

# **LEDGE ROAD 4-LOT SUBDIVISION PLAN**

SB# 01-24

## **STAFF REPORT**

July 10, 2024

**SITE:** 32 Ledge Road / Map 166 / Lot 011

**ZONING:** Town Residence (TR) & Residential Two (R-2)

**PURPOSE OF PLAN:** To depict the subdivision of Map 155/Lot 011 into four (4) single-family lots.

### **PLANS UNDER REVIEW:**

Subdivision Plan SB# 01-24, Map 166/Lot 011, 32 Ledge Road, Hudson, New Hampshire; prepared by: The Dubay Group, 136 Harvey Road Bldg. B101, Londonderry, NH 03053; prepared for Boyer Revocable Trust of 2019, 2 Merrill Street, Hudson, NH 03051; consisting of ten sheets, and plan notes 1-11 on sheet 2; dated March 29, 2024, last revised June 27, 2024.

### **ATTACHMENTS:**

- 1) Subdivision Application, date stamped April 29, 2024 – Attachment “A”.
- 2) ZBA Notice of Decision ZBA case #166-011, dated November 16, 2023 – Attachment “B”.
- 3) Department Comments – Attachment “C.”
- 4) Peer Review, prepared by Fuss & O’Neill, dated May 15, 2024 – Attachment “D”.
- 5) Applicant response to review, prepared by The Dubay Group, dated May 30, 2024 – Attachment “E”.
- 6) Drainage Memo, prepared by The Dubay Group, dated June 27, 2024 – Attachment “F”
- 7) Subdivision plans, revised June 27, 2024.

### **APPLICATION TRACKING:**

1. April 29, 2024 – Application received.
2. June 12, 2024 – Public hearing deferred.
3. June 28, 2024 – Revised Plans received.
4. July 10, 2024 – Public hearing scheduled.

### **COMMENTS & RECOMMENDATIONS:**

### **BACKGROUND:**

The subject lot is approximately 1.277 acres with approximately 710 feet of frontage along Ledge Road. The lot is split between the Town Residential (TR) and Residential Two (R-2) zones. The proposed subdivision went before the Zoning Board of Adjustment on November 19, 2023, and

was granted a variance to allow all the lots to conform to TR dimensional requirements rather than R-2. (See Attachment “B”) The site may contain a small patch of wetland in the most northeasterly corner but is not near any of the areas to be disturbed. No portion of the property is located within a flood zone. The site is intended to be served by municipal water and sewer, with extension of the underground utility already present on Ledge road to the site. The applicant proposes subdividing Map 166 Lot 011 into four lots as follows:

Map/Lot	Lot Size	Frontage on Ledge Road
<i>Minimum requirements</i>	<i>10,000 sq. ft.</i>	<i>90 ft</i>
166-011-000	10,707 sq. ft.	90 ft
166-011-001	10,347 sq. ft.	90 ft
166-011-002	10,045 sq. ft.	91 ft
166-011-003	24,506 sq. ft.	234 ft*

*\*Staff notes more frontage beyond the access easement provided to Map/Lot 166-001-000, however this space is quite narrow and non-usable.*

ZONING BOARD OF ADJUSTMENT:

The applicant appeared before the ZBA on November 16, 2023, to apply for a variance from R-2 dimensional requirements. The ZBA granted the requested variance, with a stipulation added that the 25 ft cemetery setback shall not be violated. The applicant has included this setback on the proposed building setbacks and can be seen on Sheet 3.

DEPARTMENT COMMENTS:

After plan revision 3 dated June 27, 2024, **Engineering** provided the following comments:

*“This looks good and you just need to add a detail about the water crossing under the drainage pipe, they will both be at 4-5’ depth range You might want to have the water line go under the drainage with some insulation in between, have the detail in before you record the plans.”*

The applicant has addressed all comments to the satisfaction of the Engineering Department Full comments may be found in Attachment “C.”

PEER REVIEW:

The applicant submitted the plan set to Fuss & O’Neill for peer review, who in turn provided a completed review (Attachment “D”) on May 15, 2024. Most notes and corrections were administrative in nature, with engineering related concerns relayed to the Town Engineer. The applicant provided a response letter along with a revised plan set on June 27, 2024 (attachment “E”). In revision the applicant has provided administrative updates, in addition to changes to several proposed grades of utilities per engineering request. In addition, a utility easement has been marked along the front of all proposed lots for the maintenance of water utilities.

DRAINAGE MEMO:

The applicant has provided a drainage Memo (attachment “F”), dated June 27, 2024 as part of a revised submittal. The report details pre and post-development conditions as minimal in nature. The applicant has also provided drainage features in the revised plan set per requirement by the Town Engineer.

STAFF COMMENTS:

Planning Staff has identified small administrative changes recommended for the plan. On Sheet three titled “Subdivision Plan,” note #1 should state that the intent of the plan is to subdivide Map 166 Lot 11 into four single-family residential lots. Staff also recommend including in note #7 of the plan set mention of the 25’ cemetery setback, which has been marked on the plan set. No outstanding issues remain for the site now that drainage has been remediated in revision 3 of the plan set.

RECOMMENDATIONS:

Staff recommend application acceptance and holding a public hearing, followed by deliberation and consideration of the subdivision plan. Staff has not identified any additional studies that are recommended at this time. Staff notes that a small section of the proposed driveway turnaround located on proposed Map/Lot 166-011-003 encroaches on the required 25’ setback from cemetery grounds (see sheet 4). The Applicant has addressed all comments issued by Town Staff.

**DRAFT MOTIONS**

**MOTION TO ACCEPT:**

I move to accept the subdivision application, Ledge Road 4-Lot Subdivision Plan, SB# 01-24, Map 166/Lot 011, 32 Ledge Road, Hudson, NH.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**MOTION TO DEFER:**

I move to defer further review of the subdivision application, Ledge Road 4-Lot Subdivision Plan, SB# 01-24, Map 166/Lot 011, 32 Ledge Road, Hudson, NH, to date specific, \_\_\_\_\_, 2024.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**MOTION TO CONTINUE:**

I move to continue further review of the subdivision application, Ledge Road 4-Lot Subdivision Plan, SB# 01-24, Map 166/Lot 011, 32 Ledge Road, Hudson, NH, to date specific, \_\_\_\_\_, 2024.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**MOTION TO APPROVE:**

I move to approve the subdivision plan entitled: Ledge Road 4-Lot Subdivision Plan SB# 01-24, Map 166/Lot 011, 32 Ledge Road, Hudson, NH; prepared by The Dubay Group, 136 Harvey Road Bldg. B101, Londonderry, NH 03053; prepared for Boyer Revocable Trust of 2019, 2 Merrill Street, Hudson, NH 03051; consisting of ten sheets, and plan notes 1-11 on sheet 2; dated March 29, 2024, last revised June 27, 2024; and:

That the Planning Board finds that this application complies with the Zoning Ordinances, and with the Land Use Regulations; and for the reasons set forth in the written submissions, together with the testimony and factual representations made by the applicant during the public hearing;

Subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporated into the Notice of Decision, which shall be recorded at the HCRD, together with the Plan.
2. A cost allocation procedure (CAP) amount of \$6,194.00 per single-family residential unit shall be paid prior to the issuance of a Certificate of Occupancy for the new house lots. This fee is comprised of traffic, school, and recreation impact fees.
3. All monumentation shall be set or bonded for prior to Planning Board endorsement of the Plan-of-Record.
4. Prior to the Planning Board endorsement of the Plan, it shall be subject to final administrative review by Town Planner and Town Engineer.
5. Construction activities involving the proposed undeveloped lots shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday. No exterior construction activities shall occur on Sunday.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_





**Attachment "A"**  
**The Dubay Group, Inc.**  
136 Harvey Road, Bldg B101  
Londonderry, NH 03053  
603-458-6462 thedubaygroup.com

## MEMORANDUM

---

To: Hudson Planning Board

Date: April 29, 2024

From: Doug MacGuire, PE  
The Dubay Group, Inc

Re: Ledge Road Subdivision  
32 Ledge Road

---

The proposed subdivision consists of subdividing Map 166 Lot 11 into four (4) single family lots. Map 166 Lot 11 is located in both Residential 1 (R-1) and Town Residential (TR) Zoning districts. A variance was granted on November 16, 2023, to allow all proposed lots to meet the TR zoning dimensional requirements. The existing lot is mostly clear of wooded vegetation.

The Lots will be serviced by public water and sewer. Part of the proposed subdivision is to extend the existing water main on Ledge Road to service the four (4) proposed lots. Due to grade constraints, the new homes will utilize a private force main system which will be directed into the public sewer.

The plans demonstrate adequate sight distance for all proposed lots.

**SUBDIVISION APPLICATION**

Date of Application: April 25, 2024 Tax Map #: 166 Lot #: 11

Site Address: 32 Ledge Road

Name of Project: Ledge Road Subdivision

Zoning District: R-2 & TR General SB#: 01-24  
(For Town Use Only)

Z.B.A. Action: Case# 166-011(11-16-23)

**PROPERTY OWNER:**

**DEVELOPER:**

Name: Todd Boyer

\_\_\_\_\_

Address: 2 Merrill Street

\_\_\_\_\_

Address: Hudson, NH 03051

\_\_\_\_\_

Telephone # \_\_\_\_\_

\_\_\_\_\_

Email: Boyerab@comcast.net

\_\_\_\_\_

**PROJECT ENGINEER:**

**SURVEYOR:**

Name: The Dubay Group, Inc.; c/o Doug MacGuire

The Dubay Group, Inc.; c/o Joel Connolly, LLS

Address: 136 Harvey Road, Bldg B101

136 Harvey Road, Bldg B101

Address: Londonderry, NH 03053

Londonderry, NH 03053

Telephone # 603-458-6462

603-458-6462

Email: doug@thedubaygroup.com

joel@thedubaygroup.com

**PURPOSE OF PLAN:**

The purpose of this plan is to subdivide Map 166 Lot 11 into 4 single family lots meeting the TR Zoning criteria.

As part of the subdivision, it is proposed to extend the town water main to service the 4 lots.

The newly created lots will also tie into the town sewer main.

**(For Town Use Only)**

Routing Date: 4/30/24 Deadline Date: 5/7/24 Meeting Date: tbd

\_\_\_\_\_ I have no comments \_\_\_\_\_ I have comments (attach to form)

\_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

(Initials)

Department:

Zoning: \_\_\_ Engineering: \_\_\_ Assessor: \_\_\_ Police: \_\_\_ Fire: \_\_\_ DPW: \_\_\_ Consultant: \_\_\_

**SUBDIVISION PLAN DATA SHEET**

PLAN NAME: Ledge Road Subdivision

PLAN TYPE: **Conventional Subdivision Plan** or Open Space Development (Circle One)

LEGAL DESCRIPTION: MAP 166 LOT 011

DATE: April 25, 2024

-----  
Address: 32 Ledge Road

Total Area: S.F. 55,613 Acres: 1.277

Zoning: Residential-2 & Town Residential

Required Lot Area: 10,000 sf

Required Lot Frontage: 90 ft

Number of Lots Proposed: 4

Water and Waste System Proposed: Public water; Public Sewer

Area in Wetlands: None

Existing Buildings To Be Removed: None

Flood Zone Reference: None

Proposed Linear Feet Of New Roadway: None



**SUBDIVISION PLAN APPLICATION AUTHORIZATION**

I hereby apply for *Subdivision Plan* Review and acknowledge I will comply with all of the Ordinances of the Town of Hudson, New Hampshire State Laws, as well as any stipulations of the Planning Board, in development and construction of this project. I understand that if any of the items listed under the *Subdivision Plan* specifications or application form are incomplete, the application will be considered rejected.

Pursuant to RSA 674:1-IV, the owner(s) by the filing of this application as indicated above, hereby given permission for any member of the Hudson Planning Board, the Town Planner, the Town Engineer, and such agents or employees of the Town or other persons as the Planning Board may authorize, to enter upon the property which is the subject of this application at all reasonable times for the purpose of such examinations, surveys, tests and inspections as may be appropriate. The owner(s) release(s) any claim to or right he/she (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests and/or inspections conducted on his/her (their) property in connection with this applications.

Signature of Owner: Todd Boyer Date: 4-25-24  
Print Name of Owner: Todd Boyer

- ❖ If other than an individual, indicate name of organization and its principal owner, partners, or corporate officers.

Signature of Developer: Todd Boyer Date: 4-25-24  
Print Name of Developer: Todd Boyer

- ❖ The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The individual in charge of the project must notify the Code Enforcement Officer/Building Inspector within two (2) working days of any change.

**WAIVER REQUEST FORM**

Name of Subdivision/Site Plan: \_\_\_\_\_

Street Address: \_\_\_\_\_

I \_\_\_\_\_ hereby request that the Planning Board waive the requirements of item \_\_\_\_\_ of the Hudson Land Use Regulations in reference to a plan presented by \_\_\_\_\_ (name of surveyor and engineer) dated \_\_\_\_\_ for property tax map(s) \_\_\_\_\_ and lot(s) \_\_\_\_\_ in the Town of Hudson, NH.

As the aforementioned applicant, I, herein, acknowledge that this waiver is requested in accordance with the provisions set forth in RSA 674:36, II (n), i.e., without the Planning Board granting said waiver, it would pose an unnecessary hardship upon me (the applicant), and the granting of this waiver would not be contrary to the spirit and intent of the Land Use Regulations.

Hardship reason(s) for granting this waiver (if additional space is needed please attach the appropriate documentation hereto):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reason(s) for granting this waiver, relative to not being contrary to the spirit and intent of the Land Use Regulations: (if additional space is needed please attach the appropriate documentation hereto):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed:

\_\_\_\_\_  
Applicant or Authorized Agent

**SCHEDULE OF FEES**

**A. REVIEW FEES:**

1. \$170.00 per proposed lot \$ 680.00

**CONSULTANT REVIEW FEE: (Separate Check)**

Total 1.277 acres @ \$600.00 per acre, or \$1,250.00, \$ 1,250.00  
whichever is greater.

*This is an estimate for cost of consultant review. The fee is expected to cover the amount. A complex project may require additional funds. A simple project may result in a refund.*

**LEGAL FEE:**

The applicant shall be charged attorney costs billed to the Town for the Town’s attorney review of any application plan set documents.

**B. POSTAGE:**

7 Direct Abutters Applicant, Professionals, etc. as required \$ 35.56  
by RSA 676:4.1.d @\$5.08 (or Current Certified Mail Rate)

2 Indirect Abutters (property owners within 200 feet) \$ 1.36  
@\$0.68 (or Current First Class Rate)

**C. TAX MAP UPDATE FEE**

2 to 7 lots (# of lots x \$30.00) + \$25.00 (min. \$85.00) \$ 145.00  
8 lots or more (min. \$325.00) \$ \_\_\_\_\_

**TOTAL** \$ 2,111.92

<b>(For Town Use Only)</b>	
AMOUNT RECEIVED: \$ <u>2,111.92</u>	DATE RECEIVED: <u>4/29/24</u>
RECEIPT NO.: _____	RECEIVED BY: <u>Brooke</u>

*NOTE: fees below apply only upon plan approval, NOT collected at time of application.*

**D. RECORDING:**

**\*\*\*The applicant shall be responsible for the recording of the approved plan, and all documents as required by an approval, at the Hillsborough County Registry of Deeds (HCRD), located at 19 Temple Street, Nashua, NH 03061. Additional fees associated with recording can be found at HCRD.\*\*\***

**E. COST ALLOCATION PROCEDURE AMOUNT CONTRIBUTION AND OTHER IMPACT FEE PAYMENTS:**

To be determined by the Planning Board at time of plan approval and shall be paid by the applicant at the time of submittal of the Certificate of Occupancy Permit requests.

**\*\*\*The applicant shall be responsible for all fees incurred by the town for processing and review of the applicant's application, plan and related materials.\*\*\***



TOWN OF HUDSON  
SUBDIVISION PLAN REVIEW CHECKLIST

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable

§ 276-11.1 General Plan Requirements

- | <u>Y</u> | <u>P</u>                            | <u>W</u>                 | <u>NA</u>                |                          |  |
|----------|-------------------------------------|--------------------------|--------------------------|--------------------------|--|
| 1.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A list of the names and addresses of the owner(s) of the property, the applicant(s), and all abutters as indicated in the office of the Town Assessor records not more than five (5) days prior to the day of filing [§ 276-11.1.A.] |
| 2.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - One (1) set of Plans on size 22" x 34" sheet [§ 276-11.1.B.(1)]  |
| 3.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Scale no smaller than 50 feet to the inch (1" = 50') [§ 276-11.1.B.(2)]  |
| 4.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Title block in the lower right-hand corner of the plan, containing: [§ 276-11.1.B.(3)]   |
| 5.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | -Title, including the term "site plan" or "subdivision plan"   |
| 6.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The name for whom the plan was prepared  |
| 7.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Preparer of the plan   |
| 8.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - The scale(s) of the plan   |
| 9.       | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Date of the plan   |
| 10.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Appropriate revision block   |
| 11.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Approval block located on the lower left corner of each sheet, with the require language and signature lines [§ 276-11.1.B.(4)]  |
| 12.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Owner's printed name and address and signature [§ 276-11.1.B.(6)]  |
| 13.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Name and address of all abutting property owners [§ 276-11.1.B.(7)]  |
| 14.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A locus plan at one inch equals 1,000 feet (1" = 1,000') [§ 276-11.1.B.(8)]  |
| 15.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | -Boundary of the entire parcel held in single ownership with boundary dimensions and bearings [§ 276-11.1.B.(9)]   |
| 16.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Error of closure shown and certified by a licensed land surveyor   |
| 17.      | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - North point arrow  |

Notes

18.     - Zoning classification note of the tract and location of the zoning district boundaries if the property is located in two or more zoning district [§ 276-11.1.B.(10)]
19.     - The location of all building setback lines as required by Chapter 334, Zoning, or as listed under § 276-11.1.B.(12), whichever is more stringent [§ 276-11.1.B.(12)].
20.     - The location size and character of all signs or a note\* stating "All signs are subject to approval by the Hudson Zoning Administrator prior to installation thereof." [§ 276-11.1.B.(13)] \*The discrepancy on the note language is correct – reference to the Planning Board in the regulations is outdated.
21.     - The location, detail and character of all exterior lighting or a note stating: "There will be no exterior lighting." [§ 276-11.1.B.(14)]
22.     - The location of all buildings within 50 feet of the tract [§ 276-11.1.B.(15)]
23.     - The location of roadways, driveways, travel areas or parking areas within 200 feet of the tract, with the use of an additional sheet, aerial photography, or Town topographic mapping as necessary [§ 276-11.1.B.(16)]
24.     - Existing topography at two-foot contour intervals of that portion of the tract being proposed for development from a topographic survey and contours on the remainder of the tract from a reliable plan source [§ 276-11.1.B.(17)]
25.     - Proposed topography at two-foot contour intervals [§ 276-11.1.B.(18)]
26.     - A note identifying the Tax Map and Lot Number of the tract [§ 276-11.1.B.(19)]
27.     - The location of all existing buildings (including size and height), driveways, sidewalks, parking spaces, loading area, open spaces, large trees, open drainage courses, signs, exterior lighting, service areas, easements landscaping and other pertinent items. [§ 276-11.1.B.(20)]

- Y P W NA
28.     - The location of all proposed construction, buildings, structures, pavement, etc. [§ 276-11.1.B.(21)]
29.     - A green area shown between the right-of-way line and any pavement, gravel or structure meeting the required minimum width [§ 276-11.1.B.(22)]
30.     - Highway protects listed on the transportation improvement program adopted by the Nashua Regional Planning Commission, shown in the Hudson Master Plan, or listed in the Corridor Study adopted by the Hudson Planning Board [§ 276-11.1.B.(23)]
31.     - Required open space, including the calculation showing the requirement is met [§ 276-11.1.B.(24)]

Notes

**§§ 275-8 – 275-9 Site Plan Requirements**

**(If this checklist is for a subdivision plan application, skip to the next section on page 5)**

- Y P W NA
33.     - Parking space calculation showing and a statement stating the required parking spaces are provided [§ 275-8.C.(2) & (3)]
34.     - Required dimensions for parking space [§ 275-8.C.(4)]
35.     - Required dimensions for aisle/access drive [§ 275-8.C.(5)]
36.     - Required off-street loading spaces, including calculation showing the required loading spaces are provided [§ 275-8.C.(6)]
37.     - Required landscaping for the parking lot, including calculation shown the planting requirement is met [§ 275-8.C.(7)]
38.     - Required screening for visual separation of incompatible uses [§ 275-8.C.(8)]

Notes

# Attachment "A"

- |     | <u>Y</u>                 | <u>P</u>                 | <u>W</u>                 | <u>NA</u>                |  |
|-----|--------------------------|--------------------------|--------------------------|--------------------------|--|
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Handicap accessibility provided in accordance with the latest ADA Regulations<br>[§ 275-8.C.(11)]  |
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Stormwater Management Plan [§ 275-9.A]   |
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Traffic Study, if required [§ 275-9.B]   |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Noise Study, if required [§ 275-9.C]   |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Fiscal Impact Study, if required [§ 275-9.D]   |
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Utility Study [§ 275-9.E]  |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Copies of any proposed or existing easements, covenants, deed restrictions or any other similar document pertinent to the Site Plan<br>[§ 275-9.F] |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - A copy of all applicable Town, state, county or federal approvals or permits [§ 275-9.G]   |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Chapter 270, Sewers  |
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Floodplain permit  |
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Special exception to the Wetland Ordinance   |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Septic system construction approval from the New Hampshire Water Supply and Pollution Control Commission   |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Approval of the New Hampshire Wetland Bureau for relocation, filling, dredging or rechanneling   |
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Approval of the New Hampshire Department of Public Works and Highways for any required driveway permits or curb cuts                               |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - NH RSA 149:9-a Permit  |
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | - Environmental Impact Study, if required<br>[§ 275-9.I]   |

Notes

**(End here if this checklist is for a site plan application).**

TOWN OF HUDSON  
SUBDIVISION PLAN REVIEW CHECKLIST

This checklist is intended to help the applicant and staff to ensure application completeness. Please refer to the regulations on the exact language of each requirement.

