

BLUEBIRD STORAGE

SITE PLAN # 17-21

STAFF REPORT #3

February 9, 2022

SITE: 196-202 Central Street; Tax Map 176 Lot 021-000, 022-000, 023-000

ZONING: Business (B)

PURPOSE OF PLAN: Proposes a 39,338-SF self-storage building with associated parking, drives, utilities, and stormwater ponds.

PLAN UNDER REVIEW: Non-Residential Site Plan, Bluebird Self Storage, Map 176 Lots 21, 22, & 23, 196-202 Central Street, Hudson, New Hampshire; prepared by Keach-Nordstrom Associates, Inc., 10 Commerce Park North, Suite 3B, Bedford, NH 03110; prepared for Bluebird Self Storage LLC, 125 Ocean Road, Greenland, NH 03840; consisting of 21 sheets with an additional cover page and notes 1-39 on Sheet 1; dated December 20, 2021, last revised February 14, 2022.

ATTACHMENTS

- A. Revised Project Narrative, prepared by KNA, dated February 14, 2022.
- B. Peer review letter, prepared by Fuss & O'Neill, dated February 4, 2022.
- C. Applicant response to peer review, prepared by KNA, dated February 14, 2022.
- D. Applicant response to Town Department comments, prepared by KNA, dated February 14, 2022.
- E. Additional waiver request – loading spaces.
- F. CAP Fee Worksheet

APPLICATION TRACKING:

- September 9, 2021 – The Zoning Board of Adjustment granted a variance to allow the construction of a self-storage facility in the Business Zone (see **Attachment A**).
- December 21, 2021 – Site plan application received.
- January 19, 2022 – Public hearing held, continued to February 9, 2022.
- January 29, 2022 – Site walk scheduled.
- February 9, 2022 – Public hearing scheduled, deferred.
- February 14, 2022 – Revised plan set received.
- February 23, 2022 – Public hearing scheduled.

WAIVER REQUESTS:

1. § 275-8.C.(2)(g), parking requirement for industrial uses. [GRANTED 1/19/22]

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2. § 276-11.1.(12)(c), buffer between residential use or zoning district and any improved part of the nonresidential development.
3. § 275-8.C(6)(a), loading space requirement.

COMMENTS & RECOMMENDATIONS:

BACKGROUND

The submitted plan is proposing to consolidate three different lots (Map 178 Lots 21, 22, and 23) into a single lot and construct a 3-story 39,338-SF self-storage building with associated parking, utilities, and stormwater ponds. The lot will be serviced by municipal water and sewer.

There are currently a single-family house and two small sheds on Lot 21, served by a driveway off Central Street. On Lot 23, there are a single-family house and a detached garage served by a driveway off Central Street that passes through Lot 22. There is no existing structure on Lot 22. Aside from the driveways and open lawn areas around the two residences, the lots are fairly wooded. While there is a gentle slope rising from Central Street, the lots are relatively flat, except for an area with steeper terrain at the northeast corner of Lot 23.

The Westview Cemetery abuts the three lots in the north and west.

The applicant had received a variance from the Zoning Board of Adjustment for allowing self-storage use in the Business District, which is otherwise not permitted. The applicant is seeking two waivers from the Planning Board in this application – for the required number of off-street parking and the 200’ residential buffer.

The waiver for number of parking spaces was granted by the Board at its January 19, 2022 meeting. The Board decided to wait to make a decision on the buffering requirement pending a site walk, which occurred on January 29, 2022.

SIDEWALK

Staff recommends that the existing sidewalk that ends in the western side of the subject site be improved and extended along the site’s entire frontage. This should also include pedestrian crossing markings across the site driveway. Although not currently a welcoming environment to pedestrians, this corridor has long term potential for pedestrian oriented development.

LANDSCAPING

The Applicant added landscaping along the property lines abutting residential uses. Also added was additional landscaping along the street-side of the site.

PEER REVIEW/STORMWATER MANAGEMENT

A peer review letter is provided as **Attachment B**, with the Applicant’s response in **Attachment C**. Most of the peer review comments are related to stormwater management. On page 3 of **Attachment B**, Item 6.a identifies an increase in the runoff volume at Analysis Point A which is

in the rear of the proposed building. The water table is higher here than the front of the site, making infiltration difficult as articulated at the top of page 4 in **Attachment C**. To remedy the concerns of the peer review and town staff, the Applicant must address this item by either increasing the size of the basin in the back, or direct some of the runoff to proposed infiltration basin #5. This solution was agreed to by the Town Engineer and the Applicant and has been included as a proposed condition of approval.

TOWN DEPARTMENT COMMENTS

The Applicant also included a response letter to comments received from Town Departments in **Attachment D**. Almost all comments have been addressed. The only exception is Engineering’s comment #4 concerning water line size. Per the Town Engineer’s input, the Applicant must revise the proposed water connection to a minimum 8-inch diameter in order to accommodate the 6-inch fire hydrant laterals, the 6-inch fire protection service and the 2-inch domestic service.

RECOMMENDATIONS

The Board should consider the Applicant’s two remaining waiver requests. The following items remain:

1. Improvement & extension of existing sidewalk, and pedestrian crossing markings at driveway; and, add sidewalk detail to plan set.
2. Revision of Stormwater Pond #1 by increasing the size of the basin or diverting runoff to Ponf #5, to the satiusfaction of the Town Engineer.
3. Revise the water tap to a minimum of 8-inch diameter.

If the requested waivers are granted, and if the Board finds the remaining items acceptable to be administratively reviewed and approved, Staff finds the application ready for the Board’s final decision.

DRAFT MOTIONS

CONTINUE the public hearing to a date certain:

I move to defer the public hearing for site plan application for 196-202 Central Street; Tax Map 176 Lots 21, 22, 23 to date certain, _____.

Motion by: _____ Second: _____ Carried/Failed: _____

GRANT a waiver:

I move to grant a waiver from § 276-11.1.(12)(c), 200-foot distance between residential use or zoning district and any improved part of an industrial development, based on the Board’s discussion, the testimony of the Applicant’s representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

GRANT a waiver:

I move to grant a waiver from § 275-8.C(6)(a), requirement of loading spaces, based on the Board's discussion, the testimony of the Applicant's representative, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: _____ Second: _____ Carried/Failed: _____

[Draft Approval Motion on the Following Page]

APPROVE the site plan application:

I move to approve Non-Residential Site Plan, Bluebird Self Storage, Map 176 Lots 21, 22, & 23, 196-202 Central Street, Hudson, New Hampshire; prepared by Keach-Nordstrom Associates, Inc., 10 Commerce Park North, Suite 3B, Bedford, NH 03110; prepared for Bluebird Self Storage LLC, 125 Ocean Road, Greenland, NH 03840; consisting of 21 sheets with cover page and notes 1-41 on Sheet 1; dated December 20, 2021, last revised February 14, 2022; subject to, and revised per, the following stipulations:

1. All stipulations of approval shall be incorporated into the Development Agreement, which shall be recorded at the HCRD, together with the Plan.
2. All improvements shown on the Plan, including notes 1-41 on Sheet 1, shall be completed in their entirety and at the expense of the applicant or the applicant's assigns.
3. Prior to the issuance of a final certificate of occupancy, an LLS Certified "as-built" site plan shall be provided to the Town of Hudson Land Use Division, confirming that the site conforms to the Plan approved by the Planning Board.
4. A cost allocation procedure (CAP) amount of \$29,503.50 shall be paid prior to the issuance of a Certificate of Occupancy.
5. The onsite drainage system shall be constructed and maintained in compliance with NHDES requirements for such systems.
6. The existing sidewalk on Central Street shall be improved and extended to span the frontage of the site. Pedestrian crossing marking shall be added to the driveway.
7. Stormwater Pond #1 shall be revised to improve its infiltration capability by either increasing the size of the basin or by directing some runoff to Stormwater Pond #5.
8. The water connection shall be revised to be 8-inches in diameter.
9. Prior to the Planning Board endorsement of the Plan, it shall be subject to final administrative review by Town Planner and Town Engineer.
10. Construction activities involving the subject lot shall be limited to the hours between 7:00 A.M. and 7:00 P.M. No exterior construction activities shall be allowed on Sundays.
11. Hours of refuse removal shall be exclusive to the hours between 7:00 A.M. and 7:00 P.M., Monday through Friday only.

Motion by: _____ Second: _____ Carried/Failed: _____



December 20, 2021
Revised February 14, 2022

Project Narrative:

Bluebird Self-Storage Facility
196-202 Central Street, Hudson, NH

The properties located at 196-202 Central Street are currently owned by Craven Irrevocable Trust. The parcels are Map 176, Lots 21, 22 & 23. Lots 21 and 23 are currently occupied by single-family homes. The properties also include paved driveways. The paved driveway runs north to south and connects to Central Street. The site is comprised of three separate lots, which are to be combined.

Three existing lots must be combined in order to complete this project. Map 176; Lots 21, 22 and 23 must be combined. The lots are zoned Business. On September 9, 2021, the Hudson Zoning Board of Adjustment granted a variance to allow construction of a self-storage facility in the Business Zone.

Several items must be removed in order to properly prepare the site for construction. The existing single-family buildings must be razed, the paved driveways must be removed, and an existing utility services must be removed.

The proposed site will include a three-story self-storage building with a paved driveway and parking lot. The proposed building will have a 39,338 square foot footprint and 118,164 square foot in gross area. The parking lot will contain 20 total spaces, with two spaces being handicap accessible.

In addition to the building and parking lot, a series of drainage pipes and stormwater ponds must be added to the site. A wet pond, two bioretention ponds allowing infiltration, and two chamber system infiltration ponds will help prevent excess runoff into the bordering street or the surrounding properties. The wet pond will lie in the northern portion of the lot. The bioretention ponds will border the proposed driveway and the chamber system ponds will be located in parking lot areas of the site.



February 4, 2022

Mr. Brian Groth
Town Planner
Town of Hudson
12 School Street
Hudson, NH 03051

Re: Town of Hudson Planning Board Review
Bluebird Self Storage Site Plan, 196-202 Central Street
Tax Map 176 Lots 21, 22 & 23; Acct. #1350-989
Reference No. 20030249.2110

Dear Mr. Groth:

Fuss & O'Neill (F&O) has reviewed the first submission of the materials received between December 20, 2021, and January 21, 2022, related to the above-referenced project. Authorization to proceed was received on December 23, 2021. A list of items reviewed is enclosed. The scope of our review is based on the Site 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 the development of a self-storage facility on a previously developed site consisting of 3 existing lots which are proposed to be combined as part of this project. Proposed improvements to the site also include the construction of a driveway, parking areas, drainage improvements, landscaping, lighting and other associated site improvements. The proposed buildings will be serviced by public water and sewer.

The following items are noted:

1. Site Plan Review Codes (HR 275)

- a. Hudson Regulation (HR) 275-6.C. The applicant has proposed to install new curbing along Central Street but it is unclear if the existing sidewalk will be extended along this new curbing as well. The proposed curbing and potential sidewalk would be entirely within the Town Right-of-Way.
- b. HR 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the proposed building. The applicant has proposed adding a fire hydrant and fire service connection to the site. The applicant should add a fire hydrant detail to the plan set.
- c. HR 275-6.T. If the applicant is proposing the construction of a sidewalk extension with the vertical granite curb along the site Right-of-Way (see comment above), there is no

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Vermont



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grading provided for this sidewalk area. The applicant should review and provide spot grades on the plans to ensure positive drainage will exist in this area along the sidewalk.

- d. HR 275-8.C.(2) and Zoning Ordinance (ZO) 334-15.A. The applicant has provided parking calculations on the plan set. The applicant has noted that 197 parking are required for an industrial use but the Regulations do not have a Self-Storage use. The applicant has requested a waiver for this requirement and has proposed 20 parking spaces with four additional spaces available to be striped if needed. The applicant has noted on their Waiver Request Form that the parking spaces provided are sufficient based on case studies and experience of this type of facility.
- e. HR 275-8.C.(6). The applicant has provided four off-street loading spaces on the plan set. We note that based on the size of the building 12 spaces are required. We note also that the spaces provided are 12 feet by 30 feet instead of the 12 feet by 60 feet required. The applicant should review the need for a waiver.
- f. HR 275-9.C.(11). The applicant has provided two handicap spaces for the site which exceeds the minimum of one space required for the number of proposed parking spaces.
- g. HR 275-9.F. The applicant did not provide copies of any easements or deeds as part of the package received for review, and has not shown any existing or proposed easements on the plans.

2. Administrative Review Codes (HR 276)

- a. HR 276-11.1.B.(4).(b). The applicant should provide the approval block on each sheet of the plan set. The block is missing from the Existing Conditions Plan.
- b. HR 276-11.1.B.(6). The owner's signature was not provided on the plan.
- c. HR 276-11.1.B.(12).(c). The applicant has requested a waiver for the 100-foot setback between the commercial use and the residential use adjacent to the site.
- d. HR 276-11.1.B.(13). The applicant has not included details for any proposed site signage other than traffic signs. The applicant has included a note stating that, "All signs are subject to approval by the Hudson Planning Board prior to installation."
- e. HR 276-11.1.B.(16). The applicant has not provided the locations of all driveways and travel ways within 200 feet of the site.
- f. HR 276-11.1.B.(20). The applicant has not labeled the size or height of the existing buildings on site. We note that the existing building will all be razed as part of this project.
- g. HR 276-11.1.B.(23). The applicant has not noted any pertinent highway projects on the plan set.

3. Driveway Review Codes (HR 275-8.B. (34)/Chapter 193)

- a. HR 193.10.E. The applicant has provided adequate sight distances for the proposed driveway location on the plan set.
- b. The driveway and loading area layout doesn't appear to allow for larger trucks (WB-50 and above) to access the site. The applicant should confirm that these are not anticipated, and review the need for signage to prevent such trucks from attempting to access the site. The applicant should also provide information as to the types of delivery trucks expected to access the site.



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- c. The applicant should coordinate with the Hudson Fire Department regarding the need and ability for fire equipment to access the west side of the building.

4. Traffic

- a. HR 275-9.B. The applicant has not provided any traffic information as part of their review package.

5. Utility Design/Conflicts

- a. Engineering Technical Guideline & Typical Details (ETGTD) Section 720.8.3. The applicant has not provided a cleanout for the proposed sewer service. This should be located at the property line. The applicant has moved SMH#3 to the Right-of-Way line to satisfy this requirement.
- b. The applicant should provide more detailed trench patch details for the utility trenches that extend into Central Street. Proposed material thicknesses and widths should be noted.
- c. ETGTD Section 801. The applicant should verify with the Town that the existing water main in Central Street has adequate flow and pressure to meet both domestic and fire suppression requirements for this site.

6. Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- a. HR 275-9.A.12 & 290-5.A.5 a. The applicant has proposed an increase in the runoff volume at Analysis Point A. The applicant should demonstrate that the increase will not cause flooding of the downstream property or any adverse effects. The applicant should review if this project requires a waiver with the Town Engineer as well as the NHDES AoT reviewer.
- b. HR 275-9.A.3. & 290-5.A.4. The applicant has provided test pit information the estimated seasonal high groundwater table (ESHWT), however, information pertaining to perc tests/infiltration rates has not been provided. The applicant followed the NH Stormwater Manual and has identified an infiltration rate based on the soil type and included a factor of safety of 2, but the applicant should perform perc tests to confirm the infiltration rates.
- c. HR 290-5.A.9. a. The applicant should confirm the ESHWT used for the design of the wet pond. The ESHWT for the wet pond is shown as 179.00' in the NHDES BMP worksheets. The water table was not provided for TP#8, which is in the vicinity of this BMP and the groundwater elevations provided from the remainder of the test pits are between elevation 166.00' and 174.00'.
- d. HR 290-5.a.9. b. The applicant should review the ESHWT provided in the BMP Worksheets for Bioretention Pond #2. The ESHWT in the worksheets does not align with the ESHWT provided in the test pit summary.
- e. HR 290-5.A.11. The bottom of the wet pond (Wet Pond #1) has the bottom floor elevation above the max floor elevation in the NHDES BMP Worksheets. The applicant should provide a hydrologic budget to demonstrate that a minimum permanent pool depth of 3 feet can be maintained.



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- f. HR 290-5.A.11. The applicant should review the NHDES BMP worksheet for Bioretention Pond #2. The bottom of the filter media course, and the plan sheets noted as containing the filter course specification and plantings appear to be incorrect.
- g. HR 290-5.A.11. The applicant should review and confirm the information provided is consistent between all stormwater practices and BMP worksheets.
- h. HR 290-5.A.1. & 290-5.A.3. The applicant should provide language in the Drainage Report, stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.
- i. HR 290-5.A.10. The applicant should review with NHDES AoT the need for a double row of silt sock along the 50' wetland setback lines.
- j. HR 290-5.A.12. The applicant should review with the Town if a signed agreement is required.
- k. HR 290-6.A.1. The applicant should provide calculations for the sizing of the riprap outlet at HW#143.
- l. HR 290-6.A.9. The applicant should add the required note to the plan set.
- m. HR 290-7.B.16. & 920.a.10 & 11. The applicant should show areas of permanent snow storage and snow management measures during construction on the plans.
- n. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.
- o. HR 290-a.A.10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain and Wetlands Permits being requested to ensure NHDES comments do not alter drainage design/calculations. Additional items will be required for the NHDES AoT Permit, which could potentially affect the stormwater calculations and/or construction of the site. The applicant should provide additional detail on NHDES screening layers and the NHDES PFAS sampling maps.
- p. HR 290-10.B. a. The applicant should note the requirement for a SWPPP on the plan.
- q. ETGTD 920.4.2 The applicant should show equipment storage and refueling locations on the plan.
- r. ETGTD 920.4.18 The applicant should state on the plan that the responsibility of the stormwater features falls solely upon the owner.
- s. ETGTD 930.3. The applicant should add the required 4' minimum cover to the "Typical Trench Detail".
- t. ETGTD 930.4. We note that the majority of the stormwater design utilizes pipe slopes of less than the required 2.0%. The applicant should illustrate that the drain line velocities are self-cleaning.
- u. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements.
- v. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state, or local laws, rules or



Mr. Brian Groth
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regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact the review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.

7. Zoning (ZO 334)

- a. ZO 334-14.A. The applicant has not provided the proposed building height on the plan set. A note does state that the building will be under 38 feet in height.
- b. ZO 334-17 & 334-21. The applicant has noted that the subject parcel is located within the Business (B) zoning district. The proposed use is not permitted by the Ordinance within the Business district. The applicant has noted that a Variance was received from the Zoning Board of Adjustment on September 9, 2021, to allow the non-permitted use within this district.
- c. ZO 334-33. The applicant has not shown any proposed impacts to the wetlands or wetlands setbacks on the plan set.
- d. ZO 334-60. The applicant has not provided any information for any proposed signs on site, except for traffic and parking signage. The applicant has noted that signs are subject to Planning Board approval prior to installation.
- e. ZO 334-83 and HR 218-4.E. The applicant has noted that the site is not located within a designated flood hazard area.

8. Erosion Control/Wetland Impacts

- a. The Town of Hudson should reserve the right to require any additional erosion control measures as needed. The applicant has noted this on the plans.

9. Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(7). The applicant has met the parking lot landscaping requirements.
- b. HR 275-8.C.(8). The applicant has provided screening for the residential use to the east by using the existing tree line and landscaping.
- c. HR 276-11.1.B.(14). The applicant has shown lighting fixture locations on the plans with details and photometric information.
- d. HR 276-11.1.B.(14). The applicant has noted that the lights will be on at all times to provide safety and security for the facility.

10. State and Local Permits (HR 275-9.G.)

- a. HR 275-9.G. The applicant has listed required permits and statuses on the plan set.
- b. HR 275-9.G. The applicant did not provide copies of any applicable Town, State or Federal approvals or permits in the review package.
- c. Additional local and state permitting may be required.



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11. Other

- a. ETGTD Section 565.1.1. The applicant is reminded of Town of Hudson requirements for the importing of off-site fill materials for use in constructing this project. It is recommended that these requirements be stated on the plans for the Contractors attention.
- b. The project narrative included in the Site Plan application notes that the existing driveway on the site runs east-west and connects to Roosevelt Avenue.

Please feel free to call if you have any questions.

Very truly yours,

Steven W. Reichert, P.E.

Steven W. Reichert, PE

Digitally signed by Steven W. Reichert, PE
DN: cn=Steven W. Reichert, PE, c=US, o=Fuss & O'Neill, Inc., ou=Fuss & O'Neill, Inc., email=sreichert@fando.com
Date: 2022.02.04 11:20:57 -0500

SWR:

Enclosure

cc: Town of Hudson Engineering Division – File
Keach- Nordstrom Associates, Inc. - bsouza@keachnordstrom.com

February 14, 2022

Brian Groth
Town Planner
Town of Hudson
12 School Street
Hudson, New Hampshire 03051

**Subject: Response to Fuss & O'Neill Review Letter
Bluebird Self-Storage Site Plan, 196-202 Central Street
Tax Map 176, Lots 21, 22 & 23
KNA Project No. 21-0709-3**

Dear Mr. Groth:

Our office is in receipt of Fuss & O'Neill's review comments dated February 4, 2022. Based on the comments, we have made the required modifications to the plan set and attached a copy for final review. A response to each comment has been provided below.

Site Plan Review Codes (HR 275)

- a. Hudson Regulation (HR) 275-6.C. The applicant has proposed to install new curbing along Central Street but it is unclear if the existing sidewalk will be extended along this new curbing as well. The proposed curbing and potential sidewalk would be entirely within the Town Right-of-way.
The existing sidewalk does not extend past the existing driveway of Lot 21. There is no continued sidewalk past the property heading Northeast down Central Street. The proposed use requires users to utilize vehicles to bring belongings to and from storage. For these reasons listed, no sidewalk has been proposed and the end of the existing sidewalk will remain the same. The proposed curbing is vertical granite curb, matching the type of curbing existing in front of Lot 21.
- b. HR 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the proposed building. The applicant has proposed adding a fire hydrant and fire service connection to the site. The applicant should add a fire hydrant detail to the plan set.
A fire hydrant detail is provided on Sheet 20 of the plan set. The proposed building will include a sprinkler system, sized appropriately by a plumbing engineer.
- c. HR 275-6.T. If the applicant is proposing the construction of a sidewalk extension with the vertical granite curb along the site Right-of-Way (see comment above), there is no grading provided for this sidewalk area. The applicant should review and provide spot grades on the plans to ensure positive drainage will exist in this area along the sidewalk.

No sidewalk extension is proposed.

- d. HR 275-8.C.(2) and Zoning Ordinance (ZO) 334-15.A. The applicant has provided parking calculations on the plan set. The applicant has noted that 197 parking are required for an industrial use but the Regulations for not have a Self-Storage use. The applicant has requested a waiver for this requirement and has proposed 20 parking spaces with four additional spaces available to be striped if needed. The applicant has noted on their Waiver Request Form that the parking spaces provided are sufficient based on case studies and experience of this type of facility.

No comment required.

- e. HR 275-8.C.(6). The applicant has provided four off-street loading spaces on the plan set. We note that based on the size of the building 12 spaces are required. We note also that the spaces provided are 12 feet by 30 feet instead of the 12 feet by 60 feet required. The applicant should review the need for a waiver.

A waiver has been submitted.

- f. HR 275-9.C.(11). The applicant has provided two handicap spaces for the site which exceeds the minimum of one space required for the number of proposed parking spaces.

No comment required.

- g. HR 275-9.F. The applicant did not provide copies of any easements or deeds as part of the package received for review, and has not shown any existing or proposed easements on the plans.

No easements or deeds are required for review.**Administrative Review Codes (HR 276)**

- a. HR 276-11.1.B.(4).(b). The applicant should provide the approval block on each sheet of the plan set. The block is missing from the Existing Conditions Plan.

The plan has been revised to include the block.

- b. HR 276-11.1.B.(6). The owner's signature was not provided on the plan.

The owner's signature has been added.

- c. HR 276-11.1.B.(12).(c). The applicant has requested a waiver for the 100-foot setback between the commercial use and the residential use adjacent to the site.

No comment required.

- d. HR 276-11.1.B.(13). The applicant has not included details for any proposed site signage other than traffic signs. The applicant has included a note stating that, "All signs are subject to approval by the Hudson Planning Board prior to installation."

No comment required.

- e. HR 276-11.1.B.(16).The applicant has not provided the locations of all driveways and travel ways within 200 feet of the site.

The provided master site plan shows all driveways and travel ways within 200 feet of the site.

- f. HR 276-11.1.B.(20). The applicant has not labeled the size or height of the existing buildings on site. We note that the existing building will all be razed as part of this project.

The existing building heights of been added to the existing conditions plan.

- g. HR 276-11.1.B.(23). The applicant has not noted any pertinent highway projects on the plan set.
At this time, KNA is not aware of any pertinent highway projects.

Driveway Review Codes (HR 275-8.B. (34)/Chapter 193)

- a. HR 193.10.E. The applicant has provided adequate sight distances for the proposed driveway location on the plan set.
No comment required.
- b. The driveway and loading area layout doesn't appear to allow for larger trucks (WB-50 and above) to access the site. The applicant should confirm that these are not anticipated, and review the need for signage to prevent such trucks from attempting to access the site. The applicant should also provide information as to the types of delivery trucks expected to access the site.
Bluebird does not allow larger trucks to access their properties. No signage has been required for their facilities. The largest truck types anticipated on site are single unit box trucks with a maximum length of 40'. The proposed 45' wide driveway allows for the maneuvering of these trucks on site.
- c. The applicant should coordinate with the Hudson Fire Department regarding the need and ability for fire equipment to access the west side of the building.
Fire protection is being coordinated with the Fire Department.

Traffic

- a. HR 275-9.B. The applicant has not provided any traffic information as part of their review package.
Town has not requested any traffic information. The use generates a very low traffic volume. To our understanding it is not required to this point.

Utility Design/Conflicts

- a. Engineering Technical Guideline & Typical Details (ETGTD) Section 720.8.3. The applicant has not provided a cleanout for the proposed sewer service. This should be located at the property line. The applicant has moved SMH#3 to the Right-of-Way line to satisfy this requirement.
No comment required.
- b. The applicant should provide more detailed trench patch details for the utility trenches that extend into Central Street. Proposed material thicknesses and widths should be noted.
A detail has been added.
- c. ETGTD Section 801. The applicant should verify with the Town that the existing water main in Central Street has adequate flow and pressure to meet both domestic and fire suppression requirements for this site.
Town water connection will be coordinated with the Town.

Drainage Design/Stormwater Management (HR 275-9.A./Chapter 290)

- a. HR 275-9.A.1 & 290-5.A.5.a. The applicant has proposed an increase in the runoff volume at Analysis Point A. The applicant should demonstrate that the increase will not cause flooding of the downstream property or any adverse effects. The applicant should review if this project requires a waiver with the Town Engineer as well as the NHDES AoT reviewer.
HR 275-9.A.(1). States the goal “to achieve a zero increase in runoff for both peak and volume where practicable”. Due to the higher groundwater table in the rear of the site and a cut in the overall site, it is infeasible to provide infiltration in the rear of the property. The infiltration provided in the front of the property more than meets the groundwater recharge volume required by NHDES standards. A decrease in the peak rate of runoff for every storm event is provided, however with no infiltration allowable at the rear of the site, the volume has to increase. The overall drainage for this property was designed to meet the NHDES standards and general practices.
- b. HR 275-9.A.(3) & 209-5.A.4. The applicant has provided test pit information the estimated seasonal high groundwater table (ESHWT), however, information pertaining to perc tests/infiltration rates has not been provided. The applicant followed the NH Stormwater Manual and has identified an infiltration rate based on the soil type and included a factor of safety of 2, but the applicant should perform perc tests to confirm the infiltration rates.
The test pits are consistent within the site and within close proximity to the infiltration basin areas and acceptable per NHDES standards.
- c. HR 290-5.A.9.a. The applicant should confirm the ESHWT used for the design of the wet pond. The ESHWT for the wet pond is shown as 179.00’ in the NHDES BMP worksheets. The water table was not provided for TP#8, which is in the vicinity of this BMP and the groundwater elevations provided from the remainder of the test pits are between elevation 166.00’ and 174.00’.
The ESHWT in the BMP was a typo and has been corrected. Test pit data for the test pits are provided in the details.
- d. HR 290-5.A.9.b. The applicant should review the ESHWT provided in the BMP worksheets for Bioretention Pond #2. The ESHWT in the worksheets does not align with the ESHWT provided in the test pit summary.
The BMP worksheet for Bioretention Pond #2 has been corrected.
- e. HR 290-5.A.11. The bottom of the wet pond (Wet Pond #1) has the bottom floor elevation above the max floor elevation in the NHDES BMP Worksheets. The applicant should provide a hydrologic budget to demonstrate that a minimum permanent pool depth of 3 feet can be maintained.
The correction in the BMP worksheet addresses this item. Additionally, Wet Pond #1 is a lined pond, allowing a permanent pool depth to be maintained.
- f. HR 290-5.A.11. The applicant should review the NHDES BMP worksheet for Bioretention Pond #2. The bottom of the filter media course, and the plan sheets noted as containing the filter course specification and plantings appear to be incorrect.
BMP worksheet has been reviewed. The plan sheets have been checked.

- g. HR 290-5.A.11. The applicant should review and confirm the information provided is consistent between all stormwater practices and BMP worksheets.
All BMP worksheets have been reviewed for consistency.
- h. HR 290-5.A.1. & 290-5.A.3. The applicant should provide language in the Drainage Report, stating if and how low impact development (LID) strategies for stormwater runoff were evaluated for this project.
LID strategies included the proposed Bioretention Ponds and tree box filters located at the driveway.
- i. HR 290-5.A.10. The applicant should review with NHDES AoT the need for a double row of silt sock along the 50' wetland setback lines.
KNA will coordinate with NHDES AoT to meet any requirements or standards they have.
- j. HR 290-5.A.12. The applicant should review with the Town if a signed agreement is required.
No comment required.
- k. HR 290-6.A.1. The applicant should provide calculations for the sizing of the riprap outlet at HW#143.
Riprap spreadsheet has been updated.
- l. HR 290-6.A.9. The applicant should add the required note to the plan set.
Note has been added to the Erosion Control plan.
- m. HR 290-7.B.16. & 920.a.10 & 11. The applicant should show areas of permanent snow storage and snow management measures during construction on the plans.
Snow storage areas have been labeled on the landscape plan.
- n. HR 290-8.A.4. & 5. We note the requirement of the applicant to coordinate the need for a Bond or Escrow with the Town Engineer.
No comment required.
- o. HR 290-a.A.10.A. The applicant should keep the Town informed of all communication with NHDES in relation to the required Alteration of Terrain and Wetlands Permits being requested to ensure NHDES comments do not alter drainage design/calculations. Additionally items will be required for the NHDES AoT Permit, which could potentially affect the stormwater calculations and/or construction of the site. The applicant should provide additional detail on NHDES screening layers and the NHDES PFAS sampling maps.
Any information or revisions required by the NHDES will be relayed and submitted to the Town.
- p. HR 290-10.B.a. The applicant should note the requirement for a SWPPP on the plan.
A note has been added to Sheet 1.
- q. ETGTD 920.4.2 The applicant should show equipment storage and refueling locations on the plan.
Equipment storage has been added to the Erosion Control plan.
- r. ETGTD 920.4.18. The applicant should state on the plan that the responsibility of maintaining the stormwater features are solely the owner's.
A note stating the owner is responsible is located on the Grading & Drainage plan.
- s. ETGTD 930.3. The applicant should add the required 4' minimum cover to the "Typical Trench Detail".

This booklet addresses the standards for construction of streets, water systems, sanitary sewer systems, stormwater facilities, erosion and sediment control, and traffic management facilities. These standards are to be incorporated in all designs and proposals for facilities that will be placed in public right-of-way and owned, operated, and maintained by the Town of Hudson.

- t. ETGTD 930.4. We note that the majority of the stormwater design utilizes pipe slopes of less than the required 2.0%. The applicant should review these pipe slopes and provide calculations showing that the drain line velocities are self-cleaning.
All drainage pipe slopes are adequate for self-cleaning requirement. The HydroCAD 2-year report included in the submission shows this.
- u. The applicant will be required to comply with all provisions of the Town of Hudson's MS4 permit, including but not limited to annual reporting requirements, construction site stormwater runoff control, and record keeping requirements.
KNA notes this. No comment required.
- v. Please note that this review was carried out in accordance with applicable regulations and standards in place in New Hampshire at this time. Note that conditions at the site, including average weather conditions, patterns and trends, and design storm characteristics, may change in the future. In addition, future changes in federal, state or local laws, rules or regulations, or in generally accepted scientific or industry information concerning environmental, atmospheric and geotechnical conditions and developments may affect the information and conclusions set forth in this review. In no way shall Fuss & O'Neill be liable for any of these changed conditions that may impact the review, regardless of the source of or reason for such changed conditions. Other than as described herein, no other investigation or analysis has been requested by the Client or performed by Fuss & O'Neill in preparing this review.
No comment required.

Zoning (ZO 334)

- a. ZO 334-14.A. The applicant has not provided the proposed building height on the plan set. A note does state that the building will be under 38 feet in height.
The note has been revised to call out the proposed building height.
- b. ZO 334-17 & 334-21. The applicant has noted that the subject parcel is located within the Business (B) zoning district. The proposed use is not permitted by the Ordinance within the Business district. The applicant has noted that a Variance was received from the Zoning Board of Adjustment on September 9, 2021, to allow the non-permitted use within this district.
No comment required.
- c. ZO 334-33. The applicant has not shown any proposed impacts to the wetlands or wetlands setbacks on the plan set.
No comment required.
- d. ZO 334-60. The applicant has not provided any information for any proposed signs on site, except traffic and parking signage. The applicant has noted that signs are subject to Planning Board approval prior to installation.
No comment required.

- e. ZO 334-83 and HR 218-4.E. The applicant has noted that the site is not located within a designated flood hazard area.
No comment required.

Erosion Control/Wetland Impacts

- a. The Town of Hudson should reserve the right to require any additional erosion control measures as needed. The applicant has noted this on the plans.
No comment required.

Landscaping (HR 275-8.C.(7) & 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(7). The applicant has met the parking lot landscaping requirements.
No comment required.
- b. HR 275-8.C.(8). The applicant has provided screening for the residential use to the east by using the existing tree line and landscaping.
No comment required.
- c. HR 276-11.1.B.(14). The applicant has shown lighting fixture locations on the plans with details and photometric information.
No comment required.
- d. HR 276-11.1.B.(14). The applicant has noted that the lights will be on at all times to provide safety and security for the facility.
No comment required.

State and Local Permits (HR 275-9.G.)

- a. HR 275-9.G. The applicant has listed required permits and statuses on the plan set.
No comment required.
- b. HR 275-9.G. The applicant did not provide copies of any applicable Town, State or Federal approvals or permits in the review package.
No additional permits or approvals have been requested at this time.
- c. Additional local and state permitting may be required.
Should any additional permitting be required for construction, the applicant will pursue an approval and provide the Town with any permits/approvals as required.

Other

- a. ETGTD Section 565.1.1. The applicant is reminded of Town of Hudson requirements for the importing of off-site fill materials for use in constructing this project. It is recommended that these requirements be stated on the plans for the Contractors attention.
Note #33 on the Master Plan calls for the contractor to follow the Town's requirements.
- b. The project narrative included in the Site Plan application notes that the existing driveway on the site runs east-west and connects to Roosevelt Avenue.
The error has been corrected.

Respectfully,

Bridget E. Souza, EIT
Project Engineer
Keach Nordstrom Associates, Inc.
10 Commerce Park North, Suite 3
Bedford, NH 03110



February 14, 2022

Brian Groth
 Town Planner
 Town of Hudson
 12 School Street
 Hudson, New Hampshire 03051

Subject: Response to Town Comments
Bluebird Self-Storage Site Plan, 196-202 Central Street
Tax Map 176, Lots 21, 22 & 23
 KNA Project No. 21-0709-3

Dear Mr. Groth:

Our office is in receipt of preliminary Town comments from Fire Department, Engineering, Zoning, and Planning, sent via email on January 6, 2022. Based on the comments, we have made the required modifications to the plan set. A response to each comment has been provided below.

Fire Department

1. Please provide the markings for fire apparatus access in accordance with NHPA 1.
Markings were added to the plan.
2. The project shall obtain site addressing from the Hudson Fire Department.
No comment required.
3. Two additional fire hydrants shall be located on site. Location of the hydrants shall be located in a location approved by the Hudson Fire Department.
Two hydrants have been added to the plans.
4. The proposed grass fire access lane will need further review. Grasspave2 has several lines of product. The proposed plan does not call out a specific product line. Additionally, this area will need to be maintained 12 months a year. So a snow removal plan will need to be reviewed.
The Grasspave2 product is developed by Invisible Structures Inc. Grasspave2 is one of 6 products made and is the specific product being specified. The Grasspave2 data cut sheet has been attached. The product can be snowplowed with attached skids on the snowplow and will be maintained year-round.
5. Please make sure that the proposed snow storage area shown on the plan does not impede parking or travel paths.
Snow storage areas have been added to the Landscape plan.
- A. The proposed building will require an approved sprinkler system. The Hudson Fire Department upon review of the building plans shall conduct this review. This requirement is in accordance with the International Building Code (IBC) and Hudson

Civil Engineering

Land Surveying

Landscape Architecture

Town Code (HTC), current revision, Chapter 210, Article VI. Any fire protection system shall be monitored by an approved fire alarm system.

Building will be equipped with a sprinkler system and approval will be sought as required.

- B. The fire alarm system shall be connected to the Hudson Fire Department's municipal fire alarm system or a substantially equivalent system in accordance with the Hudson Town Code, Chapter 210. A site plan detailing the aerial or underground layout to the municipal fire alarm connection must be provided before the utilities are completed for this project.
No comment required.
- C. Any required fire alarm system component must remain accessible and visible at all times.
No comment required.
- D. A blasting permit will be required for any blast on the site in accordance with the Hudson Town Code, Chapter 202.
Blasting is not anticipated on site. Should it be necessary, a permit will be obtained.

Engineering

- 1. Applicant shall provide entrance slope, not to exceed 10%.
The driveway entrance is designed at 3% slope for the first 20 feet, as required, and then transitions to a 5% slope.
- 2. Applicant shall revise sewer profile to eliminate the sumps.
Profile has been revised.
- 3. Applicant shall relocate Sewer Manhole #3 at the property line.
SMH#3 was relocated to the property line.
- 4. Applicant shall provide water line size information for domestic and fire protection.
Water line size has been added to the utility plan.
- 5. The soil testing indicated the estimated water table at 4 feet while the proposed detention basin #1 is deeper than that. Applicant shall provide a liner to eliminate groundwater or increase the size of the basins and reducing the depth.
The wet pond at the rear of the site has been revised to call for a liner.
- 6. Proposed HW#105 appears to direct water towards the abutting property, not the wetlands as intended.
The outlet directed towards the wetlands has been revised.

Zoning

- 1. Verify that the height requirement complies with section §334-14.
The proposed building height from slab to roof is approximately 35 feet. As the proposed grade along the rear and west side of the building is higher than the finished floor elevation, the average elevation compared to the finished grade five feet from the structure would be well under the allowable 38 feet.
- 2. Applicant to be aware of the Wetland Conservation Boundary markers required §334-35.
A note has been added to the plan for awareness.

Planning

1. Please provide building elevations.
Building elevations and floor plans were submitted on 1/11/2022.
2. Please provide some of the case studies referenced by the waiver request.
The case studies for the parking waiver were submitted on 1/11/2022.
3. Please provide some screening between this site and the adjacent residential uses on both sides.
Screening has been added to the landscape plan.
4. Notes #21 and #30 contain outdated references. #21 should refer to Land Use Division not Comm Dev Dept. #30 should state that signs are subject to approval by the Zoning Administrator.
The referenced notes have been updated.

Respectfully,

Bridget E. Souza, EIT

Project Engineer

Keach Nordstrom Associates, Inc.

10 Commerce Park North, Suite 3

Bedford, NH 03110

WAIVER REQUEST FORM

Name of Subdivision/Site Plan: Bluebird Self Storage

Street Address: 196-202 Central Street

I Bridget Souza hereby request that the Planning Board waive the requirements of item 275-8.C.(6)(a) of the Hudson Land Use Regulations in reference to a plan presented by Keach-Nordstrom Associates, Inc. (name of surveyor and engineer) dated January 21, 2022 for property tax map(s) 176 and lot(s) 21, 22, & 23 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):

The required loading ratio is not specific to the actual use being proposed. The loading spaces provided are sufficient to the self-storage use (based on various self-storage facility locations occupied by Applicant). Compliance with the regulations for loading spaces required at industrial use buildings would require many more spaces than necessary.

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):

The spirit and intent is met as the actual number of loading spaces provided is adequate for this use. The regulations do not provide specific requirements for this actual type of use. These facilities are very light industrial uses and do not demand the type of traffic required for large loading spaces. (4) 12'x35' loading spaces have been provided and is adequate for this use.

Signed:



Applicant or Authorized Agent



TOWN OF HUDSON

Planning Board

Timothy Malley, Chairman



12 School Street • Hudson, New Hampshire 03051 • Tel: 603-886-6008 • Fax: 603-594-1142

CAP FEE WORKSHEET - 2022

Date: 02-16-22 Zone # 1 Map/Lot: 176/Lots 021, 022, & 023
196-202 Central Street

Project Name: Bluebird Self-Storage

Proposed ITE Use #1: Warehousing

Proposed Building Area (net square footage): 39,338 S.F.

CAP FEES: (ONE CHECK NEEDED)

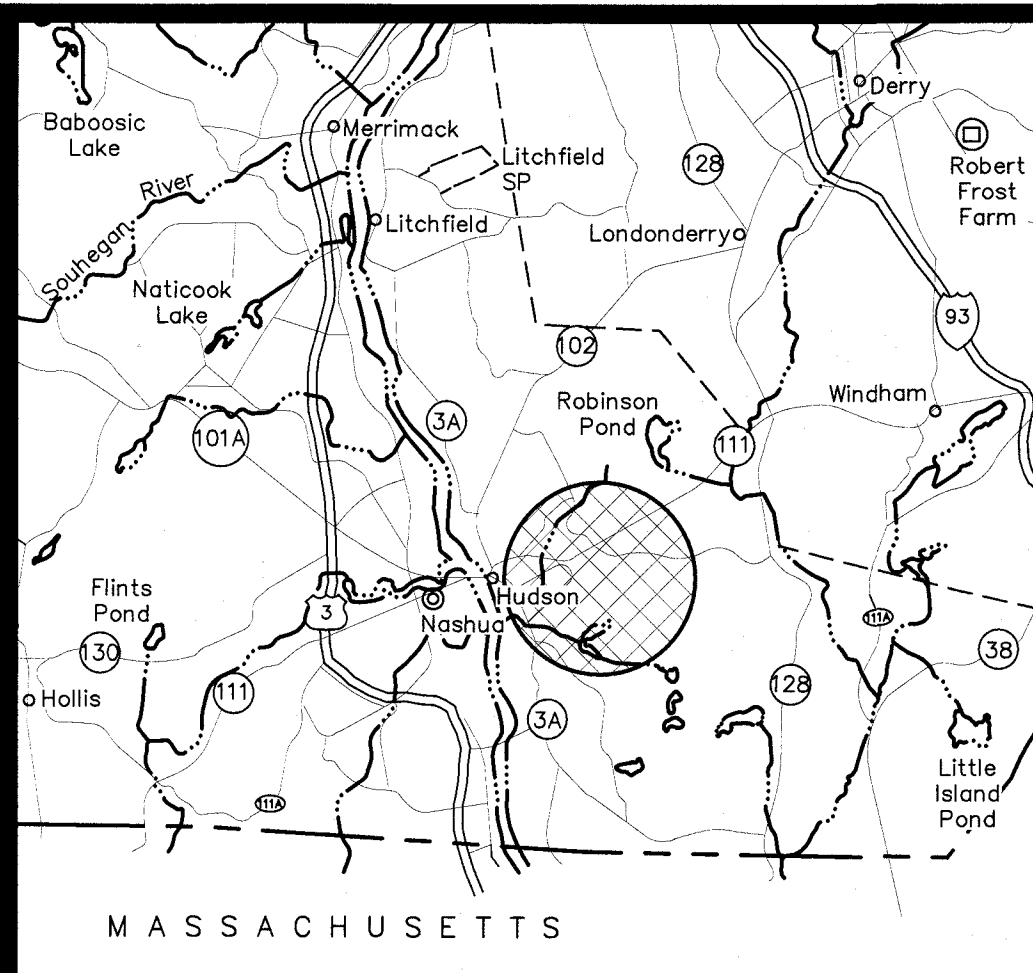
1.	(Bank 09) 2070-701	Zone 1 (\$0.75 per sf X 39,338 sf)	\$ <u>29,503.50</u>
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Check should be made payable to the Town of Hudson.

