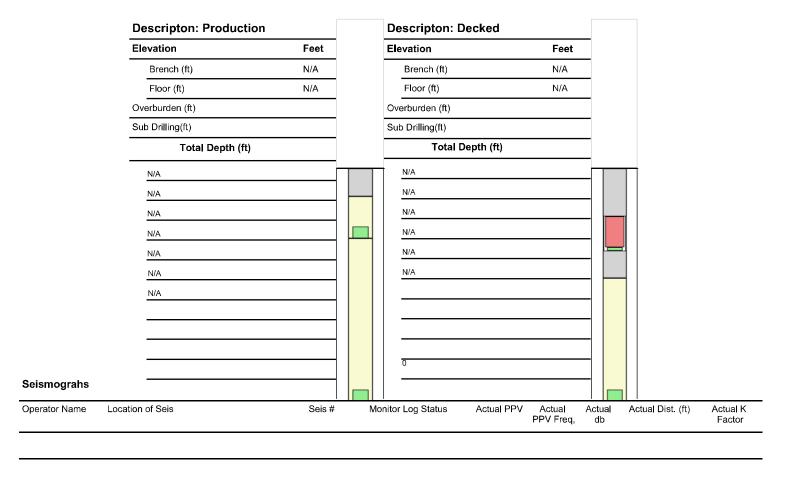
Sample Blast Report



Blast Report



| s | hot#_ | | Shot | Time (24hrs) | | Sh | ot VideoTape | d: | Weath | <u>er</u> | | |
|-------------|----------------------------|------------|----------|----------------|-------------|----------------|----------------|------------|-------------------|-----------------------------|-----|-----|
| Notes: | | | | | | | | | Weather Co | onditions: | | |
| | | | | | | | | | | Temp (°F): | | |
| | | | | | | | | | Wind I | Direction: | | |
| Preblas | t | | | | | | | | | Wind Spd: | M | PH |
| | - t Directio | n: | | | | Max I | Holes/Delay: | | Predicted | d K Factor: | | |
| Blas | t Location | 1: | | | | | | | Scale Dis | st.: | | |
| | ation of St | | | | | | Weight/Delay: | | Lbs Predicted | | | |
| Di | st. to Clos | est (Feet) | Struct | ure | _Railroad/H | ighway | Overhead | Util | N/A Undergro | und Util N/A | - | |
| Pay Qu | <u>antities</u> | | | | | | | | | | | |
| Fire Det | tail # of Hı | rs: N/A | <u> </u> | | | | <u>Pa</u> | ıy Calcula | tions Notes | | | |
| Pay Cub | oic Volum | е | | | | | | | | | | |
| N/A | | | ı | N/A N/A | | | | | | | | |
| N/A | | | 1 | N/A N/A | | | | | | | | |
| Shot I | <u>nfo</u> — | | | | | | | | | | | |
| Configura | ation | | | | | | | | | | | |
| | | | | | | | | | | Total Product | | |
| Total Drill | Depth(Ft) | | | Total SqFt | | Powder | • | | | Weight (Lbs) : | | |
| Total Ton | s | N/A | _ | Total Yards | | Factor | | | | Avg Weight / Hole (Lbs): | | |
| Cal Method | t t | Pattern | _ | | | | | | • | | | |
| # Holes | | | ٦, | Cover Used /No | o N/A | | | | | | | |
| | | AVG | | Min_ | Max | | | | | | | |
| Drill Depth | | | 1 | | | Stone Weigh | t | | Top Stemming | Min | | Max |
| Burden(Fe | et) | | Feet | | | Type of Terri | an | | Charges/Hole | Min | | Max |
| Spacing (F | eet) | | Feet | | | Type of Rock | | | Deck Stemming | Min | | Max |
| Hole Diame | eter | | 7 | | | Stemming Ty | ре | | Charge Wgt/Deck | Min | | Max |
| OverBurde | en (Ft) | | | | | Height of Fac | :e | | Depth of Water | Min | | Max |
| Control Ro | w Taped | | | | Angled H | oles /Face Ber | med | | La | ser/BoreTracking | | _ |
| | | | | | | | | | | | | |
| | | | 1 | Total Pound | s | | _ | Туре | Of Initiation: No | n-Electric | | |
| roduct # | Desc | | | | Qty | Wgt | — Product # | Desc | | | Qty | Lei |
| | | | | | | Lb | s | | | | | |
| | | | В | A BULK Totals | : | Lb | s | | | | | |
| roduct # | Desc | | | | Qty | Wgt | | | | | | |
| | | | | | | Lb | _ | | DE | TS DHOLE Totals: | | |
| | | | | | | Lb | _ | Desc | | | Qty | Le |
| | | | BAPAC | CKAGED Totals | | Lb | ·s | | | LINES Totals: | | |
| roduct # | Desc | | | | Qty | Wgt | e Product# | Desc | | | Qty | Lei |
| | | | | | | Lb | • | | | | | |
| | | | ВО | OSTERS Totals | : Lbs | | <u> </u> | | | | | |
| | | | | | | | _ | | 011 | DE DEL AV Totolo: | | |





Typical Blast Design and Timing Diagrams



Job Campbell Mill

Owner/Site

Location: Raymond, NH



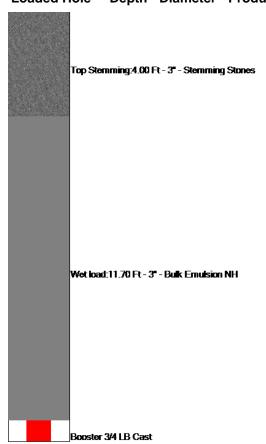
Blast Plan Description: Greater Than 6ft Typically Loaded Hole

APENDIX A. - Blast Design Plan:

| Est. Number Of Holes: 30 | |
|-----------------------------|--------|
| Hole Depth: 15.70 | Ft |
| Hole Diameter: 3 | in |
| Burden: 7.00 | Ft |
| Spacing: 8.00 | Ft |
| Holes per Delay: 1 | |
| Pounds Per Delay: 45.48 | Lbs |
| Pounds Per Hole: 45.48 | Lbs |
| Total est. Pounds: 1,364.40 | Lbs |
| Powder Factor: 1.40 | Lbs/Cy |
| Decks: 0 | |

Loaded Hole Depth - Diameter - Product

Division: Northeast



Blast Plan Notes:

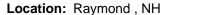
| Vibration | Prediction (formula based on Dupont Handbook) |
|----------------------------|---|
| | · |
| Site Factor (k): 220 | Ground Constant based on Site/Rock Conidtions |
| Distance Ft (d)150 | Distance to Structure |
| Lbs per Delay (w) 45.48 | Lbs explosives per 8 milisecond delay |
| Scaled Distance (sd) 22.24 | $(sd = d/square\ root\ of\ w)$ |
| Estimated PPV 1.54 | $(ppv = k * sd ^ -1.6)$ |
| | |

Typical for Production work consistent with holes 15.7 Ft deep at 150 from a structure utilizing 3' In diameter at a 7 Ft by 8 Ft pattern.



Job Campbell Mill

Owner/Site



Maine Drilling & Blasting

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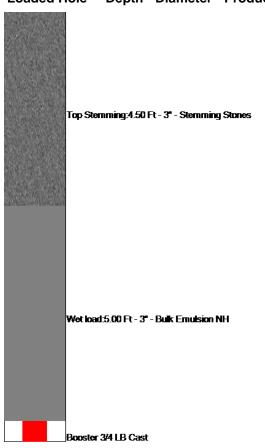
Blast Plan Description: Less Than 6ft Cuts Typically Loaded Hole

APENDIX A. - Blast Design Plan:

| Est. Number Of Holes | : 30 | |
|----------------------|--------|--------|
| Hole Depth | 9.50 | Ft |
| Hole Diameter | : 3 | in |
| Burden | 6.00 | Ft |
| Spacing | 7.00 | Ft |
| Holes per Delay | : 1 | |
| Pounds Per Delay | 19.43 | Lbs |
| Pounds Per Hole | 19.43 | Lbs |
| Total est. Pounds | 582.90 | Lbs |
| Powder Factor | : 1.31 | Lbs/Cy |
| Decks | : 0 | |
| | | |

Loaded Hole Depth - Diameter - Product

Division: Northeast



Blast Plan Notes:

| N/L and a s | Des Martine (Const. Laborator Description III) | | | | | | | | |
|----------------------------|---|--|--|--|--|--|--|--|--|
| Vibration F | Vibration Prediction (formula based on Dupont Handbook) | | | | | | | | |
| Site Factor (k): 220 | Ground Constant based on Site/Rock Conidtions | | | | | | | | |
| Distance Ft (d) 150 | Distance to Structure | | | | | | | | |
| Lbs per Delay (w) 19.43 | Lbs explosives per 8 milisecond delay | | | | | | | | |
| Scaled Distance (sd) 34.03 | (sd = d/ square root of w) | | | | | | | | |
| Estimated PPV 0.78 | $(ppv = k * sd ^ -1.6)$ | | | | | | | | |
| | | | | | | | | | |

Typical for Production work consistent with holes 9.5 Ft deep at 150 from a structure utilizing 3' In diameter at a 6 Ft by 7 Ft pattern.

| Maina Duillina |
|-----------------------|
| Maine Drilling |
| & Blasting |

Timing Diagram



Date: Blast er: Blast Plan

Job #: License:

Customer Name : Job Address: State: NH

Shot Number Blast Plan

Note-Typical timing design. Adjustments will be made pursuant to previous results. *All numbers are in milliseconds (ms)

| 0 | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 42 | 67 | 92 | 117 | 142 | 167 | 192 | 217 | 242 | 267 | 292 | 317 | 342 |
| 84 | 109 | 134 | 159 | 184 | 209 | 234 | 259 | 284 | 309 | 334 | 359 | 384 |



Job Campbell Mill

Owner/Site

Location: Raymond, NH



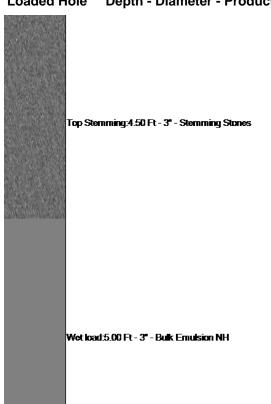
Blast Plan Description: Trench Typically Loaded Hole

APENDIX A. - Blast Design Plan:

| Est. Number Of Holes: | 24 |
|-----------------------|-------------|
| Hole Depth: | 9.50 Ft |
| Hole Diameter: | 3 in |
| Burden: | 6.00 Ft |
| Spacing: | 5.00 Ft |
| Holes per Delay: | 1 |
| Pounds Per Delay: | 19.43 Lbs |
| Pounds Per Hole: | 19.43 Lbs |
| Total est. Pounds: | 466.32 Lbs |
| Powder Factor: | 4.18 Lbs/Cy |
| Decks: | 0 |
| | |

Loaded Hole **Depth - Diameter - Product**

Division: Northeast



Blast Plan Notes:

| Vibration Prediction (formula based on Dupont Handbook) | |
|---|---|
| Site Factor (k): 220 | Ground Constant based on Site/Rock Conidtions |
| Distance Ft (d) 150 | Distance to Structure |
| Lbs per Delay (w) 19.43 | Lbs explosives per 8 milisecond delay |
| Scaled Distance (sd) 34.03 | (sd = d/ square root of w) |
| Estimated PPV 0.78 | $(ppv = k * sd ^ -1.6)$ |
| | |

Typical for Production work consistent with holes 9.5 Ft deep at 150 from a structure utilizing 3' In diameter at a 6 Ft by 5 Ft pattern.

Maine Drilling & Blasting

Timing Diagram



Date: Blaster: Blast Plan

Job #: License:

Customer Name : Job Address: State: NH

Shot Number Blast Plan

Trench Blasting Diagram

Note- Typical timing design. Adjustments will be made pursuant to previous results. *All numbers are in milliseconds (ms)



Burden 6FT



Fly Rock & Misfire Prevention Guidelines & IME Blasting Best Practices



Fly-Rock Prevention Plan

Prevention of Fly-Rock

Fly-rock prevention is most effective through good planning, attention to detail on drilling, loading and site security. Each category below contains items that are known to be effective in preventing fly-rock.

Planning

- 1. It must be clearly established who the (BIC) is and then clearly communicated to the entire crew.
- The BIC must clearly communicate what the responsibilities are for each crew member.
- 3. BIC must understand the abilities of the crew. Trainees must be trained and supervised on all job functions, (assign a trainer).
- 4. Through the use of the Job Hazard Analysis the crew must become familiar with the blast environment and clearly identify all hazards on and around the job site.
- 5. The BIC must communicate with the drill operators and other blasters with experience to fully understand the geology on site.
- 6. The blast design must take into consideration all the relevant parameters, blast geometry, hazards, type of products, timing and type and amount of cover in use.
- 7. All pre-blast calculations must be done prior to the blast and adjusted should conditions change on the site or drilling conditions dictate a modification of the plan. Powder factor should be determined prior to loading the first hole.
- 8. Each blast should be designed according to the direction of least danger.
- 9. Start each project with a conservatively designed test blast, that will not only provide information on the geology but will provide relief for the next shot.
- 10. When location or conditions on the job site change consider your next blast as a test blast.
- 11. Document your blast plan and have it reaffirmed.
- 12. Request hold harmless on shots that may cause damage or takes unnecessary risks.



Drilling

- 13. Carefully monitor and record hole depths, amount of overburden, and any drill hole anomalies with light colored crayons on the cones or another effective method.
- 14. Use flashlights attached to tapes to determine straightness of holes. If deviation is even slightly suspected, have holes bore tracked.
- 15. Arrange for Laser Profiling and Bore Tracking for high wall faces with exposures to property.

Loading the Shot

- 16. Have hole sheets and timing patterns on paper before loading.
- 17. Profile all faces before loading front row of holes.
- 18. Have blaster-in-charge load first and second rows of holes.
- 19. When using pourables (Bulk or ANFO):
 - Have an appropriate plan to deal with seams, voids, faces, and overloaded holes.
 - b. Make the appropriate design modifications for the use of bulk.
 - c. Keep the increased hazards in mind.
- 20. Take the time necessary to work safely and do not take shortcuts, or unnecessary risks. (DO NOT RUSH!)
- 21. Know the exact amount of burden on the face and load and cover accordingly, if face is bermed and you're uncertain of face location, excavate to find the face and then reberm.
- 22. Utilize berms for faces as appropriate.
- 23. If questioning the necessity to or the amount of cover, add cover.
- 24. Know the exact amount of overburden over the rock and load and cover accordingly.

Maine Drilling & Blasting

- 25. Use offsets properly.
- 26. Train the blast crew on proper stemming techniques, what stemming anomalies may look like, why, and how to report them.
- 27. Monitor the stemming to make certain that all holes are properly stemmed.
- 28. Use only appropriate crushed stone and non-sparking stemming rods to compact the stone in each hole.
- 29. Pay attention when using bulk as it can coat the sides of the hole reducing the effectiveness of the stemming.
- 30. BIC must walk the shot twice and check power, double-up on power and down hole caps when necessary (critical shots).
- 31. Ensure 100% safe detonation! Misfires can be a source for flyrock. Follow all Misfire Prevention Guidelines!
- 32. If there is a remote possibility of fly rock from a blast, take the necessary additional precautions.
- 33. Never make assumptions. If unfamiliar with the situation; figure it out, then get another opinion to confirm your decision .
- 34. Always communicate with supervisors when safety issues are compromised.

Site Security

- 35. Secure loading area before, during, and after loading.
- 36. Have a thorough, written Blast Zone Security Plan:
 - a. Design an over cautious plan.
 - b. Communicate the plan with our crew, the Contractor and his crew.
 - c. Have all blast guards use hand-held radios on the same frequency or another acceptable means of communication.
- 37. Secure the blast zone by removing people from the blast area (especially keeping them away from the face of the blast) and have them stay at an overly safe distance behind the blast and put them under cover.
- 38. Blaster must have proper cover.
- 39. Execute the Blast Zone Security plan to the "T".



Misfire Prevention Guidelines

Prevention of Misfires

These guidelines were established to provide good work practices that will greatly reduce the possibility of a misfire due to self-induced causes.

Shot Design Nonelectric

- 1. Use proper hookup procedures as found in the MD&B published guidelines
- 2. The Blaster-In-Charge may determine the need for extra surface delays to create a dual path system to enhance reliability
- 3. Ensure that there is enough slack in the shock tube
- 4. Ensure shot design allows for complete energization or in cases of larger shots appropriate advancement of the initiation sequence.

Shot Design Electric

- 5. Ensure shot design allows for complete energization
- 6. Tape connections in wet locations
- 7. Monitor meter while matting
- 8. Test equipment regularly
- 9. Perform stray current tests

Loading

- 10. "Tape" all non-electric connections to ensure there is a proper connection
- 11. The Blaster-In-Charge must walk the shot completely and verify all connections prior to shooting
- 12. The Blaster-In-Charge will have additional competent person(s) walk the shot to ensure all connections are made properly
- Use caution whenever sticking a loading pole or stemming rod into a loaded hole as it can damage shock tube
- 14. Re-prime any hole where separation is suspected
- 15. Re-prime any hole where you have used a powder retriever
- 16. Do not step on shock tube

Matting

- 17. Matting shall only be performed under the direction of the Blaster-In-Charge, or their competent designee
- 18. Ensure that the excavator on the project is sufficient in size to handle the mats in an efficient manner
- 19. Communicate the matting procedure clearly with the excavator operator, discuss hand signals also.
- 20. Design the shot with the excavators reach in mind
- Clean mats by "shaking" them with an excavator. This is more effective when the tire "grain" is sloping downward
- 22. Do not drag mats over a shot
- 23. Do not set mats with a front-end loader or other equipment that cannot properly hoist the mat over the shot
- 24. Place ANFO bags under shock tube exposed to jagged surfaces
- 25. Utilize sand cover whenever geological conditions warrant extra coverage

General Prevention Techniques

- 26. Do not cut open detonator boxes with a knife
- 27. No not allow your powder knife to swing from a lanyard (strap) unless the blade is protected
- 28. Document and calculate timing before loading the shot
- 28. After the shot has been tied in GET OFF THE SHOT!



Blasting; Best Practices

The potential to impact surface or groundwater with the substances used in commercial explosives can be controlled through the implementation of certain measures. Implementing such measures as part of a standard operating procedure will eliminate or minimize the potential for these substances to dissolve in or become associated with water. The specific measures included can be grouped into the following four (4) basic categories:

- 1. Education/Training of Explosive Users
- 2. Selection of Appropriate Explosives for the Job and Conditions
- 3. Explosives Loading and Handling
- 4. Attention to Technical Matters

1. Education/Training of Explosive Users

Both the owners/operators of the location where explosives are being used and the personnel working with commercial explosives should be well informed of all applicable regulations as well as any potential consequences associated with the products' exposure to water. The federal Clean Water Act, or the equivalent state statute, regulates the release of substances, in particular those that can cause an undue risk to human health or the environment. In addition, the Resource Conservation and Recovery Act, governs the disposal of hazardous wastes.

2. Selection of Appropriate Explosive for the Job and Conditions

Selecting the proper explosive for the particular job is critical to the prevention of surface or groundwater impact.

- ANFO (ammonium nitrate fuel oil) is not water-resistant and should be avoided if contact with water is likely.
- Various types of commercial explosives are available to withstand exposure to water. Water-resistant explosives include the cartridge forms of gelatinous nitroglycerin, watergels and emulsions and the bulk forms of emulsions which are: 1) Site Mixed Emulsion (ammonium nitrate fuel oil emulsifier) is a water-resistant explosive, semi-solid. This is manufactured on site and detonated while still warm assuring complete detonation. 2) Repump Emulsion (ammonium nitrate fuel oil emulsifier) is a water-resistant explosive, semi-solid, manufactured off site, transported and pumped into the borehole as needed.

3. Explosives Loading and Handling

- All excess product in augers or hoses is to be recovered and used either in the next blasthole or recycled in the mixer/holding tank.
- Explosive spillage around the blasthole collar is to be controlled and any such spillage should be placed into the blasthole before stemming
- Water contacting explosives during cleanup is to be contained and managed in accordance with applicable regulations
- Minimize the amount of time that explosives are exposed to wet conditions within the blasthole. The blast should be initiated as near the time the loading is completed as safety and operational procedures allow.
- Avoid having explosives exposed to precipitation.
- To assure complete detonation of explosives placed into the ground, a sufficient number of boosters must be used.

4. Attention to Technical Matters

- The actual physical conditions into which explosives are being placed must be taken into account.
- Personnel responsible for loading explosives into the boreholes should be in continuous communication with the drillers of those boreholes or supplied with adequate drill logs, so that any knowledge regarding fractures, crevices or cavities is obtained.
- Where Bulk ANFO or Emulsion is used in fractured, creviced or cavitied boreholes, plastic borehole sleeves and/or positioned inert stemming decks will be used to ensure total detonation of the explosives and avoidance of excessive charges.
- Choosing and placing the correct drilling patterns that results in the optimal use of explosives with all the explosives undergoing complete detonation.
- Quality assurance/quality control measures to maintain drilling accuracy that prevents the detonation in one blasthole from impacting the proper detonation in a nearby blasthole.
- Selecting the appropriate drilling equipment so that adequate borehole quality is maintained.
- Where appropriate to ensure complete detonation, two (2) primers will be used in each blasthole; one near the top and one near the bottom of the explosive column.
- Correct selection of delay timing for each blasthole to ensure detonation of the entire pattern, and the prevention of cut-off blastholes.



USBM Appendix B Alternative Blasting Level Criteria

APPENDIX B.-ALTERNATIVE BLASTING LEVEL CRITERIA

Safe blasting vibration criteria were developed for residential structures, having two frequency ranges and a sharp discontinuity at 40 Hz (table 13). There are blasts that represent an intermediate frequency case, being higher that the structure resonance (4 to 12 Hz) and lower that 40 Hz. The criteria of table 13 apply equally to a 35-Hz and a 10-Hz ground vibration, although the responses and damage potentials are very much different.

Using both the measured structure amplifications (fig. 39) and damage summaries (figs. 52 and 54), a smoother set of criteria was developed. These criteria have more severe measuring requirements, involving both displacement and velocity (fig. B-1).

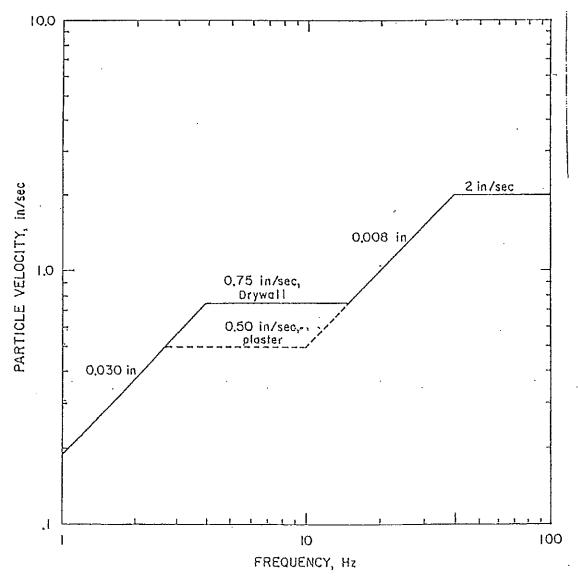


Figure B-1.—Safe levels of blasting vibration for houses using a combination of velocity and displacement.



Seismograph Specifications



Mini-Seis III Pro™

The Mini-Seis III Pro is the ultimate vibration monitor. It is suitable for geotechnical, environmental, blast monitoring and more. It features sampling rates of up to 16K over 4 or 8 channels. There is also a 128K single channel sample rate. The unit has a 16 bit dynamic range and is very low power.

Recording modes include waveform, histogram, histogram/waveform and manual. The waveform record duration can be set from 1 to 120 seconds at all sample rates. The histogram period can be set at 1, 10, 20, 30, 40, 50, 60 or 900 seconds.

Data can be downloaded to a computer or thumb drive using high speed USB. Remote access by RS232 with baud rates up to 460800 is supported. The unit has over 3.5 GB of memory and can store up to 4096 waveform and histogram records.

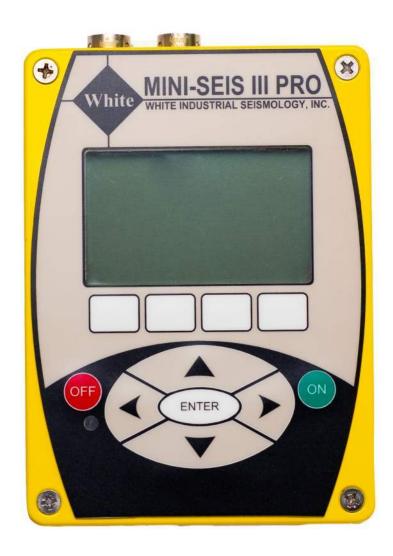
The user interface is simple and easy to navigate. Soft keys provide additional options depending on the screen being viewed. Optional GPS is available to store location coordinates and provide highly accurate clock syncing.

For advanced monitoring the instrument supports the use of non-standard sensors. White can provide a hardware interface for accelerometers, strain gauges, hydrophones and nearly any other AC or DC coupled sensor.

Multiple units can be connected together in a master-slave arrangement where the master unit triggers all of the slave units simultaneously. This feature provides a common time base useful for determining propagation velocity, structure phase response and more.

Specifications

User Manual







Industrial Seismology, Inc.

Mini-Seis III Pro Specifications

General

Channels Standard - three seismic channels and one acoustic channel. Optional – three additional

seismic channels and one additional acoustic channel (8 channel model). Support is

available for non-standard sensors.

Seismic

Range Standard 260 mm/s (10.24 in/s). Other ranges may be customized at the factory.

Resolution 0.008 mm/s (0.0003 in/s) depending on the range.

Frequency Range (ISEE) 2 to 250 Hz at 1024 sample rate as per ISEE Seismograph Performance Specifications for

Blasting Seismographs 2017 Edition. The upper frequency limit is 1/4 the sample rate.

Frequency Range (DIN) From 1 to 315 Hz.

Accuracy (ISEE) Conforms with ISEE Performance Specifications for Blasting Seismographs 2017

Edition.

Accuracy (DIN) DIN 45669-1 Standard.

Transducer Density Approximately 2.01 g/cc (125 lb/ft³)

Acoustic

Weighting Linear overpressure.

Range 0.0156 Pa (0.000156 Mb) depending on range.

Frequency Range 2 to 250 Hz at 1024 sample rate as per ISEE Seismograph Performance Specifications for

Blasting Seismographs 2017 Edition. The upper frequency limit is 1/4 the sample rate.

Linear Accuracy Conforms with ISEE Performance Specifications for Blasting Seismographs 2017

Edition.

Timer Allows an instrument to be active only during selected times on a daily basis.

Communication High speed USB or serial.

Storage Capacity Up to 4096 waveform and histogram records of any duration.

External Data Storage Write to USB thumb drive.

System Log The system log tracks on/off times, changes to setup parameters and system operation.

Operating Modes Waveform, histogram, histogram/waveform and manual.

Data Reporting Waveform and histogram events can be reported without needing to deactivate the

current operating mode.

Data Retrieval Data can be downloaded without requiring deactivation of the current operating mode.

GPS Optional integrated GPS stores location information in the record summary

Waveform Modes

Waveform Standard mode used for blast monitoring and discrete transient event monitoring.

Manual Trigger from the keypad or an external switch.

serial for simultaneous triggering.

Multi-Level Triggering Three trigger levels allow for the use of warning lights and sounds.

Sample Rate 1024, 2048, 4096, 8192, 16384 samples per second per channel over 8 channels. Also

65536 and 131072 samples per second over 1 channel.

Duration 1 to 120 seconds at all sample rates.

Pre-Trigger 1 second at 1024 sample rate. The pre-trigger time decreases proportional to the sample

rate.

Minimum Trigger Level

Seismic 0.254 mm/s (0.01 in/s) depending on range.

Linear Acoustic 88 dBL depending on range.

Downtime Between Events None at all sample rates.

Web: www.whiteseis.com

Dynamic Sensor Test With the exception of the single channel and non-standard sensors, a dynamic sensor test

is performed at the end of every event in waveform mode.

Phone: 1-417-624-0164

Email: info@whiteseis.com (Specifications Subject to Change)



Industrial Seismology, Inc.

Mini-Seis III Pro Specifications

Histogram Modes

Histogram Standard mode for recording discrete measurements from continuous and semi-

continuous sources.

Histogram/Waveform A waveform is recorded while the histogram is running when one of the trigger

thresholds is met or exceeded.

Sample Rate 1024, 2048 or 4096 samples per second over 8 channels.

Sample Period 1, 10, 20, 30, 40, 50, 60 seconds and 15 minutes.

Data Stored Channel peaks, their frequencies and optionally the vector sum.

and starting a new histogram. From 1 to 12 hours or 0 which starts a new histogram at

midnight.

Reporting

General Reporting requires an approved remote access device capable of port forwarding TCP

data. The reporting can be provided by the White Reporting ServiceTM or handled by

the user with the appropriate version of the White AutoReceiveTM software.

Waveform Mode With reporting activated, after a recording, the seismograph will output a string of

characters consisting of the unit serial number and other information.

Histogram Mode With reporting activated, after a histogram is made inactive, the seismograph will output

a string of characters consisting of the unit serial number and other information.

Physical

Size Approximately 15 cm. x 11.5 cm. x 9 cm. (6 in. x 4.5 in. x 3.5 in.).

Weight Approximately 1.6 Kg. (3.5 lbs.) without accessories.

Battery Internal 6.0 volt rechargeable.

Display The high contrast graphics display facilitates the instrument's setup. It also allows the

operator to view operating parameters and summary data.

Keypad The keypad can be used to navigate screens and modify setup data.

Clock A 24 hour clock maintains the date and time to the second, even if the primary power

fails.

Operating Time With a fully charged battery the unit will operate from 7 to 10 days at 1024 samples per

second. Longer times may be obtained using the timer mode or external power from a

solar panel or deep cycle battery.

Charging An internal charging circuit allows charging with the supplied plug-in wall mount

charger or available 10 to 15 volt DC supply. Power supplies for international use are

Phone: 1-417-624-0164

available.

Operating Temperature 0 to 130 degrees F (-18 to 54 degrees C).

Web: www.whiteseis.com



WoodsCan Electric Air Horn – Audible Device for Blast Notification



WoodsCan Hornet

Rechargeable Electric Air Horn

The world's most advanced portable signaling device for industrial and commercial safety

I have been using the WoodsCan blasting horn on a daily basis for urban and downtown blasting procedures since it was first introduced. Never would I want to go back to an aerosol device. With the in-truck quick charge, I have never yet been in a position where my signal warning device fails to work. In my line of work this is imperative. Every blaster that I come in contact with either has one or wants one...they work!

Bruce Rowell - Western Grater Contracting, Ltd.



Reliable

- A consistent 120+ decibels of sound
- · Reliable even in cold weather
- Improves crew productivity over disposable compressed gas air horns

Safe

- No frostbite from leaking gas cans
- No more explosion risks in hot weather
- Transportable on an airplane

Cost Effective

- Pays for itself within a few months
- Save hundreds the first year alone
- Save more each year thereafter

Go Green

- No more metal cans to dispose of
- No more tetrafluoroethane (potent greenhouse gas) discharged into the atmosphere
- Ozone friendly

WoodsCan Hornet product highlights:

- Cost-effective signaling device
- Extremely reliable no more leaky gas cans
- Consistent 120 decibels of sound
- High intensity LED light
- Patented design
- Over 500 one-second pulls per charge
- Rechargeable 14 volt lithium-ion battery
- 30 minute charge time
- Easy to operate
- Environmentally friendly with no greenhouse gas discharged
- Six month limited warranty



Each WoodsCan Hornet kit includes:

- WoodsCan Hornet electric air horn
- 14 volt rechargeable lithium-ion battery
- Charger (120 or 230 VAC)
- 12 volt inverter
- Durable carrying case
- (Optional) second lithium-ion battery
- User's manual

Regardless of your application, the WoodsCan Hornet will meet your signaling needs:

- Mining
- Quarrying
- Construction
- Seismic Exploration
- Animal Control
- Special Events
- Many more...





For more information, contact us at info@woodscan.com or visit: www.woodscan.com



Blasting Mats Cut Sheets





Blasting mats

Popular Products:

- 8 ft. x 16 ft. (2.43m x 4.87m)
- 10 ft. x 15 ft. (3m x 4.5m)
- 12 ft. x 24 ft. (3.65m x 7.3m)

Custom Made Products

Our equipment enables us to produce blasting mats to your particular specifications in sizes ranging from 4 x 4 ft. $_{(1.2 \times 1.2 m.)}$ to 16 x 28 ft. $_{(4.87 \times 8.53 m.)}$. A flexibility that is unique in the industry.



| WHY CHOOSE DYNAMAT BLASTING MATS? | | | |
|---|--|---|--|
| Our Innovative Processes | | | |
| Th | e Dynamat Advantage | Our Goals | |
| Automated processes | We have developed automated processes that let us measure the compaction of the blasting mats. | To ensure consistent quality. | |
| Meticulous tire selection | Our manufacturing processes demand it. | | |
| Our Added Value | | | |
| The Dynamat Advantage | | Our Goals | |
| Blasting mats over 12 feet (3.66 m) wide | We are the only manufacturer in North America to make products of such widths. | To match our client's needs. | |
| 12 inches (30 cm) between each cable | We have always spaced them this way. All our competitors, on the other hand, leave a gap of 14 to 16 inches (35 to 41 cm) between their cables. | To produce safe blasting mats that control flying debris better. | |
| Forged circular rings | We used forged rings, while the competition used welded ones. | To make blasting mats easier to handle. | |
| Two dimensions of rings | We use 10 and 13-inch (25and 33 cm) rings. | To obtain the resistance required for hoisting. | |
| The benefits of traditional blasting mats vs. blasting mats made of truck tires (transport mat) | greater flexibility and adaptability to the terrain. maximal absorption of the energy released by dynamiting. reduced possibilities of a partial blast. unequalled ease in handling. | To provide a safe product that not only eliminates all risk of flying debris when dynamiting, but also ensures optimal performance. | |

Superior quality = safety

Our products are subject to rigorous quality control at every step of the manufacturing process. Carefully selected, the recovered tires that make up our blasting mats are tied together with new cables, and that translates into solidity and resistance. All the rubber pieces are perforated in order to minimize tears. This means that clients can use our blasting mats in total safety.

Traceability

In a process that's unique to Dynamat, blasting mats are individually numbered to allow them to be easily traced and identified wherever they are on a project involving dynamiting. Now that's an advantage that's undeniably Dynamat!

Dynamat inc. 100, rue de la Station Laval, Québec H7M 3H7

Printed on : July 20th 2016

Phone: 450 662-1803 Fax: 450 662-9668 Toll free: 1800 363-8026 E-mail: info@dynamat.qc.ca Website: http://www.dynamat.qc.ca/



SDS Sheets

TECHNICAL DATA SHEET



NONEL® LEAD LINE

Nonelectric Shock Tube

Properties

SDS #1124

Net Explosive Content per 100 Spools of 2500 ft 1.105 KG or 2.436 lbs

| Smeele / Coop | gth | Length | |
|---------------|------|-------------|--|
| Spools / Case | feet | meters feet | |
| 2 | 2500 | 762 | |

- Length rounded to nearest one-half meter.
- See case label for exact case weight.

Case Dimensions

51 x 25 x 28 cm 20 x 9 ⁷/8 x 10 ⁷/8 in

Hazardous Shipping Description

• Articles, Explosives, N.O.S. (HMX, Aluminum), 1.4S, UN 0349, PG II



PRODUCT DESCRIPTION

NONEL LEAD LINE is NONEL shock tube spooled at the factory in 763 meter (2,500 foot) lengths for easy application and deployment. NONEL LEAD LINE shock tube is a small diameter, three-layer plastic tube coated on the innermost wall with a reactive explosive compound. When initiated, NONEL shock tube propagates a low energy signal, similar to a dust explosion, at approximately 2000 m/ sec (6,500 ft/sec) along the tube's length with minimal disturbance to the outside of the tube. The signal is transmitted from one NONEL shock tube to another through field-assembled splices.

NONEL LEAD LINE provides maximum flexibility to the blaster in choosing a position of safety from which to initiate nonelectric blast rounds in either underground or surface applications. NONEL LEAD LINE is the <u>only</u> NONEL product that can be cut and spliced into a NONEL detonator product to construct a custom length nonelectric starter assembly.



APPLICATION RECOMMENDATIONS

- ALWAYS splice NONEL LEAD LINE to NONEL EZTL™ nonelectric trunkline delay detonators, NONEL EZ DET® nonelectric blast initiation system, NONEL TD or NONEL Starter detonators to make-up the nonelectric starter assembly when using NONEL LEAD LINE as the primary initiator for NONEL blast rounds.
- ALWAYS trim at least 3 m [10 ft] of tubing before inserting into a nonelectric shock tube starting device or whenever dirt and/or moisture may have compromised the open tube ends before making a splice connection.



Product Disclaimer: Please see reverse side.

TECHNICAL DATA SHEET



NONEL® LEAD LINE

Nonelectric Shock Tube

TRANSPORTATION, STORAGE AND HANDLING

- NONEL LEAD LINE must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations.
- For maximum shelf life (3 years), NONEL LEAD LINE must be stored in a cool, dry, well ventilated magazine. Explosive inventory should be rotated. Avoid using new materials before the old. For recommended good practices in transporting, storing, handling and using this product, see the booklet "Prevention of Accidents in the Use of Explosive Materials" packed inside each case and the Safety Library Publications of the Institute of Makers of Explosives.

APPLICATION RECOMMENDATIONS - continued

- ALWAYS replace the plastic tube closure over the open end of any NONEL LEAD LINE that remains on the spool and is intended to be used to make up another nonelectric starter assembly.
- ALWAYS make the final hook-up of the nonelectric starter assembly to the blast round only after all equipment and non-essential personnel are clear of the blast area.
- ALWAYS unspool NONEL LEAD LINE by hand if the starter assembly has been spliced to it and is attached to the blast round.
- ALWAYS keep any NONEL LEAD LINE tube ends sealed and free from dirt and moisture since dirt or moisture in the shock tube may cause a misfire.
- NEVER use NONEL LEAD LINE for in-hole use. NONEL LEAD LINE is for use outside the borehole only.
- NEVER attempt to knot different lengths of shock tube together. Shock tube will not initiate itself through knot connections. It must be spliced.
- NEVER remove the plastic tube closure from the NONEL LEAD LINE shock tube until just before splicing.
- NEVER attach the starter assembly to the blast round until after the LEAD LINE deployment is complete whenever NONEL LEAD LINE is to be unspooled by any method other than by hand,
- NEVER run over NONEL LEAD LINE with equipment. This may damage the shock tube and may cause a misfire.
- ALWAYS replace the NONEL LEAD LINE if it is damaged
- When making a nonelectric starter assembly using NONEL LEAD LINE, ALWAYS remove the plastic tube closure and save for later use. Splice two freshly-cut ends of NONEL shock tube together (one from the NONEL LEAD LINE and the other from the NONEL detonator) by inserting them into opposite ends of the plastic connector sleeve and pushing them toward one another until they are both at least ½ cm (¼ in) in the splice.

ADDITIONAL INFORMATION – Visit **dynonobel.com** for Brochures and Case Studies related to this product.

Product Disclaimer: Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.



According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

2795 East Cottonwood Parkway, Suite 500

Salt Lake City. Utah 84121

Phone: 801-364-4800 Fax 801-321-6703 E-Mail: dnna.hse@am.dynonobel.com

www.dynonobel.com

1.1 Product Identifier

Trade Name: Shock Tube Article Number: 1124 Other Product Identifiers:

NONEL® LEAD LINE

1.2 Relevant Identified uses of the Substance or Mixture and uses Advised Against

No further relevant information available.

Application of the Substance / the Mixture

Explosive product.

Commercial blasting applications.

1.3. Emergency Telephone Number

CHEMTREC 1-800-424-9300

(US/Canada) +01 703-527-3887 (International)

SECTION 2 – HAZARD(S) IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification According to Regulation (EC) No 1272/2008

Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).



exploding bomb

Expl. 1.4 H204 Fire or projection hazard.

Classification According to Directive 67/548/EEC or Directive 1999/45/EC

R5: Heating may cause an explosion.

Information Concerning Particular Hazards for Human and Environment: Not applicable.

Additional Information: There are no other hazards not otherwise classified that have been identified.

0 percent of the mixture consists of component(s) of unknown toxicity

2.2 Label Elements

Labelling According to Regulation (EC) No 1272/2008

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

Hazard Pictograms



GHS01

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SDS #: 1124

Date:

Supersedes:

22/05/2015

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

Signal Word

Hazard-determining components of labelling

Hazard Statements

Precautionary Statements

: Warning

: octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)

: H204 Fire or projection hazard.

: P210 - Keep away from heat/sparks/open flames/hot surfaces.

- No smoking.

P250 - Do not subject to grinding/shock/friction. P280 - Wear protective gloves/protective clothing/eye

protection/face protection.

P240 - Ground/bond container and receiving equipment. P373 - DO NOT fight fire when fire reaches explosives.

P370+P380 - In case of fire: Evacuate area.

P372 - Explosion risk in case of fire.

P401 - Store in accordance with local/regional/national/international

regulations.

P501 - Dispose of contents/container in accordance with

local/regional/national/international regulations.

Hazard Description

WHMIS-Symbols

NFPA Ratings (scale 0 - 4) HMIS-Ratings (scale 0 - 4) : Explosive products are not classified under WHMIS.

: Not available.

: Not available.

HMIS Long Term Health Hazard Substances

None of the ingredients are listed.

2.3 Other Hazards

Results of PBT and vPvB Assessment

PBT : Not available. vPvB : Not available.

Explosive Product Notice: PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

| Dangerous components: | | |
|----------------------------|--|--|
| CAS: 2691-41-0 | octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | |
| EINECS: 220-260-0 | ♦ T R24; | |
| | Expl. 1.1, H201 | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311 | |
| CAS: 7429-90-5 | aluminium powder (pyrophoric) | |
| EINECS: 231-072-3 | ♦ F R15-17 | |
| Index number: 013-001-00-6 | Pyr. Sol. 1, H250; Water-react. 2, H261 | |

Additional Information: For the listed ingredients, the identity and exact percentages are being withheld as a trade secret. For the wording of the listed risk phrases refer to section 16.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information: No special measures required.

After Inhalation: Unlikely route of exposure.

Supply fresh air; consult doctor in case of complaints.

After Skin Contact: Generally the product does not irritate the skin.

Wash with soap and water.

If skin irritation is experienced, consult a doctor. **After Eye Contact:** Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After Swallowing: Unlikely route of exposure.

Do not induce vomiting; call for medical help immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Blast injury if mishandled.

Hazards

Danger of blast or crush-type injuries.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

SECTION 5 – FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Agents: DO NOT FIGHT FIRE WHEN FIRE REACHES EXPLOSIVES.

For Safety Reasons Unsuitable Extinguishing Agents: None.

5.2 Special Hazards Arising from the Substance or Mixture

DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Can explode or detonate under fire conditions. Burning material may produce toxic vapors. It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications.

Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.

5.3 Advice for Firefighters

Protective Equipment: Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional Information

Eliminate all ignition sources if safe to do so. Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions. Individual devices will randomly explode. Will not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2008 Emergency response Guidebook for further information.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Remove persons from danger area.

Ensure adequate ventilation

Wear protective clothing.

Protect from heat.

Evacuate area.

Isolate area and prevent access.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

6.2 Environmental Precautions

No special measures required.

6.3 Methods and Material for Containment and Cleaning Up

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose unusable material as waste according to item 13.

6.4 Reference to Other Sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handle with care. Avoid jolting, friction and impact.

Use only in well ventilated areas.

Do not subject to grinding/shock/friction.

Information About Fire - and Explosion Protection: Protect from heat. Emergency cooling must be available in case of nearby fire.

7.2 Conditions for Safe Storage, Including Any Incompatibilities Storage:

Requirements to be Met by Storerooms and Receptacles: Store in a cool location.

Avoid storage near extreme heat, ignition sources or open flame.

Information About Storage in One Common Storage Facility: Store away from foodstuffs.

Further Information About Storage Conditions: Store in cool, dry conditions in well sealed receptacles.

Keep away from heat.

7.3 Specific End Use(s): No further relevant information available.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional Information About Design of Technical Facilities: No further data; see item 7.

8.1 Control Parameters

Ingredients with Limit Values that Require Monitoring at the Workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

DNELs: No further relevant information available. **PNECs:** No further relevant information available.

Additional Information: The lists valid during the making were used as basis.

8.2 Exposure Controls

Personal Protective Equipment:

General Protective And Hygienic Measures: The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Respiratory Protection: Not required under normal conditions of use.

Respiratory protection may be required after product use.

Protection of Hands: Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

Material of Gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration Time of Glove Material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

Eye Protection:



Safety glasses

Face protection

Body Protection: Protective work clothing

Limitation and Supervision of Exposure Into the Environment: No further relevant information available. **Risk Management Measures:** Organizational measures should be in place for all activities involving this product.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

General Information

Appearance

Form : Solid material

Colour : According to product specification

Odour: OdourlessOdour Threshold: Not determined.pH- Value: Not applicable.

Change in Condition

Melting point/Melting range: Not Determined.Boiling point/Boiling range: Undetermined.Flash Point: Not applicable.

Flammability (solid, gaseous) : Fire or projection hazard.

Auto/Self-ignition temperature: Not determined.Decomposition temperature: Not determined.Self-igniting: Not determined.

Danger of explosion : Heating may cause an explosion.

Explosion limits

Lower: Not determined.Upper: Not determined.Vapour pressure: Not applicable.Density: Not determined.Relative density: Not determined.Vapour density: Not applicable.Evaporation rate: Not applicable.

Solubility in / Miscibility with water : Variable, dependent upon product composition and packaging.

Partition coefficient (n-octanol/water) : Not determined.

Viscosity

Dynamic: Not applicable.Kinematic: Not applicable.

9.2 Other Information : No further relevant information available.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity:

10.2 Chemical Stability:

Thermal Decomposition / Conditions to be Avoided: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

10.3 Possibility of Hazardous Reactions: Danger of explosion.

Toxic fumes may be released if heated above the decomposition point.

10.4 Conditions to Avoid: No further relevant information available.

10.5 Incompatible Materials: No further relevant information available.

10.6 Hazardous Decomposition Products: Possible in traces.

Nitrogen oxides.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity:

LD/LC50 Values Relevant for Classification: None.

Sensitisation: No sensitising effects known.

Primary irritant effect:

On the Skin: Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin. **On the Eye:** Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.

Sensitisation: No sensitising effects known.

Subacute to Chronic Toxicity: No further relevant information available.

Acute Effects (Acute toxicity, Irritation and Corrosivity): Danger of blast or crush-type injuries.

Repeated dose toxicity: No further relevant information available.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: No further relevant information available.

12.2 Persistence and Degradability: No further relevant information available.

12.3 Bioaccumulative Potential: No further relevant information available.

12.4 Mobility in Soil: No further relevant information available.

Additional Ecological Information

General Notes: Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB Assessment

PBT: Not applicable. **vPvB:** Not applicable.

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12.6 Other Adverse Effects: No further relevant information available.

DVNO

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system. Damaged materials pose a danger to anyone in the immediate area; consult experts for disposal of damaged products.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

Uncleaned Packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14 - TRANSPORT INFORMATION

14.1 UN-Number

DOT, ADR, IMDG, IATA : UN0349

14.2 UN Proper Shipping Name

DOT : For 10,000 ft spools with Wire Lock Terminations only: Not regulated as an explosive.

ARTICLES, EXPLOSIVE, N.O.S. (CONTAINS CYCLOTETRAMETHYLENE

TETRANITRAMINE)

ADR : 0349 ARTICLES, EXPLOSIVE, N.O.S. (CONTAINS CYCLOTETRAMETHYLENE

TETRANITRAMINE)

IMDG, IATA : ARTICLES, EXPLOSIVE, N.O.S. (CONTAINS CYCLOTETRAMETHYLENE

TETRANITRAMINE)

14.3 Transport Hazard Class(es)

DOT

ADR, IMDG, IATA

14.4 Packing Group

DOT, ADR, IMDG, IATA : II
14.5 Environmental Hazards:
Marine Pollutant: : No

14.6 Special Precautions for User: Not applicable.

EMS Number : F-B, S-X

14.7 Transport in Bulk According to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:

ADR

Limited Quantities (LQ) : 0

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Excepted Quantities (EQ) : Code: E0

Not permitted as Excepted Quantity

UN "Model Regulation" : UN0349, ARTICLES, EXPLOSIVE, N.O.S., 1.4S, II

1.4

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture United States (USA)

SARA

Section 355 (Extremely Hazardous Substances)

None of the ingredients are listed.

Section 313 (Specific Toxic Chemical Listings)

None of the ingredients are listed.

TSCA (Toxic Substances Control Act)

All ingredients are listed.

Proposition 65 (California)

Chemicals known to cause cancer

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males

None of the ingredients are listed.

Chemicals known to cause developmental toxicity

None of the ingredients are listed.

Carcinogenic Categories

EPA (Environmental Protection Agency)

2691-41-0 octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)

-0 Octarytio-1,5,5,7-tetralitio-1,5,5,7-tetrazocine (TMX)

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

7429-90-5 aluminium powder (pyrophoric) A4

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL)

All ingredients are listed.

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Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients are listed.

Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients are listed.

Other regulations, limitations and prohibitive regulations

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

DYNO

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

SECTION 16 – OTHER INFORMATION

Revision Date : 22/05/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the

OSHA Hazard Communication Standard 29 CFR 1910.1200

Relevant Phrases

H201 Explosive; mass explosion hazard.

- H250 Catches fire spontaneously if exposed to air.
- H261 In contact with water releases flammable gases.
- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- R15 Contact with water liberates extremely flammable gases.
- R17 Spontaneously flammable in air.
- R2 Risk of explosion by shock, friction, fire or other sources of ignition.
- R22 Harmful if swallowed.
- R24 Toxic in contact with skin.

Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Expl. 1.1: Explosives, Division 1.1
- Expl. 1.4: Explosives, Division 1.4
- Pyr. Sol. 1: Pyorphoric Solids, Hazard Category 1
- Water-react. 2: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 2.
- Acute Tox. 3: Acute toxicity, Hazard Category 3

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: Shock Tube

Sources

SDS Prepared by: ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com

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Dyno Nobel SDS

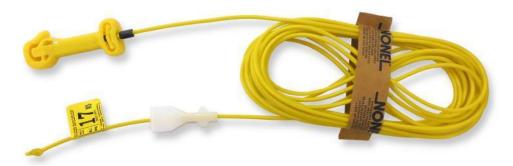
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NONEL® EZTL™ CPZ



Nonelectric Trunkline Delay Detonators Perchlorate Free



Product Description

NONEL® nonelectric delay detonator EZTL™ units consist of a length of yellow shock tube, with a surface detonator attached to one end and the other end sealed. The detonator is housed in a plastic EZ Connector block which facilitates easy connection to shock tube. A white J-hook is affixed near the sealed end. Easy-to-read, color-coded delay tags display the delay number and nominal firing time prominently.

EZTL detonators are designed for use with NONEL MS and EZ DET® units to provide effective and accurate surface timing between blastholes and/or rows of blastholes in surface and underground blasting designs.

Application Recommendations

For detailed application recommendations, **ALWAYS** request a copy of Dyno Nobel's *Product Manual: NONEL*® *and PRIMACORD*® from your Dyno Nobel representative.

- ALWAYS be sure that the shock tube(s) are securely inserted, one at a time, into the plastic EZ connector. The head of the connector block should rise to accept the tube, and return to a closed position with an audible click.
- **ALWAYS** ensure that the individual shock tubes remain aligned side by side in the EZ connector channel and do not cross over one another during insertion.
- ALWAYS protect the plastic EZ connector and all shock tube leads from impact or

Properties

MSDS #1322

Net Explosive Content per 100 units

0.0240 kg 0.0529 lbs

| Delay Time (msec) | Delay Code | Connector Block Color |
|--------------------------|------------|-----------------------|
| 17 | 17Z | Yellow |
| 25 | 25Z | Red |
| 33 | 33Z | Green |

Hazardous Shipping Description

Detonator assemblies nonelectric, 1.4B, UN 0361 PG II





NONEL® EZTL™ CPZ



Application Recommendations (continued)

damage. Use care when placing blasting mats and cover material on top of the blasting circuit. The EZ connector contains a detonator and is subject to detonation caused by abuse such as impact. Shock tube which has been cut, ruptured or damaged may cause misfires.

- NEVER use NONEL EZTL detonators with detonating cord. The low strength surface detonator will not initiate detonating cord.
- NEVER attempt to disassemble the delay detonator from the EZ connector block or use the detonator without the connector.
- NEVER place more than 6 shock tube leads into an EZ connector block. Misfires may result.
- NEVER tie-in NONEL EZTL units until all holes have been primed, loaded, stemmed and the blast site has been cleared.

Transportation, Storage and Handling

- NONEL EZTL must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations.
- For maximum shelf life (3 years), NONEL EZTL must be stored in a cool, dry, well ventilated magazine. Explosive inventory should be rotated. Avoid using new materials before the old. For recommended good practices in transporting, storing, handling and using this product, see the booklet "Prevention of Accidents in the Use of Explosive Materials" packed inside each case and the Safety Library Publications of the Institute of Makers of Explosives.

Packaging

| Ler | gth | | | Quantity per | |
|-----|-----|--------------|-----------|--------------|-----------------|
| m | ft | Product Code | Case Type | Case* | Inner Carton |
| 3.5 | 12 | DY812ME | D | 90 | 30 |
| 6 | 20 | DY820ME | D | 60 | 20 |
| 9 | 30 | DY830ME | D | 45 | 15 |
| 12 | 40 | DY840ME | D | 30 | 10 |

- * Always shipped with 2 cases strapped together. Case dimension width will double.
- · Length rounded to nearest one-half meter.
- Case weight varies by length & delay; see case label for exact weight.
- Replace "---" in Product Code with delay desired.

Case Dimensions

Detpak (D) 44 x 22 x 25 cm 17½ x 8¾ x 10 in

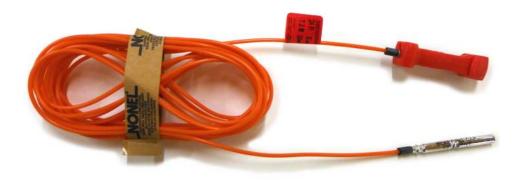
Product Disclaimer Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.



NONEL® EZ DET®CPZ 1.4B



Nonelectric Blast Initiation System Perchlorate Free



Product Description

NONEL® nonelectric delay detonator EZ DET® 1.4B units consist of a length of orange shock tube with a surface detonator attached to one end and a Standard (#8) in-hole detonator on the other. The surface detonator is inside a color-coded plastic EZ™ Connector block to facilitate easy connections to shock tube leads. This block can hold up to 6 shock tube leads. Easy-to-read, color-coded delay tags display the delay number and nominal firing time prominently.

NONEL EZ DET units can be easily connected to one another to satisfy basic blast design requirements in construction, mining, and quarry operations. They can also be used in combination with NONEL MS, NONEL EZTL™ and/or NONEL TD detonators to satisfy complex blast design requirements and minimize inventory of initiation system components.

Application Recommendations

For detailed application recommendations, **ALWAYS** request a copy of Dyno Nobel's *Product Manual: NONEL® and PRIMACORD®* from your Dyno Nobel representative.

• ALWAYS select a NONEL EZ DET unit having more than enough tubing length to extend from the planned primer location in the borehole to the collar of the next hole.

Properties

MSDS #1322

Net Explosive Content per 100 units

0.0810 kg 0.1782 lbs

| Nominal Time (msec) | Delay Code | Connector Block Color |
|------------------------|------------|-----------------------|
| 17/350 | DBZ | Yellow |
| 25/350 | ABZ | Red |
| 25/375 | AEZ | Red |

Hazardous Shipping Description

Detonator assemblies nonelectric, 1.4B, UN 0361 PG II



NONEL® EZ DET® CPZ 1.4B





Application Recommendations (continued)

- ALWAYS protect the plastic EZ Connector block and all shock tube leads from impact
 or damage during the loading and stemming operations. Use care when placing
 blasting mats and cover material on top of the blasting circuit. The EZ Connector
 block contains a detonator and is subject to detonation caused by abuse such as
 impact. Shock tube which has been cut, ruptured or damaged may cause misfires.
- ALWAYS be sure that the shock tube(s) are securely inserted, one at a time, into the EZ Connector block. The head of the EZ Connector block should rise to accept the shock tube and return to a closed position with an audible click.
- ALWAYS ensure that individual shock tubes remain aligned side by side in the connector channel and do not cross one over the another on insertion.
- **NEVER** use NONEL EZ DET units with detonating cord. The low strength surface detonator will not initiate detonating cord and may cause misfires.
- **NEVER** attempt to disassemble the delay detonator from the plastic EZ Connector block or use the detonator without the connector.
- NEVER place more than 6 shock tube leads into the plastic EZ Connector block.
 Misfires may result.
- NEVER pull, stretch, kink or put tension on shock tube such that the tube could break.
- **NEVER** splice NONEL EZ DET shock tube together to extend between holes.
- **NEVER** connect NONEL EZ DET units together until all holes have been primed, loaded and stemmed and the blast site has been cleared.

Transportation, Storage and Handling

- NONEL EZ DET must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations.
- For maximum shelf life (3 years), NONEL EZ DET must be stored in a cool, dry, well ventilated magazine. Explosive inventory should be rotated. Avoid using new materials before the old. For recommended good practices in transporting, storing, handling and using this product, see the booklet "Prevention of Accidents in the Use of Explosive Materials" packed inside each case and the Safety Library Publications of the Institute of Makers of Explosives

Packaging

| Length | | | | Quantity per | |
|--------|-----|--------------|-----------|--------------|--|
| m | ft | Product Code | Case Type | Case | |
| 4.5 | 16 | DX616 | D* | 60 | |
| 7 | 24 | DX623 | D* | 60 | |
| 9 | 30 | DX629 | D* | 40 | |
| 12 | 40 | DX641 | D* | 30 | |
| 18 | 60 | DX660 | DC | 50 | |
| 24 | 80 | DX680 | DC | 40 | |
| 30 | 100 | DX6M0 | DC | 30 | |

^{*} Always shipped with 2 cases strapped together. Case dimension width will double.

- · Length rounded to nearest one-half meter.
- Case weight varies by length & delay; see case label for exact weight.
- Replace "---" in Product Code with delay desired.

Case Dimensions

Detpak Case (DC) 48 x 45 x 26 cm 18¾ x 17¾ x 10¼ in Detpak (D) 44 x 22 x 25 cm 17 ½ x 8 ¾ x 10 in

Product Disclaimer Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.



according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- · 1.1 Product identifier
- · Trade name: Non-electric Delay Detonators
- · Article number: 1322
- · Other product identifiers:

NONEL® EZ DET® CPZ

NONEL® EZTL™ CPZ

1.2 Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

· Application of the substance / the mixture

Explosive product.

Commercial blasting applications

- · 1.3 Details of the supplier of the Safety Data Sheet
- · Manufacturer/Supplier:

Dyno Nobel Inc.

2795 East Cottonwood Parkway, Suite 500

Salt Lake City, Utah 84121 Phone: 801-364-4800 Fax: 801-321-6703

E-Mail: dnna.hse@am.dynonobel.com

· 1.4 Emergency telephone number:

CHEMTREC

1-800-424-9300 (US/Canada) +01 703-527-3887 (International)

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008

Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).



exploding bomb

Expl. 1.4 H204 Fire or projection hazard.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

R5: Heating may cause an explosion.

· Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

(Contd. on page 2)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 1)

· Additional information:

There are no other hazards not otherwise classified that have been identified.

0 percent of the mixture consists of component(s) of unknown toxicity

Product is a sealed package as delivered. Exposure to contents is unlikely when stored and used according to manufacturer's instructions. Adverse health effects are not expected from normal storage and use.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS01

· Signal word Warning

· Hazard-determining components of labelling:

diazodinitro phenol (DDNP)

pentaerythritol tetranitrate (PETN)

octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)

lead diazide

orange lead

· Hazard statements

H204 Fire or projection hazard.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P250 Do not subject to grinding/shock/friction.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P240 Ground/bond container and receiving equipment.

P373 DO NOT fight fire when fire reaches explosives.

P370+P380 In case of fire: Evacuate area. P372 Explosion risk in case of fire.

P401 Store in accordance with local/regional/national/international regulations.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

· Additional information:

EUH201 Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

- · Hazard description:
- · WHMIS-symbols: Explosive products are not classified under WHMIS.
- · NFPA ratings (scale 0 4) Not available.
- · HMIS-ratings (scale 0 4) Not available

· HMIS Long Term Health Hazard Substances

13424-46-9 lead diazide

(Contd. on page 3)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

| | (Contd. of page 2) |
|------------|--------------------|
| 7439-92-1 | lead |
| 13463-67-7 | titanium dioxide |

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- PBT: Not applicable.vPvB: Not applicable.
- · Explosive Product Notice

PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

SECTION 3: Composition/information on ingredients

- · 3.2 Mixtures
- · **Description:** Mixture of substances listed below with nonhazardous additions.

| Dangerous components: | |
|--|---|
| CAS: 78-11-5 EINECS: 201-084-3 Index number: 603-035-00-5 | pentaerythritol tetranitrate (PETN) E R3 Unst. Expl., H200 |
| CAS: 13424-46-9 EINECS: 236-542-1 Index number: 082-003-00-7 | lead diazide |
| | Unst. Expl., H200 Carc. 1B, H350; Repr. 1A, H360Df; STOT RE 2, H373 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 Acute Tox. 4, H302; Acute Tox. 4, H332 |
| CAS: 7439-92-1 EINECS: 231-100-4 | lead Repr. Cat. 1 R60-61-48/23/25; N R50/53 Repr. 1A, H360FD; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 |
| CAS: 13463-67-7 EINECS: 236-675-5 | titanium dioxide substance with a Community workplace exposure limit |
| CAS: 61790-53-2 | Diatomaceous earth (Silica-Amorphous) substance with a Community workplace exposure limit |

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

| | (Contd. | of page 3) |
|----------------------------|---|------------|
| CAS: 7429-90-5 | aluminium powder (pyrophoric) | |
| EINECS: 231-072-3 | F R15-17 | |
| Index number: 013-001-00-6 | Tyr. Sol. 1, H250; Water-react. 2, H261 | |
| CAS: 7440-36-0 | antimony | |
| EINECS: 231-146-5 | substance with a Community workplace exposure limit | |
| CAS: 4682-03-5 | diazodinitro phenol (DDNP) | |
| | Xi R36/38; Xi R43; ₩ E R3 | |
| | Unst. Expl., H200 | |
| | Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317 | |
| · SVHC | | |
| 13424-46-9 lead diazide | | |
| Additional information. | | |

· Additional information:

For the wording of the listed risk phrases refer to section 16.

For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.

SECTION 4: First aid measures

- · 4.1 Description of first aid measures
- · General information: No special measures required.
- · After inhalation:

Unlikely route of exposure.

Supply fresh air; consult doctor in case of complaints.

· After skin contact:

Generally the product does not irritate the skin.

Wash with soap and water.

If skin irritation is experienced, consult a doctor.

· After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:

Unlikely route of exposure.

Do not induce vomiting; call for medical help immediately.

- 4.2 Most important symptoms and effects, both acute and delayed Blast injury if mishandled.
- · Hazards Danger of blast or crush-type injuries.
- · 4.3 Indication of any immediate medical attention and special treatment needed

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and compression effects.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents:

Flood area with water.

DO NOT fight fire when fire reaches explosives.

· For safety reasons unsuitable extinguishing agents: None.

(Contd. on page 5)



according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 4)

· 5.2 Special hazards arising from the substance or mixture

DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Can explode or detonate under fire conditions. Burning material may produce toxic vapors. It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications. Fire or projection hazard.

Product may explode if burned in confined space. Individual cartridges may explode. Mass explosion of many cartridges at once is unlikely.

· 5.3 Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information

Eliminate all ignition sources if safe to do so.

Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions. Individual devices will randomly explode. Will not mass explode if multiple devices are involved. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2008 Emergency response Guidebook for further information.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

Ensure adequate ventilation

Protect from heat.

· 6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose unusable material as waste according to item 13.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Handle with care. Avoid jolting, friction and impact.

Use only in well ventilated areas.

Do not subject to grinding/shock/friction.

· Information about fire - and explosion protection:

Protect from heat.

Emergency cooling must be available in case of nearby fire.

(Contd. on page 6)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 5)

- · 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
- · Requirements to be met by storerooms and receptacles:

Store in a cool location.

Avoid storage near extreme heat, ignition sources or open flame.

- · Information about storage in one common storage facility: Store away from foodstuffs.
- · Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Keep away from heat.

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · Additional information about design of technical facilities: No further data; see item 7.
- · 8.1 Control parameters
- Ingredients with limit values that require monitoring at the workplace:

13424-46-9 lead diazide

PEL (USA) Long-term value: 0,05 mg/m³

as Pb; See 29 CFR 1910,1025

REL (USA) Long-term value: 0,05* mg/m³

as Pb;*8-hr TWA; See Pocket Guide App. C

TLV (USA) Long-term value: 0,05 mg/m³

as Pb; BEI

EL (Canada) Long-term value: 0,05 mg/m³

as Pb; IARC 2A, R

7439-92-1 lead

PEL (USA) Long-term value: 0,05* mg/m³

*see 29 CFR 1910,1025

REL (USA) Long-term value: 0,05* mg/m³

*8-hr TWA,excl. lead arsenate;See PocketGuideApp.C

TLV (USA) Long-term value: 0,05* mg/m³

*and inorganic compounds, as Pb; BEI

EL (Canada) Long-term value: 0,05 mg/m³

R; IARC 2B

EV (Canada) Long-term value: 0,05 mg/m³

as Pb, Skin (organic compounds)

13463-67-7 titanium dioxide

PEL (USA) Long-term value: 15* mg/m³

*total dust

REL (USA) See Pocket Guide App. A

(Contd. on page 7)

Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

| | | (Contd. of page 6) |
|---------------|---|--------------------|
| TLV (USA) | Long-term value: 10 mg/m³ withdrawn from NIC | |
| EL (Canada) | Long-term value: 10* 3** mg/m³ *total dust;**respirable fraction; IARC 2B | |
| EV (Canada) | Long-term value: 10 mg/m³ total dust | |
| 61790-53-2 D | Piatomaceous earth (Silica-Amorphous) | |
| PEL (USA) | 20mppcf or 80mg/m3 /%SiO2 | |
| REL (USA) | Long-term value: 6 mg/m³ See Pocket Guide App. C | |
| TLV (USA) | TLV withdrawn | |
| EL (Canada) | Long-term value: 4* 1,5** mg/m³ *total, **respirable | |
| EV (Canada) | Long-term value: 10* 3** mg/m³ uncalcined; *inhalable;**respirable | |
| 7429-90-5 alu | uminium powder (pyrophoric) | |
| PEL (USA) | Long-term value: 15*; 15** mg/m³ *Total dust; ** Respirable fraction | |
| REL (USA) | Long-term value: 10* 5** mg/m³ as Al*Total dust**Respirable/pyro powd./welding f. | |
| TLV (USA) | Long-term value: 1* mg/m³ as Al; *as respirable fraction | |
| EL (Canada) | Long-term value: 1,0 mg/m³ respirable, as Al | |
| EV (Canada) | Long-term value: 5 mg/m³ aluminium-containing (as aluminium) | |
| 7440-36-0 an | timony | |
| PEL (USA) | Long-term value: 0,5 mg/m³ as Sb | |
| REL (USA) | Long-term value: 0,5 mg/m³ as Sb | |
| TLV (USA) | Long-term value: 0,5 mg/m³ as Sb | |
| EL (Canada) | Long-term value: 0,5 mg/m³ | |
| EV (Canada) | Long-term value: 0,5 mg/m³ | |
| | rther relevant information available. rther relevant information available. | |
| _ | with biological limit values: | |
| 13424-46-9 le | ead diazide | |
| | | (Contd. on page 8) |

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 7)

BEI (USA) 30 µg/100 ml Medium: blood Time: not critical Parameter: Lead

7439-92-1 lead

BEI (USA) 30 μg/100 ml

Medium: blood Time: not critical Parameter: Lead

10 µg/100 ml Medium: blood Time: not critical

Parameter: Lead (women of child bearing potential)

- · **Additional information:** The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep ignition sources away - Do not smoke.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· Respiratory protection:

Not required under normal conditions of use.

Respiratory protection may be required after product use.

· Protection of hands:

Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

Face protection



Safety glasses

- · **Body protection:** Impervious protective clothing
- Limitation and supervision of exposure into the environment

No further relevant information available.

(Contd. on page 9)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 8)

· Risk management measures

Organizational measures should be in place for all activities involving this product.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Solid material

Colour: According to product specification

Odour:OdourlessOdour threshold:pH-value:Not applicable.

· Change in condition

Melting point/Melting range:
Boiling point/Boiling range:
Undetermined.

Flash point:
Not applicable.

• Flammability (solid, gaseous): Fire or projection hazard.

· Auto/Self-ignition temperature: Not determined.· Decomposition temperature: Not determined.

· **Self-igniting:** Product is not self-igniting.

• **Danger of explosion:** Heating may cause an explosion.

· Explosion limits:

Lower:
Upper:
Not determined.
Not determined.

Vapour pressure:
Not applicable.

Density:
Relative density
Vapour density
Vapour density
Evaporation rate
Not determined.
Not applicable.
Not applicable.

· Solubility in / Miscibility with

water: Variable, dependent upon product composition and packaging.

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic: Not applicable. **Kinematic:** Not applicable.

• 9.2 Other information No further relevant information available.

(Contd. on page 10)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 9)

SECTION 10: Stability and reactivity

- · 10.1 Reactivity
- · 10.2 Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

· 10.3 Possibility of hazardous reactions

Danger of explosion.

Toxic fumes may be released if heated above the decomposition point.

Reacts violently with oxidising agents.

- 10.4 Conditions to avoid Keep ignition sources away Do not smoke.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products:

Under fire conditions only:

Carbon monoxide and carbon dioxide

Leadoxide vapour

Bariumoxide vapour

Toxic metal oxide smoke

Chlorine compounds

Hydrocarbons

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- · Acute toxicity:
- LD/LC50 values relevant for classification:

7439-92-1 lead

Oral LD50 >2000 mg/kg (rat)

- Primary irritant effect:
- on the skin:

Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin.

· on the eye:

Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.

- Sensitisation: No sensitising effects known.
- · Subacute to chronic toxicity: No further relevant information available.
- · Acute effects (acute toxicity, irritation and corrosivity): Danger of blast or crush-type injuries.
- · Repeated dose toxicity:

Contains known or suspect carcinogens when inhaled. Product is in non-inhalable form and is nonclassifiable as a carcinogen.

· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Contains known or suspect carcinogens when inhaled. Product is in non-inhalable form and is non-classifiable as a carcinogen.

(Contd. on page 11)



according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 10)

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: Toxic for aquatic organisms
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential May be accumulated in organism
- · 12.4 Mobility in soil No further relevant information available.
- **Ecotoxical effects:**
- · Remark: Toxic for fish
- Additional ecological information:
- · General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary

Toxic for aquatic organisms

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.

- · 12.5 Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Damaged materials pose a danger to anyone in the immediate area; consult experts for disposal of damaged products.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

- Uncleaned packaging:
- · **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number

· DOT, ADR, IMDG, IATA UN0361

· 14.2 UN proper shipping name

• **DOT** Detonator assemblies, non-electric

(Contd. on page 12)



according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 11)

· ADR 0361, DETONATOR ASSEMBLIES, NON-ELECTRIC DETONATOR ASSEMBLIES, NON-ELECTRIC

· 14.3 Transport hazard class(es)

· DOT, ADR, IMDG, IATA



ClassLabel1.41.4B

14.4 Packing group

· DOT, ADR, IMDG, IATA

· 14.5 Environmental hazards:

Special marking (IATA): Prohibited from Transport in Passenger Aircraft.



Cargo Aircraft Only.

• 14.6 Special precautions for user Not applicable.

· **EMS Number**: F-B,S-X

· Segregation groups Lead and its compounds

· 14.7 Transport in bulk according to Annex II of

MARPOL73/78 and the IBC Code Not applicable.

· Transport/Additional information:

· ADR

· Limited quantities (LQ) 0

• Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

· Tunnel restriction code 2 (E

· UN "Model Regulation": UN0361, DETONATOR ASSEMBLIES, NON-

ELECTRIC, 1.4B, II

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · United States (USA)
- ·SARA

| Section | 355 | (extremely | hazardous | substances): |
|---------|-----|------------|-----------|--------------|
| | | | | |

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

13424-46-9 lead diazide

7439-92-1 lead

7429-90-5 aluminium powder (pyrophoric)

7440-36-0 antimony

(Contd. on page 13)

Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

| TSCA /Toxi | o Substances Control Activ | (Contd. of page |
|---------------|--|-----------------|
| All ingredier | c Substances Control Act): | |
| • | 65 (California): | |
| • | known to cause cancer: | |
| | lead diazide | |
| 7439-92-1 | | |
| | titanium dioxide | |
| | | |
| 7439-92-1 I | known to cause reproductive toxicity for females: | |
| | | |
| | known to cause reproductive toxicity for males: | |
| 7439-92-1 I | | |
| | known to cause developmental toxicity: | |
| | lead diazide | |
| 7439-92-1 | | |
| _ | ic Categories | |
| • | onmental Protection Agency) | |
| | lead diazide | E |
| 7439-92-1 | lead | E |
| • | national Agency for Research on Cancer) | |
| 13424-46-9 | lead diazide | 2 |
| 7439-92-1 | | 2 |
| 13463-67-7 | titanium dioxide | 2 |
| 61790-53-2 | Diatomaceous earth (Silica-Amorphous) | 3 |
| TLV (Thres | nold Limit Value established by ACGIH) | |
| 13424-46-9 | lead diazide | A |
| 7439-92-1 | lead | A |
| 13463-67-7 | titanium dioxide | l A |
| 7429-90-5 | aluminium powder (pyrophoric) | F |
| NIOSH-Ca (| National Institute for Occupational Safety and Health) | |
| 13463-67-7 | titanium dioxide | |
| Canada | | |
| | omestic Substances List (DSL) | |
| All ingredier | onents are listed on the NDSL. | |
| | | |
| | gredient Disclosure list (limit 0.1%) | |
| 7439-92-1 I | | |
| | gredient Disclosure list (limit 1%) | |
| 7429-90-5 | lluminium powder (pyrophoric) | |

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and **OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 13)

7440-36-0 antimony

Other regulations, limitations and prohibitive regulations

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Substances of very high concern (SVHC) according to REACH, Article 57

13424-46-9 lead diazide

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Disclaimer

Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, the information contained herein, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. The information contained herein is provided for reference purposes only and is intended only for persons having relevant technical skills. Because conditions and manner of use are outside of our control, the user is responsible for determining the conditions of safe use of the product. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product or information. Under no circumstances shall either Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.

| Relevant | phrases |
|----------|--|
| H200 | Unstable explosives. |
| H250 | Catches fire spontaneously if exposed to air. |
| H261 | In contact with water releases flammable gases. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H350 | May cause cancer. |
| H360Df | May damage the unborn child. Suspected of damaging fertility. |
| H360FD | May damage fertility. May damage the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| R15 | Contact with water liberates extremely flammable gases. |
| R17 | Spontaneously flammable in air. |
| R20/22 | Harmful by inhalation and if swallowed. |
| R3 | Extreme risk of explosion by shock, friction, fire or other sources of ignition. |
| R33 | Danger of cumulative effects. |
| R36/38 | Irritating to eyes and skin. |
| 1 | |

(Contd. on page 15)

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and **OSHA GHS**

Printing date 22.05.2015 Revision: 22.05.2015

Trade name: Non-electric Delay Detonators

(Contd. of page 14)

R43 May cause sensitisation by skin contact.