Key: Y=Yes P =Pending W=Waiver Request NA=Not Applicable

§§ 289-26 – 289-27 Subdivision Plan Requirements

(Not applicable if this checklist is for a site plan application)

- |     | <u>Y</u>                            | <u>P</u>                 | <u>W</u>                 | <u>NA</u>                           |   |
|-----|-------------------------------------|--------------------------|--------------------------|-------------------------------------|---|
| 54. | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | - Proposed subdivision name [§ 289-26.B.(1)]  |
| 55. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | - Abutting subdivision names, streets, easements, setbacks, alleys, parks and public open spaces and similar facts regarding abutting property [§ 289-26.B.(2)] |

Notes

Send recorded copy to:

TOWN OF HUDSON  
ZONING BOARD OF ADJUSTMENT  
12 School Street, Hudson, New Hampshire 03051

**NOTICE OF DECISION**

**Map 166, Lot 011-000, Split Zoned TR (Town Residence) & R-2 (Residential-Two), Case # 166-011**

ZBA Decision 11/16/2023

**Variance – GRANTED with 1 stipulation**

Property Owner: Todd A. Boyer, Trustee of The Boyer Family Revocable Trust of 2019  
2 Merrill Street, Hudson, NH 03051

Legal Representative: Elizabeth Hartigan, Esquire, Gottesman & Hollis P.A.  
39 East Pearl Street, Nashua, NH 03060-3407

Property Location: 32 Ledge Road, Hudson, NH 03051

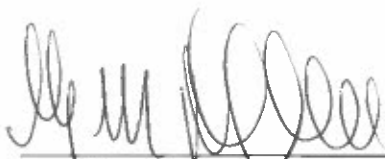
Action sought: Variance for a proposed 4-lot subdivision to allow three (3) lots within the R-2 Zone with lot areas of 12,192 SF and 12,401 SF and 21,088 SF where 43,560 square feet is required for each lot.

Zoning Ordinance Article: VII: Dimensional Requirements; §334-27, Table of Permitted Principal Uses.

Action granted: After consideration of the testimony, aerial review and recognition that this is a unique parcel in that it is a split zoned lot (first portion in TR & remainder in R-2); and that the first lot meets the 10,000 SF requirement of the TR Zone and the proposal for the remainder of the lot to be subdivided are to comply with the TR Zone all of which would be over 10,000 SF, keeping it within the character of the neighborhood; and that it is the last and only undeveloped lot in this TR neighborhood surrounded by cemetery on the other three (3) sides and is of an odd configuration; and acknowledgement that Subdivision and Wetland review would be required by the Planning Board; and after review of the Variance criteria and determining that each criterion was satisfied, motion made, seconded and voted 4:1 to grant the Variance with the stipulation that the 25-foot required cemetery setback shall not be violated.

**NOTES:**

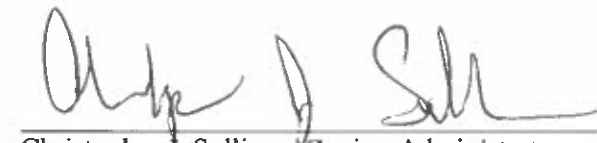
- 1) All representations of fact or intention made by the applicant, owner and agent during testimony before the Zoning Board of Adjustment relative to the obtaining of this relief shall be considered conditions of this approval, regardless of the fact that such facts or intentions may not have been specifically stated as stipulations of the motion. For details of specific discussion relative to this decision, please consult the public minutes recorded during this hearing.
- 2) In accordance with RSA 674:33 and Hudson Town Code §334-82, variances and special exceptions shall be valid if exercised within two (2) years from the date of approval by the Zoning Board of Adjustment. For variances or special exceptions which require subsequent Planning Board review, and which have gained application acceptance within six (6) months of approval by the Zoning Board of Adjustment, the variance or special exception shall be valid for a period of two (2) years after resolution of the Planning Board application.



Gary M. Daddario, ZBA Chairman

11/16/23

Date



Christopher J. Sullivan, Zoning Administrator

12/7/23

Date

# Attachment "C"

**From:** [Dhima, Elvis](#)  
**To:** [Jacob Doerfler](#)  
**Cc:** [Twardosky, Jason](#); [Dionne, Eric](#); [Kirkland, Donald](#); [Gradert Benjamin](#); [Dubowik, Brooke](#); [Minkarah, Jay](#); [boyerab@comcast.net](mailto:boyerab@comcast.net)  
**Subject:** RE: Ledge Road Subdivision  
**Date:** Thursday, June 27, 2024 1:25:55 PM  
**Attachments:** [image001.png](#)

---

Jake

This looks good and you just need to add a detail about the water crossing under the drainage pipe, they will both be at 4-5' depth range

You might want to have the water line go under the drainage with some insulation in between ,

Have the detail in before you record the plans

Brooke, Ben

The applicant has addressed all comments to the satisfaction of the Engineering Department

E

***Elvis Dhima, P.E.***  
***Town Engineer***

12 School Street  
Hudson, NH 03051  
Phone: (603) 886-6008



**Dubowik, Brooke**

---

**From:** Dhima, Elvis  
**Sent:** Wednesday, May 1, 2024 9:34 AM  
**To:** Dubowik, Brooke  
**Cc:** Gradert Benjamin; Minkarah, Jay  
**Subject:** RE: Dept Sign Off - SB# 01-24 Ledge Rd 4-Lot Subdivision

Brooke

Please see below

1. Applicant shall replace the 8x6 anchor tees with regular 1" tap for the domestic services
2. Applicant shall increase the slope of the sewer main from SMH 1 to SMH 2 to 1 % min
3. Applicant shall provide a sewer cleanout for proposed Lot 11
4. Applicant shall require a water line extension approval, subject to BOS approval, prior to issuing the first building permit

Thank you

E

*Elvis Dhima, P.E.*  
*Town Engineer*

12 School Street  
Hudson, NH 03051  
Phone: (603) 886-6008  
Mobile: (603) 318-8286





Dubowik, Brooke

---

**From:** Dhima, Elvis  
**Sent:** Friday, May 31, 2024 3:52 PM  
**To:** Dubowik, Brooke; Gradert Benjamin; Kirkland, Donald  
**Subject:** Fwd: Ledge Road Subdivision

See below

They need to show drainage improvements

E

Elvis Dhima P.E.  
Town Engineer  
12 School Street  
Hudson, NH 03051  
Sent from my iPhone

Begin forwarded message:

**From:** "Dhima, Elvis" <edhima@hudsonnh.gov>  
**Date:** May 28, 2024 at 5:15:21 PM EDT  
**To:** Jacob Doerfler <jake@thedubaygroup.com>  
**Cc:** "Twardosky, Jason" <jtwardosky@hudsonnh.gov>, "Dionne, Eric" <edionne@hudsonnh.gov>, "Kirkland, Donald" <dkirkland@hudsonnh.gov>  
**Subject:** RE: Ledge Road Subdivision

Jacob

See below

E

*Elvis Dhima, P.E.*  
*Town Engineer*

12 School Street  
Hudson, NH 03051  
Phone: (603) 886-6008



---

**From:** Jacob Doerfler <jake@thedubaygroup.com>  
**Sent:** Tuesday, May 28, 2024 4:21 PM  
**To:** Dhima, Elvis <edhima@hudsonnh.gov>  
**Subject:** Ledge Road Subdivision

**EXTERNAL: Do not open attachments or click links unless you recognize and trust the sender.**

---

Good afternoon Elvis,

I am finalizing your May 1<sup>st</sup> emailed comments and Fuss & O'Neills comments for the Ledge Road Subdivision project. Before resubmitting plans, I wanted to reach out and ask a few clarify questions to hopefully speed this process up.

Your comment #2, you asked that the gravity sewer slope be changed to 1%. I originally made the sewer slope 1/2% to achieve the greatest cover over the pipe (Approximately 4.8'). If I make the sewer slope 1%, there will only be approximately 4.25' of cover over the pipe. Are you ok with that? [I'm good with the cover.](#)

Your comment #3. You asked for a sewer clean out be added for Lot 11. There is a SMH right there at Lot 11, do you want a clean out along with the SMH3 proposed or is SMH3 sufficient for cleansing purposes? [SMH 3 could be used as a clean out. No need to add a separate cleanout.](#)

Also, if you could weigh in on a few questions I have regarding the Fuss & O'Neill comment letter.

1. FANDO comment #1g: They noted no sidewalks were proposed and to confirm with the town that a sidewalk will not be required. The nearest sidewalk is 800 feet away and on the opposite side of the road, so we did not feel it was appropriate, do you agree with this rational? [Engineering and DPW currently have no plans or funds to extend the sidewalk on this road. In addition, DPW will not plow this proposed sidewalk.](#)
2. FANDO comment #4a: They made mention that a Drainage report wasn't submitted, which is true however, we didn't feel that one was needed for this frontage lot subdivision. Do you agree, or will you require a drainage analysis? [You need to show drainage improvements and in the past, similar to this kind of minor development, we have seen it getting achieved by one or two dry well installations/ lot to handle the roof runoffs](#)

Thank you very much for your assistance.

**Jake Doerfler, PE, CPESC**

Project Engineer

**The Dubai Group Inc.**

[Engineers](#) | [Planners](#) | [Surveyors](#)

136 Harvey Road Bldg B101

Londonderry, NH 03053

P- 603.458.6462 C- 603.540.8846

[www.TheDubayGroup.com](http://www.TheDubayGroup.com)

# Attachment "C"

**From:** [Dhima, Elvis](#)  
**To:** [Gradert Benjamin](#)  
**Cc:** [Twardosky, Jason](#); [Kirkland, Donald](#)  
**Subject:** RE: Drainage 32 Ledge Road  
**Date:** Thursday, June 6, 2024 4:04:48 PM  
**Attachments:** [2024.5.30 Ledge Road Subdivision Plans.pdf](#)  
[image001.png](#)

---

Ben

The revised plans indicate a 1 foot deep "hole" between lot 11 and 11-1 , no improvements on Lot 2, some kind of swale around the proposed house on 2 foot deep basin on Lot 4

All the proposed measures appear unpractical and will result in issues in the future ,

We do not recommend approval of this subdivision until drainage item has been addressed.

If the Planning Board approves it as is, all the future complaints about these lots will be send to the Planning Board to deal with

E

***Elvis Dhima, P.E.***  
***Town Engineer***

12 School Street  
Hudson, NH 03051  
Phone: (603) 886-6008



**Town of Hudson**  
NEW HAMPSHIRE 03051

---

Attachment "C"  
**RECEIVED**

APR 30 2024

TOWN OF HUDSON  
ASSESSORS OFFICE

**SUBDIVISION APPLICATION**

Date of Application: April 25, 2024 Tax Map #: 166A Lot #: 11

Site Address: 32 Ledge Road

Name of Project: Ledge Road Subdivision

Zoning District: R-2 & TR General SB#: 01-24  
(For Town Use Only)

Z.B.A. Action: Case# 166-011(11-16-23)

**PROPERTY OWNER:**

Name: Todd Boyer

Address: 2 Merrill Street

Address: Hudson, NH 03051

Telephone # \_\_\_\_\_

Email: Boyerab@comcast.net

**DEVELOPER:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PROJECT ENGINEER:**

Name: The Dubai Group, Inc.; c/o Doug MacGuire

Address: 136 Harvey Road, Bldg B101

Address: Londonderry, NH 03053

Telephone # 603-458-6462

Email: doug@thedubaygroup.com

**SURVEYOR:**

The Dubai Group, Inc.; c/o Joel Connolly, LLS

136 Harvey Road, Bldg B101

Londonderry, NH 03053

603-458-6462

joel@thedubaygroup.com

**PURPOSE OF PLAN:**

The purpose of this plan is to subdivide Map 166 Lot 11 into 4 single family lots meeting the TR Zoning criteria.

As part of the subdivision, it is proposed to extend the town water main to service the 4 lots.

The newly created lots will also tie into the town sewer main.

(For Town Use Only)

Routing Date: 4/30/24 Deadline Date: 5/7/24 Meeting Date: tbd

Jm I have no comments \_\_\_\_\_ I have comments (attach to form)

(Initials) Title: Chief Assessor Date: 4-30-24

Department: \_\_\_\_\_

Zoning: \_\_\_ Engineering: \_\_\_ Assessor: \_\_\_ Police: \_\_\_ Fire: \_\_\_ DPW: \_\_\_ Consultant: \_\_\_

**SUBDIVISION APPLICATION**

Date of Application: April 25, 2024 Tax Map #: 166 Lot #: 11

Site Address: 32 Ledge Road

Name of Project: Ledge Road Subdivision

Zoning District: R-2 & TR General SB#: 01-24  
(For Town Use Only)

Z.B.A. Action: Case# 166-011(11-16-23)

**PROPERTY OWNER:**

**DEVELOPER:**

Name: Todd Boyer

\_\_\_\_\_

Address: 2 Merrill Street

\_\_\_\_\_

Address: Hudson, NH 03051

\_\_\_\_\_

Telephone # \_\_\_\_\_

\_\_\_\_\_

Email: Boyerab@comcast.net

\_\_\_\_\_

**PROJECT ENGINEER:**

**SURVEYOR:**

Name: The Dubai Group, Inc.; c/o Doug MacGuire

The Dubai Group, Inc.; c/o Joel Connolly, LLS

Address: 136 Harvey Road, Bldg B101

136 Harvey Road, Bldg B101

Address: Londonderry, NH 03053

Londonderry, NH 03053

Telephone # 603-458-6462

603-458-6462

Email: doug@thedubaygroup.com

joel@thedubaygroup.com

**PURPOSE OF PLAN:**

The purpose of this plan is to subdivide Map 166 Lot 11 into 4 single family lots meeting the TR Zoning criteria.

As part of the subdivision, it is proposed to extend the town water main to service the 4 lots.

The newly created lots will also tie into the town sewer main.

**(For Town Use Only)**

Routing Date: 4/30/24 Deadline Date: 5/7/24 Meeting Date: tbd

I have no comments \_\_\_\_\_  I have comments (attach to form)

SCM Title: Captain Steve McElhinney Date: 04/30/24

(Initials)

Department: \_\_\_\_\_

Zoning:  Engineering:  Assessor:  Police:  Fire:  DPW:  Consultant:

**SUBDIVISION APPLICATION**

Date of Application: April 25, 2024 Tax Map #: 166 Lot #: 11

Site Address: 32 Ledge Road

Name of Project: Ledge Road Subdivision

Zoning District: R-2 & TR General SB#: 01-24  
(For Town Use Only)

Z.B.A. Action: Case# 166-011(11-16-23)

**PROPERTY OWNER:**

**DEVELOPER:**

Name: Todd Boyer

Address: 2 Merrill Street

Address: Hudson, NH 03051

Telephone # \_\_\_\_\_

Email: Boyerab@comcast.net

**PROJECT ENGINEER:**

**SURVEYOR:**

Name: The Dubay Group, Inc.; c/o Doug MacGuire

The Dubay Group, Inc.; c/o Joel Connolly, LLS

Address: 136 Harvey Road, Bldg B101

136 Harvey Road, Bldg B101

Address: Londonderry, NH 03053

Londonderry, NH 03053

Telephone # 603-458-6462

603-458-6462

Email: doug@thedubaygroup.com

joel@thedubaygroup.com

**PURPOSE OF PLAN:**

The purpose of this plan is to subdivide Map 166 Lot 11 into 4 single family lots meeting the TR Zoning criteria.

As part of the subdivision, it is proposed to extend the town water main to service the 4 lots.

The newly created lots will also tie into the town sewer main.

(For Town Use Only)

Routing Date: 4/30/24 Deadline Date: 5/7/24 Meeting Date: tbd

I have no comments  I have comments (attach to form)

DRM Title: Fire Marshal Date: 5/1/24  
(Initials)

Department: \_\_\_\_\_

Zoning: \_\_\_ Engineering: \_\_\_ Assessor: \_\_\_ Police: \_\_\_ Fire:  DPW: \_\_\_ Consultant: \_\_\_

May 15, 2024

Mr. Jay Minkarah  
Acting Town Planner  
Town of Hudson  
12 School Street  
Hudson, NH 03051

RE: Town of Hudson Planning Board Review  
Ledge Road Subdivision Plan  
Tax Map 166, Lot 11, Acct. #1350-111  
Fuss & O'Neill Reference No. 20030249.2390

Dear Mr. Minkarah:

Fuss & O'Neill, Inc. has reviewed the first submission of the materials received on May 1, 2024, related to the above-referenced project. Authorization to proceed was received on May 1, 2024. A list of items reviewed is enclosed. The scope of our review is based on the Subdivision Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

We have included a copy of Fuss & O'Neill's evaluation of the checklist for your reference. We note that several items could not be verified by Fuss & O'Neill and require action by the Town.

The project appears to consist of subdividing an existing lot and creating a four (4)-lot subdivision out of the 1.277-acre site. The lots are proposed to be serviced by municipal water and sewer systems. No new roadways are proposed as part of the subdivision plan.

The following items are noted:

**1. Administrative and Subdivision Review Codes (HR 276 & HR 289)**

- a. Hudson Regulation (HR) 276-7. The applicant has not noted any waivers requested on the plan set.
- b. HR 276-11.B.(6). The applicant has not provided the owner's signature on the plan set.
- c. HR 276-11.1.B.(13). The applicant has not shown any signs on the plan set.
- d. HR 276-11.1.B.(14). The applicant has not shown any lighting on the plan set or provided a note stating that none is proposed.
- e. HR 276-11.B.(16). The applicant has not shown all driveways, parking areas and travel ways within 200 feet of the site.
- f. HR 276-11.1.B.(17). The applicant has not provided a benchmark on the plans.
- g. HR 289-18.X. and 289-28.G. The applicant has not proposed a sidewalk to be constructed as part of this project. There is approximately 400 feet of existing sidewalk along Ledge Road adjacent to Derry Road. The application should confirm with the Town that a sidewalk is not required.

- h. HR 289-22. The applicant has not proposed any specific open spaces on the plan set.
- i. HR 289-26.B.(3). The applicant has not shown any existing easements on the plan set.

**2. Driveway Review Codes (HR 193-10)**

- a. HR 193-10.A. & 193-10.E. The applicant has shown the location of a proposed driveway for each proposed lot on the plan set. The applicant has provided sight distance information on the plan set.
- b. HR 193-10.J. The applicant has included a driveway detail on the plan set.

**3. Roadway Design**

- a. HR 289-18. The applicant is not proposing any new roadways or changes to the existing roads.

**4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)**

- a. HR 289-20. and 290-3.A.(1). The applicant has not shown any drainage improvements on the plans. The applicant has not provided a stormwater report or any drainage calculations in the package received for review.

**5. Zoning (HR 334)**

- a. HR 334-14 The applicant has not noted any proposed building heights on the plan set.
- b. HR 334-20. The site is located in the Town Residential (TR) District and the Residential (R-2) District. The applicant has noted that the proposed use is single family residential.
- c. HR 334-27. The applicant has proposed lot sizes, frontages and setbacks that meet the minimum requirements of the Town Residential (TR) District in Attachment 4 of the Ordinance. We note that a majority of the site area is within the Residential (R-2) District, and lots 11-2, 11-3 and a majority of lot 11-1 are within the R-2 District. The applicant has noted a ZBA case #166-011 which granted relief of dimensional requirements for the lots in the R-2 District.
- d. HR 334-33. The applicant has not shown any wetlands on the site. The applicant should confirm that no wetlands exist on the property.
- e. HR 334-62. There are no sign installations proposed as a part of this project.
- f. HR 334-83. The site is not located in a designated flood hazard area. The applicant has noted this on the plans.

**6. Sewer/Water Design/Conflicts & Utility Design/Conflicts (HR 276-13.E.)**

- a. HR 276-13.A. The applicant has not shown the location of any electric, telephone, television or other utility services on the plan set.
- b. HR 276-13.E. The applicant has proposed to extend the existing water main to service the subdivision. The applicant should provide confirmation that the design has been approved by the Town's water utility and that capacity exists in the current Ledge Road water main for the additional flows needed for these lots.
- c. HR 276-13.E. The applicant has shown private pump station systems for each home with force mains connecting to the existing sewer system. The Town would only be responsible for the maintenance of the gravity sewer within the Town Right-of-Way, so the applicant should note on the plan that all sewer features on private property will be maintained by the residents. The applicant should also review the need for cross easements between the lots for force main maintenance.
- d. HR 276-15. The applicant should add a Dig Safe logo and phone number to the plan set.
- e. HR 289-21. The applicant has not shown any existing or proposed utility easements on the plan set.



Mr. Jay Minkarah  
May 15, 2024  
Page 3

- f. Hudson Engineering Technical Guidelines & Typical Details (ETGTD) Section 720.8.3. The applicant should review the proposed location of SMH-2 with the Town for conformance with this requirement. The SMH is not located at the property line.
- g. The applicant is proposing at least 100 feet of roadway with 2 utility trenches. The applicant should coordinate with the Town if an overlay should be required in this area.
- h. The applicant should add a sewer and water crossing detail to the plan set.
- i. The applicant has proposed the water main extension to be installed directly underneath overhead utility wires, and with several bends to accommodate pole locations. We recommend moving the proposed water away from the overhead wires to avoid conflicts during construction and also to eliminate some of the proposed bends.
- j. ETGTD Section 830.1. The applicant has proposed various sized water services to the lots within the subdivision. Lot 11-1 has a 6" valve off of the main, Lot 11-2's water service is not labelled, and Lot 11-3 has a 1" PVC service shown. The applicant should clarify the intent for the water service sizes and proposed materials for each Lot and confirm with the Hudson water utility that the proposed size is acceptable.
- k. ETGTD Section 720.8.5. We recommend the applicant add a note to the plans that floor drains, roof drains, sump pumps, or any other non-sanitary sewerage drain cannot be connected to the sewer service for the proposed houses.