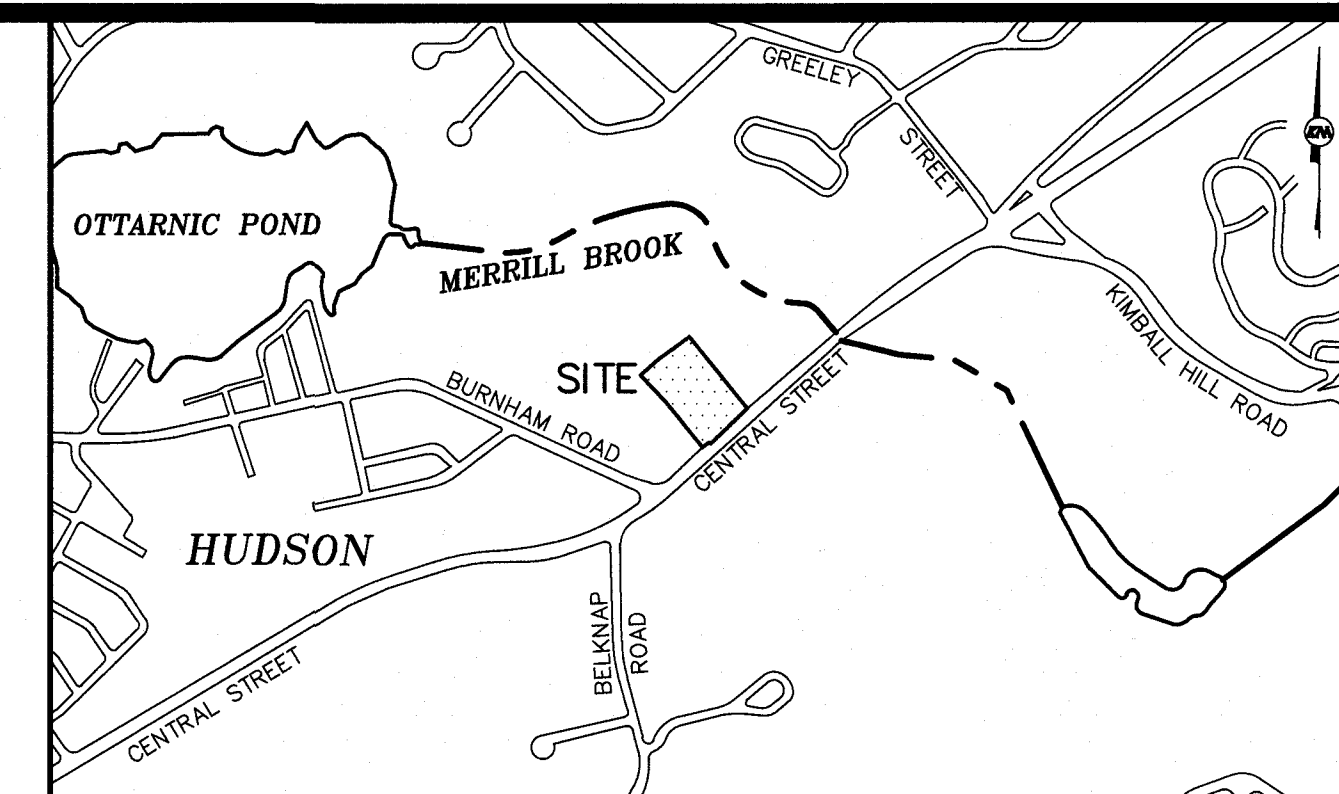
Thank you,

Brooke Dubowik

Planning Administrative Aide



VICINITY PLAN
NOT TO SCALE



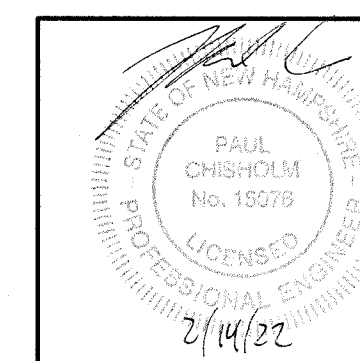
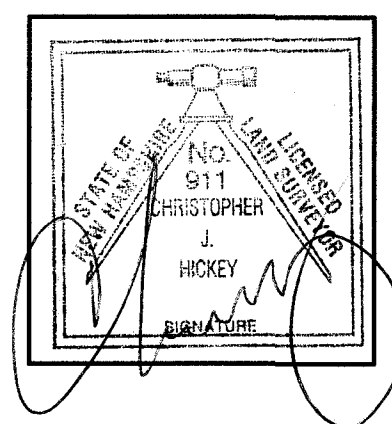
LOCUS MAP
SCALE: 1" = 1,000'

NON-RESIDENTIAL SITE PLAN BLUEBIRD SELF STORAGE

MAP 176 LOTS 21,22, & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE

APPLICANT:
BLUEBIRD SELF STORAGE
125 OCEAN ROAD
GREENLAND, NH 03840

PREPARED BY:
KEACH-NORDSTROM ASSOCIATES, INC.
10 COMMERCE PARK NORTH, SUITE 3
BEDFORD, NEW HAMPSHIRE 03110
(603) 627-2881



KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

DECEMBER 20, 2021
REVISED: FEBRUARY 14, 2022
PROJECT NO. 21-0709-3

SHEET TITLE

SHEET No.

MASTER SITE PLAN	1
EXISTING CONDITIONS PLAN	2
REMOVALS/DEMOLITION PLAN	3
NON-RESIDENTIAL SITE PLAN	4
GRADING AND DRAINAGE PLAN	5
SPOT GRADE PLAN	6
UTILITY PLAN	7
EROSION CONTROL PLAN	8
LANDSCAPE PLAN	9
LIGHTING PLAN	10-11
FIRE TRUCK TURNING PLAN	12
SIGHT DISTANCE PLAN & PROFILE	13
SEWER PROFILE	14
DRAINAGE PROFILES	15
CONSTRUCTION DETAILS	16-23

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL	APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: _____
	_____ SIGNATURE DATE: _____
	_____ SIGNATURE DATE: _____
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.	

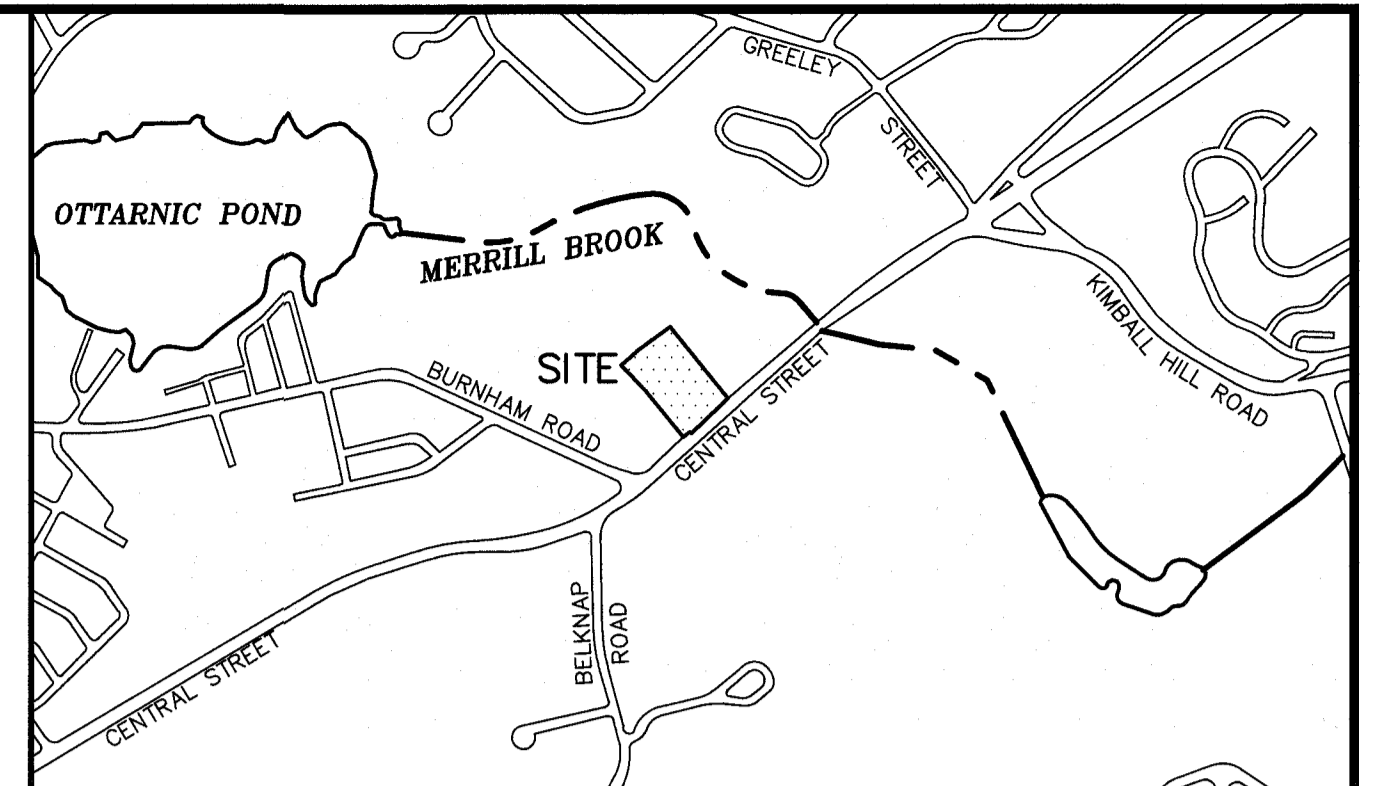


REFERENCE PLANS:

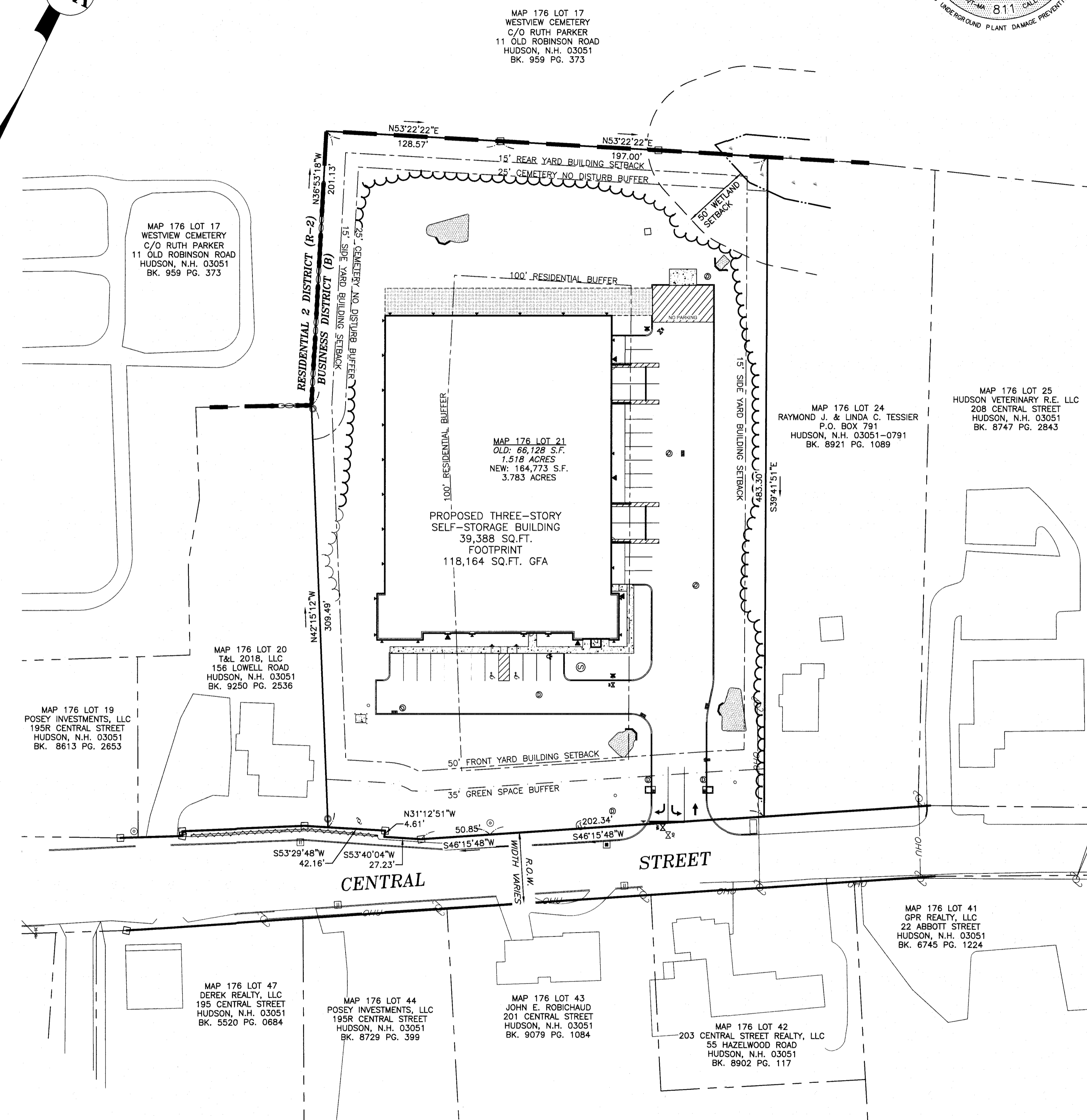
1. EXISTING CONDITIONS PLAN, BLUEBIRD SELF STORAGE, MAP 176 LOTS 21, 22 & 23, 196-202 CENTRAL STREET, HUDSON, NEW HAMPSHIRE, DATED DECEMBER 20, 2021, PREPARED BY KEACH-NORDSTROM ASSOCIATES, INC.

NOTES:

- 1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE CONSOLIDATION OF THREE LOTS INTO ONE AND TO DEPICT THE PROPOSED SITE LAYOUT OF A SELF STORAGE FACILITY ON MAP 176 LOTS 21, 22 & 23 IN THE TOWN OF HUDSON, NEW HAMPSHIRE AS SHOWN HEREON.
2. OWNER OF RECORD: RONALD CRAVEN
3. LOT AREA: MAP 176 LOT 21 = 66,128 S.F., OR 1.518 ACRES
4. TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY THIS OFFICE JULY AND OCTOBER OF 2021.



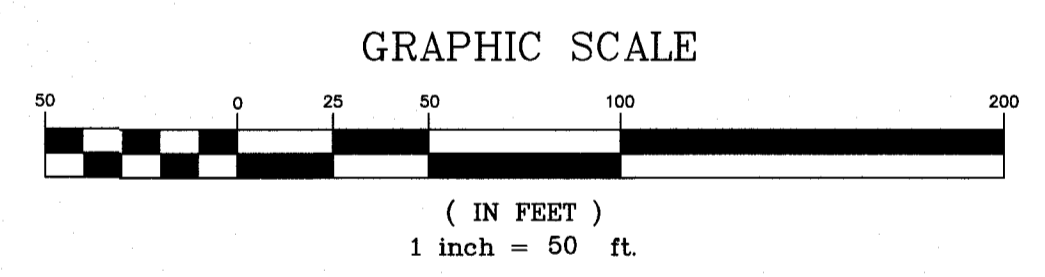
VICINITY MAP SCALE: 1" = 1,000'



LEGEND

- GB-F GRANITE BOUND FOUND
IP-F IRON PIN FOUND
IP-S IRON PIN SET WITH CAP
W/CAP UTILITY POLE
S/L STREET LIGHT
G/V GAS VALVE
W/V WATER VALVE
S/M SEWER MANHOLE
D/M DRAINAGE MANHOLE
C/B CATCH BASIN
A/B ABUTTER LINE
P/L PROPERTY LINE
O/U OVERHEAD UTILITIES
D/L DRAINAGE LINE
T/T TREELINE
R/L RETAINING WALL
E/P EDGE OF PAVEMENT
V/C VERTICAL GRANITE CURB
S/B SETBACK
100' RESIDENTIAL BUFFER
G/SB GREEN SPACE BUFFER
P/S PROPOSED SIGN
P/LT PROPOSED LIGHT
P/GV PROPOSED GAS VALVE
P/WV PROPOSED WATER VALVE
P/WG PROPOSED WOOD GUARDRAIL
P/T TREELINE
P/EOP PROPOSED EDGE OF PAVEMENT
P/RW PROPOSED RETAINING WALL
P/VGC PROPOSED VERTICAL GRANITE CURB
P/OS PROPOSED OUTLET STRUCTURE

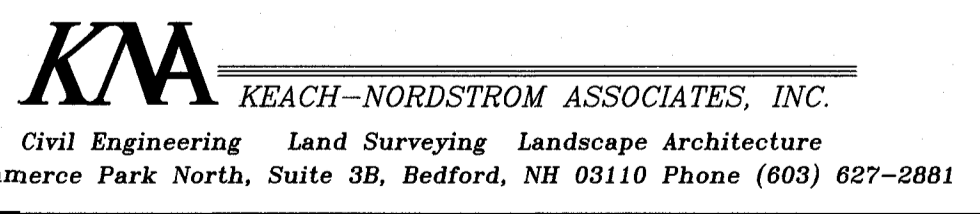
LOAM & SEED ALL DISTURBED AREAS (TYP.)



- 12. EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF HUDSON MAP NUMBER 3300920518D, PANEL 518 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009 INDICATES THAT NO PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN A DESIGNATED FLOOD HAZARD AREA.
13. OPEN SPACE REQUIRED = 35%
14. PARKING CALCULATIONS: PARKING REQUIRED = 1 SPACE/600 SF x 118,164 SF = 197 SPACES
15. SITE LIGHTING SHALL BE SHOWN ON THE PLAN, DIRECTED ONTO SITE, AND SHALL CONFORM WITH ALL APPLICABLE TOWN OF HUDSON ZONING REGULATIONS.
16. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS OF 7:00 AM & 7:00 PM, MONDAY THROUGH SATURDAY. NO EXTERIOR CONSTRUCTION ACTIVITIES SHALL OCCUR ON SUNDAY.

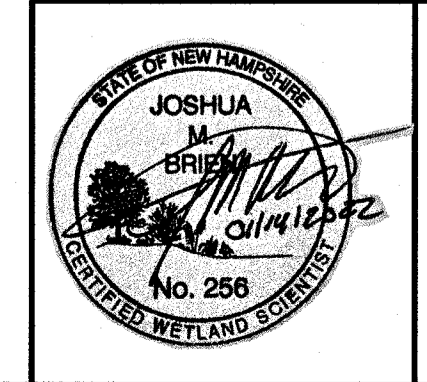
MASTER SITE PLAN BLUEBIRD SELF STORAGE MAP 176 LOTS 21, 22 & 23 196-202 CENTRAL STREET HUDSON, NEW HAMPSHIRE HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294
APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840

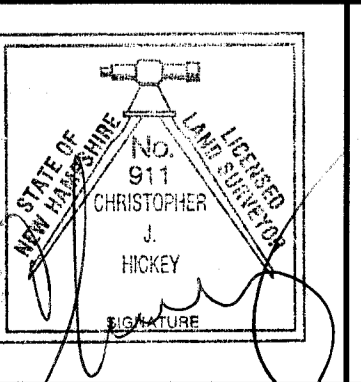


PURSUANT TO THE REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL. APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL.

OWNER OF MAP 176 LOTS 21, 22 & 23 SIGNATURE: Ronald Craven DATE: 2/14/22



WETLAND SCIENTIST'S CERTIFICATION: JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN JULY OF 2021 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).



CERTIFICATION: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING JULY AND OCTOBER OF 2021. SAID SURVEY HAS AN ERROR OF CLOSURE BETTER THAN ONE PART IN TEN THOUSAND (1:10,000). SIGNATURE: Paul Christopher DATE: 2/14/22

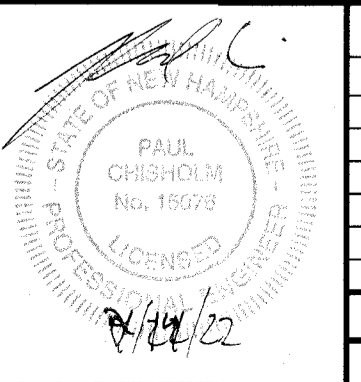
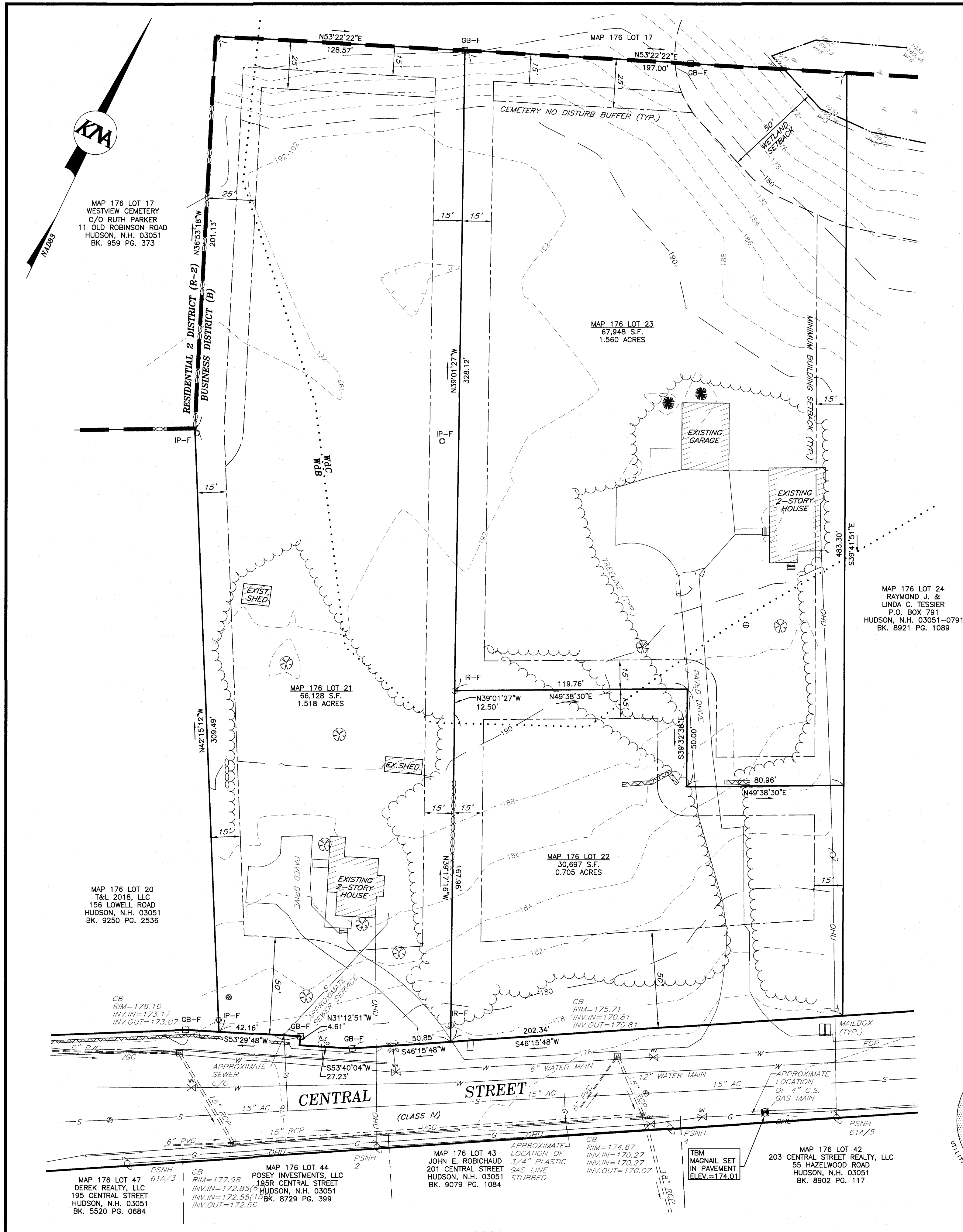


Table with 4 columns: No., DATE, DESCRIPTION, BY. Contains two revision entries for revised grading/drainage and review comments.

DATE: DECEMBER 20, 2021 SCALE: 1" = 50' PROJECT NO: 21-0709-3 SHEET 1 OF 23



PURSUANT TO THE REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

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

SIGNATURE DATE: _____
SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

- LEGEND**
- GB-F GRANITE BOUND FOUND
 - IP-F IRON PIPE FOUND
 - IR-F IRON ROD FOUND
 - DH-F DRILL HOLE FOUND
 - ⊕ BENCHMARK
 - ⊕ UTILITY POLE
 - ⊕ STREET LIGHT
 - ⊕ GAS VALVE
 - ⊕ WATER VALVE
 - ⊕ HYDRANT
 - ⊕ WATER SHUT OFF
 - ⊕ WELL
 - ⊕ SEWER MANHOLE
 - ⊕ CATCH BASIN
 - ⊕ ABUTTER LINE
 - ⊕ PROPERTY LINE
 - ⊕ WETLAND
 - ⊕ WETLAND SETBACK
 - OHU — OVERHEAD UTILITIES
 - G — GAS LINE
 - W — WATER LINE
 - S — SEWER LINE
 - D — DRAINAGE LINE
 - T — TREE LINE
 - EOP — EDGE OF PAVEMENT
 - VGC — VERTICAL GRANITE CURB
 - 10' — 10' CONTOUR
 - 2' — 2' CONTOUR
 - EOP — STONEWALL
 - SOIL LINE
 - SETBACK
 - DISTRICT BOUNDARY
 - ⊕ DECIDUOUS TREE
 - ⊕ CONIFEROUS TREE
 - ⊕ BUSH

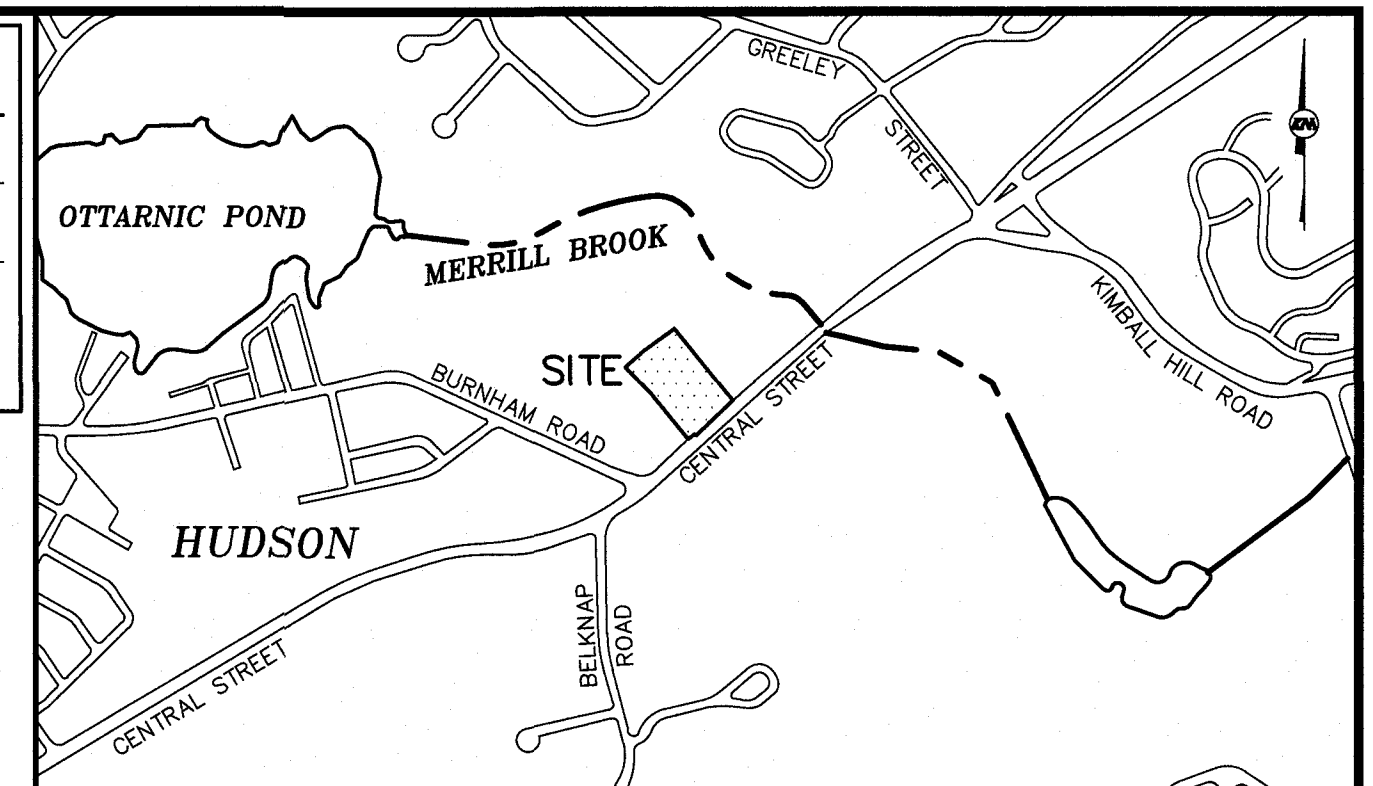
SCS SOILS LEGEND

WdB WINDSOR LOAMY SAND
3 TO 8 PERCENT SLOPES

WdC WINDSOR LOAMY SAND
8 TO 15 PERCENT SLOPES

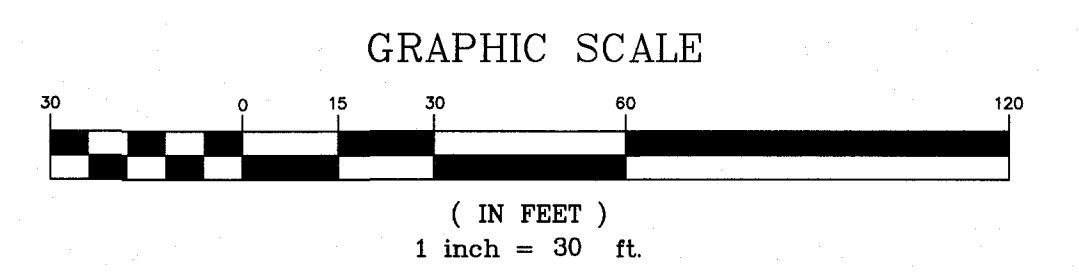
SOURCE: USDA-SCS WEB SOIL SURVEY
HILLSBOROUGH COUNTY

- REFERENCE PLANS:**
- "LAND OF NAPOLEON & JOSEPHINE PELLETIER, HUDSON, N.H. SCALE: 1"=40'. DATED: OCTOBER, 1952. H.C.R.D. PLAN #830
 - "PLAN OF LAND OF PERLEY B. SMITH ESTATE, CENTRAL STREET HUDSON, N.H." SCALE: 1"=50'. DATED: JULY 1962. PREPARED BY: NED SPAULDING, CIVIL ENGINEER. H.C.R.D. PLAN #2237
 - "STATE OF N.H. D.O.T. R.O.W. PLANS OF PROPOSED FEDERAL AID URBAN SYSTEM PROJECT" M-5229(003), M-5229(005), N.H. PROJECT NO. C-2432-B&D PREPARED BY: HOWARD, NEEDLES, TAMMEN & BERGENDOFF. H.C.R.D. PLAN #19222
 - "BOUNDARY PLAN—LOT 16 MAP 20, CENTRAL STREET—HUDSON, N.H." SCALE: 1"=50'. DATED: MAY 24, 1989. PREPARED BY: MAYNARD & PAQUETTE, INC. H.C.R.D. PLAN #23415
 - "STATE OF N.H. D.O.T. PLANS OF PROPOSED FEDERAL AID URBAN SYSTEM PROJECT" MG-M-5229(008), N.H. PROJECT NO. C-2432-G, MARK-UPS. PREPARED BY: HOWARD, NEEDLES, TAMMEN & BERGENDOFF. PLAN #24320
 - "STATE OF N.H. D.O.T. PLANS OF PROPOSED FEDERAL AID URBAN SYSTEM PROJECT" MG-M-5229(008) AS BUILT PLANS. PREPARED BY: HOWARD, NEEDLES, TAMMEN & BERGENDOFF. PLAN #24326



VICINITY MAP
SCALE: 1" = 1,000'

- NOTES:**
- THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING CONDITIONS PRESENT ON S MAP 176 LOTS 21, 22, & 23 IN THE TOWN OF HUDSON, NEW HAMPSHIRE AS SHOWN HEREON.
 - LOT AREA:
MAP 176 LOT 21 = 66,128 S.F., OR 1.518 ACRES
MAP 176 LOT 22 = 30,697 S.F., OR 0.705 ACRES
MAP 176 LOT 23 = 67,948 S.F., OR 1.560 ACRES
TOTAL LOT AREA = 164,773 S.F., OR 3.783 ACRES
 - OWNER OF RECORD:
RONALD CRAVEN
C/O NANCY CRAVEN
88 SPEARE ROAD
HUDSON, NH 03051
H.C.R.D. BK. 6079 PG. 1296 (LOT 21)
H.C.R.D. BK. 6079 PG. 1294 (LOT 22)
H.C.R.D. BK. 6628 PG. 0212 (LOT 23)
 - THE SUBJECT PARCELS ARE LOCATED WITHIN THE BUSINESS ZONING DISTRICT (B). DIMENSIONAL REQUIREMENTS ARE AS FOLLOWS FOR LOTS SERVICED WITH MUNICIPAL SEWER AND WATER:
— MINIMUM LOT AREA 30,000 SF
— MINIMUM LOT FRONTAGE 150 FT
— MINIMUM BUILDING SETBACKS:
— FRONT 50
— SIDE 15
— REAR 15
 - TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY THIS OFFICE JULY AND OCTOBER OF 2021.
 - HORIZONTAL DATUM IS NAD83. VERTICAL DATUM IS NAVD88 OBTAINED FROM GPS SURVEY METHODS POST PROCESSED THROUGH NOAA-GPS. NORTH ORIENTATION IS NAD83.
 - EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF HUDSON MAP NUMBER 3300920518D, PANEL 518 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009 INDICATES THAT NO PORTION OF THE SUBJECT PARCELS ARE LOCATED WITHIN A DESIGNATED FLOOD HAZARD AREA.
 - WETLAND MAPPING WAS PERFORMED BY JOSHUA BRIEN OF KEACH NORDSTROM ASSOCIATES ON JULY 15, 2021.
 - SITE IS SERVICED BY MUNICIPAL WATER AND SEWER.
 - THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF THE UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR OR OWNER SHALL CONTACT DIG-SAFE AT 811.
 - EXISTING BUILDING HEIGHTS:
LOT 21 HOUSE - 22± FT
LOT 23 HOUSE - 20± FT
LOT 23 GARAGE - 12± FT



EXISTING CONDITIONS PLAN
BLUEBIRD SELF STORAGE

MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
--	--

K/A KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES

DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
PROJECT NO: 21-0709-3 SHEET 2 OF 23

WETLAND SCIENTIST'S CERTIFICATION:

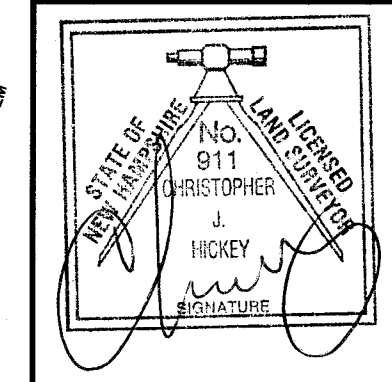
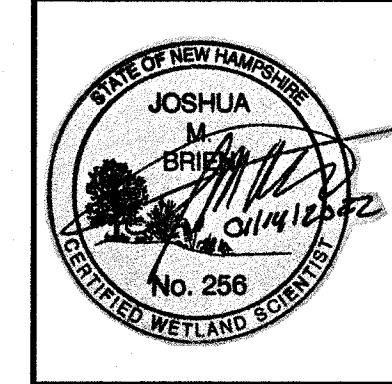
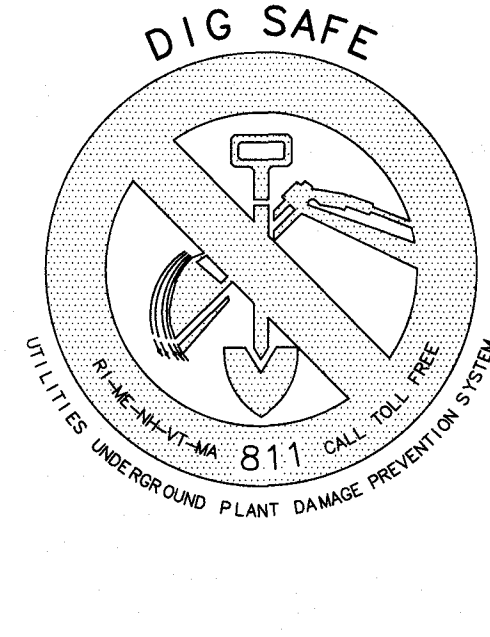
JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN JULY OF 2021 USING THE TECHNICAL CRITERIA IN THE CORES OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).

CERTIFIED WETLAND SCIENTIST DATE _____

CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING JULY AND OCTOBER OF 2021. SAID SURVEY HAS AN ERROR OF CLOSURE BETTER THAN ONE PART IN TEN THOUSAND (1:10,000).

[Signature]
LICENSED LAND SURVEYOR DATE: 2/14/22



MAP 176 LOT 17
WESTVIEW CEMETERY
C/O RUTH PARKER
11 OLD ROBINSON ROAD
HUDSON, N.H. 03051
BK. 959 PG. 373

MAP 176 LOT 23
67,948 S.F.
1.560 ACRES

MAP 176 LOT 24
RAYMOND J. &
LINDA C. TESSIER
P.O. BOX 791
HUDSON, N.H. 03051-0791
BK. 8921 PG. 1089

MAP 176 LOT 21
66,128 S.F.
1.518 ACRES

MAP 176 LOT 22
30,697 S.F.
0.705 ACRES

MAP 176 LOT 20
T&L 2016, LLC
156 LOWELL ROAD
HUDSON, N.H. 03051
BK. 9250 PG. 2536

MAP 176 LOT 43
JOHN E. ROBICHAUD
201 CENTRAL STREET
HUDSON, N.H. 03051
BK. 9079 PG. 1084

MAP 176 LOT 42
CENTRAL STREET REALTY, LLC
55 HAZELWOOD ROAD
HUDSON, N.H. 03051
BK. 8902 PG. 117

MAP 176 LOT 47
DEREK REALTY, LLC
195 CENTRAL STREET
HUDSON, N.H. 03051
BK. 5520 PG. 0684

MAP 176 LOT 44
POSEY INVESTMENTS, LLC
195R CENTRAL STREET
HUDSON, N.H. 03051
BK. 8729 PG. 399

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

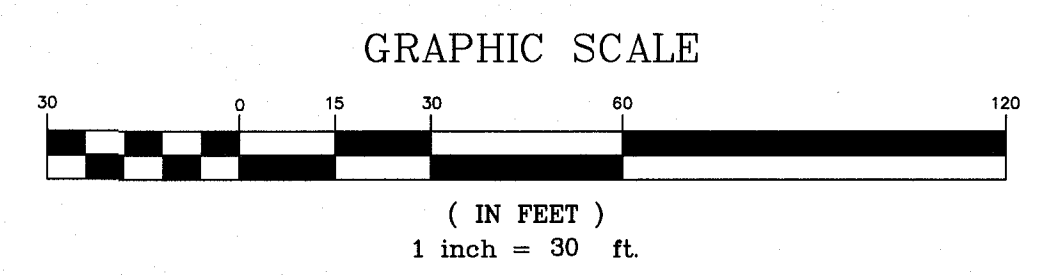
APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
 _____ SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

- REMOVALS/DEMOLITION NOTES:**
- THE PURPOSE OF THIS PLAN IS TO DEPICT EXISTING FEATURES ON SITE TO BE REMOVED, SALVAGED OR REPLACED.
 - ALL STUMPS, ROOTS, BRANCHES, BRUSH, WOODS, AND OTHER PERISHABLE MATERIAL RESULTING FROM THE CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF BY AN APPROVED METHOD.
 - STRIP, STOCKPILE, AND REUSE ON-SITE GRAVEL AND FILL AREAS WHERE APPROPRIATE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE DESIGN ENGINEER.
 - REMOVE ALL ASPHALT, CURBING, CONCRETE, VEGETATION, TREES, SHRUBS, LIGHT POLES, SIGNAGE, AND STRUCTURES WITHIN THE HATCHED AREA, UNLESS OTHERWISE NOTED.
 - DEBRIS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
 - ALL WORK PERFORMED ON BEHALF OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF HUDSON'S ENGINEERING TECHNICAL GUIDELINES & TYPICAL DETAILS, LATEST EDITION.
 - SITE CONTRACTOR SHALL ESTABLISH TEMPORARY PERIMETER CONTROLS PRIOR TO THE START OF SITE EXCAVATION.
 - CONTRACTOR SHALL WORK WITH LOCAL UTILITY PROVIDERS DURING SHUT DOWN AND REMOVAL EFFORTS.
 - ALL ITEMS TO REMAIN SHALL BE PROTECTED BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.

LEGEND

▣ GB-F	GRANITE BOUND FOUND	---	ABUTTER LINE
● IPIN-F	IRON PIN FOUND	---	PROPERTY LINE
⊙ DH-F	DRILL HOLE FOUND	---	WETLAND
⊙ IPP-F	IRON PIPE FOUND	---	OVERHEAD UTILITIES
⊙	UTILITY POLE	---	TREELINE
⊙	SIGN	---	EDGE OF PAVEMENT
☆	LIGHT	---	VERTICAL GRANITE CURB
⊙	GAS VALVE	---	SLOPED GRANITE CURB
⊙	WATER VALVE	---	BITUMINOUS CURB
⊙	HYDRANT	---	STONEWALL
⊙	WATER SHUT OFF	---	EASEMENT
⊙	WELL	---	ZONE LINE
⊙	SEWER MANHOLE	---	
⊙	DRAINAGE MANHOLE	---	
⊙	CATCH BASIN	---	
⊙	FLARED END SECTION	---	



NPDES NOTE

THIS PROJECT DISTURBS IN EXCESS OF 1-ACRE OF LAND, THEREFORE IT WILL BE REQUIRED TO OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE AS ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE OWNER/DEVELOPER AND "OPERATOR" (GENERAL CONTRACTOR) SHALL EACH BE REQUIRED TO PREPARE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MEETING THE REQUIREMENTS OF THE CURRENT CONSTRUCTION GENERAL PERMIT.

UTILITY NOTE

THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

REMOVALS/DEMOLITION PLAN
BLUEBIRD SELF STORAGE

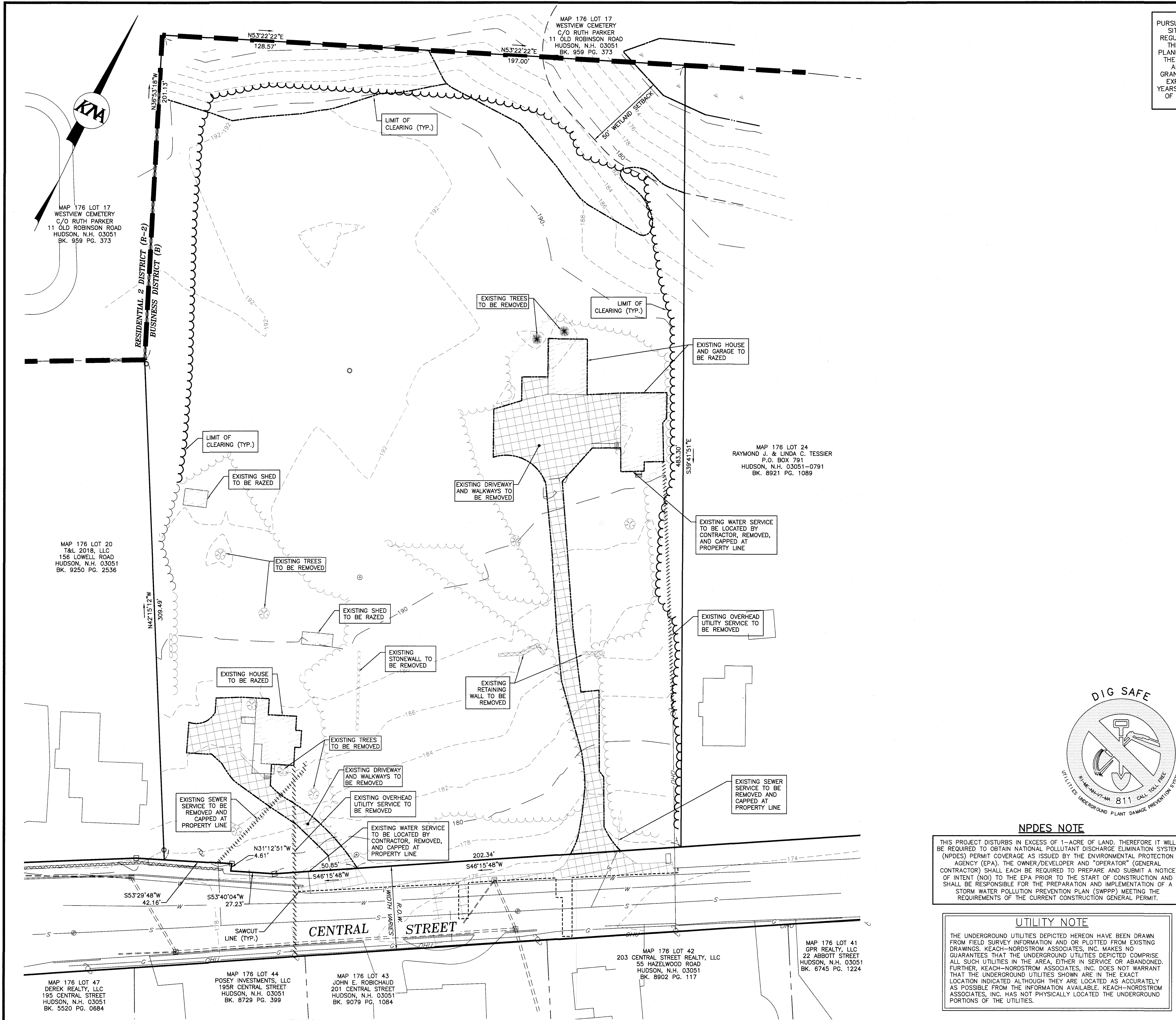
MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
--	--

KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

No.	DATE	DESCRIPTION	BY
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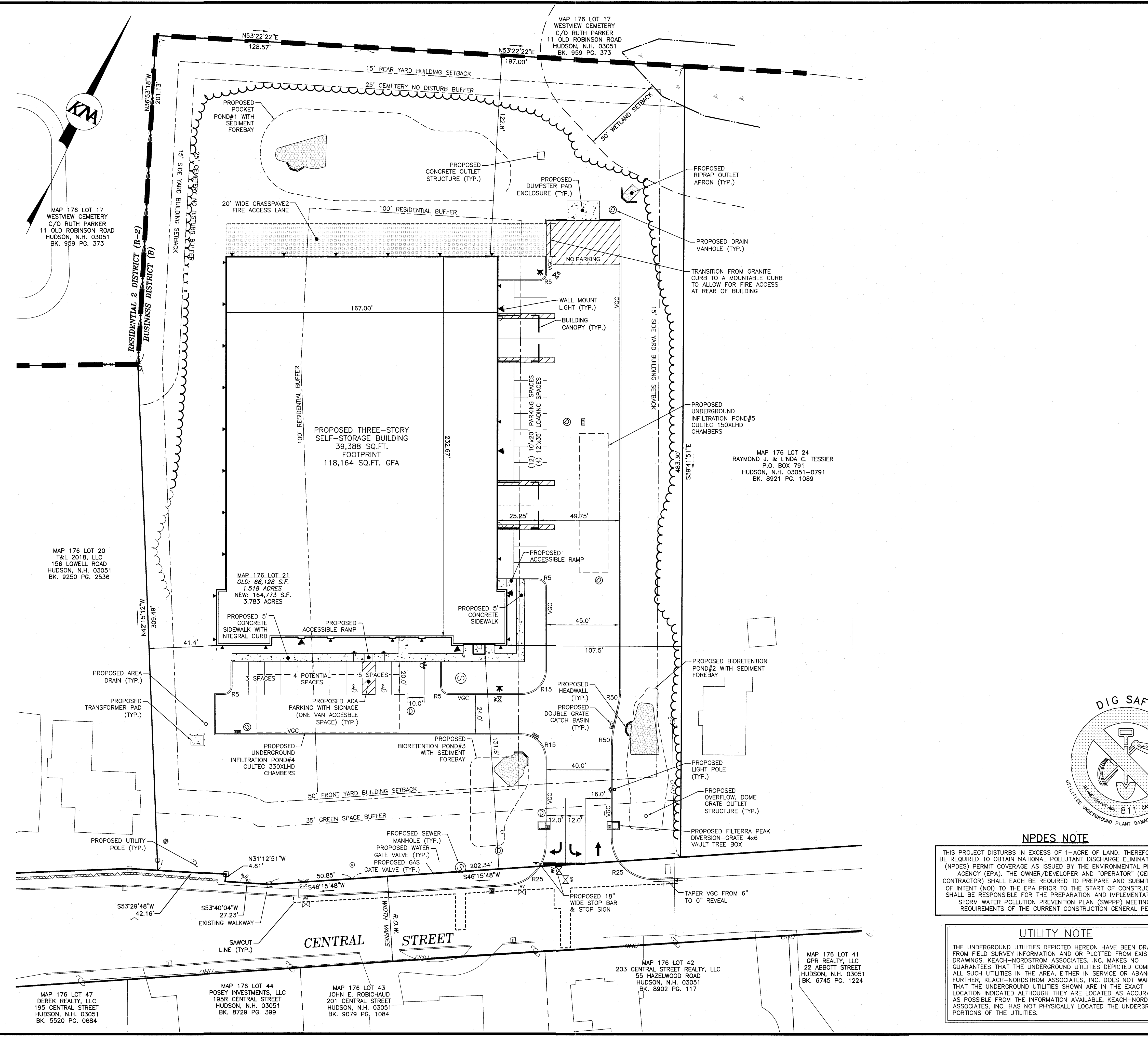
DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
 PROJECT NO: 21-0709-3 SHEET 3 OF 23



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
 _____ SIGNATURE DATE: _____

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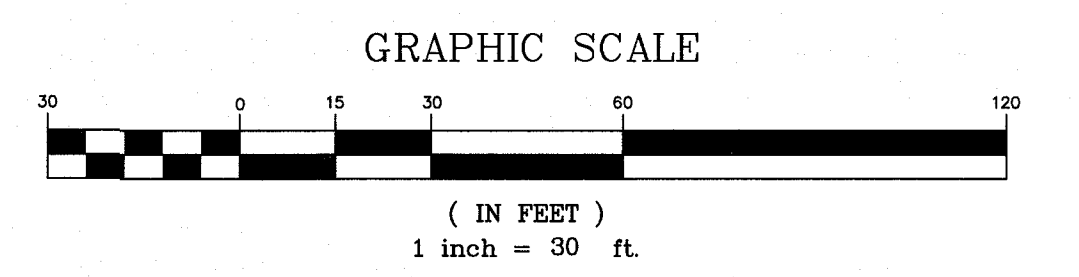


LEGEND

- ⊠ GB-F GRANITE BOUND FOUND
- ⊙ IPIN-F IRON PIN FOUND
- ⊙ DH-F DRILL HOLE FOUND
- ⊙ UTILITY POLE
- ⊙ PROPOSED SIGN
- ⊙ PROPOSED LIGHT
- ⊙ PROPOSED HYDRANT
- ⊙ PROPOSED WELL
- ⊙ PROPOSED SEWER MANHOLE
- ⊙ PROPOSED DRAINAGE MANHOLE
- ⊙ PROPOSED CATCH BASIN
- ⊙ PROPOSED OUTLET STRUCTURE
- ABUTTER LINE
- PROPERTY LINE
- OHU OVERHEAD UTILITIES
- TREELINE
- EDGE OF PAVEMENT
- STONEWALL
- BUILDING SETBACK
- ZONE LINE
- PROPOSED TREELINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED VERTICAL GRANITE CURB
- PROPOSED SWALE
- EASEMENT
- ⊙ SITE LIGHTING
- ⊙ BUILDING WALL PACK LIGHTING

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LOAM & SEED ALL DISTURBED AREAS (TYP.)