R48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if

swallowed.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

R60 May impair fertility.

R61 May cause harm to the unborn child.

R62 Possible risk of impaired fertility.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the

International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent Expl. 1.4: Explosives, Division 1.4

Unst. Expl.: Explosives, Unstable explosives

Pyr. Sol. 1: Pyorphoric Solids, Hazard Category 1

Water-react. 2: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 1B: Carcinogenicity, Hazard Category 1B

Repr. 1A: Reproductive toxicity, Hazard Category 1A

Repr. 1A: Reproductive toxicity, Hazard Category 1A

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1 STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

Sources

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com

TECHNICAL DATA SHEET

SA BOOS Y

TROJAN® SPARTAN®

Cast Booster

| Prope | rties | #1108 |
|----------------------------------|----------|--------------------------------------|
| | | |
| Density | g/cc avg | 1.65 |
| Velocity | m/sec | 7,550 |
| | ft/s | 24,800 |
| Detonation Pressure Kbars | | 235 |
| Water Resistance | | 6 months with no loss of sensitivity |
| Shelf Life Maximum | | 5 years from date of production |
| Maximum Usage Temperature* | | 66°C / 150°F |

*Never expose explosive materials to sources of heat exceeding 66°C (150°F) or to open flame, unless such materials or procedures for their use have been recommended for such exposure by the manufacturer.

All Dyno Nobel Inc. energy and gas volume values except Velocity and Detonation Pressure are calculated using PRODET™ the computer code developed by Dyno Nobel Inc. for its exclusive use. Other computer codes may give different values.

Velocity and Detonation Pressure are the result of empirical methods during May 2009.

Hazardous Shipping Description

• UN 0042 Boosters, 1.1D PG II



SDS

PRODUCT DESCRIPTION

TROJAN SPARTAN cast boosters are detonator sensitive,

high density, high energy molecular explosives avaliable in various sizes designed to optimize initiation of all booster sensitive explosives. All TROJAN SPARTAN boosters are manufactured with an internal through-tunnel and detonator well for easy application with either electric, electronic or nonelectric detonators or 10.6 g/m (50 gr/ft) minimum strength detonating cord.



TROJAN SPARTAN boosters are formulated from the highest quality PETN and other high explosive materials ensuring reliability, consistency and durability in all blasting environments. The fluorescent green container and clear printing makes the TROJAN SPARTAN booster more visible on the blast site (as well as in low light situations) and reduces the possibility of misplaced charges. The redesigned Caplock™ holds the detonator in place more securely and makes it more difficult for the detonator to be pulled out of the capwell position while it is being lowered into the borehole.

APPLICATION RECOMMENDATIONS

 NEVER force the detonator into the through-tunnel, the detonator-well or otherwise attempt to clear these areas if obstructed. If the through-tunnel or detonator-well does not accommodate the detonator, do not use the booster. Notify your Dyno Nobel representative.



TECHNICAL DATA SHEET



TROJAN® SPARTAN®

Cast Booster

Properties Cont.

Packaging

| Unit V | Veight | l | Unit Dimer | | nsions Case | | _ | Gross eight/Case | |
|--------|--------|-----------|------------|------------|----------------|----------|------|---------------------|--|
| g | oz | Len cm | gth in | Diam cm | neter in | Quantity | kg | lbs | |
| 90* | 3.2 | 11.9 | 4.7 | 2.7 | 1.1 | 150 | 14.0 | 30.9 | |
| 150 | 5.5 | 11.9 | 4.7 | 3.6 | 1.4 | 95 | 15.0 | 33.1 | |
| 200 | 7 | 11.7 | 4.6 | 4.1 | 1.6 | 72 | 15.6 | 34.4 | |
| | - | 11.7 | | | | | 17.6 | 38.9 | |
| 350 | 12 | 11.9 | 4.7 | 5.0 | 2.0 | 49 | 17.0 | 30.9 | |
| 400 | 14 | 11.9 | 4.7 | 5.5 | 2.2 | 40 | 16.8 | 37.0 | |
| 450 | 16 | 11.9 | 4.7 | 5.8 | 2.3 | 36 | 17.4 | 38.3 | |
| 900* | 32 | 12.9 | 5.1 | 7.9 | 3.1 | 18 | 17.8 | 39.2 | |

^{*} The Caplock feature is not available on these boosters because the shells are made of cardboard instead of plastic.

Note: All weights and dimensions are approximate.

Case Dimensions

42 x 33 x 14 cm 16 ½ x 13 x 5 ½ in

APPLICATION RECOMMENDATIONS - continued

- ALWAYS use detonating cord with a coreload of 10.6 g/m (50 gr/ft) or higher when initiating the TROJAN SPARTAN booster with detonating cord.
- Minimum detonator is No. 8 strength for temperatures above -40° C (-40° F). A high strength detonator is recommended for temperatures below -40° C (-40° F).
- Extremely low temperatures do not affect the performance of cast boosters with commercial detonators. Low temperatures do affect detonators and detonating cord. Be certain your initiation system is suitable for your application in extremely low temperatures. Cast boosters are more susceptible to breakage during handling in extremely cold temperatures.

TRANSPORTATION, STORAGE AND HANDLING

- Dyno Nobel cast boosters must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations.
- For maximum shelf life (5 years), Dyno Nobel cast boosters must be stored in a cool, dry, well ventilated magazine. Explosive inventory should be rotated. Avoid using new materials before the old.

ADDITIONAL INFORMATION – Visit **dynonobel.com** for Brochures and Case Studies related to this product.





According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

SDS #: 1108

Supersedes: 07/20/2020

Date:

08/26/2020

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

6440 S. Millrock Drive, Suite 150 Salt Lake City, Utah 84121 Phone: 801-364-4800

Fax 801-321-6703

E-Mail: dnna.hse@am.dynonobel.com

www.dynonobel.com

1.1 Product Identifier

Trade Name: CAST BOOSTERS

Article Number: No other identifiers

1108

Other Product Identifiers:

DYNO® CORD SENSITIVE BOOSTERS - CS35, CS45, CS90, CS135

TROJAN® SPARTAN® TROJAN® SPARTAN® Slider

TROJAN® Stinger TROJAN® NB

TROJAN® NB UNIVERSAL TROJAN® Twinplex TROJAN® SPARTAN® SR TROJAN® SPARTAN® Cone TROJAN® Ringprime TROJAN® SPARTAN® CSU

TROJAN[®] WB TROJAN[®] SHIELD™

1.2 Relevant Identified uses of the Substance or Mixture and uses Advised Against

No further relevant information available.

Application of the Substance / the Mixture

Explosive product.

Commercial blasting applications.

1.3. Emergency Telephone Number

CHEMTREC 1-800-424-9300

1-800-424-9300 (US/Canada) +01 703-527-3887 (International)

SECTION 2 - HAZARD(S) IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification According to Regulation (EC) No 1272/2008

Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).



SDS# 1108 Date: 07/20/2020

Expl. 1.1 H201 Explosive; mass explosion hazard.

Classification According to Directive 67/548/EEC or Directive 1999/45/EC



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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS



E; Explosive

R2: Risk of explosion by shock, friction, fire or other sources of ignition.

Information Concerning Particular Hazards for Human and Environment: The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification System: The classification is according to the latest editions of the EU-lists and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists and is supplemented by information from technical literature and by information provided by the company.

Additional Information: There are no other hazards not otherwise classified that have been identified.

0 percent of the mixture consists of component(s) of unknown toxicity.

2.2 Label Elements

Labelling According to Regulation (EC) No 1272/2008

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

Hazard Pictograms



GHS01

Signal Word : Danger

Hazard-determining components of labelling: : pentaerythritol tetranitrate (PETN)

: octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)

: perhydro-1,3,5-trinitro-1,3,5-triazine (RDX)

: 2,4,6-trinitrotoluene (TNT) : aluminium powder (pyrophoric)

Hazard statements : H201 Explosive; mass explosion hazard.

Precautionary Statements : P210 - Keep away from heat/sparks/open flames/hot surfaces.

- No smoking.

P250 - Do not subject to grinding/shock/friction. P280 - Wear protective gloves/protective clothing/eye

protection/face protection.

P373 - DO NOT fight fire when fire reaches explosives.

P370+P380 - In case of fire: Evacuate area.

P372 - Explosion risk in case of fire.

P401 - Store in accordance with local/regional/national/international

regulations.

P501 - Dispose of contents/container in accordance with

local/regional/national/international regulations.

Hazard Description

WHMIS-Symbols : Explosive products are not classified under WHMIS.

NFPA Ratings (scale 0 - 4) : Not available. HMIS-Ratings (scale 0 - 4) : Not available.



According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

HMIS Long Term Health Hazard Substances

None of the ingredients are listed.

2.3 Other Hazards

Results of PBT and vPvB Assessment

PBT : Not applicable. vPvB : Not applicable.

Explosive Product Notice: PREVENTION OF ACCIDENTS IN THE USE OF EXPLOSIVES - The prevention of accidents in the use of explosives is a result of careful planning and observance of the best known practices. The explosives user must remember that he is dealing with a powerful force and that various devices and methods have been developed to assist him in directing this force. He should realize that this force, if misdirected, may either kill or injure both him and his fellow workers.

WARNING - All explosives are dangerous and must be carefully handled and used following approved safety procedures either by or under the direction of competent, experienced persons in accordance with all applicable federal, state, and local laws, regulations, or ordinances. If you have any questions or doubts as to how to use any explosive product, DO NOT USE IT before consulting with your supervisor, or the manufacturer, if you do not have a supervisor. If your supervisor has any questions or doubts, he should consult the manufacturer before use.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

SDS# 1108 Date: 07/20/2020

Description: Mixture of substances listed below with nonhazardous additions.

| Dangerous components: | |
|----------------------------|--|
| CAS: 78-11-5 | pentaerythritol tetranitrate (PETN) |
| EINECS: 201-084-3 | ⊘ E R3 |
| Index number: 603-035-00-5 | |
| CAS: 118-96-7 | 2,4,6-trinitrotoluene (TNT) |
| EINECS: 204-289-6 | ◆ T R23/24/25; ◆E R2; ◆ N R51/53 |
| Index number: 609-008-00-4 | R33 |
| | Expl. 1.1, H201 |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 |
| | ♦ STOT RE 2, H373 |
| | ♦ Aquatic Chronic 2, H411 |
| CAS: 7429-90-5 | aluminum metal |
| | ॐ F R15 |
| | Water-react. 1, H260 |
| CAS: 121-82-4 | perhydro-1,3,5-trinitro-1,3,5-triazine (RDX) |
| EINECS: 204-500-1 | ◆ T R25; ◆E R2 |
| | Expl. 1.1, H201 |
| | ♠ Acute Tox. 3, H301 |
| CAS: 2691-41-0 | octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) |
| EINECS: 220-260-0 | ♥ T R24; |
| | Expl. 1.1, H201 |
| | Acute Tox. 3, H301; Acute Tox. 3, H311 |

Additional Information: For the wording of the listed risk phrases refer to section 16.

For the listed ingredients, the identity and exact percentages are being withheld as a trade secret.



Groundbreaking Performance

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

General Information: No special measures required.

After Inhalation: Supply fresh air; consult doctor in case of complaints. **After Skin Contact:** Generally the product does not irritate the skin.

Wash with soap and water.

If skin irritation is experienced, consult a doctor. **After Eye Contact:** Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After Swallowing: Do not induce vomiting; call for medical help immediately. **4.2 Most Important Symptoms and Effects, Both Acute and Delayed**

Blast injury if mishandled.

Hazards: Danger of blast or crush-type injuries.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Product may produce physical injury if mishandled. Treatment of these injuries should be based on the blast and

compression effects.

SECTION 5 - FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Agents: DO NOT fight fire when fire reaches explosives.

For Safety Reasons Unsuitable Extinguishing Agents: None.

5.2 Special Hazards Arising from the Substance or Mixture

DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Can explode or detonate under fire conditions. Burning material may produce toxic vapors. It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications.

Explosive; mass explosion hazard.

5.3 Advice for Firefighters

Protective Equipment: Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional Information

Eliminate all ignition sources if safe to do so. Flammability Classification: (defined by 29 CFR 1910.1200) Explosive. Can explode under fire conditions. Individual devices will randomly explode. Mass explosion of multiple devices is possible under certain conditions. Burning material may produce toxic and irritating vapors. In unusual cases, shrapnel may be thrown from exploding devices under containment. See 2012 Emergency response Guidebook for further information.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Evacuate area.

Wear protective clothing.

Ensure adequate ventilation.

Keep away from ignition sources.

Protect from heat.

Isolate area and prevent access.

6.2 Environmental Precautions

No special measures required.

6.3 Methods and Material for Containment and Cleaning Up

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose unusable material as waste according to item 13.

SDS# 1108 Date: 07/20/2020



Page 4 of 12

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

6.4 Reference to Other Sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Open and handle receptacle with care.

Handle with care. Avoid jolting, friction and impact.

Use only in well ventilated areas.

Do not subject to grinding/shock/friction.

Information About Fire - and Explosion Protection: Keep ignition sources away - Do not smoke. Protect from heat.

Prevent impact and friction. Emergency cooling must be available in case of nearby fire.

7.2 Conditions for Safe Storage, Including Any Incompatibilities Storage:

Requirements to be Met by Storerooms and Receptacles: Store in a cool location.

Avoid storage near extreme heat, ignition sources or open flame.

Information About Storage in One Common Storage Facility: Store away from foodstuffs.

Store away from oxidising agents.

Further Information About Storage Conditions: Store under lock and key and with access restricted to technical

experts or their assistants only.

Keep away from heat. 7.3 Specific End Use(s): No further relevant information available.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

| | t Design of Technical Facilities: No further data; see item 7. | | | |
|---|--|--|--|--|
| 8.1 Control Parameters | | | | |
| Ingredients with Limit Value | es that Require Monitoring at the Workplace: | | | |
| 118-96-7 2,4,6-trinitrotoluer | ne (TNT) | | | |
| PEL (USA) | Long-term value: 1,5 mg/m³ | | | |
| | Skin | | | |
| REL (USA) | Long-term value: 0,5 mg/m³ | | | |
| | Skin | | | |
| TLV (USA) | Long-term value: 0,1 mg/m³ | | | |
| | Skin; BEI-M | | | |
| EL (Canada) | Long-term value: 0,1 mg/m³ | | | |
| | Skin | | | |
| EV (Canada) Short-term value: 0,2 mg/m³, 0,02 ppm | | | | |
| | Long-term value: 0,1 mg/m³, 0,01 ppm | | | |
| | Skin | | | |
| 7429-90-5 aluminum metal | | | | |
| PEL (USA) | Long-term value: 15*; 15** mg/m³ | | | |
| | *Total dust; ** Respirable fraction | | | |
| REL (USA) | Long-term value: 10* 5** mg/m³ | | | |
| | as Al*Total dust**Respirable/pyro powd./welding f. | | | |
| TLV (USA) | | | | |
| | as Al; *as respirable fraction | | | |
| EL (Canada) | (Canada) Long-term value: 1,0 mg/m³ | | | |

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respirable, as Al

According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

| EV (Canada) | Long-term value: 5 mg/m³ | | | |
|---|-------------------------------------|--|--|--|
| | aluminium-containing (as aluminium) | | | |
| 121-82-4 perhydro-1,3,5-trinitro-1,3,5-tria | zine (RDX) | | | |
| REL (USA) | Short-term value: 3 mg/m³ | | | |
| | Long-term value: 1,5 mg/m³ | | | |
| | Skin | | | |
| TLV (USA) | Long-term value: 0,5 mg/m³ | | | |
| | Skin | | | |
| EL (Canada) | Long-term value: 0,5 mg/m³ | | | |
| | Skin | | | |
| EV (Canada) | Long-term value: 0,5 mg/m³ | | | |
| | Skin | | | |

DNELs: No further relevant information available. **PNECs:** No further relevant information available.

| FINE 03. NO future relevant information available. | | | |
|--|---|--|--|
| Ingredients with biological limit values: | | | |
| 118-96-7 2,4,6-trinitrotoluene (TNT) | | | |
| BEI (USA) 1,5 % of hemoglobin | | | |
| Medium: blood | | | |
| | Time: during or end of shift | | |
| | Parameter: Methemoglobin (background, nonspecific, semi-quantitative) | | |

Additional Information: The lists valid during the making were used as basis.

8.2 Exposure Controls

Personal Protective Equipment:

General Protective and Hygienic Measures: The usual precautionary measures are to be adhered to when handling chemicals.

Keep ignition sources away - Do not smoke.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Respiratory Protection: Not required under normal conditions of use.

Respiratory protection may be required after product use.

Protection of Hands: Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of Gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration Time of Glove Material: The exact break through time must be found out by the manufacturer of the protective gloves and has to be observed.

Eye Protection:



Safety glasses

Face protection

Body Protection: Impervious protective clothing

Limitation and Supervision of Exposure into the Environment: No further relevant information available. **Risk Management Measures:** Organizational measures should be in place for all activities involving this product.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

General Information

Appearance

Form : Solid material

Colour : According to product specification

Odour: OdourlessOdour Threshold: Not determined.pH- Value: Not applicable.

Change in Condition

Melting point/Melting range : 80 °C (176 °F) (trinitrotoluene)

Boiling point/Boiling range : Undetermined. **Flash Point** : Not applicable.

Flammability (solid, gaseous) : Explosive; mass explosion hazard.

Auto/Self-ignition temperature: Not determined.Decomposition temperature: Not determined.

Self-igniting : Product is not self-igniting.

Danger of explosion : Risk of explosion by shock, friction, fire or other sources of ignition.

Explosion limits

Lower: Not determined.Upper: Not determined.Vapour pressure: Not applicable.

Density at 20 °C (68 °F) : 1,55 - 1,65 g/cm³ (12,935 - 13,769 lbs/gal)

Relative density : Not determined.
Vapour density : Not applicable.
Evaporation rate : Not applicable.

Solubility in / Miscibility with water : Variable, dependent upon product composition and packaging.

Partition coefficient (n-octanol/water) : Not determined.

Viscosity

Dynamic: Not applicable.Kinematic: Not applicable.

9.2 Other Information : No further relevant information available.

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity:

10.2 Chemical Stability:

Thermal Decomposition / Conditions to be Avoided: No decomposition if used and stored according to specifications. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

10.3 Possibility of Hazardous Reactions: Danger of explosion. Toxic fumes may be released if heated above the decomposition point.

10.4 Conditions to Avoid: Keep ignition sources away - Do not smoke. **10.5 Incompatible Materials:** No further relevant information available.

10.6 Hazardous Decomposition Products: Carbon monoxide and carbon dioxide

Nitrogen oxides Hydrocarbons.

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity:

LD/LC50 values relevant for classification: None.

Primary irritant effect:

On the Skin: Not a skin irritant in unused form. Vapors/particles from used product are possibly irritating to skin. On the Eye: Not an eye irritant in unused form. Vapors/particles from used product are possibly irritating to eyes.

Sensitisation: No sensitising effects known.

Subacute to Chronic Toxicity: No further relevant information available.

Acute Effects (Acute Toxicity, Irritation and Corrosivity): Danger of blast or crush-type injuries.

Repeated Dose Toxicity: No further relevant information available.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic Toxicity: Toxic for aquatic organisms

12.2 Persistence and Degradability: No further relevant information available.

12.3 Bioaccumulative Potential: No further relevant information available.

12.4 Mobility in Soil: No further relevant information available.

Ecotoxical effects: Remark: Toxic for fish

Additional Ecological Information:

General Notes: Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded.

12.5 Results of PBT and vPvB Assessment PBT: Not applicable.

vPvB: Not applicable.

12.6 Other Adverse Effects: No further relevant information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system. Damaged materials pose a danger to anyone in the immediate area; consult experts for disposal of damaged products.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

Uncleaned Packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14 – TRANSPORT INFORMATION

14.1 UN-Number

DOT, ADR, IMDG : UN0042 **IATA** : FORBIDDEN

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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

14.2 UN Proper Shipping Name

DOT, IMDG : Boosters, without detonator

ADR : 0042, BOOSTERS, WITHOUT DETONATOR

IATA : FORBIDDEN

14.3 Transport Hazard Class(es)

DOT, ADR, IMDG

IATA

Class : FORBIDDEN

14.4 Packing Group

DOT, ADR, IMDG : II

IATA : FORBIDDEN

14.5 Environmental Hazards: Marine Pollutant:: No

Special Marking (IATA): : Prohibited from Transport in Passenger Aircraft.

14.6 Special Precautions for User: Not applicable.

EMS Number: : F-B,S-X

14.7 Transport in Bulk According to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ) : 0

Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

Tunnel restriction code

IMDG

Limited Quantities (LQ) : 0

Excepted Quantities (EQ) : Code: E0

Not permitted as Excepted Quantity

IATA : FORBIDDEN.

UN "Model Regulation" : UN0042, BOOSTERS, WITHOUT DETONATOR, 1.1D, II

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture United States (USA)

SARA

Section 355 (Extremely Hazardous Substances)

None of the ingredients are listed.

Section 313 (Specific Toxic Chemical Listings)

7429-90-5 aluminum metal

TSCA (Toxic Substances Control Act)

All ingredients are listed.

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Proposition 65 (California)

Chemicals known to cause cancer

118-96-7 2.4.6-trinitrotoluene (TNT)

Chemicals known to cause reproductive toxicity for females

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males



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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

| None of the ingredients are listed. | lovel and and toxicity | | | | |
|--|--|----------------|--|--|--|
| Chemicals known to cause do None of the ingredients are listed. | evelopmental toxicity | | | | |
| | | | | | |
| Carcinogenic Categories | on Aganay) | | | | |
| EPA (Environmental Protection Agency) | | | | | |
| 118-96-7 121-82-4 | 2,4,6-trinitrotoluene (TNT) | C | | | |
| 2691-41-0 | perhydro-1,3,5-trinitro-1,3,5-triazine (RDX) | D | | | |
| IARC (International Agency f | octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX) | ט ן | | | |
| 118-96-7 | 2,4,6-trinitrotoluene (TNT) | 3 | | | |
| TLV (Threshold Limit Value e | | <u> </u> | | | |
| 7429-90-5 | aluminum metal | A4 | | | |
| 121-82-4 | perhydro-1,3,5-trinitro-1,3,5-triazine (RDX) | A4 A4 | | | |
| | for Occupational Safety and Health) | Λ τ | | | |
| None of the ingredients are listed. | Tor Occupational Galety and Fleating | | | | |
| Canada | | | | | |
| Canadian Domestic Substances List | (DSL) | | | | |
| All ingredients are listed. | . (202) | | | | |
| Canadian Ingredient Disclos | ure list (limit 0.1%) | | | | |
| None of the ingredients are listed. | | | | | |
| Canadian Ingredient Disclos | ure list (limit 1%) | | | | |
| 118-96-7 2,4,6-trinitrotoluene (TNT) | | | | | |
| 7429-90-5 aluminum metal | | | | | |
| Other regulations, limitations and pr | ohibitive regulations | | | | |
| This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the | | | | | |
| SDS contains all the information required by the Controlled Products Regulations. | | | | | |
| Substances of very high concern (SVHC) according to REACH, Article 57 | | | | | |
| None of the ingredients are listed. | <u> </u> | | | | |
| 5.2 Chemical safety assessment: A | Chemical Safety Assessment has not been carried out. | | | | |

SECTION 16 – OTHER INFORMATION

Revision Date: 22/05/2015

Other Information: **Relevant Phrases**

- H200 Unstable explosives.
- H201 Explosive; mass explosion hazard.
- H260 In contact with water releases flammable gases which may ignite spontaneously.
- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H331 Toxic if inhaled.
- H315 Causes skin irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.
- R15 Contact with water liberates extremely flammable gases.
- R2 Risk of explosion by shock, friction, fire or other sources of ignition.
- R22 Harmful if swallowed.



According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

- R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- R24 Toxic in contact with skin.
- R25 Toxic if swallowed.
- R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R33 Danger of cumulative effects.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Abbreviations and acronyms:

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- · GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- DNEL: Derived No-Effect Level (REACH)
- PNEC: Predicted No-Effect Concentration (REACH)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Expl. 1.1: Explosives, Division 1.1
- Unst. Expl.: Explosives, Unstable explosives
- Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 1
- Acute Tox. 3: Acute toxicity, Hazard Category 3
- STOT RE 2: Specific target organ toxicity Repeated exposure, Hazard Category 2
- Aquatic Chronic 2: Hazardous to the aquatic environment Chronic Hazard, Category 2

Sources

SDS Prepared by:

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Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com

Party Responsible for the Preparation of This Document

Dyno Nobel Inc.

6440 S. Millrock Drive, Suite 150 Salt Lake City, Utah 84121

Phone: 801-364-4800 SDS# 1108 Date: 07/20/2020



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According to: 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Trade Name: CAST BOOSTERS

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Dyno Nobel SDS

SDS# 1108 Date: 07/20/2020



TECHNICAL DATA SHEET

AN SINES OF THE SINES

BLASTEX ®

Small & Large Diameter Booster Sensitive Emulsion

| Prope | rties | | SDS #1063 | |
|---|------------------------------|--------------------------------|--------------|--|
| | | BLASTEX | BLASTEX PLUS | |
| Density | (g/cc) Avg | 1.26 | 1.26 | |
| Energy ^a | (cal/g) | 740 | 800 | |
| | (cal/cc) | 930 | 1,010 | |
| Relative \ | Weight Strength ^a | 0.84 | 0.91 | |
| Relative Bulk Strength ^{a,b} | | 1.29 | 1.40 | |
| Velocity ^c | (m/s) | 5,000 | 4,900 | |
| | (ft/s) | 16,400 | 16,100 | |
| Detonation Pressure ^c (Kbars) | | 79 | 76 | |
| Gas Volume ^a (moles/kg) | | 44 | 39 | |
| Fume Class | | IME1 & NRCand | IME1 | |
| Shelf Life Maximum | | 1 year from date of production | | |
| Maximum Water Depth | | 45 m (150 ft) | | |
| Water Resistance | | Excellent | | |

- ^a All Dyno Nobel Inc. energy and gas volume values are calculated using PRODET™ the computer code developed by Dyno Nobel Inc. for its exclusive use. Other computer codes may give different values.
- b ANFO = 1.00 @ 0.82 g/cc
- ^c Unconfined @ 75 mm (3 in) diameter
- d Approved by Natural Resources Canada as Fume Class 1 in:
 *valeron chub 50 mm (2 in) diameter and greater
 *shot bag 125 mm (5 in) diameter and greater

Hazardous Shipping Description

• Explosive, Blasting, Type E, 1.5D, UN 0332 II



PRODUCT DESCRIPTION

BLASTEX is a booster sensitive, water resistant, packaged emulsion explosive designed to satisfy a majority of medium diameter explosive applications for quarry and construction blasting. It is a cost effective alternative to most detonator sensitive, water resistant, packaged emulsion explosives. BLASTEX is available in two grades with increasing energy level for each.



APPLICATION RECOMMENDATIONS

- Package diameter and type affect product density. Use cartridge count to determine actual explosive charge weight.
- Ensure continuous column loading. For column lengths in excess of 6 m (20 ft) or whenever column separation is suspected, multiple priming is recommended.
- Emulsion explosives are susceptible to "dynamic shock" and may detonate at low order or fail completely when applied in very wet conditions, where explosive charges or decks are closely spaced and/or where geological conditions promote this effect. Consult your Dyno Nobel representative for alternate product recommendations when these conditions exist.
- ALWAYS use a cast booster as a primer for BLASTEX to ensure maximum performance.
- ALWAYS use a 340 g (12 oz) or larger cast booster at internal product temperatures higher than -18° C (0° F). At internal product temperatures below -18° C (0° F) and higher than -34° C (-30° F) use a 454 g (16 oz) or larger cast booster.
- NEVER use BLASTEX at internal product temperatures below -34° C (-30° F). At internal product temperatures below -34° C (-30° F), adequate product warm-up time must be allowed after loading into boreholes and before initiation.
- Use with detonating cord is not recommended.



TECHNICAL DATA SHEET

A CED EXPLOSING

BLASTEX ®

Small & Large Diameter Booster Sensitive Emulsion

Properties Cont.

Packaging, Chub

| Diameter x Length | | Blastex | Case | Net Explosive Weight* | | Net Explosive Weight / Chub | | |
|-------------------|---------|---------|------|--------------------------|------|--------------------------------|------|------|
| mm | in | | Plus | Qty | kg | lbs | kg | lbs |
| 50 x 400 | 2 x 16 | • | • | 18 | 18.0 | 40 | 1.00 | 2.20 |
| 57 x 400 | 2¼ x 16 | • | • | 14 | 17.7 | 39 | 1.26 | 2.78 |
| 65 x 400 | 2½ x 16 | • | • | 12 | 18.1 | 40 | 1.51 | 3.33 |
| 70 x 400 | 2¾ x 16 | • | • | 9 | 17.3 | 38 | 1.92 | 4.23 |
| 75 x 400 | 3 x 16 | • | • | 8 | 18.2 | 40 | 2.27 | 5.00 |
| 89 x 400 | 3½ x 16 | • | • | 6 | 16.7 | 37 | 2.77 | 6.11 |

Packaging, Shot Bag

| Bag Diameter | | Bag W | Tote Bag | |
|--------------|----|-------|----------|----------|
| mm | in | kg | lbs | Quantity |
| 125 | 5 | 11.3 | 25 | 40 |

TRANSPORTATION, STORAGE AND HANDLING

- BLASTEX and BLASTEX PLUS must be transported, stored, handled and used in conformity with all applicable federal, state, provincial and local laws and regulations.
- Packaged emulsions have a shelf life of one (1) year when stored at temperatures between -18° C and 38° C (0° F and 100° F). Explosive inventory should be rotated. Avoid using new materials before the old. For recommended good practices in transporting, storing, handling and using this product, see the booklet "Prevention of Accidents in the Use of Explosive Materials" packed inside each case ad the Safety Library Publications of the Institute of Makers of Explosives.

PACKAGING DETAILS

- Package diameter and type affect product density. Use cartridge count to determine actual explosive charge weight.
- All weights are approximate.
- BLASTEX and BLASTEX PLUS are available in a wide variety of sizes. Custom sizes
 are subject to surcharge and may require longer than usual lead times.
- Check with your Dyno Nobel representative should you have any questions.
 *Add two pounds for Gross Case Weight

Tote Bag Dimensions

84 x 84 x 94 cm 33 x 33 x 37 in

Case Dimensions

44 x 35 x 20 cm 17.25 x 13.875 x 7.875 in

ADDITIONAL INFORMATION – Visit **dynonobel.com** for Brochures and Case Studies related to this product.

Product Disclaimer: Dyno Nobel Inc. and its subsidiaries disclaim any warranties with respect to this product, the safety or suitability thereof, or the results to be obtained, whether express or implied, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHER WARRANTY. Buyers and users assume all risk, responsibility and liability whatsoever from any and all injuries (including death), losses, or damages to persons or property arising from the use of this product. Under no circumstances shall Dyno Nobel Inc. or any of its subsidiaries be liable for special, consequential or incidental damages or for anticipated loss of profits.



SECTION 1 – IDENTIFICATION

Name, Address, and Telephone of the Responsible Party

Dyno Nobel Inc.

2795 East Cottonwood Parkway, Suite 500

Salt Lake City, Utah 84121

Phone: 801-364-4800 Fax 801-321-6703

E-Mail: dnna.hse@am.dynonobel.com www.dynonobel.com

Product Identifier
Product Form: Mixture

Product Name: Packaged Emulsion Explosives

Trade Name(s): Synonyms:

BLASTEX® BLASTGEL® TX

BLASTEX® PLUS BLASTEX® TX

Other Means of Identification

Product Class: Emulsion Explosives, Packaged

Intended Use of the Product: Industrial blasting applications

Emergency Telephone Number

FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300

CANUTEC (CANADA) 613-996-6666

SECTION 2 – HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Expl. 1.5 H205

Label Elements
GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H205 - May mass explode in fire

Precautionary Statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No

smokina

P264 - Wash exposed areas. thoroughly after handling

P280 - Wear protective gloves/protective clothing/eye protection/face

protection

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P373 - DO NOT fight fire when fire reaches explosives

P370+P380 - In case of fire: Evacuate area

P372 - Explosion risk in case of fire

P401 – Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27

CFR part 555.

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Supersedes: 02/02/2017

Date:

10/12/2018

P501 - Dispose of contents/container according to local, regional, national, and international regulations

Other Hazards

Hazards Not Otherwise Classified (HNOC): Not available

Other Hazards: None

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

| Name | Product identifier | % (w/w) | Ingredient Classification (GHS-US) |
|------------------|---------------------|-----------|------------------------------------|
| Ammonium nitrate | (CAS No) 6484-52-2 | 65 - 85 | Ox. Sol. 3, H272 |
| | | | Eye Irrit. 2A, H319 |
| Sodium nitrate | (CAS No) 7631-99-4 | 0.1 – 10 | Ox. Sol. 3, H272 |
| | | | Acute Tox. 4 (Oral), H302 |
| | | | Eye Irrit. 2A, H319 |
| Aluminum | (CAS No) 7429-90-5 | 0.1 - 3 | Comb. Dust, H232 |
| | | | Flam. Sol. 1, H228 |
| | | | Water-react. 2, H261 |
| Mineral Oil | (CAS No) 64742-54-7 | 0 – 2 | Asp. Tox. 1, H304 |
| Wax (paraffin) | (CAS No) 8002-72-2 | 0.0 - 2.2 | Not Classified |

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

Full text of H-phrases: see section 16

SECTION 4 - FIRST AID MEASURES

Description of First Aid Measures

This is a packaged product that will not result in exposure to the contents under normal conditions of use. In the event of contact, administer first aid appropriate for symptoms present.

General: Never give anything by mouth to an unconscious person. If exposed or concerned, seek medical advice and

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Avoid ingestion, contact with eyes or skin.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation.

Eye Contact: May cause serious eye irritation.

Ingestion: Seek medical attention.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate

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all personnel to a predetermined safe location, no less than 2,500 feet in all directions.

Unsuitable Extinguishing Media: DO NOT FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Can explode or detonate under fire conditions. Burning material may produce toxic vapors.

Explosion Hazard: This product is an explosive with mass detonation hazard. Heating may cause an explosion. **Reactivity:** Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy projectile impact, expecially when confined or in a large quantity.

projectile impact, especially when confined or in a large quantity.

Advice for Firefighters

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Guard against re-entry.

Protection During Firefighting: See above

Hazardous Combustion Products: Nitrogen Oxides (NOx), Carbon Monoxide (CO). Ammonia.

Reference to Other Sections: Refer to section 9 for flammability properties.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Eliminate every possible source of ignition.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

Methods for Cleaning Up: Protect from all ignition sources. If no fire danger is present, and product is undamaged and/or uncontaminated, pick up or sweep up and repackage product in original packaging or other clean DOT approved container. Ensure that a complete account of product has been made and is verified. Follow applicable Federal, State, and local spill reporting requirements.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see section 13.

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling

This is a packaged product that will not result in exposure to the contents under normal conditions of use.

Additional Hazards When Processed: This product is an explosive and should only be used under the supervision of trained and licensed personnel. Use accepted safe industry practices when handling and using explosive materials. Unintended detonation of explosives or explosive devices can cause serious injury or death.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555.

Storage Conditions: Store in cool, dry, well-ventialated location. Store in compliance with Federal, State and local regulations. Keep away from heat, flame, ignition sources and strong shock. Do NOT store explosives in a detonator magazine or detonators in an explosive magazine. Keep containers closed. Explosives should be kept well away from initiating explosives; protected from physical damage; separated from oxidizing materials, combustibles, and sources of

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heat. Isolate from incompatibles.

Incompatible Materials: Corrosives (strong acids and strong bases or alkalis)

Specific End Use(s) For industrial blasting applications.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

| | Occupational Exposure Limits | | | | |
|------------------|------------------------------|-----------------------------------|------------------|--|--|
| Ingredients: | Product identifier: | ACGIH TLV-TWA | OSHA PEL-TWA | | |
| Ammonium nitrate | (CAS No) 6484-52-2 | None | None | | |
| Sodium nitrate | (CAS No) 7631-99-4 | None | None | | |
| Aluminum | (CAS No) 7429-90-5 | 10 mg/m³ (dust) | 15 mg/m³ (total) | | |
| Mineral Oil | (CAS No) 64742-54-7 | 5 mg/m³ (mist) | 5 mg/m³ (mist) | | |
| Wax (paraffin) | (CAS No) 8002-72-2 | 2-10 mg/m ³ (wax fume) | None | | |

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.







Personal Protective Equipment: Gloves. Protective goggles. Protective clothing.

Materials for Protective Clothing: protective clothing.

Hand Protection: Protect against incidental skin contact.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may

exceed established Occupational Exposure Limits.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties
Physical State : Solid

Appearance : White or pink opaque semi-solid, which will appear gray if product

contains aluminum. Typically paper or plastic chub packaging.

Occupational Exposure Limits

Odor : Faint petroleum odor

Odor Threshold : Not available pH : Not applicable

Evaporation Rate : <

Melting Point: Not applicableFreezing Point: Not applicableBoiling Point: Not applicableFlash Point: Not applicable

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Auto-ignition Temperature : Not available

Decomposition Temperature : Ammonium nitrate: 210 °C (410 °F)

Flammability (solid, gas) Not applicable **Lower Flammable Limit** Not applicable **Upper Flammable Limit** Not applicable **Vapor Pressure** Not applicable Relative Vapor Density at 20 °C : Not applicable **Relative Density** Not applicable **Density** 1.20 - 1.30 a/cc **Specific Gravity** Not applicable

Solubility : Partially soluble in water

Partition coefficient: n-octanol/water : Not available Viscosity : Not available

Explosive properties : Explosive; mass explosion hazard

Explosion Data – Sensitivity to Mechanical : Not sensitive

Impact

Explosion Data – Sensitivity to Static : Not sensitive

Discharge

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Stable under normal conditions, may explode when subjected to fire, supersonic shock or high-energy

projectile impact, especially when confined or in a large quantity. **Chemical Stability:** Stable under normal temperature and pressure.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Keep away from heat, flame, ignition sources and strong shock.

Incompatible Materials: Corrosives (strong acids and strong bases or alkalis).

Hazardous Decomposition Products: Nitrogen Oxides (NOx), Carbon Monoxide (CO), Ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: May cause eye irritation. Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified **Carcinogenicity:** Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation. Symptoms/Injuries After Skin Contact: May cause skin irritation. Symptoms/Injuries After Eye Contact: Causes eye irritation.

Symptoms/Injuries After Ingestion: If ingested, seek medical attention.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Sodium nitrate (7631-99-4)

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| LD50 Oral Rat | > 2000 mg/kg |
|------------------------------|----------------|
| Ammonium nitrate (6484-52-2) | |
| LD50 Oral Rat | 2217 mg/kg |
| LC50 Inhalation Rat | > 88.8 mg/l/4h |
| | |

| SECTION 12: ECOLOGICAL INF | ORMATION |
|---|---|
| Toxicity Not classified | |
| Sodium nitrate (7631-99-4) | |
| LC50 Fish 1 | 2000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static]) |
| LC 50 Fish 2 | 994.4 - 1107 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static]) |
| Persistence and Degradabili | ty |
| Sodium nitrate (7631-99-4) | |
| Persistence and Degradability | Readily biodegradable in water. |
| Bioaccumulative Potential | |
| Sodium nitrate (7631-99-4) | |
| Bioaccumulative Potential | Not expected to bioaccumulate. |
| Ammonium nitrate (6484-5 | 2-2) |
| BCF fish 1 | No bioaccumulation expected. |
| Mobility in Soil Not available | |
| Other Adverse Effects Other Information: Avoid release to Toxicity Not classified | the environment. |

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Disposal must comply with Federal, State and local regulations. If product becomes a waste, it is potentially regulated as a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR, part 261. Review disposal requirements with a person knowledgeable with applicable environmental law (RCRA) before disposing of any explosive material.

Additional Information: None

SECTION 14 - TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E or Agent blasting, Type E

Hazard Class : 1.5D

Identification Number: UN0332Label Codes: 1.5DPacking Group: II



ERG Number : 140 14.2 In Accordance with IMDG

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)

Hazard Class : 1.5D **Identification Number** : UN0332

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Label Codes: 1.5DEmS-No. (Fire): F-BEmS-No. (Spillage): S-Y



14.3 In Accordance with IATA

Proper Shipping Name : AGENT, BLASTING TYPE E

Identification Number : UN0332

Hazard Class : 1

Label Codes : 1.5D

ERG Code (IATA) : 1L 14.4 In Accordance with TDG

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E

Packing Group : II
Hazard Class : 1.5D
Identification Number : UN0332
Label Codes : 1.5D



SECTION 15 - REGULATORY INFORMATION

US Federal Regulations

Packaged Emulsion Explosives

Bureau of Alcohol Tobacco & Firearms (BATF)

Department of Transportation (DOT)

Mine Safety & Health Administration (MSHA)

Canadian Regulations

Packaged Emulsions

WHMIS Classification Note: Explosives are not regulated under WHMIS. They are subject to the regulations

of the Explosives Act of Canada.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 10/12/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the

OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

| Expl. 1.5 | Explosive Category 1.5 |
|-----------|--------------------------|
| H205 | May mass explode in fire |

Party Responsible for the Preparation of This Document

Dyno Nobel Inc.

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Salt Lake City, Utah 84121 Phone: 801-364-4800

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Dyno Nobel SDS

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1966 Emulsion Blend Technical Data Sheet



1966 Emulsion Blend is based on the Nelson Brothers PowerNel ®1500 or similar Sensitized Bulk Emulsion. For purposes of this document the PowerNel ®1500 was used to develop the information below:

PowerNel_® 1500 Specification

PowerNel 1500 is an ammonium nitrate / hydrocarbon emulsion blasting agent in the form of a water-in-oil emulsion explosive. PowerNel 1500 can be used in packaged or bulk form, and it is often used in combination with low cost ANFO in various proportions to meet individual blasting needs. PowerNel 1500 is sensitized to insure effective performance when used under demanding conditions.

PowerNel® 1500 is manufactured to the following specifications:

| PowerNel _® 1500 | | | |
|---|---------------------------|--|--|
| Parameter | Specification | | |
| Density g/cc | 1.25 maximum ¹ | | |
| lb/gal | | | |
| Absolute Weight Strength cal/g | 645 ² | | |
| Absolute Bulk Strength cal/cc | | | |
| Relative Bulk Strength (% ANFO) | 109 | | |
| Relative Bulk Strength (% ANFO) Velocity of Detonation ³ ft/sec | 19,000 – 20,000 | | |
| Shelf Life (minimum, matrix only) | | | |

The Sensitized Bulk Emulsion is blended to an approximate 80% Emulsion / 20% Ammonium Nitrate ratio for delivery to the job site. Additional ratios may be blended on site by "Quad" blend trucks and include 70/30 and 50/50 ratios.

| BLEND | Sensitized Emulsion | 80/20 | 70/30* | 50/50* |
|-------------------------------|----------------------------|---------------------|---------------------|----------------------------|
| DENSITY ⁴ g/cc | 1.25 | 1.27 | 1.29 | 1.34 |
| Relative Bulk Strength | 109 | 117 | 123 | 135 |
| Velocity of Detonation ft/sec | 19,000-20,000 ³ | 19,000 ⁵ | 18,700 ⁵ | 16,100 ⁵ |
| Water Resistance | Excellent | Excellent | Excellent | Excellent |
| Minimum Diameter** | 3" | 3 ½" | 5" | 6" |
| Minimum Booster*** | ¾ lb | ¾ lb | 1 lb | 2 lb |

^{*}These blends (70/30 & 50/50) are produced on site from a "Quad" truck.

All data provided by Nelson Bros. laboratory:

^{**} Recommended minimum diameters

^{***}Recommended minimum priming requirements

¹At normal ambient temperature (approx 75 F)

² From TIGERWIN Program Code, version 4

Measured velocities in 6.75 inch diameter borehole, 100% emulsion

⁴ Typical values, may vary with ANFO density

⁵ Typical, averaged values in 6.75 inch borehole

Maine Drilling & Blasting

Safety Data Sheet

Setting Earth Shattering Standards Since 1966

SECTION 1 – IDENTIFICATION

Name, Address, and Telephone of the Responsible Party

Maine Drilling & Blasting

88 Gold Ledge Ave, Auburn, NH 03032

Phone: (207) 582-2338 Toll Free: (800) 370-2338

Product Identifier Product Form: Mixture

Product Name: 1966 Emulsion Blend

Other Means of Identification Product Class: Emulsion

Trade Names:

1966 Emulsion Blend

Intended Use of the Product

Industrial applications

Emergency Telephone Numbers: DAY: 603-647-0299

FOR 24 HOUR EMERGENCY, CALL CHEMTREC (USA) 800-424-9300

CANUTEC (CANADA) 613-996-6666

SECTION 2 – HAZARD(S) IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Expl. 1.5 H205
Eye Irrit. 2A H319
Carc. 2 H351
STOT RE 2 H373

Label Elements GHS-US Labeling

Hazard Pictograms (GHS-US)





Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US) : H205 - May mass explode in fire.

H319 - Causes serious eye irritation.

H351 – Contains materials suspected of causing cancer.

H373 - May cause damage to organs through prolonged or repeated

Date:

03/16/2018

Supersedes: 08/24/2015 & 09/2005

exposure.

Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and

understood.

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No

smoking.

P220 - Keep/Store away from combustible materials.

P221 - Take any precaution to avoid mixing with combustible materials.

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Maine Drilling & Blasting

Safety Data Sheet

P240 - Ground/bond container and receiving equipment. Consult manufacturer for detailed guidance on appropriate grounding/bonding.

P260 - Do not breathe dust, mist, vapors.

P264 - Wash hands, forearms and exposed areas thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear eye protection, protective clothing, protective gloves.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P314 - Get medical advice/attention if you feel unwell.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P370+P378 - In case of fire: Do NOT attempt to fight fire.

P370+P380 - In case of fire: Evacuate area.

P372 - Explosion risk in case of fire.

P373 - DO NOT fight fire when fire reaches explosives.

P401 - Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555..

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

| Name | Product identifier | % (w/w) | Ingredient Classification (GHS-US) |
|------------------------------|---------------------|---------|---|
| Ammonium nitrate | (CAS No) 6484-52-2 | 65 - 90 | Ox. Sol. 3, H272 |
| | , | | Eye Irrit. 2A, H319 |
| Fuel oil / mineral oil blend | (CAS No) 68476-30-2 | 3 - 9 | Flam. Liq. 3, H226 |
| | , , , | | Acute Tox. 4 (Inhalation:dust,mist), H332 |
| | | | Skin Irrit. 2, H315 |
| | | | Carc. 2, H351 |
| | | | STOT RE 2, H373 |
| | | | Asp. Tox. 1, H304 |
| | | | Aquatic Acute 3, H402 |
| | | | Aquatic Chronic 2, H411 |
| Polymeric Surfactant | NA | 0.5 - 2 | Not available |

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in deminimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION 4 - FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing and wash before reuse. Gently wash with plenty of soap and water. **Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

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Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: May cause serious eye irritation. Contains material suspected of causing cancer. May cause damage to organs

through prolonged or repeated exposure.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation.

Eye Contact: May cause serious eye irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Contains material suspected of causing cancer. May cause damage to organs through prolonged

or repeated exposure.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If ingested, causes methemoglobenemia – emergency

response should treat appropriately, such as by intravenous administration of methylene blue.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: DO NOT FIGHT FIRES INVOLVING EXPLOSIVES.

Unsuitable Extinguishing Media: Do not attempt to fight fires involving explosive materials. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Can explode or detonate under fire conditions. Burning material may produce toxic vapors.

Explosion Hazard: Explosion risk in case of fire. This product is an explosive with mass detonation hazard. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Stable under normal conditions. May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.

Advice for Firefighters

Firefighting Instructions: DO NOT ATTEMPT TO FIGHT FIRES INVOLVING EXPLOSIVE MATERIALS. Evacuate all personnel to a predetermined safe location, no less than 2,500 feet in all directions. Can explode or detonate under fire conditions. Burning material may produce toxic vapors.

Hazardous Combustion Products: Carbon Monoxide (CO) and Nitrogen Oxides (NOx)

Reference to Other Sections: Refer to section 9 for flammability properties.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eves, or clothing. Avoid breathing (yapor, mist, dust).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Stop release if safe to do so. Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes to prevent migration and entry into sewers or streams. Do not use combustible absorbents and do not mix with other materials.

Methods for Cleaning Up: Collect spillage for possible reuse. Clean up spills immediately and dispose of waste in accordance with appropriate Federal, State and local regulations.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection

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SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling

General: It is recommended that users of explosives material be familiar with the Institute of Makers of Explosives Safety Library publications. Comply with the safety library publication No. 4 "Warnings and Instructions" as adopted by the Institute of Makers of Explosives.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and forearms thoroughly after handling. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Contact manufacturer for appropriate grounding/bonding guidance. Comply with applicable regulations.

Storage Conditions: Store as defined in the Explosives Act of Canada and the provisions of the Bureau of Alcohol, Tobacco and Firearms regulations contained in 27 CFR Part 555. Store in a dry, cool and well-ventilated place. Keep/Store away from direct sunlight, extremely high or low temperatures, heat sources, ignition sources. Keep container closed when not in use. Store locked up.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Zinc. Copper and its alloys. Organic materials. Combustible materials.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION Control Parameters For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), or OSHA (PEL). Fuels, diesel, no. 2 (68476-30-2) USA ACGIH ACGIH TWA (mg/m³) 100 mg/m³ (inhalable fraction and vapor, as total hydrocarbons) 8 h (skin) USA ACGIH ACGIH chemical category Skin - potential significant contribution to overall exposure by the cutaneous route, Confirmed Animal Carcinogen with Unknown Relevance to Humans

Exposure Controls

Appropriate Engineering Controls: Ventilation System: Indoors: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details. Use explosion-proof equipment. / Outdoors: Work upwind.

Personal Protective Equipment: Personal Respirators (NIOSH Approved): A respirator is not needed under normal and intended conditions of use. If the exposure limit is exceeded and engineering controls are not feasible, use a mask with an organic vapor cartridge or positive pressure air supplied (SCBA) unit. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).







Skin Protection: Gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure - Neoprene, PVC.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible.

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State : Solid

Appearance : White to tan colored thick cream. If aluminim is present, gray metal

particles will be visible. If ammonium nitrate prill is present, white to

tan colored granules will be visible.

Odor : Slight odor of fuel oil

Odor Threshold: Not availablepH: Not availableEvaporation Rate: Not availableMelting Point: Not availableFreezing Point: Not availableBoiling Point: Not available

Flash Point : 165 °F (74 °C) (PMCC)

Auto-ignition Temperature Not available **Decomposition Temperature** : Not available Flammability (solid, gas) Not available **Lower Flammable Limit** Not available **Upper Flammable Limit** : Not available **Vapor Pressure** Not available Relative Vapor Density at 20 °C Not available Density Not available **Specific Gravity** 1.20 - 1.30Solubility Not available Partition Coefficient: N-Octanol/Water : Not available **Viscosity** Not available

Explosive properties : Explosive; fire, blast or projection hazard

Explosion Data - Sensitivity to Mechanical : Not expected to present an explosion hazard due to mechanical

Impact

impact

impact.

Explosion Data – Sensitivity to Static : Not expected to present an explosion hazard due to static discharge.

Discharge

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: May cause or intensify fire; oxidizer. May accelerate the burning of other combustible materials. Contact with organic material or combustible material may cause an explosive situation.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7). May explode when subjected to fire, supersonic shock or high-energy projectile impact, especially when confined or in large quantities.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Avoid temperatures above (212°F (100°C).

Incompatible Materials: Avoid all contamination, especially peroxides and chlorates. Alkaline contamination may

liberate ammonia fumes.

Hazardous Decomposition Products: Gaseous nitrogen oxides and carbon oxides: Toxic decomposition products

including carbon monoxide (CO) may migrate to off blast-site areas.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

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Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Contains an ingredient suspected of causing cancer.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated

exposure.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation. Symptoms/Injuries After Skin Contact: May cause skin irritation. Symptoms/Injuries After Eye Contact: May cause serious eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects. Overexposure to this material may result in methemoglobinemia. Methemoglobinemia decreases the blood's ability to carry oxygen and results in symptoms such as dizziness, drowsiness, headache, shortness of breath, blue skin and lips, rapid heart rate, unconsciousness, and possibly death.

Chronic Symptoms: Contains an ingredient suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

| Fuels, diesel, no. 2 (68476-30-2) | |
|-----------------------------------|-------------------|
| LD50 Oral Rat | 18.7 - 24.9 ml/kg |
| LD50 Dermal Rabbit | > 4300 mg/kg |
| ATE US (dust, mist) | 3.60 mg/l/4h |
| Ammonium nitrate (6484-52-2) | |
| LD50 Oral Rat | 2217 mg/kg |
| LC50 Inhalation Rat | > 88.8 mg/l/4h |

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Ecology - Water: Harmful to aquatic life with long lasting effects.

| Fuels, diesel, no. 2 (68476-30-2) | | | | | |
|---|-------------------------------|--|--|--|--|
| LC50 Fish 1 57 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) | | | | | |
| Persistence and Degradability Not available | | | | | |
| Bioaccumulative Potential | | | | | |
| Ammonium nitrate (6484-52-2) | | | | | |
| BCF fish 1 | (no bioaccumulation expected) | | | | |
| Log Pow -3.1 (at 25 °C) | | | | | |
| Mobility in Soil Not available | | | | | |

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Treatment Methods: Uncontaminated and contaminated material may be placed in large diameter boreholes and detonated so that the explosive energy is utilized as originally intended. Dispose of under direct supervision of a qualified person according to local, state and federal regulations. Call Maine Drilling & Blasting Safety and Compliance

SDS Date: 03/16/2018 Page 6 of 9

Maine Drilling & Blasting

Safety Data Sheet

Department for recommendations and assistance.

Additional Considerations: This material may become a hazardous waste under certain conditions and must be collected, labeled and disposed of per state and federal hazardous waste regulations.

SECTION 14 - TRANSPORT INFORMATION

In Accordance with DOT

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)

Hazard Class: 1.5DIdentification Number: NA0332Label Codes: 1.5D

Packing Group : II ERG Number : 140

In Accordance with IMDG

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)

Hazard Class : 1

Identification Number: UN0332Label Codes: 1.5DEmS-No. (Fire): F-BEmS-No. (Spillage): S-Y



In Accordance with IATA

Proper Shipping Name : AGENT, BLASTING TYPE E

Identification Number : UN0332

Hazard Class : 1 Label Codes : 1.5D ERG Code (IATA) : 1L

ERG Code (IATA)
In Accordance with TDG

n Accordance with TDC

Proper Shipping Name : EXPLOSIVE, BLASTING, TYPE E

Packing Group : II
Hazard Class : 1.5D
Identification Number : UN0332
Label Codes : 1.5D

SARA Section 313 - Emission Reporting



US Federal Regulations MDB Blend 1966 SARA Section 311/312 Hazard Classes Immediate (acute) health hazard Delayed (chronic) health hazard Sudden release of pressure hazard Fire hazard Fire hazard Listed on the United States TSCA (Toxic Substances Control Act) inventory Ammonium nitrate (6484-52-2) Listed on the United States TSCA (Toxic Substances Control Act) inventory

SDS Date: 03/16/2018 Page 7 of 9

Maine Drilling & Blasting

Safety Data Sheet

| Fuels, diesel, no. | |
|---|--|
| | 2 (68476-30-2) |
| | egulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour |
| | egulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual |
| U.S New Jersey - Discha | arge Prevention - List of Hazardous Substances |
| | onmental Hazardous Substances List |
| RTK - U.S New Jersey - | Right to Know Hazardous Substance List |
| | onsumer Products - Initial List of Candidate Chemicals and Chemical Groups |
| U.S Texas - Effects Scre | |
| U.S Texas - Effects Scre | eening Levels - Short Term |
| Ammonium nitra | te (6484-52-2) |
| U.S Massachusetts - Rig | ght To Know List |
| | to Know Hazardous Substance List |
| | (Right to Know) - Environmental Hazard List |
| U.S Pennsylvania - RTK | (Right to Know) List |
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| Canadian Regulat | ions 1966 Emulsion Blend |
| WHMIS Classication | Note: Explosives are not regulated under WHMIS. They are subject to the regulations |
| | of the Explosives Act of Canada. |
| | |
| | P 11 11 11 11 11 11 11 11 11 11 11 11 11 |
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| Canadian Regulat | |
| | ions MDB Blend 1966 |
| Canadian Regulat WHMIS Classication | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations |
| WHMIS Classication | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. |
| WHMIS Classication Fuels, diesel, no. | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) |
| WHMIS Classication Fuels, diesel, no. | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) BL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic effects |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) |
| Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) SL (Domestic Substances List) |
| WHMIS Classication Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) SL (Domestic Substances List) Class C - Oxidizing Material |
| Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat Listed on the Canadian DS WHMIS Classification | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) SL (Domestic Substances List) Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects |
| Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat Listed on the Canadian DS | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) SL (Domestic Substances List) Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class B Division 6 - Reactive Flammable Material |
| Fuels, diesel, no. Listed on the Canadian DS WHMIS Classification Ammonium nitrat Listed on the Canadian DS WHMIS Classification | ions MDB Blend 1966 Note: Explosives are not regulated under WHMIS. They are subject to the regulations of the Explosives Act of Canada. 2 (68476-30-2) SL (Domestic Substances List) Class B Division 3 - Combustible Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing immediate and serious toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects te (6484-52-2) SL (Domestic Substances List) Class C - Oxidizing Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

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SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 08/24/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the

OSHA Hazard Communication Standard 29 CFR 1910.1200.

Party Responsible for the Preparation of This Document

Maine Drilling & Blasting

88 Gold Ledge Ave Auburn, NH 03032

Phone: (603) 647-0299 Toll Free: (800) 370-0299

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Job: December 2023 Units: Ft-CY Sat Dec 9, 2023 10:12:51 Page 1

Volume Report Subgrade vs Stripped

| | Total Cut | Area Volume Fill OnGrade Cut Fil | II Cut Fill Cut Fill -Import | Change Per 0.1 ft | | | | | | | | | | | |
|-----------------------------------|---|---|---|----------------------|--------------|--------------------|---------------|---------------|---------------|----------|--------------|--|---------------|---------------|---|
| Building | 199,624 89,403 105 Ledge 73,918 Building T | 23,885 | 1.00 1.00 7,862 42,056 -34,194 1.00 23,885 23,885 31,747 42,056 -10,309 | 739 | | | | | | | | | | | |
| FCA - Loam & Seed | 135,059 131,462 2 Ledge 115,743 FCA - Loam & Seed T | 1,505 1,092 11,549 47 42,485 Total: 54,034 47 | 1.00 42,485 42,485 | 500 | | | | | | | | | AGTEK O 60 | | |
| HD Pavement | 131,281 50,521 80 Ledge 43,540 HD Pavement T | 0,098 662 6,926 44,266 17,215 otal: 24,141 44,266 | 1.00 17,215 17,215 | 486 | | | C3+14 C14+17 | C28+34 C27+76 | C22+76 | | | | 0 60 | 120 | |
| Loading Docks | Ledge 0 | 0 0 12,052 0 | 1.00 0 | | | | | | | | | | | | |
| Loading Docks | Loading Docks T 20,715 20,704 Ledge 16,999 Loading Docks T | 0 11 2,116 (8,060 | 0 12,052 -12,052 0 1.00 1.00 2,116 0 2,116 1.00 8,060 8,060 0 10,176 0 10,176 | | | C0+87 | C5+59 C11+31 | C23+88 C24+37 | C24+21 C18+68 | C12+50 | C5+33 | | | | |
| Lo | ading Sub: 36,400 20,704 15 Ledge 16,999 Total Load | 5,685 11 2,116 12,052 8,060 ding: 10,176 12,052 | 8,060 8,060 | 135 | | C8+38 | C7+65 C9+58 | C21+93 C21+13 | C19+83 C16+56 | C8+66 | C6+61 C4+06 | C0+39 C0+21 | C6+01 | | |
| Loam & Seed | 221,449 66,393 152 Ledge 38,865 Loam & Seed T | 2,505 2,551 6,092 45,293 10,892 otal: 16,984 45,293 | 1.00 10,892 10,892 | 820 | | C1+28 (// C14+00 C | C13+16 C13+43 | C20+46 C17+67 | C15+71 C13+74 | 4 C9+47 | C0+95 C2+58 | F1+26 F3+28 | F6+09 | | |
| Loam & Seed Arour | d Building 2,547 2,547 Ledge 2,158 | 0 0 566 0 484 | 0 1.00 1.00 566 0 566 1.00 484 484 | | | | 013143 | 020140 | C15+71 C13+74 | 09147 | C0+95 C2+58 | 13/28 | | | |
| Loam & Seed Arour | Loam & Seed Around Building T d Building 40,360 22,395 17 Ledge 17,540 Loam & Seed Around Building T | 7,812 153 4,451 9,365 6,011 | 5 1.00 1.00 4,451 9,365 -4,914 1.00 6,011 6,011 | | C1+96 | C11+96 C14+92 C | C14+18 C12+04 | C17+59 C13+18 | C12+03 C11+15 | 5 C1+73 | ON+GD F2+03 | F3+19 F9+04 | F2+99 | | |
| | Ledge 58,563 Total Le | 17,387 | 17,387 17,387 | | C12+33 | C16+00 C11+91 | C13+32 C6+73 | C13+63 C10+95 | C8+53 C7+29 | ON+GD | C2+36 F2+56 | | | | |
| SD Pavement | 66,671 43,401 22 Ledge 38,121 SD Pavement T | 9,981 | 1.00 9,981 9,981 | | C10+98 | C7194 | C9+08 C11+77 | C40.100 | C5125 | 7 | F6.140 | F3+10 F1+29 | | C10+95 C15+45 | 248,20 |
| Regions Total | 833,391 426,826 397 <u>Ledge</u> 346,884 <u>Regions T</u> | 119,013 | 119,013 119,013 | | | C7+81 C10+07 | CSTOS | C10+99 C9+83 | C5+25 F1+27 | 7 F1+57 | F6+40 F6+78 | F3+10 | | C10+95 C15+45 | C16+30 |
| Stripping Qtys | Plane Slope Area Area De | epth Volume | | | F1+34 C3+73 | C3+17 | C2+11 C7+31 | C3+76 C2+81 | F0+43 F3+03 | F7+97 | F13+29 F2+47 | F3+74 F1+57 | C4+69 | C13+04 C19+03 | C29+50 C7+74 |
| FCA - Loam Strip Loam Strip | | .000 5,046 .000 26,027 | | | F1+15 F2+43 | F3+86 F2+85 | F4+80 C0+25 | F4100 | F0.02 | 1 540,47 | F15+38 F5+11 | F10+38 F1+19 | C8+50 | 040,00 | 000.444 |
| Stri _l | oping Total 833,391 838,978 | 31,073 | | | F1+15 F2+43 | F2+65 | F4+80 C0+25 | F1+60 F6+61 | F8+03 F9+51 | 1 F12+17 | F13+38 | // /////////////////////////////////// | C8+30 | C12+82 C18+63 | C26+14 C8+24 |
| <u>Sectional Qtys</u> Building | Plane Slope Area Area Death 199,624 199,661 5 | epth Volume 5.000 36,974 | | | F10+16 F5+82 | F9+50 F9+08 | F2+41 F4+24 | F7+12 F8+00 | F13+76 F13+65 | 5 F15+40 | F19+05 F8+05 | F2+93 | C7+04 | C13+59 C18+34 | C22+18 C7+09 |
| FCA - Loam & Seed | | 2,538 | | | | | | | | | | | | | |
| HD Pavement Loading Docks | 15,685 15,699 1 | .500 7,297 .500 872 | | | F4+82 | F10+69 F13+35 | F8+54 F7+29 | F12+11 F13+43 | F14+00 F18+96 | F24+60 | | | C6+55 | C13+91 C14+98 | C14+23 //////////////////////////////////// |
| Loading Docks Lo | | .500 1,152 .500 2,024 | | | F9+31 | F8+19 F16+61 F | F20+58 F22+80 | F18+34 F17+87 | F18+75 F23+80 | F24+78 | | | C3+25 C7+31 | C17+56 C15+59 | C8+23 |
| Loam & Seed | 221,449 233,911 0 | .500 4,332 | | | | | | | | | | | | | |
| Sectional Qtys Loam & Seed Aroun | | .500 756 | C0+86 C5+20 | C0+19 | F12+18 | F16+87 F18+41 F | F21+40 F20+20 | F19+36 F20+39 | F22+20 F24+73 | 3 F26+05 | | | C3+41 C8+64 | C10+25 C10+47 | |
| Loam & Seed Aroun I | | .500 47 | F6+95 F6+90 | F9+23 F4+93 C | F9+78 F11+83 | | F17+97 F24+35 | F23+87 F23+20 | F23+29 F24+96 | 6 F19+00 | | C3+46 | C6+15 C1+76 | C0+29 | |
| SD Pavement | | .330 3,285 | | 2,2 | | | | | | | | | | | |
| Sect | onal Total 833,391 848,469 | 57,253 F1+79 | 79 F1+07 F4+11 F8+17 | F12+47 F13+71 F14 | 4+85 | | F5+93 | F13+76 F22+41 | F24+65 F25+64 | 4 F12+64 | | C0+48 | | | |
| | | F0+91 F3+5 | C1+26 C7+85 F0+99 | | | | | | F4+66 F8+11 | | | | | | |
| | | F0+5 | 50 F1+02 | | | | | | | | | | | | |
| | | · · | | | | | | | | | | | | | |



P.O. Box 202 512 Raymond Road Candia, NH 03034 Office: 603-483-2133 Fax: 603-483-2998 www.severinotrucking.com



PERMITTING OUTLINE

December 14, 2023

RE: Application #2022-009
Jewett Industrial Development
Route 27 (Map 28, Lots 9,10,11)
Town of Raymond
Rockingham County, New Hampshire
BEMA # W211232

| Agency/Permitting Entity | Approval Date/Anticipated |
|--|---------------------------------------|
| Raymond Planning Board (Site Plan, Special Permit, Conditional Use Permit) | Spring 2024 |
| Raymond Conservation Commission | Support letter received fall of 2023 |
| Lamprey River Advisory Committee | Support letters received fall of 2023 |
| Raymond Building Department (Major building application) | June 2024 |
| Raymond Building Inspector (Flood Hazard Permit) | June 2024 |
| NHDOT Driveway Permit | April 2024 |
| NHDES Wetland Bureau (Dredge and Fill Wetland Permit Application) | July 2024 |
| New Hampshire Fish and Game | June 2024 |
| NHDES Alteration of Terrain (AoT) | July 2024 |
| NHDES Subsurface System Bureau (Septic) | June 2024 |
| NHDES Drinking Water and Groundwater Bureau (Private Well) | April 2024 |
| New Hampshire Division of Historical Resources | April 2024 |



CELEBRATING OVER 35 YEARS OF SERVICE TO OUR CLIENTS

19 December 2023

Diana Luszcz, Chair Raymond Planning Board 4 Epping Street Raymond, NH 03077

Re: Planning Board Application #2022-009

Dear Chair Luszcz and Planning Board Members:

LIZABETH M. MACDONALD JOHN J. RATIGAN DENISE A. POULOS ROBERT M. DEROSIER CHRISTOPHER L. BOLDT SHARON CUDDY SOMERS DOUGLAS M. MANSFIELD KATHERINE B. MILLER CHRISTOPHER T. HILSON HEIDI J. BARRETT-KITCHEN JUSTIN L. PASAY ERIC A. MAHER CHRISTOPHER D. HAWKINS ELAINA L. HOEPPNER WILLIAM K. WARREN BRIANA L. MATUSZKO ALI GENNARO

RETIRED MICHAEL J. DONAHUE CHARLES F. TUCKER ROBERT D. CIANDELLA NICHOLAS R. AESCHLIMAN

As the Board knows, this firm represents the applicant, Jewett Construction (the "Applicant"), with regard to the above referenced Planning Board matter which proposes the development of a 200,000 sf industrial warehouse facility and associated site improvements (the "Project") on property identified as Town Tax Map 28, Lots 9, 10 and 11 (the "Property"). This letter follows several appearances before the Town's Conservation Commission and Planning Board, site walks and filings the Applicant has made with the Commission since the summer of 2022. We intend this filing, which provides an updated Application for Special Permit and Conditional Use Permit Application to update and replace all previous filings in this context. We enclose herewith the following information for the Board's consideration at the 4 January 2024 meeting:

- Updated Special Permit Application (Enclosure 1);
- Updated Wetland Impacts Plan from Bohler Engineering (Enclosure 2);
- Conservation Area Exhibit from Bohler Engineering (Enclosure 3)

Below, please find a permitting overview which summarizes the application of the Town's Conservation District Ordinance and Groundwater Overlay District Ordinance on the Property and Project, as well as an updated factual overview of all proposed wetland-related impacts to include an updated Special Permit analysis and restated Conditional Use Permit analysis.

Permitting Overview

1. **Conservation District Impacts**

The Property is located within the Town's Conservation District (Zone G) (the "Conservation" District" or the "District"). See Zoning Ordinance, Section 4.9. The District is comprised of, among other things, the "Shoreland Protection Area" (the "Shoreland District") as

> DONAHUE, TUCKER & CIANDELLA, PLLC 16 Acadia Lane, P.O. Box 630, Exeter, NH 03833 111 Maplewood Avenue, Suite D, Portsmouth, NH 03801 Towle House, Unit 2, 164 NH Route 25, Meredith, NH 03253

well as "Poorly Drained and Very Poorly Drained Soils." Zoning Ordinance, Section 4.9.3. The Shoreland District is comprised of any area of land within 75 ft of the seasonal high water mark of any water body depicted on the Water Resource Management Plan (3/2009) or any water body with flowing or standing water six months of the year which is not on the above plan. Zoning Ordinance, Section 4.9.3.1. With regard to poorly and very poorly drained soils, and because the Applicant understands that the filing of the underlying Planning Board application for the Project occurred before public notice of the change to Section 15.3.2 of the Zoning Ordinance, a 25 foot wetland setback applies (the March 2023 Town Meeting appears to have increased this setback to 75 feet). See Wetland Impacts Plan.

Within the Conservation District, buildings and permanent structures, accessory buildings and non-permanent structures, and roads/driveways/ROWs and parking lots are all permitted by Special Permit from the Planning Board. Zoning Ordinance, Section 4.9.5. "Structure" is defined by the Zoning Ordinance as "[a] combination of materials to form a construction for use, occupancy, or ornamentation whether installed on, above, or below the surface of land or water." Zoning Ordinance, Section 13.1.74. "Structure, Permanent" is defined as "[a]nything built with a footing or foundation and/or by nature of its size, positioning, projected use or construction and upon installation or removal, causes any destruction to surroundings or to the structure itself, exclusive of fences, wells and stonewalls." Zoning Ordinance, Section 13.1.75.

The Applicant previously filed a Special Permit request with the Town proposing a 200,000 SF warehouse distribution facility with 218 parking spaces and 38 loading docks¹ and construction improvements requiring the filling of 4,538 sf of isolated wetland impacts as well as a temporary wetland disturbance of an additional 3,677 sf to accommodate a stream crossing for construction activity and to create the proposed 10,000 sf wetland replication area, which temporary impacts the Applicant proposes will be restored after earthwork is complete. By this filing, and pursuant to the discussions the Applicant has had with the Conservation Commission, the Applicant files a revised Special Permit Application² contemplating the following impacts to the Conservation District based on the applicable 75 ft (Shoreland District) and 25 ft (poorly and very poorly drained soils) setbacks, all as depicted on the Wetland Impact Plan enclosed herewith:

- Buffer Impacts (Impervious): 5,202 sf

- Buffer Impacts (Pervious): 50,629 sf

- Wetland Filling: 3,338 sf

- Temporary Wetland impact for crossing: 649 sf

- Wetland Replication: 10,000 sf

- Temporary Buffer Disturbance: 3,667 sf

- Temporary Tier 1 Intermittent Stream Disturbance: 42 LF

- Temporary Vernal Pool Buffer Disturbance: 870 sf

- Permanent Vernal Pool Buffer Disturbance: 136 sf

¹ We note that the Project proposal has since been amended to propose 198 parking spaces and 40 loading docks.

² See Enclosure 1.

We note the generally positive evolution of the proposed wetland impacts for the Project the Applicant has refined the design in response to continued interactions with the Town. Specifically, while the proposed buffer impacts (impervious) have increased slightly by 224 sf to 5,202 sf (an increase of 4.4%), the Applicant has reduced the proposed buffer impacts (pervious) by 9,346 sf (a reduction of 15.5%) and most importantly, the Applicant has reduced the proposed direct wetland fill impact by 1,200 sf to 3,338 sf (a 26.4% reduction).

We note further that both the proposed temporary and permanent vernal pool buffer disturbance impact have increased slightly by 462 sf to a proposed 870 sf and 53 sf, respectively. This increase was necessitated to account for adequate installation and stabilization measures during construction of the outlet pipe to the vernal pool.

2. Groundwater Conservation Overlay District

In addition to the Conservation District, the Property is also located within the Town's Groundwater Conservation Overlay District (the "Groundwater District"). Zoning Ordinance, Section 5.2. The Groundwater District requires certain performance standards be met where a proposed use will render impervious more than 15% (or 2,500 sf, whichever is less) of the property. Zoning Ordinance, Section 5.2.6.1. A Conditional Use Permit is required for uses that are otherwise permitted within the underlying zoning district if they involve, among other things, rendering impervious more than 15% or, 2,500 sf of any property. In this case, the Applicant has already requested a Conditional Use Permit for a use which will render impervious more than 15% or 2,500 of the Property.