**7. Erosion Control/Wetland Impacts**

- a. HR 290-6. The applicant has not shown any proposed erosion and sedimentation control measures on the plan set.
- b. The Town should reserve the right to require additional erosion control measures.

**8. State and Local Permits**

- a. The applicant should note the need for any permits on the plan set.
- b. Additional local permitting may be required.

**9. Other**

- a. No other comments at this time.

Please feel free to call if you have any questions.

Very truly yours,



Steven W. Reichert, PE

SWR:elc

Enclosure

cc: Town of Hudson Engineering Division – File  
The Dubay Group – [doug@thedubaygroup.com](mailto:doug@thedubaygroup.com)



## MEMORANDUM

---

To: Jay Minkarah  
Town of Hudson

Date: May 30, 2024

From: Jake Doerfler, PE  
The Dubay Group, Inc

Re: Ledge Road Subdivision  
Review Comments

---

We have received the comment letter from Fuss and O'Neill dated May 15, 2024 for the above referenced project. Based on that review, we offer the following revised plans and responses to comments.

1. Administrative and Subdivision Review Codes (HR 276 & HR 289)
  - a. Hudson Regulation (HR) 276-7. The applicant has not noted any waivers requested on the plan set.

**TDG Response:** *Not waivers are being requested at this time.*

- b. HR 276-11.B.(6). The applicant has not provided the owner's signature on the plan set.

**TDG Response:** *The owner signature has been added to the Cover Sheet.*

- c. HR 276-11.1.B.(13). The applicant has not shown any signs on the plan set.

**TDG Response:** *No signs are proposed. A note has been added to Sheet 4.*

- d. HR 276-11.1.B.(14). The applicant has not shown any lighting on the plan set or provided a note stating that none is proposed.

**TDG Response:** *No lighting is proposed for the front lots. A note has been added to Sheet 4.*

- e. HR 276-11.B.(16). The applicant has not shown all driveways, parking areas and travel ways within 200 feet of the site.

**TDG Response:** *The Existing Conditions plan has been updated.*



- f. HR 276-11.1.B.(17). The applicant has not provided a benchmark on the plans.

**TDG Response:** *Benchmarks have been added to the plans.*

- g. HR 289-18.X. and 289-28.G. The applicant has not proposed a sidewalk to be constructed as part of this project. There is approximately 400 feet of existing sidewalk along Ledge Road adjacent to Derry Road. The application should confirm with the Town that a sidewalk is not required.

**TDG Response:** *The Town Engineer has reviewed the plans and has stated that the town currently has no plans to extend the sidewalk on Ledge Road.*

- h. HR 289-22. The applicant has not proposed any specific open spaces on the plan set.

**TDG Response:** *The project is a standard Subdivision, and no open space is proposed.*

- i. HR 289-26.B.(3). The applicant has not shown any existing easements on the plan set.

**TDG Response:** *There are no existing easements on-site. A note has been added to the Existing Condition and Subdivision Plans.*

2. Driveway Review Codes (HR 193-10)

- a. HR 193-10.A. & 193-10.E. The applicant has shown the location of a proposed driveway for each proposed lot on the plan set. The applicant has provided sight distance information on the plan set.

**TDG Response:** *Comment noted.*

- b. HR 193-10.J. The applicant has included a driveway detail on the plan set.

**TDG Response:** *Comment noted.*

3. Roadway Design

- a. HR 289-18. The applicant is not proposing any new roadways or changes to the existing roads.

**TDG Response:** *Comment noted.*



4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)
  - a. HR 289-20. and 290-3.A.(1). The applicant has not shown any drainage improvements on the plans. The applicant has not provided a stormwater report or any drainage calculations in the package received for review.

**TDG Response:** *A drainage memo and analysis has been included in the resubmission.*

5. Zoning (HR 334)
  - a. HR 334-14 The applicant has not noted any proposed building heights on the plan set.

**TDG Response:** *The lots are prototypical in nature. A note has been added to the plans specifying maximum building height.*

- b. HR 334-20. The site is located in the Town Residential (TR) District and the Residential (R-2) District. The applicant has noted that the proposed use is single family residential.

**TDG Response:** *Comment noted.*

- c. HR 334-27. The applicant has proposed lot sizes, frontages and setbacks that meet the minimum requirements of the Town Residential (TR) District in Attachment 4 of the Ordinance. We note that a majority of the site area is within the Residential (R-2) District, and lots 11-2, 11-3 and a majority of lot 11-1 are within the R-2 District. The applicant has noted a ZBA case #166-011 which granted relief of dimensional requirements for the lots in the R-2 District.

**TDG Response:** *Comment noted.*

- d. HR 334-33. The applicant has not shown any wetlands on the site. The applicant should confirm that no wetlands exist on the property.

**TDG Response:** *There are no wetland on the disturbed portion of the site. A note has been added to the Existing Condition Plan.*

- e. HR 334-62. There are no sign installations proposed as a part of this project.

**TDG Response:** *No signs are proposed. A note has been added to Sheet 4*



- f. HR 334-83. The site is not located in a designated flood hazard area. The applicant has noted this on the plans.

**TDG Response:** *Comment noted.*

6. Sewer/Water Design/Conflicts & Utility Design/Conflicts (HR 276-13.E.)

- a. HR 276-13.A. The applicant has not shown the location of any electric, telephone, television or other utility services on the plan set.

**TDG Response:** *Overhead utilities have been added.*

- b. HR 276-13.E. The applicant has proposed to extend the existing water main to service the subdivision. The applicant should provide confirmation that the design has been approved by the Town's water utility and that capacity exists in the current Ledge Road water main for the additional flows needed for these lots.

**TDG Response:** *The Town Engineer has reviewed the plans and has not commented on this.*

- c. HR 276-13.E. The applicant has shown private pump station systems for each home with force mains connecting to the existing sewer system. The Town would only be responsible for the maintenance of the gravity sewer within the Town Right-of-Way, so the applicant should note on the plan that all sewer features on private property will be maintained by the residents. The applicant should also review the need for cross easements between the lots for force main maintenance.

**TDG Response:** *An easement has been added for the sewer force main.*

- d. HR 276-15. The applicant should add a Dig Safe logo and phone number to the plan set.

**TDG Response:** *Dig Safe Logo has been added to the plans.*

- e. HR 289-21. The applicant has not shown any existing or proposed utility easements on the plan set.

**TDG Response:** *There are no existing easements on-site. A note has been added to the Existing Condition Plan. There is a 20' wide utility easement shown on both the Subdivision Plan and the Utility w/ Prototypical Lot Grading plan. Also, there is a 20' wide access easement on the east side of the property to accommodate the existing access to the cemetery.*



- f. Hudson Engineering Technical Guidelines & Typical Details (ETGTD) Section 720.8.3. The applicant should review the proposed location of SMH-2 with the Town for conformance with this requirement. The SMH is not located at the property line.

**TDG Response:** *The Town Engineer has reviewed the plans and has not commented on the SMH location.*

- g. The applicant is proposing at least 100 feet of roadway with 2 utility trenches. The applicant should coordinate with the Town if an overlay should be required in this area.

**TDG Response:** *The Town Engineer has reviewed the plans and has not commented on this.*

- h. The applicant should add a sewer and water crossing detail to the plan set.

**TDG Response:** *Detail has been added to Sheet 7.*

- i. The applicant has proposed the water main extension to be installed directly underneath overhead utility wires, and with several bends to accommodate pole locations. We recommend moving the proposed water away from the overhead wires to avoid conflicts during construction and also to eliminate some of the proposed bends.

**TDG Response:** *The water line has been centered between the edge of pavement and the ROW and has been reviewed by the Town of Hudson and as far as we are aware, do not take objection to the location.*

- j. ETGTD Section 830.1. The applicant has proposed various sized water services to the lots within the subdivision. Lot 11-1 has a 6" valve off of the main, Lot 11-2's water service is not labelled, and Lot 11-3 has a 1" PVC service shown. The applicant should clarify the intent for the water service sizes and proposed materials for each Lot and confirm with the Hudson water utility that the proposed size is acceptable.

**TDG Response:** *The water line labeling has been updated.*

- k. ETGTD Section 720.8.5. We recommend the applicant add a note to the plans that floor drains, roof drains, sump pumps, or any other non-sanitary sewerage drain cannot be connected to the sewer service for the proposed houses.

**TDG Response:** *A note has been added to Sheet 4.*



7. Erosion Control/Wetland Impacts

- a. HR 290-6. The applicant has not shown any proposed erosion and sedimentation control measures on the plan set.
- b. The Town should reserve the right to require additional erosion control measures.

**TDG Response:** *Silt sock has been added for perimeter protection. A note has also been added to Sheet 4 regarding the need for erosion and sedimentation control during construction. A silt sock detail has also been added to the plans.*

8. State and Local Permits

- a. The applicant should note the need for any permits on the plan set.
- b. Additional local permitting may be required.

**TDG Response:** *Applicable Permits have been noted on the Cover Sheet.*

Please let us know if there are any further questions or comments.

Sincerely,

**The Dubay Group, Inc.**



Jake Doerfler, PE, CPESC  
Project Engineer



## MEMORANDUM

---

To: Jay Minkarah  
Town of Hudson

Date: June 27, 2024

From: Jake Doerfler, PE  
The Dubai Group, Inc

Re: Ledge Road Subdivision  
Drainage Memo

---

A drainage review has been performed to determine the changes in drainage condition associated with the four (4) lot subdivision on Ledge Road. The following memorandum details the existing and proposed conditions of the site and summarizes the changes to the drainage condition. A HydroCAD pre/post analysis for the 10 & 25-year storm events along with a Drainage Plan are included with this memo.

### **Executive Summary:**

The purpose of this project is to subdivide Map 166 Lot 11 into 4 single family lots with frontage on Ledge Road. The parcel is located at 32 Ledge Road in Hudson, NH. The existing lot area is 1.28 acres and is located within the Residential 2 (R-2) and Town Residential (TR) zones. The soil on site is excessively drained SCS Hydrologic Soil Group "A".

### **Existing Site Conditions:**

The existing parcel, Map 166 Lot 11, is located at 32 Ledge. The lot is currently undeveloped but was cleared of vegetation in late 2020 to early 2021. The parcel is adjacent to St Patrick Cemetery and has a 25' "no excavation" setback. Currently, the site is bare dirt with a few material stockpiles present. The existing topography generally slopes in the easterly direction. As a result, the northeastern limit of disturbances has been designated as the design point. The soil on site is classified as SCS Hydrologic Soil Group "A". The Pre-Development Plan is representative of the grades and ground cover that existed in 2020.

Design points are usually a wetland swale, existing drainage structure, culvert, or simple area of natural sheet flow where a subject site discharges runoff onto an abutting property or right-of-way. These design points remain the same in the pre- and post-development conditions to provide a point of comparison in analyzing the peak runoff or volume change on a site. The design point evaluated in this report is summarized below:





Design Point #1: This design point is located on the north-northeastern limit of disturbance where the runoff naturally flows.

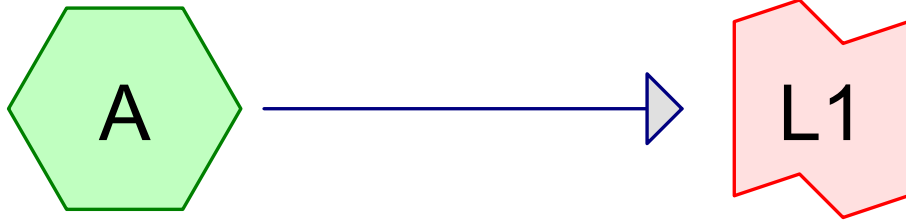
**Proposed Site Conditions**

The proposed project is to subdivide Map 166 Lot 11 into 4 single family frontage lots. Prototypical houses and grading have been shown to account for stormwater runoff. The disturbed area has been broken up into five (5) subcatchments. Runoff is directed through area drains in the front yards to an infiltration basin. The infiltration basin does not discharge any water during the 25-year storm.

The pre- and post-development runoff rates based on the design storms are tabulated below. All watersheds show no increase in runoff during post-development conditions as required per the Town of Hudson Regulations. Per section 289-20. C. (4) of the Town of Hudson Subdivision Regulations, the 10-year and 25-years storm events were evaluated.

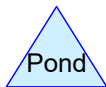
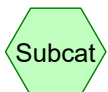
**Table 1 - Pre vs. Post Runoff Analysis**

<b>Design Storm</b>	<b><u>Existing Conditions</u></b> <i>Peak Flow Runoff Rate</i>	<b><u>Developed Conditions</u></b> <i>Peak Flow Runoff Rate</i>	<b>Change</b>
<b>DESIGN POINT #1</b>			
	Node Label - L1	Node Label - L1	
10-Year	0.00	0.00	0.00
25-Year	0.01	0.00	-0.01



SUBCAT A

NORTHEAST  
PROPERTY CORNER



**632-PRE DEVELOPMENT**

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 2

**Area Listing (all nodes)**

Area (sq-ft)	CN	Description (subcatchment-numbers)
4,531	39	>75% Grass cover, Good, HSG A (A)
50,372	30	Woods, Good, HSG A (A)
<b>54,903</b>	<b>31</b>	<b>TOTAL AREA</b>

**632-PRE DEVELOPMENT**

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 3

**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
54,903	HSG A	A
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>54,903</b>		<b>TOTAL AREA</b>

**632-PRE DEVELOPMENT**

*Type III 24-hr 10 YR Rainfall=4.44"*

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 4

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

**Subcatchment A: SUBCAT A**

Runoff Area=54,903 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=650' Slope=0.0250 '/' Tc=17.9 min CN=31 Runoff=0.00 cfs 0 cf

**Link L1: NORTHEAST PROPERTY CORNER**

Inflow=0.00 cfs 0 cf  
Primary=0.00 cfs 0 cf

**Total Runoff Area = 54,903 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"**  
**100.00% Pervious = 54,903 sf 0.00% Impervious = 0 sf**

**632-PRE DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 5

**Summary for Subcatchment A: SUBCAT A**

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Description
50,372	30	Woods, Good, HSG A
4,531	39	>75% Grass cover, Good, HSG A
54,903	31	Weighted Average
54,903		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0250	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
12.6	600	0.0250	0.79		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
17.9	650	Total			

**Summary for Link L1: NORTHEAST PROPERTY CORNER**

Inflow Area = 54,903 sf, 0.00% Impervious, Inflow Depth = 0.00" for 10 YR event

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

**632-PRE DEVELOPMENT**

*Type III 24-hr 25 YR Rainfall=5.61"*

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 6

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

**Subcatchment A: SUBCAT A**

Runoff Area=54,903 sf 0.00% Impervious Runoff Depth>0.06"  
Flow Length=650' Slope=0.0250 '/' Tc=17.9 min CN=31 Runoff=0.01 cfs 257 cf

**Link L1: NORTHEAST PROPERTY CORNER**

Inflow=0.01 cfs 257 cf  
Primary=0.01 cfs 257 cf

**Total Runoff Area = 54,903 sf Runoff Volume = 257 cf Average Runoff Depth = 0.06"**  
**100.00% Pervious = 54,903 sf 0.00% Impervious = 0 sf**

**632-PRE DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 7

**Summary for Subcatchment A: SUBCAT A**

Runoff = 0.01 cfs @ 15.86 hrs, Volume= 257 cf, Depth> 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Description
50,372	30	Woods, Good, HSG A
4,531	39	>75% Grass cover, Good, HSG A
54,903	31	Weighted Average
54,903		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0250	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
12.6	600	0.0250	0.79		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
17.9	650	Total			

**Summary for Link L1: NORTHEAST PROPERTY CORNER**

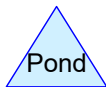
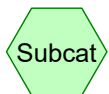
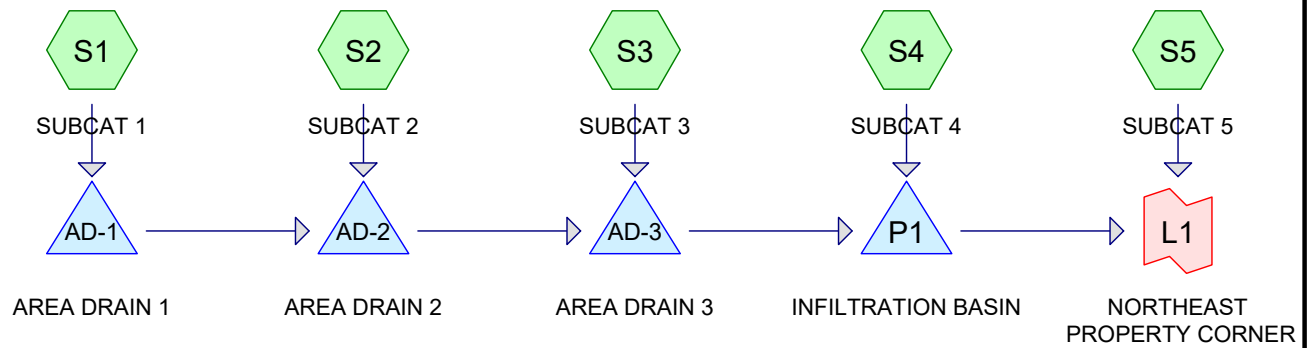
Inflow Area = 54,903 sf, 0.00% Impervious, Inflow Depth > 0.06" for 25 YR event

Inflow = 0.01 cfs @ 15.86 hrs, Volume= 257 cf

Primary = 0.01 cfs @ 15.86 hrs, Volume= 257 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs





**632-POST DEVELOPMENT**

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 2

**Area Listing (all nodes)**

Area (sq-ft)	CN	Description (subcatchment-numbers)
42,288	39	>75% Grass cover, Good, HSG A (S1, S2, S3, S4, S5)
3,688	98	Unconnected pavement, HSG A (S1, S2, S3, S4)
5,935	98	Unconnected roofs, HSG A (S1, S2, S3, S4)
2,992	30	Woods, Good, HSG A (S5)
<b>54,903</b>	<b>49</b>	<b>TOTAL AREA</b>

**632-POST DEVELOPMENT**

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 3

**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
54,903	HSG A	S1, S2, S3, S4, S5
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
<b>54,903</b>		<b>TOTAL AREA</b>



**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 5

**Summary for Subcatchment S1: SUBCAT 1**

Runoff = 0.03 cfs @ 12.44 hrs, Volume= 372 cf, Depth> 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Adj	Description
2,309	98		Unconnected roofs, HSG A
781	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
17,934	39		>75% Grass cover, Good, HSG A
21,024	48	43	Weighted Average, UI Adjusted
17,934			85.30% Pervious Area
3,090			14.70% Impervious Area
3,090			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0250	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	150	0.0250	2.37		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
6.4	200	Total			

**Summary for Subcatchment S2: SUBCAT 2**

Runoff = 0.02 cfs @ 12.38 hrs, Volume= 204 cf, Depth> 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Adj	Description
1,145	98		Unconnected roofs, HSG A
781	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
6,820	39		>75% Grass cover, Good, HSG A
8,746	52	45	Weighted Average, UI Adjusted
6,820			77.98% Pervious Area
1,926			22.02% Impervious Area
1,926			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 6

**Summary for Subcatchment S3: SUBCAT 3**

Runoff = 0.03 cfs @ 12.35 hrs, Volume= 235 cf, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Adj	Description
1,421	98		Unconnected roofs, HSG A
789	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
6,731	39		>75% Grass cover, Good, HSG A
8,941	54	46	Weighted Average, UI Adjusted
6,731			75.28% Pervious Area
2,210			24.72% Impervious Area
2,210			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment S4: SUBCAT 4**

Runoff = 0.03 cfs @ 12.38 hrs, Volume= 261 cf, Depth> 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Adj	Description
1,060	98		Unconnected roofs, HSG A
1,337	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
7,512	39		>75% Grass cover, Good, HSG A
9,909	53	46	Weighted Average, UI Adjusted
7,512			75.81% Pervious Area
2,397			24.19% Impervious Area
2,397			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	200	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
2.1	125	0.0400	1.00		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.6	375	Total			

**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 7

**Summary for Subcatchment S5: SUBCAT 5**

Runoff = 0.00 cfs @ 20.75 hrs, Volume= 14 cf, Depth> 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10 YR Rainfall=4.44"

Area (sf)	CN	Description
0	98	Unconnected roofs, HSG A
0	98	Unconnected pavement, HSG A
2,992	30	Woods, Good, HSG A
3,291	39	>75% Grass cover, Good, HSG A
6,283	35	Weighted Average
6,283		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	200	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
2.1	125	0.0400	1.00		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.6	375	Total			

**Summary for Pond AD-1: AREA DRAIN 1**

Inflow Area = 21,024 sf, 14.70% Impervious, Inflow Depth > 0.21" for 10 YR event  
 Inflow = 0.03 cfs @ 12.44 hrs, Volume= 372 cf  
 Outflow = 0.03 cfs @ 12.44 hrs, Volume= 371 cf, Atten= 2%, Lag= 0.1 min  
 Discarded = 0.01 cfs @ 12.47 hrs, Volume= 187 cf  
 Primary = 0.01 cfs @ 12.44 hrs, Volume= 185 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 175.51' @ 12.47 hrs Surf.Area= 78 sf Storage= 1 cf  
 Flood Elev= 178.00' Surf.Area= 900 sf Storage= 1,277 cf