NPDES NOTE

THIS PROJECT DISTURBS IN EXCESS OF 1-ACRE OF LAND, THEREFORE IT WILL BE REQUIRED TO OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE AS ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE OWNER/DEVELOPER AND "OPERATOR" (GENERAL CONTRACTOR) SHALL EACH BE REQUIRED TO PREPARE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MEETING THE REQUIREMENTS OF THE CURRENT CONSTRUCTION GENERAL PERMIT.

UTILITY NOTE

THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

NON RESIDENTIAL SITE PLAN
BLUEBIRD SELF STORAGE
 MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 RONALD CRAVEN TRUST
 c/o NANCY CRAVEN TRUST
 88 SPEARE ROAD
 HUDSON, NH 03051
 H.C.R.D. BK. 6079 PG. 1294

APPLICANT:
 BLUEBIRD SELF STORAGE LLC.
 125 OCEAN ROAD
 GREENLAND, NH 03840

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 827-2881

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 PROJECT NO: 21-0709-3 SHEET 4 OF 23

MAP 176 LOT 17
 WESTVIEW CEMETERY
 C/O RUTH PARKER
 11 OLD ROBINSON ROAD
 HUDSON, N.H. 03051
 BK. 959 PG. 373

MAP 176 LOT 17
 WESTVIEW CEMETERY
 C/O RUTH PARKER
 11 OLD ROBINSON ROAD
 HUDSON, N.H. 03051
 BK. 959 PG. 373

MAP 176 LOT 24
 RAYMOND J. & LINDA C. TESSIER
 P.O. BOX 791
 HUDSON, N.H. 03051-0791
 BK. 8921 PG. 1089

MAP 176 LOT 20
 T&L 2018, LLC
 156 LOWELL ROAD
 HUDSON, N.H. 03051
 BK. 9250 PG. 2536

MAP 176 LOT 21
 OLD: 66,128 S.F.
 1.518 ACRES
 NEW: 164,773 S.F.
 3.783 ACRES

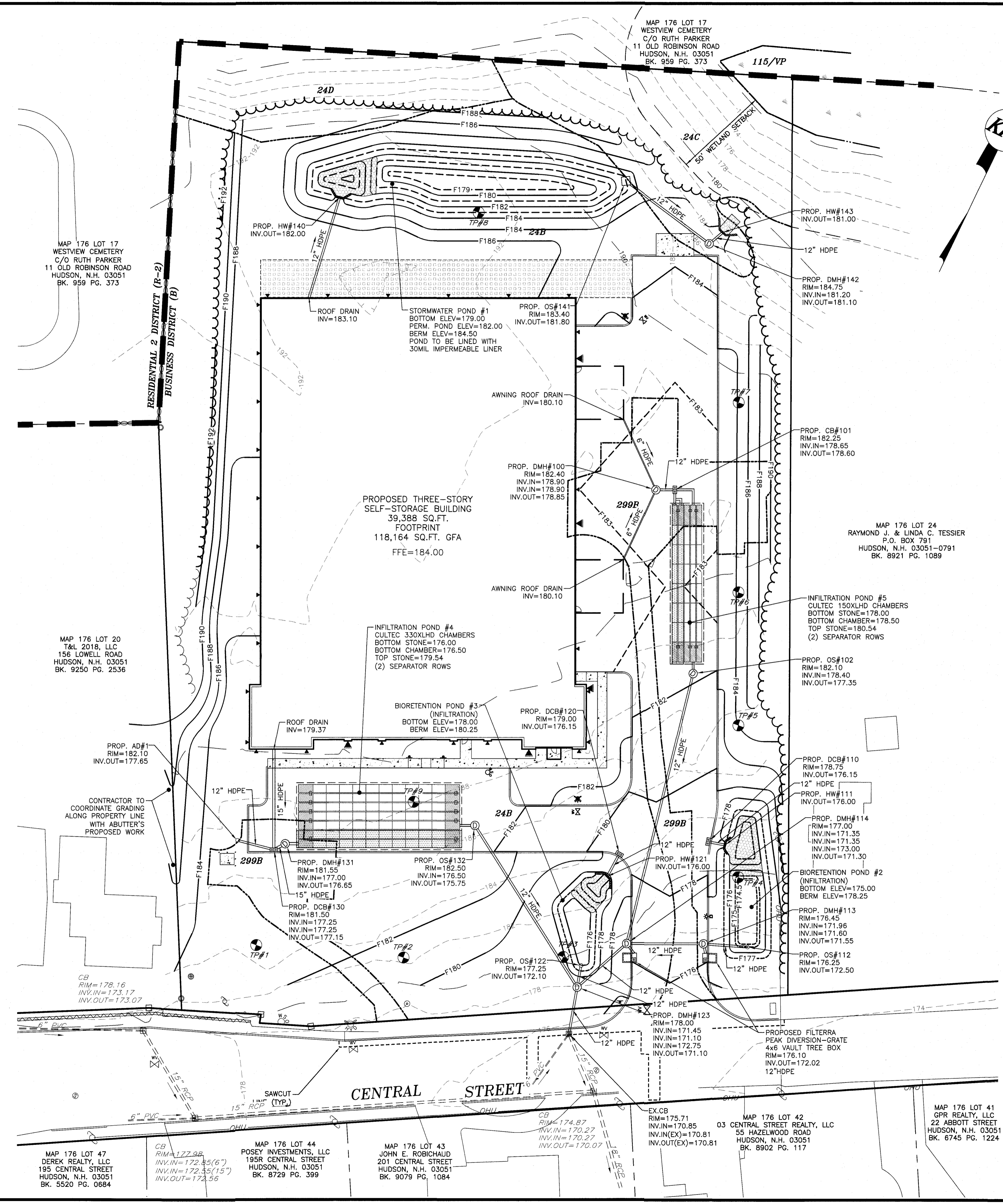
MAP 176 LOT 47
 DEREK REALTY, LLC
 195 CENTRAL STREET
 HUDSON, N.H. 03051
 BK. 5520 PG. 0684

MAP 176 LOT 44
 POSEY INVESTMENTS, LLC
 195R CENTRAL STREET
 HUDSON, N.H. 03051
 BK. 8729 PG. 399

MAP 176 LOT 43
 JOHN E. ROBICHAUD
 201 CENTRAL STREET
 HUDSON, N.H. 03051
 BK. 9079 PG. 1084

MAP 176 LOT 42
 203 CENTRAL STREET REALTY, LLC
 55 HAZELWOOD ROAD
 HUDSON, N.H. 03051
 BK. 8902 PG. 117

MAP 176 LOT 41
 22 ABBOTT STREET
 HUDSON, N.H. 03051
 BK. 6745 PG. 1224



CONSTRUCTION NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED GRADING AND DRAINAGE SYSTEMS FOR THIS SITE.
2. 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. ALL WORK PERFORMED IN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2016 ARE HEREBY INCORPORATED BY REFERENCE.
3. CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, PUBLIC WORKS DEPARTMENT, HUDSON, NEW HAMPSHIRE. ALL DRAINAGE PIPES SHOWN SHALL BE HDPE. CATCH BASINS SHALL HAVE 3' SUMPS UNLESS OTHERWISE NOTED.
4. 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 TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.
5. ALL DRAINAGE PIPE SHALL BE INSTALLED FOLLOWING MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. PLANS TO COMPLY WITH THE TOWN OF HUDSON'S MS4 PERMIT.
7. OWNER IS SOLELY RESPONSIBLE FOR MAINTAINING THE STORMWATER MANAGEMENT SYSTEM AS OUTLINED IN THE OPERATIONS & MAINTENANCE PLAN.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
SIGNATURE DATE: _____
SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

LEGEND

GB-F	GRANITE BOUND FOUND	---	PROPOSED CHAIN LINK FENCE
IPIN-F	IRON PIN FOUND	○	PROPOSED STOCKADE FENCE
DH-F	DRILL HOLE FOUND	○	PROPOSED POST & RAIL FENCE
○	UTILITY POLE	○	PROPOSED UTILITY POLE
×	PROPOSED SIGN	×	PROPOSED BARBED WIRE FENCE
□	PROPOSED LIGHT	□	PROPOSED GUARDRAIL
○	PROPOSED HYDRANT	○	PROPOSED OVERHEAD UTILITIES
○	PROPOSED WELL	○	PROPOSED UNDERGROUND UTILITIES
○	PROPOSED SEWER MANHOLE	○	PROPOSED GAS LINE
○	PROPOSED DRAINAGE MANHOLE	○	PROPOSED WATER LINE
○	PROPOSED CATCH BASIN	○	PROPOSED SEWER LINE
□	PROPOSED OUTLET STRUCTURE	□	PROPOSED DRAINAGE LINE
---	ABUTTER LINE	---	PROPOSED TREELINE
---	PROPERTY LINE	---	PROPOSED EDGE OF PAVEMENT
---	WETLAND	---	PROPOSED VERTICAL GRANITE CURB
---	GUARDRAIL	---	PROPOSED SLOPED GRANITE CURB
---	OVERHEAD UTILITIES	---	PROPOSED 2' CONTOUR
---	DRAINAGE LINE	---	PROPOSED SWALE
---	TREELINE	---	PROPOSED RETAINING WALL
---	EDGE OF PAVEMENT	---	PROPOSED STONEWALL
---	STONEWALL	---	EASEMENT
---	BUILDING SETBACK	---	SITE LIGHTING
---	ZONE LINE	---	BUILDING WALL PACK LIGHTING
---	10' CONTOUR	---	TEST PIT
---	2' CONTOUR	---	

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSG
24B	AGAWAM LOAMY SAND	3-8%	WELL DRAINED	B
24C	AGAWAM LOAMY SAND	8-15%	WELL DRAINED	B
24C	AGAWAM LOAMY SAND	15-25%	WELL DRAINED	B
115/VP	SCARBORO MUCKY FINE SANDY LOAM	3-8%	VERY POORLY DRAINED	D
299	UDORTHERTS, URBAN LAND	3-8%	POORLY DRAINED	D

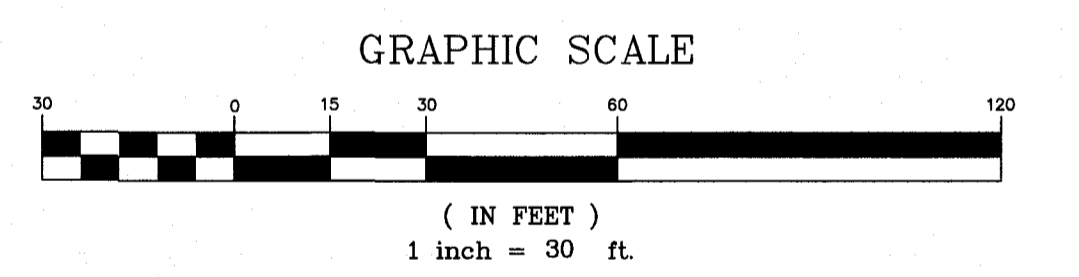
THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY.

SCS SOILS LEGEND

WdB	WINDSOR LOAM SAND, 3-8% SLOPES
WdC	WINDSOR LOAM SAND, 8-15% SLOPES
SOURCE: USDA-SCS WEB SOIL SURVEY	

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LOAM & SEED ALL DISTURBED AREAS (TYP.)



NPDES NOTE

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UTILITY NOTE

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GRADING & DRAINAGE PLAN
BLUEBIRD SELF STORAGE
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
--	--

KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES

DATE: DECEMBER 20, 2021

SCALE: 1" = 30'

PROJECT NO: 21-0709-3

SHEET 5 OF 23

MAP 176 LOT 17
WESTVIEW CEMETERY
C/O RUTH PARKER
11 OLD ROBINSON ROAD
HUDSON, N.H. 03051
BK. 959 PG. 373

MAP 176 LOT 20
T&L 2018, LLC
156 LOWELL ROAD
HUDSON, N.H. 03051
BK. 9250 PG. 2536

MAP 176 LOT 24
RAYMOND J. & LINDA C. TESSIER
P.O. BOX 791
HUDSON, N.H. 03051-0791
BK. 8921 PG. 1089

MAP 176 LOT 42
CENTRAL STREET REALTY, LLC
55 HAZELWOOD ROAD
HUDSON, N.H. 03051
BK. 8902 PG. 117

MAP 176 LOT 41
GPR REALTY, LLC
22 ABBOTT STREET
HUDSON, N.H. 03051
BK. 6745 PG. 1224

MAP 176 LOT 44
POSEY INVESTMENTS, LLC
195R CENTRAL STREET
HUDSON, N.H. 03051
BK. 8729 PG. 399

MAP 176 LOT 43
JOHN E. ROICHAUD
201 CENTRAL STREET
HUDSON, N.H. 03051
BK. 9079 PG. 1084

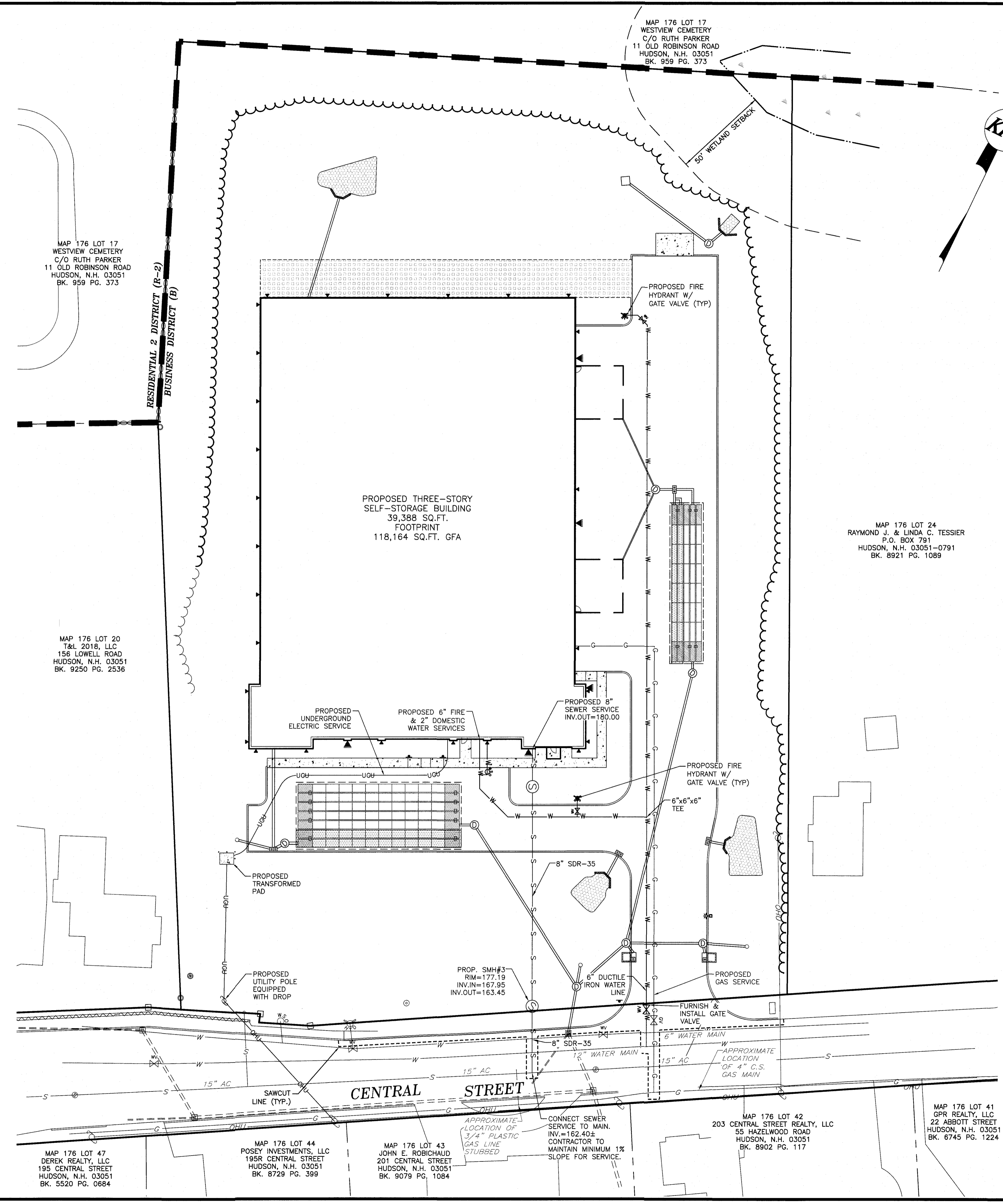
MAP 176 LOT 47
DEREK REALTY, LLC
195 CENTRAL STREET
HUDSON, N.H. 03051
BK. 5520 PG. 0684

MAP 176 LOT 48
RIMA 177.98
INV.IN=172.85(6')
INV.IN=172.35(15')
INV.OUT=173.56

MAP 176 LOT 49
RIMA 174.87
INV.IN=170.27
INV.IN=170.27
INV.OUT=170.07

MAP 176 LOT 50
RIMA 175.71
INV.IN=170.85
INV.IN(EX)=170.81
INV.OUT(EX)=170.81

MAP 176 LOT 51
RIMA 174.87
INV.IN=170.27
INV.IN=170.27
INV.OUT=170.07



CONSTRUCTION NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED GRADING AND DRAINAGE SYSTEMS FOR THIS SITE.
2. 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. ALL WORK PERFORMED IN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2016 ARE HEREBY INCORPORATED BY REFERENCE.
3. CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, PUBLIC WORKS DEPARTMENT, HUDSON, NEW HAMPSHIRE. ALL DRAINAGE PIPES SHOWN SHALL BE HDPE. CATCH BASINS SHALL HAVE 3' SUMPS UNLESS OTHERWISE NOTED.
4. 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 TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.
5. ALL DRAINAGE PIPE SHALL BE INSTALLED FOLLOWING MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. PLANS TO COMPLY WITH THE TOWN OF HUDSON'S MS4 PERMIT.
7. OWNER IS SOLELY RESPONSIBLE FOR MAINTAINING THE STORMWATER MANAGEMENT SYSTEM AS OUTLINED IN THE OPERATIONS & MAINTENANCE PLAN.
8. THE WATER, SANITARY SEWER, GAS AND ELECTRICAL UTILITIES SHOWN HERE SHALL BE COORDINATED WITH THE FINAL BUILDING PLANS PRIOR TO CONSTRUCTION. THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.

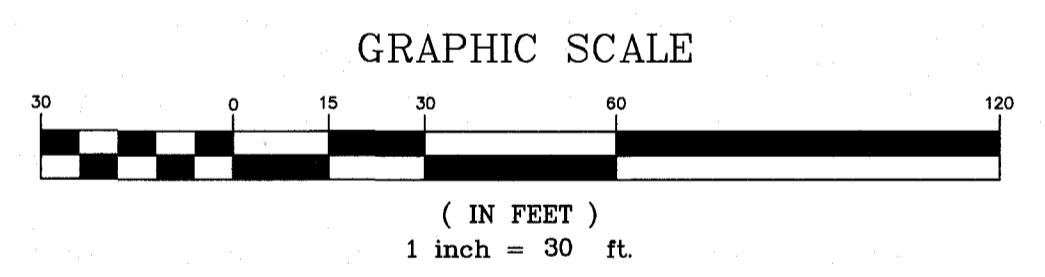
APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____
 SIGNATURE DATE: _____
 SIGNATURE DATE: _____
 SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

LEGEND

□ GB-F	GRANITE BOUND FOUND	— — —	PROPOSED CHAIN LINK FENCE
○ IPIN-F	IRON PIN FOUND	—○—○—○	PROPOSED STOCKADE FENCE
⊙ DH-F	DRILL HOLE FOUND	—○—○—○	PROPOSED POST & RAIL FENCE
⊙	UTILITY POLE	—x—x—x	PROPOSED BARBED WIRE FENCE
⊙	PROPOSED SIGN	—○—○—○	PROPOSED GUARDRAIL
⊙	PROPOSED LIGHT	—OHU—	PROPOSED OVERHEAD UTILITIES
⊙	PROPOSED HYDRANT	—UGU—	PROPOSED UNDERGROUND UTILITIES
⊙	PROPOSED WELL	—G—G—	PROPOSED GAS LINE
⊙	PROPOSED SEWER MANHOLE	—W—W—	PROPOSED WATER LINE
⊙	PROPOSED DRAINAGE MANHOLE	—S—S—	PROPOSED SEWER LINE
⊙	PROPOSED CATCH BASIN	— — —	PROPOSED DRAINAGE LINE
⊙	PROPOSED OUTLET STRUCTURE	— — —	PROPOSED TREETLINE
— — —	ABUTTER LINE	— — —	PROPOSED EDGE OF PAVEMENT
— — —	PROPERTY LINE	— — —	PROPOSED VERTICAL GRANITE CURB
— — —	WETLAND	— — —	PROPOSED SLOPED GRANITE CURB
— — —	GUARDRAIL	— — —	PROPOSED 2' CONTOUR
— — —	OVERHEAD UTILITIES	— — —	PROPOSED SWALE
— — —	DRAINAGE LINE	— — —	PROPOSED RETAINING WALL
— — —	TREETLINE	— — —	PROPOSED STONEWALL
— — —	EDGE OF PAVEMENT	— — —	EASEMENT
— — —	STONEWALL	— — —	SITE LIGHTING
— — —	BUILDING SETBACK	— — —	BUILDING WALL PACK LIGHTING
— — —	ZONE LINE	— — —	TEST PIT
— — —	10' CONTOUR	— — —	
— — —	2' CONTOUR	— — —	

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LOAM & SEED ALL DISTURBED AREAS (TYP.)



NPDES NOTE

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UTILITY NOTE

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UTILITY PLAN
BLUEBIRD SELF STORAGE
 MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
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 Civil Engineering Land Surveying Landscape Architecture
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No.	DATE	DESCRIPTION	BY
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2	02-14-2022	REVISED PER REVIEW COMMENTS	BES

DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
 PROJECT NO: 21-0709-3 SHEET 7 OF 23

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

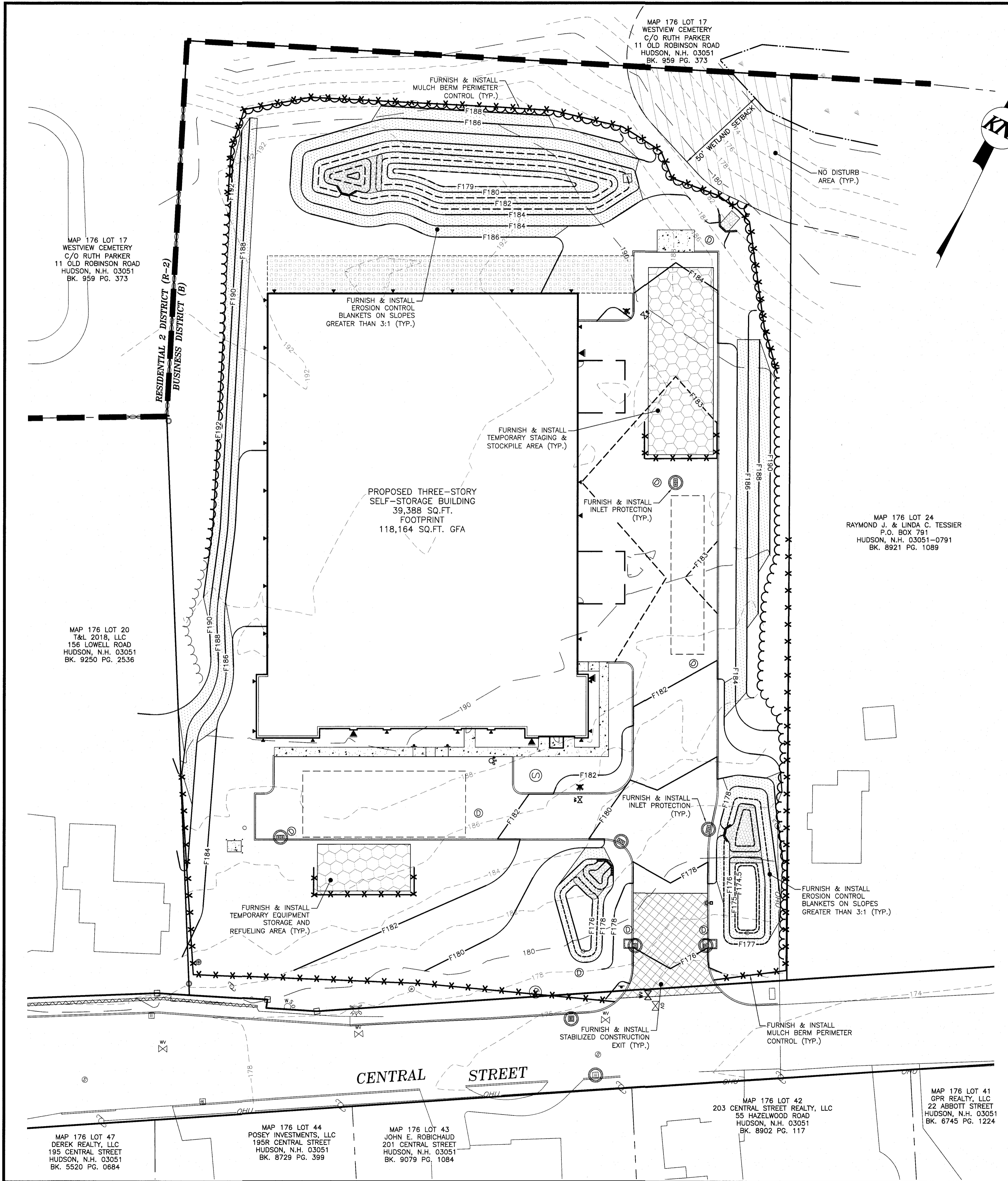
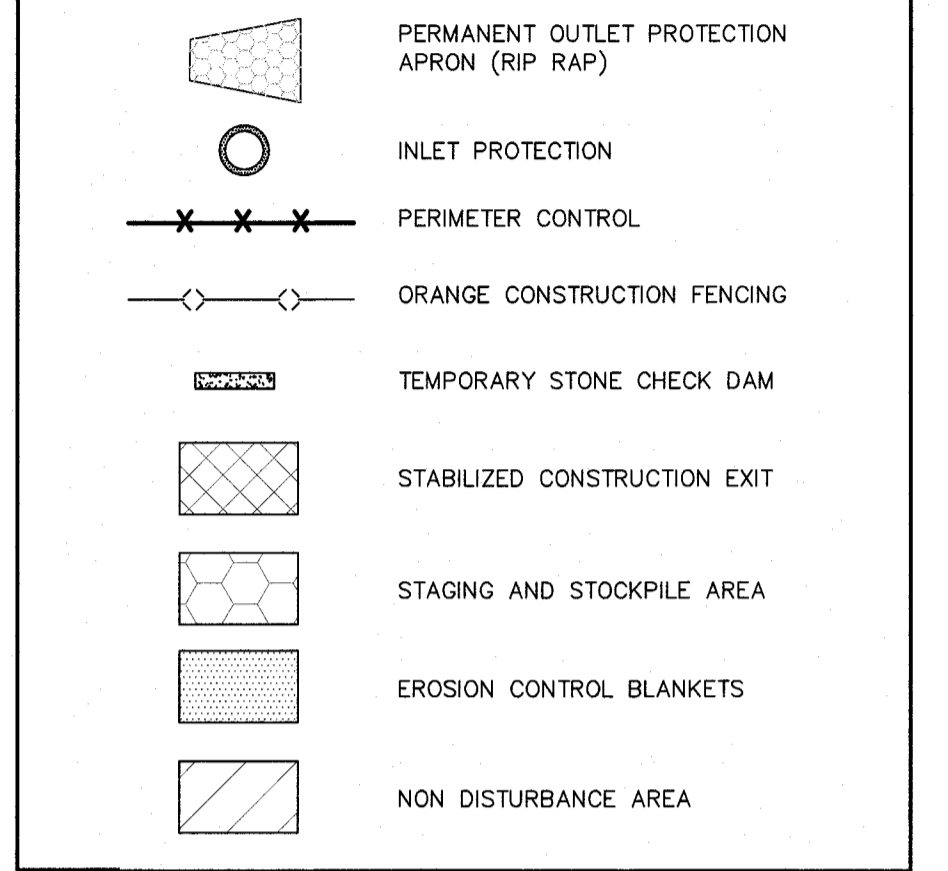
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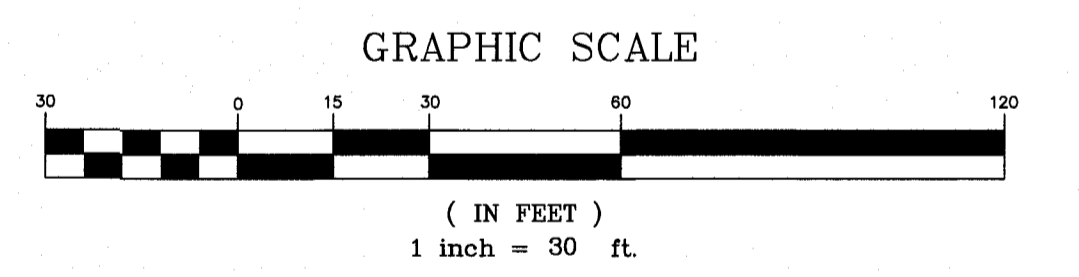
EROSION CONTROL NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE REQUIRED ONSITE TEMPORARY CONSTRUCTION EROSION CONTROL MEASURES AS WELL AS THE PERMANENT EROSION CONTROL MEASURES.
2. ALL MEASURES IN THE PLAN SHALL MEET AS A MINIMUM THE BEST MANAGEMENT PRACTICES SET FORTH IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL TITLED "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION," DATED DECEMBER 2010, AS AMENDED FROM TIME TO TIME.
3. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED OR SUPPLEMENTED. THE STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.
4. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.
5. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE TEMPORARILY STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN FIVE DAYS FROM THE INITIAL DISTURBANCE WITH SEED AND MULCH. EROSION CONTROL BLANKETS OR CRUSTED STONE OR OTHER SUITABLE MEASURES APPROVED BY THE TOWN ENGINEER OR DESIGNATED REPRESENTATIVE. ALL DISTURBED SOIL AREAS THAT HAVE ACHIEVED FINAL GRADING SHALL BE PERMANENTLY STABILIZED WITHIN THREE DAYS FOLLOWING FINAL GRADING.
6. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
7. OFFSITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE OR CARRIED NON-EROSIVELY THROUGH THE PROJECT AREA. INTEGRITY OF DOWNSTREAM DRAINAGE SYSTEMS SHALL BE MAINTAINED.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED.
9. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
10. THE TOWN OF HUDSON SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.
11. INFILTRATION AREAS ARE TO BE PROTECTED FROM OVER-COMPACTION DURING CONSTRUCTION.
12. SLOPES OVER 2:1 TO BE DESIGNED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

EROSION & SEDIMENT CONTROL LEGEND



LOAM & SEED ALL DISTURBED AREAS (TYP.)



NPDES NOTE

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EROSION CONTROL PLAN
BLUEBIRD SELF STORAGE

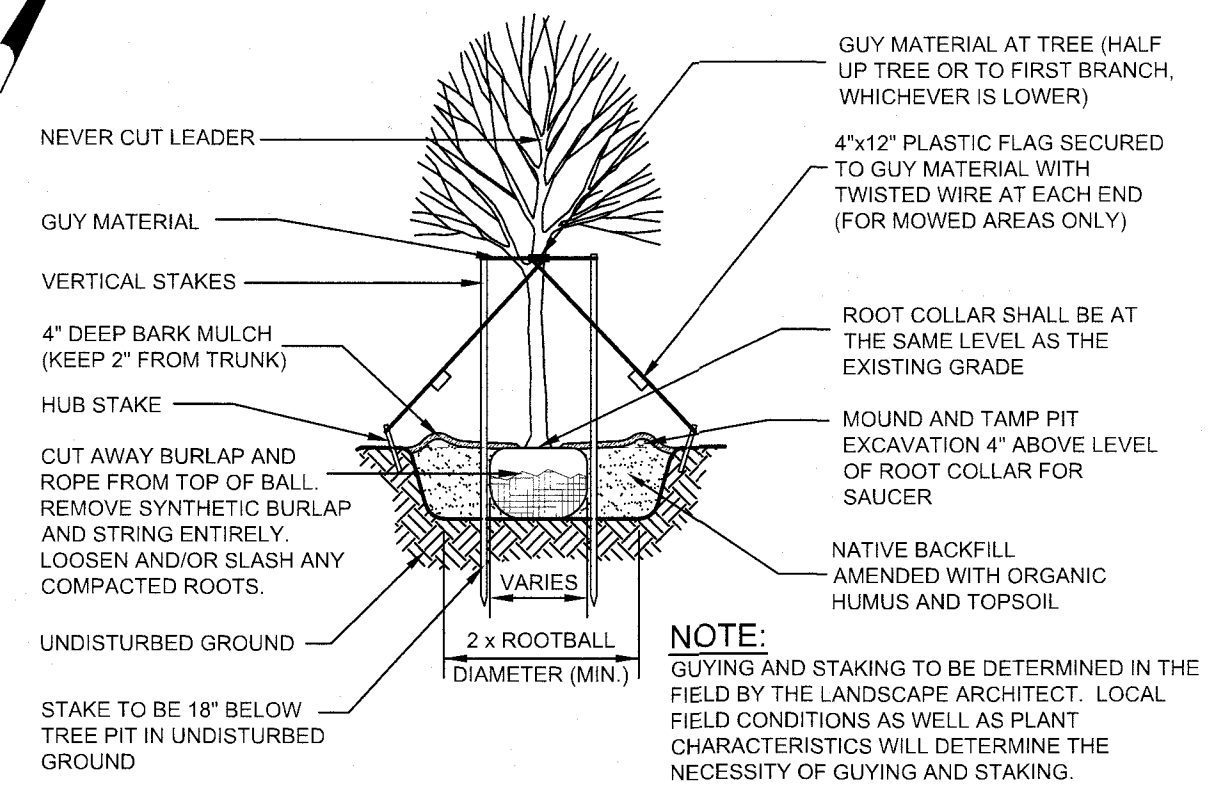
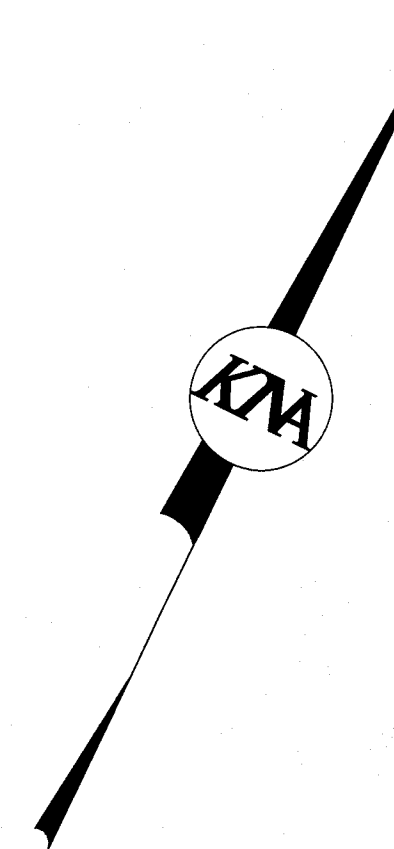
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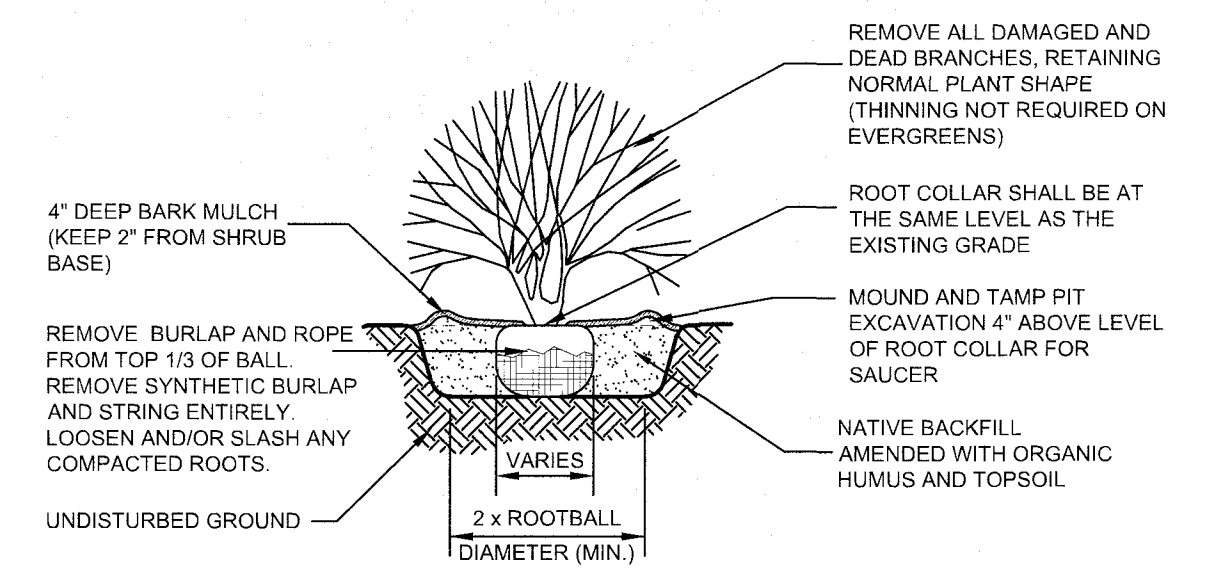
KMA KEACH-NORDSTROM ASSOCIATES, INC.
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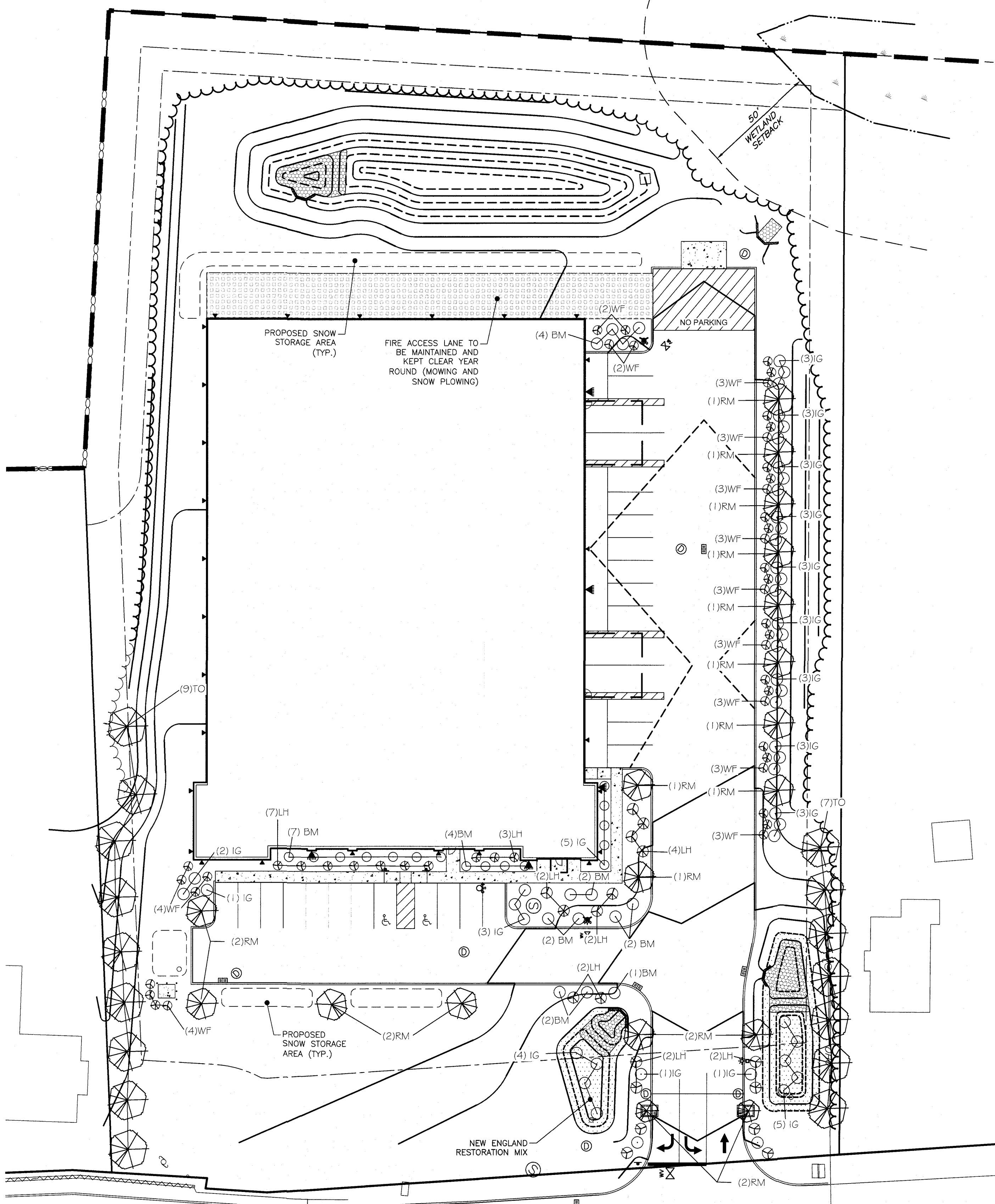
DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
 PROJECT NO: 21-0709-3 SHEET 8 OF 23



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)



BALLED & BURLAP SHRUB PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)



- LANDSCAPE NOTES:**
1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE LANDSCAPE WHICH PROVIDES CLIMATIC RELIEF AND AESTHETIC APPEAL.
 2. ALL PLANT MATERIALS USED SHALL BE NURSERY STOCK AND SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF INSTALLATION. ANY MATERIAL WHICH DIES OR DOES NOT SHOW HEALTHY APPEARANCE WITHIN THIS TIME SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, WITH SAME WARRANTY REQUIREMENTS AS THE ORIGINAL. WARRANTIES TYPICALLY DO NOT COVER LOSS DUE TO INSECT INFESTATION OR MECHANICAL DAMAGE (I.E. SNOW STORAGE).
 3. IF THE SOIL CONDITIONS ARE EXTREMELY SANDY, ALL TREES SHALL HAVE A 6" LAYER OF COMPACTED TOPSOIL PLACED IN THE BASE OF THE PLANT PIT AS A MOISTURE RETENTION LAYER. THE PLANT PIT SIDEWALLS SHALL BE OVER EXCAVATED BY AN ADDITIONAL 12" BEYOND THE NORMAL OUTSIDE RADIUS OF THE HOLE. A TOPSOIL MIXTURE SHALL BE USED TO BACKFILL THE HOLE AS FOLLOWS: ORGANIC TOPSOIL, AMENDED WITH 10% WOOD ASH, 10% MANURE, 30% PEATMOSS AND A GRANULAR HYDROGEL TO ABSORB AND RETAIN WATER.
 4. PLANTING BEDS AND SAUCERS SHALL RECEIVE A 4" MINIMUM THICKNESS OF PINE/HEMLOCK BARK MULCH OVER A 5oz. POLYPROPYLENE WEED CONTROL FABRIC.
 5. PAVEMENT AND ROAD BASE MATERIAL ENCOUNTERED IN ANY LAWN OR PLANTING BED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SUITABLE AMENDED SOIL INSTALLED AS SPECIFIED IN THE TURF ESTABLISHMENT SCHEDULE.
 6. PLANT TYPES SHOWN ARE SUBJECT TO AVAILABILITY. SUBSTITUTE MATERIALS CAN BE IMPLEMENTED WITH APPROVAL FROM KEACH NORDSTROM ASSOCIATES PRIOR TO CONSTRUCTION.