Special Permit (Conservation District Impacts)

The criteria for granting a Special Permit for Conservation District impacts are outlined in Section 4.9.6 of the Zoning Ordinance. Specifically, the Planning Board may grant a Special Permit if it finds that the use is consistent with the purposes of the Conservation District and meets the specific criteria of Section 4.9.6.2 of the Zoning Ordinance.

In this case, and as depicted on the Wetlands Impact Plan, the primary impacts to the District will be caused by the road which will provide access to the Property, pervious buffer impacts caused by grading on the eastern portion of the Property, and the temporary impacts associated with the temporary crossing and Wetland Replication area, also on the eastern portion of the site. See Wetland Impacts Plan. Of the proposed buffer impacts proposed, the significant majority are pervious grading impacts which are intended to be restored to a vegetated state subsequent to the completion of construction. Id. In addition to the Wetlands Impact Plan provided herewith, the civil plan set from Bohler Engineering and Gove's Function and Value Analysis and additional filed materials detail how the proposed Wetland Replication area compensates for and offsets the disturbance noted above.

The Planning Board's granting of the Special Permit is appropriate because the Project has been designed to comply with the purposes of the Conservation District and appears to meet

the criteria identified in Section 4.9.1 of the Zoning Ordinance. Specifically, the purpose of the Conservation District Zoning Ordinance is to: 1) preserve sensitive wetlands, shoreland and other water bodies that provide flood protection, augment stream flow during dry periods, absorb nutrients and contribute to the viability of the Town's groundwater; 2) protect the wetlands and water bodies that are close to high-intensity development through restrictions such as limitations of certain land uses and buffering; 3) protect wildlife habitat and maintain the ecological values referenced in RSA 483-A; 4) limit development in areas where the natural features are not favorable for development; 5) encourage those low-intensity uses that can be harmoniously and safely located in the wetland areas; 6) preserve and enhance aesthetic values associated with lakes, ponds, river systems and wetlands; 7) encourage the preservation and/or restoration of Raymond's Shoreland Protection Area as natural vegetated shoreland buffer to filter sediment and pollutants from runoff and thus help protect the Town's water quality; and 8) discourage the following activities in Raymond's Shoreland Protection Area: any alteration of stream paths; landscaping; mowing; dumping of litter or trash, storage of grass clippings, leaves or snow; use of fertilizer and/or pesticides. See Zoning Ordinance, Section 4.9.1.

In this case, and as explained in Gove's updated Function and Value Analysis, the Project exemplifies the doctrine of avoidance and minimization. More specifically, the Project proposal contemplates the siting and construction of the proposed road and main building in a manner so to avoid direct (fill) impacts to the primary wetlands on the Property to include Wetlands A, B, which are not within the Shoreland District and which have a 25 ft setback requirement (see Gove Environmental Services, Inc., analysis dated May 2023), and C and D which wetlands are within the Shoreland District and therefore have a 75 ft setback requirement, to the greatest extent possible, and where such avoidance is not possible, to minimize them to the greatest extent possible. Id. All proposed direct and buffer impacts are depicted on Enclosure 2, which is the updated Wetlands Impact Plan from Bohler Engineering and Gove Environmental. Further, Gove will supplementing this filing with a graph depicting the evolution of the proposed wetland (and buffer) impacts as the Project has been refined.

The permanent impacts to Wetlands A, D and E to accommodate access to the Property are unavoidable and have been minimized to the greatest extent possible, (3,338 SF). Further, the temporary impacts associated with the temporary crossing have been isolated at the narrowest portion of Wetland B and the crossing itself has been designed to meet the Tier 1 crossing standards as required by New Hampshire Department of Environmental Services. This crossing is necessary, among other reasons, to facilitate the creation of the proposed Wetland Replication Area which will ensure Project-compliance with the Town's no net loss requirement outlined in Section 2.9.1 of the Zoning Ordinance. Said temporary impacts will be restored to their pre-construction condition after the Project is complete. We note additionally, that the Applicant is open to conveying a conservation easement to the Town, as discussed in other filings provided to the Board.

Further, the Applicant has designed the Project such that all direct (fill) wetland impacts are proposed to be made to the lowest functioning man-made wetland on the Property (Wetland E) (see Gove's Function and Value Analysis), and said impacts are required and are unavoidable,

to provide access to the main upland area of the Property from Route 27. Additionally, with the exception of minimal disturbance to accommodate a drainage pipe outfall (870 sf of temporary buffer disturbance and 136 sf of permanent buffer disturbance), the Project maintains a 100 ft buffer from the identified vernal pool on the Property and has located the building as far away as possible from Wetland C, which is a higher-functioning wetland located on the southern portion of the Property. See Id.

The Project's stormwater management infrastructure has been designed to treat stormwater runoff prior to entering any of the wetland systems on the Property, as detailed in the Drainage Report, such that the principal functions and values for Wetlands A, B, C and D will be maintained upon construction of the Project. See Gove's Functions and Value Analysis. As a result, the Project as designed, will have no significant negative effects to the continued existence of those systems or their associated functions and values.

Accordingly, the design for the Project preserves other sensitive wetland areas on the Property, protects wetlands on the Property to the greatest extent possible, protects wetland dependent wildlife through preservation of the existing buffers associated with same to the greatest extent possible and the restoration of areas which are contemplated to be temporarily altered to construct the proposed site improvements, protects wetland dependent wildlife habitat by way of buffer preservation to those areas most proximate to the highest functioning wetland systems and which are intended to be preserved as part of this project, limits development in areas where the natural features are not favorable for development, facilitates a use which is harmonious with and safely sited amongst the wetlands on the Property; and preserves existing aesthetic value of Wetlands A, B, C and D, which will endure no direct wetland impacts, all in accordance with Section 4.9.1 of the Zoning Ordinance. Further, as referenced above, the Applicant is open to permanently conserving several acres of the Property with a conservation easement which should be discussed further with the Board.

Additionally, and in consideration of Section 4.9.1.7 and 4.9.1.8, the Project has been thoughtfully designed to respect the existing Shoreland Protection buffers associated with Wetlands C and D, respectfully. To achieve this, the proposed site improvements were strategically positioned to either maintain said buffers in their native state or such that the temporary grading activities required to support the proposed site improvements would be minimized and will be allowed to renaturalize and function in a manner which is consistent with the expectations described in the Zoning Ordinance. By way of further explanation, the intent of this renaturalization is that limited, if any, maintenance is occurring in these locations (i.e. no mowing, snow storage, placement of grass clippings, and the general exclusion of similarly categorized activities). The proposed stormwater management systems have been designed to meet or exceed the standards set forth by the Town and the New Hampshire Department of Environmental Services (NHDES). As part of the design, careful consideration is given to the existing watersheds and, to the extent practicable, the maintaining of existing hydrologic patterns. Finally, the Applicant is open to permanently conserving portions of the site with a conservation easement, which proposal should be discussed further with the Board.

Finally, the Special Permit complies with the criteria identified in Section 4.9.6.2 as follows:

- **Section 4.9.6.2.1:** A New Hampshire licensed civil engineer, or other appropriate New Hampshire licensed professional has provided a review of the design and construction methods for the proposed use. <u>See</u> Civil Plans; Drainage Report; Geotechnical Report and Gove's Function and Value Analysis;
- Section 4.9.6.2.2: The Raymond Conservation Commission has reviewed and provided comments on the proposed use. See Conservation Commission letters dated October 3, 2022 and September 27, 2023
- Section 4.9.6.2.3: The Applicant has already provided and updated erosion control plan. See Civil Plans, Sheets C-601, C-602, C-603, C-604. See also Drainage Report and Geotechnical Report previously submitted;
- Section 4.9.6.2.4: The Applicant intends to maintain the site as nearly as practical and possible to its original grade, shape and appearance. See Civil Plans, Geotechnical Report, Drainage Report, Gove's Function and Values Analysis; and
- Section 4.9.6.2.5: The Applicant remains committed to and responsible for the costs of any outside technical assistance that the Planning Board requires as part of its review of the proposed use.

For these collective reasons, granting the requested Special Permit is appropriate.

Conditional Use Permit

Approval of the requested Conditional Use Permit regarding the Property's location within the Groundwater District is also appropriate, as explained below. Though review and comment by the Conservation Commission is not a specified criteria for the Planning Board to issue a Conditional Use Permit for activity within the Groundwater District pursuant to Section 5.2 of the Zoning, the Applicant provides the below analysis and is happy to entertain any comments or questions from the Commission regarding same.

As noted above, Section 5.2 of the Zoning Ordinance regulates the Town's Groundwater District and permits the Planning Board to issue a Conditional Use Permit for projects which will render impervious more than 15% or more than 2,500 sf of any lot, whichever is less, where the Planning Board finds that the proposed use is not a prohibited use and will be in compliance with the applicable performance standards detailed in Section 5.2.6 of the Zoning Ordinance, and with any other applicable local, state and federal requirements. Zoning Ordinance, 5.2.11.3.

In this case, approval of the requested Conditional Use Permit is warranted because the proposed industrial warehouse use is permitted in the Industrial Zoning District and because the

proposed use is not one of the expressly prohibited uses contemplated in Section 5.2.10 of the Zoning Ordinance. We note that Section 5.2.10.4 of the Zoning Ordinance prohibits the "siting of a snow dump" and that the Zoning Ordinance defines "snow dump" as a "location where snow which is cleared from roadways and/or motor vehicle parking areas is placed for disposal." The Applicant does not interpret its Project as inclusive of the "siting of a snow dump" but this matter requires additional coordination with the Town and regardless, the Applicant believes that snow storage activities for the Project can be sited on the Property outside the Groundwater Protection District based on the Town's 2009 maps, referenced in Section 5.2.3 of the Zoning Ordinance. Finally, the Project complies with the applicable performance standards listed in Section 5.2.6 and has filed a Spill Prevention, Control and Countermeasure Plan ("SPCC Plan"). See Drainage Report; Geotechnical Report.

Conclusion

We thank you for your time and attention and look forward to appearing before you on 4 January 2024.

Very truly yours, DONAHUE, TUCKER & CIANDELLA, PLLC



Justin L. Pasay, Esq.

Christopher L. Boldt, Esq. JLP/lh

cc: Jewett Construction (email only)

Bohler Engineering (email only)

Gove Environmental Services (email only)



Application for Special Permit

Town of Raymond, NH

| <u>Site information</u> | | |
|---|----------|--------------|
| Property Address: 81 Route 27 | | |
| Map #: _28 Lot #: _9,10,11 | | |
| Property Owner Information | | |
| Name: Redimix Companies, Inc. Attn: Larry Major | Phone: _ | |
| Address: 3 Eastgate Park Road | | |
| Address: Belmont, NH 03220 | | |
| Applicant/Agent Information | | |
| Name: _Jewett Construction, Attn: Dan Ray | Phone: _ | 603-895-2412 |
| Address: 25 Spaulding Road Suite #17-2 | | |
| Address: Fremont, NH 03044 | | |

Project Description - The proposed project includes the construction of a new 200,000 SF freestanding warehouse building along with new paved parking areas, landscaping, stormwater management components and associated utilities. Proposed wetland impacts will be 3,987 sf. This will be through two separate impacts. Impact area 1 is for the driveway construction into the site and will impact 3,338 SF of isolated scrub shrub wetlands; Impact area 2 is for a temporary impact to access the portion of the site to be used as the source for burrow material for the development area. This area will have a 24' wide temporary gravel road with one 49" X 33" RMP Arch Culvert to cross a tier 1 intermittent stream temporarily impacting 649 SF of wetland and 42 LF of stream. Development will also impact the shoreland high water 75' buffer.

- Impervious impact conservation district buffer (25' setback) = 5,202 SF
- Impervious impact shoreland district buffer(75' setback) = 3,567 SF
- Temporary wetland and shoreland district impact (temporary crossing) = 4,316 SF
- Pervious impact within buffers (conservation district and shoreland district) = 50,629 SF

Applicant Signature* (see page 2): Date: 12/19/23

Submission Checklist

- *COMPLETED & SIGNED APPLICATION. If the applicant is <u>NOT</u> the property owner, <u>a notarized letter of permission</u> from the property owner is required to be submitted with this application.
- **LIST OF ABUTTERS.** The list of abutters must include the following information:
 - Name of property owner(s)
 - Address of property owner(s)
 - Name of abutting property owner(s)
 - Address of abutting property owner(s)
 - > Tax Map and Lot Numbers for all properties listed
 - Name and Address of any agents authorized by the applicant to represent them and whose professional seal appears on a plat submitted to the Planning Board (i.e. land surveyors, wetland scientists, engineers, etc.)

(For more information, please refer to NH Revised Statues Annotated 672:3 for a definition of the term "abutter," and RSA 676:4 for legal notice requirements).

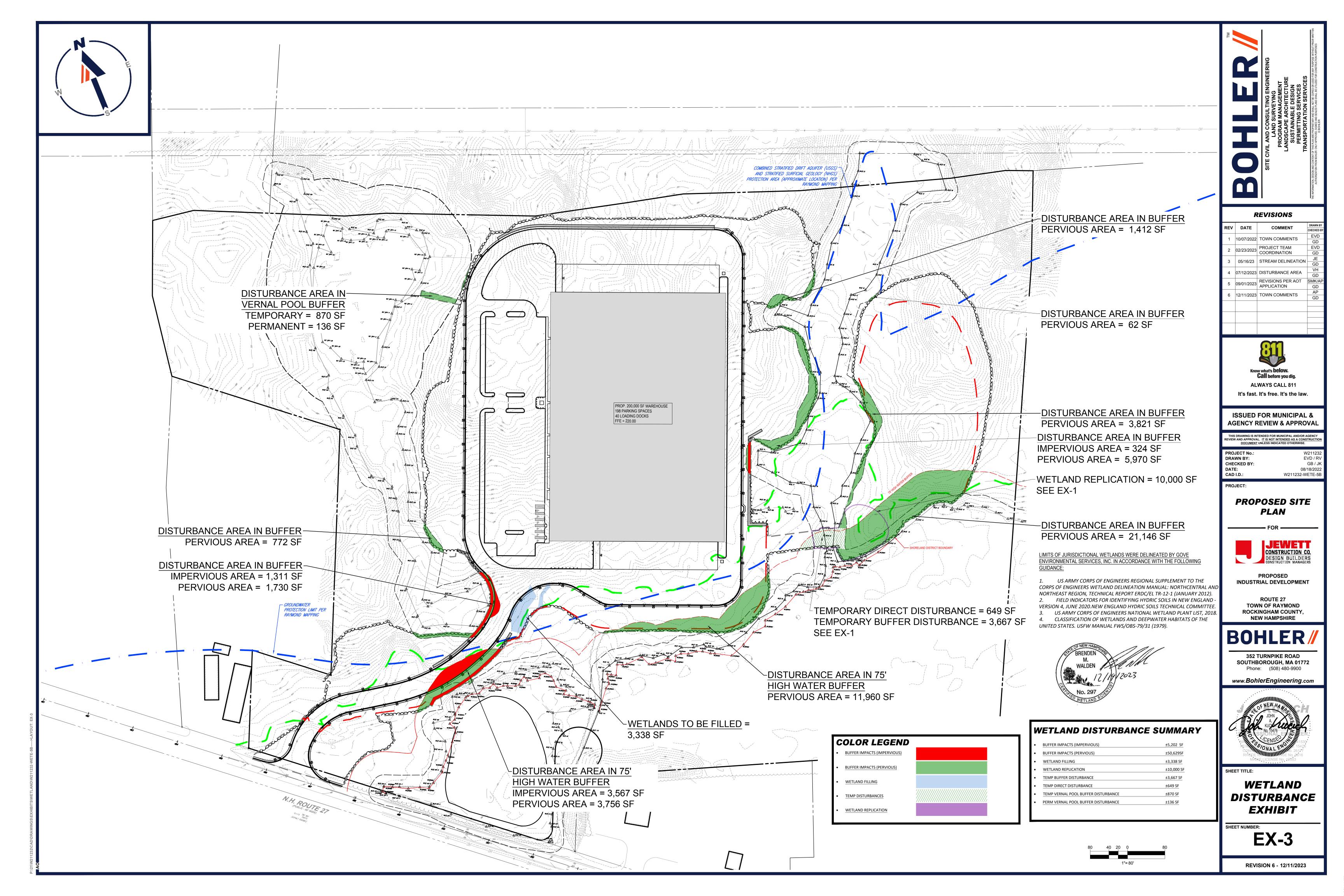
- **APPLICATION FEE.** The application fee to the Planning Board for a Special Permit is as follows:
 - > \$100.00 base application fee, plus;
 - > \$10.00 per abutter (including the applicant, property owner(s), and any agents authorized to represent the property owner(s))
 - When writing a check, this amount must be kept separate from the Escrow Account (see below). Please make checks payable to the Town of Raymond.
- **ESCROW ACCOUNT.** This is a separate account established by the applicant to cover the cost of any additional legal notification, engineering review, legal review, document recording or outside copying incurred by the Town. Any unused funds will be returned to the applicant.
 - > \$250.00 Minimum amount required to establish Escrow Account.
 - When writing a check, this amount must be kept separate from the Application Fee (see above). Please make checks payable to the Town of Raymond.

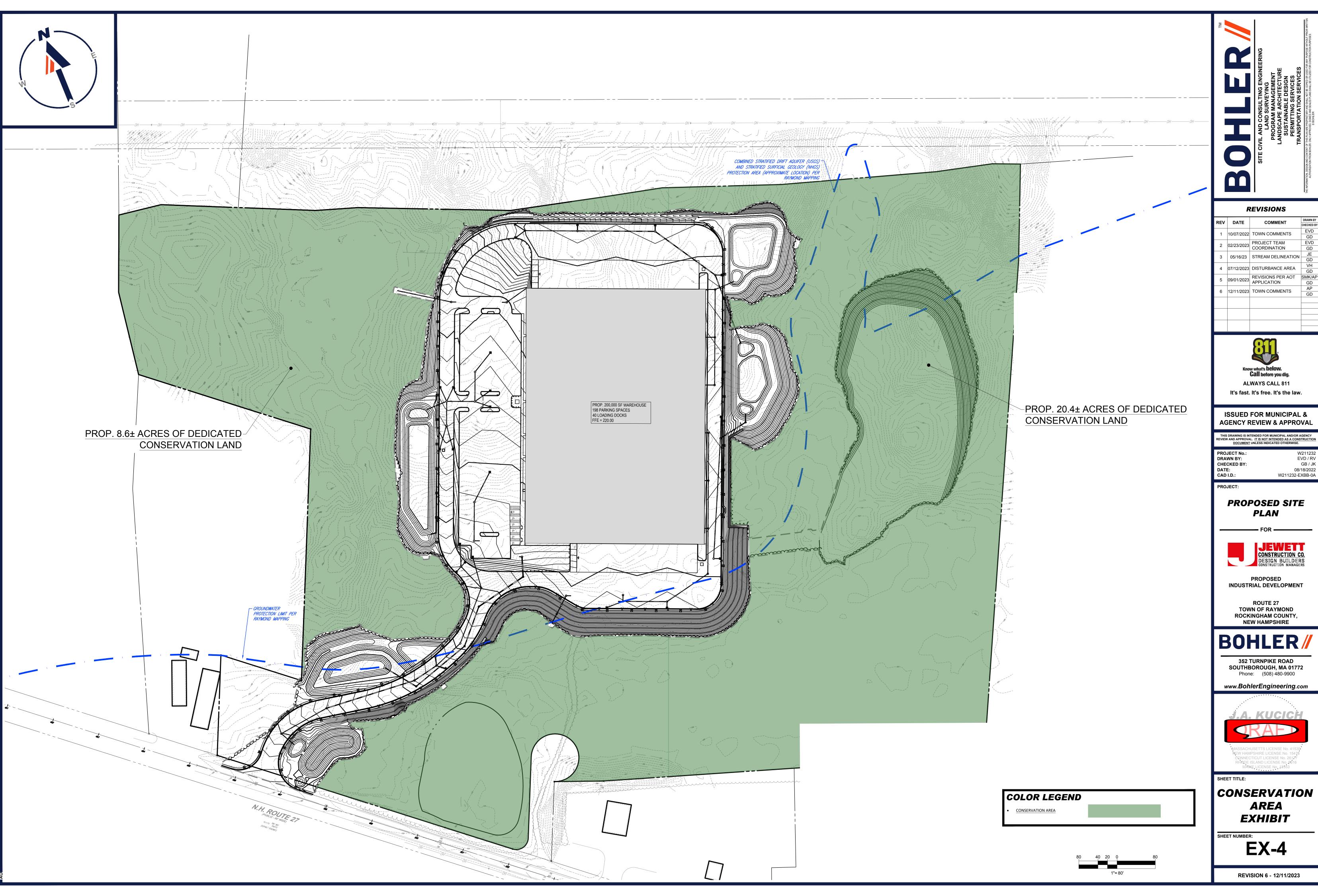
• PLANS.

➤ One (1) 24" x 36" copy of the plan, plus ten (10) 11" x 17" copies shall be provided.

-OR-

➤ If the original plan is smaller than 24" x 36" in size, then one (1) copy of the original plan, plus ten (10) 11" x 17" copies of the plan shall be provided.





| REV | DATE | COMMENT | DRAWN BY |
|-----|------------|-------------------------------|------------|
| | | | CHECKED BY |
| 1 | 10/07/2022 | TOWN COMMENTS | EVD |
| | | | GD |
| 2 | 02/23/2023 | PROJECT TEAM | EVD |
| | | COORDINATION | GD |
| 3 | 05/16/23 | STREAM DELINEATION | JE |
| | | | GD |
| 4 | 07/12/2023 | DISTURBANCE AREA | VH |
| | | | GD |
| 5 | 09/01/2023 | REVISIONS PER AOT APPLICATION | SMK/AP |
| | | | GD |
| 6 | 12/11/2023 | TOWN COMMENTS | AP |
| | | | GD |
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CONSERVATION

REVISION 6 - 12/11/2023





Date: 01/18/2023

To: Doug Reymore, Jewett Construction (the "Applicant")

Subject: Functions and Values Analysis for property located at 81 Route 27 and further identified

as Town Tax Map 28, Lots 9, 10, 11 (the "Property")

Re: Minor Dredge and Fill, Commercial Development

This analysis has been revised as of <u>December 19, 2023</u> to reflect the most current proposal related to wetland and wetland buffer impacts identified on the Wetland Disturbance Exhibit EX-3 with a revision date of December 12, 2023.

The functions and values of the wetlands on the Property were reviewed both during a field delineation as well as utilizing additional aerial imagery and survey data. The five wetland systems identified, referred to herein as Wetlands A, B, C, D and E, are depicted on the attached EC plan (which is a slightly modified version of the Demolition Plan (sheet C-201) of the Civil Plan Set filed with the Town by the Applicant) (the "Plan"). These wetlands were reviewed individually per Army Corps of Engineers Evaluation forms. Please find below an analysis of each of the five wetlands on the Property, which analysis will outline the overall principal functions related to each, as well as the corresponding proposed impacts as shown on the attached Wetland Disturbance Exhibit, Sheet EX-3.

Project Overview and Summary

The Applicant proposes to develop the Property for the construction of a 200,000 SF commercial/industrial building (the "Project") and in so doing has avoided and minimized all impacts to the jurisdictional wetland areas on the site to the greatest extent practicable. For example, the Applicant has directed all permanent wetland impacts associated with the Project to the lowest functioning man-made wetland on the subject Property, identified as Wetland E, and said impacts are required, and are unavoidable, to provide access to the main buildable upland area of the Property.

The Project will maintain a 100ft structural buffer to the identified vernal pool on the Property with only minimal impacts to maintain the existing hydrology to the wetland. Additionally, the Applicant has intentionally located the proposed building as far away as possible from the large, higher functioning wetland to the south, identified as Wetland C on the Plan. The Project requires a temporary impact to Wetland B for access to an area necessary construct an 11,773 SF wetland replication area to comply with the Town's no net loss zoning requirement (the "Wetland Replication Area"). This temporary crossing was designed to cross Wetland B at its narrowest point to minimize the temporary effects of the crossing. Upon construction completion, the crossing area will be restored to its pre-construction condition. The temporary crossing will also meet all Tier 1 stream crossing guidelines and as such, will have no negative effects on the existing hydrologic connectivity of the wetland.

Additionally, the stormwater management features proposed with the Project will maintain all existing hydrologic contributions to these wetlands as well as treat all stormwater runoff prior to





entering any of the wetland systems on the site, in accordance with all applicable regulations. These design considerations proposed with this Project will assist in ensuring that the principal functions and values for each of the five wetlands, identified herein, will be maintained upon the construction completion of this Project. As such, the Project as designed will have no significant negative effects to the continued existence of these natural systems.

Analysis

1) Wetland A:

Wetland A is an isolated wetland system the originates on the northern edge of the property and drains to the south through an intermittent stream that dissipates before reconnecting to any adjacent wetlands on the Property. Wetland A is a forested wetland with a scrub shrub understory and vegetation consisting of cinnamon fern, sensitive fern royal fern, gold thread, winterberry, highbush blueberry, iron wood, red maple, hemlock, and some American beach. Principal functions associated with Wetland A consist of Groundwater Recharge/Discharge, Floodflow Alteration, and Wildlife Habitat. These functions attributed to Wetland A acknowledge and account for the presence of the vernal pool identified on the Plan, and its associated intermittent stream.

The Project proposes no direct impacts to Wetland A or the vernal pool. In fact, the Applicant was sure to avoid any proposal to impact Wetland A and the vernal pool by siting the building as far to the north and east as practical. There will be minimal impacts to the project designated 100ft buffer to the vernal pool for the construction of the stormwater outlet structure. This is proposed to maintain the existing hydrology to the pool and will only be directing 6,000SF of roof runoff to a catch basin prior to being discharged near Wetland A.

2) Wetland B:

Wetland B is a wetland associated with an intermittent stream that flows from the northern Property boundary to the south through the Property into a larger wetland complex identified as Wetland C. Wetland B is a forested wetland with a secondary scrub shrub understory and is composed of similar vegetation to Wetland A inclusive of cinnamon fern, sensitive fern royal fern, gold thread, winterberry, highbush blueberry, iron wood, red maple, hemlock, some white pine and some American beach.

Wetland B has principal functions of Groundwater Recharge/Discharge, Floodflow Alteration, and Wildlife Habitat. These functions are attributed to the associated watercourse and overall connection to a larger wetland complex to the south of the wetland system.

The only impacts proposed to Wetland B by the Project are temporary impacts to accommodate the construction of the Wetland Replication Area which will consist generally of New England wet seed mix over six inches of top soil, and which will meet the Town's no net loss zoning ordinance. More specifically, a narrow temporary crossing is proposed, as detailed the Project's civil plan set, over the narrowest area of Wetland B. The temporary impact to accommodate the temporary crossing will include a temporary construction access road, 42 LF culvert, headwall and dewatering sump. Importantly, the Project proposes no permanent disturbance to this jurisdictional area.





Once the Wetland Replication Area work is complete, the crossing will be removed and restored with vegetation as specified in the Project's Landscape Plans.

3) Wetland C

Wetland C is a large wetland system originating off site to the east that receives hydrologic contribution from Wetland B and drains through Wetland D, analyzed below, before eventually draining off site to the west and out letting to the Lamprey River. Wetland C is a large, ponded area that has an associated constricted outlet from a man-made crossing that has seen common beaver activity on site. Vegetation in Wetland C is consistent with marsh type vegetation including hummocks of grasses and edges of the wetland consisting of scrub shrub vegetation with highbush blueberry, winterberry, speckled alder, witchhazel, and iron wood. Principal functions of the wetland include, Groundwater Recharge/Discharge, Floodflow Alteration, Fish and Shellfish Habitat, Sediment/Toxicant Retention, Nutrient Retention, Production Export, Sediment/Shoreline Stabilization, and Wildlife Habitat. These functions are attributed to the overall size of Wetland C and additional hydrologic contribution from onsite and offsite wetland systems as well as the presence of consistent ponding within the wetland system.

The Project proposes no impacts Wetland C and all proposed stormwater designs ensure that there will be no changes in hydrology within the wetland.

4) Wetland D:

Wetland D is a ponded area with a constricted outlet that flows to the south across route 27. Wetland D receives hydrologic contribution from wetland C and wetland B. Similar to Wetland C, Wetland D has hummocks along the edges with a clear area of deepwater habitat within the wetland system. Vegetation in this area consists of winterberry, highbush blueberry, iron wood and red maple. Principal functions of this wetland consist of Groundwater Recharge/Discharge, Floodflow Alteration, Fish and Shellfish Habitat, Sediment/Toxicant Retention, Nutrient Retention, Production Export, Sediment/Shoreline Stabilization, and Wildlife Habitat. These functions are associated with the presence of the constricted inlet and outlet of the wetland and the presence of the deepwater habitat.

The Project proposes no direct impacts to Wetland D and all proposed stormwater designs ensure that there will be no changes in hydrology within the wetland.

5) Wetland E:

Wetland E is an isolated man-made drainage area that appears to have been constructed with the access roadway to the utility ROW adjacent to the Property. Wetland E is dominantly forested with a scrub shrub/Herbaceous understory with an associated trenched drainage. Vegetation in this area consists of cinnamon fern, sensitive fern, royal fern, winterberry, speckled alder, witch hazel, iron wood, red maple and hemlock. Principal functions associated with this wetland are limited to Wildlife Habitat. The overall functions and value of Wetland E are limited because it is a man-made wetland system which was developed for drainage. Wetland E is proposed to be filled entirely for the Project to gain access to the buildable uplands on the subject property, and to avoid impacts to higher-functioning and higher-value wetland systems on the Property, as explained above. These impacts will amount to will amount to 3,338SF of direct wetland impact.



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This is an overall reduction from the initial proposed wetland impact of 4,538 SF. Functions and values of this wetland will be replicated on site through the construction of stormwater management features as well as the wetland replication area.

Conclusion

In conclusion, the Project avoids impacts to the highest functioning and highest value wetland systems on the Property by isolating all permanent impacts to Wetland E, a previously disturbed low-functioning and low-value man-made drainage feature, which impact is required to gain access to the large viable upland area the Property enjoys. The proposed temporary impacts associated with the temporary crossing of Wetland B are required to complete the Wetland Replication Area and ensure the Project complies with all regulations and said impacts will be restored to their pre-construction condition upon completion of the Project.

If you have any other questions or believe I can assist you and any other way please feel free to contact me either by email: bwalden@gesinc.biz or by phone: 207-710-7863.

Sincerely

Brenden Walden Business Manager & Wetland Scientist #297 Gove Environmental Services, Inc.

Attachments:

Aerial Existing Conditions ACOE Data Sheets



GOVE ENVIRONMENTAL SERVICES, INC.

AERIAL

Aerial



Legend

Parcels

Parcel Polygons
Attributes for Additional Lines

State

County☐ City/Town

Map Scale

1: 6,494



© NH GRANIT, www.granit.unh.edu Map Generated: 12/27/2022

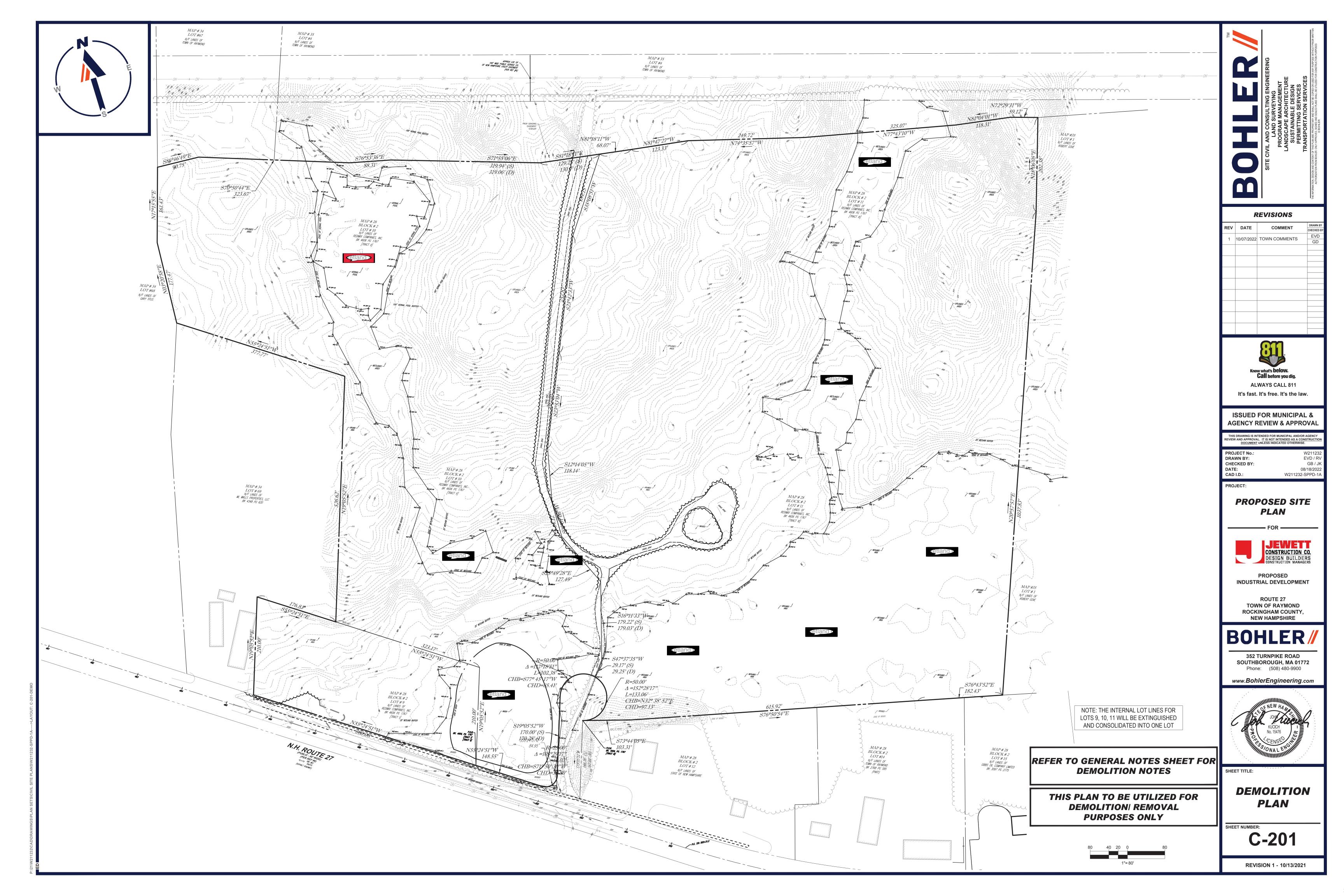
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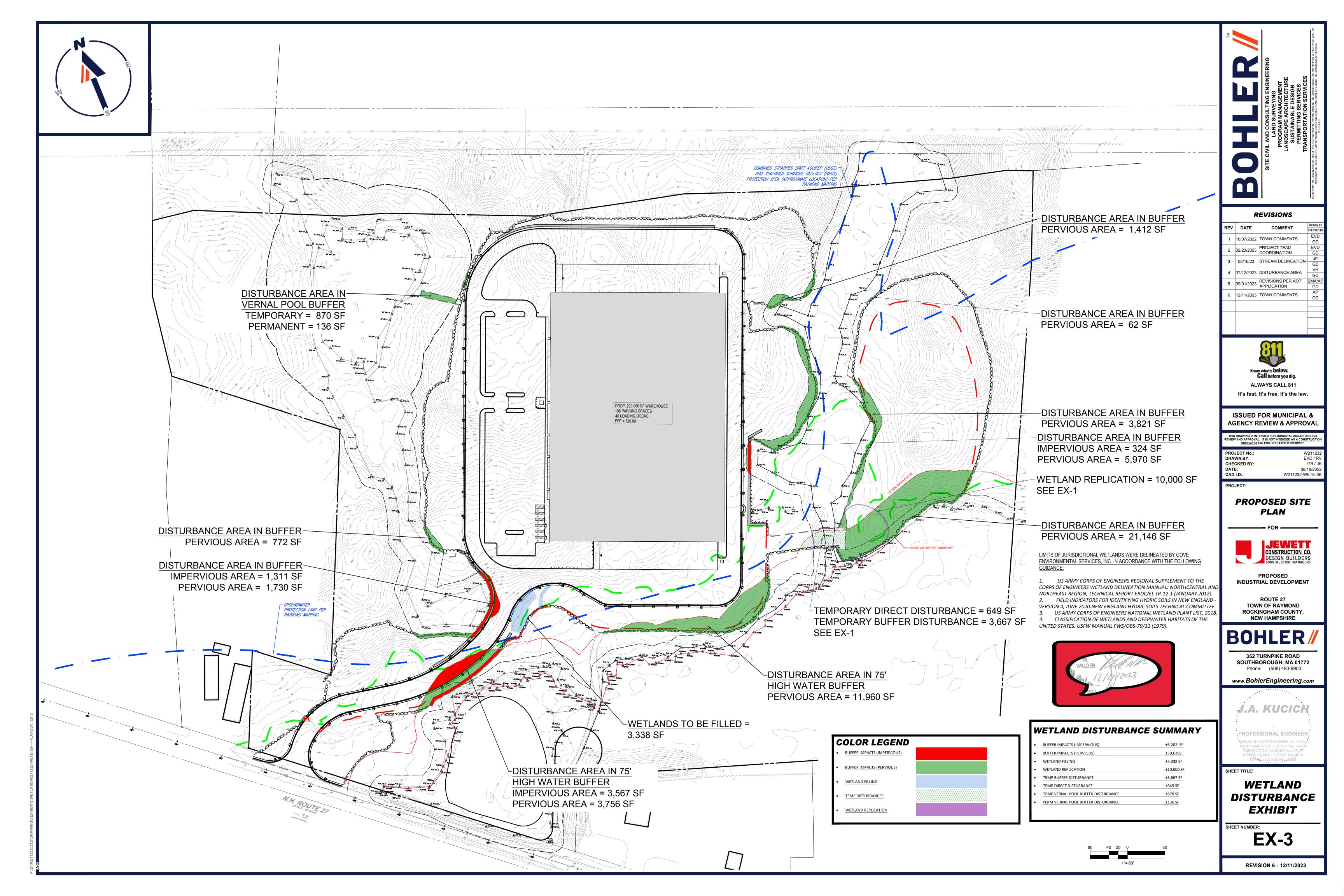




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EXISTING CONDITIONS &WETLAND IMPACT PLAN







GOVE ENVIRONMENTAL SERVICES, INC. ACOE DATA SHEETS

| | | | | | Wetland I.D. WetlandA |
|--|-------------------|--|----------|-----------------------------------|--|
| Total area of wetland unknown Human made? no | Is wetla | and part of a wildlife corridor? no | O | or a "habitat island"? no | Latitude Longitude |
| Adjacent land use Residential/utility | | Distance to nearest road | way o | r other development_adjacent | Prepared by: BMW Date 1/16/23 |
| Dominant wetland systems present PFO1E/PSS | 1E | Contiguous undevelope | | | Wetland Impact: Type_N/AArea |
| Is the wetland a separate hydraulic system? Yes How many tributaries contribute to the wetland? N | | not, where does the wetland lie inWildlife & vegetation diversity/ | | | Evaluation based on: Office Yrd Field Yes Corps manual wetland delineation |
| Function/Value | Suitabilit Y/N | | rinci | | completed? Y ^X N |
| Groundwater Recharge/Discharge | Y | 7,9,10,15 | Υ | Wetland associated with an ar | ea of ponding and an intermittent outle |
| Floodflow Alteration | Y | 7,9,14,16,18 | Υ | Wetland associated with an ar | ea of ponding and an intermittent outle |
| Fish and Shellfish Habitat | N | | N | No Permanent was | ter present |
| Sediment/Toxicant Retention | Y | 3,4,5, | N | Wetland associated with pondi | ng but no active contributions of erosior |
| Nutrient Removal | Y | 5,6,7,8,9,10,11 | N | Wetland has potential to manage e | excess nutrients but size and location limiting |
| → Production Export | Y | 4,5,7,8,11, | N | no signs of signific | ant flushing resnt |
| Sediment/Shoreline Stabilization | Y | 2,5,7,12,13,14,15, | N | intermittent stream prese | ent no distinct shoreline presem |
| ₩ Wildlife Habitat | Y | 1,3,4,5,7,8,13,15,17,18,19,20,2 | Υ | active vernal pool present, | with associated intermittent stream |
| Recreation | N | | | private property no | access |
| Educational/Scientific Value | N | | | private property no | access |
| ★ Uniqueness/Heritage | N | | | private property no | access |
| Visual Quality/Aesthetics | N | | | private property no | access |
| ES Endangered Species Habitat | Y | | | See NHB | |
| Other | | | | | |

| lmaum | | | | - | Wetland I.D. wetlands |
|---|----------|-------------------------------------|--------|---------------------------------------|---|
| Total area of wetland unknown Human made? no | Is wetla | and part of a wildlife corridor? no |) | or a "habitat island"? NO | Latitude Longitude |
| Adjacent land use Residential/utility | | Distance to nearest road | way oi | r other development adjacent | Prepared by: BMW Date 1/16/23 |
| Dominant wetland systems present_PFO1E/PSS | 1E | Contiguous undevelope | d buff | er zone present_Yes | Wetland Impact: Type N/A Area Area |
| Is the wetland a separate hydraulic system? no How many tributaries contribute to the wetland? N Function/Value | | _Wildlife & vegetation diversity/a | abunda | ance (see attached list) | Evaluation based on: Office Yrd Field Yes Corps manual wetland delineation completed? Y X N Omments |
| Groundwater Recharge/Discharge | Y | 2.4.7.15 | Y | | with a larger wetland complex |
| Floodflow Alteration | Y | 2.5.7,9,16,18 | Y | | with a larger wetland complex |
| Fish and Shellfish Habitat | N | | N | no permanent water | is present in this wetland |
| Sediment/Toxicant Retention | Y | 3,6,7,8,9,10,11,16 | N | intermittent stream present but no so | ources of excess sediments or toxicants present |
| Nutrient Removal | Y | 5,6,7,8,9,10,11 | N | no signs of flushing | g present within wetland |
| → Production Export | Y | 2,4,5,7,8,11, | N | no signs of produc | tion export present |
| Sediment/Shoreline Stabilization | Y | 2,5,7,12,13,14,15, | N | intermittent watercourse w | ith minimal erosive forces present |
| ₩ Wildlife Habitat | Y | 1,3,4,5,7,8,13,15,17,18,19,20,2 | Υ | intermittent watercouse a | associated with a larger wetland |
| Recreation | N | | | private property no | access |
| Educational/Scientific Value | N | | | private property no | access |
| ★ Uniqueness/Heritage | N | | | private property no | access |
| Visual Quality/Aesthetics | N | | | private property no | access |
| ES Endangered Species Habitat | Y | | | See NHB | |
| Other | | | | | |

| | | | | | Wetland I.D. Wetland | d C |
|--|---------------------|--|----------------|---|---|--------------------------------|
| Total area of wetland unknown Human made? no | Is wetla | and part of a wildlife corridor? n |) | or a "habitat island"? no | | Longitude |
| Adjacent land use Commercial/Residential/Ro | adway | Distance to nearest road | way o | r other development <100 ft | Prepared by: BW | _ _{Date_} 1/16/23 |
| Dominant wetland systems present_PSS/PEM | | Contiguous undevelope | ed buff | er zone present yes | Wetland Impact: Type none | Area |
| Is the wetland a separate hydraulic system? no How many tributaries contribute to the wetland? ul | nknown | _Wildlife & vegetation diversity/ | abunda | ance (see attached list) | Evaluation based on: Office yes Fiel Corps manual wetlan completed? Y X | |
| Function/Value | Suitabilit Y / N | | rinci uncti | | Comments | |
| Groundwater Recharge/Discharge | Y | 2,4,7,9,15 | Υ | Large wetland associated wit | h a watercourse and | I constricted outlet |
| Floodflow Alteration | Y | 1,3,5,6,7,8,9,13,15,16,18 | Y | Large wetland associated with a v | watercourse and areas | of dense vegetation |
| Fish and Shellfish Habitat | Y | 1,2,3,4,5,7,10,14,16 | Y | Large wetland with permanent water pr | esent to have potential to s | support fish and shellfish |
| Sediment/Toxicant Retention | Y | 1,2,3,4,5,6,7,8,10,11,12,13,10 | Y | Large wetland with slow moving water and o | rganic material to trap and reta | ain sediments and toxicants |
| Nutrient Removal | Y | 1,2,3,4,5,6,7,8,9,10,11,12,13,15 | Y | Large wetland with areas of dense vegeta | tion and slow moving water t | o absorb excess nutrients |
| → Production Export | Y | 1,2,4,5,6,78,10,11,12 | , Y | Large wetland with a constricted | outlet that has potentia | al to support flushing |
| Sediment/Shoreline Stabilization | Y | 3,4,6,7,9,12,13,14,15 | Υ | Large wetland associated with a watercourse v | vith dense vegetation along the | banks to support stabilization |
| ₩ Wildlife Habitat | Y | 4,5,6,7,8,9,11,12,13,15,17,18,19,20,21 | Υ | Large wetland with various classes of vege | etation and areas of permane | nt water to support wildlife |
| Recreation | N | | N | Private Property with n | o public access | or view points |
| Educational/Scientific Value | N | | N | Private Property with n | o public access | or view points |
| ★ Uniqueness/Heritage | N | | N | Private Property with n | o public access | or view points |
| Visual Quality/Aesthetics | N | | N | Private Property with n | o public access | or view points |
| ES Endangered Species Habitat | Y | | | See NHB | | |
| Other | | | | | | |

| | | | | | Wetland I.D. Wetland D |
|--|---------------------|--|-------|--|---|
| Total area of wetland unknown Human made? no | Is wetla | and part of a wildlife corridor? no |) | or a "habitat island"? no | Latitude Longitude |
| Adjacent land use Commercial/Residential/Re | adway | Distance to nearest road | way o | r other development 0 ft | Prepared by: BW Date 1/16/23 |
| Dominant wetland systems present PFO/PSS/PE | | Contiguous undevelope | | | Wetland Impact: Type noneArea |
| Is the wetland a separate hydraulic system? no How many tributaries contribute to the wetland? ul | | | | | Evaluation based on: Office yes Field yes |
| | Suitabilit Y / N | y Rationale P | rinci | pal | Corps manual wetland delineation completed? YX N |
| Groundwater Recharge/Discharge | Y | 2,4,7,9,15 | Υ | Wetland with deepwater habitat present a | nd is associated with adjacent wetlands/watercourses |
| Floodflow Alteration | Y | 1,3,5,6,7,8,9,13,15,16,18 | Y | Wetland area with a constricted inlet and | outlet with dense vegetation and deepwater presen |
| Fish and Shellfish Habitat | Y | 1,2,3,4,5,7,10,14,16 | Y | Wetland area has deepwater hab | itat present that could support fish/shellfish |
| Sediment/Toxicant Retention | Y | 1,2,3,4,5,6,7,8,10,11,12,13,16 | Y | Wetland has constricted inlet and outlet w | ith deepwater present to retain sediment and toxicants |
| Nutrient Removal | Y | 1,2,3,4,5,6,7,8,9,10,11,12,13,15 | Y | wetland has areas of dense vegetation | and slow moving water to absorb excess nutrients |
| → Production Export | Y | 1,2,4,5,6,78,10,11,12 | , Y | wetland has a constricted outl | et that has potential to support flushing |
| Sediment/Shoreline Stabilization | Y | 3,4,6,7,9,12,13,14,15 | Υ | wetland associated with a watercourse with | dense vegetation along the banks to support stabilization |
| ₩ Wildlife Habitat | Y | 4,5,6,7,8,9,11,12,13,15,17,18,19,20,21 | Υ | Wetland with various classes of vegetation | n and areas of permanent deepwater to support wildlife |
| Recreation | N | | N | Private Property with n | o public access or view points |
| Educational/Scientific Value | N | | N | Private Property with n | o public access or view points |
| ★ Uniqueness/Heritage | N | | N | Private Property with n | o public access or view points |
| Visual Quality/Aesthetics | N | | N | Private Property with n | o public access or view points |
| ES Endangered Species Habitat | Y | | | See NHB | |
| Other | | | | | |

| Total area of wetland unknown Human made? no Adjacent land use Commercial/Residential/Ro Dominant wetland systems present PFO/PSS/PE Is the wetland a separate hydraulic system? no | eadway EM | Distance to nearest road Contiguous undevelope | way o | r other development >100 ft For zone present yes | Wetland I.D. Wetland E Latitude Longitude Prepared by: BW Date 1/16/23 Wetland Impact: Type none Area |
|---|--------------|--|------------------|---|---|
| How many tributaries contribute to the wetland? <u>ur</u> | | Wildlife & vegetation diversity/s | abunda Princi | ance (see attached list) | Evaluation based on: Office yes Field yes Corps manual wetland delineation completed? Y X N N N N N N N N N N N N N N N N N N |
| Groundwater Recharge/Discharge | Y | 4 | N | Small isolated man-made drainage area for | or directing stormwater from the existing woods road |
| Floodflow Alteration | Y | 18 | N | Small isolated man-made drainage area for | or directing stormwater from the existing woods road |
| Fish and Shellfish Habitat | Y | | N | no permanent water | er present |
| Sediment/Toxicant Retention | Y | | N | Small isolated man-made drainage area for | or directing stormwater from the existing woods road |
| Nutrient Removal | Y | 8,9,10 | N | Small isolated man-made drainage area for | or directing stormwater from the existing woods road |
| → Production Export | Y | 7, | N | Small isolated man-made drainage area for | or directing stormwater from the existing woods road |
| Sediment/Shoreline Stabilization | Y | | N | No shoreline prese | ent |
| ₩ Wildlife Habitat | Y | 4,5,7,13,18,19,21, | Υ | Small isolated man-made drainage area with are | as of dense vegetation and close proximity to other wetlands |
| Recreation | N | | N | Private Property with no | public access or view points |
| Educational/Scientific Value | N | | N | Private Property with no | public access or view points |
| ★ Uniqueness/Heritage | N | | N | Private Property with no | public access or view points |
| Visual Quality/Aesthetics | N | | N | Private Property with no | public access or view points |
| ES Endangered Species Habitat | Y | | | See NHB | |
| Other | | | | | |



TOWN OF RAYMOND

Community Development Department Office of Planning & Zoning

4 Epping Street Raymond, NH 03077 Tel: (603) 895-7018 • Fax: (603) 895-7064 communitydevdirector@raymondnh.gov

Regional Impact / Legal Notice

You are hereby notified that the Raymond Planning Board will hold a Public Hearing on Thursday January 4, 2024, beginning at 7:00 p.m. The meeting will be held in the Media Center at Raymond High School; 45 Harriman Hill Road. The project has been found by the Raymond Planning Board to have the potential for regional impact with regard to NH RSA 36:57 and, as such, you have been afforded the status of an abutter to this project. Consistent with NH RSA 36:57 (II) you are being sent a copy of the minutes from the November 16, 2023, meeting in which the project declared to have the potential for Regional Impact, was discussed. In fulfillment of NH RSA 36:57 (III) which requires that municipalities notify by certified mail all affected municipalities and the regional planning commission at least fourteen (14) days prior to the public hearing, this notice shall serve as that requirement.

Application #2021-018 White Rock Place: A Site Plan Application has been submitted by Joseph Coronati of Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing 156 market rate apartments of three four story buildings on slabs with elevators, a mixture of one- and two-bedroom units with open space preserved, recreational trails, and associated parking. Access will be from Main Street. The property is identified as Raymond Tax Map 23 Lots 25 & 29, located at 109A & C Main Street, Raymond NH, 03077 and is within Zone B & D (Industrial).

You are invited to attend, or you may submit written comments to: Jason Cleghorn, Community and Economic Director, Town of Raymond, Community Development Department, Office of Planning & Zoning, 4 Epping Street, Raymond, NH 03077. If you require audio or visual aids, please contact the Board of Selectmen's Office at least 24 hours prior to the meeting.

ENTITIES SENT THE DRI NOTICE PER NH RSA 36:57 (II)

Seacoast School of Technology

40 Linden Street Exeter, NH 03833

Town of Chester Planning Department

84 Chester Street Chester, NH 03036

Lamprey River Advisory Committee

249 Calef Highway Lee, NH 03861

Candia Fire and Rescue

11 Deerfield Road Candia, NH 03034

Raymond School District

43 Harriman Hill Road Raymond, NH 03077

No responses received except from the Rockingham Planning Commission (attached in this packet)

The Town of Epping Planning Board

157 Main Street Epping, NH 03042

Candia Town Offices

74 High Street Candia, NH 03034

Epping Fire Department

37 Pleasant Street Epping, NH 03042

Rockingham Planning Commission

156 Water Street Exeter, NH 03833

Town of Fremont

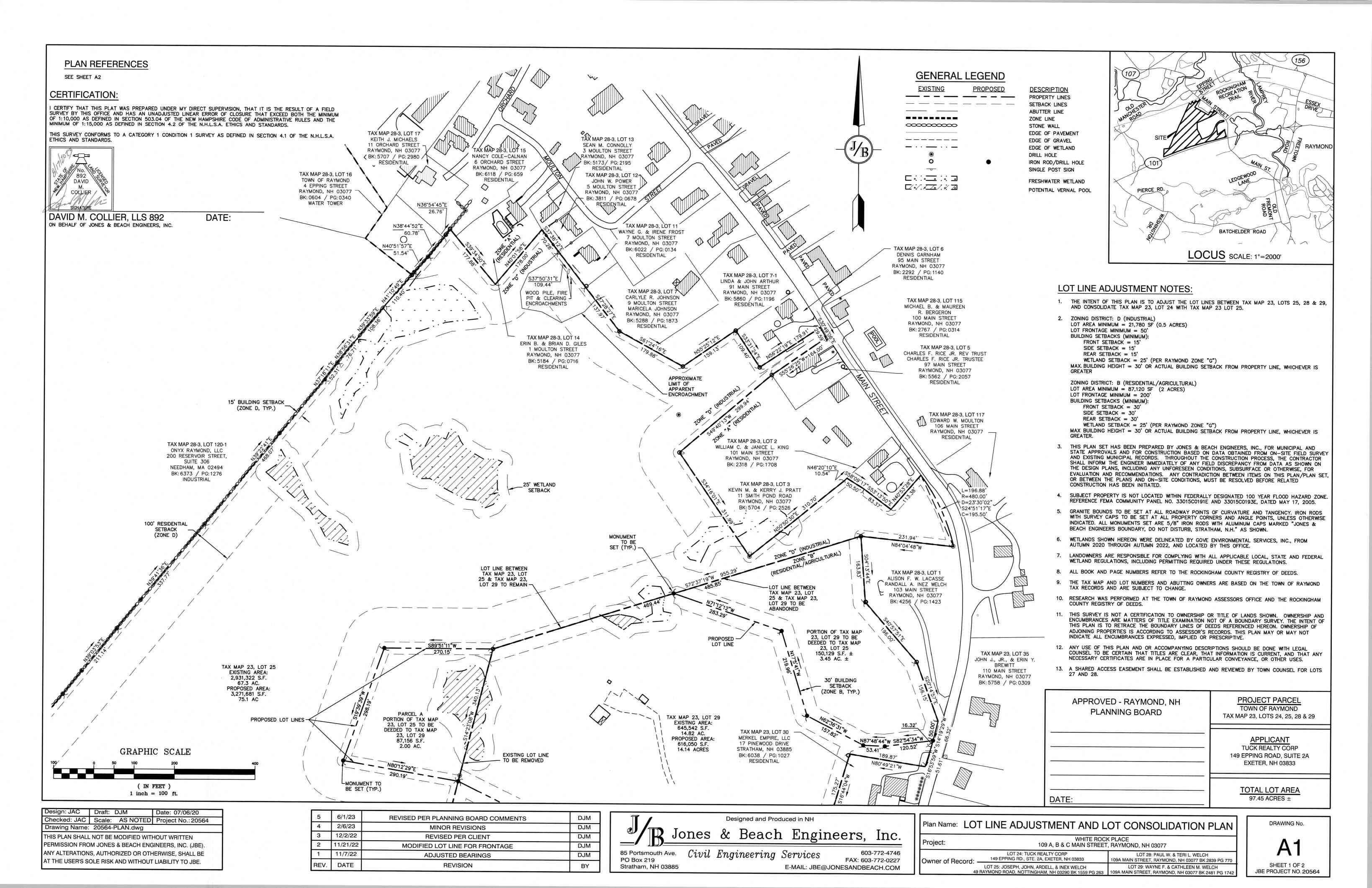
295 Main Street PO Box 120 Fremont, NH 03044-0120

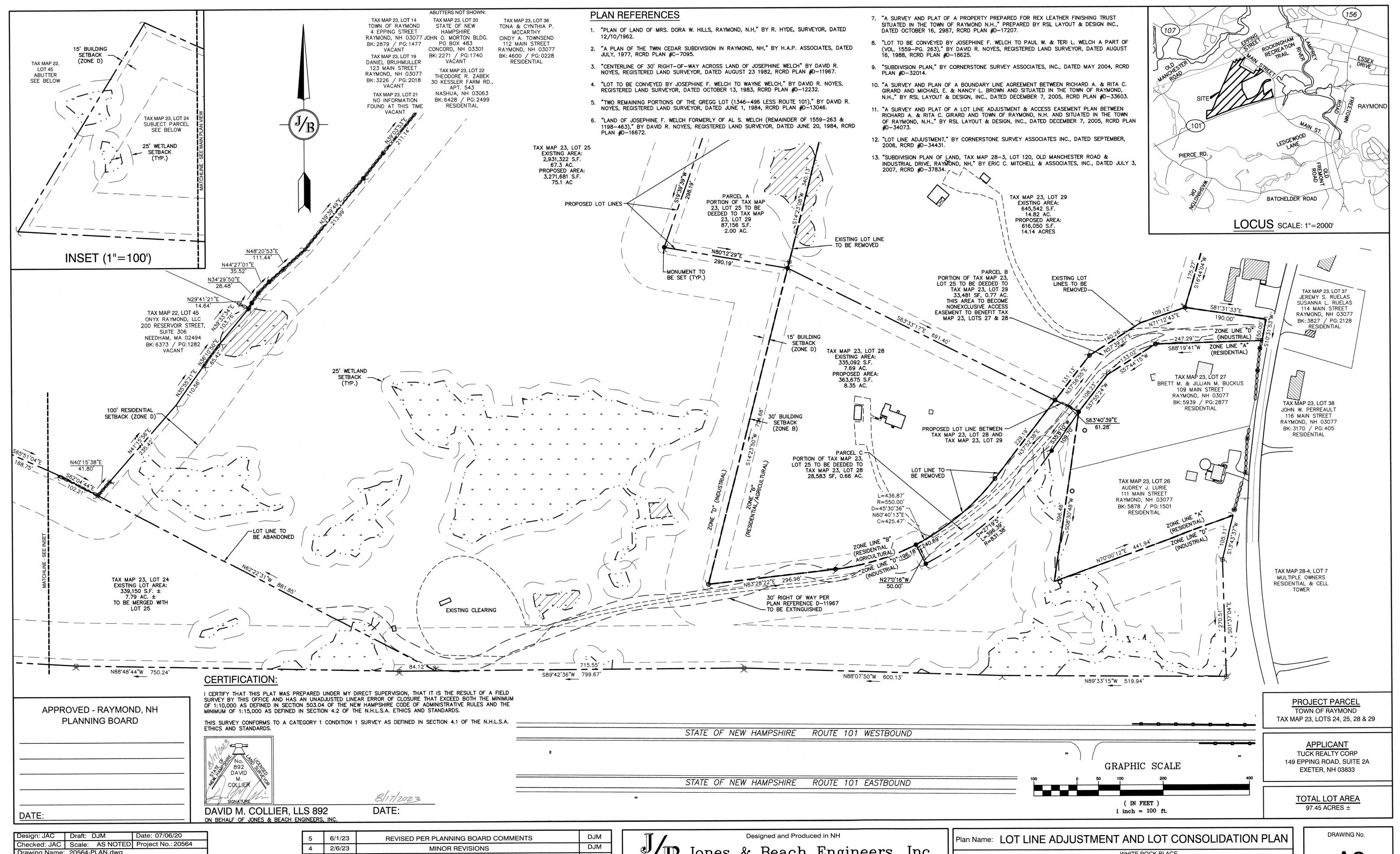
Nottingham Planning Dept

139 Stage Road P.O Box 114 Nottingham, NH 03290

Fremont Safety Complex Town of Fremont Fire Department

425 Main Street Fremont, NH 03044





Checked: JAC | Draft: DJM | Date: 07/06/20 |
Checked: JAC | Scale: AS NOTED | Project No.: 20564 |
Drawing Name: 20564-PLAN.dwg

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN |
PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). |
ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE |
AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

| 5 | 6/1/23 | REVISED PER PLANNING BOARD COMMENTS | DJM |
|------|------------------|--|---|
| 4 | 2/6/23 | MINOR REVISIONS | DJM |
| 3 | 12/2/22 | REVISED PER CLIENT | DJM |
| 2 | 11/21/22 | MODIFIED LOT LINE FOR FRONTAGE | DJM |
| 1 | 11/7/22 | ADJUSTED BEARINGS | DJM |
| REV. | DATE | REVISION | BY |
| | 4 3 2 1 | 4 2/6/23 3 12/2/22 2 11/21/22 1 11/7/22 | 4 2/6/23 MINOR REVISIONS 3 12/2/22 REVISED PER CLIENT 2 11/21/22 MODIFIED LOT LINE FOR FRONTAGE 1 11/7/22 ADJUSTED BEARINGS |

| 1 7/ | Designed and Produced in NH | | | | | | |
|--------------------------------|-----------------------------|-----|----------|----------|-------|--------------------------|--|
| B_{-} | Jones | & | Beach | n Engin | eers, | Inc. | |
| 85 Portsmouth Av PO Box 219 | e. Civil | Eng | ineering | Services | 603 | 3-772-4746 3-772-0227 | |

Stratham, NH 03885

E-MAIL: JBE@JONESANDBEACH.COM

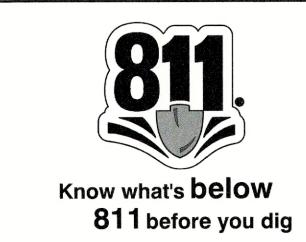
| Plan Name: | OT LINE ADJUSTMENT AND LOT CONSOLIDATION PLAN | | | | | |
|---------------|---|---|--|----|--|--|
| Project: | | WHITE ROCK PLACE 109 A, B & C MAIN STREET, RAYMOND, NH 03077 | | | | |
| 0 (0 | LOT 24: TUCK REALTY CORP 149 EPPING RD., STE. 2A, EXETER, NH 03833 | LOT 28: PAUL W. & TERI L. WELCH 109A MAIN STREET, RAYMOND, NH 03077 BK 2839 PG 770 | | | | |
| Owner of Reco | LOT 25: JOSEPH, JOHN, ARDELL, & INEX WELCH 49 RAYMOND ROAD, NOTTINGHAM, NH 03290 BK 1559 PG 263 | LOT 29: WAYNE F. & CATHLEEN M. WELCH 109A MAIN STREET, RAYMOND, NH 03077 BK 2481 PG 1742 | | JE | | |

A2
SHEET 2 OF 2
JBE PROJECT NO. 20564

"WHITE ROCK PLACE"

MULTI-FAMILY RESIDENTIAL SITE PLAN & SUBDIVISION TAX MAP 23, LOT 25

109A MAIN STREET & RTE 101, RAYMOND, NH 03077



GENERAL LEGEND

\$ □-0

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CURB SPOT GRADE

PAVEMENT SPOT GRADE

SPOT GRADE

DOUBLE POST SIGN SINGLE POST SIGN

PHOTO LOCATION TREES AND BUSHES UTILITY POLE

LIGHT POLES DRAIN MANHOLE SEWER MANHOLE HYDRANT WATER GATE WATER SHUT OFF REDUCER SINGLE GRATE CATCH BASIN DOUBLE GRATE CATCH BASIN TRANSFORMER CULVERT W/WINGWALLS

CULVERT W/FLARED END SECTION CULVERT W/STRAIGHT HEADWALL STONE CHECK DAM DRAINAGE FLOW DIRECTION

4K SEPTIC AREA

WETLAND IMPACT

VEGETATED FILTER STRIP

RIPRAP OPEN WATER

FRESHWATER WETLANDS

TIDAL WETLANDS

STABILIZED CONSTRUCTION **ENTRANCE**

CONCRETE \sim

(XXXXX

GRAVEL SNOW STORAGE

RETAINING WALL

JONES & BEACH ENGINEERS, INC. **85 PORTSMOUTH AVENUE**

CIVIL ENGINEER / SURVEYOR

PO BOX 219 STRATHAM, NH 03885 (603) 772-4746 CONTACT: JOSEPH CORONATI EMAIL: JCORONATI@JONESANDBEACH.COM

WETLAND AND SOIL CONSULTANT GOVE ENVIRONMENTAL SERVICES, INC. 8 CONTINENTAL DR BUILDING 2 UNIT H EXETER, NH 03833-7526 (603) 778-0644 **CONTACT: JAMES GOVE**

EMAIL: JGOVE@GESINC.BIZ

LIGHTING CONSULTANT

CHARRON, INC. PO BOX 4550 MANCHESTER, NH 03108 (603) 624-4827 **CONTACT: DANIEL HEBERT** EMAIL: DHEBERT@CHARRONINC.COM

BATCHELDER ROAD

LOCUS MAP

SCALE 1" = 2000'

LANDSCAPE DESIGNER

LM LAND DESIGN 11 SOUTH ROAD BRENTWOOD, NH 03833 (603) 770-7728 **CONTACT: LISE MCNAUGHTON** EMAIL: LMLANDDESIGN@GMAIL.COM

WATER

RAYMOND WATER DEPARTMENT **4 EPPING STREET** RAYMOND, NH 03077 (603) 895-4657

ELECTRIC

EVERSOURCE 74 OLD DOVER ROAD ROCHESTER, NH 03867 (603) 332-4227

CABLE/TELEPHONE **FAIRPOINT COMMUNICATIONS** 5 FLORAL AVE RAYMOND, NH 03077

SHEET INDEX

COVER SHEET

OVERVIEW EXISTING CONDITIONS PLAN

C2-C12 EXISTING CONDITIONS PLAN

SUBDIVISION PLAN

OVERVIEW SITE PLAN

C14-C15 SITE PLAN

OVERVIEW GRADING PLAN

C17-C18 GRADING AND DRAINAGE PLAN

C19-C20 EROSION AND SEDIMENT CONTROL PLAN

C21-C22 UTILITY PLAN

P1-P2 PLAN & PROFILE

LANDSCAPE PLAN

EFFLUENT DISPOSAL DESIGN

DETAIL SHEETS

EROSION AND SEDIMENT CONTROL DETAILS

TRUCK TURNING PLAN

HIGHWAY ACCESS PLAN

PARKING EXPANSION EXHIBIT

FISH AND GAME CONDITIONS AND FLYERS

ARCHITECTURAL ELEVATIONS

ARCHITECTURAL FLOOR PLANS

PLEASE TAKE NOTE OF NEW HAMPSHIRE FISH AND GAME CONDITIONS AND FLYERS ON SHEET WL1

PROJECT PARCEL TOWN OF RAYMOND TAX MAP 23, LOT 25

APPLICANT TUCK REALTY CORP PO BOX 190 EXETER, NH 03833

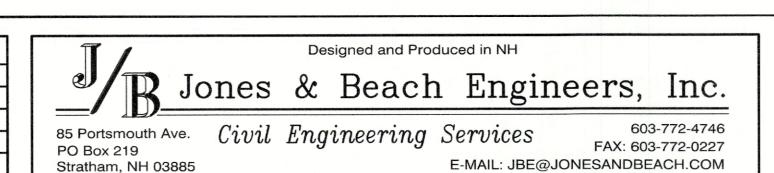
TOTAL LOT AREA 3,271,681 S.F. 75.11 ACRES

APPROVED - RAYMOND, NH PLANNING BOARD

Design: JAC | Draft: DJM Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

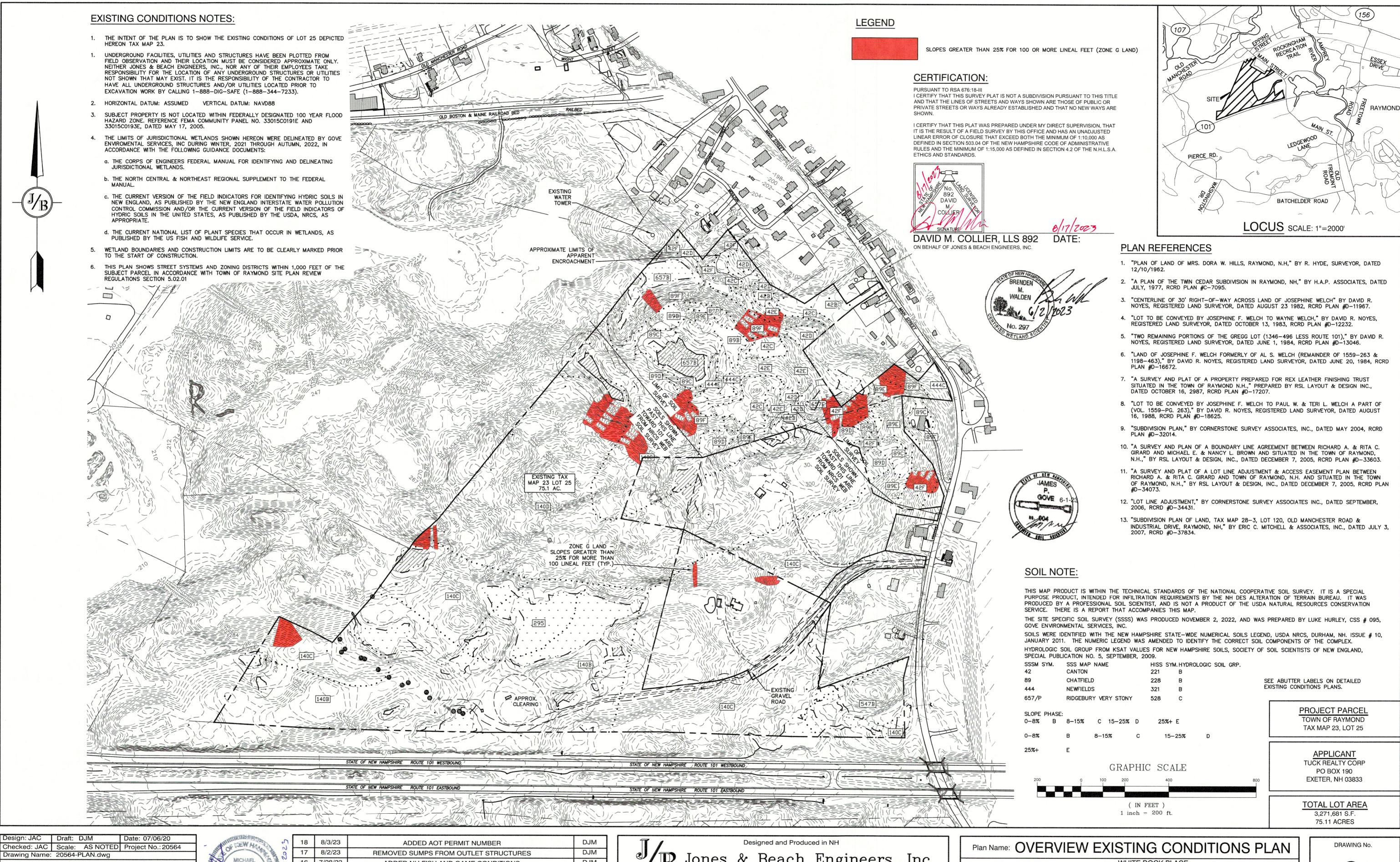


| 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|------|---------|--------------------------------------|-----|
| 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| REV. | DATE | REVISION | BY |



| | DATE: | |
|------------------|---|-----|
| Plan Name: | COVER SHEET | |
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 | JBE |

DRAWING No. SHEET 1 OF 61 JBE PROJECT NO. 20564



Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN ERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE 「THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE



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| The same of the sa | REV. | DATE | REVISION | BY |
| 00 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 7 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 202 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 67 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |

Jones & Beach Engineers, Inc. 85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227 PO Box 219

Stratham, NH 03885

E-MAIL: JBE@JONESANDBEACH.COM

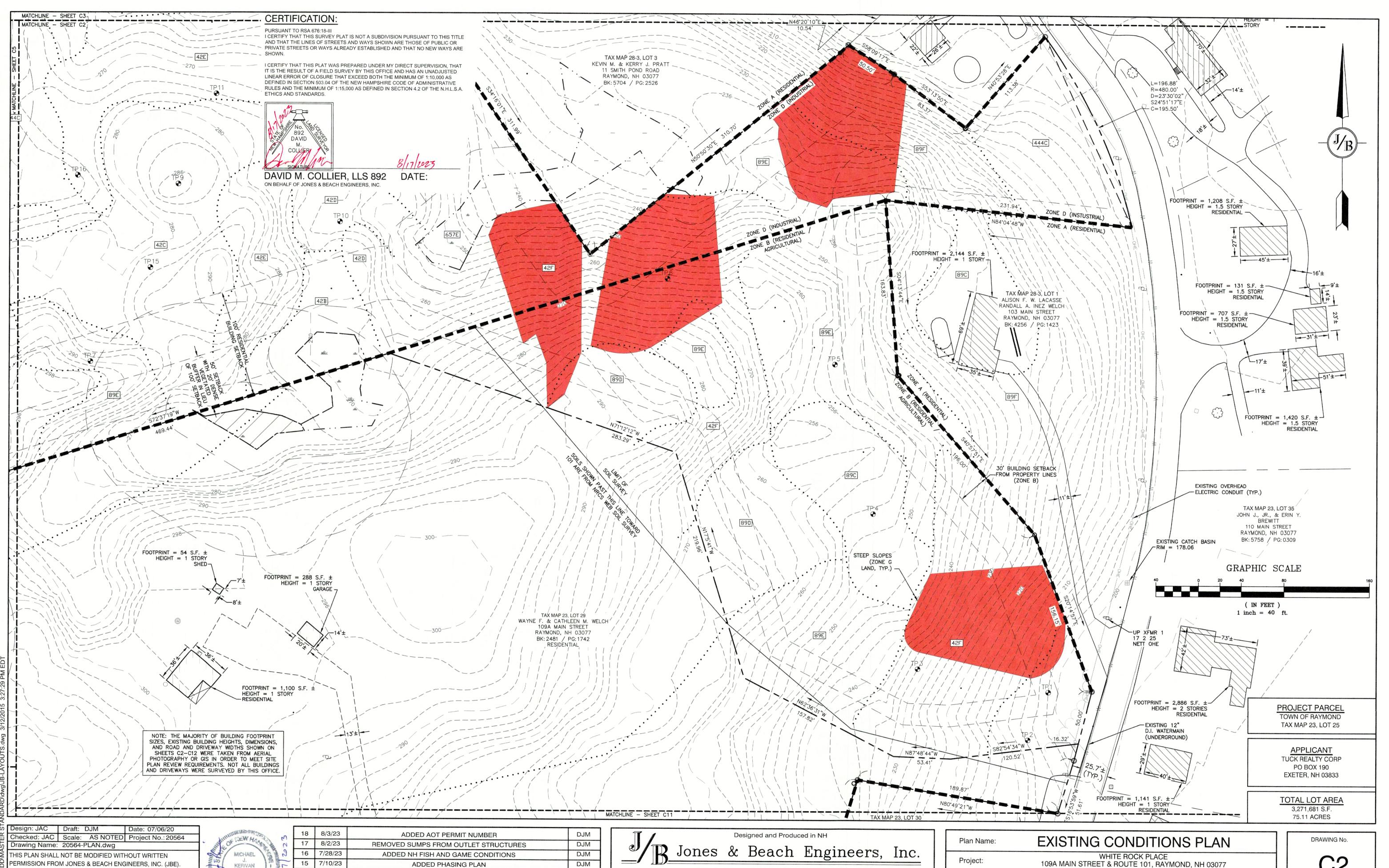
WHITE ROCK PLACE Project: 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