Plug-Flow detention time= 0.6 min calculated for 371 cf (100% of inflow)  
 Center-of-Mass det. time= 0.4 min ( 994.4 - 994.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	175.50'	1,277 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
175.50	75	0	0	75	
176.00	330	94	94	331	
178.00	900	1,183	1,277	926	

**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 8

Device	Routing	Invert	Outlet Devices
#1	Primary	172.50'	<b>12.0" Round Culvert</b> L= 84.0' Ke= 0.500 Inlet / Outlet Invert= 172.50' / 171.57' S= 0.0111 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	175.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Discarded	175.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.01 cfs @ 12.47 hrs HW=175.51' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.01 cfs @ 12.44 hrs HW=175.51' TW=175.51' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.01 cfs of 0.11 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.01 cfs @ 0.17 fps)

**Summary for Pond AD-2: AREA DRAIN 2**

Inflow Area = 29,770 sf, 16.85% Impervious, Inflow Depth > 0.16" for 10 YR event  
 Inflow = 0.03 cfs @ 12.41 hrs, Volume= 388 cf  
 Outflow = 0.03 cfs @ 12.43 hrs, Volume= 388 cf, Atten= 1%, Lag= 0.7 min  
 Discarded = 0.01 cfs @ 12.43 hrs, Volume= 153 cf  
 Primary = 0.02 cfs @ 12.43 hrs, Volume= 235 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 175.51' @ 12.43 hrs Surf.Area= 79 sf Storage= 1 cf  
 Flood Elev= 177.50' Surf.Area= 830 sf Storage= 1,011 cf

Plug-Flow detention time= 0.5 min calculated for 388 cf (100% of inflow)  
 Center-of-Mass det. time= 0.3 min ( 976.0 - 975.6 )

Volume	Invert	Avail.Storage	Storage Description	
#1	175.50'	1,011 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
175.50	75	0	0	75
176.00	400	108	108	401
177.50	830	903	1,011	850

Device	Routing	Invert	Outlet Devices
#1	Primary	171.47'	<b>12.0" Round Culvert</b> L= 95.0' Ke= 0.500 Inlet / Outlet Invert= 171.47' / 170.42' S= 0.0111 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	175.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Discarded	175.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'



**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubay Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 9

**Discarded OutFlow** Max=0.01 cfs @ 12.43 hrs HW=175.51' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.02 cfs @ 12.43 hrs HW=175.51' TW=173.51' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.02 cfs of 4.43 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.02 cfs @ 0.31 fps)

**Summary for Pond AD-3: AREA DRAIN 3**

Inflow Area = 38,711 sf, 18.67% Impervious, Inflow Depth > 0.15" for 10 YR event  
 Inflow = 0.05 cfs @ 12.40 hrs, Volume= 470 cf  
 Outflow = 0.05 cfs @ 12.40 hrs, Volume= 470 cf, Atten= 0%, Lag= 0.3 min  
 Discarded = 0.01 cfs @ 12.40 hrs, Volume= 178 cf  
 Primary = 0.04 cfs @ 12.40 hrs, Volume= 291 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 173.51' @ 12.40 hrs Surf.Area= 84 sf Storage= 1 cf  
 Flood Elev= 174.50' Surf.Area= 1,100 sf Storage= 705 cf

Plug-Flow detention time= 0.4 min calculated for 469 cf (100% of inflow)

Center-of-Mass det. time= 0.3 min ( 961.3 - 961.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	173.50'	705 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
173.50	75	0	0	75	
174.00	900	206	206	901	
174.50	1,100	499	705	1,108	

Device	Routing	Invert	Outlet Devices	
#1	Primary	170.32'	<b>12.0" Round Culvert</b> L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 170.32' / 168.00' S= 0.0150 ' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf	
#2	Device 1	173.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads	
#3	Discarded	173.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'	

**Discarded OutFlow** Max=0.01 cfs @ 12.40 hrs HW=173.51' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.04 cfs @ 12.40 hrs HW=173.51' TW=167.00' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.04 cfs of 5.63 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.04 cfs @ 0.36 fps)

**632-POST DEVELOPMENT**

Type III 24-hr 10 YR Rainfall=4.44"

Prepared by The Dubay Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 10

**Summary for Pond P1: INFILTRATION BASIN**

Inflow Area = 48,620 sf, 19.79% Impervious, Inflow Depth > 0.14" for 10 YR event  
 Inflow = 0.06 cfs @ 12.40 hrs, Volume= 552 cf  
 Outflow = 0.06 cfs @ 12.40 hrs, Volume= 552 cf, Atten= 0%, Lag= 0.0 min  
 Discarded = 0.06 cfs @ 12.40 hrs, Volume= 552 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 167.00' @ 12.40 hrs Surf.Area= 530 sf Storage= 0 cf  
 Flood Elev= 168.00' Surf.Area= 870 sf Storage= 693 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	693 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet) Wet.Area (sq-ft)
167.00	530	0	0 530
168.00	870	693	693 883

Device	Routing	Invert	Outlet Devices
#1	Discarded	167.00'	<b>6.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	167.60'	<b>6.0' long x 4.0' breadth Broad-Crested Rectangular Weir</b>
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00
			2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66
			2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

**Discarded OutFlow** Max=0.07 cfs @ 12.40 hrs HW=167.00' (Free Discharge)  
 ↗**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=167.00' TW=0.00' (Dynamic Tailwater)  
 ↗**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Link L1: NORTHEAST PROPERTY CORNER**

Inflow Area = 54,903 sf, 17.53% Impervious, Inflow Depth > 0.00" for 10 YR event  
 Inflow = 0.00 cfs @ 20.75 hrs, Volume= 14 cf  
 Primary = 0.00 cfs @ 20.75 hrs, Volume= 14 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 12

**Summary for Subcatchment S1: SUBCAT 1**

Runoff = 0.12 cfs @ 12.28 hrs, Volume= 944 cf, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Adj	Description
2,309	98		Unconnected roofs, HSG A
781	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
17,934	39		>75% Grass cover, Good, HSG A
21,024	48	43	Weighted Average, UI Adjusted
17,934			85.30% Pervious Area
3,090			14.70% Impervious Area
3,090			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0250	0.16		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	150	0.0250	2.37		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
6.4	200	Total			

**Summary for Subcatchment S2: SUBCAT 2**

Runoff = 0.08 cfs @ 12.15 hrs, Volume= 474 cf, Depth> 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Adj	Description
1,145	98		Unconnected roofs, HSG A
781	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
6,820	39		>75% Grass cover, Good, HSG A
8,746	52	45	Weighted Average, UI Adjusted
6,820			77.98% Pervious Area
1,926			22.02% Impervious Area
1,926			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 13

**Summary for Subcatchment S3: SUBCAT 3**

Runoff = 0.09 cfs @ 12.14 hrs, Volume= 528 cf, Depth> 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Adj	Description
1,421	98		Unconnected roofs, HSG A
789	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
6,731	39		>75% Grass cover, Good, HSG A
8,941	54	46	Weighted Average, UI Adjusted
6,731			75.28% Pervious Area
2,210			24.72% Impervious Area
2,210			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					<b>Direct Entry,</b>

**Summary for Subcatchment S4: SUBCAT 4**

Runoff = 0.10 cfs @ 12.17 hrs, Volume= 584 cf, Depth> 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Adj	Description
1,060	98		Unconnected roofs, HSG A
1,337	98		Unconnected pavement, HSG A
0	30		Woods, Good, HSG A
7,512	39		>75% Grass cover, Good, HSG A
9,909	53	46	Weighted Average, UI Adjusted
7,512			75.81% Pervious Area
2,397			24.19% Impervious Area
2,397			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	200	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
2.1	125	0.0400	1.00		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.6	375	Total			

**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 14

**Summary for Subcatchment S5: SUBCAT 5**

Runoff = 0.00 cfs @ 13.76 hrs, Volume= 92 cf, Depth> 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25 YR Rainfall=5.61"

Area (sf)	CN	Description
0	98	Unconnected roofs, HSG A
0	98	Unconnected pavement, HSG A
2,992	30	Woods, Good, HSG A
3,291	39	>75% Grass cover, Good, HSG A
6,283	35	Weighted Average
6,283		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	50	0.0400	0.19		<b>Sheet Flow,</b> Grass: Short n= 0.150 P2= 2.97"
1.1	200	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
2.1	125	0.0400	1.00		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
7.6	375	Total			

**Summary for Pond AD-1: AREA DRAIN 1**

Inflow Area = 21,024 sf, 14.70% Impervious, Inflow Depth > 0.54" for 25 YR event  
 Inflow = 0.12 cfs @ 12.28 hrs, Volume= 944 cf  
 Outflow = 0.12 cfs @ 12.26 hrs, Volume= 944 cf, Atten= 0%, Lag= 0.0 min  
 Discarded = 0.01 cfs @ 12.29 hrs, Volume= 320 cf  
 Primary = 0.11 cfs @ 12.26 hrs, Volume= 624 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 175.54' @ 12.29 hrs Surf.Area= 89 sf Storage= 3 cf  
 Flood Elev= 178.00' Surf.Area= 900 sf Storage= 1,277 cf

Plug-Flow detention time= 0.5 min calculated for 944 cf (100% of inflow)  
 Center-of-Mass det. time= 0.4 min ( 939.8 - 939.4 )

Volume	Invert	Avail.Storage	Storage Description		
#1	175.50'	1,277 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
175.50	75	0	0	75	
176.00	330	94	94	331	
178.00	900	1,183	1,277	926	

**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 15

Device	Routing	Invert	Outlet Devices
#1	Primary	172.50'	<b>12.0" Round Culvert</b> L= 84.0' Ke= 0.500 Inlet / Outlet Invert= 172.50' / 171.57' S= 0.0111 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	175.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Discarded	175.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.01 cfs @ 12.29 hrs HW=175.54' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.11 cfs @ 12.26 hrs HW=175.54' TW=175.53' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.11 cfs of 0.24 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.11 cfs @ 0.34 fps)

**Summary for Pond AD-2: AREA DRAIN 2**

[80] Warning: Exceeded Pond AD-1 by 0.01' @ 12.10 hrs (0.07 cfs 26 cf)

Inflow Area =	29,770 sf, 16.85% Impervious, Inflow Depth > 0.44" for 25 YR event
Inflow =	0.18 cfs @ 12.24 hrs, Volume= 1,098 cf
Outflow =	0.18 cfs @ 12.25 hrs, Volume= 1,097 cf, Atten= 0%, Lag= 0.3 min
Discarded =	0.01 cfs @ 12.25 hrs, Volume= 278 cf
Primary =	0.17 cfs @ 12.25 hrs, Volume= 820 cf

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

Peak Elev= 175.53' @ 12.25 hrs Surf.Area= 89 sf Storage= 3 cf

Flood Elev= 177.50' Surf.Area= 830 sf Storage= 1,011 cf

Plug-Flow detention time= 0.4 min calculated for 1,095 cf (100% of inflow)

Center-of-Mass det. time= 0.3 min ( 913.9 - 913.6 )

Volume	Invert	Avail.Storage	Storage Description	
#1	175.50'	1,011 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
175.50	75	0	0	75
176.00	400	108	108	401
177.50	830	903	1,011	850

Device	Routing	Invert	Outlet Devices
#1	Primary	171.47'	<b>12.0" Round Culvert</b> L= 95.0' Ke= 0.500 Inlet / Outlet Invert= 171.47' / 170.42' S= 0.0111 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	175.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Discarded	175.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'

**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubai Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 16

**Discarded OutFlow** Max=0.01 cfs @ 12.25 hrs HW=175.53' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.01 cfs)

**Primary OutFlow** Max=0.17 cfs @ 12.25 hrs HW=175.53' TW=173.54' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.17 cfs of 4.42 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.17 cfs @ 0.61 fps)

**Summary for Pond AD-3: AREA DRAIN 3**

Inflow Area = 38,711 sf, 18.67% Impervious, Inflow Depth > 0.42" for 25 YR event  
 Inflow = 0.26 cfs @ 12.17 hrs, Volume= 1,347 cf  
 Outflow = 0.26 cfs @ 12.17 hrs, Volume= 1,347 cf, Atten= 0%, Lag= 0.1 min  
 Discarded = 0.02 cfs @ 12.17 hrs, Volume= 312 cf  
 Primary = 0.25 cfs @ 12.17 hrs, Volume= 1,035 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 173.54' @ 12.17 hrs Surf.Area= 112 sf Storage= 4 cf  
 Flood Elev= 174.50' Surf.Area= 1,100 sf Storage= 705 cf

Plug-Flow detention time= 0.4 min calculated for 1,344 cf (100% of inflow)  
 Center-of-Mass det. time= 0.3 min ( 900.6 - 900.3 )

Volume	Invert	Avail.Storage	Storage Description	
#1	173.50'	705 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
173.50	75	0	0	75
174.00	900	206	206	901
174.50	1,100	499	705	1,108

Device	Routing	Invert	Outlet Devices
#1	Primary	170.32'	<b>12.0" Round Culvert</b> L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 170.32' / 168.00' S= 0.0150 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	173.50'	<b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Discarded	173.50'	<b>6.000 in/hr Exfiltration over Wetted area</b> Phase-In= 0.01'

**Discarded OutFlow** Max=0.02 cfs @ 12.17 hrs HW=173.54' (Free Discharge)

↳ **3=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.24 cfs @ 12.17 hrs HW=173.54' TW=167.14' (Dynamic Tailwater)

↳ **1=Culvert** (Passes 0.24 cfs of 5.65 cfs potential flow)

↳ **2=Orifice/Grate** (Weir Controls 0.24 cfs @ 0.68 fps)



**632-POST DEVELOPMENT**

Type III 24-hr 25 YR Rainfall=5.61"

Prepared by The Dubay Group, Inc.

Printed 6/27/2024

HydroCAD® 10.00-24 s/n 07602 © 2018 HydroCAD Software Solutions LLC

Page 17

**Summary for Pond P1: INFILTRATION BASIN**

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=82)

Inflow Area = 48,620 sf, 19.79% Impervious, Inflow Depth > 0.40" for 25 YR event  
 Inflow = 0.35 cfs @ 12.17 hrs, Volume= 1,619 cf  
 Outflow = 0.10 cfs @ 12.80 hrs, Volume= 1,621 cf, Atten= 71%, Lag= 37.8 min  
 Discarded = 0.10 cfs @ 12.80 hrs, Volume= 1,621 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 167.57' @ 12.80 hrs Surf.Area= 713 sf Storage= 352 cf  
 Flood Elev= 168.00' Surf.Area= 870 sf Storage= 693 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 26.5 min ( 917.5 - 891.0 )

Volume	Invert	Avail.Storage	Storage Description	
#1	167.00'	693 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
167.00	530	0	0	530
168.00	870	693	693	883

Device	Routing	Invert	Outlet Devices
#1	Discarded	167.00'	<b>6.000 in/hr Exfiltration over Wetted area</b>
#2	Primary	167.60'	<b>6.0' long x 4.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

**Discarded OutFlow** Max=0.10 cfs @ 12.80 hrs HW=167.57' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=167.00' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Summary for Link L1: NORTHEAST PROPERTY CORNER**

Inflow Area = 54,903 sf, 17.53% Impervious, Inflow Depth > 0.02" for 25 YR event  
 Inflow = 0.00 cfs @ 13.76 hrs, Volume= 92 cf  
 Primary = 0.00 cfs @ 13.76 hrs, Volume= 92 cf, Atten= 0%, Lag= 0.0 min

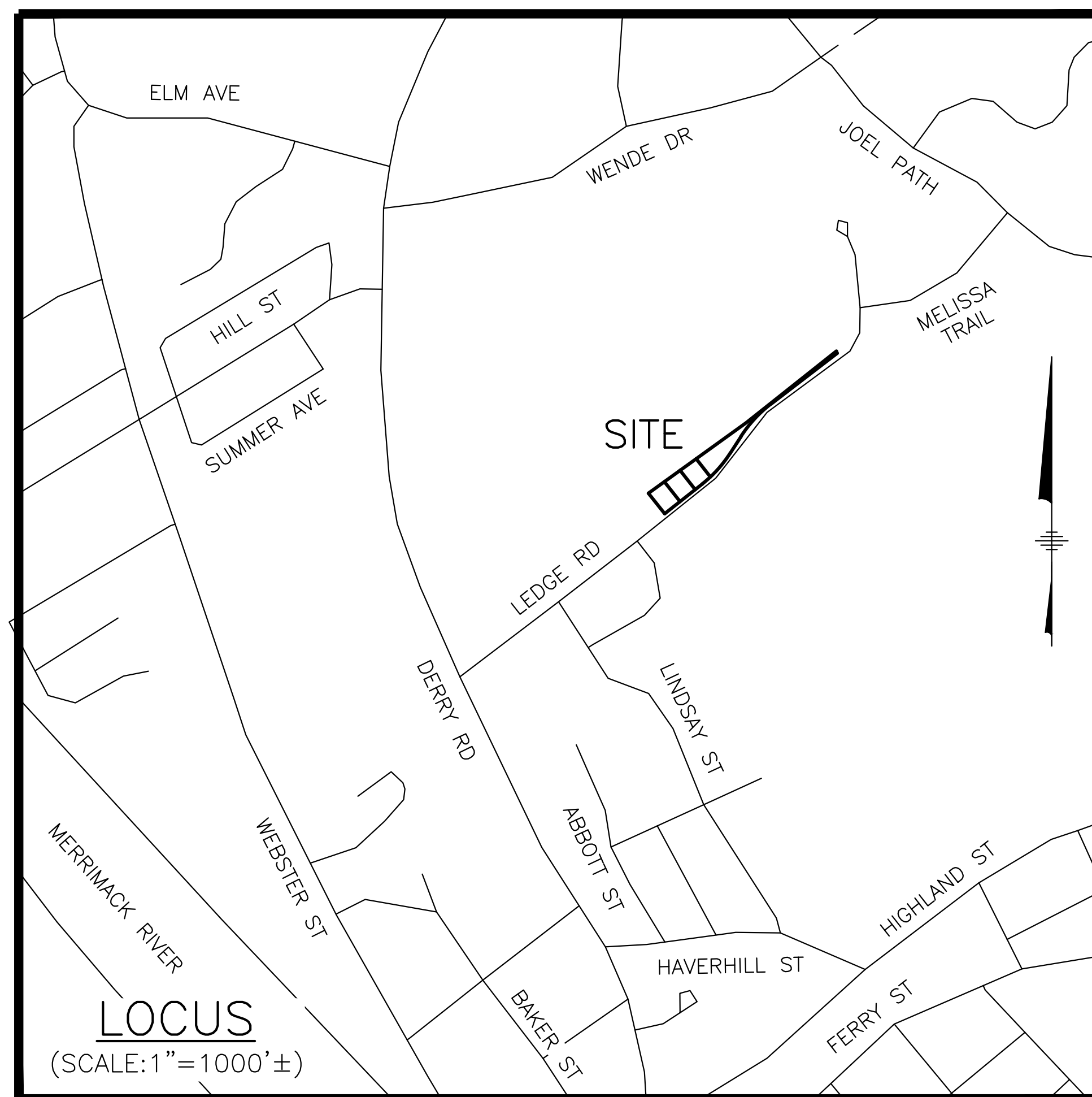
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



# LEDGE ROAD SUBDIVISION

MAP 166 LOT 11

## HUDSON, NEW HAMPSHIRE



### SHEET INDEX

- 1 TITLE SHEET
- 2 EXISTING CONDITIONS PLAN
- 3 SUBDIVISION PLAN
- 4 UTILITY PLAN W/ PROTOTYPICAL LOT GRADING
- 5-6 SIGHT DISTANCE PLAN & PROFILES
- 7-10 CONSTRUCTION DETAILS



**The Dubay Group, Inc.**

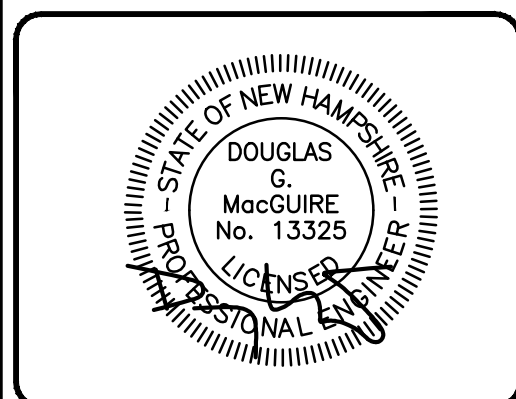
136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers

Planners

Surveyors

TheDubayGroup.com



REVISIONS:			
REV.	DATE	COMMENT	BY
1	4/23/24	REVS PER TOWN COMMENTS	JHD
2	5/29/24	REVS PER F&O & TOWN COMMENTS	JHD
3	6/27/24	REVS PER TOWN COMMENTS	SJK

DRAWN BY: JHD  
CHECKED BY: DGM  
DATE: MARCH 29, 2024  
SCALE:  
FILE: 632-COVER  
DEED REF: -

PROJECT:

### MAP 166 LOT 11

32 LEDGE ROAD  
HUDSON, NEW HAMPSHIRE

FOR

### THE BOYER REVOCABLE TRUST OF 2019

TODD A. BOYER & LORRIE A. BOYER, TRUSTEES  
2 MERRILL STREET  
HUDSON, NH 03051  
BOOK 9349 PAGE 2274

SHEET TITLE:

**TITLE SHEET**

### Permits & Approvals:

	Permit #	Date
NHDES Sewer Connection Permit	-	-



APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_

CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SUBDIVISIONS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FOR AN APPLICANT TO GAIN AN EXEMPTION FROM ALL SUBSEQUENT CHANGES IN SUBDIVISION REGULATIONS, SITE PLAN REGULATIONS AND CHANGES TO THE ZONING ORDINANCE, SEE NH RSA 674:39.