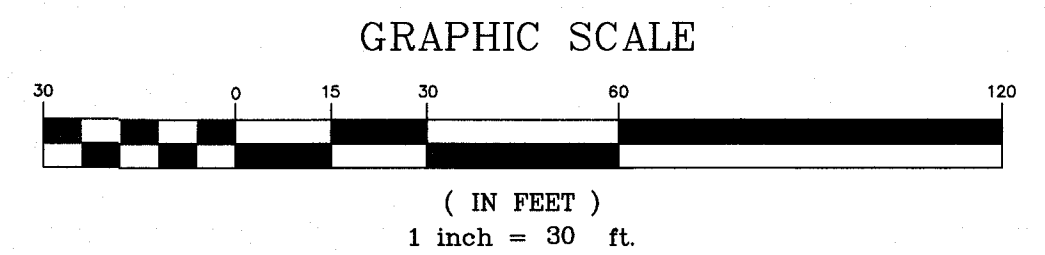
LANDSCAPE CALCULATIONS

REQUIRED PARKING LOT INTERIOR LANDSCAPE AREA	28,870 SF
PROPOSED PARKING AREA PAVED:	2,887 SF
10% REQUIRED LANDSCAPE AREA:	8,612 SF
PROVIDED LANDSCAPE AREA:	8,612 SF

REQUIRED PARKING LOT SHADE TREES AND SHRUBS	28,870 SF
PROPOSED PAVED AREA:	28,870 SF
SHADE TREES REQUIRED (28,870/1,600):	18 TREES REQUIRED
(OR 1 TREE/5 PROP. PARKING SPACES)	6 TREES REQUIRED
SHADE TREES PROVIDED:	18 TREES PROPOSED
SHRUBS REQUIRED (28,870/200):	145 SHRUBS, OR
(OR 1.6 x 28 PROP. PARKING SPACES)	45 SHRUBS PROPOSED
SHRUBS PROVIDED:	145 SHRUBS PROPOSED

PLANTING SCHEDULE

Botanical Name / Common Name	Size	Label	Quantity	Mature Height
Trees				
<i>Acer rubrum</i> 'Redpointe' / Redpointe Red Maple	3-3.5" CAL	RM	18	40-60'
<i>Thuja Occidentalis</i> / Eastern Arborvitae	3-3.5" CAL	TO	16	30-40'
Shrubs				
<i>Hydrangea Panicula</i> 'Little Lamb' / Little Lamb Panicle Hydrangea	24"	LH	23	5-6'
<i>Ilex glabra</i> 'Compacta' / Compact Inkberry	#3	IG	45	5-6'
<i>Viburnum Dentatum</i> 'Blue Muffin' / Blue Muffin Viburnum	2.5-3" B&B	BM	36	5-6'
<i>Weigela Florida</i> 'Wine & Roses' / Wine & Roses Weigela	2.5-3" B&B	WF	31	5-6'
Seed Mix				
New England Erosion Control/Restoration Mix				



LANDSCAPE PLAN
BLUEBIRD SELF STORAGE
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--	--



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

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

SIGNATURE DATE: _____

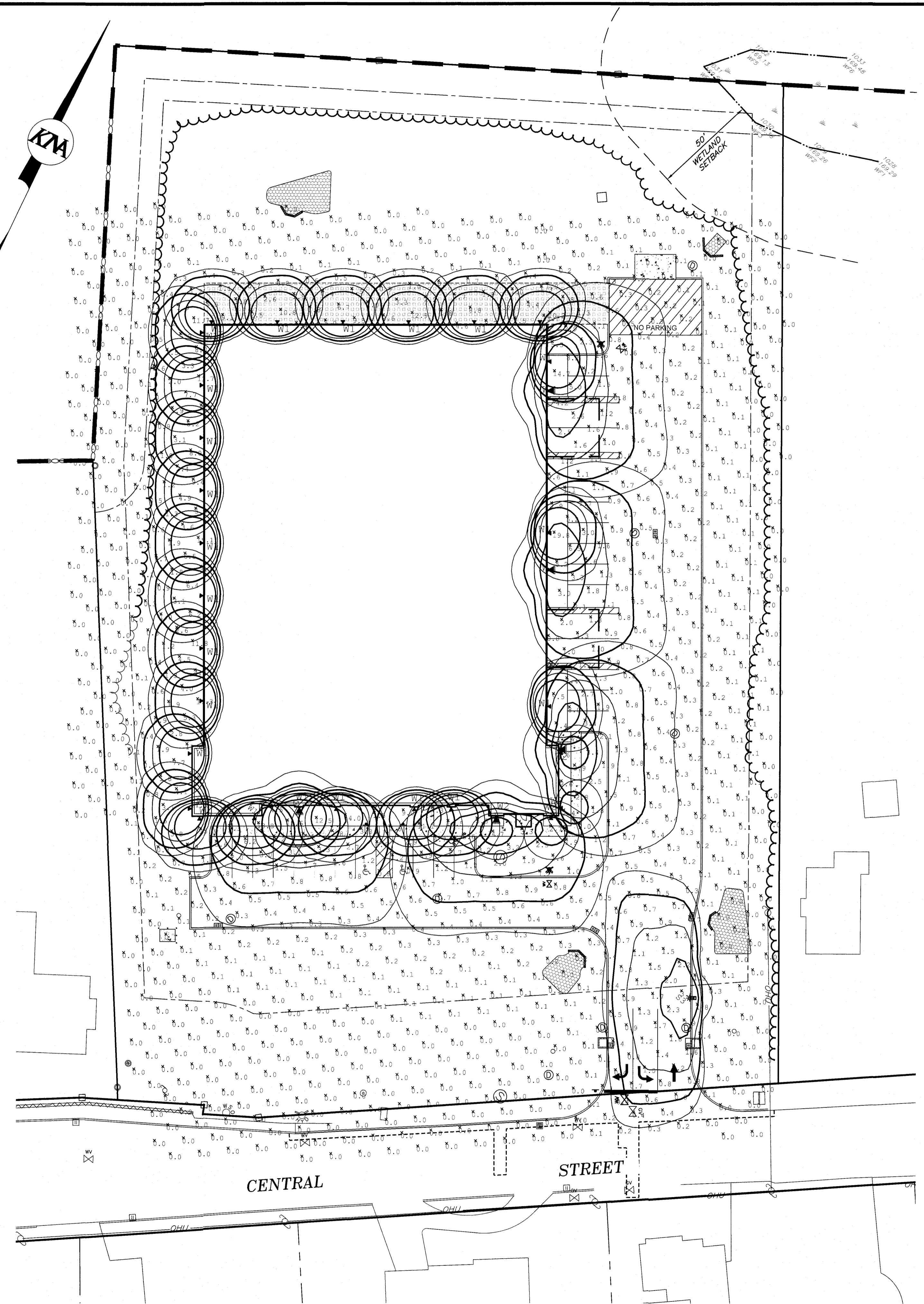
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DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
PROJECT NO: 21-0709-3 SHEET 9 OF 23



LIGHTING NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE LIGHTING/PHOTOMETRICS ON THE SITE DURING BUSINESS HOURS, AT STANDARD OPERATING BRIGHTNESS.
2. ALL LIGHTS/FIXTURES SHALL BE AS SPECIFIED BY CHARRON LIGHTING.
3. ALL PROPOSED LIGHTS/FIXTURES ARE TO BE FULL CUTOFF.
4. FIXTURES SHALL BE MOUNTED AS HEIGHTS AS SPECIFIED IN TABLE.
5. PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ELECTRICIAN FOR THE EXACT LOCATION, LAYOUT, CONDUIT SIZE AND CIRCUITS ASSOCIATED WITH THE SITE LIGHTING.
6. LIGHTING WILL BE ON AT ALL TIMES TO PROVIDE SECURITY AND SAFETY FOR THE FACILITY.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

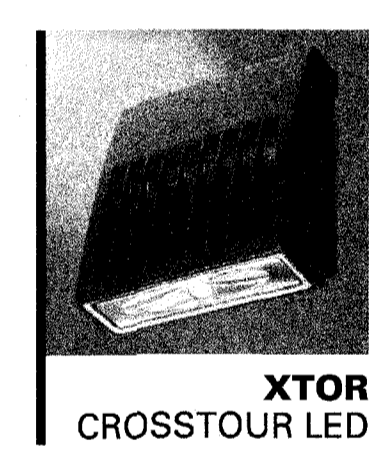
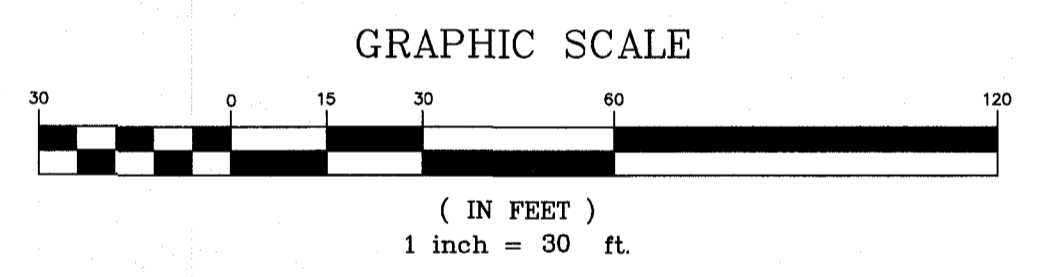
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
SIGNATURE: _____
SIGNATURE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

LEGEND

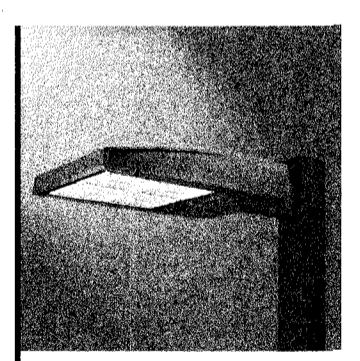
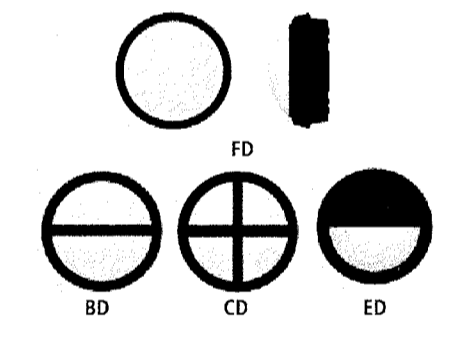
- GB-F GRANITE BOUND FOUND
- IPIN-F IRON PIN FOUND
- ⊙ DH-F DRILL HOLE FOUND
- UTILITY POLE
- ▽ PROPOSED SIGN
- ⊛ PROPOSED LIGHT
- ⊙ PROPOSED HYDRANT
- ⊙ PROPOSED WELL
- ⊙ PROPOSED SEWER MANHOLE
- ⊙ PROPOSED DRAINAGE MANHOLE
- ⊙ PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- ABUTTER LINE
- PROPERTY LINE
- OHU OVERHEAD UTILITIES
- TREELINE
- EDGE OF PAVEMENT
- STONEWALL
- BUILDING SETBACK
- ZONE LINE
- PROPOSED TREELINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED VERTICAL GRANITE CURB
- PROPOSED SWALE
- EASEMENT
- ⊛ SITE LIGHTING
- ⊛ BUILDING WALL PACK LIGHTING

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

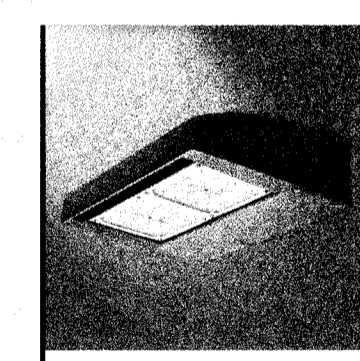


XTOR
CROSSTOUR LED

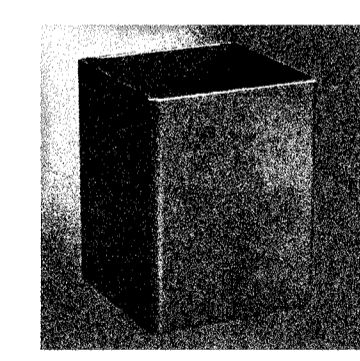
MILLENNIUM™ ROUND
MR17 SERIES - DEEP PROFILE HOUSING



GLEON
GALLEON LED



GWC GALLEON
WALL



SSS SQUARE
STRAIGHT STEEL

SYMBOL	QTY	LABEL	ARRANGEMENT	DESCRIPTION
⊛	1	S3	SINGLE	GLEON-SA1C-740-U-SL3-HSS-MS/DIM-L20/ SSS4A20SFN1 (20' AFG)
⊛	5	W	SINGLE	GWC-SA1C-740-U-SL4-MA/DIM-L20/ WALL MTD 18' AFG
⊛	25	W1	SINGLE	AXCS3A-MSP/DIM-L12 (9' AFG)
⊛	4	W2	SINGLE	TRE11-LD4-25W-35-OPL-WH-UNV-EDD1/WALL MTD 13' AFG

STATAREA_1
FRONT PARKING LOT AREA
ILLUMINANCE (FC)
AVERAGE = 1.02
MAXIMUM = 6.2
MINIMUM = 0.2
AVG/MIN RATIO = 5.10
MAX/MIN RATIO = 31.00

STATAREA_2
SIDE PARKING LOT AREA
ILLUMINANCE (FC)
AVERAGE = 0.96
MAXIMUM = 8.0
MINIMUM = 0.2
AVG/MIN RATIO = 4.80
MAX/MIN RATIO = 40.00



IN ASSOCIATION WITH:

P.O. BOX 4550
MANCHESTER, NH 03108
(603) 624-4827
FAX: (603) 624-9764
SALES@CHARRONING.COM

LIGHTING PLAN
BLUEBIRD SELF STORAGE
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

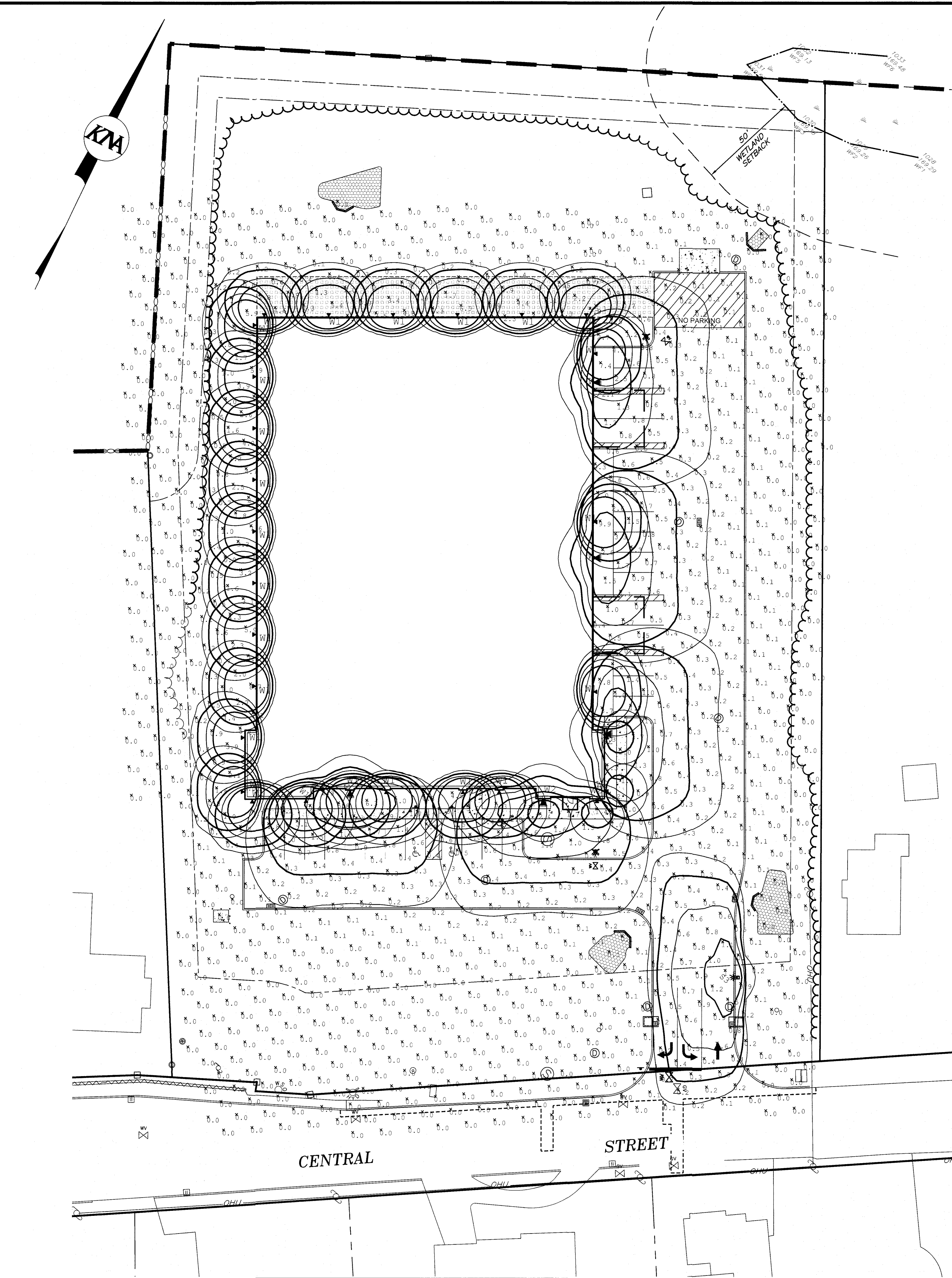
OWNER OF RECORD:
RONALD CRAVEN TRUST
c/o NANCY CRAVEN TRUST
88 SPEARE ROAD
HUDSON, NH 03051
H.C.R.D. BK. 6079 PG. 1294

APPLICANT:
BLUEBIRD SELF STORAGE LLC.
125 OCEAN ROAD
GREENLAND, NH 03840

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES

DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
PROJECT NO: 21-0709-3 SHEET 10 OF 23



LIGHTING NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE LIGHTING/PHOTOMETRICS ON THE SIGHT DURING OFF HOURS, DIMMED TO 50% OPERATING BRIGHTNESS.
2. ALL LIGHTS/FIXTURES SHALL BE AS SPECIFIED BY CHARRON LIGHTING.
3. ALL PROPOSED LIGHTS/FIXTURES ARE TO BE FULL CUTOFF.
4. FIXTURES SHALL BE MOUNTED AS HEIGHTS AS SPECIFIED IN TABLE.
5. PRIOR TO CONSTRUCTION, THE SITE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ELECTRICIAN FOR THE EXACT LOCATION, LAYOUT, CONDUIT SIZE AND CIRCUITS ASSOCIATED WITH THE SITE LIGHTING.
6. LIGHTING WILL BE ON AT ALL TIMES TO PROVIDE SECURITY AND SAFETY FOR THE FACILITY.

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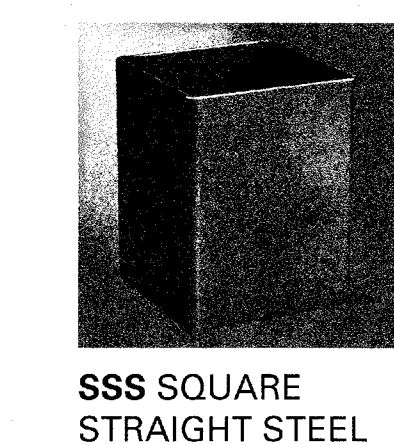
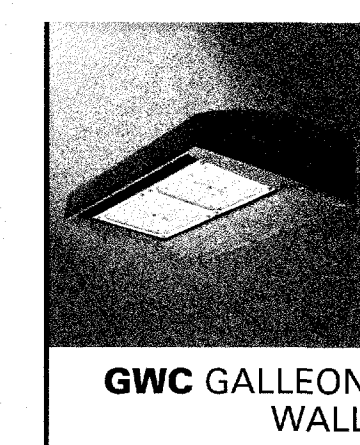
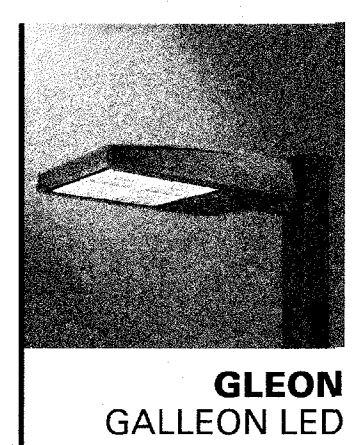
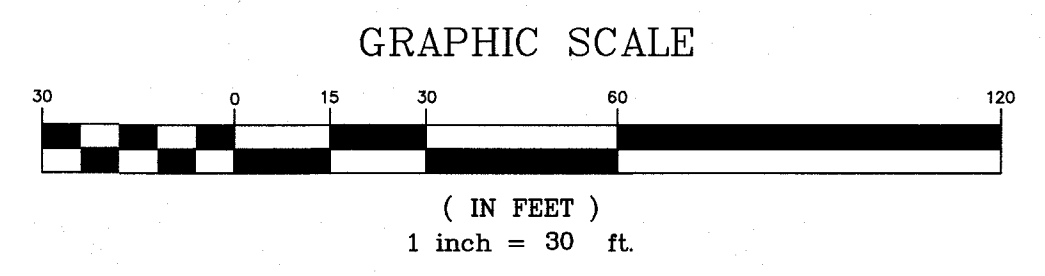
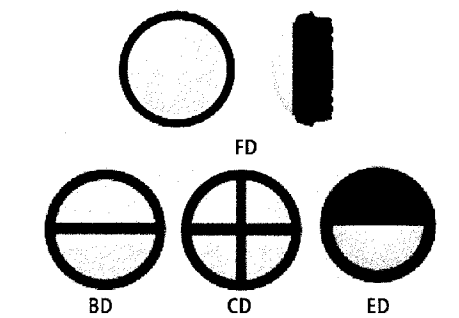
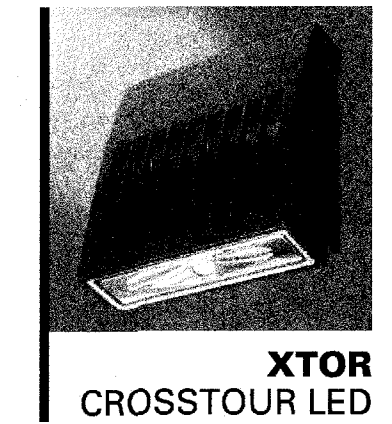
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LEGEND

- ⊠ GB-F GRANITE BOUND FOUND
- ⊙ IPIN-F IRON PIN FOUND
- ⊙ DH-F DRILL HOLE FOUND
- ⊙ U UTILITY POLE
- ⊙ PROPOSED SIGN
- ⊙ PROPOSED LIGHT
- ⊙ PROPOSED HYDRANT
- ⊙ PROPOSED WELL
- ⊙ PROPOSED SEWER MANHOLE
- ⊙ PROPOSED DRAINAGE MANHOLE
- ⊙ PROPOSED CATCH BASIN
- ⊙ PROPOSED OUTLET STRUCTURE
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- PROPOSED VERTICAL GRANITE CURB
- PROPOSED SWALE
- EASEMENT
- ⊙ SITE LIGHTING
- ⊙ BUILDING WALL PACK LIGHTING

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

MILLENNIUM™ ROUND
MR17 SERIES - DEEP PROFILE HOUSING



LUMINAIRE SCHEDULE				
SYMBOL	QTY	LABEL	ARRANGEMENT	DESCRIPTION
⊙	1	S3	SINGLE	GLEON-SA1C-740-U-SL3-HSS-MS/DIM-L20/ SSS420SFN1 (20' AFG)
⊙	5	W	SINGLE	GWC-SA1C-740-U-SL4-MA/DIM-L20/ WALL MTD 18' AFG
⊙	25	W1	SINGLE	AXCS3A-MSP/DIM-L12 (9' AFG)
⊙	4	W2	SINGLE	TRE11-LD4-25W-35-OPL-WH-UNV-EDD1/WALL MTD 13' AFG

IN ASSOCIATION WITH:

CHARRON
BRIGHTER.

P.O. BOX 4550
 MANCHESTER, NH 03108
 (603) 624-4827
 FAX (603) 624-8764
 SALES@CHARRON.COM

LIGHTING PLAN
BLUEBIRD SELF STORAGE
 MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
RONALD CRAVEN TRUST
c/o NANCY CRAVEN TRUST
88 SPEARE ROAD
HUDSON, NH 03051
H.C.R.D. BK. 6079 PG. 1294

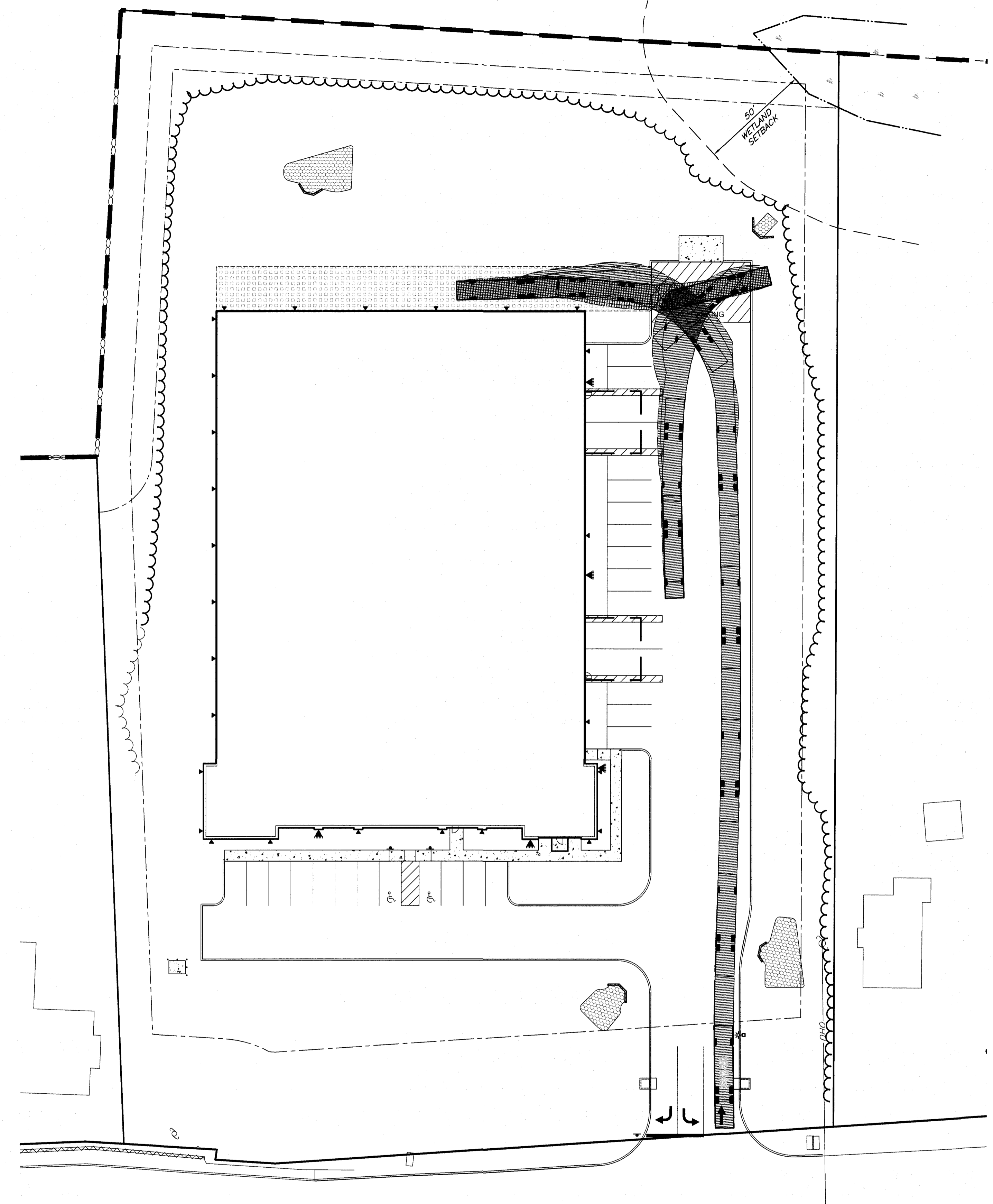
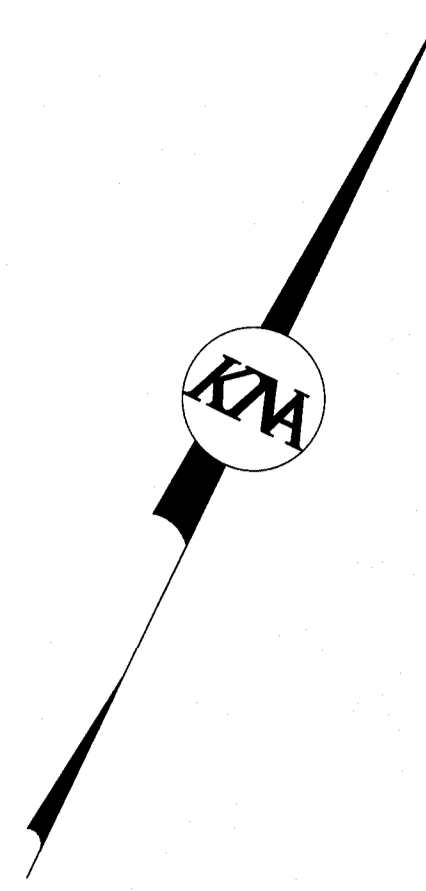
APPLICANT:
BLUEBIRD SELF STORAGE LLC.
125 OCEAN ROAD
GREENLAND, NH 03840

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 827-2881

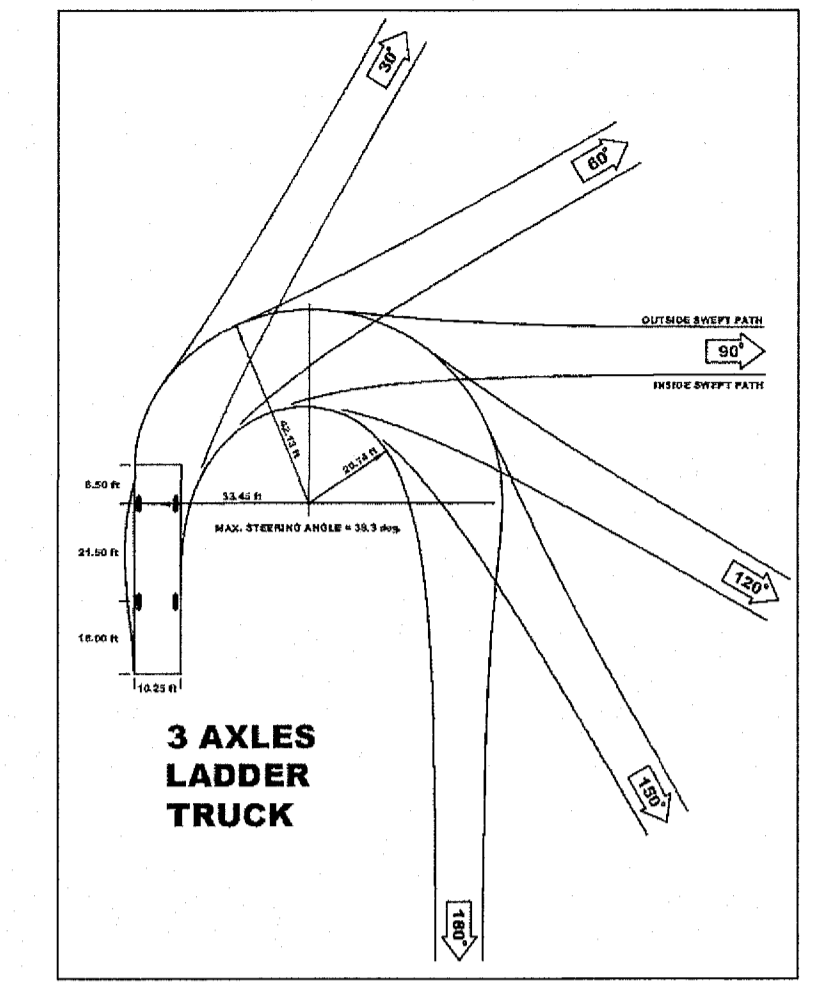


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DATE: DECEMBER 20, 2021 SCALE: 1" = 30'
 PROJECT NO: 21-0709-3 SHEET 11 OF 23

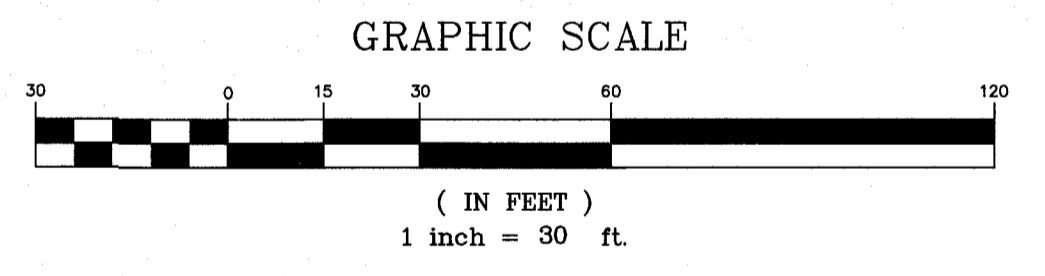


NOTES:
 1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE REVERSE TURNING MOTION OF A FIRE TRUCK THROUGH THE PROPOSED SITE.



3 AXLE LADDER TRUCK

Width	: 10.25
Track	: 6.00
Lock to Lock Time	: 6.00
Steering Angle	: 40.00



FIRE TRUCK TURNING PLAN
BLUEBIRD SELF STORAGE
 MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
--	--



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

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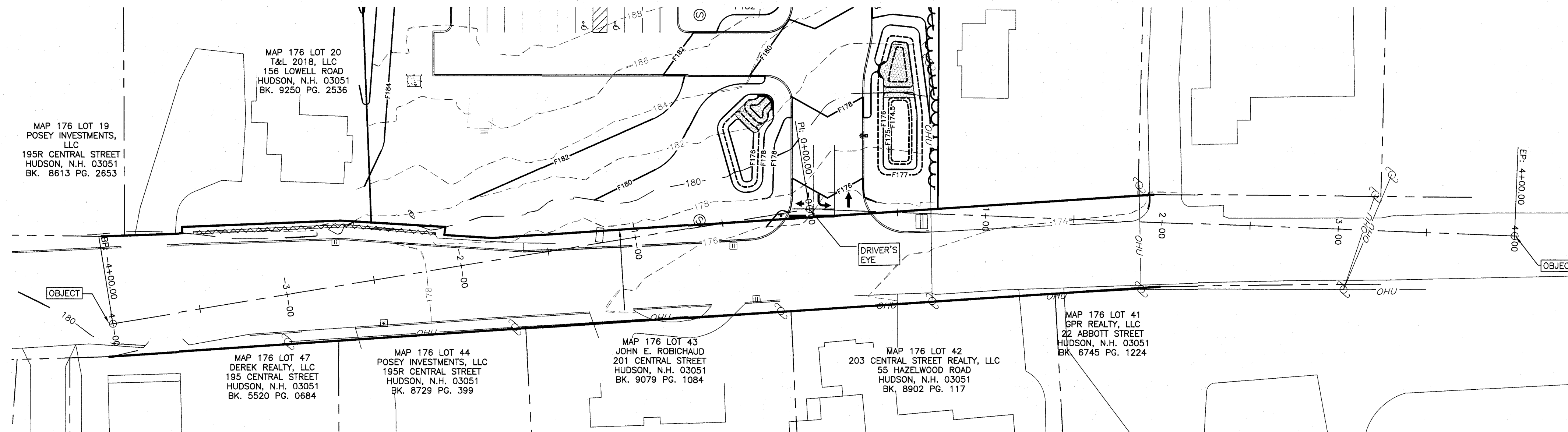
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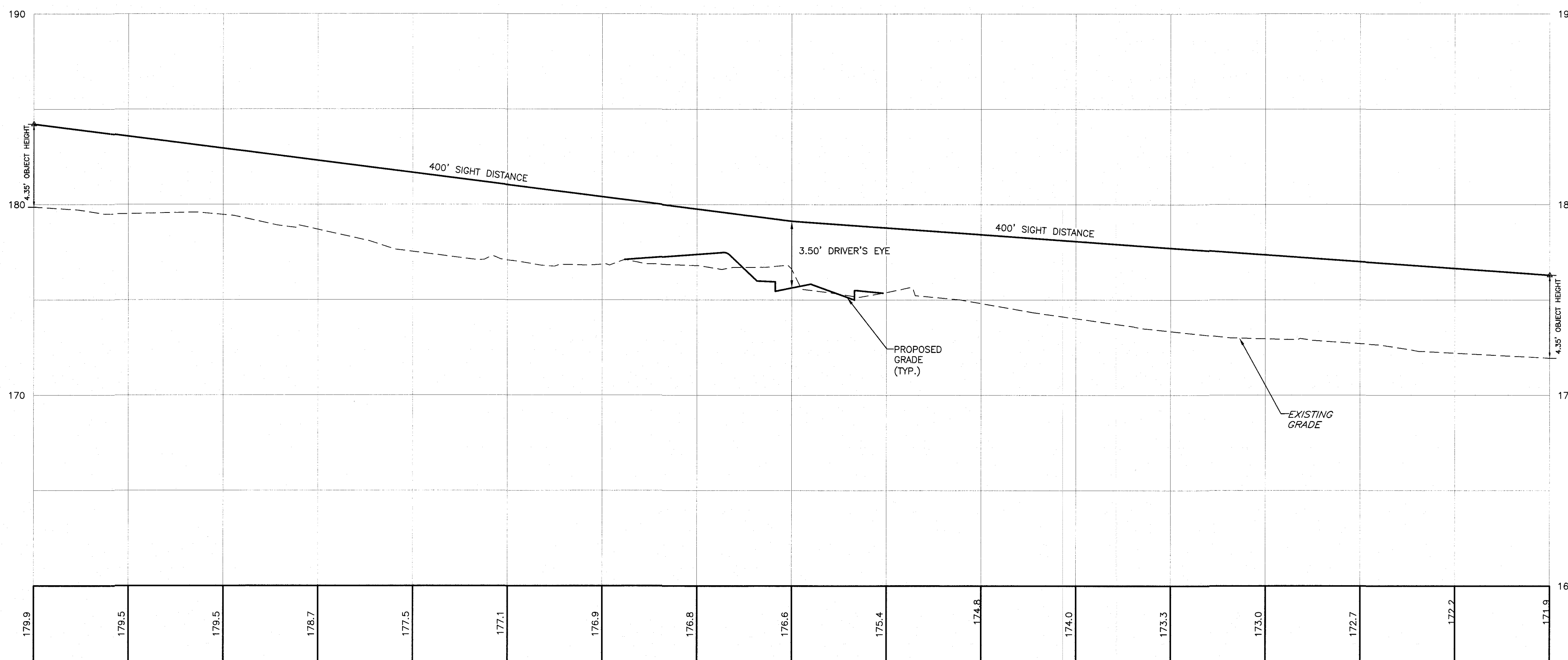
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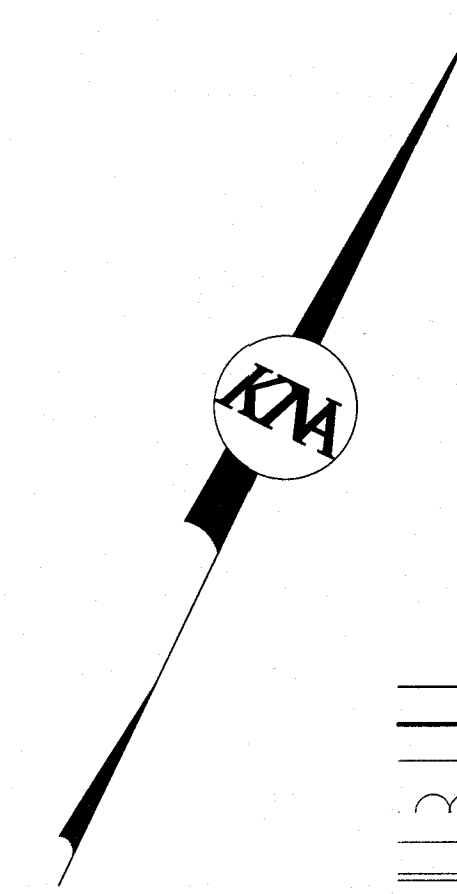


SIGHT DISTANCE PLAN
SCALE: 1" = 40'



SIGHT DISTANCE PROFILE
SCALE: 1" = 40'(HORIZ.)
1" = 4'(VERT.)

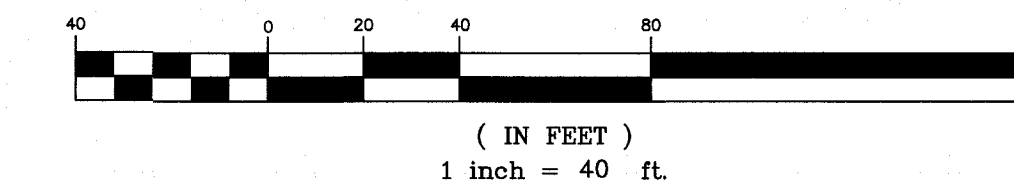
NOTES:
1. SIGHT DISTANCE WAS CALCULATED USING TABLE 3-2 (STOPPING SIGHT DISTANCE ON GRADES) FOUND IN AASHTO'S, "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS 2018 7TH EDITION" AS REQUIRED BY HTC-193-10(E).



LEGEND

- UTYLITY POLE
- ABUTTER LINE
- PROPERTY LINE
- OHU OVERHEAD UTILITIES
- TREELINE
- EDGE OF PAVEMENT
- VERTICAL GRANITE CURB
- BITUMINOUS CURB
- 10' CONTOUR
- 2' CONTOUR
- BUILDING SETBACK
- ▽ PROPOSED SIGN
- PROPOSED LIGHT
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED TREELINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BITUMINOUS CURB
- PROPOSED 2' CONTOUR
- PROPOSED SWALE
- PROPOSED SITE LIGHTING

GRAPHIC SCALE



SIGHT DISTANCE PLAN & PROFILE
BLUEBIRD SELF STORAGE
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
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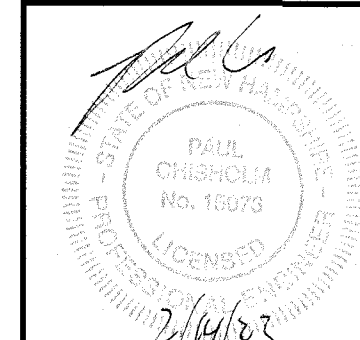
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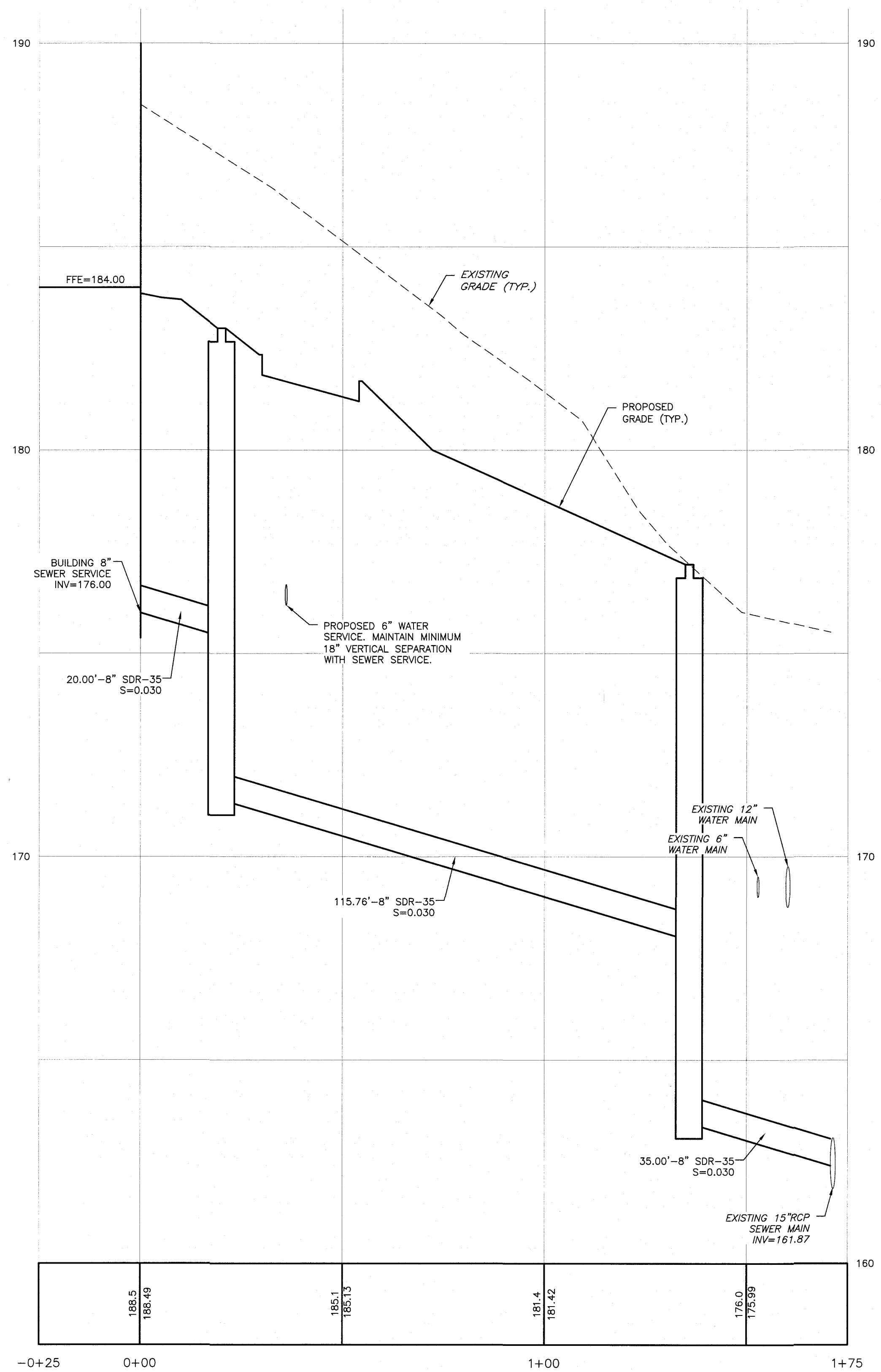
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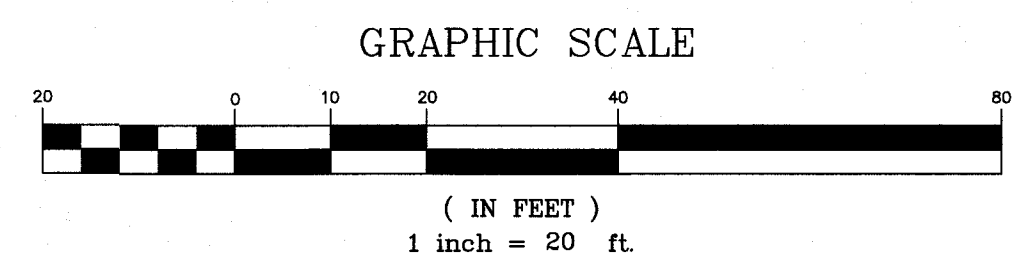


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DATE: DECEMBER 20, 2021 SCALE: 1" = 40'
PROJECT NO: 21-0709-3 SHEET 13 OF 23



SEWER PROFILE
 SCALE: 1" = 20'(HORIZ.)
 1" = 2'(VERT.)