Owner of Record:

SHEET 2 OF 61

JBE PROJECT NO. 20564



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KERIVAN

15 7/10/23 DJM ADDED PHASING PLAN 14 6/1/23 REVISED PER TRC COMMENTS DJM DATE REVISION

Pagineers, Inc. 85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227

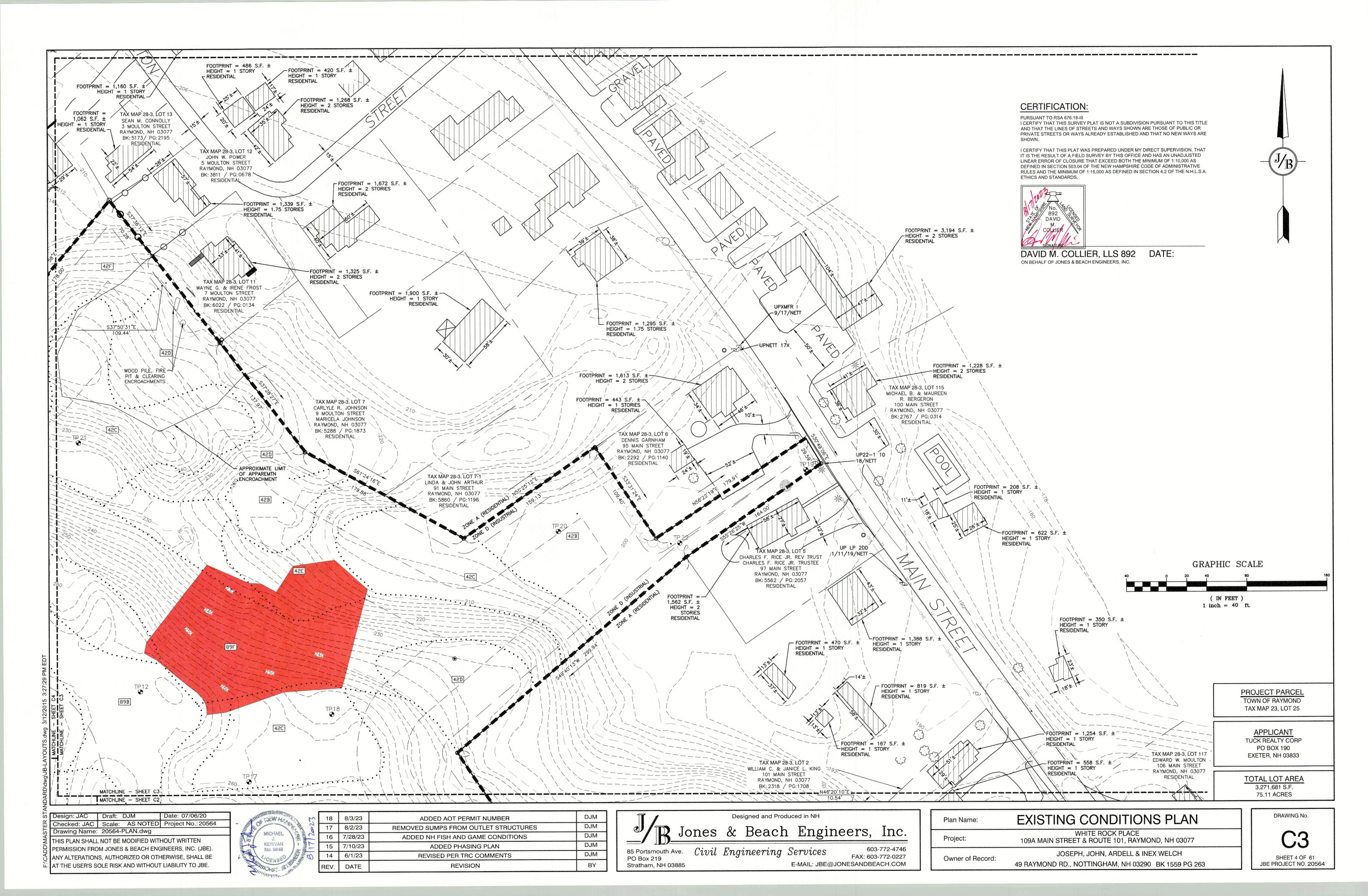
E-MAIL: JBE@JONESANDBEACH.COM

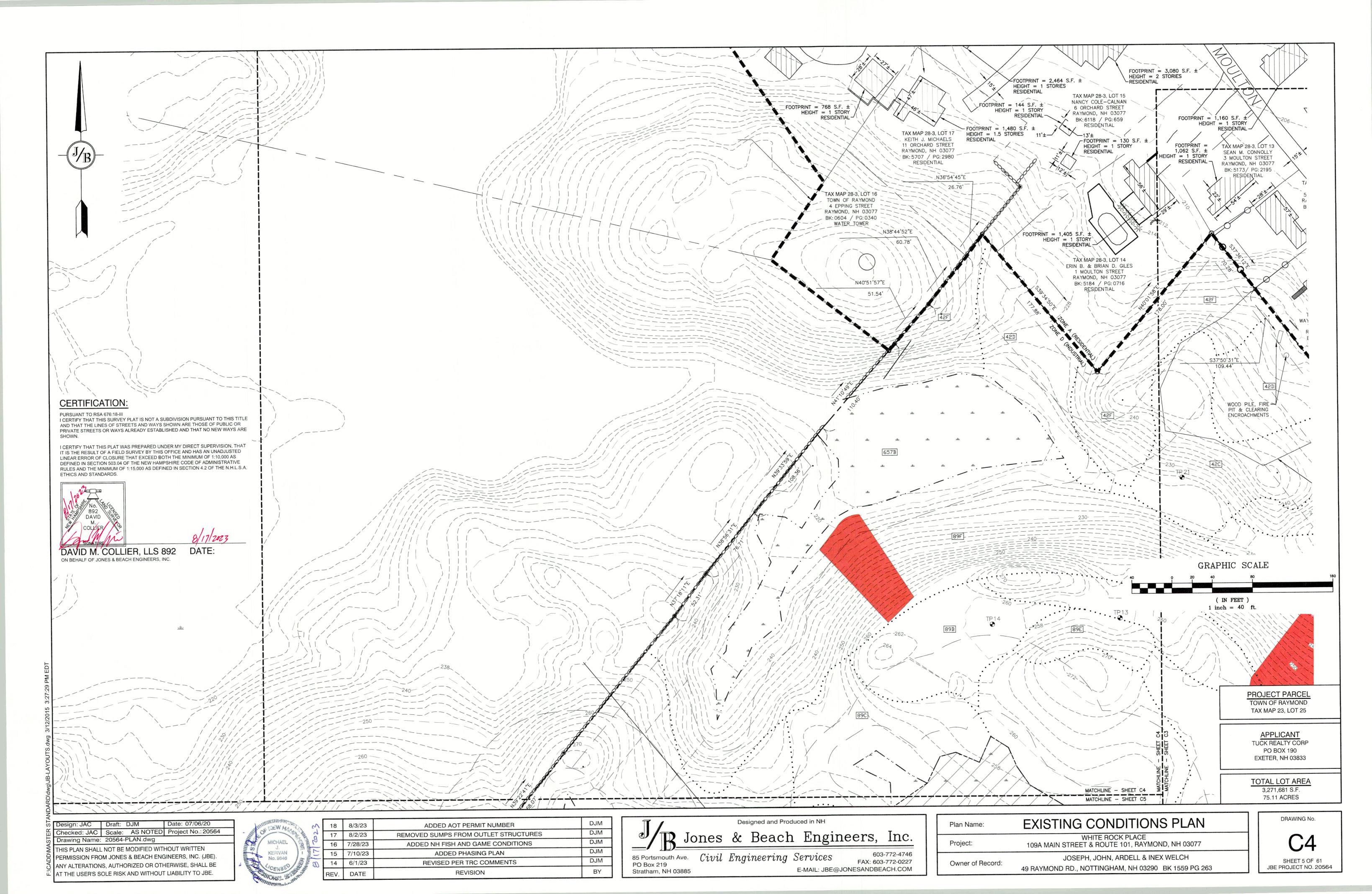
PO Box 219

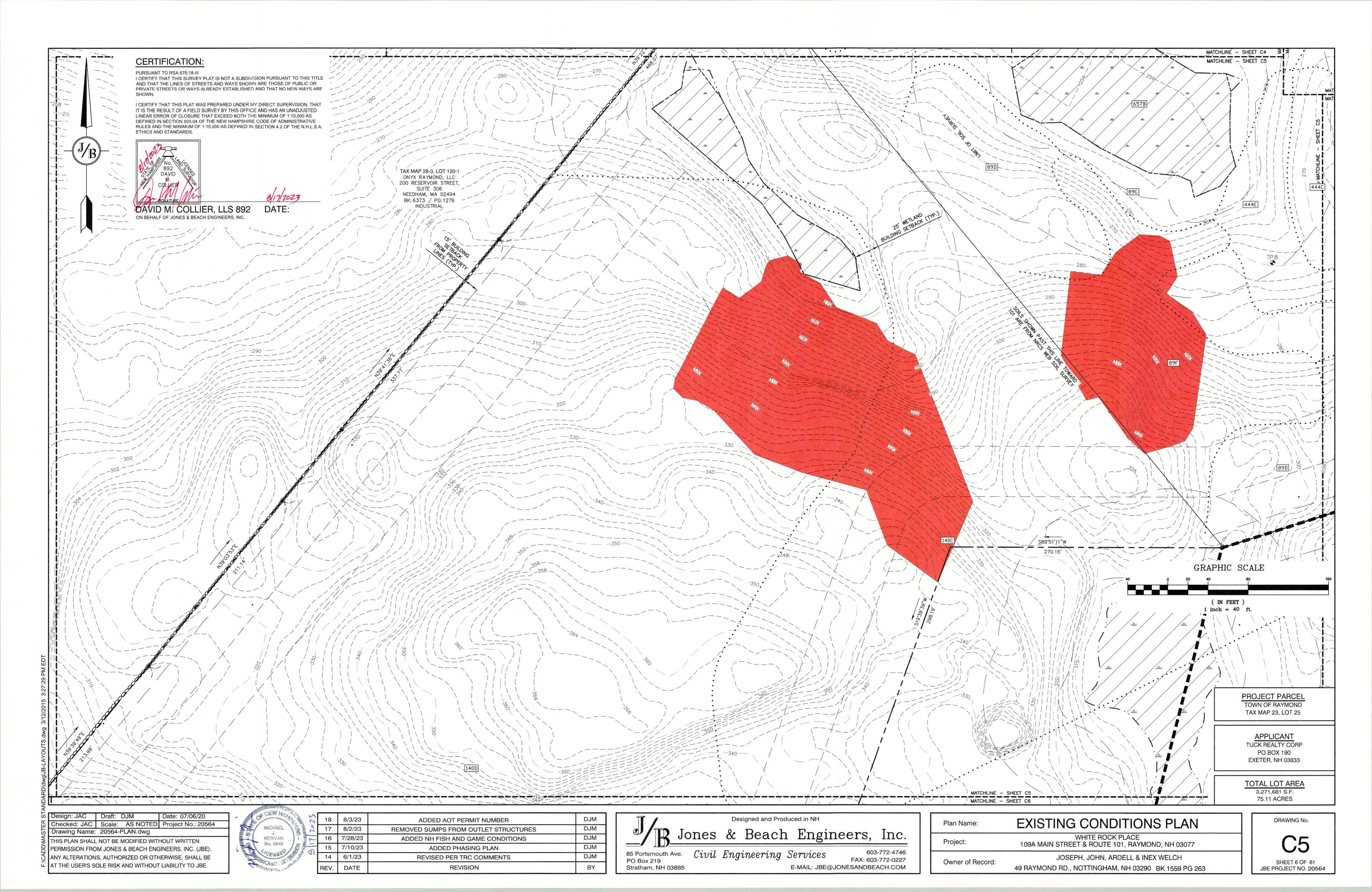
Stratham, NH 03885

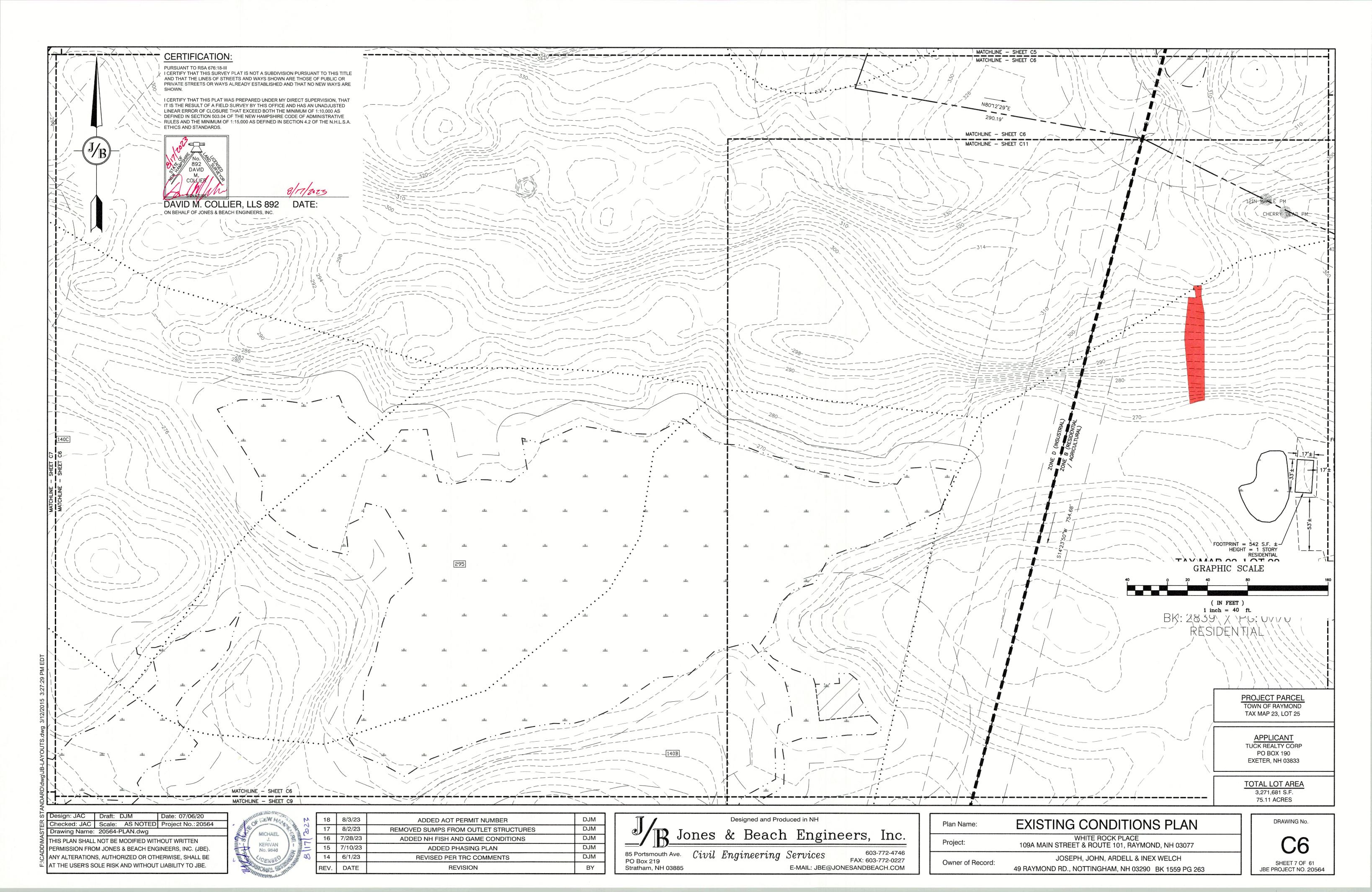
Project: 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH Owner of Record: 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

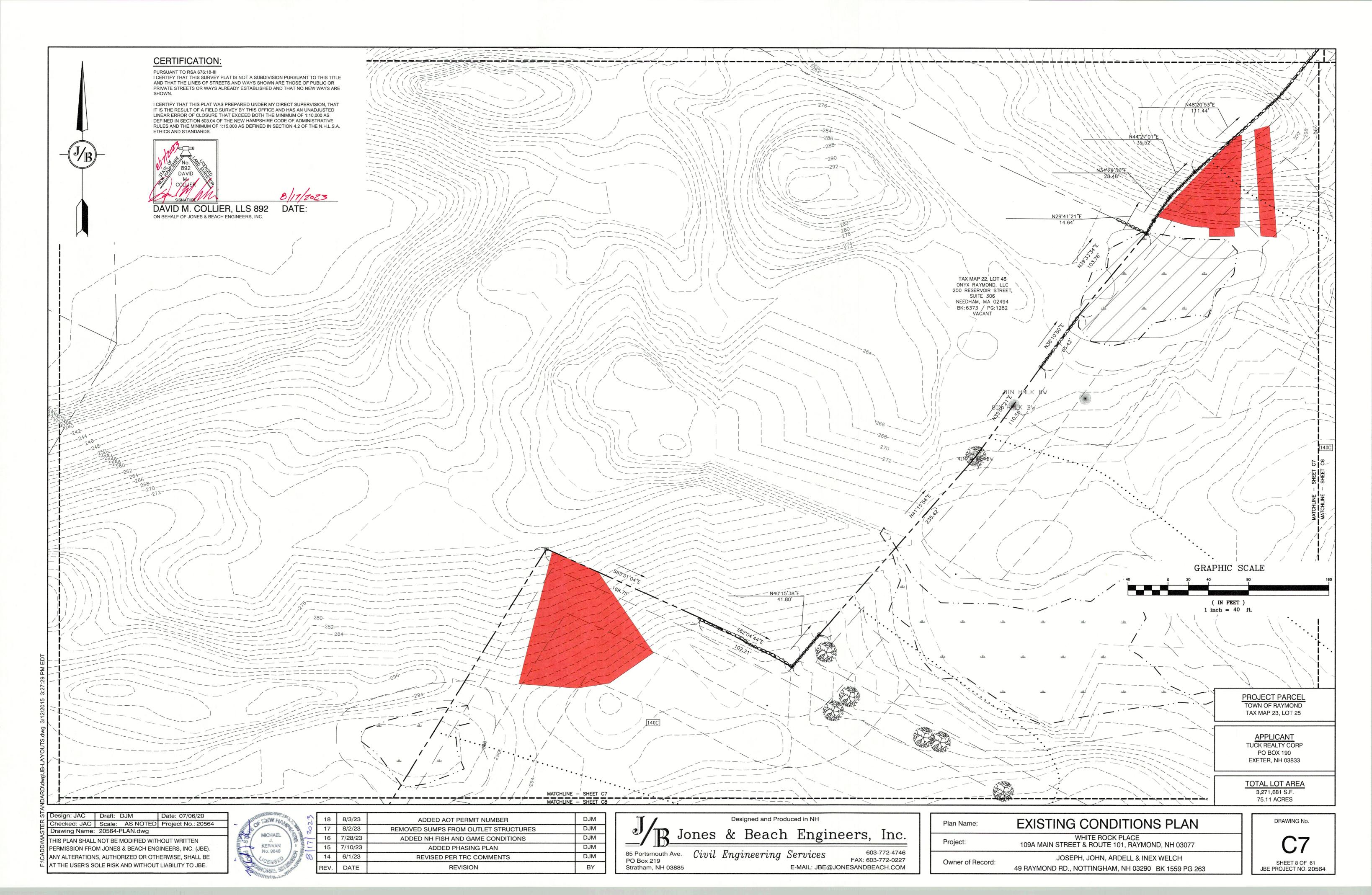
SHEET 3 OF 61 JBE PROJECT NO. 20564

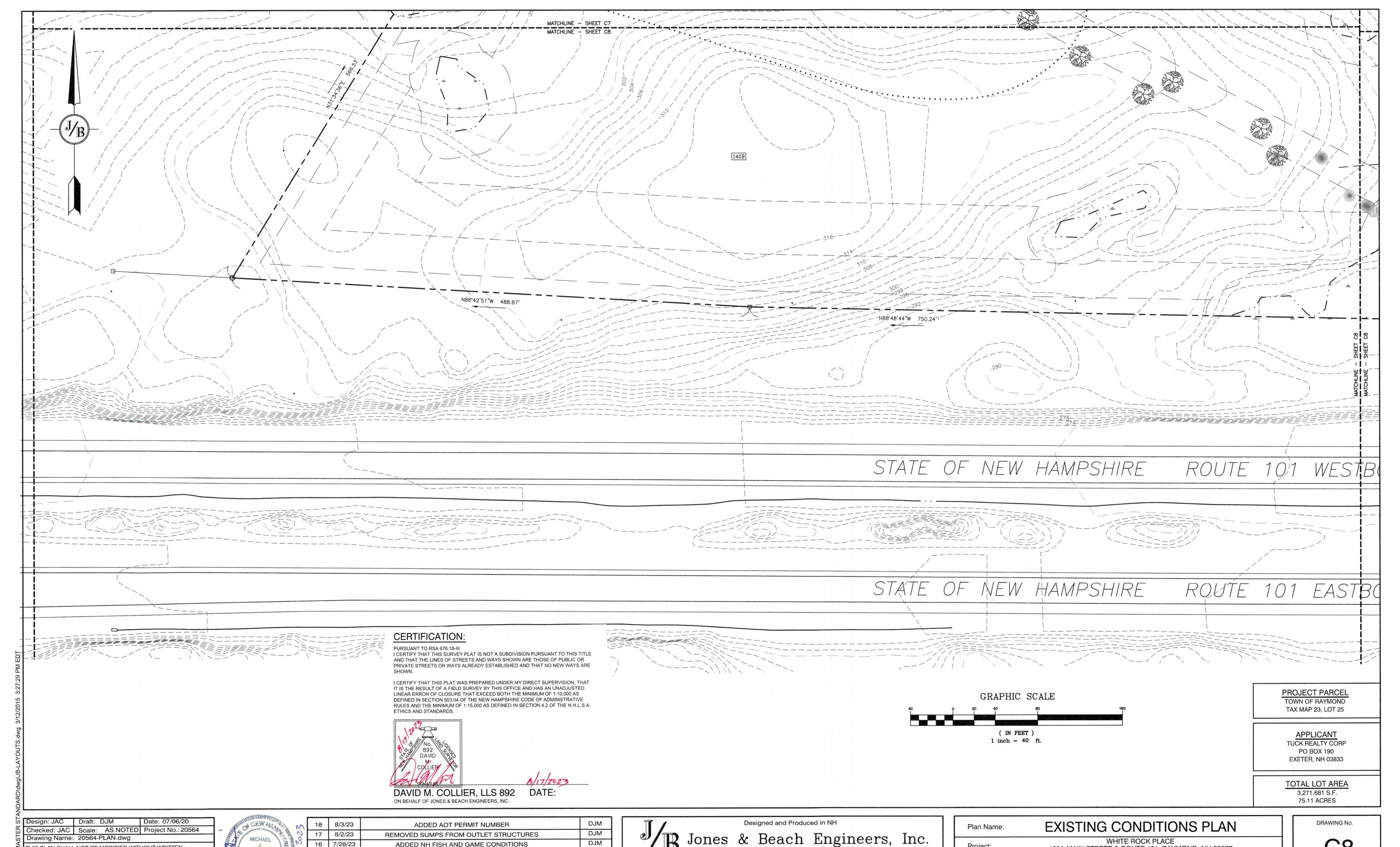












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|---------|------|---------|--------------------------------------|---|
| M | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| N | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 3 0 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| T T | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 8 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| R. Call | REV. | DATE | REVISION | BY |

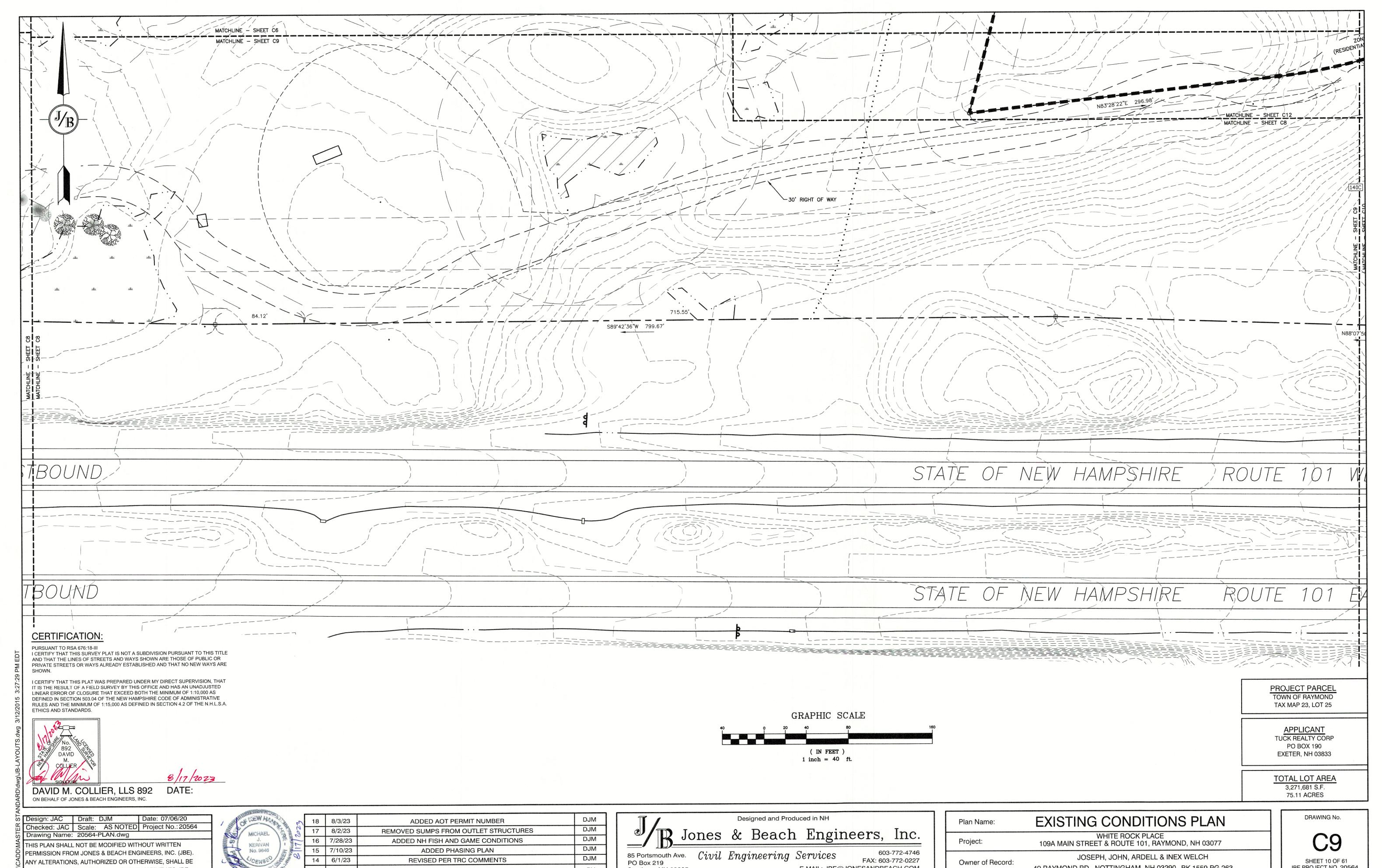
| / b | Olics | & Deaci | i Diigiiid | |
|-------------------|-------|----------------|------------|-----------------------------------|
| 85 Portsmouth Ave | | Engineering | | 603-772-4746 FAX: 603-772-0227 |
| Stratham, NH 0388 | 5 | E-MAIL: JBE@JC | | NESANDBEACH.COM |

| Plan Name: | EXISTING CONDITIONS PLAN |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Becord: | JOSEPH, JOHN, ARDELL & INEX WELCH |

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

Owner of Record:

SHEET 9 OF 61 JBE PROJECT NO. 20564



Stratham, NH 03885

PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE

AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



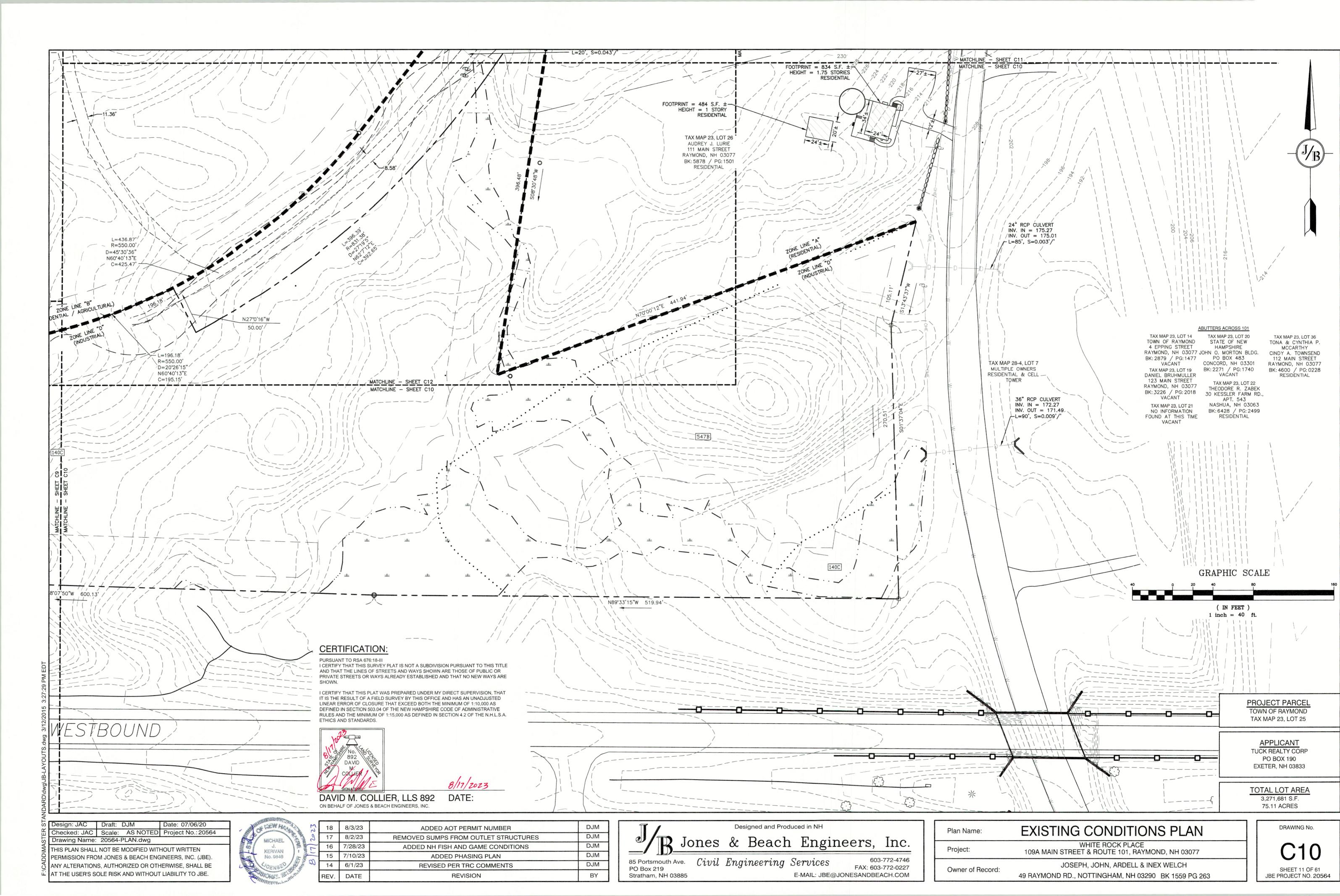
| 2 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|-----|------|---------|--------------------------------------|-----|
| 0 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 2/2 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| _ | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| B | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |

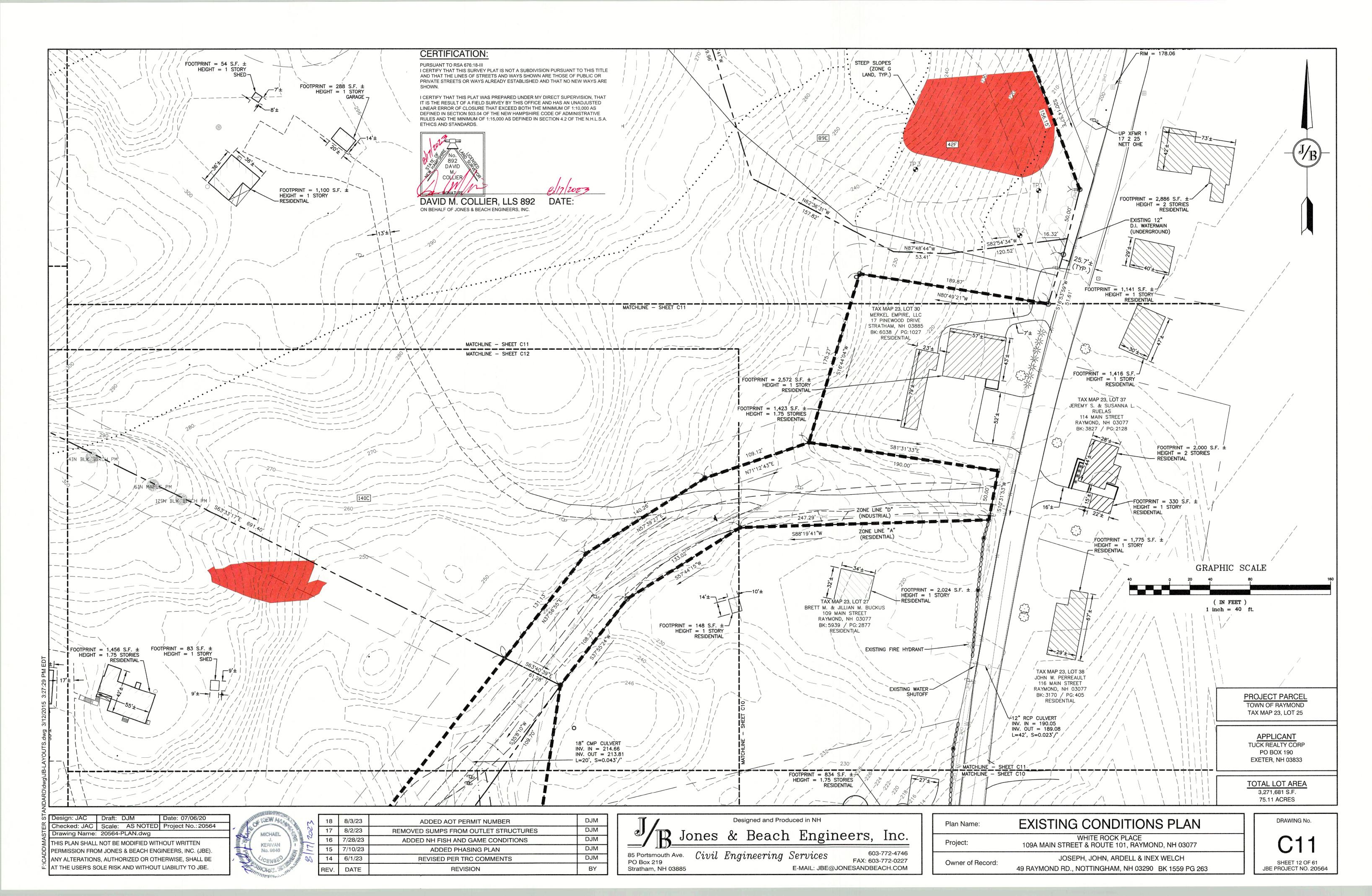
| Plan Name: | EXISTING CONDITIONS PLAN | | |
|------------------|---|--|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | | |
| Owner of Decords | JOSEPH, JOHN, ARDELL & INEX WELCH | | |
| Owner of Record: | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 | | |

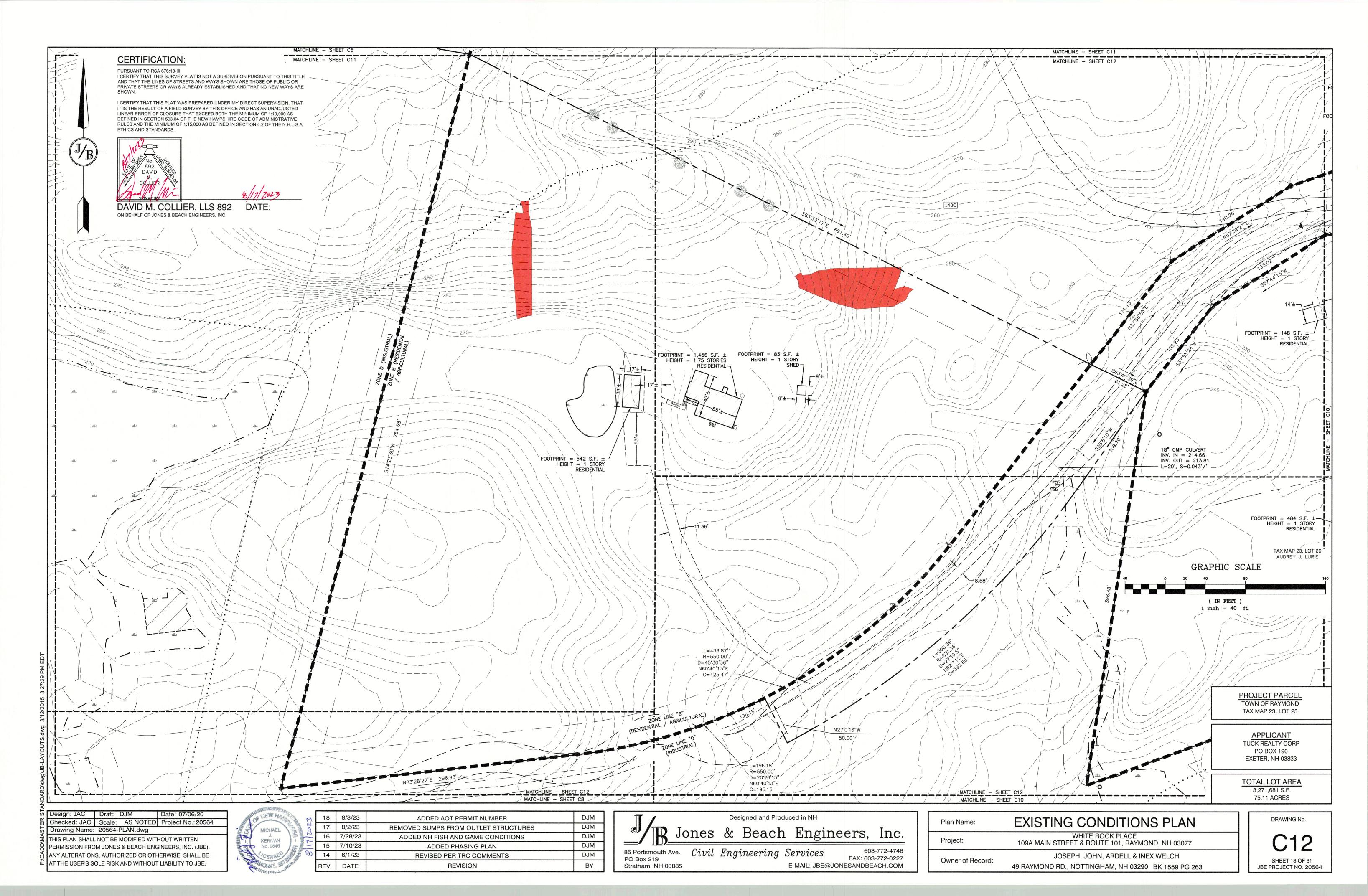
FAX: 603-772-0227

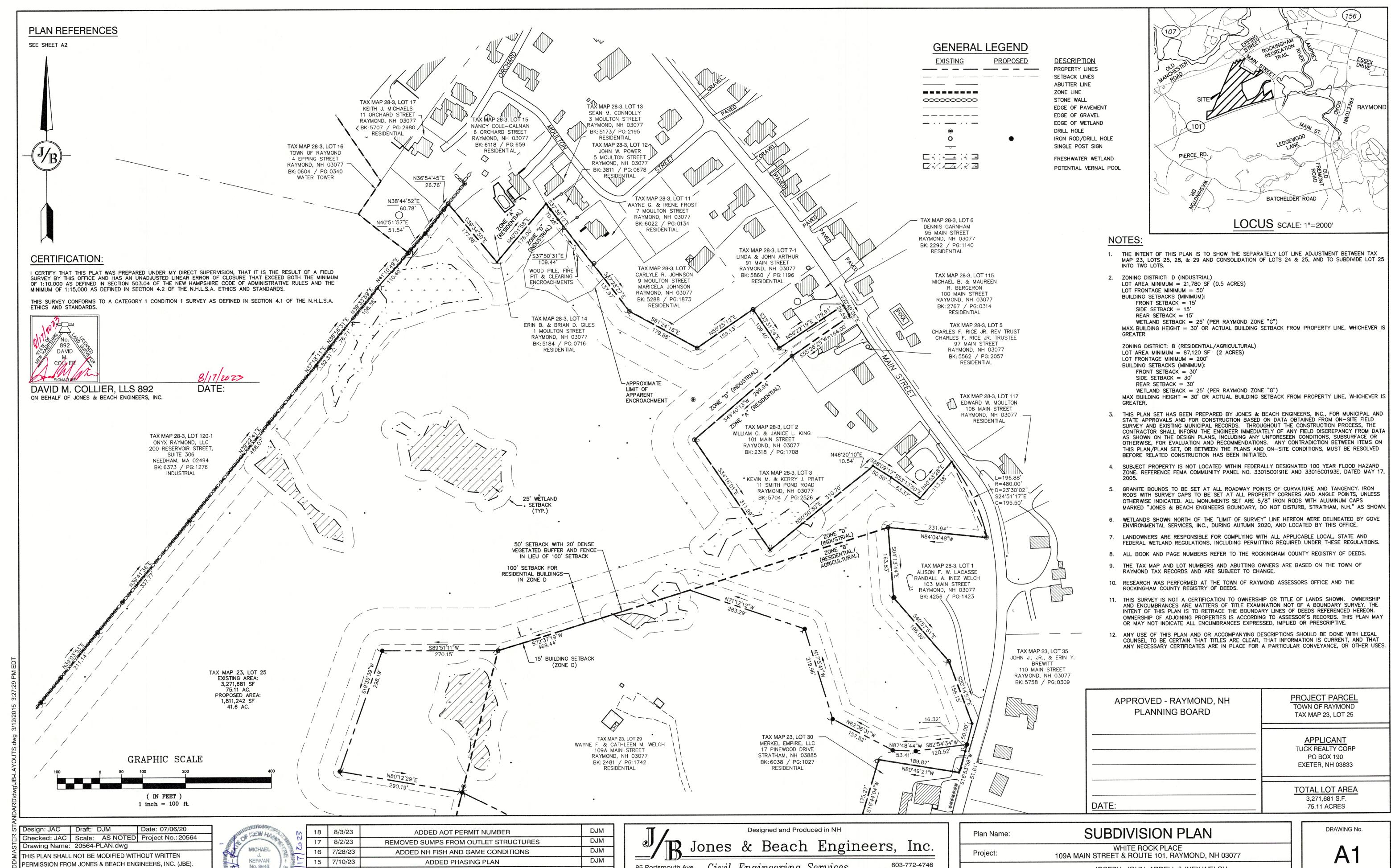
E-MAIL: JBE@JONESANDBEACH.COM

SHEET 10 OF 61 JBE PROJECT NO. 20564









85 Portsmouth Ave. Civil Engineering Services

DJM

BY

PO Box 219

Stratham, NH 03885

No. 9846

ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE

AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

14 6/1/23

REV. DATE

REVISED PER TRC COMMENTS

REVISION

603-772-4746

Owner of Record:

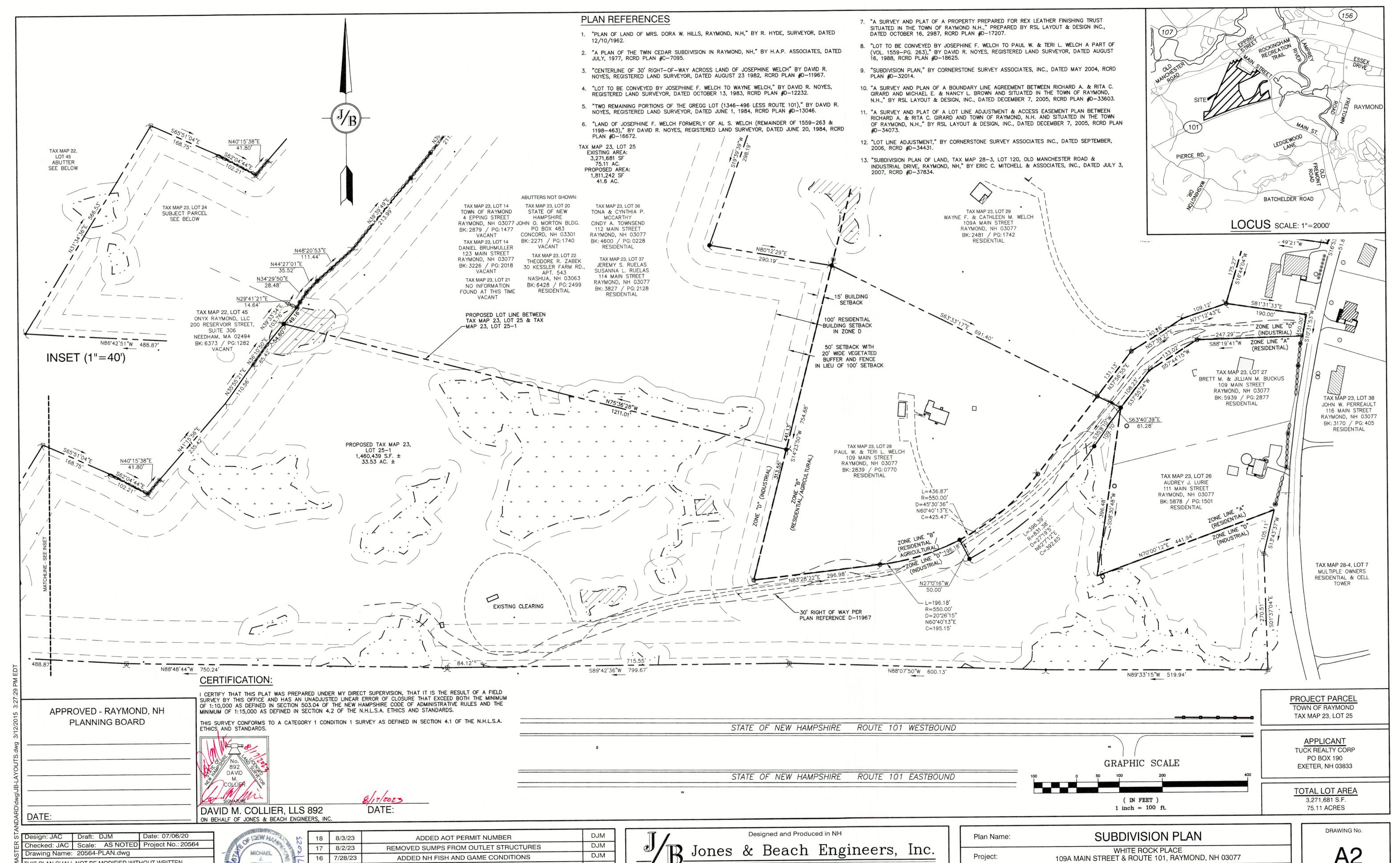
FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

JBE PROJECT NO. 20564

JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263



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KERIVAN No. 9846

DJM 15 7/10/23 ADDED PHASING PLAN DJM REVISED PER TRC COMMENTS 14 6/1/23 BY REVISION DATE

85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

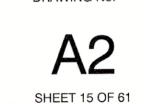
PO Box 219

Stratham, NH 03885

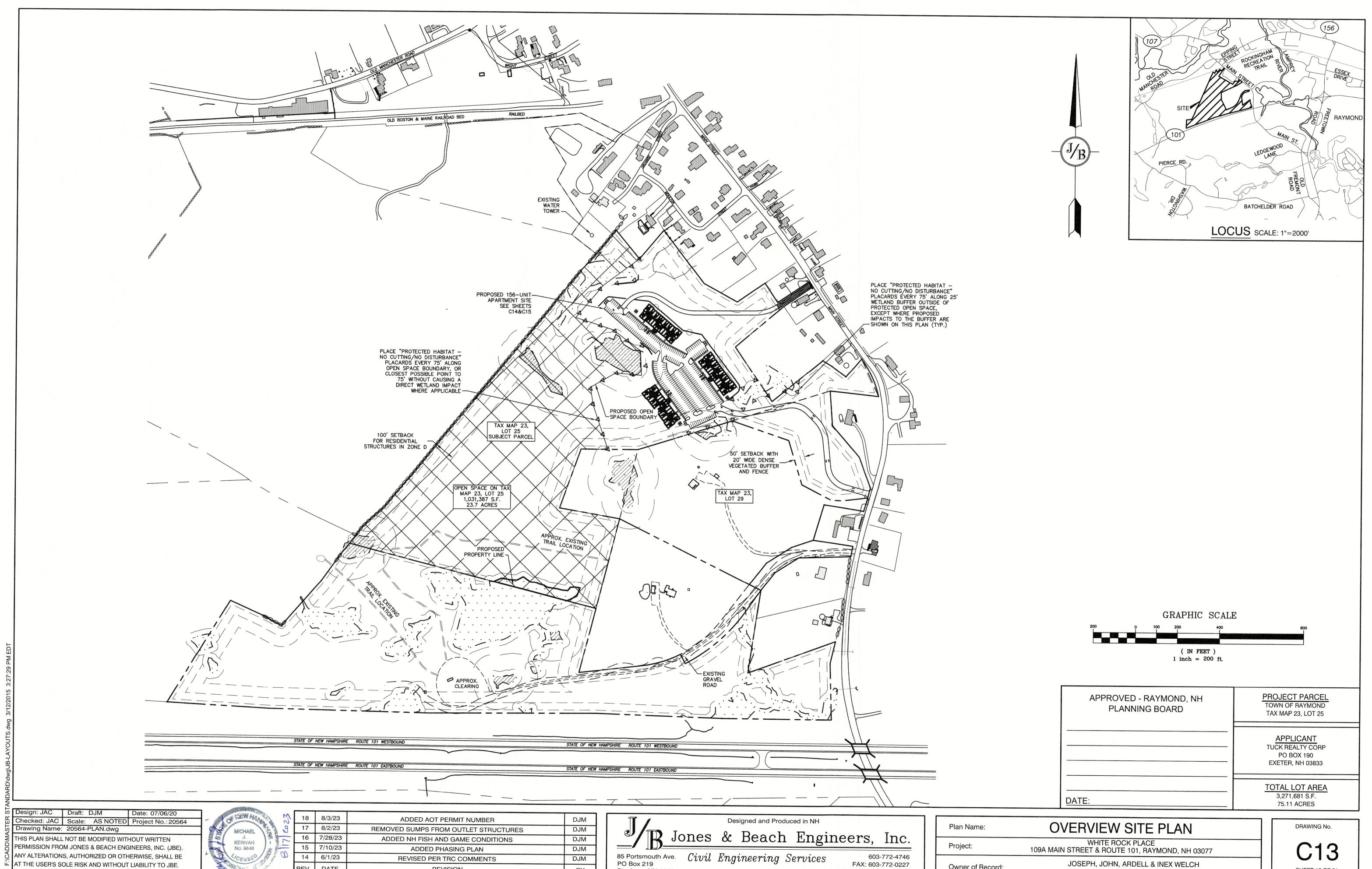
JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

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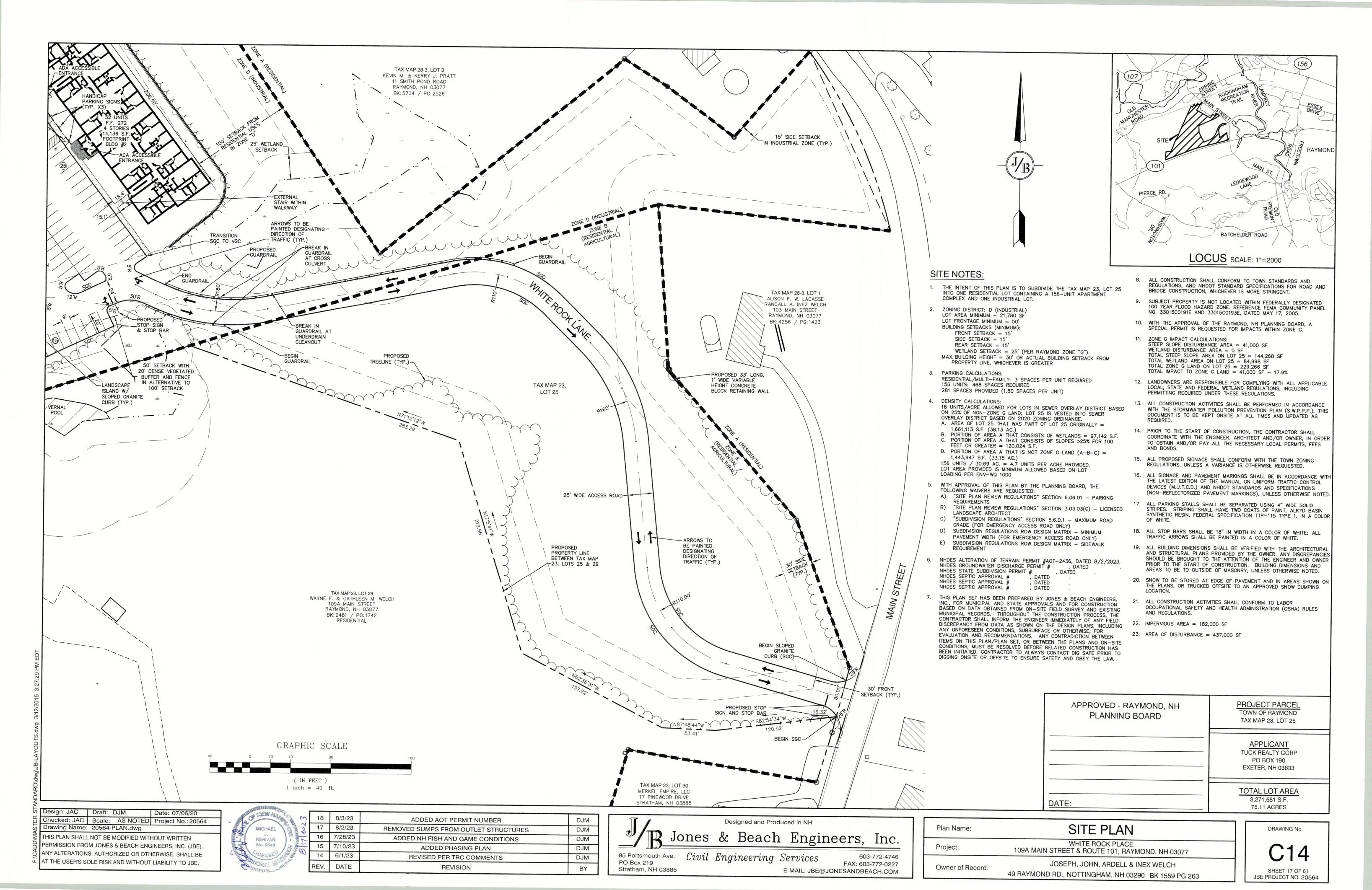
Stratham, NH 03885

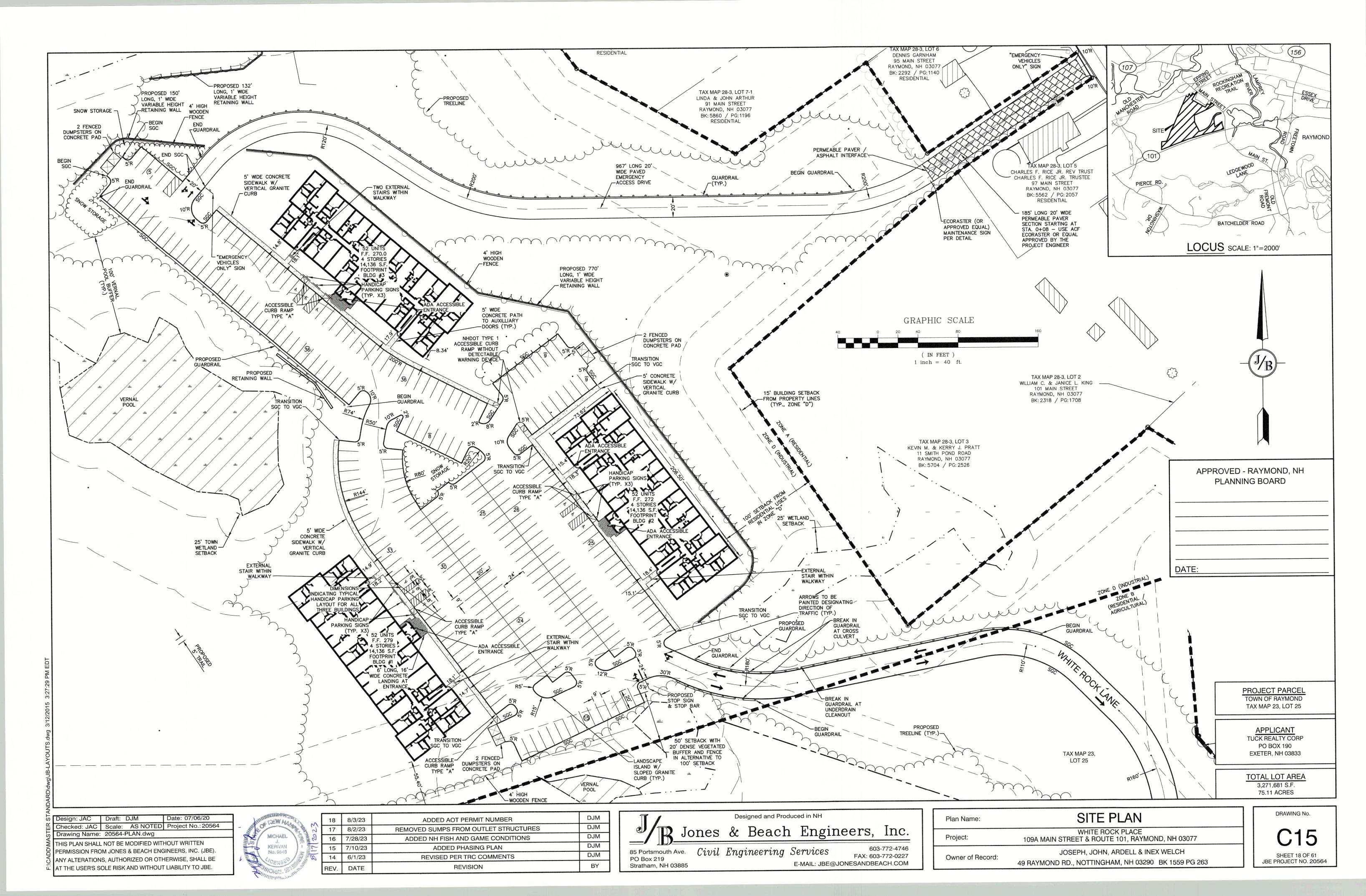
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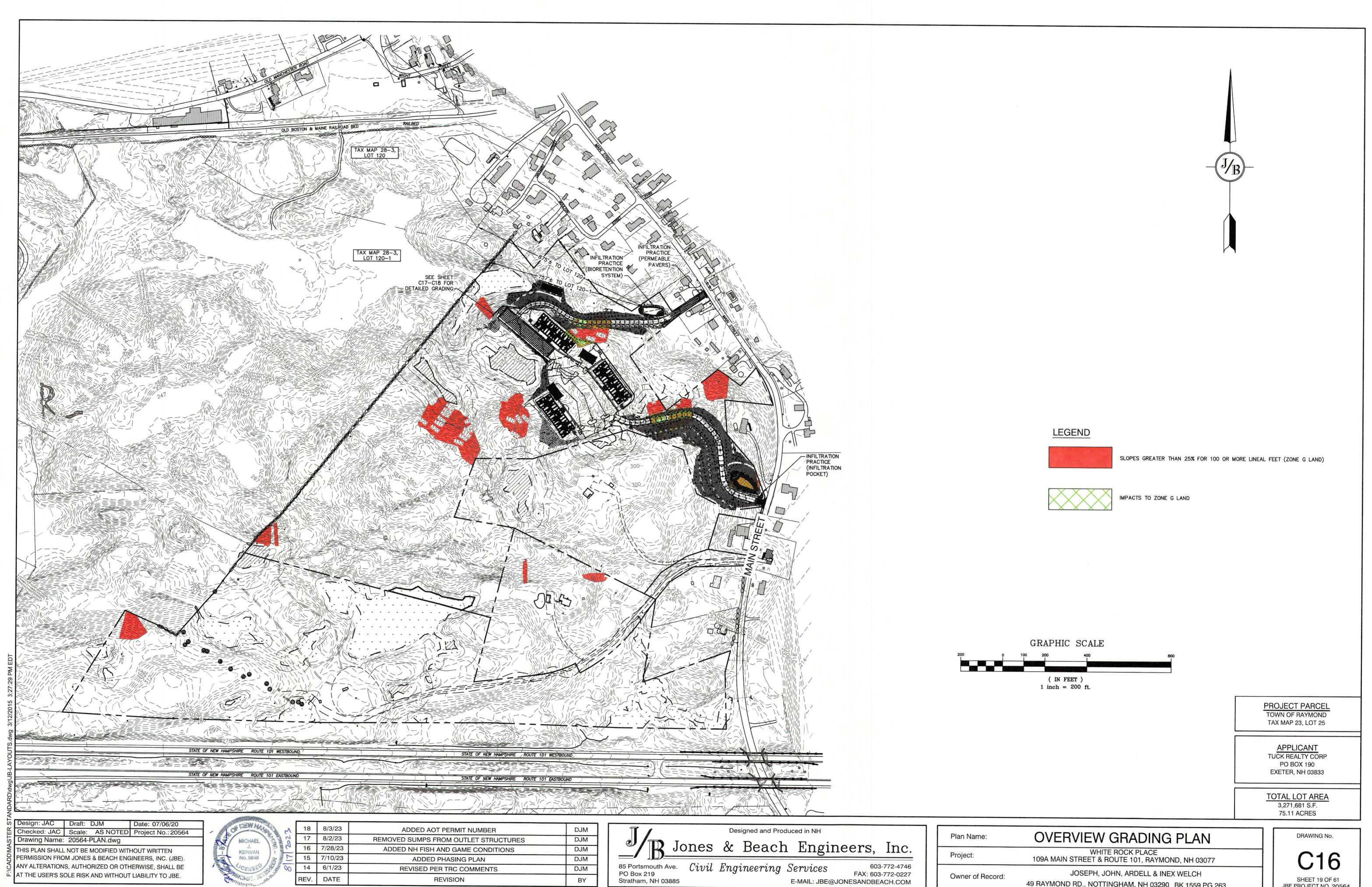
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SHEET 16 OF 61 JBE PROJECT NO. 20564





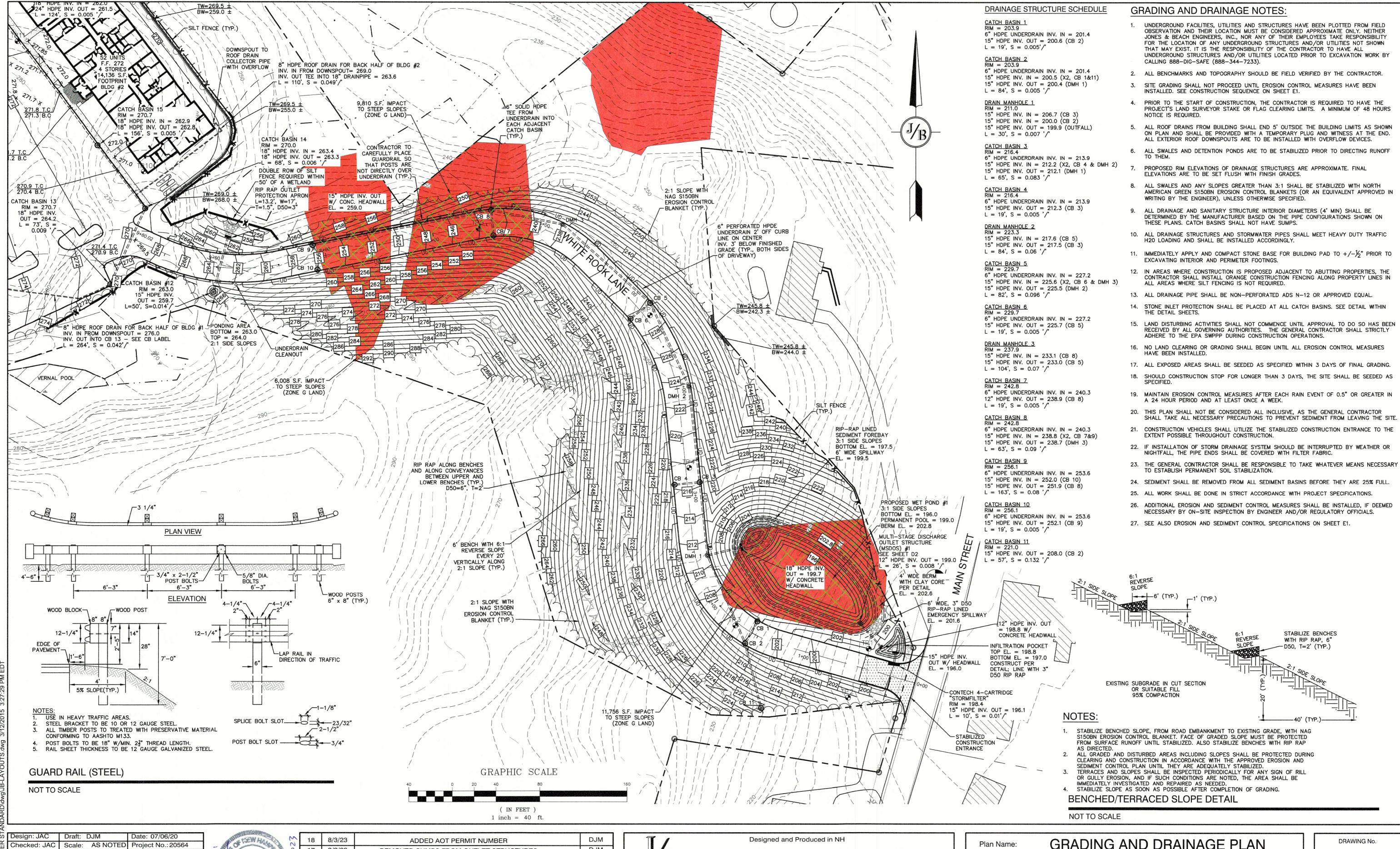


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Drawing Name: 20564-PLAN.dwg

DJM 17 8/2/23 REMOVED SUMPS FROM OUTLET STRUCTURES MICHAEL DJM 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS KERIVAN DJM 15 7/10/23 ADDED PHASING PLAN No. 9846 DJM 6/1/23 REVISED PER TRC COMMENTS DATE REVISION

& Beach Engineers, Inc.