OWNER'S SIGNATURE

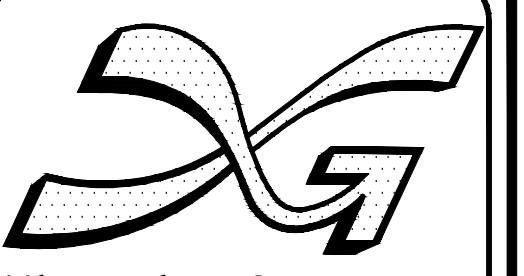
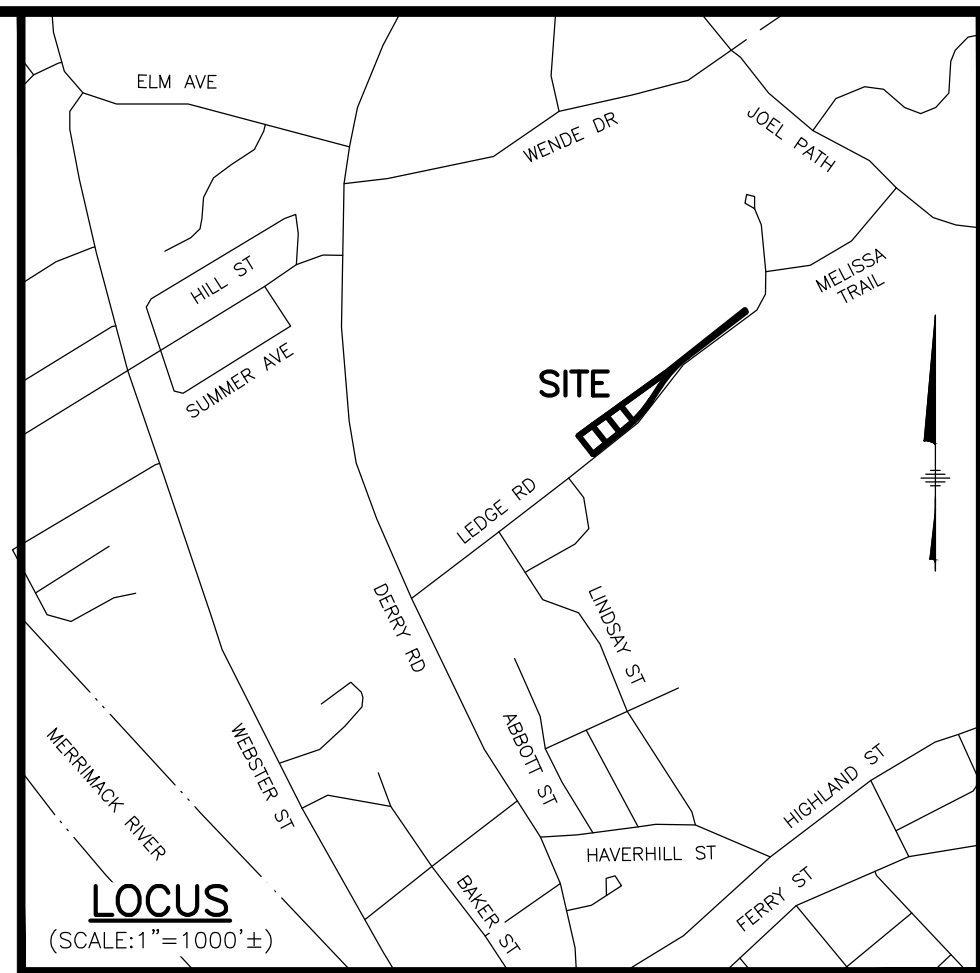
*Todd A. Boyer*  
TODD A. BOYER  
THE BOYER REVOCABLE TRUST OF 2019  
4/25/24  
DATE

**LEGEND**

- IRON PIPE OR IRON ROD
- BOUND
- PROPERTY LINE
- ABUTTER LINE
- TREELINE
- BUILDING SETBACK
- 176 — CONTOUR ELEVATION
- EOP — EDGE OF PAVEMENT
- CCB — CAPE COD BERM
- CHAIN LINK FENCE
- TR — ZONE LINE
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- HYDRANT
- WATER VALVE
- GAS LINE
- SEWER LINE
- UTILITY POLE
- GUY WIRE
- OHW — OVERHEAD WIRES

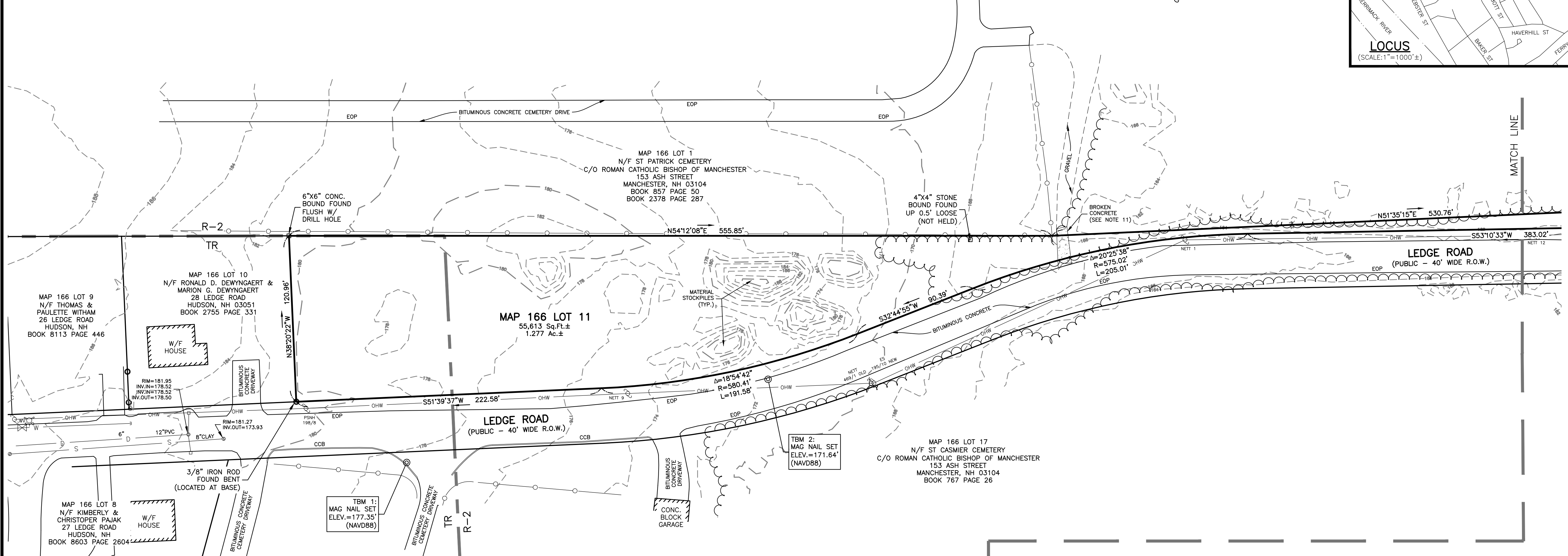
**REFERENCE PLANS:**

1. HILLSBOROUGH COUNTY REGISTRY OF DEEDS (H.C.R.D.) PLAN #2618
2. H.C.R.D. PLAN #7582
3. H.C.R.D. PLAN #21674



**The Dubay Group, Inc.**  
 136 Harvey Road, Bldg 101B  
 Londonderry, NH 03053  
 603-458-6462

Engineers  
 Planners  
 Surveyors  
 TheDubayGroup.com



**REVISIONS:**

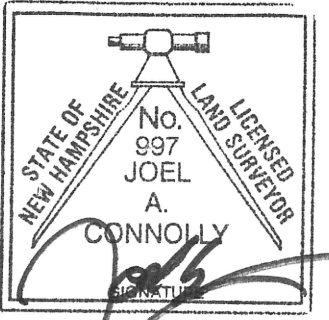
REV	DATE	COMMENT	BY
2	5/29/24	REVS PER F&O & TOWN COMMENTS	JAC

DRAWN BY: NIG  
 CHECKED BY: JAC  
 DATE: MARCH 29, 2024  
 SCALE: 1"=40'  
 FILE: 632-WS

**CERTIFICATION:**

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND WITH AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

I CERTIFY THAT THIS SURVEY PLAN IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.



5/29/2024  
 DATE

APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 CHAIRMAN: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY: \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

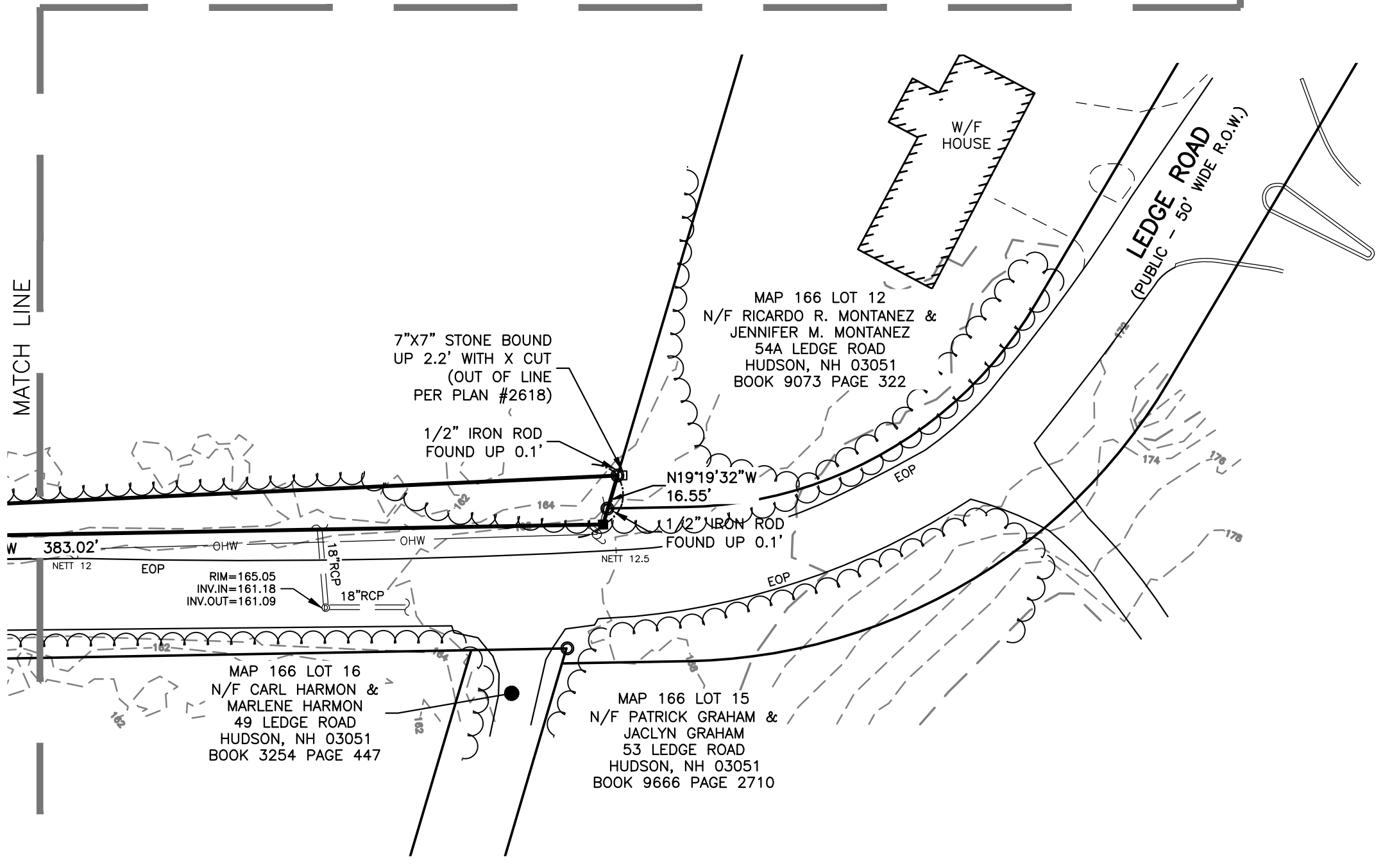
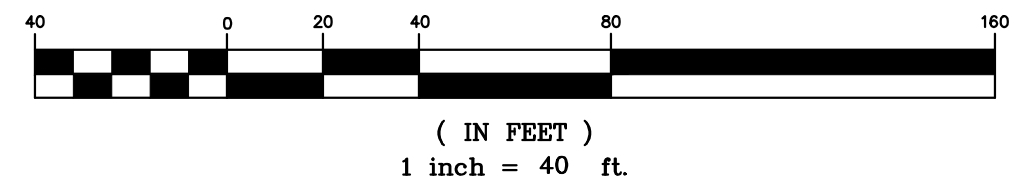
**NOTES:**

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SITE CONDITIONS OF MAP 166 LOT 11 BASED ON A SURVEY PERFORMED BY THIS OFFICE BETWEEN MAY 12 AND MAY 18, 2023 AND A UAS (DRONE) FLIGHT BY THIS OFFICE ON MAY 16, 2023 AND PROCESSED USING PIX4D SOFTWARE.
2. THE BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A SURVEY PERFORMED BY THIS OFFICE BETWEEN MAY 12 AND MAY 18, 2023 AND PLAN REFERENCES LISTED HEREON.
3. THE HORIZONTAL DATUM IS BASED ON NAD83 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON MAY 18, 2023.
4. THE VERTICAL DATUM IS BASED ON NAVD88 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON MAY 18, 2023.
5. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON RECORD DESIGN PLANS, DIG SAFE FLAGGING, INFORMATION PROVIDED BY THE TOWN OF HUDSON, NH, AND/OR ABOVE GROUND FEATURES LOCATED BY THIS OFFICE. SAID UNDERGROUND UTILITIES ARE NOT WARRANTED TO BE EXACT OR INCLUSIVE OF ALL EXISTING UTILITIES.
6. MAP 166 LOT 11 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP 33011C0514E, WITH AN EFFECTIVE DATE OF APRIL 18, 2011.
7. MAP 166 LOT 11 IS ZONED RESIDENTIAL 2 (R-2) AND TOWN RESIDENTIAL (TR) PER THE TOWN OF HUDSON ZONING MAP;
8. REFER TO ZONING BOARD OF APPEALS CASE #166-011 GRANTING RELIEF OF DIMENSIONAL REQUIREMENTS TO ALLOW FOR A FOUR (4) LOT SUBDIVISION. SEE NOTICE OF DECISION AND CASE FILE FOR ADDITIONAL INFORMATION.
9. THERE WERE NO WETLANDS OBSERVED ON OR DIRECTLY ADJACENT TO THE PORTION OF THE PROPERTY BEING DEVELOPED.
10. IN CONDUCTING THE REGISTRY RESEARCH THERE WERE NO RECORDED EASEMENTS FOUND TO BE ON OR ACROSS THE SUBJECT PARCEL. IN CONDUCTING THE FIELD SURVEY THERE WAS A PHYSICAL ACCESS USE OBSERVED CROSSING FROM FROM LEDGE ROAD TO MAP 166 LOT 1.

<b>RESIDENTIAL 2:</b>	
MIN LOT SIZE:	43,560 SF±
MIN LOT FRONTAGE:	120 FT
MIN FRONT YARD:	30 FT
MIN SIDE YARD:	15 FT
MIN REAR YARD:	15 FT
<b>TOWN RESIDENTIAL:</b>	
MIN LOT SIZE:	10,000 SF±
MIN LOT FRONTAGE:	90 FT
MIN FRONT YARD:	30 FT
MIN SIDE YARD:	15 FT
MIN REAR YARD:	15 FT

REFER TO THE TOWN OF HUDSON ZONING ORDINANCE FOR ADDITIONAL INFORMATION AND RESTRICTIONS.

**GRAPHIC SCALE**



**PROJECT:**

**MAP 166 LOT 11**  
 32 LEDGE ROAD  
 HUDSON, NEW HAMPSHIRE

— PREPARED FOR/OWNER —

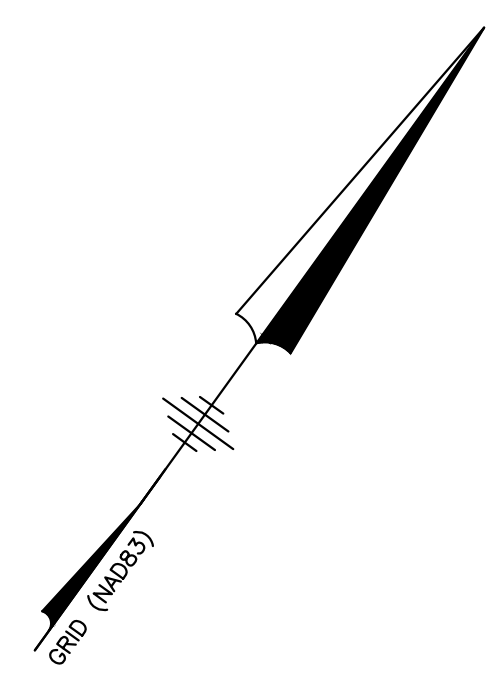
**THE BOYER REVOCABLE TRUST OF 2019**  
 TODD A. BOYER & LORRIE A. BOYER, TRUSTEES  
 2 MERRIL STREET  
 HUDSON, NH 03051  
 BOOK 9349 PAGE 2274

**SHEET TITLE:**

**EXISTING CONDITIONS PLAN**

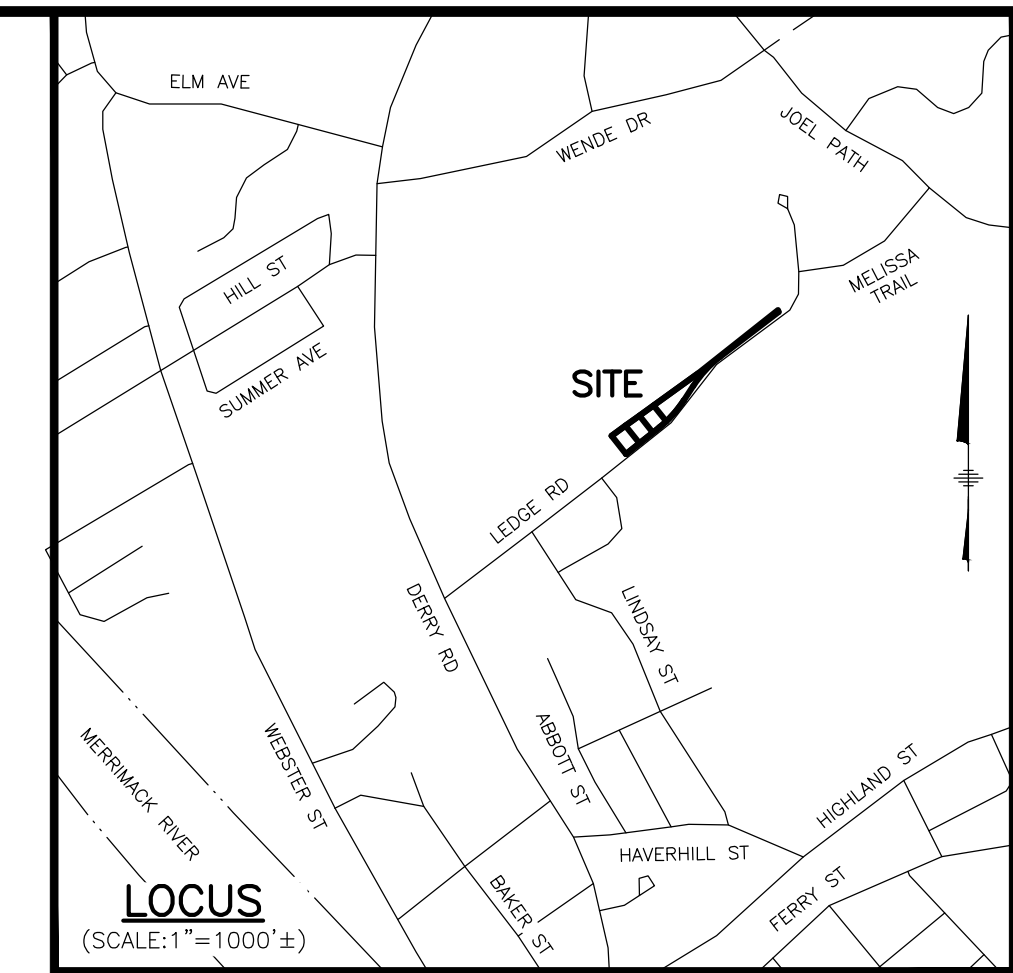


N:\PROJECTS\632-Boyer-Ledge Rd. Hudson\Survey\632-115.dwg



**LEGEND**

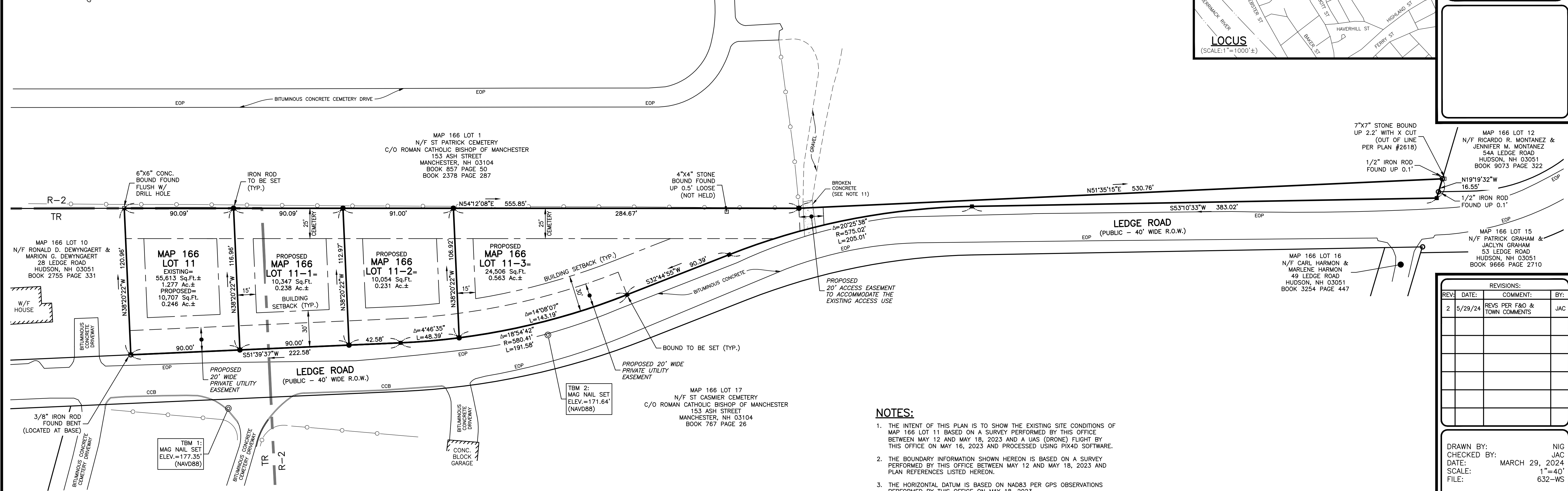
- IRON PIPE OR IRON ROD
- BOUND
- PROPERTY LINE
- ABUTTER LINE
- BUILDING SETBACK
- EOP EDGE OF PAVEMENT
- CCB CAPE COD BERM
- CHAIN LINK FENCE
- TR ZONE LINE