SEWER PROFILE
BLUEBIRD SELF STORAGE
 MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
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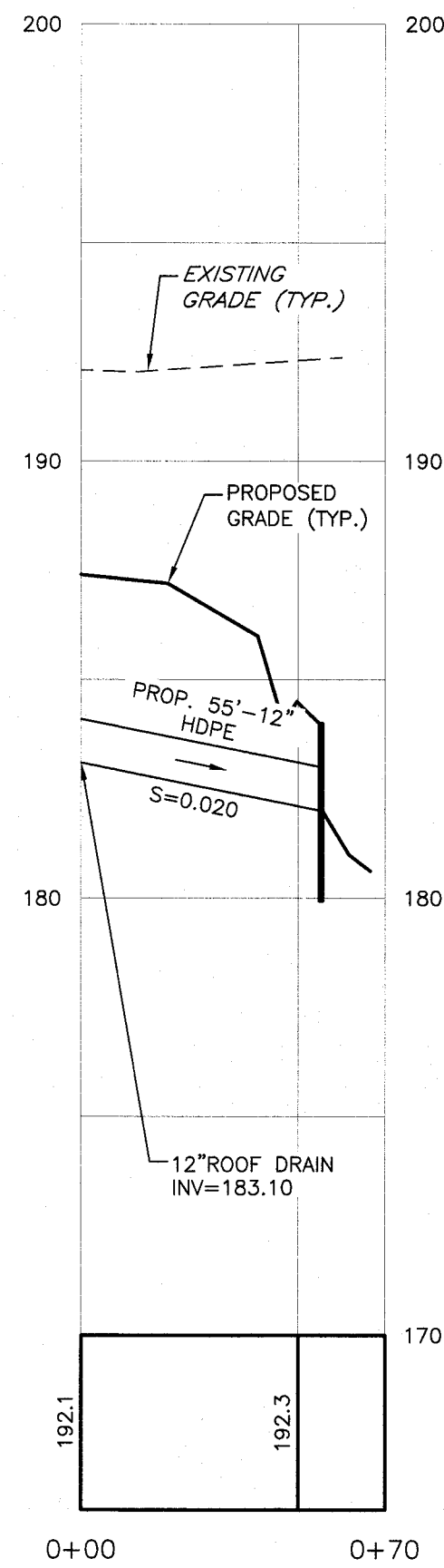
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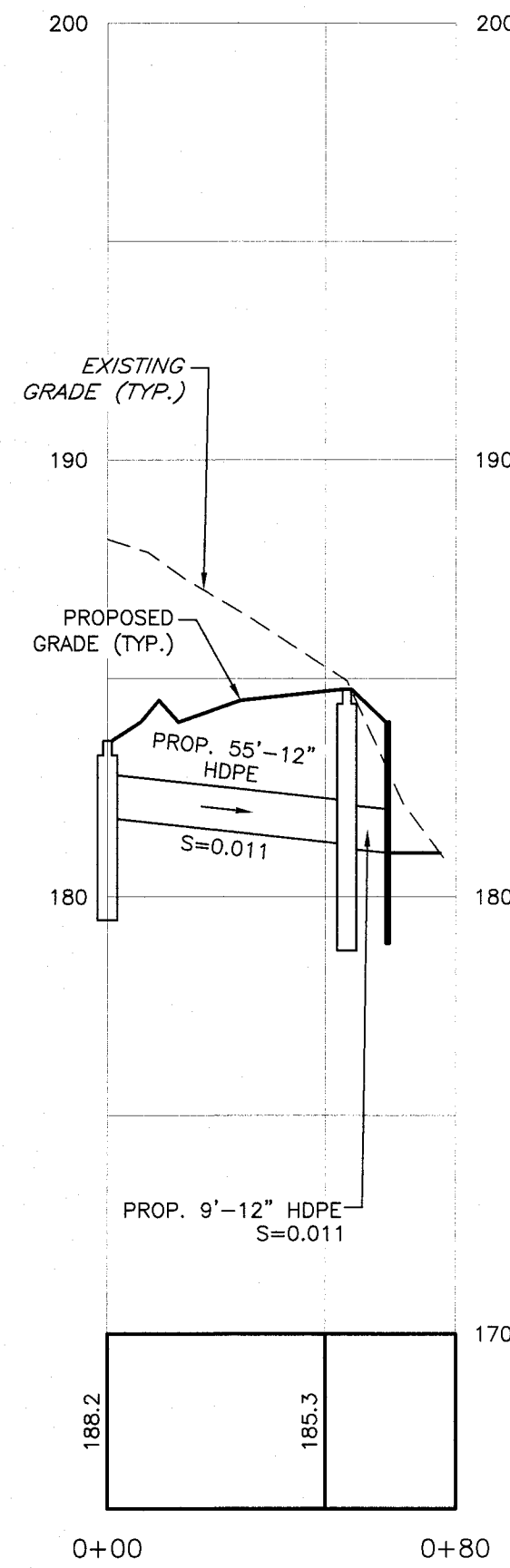
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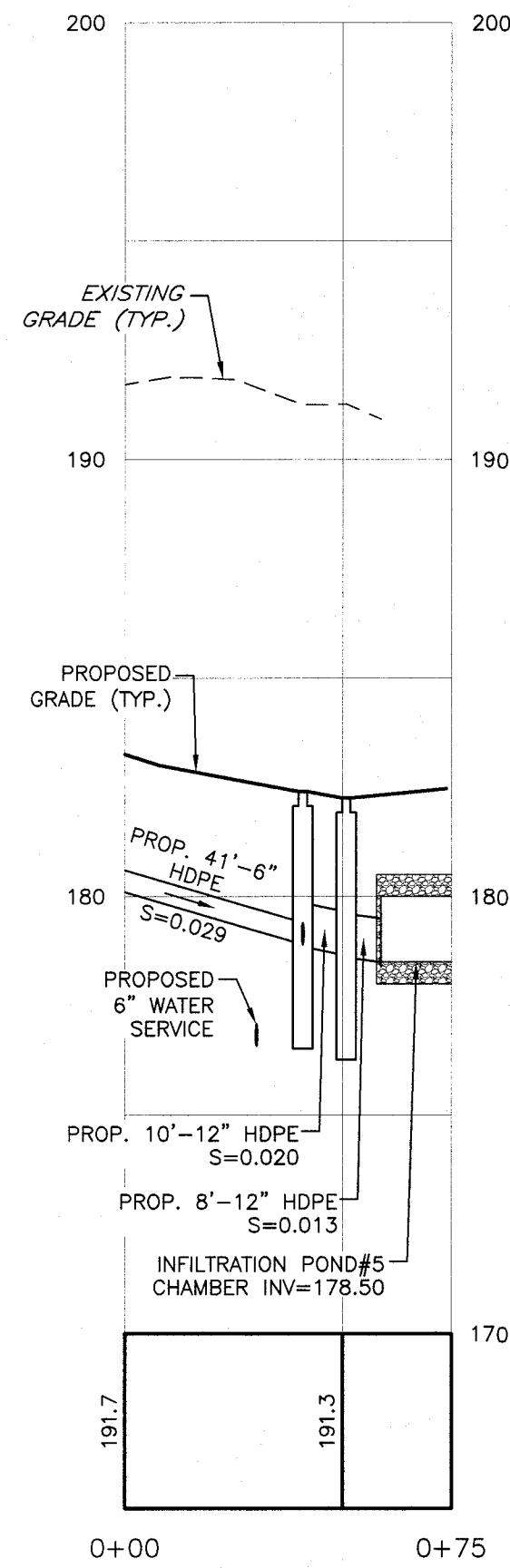
DATE: DECEMBER 20, 2021 SCALE: AS SHOWN
 PROJECT NO: 21-0709-3 SHEET 14 OF 23



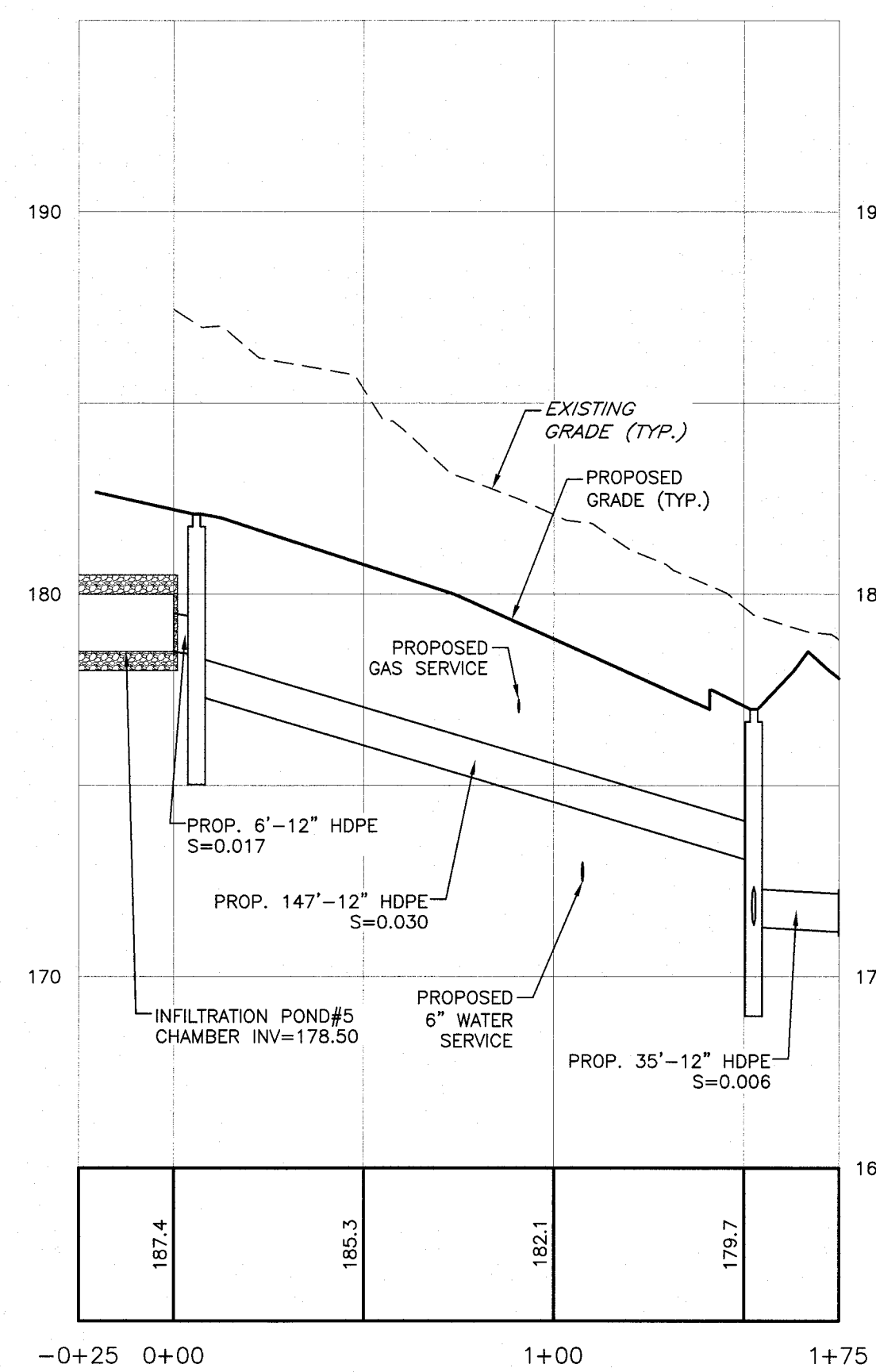
DRAINAGE PROFILE
ROOF DRAIN TO POND#1
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



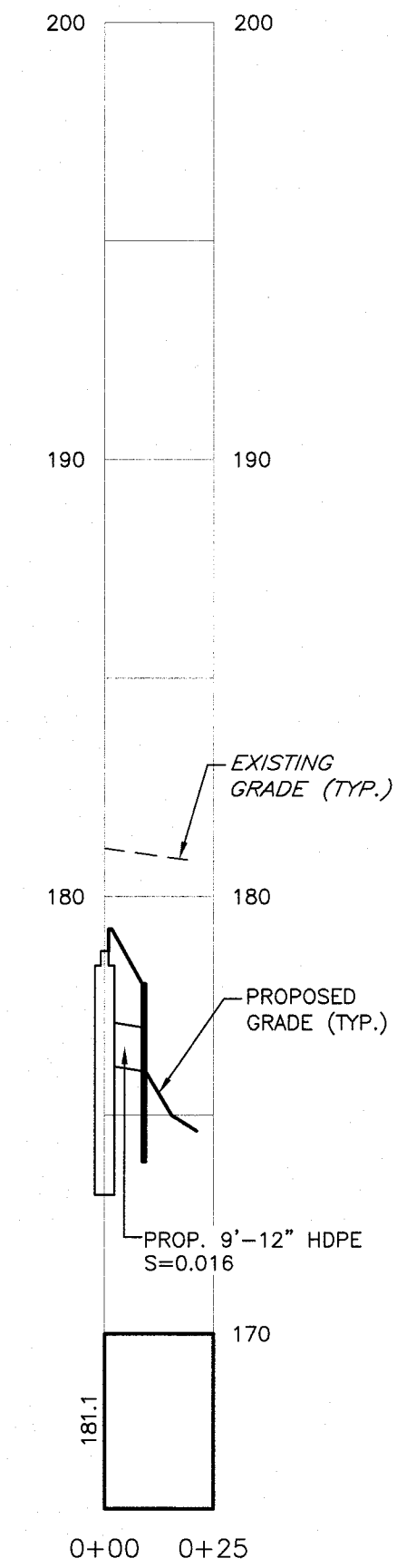
DRAINAGE PROFILE
OS#141 TO HW#143
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



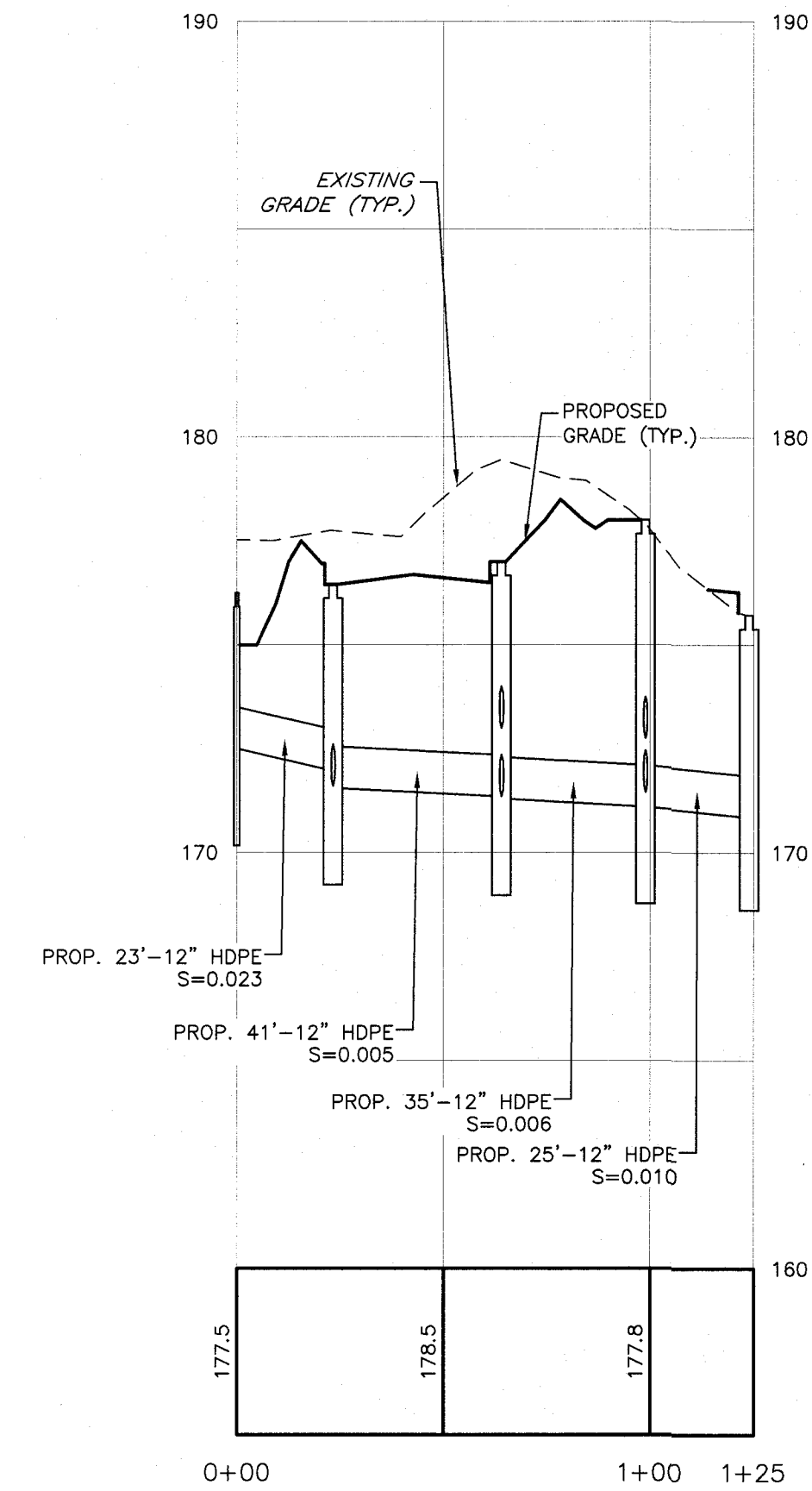
DRAINAGE PROFILE
AWNING ROOF DRAIN TO IP#5
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



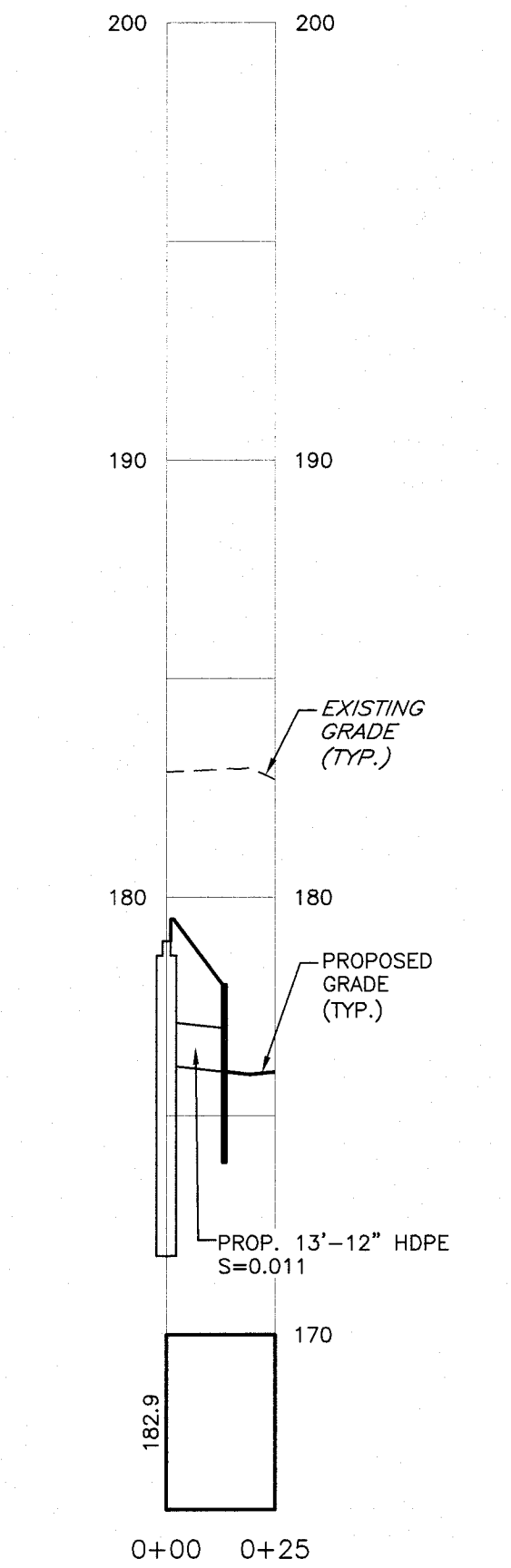
DRAINAGE PROFILE
IP#5 TO DMH#123
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



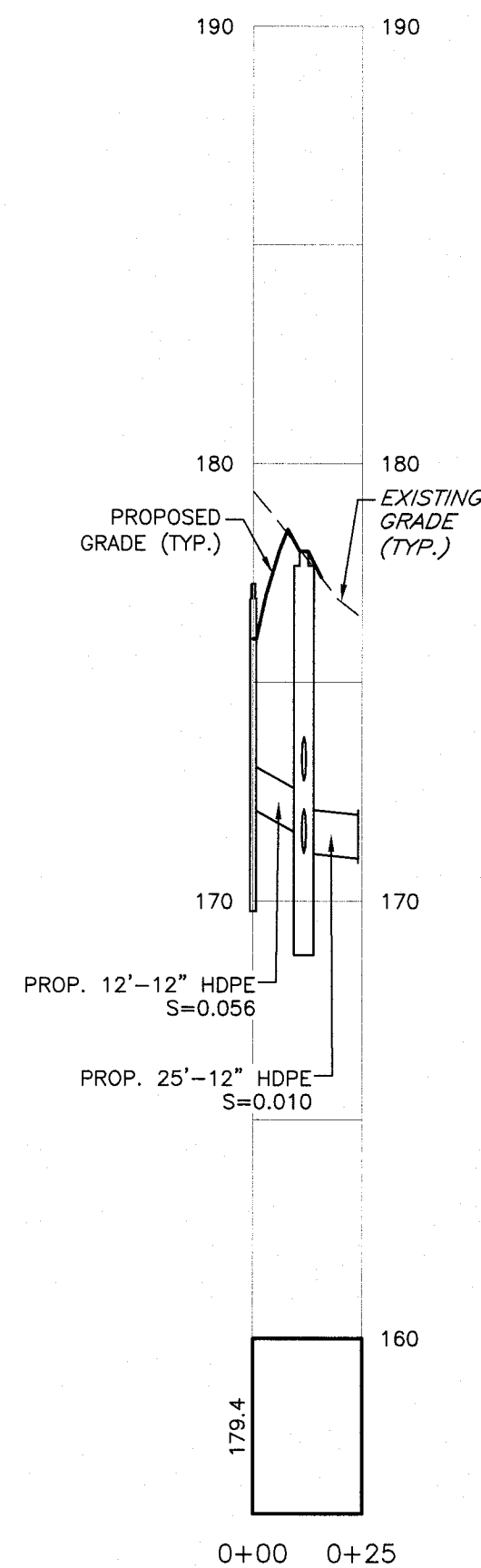
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DCB#110 TO HW#111
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



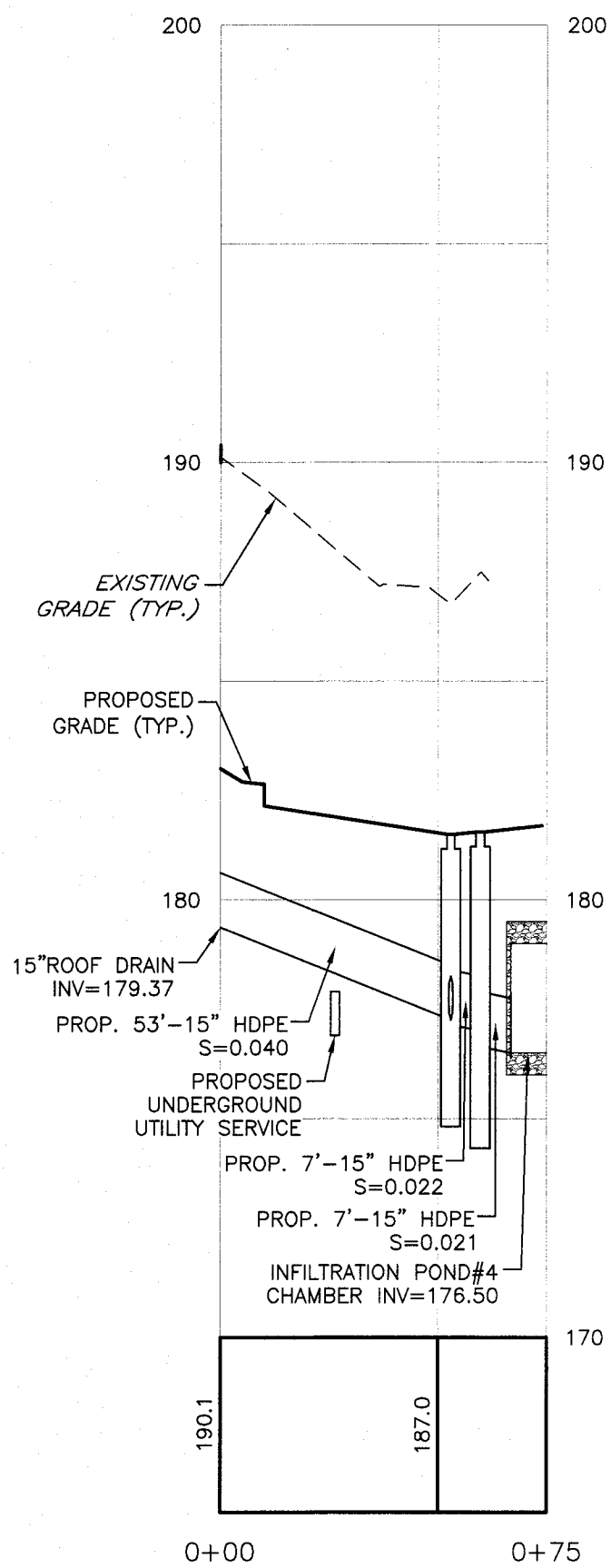
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OS#112 TO EXIST.CB
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



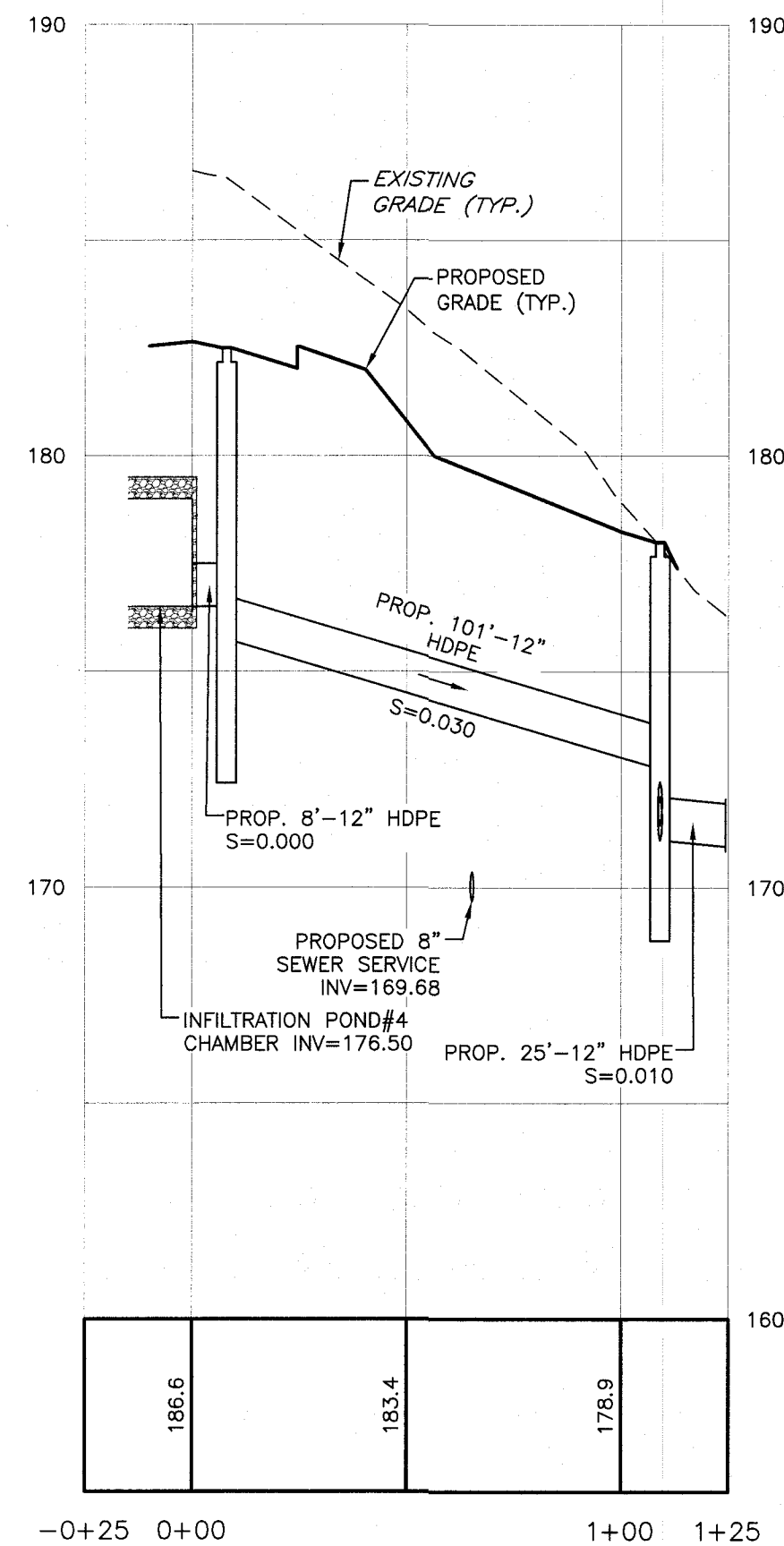
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DCB#120 TO HW#121
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



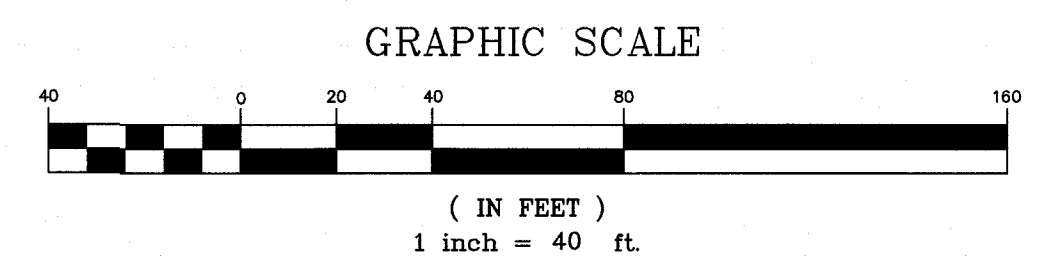
DRAINAGE PROFILE
OS#122 TO DMH#123
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



DRAINAGE PROFILE
ROOF DRAIN TO IP#4
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



DRAINAGE PROFILE
IP#4 TO DMH#123
 SCALE: 1" = 40'(HORIZ.)
 1" = 4'(VERT.)



DRAINAGE PROFILES
BLUEBIRD SELF STORAGE

MAP 176 LOTS 21, 22 & 23
 196-202 CENTRAL STREET
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
--	--

KMA
 KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES

DATE: DECEMBER 20, 2021 **SCALE:** AS SHOWN
PROJECT NO: 21-0709-3 **SHEET** 15 OF 23

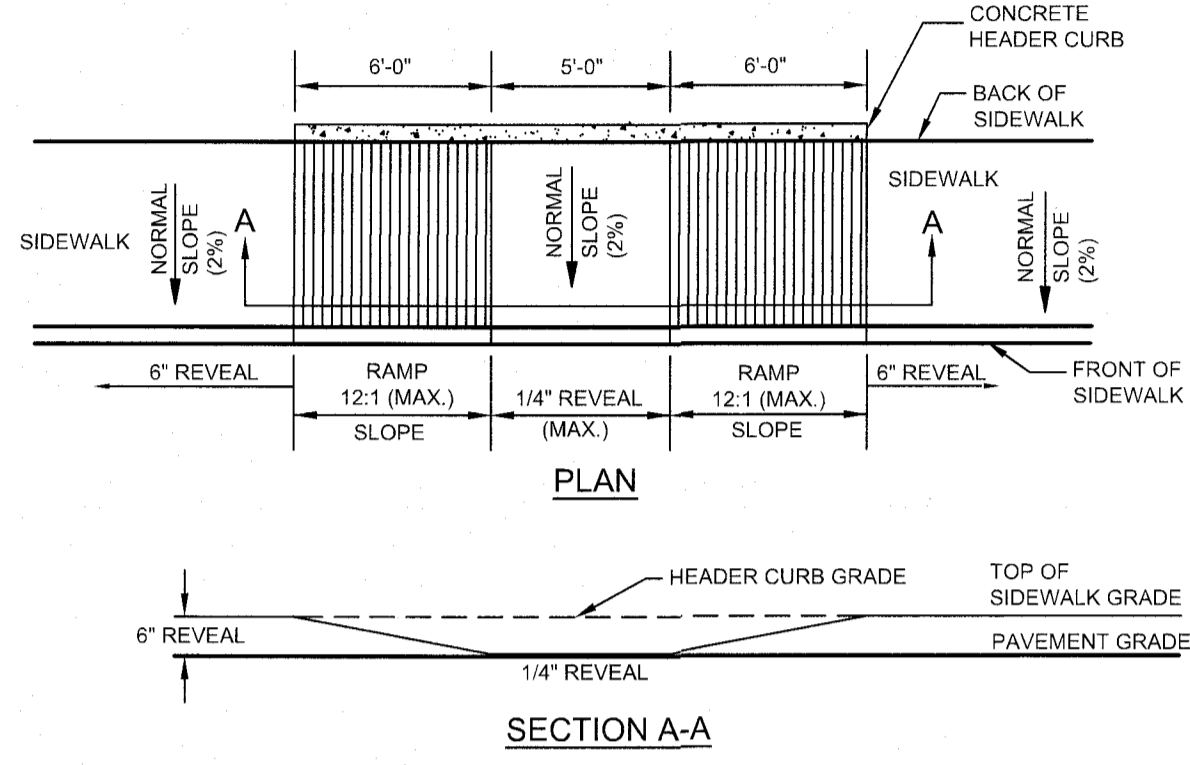
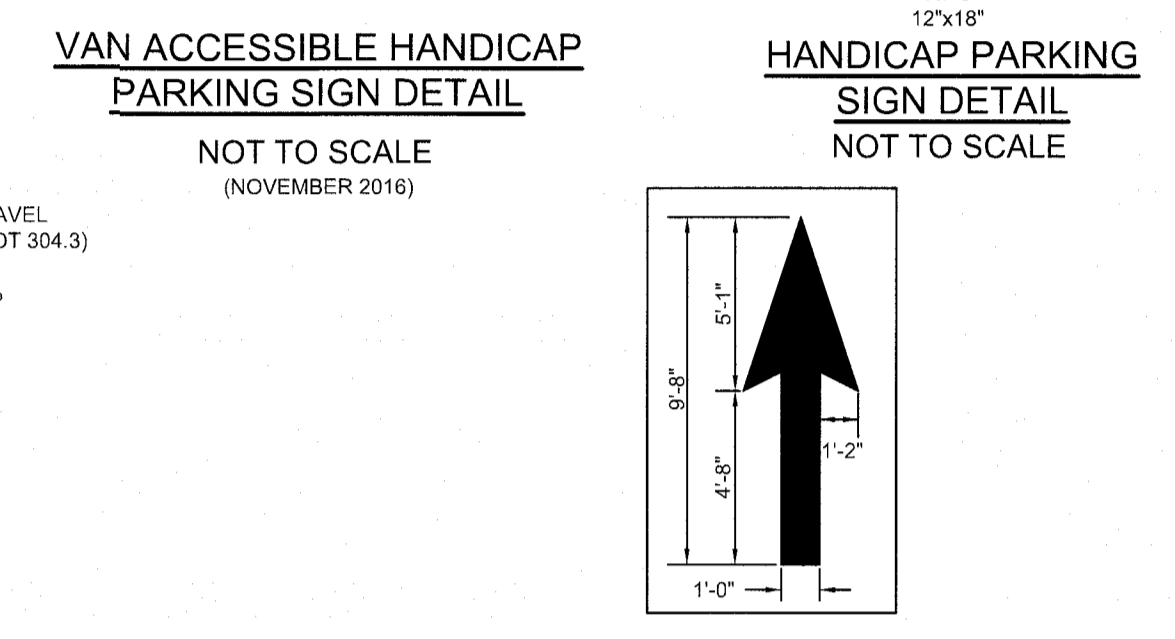
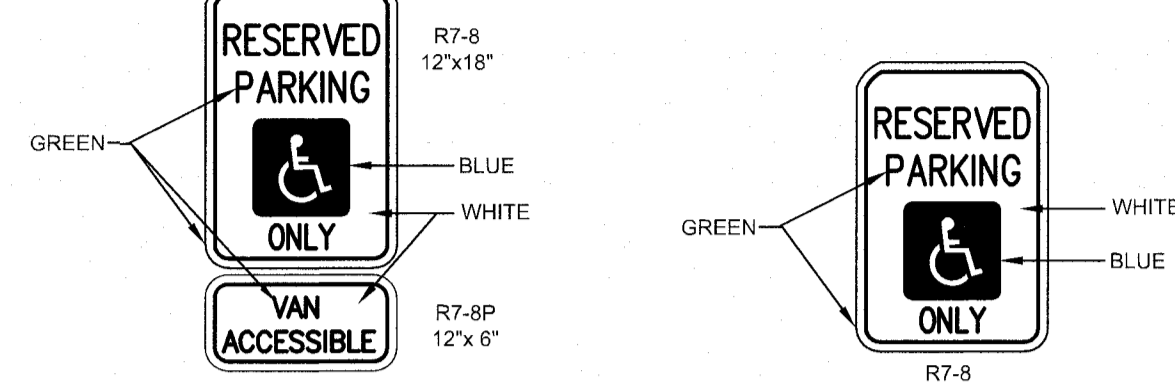
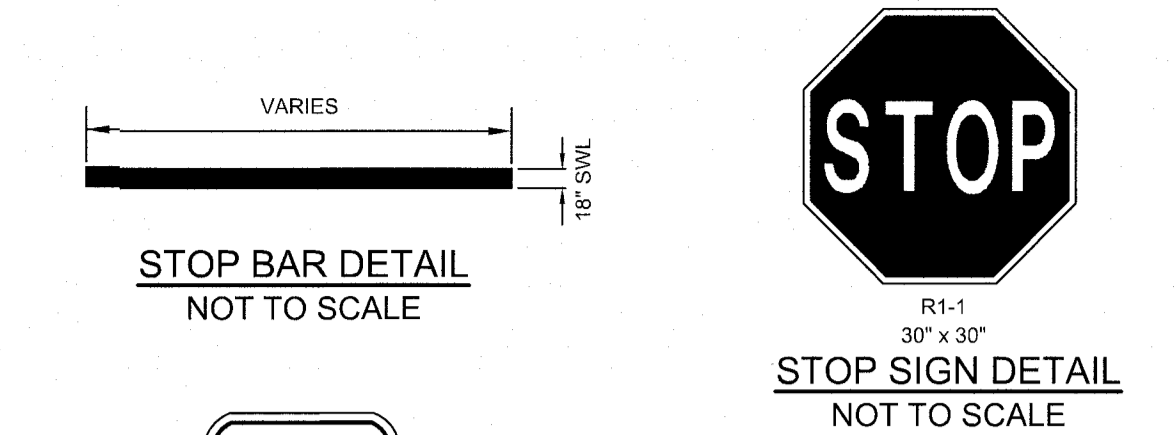
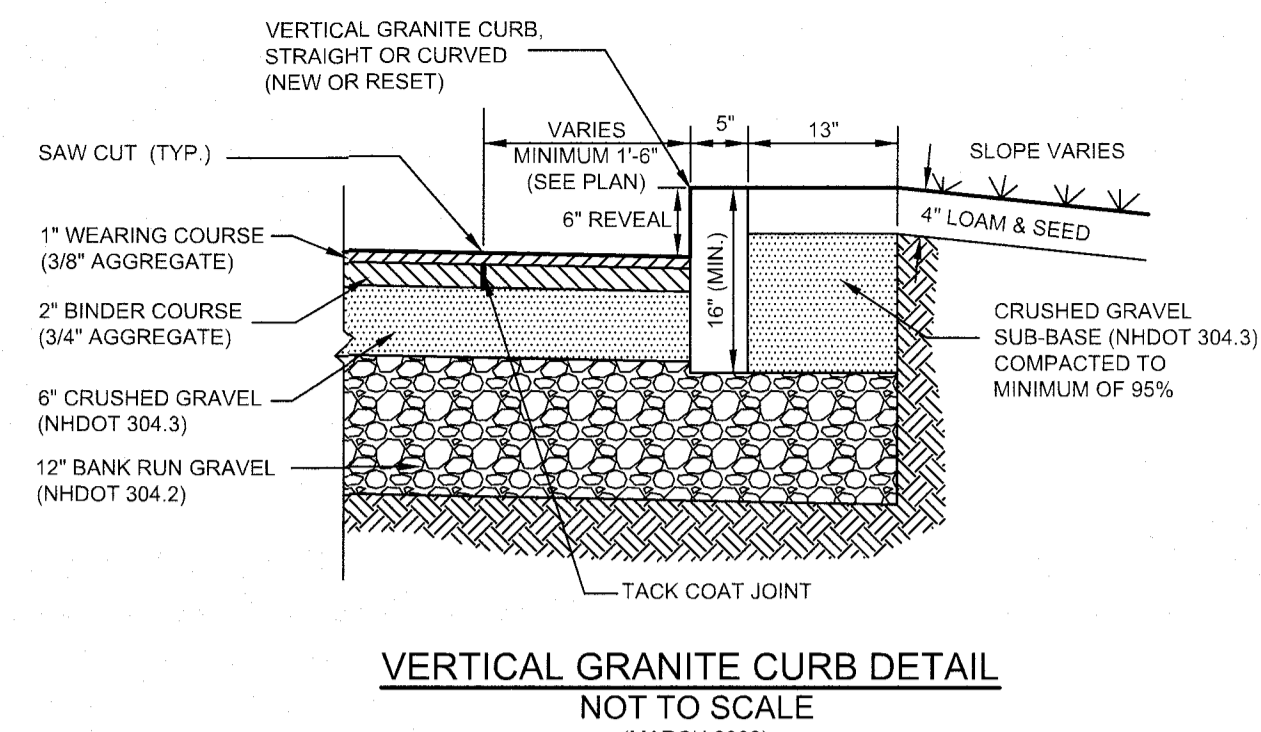
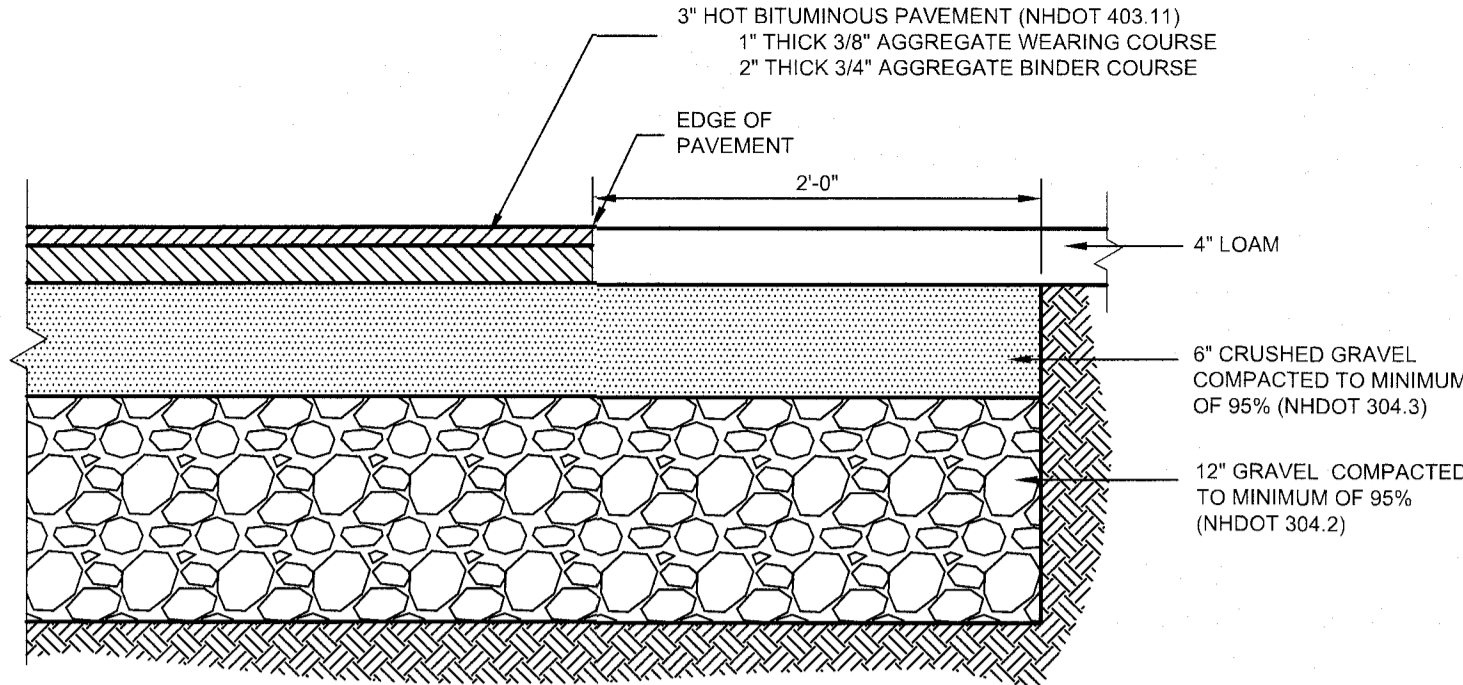
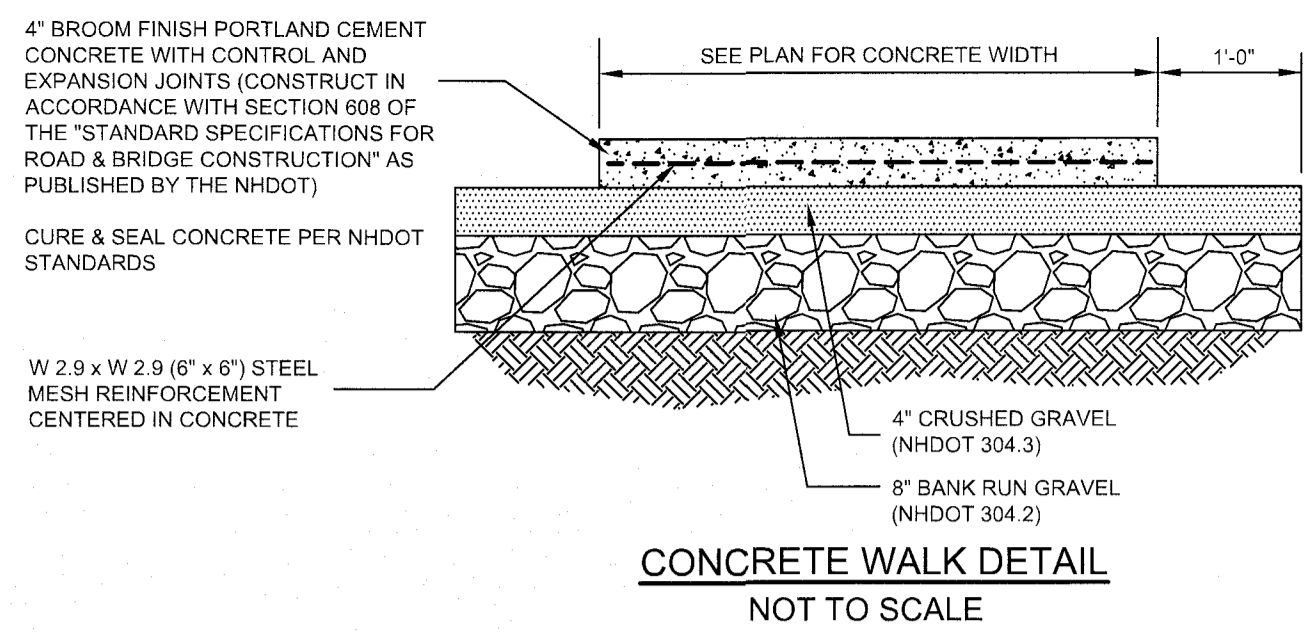
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