PO Box 219

85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

GRADING AND DRAINAGE PLAN

Project:

Owner of Record:

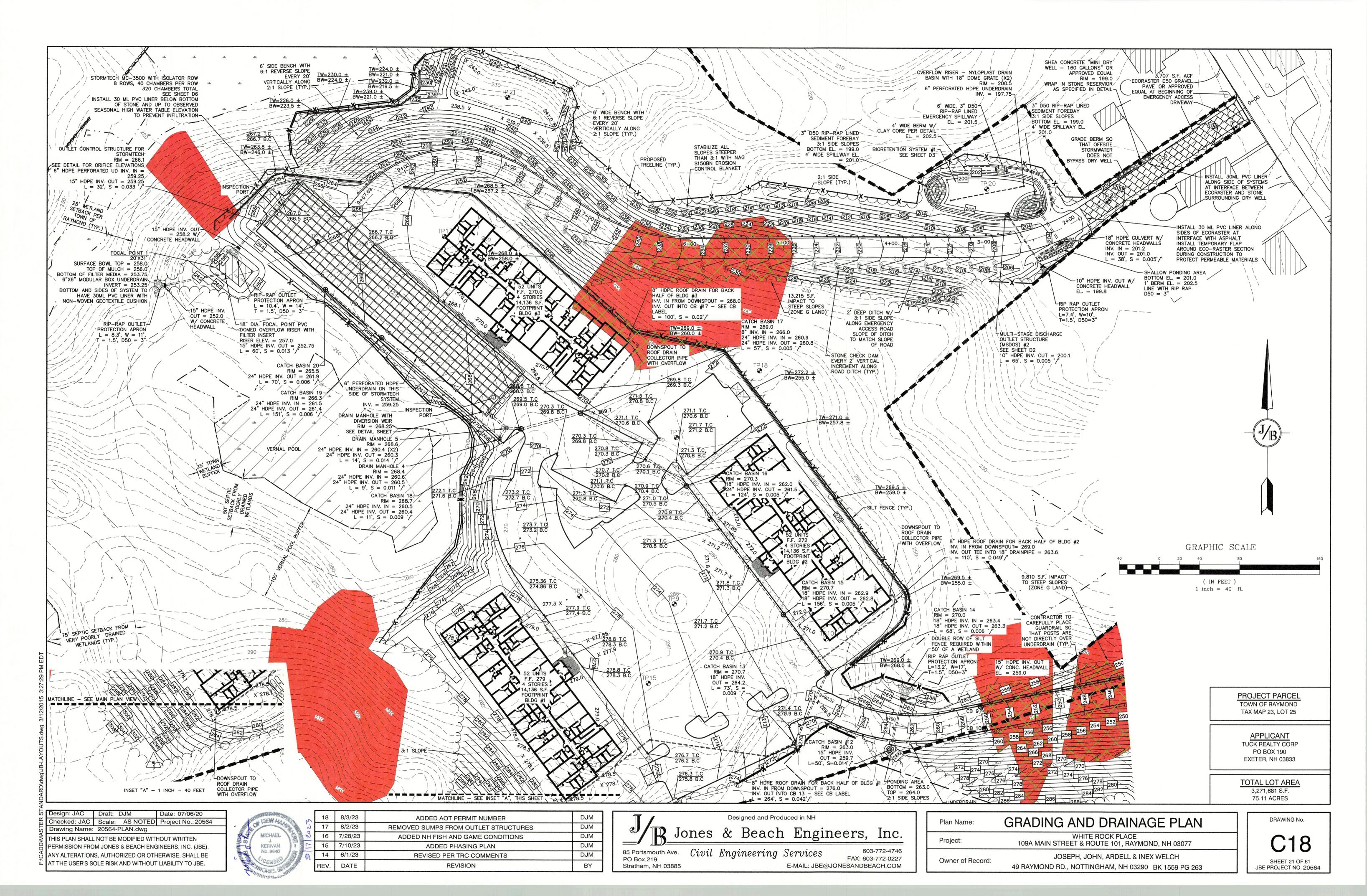
WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077

JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 20 OF 61

JBE PROJECT NO. 20564





85 Portsmouth Ave. Civil Engineering Services
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Civil Engineering Services

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603-772-4746

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DJM

DJM

DJM

ADDED NH FISH AND GAME CONDITIONS

ADDED PHASING PLAN

REVISED PER TRC COMMENTS

REVISION

16 7/28/23

15 7/10/23

6/1/23

DATE

KERIVAN

No. 9846

Drawing Name: 20564-PLAN.dwg

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN

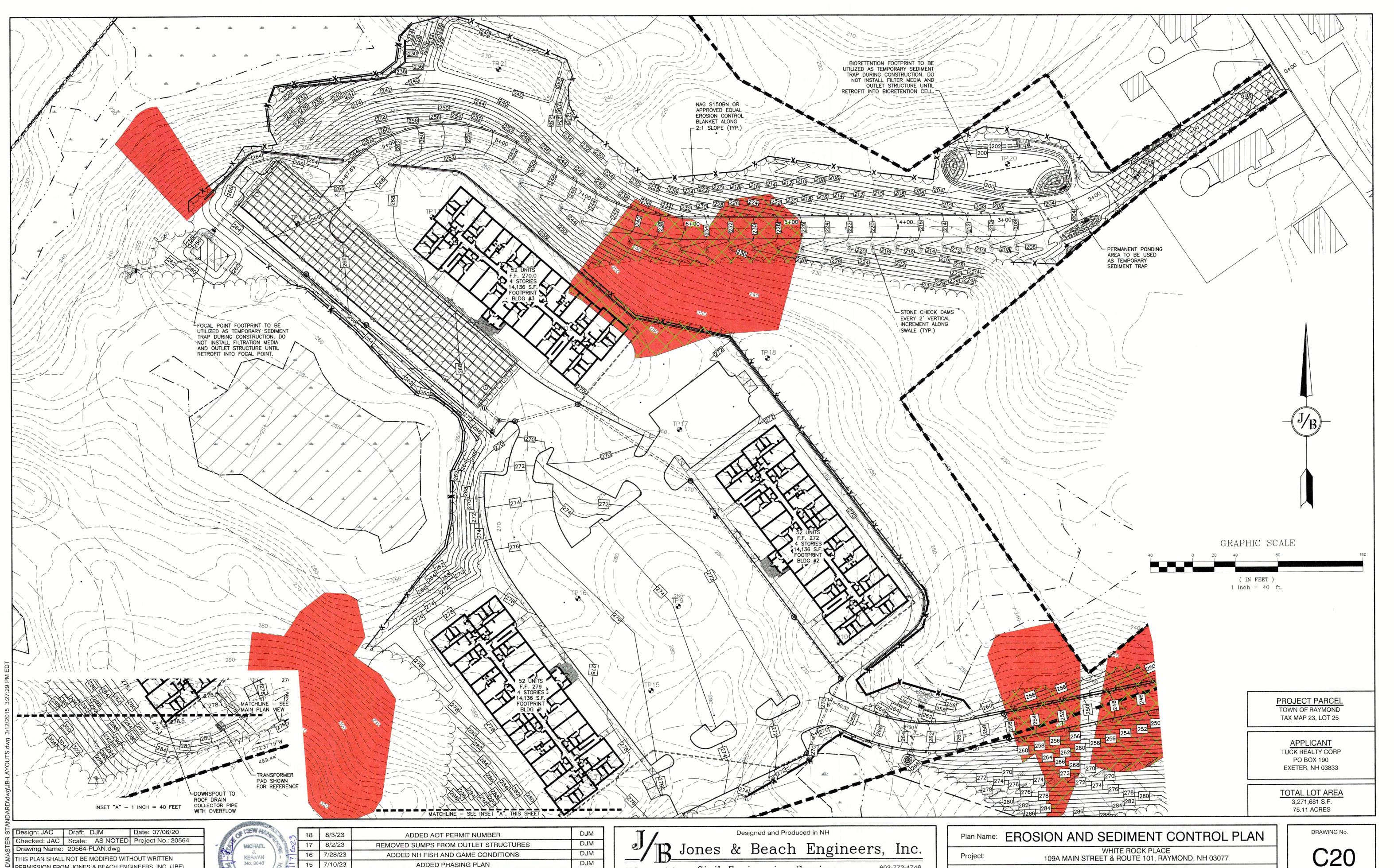
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WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 Project: JOSEPH, JOHN, ARDELL & INEX WELCH Owner of Record:

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 22 OF 61 JBE PROJECT NO. 20564



85 Portsmouth Ave. Civil Engineering Services
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Civil Engineering Services

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FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

Owner of Record:

DJM

BY

7/10/23

6/1/23

DATE

REVISED PER TRC COMMENTS

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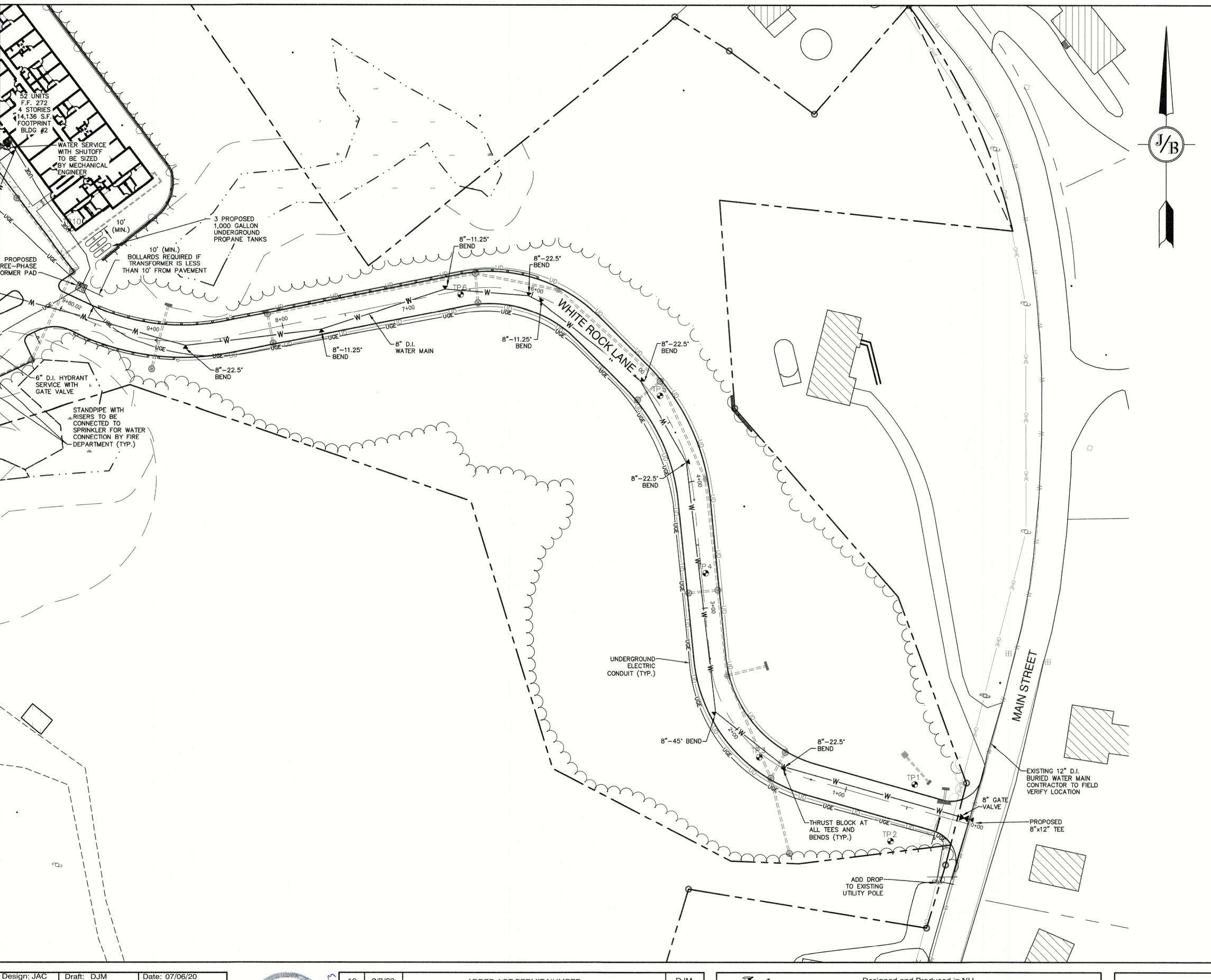
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SHEET 23 OF 61 JBE PROJECT NO. 20564

JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263



UTILITY NOTES:

- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND
- 2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
- 3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
- A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF
- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
- 6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
- AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
- INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK
- 10. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" OR DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
- 11. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING
- 12. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
- 13. SEPTIC FLOW CALCULATIONS:
- 72 2-BEDROOM UNITS @ 150 GPD/BEDROOM = 21,600 GPD 84 1-BEDROOM UNITS @ 225 GPD/UNIT = 18,900 GPD 13,500 GPD PER BUILDING TOTAL FLOW = 40,500 GPD
- 14. ALL SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS.
- 15. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
- 16. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
- 17. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICH EVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
- 18. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
- 19. IF THE BUILDING IS REQUIRED TO HAVE A SPRINKLER SYSTEM, A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, OWNER, ARCHITECT AND THE LOCAL FIRE DEPARTMENT PRIOR TO THE INSTALLATION.
- 20. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
- 21. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
- 22. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
- 23. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- 24. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
- 25. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
- 26. SANITARY SEWER LINES SHALL BE LOCATED AT LEAST TEN (10) FEET HORIZONTALLY FROM AN EXISTING OR PROPOSED WATER LINE. WHEN A SEWER LINE CROSSES UNDER A WATER LINE, THE SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATERMAIN. THE SEWER LINE SHALL ALSO MAINTAIN A VERTICAL SEPARATION OF NOT LESS THAN 18 INCHES.
- 27. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END AT RIGHT OF WAY AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
- 28. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
- 29. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

GRAPHIC SCALE (IN FEET) 1 inch = 40 ft.

> PROJECT PARCEL TOWN OF RAYMOND TAX MAP 23, LOT 25

APPLICANT TUCK REALTY CORP PO BOX 190 EXETER, NH 03833

TOTAL LOT AREA 3,271,681 S.F. 75.11 ACRES

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|---------------------|------|---------|--------------------------------------|-----|
| MILLE LEWYS V | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| 3 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| MICHAEL TO | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| KERIVAN No. 9848 | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| No. 9846 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| CENSO STATE | REV. | DATE | REVISION | BY |

Designed and Produced in NH Jones & Beach Engineers, Inc. 85 Portsmouth Ave. Civil Engineering Services 603-772-4746

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Stratham, NH 03885

FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

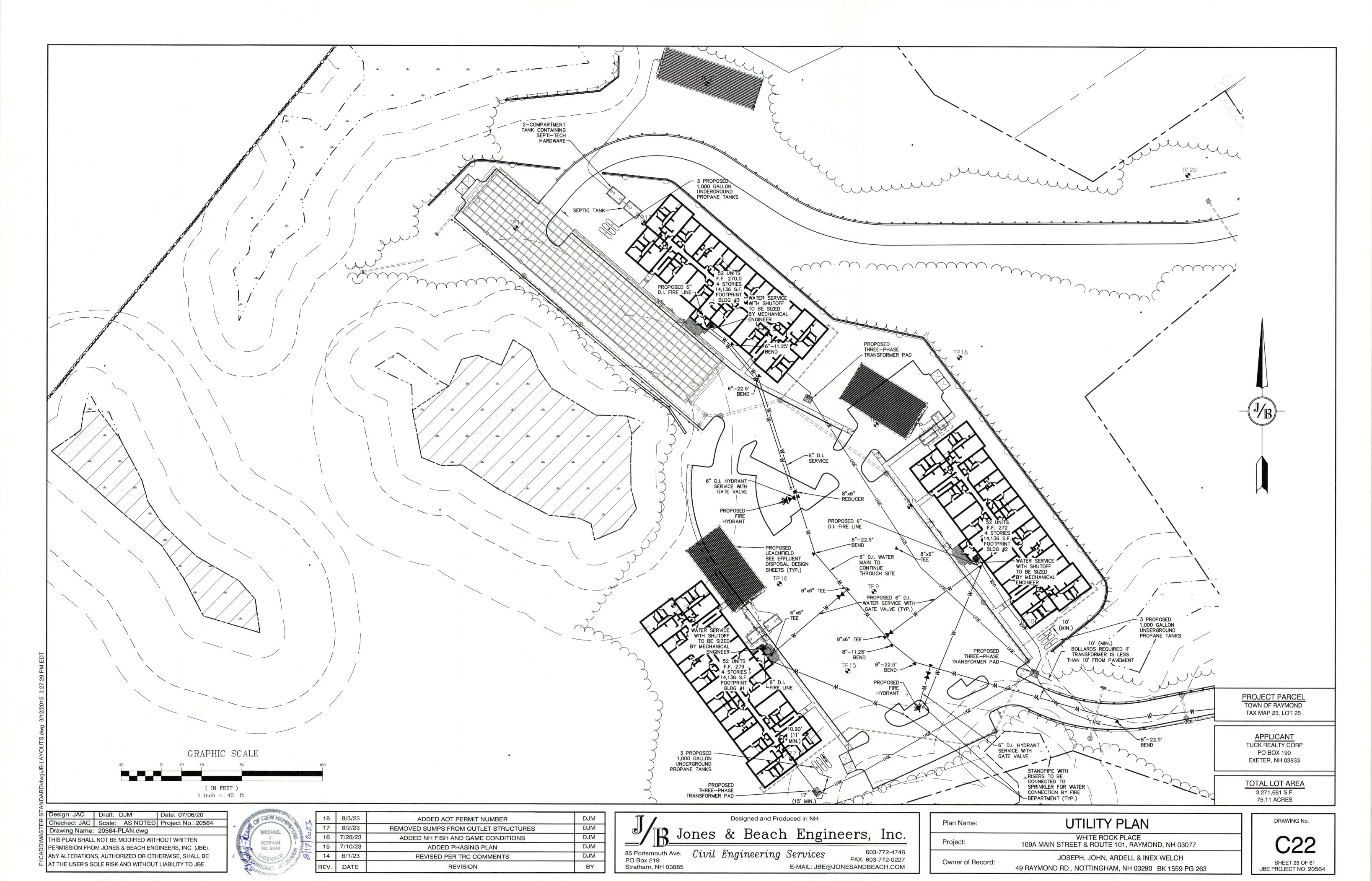
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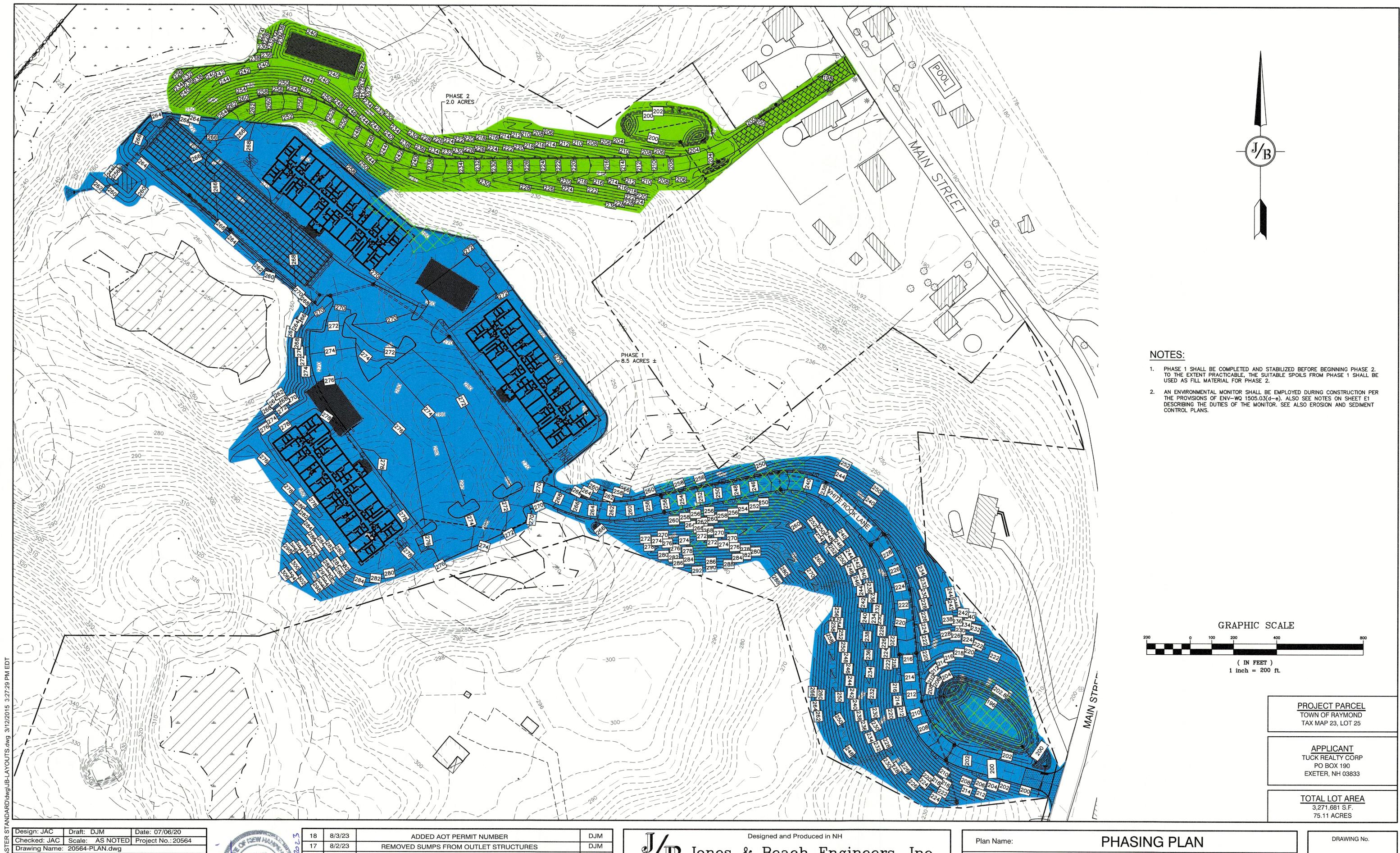
UTILITY PLAN Plan Name: WHITE ROCK PLACE Project: 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

DRAWING No.

JBE PROJECT NO. 20564





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Checked: JAC | Scale: AS NOTED | Project No.: 20564 |
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DJM
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DJM
No. 9846
15 7/10/23 ADDED PHASING PLAN
DJM
REV. DATE
REVISION
BY

B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. PO Box 219
Stratham, NH 03885

Designed and Produced in NH

Reach Engineers, Inc.

603-772-4746
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| IIIC. | Project: |
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| 3-772-4746 | |
| 3-772-0227 | Owner of |
| EACH.COM | |

| Plan Name: | PHASING PLAN | |
|------------|---|-----------------------------|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | and the chiques constraints |
| | JOSEPH, JOHN, ARDELL & INEX WELCH | |

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

DRAWING No.

PH 1

SHEET 26 OF 61

JBE PROJECT NO. 20564

THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE CONSTRUCTION SITE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND BE MADE ACCESSIBLE TO THE PUBLIC. THE CONSTRUCTION SITE OPERATOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA REGIONAL OFFICE SEVEN DAYS PRIOR TO COMMENCEMENT OF ANY WORK ON SITE. EPA WILL POST THE NOI AT HTTP: //CFPUB1.EPA.GOV/NPDES/STORMWATER/NOI/NOISEARCH.CFM. AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE" STATUS ON THIS WEBSITE. A COMPLETED NOTICE OF TERMINATION

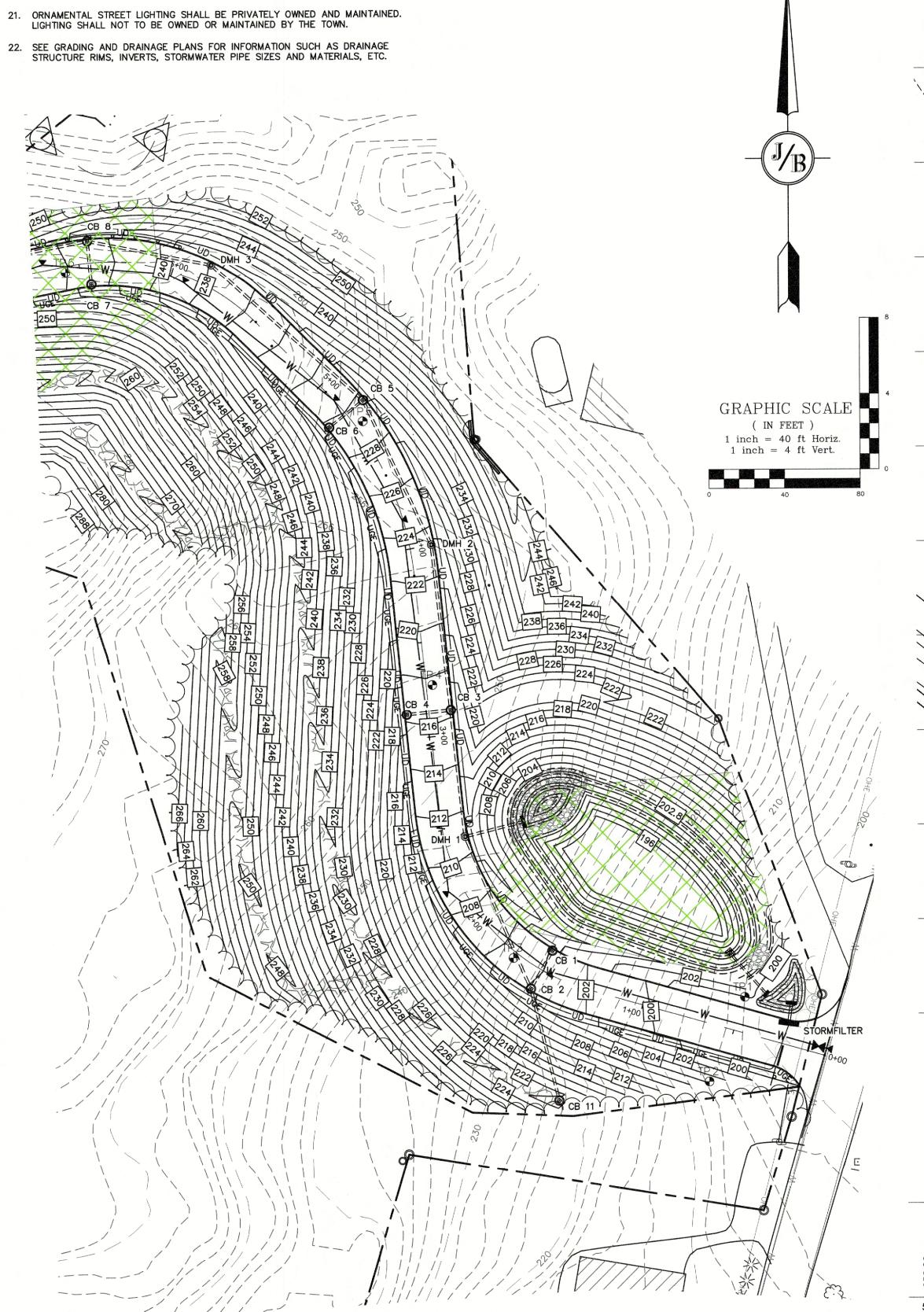
SHALL BE SUBMITTED TO THE NPDES PERMITTING AUTHORITY WITHIN 30 DAYS

AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.

PROVIDE DPW WITH A COPY OF THE NOTICE OF TERMINATION (NOT).

- ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE TOWN, AND NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
- DEVELOPER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
- CONTRACTOR TO COORDINATE AND COMPLETE ALL WORK REQUIRED FOR THE RELOCATION AND/OR INSTALLATION OF ELECTRIC, CATV, TELEPHONE, AND FIRE ALARM PER UTILITY DESIGN AND STANDARDS. LOCATIONS SHOWN ARE APPROXIMATE. LOW PROFILE STRUCTURES SHALL BE USED TO THE GREATEST
- THIS PLAN HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC. FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS
- 6. SILTATION AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN UNTIL SITE HAS BEEN STABILIZED WITH PERMANENT VEGETATION. SEE DETAIL SHEET E1 FOR ADDITIONAL NOTES ON EROSION CONTROL.
- 7. ALL DISTURBED AREAS NOT STABILIZED BY OCTOBER 15TH SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE
- 8. FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
- CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
- 10. ROADWAY INTERSECTIONS WITH SLOPE GRANITE CURB SHALL EXTEND AROUND RADIUS WITH 6' STRAIGHT PIECE ALONG TANGENT.
- 11. RETAINING WALLS SHALL BE DESIGNED AND STAMPED BY A STRUCTURAL PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER PRIOR TO INSTALLATION.
- 12. 6" PERFORATED ADS-N12 UNDER DRAIN IS TO BE PLACED BENEATH ROAD SHOULDERS AS SHOWN. CONTRACTOR TO ADJUST LOCATION IN THE FIELD ONLY WITH PRIOR APPROVAL OF PROJECT ENGINEER AND PUBLIC WORKS DEPARTMENT.
- 13. ALL PAVED OR GRAVELED AREAS INTENDED FOR VEHICULAR TRAFFIC TO BE CONSTRUCTED WITH MAXIMUM 8% SLOPE UNLESS OTHERWISE SPECIFIED, SUBJECT TO WAIVER FROM THE PLANNING BOARD.
- 14. DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE: SILT FENCING WILL BE INSPECTED DURING AND AFTER STORM EVENTS IN EXCESS OF 0.25" TO ENSURE THAT THE FENCE STILL HAS INTEGRITY AND IS NOT ALLOWING SEDIMENT TO PASS. SEDIMENT BUILD UP IN SWALES WILL BE REMOVED IF IT IS DEEPER THAN SIX INCHES, AND IS TO BE REMOVED FROM SUMPS BELOW THE INLET OF CULVERTS SEMIANNUALLY, AS WELL AS FROM CATCH BASINS. FOLLOWING MAJOR STORM EVENTS, THE STAGE DISCHARGE OUTLET STRUCTURES ARE TO BE INSPECTED AND ANY DEBRIS REMOVED FROM THE ORIFICE, TRASH RACK AND EMERGENCY SPILLWAY. INFREQUENTLY, SEDIMENT MAY ALSO HAVE TO BE REMOVED FROM THE SUMP OF THE STRUCTURE.
- 15. ALL DRAINAGE INFRASTRUCTURE SHALL BE INSTALLED AND STABILIZED PRIOR TO
- 16. DETENTION PONDS REQUIRE TIMELY MAINTENANCE AND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM EVENT, AS WELL AS FREQUENTLY DURING THE FIRST YEAR OF OPERATION, AND ANNUALLY THEREAFTER. EVERY FIVE YEARS, THE SERVICES OF A PROFESSIONAL ENGINEER SHOULD BE RETAINED TO PERFORM A THOROUGH INSPECTION OF THE DETENTION POND AND ITS INFRASTRUCTURE. ANY DEBRIS AND SEDIMENT ACCUMULATIONS SHOULD BE REMOVED FROM THE OUTLET STRUCTURE(S) AND EMERGENCY SPILLWAY(S) AND DISPOSED OF PROPERLY, DETENTION POND BERMS SHOULD BE MOWED AT LEAST ONCE ANNUALLY SO AS TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION. TREES SHOULD NEVER BE ALLOWED TO GROW ON A DETENTION POND BERM, AS THEY MAY DESTABILIZE THE STRUCTURE AND INCREASE THE POTENTIAL FOR FAILURE. AREAS SHOWING SIGNS OF EROSION OR THIN OR DYING VEGETATION SHOULD BE REPAIRED IMMEDIATELY BY WHATEVER MEANS NECESSARY, WITH THE EXCEPTION OF FERTILIZER. RODENT BURROWS SHOULD BE REPAIRED IMMEDIATELY AND THE ANIMALS SHOULD BE TRAPPED AND RELOCATED IF THE PROBLEM PERSISTS.
- 17. THE DETENTION PONDS ARE TO BE CONSTRUCTED PRIMARILY THROUGH EXCAVATION. IN THOSE AREAS WHERE THE BERMS MUST BE CONSTRUCTED BY THE PLACEMENT OF FILL, THE ENTIRE EMBANKMENT AREA OF THE DETENTION PONDS SHALL BE EXCAVATED TO PROPOSED GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 95% AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. IN THE EVENT THE FOUNDATION MATERIAL EXPOSED DOES NOT ALLOW THE SPECIFIED COMPACTION, AN ADDITIONAL ONE FOOT (1') OF EXCAVATION AND THE PLACEMENT OF A ONE FOOT (1') THICK, TWELVE FOOT (12') WIDE PAD OF THE MATERIAL DESCRIBED IN THE NOTE BELOW, COMPACTED TO 95% OF ASTM D-1557 MAY BE NECESSARY. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED WITHIN FOR ANY REASON.
- 18. DETENTION PONDS SHALL HAVE BERMS WITH CLAY CORES. SEE DETAIL SHEETS FOR POND AND POND BERM SPECIFICATIONS.
- 19. ROAD SIDE SLOPES MUST BE BENCHED AS SHOWN ON THIS PLAN. THERE SHALL BE A 6' WIDE BENCH WITH A MAXIMUM REVERSE SLOPE OF 6:1 EVERY 20' VERTICALLY ALONG THE 2:1 SLOPE. SEE DETAIL ON SHEET C3.

- 20. COMPACTION TESTING SERVICES (I.E. NUCLEAR DENSITY TESTS) SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR FOR ROADWAY CONSTRUCTION, AND ON THE FOUNDATION OF THE BERM AND ON EVERY LIFT OF NEWLY PLACED MATERIAL.



255 STA. 4+79.81 STA. 4+00.00 -WATER/DRAINAGE STA. 3+13.00 CROSSING TOP OF WATER TO CROSS 6" ± UNDER DRAIN LINE DMH 1 STA. 2+43.91 PVI STA.= 1+05.00\ 2 2 199.94 WATER/DRAINAGE CROSSING TOP OF WATER TO STA. 1+56.80 — 60.94 VC —— CROSS 7.2" ± K = 10.16UNDER DRAIN LINE AD= 6.00 J PVI ELEV.= 198.44 -- 52.92 VC ---K = 21.06SAG STA.=0+14.34 CONTECH SAG ELEV.= 198.55 "STORMFILTER" \ AD= 2.51 STA. = 0+14.34ON CENTER WATER/DRAINAGE TOP OF WATER TO CROSS 16" ± UNDER DRAIN LINE-1 + 503+00 2+50 2+00 MAIN DRIVEWAY PLAN AND PROFILE STA. 0+00 - 5+00 (1"=40' H; 1"=4' V)

Design: JAC | Draft: DJM Date: 07/06/20 Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg

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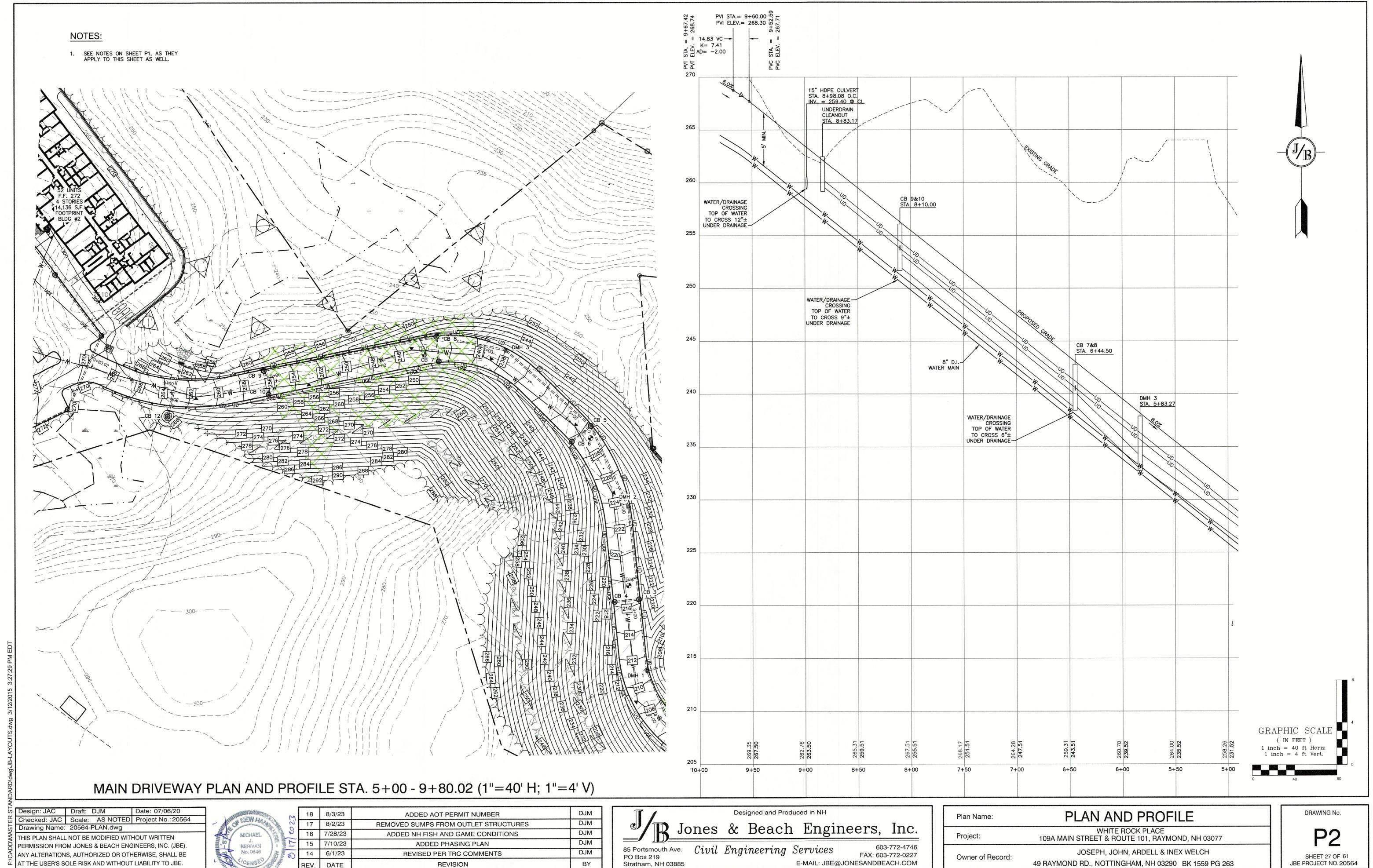
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| | REV. | DATE | REVISION | BY |

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| J/R | Jones | & | Beach | Engineers, | Inc. |
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| 85 Portsmouth Ave. PO Box 219 | | Services | 603-772-4746 FAX: 603-772-0227 |
| Stratham, NH 03885 | | F-WAIL: JBE@JC | NESANDBEACH.COM |

| Plan Name: | PLAN AND PROFILE |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH |
| Owner of Necord. | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

DRAWING No. SHEET 26 OF 61 JBE PROJECT NO. 20564

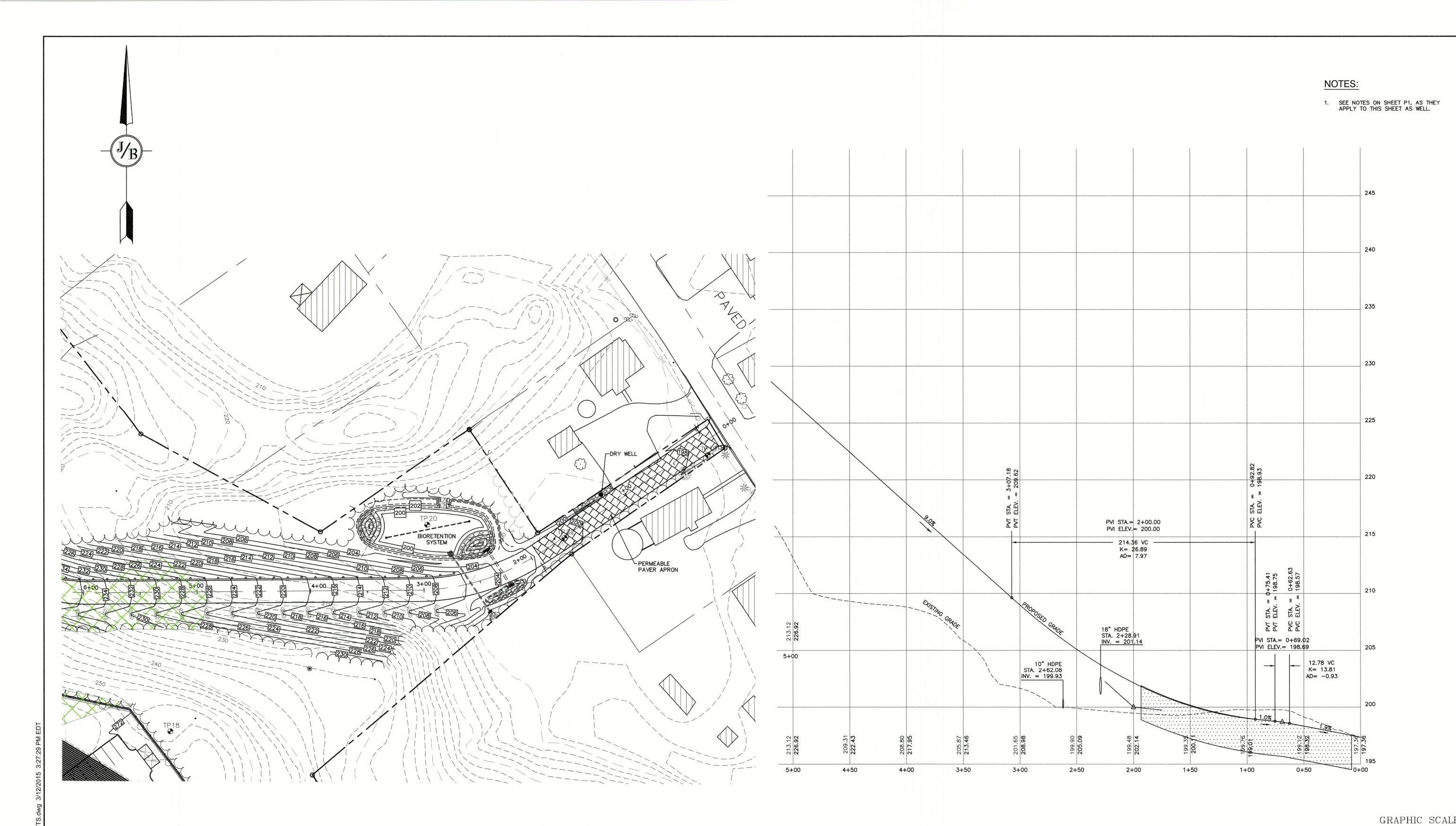




| N | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|-----|------|---------|--------------------------------------|-----|
| 2 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 2 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| T C | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| S | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |

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PO Box 219
Stratham, NH 03885

Civil Engineering Services
E-MAIL: JBE@J E-MAIL: JBE@JONESANDBEACH.COM



EMERGENCY ACCESS ROAD PLAN AND PROFILE STA. 0+00 - 5+00 (1"=40' H; 1"=4' V)

Design: JAC Draft: DJM Date: 07/06/20
Checked: JAC Scale: AS NOTED Project No.: 20564
Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN



| .0 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
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| 220 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 2 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 17 | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 00 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |

| 1/ | | Des | signed and Pro | duced in NH | | |
|----------------------------------|-------|-----|----------------|-------------|-----------------|--------------------------|
| \mathbb{B}^{Jo} | nes | & | Beach | n Eng | ineers, | Inc. |
| 85 Portsmouth Ave. PO Box 219 | Civil | Eng | ineering | Services | 603 FAX: 603 | 3-772-4746 3-772-0227 |
| Stratham, NH 03885 | | | | E-MAIL: JBE | @JONESANDBE | ACH.COM |

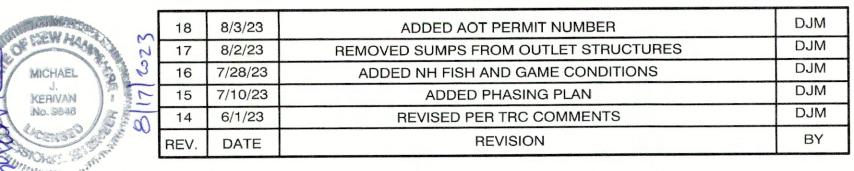
| Plan Name: | PLAN AND PROFILE |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH |
| Owner of Necord. | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

DRAWING No. **P3** SHEET 28 OF 61 JBE PROJECT NO. 20564

(IN FEET)
1 inch = 40 ft Horiz.
1 inch = 4 ft Vert.



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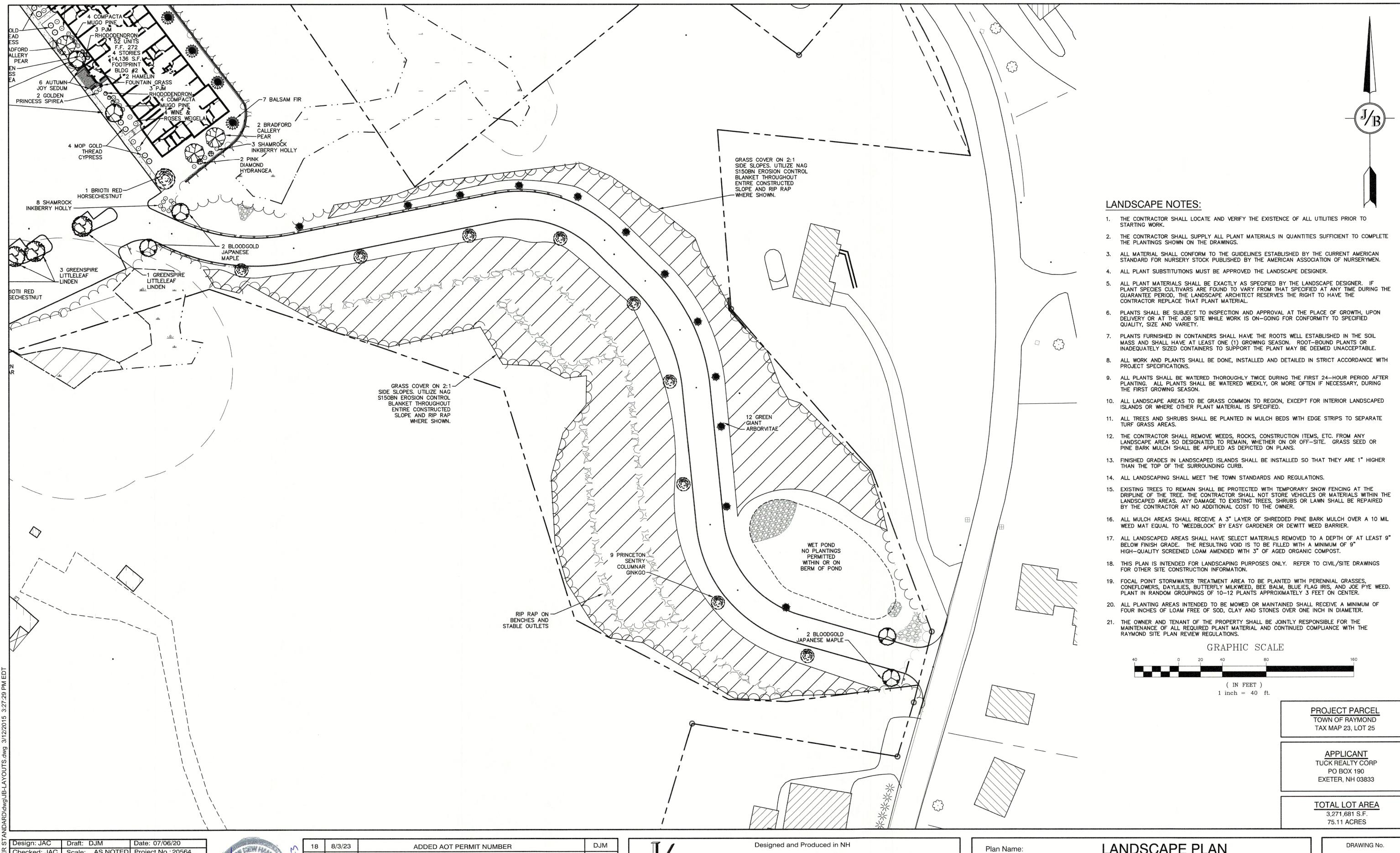
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PO Box 219
Stratham, NH 03885

Civil Engineering Services

E-MAIL: JBE@J FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

| Plan Name: | PLAN AND PROFILE |
|------------------|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

SHEET 29 OF 61 JBE PROJECT NO. 20564



Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE



| M | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|---|------|---------|--------------------------------------|-----|
| 2 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 2 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 90 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| S. A. | REV. | DATE | REVISION | BY |

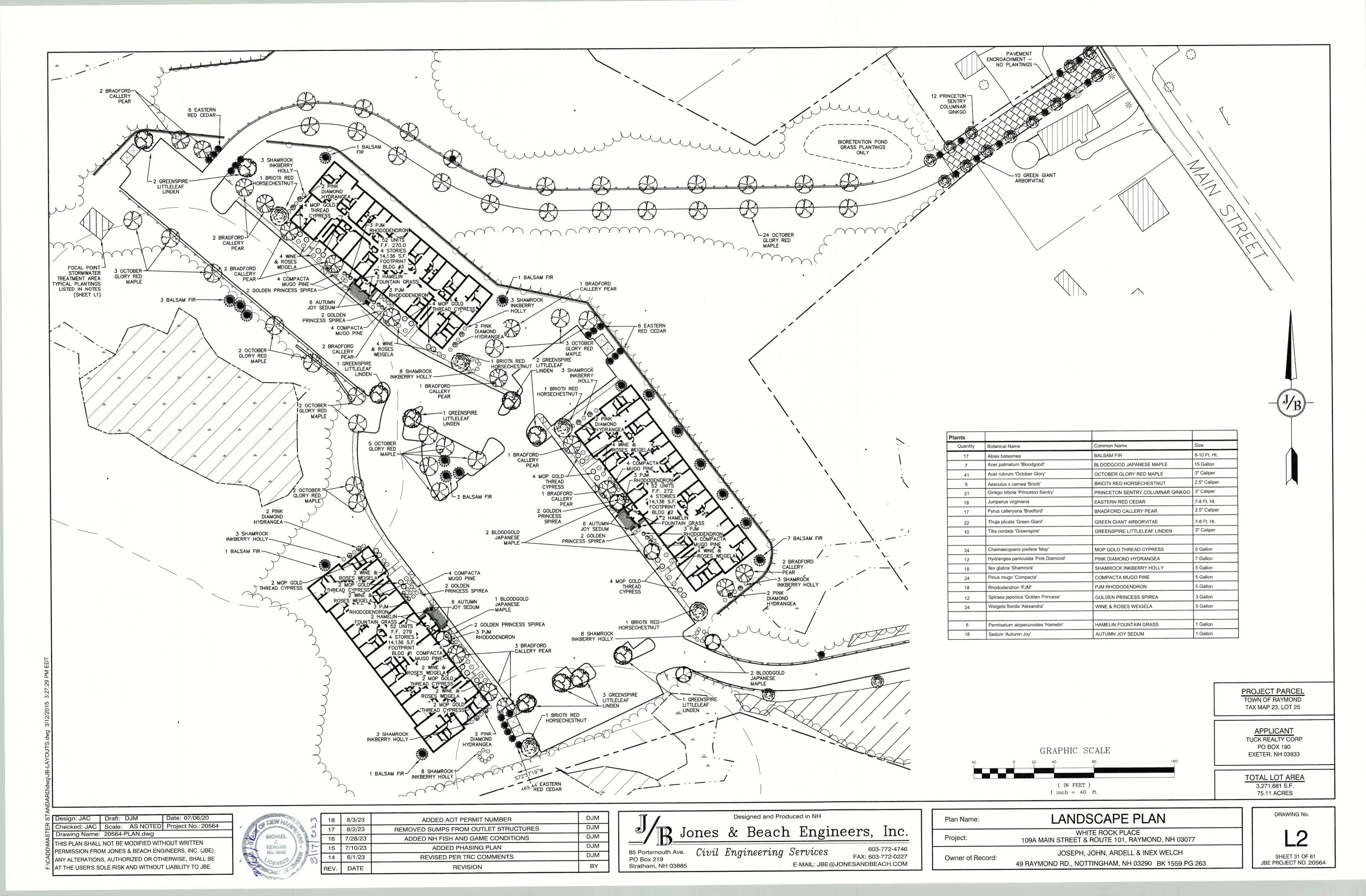
Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227 PO Box 219 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

| Plan Name: | LANDSCAPE PLAN | |
|------------|---|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | |

Owner of Record:

JOSEPH, JOHN, ARDELL & INEX WELCH SHEET 30 OF 61 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 JBE PROJECT NO. 20564





Design: JAC Draft: DJM Date: 07/06/20 Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



| 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|------|----------------------|--|--|
| 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| REV. | DATE | REVISION | BY |
| | 17 16 15 14 | 17 8/2/23 16 7/28/23 15 7/10/23 14 6/1/23 | 17 8/2/23 REMOVED SUMPS FROM OUTLET STRUCTURES 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS 15 7/10/23 ADDED PHASING PLAN 14 6/1/23 REVISED PER TRC COMMENTS |

Designed and Produced in NH Jones & Beach Engineers, Inc. 85 Portsmouth Ave. Civil Engineering Services 603-772-4746

PO Box 219

Stratham, NH 03885

FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

Owner of Record:

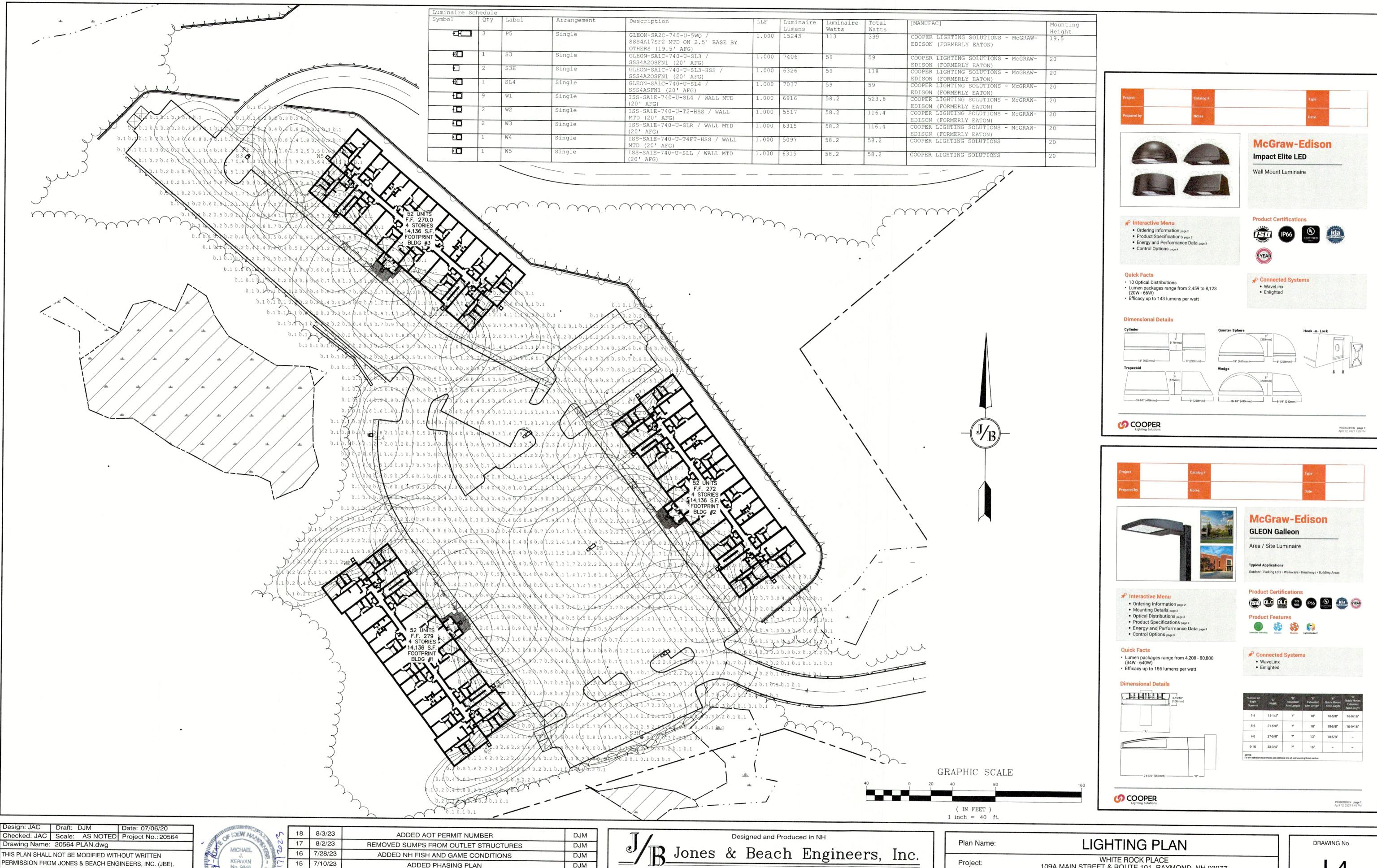
| Plan Name: | LIGHTING PLAN | |
|------------------|---|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | Mary and indicate the first of the control of the c |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH | |

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 32 OF 61

JBE PROJECT NO. 20564

DRAWING No.



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KERIVAN No. 9846

15 7/10/23 DJM ADDED PHASING PLAN 14 6/1/23 REVISED PER TRC COMMENTS DJM REV. DATE REVISION

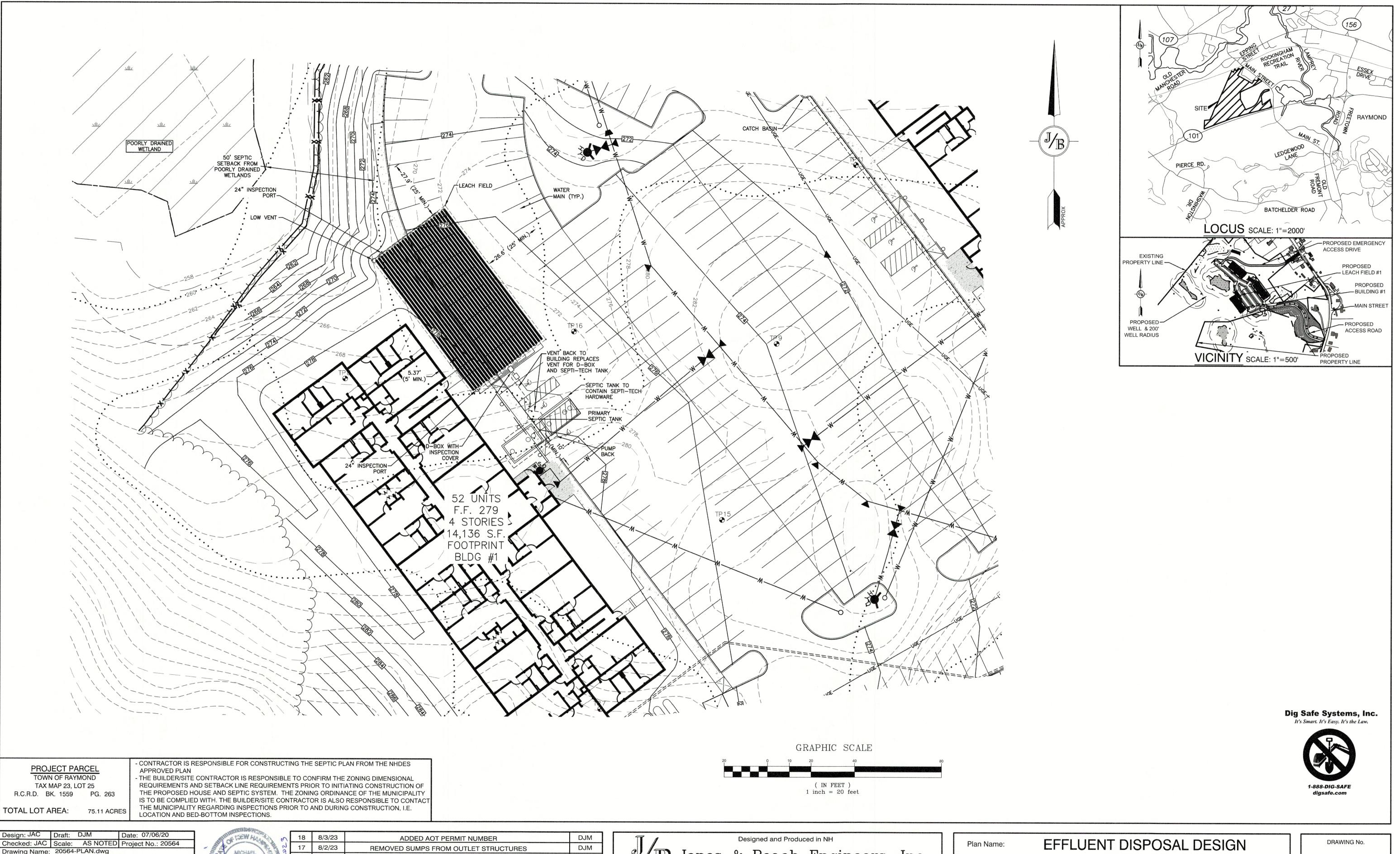
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WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 Project: JOSEPH, JOHN, ARDELL & INEX WELCH Owner of Record:

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 33 OF 61 JBE PROJECT NO. 20564



Design: JAC Draft: DJM Date: 07/06/20
Checked: JAC Scale: AS NOTED Project No.: 20564
Drawing Name: 20564-PLAN.dwg
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| 8/17/2023 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
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| | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
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| | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |

B Jones & Beach Engineers, Inc.

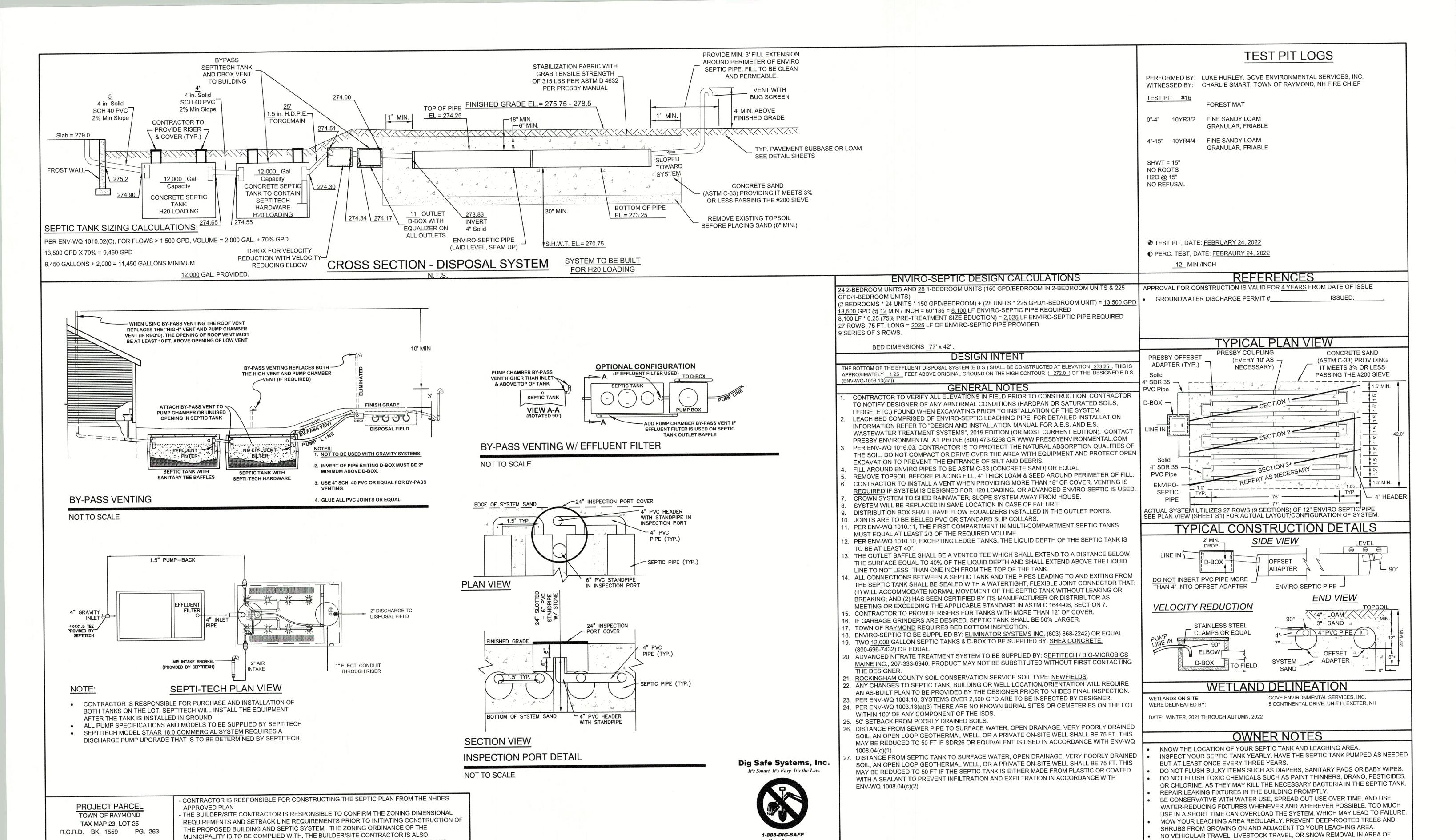
85 Portsmouth Ave. PO Box 219
Stratham, NH 03885

Civil Engineering Services

603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

| April 1 from the later permitting of the permitt | | |
|--|--|---|
| Plan Name: | EFFLUENT DISPOSAL DESIGN | • |
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 | |

SHEET 34 OF 61
JBE PROJECT NO. 20564



RESPONSIBLE TO CONTACT THE MUNICIPALITY REGARDING INSPECTIONS PRIOR TO AND TOTAL LOT AREA: 75.11 ACRES DURING CONSTRUCTION, I.E. LOCATION AND BED-BOTTOM INSPECTIONS Design: JAC Draft: DJM Date: 07/06/20 Checked: JAC | Scale: AS NOTED | Project No.: 20564

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Drawing Name: 20564-PLAN.dwg

CEWA

MICHAEL

KERIVAN

No. 9846

DJM ADDED AOT PERMIT NUMBER DJM REMOVED SUMPS FROM OUTLET STRUCTURES 17 8/2/23 DJM 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS DJM 15 7/10/23 ADDED PHASING PLAN DJM REVISED PER TRC COMMENTS 14 6/1/23 REVISION DATE

Designed and Produced in NH Jones & Beach Engineers, Inc. 603-772-4746 85 Portsmouth Ave. Civil Engineering Services FAX: 603-772-0227 PO Box 219

Stratham, NH 03885

E-MAIL: JBE@JONESANDBEACH.COM

EFFLUENT DISPOSAL DESIGN Plan Name:

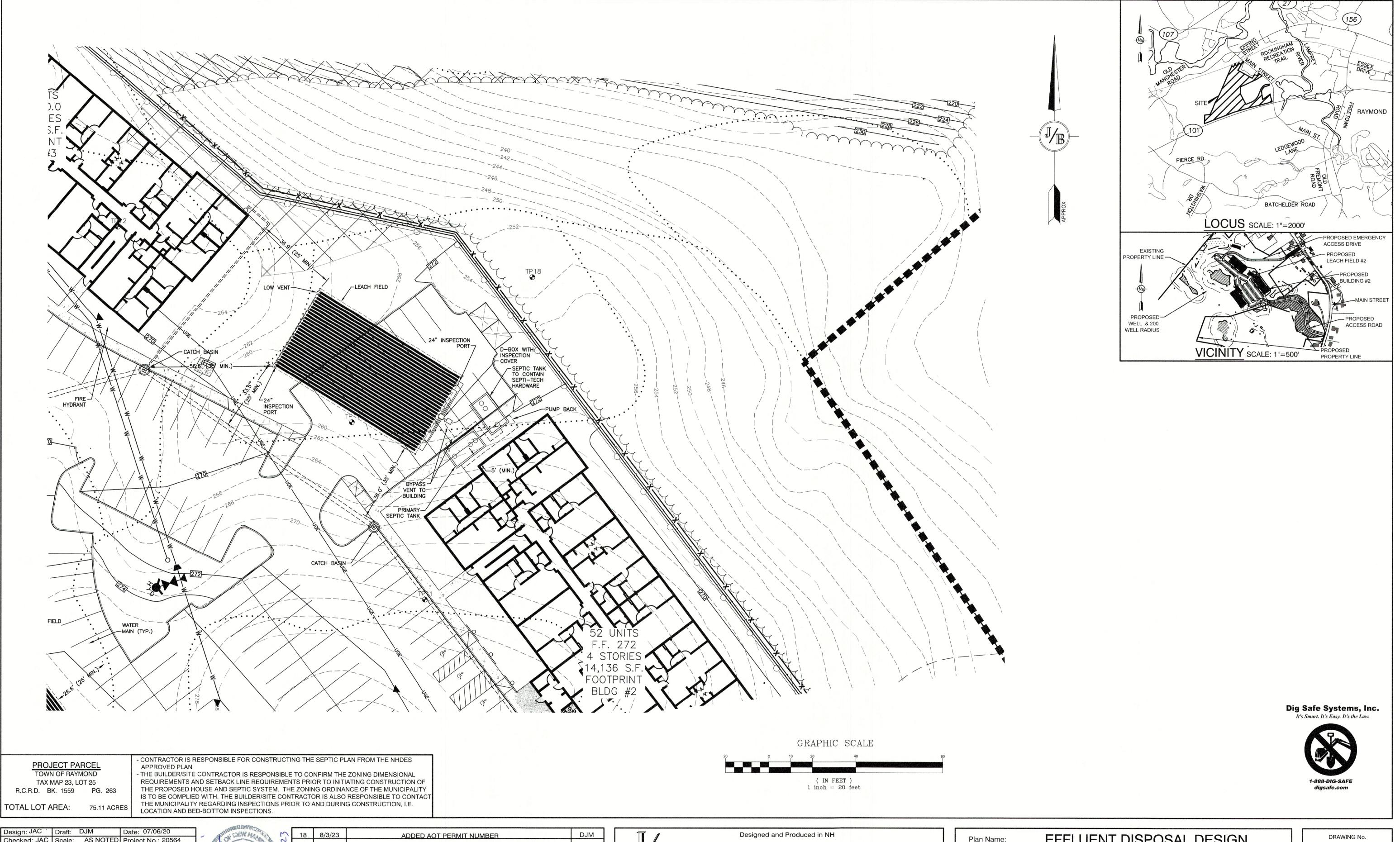
Owner of Record:

WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 Project: JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SYSTEM, UNLESS SPECIFICALLY DESIGNED FOR H20 LOADING.

DRAWING No. SHEET 35 OF 61 JBE PROJECT NO. 20564



Design: JAC Draft: DJM Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



| 7 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|---|------|---------|--------------------------------------|-----|
| 7 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| _ | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| _ | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 7 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |
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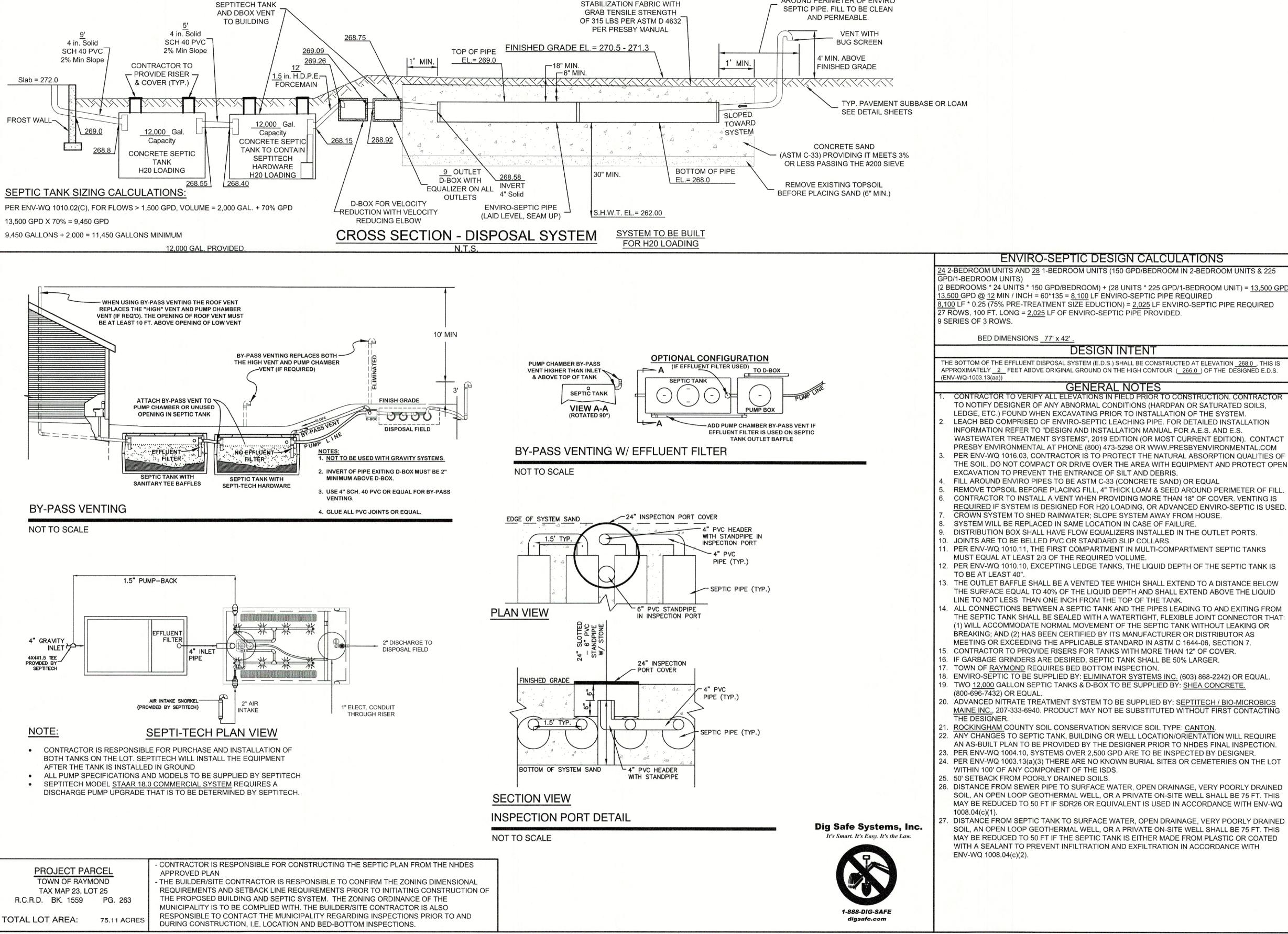
Stratham, NH 03885

85 Portsmouth Ave. Civil Engineering Services
PO Box 219 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

603-772-4746

| Plan Name: | EFFLUENT DISPOSAL DESIGN |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

SHEET 36 OF 61 JBE PROJECT NO. 20564



Design: JAC Draft: DJM Date: 07/06/20 DJM 18 8/3/23 ADDED AOT PERMIT NUMBER Checked: JAC | Scale: AS NOTED | Project No.: 20564 17 I 8/2/23 DJM REMOVED SUMPS FROM OUTLET STRUCTURES Drawing Name: 20564-PLAN.dwg MICHAEL DJM 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN KERIVAN 15 7/10/23 DJM PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ADDED PHASING PLAN No. 9846 DJM ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE 14 6/1/23 REVISED PER TRC COMMENTS AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE REV. DATE REVISION BY

BYPASS

Designed and Produced in NH Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services PO Box 219 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

EFFLUENT DISPOSAL DESIGN Plan Name: WHITE ROCK PLACE

DRAWING No.

1.5' MIN.

4" HEADER

109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 Project: JOSEPH, JOHN, ARDELL & INEX WELCH Owner of Record:

NO H₂O REFUSAL = 42" TEST PIT, DATE: FEBRUARY 24, 2022 PERC. TEST, DATE: FEBRAURY 24, 2022 REFERENCES APPROVAL FOR CONSTRUCTION IS VALID FOR 4 YEARS FROM DATE OF ISSUE GROUNDWATER DISCHARGE PERMIT # ISSUED: TYPICAL PLAN VIEW PRESBY COUPLING CONCRETE SAND PRESBY OFFESET (EVERY 10' AS -(ASTM C-33) PROVIDING ADAPTER (TYP.) NECESSARY) IT MEETS 3% OR LESS PASSING THE #200 SIEVE " SDR 35 1 1.5' MIN. PVC Pipe D-BOX LINE 4" SDR 35 REPEAT AS NECESSARY -

TEST PIT LOGS

PERFORMED BY: LUKE HURLEY, GOVE ENVIRONMENTAL SERVICES, INC.

WITNESSED BY: CHARLIE SMART, TOWN OF RAYMOND, NH

FOREST MAT

FINE SANDY LOAM

FINE SANDY LOAM

FINE SANDY LOAM

GRANULAR, FRIABLE

GRANULAR, FRIABLE

GRANULAR FRIABLE

0"-4" 10YR3/2

4"-20" 10YR5/6

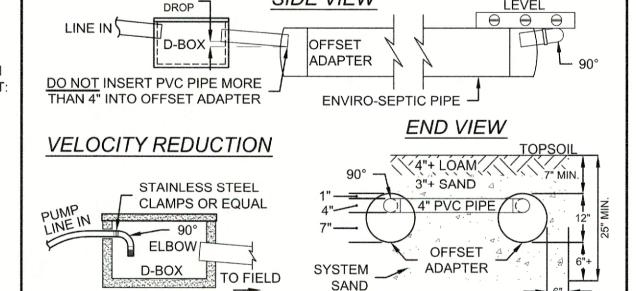
20"-42" 2.5Y5/3

SHWT NOT FOUND

NO ROOTS

PVC Pipe

SEPTIC



CTUAL SYSTEM UTILIZES 27 ROWS (9 SECTIONS) OF 12" ENVIRO-SEPTIC PIPE

TYPICAL CONSTRUCTION DETAILS

SIDE VIEW

SEE PLAN VIEW (LEFT) FOR ACTUAL LAYOUT/CONFIGURATION OF SYSTEM.

<u>WETLAND DELINEATION</u>

WETLANDS ON-SITE WERE DELINEATED BY:

GOVE ENVIRONMENTAL SERVICES, INC. 8 CONTINENTAL DRIVE, UNIT H, EXETER, NH

DATE: WINTER, 2021 THROUGH AUTUMN, 2022 - THERE ARE NO WETLANDS WITHIN 75' OF THE

OWNER NOTES

KNOW THE LOCATION OF YOUR SEPTIC TANK AND LEACHING AREA. INSPECT YOUR SEPTIC TANK YEARLY. HAVE THE SEPTIC TANK PUMPED AS NEEDED

BUT AT LEAST ONCE EVERY THREE YEARS.

DO NOT FLUSH BULKY ITEMS SUCH AS DIAPERS, SANITARY PADS OR BABY WIPES.

DO NOT FLUSH TOXIC CHEMICALS SUCH AS PAINT THINNERS, DRANO, PESTICIDES

OR CHLORINE, AS THEY MAY KILL THE NECESSARY BACTERIA IN THE SEPTIC TANK.

REPAIR LEAKING FIXTURES IN THE BUILDING PROMPTLY.

BE CONSERVATIVE WITH WATER USE, SPREAD OUT USE OVER TIME, AND USE WATER-REDUCING FIXTURES WHENEVER AND WHEREVER POSSIBLE. TOO MUCH

USE IN A SHORT TIME CAN OVERLOAD THE SYSTEM, WHICH MAY LEAD TO FAILURE

MOW YOUR LEACHING AREA REGULARLY. PREVENT DEEP-ROOTED TREES AND

SHRUBS FROM GROWING ON AND ADJACENT TO YOUR LEACHING AREA.

NO VEHICULAR TRAVEL, LIVESTOCK TRAVEL, OR SNOW REMOVAL IN AREA OF

SYSTEM, UNLESS SPECIFICALLY DESIGNED FOR H20 LOADING.