**The Dubai Group, Inc.**  
 136 Harvey Road, Bldg 101B  
 Londonderry, NH 03053  
 603-458-6462

Engineers  
 Planners  
 Surveyors

TheDubayGroup.com



**NOTES:**

- THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING SITE CONDITIONS OF MAP 166 LOT 11 BASED ON A SURVEY PERFORMED BY THIS OFFICE BETWEEN MAY 12 AND MAY 18, 2023 AND A UAS (DRONE) FLIGHT BY THIS OFFICE ON MAY 16, 2023 AND PROCESSED USING PIX4D SOFTWARE.
- THE BOUNDARY INFORMATION SHOWN HEREON IS BASED ON A SURVEY PERFORMED BY THIS OFFICE BETWEEN MAY 12 AND MAY 18, 2023 AND PLAN REFERENCES LISTED HEREON.
- THE HORIZONTAL DATUM IS BASED ON NAD83 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON MAY 18, 2023.
- THE VERTICAL DATUM IS BASED ON NAVD88 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON MAY 18, 2023.
- UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON RECORD DESIGN PLANS, DIG SAFE FLAGGING, INFORMATION PROVIDED BY THE TOWN OF HUDSON, NH, AND/OR ABOVE GROUND FEATURES LOCATED BY THIS OFFICE. SAID UNDERGROUND UTILITIES ARE NOT WARRANTED TO BE EXACT OR INCLUSIVE OF ALL EXISTING UTILITIES.
- MAP 166 LOT 11 IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP 33011C0514E, WITH AN EFFECTIVE DATE OF APRIL 18, 2011.
- MAP 166 LOT 11 IS ZONED RESIDENTIAL 2 (R-2) AND TOWN RESIDENTIAL (TR) PER THE TOWN OF HUDSON ZONING MAP;

<b>RESIDENTIAL 2:</b>	
MIN LOT SIZE:	43,560 SF±
MIN LOT FRONTAGE:	120 FT
MIN FRONT YARD:	30 FT
MIN SIDE YARD:	15 FT
MIN REAR YARD:	15 FT
<b>TOWN RESIDENTIAL:</b>	
MIN LOT SIZE:	10,000 SF±
MIN LOT FRONTAGE:	90 FT
MIN FRONT YARD:	30 FT
MIN SIDE YARD:	15 FT
MIN REAR YARD:	15 FT

REFER TO THE TOWN OF HUDSON ZONING ORDINANCE FOR ADDITIONAL INFORMATION AND RESTRICTIONS.

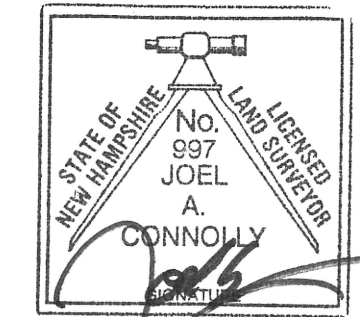
- REFER TO ZONING BOARD OF APPEALS CASE #166-011 GRANTING RELIEF OF DIMENSIONAL REQUIREMENTS TO ALLOW FOR A FOUR (4) LOT SUBDIVISION. SEE NOTICE OF DECISION AND CASE FILE FOR ADDITIONAL INFORMATION.
- THERE WERE NO WETLANDS OBSERVED ON OR DIRECTLY ADJACENT TO THE PORTION OF THE PROPERTY BEING DEVELOPED.
- IN CONDUCTING THE REGISTRY RESEARCH THERE WERE NO RECORDED EASEMENTS FOUND TO BE ON OR ACROSS THE SUBJECT PARCEL. IN CONDUCTING THE FIELD SURVEY THERE WAS A PHYSICAL ACCESS USE OBSERVED CROSSING FROM FROM LEDGE ROAD TO MAP 166 LOT 1.

**REFERENCE PLANS:**

- HILLSBOROUGH COUNTY REGISTRY OF DEEDS (H.C.R.D.) PLAN #2618
- H.C.R.D. PLAN #7582
- H.C.R.D. PLAN #21674

**CERTIFICATION:**

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND WITH AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.



JOEL A. CONNOLLY, LLS 997 DATE 5/29/2024

REV	DATE	REVISIONS:	BY:
2	5/29/24	REVS PER F&O & TOWN COMMENTS	JAC

DRAWN BY: NIC  
 CHECKED BY: JAC  
 DATE: MARCH 29, 2024  
 SCALE: 1"=40'  
 FILE: 632-WS

PROJECT:  
**MAP 166 LOT 11**  
 32 LEDGE ROAD  
 HUDSON, NEW HAMPSHIRE

— PREPARED FOR/OWNER —

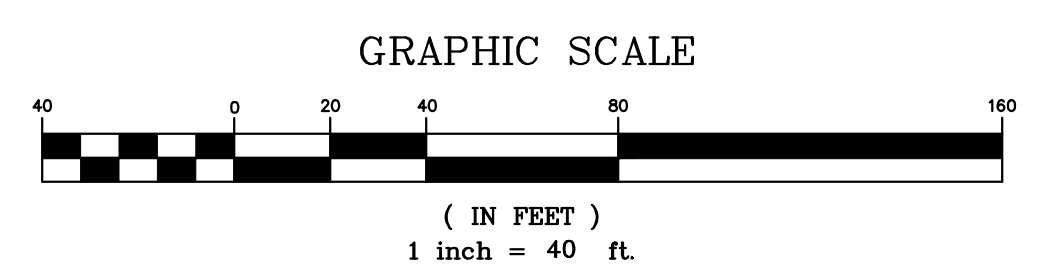
**THE BOYER REVOCABLE TRUST OF 2019**  
 TODD A. BOYER &  
 LORRIE A. BOYER, TRUSTEES  
 2 MERRIL STREET  
 HUDSON, NH 03051  
 BOOK 9349 PAGE 2274

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING: \_\_\_\_\_

CHAIRMAN	SIGNATURE DATE:
SECRETARY	SIGNATURE DATE:

SUBDIVISIONS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FOR AN APPLICANT TO GAIN AN EXEMPTION FROM ALL SUBSEQUENT CHANGES IN SUBDIVISION REGULATIONS, SITE PLAN REGULATIONS AND CHANGES TO THE ZONING ORDINANCE, SEE NH RSA 674:39.



SHEET TITLE:  
**SUBDIVISION PLAN**

PROJECT #632 SHEET 3 of 10

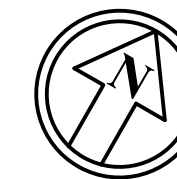


The Dubay Group, Inc.

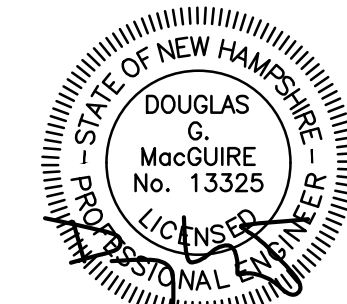
136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers  
Planners  
Surveyors

TheDubayGroup.com



20 0 10 20  
1 INCH = 20 FEET



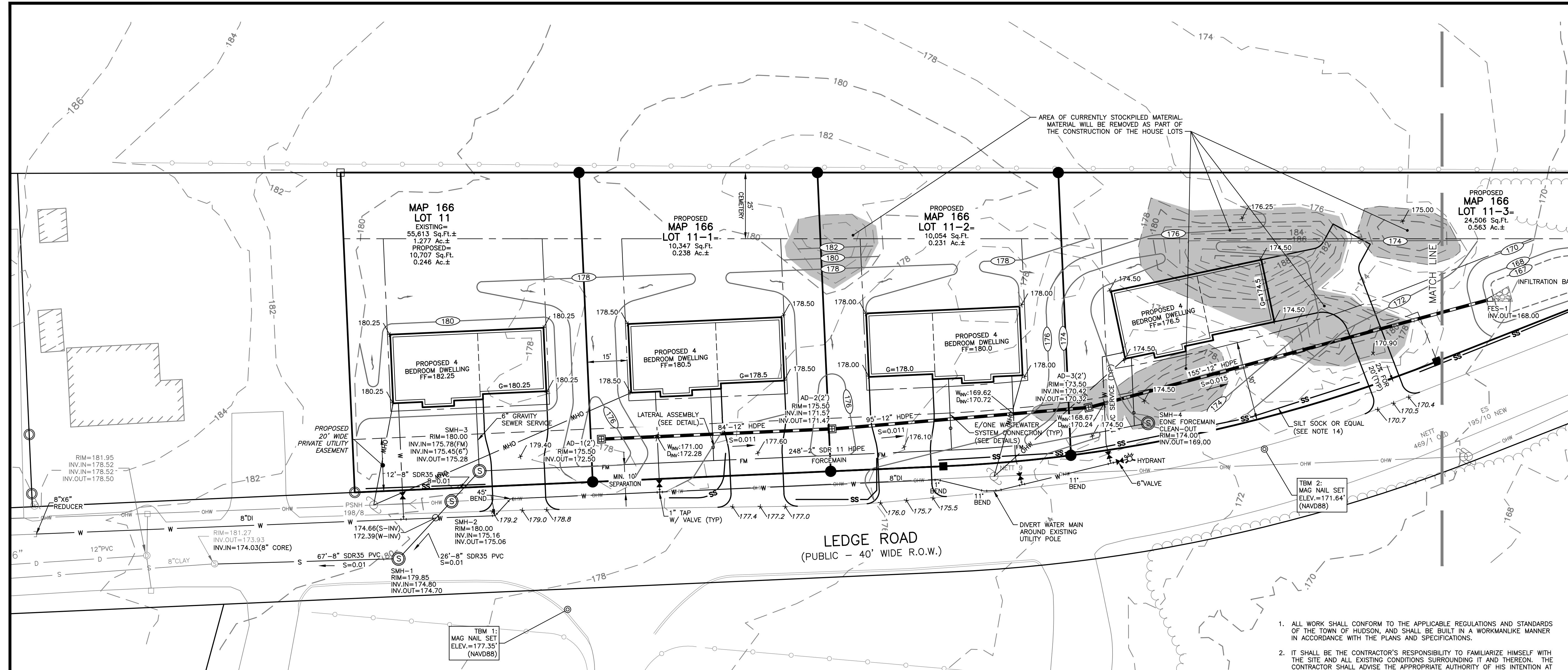
REV#	DATE	REVISIONS:	COMMENT:	BY:
1	4/23/24	REVS PER TOWN COMMENTS		JHD
2	5/29/24	REVS PER F&O & TOWN COMMENTS		JHD
3	6/27/24	REVS PER TOWN COMMENTS		SJK

DRAWN BY: JHD  
 CHECKED BY: DGM  
 DATE: MARCH 29, 2024  
 SCALE: 1"=20'  
 FILE: 632-UTILITY  
 DEED REF: -

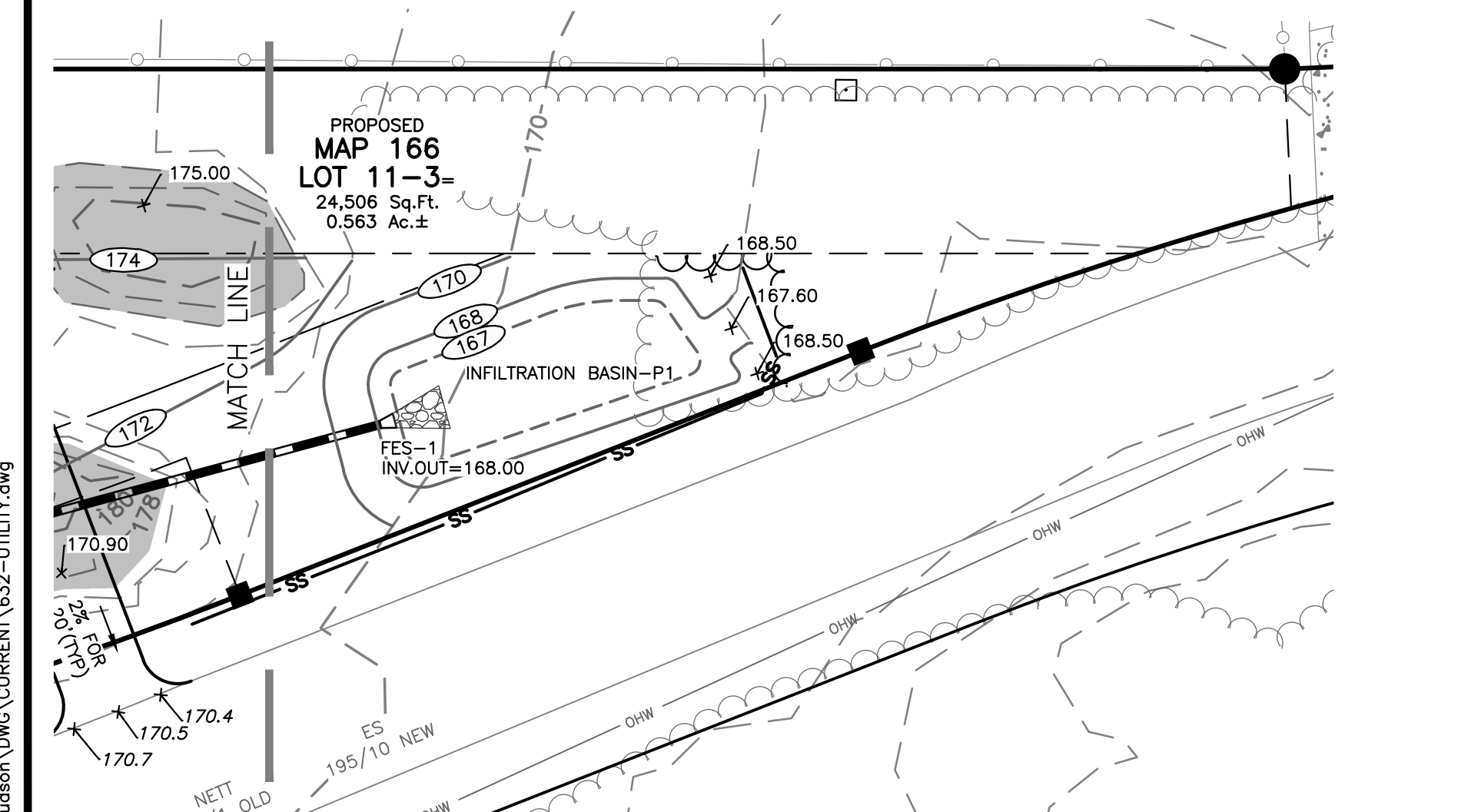
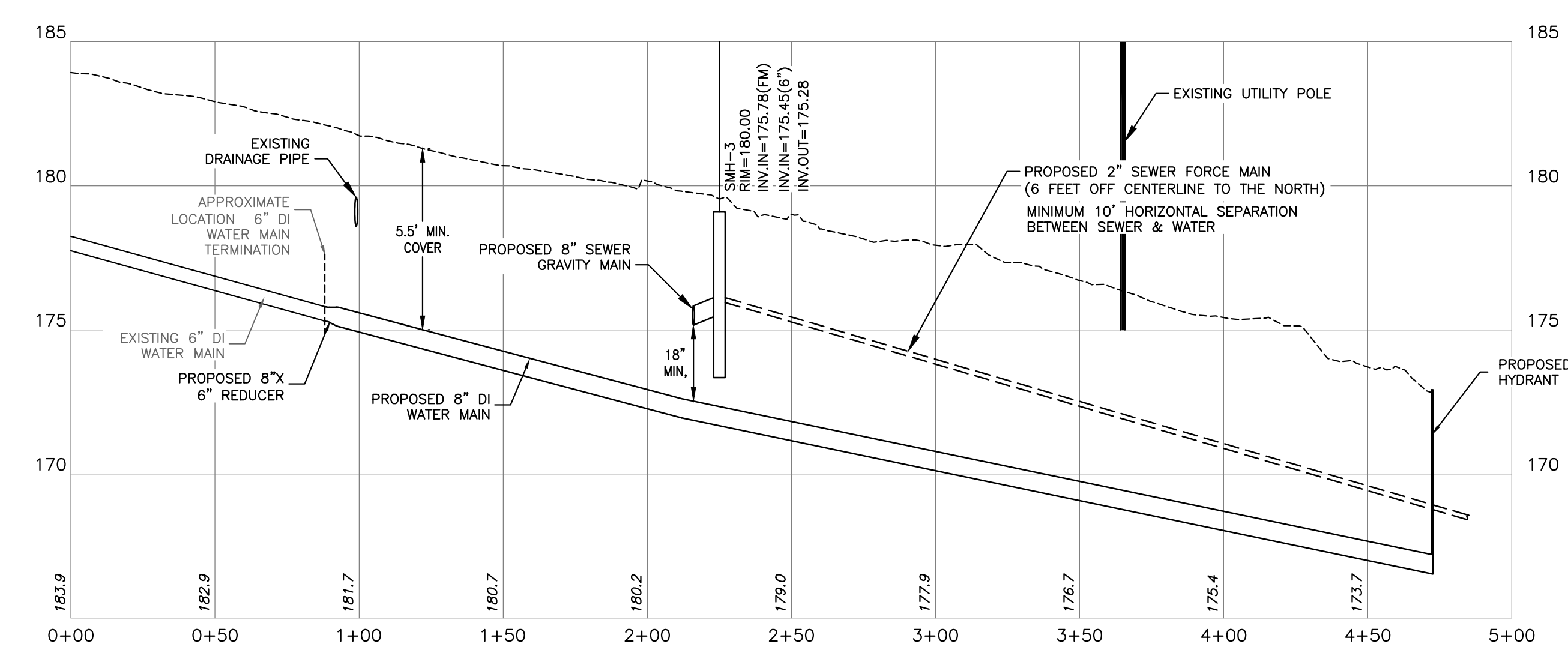
PROJECT:  
**MAP 166 LOT 11**  
 32 LEDGE ROAD  
 HUDSON, NEW HAMPSHIRE  
 FOR  
**THE BOYER REVOCABLE TRUST OF 2019**  
 TODD A. BOYER & LORRIE A. BOYER, TRUSTEES  
 2 MERRILL STREET  
 HUDSON, NH 03051  
 BOOK 9349 PAGE 2274

SHEET TITLE:  
**UTILITY PLAN W/  
 PROTOTYPICAL  
 LOT GRADING**

PROJECT #632 SHEET 4 of 10



- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTION AT LEAST 48 HOURS IN ADVANCE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
- THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN IN THE PLANS THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THE DETAILS PROVIDED SHALL SERVE AS A GUIDE ONLY.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS AND ALIGNMENTS. ALL GRADE DROPS SHALL BE PROVIDED WITH RAILS AS REQUIRED BY CODE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
- THERE SHALL BE 5' MINIMUM SEPARATION BETWEEN ALL UTILITIES AND 10' BETWEEN WATER AND SEWER.
- SEWER INSTALLATION SHALL BE COMPLETED IN ACCORDANCE WITH TOWN OF HUDSON AND NHDES SPECIFICATIONS.
- FLOOR DRAINS, ROOF DRAINS, SLUMP PUMPS, OR ANY OTHER NON-SANITARY DRAIN CANNOT BE CONNECTED TO THE SEWER SERVICE FOR THE PROPOSED HOUSES.
- NO SIGNAGE IS PROPOSED FOR THIS PROJECT.
- NO LIGHTING IS PROPOSED FOR THIS PROJECT.
- DURING CONSTRUCTION, EROSION & SEDIMENTATION CONTROLS SHALL BE USED AS NEEDED TO PREVENT SEDIMENT TRANSPORT OFF PROPERTY.
- THE APPLICANT IS REQUIRED TO ACQUIRE A WATER LINE EXTENSION APPROVAL AND A BOS APPROVAL PRIOR TO ISSUING THE FIRST BUILDING PERMIT.
- THE HOUSES SHOWN ARE PROTOTYPICAL AND BUILDING PERMITS MUST BE OBTAINED FOR EACH LOT. PER THE TOWN OF HUDSON'S ZONING ORDINANCE SECTION 334-14, NO OCCUPIED STRUCTURE MAY EXCEED 38 FEET IN HEIGHT. THE HEIGHT IS MEASURED FROM THE AVERAGE ELEVATION OF THE FINISHED GRADE WITHIN FIVE FEET OF THE STRUCTURE TO THE HIGHEST POINT OF THE ROOF.



APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
 CHAIRMAN \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_  
 SECRETARY \_\_\_\_\_ SIGNATURE DATE: \_\_\_\_\_

SUBDIVISIONS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FOR AN APPLICANT TO GAIN AN EXEMPTION FROM ALL SUBSEQUENT CHANGES IN SUBDIVISION REGULATIONS, SITE PLAN REGULATIONS AND CHANGES TO THE ZONING ORDINANCE, SEE NH RSA 674:39.



N:\PROJECTS\632-Boyer-Ledge Rd. Hudson\DWG\CURRENT\632-UTILITY.dwg





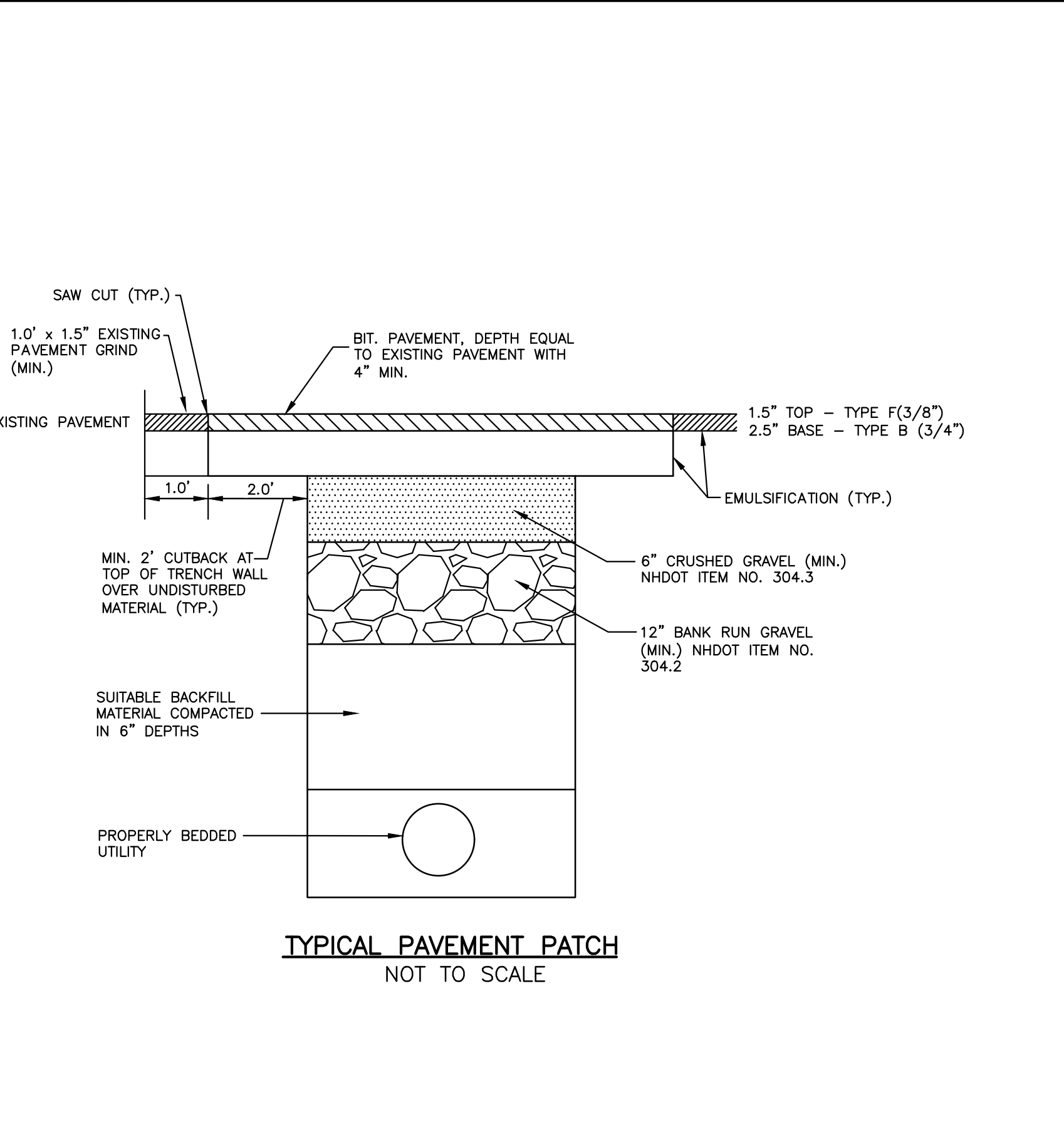
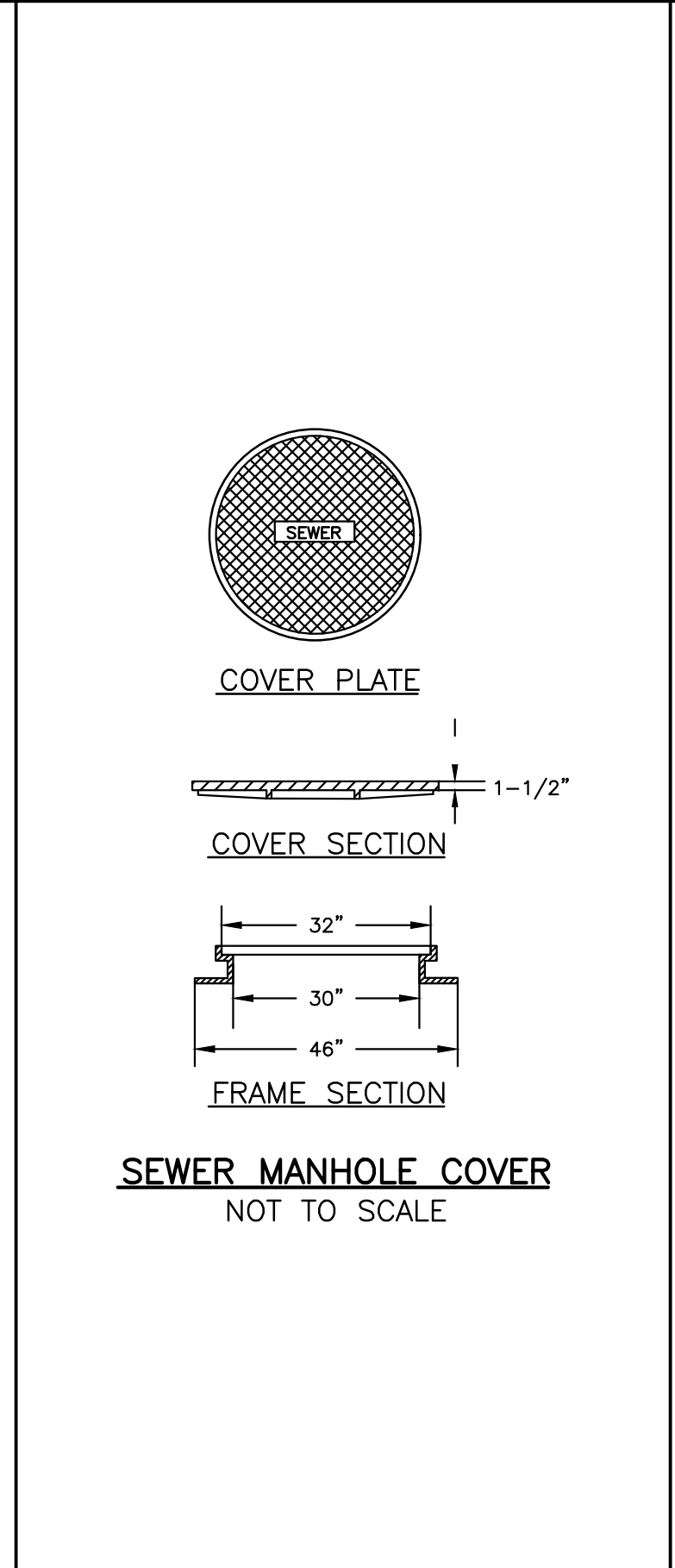
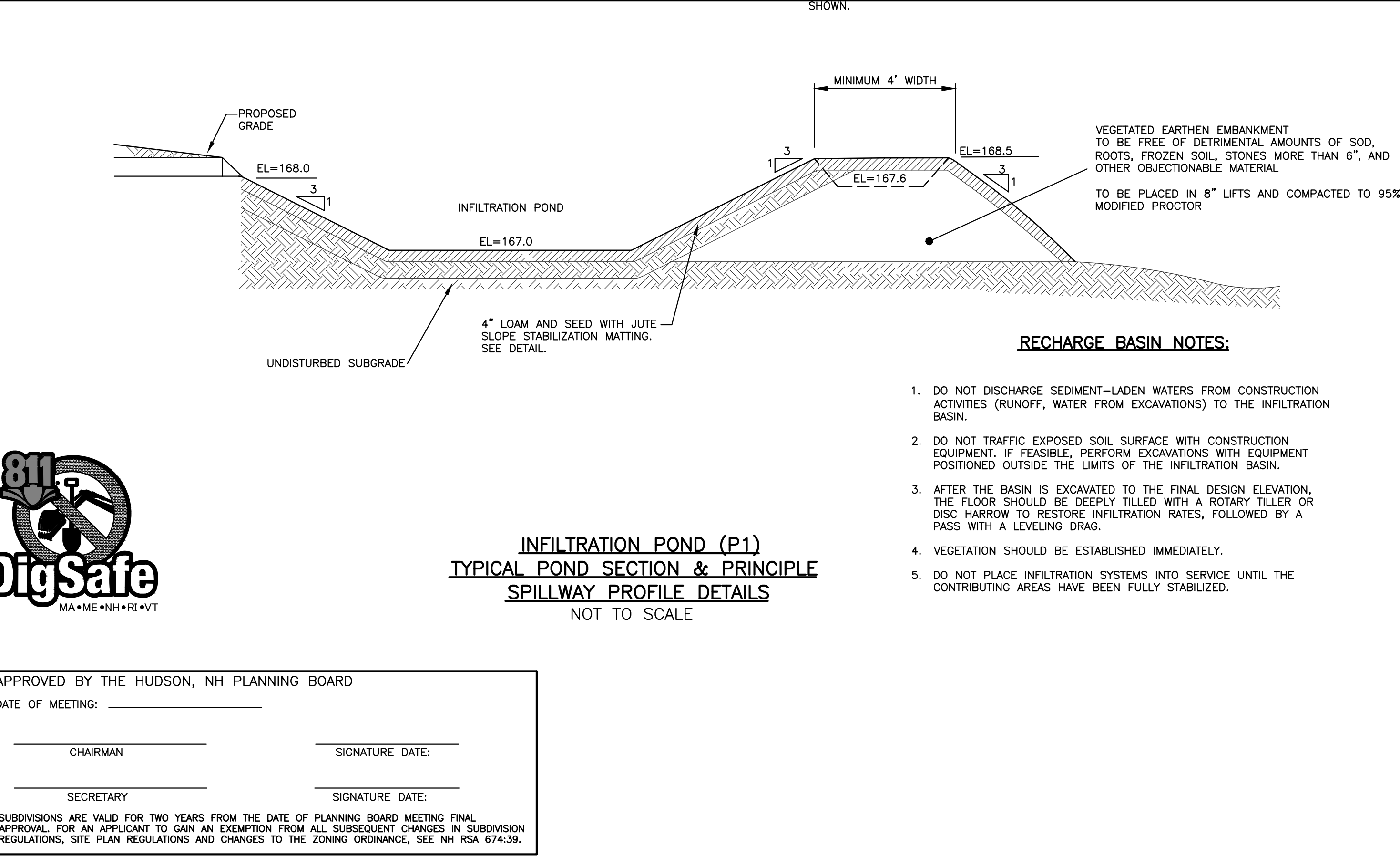
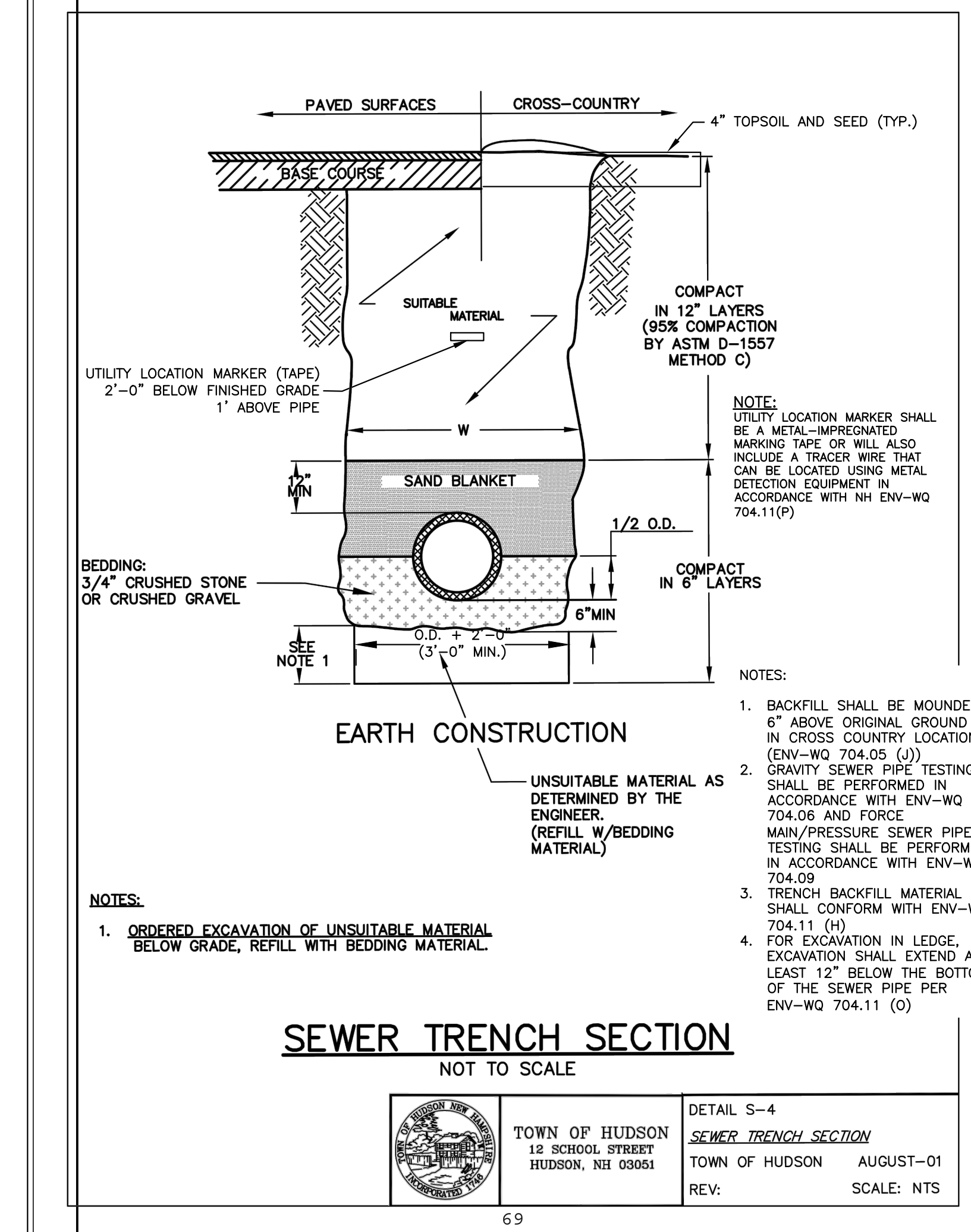
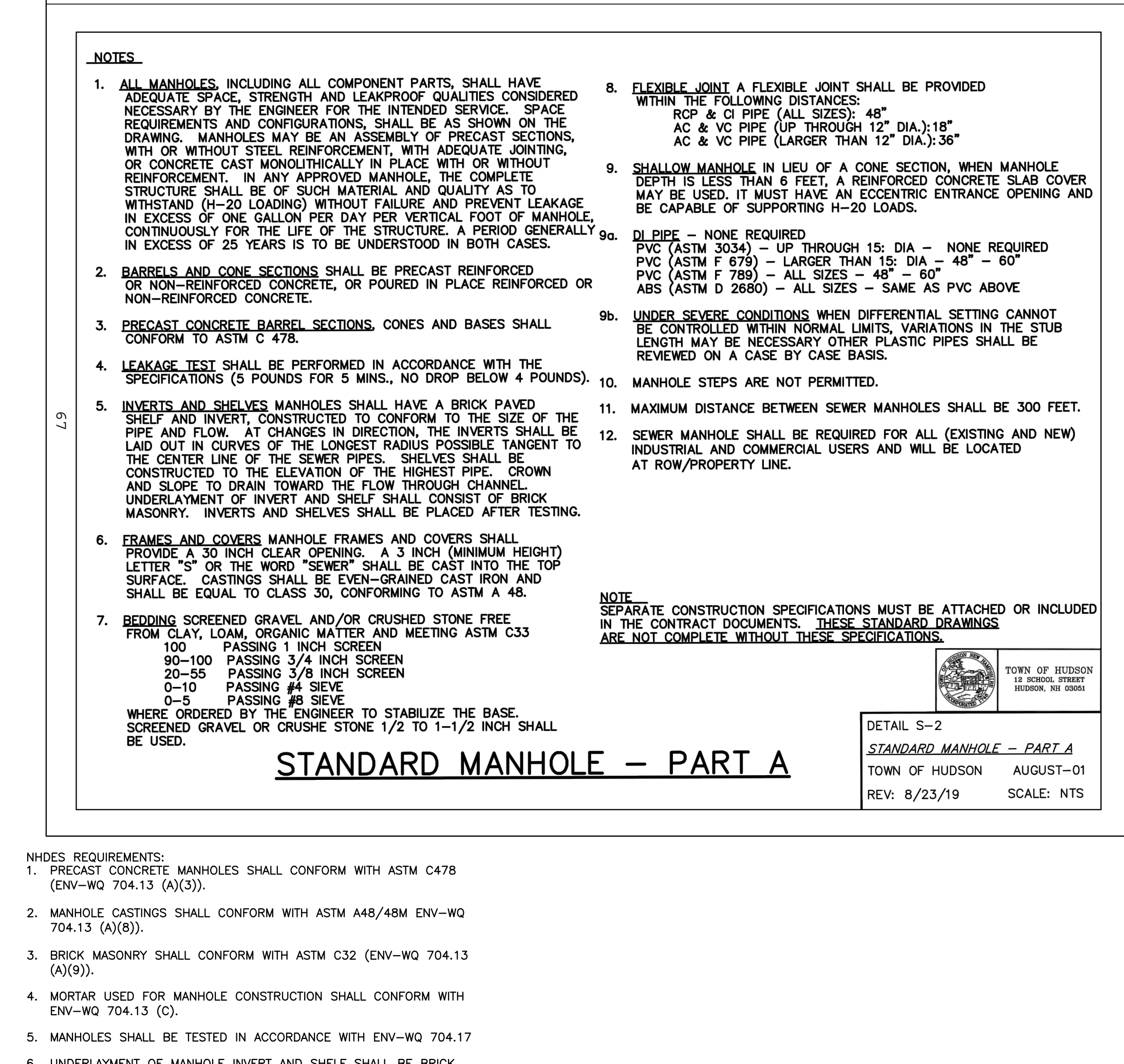
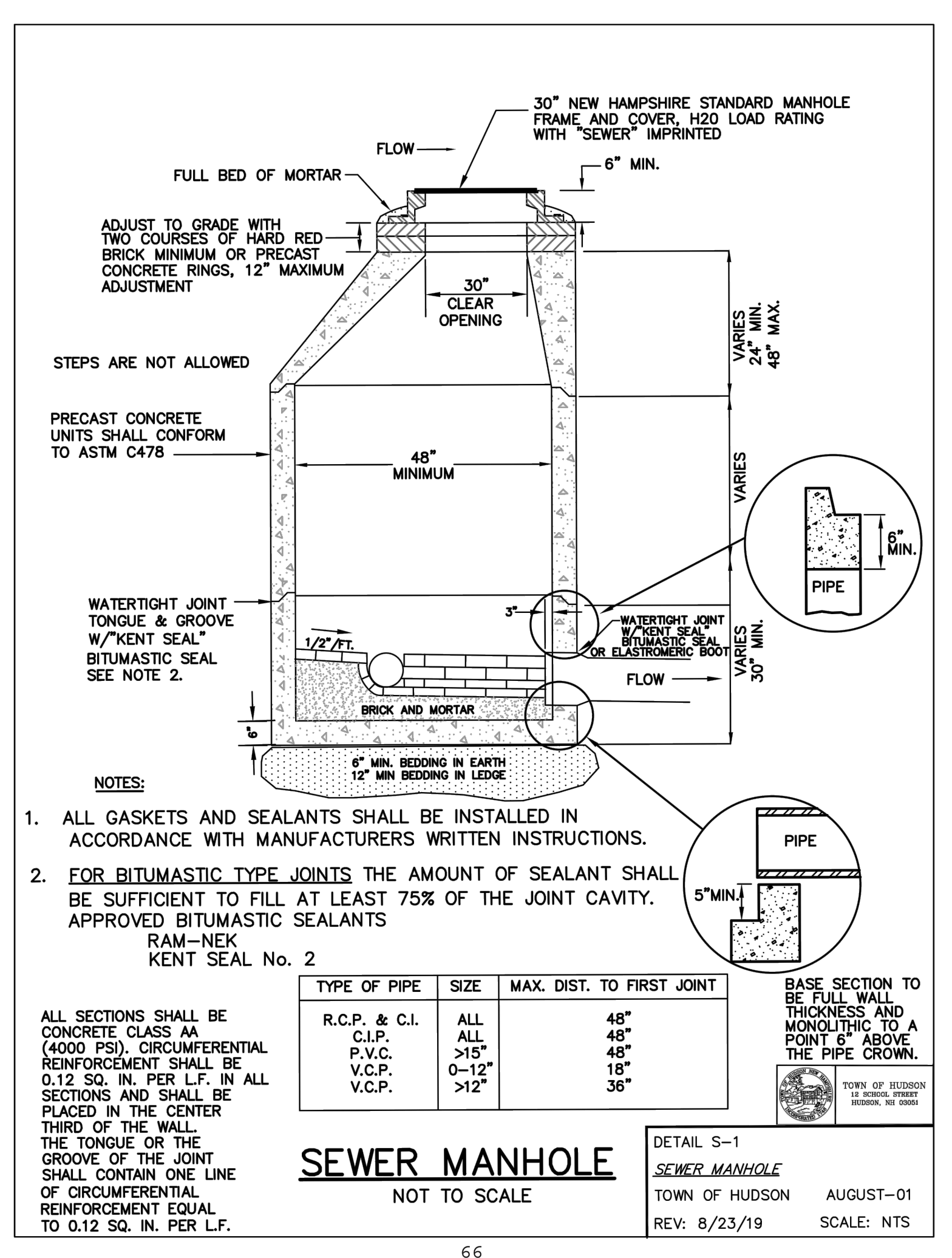












**The Dubay Group, Inc.**

136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers  
Planners  
Surveyors

TheDubayGroup.com

REVISIONS:

REV#	DATE	COMMENT	BY:
1	4/23/24	REVS PER TOWN COMMENTS	JHD
2	5/29/24	REVS PER F&O & TOWN COMMENTS	JHD
3	6/27/24	REVS PER TOWN COMMENTS	SJK

REV#	DATE	COMMENT	BY:

DRAWN BY:  
CHECKED BY: MARCH 29, 2024  
SCALE:  
FILE: 632-details  
DEED REF: -

PROJECT:  
**MAP 166 LOT 11**  
32 LEDGE ROAD  
HUDSON, NEW HAMPSHIRE

FOR

**THE BOYER REVOCABLE TRUST OF 2019**

TODD A. BOYER & LORRIE A. BOYER, TRUSTEES  
2 MERRILL STREET  
HUDSON, NH 03051  
BOOK 9349 PAGE 2274

SHEET TITLE:  
**CONSTRUCTION DETAILS-3**

PROJECT #632 SHEET 9 of 10

NA=PROJECTS\632-Boyer-Ledge, Rd., Hudson\DWG\CURRENT\632-detailed.dwg



## Home Wastewater Disposal System

### DESCRIPTION

The E/One Home Wastewater Disposal System was designed specifically for indoor installation in a basement mechanical room, on or in the slab. Its clean look fits unobtrusively into any environment. While the E/One indoor unit is completely enclosed for safety and appearance, it is easy to access should it require service.