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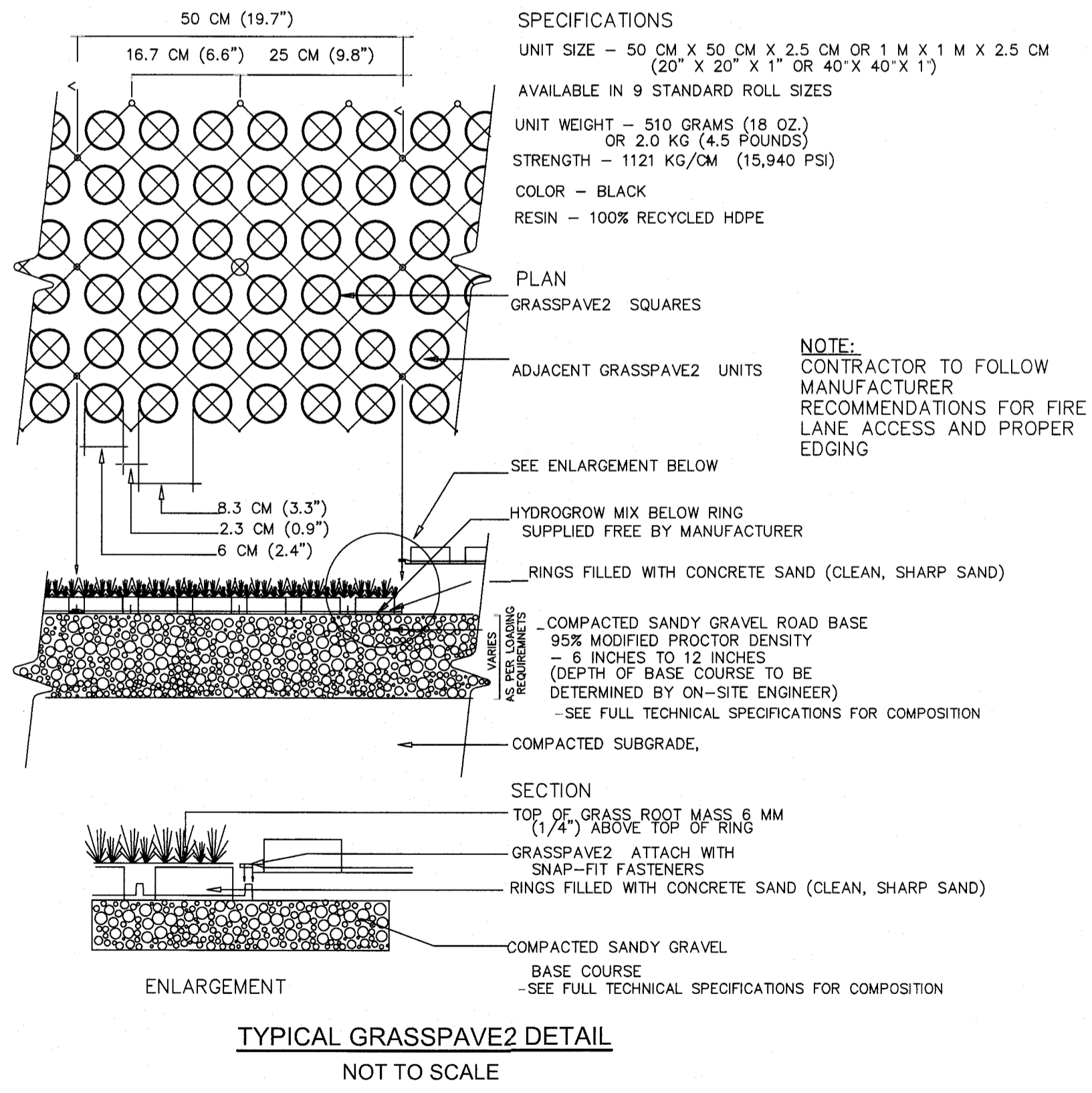
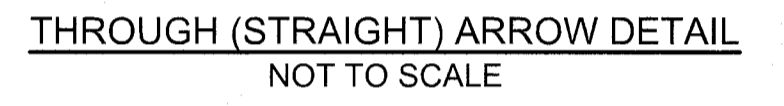
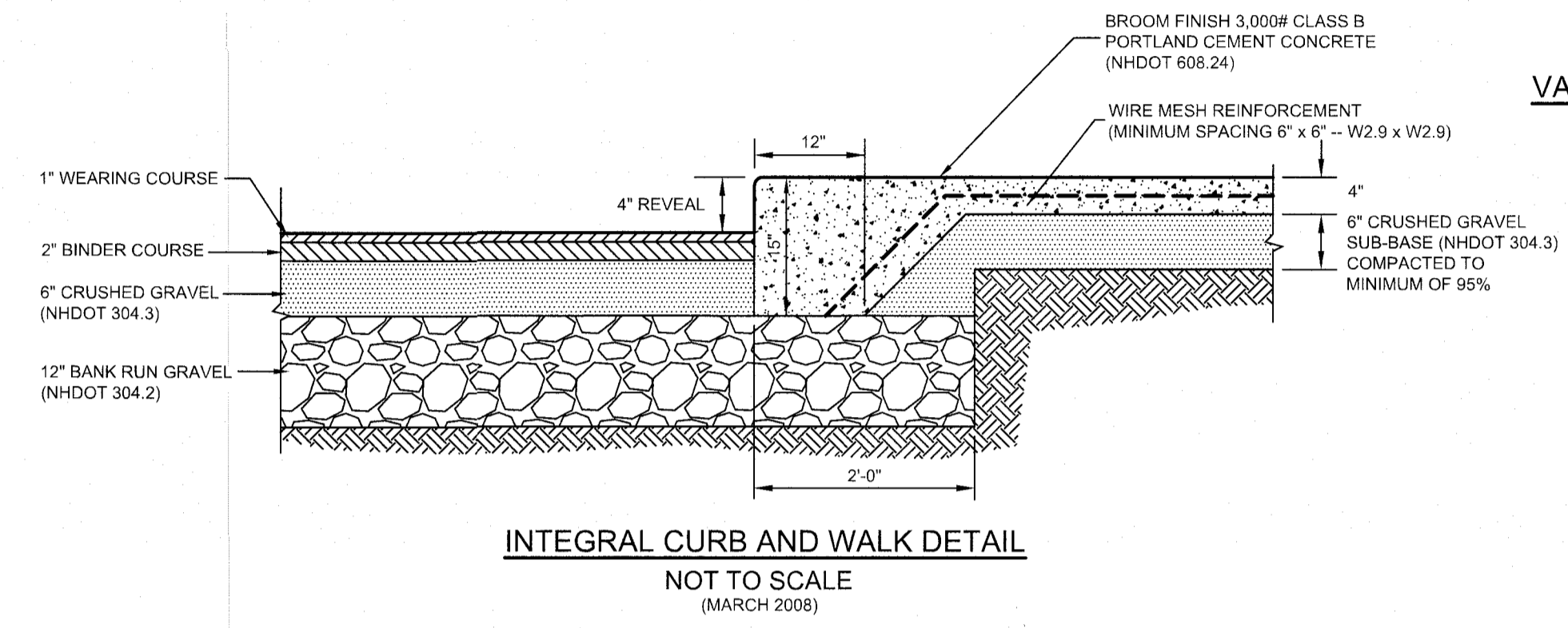
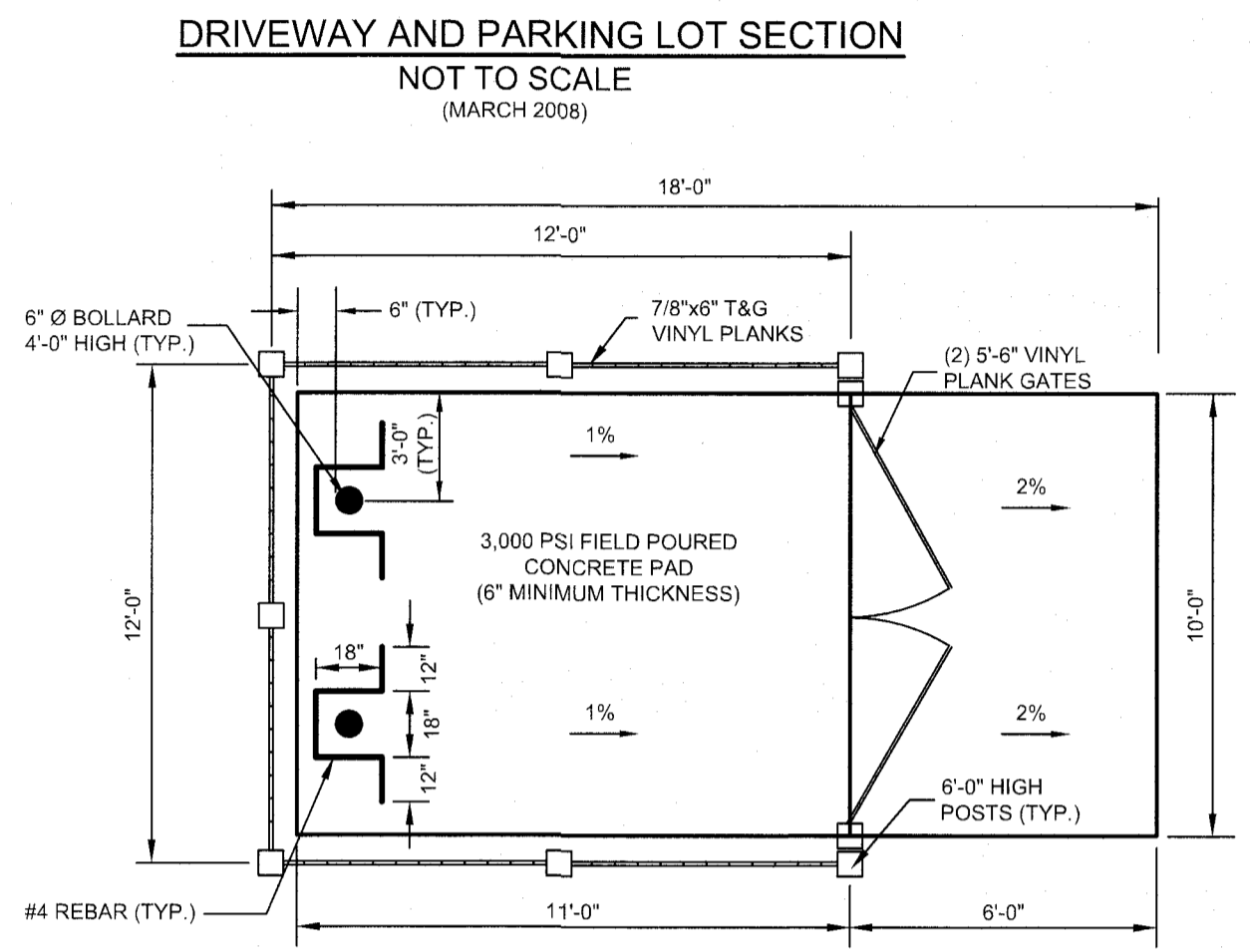
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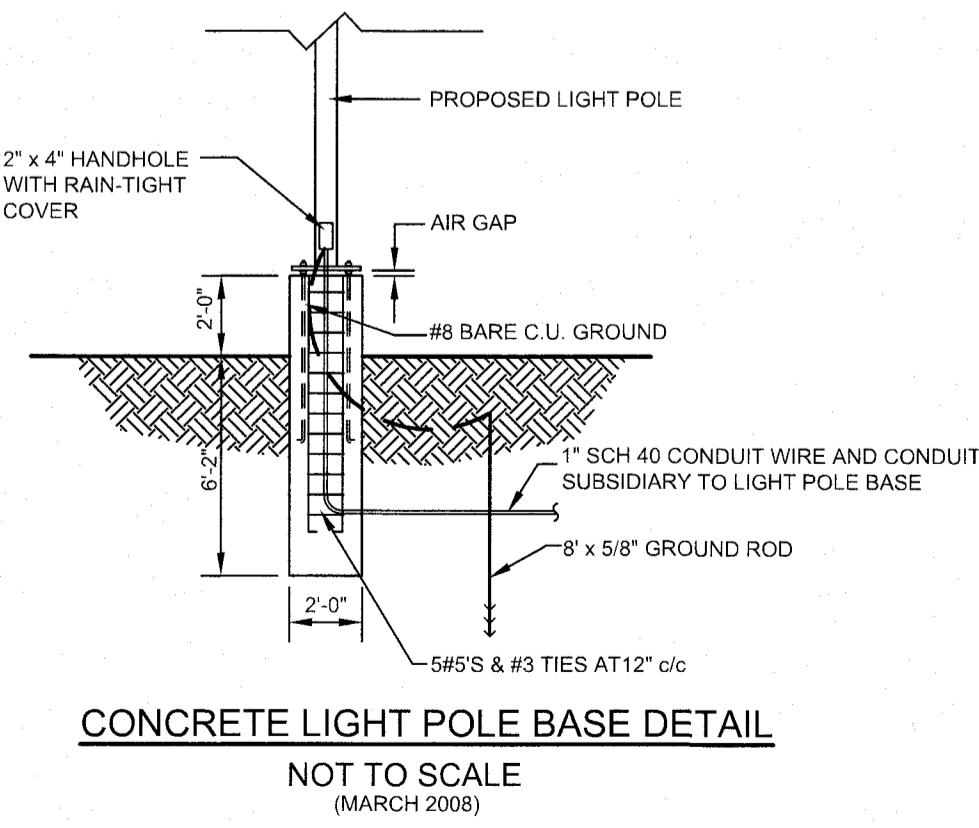
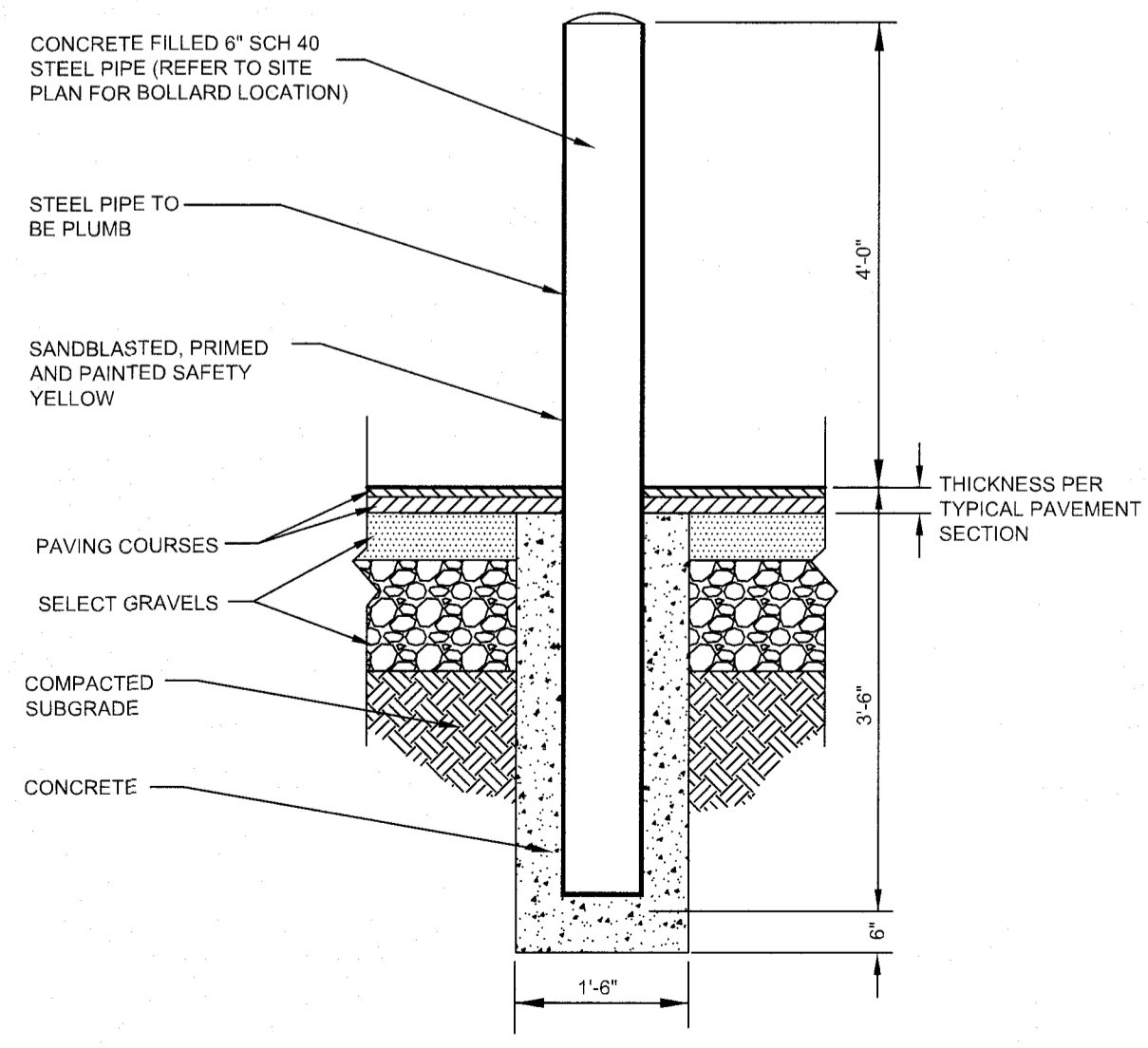
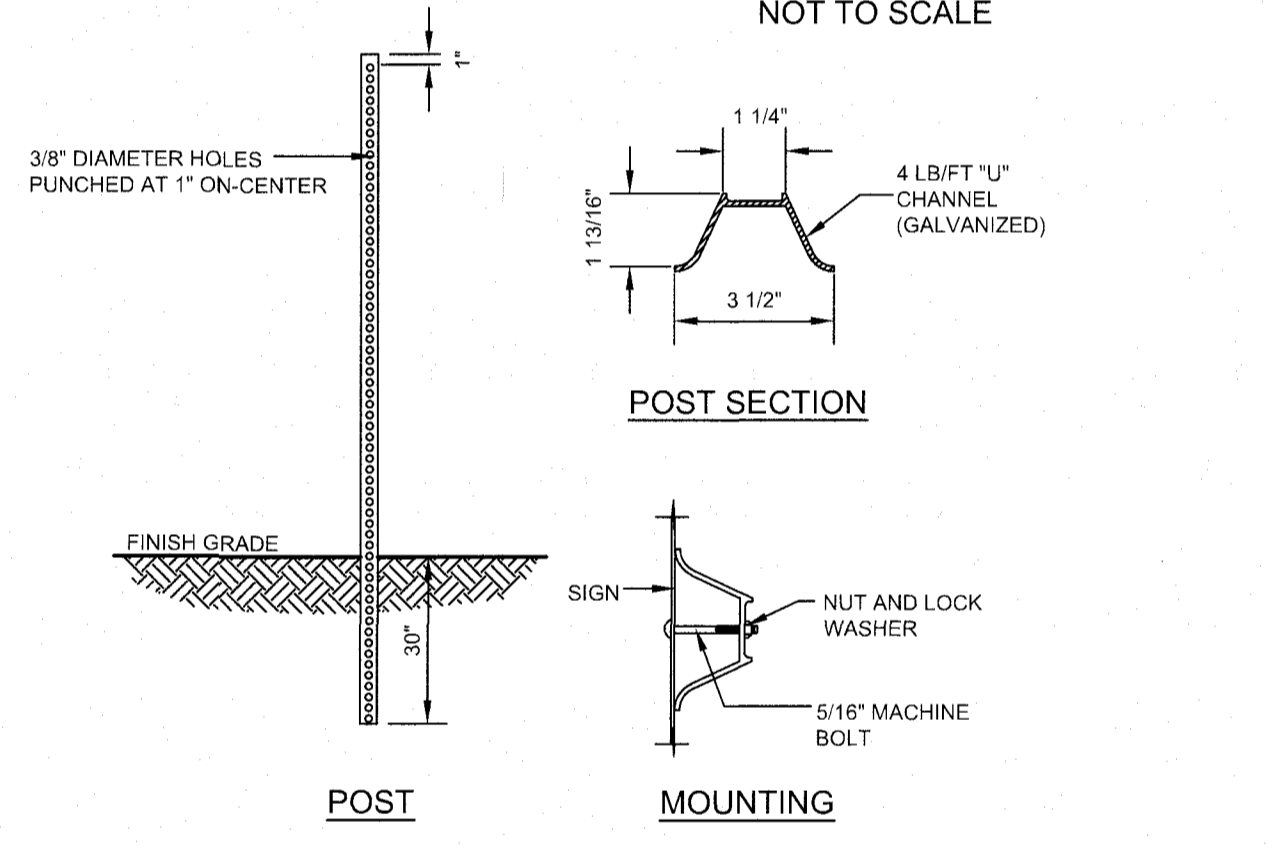
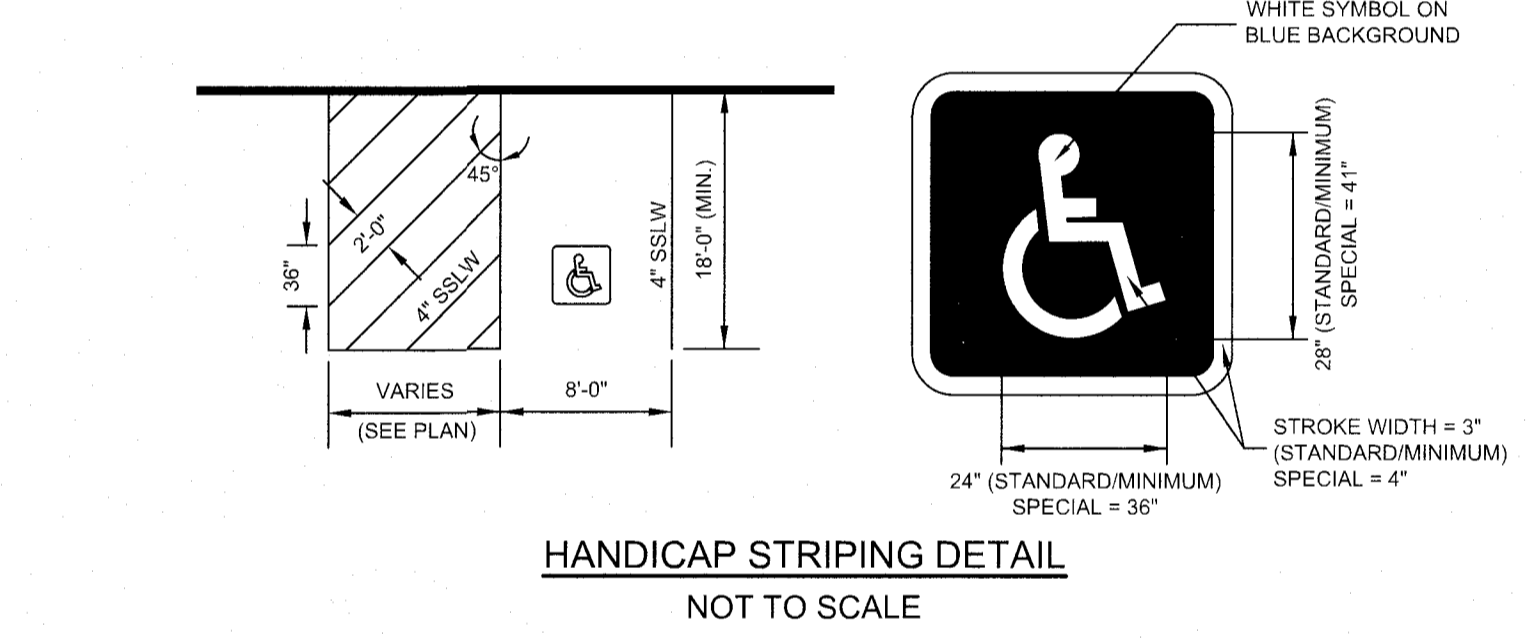
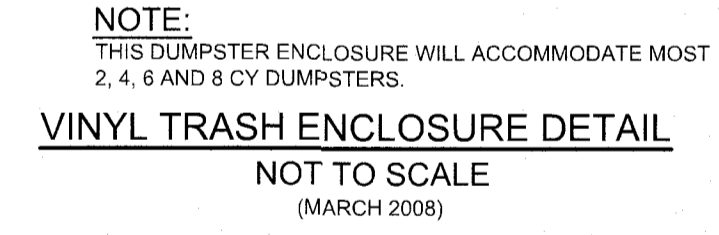
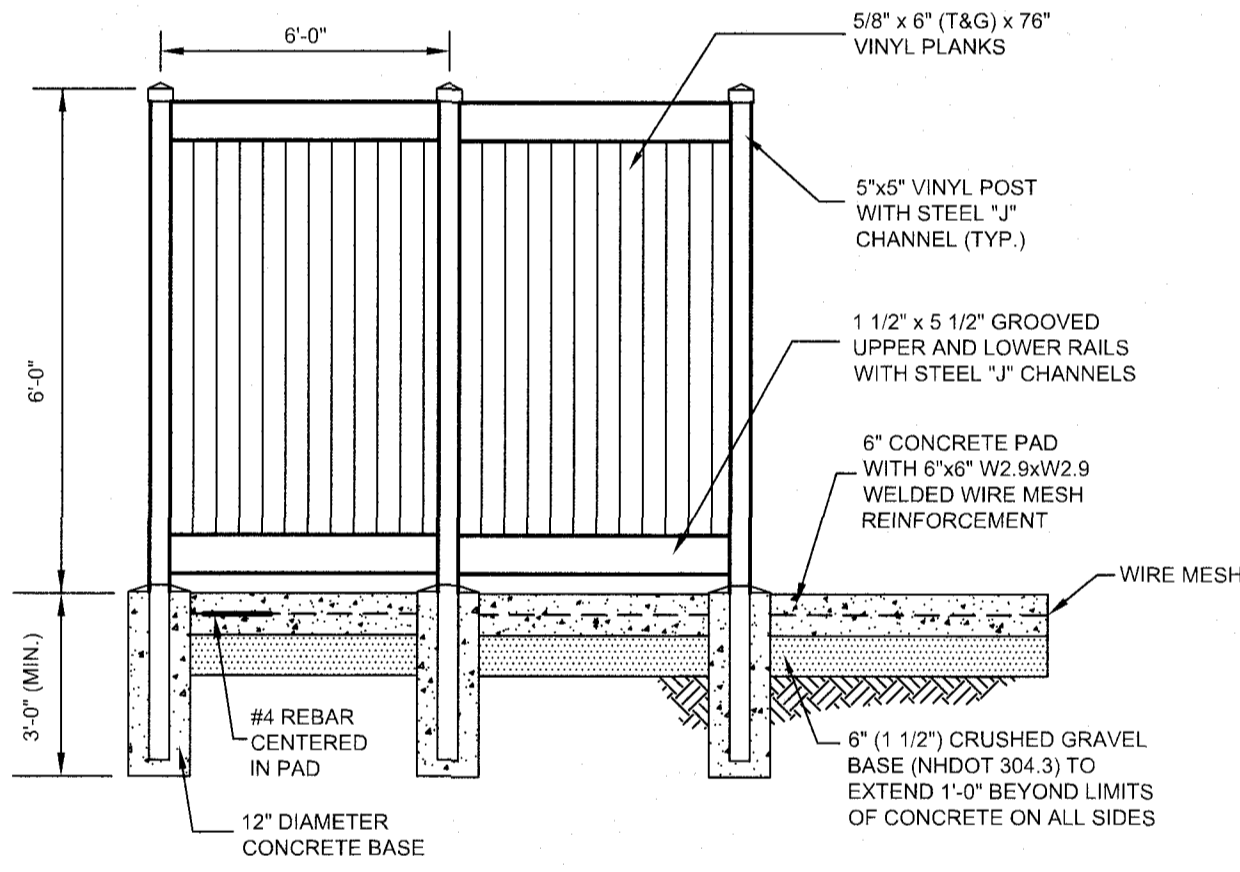


- NOTES:**
- A BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP SHALL BE USED ON PORTLAND CEMENT CONCRETE RAMPS.
 - MAINTAIN THE NORMAL PAVEMENT PROFILE THROUGHOUT THE RAMP AREA.
 - MAINTAIN A MAXIMUM 1/4" OF CURB REVEAL AT THE RAMP. SEE SECTION A-A



- SPECIFICATIONS**
- UNIT SIZE - 50 CM X 50 CM X 2.5 CM OR 1 M X 1 M X 2.5 CM (20" X 20" X 1" OR 40" X 40" X 1")
 - AVAILABLE IN 9 STANDARD ROLL SIZES
 - UNIT WEIGHT - 510 GRAMS (18 OZ.) OR 2.0 KG (4.5 POUNDS)
 - STRENGTH - 1121 KG/CM (15,940 PSI)
 - COLOR - BLACK
 - RESIN - 100% RECYCLED HDPE

NOTE: CONTRACTOR TO FOLLOW MANUFACTURER RECOMMENDATIONS FOR FIRE LANE ACCESS AND PROPER EDGING



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CONSTRUCTION DETAILS
BLUEBIRD SELF STORAGE

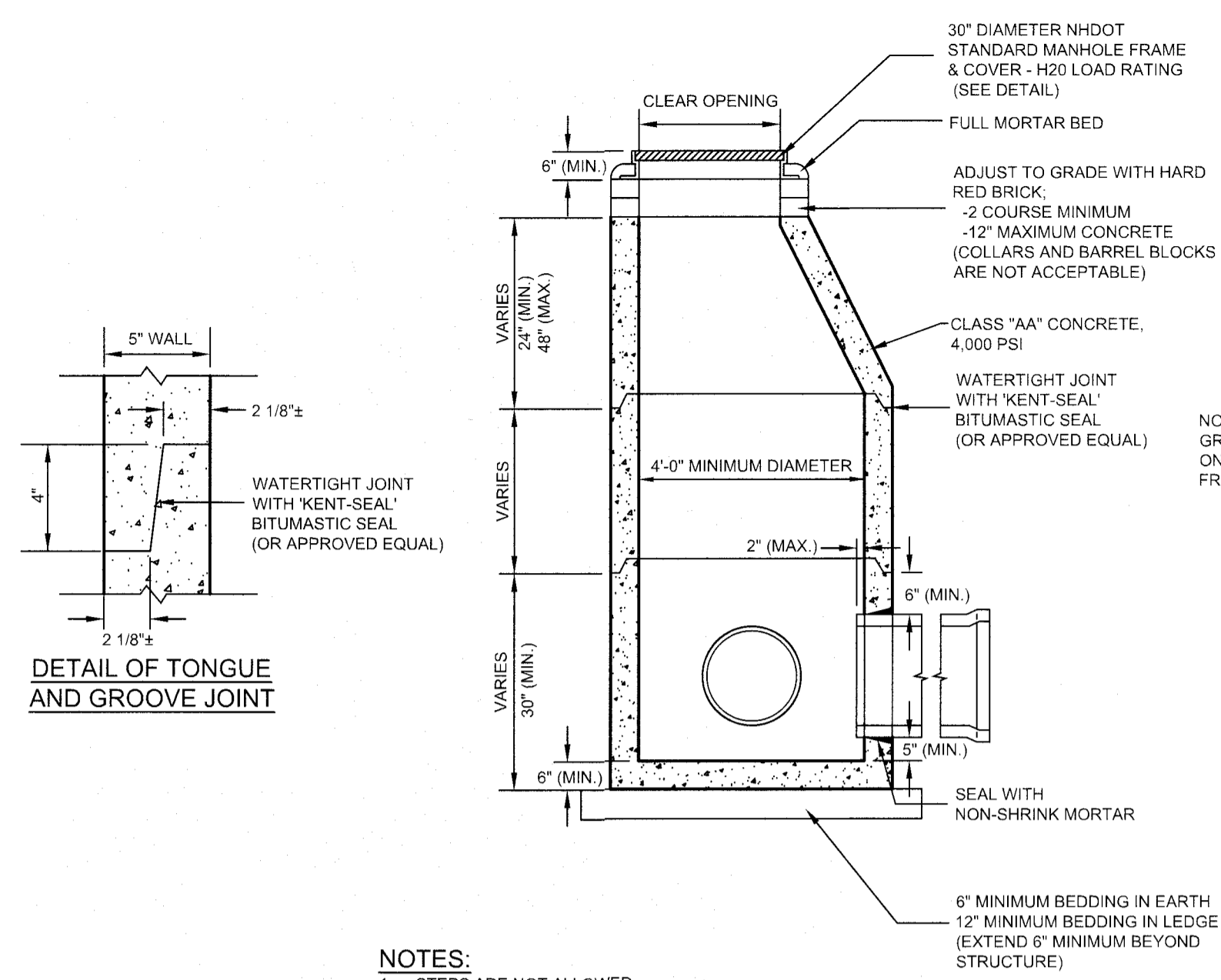
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
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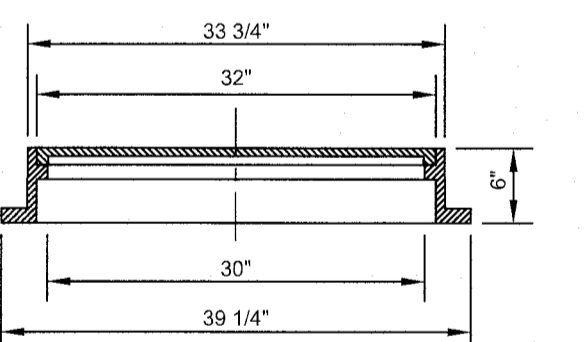
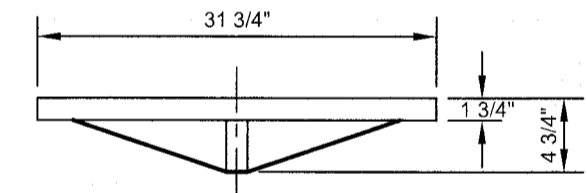
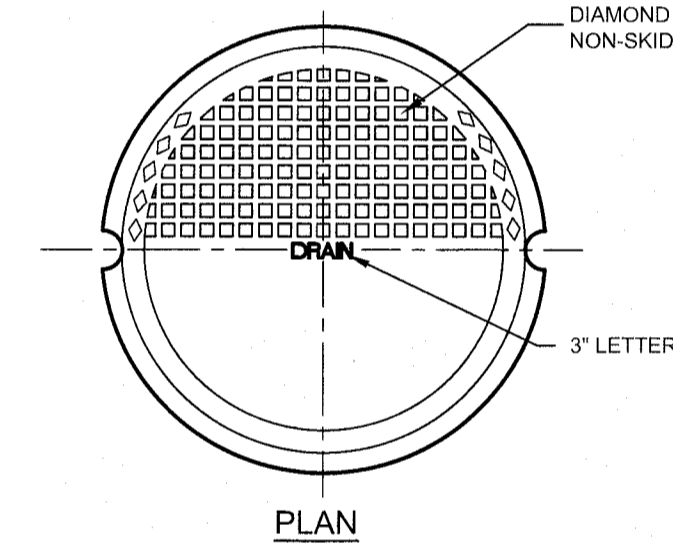
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PROJECT NO: 21-0709-3 SHEET 16 OF 23



- NOTES:**
- STEPS ARE NOT ALLOWED.
 - ALL SECTIONS SHALL BE CONCRETE CLASS AA (4,000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE WALL.
 - THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
 - MATERIALS AND CONSTRUCTION TO NHDOT STANDARDS.

PRECAST REINFORCED DRAIN MANHOLE DETAIL
NOT TO SCALE
(MARCH 2008)



DRAIN MANHOLE FRAME AND COVER DETAIL
NOT TO SCALE
(JANUARY 2012)

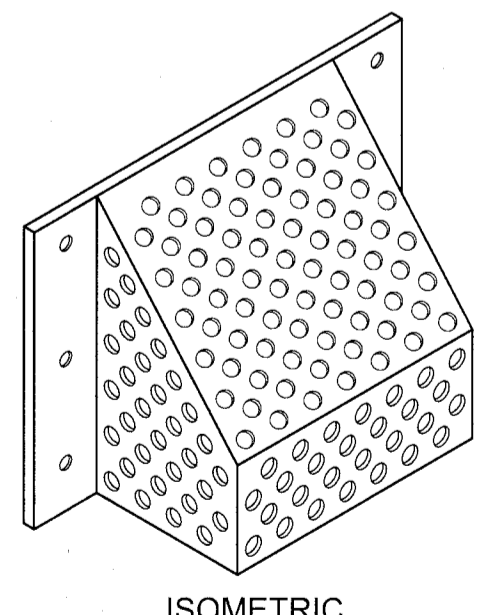
- NOTES:**
NEW HAMPSHIRE MAINTAINS A CLEAR OPENING DESIGNATION OF 30\"/>

FEATURES:

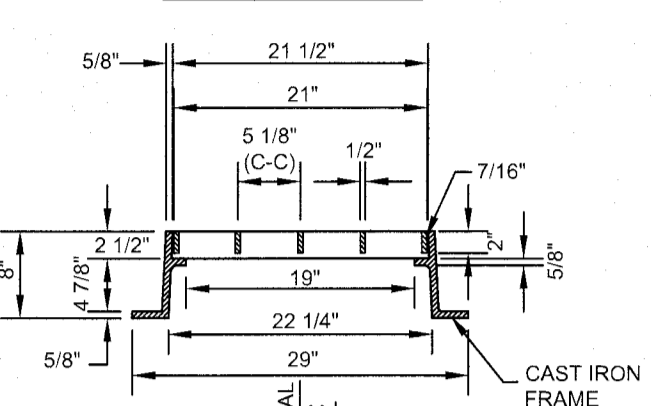
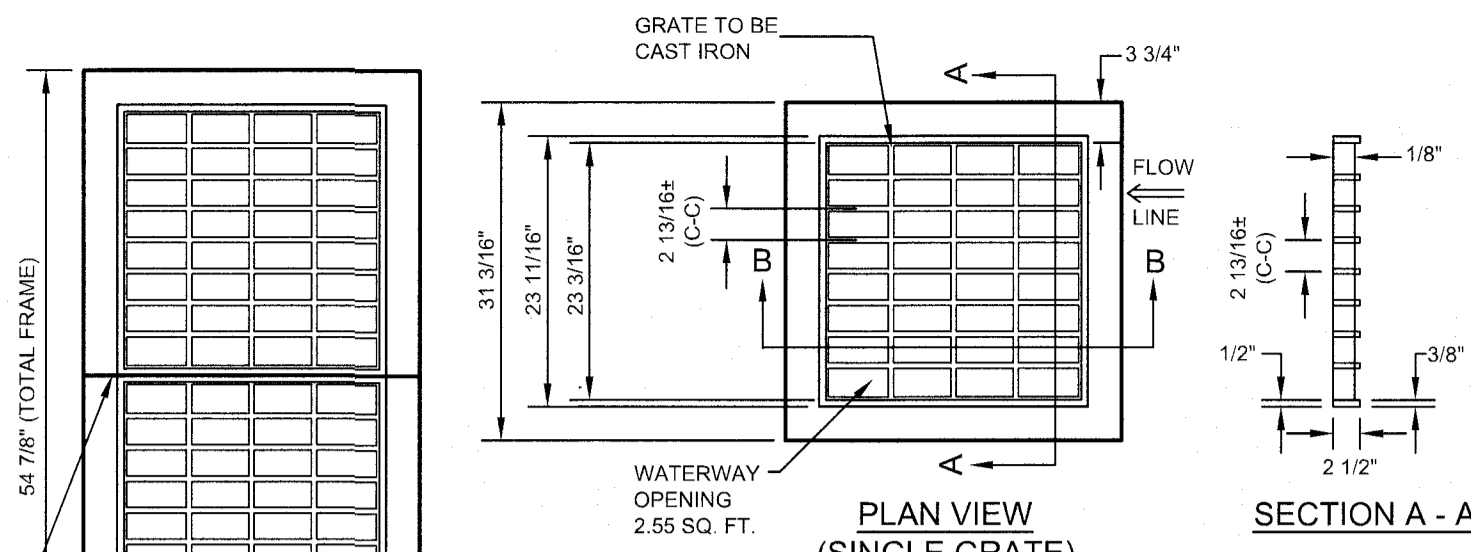
 - 3\"/>
 - COVERS MARKED DRAIN
 - NONROCKING COVER
 - DIAMOND SURFACE DESIGN

SPECIFICATIONS:

 - FULLY MACHINED FRAME AND COVER
 - H-20 LOAD RATED
 - GRAY CAST IRON MEETS ASTM A48 CLASS 30

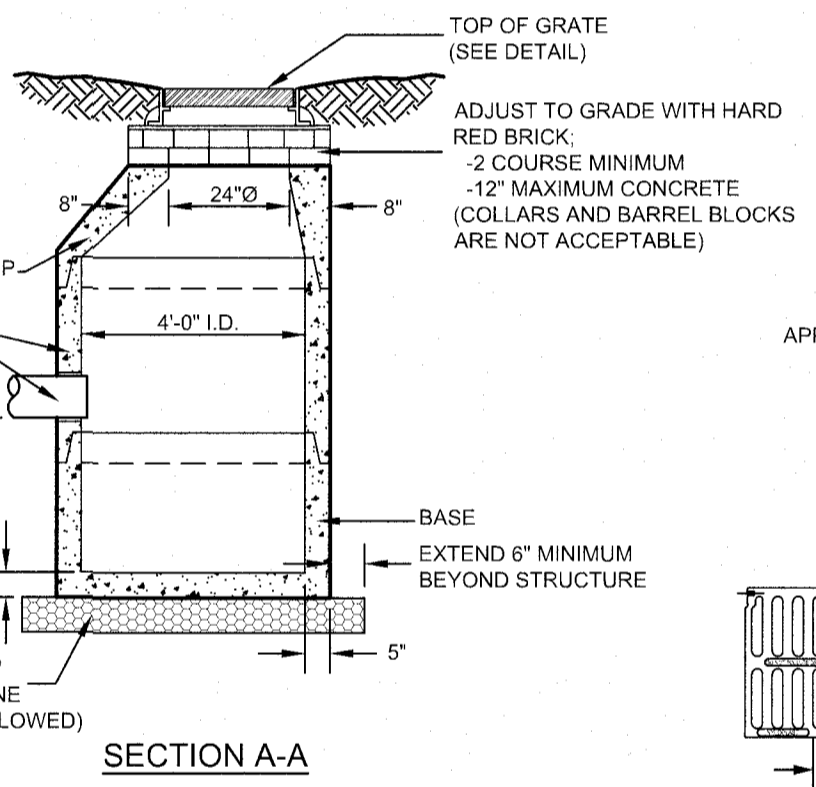
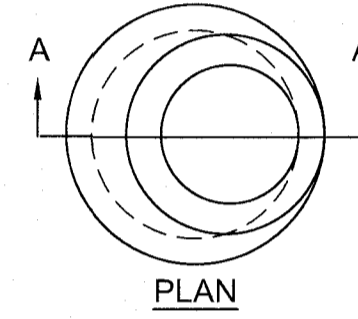


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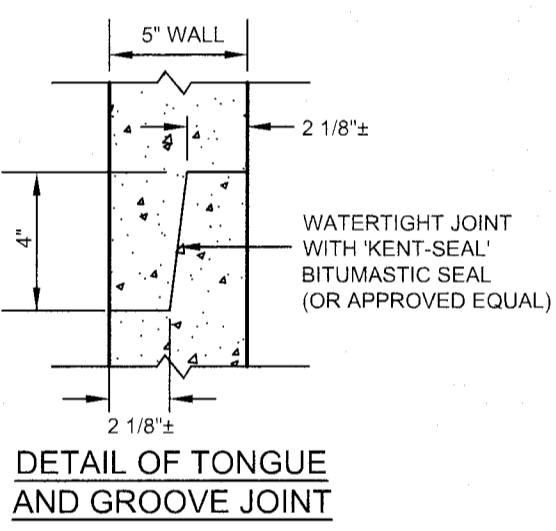


TYPE B FRAME & GRATE DETAIL
NOT TO SCALE
(MARCH 2008)

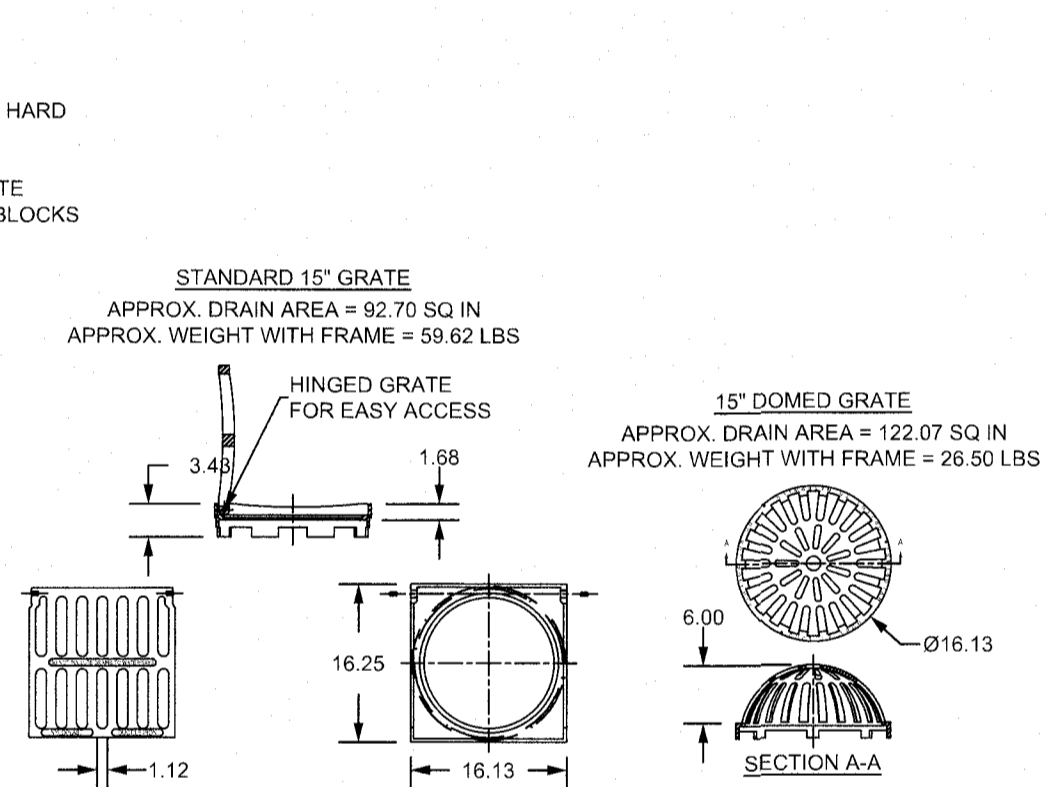
- NOTES:**
- ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCH PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
 - THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCH PER LINEAR FOOT.
 - RISER OF 1\", 2\", 3\" & 4\" CAN BE USED TO REACH DESIRED DEPTH.
 - MATERIALS AND CONSTRUCTION TO NHDOT STANDARDS.