PROVIDE MIN. 3' FILL EXTENSION

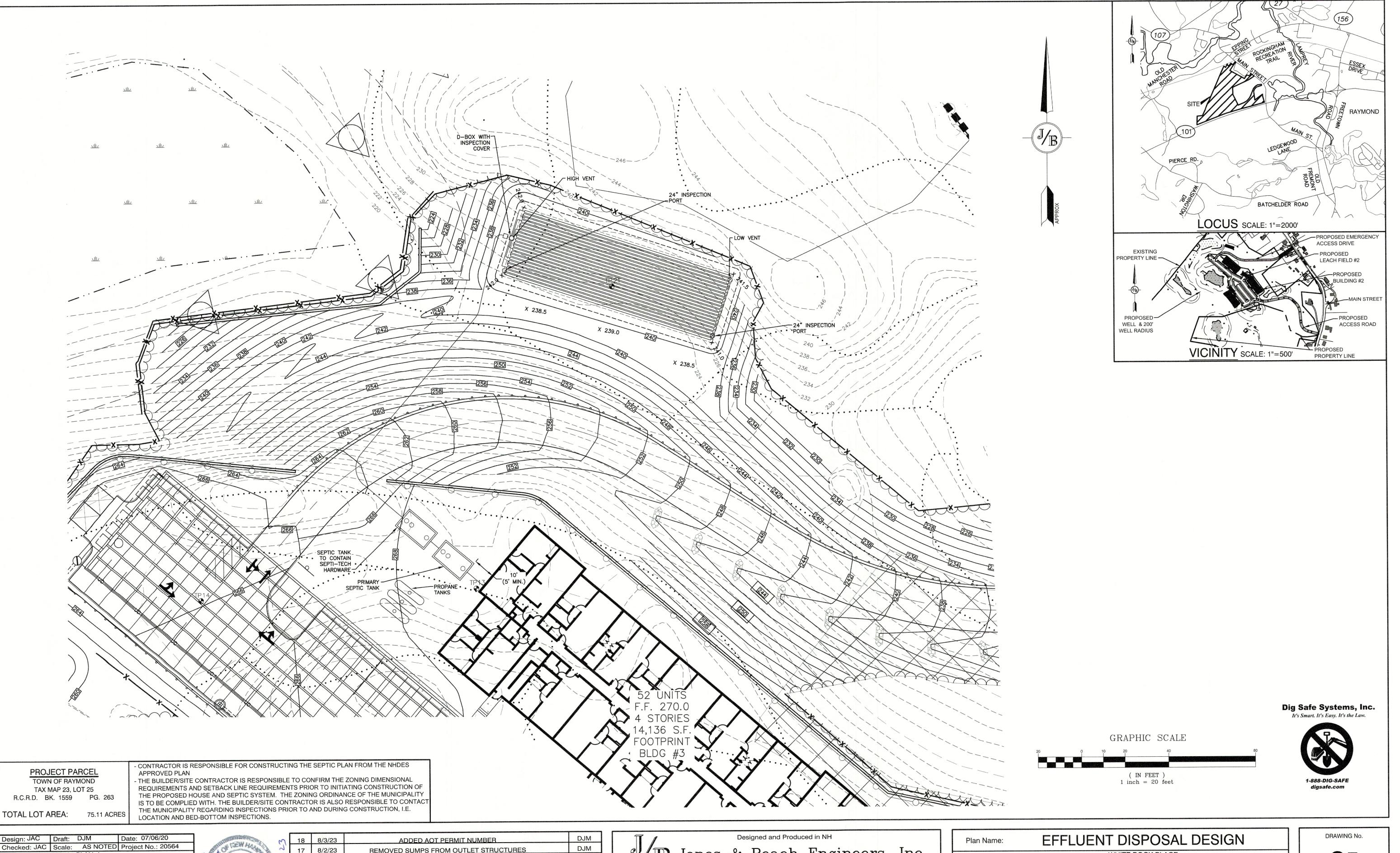
AROUND PERIMETER OF ENVIRO

603-772-4746 FAX: 603-772-0227

DESIGN INTENT

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 37 OF 61 JBE PROJECT NO. 20564



Design: JAC Draft: DJM Date: 07/06/20
Checked: JAC Scale: AS NOTED Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN

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| | | | | CONTRACTOR OF STREET |
|---------------------|------|---------|--------------------------------------|--|
| 2 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| 2 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 3 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| (7) | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| $\overline{\omega}$ | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| w | REV. | DATE | REVISION | BY |
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Jones & Beach Engineers, Inc.

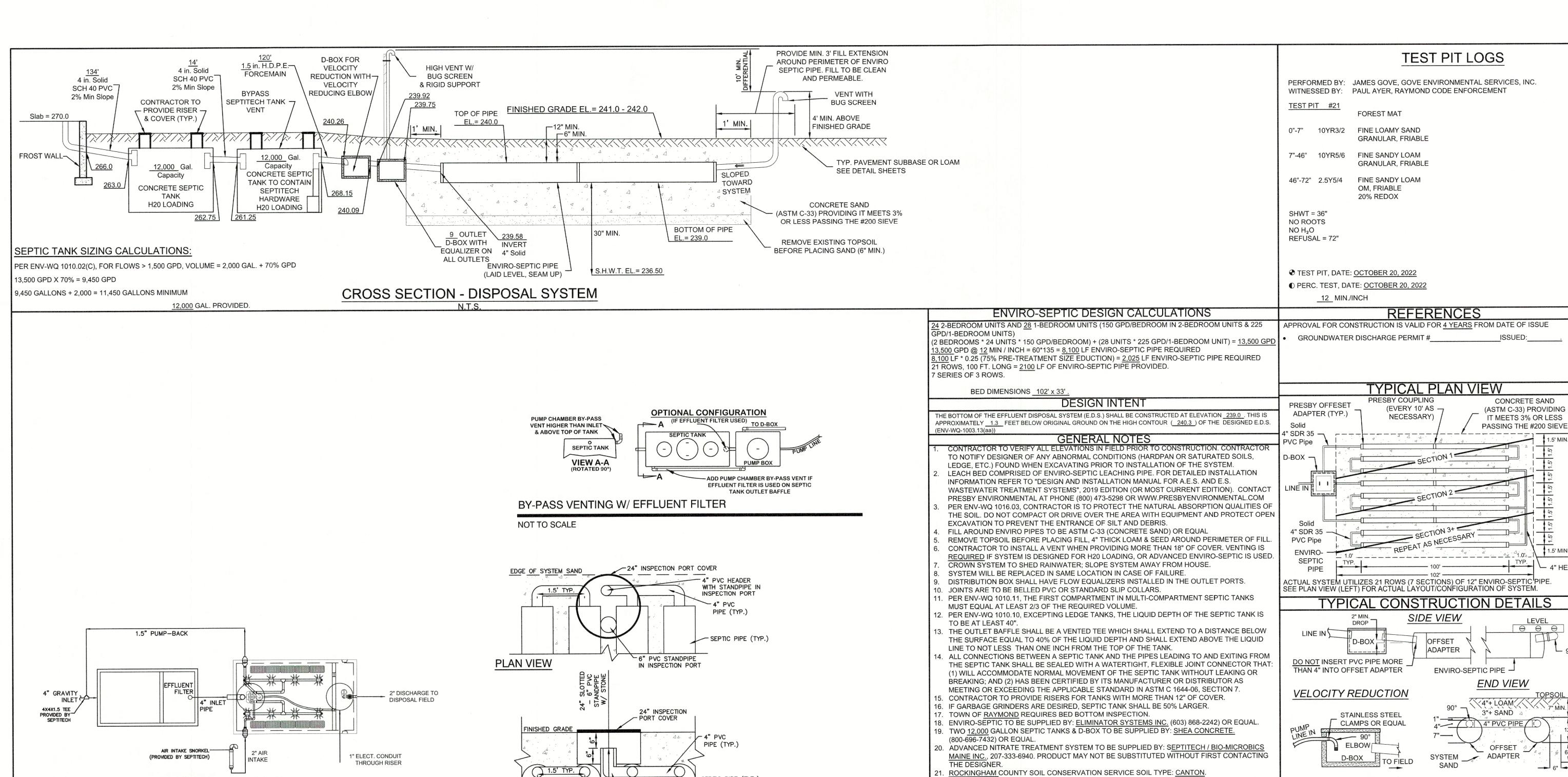
85 Portsmouth Ave. Civil Engineering Services
PO Box 219
Stratham, NH 03885

E-MAIL: JBE@C 603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

| Plan Name: | EFFLUENT DISPOSAL DESIGN | |
|------------------|---|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH | |

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 38 OF 61 JBE PROJECT NO. 20564



- SEPTI-TECH PLAN VIEW NOTE: CONTRACTOR IS RESPONSIBLE FOR PURCHASE AND INSTALLATION OF
- AFTER THE TANK IS INSTALLED IN GROUND ALL PUMP SPECIFICATIONS AND MODELS TO BE SUPPLIED BY SEPTITECH

BOTH TANKS ON THE LOT. SEPTITECH WILL INSTALL THE EQUIPMENT

 SEPTITECH MODEL STAAR 18.0 COMMERCIAL SYSTEM REQUIRES A DISCHARGE PUMP UPGRADE THAT IS TO BE DETERMINED BY SEPTITECH.

APPROVED PLAN

SECTION VIEW INSPECTION PORT DETAIL

NOT TO SCALE

BOTTOM OF SYSTEM SAND

SEPTIC PIPE (TYP.)

- 4" PVC HEADER

WITH STANDPIPE



Dig Safe Systems, Inc. It's Smart. It's Easy. It's the Law.

1-888-DIG-SAFE

WETLAND DELINEATION

WETLANDS ON-SITE WERE DELINEATED BY:

22. ANY CHANGES TO SEPTIC TANK, BUILDING OR WELL LOCATION/ORIENTATION WILL REQUIRE

23. PER ENV-WQ 1004.10, SYSTEMS OVER 2,500 GPD ARE TO BE INSPECTED BY DESIGNER.

WITHIN 100' OF ANY COMPONENT OF THE ISDS.

50' SETBACK FROM POORLY DRAINED SOILS.

ENV-WQ 1008.04(c)(2).

AN AS-BUILT PLAN TO BE PROVIDED BY THE DESIGNER PRIOR TO NHDES FINAL INSPECTION.

24. PER ENV-WQ 1003.13(a)(3) THERE ARE NO KNOWN BURIAL SITES OR CEMETERIES ON THE LOT

26. DISTANCE FROM SEWER PIPE TO SURFACE WATER, OPEN DRAINAGE, VERY POORLY DRAINED

SOIL, AN OPEN LOOP GEOTHERMAL WELL, OR A PRIVATE ON-SITE WELL SHALL BE 75 FT. THIS

MAY BE REDUCED TO 50 FT IF SDR26 OR EQUIVALENT IS USED IN ACCORDANCE WITH ENV-WQ

DISTANCE FROM SEPTIC TANK TO SURFACE WATER, OPEN DRAINAGE, VERY POORLY DRAINED

SOIL, AN OPEN LOOP GEOTHERMAL WELL, OR A PRIVATE ON-SITE WELL SHALL BE 75 FT. THIS

MAY BE REDUCED TO 50 FT IF THE SEPTIC TANK IS EITHER MADE FROM PLASTIC OR COATED

WITH A SEALANT TO PREVENT INFILTRATION AND EXFILTRATION IN ACCORDANCE WITH

GOVE ENVIRONMENTAL SERVICES, INC. 8 CONTINENTAL DRIVE, UNIT H, EXETER, NH

CONCRETE SAND

4" HEADER

DATE: WINTER, 2021 THROUGH AUTUMN, 2022 - THERE ARE NO WETLANDS WITHIN 75' OF THE

OWNER NOTES

- KNOW THE LOCATION OF YOUR SEPTIC TANK AND LEACHING AREA. INSPECT YOUR SEPTIC TANK YEARLY. HAVE THE SEPTIC TANK PUMPED AS NEEDED
- BUT AT LEAST ONCE EVERY THREE YEARS
- DO NOT FLUSH BULKY ITEMS SUCH AS DIAPERS, SANITARY PADS OR BABY WIPES.
- DO NOT FLUSH TOXIC CHEMICALS SUCH AS PAINT THINNERS, DRANO, PESTICIDES, OR CHLORINE, AS THEY MAY KILL THE NECESSARY BACTERIA IN THE SEPTIC TANK.
- REPAIR LEAKING FIXTURES IN THE BUILDING PROMPTLY.
- BE CONSERVATIVE WITH WATER USE, SPREAD OUT USE OVER TIME, AND USE WATER-REDUCING FIXTURES WHENEVER AND WHEREVER POSSIBLE. TOO MUCH
- USE IN A SHORT TIME CAN OVERLOAD THE SYSTEM, WHICH MAY LEAD TO FAILURE.
- MOW YOUR LEACHING AREA REGULARLY. PREVENT DEEP-ROOTED TREES AND
- SHRUBS FROM GROWING ON AND ADJACENT TO YOUR LEACHING AREA.

NO VEHICULAR TRAVEL, LIVESTOCK TRAVEL, OR SNOW REMOVAL IN AREA OF SYSTEM, UNLESS SPECIFICALLY DESIGNED FOR H20 LOADING.

Date: 07/06/20 Design: JAC Draft: DJM Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE).

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PG. 263

75.11 ACRES

PROJECT PARCEL

TOWN OF RAYMOND

R.C.R.D. BK. 1559

TOTAL LOT AREA:

TAX MAP 23, LOT 25



LOCATION AND BED-BOTTOM INSPECTIONS.

- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SEPTIC PLAN FROM THE NHDES

THE BUILDER/SITE CONTRACTOR IS RESPONSIBLE TO CONFIRM THE ZONING DIMENSIONAL

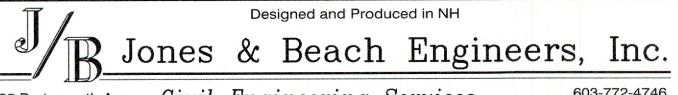
THE MUNICIPALITY REGARDING INSPECTIONS PRIOR TO AND DURING CONSTRUCTION, I.E.

REQUIREMENTS AND SETBACK LINE REQUIREMENTS PRIOR TO INITIATING CONSTRUCTION OF

THE PROPOSED HOUSE AND SEPTIC SYSTEM. THE ZONING ORDINANCE OF THE MUNICIPALITY

IS TO BE COMPLIED WITH. THE BUILDER/SITE CONTRACTOR IS ALSO RESPONSIBLE TO CONTACT

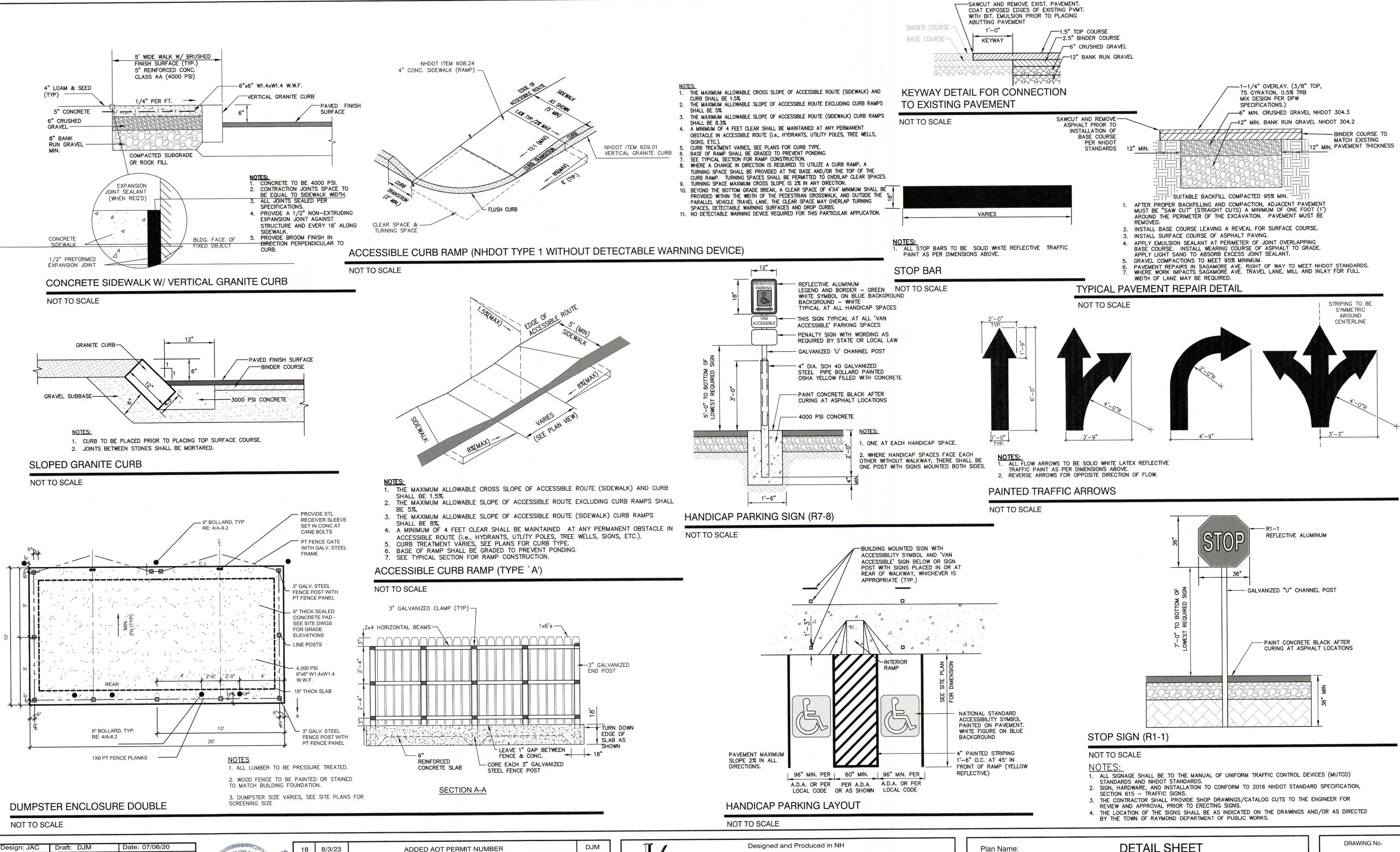
| | - | | |
|------|---------|--------------------------------------|-----|
| 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| REV. | DATE | REVISION | BY |



85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227 PO Box 219 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

| Plan Name: | EFFLUENT DISPOSAL DESIGN |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

DRAWING No. **S6** SHEET 39 OF 61 JBE PROJECT NO. 20564



Checked: JAC Scale: AS NOTED Project No.: 20564
Drawing Name: 20564-PLAN.dwg

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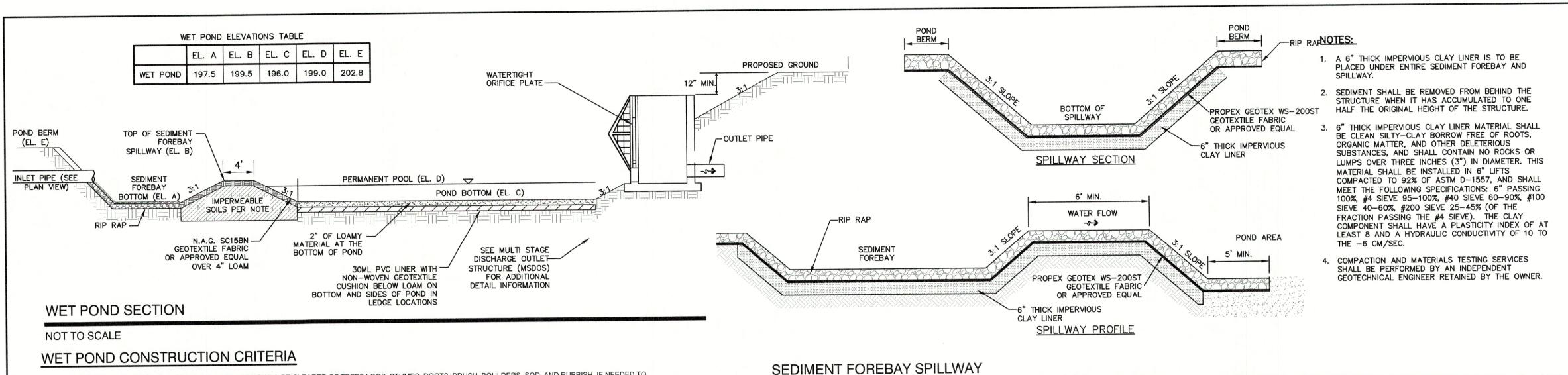
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B Jones & Beach Engineers, Inc.

85 Portsmouth Ave. PO Box 219 Stratham, NH 03885 Civil Engineering Services E-MAIL: JBE@JONESANDBEACH.COM

| Plan Name: | DETAIL SHEET |
|-------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of December | JOSEPH, JOHN, ARDELL & INEX WELCH |
| Owner of Record: | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

D1
SHEET 40 OF 61
JBE PROJECT NO. 20564



NOT TO SCALE

CONST. TRASH RACK 6"

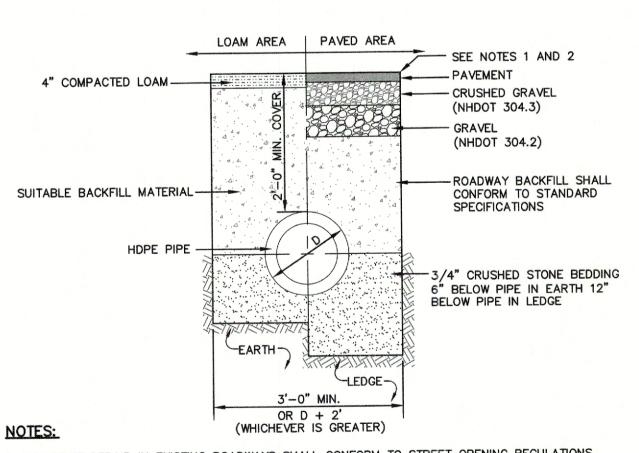
WELDED WIRE FABRIC ON

SPACING EACH WAY

#5 REBAR FRAME

FOUNDATION PREPARATION -- THE FOUNDATION 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 DAM AND SPILLWAYS. FOUNDATION SURFACES SHALL BE SLOPED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE MATERIAL. THE SURFACE SHALL HAVE MOISTURE ADDED OR IT SHALL BE COMPACTED, IF NECESSARY, SO THAT THE FIRST LAYER OF FILL MATERIAL CAN BE COMPACTED AND BONDED TO THE FOUNDATIONS. THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE DUG TO THE LINES AND GRADES SHOWN ON THE PLANS OR AS STAKED IN THE FIELD. IF THEY ARE SUITABLE, EXCAVATED MATERIALS SHALL BE USED IN THE PERMANENT FILL. EXISTING STREAM CHANNELS IN THE FOUNDATION AREA SHALL BE SLOPED NO STEEPER THAN 1:1 AND DEEPENED AND WIDENED AS NECESSARY TO REMOVE ALL STONES, GRAVEL, SAND, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND TO ACCOMMODATE COMPACTION EQUIPMENT. FILL PLACEMENT -- THE MATERIAL PLACED IN THE FILL 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

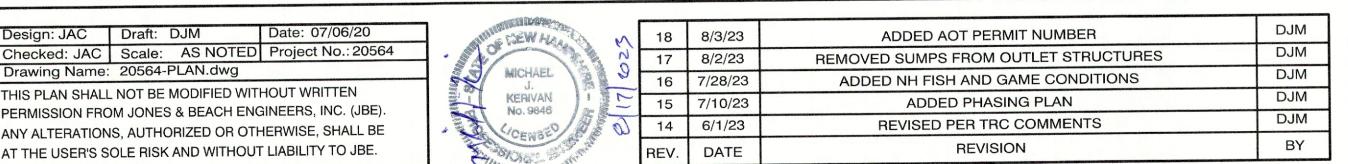
- SELECTED BACK FILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS AND ANTI SEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES, TO PREVENT DAMAGE FROM UNEQUAL LOADING. THE PLACING AND SPREADING OF FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL BROUGHT UP IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED. THE 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. THE BONDING SURFACE SHALL BE TREATED THE SAME AS THAT SPECIFIED FOR THE FOUNDATION SO AS TO INSURE A GOOD BOND WITH THE NEW FILL. THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SURROUNDING MATERIAL. IF IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE CENTER AND UPSTREAM PARTS OF THE FILL. IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELEVATIONS SHOWN ON
- 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 -- CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREAS OR EACH LAYER OF FILL TO ENSURE THAT THE REQUIRED COMPACTION IS OBTAINED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTAIN THE REQUIRED COMPACTION. IF A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY. 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. FILL ADJACENT TO CONCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE LOAD.
- PROTECTION -- A PROTECTIVE COVER OF VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, AND BORROW AREA IF SOIL AND CLIMATIC CONDITIONS PERMIT. IF SOIL OR CLIMATIC CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NON-VEGETATIVE MEANS SUCH AS MULCHES OR GRAVEL MAY BE USED. IN SOME PLACES, TEMPORARY VEGETATION MAY BE USED UNTIL CONDITIONS PERMIT ESTABLISHMENT OF PERMANENT VEGETATION. THE EMBANKMENT AND SPILLWAY SHALL BE FENCED IF NECESSARY TO PROTECT THE VEGETATION.
- SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING SHALL COMPLY WITH THE APPROPRIATE VEGETATIVE BMPS
- CONCRETE -- THE MIX DESIGN AND TESTING OF CONCRETE SHALL BE CONSISTENT WITH THE STRENGTH REQUIREMENTS OF THE JOB. MIX REQUIREMENTS OR NECESSARY STRENGTH SHALL BE SPECIFIED. THE TYPE OF CEMENT, AIR ENTRAPMENT, SLUMP, AGGREGATE, OR OTHER PROPERTIES SHALL BE SPECIFIED IF NECESSARY, ALL CONCRETE IS TO CONSIST OF A WORKABLE MIX THAT CAN BE PLACED AND FINISHED IN AN ACCEPTABLE MANNER. NECESSARY CURING SHALL SPECIFIED. REINFORCING STEEL SHALL BE PLACED AS INDICATED ON THE PLANS AND SHALL BE HELD SECURELY IN PLACE DURING CONCRETE PLACEMENT. SUB GRADES AND FORMS SHALL BE INSTALLED TO LINE AND GRADE, AND THE FORMS SHALL BE MORTAR TIGHT AND UNYIELDING AS THE CONCRETE IS PLACED.
- BERMS AND WEIRS SEPARATING THE FOREBAY AND TREATMENT POND SHOULD BE CONSTRUCTED WITH CLAY, OR NON-CONDUCTIVE SOILS, AND/OR A FINE GEOTEXTILE, OR SOME COMBINATION THEREOF, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THESE EARTHEN DIVIDERS.
- CONSTRUCTION OF THE WET PONDS WILL REQUIRE SIGNIFICANT LEDGE EXCAVATION. LEDGE SHALL BE REMOVED CAREFULLY AND SHALL BE REMOVED TO A DEPTH OF 3" BELOW THE BOTTOM OF THE POND. AN IMPERMEABLE LINER SHALL BE PLACED AS SPECIFIED IN LEDGE LOCATIONS IN ORDER TO PREVENT CONTACT BETWEEN LEDGE AND THE PERMANENT POOL, WHICH WOULD IMPEDE THE INTENDED FUNCTIONING OF THE SYSTEM.



- 1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
- 2. NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND TOWN SPECIFICATIONS.
- 3. ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D-1557.

DRAINAGE TRENCH

NOT TO SCALE



STRUCTURE FOR REVIEW BY THE TYPICAL INLET TRASH RACKS NOT TO SCALE POND STRUCTURE COVER AS SHOWN - STAINLESS STEEL HINGE SLOT FOR 1/4" ORIFICE PLATE -PAINTED ANGLE IRON -- #5 REBAR @ 4"o.c. TRASHRACK FRAME - ANGLE IRON PAINTED ANGLE IRON 1/2" SLOT FOR 1/4" ORIFICE PLATE TRASHRACK FRAME--TRASH RACK OF ANGLE IRON AND REBAR ANGLE IRON S.S. BOLTED ON CONCRETE FOR TRASH RACK PLACEMENT PIPE SIZE U 5 REBAR -(J) ORIFICE SIZE 6" WALLS (TYP.) POND BOTTOM A) ORIFICE SIZE #5 REBAR o 24" o CONCRETE SLAB SIDE VIEW POND STRUCTURE COVER FRONT VIEW 1/2" SLOT FOR TOP VIEW 1/4" ORIFICE PLATE -APPROXIMATE LIST OF MATERIALS \oplus (J) | (K) (E) . 3 C.Y. - 5000 PSI CONCRETE 198.83 | 199.0 | 198.33 | 12" | 7.5" | 199.85 2. 15 ANGLE IRONS @ 4' LENGTH N/A 201.7 48" 199.0 MSDOS 1 3. REQUIRED S.S. BOLTS AND FASTENERS

200.3

STABILIZED

N/A 201.1

6.5' HIGH - DP#1

4.0' HIGH - DP#2

- TRASH RACK

MSDOS 2

PO Box 219

Stratham, NH 03885

- 7. 32 #4 REBARS @ 4.5' LENGTH REINFORCING STEEL SHALL CONSIST OF A SINGLE LAYER OF HORIZONTAL AND VERTICAL PLACED #4 REBAR @
- CONCRETE BOX TO BE CONSTRUCTED OR PRECAST OF EQUAL DIMENSIONS AND REINFORCING. CONCRETE SLAB TO BE CONSTRUCTED ALONG WITH BASE, FOR PRECAST BOX, A SLOTTED CONCRETE SLAB TO
- 4. SECTION JOINTS AND PIPE OPENING SHALL BE SEALED WATERTIGHT WITH MORTAR BY CONTRACTOR.
- MULTI-STAGE DISCHARGE OUTLET STRUCTURE (MSDOS)

4. 1/4" STEEL PLATE WITH DRILLED ORIFICES

6. 48 #5 REBARS @ 1', 2' AND 3' LENGTHS

5. 1 C.Y. - CRUSHED STONE FOR BASE

NOT TO SCALE

- 5. ALL EXPOSED REBAR TO BE PAINTED WITH RUST-RESISTANT PAINT, COLOR AT CONTRACTOR'S DISCRETION. TO BE SUPPLIED BY CAPITAL CONCRETE PRODUCTS OF HENNIKER, N.H., (1-603-428-3218) OR EQUAL. STRUCTURE TO HAVE TEMPORARY PLYWOOD INSTALLED IN THE ORIFICE PLATE SLOT UNTIL THE SITE IS
- STRUCTURE IS TO BE DESIGNED FOR H20 LOADING. 9. SOIL UNDERLYING THE STRUCTURE IS TO BE COMPACTED TO 95% MODIFIED PROCTOR.
- 10. TRASH RACK TO PROTECT ALL ORIFICES 6" OR LESS IN DIAMETER.

CONST 4'X4' GRATE 6"

STAINLESS-

STEEL CLIPS

1) ALL OUTLET STRUCTURES SHALL

CONCRETE STRENGTH OF 4,000 PSI @

2) THE CONTRACTOR SHALL SUBMIT

BE PRE CAST WITH A MINIMUM

SHOP DRAWINGS FOR EACH

28 DAYS.

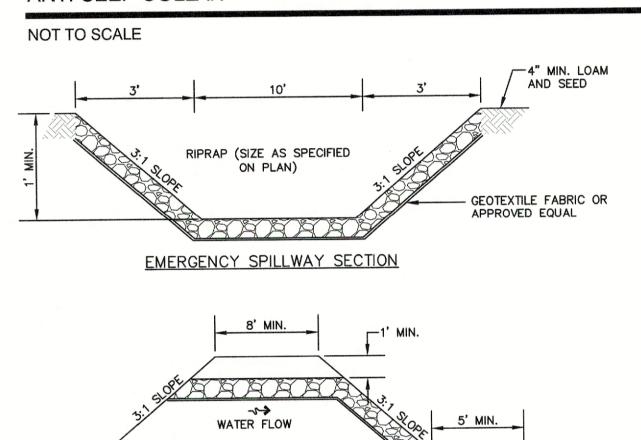
REBAR

SPACING EACH WAY #5

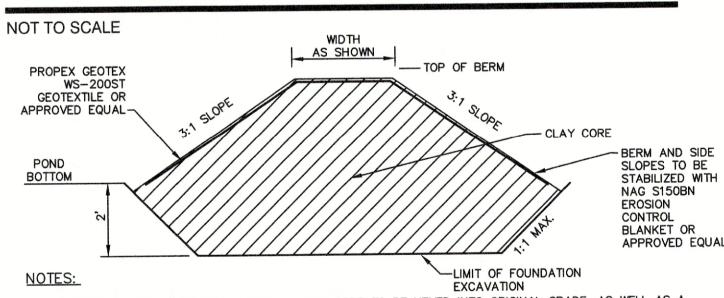
4" LOAM (MIN) COVER AS SPECIFIED ANIT-SEEP COLLAR-AS SPECIFIED FI FXIBI F COUPLING-- RESEAL WITH CLAY MATERIAL SAME AS SPECIFICATIONS FOR CLAY CORE IN BERM ANTI-SEEP COLLARS TO BE AGRI-DRAIN ITEM #ASCO6, 'RIPLEY'S DAM', OR APPROVED EQUIVALENT-

- 1. CONTRACTOR SHALL INSTALL COLLAR(S) PER MANUFACTURER'S SPECIFICATIONS.
- 2. CONTRACTOR SHALL ENSURE A WATERTIGHT SEAL BETWEEN THE COLLAR(S) AND PIPE(S).
- 3. ANTI-SEEP COLLARS SHALL BE PLACED $\pm 15^{\circ}$ AND $\pm 25^{\circ}$ DOWNSTREAM OF THE CULVERT INLETS, UNLESS OTHERWISE SPECIFIED. WHEN A CLAY CORE IS SPECIFIED, A COLLAR SHALL BE INSTALLED ON BOTH SIDES OF THE CORE.

ANTI-SEEP COLLAR



EMERGENCY SPILLWAY



GEOTEXTILE FABRIC OR

EMERGENCY SPILLWAY PROFILE

APPROVED EQUAL

- BERM SHALL BE CONSTRUCTED WITH A CLAY CORE TO BE KEYED INTO ORIGINAL GRADE, AS WELL AS A FINE GEOTEXTILE, TO AVOID WATER SEEPAGE AND SOIL PIPING THROUGH THE EARTHEN DIVIDER.
- 2. THE ENTIRE EMBANKMENT AREA OF EACH POND SHALL BE EXCAVATED A MINIMUM OF 2', STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 92% OF ASTM D-1557, AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3%, AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED FOR ANY REASON.
- 3. CLAY CORE MATERIAL SHALL BE CLEAN SILTY-CLAY BORROW FREE OF ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL CONTAIN NO ROCKS OR LUMPS OVER THREE INCHES (3") IN DIAMETER. THIS MATERIAL SHALL BE INSTALLED IN 6" LIFTS COMPACTED TO 92% OF ASTM D-1557, AND SHALL MEET THE FOLLOWING SPECIFICATIONS: 6" PASSING 100%, #4 SIEVE 95-100%, #40 SIEVE 60-90%, #100 SIEVE 40-60%, #200 SIEVE 25-45% (OF THE FRACTION PASSING THE #4 SIEVE). THE CLAY COMPONENT SHALL HAVE "A PLASTICITY INDEX OF AT LEAST 8 AND A HYDRAULIC CONDUCTIVITY OF 10 TO THE -6 CM/SEC.
- COMPACTION AND MATERIALS TESTING SERVICES SHALL BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE OWNER.

POND BERM WITH CLAY CORE

NOT TO SCALE

DETAIL SHEET Designed and Produced in NH Plan Name:

199.93 200.1 199.43 10" N/A N/A

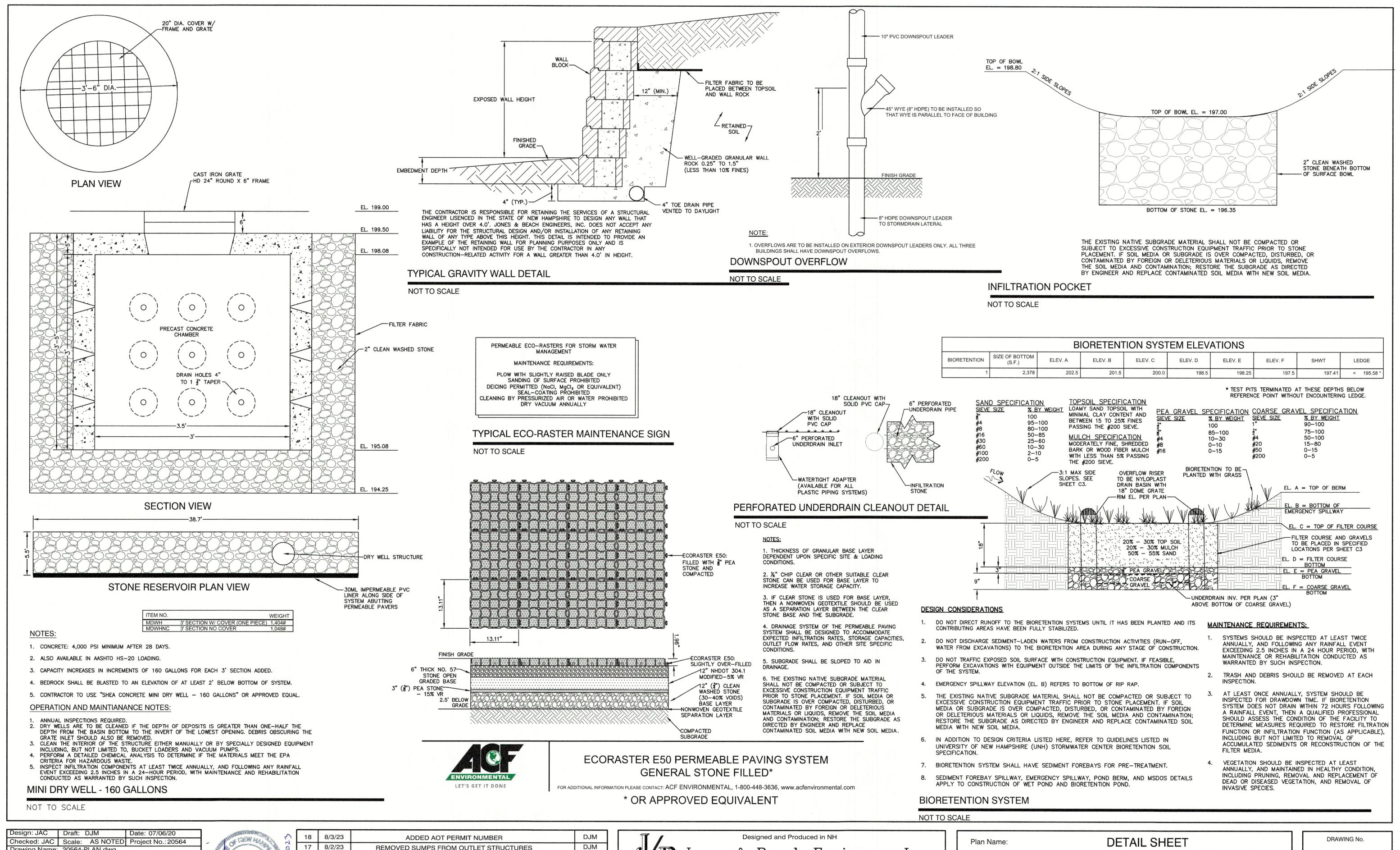
603-772-4746 85 Portsmouth Ave. Civil Engineering Services FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Owner of Record:

WHITE ROCK PLACE Project: 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 41 OF 61 JBE PROJECT NO. 20564

DRAWING No.



Checked: JAC Scale: AS NOTED Project No.: 20564
Drawing Name: 20564-PLAN.dwg
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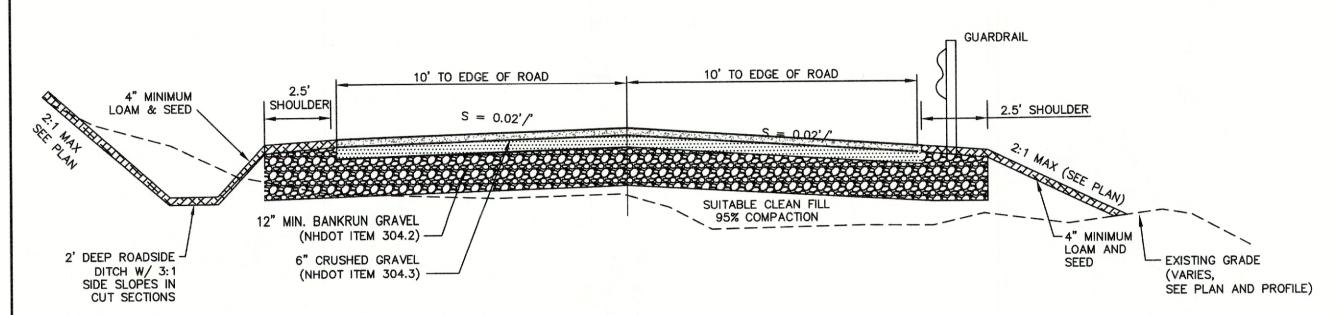
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49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

D3

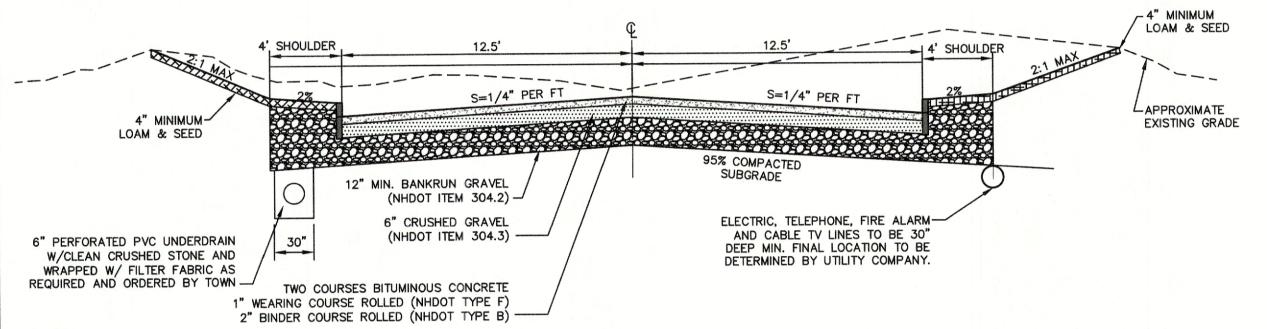
SHEET 42 OF 61

JBE PROJECT NO. 20564



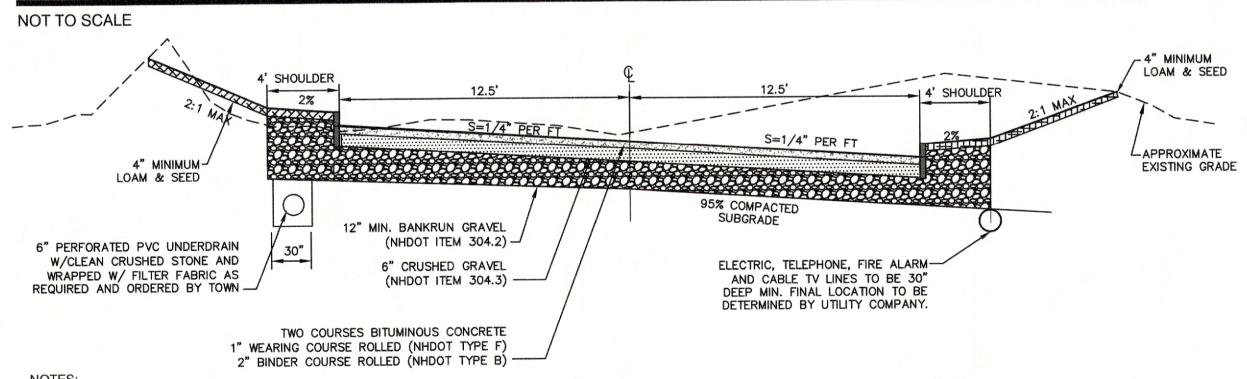
- REMOVE ALL ORGANICS, TOPSOIL AND MATERIAL YIELDING TO A 10 TON ROLLER. SUBBASE AREAS THAT CONTAIN UNSUITABLE MATERIALS MUST BE EXCAVATED TO A DEPTH NO LESS THAN 36" BELOW FINISH GRADE AND BE REPLACED WITH GRAVEL COMPACTED TO 95%.
- 2. ALL MATERIALS TO BE AS SPECIFIED PER TOWN AND NHDOT STANDARDS, WHICHEVER IS MOST STRINGENT. GRADATION AND COMPACTION TEST RESULTS (95% MIN.) SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
- 3. TOWN MAY REQUIRE UNDERDRAIN, ADDITIONAL GRAVEL AND/OR ADDITIONAL DRAINAGE IF SOIL CONDITIONS WARRANT.
- 4. LOAM AND/OR UNSUITABLE MATERIAL SHALL BE REMOVED TO A SOLID BASE MATERIAL.
- 5. COMPACTION SHALL BE PERFORMED TO 95% OF THE MATERIALS' MODIFIED PROCTOR VALUE.
- TYPICAL ROADWAY SECTION (EMERGENCY ACCESS DRIVE STA. 1+93 9+67)

NOT TO SCALE



- 1. REMOVE ALL ORGANICS, TOPSOIL AND MATERIAL YIELDING TO A 10 TON ROLLER. SUBBASE AREAS THAT CONTAIN UNSUITABLE MATERIALS MUST BE EXCAVATED TO A DEPTH NO LESS THAN 36" BELOW FINISH GRADE AND BE REPLACED WITH GRAVEL COMPACTED TO 95%.
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TYPICAL ROADWAY SECTION (WHITE ROCK LANE, STA. 1+46 - 9+95.40)



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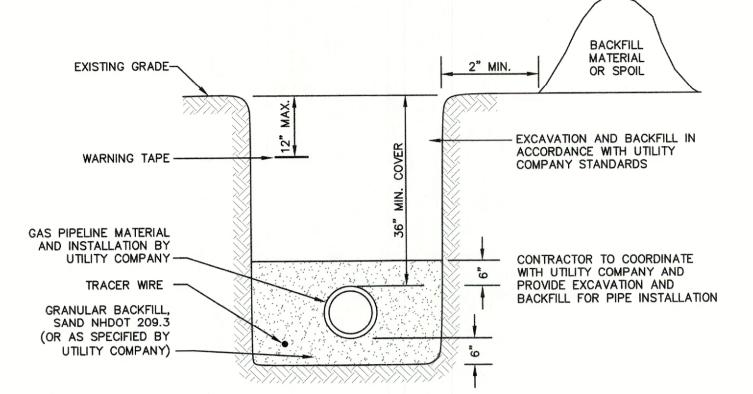
TYPICAL ROADWAY SECTION (WHITE ROCK LANE, STA. 0+00 - 1+46)

NOT TO SCALE

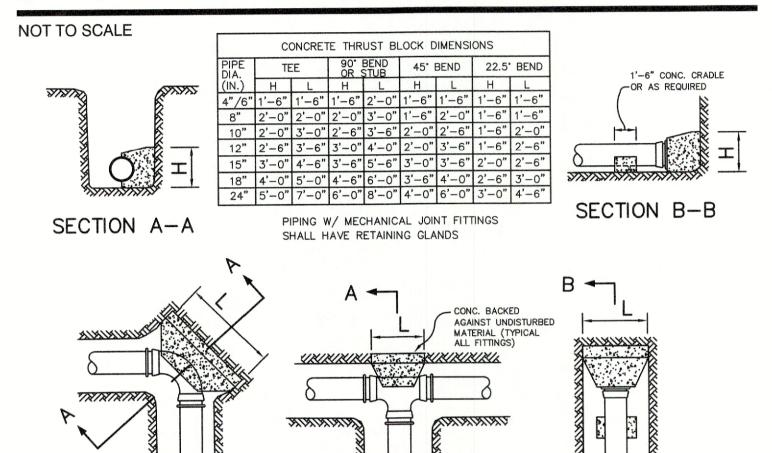
| Design: JAC | Draft: DJM | | Date: 07/06/20 | | | |
|---|------------------------------|----------|--------------------|--|--|--|
| Checked: JAC | Scale: | AS NOTED | Project No.: 20564 | | | |
| Drawing Name: | Drawing Name: 20564-PLAN.dwg | | | | | |
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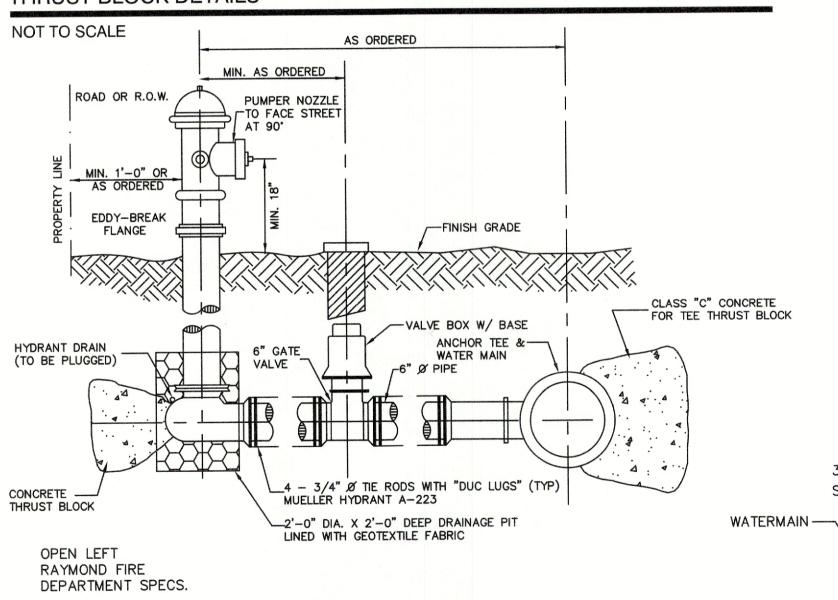
GAS TRENCH



PLAN

PLAN

THRUST BLOCK DETAILS

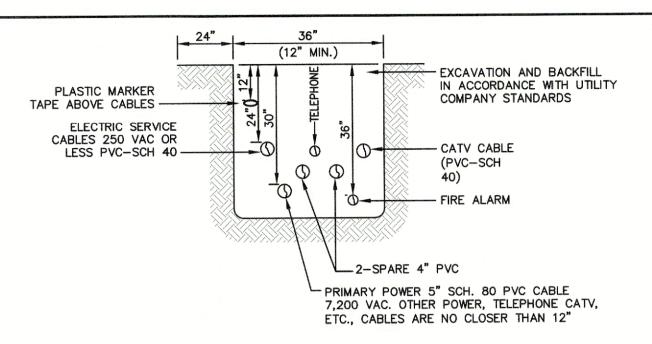


1. ALL PIPE FITTINGS TO BE D.I. PRESSURE CLASS 350, THICKNESS CLASS 52.

- . HYDRANT TO BE PAINTED RED WITH WHITE "REFLECTOR" PAINT ON BONNET. 3. MECHANICAL JOINTS SHALL HAVE MEGALUG RETAINING GLANDS AS MADE BY EBBA OR APPROVED EQUAL.
- STEAMER NOZZLE TO BE "STORCH" TYPE.
 NATIONAL STANDARD THREAD.

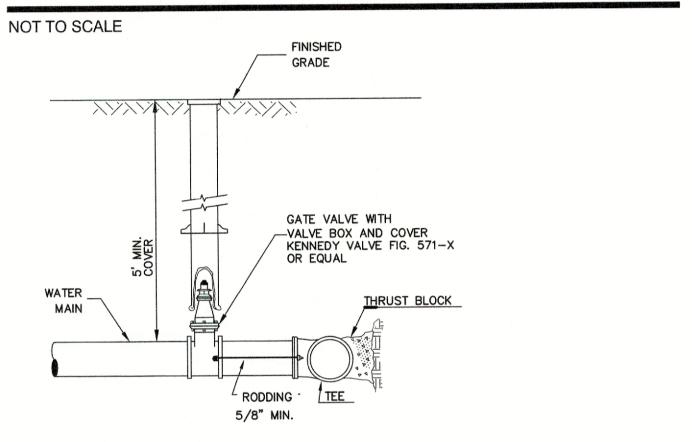
HYDRANT INSTALLATION

NOT TO SCALE

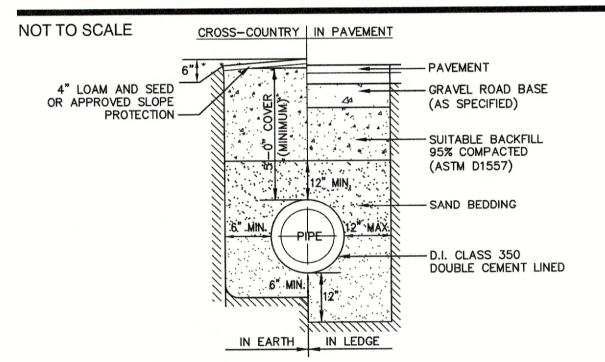


NOTE: ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.

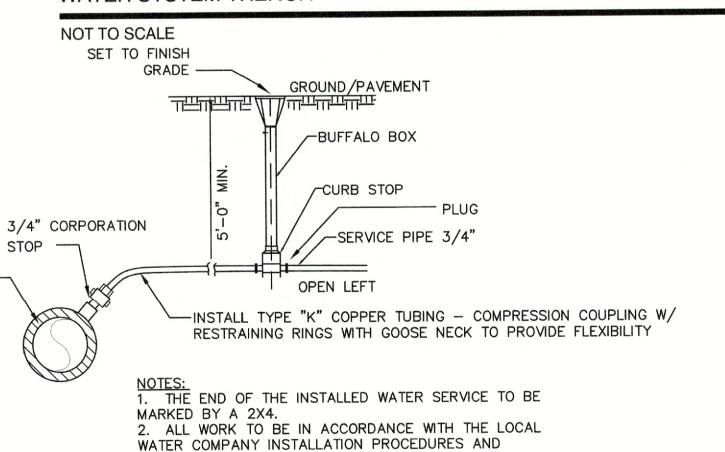
UTILITY TRENCH



BURIED GATE VALVE DETAIL



WATER SYSTEM TRENCH



SPECIFICATIONS. TYPICAL WATER SERVICE CONNECTION

NOT TO SCALE

Designed and Produced in NH

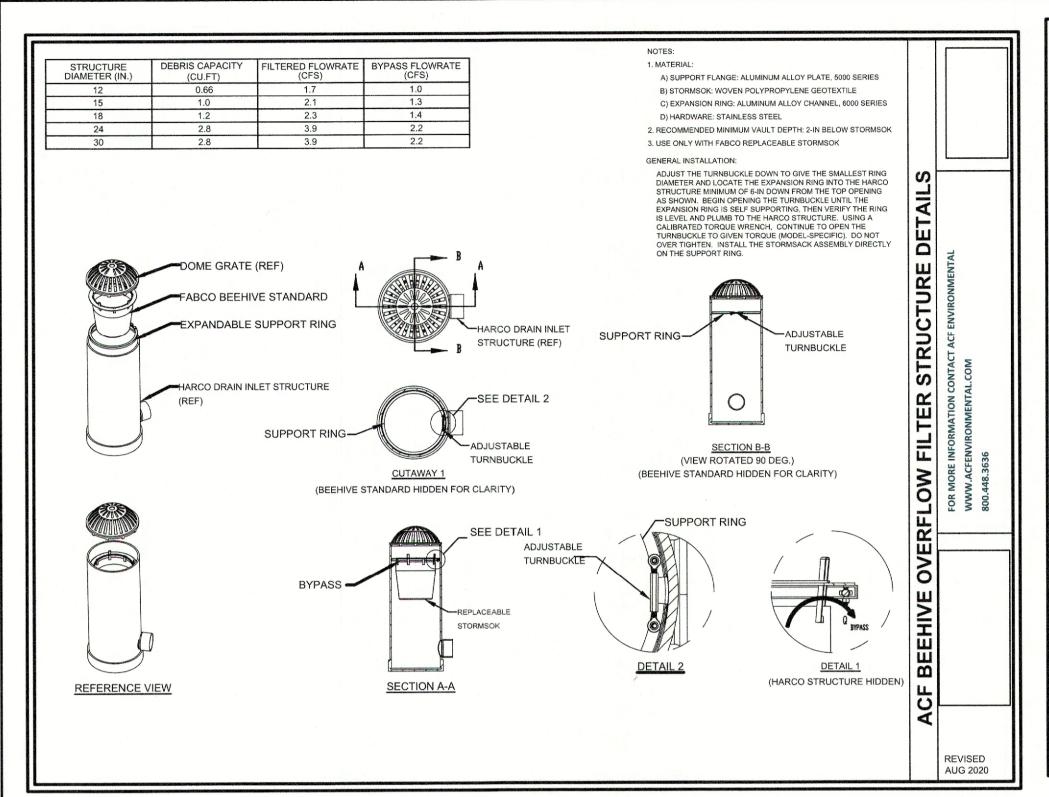
Jones & Beach Engineers, Inc.

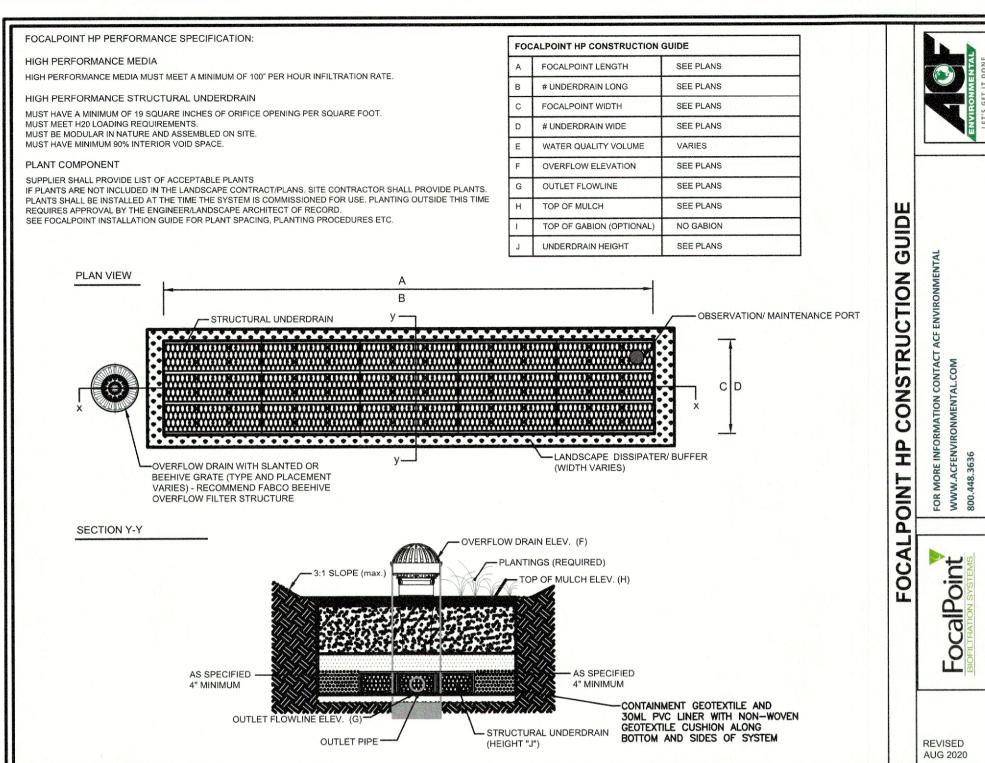
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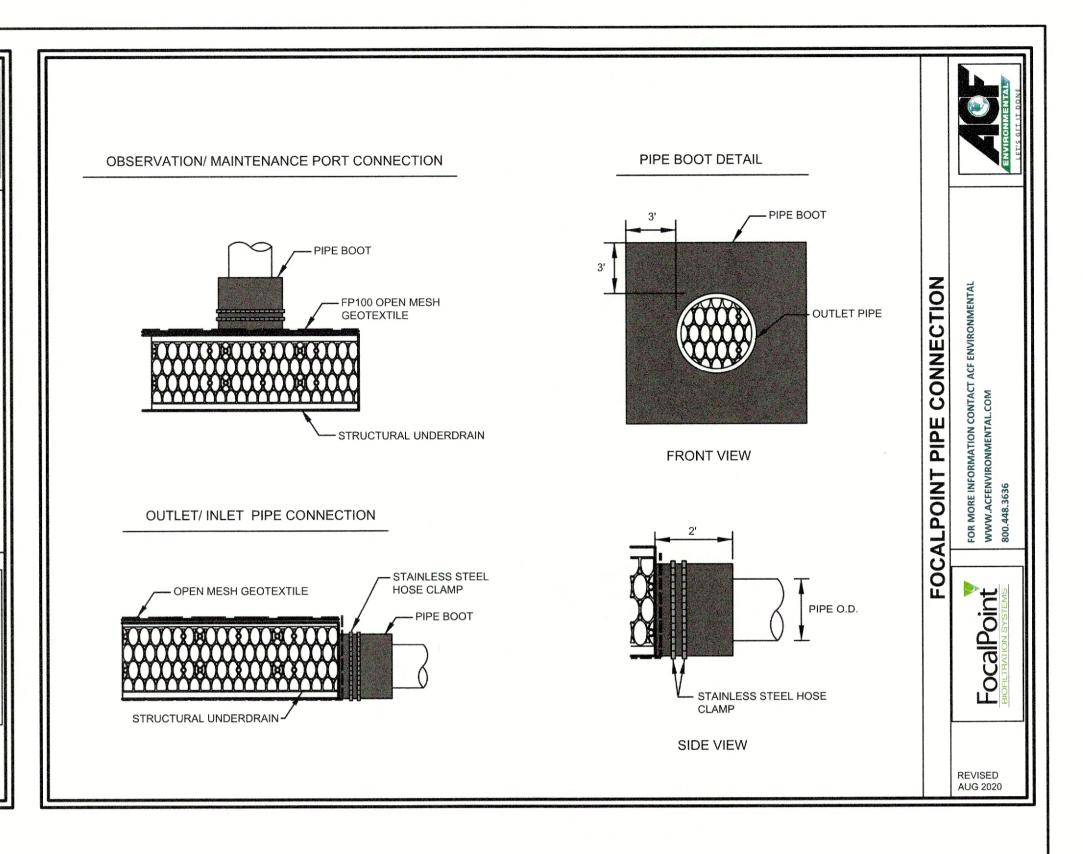
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| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

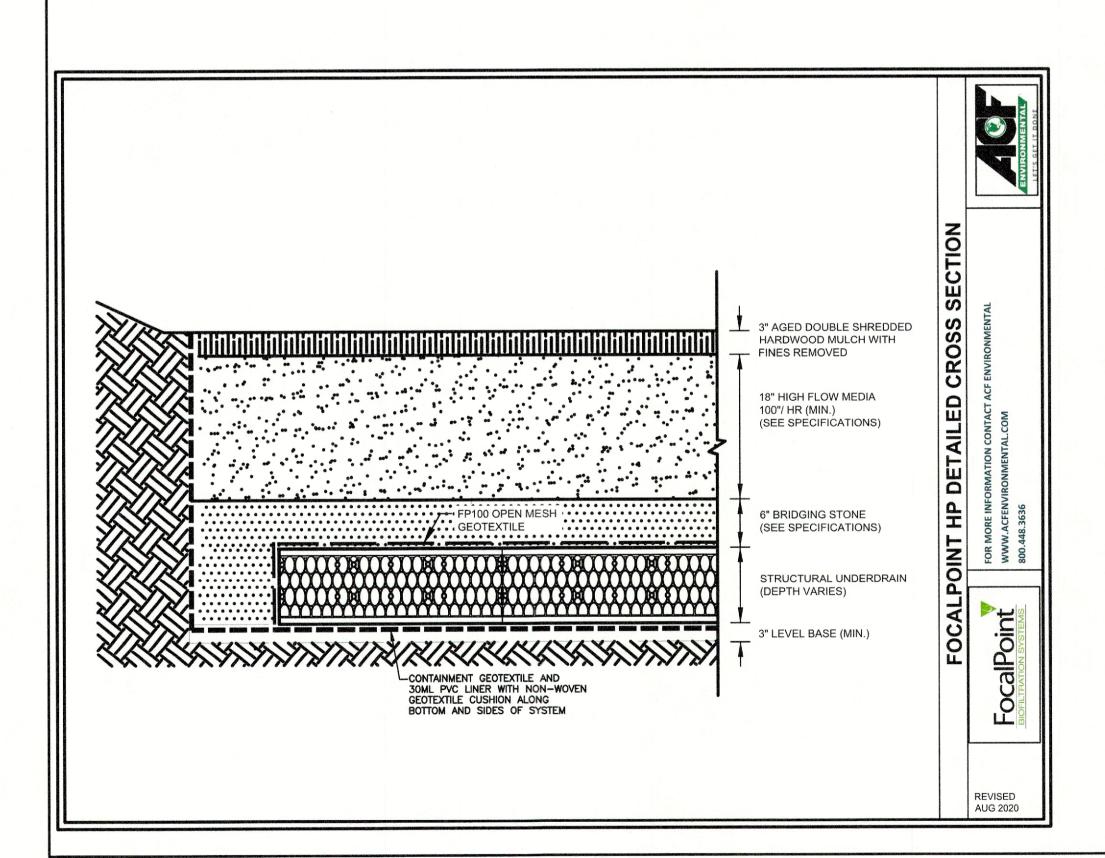
SHEET 43 OF 61 JBE PROJECT NO. 20564

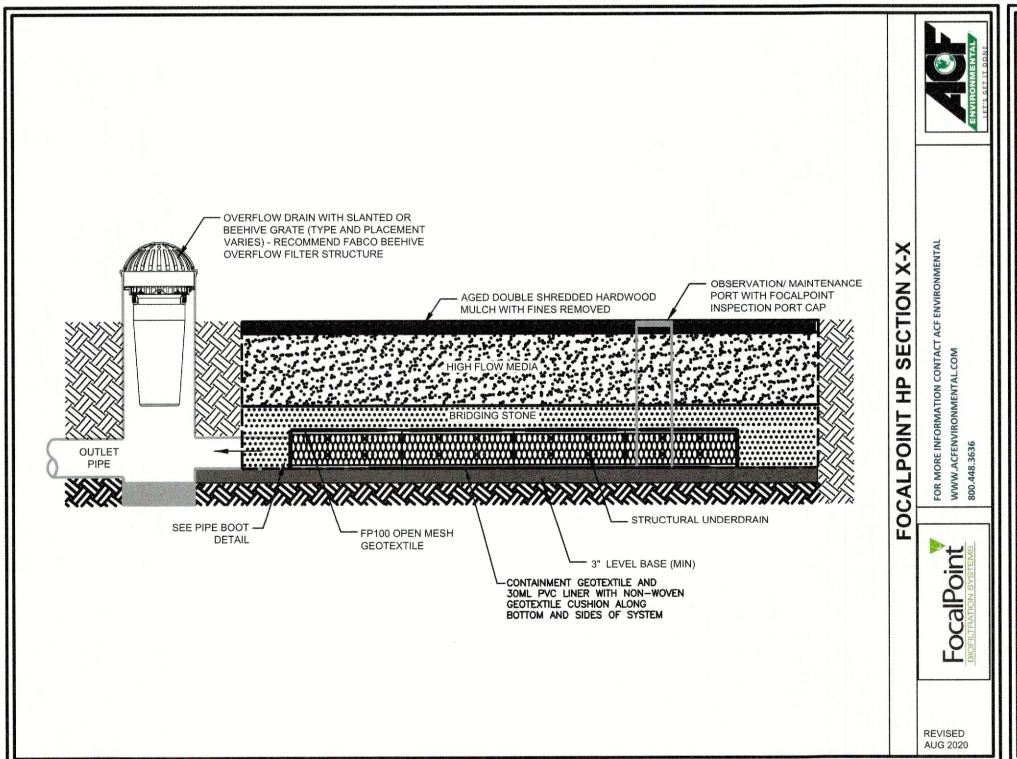
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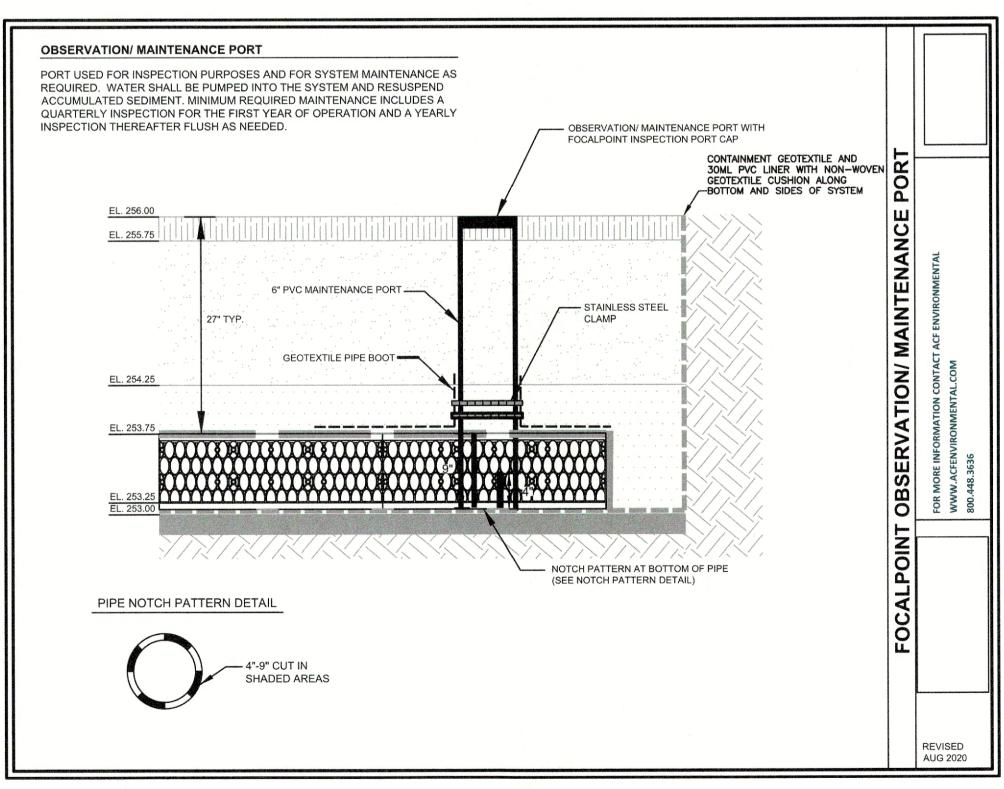






PO Box 219

Stratham, NH 03885



| Design: JAC | Draft: DJM | Date: 07/06/20 |
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| Checked: JAC | Scale: AS NOTE | D Project No.: 20564 |
| Drawing Name | 20564-PLAN.dwg | |

ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE

AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE



| 2 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|----|------|---------|--------------------------------------|-----|
| 25 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
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| - | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 2 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |



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| Plan Name: | DETAIL SHEET |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

DRAWING No. SHEET 44 OF 61 JBE PROJECT NO. 20564

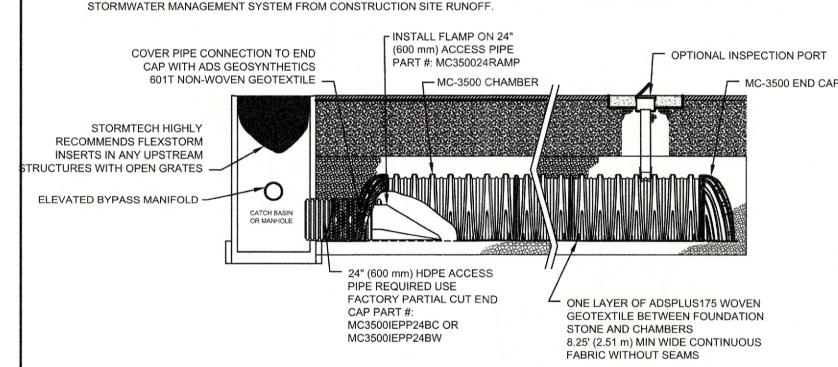
MC-3500 STORMTECH CHAMBER **SPECIFICATIONS**

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE
- CHAMBERS SHALL BE DESIGNED. TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO

- REQUIREMENTS FOR HANDLING AND INSTALLATION:
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
- TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C). CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
- THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
- THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE"
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
- STORMTECH RECOMMENDS 3 BACKFILL METHODS: STONESHOOTER LOCATED OFF THE CHAMBER BED
- BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE. BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- 4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE
- MAINTAIN MINIMUM 6" (150 MM) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- 9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING. 10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE
- 11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE



INSPECTION & MAINTENANCE

DESIGN ENGINEER.

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS
 - (OPTIONAL) A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2, IF NOT, PROCEED TO STEP 3,
 - B. ALL ISOLATOR PLUS ROWS B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 -) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- 2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

MC-3500 ISOLATOR ROW PLUS DETAIL

NOT TO SCALE

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED: NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE"
- WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE"
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY. STORMTECH STORMTECH -- STORMTECH END CAP CHAMBERS -- STORMTECH CHAMBER CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT. **END CAP OUTLET MANIFOLD** 12" (300 mm) MIN SEPARATION 12" (300 mm) MIN WIDTH 12" (300 mm) MIN INSERTION ---CONCRETE COLLAR NOT REQUIRED FOUNDATION STONE FOR UNPAVED APPLICATIONS BENEATH CHAMBERS CONCRETE COLLAR -MANIFOLD STUB 8" NYLOPLAST INSPECTION PORT MANIFOLD HEADER PAVEMENT BODY (PART# 2708AG4IPKIT) OR TRAFFIC RATED BOX W/SOLID ADS GEOSYNTHETICS LOCKING COVER **601T NON-WOVEN** SECTION A-A DUAL WALL GEOTEXTILE · CONCRETE SLAB PERFORATED SDR 35 PIPE 6" (150 mm) MIN THICKNESS STORMTECH UNDERDRAIN END CAP -- MANIFOLD HEADER (100 mm) INSERTA TEE TO BE CENTERED ON CORRUGATION VALLEY MANIFOLD STUB STORMTECH CHAMBER -FOUNDATION STONE BENEATH CHAMBERS 12" (300 mm) 12" (300 mm) MIN SEPARATION MIN INSERTION ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL - 1 - 6" HDPE UNDERDRAIN FOR A PROPER FIT IN END CAP OPENING. SECTION B-B

STORMTECH MC SERIES END CAP INSERTION DETAIL

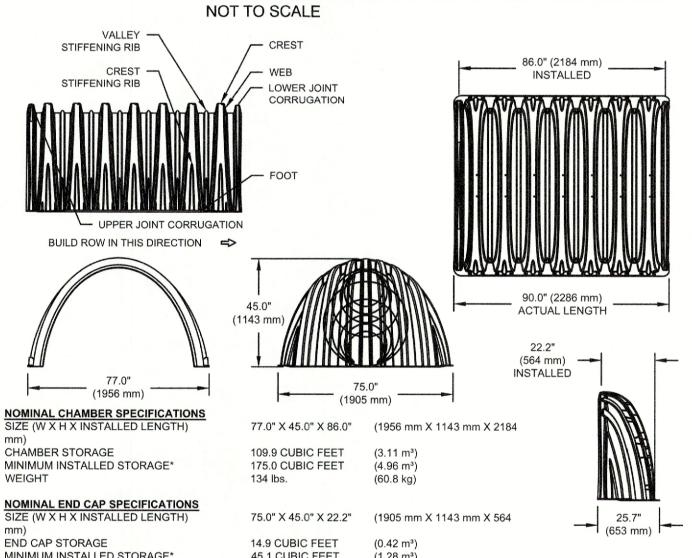
NOT TO SCALE

STORMTECH MC-3500 UNDERDRAIN DETAIL

NOT TO SCALE

MC SERIES 4" PVC INSPECTION PORT DETAIL

INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.



MINIMUM INSTALLED STORAGE

45.1 CUBIC FEET (1.28 m³)

(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"

49 lbs.

PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T" END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W" END CAPS WITH A WELDED CROWN PLATE END WITH "C" DART# STUR

| PARI# | STUB | В | C | |
|----------------------|--|-------------------|---------------|---|
| MC3500IEPP06T | 6" (150 mm) | 33.21" (844 mm) | | |
| MC3500IEPP06B | 6 (150 mm) | | 0.66" (17 mm) | |
| MC3500IEPP08T | 8" (200 mm) | 31.16" (791 mm) | | ##// / I |
| MC3500IEPP08B | 6 (200 mm) | | 0.81" (21 mm) | |
| MC3500IEPP10T | 10" (250 mm) | 29.04" (738 mm) | **** | |
| MC3500IEPP10B | 10 (250 mm) | | 0.93" (24 mm) | |
| MC3500IEPP12T | 12" (200 mm) | 26.36" (670 mm) | | Total Control of the |
| MC3500IEPP12B | 12" (300 mm) | | 1.35" (34 mm) | |
| MC3500IEPP15T | 15" (375 mm) | 23.39" (594 mm) | | CUSTOM PARTIAL CUT INVERTS |
| MC3500IEPP15B | | | 1.50" (38 mm) | ARE AVAILABLE UPON REQUEST. |
| MC3500IEPP18TC | | 20.03" (509 mm) | | INVENTORIED MANIFOLDS INCLUDE |
| MC3500IEPP18TW | 19" (450 mm) | 20.03 (509 11111) | | 12-24" (300-600 mm) SIZE ON SIZE |
| MC3500IEPP18BC | 16 (450 11111) | 18" (450 mm) | 1.77" (45 mm) | AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS, CUSTOM |
| MC3500IEPP18BW | | | 1.77 (45 mm) | INVERT LOCATIONS ON THE |
| MC3500IEPP24TC | Cate Constitution of the C | 14.48" (368 mm) | | MC-3500 END CAP CUT IN THE FIELD |
| MC3500IEPP24TW | 24" (600 mm) | 14.46 (366 11111) | | ARE NOT RECOMMENDED FOR PIPE |
| MC3500IEPP24BC | 24 (600 mm) | | 2.06" (52 mm) | SIZES GREATER THAN 10" (250 mm). |
| MC3500IEPP24BW | | | 2.06" (52 mm) | THE INVERT LOCATION IN COLUMN |
| MC3500IEPP30BC | 30" (750 mm) | | 2.75" (70 mm) | 'B' ARE THE HIGHEST POSSIBLE |
| NOTE: ALL DIMENSIONS | ARE NOMINAL | | | FOR THE PIPE SIZE. |

MC-3500 TECHNICAL SPECIFICATIONS

NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

| | MATERIAL LOCATION | TERIAL LOCATION DESCRIPTION | | COMPACTION / DENSITY REQUIREMENT |
|---|---|--|---|---|
| D | FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER | ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS. | N/A | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| С | INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER. | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER. | AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOF DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. |
| В | EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE. | CLEAN, CRUSHED, ANGULAR STONE | AASHTO M43 ¹ 3, 4 | NO COMPACTION REQUIRED. |
| А | FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER. | CLEAN, CRUSHED, ANGULAR STONE | AASHTO M43 ¹ 3, 4 | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,} |

PLEASE NOTE: 1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".

- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGNS, CONTACT
- STORMTECH FOR COMPACTION REQUIREMENTS. 4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S
- ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS . VARIES PER GRADING PLAN (265.6 MIN.) *TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED TALLATIONS WHERE RUTTING FROM VEHICLES MAY OCC 18" (450 mm) INCREASE COVER TO 24" (600 mm TOP OF STONE EL. 264.7 12" (300 mm) MIN PERIMETER STONE -(SEE NOTE 4) **EXCAVATION WALL** (1143 mm) (CAN BE SLOPED OR VERTICAL) CHAMBER EL. 260.0 BOTTOM OF STONE EL. 259.25 DEPTH OF STONE TO BE DETERMINED 6" (150 mm) MIN BY SITE DESIGN ENGINEER 9" (230 mm) MIN 77" (1956 mm) ——— END CAP (150 mm) MIN SUBGRADE SOILS -(SEE NOTE 3)

NOTES:

- 1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- 2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS. TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%.
- AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

STORMTECH MC-3500 CROSS SECTION DETAIL

NOT TO SCALE

| Design: JAC | Draft: | DJM | Date: 07/06/20 | | |
|--|--------|-----------|--------------------|--|--|
| | | | Project No.: 20564 | | |
| Drawing Name: | 20564- | -PLAN.dwg | | | |
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| PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). | | | | | |
| ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE | | | | | |

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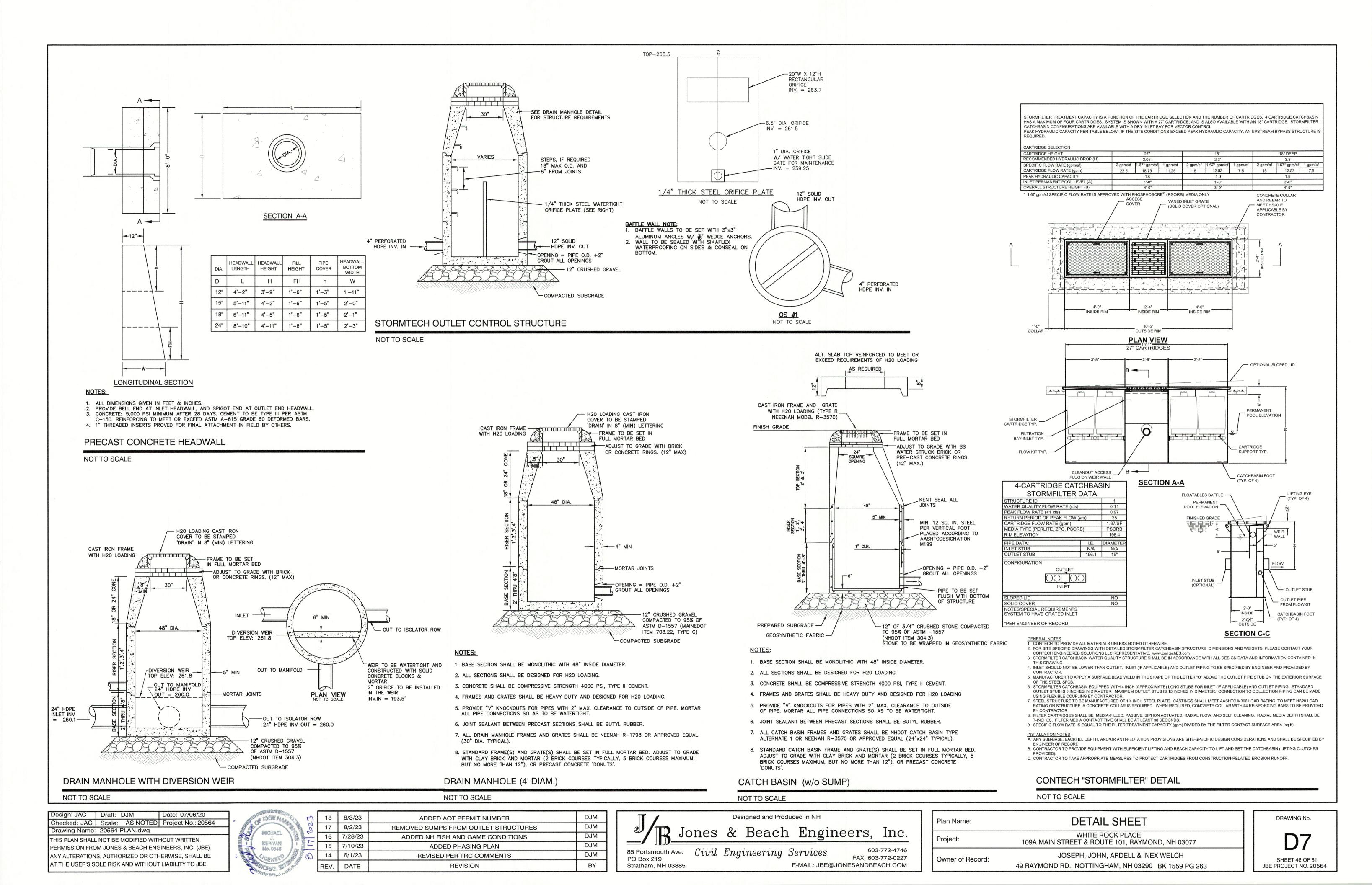


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|----|------|---------|--------------------------------------|-----|
| 2 | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| 2 | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 7 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 20 | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 30 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |
| | | | | |

Designed and Produced in NH 85 Portsmouth Ave. Civil Engineering Services FAX: 603-772-0227 PO Box 219 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

| Plan Name: | DETAIL SHEET | |
|--------------------|---|------------------|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | B3-1473-1-10-1-0 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH | |
| Owner of flectord. | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 | |

DRAWING No. SHEET 45 OF 61 JBE PROJECT NO. 20564



THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED, EXCEPT THAT MORE AREA MAY BE EXPOSED AS APPROVED BY NHDES IF AN ENVIRONMENTAL MONITOR IS

EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.

- ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS, DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
- SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
- AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE—VEGETATED.
- AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS
- ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN S150BN EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- AFTER OCTOBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
- b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
- d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
- FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE BELOW).
- PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL
- IN ORDER TO ENSURE THE STABILITY OF THE SITE AND EFFECTIVE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES SPECIFIED IN THE PLANS FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL BE IN STRICT COMPLIANCE WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS IN ADDITION TO THOSE CALLED FOR IN THE SWPPP:
 - a. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE SITE SPECIFIC PERMIT ("PERMIT").
 - b. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY 1/2 INCH OR GREATER RAIN EVENT (I.E. 1/2 INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
 - c. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485 A:17 AND ALL APPLICABLE DES PERMIT
 - d. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (MICHAEL SCHLOSSER AT: MICHAEL.J.SCHLOSSER@DES.NH.GOV)
 - e. THE MONITOR SHALL MEET WITH DES TO DECIDE UPON A REPORT FORMAT. THE REPORT FORMAT SHALL BE REVIEWED AND APPROVED BY DES PRIOR TO THE START OF CONSTRUCTION.

BLASTING BEST MANAGEMENT PRACTICES

ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPS) TO PREVENT CONTAMINATION OF GROUNDWATER INCLUDING PREPARING, REVIEWING AND FOLLOWING AN APPROVED BLASTING PLAN; PROPER DRILLING, EXPLOSIVE HANDING AND LOADING PROCEDURES; OBSERVING THE ENTIRE BLASTING PROCEDURES; EVALUATING BLASTING PERFORMANCE; AND HANDLING AND STORAGE OF BLASTED ROCK.

- LOADING PRACTICES. THE FOLLOWING BLASTHOLE 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 SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
- (b) EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF SITE DISPOSAL
- (c) SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF SITE DISPOSAL
- (d) LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
- (e) LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
- (f) EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
- IN WRITING BY THE ENGINEER) ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS 2. EXPLOSIVE SELECTION. THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
 - (a) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION (b) EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE
 - PRODUCT UPON GROUNDWATER. PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
 - 4. MUCK PILE MANAGEMENT. MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THÉ FOLLOWING MEASURES: (a) REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
 - CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER. SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED

MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT

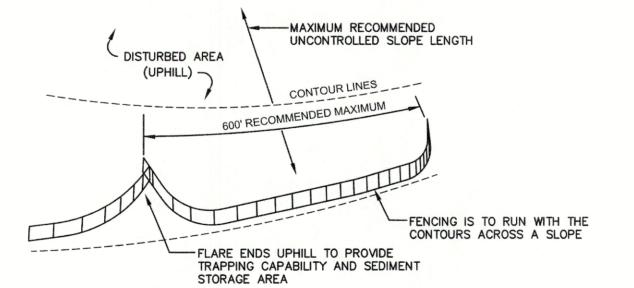
SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:

ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.

WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.

4. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.

- (a) THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE: 1. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
- . SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY. 3. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
- 4. INSPECT STORAGE AREAS WEEKLY.
- 5. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS. 5. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS. 7. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR
- (b) THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE: I. EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED. 2. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS. 3. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
- 5. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE. (A) THE TRAINING OF ON SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING
- (a) FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF NHDES [NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6: 'BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT" OR ITS SUCCESSOR DOCUMENT.]



7. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING

2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED

3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE

4. SEDIMENT DEPOSITS THAT ARE REMOVED, OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED,

PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE DONE IMMEDIATELY.

REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.

SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

DISPOSED AS DIRECTED BY THE ENGINEER. THE AREA DISTURBED BY THE REMOVAL SHALL BE

CONSTRUCTION SPECIFICATIONS:

AREA OF EMBANKMEN CONSTRUCTION OR ANY

DISTURBED AREA TO BE

STABILIZED (UPHILL)-

- 1. WOVEN FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP, MID AND BOTTOM AND EMBEDDED IN THE GROUND A MINIMUM OF 8" AND THEN COVERED WITH SOIL.
- 2. THE FENCE POSTS SHALL BE A MINIMUM OF 48" LONG, SPACED A MAXIMUM 10' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.

-16" POST DEPTH (MIN)

- 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED 6", FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
- 4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED AND PROPERLY DISPOSED OF WHEN IT IS 6" DEEP OR VISIBLE 'BULGES' DEVELOP IN THE SILT FENCE.
- 5. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE. SILT FENCE SHALL REMAIN IN PLACE FOR 24 MONTHS.

48" HARDWOOD

SILT FENCE

NOT TO SCALE

ADDED AOT PERMIT NUMBER DJM 8/2/23 REMOVED SUMPS FROM OUTLET STRUCTURES 16 7/28/23 DJM ADDED NH FISH AND GAME CONDITIONS DJM 15 7/10/23 ADDED PHASING PLAN DJM 14 6/1/23 REVISED PER TRC COMMENTS REVISION BY

LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.

SMOOTHED AND REVEGETATED.

MAINTENANCE:

SEEDING SPECIFICATIONS

- GRADING AND SHAPING A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED)
- B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
- 2. SEEDBED PREPARATION
- A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
- B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.

ESTABLISHING A STAND

- A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES 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
 - AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT. NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT. PHOSPHATE(P205), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT. POTASH(K20), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
- (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
- B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING. C. REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED
- MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE. D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.

- A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING. B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
- 5. MAINTENANCE TO ESTABLISH A STAND A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED
- B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
- C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

| _USE | SEEDING MIXTURE 1/ | DROUGHTY | WELL DRAINED | MODERATELY WELL DRAINED | POORLY DRAINED |
|---|-----------------------|------------------------------|-----------------------------------|--|------------------------------|
| STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS | A B C | FAIR POOR POOR FAIR | GOOD GOOD GOOD EXCELLENT | GOOD FAIR EXCELLENT EXCELLENT | FAIR FAIR GOOD POOR |
| WATERWAYS, EMERGENC SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER. | | GOOD GOOD | GOOD EXCELLENT | GOOD EXCELLENT | FAIR FAIR |
| LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES. | A B C | GOOD GOOD GOOD | GOOD GOOD EXCELLENT | GOOD FAIR EXCELLENT | FAIR POOR FAIR |
| PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.) | E F | FAIR FAIR | EXCELLENT EXCELLENT | EXCELLENT EXCELLENT | <u>2/</u> 2/ |

GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

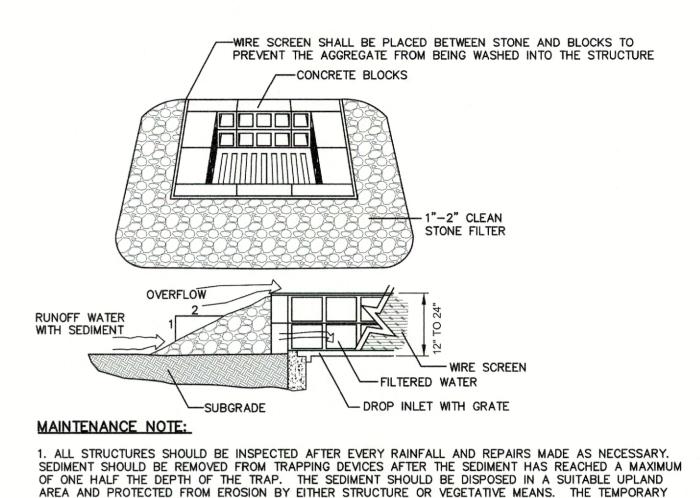
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS. NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT

/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.

SEEDING GUIDE

| MIXTURE | POUNDS PER ACRE | POUNDS PI 1.000 Sq. |
|---|----------------------------|-------------------------------------|
| A. TALL FESCUE | 20 | 0.45 |
| CREEPING RED FESCUE | 20 | 0.45 |
| RED TOP | 2 | 0.05 |
| TOTAL | 42 | 0.95 |
| B. TALL FESCUE CREEPING RED FESCUE CROWN VETCH OR | 15 10 15 | 0.35 0.25 0.35 |
| FLAT PEA | 30 | 0.75 |
| TOTAL | 40 OR 55 | 0.95 OR 1.35 |
| C. TALL FESCUE CREEPING RED FESCUE BIRDS FOOT TREFOIL TOTAL | 20 20 <u>8</u> 48 | 0.45 0.45 <u>0.20</u> 1.10 |
| D. TALL FESCUE | 20 | 0.45 |
| FLAT PEA | 30 | 0.75 |
| TOTAL | 50 | 1.20 |
| E. CREEPING RED FESCUE 1/ | 50 | 1.15 |
| KENTUCKY BLUEGRASS 1/ | 50 | 1.15 |
| TOTAL | 100 | 2.30 |
| F. TALL FESCUE 1 | 150 | 3.60 |

SEEDING RATES



TO THE INLET HAS BEEN COMPLETELY STABILIZED. TEMPORARY CATCH BASIN INLET PROTECTION (Block and Gravel Drop Inlet Sediment Filter)

TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA

NOT TO SCALE

CONSTRUCTION SEQUENCE

- PRIOR TO THE START OF ANY ACTIVITY, IT IS THE RESPONSIBILITY OF THE SITE'S SITE DEVELOPER (OR OWNER) TO FILE A NOTICE OF INTENT (NOI) FORM WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) IN ORDER TO GAIN COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. A PRE CONSTRUCTION MEETING IS TO BE HELD WITH ALL DEPARTMENT HEADS PRIOR TO THE START OF CONSTRUCTION.
- WETLAND BOUNDARIES ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION. AT LEAST A TEMPORARY CULVERT OR ROADBED TO BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.
- 3. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
- INSTALL SILT FENCING, HAY BALES AND CONSTRUCTION ENTRANCES PRIOR TO THE START OF CONSTRUCTION. THESE ARE TO BE MAINTAINED UNTIL THE FINAL PAVEMENT SURFACING AND LANDSCAPING AREAS ARE ESTABLISHED.
- 5. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
- 6. CONSTRUCT AND/OR INSTALL TEMPORARY OR PERMANENT SEDIMENT AND/OR DETENTION BASIN(S) AS REQUIRED. THESE FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUN-OFF TO THEM. 7. STRIP LOAM AND PAVEMENT, OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK PER THE RECOMMENDATIONS OF THE PROJECT
- ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY. 8. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS, INCLUDING THE CONSTRUCTION OF ANY RETAINING WALLS
- AND SOUND WALLS.
- 9. PREPARE BUILDING PAD(S) TO ENABLE BUILDING CONSTRUCTION TO BEGIN.
- 10. INSTALL THE SEWER AND DRAINAGE SYSTEMS FIRST, THEN ANY OTHER UTILITIES IN ACCORDANCE WITH THE PLAN AND DETAILS. ANY CONFLICTS BETWEEN UTILITIES ARE TO BE RESOLVED WITH THE INVOLVEMENT AND APPROVAL OF THE ENGINEER.
- 11. INSTALL INLET PROTECTION AT ALL CATCH BASINS AS THEY ARE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
- 12. ALL SWALES AND DRAINAGE STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUN-OFF DIRECTED TO THEM.
- 13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE DITCHES, CHECK DAMS, SEDIMENT TRAPS, ETC., TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ABUTTING WATERS AND/OR PROPERTY.
- 14. PERFORM FINAL FINE GRADING, INCLUDING PLACEMENT OF 'SELECT' SUBGRADE MATERIALS.
- 15. PAVE ALL PARKING LOTS AND ROADWAYS WITH INITIAL 'BASE COURSE'.
- 16. PERFORM ALL REMAINING SITE CONSTRUCTION (i.e. BUILDING, CURBING, UTILITY CONNECTIONS, ETC.)
- 17. LOAM AND SEED ALL DISTURBED AREAS AND INSTALL ANY REQUIRED SEDIMENT AND EROSION CONTROL FACILITIES (i.e. RIP RAP, EROSION CONTROL BLANKETS, ETC.).
- 18. FINISH PAVING ALL ROADWAYS AND PARKING AREAS WITH 'FINISH' COURSE.
- 19. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- 20. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- 21. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- 22. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE BEEN 75%-85% ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND RE-VEGETATE ALL DISTURBED AREAS.
- 23. CLEAN SITE AND ALL DRAINAGE STRUCTURES, PIPES AND SUMPS OF ALL SILT AND DEBRIS.
- 24. INSTALL ALL PAINTED PAVEMENT MARKINGS AND SIGNAGE PER THE PLANS AND DETAILS.
- 25. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL
- 26. UPON COMPLETION OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ANY RELEVANT PERMITTING

AGENCIES THAT THE CONSTRUCTION HAS BEEN FINISHED IN A SATISFACTORY MANNER.

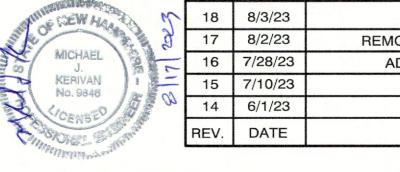
DRAWING No.

JOSEPH, JOHN, ARDELL & INEX WELCH 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

EROSION AND SEDIMENT CONTROL DETAILS WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 SHEET 47 OF 61 JBE PROJECT NO. 20564

Design: JAC | Draft: DJM Date: 07/06/20 Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE

AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



SEOTEXTILE FENCE WITH

CONTROL FABRIC OR

PPROVED EQUAL

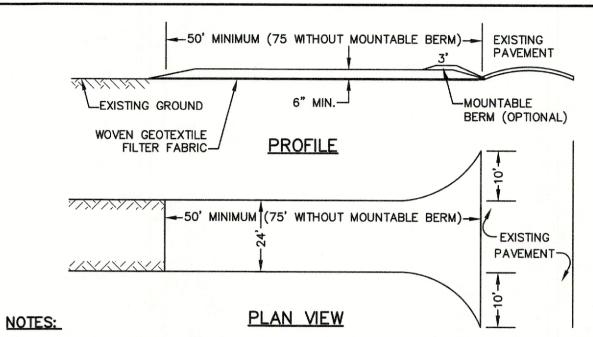
PROPEX-SILT STOP SEDIMENT

Designed and Produced in NH

85 Portsmouth Ave. Civil Engineering Services PO Box 219 E-MAIL: JBE@JONESANDBEACH.COM Stratham, NH 03885

603-772-4746 FAX: 603-772-0227 Owner of Record:

Project:



- 1. STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE, RECLAIMED STONE, OR
- RECYCLED CONCRETE EQUIVALENT. 2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, 75' WITHOUT A MOUNTABLE BERM, AND EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH
- 3. THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES. 4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE
- INGRESS OR EGRESS OCCURS, OR 10 FEET, WHICHEVER IS GREATER. 5. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
- FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT. 6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE
- 7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE

STABILIZED CONSTRUCTION ENTRANCE

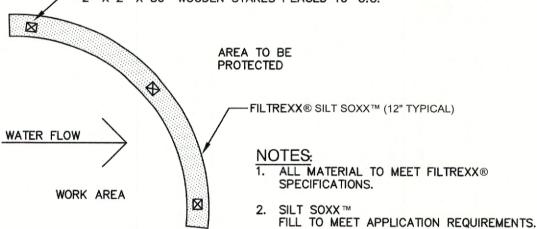
3. COMPOST MATERIAL TO BE DISPERSED ON SITE,

AS DETERMINED BY ENGINEER.

NOT TO SCALE

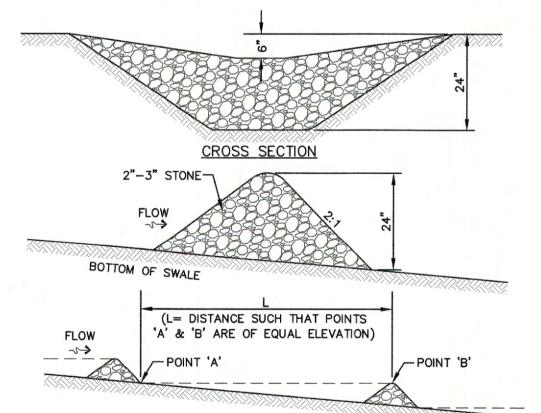
BLOWN PLACED FILTER MEDIA ™--1" X 1" X 36" WOODEN STAKES PLACED 10' O.C. FILTREXX®SILT SOXX™ (12" TYPICAL)

-2" X 2" X 36" WOODEN STAKES PLACED 10' O.C.



FILTREXX® SILT SOXX™

NOT TO SCALE



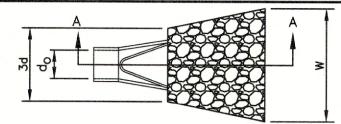
MAINTENANCE NOTE:

. STONE CHECK DAMS SHOULD BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHOULD BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND THE STRUCTURES. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE.

Date: 07/06/20

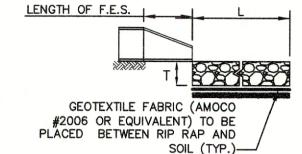
STONE CHECK DAM

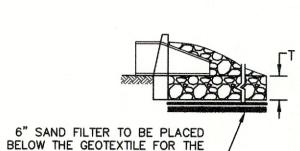
NOT TO SCALE



SECTION A-A

PIPE OUTLET TO FLAT AREA



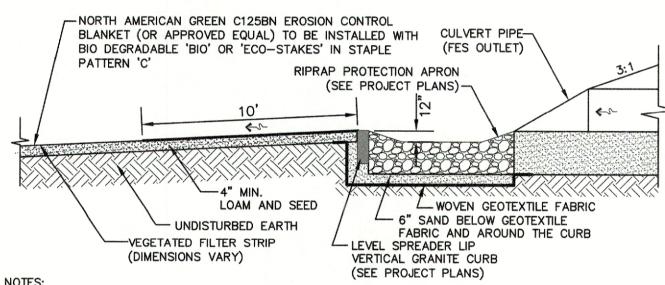


FULL EXTENT OF THE APRON (TYP.)-SECTION A-A PIPE OUTLET TO

| PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL | | WELL-DEFINE CHANNEL |
|---|-----------------------|------------------------|
| TABLE 7-24RECOMMEN | DED RIP RAP GRADAT | ION RANGES |
| THICKNESS OF RIP RAP = | = 1.5 FEET | |
| d50 SIZE= 0.25 | FEET 3 | INCHES |
| % OF WEIGHT SMALLER THAN THE GIVEN d50 SIZ | SIZE OF STO E FROM | NE (INCHES) TO |
| 100% | 5 | 6 |
| 85% | 4 | 5 |
| 50% | 3 | 5 |
| 15% | 1 | 2 |

RIP RAP OUTLET PROTECTION APRON

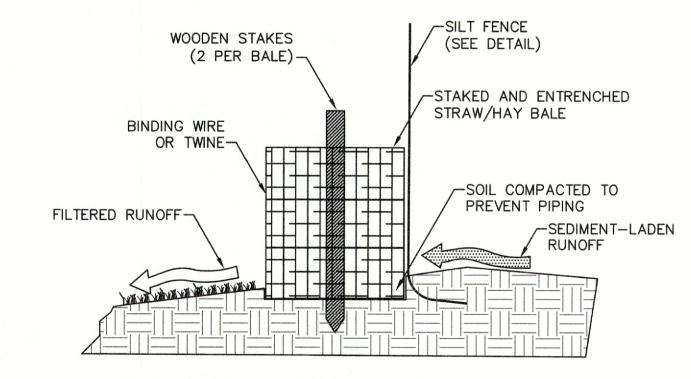
NOT TO SCALE



- 1. CONSTRUCT LEVEL SPREADER LIP ON ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
- 2. VERTICAL GRANITE CURB SHALL BE PLACED A MINIMUM OF SIX INCHES DEEP AND EXTEND ENTIRE LENGTH
- 3. THE RIP RAP APRON PRIOR TO THE LEVEL SPREADER SHALL NOT EXCEED A 0 PERCENT GRADE.
- 4. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER MUST NOT RECONCENTRATE IMMEDIATELY BELOW THE SPREADER.
- 5. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
- 6. MAINTENANCE: LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE SPREADER HAS BEEN DAMAGED. SEDIMENT DEEPER THAN FOUR INCHES ACCUMULATION SHOULD BE REMOVED. IF RILLING HAS TAKEN PLACE ON LIP, THEN DAMAGE SHOULD BE REPAIRED AND REVEGETATED. VEGETATION SHOULD BE MOWED OCCASIONALLY TO CONTROL WEEDS AND ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE SPREADER AND AWAY FROM OUTLET AREA. FERTILIZATION SHOULD BE DONE AS NECESSARY TO KEEP VEGETATION HEALTHY AND DENSE.

LEVEL SPREADER AT CULVERT OUTLET

NOT TO SCALE



HAYBALE DETAIL

NOT TO SCALE

DJM

DJM PO Box 219

Designed and Produced in NH

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION,

3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER

5. OUTLET CREST ELEVATIONS SHALL BE AT LEAST ONE FOOT BELOW THE TOP OF THE EMBANKMENT.

6. OUTLET CREST IS TO BE STABILIZED WITH AMOCO #2004 GEOTEXTILE (OR APPROVED EQUAL), WHICH IS TO BE "TOED" INTO THE GROUND AT ITS ENDS AT LEAST SIX INCHES AND IS TO EXTEND AT LEAST ONE FOOT

7. ALL DISTURBED AREAS SHALL BE VEGETATED USING THE APPROPRIATE VEGETATIVE BEST MANAGEMENT

8. ALL TRAPS ARE TO HAVE SEDIMENT DEPOSITS REMOVED AND DISPOSED PROPERLY AT LEAST ONCE WEEKLY

INTO THE TRAP AND ONE FOOT DOWNSTREAM FROM THE OUTLET EDGE FOR THE ENTIRE LENGTH OF THE

2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS, WOODY VEGETATION, STONES OVER 6"

SIZE, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIALS. THE FILL SHALL BE COMPACTED BY ROUTING CONSTRUCTION EQUIPMENT OVER IT SO THAT THE ENTIRE AREA OF THE FILL IS TRAVERSED BY AT

85 Portsmouth Ave. Civil Engineering Services 603-772-4746 FAX: 603-772-0227 Stratham, NH 03885

LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT.

4. ALL CUT AND FILL SLOPES SHALL BE 2:1 (H: V) OR FLATTER.

-

CONSTRUCTION SPECIFICATIONS:

ROOTS, AND DEBRIS.

POLLUTION ARE MINIMIZED.

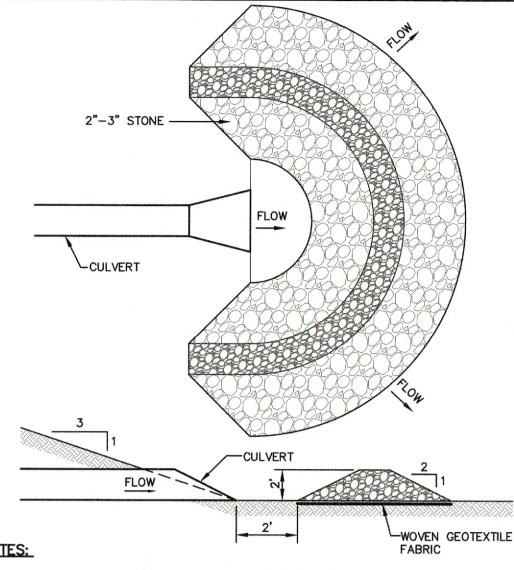
AND AFTER EACH RAINFALL.

TEMPORARY SEDIMENT TRAP

- I. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- 2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- 3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. 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 REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- 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
- 5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
- . MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM, IF THE RIP RAP 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 OUTLET PROTECTION.

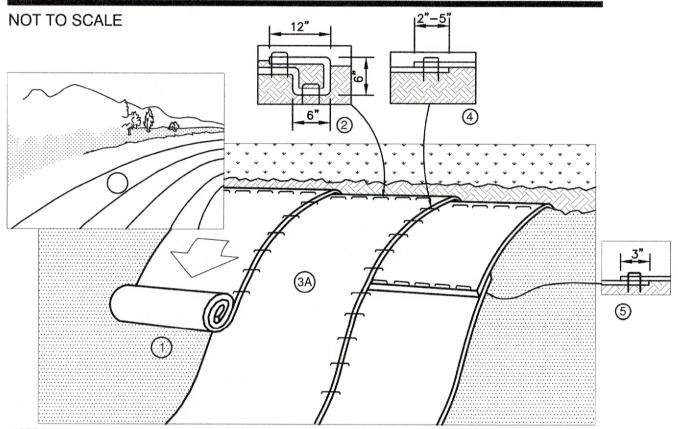
HIGH BY 2'WIDE BERM IF NECESSARY,

TO DIVERT FLOW INTO TRAP. LENGTH AS REQUIRED.



- 1. TEMPORARY CULVERT INLET PROTECTION CHECK DAMS SHALL BE CONSTRUCTED OF 2-3" STONE OVER WOVEN GEOTEXTILE FABRIC.
- SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURE WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
- 4. STRUCTURE SHALL BE REMOVED WHEN THE SITE IS STABILIZED WITH THE PROPOSED RIP RAP FIELD. AREAS OUTSIDE THE RIP RAP FIELD ARE TO BE VEGETATED AND SMOOTHED.

TEMPORARY CULVERT INLET PROTECTION CHECK DAM



- 1. PREPARE SOIL BEFORE INSTALLING BLANKETS, 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
- 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET 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 BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- 3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- 5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
- 6. THERE SHALL BE NO PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN & INCHES MATERIAL UTILIZED.
- 7. TURF REINFORCEMENT MATS SHALL BE COVERED WITH SOIL TO PREVENT EXPOSURE OF THE MATS TO THE SURFACE.



EROSION CONTROL BLANKET SLOPE INSTALLATION (NORTH AMERICAN GREEN BIONET S150BN)

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

NOT TO SCALE

Plan Name: EROSION AND SEDIMENT CONTROL DETAILS

| Duningt | WHITE ROCK PLACE |
|------------------|---|
| Project: | 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH |
| | |

DRAWING No.

SHEET 48 OF 61 JBE PROJECT NO. 20564

Design: JAC | Draft: DJM

Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE) ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE T THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE

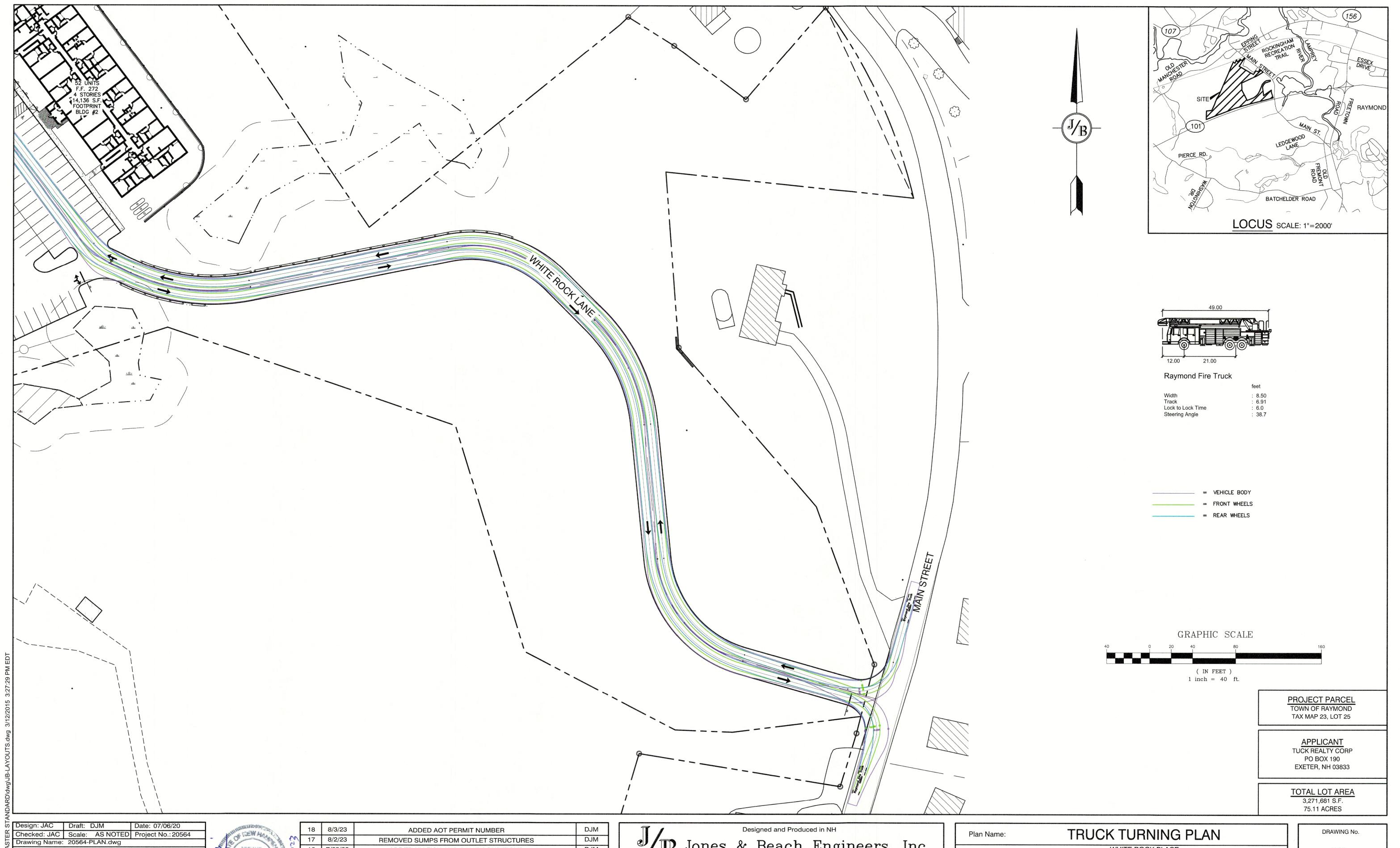


18 8/3/23 ADDED AOT PERMIT NUMBER 17 8/2/23 REMOVED SUMPS FROM OUTLET STRUCTURES 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS 15 7/10/23 ADDED PHASING PLAN 6/1/23 REVISED PER TRC COMMENTS REV. DATE REVISION

Jones & Beach Engineers, Inc.

NOT TO SCALE

E-MAIL: JBE@JONESANDBEACH.COM



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| | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|------|------|---------|--------------------------------------|-----|
| w | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 9 | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 100 | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 5 05 | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| 1378 | REV. | DATE | REVISION | BY |

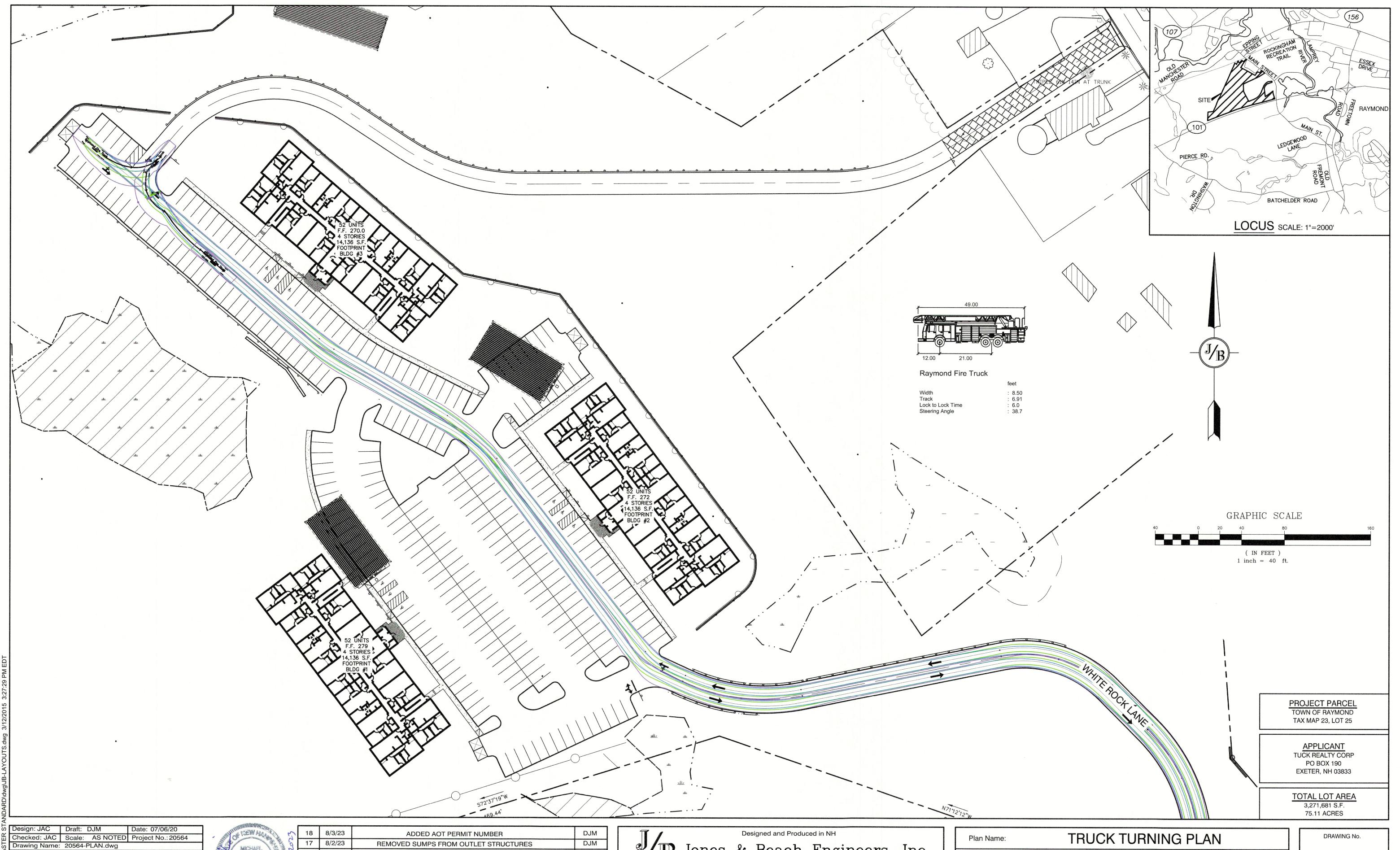
P Jones & Beach Engineers, Inc. 85 Portsmouth Ave. Civil Engineering Services
PO Box 219
Stratham, NH 03885

E-MAIL: JBE@C

Services 603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

| Plan Name: | TRUCK TURNING PLAN |
|------------------|---|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH |
| O WHO OT HOODIG! | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 |

SHEET 49 OF 61 JBE PROJECT NO. 20564



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DJM 16 7/28/23 ADDED NH FISH AND GAME CONDITIONS KERIVAN No. 9846 DJM 15 7/10/23 ADDED PHASING PLAN DJM 14 6/1/23 REVISED PER TRC COMMENTS REVISION REV. DATE

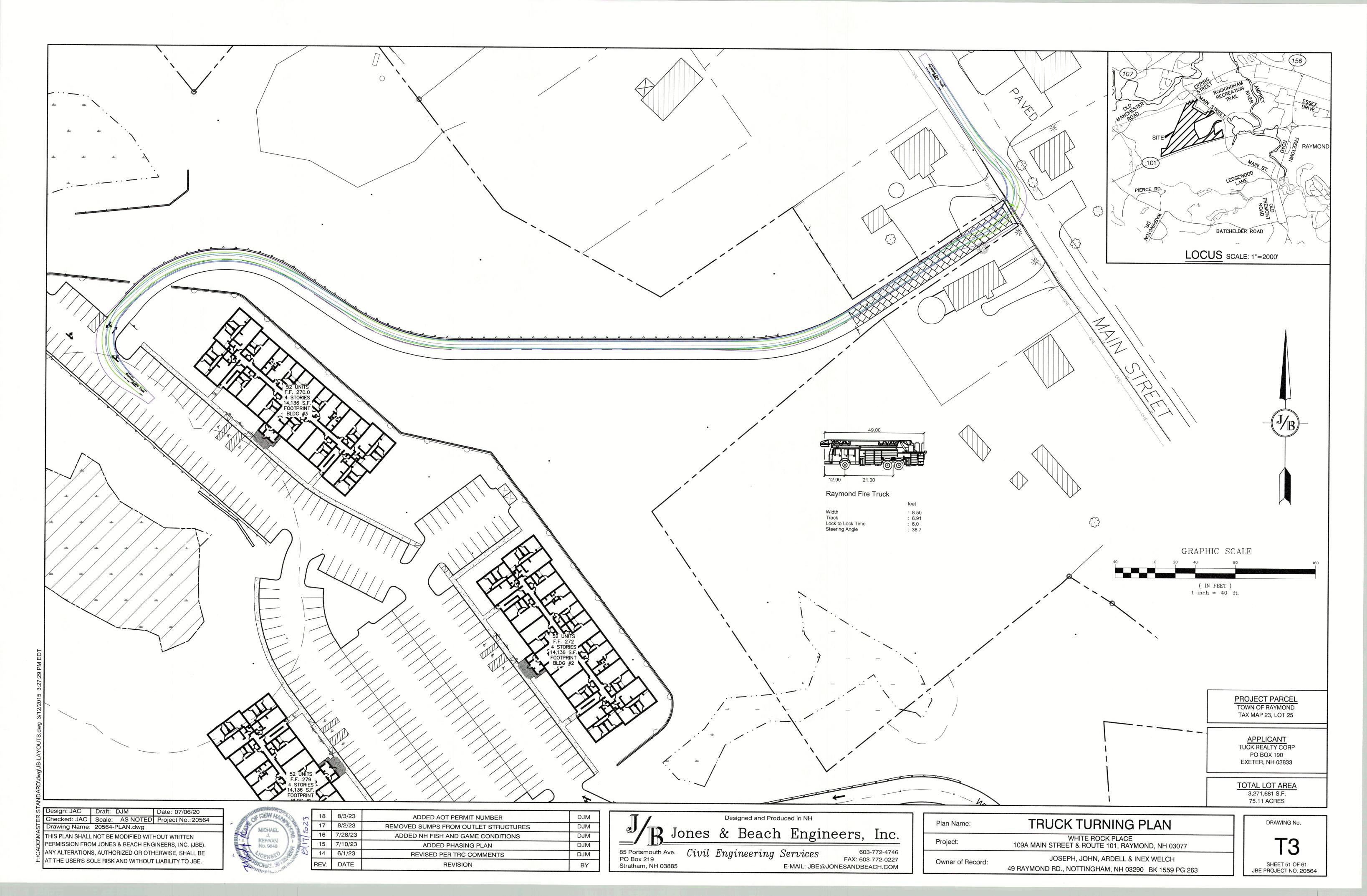
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PO Box 219
Stratham, NH 03885

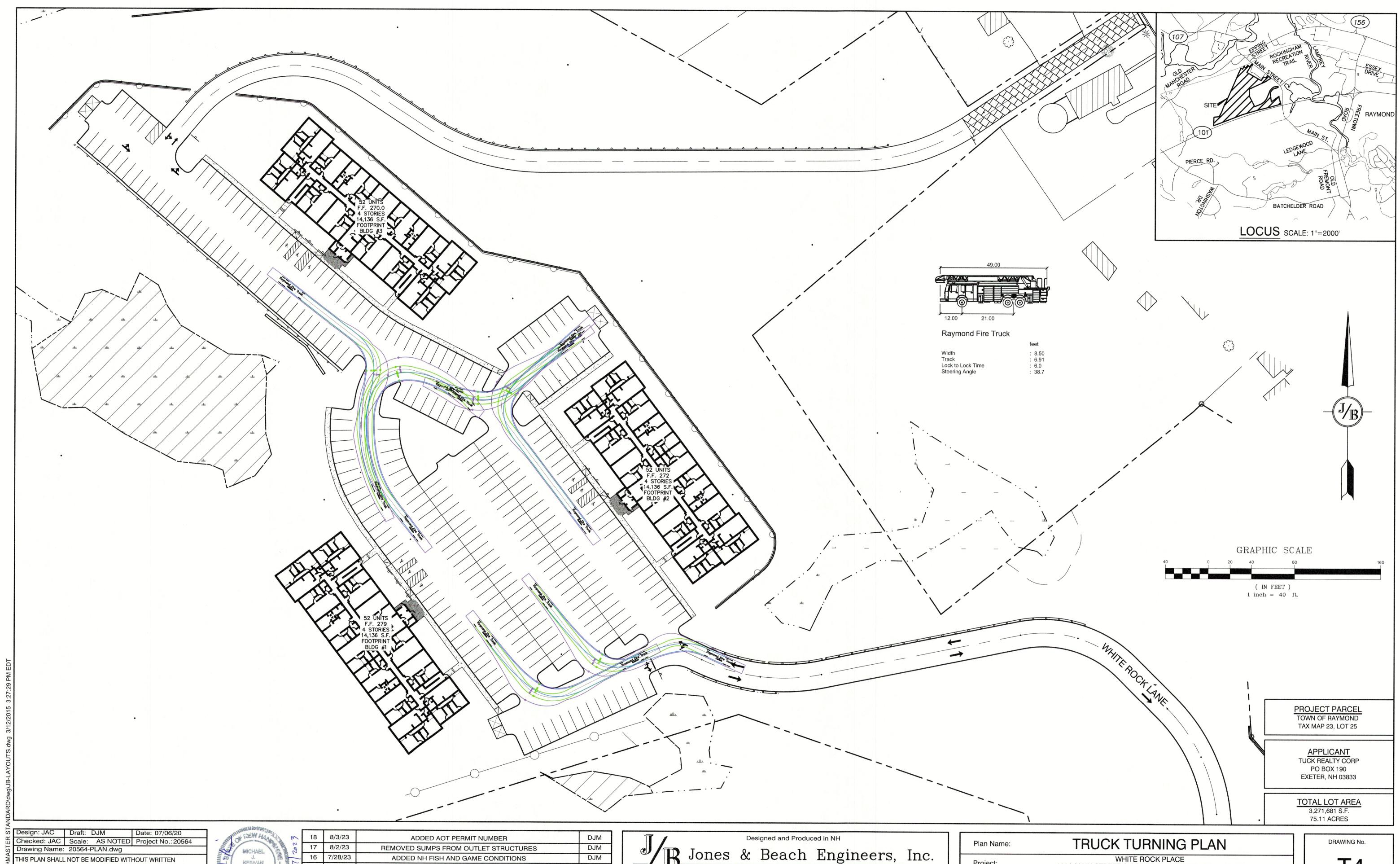
Civil Engineering Services
E-MAIL: JBE@. 603-772-4746 FAX: 603-772-0227

E-MAIL: JBE@JONESANDBEACH.COM

WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 Project: JOSEPH, JOHN, ARDELL & INEX WELCH Owner of Record: 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 50 OF 61 JBE PROJECT NO. 20564





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J. KERIVAN No. 9846

15 7/10/23 DJM ADDED PHASING PLAN DJM 14 6/1/23 REVISED PER TRC COMMENTS REV. DATE REVISION

B Jones & Beach Engineers, Inc. 85 Portsmouth Ave. Civil Engineering Services

Project: Owner of Record:

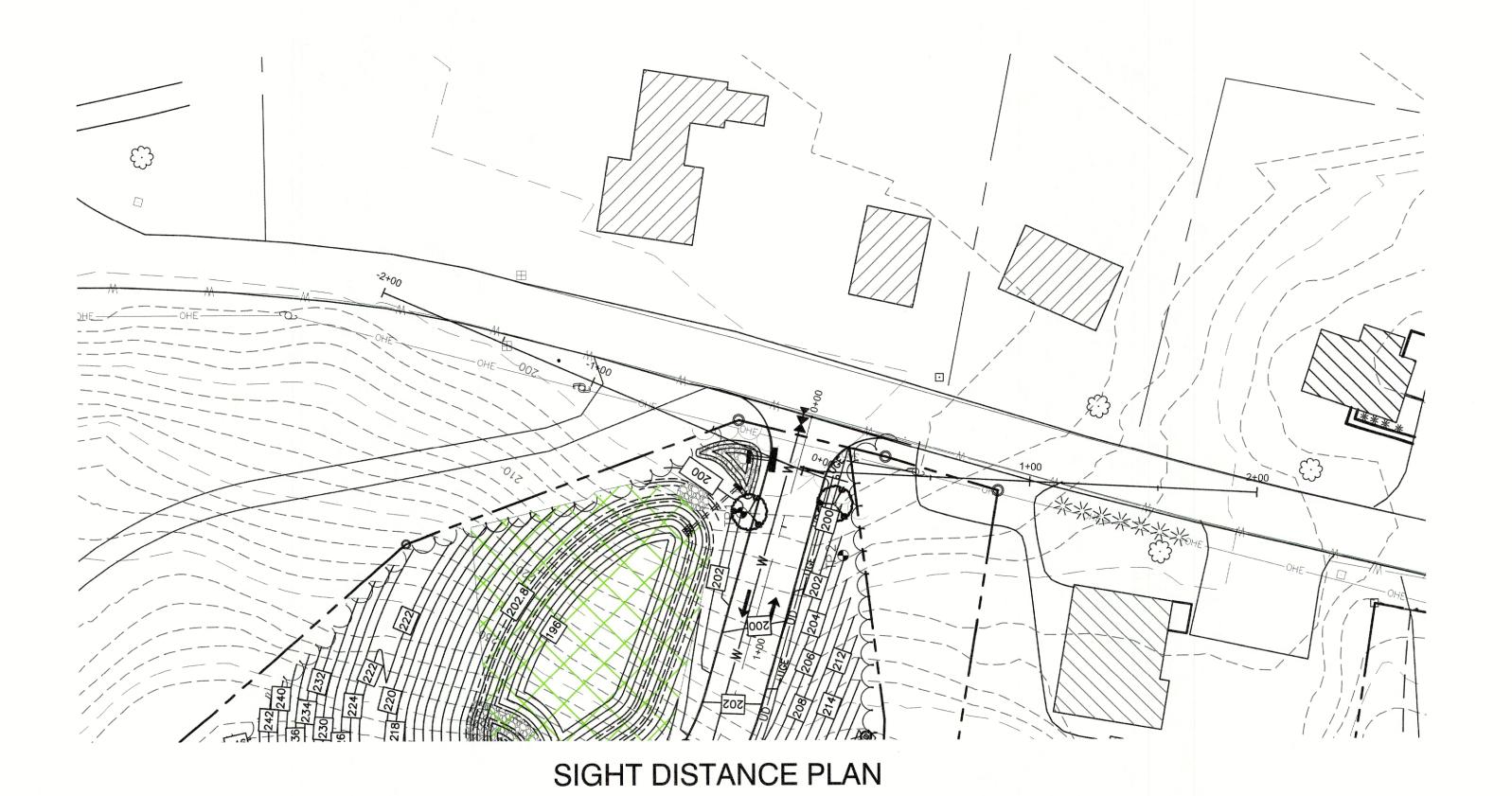
603-772-4746 FAX: 603-772-0227

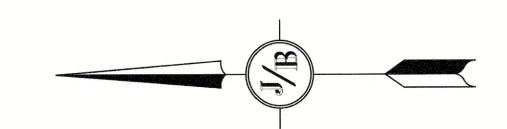
E-MAIL: JBE@JONESANDBEACH.COM

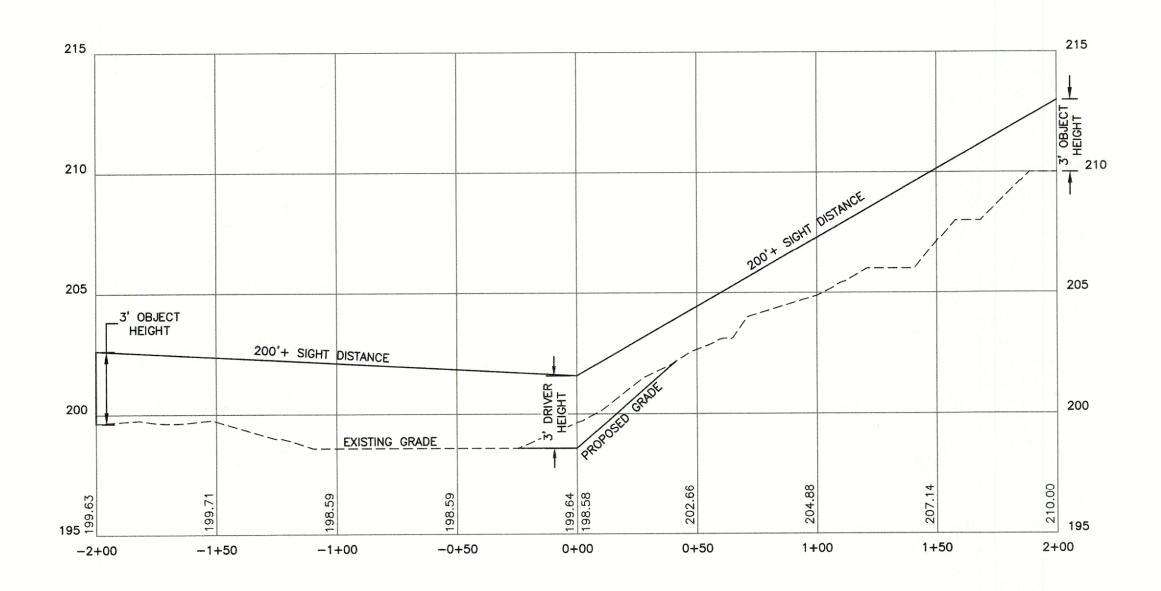
WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

SHEET 52 OF 61 JBE PROJECT NO. 20564







(IN FEET)
1 inch = 40 ft Horiz.
1 inch = 4 ft Vert.

SIGHT DISTANCE PROFILE

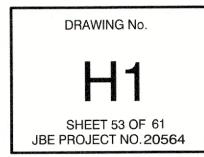
| Design: JAC | Draft: DJM | Date: 07/06/20 | |
|--|---------------------|----------------------|--|
| Checked: JAC | | Project No.: 20564 | |
| Drawing Name: | 20564-PLAN.dwg | | |
| THIS PLAN SHALL | NOT BE MODIFIED WI | THOUT WRITTEN | |
| PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). | | | |
| ANY ALTERATION | S, AUTHORIZED OR O | THERWISE, SHALL BE | |
| AT THE USER'S S | OLE RISK AND WITHOU | JT LIABILITY TO JBE. | |
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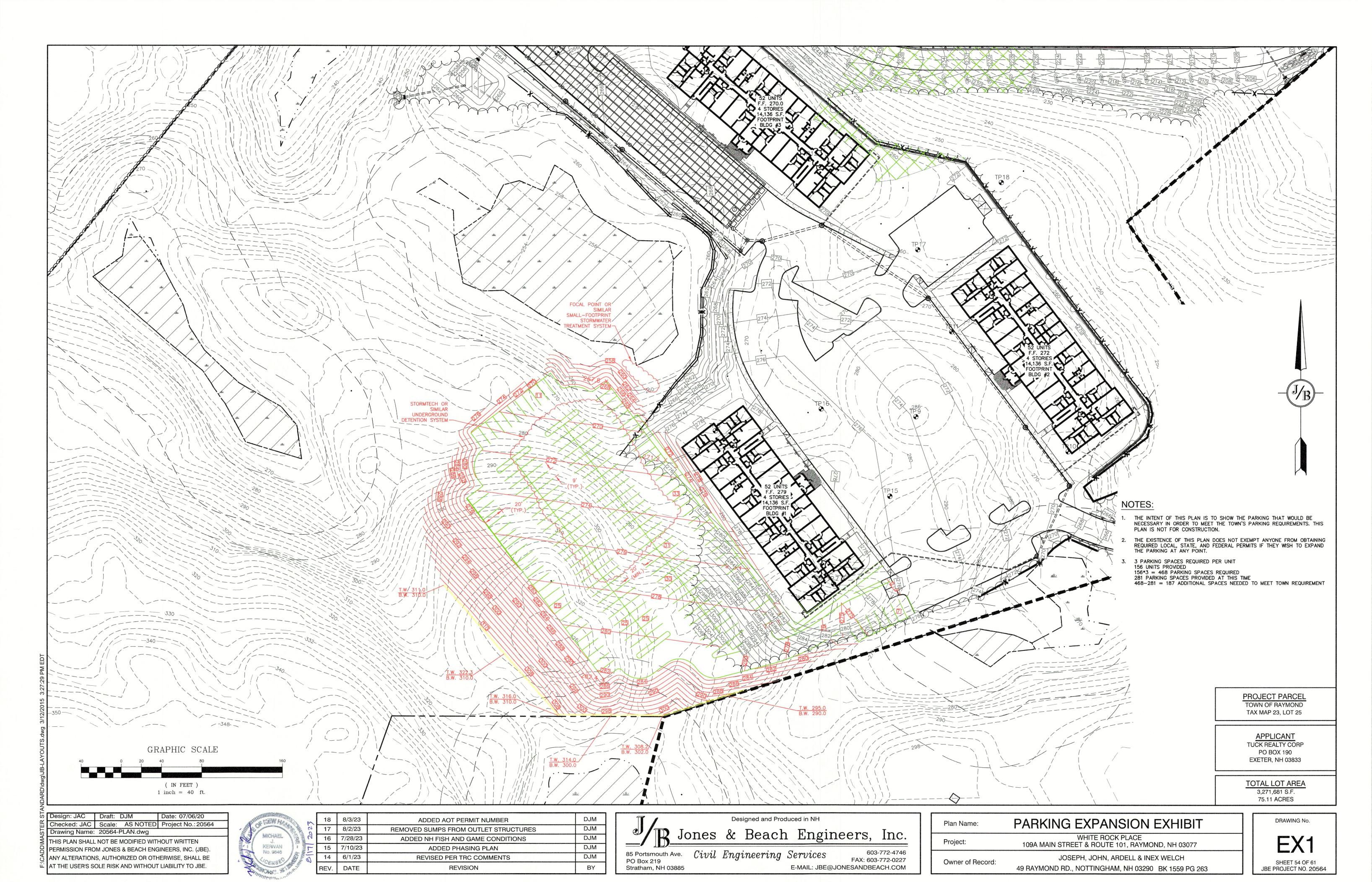


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| 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
| 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| REV. | DATE | REVISION | BY |

| 7/ | | Designed and P | oduced in NH | |
|--------------------|-------|----------------|----------------|-----------------------------------|
| B Jo | nes | & Beac | h Engine | eers, Inc. |
| 85 Portsmouth Ave. | Civil | Engineerin | g Services | 603-772-4746 FAX: 603-772-0227 |
| Stratham, NH 03885 | | | E-MAIL: JBE@JO | NESANDBEACH.COM |

| Plan Name: | HIGHWAY ACCESS PLAN | |
|------------------|---|--|
| Project: | WHITE ROCK PLACE 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 | |
| Owner of Record: | JOSEPH, JOHN, ARDELL & INEX WELCH | |
| Owner of necord. | 49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263 | |





NEW HAMPSHIRE FISH AND GAME - RECOMMENDED PERMIT **CONDITIONS:**

- BLANDING'S TURTLE (STATE ENDANGERED), SPOTTED TURTLE (STATE THREATENED) AND NORTHERN BLACK RACER (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION.
- 2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT DURING THE CONSTRUCTION PHASE OF THE PROJECT. SEE FLYERS ON THIS SHEET.
- OBSERVATIONS OF NORTHERN BLACK RACERS IN THE MONTHS OF APRIL-MAY AND SEPTEMBER-OCTOBER MAY INDICATE THE POTENTIAL FOR A DEN SITE ON OR NEAR THE PROJECT SITE. OBSERVATIONS OF THIS SPECIES DURING THIS TIMEFRAME SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM. PLEASE CONTACT MELISSA WINTERS (603-479-1129) OR BRENDAN CLIFFORD (603-944-0885). OBSERVATIONS OF THIS SPECIES OUTSIDE OF THIS TIMEFRAME CAN FOLLOW GENERAL REPORTING GUIDANCE. PLEASE INCLUDE PHOTOGRAPH WITH
- TURTLES AND SNAKES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH JUNE 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT MELISSA WINTERS (603-479-1129) OR JOSH MEGYESY (978-578-0802) AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED: THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
- 5. A 25 FOOT NO-CUT, NO-DISTURB BUFFER SHALL BE MAINTAINED AROUND WETLANDS, WITH THE EXCEPTION OF PROPOSED DISTURBANCES DEPICTED ON THE PLAN OF REFERENCE. PLACARDS MARKING THESE AREAS AS "PROTECTED HABITAT- NO CUTTING / NO DISTURBANCE" SHALL BE PLACED EVERY 75 FEET ALONG THE BUFFER BOUNDARIES. THE 25 FOOT NO-CUT, NO-DISTURB BUFFER AND PLACARDS SHALL BE MAINTAINED AND CONSERVED IN PERPETUITY IN ACCORDANCE
- THE CONSERVATION EASEMENT DEED DOCUMENT TITLED, 'DRAFT CONSERVATION EASEMENT DEED (00971494XC637B), ATTACHED, SHALL BE FINALIZED AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. A COPY OF THE RECORDED DOCUMENT SHALL BE PROVIDED TO
- a. A NO CUT, NO DISTURB BUFFER SHALL BE MAINTAINED IN ACCORDANCE WITH THE BOUNDARIES OF THE "OPEN SPACE AREA" ON THE PLAN TITLED, "OVERVIEW SITE PLAN, SHEET C13" DATED 6/1/2023. PLACARDS MARKING THESE AREAS AS "PROTECTED HABITAT- NO CUTTING / NO DISTURB BUFFER" SHALL BE PLACED EVERY 75 FEET ALONG THE OPEN SPACE BOUNDARY. PLEASE IDENTIFY PLACARD PLACEMENTS ON PLAN SHEETS. SEE PLAN SHEET C13.
- 7. VERNAL POOLS AND POTENTIAL VERNAL POOLS SHALL BE FLAGGED PRIOR TO WORK AND ALL IMPACTS TO VERNAL POOLS AND POTENTIAL VERNAL POOLS SHALL BE AVOIDED.
- NO SUMPS SHALL BE INCLUDED IN THE DESIGN OF CATCH BASINS OR OUTLET CONTROL
- 9. SLOPED OR "CAPE COD" CURBING SHALL BE UTILIZED WHEREVER CURBING IS PROPOSED.
- 10. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS. UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE PLAN SHEETS E1-E2.
- 11. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM WILDLIFE SPECIES OBSERVATION.
- 12. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
- 13. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
- G.SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING, NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
- 14. NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

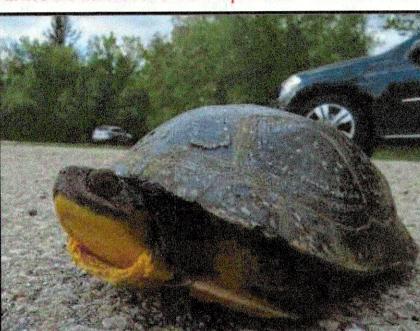


PLEASE REPORT OBSERVATIONS OF RARE TURTLES

The NH Fish & Game Department is requesting observations of the following turtle species

Turtles may be attracted to disturbed ground during nesting season (May 15th – June 30th)

Turtles are most active from April 15th - October 15th



Blanding's turtle

(State Endangered)

Large, dark/black domed shell with lighter speckles.

Distinct yellow throat/chin.

Aquatic but often moves on land.



Spotted turtle (State Threatened)

Small, mostly aquatic with black or dark brown with yellow spots.

Fairly flat shell compared to Blanding's turtle.

Spots vary in color and number.

Fis 1401.03 (a) No person shall take or possess a spotted turtle (Clemmys guttata)...Blanding's turtle (Emydoidea blandingii)...or any egg or part thereof.

Report sightings immediately to NHFG Wildlife Division at 603-271-2461 (M-F 8-4) or to NHFG Wildlife Biologist Melissa Winters 603-479-1129 (cell) anytime.

Please report promptly, noting specific location and date - Photographs strongly encouraged

Northern Black Racer

(New Hampshire state threatened species)

Emerge from hibernacula in April, Basking April - August,

Hatchlings emerge August - September, Return to hibernacula mid-September - mid-October





- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft.
- Hatchlings are very small and patterned



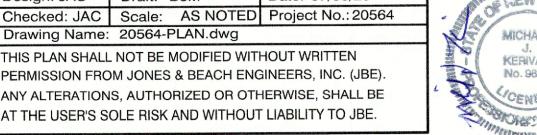
Immediately report sightings to NH Fish and Game Melissa Winters (603-479-1129) or Brendan Clifford (603-944-0885)

Please report promptly, noting specific location and date Photographs strongly encouraged

Fis 1401.03 (a) No person shall take or possess a black racer (Coluber constrictor)...or any egg or part thereof.



Design: JAC | Draft: DJM | Date: 07/06/20 Checked: JAC | Scale: AS NOTED | Project No.: 20564 Drawing Name: 20564-PLAN.dwg THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN





| | 18 | 8/3/23 | ADDED AOT PERMIT NUMBER | DJM |
|--|------|---------|--------------------------------------|-----|
| | 17 | 8/2/23 | REMOVED SUMPS FROM OUTLET STRUCTURES | DJM |
| | 16 | 7/28/23 | ADDED NH FISH AND GAME CONDITIONS | DJM |
| | 15 | 7/10/23 | ADDED PHASING PLAN | DJM |
| | 14 | 6/1/23 | REVISED PER TRC COMMENTS | DJM |
| | REV. | DATE | REVISION | BY |

Designed and Produced in NH Jones & Beach Engineers, Inc.

85 Portsmouth Ave. Civil Engineering Services PO Box 219 Stratham, NH 03885

FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Owner of Record:

FISH AND GAME FLYERS Plan Name:

WHITE ROCK PLACE Project: 109A MAIN STREET & ROUTE 101, RAYMOND, NH 03077 JOSEPH, JOHN, ARDELL & INEX WELCH

49 RAYMOND RD., NOTTINGHAM, NH 03290 BK 1559 PG 263

JBE PROJECT NO. 20564

DRAWING No.



Tuck Realty Corp.