### APPLICATIONS

Indoor installation in all single-family homes built on any kind of terrain — hilly, rocky, wet or flat. Ideally suited for new residential communities.

### FEATURES AND BENEFITS

- Complete and ready for installation. Includes grinder pump, check valve, alarm panel, controls, and a tough, noncorrosive tank made from high-density polyethylene.
- The grinder pump within the tank is state-of-the-art, grinding all solids into fine particles for easy, reliable disposal through small-diameter pipes to a central treatment plant or nearby sewer line.
- The pump activates automatically and runs infrequently for very short periods.
- 1 1/4-inch discharge connection is adaptable to any piping requirement, thereby meeting local codes.
- 91-gallon tank capacity is based on water usage patterns and is more than adequate to meet the needs of single-family homes.
- Internal check valve assembly is custom-designed for non-clog, trouble-free operation.
- Typical electric power usage for a single-family home is 84 kWh to 168 kWh per year, an approximate cost of \$10 to \$20 per year.
- Designed with sound-insulating properties.

### OPERATIONAL INFORMATION

- **Motor**  
1 hp, 1725 rpm, high torque, capacitor start, thermally protected, 240V, 60 Hz, 1 phase

- **Inlet Connection**  
4-inch PVC socket weld

- **Discharge Connection**  
Pump discharge terminates in 1 1/4-inch NPT female thread. Can be adapted to 1 1/4-inch PVC pipe or any other material required by local codes.

- **Discharge\***  
15 gpm at 0 psig  
11 gpm at 40 psig  
7.8 gpm at 80 psig  
\* Discharge data includes loss through check valve, which is minimal

- **Overload Capacity**  
The maximum pressure that the pump can generate is limited by the motor's characteristics. The motor generates a pressure well below the rating of the piping and appurtenances. The automatic reset feature does not require manual operation following overload.

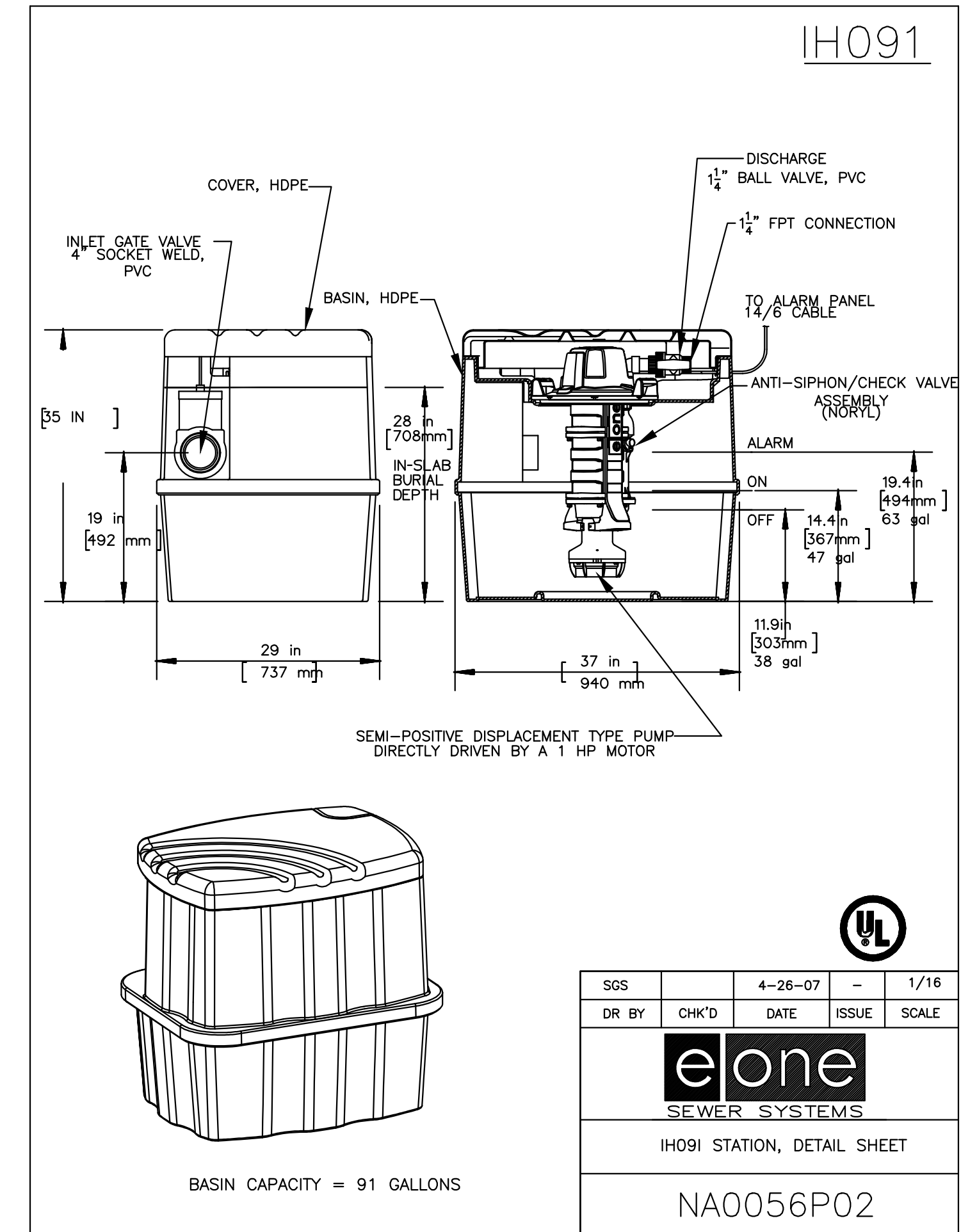
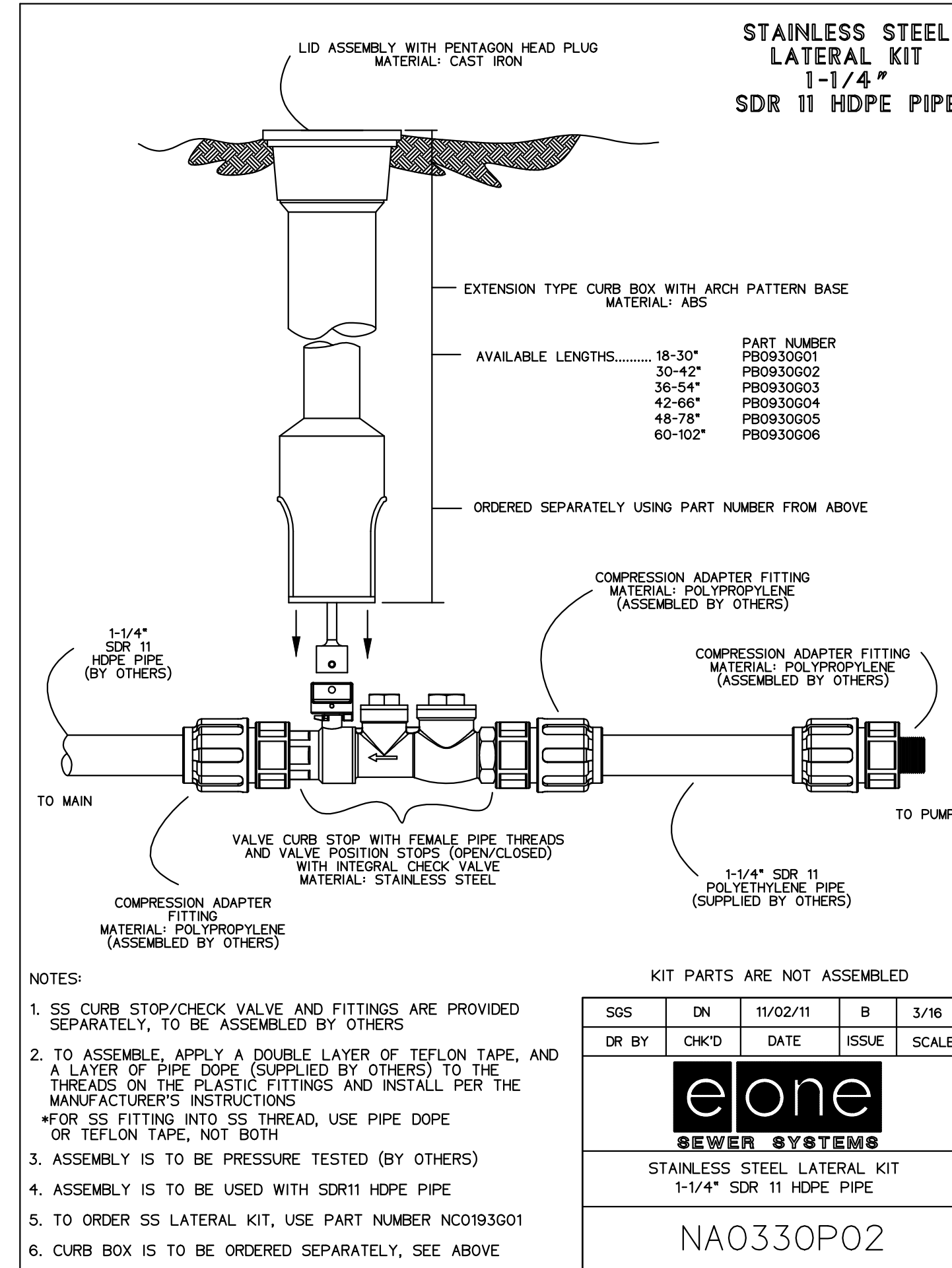
- **E/One Sentry Alarm Panel**  
Includes circuit breakers, terminal blocks and ground lugs, audible alarm with manual silence, manual run feature and run indicator, redundant "start" function with high level alarm, conformal-coated alarm board (both sides), and alarm board overload protection. Optional Remote Sentry in-home display module available.

- **Dimensions/Weight**  
29" x 27" x 35" / Approximately 200 lbs

**eone** SEWER SYSTEMS  
Environment One Corporation  
2773 Balltown Road, Niskayuna, New York 12309  
Voice 518.346.6161 Fax 518.346.6188  
www.eone.com A Precision Castparts Company



LM000386 Rev A



**The Dubai Group, Inc.**

136 Harvey Rd. Bldg B101  
Londonderry, NH 03053  
603-458-6462

Engineers

Planners

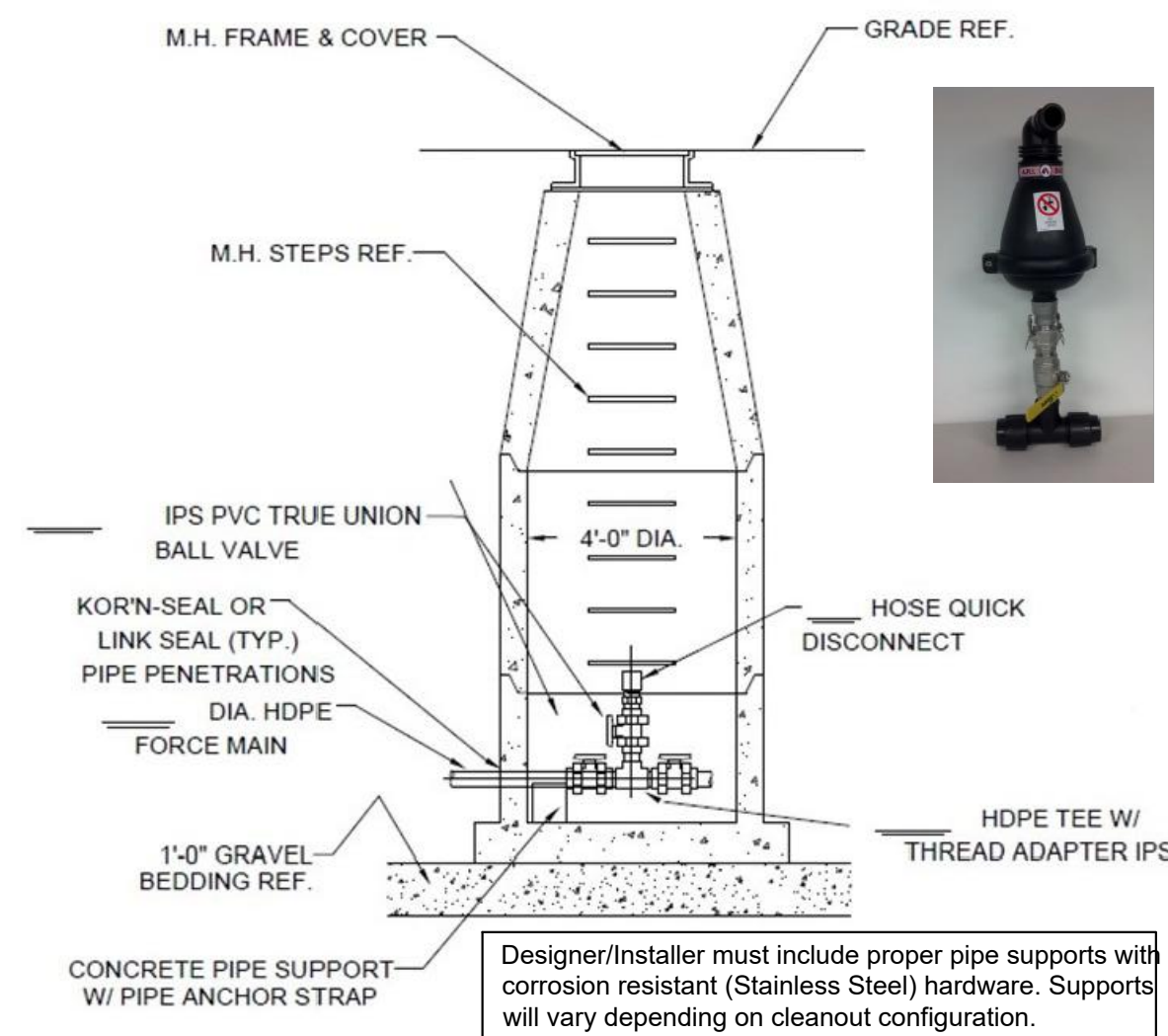
Surveyors

TheDubayGroup.com

### REVISIONS:

REV.	DATE:	COMMENT:	BY:
1	4/23/24	REVS PER TOWN COMMENTS	JHD
2	5/29/24	REVS PER F&O & TOWN COMMENTS	JHD

### Example of Typical Cleanout Detail (Optional Air/Vacuum Valve shown -right)



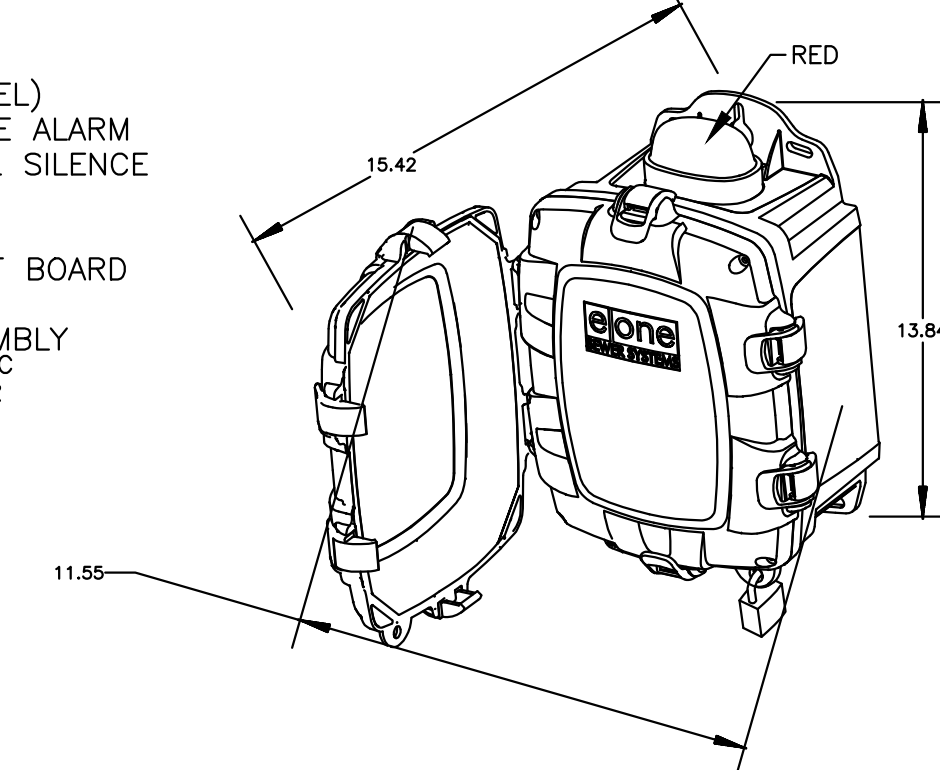
Cleanout detail can be modified to match typical installation needs. Inline shut offs may be added to isolate flow direction. Image shown is flow through cleanout. These structures can be terminal end of line cleanouts, or junction cleanouts as may be required. Optional air and vacuum relief valves may be added when required.

### SIMPLEX SENTRY

REDUNDANT RUN (HIGH LEVEL)  
EXTERNAL VISUAL & AUDIBLE ALARM  
EXTERNAL LATCHING MANUAL SILENCE  
MANUAL RUN  
PUMP RUN INDICATOR  
CONFORMAL COATED CIRCUIT BOARD  
PADLOCK  
NEMA 4X ENCLOSURE ASSEMBLY  
CORROSION PROOF THERMOPLASTIC  
POLYESTER APPROVED BY UL FOR  
ELECTRICAL CONTROL ENCLOSURE

### OPTIONS:

- ALARM CONTACTS
- HOUR METER



CE UPC®  
ASME A112.3.4

UL NSF

LR28268 LISTED 506D

AD	SM	01/9/08	D	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE
<b>eone</b> SEWER SYSTEMS				
SIMPLEX SENTRY, 120V 60Hz. SINGLE POLE POWER				
LM000327				



APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING: \_\_\_\_\_

CHAIRMAN SIGNATURE DATE: \_\_\_\_\_

SECRETARY SIGNATURE DATE: \_\_\_\_\_

SUBDIVISIONS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL FOR AN APPLICANT TO GAIN AN EXEMPTION FROM ALL SUBSEQUENT CHANGES IN SUBDIVISION REGULATIONS, SITE PLAN REGULATIONS AND CHANGES TO THE ZONING ORDINANCE, SEE NH RSA 674:39.

DRAWN BY:  
CHECKED BY:  
DATE: MARCH 29, 2024  
SCALE:  
FILE: 632-details  
DEED REF: -

PROJECT:

**MAP 166 LOT 11**  
32 LEDGE ROAD  
HUDSON, NEW HAMPSHIRE

FOR

**THE BOYER REVOCABLE TRUST OF 2019**

TODD A. BOYER & LORRIE A. BOYER, TRUSTEES  
2 MERRILL STREET  
HUDSON, NH 03051  
BOOK 9349 PAGE 2274

SHEET TITLE:

**CONSTRUCTION DETAILS-4**

PROJECT #632 SHEET 10 of 10