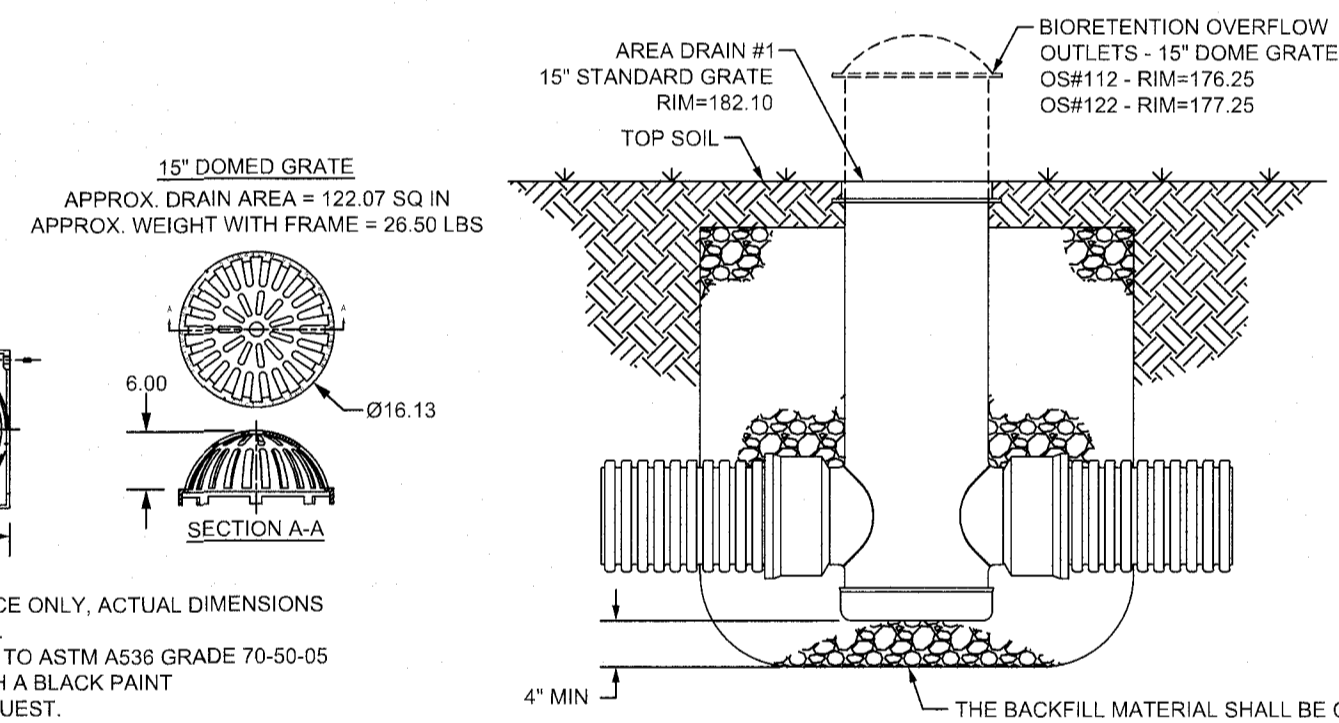
PRECAST REINFORCED CATCH BASIN
NOT TO SCALE
(MAY 2012)



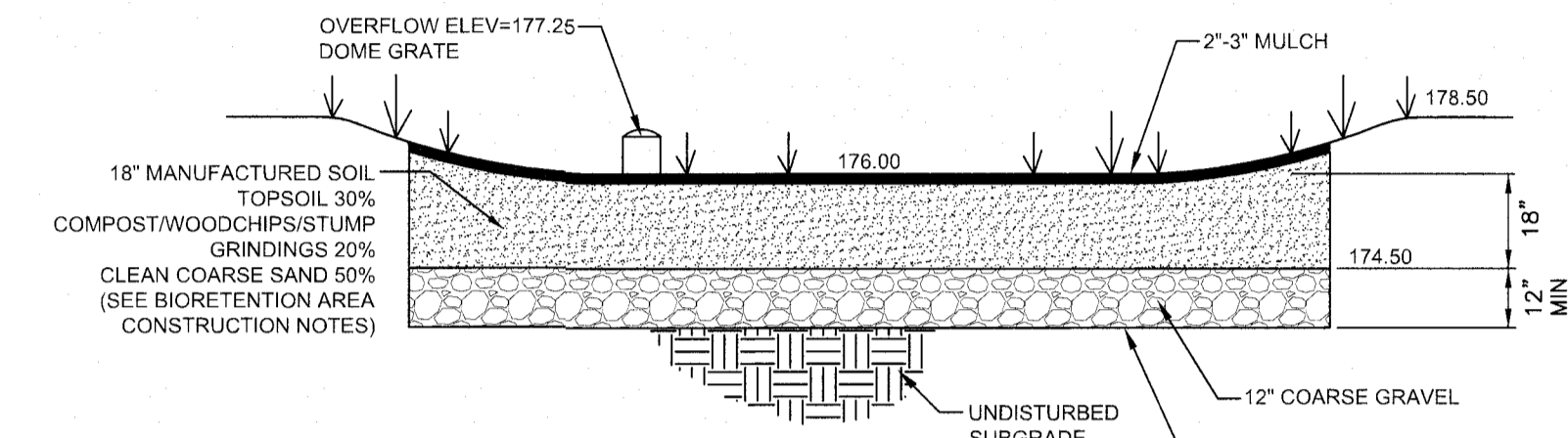
DETAIL OF TONGUE AND GROOVE JOINT



NYLOPLAST 15\"/> NOT TO SCALE

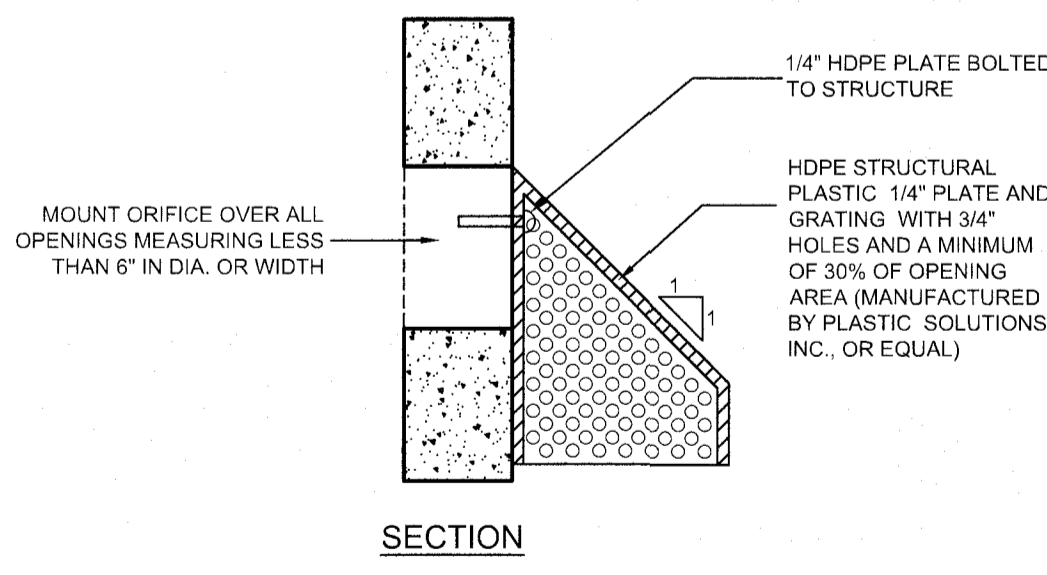


BIORETENTION POND #2
NOT TO SCALE

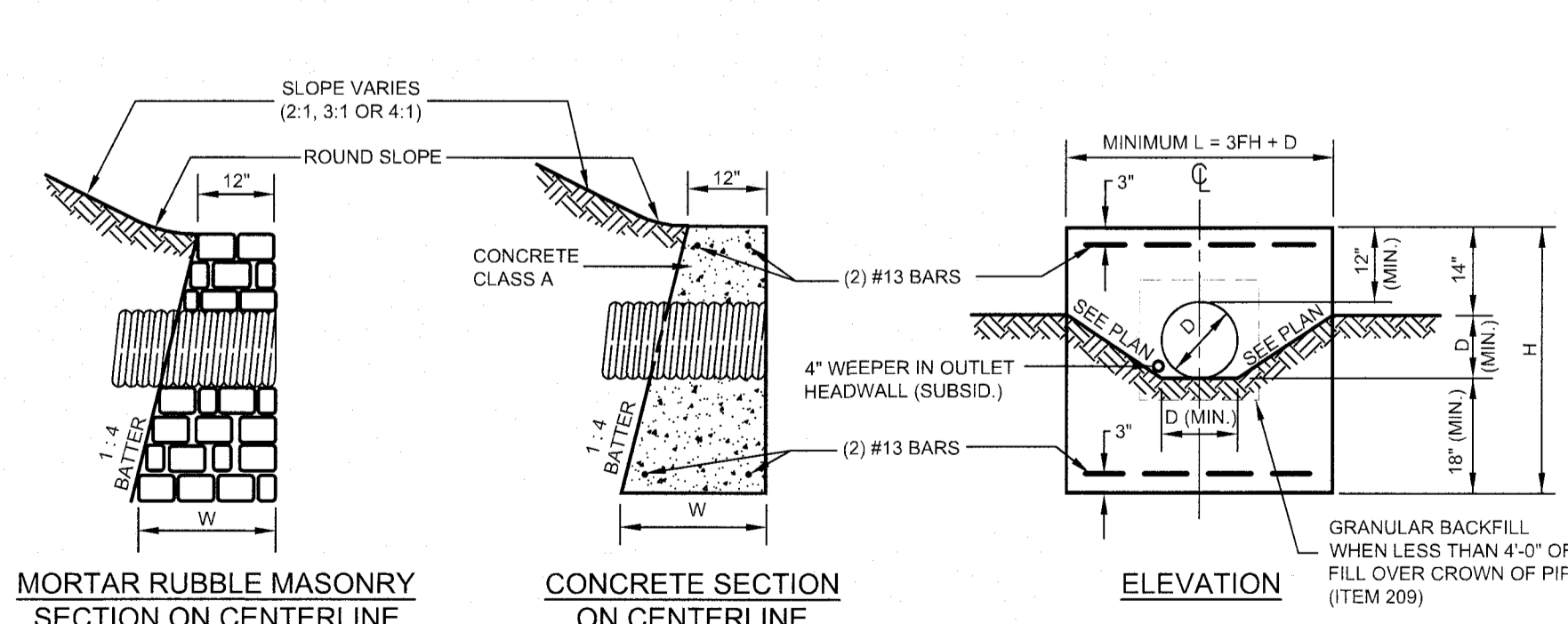


BIORETENTION POND #3
NOT TO SCALE

COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
LOAMY COARSE SAND	70 TO 80	10	85 TO 100
		20	70 TO 100
		60	15 TO 40
		200	8 TO 15



TRASH RACK DETAIL
NOT TO SCALE



MORTAR RUBBLE MASONRY AND CONCRETE HEADWALLS
NOT TO SCALE

DIAMETER D (INCH)	AREA OF PIPE (SF)	MASONRY PER FOOT OF WALL (CU. YD.)	MASONRY PER HOLE (CU. YD.)	MASONRY PER STANDARD HEADER (CU. YD.)	STEEL PER STANDARD HEADER (LB)	LENGTH OF BARS	PIPE EXC. 1' DEPTH (CU. YD.)	HEADER EXC. PER HEADER 1' DEPTH (CU. YD.)	ITEM 209 PER LINEAR FOOT	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	"L" HEADWALL		
													MASONRY IN CORNER FRUSTRUM (CU. YD.)	HEADER EXC. PER HEADER 1' DEPTH (CU. YD.)	
12"	0.79	0.186	1.08	0.61	9	3'-2"	0.111	0.789	0.30	3'-6"	3'-6"	10"	1'-10 1/2"	0.28	1.057
15"	1.23	0.262	1.73	0.85	11	3'-10"	0.120	0.947	0.35	4'-6"	3'-9"	1'-1"	1'-11 1/4"	0.31	1.232
18"	1.77	0.222	2.52	1.13	14	5'-2"	0.130	1.111	0.39	5'-6"	4'-0"	1'-4"	2'-0"	0.35	1.406

NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY.

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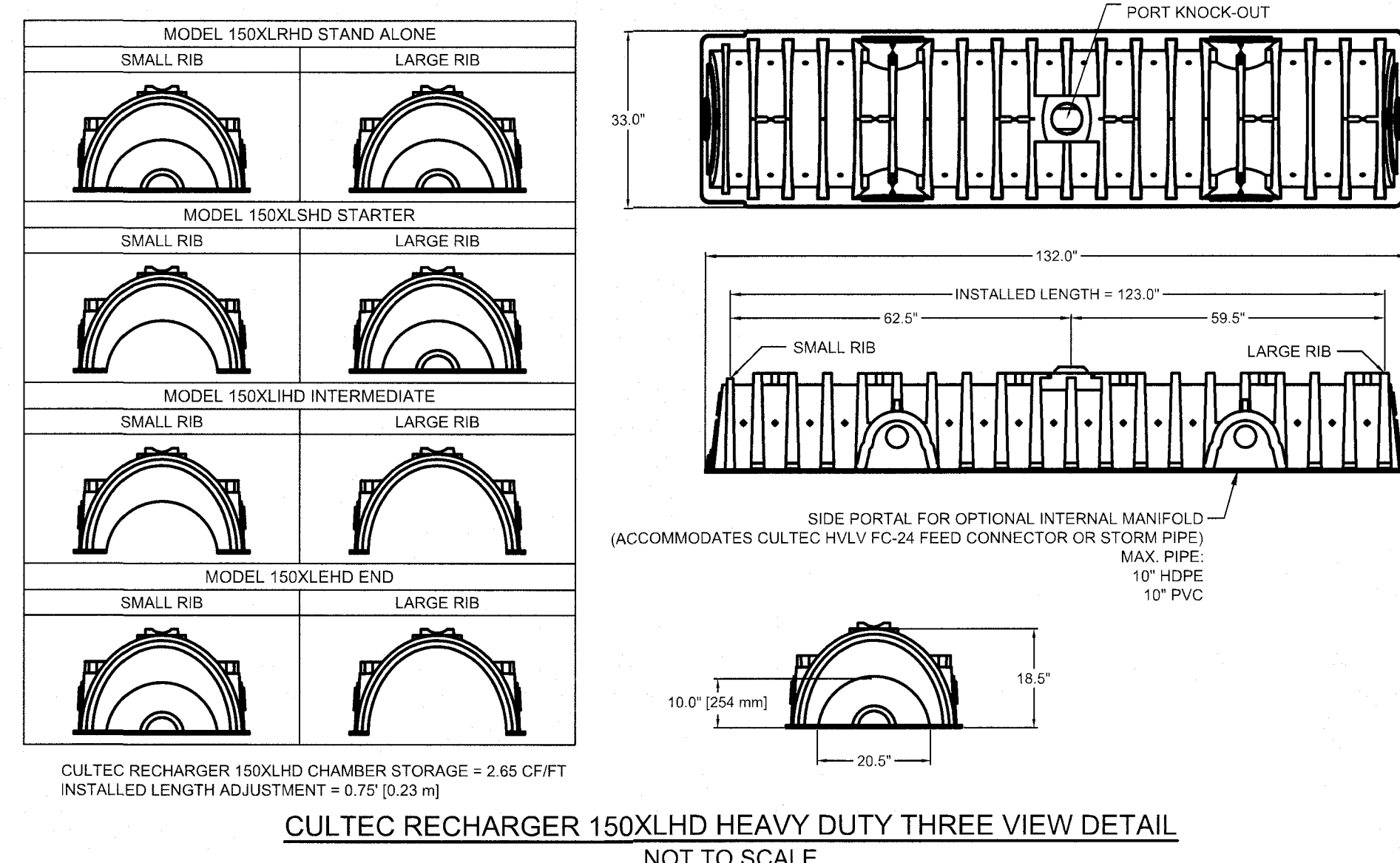
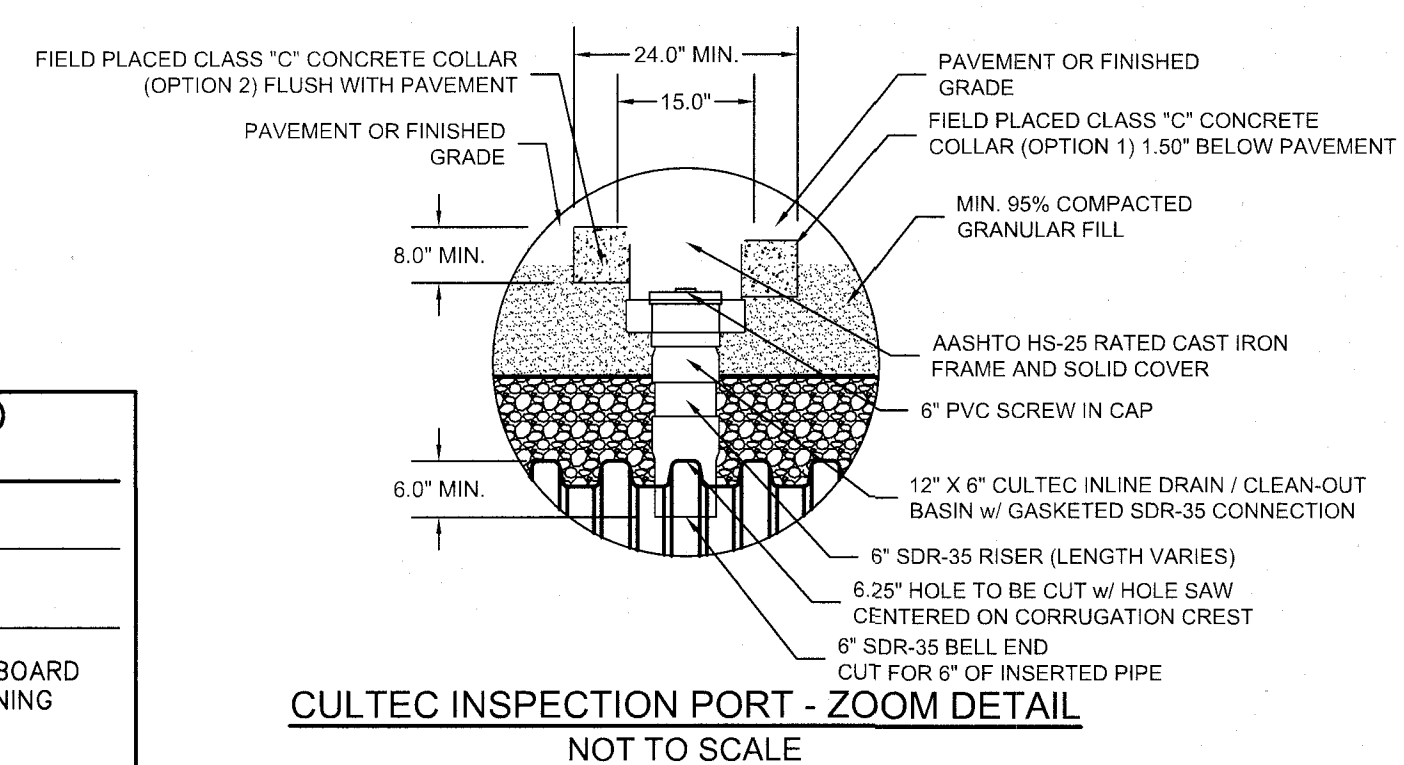
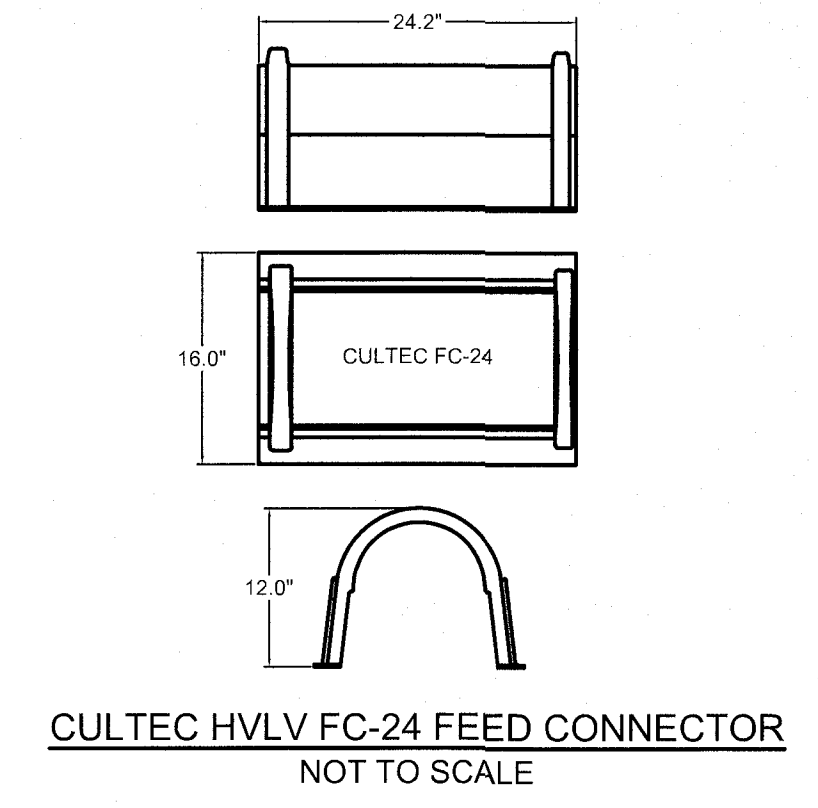
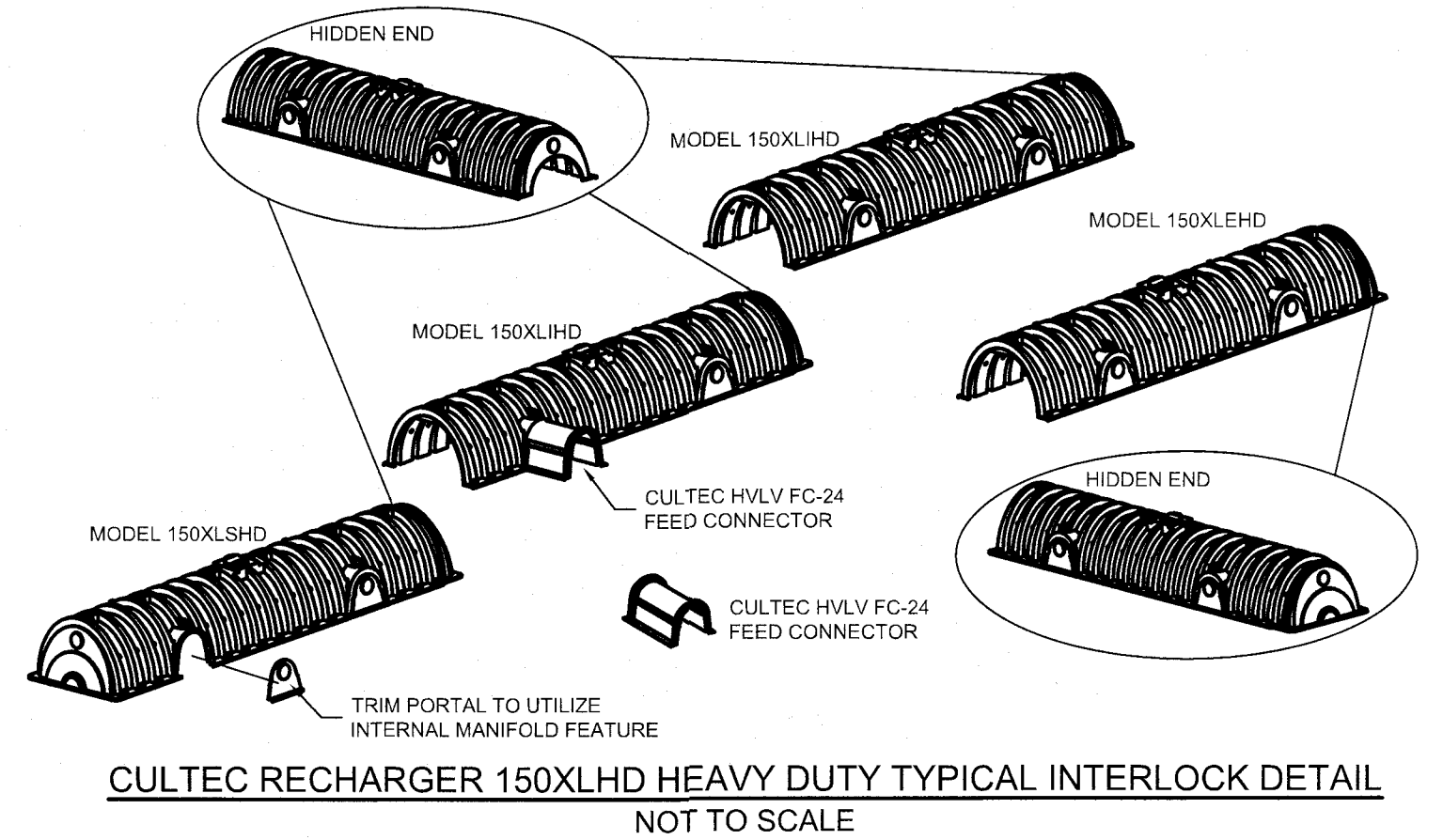
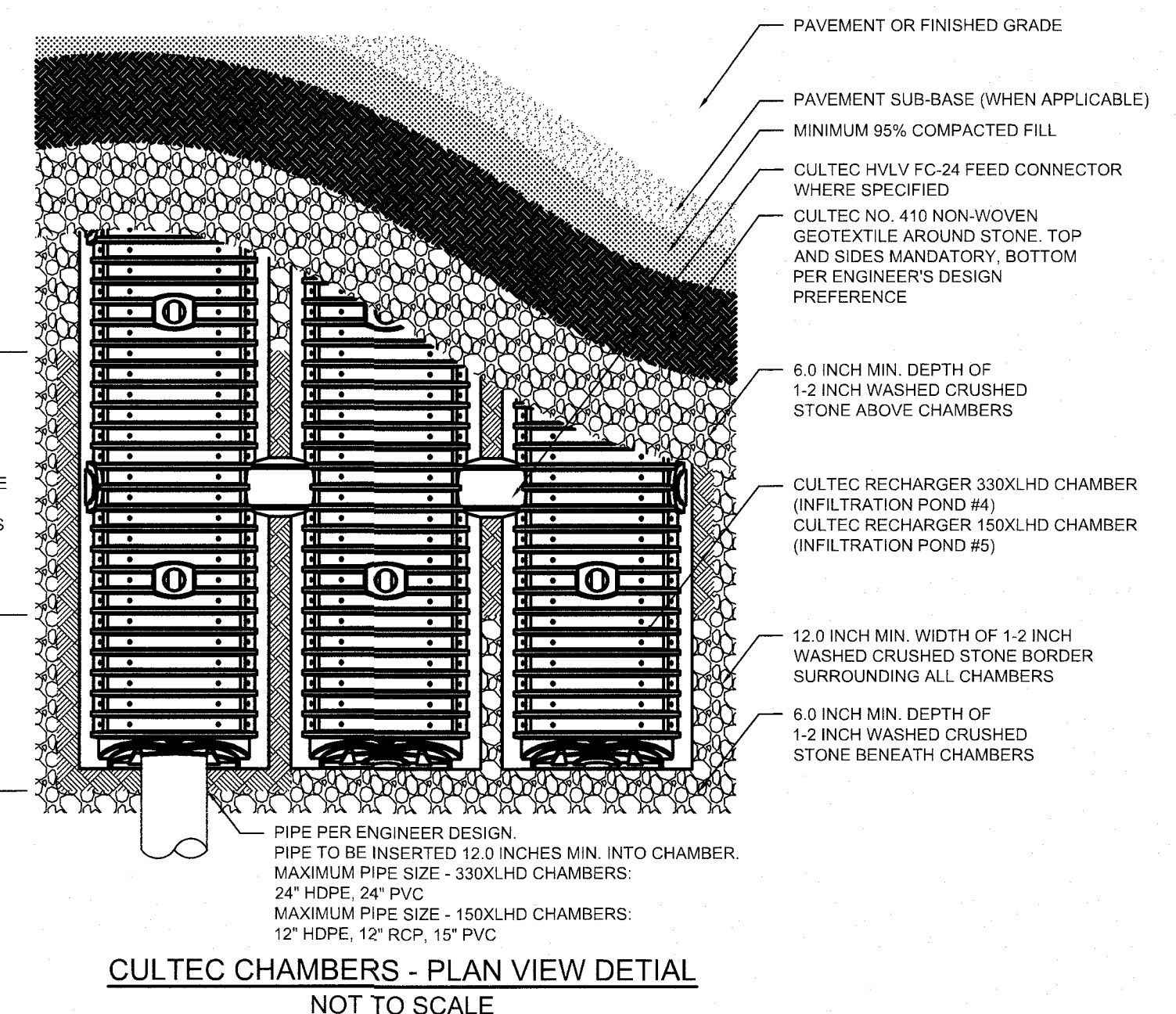
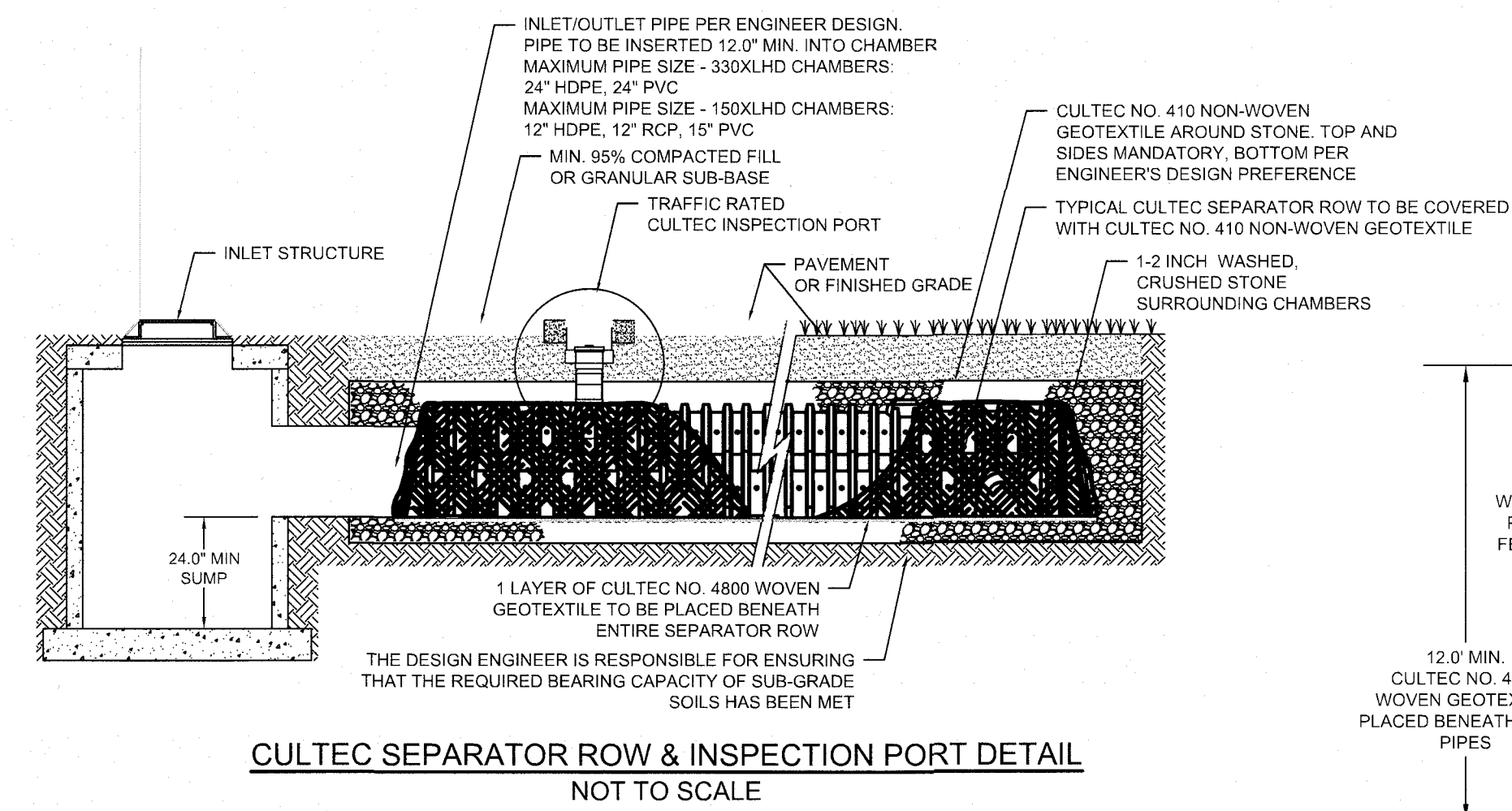
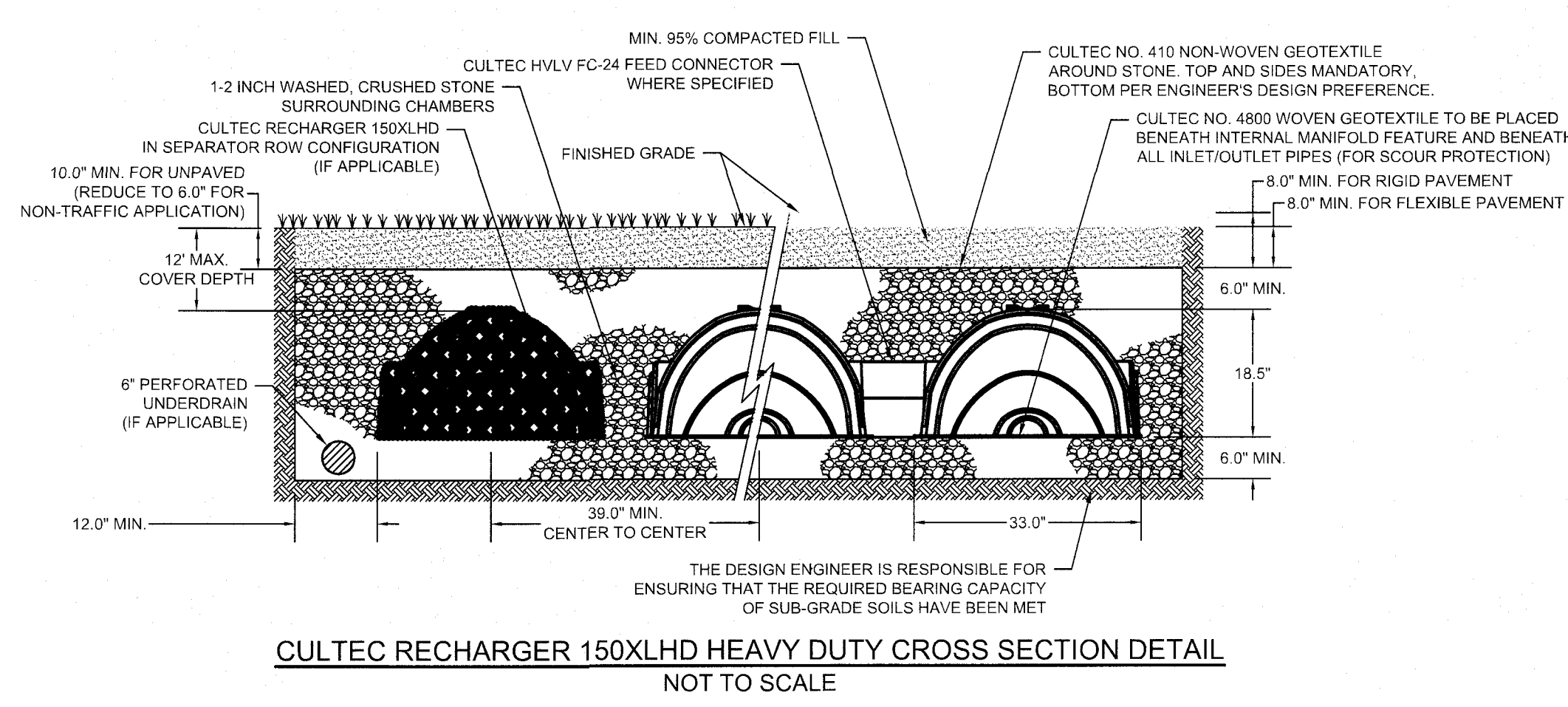
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SHEET 17 OF 23

TP #1	TP #2	TP #3	TP #4	TP #5	TP #6	TP #7	TP #8	TP #9
LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: 13'	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: 12'	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 10-1-2021 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE	LOGGED BY GPC PERC TEST @ 20" DATE: 1-3-2022 PERC RATE: 2 MIN./INCH IMPERVIOUS LAYER: NONE WATER ENCOUNTERED: NONE
0" 12" 24" 48" E.S.H.W.T. 72" BOTTOM OF HOLE	0" 12" 24" 48" E.S.H.W.T. 10' BOTTOM OF HOLE	0" 8" 14" 26" 30" 48" 10' SHWT 14' BOTTOM OF HOLE	0" 12" 20" 10' SHWT 13' BOTTOM OF HOLE	0" 24" 32" 66" BOTTOM OF HOLE	0" 18" 36" 15' BOTTOM OF HOLE	0" 12" 24" 48" E.S.H.W.T. 60" BOTTOM OF HOLE	0" 12" 24" 48" E.S.H.W.T. 15' BOTTOM OF HOLE	0" 12" 24" 48" E.S.H.W.T. 16' BOTTOM OF HOLE
TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 6/2, GRANULAR, FRIABLE, SAND, FEW ROOTS 10YR 6/1, FIRM, SILTY SAND, W/ REDOX FEATURES	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/2, GRANULAR, FRIABLE, SAND, FEW ROOTS	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE LOAMY SAND, ROOTS 10YR 6/2, GRANULAR, FRIABLE SAND, ROOTS BURIED "A" 10YR 4/6, GRANULAR, FRIABLE, SAND, FEW ROOTS 10YR 7/4, SAND,	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/6, GRANULAR, FRIABLE, SAND, FEW ROOTS TO 40"	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/6, GRANULAR, FRIABLE, SAND, FEW ROOTS TO 40"	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/2, GRANULAR, FRIABLE, SAND	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/2, GRANULAR, FRIABLE, SAND	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 8/3, GRANULAR, FRIABLE, SAND, FEW ROOTS 10YR 7/3, SAND	TOPSOIL 10YR 5/8, GRANULAR, FRIABLE SAND, ROOTS 10YR 7/2, GRANULAR, FRIABLE, SAND, FEW ROOTS



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CULTEC RECHARGER® 150XLHD SPECIFICATIONS

GENERAL
CULTEC RECHARGER® 150XLHD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR
- THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 150XLHD SHALL BE 18.5 INCHES (470 mm) TALL, 33 INCHES (838 mm) WIDE AND 11 FEET (3.35 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 150XLHD SHALL BE 10.25 FEET (3.12 m).
- MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 12 INCHES (300 mm) HDPE OR 15" (375 mm) SMOOTH-WALL PVC.
- THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL INSIDE DIMENSIONS OF EACH SIDE PORTAL SHALL BE 8.5 INCHES (216 mm) HIGH BY 12 INCHES (304 mm) WIDE. MAXIMUM ALLOWABLE OUTER DIAMETER (O.D.) PIPE SIZE IN THE SIDE PORTAL IS 10.25 INCHES (260 mm).
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV® FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (615 mm) LONG.
- THE NOMINAL STORAGE VOLUME OF THE RECHARGER 150XLHD CHAMBER SHALL BE 2.650 FT³ / FT (0.246 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 150XLHD SHALL BE 27.18 FT³ / UNIT (0.77 m³ / UNIT) - WITHOUT STONE.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE RECHARGER 150XLHD CHAMBER SHALL HAVE THIRTY DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER 150XLHD CHAMBER SHALL HAVE 20 CORRUGATIONS.
- THE ENDWALL OF THE CHAMBER, WHEN PRESENT, SHALL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
- THE RECHARGER 150XLHD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE ENDWALLS.
- THE RECHARGER 150XLHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 10 INCHES (254 mm) HIGH X 20.5 INCHES (521 mm) WIDE.
- THE RECHARGER 150XLHD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 10 INCHES (254 mm) HIGH X 20.5 INCHES (521 mm) WIDE.
- THE RECHARGER 150XLHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
- THE HVLV® FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE RECHARGER 150XLHD AND ACT AS CROSS FEED CONNECTIONS.
- CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- THE CHAMBER SHALL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.
- THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF IAPMO PS 63-2019, INCLUDING RESISTANCE TO AASHTO H-10 AND H-20 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATION OF NSAI IRISH AGREEMENT BOARD CERTIFICATE FOR CULTEC ATTENUATION AND INFILTRATION.
- MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.66 m).

CULTEC RECHARGER® 330XLHD PRODUCT SPECIFICATIONS

GENERAL
CULTEC RECHARGER 330XLHD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT, USA. (203-775-4416 OR 1-800-428-5832)
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 330XLHD SHALL BE 30.5 INCHES (775 mm) TALL, 52 INCHES (1321 mm) WIDE AND 8.5 FEET (2.59 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 330XLHD SHALL BE 7 FEET (2.13 m).
- MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 24 INCHES (600 mm) HDPE.
- THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL INSIDE DIMENSIONS OF EACH SIDE PORTAL SHALL BE 10.5 INCHES (267 mm) HIGH BY 11.5 INCHES (292 mm) WIDE. MAXIMUM ALLOWABLE OUTER DIAMETER (O.D.) PIPE SIZE IN THE SIDE PORTAL IS 11.75 INCHES (298 mm).
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
- THE NOMINAL STORAGE VOLUME OF THE RECHARGER 330XLHD CHAMBER SHALL BE 7.459 FT³ / FT (0.693 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 330XLHD SHALL BE 52.213 FT³ / UNIT (1.478 m³ / UNIT) - WITHOUT STONE.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE RECHARGER 330XLHD CHAMBER SHALL HAVE FIFTY-SIX DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER 330XLHD CHAMBER SHALL HAVE 16 CORRUGATIONS.
- THE ENDWALL OF THE CHAMBER, WHEN PRESENT, SHALL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
- THE RECHARGER 330XLHD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
- THE RECHARGER 330XLHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 14 INCHES (356 mm) HIGH X 34.5 INCHES (876 mm) WIDE.
- THE RECHARGER 330XLHD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 14 INCHES (356 mm) HIGH X 34.5 INCHES (876 mm) WIDE.
- THE RECHARGER 330XLHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
- THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE RECHARGER 330XLHD AND ACT AS CROSS FEED CONNECTIONS.
- CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- THE CHAMBER SHALL HAVE A 6 INCH (152 mm) DIAMETER RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF IAPMO PS 63-2019, INCLUDING RESISTANCE TO AASHTO H-10 AND H-20 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE SPECIFICATIONS OF NSAI IRISH AGREEMENT BOARD CERTIFICATE FOR CULTEC ATTENUATION AND INFILTRATION.
- MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.66 m).
- THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

CULTEC HVLV FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL
CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 330XLHD STORMWATER CHAMBERS.

CHAMBER PARAMETERS

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
- THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER® STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL INTRUSION INTO THE STONE.

GEOTEXTILE PARAMETERS

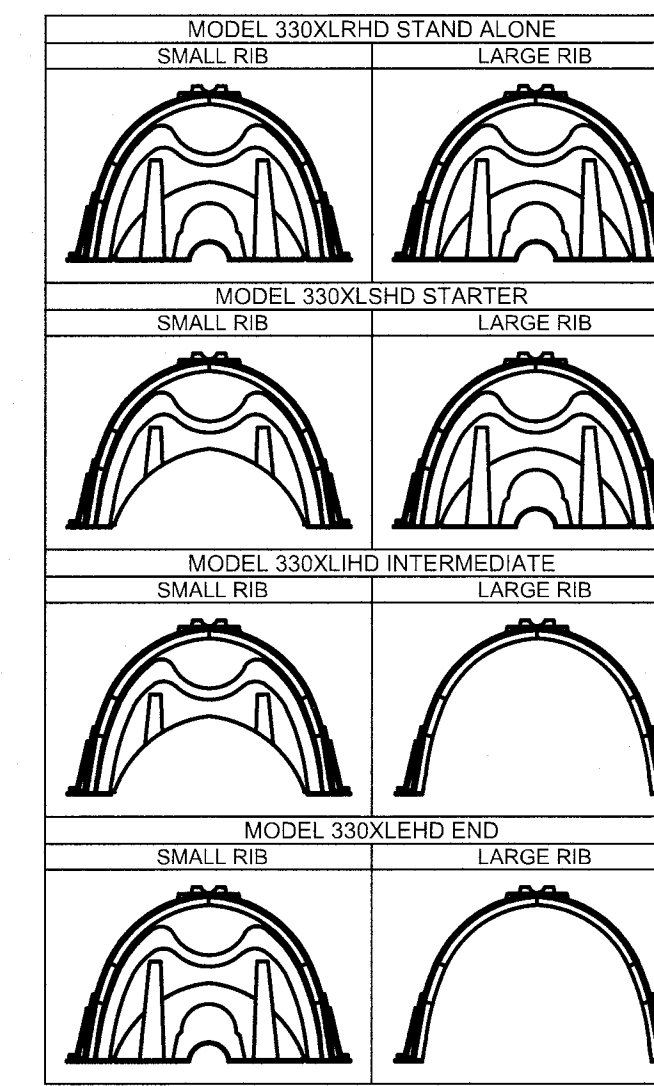
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M).
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SQ) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING METHOD.

CULTEC NO. 4800™ WOVEN GEOTEXTILE

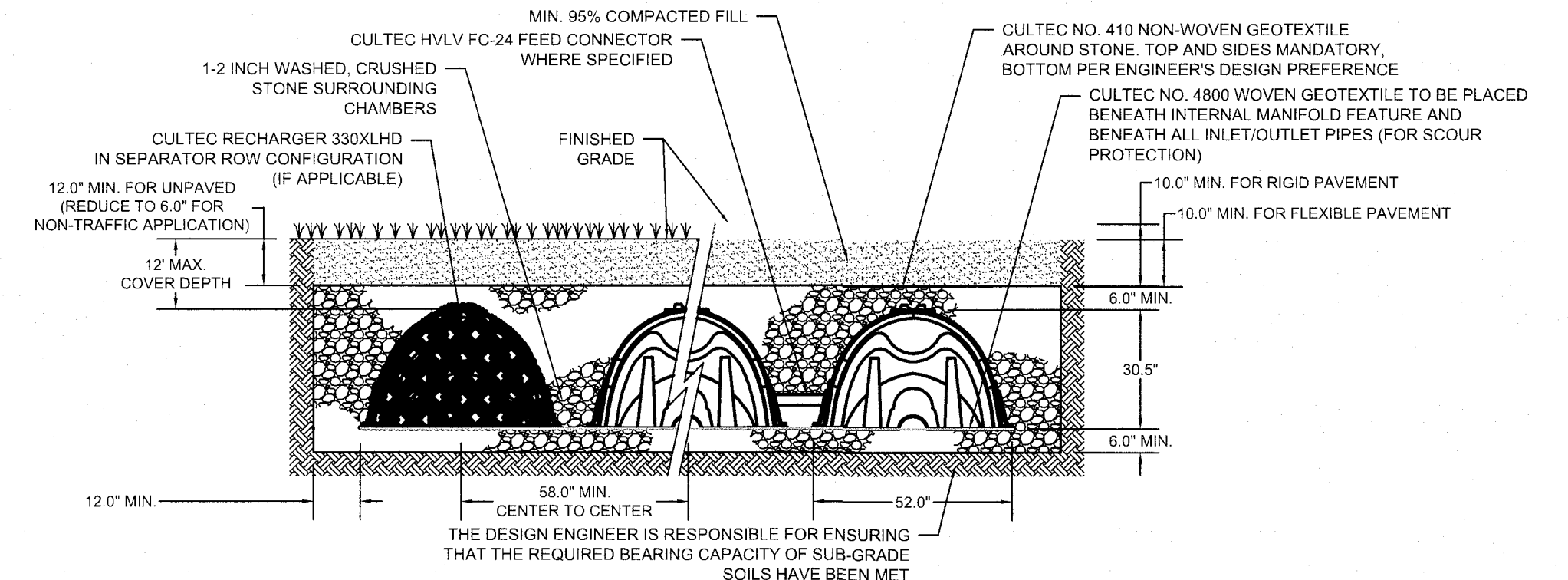
CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR MAINTENANCE.