Exeter, New Hampshire

White Rock Place
Raymond, NH
March 17, 2023

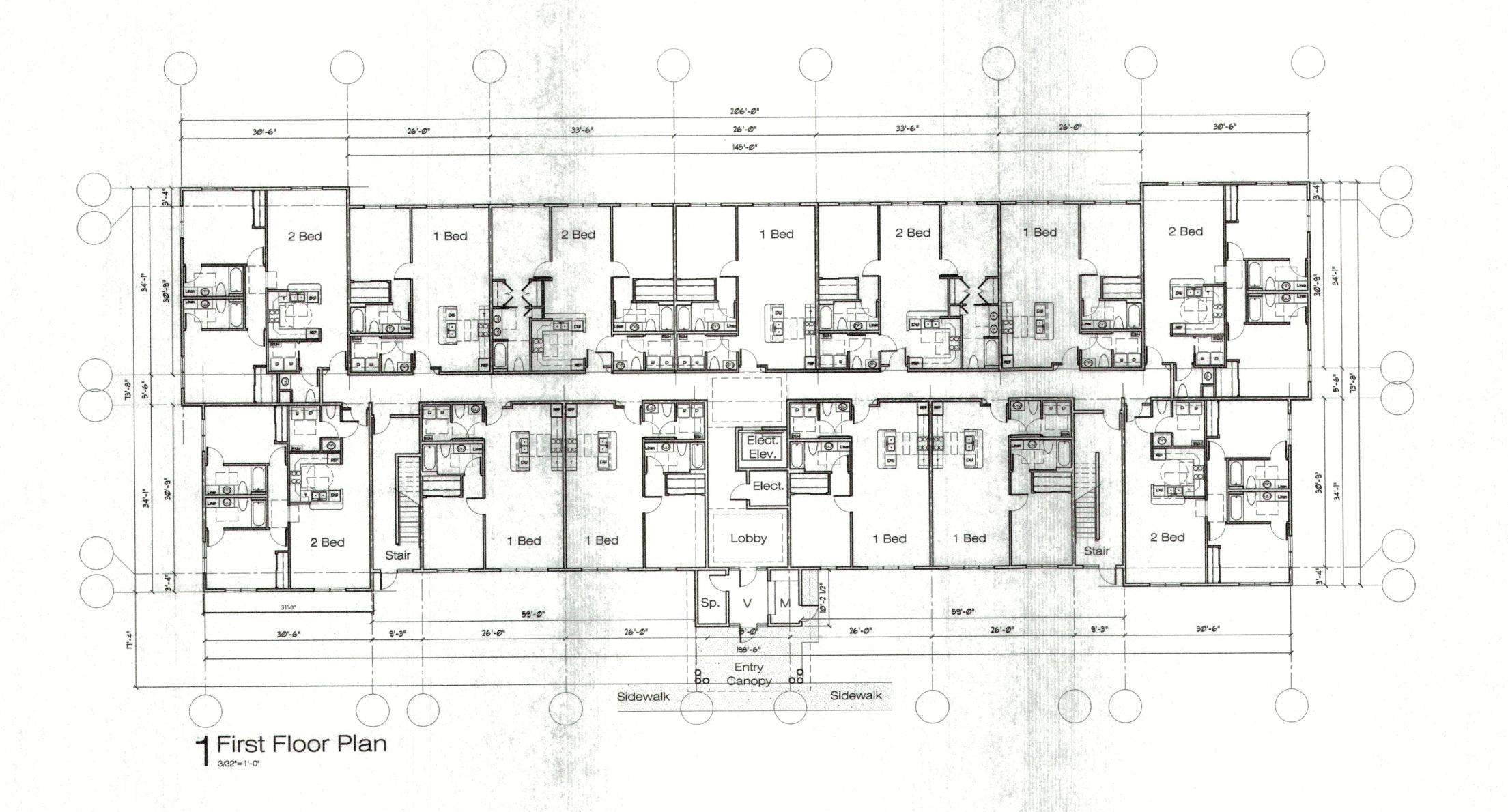




THA ARCHITECTS, LLC

ARCHITECTURE * PLANNING * CONSULTING * INTERIOR DESIGN

89 WILLOWBROOK AVENUE STRATHAM, NH 03885
Tel: (603) 770-249 Fax: (603) WWW.THAARC.COM



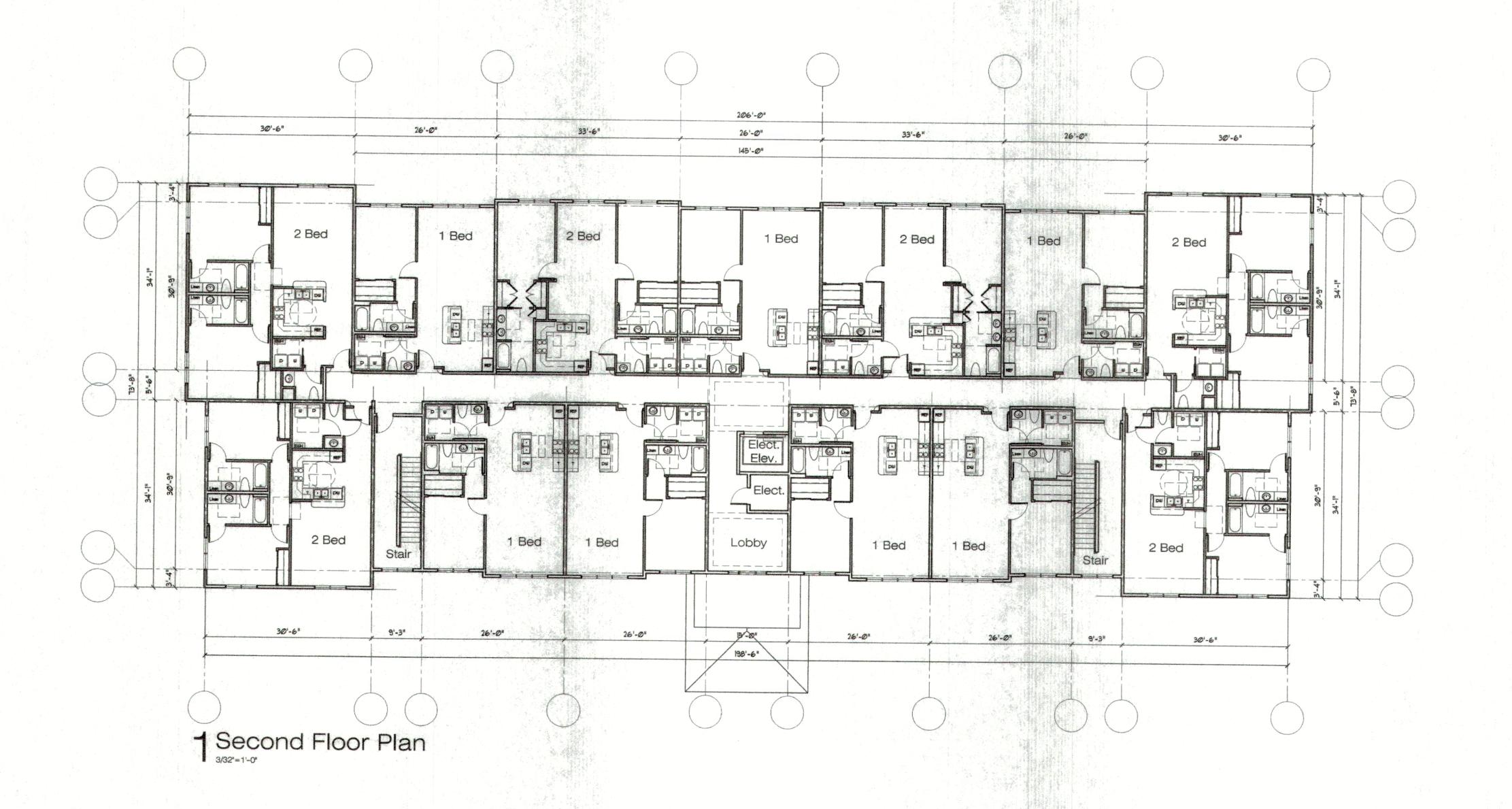
Tuck Realty Corp.
Exeter, New Hampshire

White Rock Place
Raymond, NH
March 17, 2023





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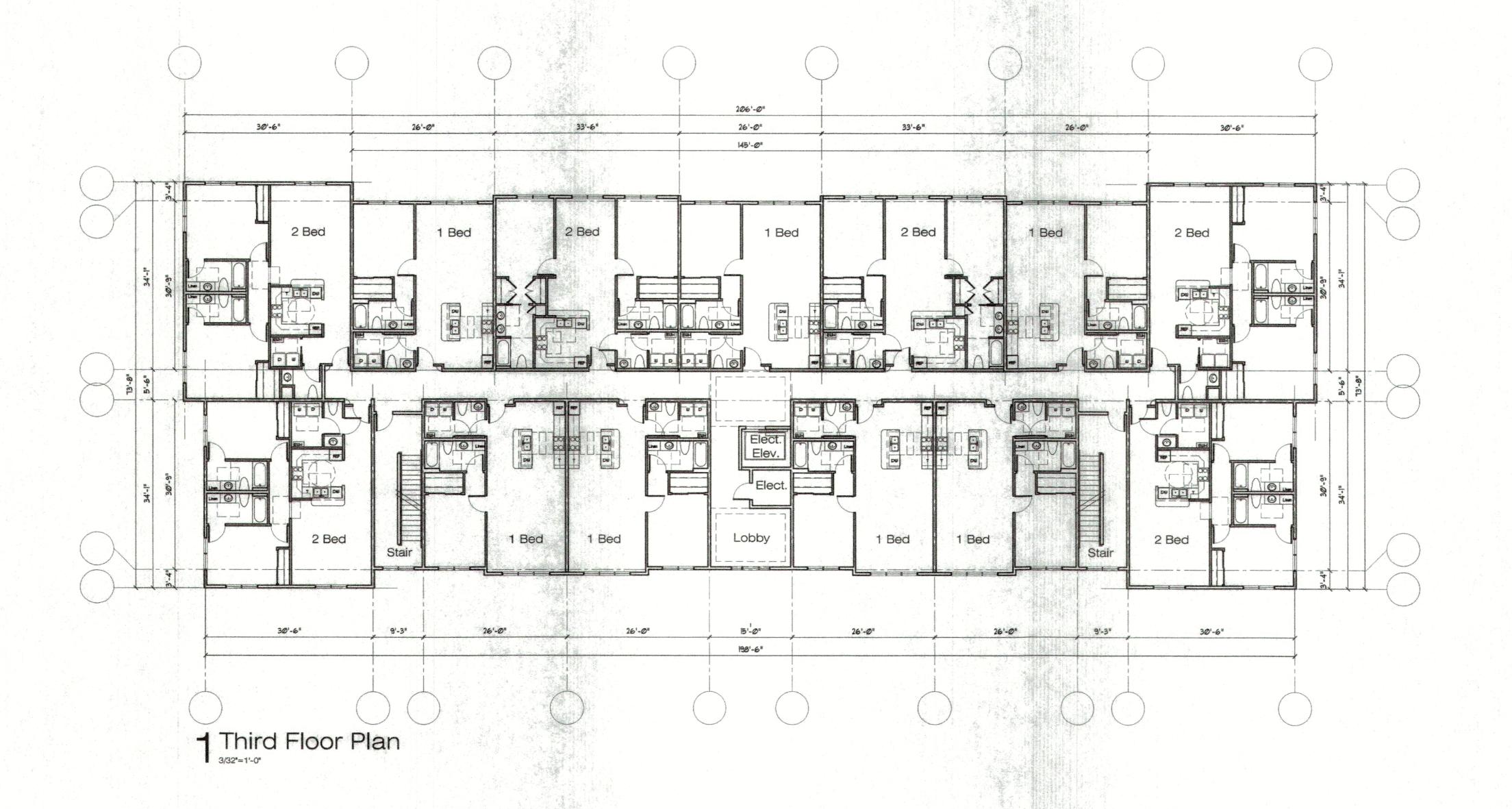
Tuck Realty Corp. Exeter, New Hampshire

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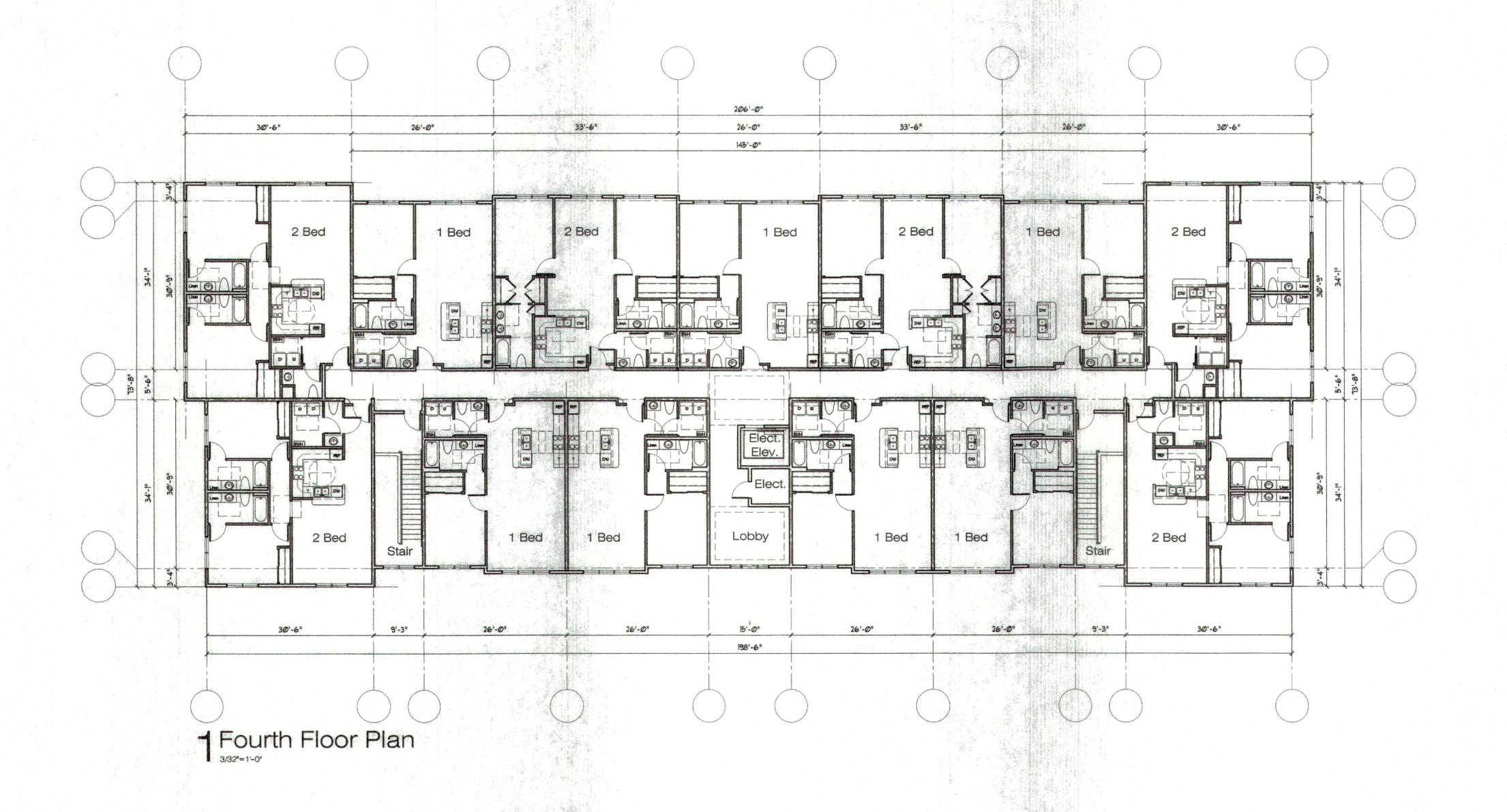
Tuck Realty Corp.
Exeter, New Hampshire

White Rock Place Raymond, NH March 17, 2023





Tel: (603) 770-2491 Fax: (603) •WWW.THAARC.CO



Tuck Realty Corp.

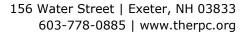
Exeter, New Hampshire

White Rock Place Raymond, NH March 17, 2023





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Memo To: RPC Development of Regional Impact Subcommittee

From: Rockingham Planning Commission Staff

Date: December 12, 2023

Subject: Raymond Regional Impact Declaration: Site Plan Application for 156 Unit Residential

Development located at 109A&C Main Street, Raymond, NH (Tax Map 23 Lot 25 and

Lot 29)

Rockingham Planning Commission (RPC) was notified on November 21, 2023 of a site plan application and associated lot line adjustment application before the Raymond Planning Board was declared a development of regional impact under RSA 36:55. The proposal was submitted by Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing 156-unit multifamily residential development to be located within three, four-story buildings.

The Raymond Planning Board declared as part of their November 16, 2023 (<u>meeting minutes</u>) regional impact determination that the following municipalities have potential impacts from the proposal within New Hampshire: Exeter, Epping, Deerfield, Chester, Candia, Fremont, Durham, and Newfields.

At the direction of the RPC Regional Impact Committee chair, RPC staff was requested to write a memo regarding potential regional impacts to be distributed to the Town of Raymond, the applicant, and the potentially impacted municipalities identified above. Comments below regard the proposal's potential regional impacts as identified under RSA 36:55 that can reasonably be expected to impact on a neighboring municipality, because of factors such as, but not limited to, the following:

I. Relative size or number of dwelling units as compared with existing stock.

The proposal includes the development of 156 residential units, including 84, 1-bedroom units and 72, 2-bedroom units. According to Rockingham Planning Commission's <u>2023 Regional Housing Needs Assessment</u>, as of 2020 Raymond had 4,500 housing units, which accounts for 5% of the region's housing stock. If approved, this proposal would increase Raymond's housing stock by 3.5 %.

Additionally, the majority of Raymond's housing units have three or more bedrooms, while only around 11% of Raymond's existing housing units have 0-1 bedrooms and 34% have 2-bedrooms. The average household size in Raymond in 2.4 people per household. The proposal's mixture of smaller-unit sizes would help fulfill a community and regional need of smaller housing units.

Raymond, like the rest of the region and state, lacks sufficient affordable housing and overall housing availability. Based on the *2023 Regional Housing Needs Assessment*, by 2040 Raymond is projected to need 522 more housing units (a mixture of market rate and affordable housing) to meet needs based on population growth and employment projections. The proposal does not explicitly call for the creation workforce housing with applicable income limitations. However, given the smaller size of the housing units, if approved the proposal appears to increase housing diversity within Raymond and the region.

II. Proximity to the borders of a neighboring community.

The proposal is located fully within Raymond, located north of Route 101 near Exit 5. The closest municipal boundaries (Epping and Fremont) to the proposal are 1.5 miles away. Given the distance from the site to municipal borders there is little to no direct impact on neighboring communities from this proposal.

III. Transportation networks.

Given that the application is for new residential units in an area of existing residential use the impact to the transportation network is anticipated to be limited to increased traffic volumes.

- Traffic volume: A traffic count station north of the proposed site indicated that 2022 traffic volumes were 3,248 vehicles per day (Average Annualized Daily Traffic). That same site indicated an AADT of 3,432 in 2019 (Pre-pandemic) and 3,678 in 2016. The VAI Traffic Impact Study indicates an Average Weekday Traffic of 3,510 based on reasonable assumptions adjusting for the impacts of the time of year and the impacts of the pandemic on overall levels of traffic in the area. Background growth for future roadway volumes is assumed at 1.0% per year which is higher than current average annual growth but is a standard assumption in traffic impacts studies to estimate future conditions.
- **Trip Generation:** The VAI Analysis utilizes the ITE Land Use Code (LUC) 221, Multifamily Housing (Mid-Rise) which appears to be the best fit for the type and size of the structures proposed. Based on this LUC and the number of units 708 additional vehicle trips per day are generated with 50% entering and 50% exiting. The analysis also indicates that AM/PM peak hour traffic would be 57/61 trips respectively with the AM trips weighted towards exiting the development and the PM trips weighted towards entering. These assumptions seem reasonable expectations of trips generated by the development.
- **Trip Distribution:** The VAI assessment indicates an expected 47% of trips turning north toward the Raymond town center and 53% turning south towards Freetown Road. This appears to be a reasonable assumption based on existing traffic patterns and Census Journey To Work data.
- **Safety:** Traffic safety concerns would largely be related to site distance at the driveway and whether site lines exceed the minimum Stopping Site Distance (SSD) at 35 MPH which is above the current 85th Percentile speed (observed) and the current speed limit (30 MPH). The available site distance to the north is substantially less than the "desirable site distance" (335 feet) but at 256 feet it does meet minimum requirement of 250 feet as indicated in Table 6 on page 13 of the Traffic Impact Analysis bv VAI. This indicates that southbound traffic may need to slow more than the ideal for vehicular traffic exiting the proposed development but that there is still enough room to stop if need be.
- Traffic Impacts: The traffic impact analysis indicates incremental increases in traffic and subsequent incremental change in delay at adjacent intersections on Main Street. Some of the turning movements at these intersections are considered near or in "failure" conditions (Level of Service "E" or "F") which means that they are at or near capacity. The traffic generated from this development proposal does not push any individual turning movement into failure condition but does add generally small increments of delay. One thing to note is that the analysis of intersection turning movements that are over capacity can create extreme estimates of delay under both existing and future conditions that are potentially unrealistic.

IV. Anticipated emissions such as light, noise, smoke, odors, or particles.

The greatest impact from emissions such as light, noise, smoke, odors, or particles, is likely to occur during the construction phase of the project. To mitigate any existing noise from construction of the project, it is recommended that the Raymond Planning Board review, and if necessary, adjust the proposed construction hours to avoid excessive temporary impact to abutting properties from the construction. The Planning Board should also require best practices to minimize dust, particles and excessive runoff during construction.

Once constructed, residential uses will have a minimal impact on emissions and be limited to noise and air emissions from personal vehicles.

V. Proximity to aquifers or surface waters which transcend municipal boundaries.

The site is located within Raymond Groundwater Protection Overlay District. The proposal is not within any existing Wellhead Protection Areas but is located over the stratified drift aquifer that is shared by several neighboring communities. The proposal is designed to connect to the Raymond municipal water system therefore, the impact to regional groundwater would be largely limited to groundwater recharge, stormwater runoff, and wastewater treatment. It is recommended that the Raymond Planning Board:

- 1) seek to limit the impervious surfaces (including allowing flexibility in roadway and parking lot requirements) to allow greater groundwater recharge,
- 2) ensure that Raymond's stormwater regulations are followed, and
- 3) that all wastewater treatment (septic) facilities receive NHDES approval as a condition of approval.

The proposal is located within Lamprey River watershed, and portions of the property are located within the Lamprey River watershed designated river corridor under RSA 483. To maintain consistency with the Lamprey River Watershed Management Plan, it is recommended that the Raymond Planning Board follow required local, state and federal the stormwater management regulations. Raymond is also advised to have all state and federal permit numbers be noted on the recorded plan set as a condition of any approval.

VI. Shared facilities such as schools and solid waste disposal facilities.

The proposal does not appear to rely on any shared municipal facilities, however, there is potential to required shared municipal emergency services. It is recommended that the Raymond Planning Board seek input from their Fire and Police Departments.

The Raymond Planning Board has raised concerns about the impact on regional schools. Given the overall decline in school enrollment in both Raymond and the region (from 26,600 children in 2013 to 22,753 children in 2021) due to a reduced school-age population, the impact to shared regional educational facilities from this proposal is considered very limited.

Finally, it should be noted that the above comments and recommendations are considered advisory only. The RPC, nor the impacted municipalities, have any authority under the regional impact statute to interfere with the decision-making power held by the Raymond Planning Board.

Cc:

RPC Regional Impact Committee (via email)
Town of Raymond Planning Board (via email)
Town of Fremont (via email)
Town of Epping (via email)
Town of Exeter (via email)
Town of Exeter (via email)
Town of Newfields (via email)

Conservation Commission Approved Minutes 2023.11.05

The Conservation Commission met in the Raymond Town Hall parking lot, for a noticed site walk of White Rock Place, a proposed housing development located at Tax Map 23 – Lots, 24, 25, 28 &29. 109 A, B, C &D Main Street. Present were: Cons Com members, Kris Holleran, Warren Gibby, Kathy McDonald. The Developer, Mike Garrepy and Jones & Beach rep Joseph Coronati. Members of the public, Kevin Pratt, and Dennis Garnham who joined in later.

Kathy called the session to order at 9:01 AM. Joe handed out small map packets to review. We carpooled to the proposed entrance on Main Street, an undeveloped lot, to the left of 103 Main St. (Randy LaCasse driveway). The lot is heavily wooded, covered in oak, pine, and birch trees with an undergrowth of blackberry bushes. There were many stone outcroppings and lots of rocks and boulders. It was level from the road to about 15 feet in, then we began climbing a steep hill. The center line was flagged, but not the sides of the proposed roadway. There were comments and questions about the water that pools on the road (presently) and the culvert, running under Main St. that empties across the street toward the Lamprey River. Joe pointed to a hill on our right next to LaCasse house which he said would be removed and dug down to form a retention pool for the road run off.

We continued up hill to a bend on the plan overlooking the abutting house. There were questions as to how much earth would be removed and how close we were to the abutting property and how will the steep slopes and cuts be addressed. Joe explained they are hoping to build steps for some of the cuts. A cross section of the cut and fill plan was not presented. Mike said the road would be excavated from 10 feet down to 40 feet down. Areas containing wetland flags were noticed. We followed the center line flags, uphill as the road switched back along a very steep hillside. We passed a boulder field and crossed between two wetlands. At the top of this knoll we were joined by Dennis.

Joe explained this is where the three buildings and parking lots will be. The dips and depressions will be filled in to level off this area. It was decided to return to Main Street via the proposed emergency access road. We headed downhill following Joe, as the location of the Emergency Road was not flagged. The downhill hike was very steep and rocky. At the base of one of the hills we came upon a large ponded wetland. Mike indicated a narrow area between two houses where the Emergency Access Road will join Main Street. Mike said the access road will be 20 feet wide. Dennis noted the utility company moved the light pole over and it is now inside the access road. Kathy motioned to adjourn, Kris Seconded All in favor. We adjourned at 10:39AM.

Members of Cons Com met at the end of Jamma Drive for our work session. Kathy called the meeting to order at 11:00AM. We unloaded Warren's truck with the signs from Mike's House. Our first sign was installed before the bridge on the Dearborn property. Our merry band carried the signs along the Red Trail to the railroad bed. We installed one sign just off the rail trail at the entrance of the Red Trail and another at the entrance to the Yellow Trail. It was good to see visitors and their dogs utilizing the trails. However, along the Red Trail we noticed unapproved pink/purple arrows on some of the trees. Next stop was Robinson Hill where we installed the last sign next to the kiosk. Kris motioned to adjourn, seconded by Warren, all approved. We adjourned at 2:00PM.

Respectfully submitted, Kathy McDonald Secretary



Southern New Hampshire Planning Commission

438 Dubuque Street, Manchester, NH 03102-3546, Telephone (603) 669-4664 Fax (603) 669-4350 www.snhpc.org

Memorandum

To: Jennifer Rowden, Land Use Program Manager, Rockingham Planning Commission

From: Sylvia von Aulock, Executive Director, Southern NH Planning Commission Sufference

Dave Tilton, Regional Planner, Southern NH Planning Commission

Re: Regional Impact Determination – 109 A & C Main St, Raymond, NH 156-unit

residential development

Date: December 26, 2023

The Southern New Hampshire Commission (SNHPC) has received a Notice of Determination of Regional Impact for the proposed development of a 156-unit multifamily residential development to be located on 109A & C Main Street in Raymond, NH. SNHPC has reviewed the Raymond planning board minutes from the November 16, 2023 meeting, and the Regional Impact Determination memo from the Rockingham Planning Commission (RPC) that was sent on December 12, 2023.

RSA Chapter 36:55 defines a Development of Regional Impact as: "any proposal before a local land use board which in the determination of such local land use board could reasonably be expected to impact on a neighboring municipality, because of factors such as, but not limited to, the following:

- I. Relative size or number of dwelling units as compared with existing stock.
- II. Proximity to the borders of a neighboring community.
- III. Transportation networks.
- IV. Anticipated emissions such as light, noise, smoke, odors, or particles.
- V. Proximity to aquifers or surface waters which transcend municipal boundaries.
- VI. Shared facilities such as schools and solid waste disposal facilities."

A project may be a development of regional impact if it meets any one of the standards listed above.

I. Relative size or number of dwelling units as compared with existing stock.

The applicant is proposing 156 market rate apartments to be constructed within three buildings that are proposed to be four stories in height. The proposed site is located on Tax Map 23 Lot 25 and Lot 29, to be located at 109A & C Main Street in Raymond, NH. Of the proposed 156 units to be constructed, 84 units are designated as 1-bedroom units and 72 as 2-bedroom units.

As stated in the Rockingham Planning Commission memo from December 12, 2023, the proposed development would increase housing diversity in Raymond and throughout the region. According to the Rockingham Planning Commission's recently completed Regional Housing Needs Assessment, there has been a substantial shortfall of housing being built over the last 20 years. When looking at Raymond's building permits over the past two decades, it appears that building permits for 2020 were about half of those issued in 2000. Although this project may have some mitigatable local impacts to the existing neighborhood, regionally speaking, the project is not considered to have regional impacts. One could go further and say that the proposal could be considered as much needed diverse housing.

II. Proximity to the borders of a neighboring community.

Development of Regional Impact guidelines standards states that a proposed development may be classified as having a regional impact if the proposed development is directly adjacent to a municipal boundary. The straight-line distance between the proposed development and the municipal border of Candia is 4.21 miles, the distance to the border of Chester is 3.22 miles and for Deerfield the distance is 3.98 miles. The distance from the proposed development to the municipal borders of Candia, Chester and Deerfield do not appear to have a direct impact on those communities.

III. Transportation networks.

SNHPC did not receive a Traffic Impact Study as part of this Determination of Regional Impact. Reviewing the Transportation networks section of the RPC memo, the transportation impacts from the proposed development either will have a minimal impact to the region, such as noted in the traffic impact subsection of the RPC memo, or will be a local impact as stated in the safety subsection in regard to Stopping Site Distances (SSD). In reviewing the plans provided, SNHPC concluded that although there may be some internal vehicle and truck conflicts and concerns (it is recommended that a truck turning template plan be included to verify waste management, delivery and moving truck parking areas are accommodated), there are no apparent regional impacts to transportation networks.

IV. Anticipated emissions such as light, noise, smoke, odors, or particles.

The anticipated impacts from the proposed development will be likely be contained to the construction phase of the project and will present an impact to the residents who live around the proposed development, but do not appear to impact the neighboring SNHPC communities. Again, these localized impacts can be mitigated through proper landscaping and buffer plantings, berms, fences, and other preconstruction agreements.

V. Proximity to aquifers or surface waters which transcend municipal boundaries.

The proposed development is designed to utilize the Raymond municipal water system and will not be drawing from any regional aquifers. SNHPC concurs with the recommendations presented in the RPC memo: to limit any impacts that the proposed development may have regarding stormwater runoff, groundwater recharge and wastewater treatment, as well as the recommendations put forth by the RPC regarding following local, state and federal regulations pertaining to stormwater management and the inclusion of all applicable state and federal permit numbers noted in the plan, as a condition of approval.

VI. Shared facilities such as schools and solid waste disposal facilities.

The 2020 decennial census data shows the number of minors in the community of Raymond at 1,934 individuals with 4,285 households. This calculates out to a rate of 0.45 minors per household. Thus, the highest estimate for minors entering the school system from the proposed development would be 70 and that is if every unit were occupied by a family with a school-aged child. With the declining school rates in Raymond and the region as noted in the memo provided by the RPC, the impacts to the regional school system would be minimal.

Having reviewed the procedural guidelines for the Development of Regional Impacts, SNHPC does not anticipate this proposed development having a regional impact on the communities of Candia, Chester and Deerfield, which are located in the SNHPC region.

If you have any questions, feel free to contact me at svonaulock@snhpc.org or (603) 669-4664.

Cc: Town of Candia

Town of Chester

Town of Deerfield

Town of Raymond



| Pledge of Allegiance: Recited by all in attendance. |
|---|
| |
| Meeting called to order: |
| The meeting started at approximately 6:00 pm. |
| |
| Roll Call: |
| Bob McDonald, Planning Board, Tom Daigle, Dee Luszcz, Planning Board Chair |
| Jim McLeod, Vice-Chair, Trisha Bridgeo, Board of Selectmen, Gretchen Gott, |
| Planning Board, Jason Cleghorn, Community Development Director. |
| |
| Public Meeting: |
| |
| Application #2022-015 LLA White Rock Place: |
| |
| A Lot Line Adjustment has been submitted by Joseph Coronati of Jones and Beach |
| Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing to adjust |
| the lot line configuration between Tax Map 23 Lots 24, 25, 28, and 29, located at |
| 109 Main Street in Raymond NH. Lots 24 and 25 are located within Zone D |
| (Industrial) and Lots 28 and 29 are in Zone B (Residential). |
| |
| Tim Phoenix of Hoefle, Phoenix, Gormley and Roberts representing Tuck Realty, |
| Mike Garrepy from the development team and Joseph Coronati from Jones and |
| Beach were all introduced. Mr. Phoenix said there had been a question of |
| authorizations from the owners and that he had located those files in the online |
| documents. Mr. Phoenix asked if that would be an impediment to them proceeding |
| tonight. |
| |
| Mr. McLeod said that it would not be an impediment to them proceeding at this |
| point. |
| |
| Motion: |
| Mr. McLeod made a motion to accept Application 2022-015 Lot line |
| Adjustment White Rock Place as complete for review; Mr. McDonald |
| seconded the motion. |
| |
| A roll call vote was taken. |
| Mr. McDonald – Yes |
| Mr. Daigle - Yes |
| |

Ms. Luszcz – Aye

Mr. McLeod - Aye

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39



Ms. Bridgeo – Aye

41

Planning Board Minutes November 16, 2023 @ 6:00 PM Media Center Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

| 42 | ws. Gott – Aye |
|----------|---|
| 43 | |
| 44 | The motion passed with a vote of 6 in favor, 0 opposed and 0 abstentions. |
| 45 | |
| 46 | Discussion Concerning Mortgages: |
| 47 | |
| 48 | Ms. Luszcz asked if there were any mortgages on the properties citing RSA 674:39 |
| 49 | A. |
| 50 | |
| 51 | Mr. Phoenix said that this application is a lot line adjustment not a merger and that |
| 52 | RSA doesn't apply but they will let the Board know if there are mortgages and how |
| 53 | they are going to handle it. |
| 54 55 | Zono Clarification: |
| 56 | Zone Clarification: |
| 57 | Mr. McLeod said that the lot lines cross multiple zones: Zone D and Zone B. Mr. |
| 58 | McLeod asked for clarification to visualize where the lines are. |
| 59 | |
| 60 | Mr. Coronati created a new exhibit illustrating on the plan that Lot 25 is not |
| 61 | changing zones. He highlighted Lot 25 in pink and said that Lot 24 is part of the |
| 62 | application and is being absorbed into the property. It is already owned by Tuck |
| 63 | Realty. Mr. Coronati explained that a voluntary lot merger is basically a form to be |
| 64 | filled out and brought into the town to have them merged. Mr. Coronati said there |
| 65 | are no buffer requirements for the lot line adjustments; they will be putting a |
| 66 | residential next to a residential. |
| 67 | |
| 68 | Mr. Phoenix was under the assumption that none of the lots were being merged but |
| 69 | it does bring back in RSA 674:39 A at least with respect to Lot 24. Neither Lot 24 |
| 70 | nor Lot 25 have mortgages on them, but he will confirm that. |
| 71 | Mr. Olankana asida lattakulatian akantuusuldusa dita ka anaatadta nannasantika |
| 72 | Mr. Cleghorn said a lot tabulation chart would need to be created to represent the |
| 73 74 | totals of the zoning district within the lot lines. Mr. Garrepy said they can provide that chart. |
| 74 75 | mai Gian. |
| 13 | |

Letters of Authorization:

76

77 78

79

80

Ms. Luszcz asked if there are 6 owners of Lot 25 because she has 6 letters of authorization.



| 81 82 | Mr. Coronati said there are 5 owners of Lot 25, and the 6 th letter of authorization is |
|------------|--|
| 83 84 | Tuck Realty who owns Lot 24. |
| 85 | The 5 owners of Lot 25 are: |
| 86 | Joseph Welch |
| 87 | Al Welch |
| 88 | Henry Peterson |
| 89 | Alison Robin Proulx |
| 90 | Inez Welch |
| 91 | THOSE WORTH |
| 92 | There is an authorization from Turner Porter who is the principal owner of Lot 24, |
| 93 | but it mistakenly says Lot 25. Mr. Garrepy said he would have that revised and |
| 94 | submit that to the file. |
| 95 | |
| 96 | Continuation of Application: |
| 97 | |
| 98 | Motion: |
| 99 | Mr. McLeod made a motion to continue Application 2022-015 Lot Line |
| 100 | Adjustment White Rock Place to January 4, 2024, at 7pm, Raymond High |
| 101 | School Media Center, 45 Harriman Hill Road; Mr. Daigle seconded the |
| 102 | motion. |
| 103 | A nell cell cote core teleso |
| 104 | A roll call vote was taken. |
| 105 | Mr. McDonald – Yes |
| 106 107 | Mr. Daigle – Yes Ms. Luszcz – Aye |
| 107 | Mr. McLeod – Aye |
| 109 | Ms. Bridgeo – Aye |
| 110 | Ms. Gott – Yes |
| 111 | |
| 112 | The motion passed with a vote of 6 in favor, 0 opposed and 0 abstentions. |
| 113 | · · · · · · · · · · · · · · · · · · · |
| 114 | Application #2021-018 White Rock Place: |
| 115 | |
| 116 | A Site Plan Application has been submitted by Joseph Coronati of Jones and |
| 117 | Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing |
| 118 | 156 market rate apartments of three 4 story buildings on slabs with elevators, mix |
| 119 | of 1- and 2-bedroom units with an open space preserved, recreation trails, and |
| 120 | parking. Access will be from Main Street. The property is identified as Raymond |

Page **3** of **20**



121 Tax Map 23 Lot 25 and Lot 29, located at 109A & C Main Street, Raymond NH, 03077 and are within Zone B and Zone D. 122 123 124 **Abutters List:** 125 Ms. Luszcz asked if the state had been notified as an abutter because of Route 126 127 101. Mr. Garrepy said that it is not normal to notify the DOT when it is their road. 128 129 130 Mr. Cleghorn read the abutters list for this application. 131 Erin Brewitt of 110 Main Street said she was not notified as an abutter. Mr. 132 133 Cleghorn said John Brewitt was on the abutters notice but Erin Brewitt was omitted. 134 Motion: 135 Mr. McLeod made a motion to accept Application 2021-018 White Rock 136 Place as complete for review; Ms. Luszcz seconded the motion. 137 138 139 Discussion: 140 Mr. McLeod said the only reason it was not complete was because he did 141 not feel that there was a zoning determination and that, in his mind, was to 142 come before. It has been explained that is not the case. 143 144 A roll call vote was taken. 145 Ms. Gott - Yes 146 Ms. Bridgeo - Aye 147 Mr. McLeod - Aye 148 Ms. Luszcz – Aye 149 Mr. Daigle - Yes 150 Mr. McDonald - Yes 151 152 The motion passed with a vote of 6 in favor, 0 opposed and 0 abstentions. 153 154 Vesting: 155 156 Mr. Garrepy asked for clarification about the vote at the previous meeting about not 157

accepting jurisdiction because it wasn't complete due to zoning matters. He wants to

make sure everyone is clear that there are no zoning matters or ordinance issues

Page 4 of 20

that they need to be aware of.

158

159



161 Ms. Luszcz said that vesting is a legal issue, and this Board is not going to comment 162 on the vesting. The Board cannot talk about the project outside of a public hearing. 163 164 **Regional Impact:** 165 166 167 Ms. Luszcz read the Regional Impact worksheet. Statutory Authority: refer to RSA 36:54-58 – The purpose of this statute is to 168 establish the framework to be followed by a community that is reviewing a 169 170 development proposal with potential impacts beyond its municipal boundaries. 171 Findings of YES on one or more of the items below indicate the possible need for a local land use board to make a determination that the development proposal results 172 173 in regional impacts. 174 175 Poll: 176 **School Impacts:** Does the development create a significant new student population 177 affecting a regional school district? Yes/No 178 179 180 Ms. Gott said the Seacoast School of Technology (SST) is a regional vocational school where students from Raymond commute to Exeter to attend. Ms. Gott said 181 there are other schools that are working on adopting Raymond as their High School, 182 183 but that is only the potential of regionalization, not definite. SST is a definite regional school. 184 185 So, knowing that there is a regional school district, the results are: 186 Mr. McDonald - Yes 187 Mr. Daigle – Yes 188 • Ms. Luszcz – Yes 189 • Mr. McLeod – No 190 191 Ms. Bridgeo – Yes Ms. Gott – Yes 192 193 The poll was 5 to 1 YES. 194 195 **Traffic Generation:** Will the project generate traffic that will create an impact on 196 197 surrounding municipalities? Yes/No

198 199

Discussion:



200 Mr. McLeod said the traffic is not significant. It is residential and there will be a lot more cars but that is not going to affect the people in Exeter. 201 202 203 Ms. Bridgeo disagreed with Mr. McLeod saying that they have already started to see traffic changes that have a cumulative effect every time one of these developments 204 comes in, especially on Route 102 and neighboring towns. 205 206 207 Mr. Daigle agreed with Ms. Bridgeo on the impact on the towns and for traffic downtown. 208 209 Ms. Gott said that Main Street is a regular traffic way to get to Route 27 but is saying 210 she doesn't know if it would be impacted. 211 212 213 Ms. Gott – No Ms. Bridgeo – Yes 214 Mr. McLeod – No 215 Ms. Luszcz – No 216 • Mr. Daigle – Yes 217 Mr. McDonald - Yes 218 219 220 Mr. McLeod explained that because it was a 3 to 3 vote, they are required to make it a YES. 221 222 223 Road Networks: Does the development provide the opportunity to create a more 224 efficient road network for the regional area or potentially affect regional travel patterns? Yes/No 225 226 Mr. McLeod – No 227 Mr. McDonald - Yes 228 • Mr. Daigle – Yes 229 • Ms. Luszcz – No 230 • Ms. Bridgeo – Yes 231 Ms. Gott – No 232 233

234 The

235236

237

238

The vote was 3 to 3, so they are required to make it a YES.

Building Size: Is the proposed building greater than 50,000 square feet and located within 2,500 feet of a municipal line? Yes/No



Mr. McLeod said this question is not applicable. 240 241

242

239

Mr. Coronati confirmed that there would be 3 buildings with a footprint total of 42,408.

243 244

- Mr. McDonald No
- Mr. Daigle No 245
- Ms. Luszcz No 246
- Mr. McLeod No 247
- Ms. Bridgeo No 248
- Ms. Gott No 249

250 251

Visual Impacts: Will the development create visual impacts to neighboring municipalities such as light pollution, glare, or structures visible from neighboring municipalities? Yes/No

253 254

252

- Mr. McDonald No 255
- Mr. Daigle No 256
- Ms. Luszcz No 257
- Mr. McLeod No 258
- 259 Ms. Bridgeo – No
- Ms. Gott No 260

261 262

263

264

Pollution: Does the development propose the operation of a facility or business which would generate excessive amount of air pollution, wastewater discharge, noise, or hazardous waste transport? Yes/No

265 266

Discussion:

267 268

269 270

Mr. McLeod said by the definition of the way that it is written, the answer would be no. However, he believes that the intent of this is that any development that created these issues would fall under this. The applicant is abutting a property that is a Brownfield site that is under SSI.

271 272

273 Ms. Luszcz said this is on a regional basis not on a local and it must be excessive. 274

275

276 Ms. Bridgeo said that waterways are not located on just one parcel. They are regional because we do impact them. The Brownfield is part of the Lamprey 277



| 278 | Watershed. |
|------------|--|
| 279 280 | Ms. Gott – Yes |
| 281 | Ms. Bridgeo – Yes |
| 282 | Mr. McLeod – Yes |
| 283 | Ms. Luszcz – Yes |
| 284 | Mr. Daigle – Yes |
| 285 | Mr. McDonald – Yes |
| 286 | |
| 287 | Water Supply Impacts: Will the development require a major impact wetland permit from NH DES? Yes/No |
| 288 289 | permit nontrial DES? Tes/No |
| 290 | Mr. Garrepy said there is a wetland on the property, but there is no permit. |
| 291 | |
| 292 | Ms. Gott – No |
| 293 | Ms. Bridgeo – No |
| 294 | Mr. McLeod – No |
| 295 | Ms. Luszcz – No |
| 296 | Mr. Daigle – No |
| 297 | Mr. McDonald – No |
| 298 | |
| 299 | Will impacts to known aquifers occur? Yes/No |
| 300 | |
| 301 | Mr. Coronati said the Town GIS has the Watershed Resource Protection Area but |
| 302 | did not think that they were in that area. |
| 303 | |
| 304 | Mr. McLeod explained that this is not asking if it is on an aquifer; it is asking if there |
| 305 | will be impacts to known aquifers. The original intent of this project was it would be |
| 306 | connected to town water and in that scenario, it wouldn't impact known aquifers. |
| 307 | |
| 308 | Ms. Bridgeo said that if there is a possibility of impact, we should note it up front. |
| 309 | Ms. Bridgeo noted that if there is a possibility of impact, we should note it up from: Ms. Bridgeo noted that Fremont is another municipality that uses our water system. |
| 310 | was Bridges floted that Fremont is another maniopality that ases our water system. |
| 311 | Mr. McDonald – Abstain |
| 312 | Mr. Daigle – Yes |
| 313 | Ms. Luszcz – Yes |
| 314 | Mr. McLeod – No |
| | · ···· = - · · · · · · · |



| 315 316 | Ms. Bridgeo – Yes Ms. Gott – No |
|------------|--|
| 317 | Wis. Gott – No |
| 318 | Does the project involve permitting a large groundwater withdrawal? Yes/No |
| 319 | |
| 320 | Ms. Gott – No |
| 321 | Ms. Bridgeo – No |
| 322 | Mr. McLeod – No |
| 323 | Ms. Luszcz – No |
| 324 | Mr. Daigle – No |
| 325 | Mr. McDonald – No |
| 326 | |
| 327 | Will the development cause negative impacts to another community's municipal |
| 328 329 | water supply? Yes/No |
| 330 | Ms. Gott – No |
| 331 | Ms. Bridgeo – No |
| 332 | Mr. McLeod – No |
| 333 | Ms. Luszcz – No |
| 334 | Mr. Daigle – No |
| 335 | Mr. McDonald – No |
| 336 | |
| 337 | Conservation Lands: Does the development abut existing conservation lands, |
| 338 | greenway, or existing farmland such that coordination between municipalities |
| 339 | could lead to the creation or preservation of greenways or wildlife habitat areas or |
| 340 | prevent fragmentation of forests, farms or other conservation lands? Yes/No |
| 341 | |
| 342 | Mr. McDonald – No |
| 343 | Mr. Daigle – No |
| 344 | Ms. Luszcz – No |
| 345 | Mr. McLeod – No |
| 346 | Ms. Bridgeo – No |
| 347 | Ms. Gott – No |
| 348 | |

Economic Impacts: Does the development propose the creation of business or industry that would significantly impact regional economic development? Yes/No

349



| cant increased demand |
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| 387 388 | Ms. Bridgeo – No Ms. Gott – No |
|--|--|
| 389 390 391 | Other: Does the development create other regional impacts not listed in items 1 – 11 above? Yes/No |
| 392 393 394 395 | Mr. McDonald – No Mr. Daigle – No Ms. Luszcz – No |
| 396 397 398 399 | Mr. McLeod – No Ms. Bridgeo – No Ms. Gott – No |
| 400 | Discussion of Impacted Towns: |
| 401 402 403 404 | The Board identified the impacted towns by going through the Regional Impact Worksheet. |
| 405 | Mr. McLeod said that Exeter would need to be notified because of SST. |
| 406 407 | Mr. Cleghorn recommended notifying the Rockingham Planning Commission. |
| 408 409 410 411 | Ms. Luszcz said that traffic generation is going to affect Epping, Deerfield, Chester, Candia, and Fremont. Ms. Luszcz suggested sending letters to all the neighboring towns. Mr. McLeod said that mutual aid would be to all the abutting communities. |
| 412 413 414 | Ms. Bridgeo further commented that the water supply that we drink out of from the Lamprey would include Durham, New Fields, Epping, and Exeter. |
| 415 416 | Legal Agreement Discussion: |
| 417 418 419 | Mr. Garrepy said they Mr. Cleghorn did receive an email about a legal agreement about their application and would like it made public. |
| 420 421 422 423 | Ms. Luszcz said that would be privileged information of the Board and did not propose a vote to the Board, however Ms. Gott did make a motion. |
| 423 424 425 426 427 428 | Motion: Ms. Gott made a motion that the Board does not release the information from that meeting at this time; Mr. McLeod seconded the motion and commented that they had just determined that it is not the proper time to take this up. |



| 430 | A roll call vote was taken. |
|-----|--|
| 431 | Ms. Bridgeo – No |
| 432 | Mr. McLeod - No |
| 433 | Ms. Luszcz – No |
| 434 | Mr. Daigle - No |
| 435 | Mr. McDonald – No |
| 436 | Ms. Gott - Yes |
| 437 | |
| 438 | The motion did not pass with a vote of 1 in favor, 5 opposed and 0 |
| 439 | abstentions. |
| 440 | |
| 441 | |
| 442 | Continuation: |
| 443 | |
| 444 | Motion: |
| 445 | Mr. McLeod made a motion to continue Application 2021-018 White |
| 446 | Rock Place to January 4, 2024, at the Raymond High School Media |
| 447 | Center, 45 Harriman Hill Road; Mr. McDonald seconded the motion. |
| 448 | |
| 449 | A roll call vote was taken. |
| 450 | Mr. McDonald – Yes |
| 451 | Mr. Daigle – Yes |
| 452 | Ms. Luszcz – Yes |
| 453 | Mr. McLeod – Yes |
| 454 | Ms. Bridgeo – Yes |
| 455 | Ms. Gott - Yes |
| 456 | |
| 457 | The motion passed with a unanimous vote. |
| 458 | |
| 459 | Tabling of Lane Road Application: |
| 460 | |
| 461 | Motion: |
| 462 | Mr. McLeod made a motion to move Application 2023-019 197 |
| 463 | Lane Road Conservation Subdivision until after the joint meeting |
| 464 | with the Town of Raymond Conservation Commission; Ms. |
| 465 | Bridgeo seconded the motion. |
| 466 | Discussion |
| 467 | Discussion: |
| 468 | Ms. Gott said that she feels uncomfortable about tabling the Lane |
| 469 | Road Application because of the number of abutters in attendance |



| 470 | and suggested that they do not have the time certain notice apply |
|-----|---|
| 471 | and move it back so that the Board can recognize that they are |
| 472 | here. |
| 473 | |
| 474 | Mr. McLeod said that they have a design review, and the |
| 475 | Conservation Commission are in attendance for legal reasons for |
| 476 | the Zoning Ordinances at it has been noticed for 7:30. |
| 477 | |
| 478 | Ms. Luszcz said it is still her intent to hear the Lane Road Design |
| 479 | Review. |
| 480 | |
| 481 | A roll call vote was taken. |
| 482 | Mr. McDonald – Yes |
| 483 | Mr. Daigle – Yes |
| 484 | Ms. Luszcz – Yes |
| 485 | Mr. McLeod - Yes |
| 486 | Ms. Bridgeo – Yes |
| 487 | Ms. Gott - No |
| 488 | |
| 489 | The motion passed with a vote of 5 in favor of tabling Lane Road, 1 |
| 490 | opposed and 0 abstentions. |
| 491 | |
| 492 | Joint Meeting with Town of Raymond Conservation Commission: |
| 493 | |
| 494 | The Planning Board will meet in a joint session with the Town of Raymond |
| 495 | Conservation Commission to discuss potential Town Warrant articles |
| 496 | concerning the amendment of the Town's Groundwater Conservation Overlay |
| 497 | District (Section 5.2 of the Zoning Ordinance) specifically Sections 5.2.4.8 |
| 498 | Definition of Impervious Surface, Section 5.2.3 Groundwater Conservation |
| 499 | Overlay District Description as well as potential changes to Section 4.9 |
| 500 | Conservation District specifically Section 4.9.3.1 Shoreland Protection Area, |
| 501 | Section 4.9.3 and Section 4.9.5 District Boundaries, pertaining to the definition |
| 502 | of the wetland setback area, Section 15.1 Area and Dimension Table clarifying |
| 503 | language. Potential amendments to Sections 4.9.3 and 4.9.4 External Links, |
| 504 | updating newer references to the Rockingham County Soil Survey and adding |
| 505 | revised reference language therein. |
| 506 | 3 3 |

Jan Kent, chair of the Conservation Commission, opened their meeting at 7:40

PM and introduced the Board Members in attendance.

507



510

The members in attendance were:

Planning Board Minutes November 16, 2023 @ 6:00 PM Media Center Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

| 511 | Jan Kent – Chair |
|-----|---|
| 512 | Mike Unger – Vice Chair |
| 513 | Kathy McDonald – Secretary |
| 514 | Warren Gibby – Member |
| 515 | Transcriber and the second of |
| 516 | Potential Articles Presentation: |
| 517 | |
| 518 | <u>Definition of Impervious Surface:</u> |
| 519 | |
| 520 | Mike Unger explained that the Conservation Commission had a question |
| 521 | about section 5.2.4.8 The Definition of Impervious Surface. |
| 522 | |
| 523 | Mr. Cleghorn said that they cannot make the definition at this meeting and |
| 524 | asked for the ability to come up with some sample definitions and bring them |
| 525 | before both Boards. |
| 526 | |
| 527 | Ms. Bridgeo asked if the Conservation Commission wanted to do the |
| 528 | language for that and submit it to Mr. Cleghorn. |
| 529 | |
| 530 | Ms. Kent said they don't meet until the second Wednesday in December and |
| 531 | won't have any opportunity to work on it. |
| 532 | |
| 533 | Section 5.2.3: Groundwater Conservation Overlay District Description: |
| 534 | |
| 535 | Mike Unger said that this deals mostly with updating Map B that is in the |
| 536 | ordinance to reflect the current Well Head Protection Areas. Well #4 is not |
| 537 | currently shown and there may have been other community wells that aren't |
| 538 | on that map. The second paragraph was just to make the language consistent |
| 539 | between the map and the ordinance. Lastly, it may just be an administrative |
| 540 | thing to make sure the links are active or to add links in the online ordinance. |
| 541 | |
| 542 | Ms. Luszcz asked if "Groundwater Protection Zone" and "Groundwater |
| 543 | Conservation Overlay District" are one and the same. |
| 544 | |
| 545 | Mr. Cleghorn said that he needed to research that and get an opinion on |
| 546 | whether just hyperlinking existing text requires warrant. He will discuss the |
| 547 | matter with the Town Counsel. |
| 548 | |
| 549 | Mr. McLeod said that is something they can take up at the Raymond Source |
| | Page 14 of 20 |



Water Protection Plan (SWP) Steering Committee Meeting on Monday to continually update the map as things happen.

Section 4.9.3.1 Shoreland Protection Area:

Jan Kent explained that this particular ordinance was created some time ago and there have been a couple changes over the years. The first paragraph was to try and clean it up. The first change is to remove references to the "Water Resource Management Plan". Changes were made that are not applicable anymore. The second paragraph was changing some wording because of challenges that they have. To replace "having flowing or standing water for (6) months of the year" with "intermittent or perennial streams". They provided the language for the warrant.

Ms. Bridgeo asked if the Water Resource Management Plan referenced any place else in the document? Has it been checked to make sure that it is no place else?

Jan Kent said they want to remove the reference in this particular item only. They were referring to this plan to determine what streams had for setback. They strengthened the ordinance so that that Plan did not apply anymore.

Ms. Bridgeo asked if they knew of any NHDES document that would list the intermittent of perennial streams? That would also help when looking at plans.

Jan Kent did not know if "Maps in Granite" would have a list.

Mr. McLeod said that should also be considered at the Raymond Source Water Protection Plan (SWP) Steering Committee Meeting on Monday because there should be a quick reference for people to reference the definitions of perennial and the other types of waterways are, and that should be part of the new plan that they are working on.

Mr. Cleghorn said that if they are adding the phrase "intermittent or perennial streams", they should probably amend the definitions and have a definition of those. Ms. Kent agreed with that proposal.

Potential Article 4

Section 4.9.3 District Boundaries, section 4.9.3.5 and section 4.9.5



Jan Kent explained that the wording is inconsistent, and that the wetland setback is not currently included in Zone G. They are just recommending that they add a new section under District Boundaries, to include the wetland setback area as defined in 15.3.2.

Mr. Cleghorn said that he wanted to establish that he does not have any issue with further protection of the natural environment, however, if they make this change it may be a deeper policy change than it may appear. This will have the effect of lowering densities, because now with larger areas of properties, if you include the setback area, not just the wetlands will now be taken out of the Zone G calculations. It has bigger implications than just shoreland. Zone G implications are much wider in range. This is a policy implicating the others are clarifying. Additionally, a special permit is currently only needed when there is a wetland impact. This would make it such that a special permit is now required if it is not just the wetland itself but the setback area. That is also a policy discussion. Mr. Cleghorn said he would work up a policy analysis for this article.

Mr. McLeod said that he agreed with the Conservation Commission on this, and they do want more protective language in there understanding that it does have additional impacts. This would require educating the public to understand what the implications are. It needs more definition and more education for the public. Mr. McLeod said he could see both sides of the issues, but it is legitimate enough to put before the voters. He can see where it might be a big problem where somebody is just encroaching a few feet into a buffer, they're not really affecting things, and now they have to go through this whole process. However, what they are really trying to do is make sure that that somebody isn't just using all that buffer zone, and nobody even knows about it because they didn't get a permit.

Potential Article 5:

Mr. McLeod said that potential article 5 follows right along with article 4 and would just be a clean-up.

Jan Kent said it is part of the other article.

Potential Article 6:



| 628 | |
|-----|---|
| 629 | Jan Kent said that Article 6 was just a table that needed some cleaning up |
| 630 | because it was confusing. This is something that could be done |
| 631 | independently. |
| 632 | |
| 633 | Potential Article 7: |
| 634 | |
| 635 | Section 4.9.3 and 4.9.4 - External Links |
| 636 | |
| 637 | Jan Kent said there is more up-to-date information out there as the 1994 |
| 638 | version of the Rockingham County Soil Survey Map is out of date. |
| 639 | |
| 640 | Mr. McLeod suggests finding another section or area and just have a note, |
| 641 | possibly in the title area in the intro of the ordinance saying all referenced |
| 642 | State Level Maps and studies are the most current edition. |
| 643 | · |
| 644 | Mr. Cleghorn said that cleaning up all the hyperlinks would still require a |
| 645 | warrant and that it would not be a productive use of time to go into each |
| 646 | reference. |
| 647 | |
| 648 | Conservation Commission Adjournment: |
| 649 | |
| 650 | Motion: |
| 651 | Kathy McDonald made a motion to adjourn at 8:24pm; Mike Unger |
| 652 | seconded the motion. |
| 653 | |
| 654 | The motion passed with a unanimous vote of Conservation |
| 655 | Commission Board by saying 'aye'. |
| 656 | , , , , |
| 657 | |
| 658 | Public Hearing: |
| 659 | |
| 660 | Application #2023-010 197 Lane Road Conservation Subdivision: |
| 661 | |
| 662 | In accordance with NH RSA 676:4 II(b) the Planning Board will engage in a |
| 663 | nonbinding design review discussion with an applicant, Cynthia Nye |
| 664 | Revocable Trust, and their authorized representatives Erik Poulin, P.E. of |
| 665 | Jones and Beach Engineers, Inc. The discussion will be regarding a proposal |
| 666 | for a five (5) lot Conservation Subdivision. The property is located at Tax Map |

19/Lot 5 at 197 Lane Road located within Zone B.



668 669

Mr. McLeod read the abutters notice list. Mr. McLeod suggested having forms available for those who are present but were not notified.

670 671 672

Karl Urlich of 183 Lane Road was present but not listed on the abutters list. Mr. Ulrich accepted his presence as notice of the plan.

673 674 675

Ms. Gott disclosed that she knows several of the people involved through school and it will not have any bearing on her decision making.

676 677 678

Applicant Presentation:

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Erik Poulin of Jones and Beach, representing the property owner Douglas Nye, who was also present, introduced himself and said the property is 197 Lane Road, Lot 4. This property they are accessing through which has the rights to do that, and they just received a letter from Eversource giving them preliminary approval for what they are planning. Mr. Poulin said they met with RPC for a preliminary meeting to get some overall feedback. They decided to do a Conservation Subdivision design allowing them to design (4) developable lots with one shared driveway on Lane Road. This allowed them to reduce the size of the lots, keep the wetland impact to just one location, and provide substantial open space that will be added to the rear of the property. The lots will be serviced by individual septic tanks and wells. The wetlands were delineated by Gove Environmental Services. There is a wetland impact needed to access the upland area. The current estimated wetland impact is about 3,200 square feet. but the latest design will probably bring it down to 2,900 square feet of impact. They are preparing a State Dredge and Fill Permit and will meet with the Conservation Commission once that is filed. Mr. Poulin explained that the yield plan, the way it's shown, potentially could be built, would require wetland impacts to accomplish it. When they come back, they will make sure that Zone G land is accounted for lot size. Moving forward, they want to break Lot #3 off and subdivide Lot #5 to make that happen when they do the final subdivision. They are conveying 1.91 acres to an abutter on Lot #21.

Public Comment:



| 702 703 704 | Karl Ulrich commented that going to the conservation subdivision that they make sure they have at least 50% of the buildable 2 acre lots, not the entire conservation. |
|-------------------|--|
| 705 706 | Ms. Luszcz said that they do not have to stay 2 acres; they have to remove all the Zone G land. |
| 707 | Public comment and Design review closed at approximately 8:50pm. |
| 708 | Motion: |
| 709 | Mr. McLeod made a motion to close the review of Application 2023- |
| 710 | 010: 197 Lane Road Subdivision; Ms. Luszcz seconded the motion. |
| 711 | A roll call vote was taken. |
| 712 | Mr. McDonald - Yes |
| 713 | Mr. Daigle - Yes |
| 714 | Ms. Luszcz – Yes |
| 715 | Mr. McLeod - Yes |
| 716 | Ms. Bridgeo – Yes |
| 717 | Ms. Gott - Yes |
| 718 | |
| 719 | The motion passed with a vote of 6 in favor, 0 opposed and 0 abstentions. |
| 720 | |
| 721 | Approval Of Minutes: |
| 722 | |
| 723 | Motion: |
| 724 | Mr. McLeod made a motion to table the minutes from November 9, |
| 725 | 2023, until the next meeting which is November 30, 2023; Mr. |
| 726 | McDonald seconded the motion. |
| 727 | |
| 728 | A roll call vote was taken. |
| 729 | Mr. McDonald - Yes |
| 730 | Mr. Daigle – Yes |
| 731 | Ms. Luszcz – Yes |
| 732 | Mr. McLeod - Yes |
| 733 | Ms. Bridgeo – Yes |
| 734 | Ms. Gott - Yes |
| 735 | The median record with a rate of Cin ferror Comment Lead Col. (1) |
| 736 | The motion passed with a vote of 6 in favor, 0 opposed and 0 abstentions. |
| 737 | |

Board Member Update:



| 739 | |
|------------|--|
| 740 | Mr. McLeod said they do have the Source Water Protection Steering Committee |
| 741 | meeting next Monday. It is from 6:30 to 8:00 at 57 Main Street at the Economic |
| 742 | Development Building. |
| 743 | |
| 744 | Adjournment: |
| 745 | |
| 746 | Motion: |
| 747 | Mr. McLeod made a motion to adjourn; Mr. McDonald seconded the |
| 748 | motion. |
| 749 | |
| 750 | A vote was taken. |
| 751 | Mr. McDonald - Yes |
| 752 | Mr. Daigle - Yes |
| 753 | Ms. Luszcz – Yes |
| 754 | Mr. McLeod - Yes |
| 755 | Ms. Bridgeo – Yes |
| 756 | Ms. Gott - Yes |
| 757 | |
| 758 | A unanimous vote was taken by a show of hands. Motion passed. |
| 759 | |
| 760 | Chair Luszcz adjourned the meeting at approximately 8:55 PM. |
| 761 | |
| 762 | Respectfully submitted, |
| 763 | |
| 764 | Jill A. Vadeboncoeur |
| | |
| 765 | |
| 765 766 | The video of this meeting is to be preserved for 5 years, attached to these |
| | The video of this meeting is to be preserved for 5 years, attached to these minutes and made part of the permanent record. |



<u>Pledge of Allegiance</u>: Recited by all in attendance.

Meeting called to order:

The meeting started at approximately 7:00 pm.

Roll Call:

Bob McDonald, Planning Board, Tom Daigle, Planning Board, Dee Luszcz,
 Planning Board Chair, Trisha Bridgeo, Board of Selectmen, Gretchen Gott,

9 Planning Board.

Absent:

Jim McLeod, Vice-Chair; Jason Cleghorn, Community Development Director.

Public Meeting:

Application #2023-012 Autumn Trail Realty:

A Site Plan has been submitted by Brandon Richards of Fieldstone Land Consultants, PLLC on behalf of Autumn Trail Realty, LLC. The applicant is proposing an 8,000 S.F. commercial building. The property is identified as Raymond Tax Map 32, Lot 72 located 1000 feet south of the Deerfield Rd. and Long Hill Rd. intersection within the Town of Raymond and is within the C1 zoning district.

<u>Application #2023-013 Autumn Trail Realty Conditional Use Application:</u>

A Conditional Use Application has been submitted by Brandon Richards of Fieldstone Land Consultants, PLLC on behalf of Autumn Trail Realty, LLC. The applicant is proposing a Conditional Use Permit for exceedance of 15% impervious surface within the Groundwater Conservation District. The property is identified as Raymond Tax Map 32, Lot 72 located 1000 feet south of the Deerfield Rd. and Long Hill Rd. intersection within the Town of Raymond and is within the C1 zoning district.

Ms. Luszcz read an email from the applicant for continuance. The email will be posted at the end of these meeting minutes. Ms. Luszcz clarified that as the Boad has not accepted the plans, they will need to be rescheduled and notices will need to be resent. No motion necessary.

Application #2023-009 Taft Way Special Permit:



A Special Permit application has been submitted by Daniel Perry Builders on behalf of Paul Morgado. The applicant is proposing a wetland impact of approximately 813 SF for the construction of a driveway to access Tax Map 16-2 Lot 4 located at Taft Way in Raymond NH. The Lot is located within the Residential B Zoning District.

Continuance from 10/26/2023 PB Meeting

As there was a typo on the notice that was sent out saying "Tuesday" instead of "Thursday", Ms. Luszcz said that they will need to reschedule and resend the notices out for a hearing.

Motion:

Ms. Luszcz made a motion to continue application 2023-009 Taft Way Special Permit until February 1, 2024, at the Raymond High School Media Center, 45 Harriman Hill Road at 7:00pm; Ms. Bridgeo seconded the motion.

A roll call vote was taken,

Mr. Daigle - Yes

Mr. McDonald - Yes

Ms. Luszcz – Aye

Ms. Bridgeo – Yes Ms. Gott – Yes

The motion passed with a unanimous vote of 6 in favor, 0 opposed, and 0 abstention.

39 Morrison Road Driveway Permit:

The applicant and their representative are seeking to be permitted to install a driveway off the existing Class VI roadway, at 39 Morrison Road for Lots 20 and 24. The property is Zone B and exceeds the minimum lot size and frontage. Lot 20 does have significant wetlands which cannot be calculated toward the minimum lot size. **Continuance from 10/26/2023 PB Meeting**

Ms. Luszcz and Ms. Bridgeo explained to the applicant that as they did not get proper notification, they will have to continue their application at a later date in order for proper notification to be sent out.

Motion:



Ms. Luszcz made a motion to continue 39 Morrison Road Driveway Permit until February 1, 2024, at the Raymond High School Media Center, 45 Harriman Hill Road at 7:00pm; Ms. Bridgeo seconded the motion.

> A roll call vote was taken, Mr. Daigle – Yes Mr. McDonald – Yes Ms. Luszcz – Aye Ms. Bridgeo – Yes Ms. Gott – Yes

The motion passed with a unanimous vote of 6 in favor, 0 opposed, and 0 abstention.

Application #2023-05 Mardon Woods:

A Site Plan has been submitted by Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing a multi-family residential project consisting of 148 duplexes for a total of 296 dwelling units with clubhouse facilities. Approximately .24 acres of wetland disturbance is associated with the plan. The property is identified as Raymond Tax Map 17, Lots 66 & 82 located at 65 and 101 Batchelder Road within the Town of Raymond and is within the C3W zoning district and Groundwater Protection Overlay.

Application #2023-014 Mardon Woods Lot Line Adjustment:

A Lot Line Adjustment has been submitted by Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing a multi-family residential project consisting of 148 duplexes for a total of 296 dwelling units with clubhouse facilities. Approximately .24 acres of wetland disturbance is associated with the plan. The property is identified as Raymond Tax Map 17, Lots 66 & 82 located at 65 and 101 Batchelder Road within the Town of Raymond and is within the C3W zoning district and Groundwater Protection Overlay.

<u>Application #2023-015 Mardon Woods Special Permit Application:</u>

- A Special Permit Application has been submitted by Jones and Beach Engineers, Inc. on behalf of Tuck Realty Corp. The applicant is proposing a multi-family residential project consisting of 148 duplexes for a total of 296 dwelling units with
- clubhouse facilities. Approximately .24 acres of wetland disturbance is associated
- with the plan. The property is identified as Raymond Tax Map 17, Lots 66 & 82



located at 65 and 101 Batchelder Road within the Town of Raymond and is within the C3W zoning district and Groundwater Protection Overlay. The following waiver is requested: Site Plan Regulations Appendix II – Site Plan Review Fees

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Two notices were sent out regarding the public hearing for these applications. One was sent on December 7, 2023, saying "Tuesday December 21" and another was sent on December 11, 2023, with the correction of "Thursday December 21". Since the corrected notice has the postal date of December 11, but the mail would not have arrived to the receiver until a day or two later, this would not follow RSA 675:7. Ms. Luszcz decided to follow the law and told the applicant that they will need to contact Mr. Cleghorn to reschedule their hearing. As the Boad has not accepted the plans, they will need to be rescheduled and notices will need to be resent. No motion necessary.

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Public Comment:

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Fred Richard of 26 Old Fremont Road wanted clarification on why the other two applicants weren't notified with an updated notice like Mardon Woods. Ms. Luszcz said she could not comment as she is not part of the Town Staff and said he may go to the Town Hall with any questions. Ms. Bridgeo reminded that the Board does not handle the notices.

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Approval of Minutes:

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December 7, 2023

- 150 Ms. Luszcz wanted to strike "Mr. McLeod said, "just take it someplace"" on page 10 line 391 as it was a joke and taken out of context. On the same page lines 382-383, Ms. Luszcz wants "Ms. Gott commented that that problems occurred when there
- were no building inspectors or code enforcers on staff so "some things were put
- where they should not have been" as it is derogatory with no facts to back it up.
- However, Ms. Gott said to leave it in. Ms. Luszcz asked for a poll:

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Should "Ms. Gott commented that that problems occurred when there were no building inspectors or code enforcers on staff so "some things were put where they should not have been" be stricken from the minutes?

- 161 Poll vote:
- 162 Mr. McDonald Yes, strike
- 163 Mr. Daigle Yes, strike
- 164 Ms. Luszcz Yes, strike
- 165 Ms. Bridgeo Yes. strike
- 166 Ms. Gott No, leave as is



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The vote passes 4 to 1 to strike the comment.

Planning Board Minutes December 21, 2023 @ 7:00 PM Media Center Raymond High School 45 Harriman Hill Road, Raymond, NH 03077

169 Motion: Mr. McDonald made a motion to accept the minutes from December 170 7, 2023 as amended, Mr. Daigle seconded the motion. 171 172 A roll call vote was taken. 173 Mr. McDonald - Yes 174 Mr. Daigle - Yes 175 Ms. Luszcz – Ave 176 Ms. Bridgeo - Yes 177 Ms. Gott – No based on the striking of the last comment. 178 179 The motion passed with a vote of 4 in favor, 1 opposed, and 0 abstention. 180 181 **Staff Updates:** 182 No staff were present at the request of Ms. Luszcz. 183 184 **Board Member Updates:** 185 Ms. Bridgeo reported that the Board of Selectmen are working on the budge and 186 will be meeting on Tuesday December 26 at a time to be determined. 187 188 Work Session: 189 190 Warrant Articles 191 192 Ms. Luszcz completed the drafts of the warrant articles that will be sent to Legal 193 for review. Legal reviewed the articles and so far, have given the Board a green 194 light to proceed with them with very minor changes. 195 196 Conservation Committee Conversation 197 Ms. Bridgeo asked for the two Conservation Committee members to come to the 198 stand to answer some questions. She asked if the Conservation Committee 199 200 would look at the local zoning shoreland protection versus the State shoreland RSA 483. Ms. McDonald said that they look at both, and whichever is stricter 201 would apply to the application. Ms. McDonald also mentioned that sometimes 202 the Conservation Committee is not notified of a Special Permit. Ms. Luszcz 203 requested a list of all applications that should be reviewed by the Conservation 204 Committee. Ms. Gott clarified that the list should be the type of 205

applications/permits not the name of specific applications.



The warrant articles will be posted no later than Friday December 29 to meet the 208 January 11, 2024 hearing date. 209 210 Ms. Bridgeo wanted clarification that there should not be a warrant article for 211 Zoning Amendment #9 as that was previously voted on in 2021. Mr. Daigle 212 confirmed the information. The reason why the change was brought up in the 213 previous Planning Board meeting was because the changes were not made to 214 the Zoning Ordinance despite being voted on previously. 215 216 Motion: 217 Ms. Bridgeo made a motion to remove Zoning Amendment #9 from 218 the Public Hearing on January 11, 2024, at the Raymond High 219 School Media Center, 45 Harriman Hill Road at 7:00pm; Mr. Daigle 220 seconded the motion. 221 222 A roll call vote was taken. 223 Ms. Gott - Yes 224 Ms. Bridgeo - Yes 225 Ms. Luszcz – Yes 226 Mr. Daigle - Yes 227 Mr. McDonald - Yes 228 229 The motion passed unanimously with a vote of 5 in favor, 0 opposed, and 230 0 abstention. 231 232 2024 Planning Board Calendar 233 This will be updated the following week. 234 235 **Notice of Meetings** 236 Ms. Luszcz noted that the time of meetings on posted notices and agendas 237 could be a bigger font size to be more noticeable. Ms. Bridgeo commented that 238 it is also important that the postings in the Union Leader newspaper continue to 239

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Board of Selectmen Recap

computer.

Ms. Luszcz and Mr. McLeod attended the last Board of Selectmen meeting on December 18, 2023 in regards to the Regional Planning Commission Membership. Ms. Luszcz read their letter which will be attached to these meeting minutes below. The motions at this meeting passed.

be available as several people were notified by reading that instead of using a



Ms. Gott stated that she would not like to join any Regional Planning 249 Commission this year as she does not know anything about the Strafford 250 251 Planning Commission. She wants to take some time to do more research before deciding. Ms. Gott also commented that they are not required by the State to be 252 253 part of a Regional Planning Commission. 254 Ms. Bridgeo commented that the State is currently updating each Regional 255 Planning Commission's master plan and writing which municipalities belong to 256 257 which Planning Commission. 258 Mr. McDonald reminded everyone that in the letter Ms. Luszcz read, it said "to 259 begin the process of updating" which he is fine with exploring the options and 260 does not want to delay it. Mr. Daigle also agrees. 261 262 263 The cost of membership will be per the number of residents. The number of representatives will be based on population. Their website is comprehensive to 264 investigate their services. 265 266 **Adjournment:** 267 268 Motion: 269 Ms. Bridgeo made a motion to adjourn; Mr. McDonald seconded the 270 motion. 271 272 A roll call vote was taken. 273 Mr. McDonald - Yes 274 Mr. Daigle - Yes 275 Ms. Luszcz - Ave 276 Ms. Bridgeo - Yes 277 Ms. Gott - Yes 278 279 The motion passed unanimously with a vote of 5 in favor, 0 opposed, and 280 0 abstention. 281 282 Chair Luszcz announced the next meeting will be on Thursday January 4, 2024 283 at 7:00 PM and adjourned the meeting at approximately 8:50 PM. 284 285 Respectfully submitted, 286 287

Christine M. Aiello



The video of this meeting is to be preserved for 5 years, attached to these minutes and made part of the permanent record.

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Attachments:

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Autumn Trails Continuance Email:

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From: Brandon Richards <email redacted>
Sent: Thursday, December 21, 2023 1:44 PM

To: Jason Cleghorn < communitydevdirector@raymondnh.gov
 Subject: Autumn Trail Realty Planning Board Meeting Continuance

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Good Afternoon Jason,

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308 309 I'm just reaching out to formally request a continuance for our application that is to be in front of the planning board during tonight's meeting, 12/21/23. I did leave you a message but figured I'd send an email to add some more information. We just mailed out revised plans per the 3rd party engineering review comments yesterday, 12/20/23, and there wouldn't be sufficient time for the board and the review engineer to review our plans prior to tonight's meeting. Can we please be granted a continuance to be on the next planning board agenda?

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If you'd like, please reach out to me at your earliest convenience at [phone # redacted]

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Thank You,

314 Brandon L. Richards

315 Project Engineer



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Milford Office: 206 Elm Street – Milford, NH 03055 Keene Office: 45 Roxbury Street – Keene, NH 03431

Tel: [phone # redacted]

[email redacted]

321 <u>www.FieldstoneLandConsultants.com</u>

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Board of Selectmen Letter:



December 18, 2023

To: Raymond Board of Selectman

From: Dee Luszcz, Raymond Planning Board Chairwoman

Jim McLeod, Raymond Planning Board Vice-Chairman

RE: Regional Planning Commission Membership

Greetings Board of Selectmen Members,

Representing our positions only, the Chair and Vice Chair of the Raymond Planning Board, would like to ask the BOS to approve the RPB to begin the process of updating our Planning Commission.

The Rockingham Planning Commission, with whom we currently enjoy membership, has a sterling reputation, and does solid work, however, they are understandably more aligned with the communities they represent along the coast. In doing research, we have identified the Strafford Planning Commission as a closer fit to our community needs and their represented communities more closely mirror the challenges and opportunities of our own.

Our understanding is that there is a process involved that begins with a request to the BOS. This letter is submitted to you in that capacity. If the BOS gives its formal consent, we will bring the request to the RPB for a vote this week.

Motion: "To request the RPB to take an advisory vote on updating to the Strafford Planning Commission to represent the Town of Raymond regionally."

This vote of the RPB, along with our recommendation, will be presented to the BOS at your next meeting.

This vote of the RPB, along with our recommendation, will be presented to the BOS at your next meeting.

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Dee Luszcz, Raymond Planning Board Chairwoman

Thank you for your time and consideration.

Jim McLeod, Raymond Planning Board Vice-Chairman