GEOTEXTILE PARAMETERS

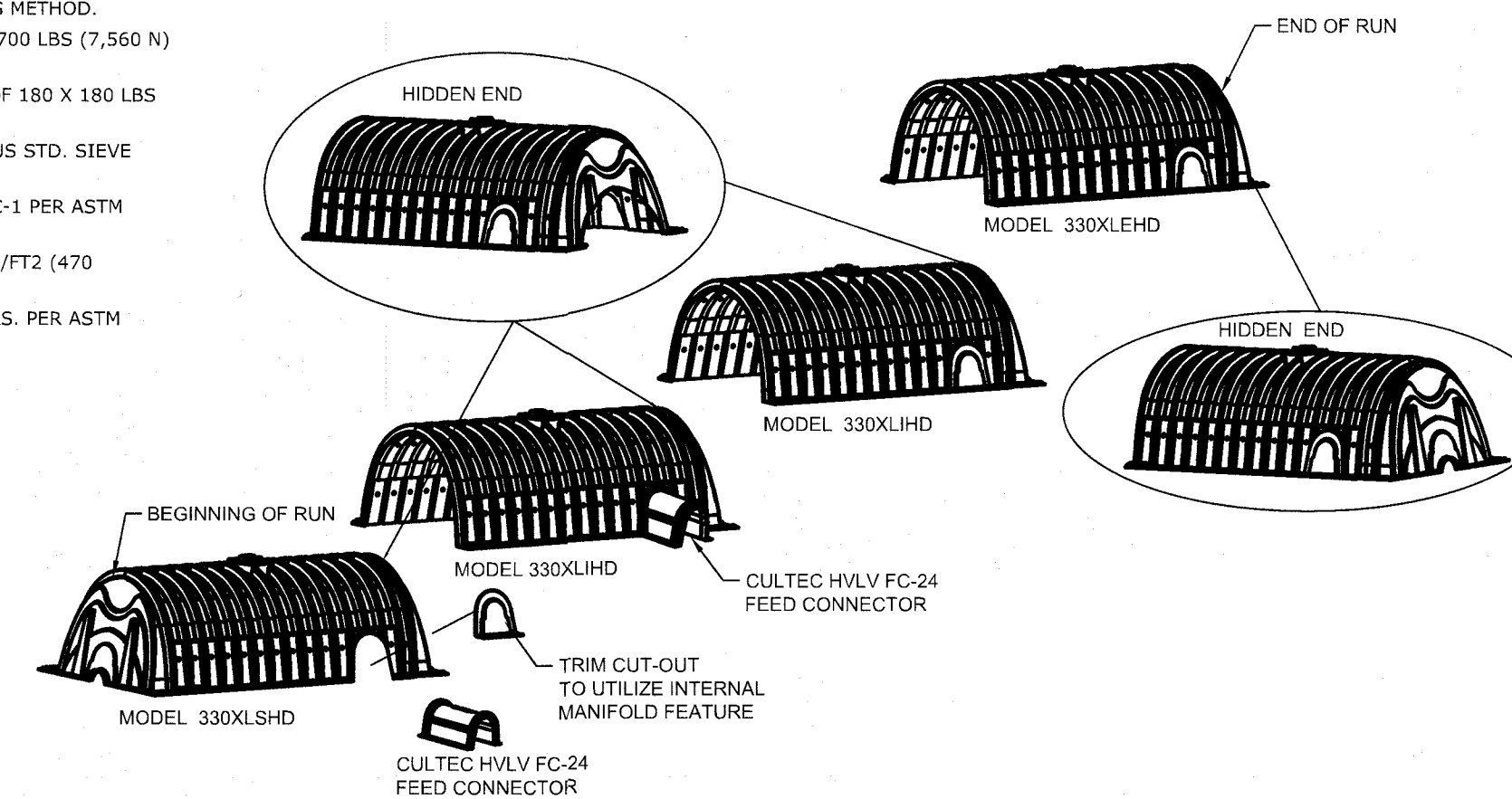
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT (74 X 74 KN/M) PER ASTM D4595 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN OF 960 X 1,096 LBS/FT (14 X 16 KN/M) PER ASTM D4595 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN OF 2,740 X 2,740 LBS/FT (40 X 40 KN/M) PER ASTM D4595 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4595 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT2 (470 LPM/M2) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.



CULTEC RECHARGER 330XLHD HEAVY DUTY THREE VIEW DETAIL
NOT TO SCALE



CULTEC RECHARGER 330XLHD HEAVY DUTY CROSS SECTION DETAIL
NOT TO SCALE



CULTEC RECHARGER 330XLHD HEAVY DUTY TYPICAL INTERLOCK DETAIL
NOT TO SCALE

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

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

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

CONSTRUCTION DETAILS			
BLUEBIRD SELF STORAGE			
MAP 176 LOTS 21, 22 & 23 196-202 CENTRAL STREET HUDSON, NEW HAMPSHIRE HILLSBOROUGH COUNTY			
OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294		APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840	
KMA KEACH-NORDSTROM ASSOCIATES, INC. Civil Engineering Land Surveying Landscape Architecture 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881			
REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES
DATE: DECEMBER 20, 2021		SCALE: N.T.S.	
PROJECT NO: 21-0709-3		SHEET 20 OF 23	

NOTES:

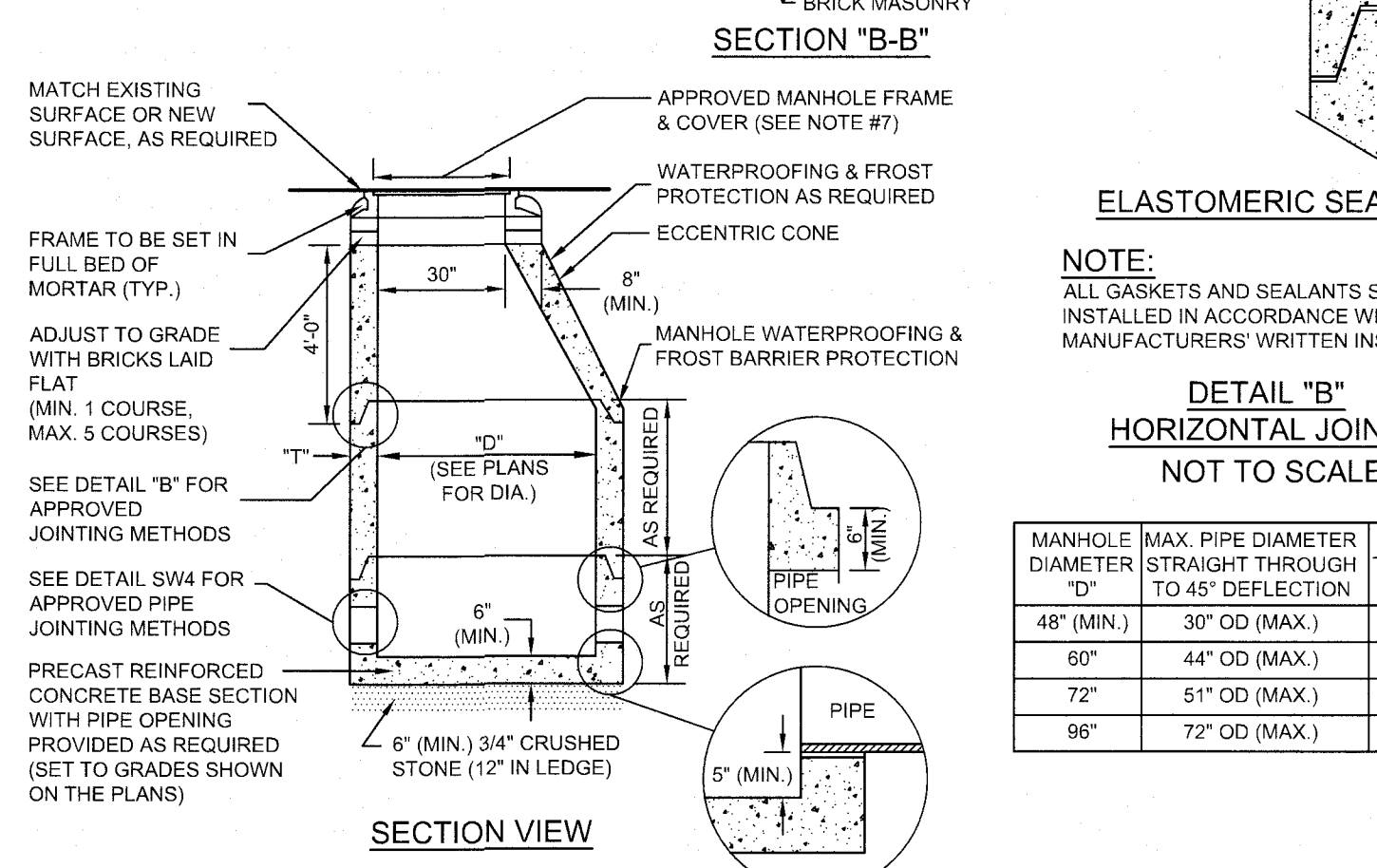
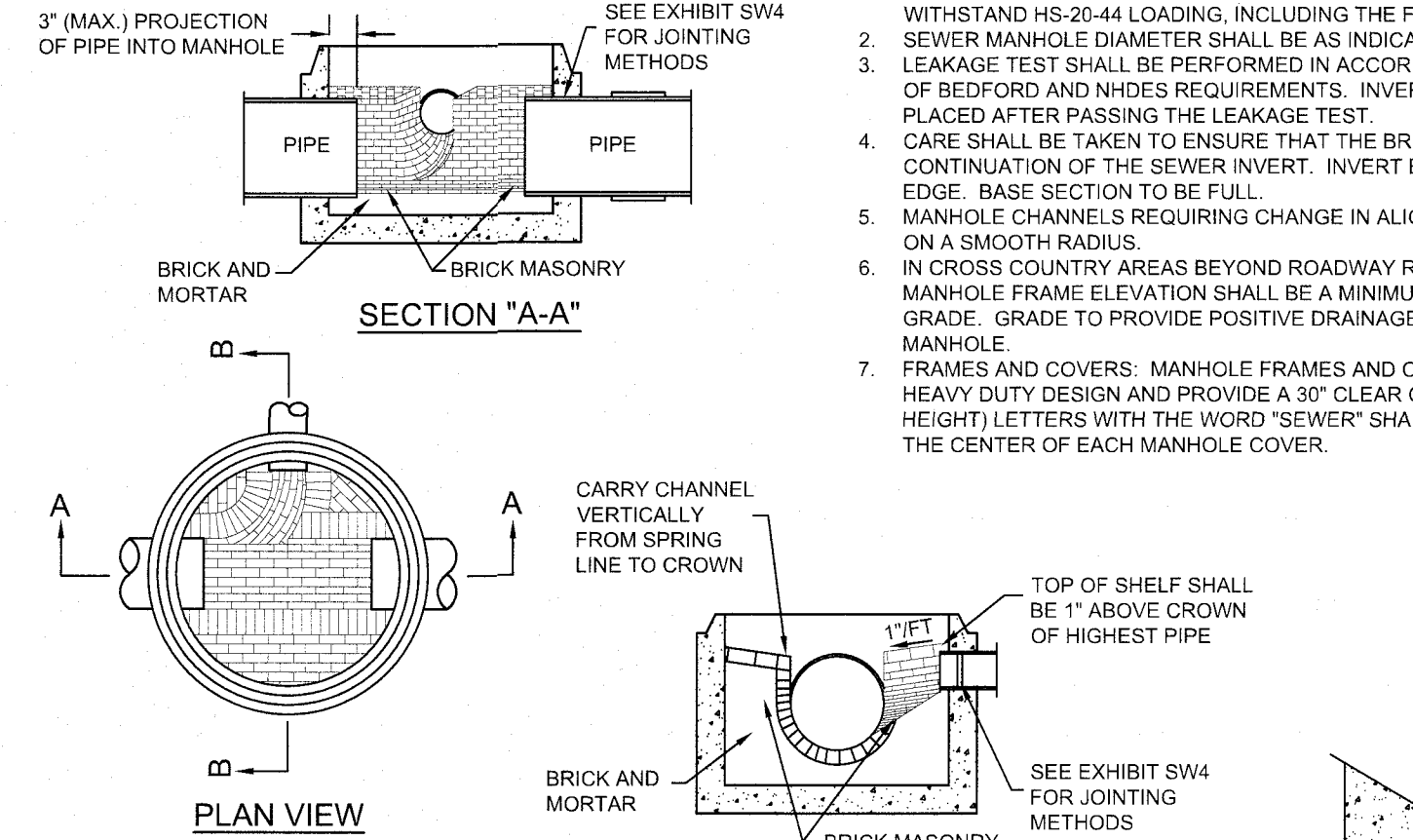
- MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 4 INCHES. MINIMUM SIZE FOR STREET SEWER LINES SHALL BE 8 INCHES.
- PIPE AND JOINT MATERIALS**
 - DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA):
 - AWWA C15/A21 51-02 - FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND LINED MOLDS, FOR WATER OR OTHER LIQUIDS.
 - AWWA C150/A21 50-02 - FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536-84 (2004) DUCTILE IRON CASTINGS.
 - JOINTS SHALL BE MECHANICAL, PUSH-ON OR BALL-AND-SOCKET TYPE.
 - PLASTIC GRAVITY SEWER PIPE AND FITTINGS SHALL COMPLY WITH THE FOLLOWING STANDARDS:
 - ASTM D3034-04A - PVC, SOLID WALL.
 - AT LEAST 46 PSI AT 5% PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2414-02 DURING MANUFACTURING, AND
 - JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212-96A(2003)E1 AND SHALL BE PUSH-ON OR BELL-AND-SPIGOT TYPE.
- DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
- JOINTS SHALL BE DEPENDENT UPON PROPER MATERIALS (SEE NOTE #2) FOR WATER TIGHTNESS, AND ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
- SERVICE CONNECTIONS SHALL USE SANITARY TEE OR WYE FITTINGS FOR ALL NEW CONSTRUCTION. THE CENTERLINE OF ALL BUILDING CONNECTIONS SHALL ENTER THE TOP HALF OF THE SEWER. ANY SERVICE CONNECTION WITH A VERTICAL RISE UP TO 4 FEET MAY HAVE THE SEWER FITTING SET VERTICALLY. ANY SERVICE CONNECTION WITH A VERTICAL RISE UP TO 12 FEET SHALL EMPLOY NON-ENCASED RISERS THAT PROTECT AGAINST PIPE PENETRATION OR FAILURE AT THE FITTING BY THE USE OF BELL-ON-BELL CONNECTIONS. FOR EXISTING SEWER WHERE FITTINGS CANNOT BE INSTALLED, SADDLE CONNECTIONS SHALL BE USED. PRESSURE SEWERAGE SHALL HAVE AN ISOLATION VALVE OR CURB STOP VALVE INSTALLED AT THE PROPERTY LINE. IF A CHECK VALVE IS USED AT THE PROPERTY LINE, THE VALVE SHALL BE INSTALLED WITHIN A VAULT TO FACILITATE MAINTENANCE. ROOF DOWNSPOUTS, EXTERIOR OR INTERIOR FOUNDATION DRAINS, SUMP PUMPS OR OTHER SOURCE OF SURFACE WATER RUN-OFF OR GROUND WATER SHALL NOT BE DIRECTLY OR INDIRECTLY CONNECTED TO A PUBLIC SEWER.
- PIPE INSTALLATION**
 - THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER.
 - PIPES SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL.
 - BEDDING AND RE-FILL, FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE, SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES.
 - THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT.
 - PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

- TESTING:** THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS, (PRIOR TO BACKFILLING)
 - AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.
 - THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEAN OUT WITH A FLASHLIGHT.
 - DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER. IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE.
 - LEAKAGE OBSERVED IN ANY OF THE ABOVE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP, IF NECESSARY, AND RE-LAID SO AS TO ASSURE WATER-TIGHTNESS.
- ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY, ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUND WATER, SHALL NOT BE PERMITTED.
- WATER SERVICE SHALL NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE, UNLESS NECESSARY AND APPROVED BY THE A.H.J. WHEN NECESSARY, THE WATER SERVICE SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE SEWER SERVICE, AS SHOWN.
- LOCATION: THE LOCATION OF THE WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS MATERIAL, ROD OR PIPE SHALL BE PLACED OVER THE WYE TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.
- CHIMNEY CONNECTIONS ARE ONLY PERMITTED IF ALLOWED BY THE A.H.J. ANY VERTICAL RISE GREATER THAN 4 FEET SHALL BE PROVIDED WITH ADDED SUPPORT BY ENCASED THE FITTING AND RISER IN A PRECAST CONCRETE CHIMNEY. UP TO 12 FEET OF VERTICAL RISE CAN ALSO BE SECURED BY PROPER MEANS AS LONG AS IT CONSISTS OF A BELL-ON-BELL CONNECTION PROPERLY PROTECTED AGAINST PIPE PENETRATION AND IF IT IS ALLOWED BY THE A.H.J.
- UNLESS OTHERWISE NOTED, ALL GRANULAR MATERIAL SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR TEST DENSITY.

NOTES:

- IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING, INCLUDING THE FRAME AND COVER.
- SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
- LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF BEDFORD AND NH'S REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST.
- CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL.
- MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILT ON A SMOOTH RADIUS.
- IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30" CLEAR OPENING. 3" (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER.

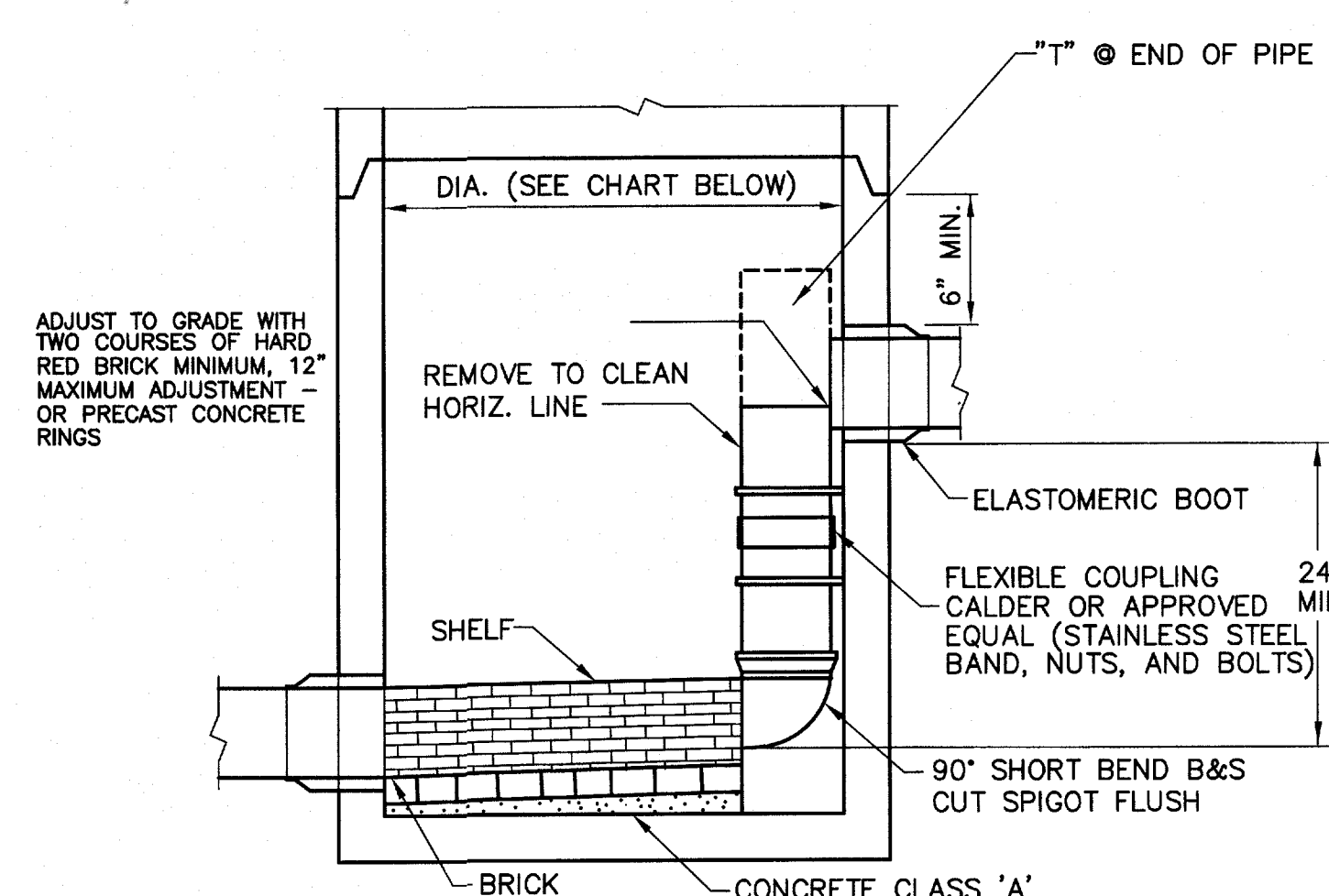
- ALL COMPONENT PARTS OF MANHOLE STRUCTURES SHALL HAVE THE STRENGTH, LEAK RESISTANCE AND SPACE NECESSARY FOR THE INTENDED SERVICE.
- MANHOLE STRUCTURES SHALL HAVE A LIFE EXPECTANCY IN EXCESS OF 25 YEARS.
- MANHOLE STRUCTURES SHALL BE DESIGNED TO WITHSTAND H-20 LOADING AND SHALL NOT LEAK IN EXCESS OF ONE GPD PER VERTICAL FOOT OF MANHOLE FOR THE LIFE OF THE STRUCTURE.
- BARRELS, CONCRETE GRADE RINGS AND CONE SECTIONS SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE CONFORMING TO ASTM C478.
- BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 100% PASSING 1 INCH SCREEN 90% PASSING 3/4 INCH SCREEN 20-55% PASSING 3/8 INCH SCREEN 0-10% PASSING #4 SIEVE 0-5% PASSING #8 SIEVE WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
- BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
- HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER-TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
- PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
 - ELASTOMERIC RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
 - EAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
 - ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
 - NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
- MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
- ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
- ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING MEMBRANE.
- MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
- MATERIALS OF CONSTRUCTION FOR MANHOLES SHALL BE AS FOLLOWS:
 - CONCRETE FOR PRECAST BASES OR GRADE RINGS SHALL CONFORM TO THE REQUIREMENTS FOR CLASS AA CONCRETE IN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION";
 - REINFORCING FOR PRECAST CONCRETE SHALL BE STEEL OR STRUCTURAL FIBERS THAT CONFORM TO THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION";
 - PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL BE CERTIFIED BY THEIR MANUFACTURER(S) AS CONFORMING TO ASTM C478;
 - THE MANHOLE FRAME AND COVER SHALL PROVIDE A 30-INCH DIAMETER CLEAR OPENING;
 - THE MANHOLE COVER SHALL HAVE THE WORD "SEWER" IN 3-INCH LETTERS CAST INTO THE TOP SURFACE;
 - THE CASTINGS SHALL BE OF EVEN-GRAINED CAST IRON, SMOOTH AND FREE FROM SCALE, LUMPS, BLISTS AND DEFECTS;
 - CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION;
 - CASTINGS SHALL BE EQUAL TO CLASS 30, BE CERTIFIED BY THEIR MANUFACTURER(S) AS CONFORMING TO ASTM A484B/M;
 - BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL BE CERTIFIED BY THEIR MANUFACTURER(S) AS CONFORMING TO ASTM C32, CLAY OR SHALE, FOR GRADE SS HARD BRICK;
 - MORTAR SHALL BE COMPOSED OF TYPE II PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION;
 - PROPORTIONS IN PARTS BY VOLUMES SHALL BE:
 - 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
 - 4.5 PARTS SAND, ONE PART CEMENT AND 0.5 PARTS HYDRATED LIME;
 - CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150/C150M;
 - HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES";
 - SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO THE ASTM C33 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES";
 - CONCRETE FOR DROP SUPPORTS SHALL CONFORM TO THE REQUIREMENT FOR CLASS AAA CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION";
 - SUBJECT TO (D) BELOW, A FLEXIBLE PIPE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION:
 - WITHIN 48-INCHES FOR REINFORCED CONCRETE (RC) PIPE, AND
 - WITHIN 60-INCHES FOR PVC PIPE LARGER THAN 15-INCH DIAMETER;
 - NO FLEXIBLE JOINT SHALL BE REQUIRED FOR D.I. PIPE OR FOR PVC PIPE UP THROUGH 15-INCH DIAMETER; AND
 - WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED IN LIEU OF A CONE SECTION, PROVIDED THE SLAB HAS AN ECCENTRIC ENTRANCE OPENING AND IS CAPABLE OF SUPPORTING H-20 LOADS.
- MANHOLE TESTING:
 - MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST.
 - THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
 - THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg; AND
 - THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1-INCH Hg PRESSURE DROP TO 9 INCH Hg SHALL BE:
 - NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP IN DEPTH;
 - NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP; AND
 - NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
 - THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (B) ABOVE.
 - INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETED.
 - FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENTS TO GRADE.



MANHOLE SIZE CHART

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	WALL THICKNESS "T"
48" (MIN.)	30" OD (MAX.)	
60"	44" OD (MAX.)	
72"	51" OD (MAX.)	
96"	72" OD (MAX.)	

TYPICAL SEWER MANHOLE



MAN HOLE SIZE CHART

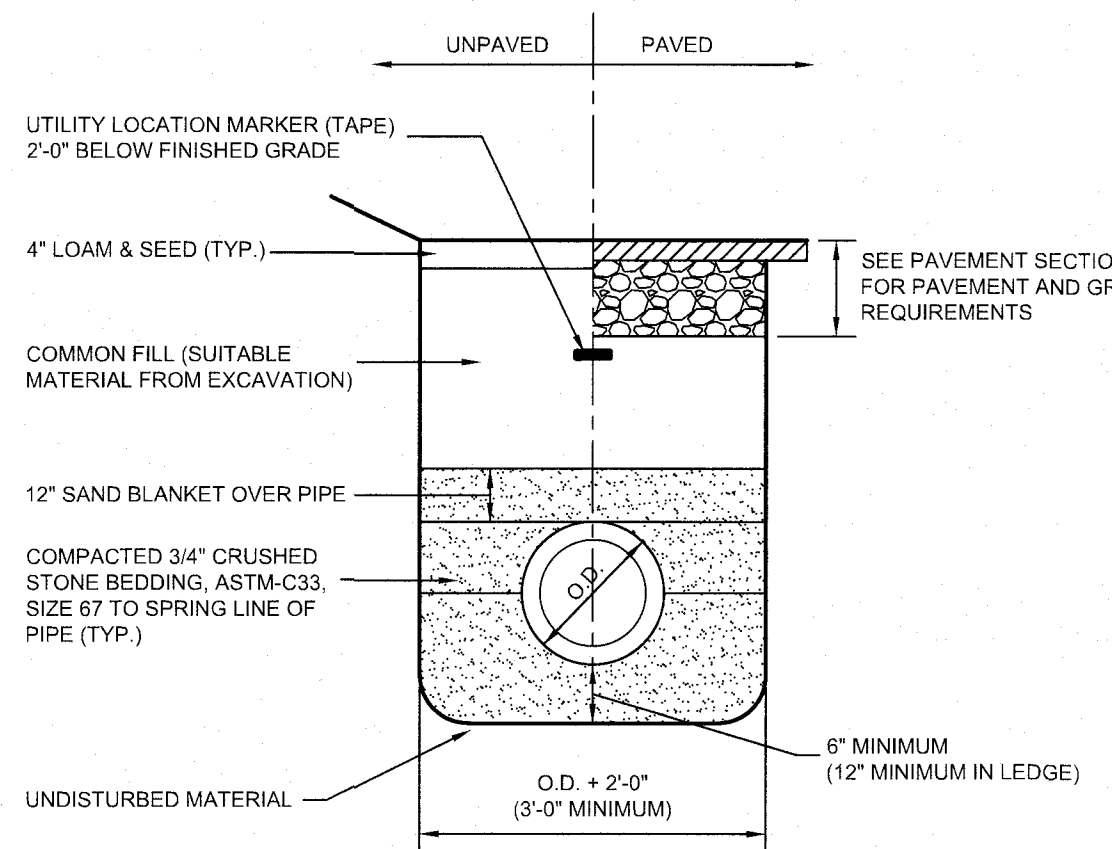
ONE 8" DROP USE 4' DIA.
ONE 10" DROP USE 4' DIA.
TWO 8" DROP USE 5' DIA.
TWO 10" DROP USE 5' DIA.
ONE 12" DROP USE 5' DIA.
ONE 15" DROP USE 5' DIA.
ONE 18" DROP USE 6' DIA.
ONE 24" DROP USE 6' DIA.

HUDSON INTERNAL DROP SEWER MANHOLE

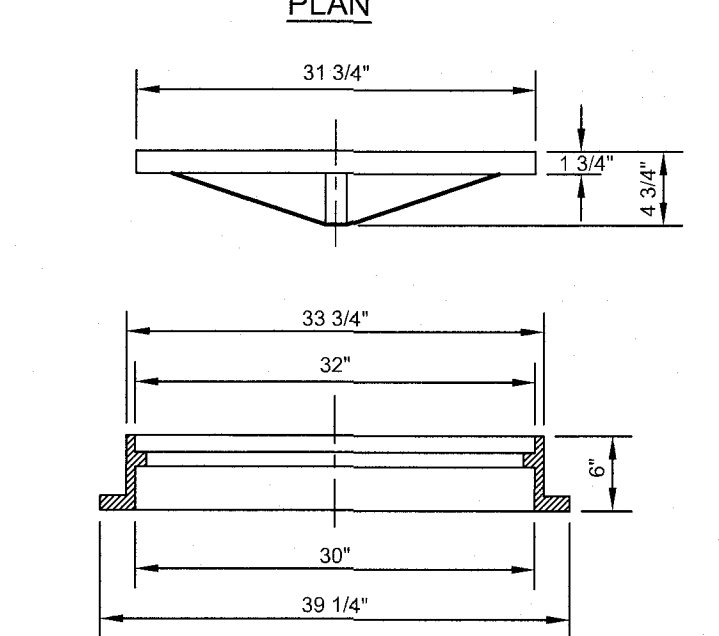
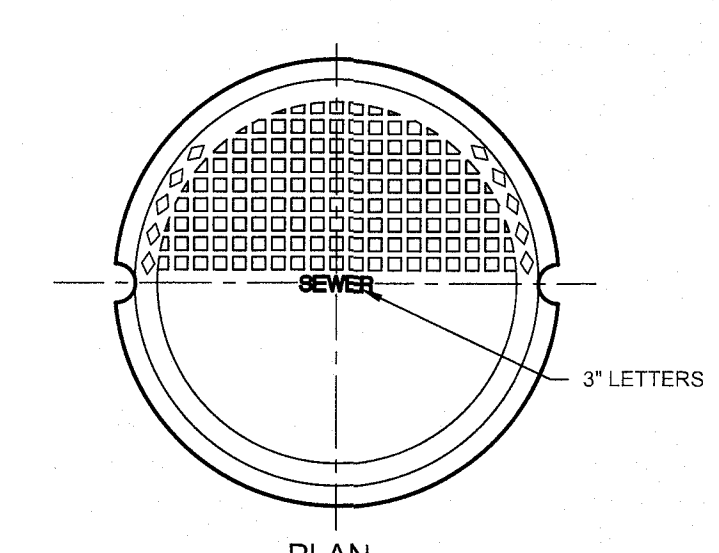
NOTES:
NEW HAMPSHIRE MAINTAINS A CLEAR OPENING DESIGNATION OF 30" FOR ITS MANHOLE CASTINGS.

- FEATURES:**
- 3" LETTERING
 - COVERS MARKED SEWER
 - NONROCKING COVER
 - DIAMOND SURFACE DESIGN

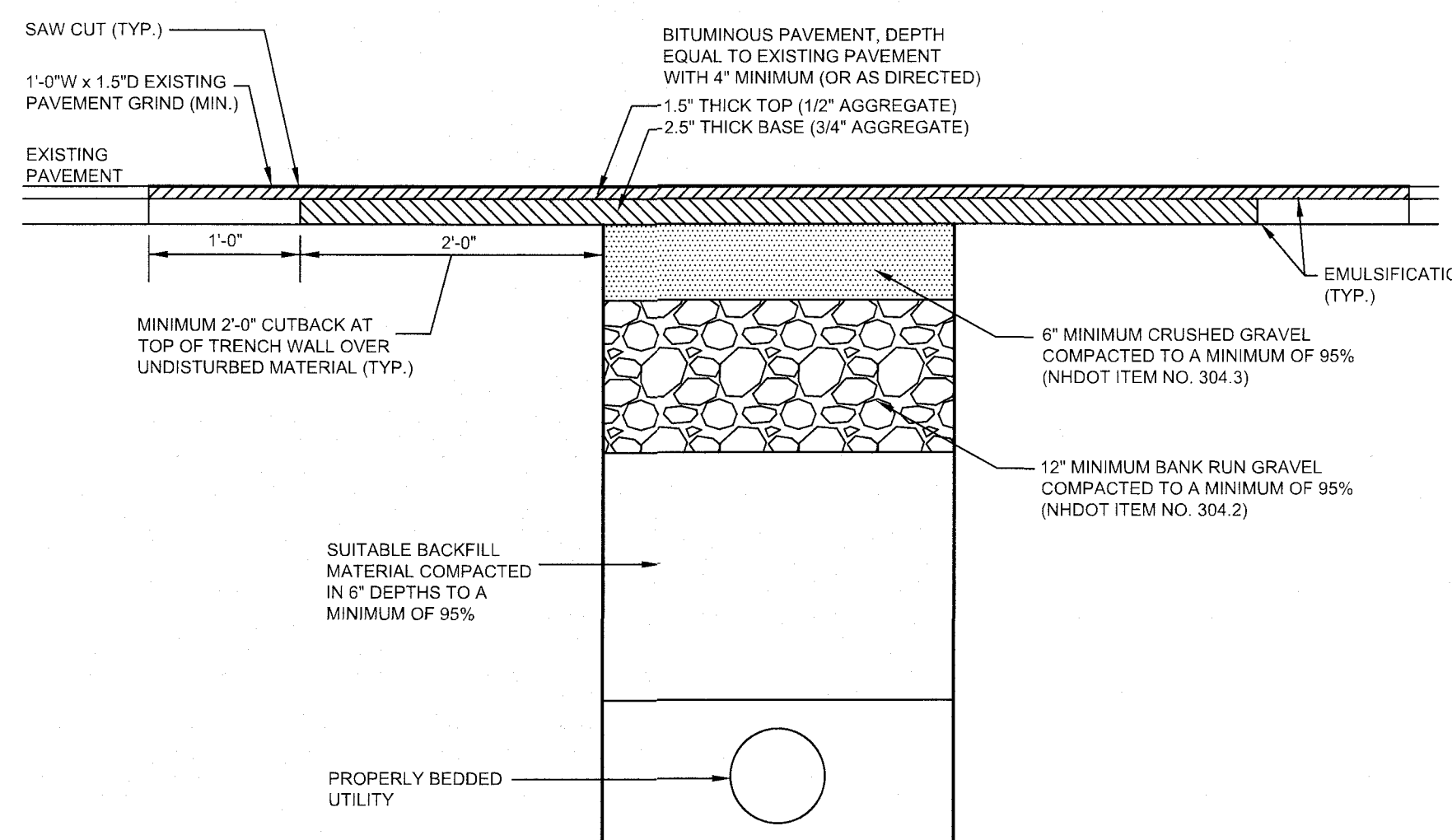
- SPECIFICATIONS:**
- FULLY MACHINED FRAME AND COVER
 - H-20 LOAD RATED
 - GRAY CAST IRON MEETS ASTM A48 CLASS 30



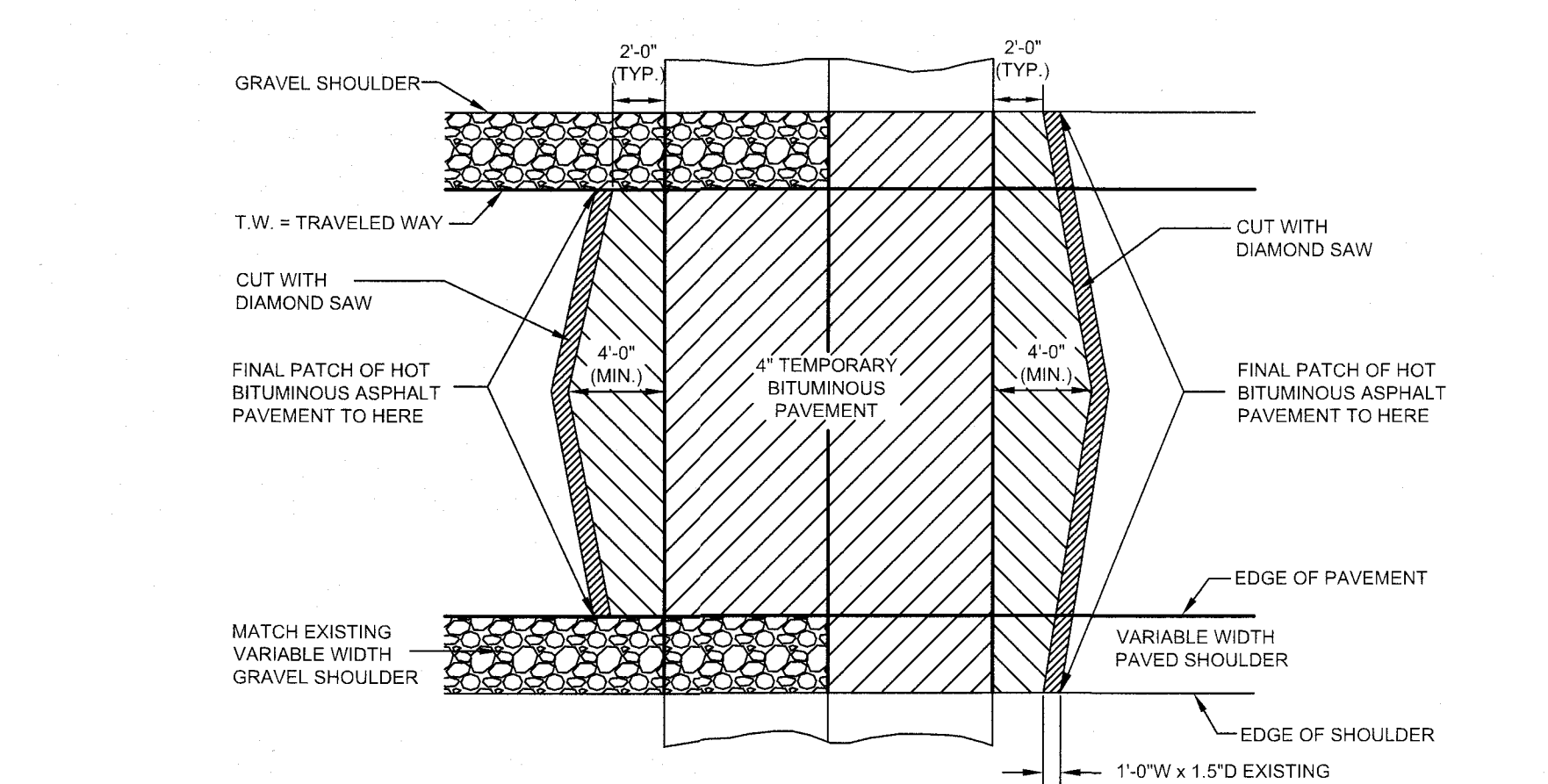
TYPICAL SEWER SERVICE PIPE TRENCH
NOT TO SCALE
EXHIBIT SW1



SEWER MANHOLE FRAME AND COVER DETAIL
NOT TO SCALE
(MARCH 2008)



PERMANENT PAVEMENT REPAIR
NOT TO SCALE



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

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

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

CONSTRUCTION DETAILS
BLUEBIRD SELF STORAGE

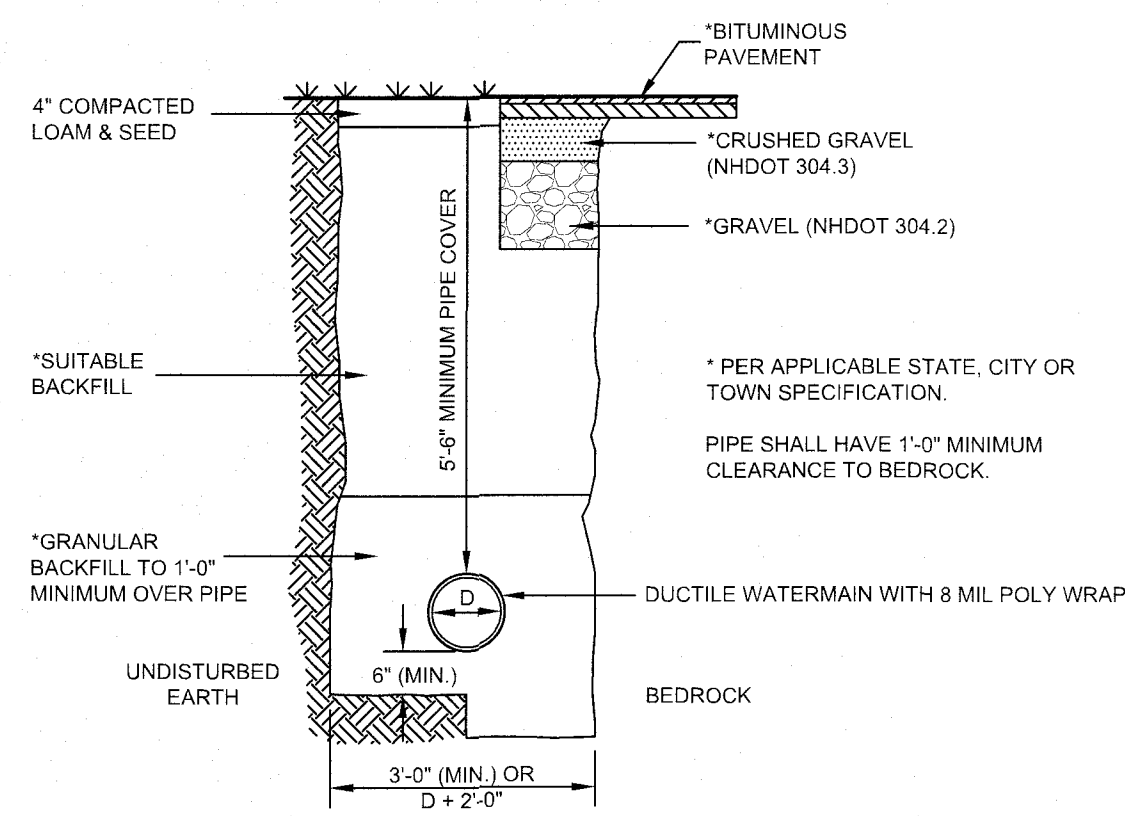
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:	APPLICANT:
RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840

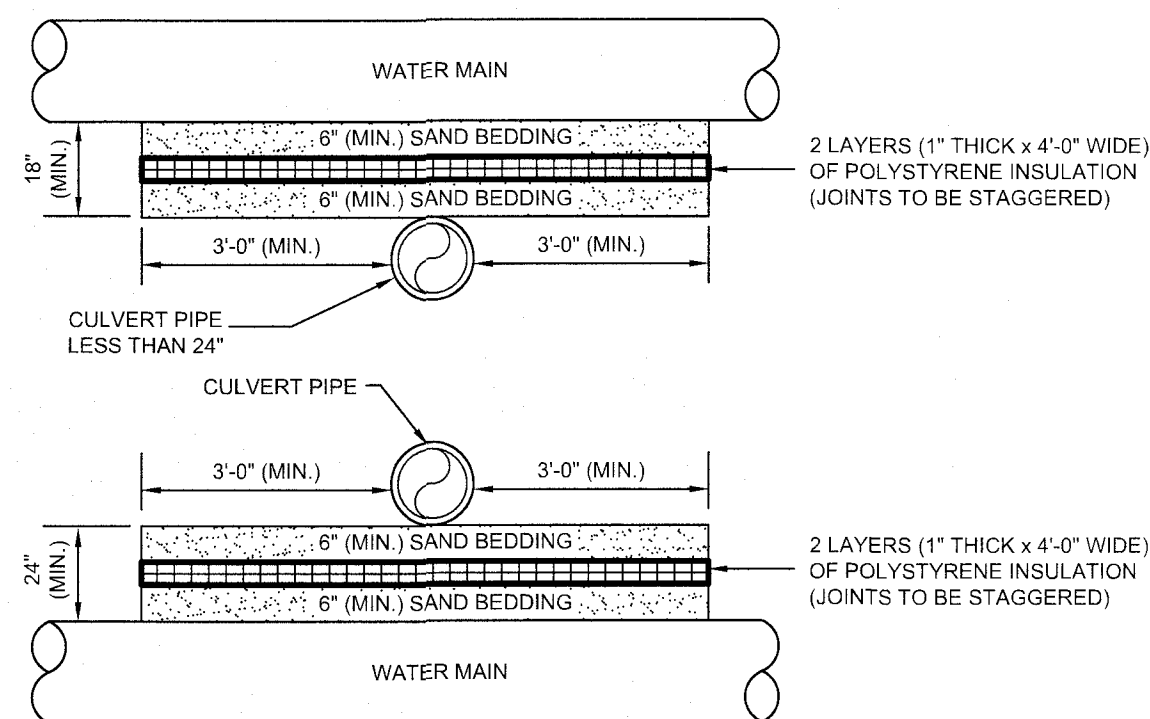
KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2861

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BBS
2	02-14-2022	REVISED PER REVIEW COMMENTS	BBS

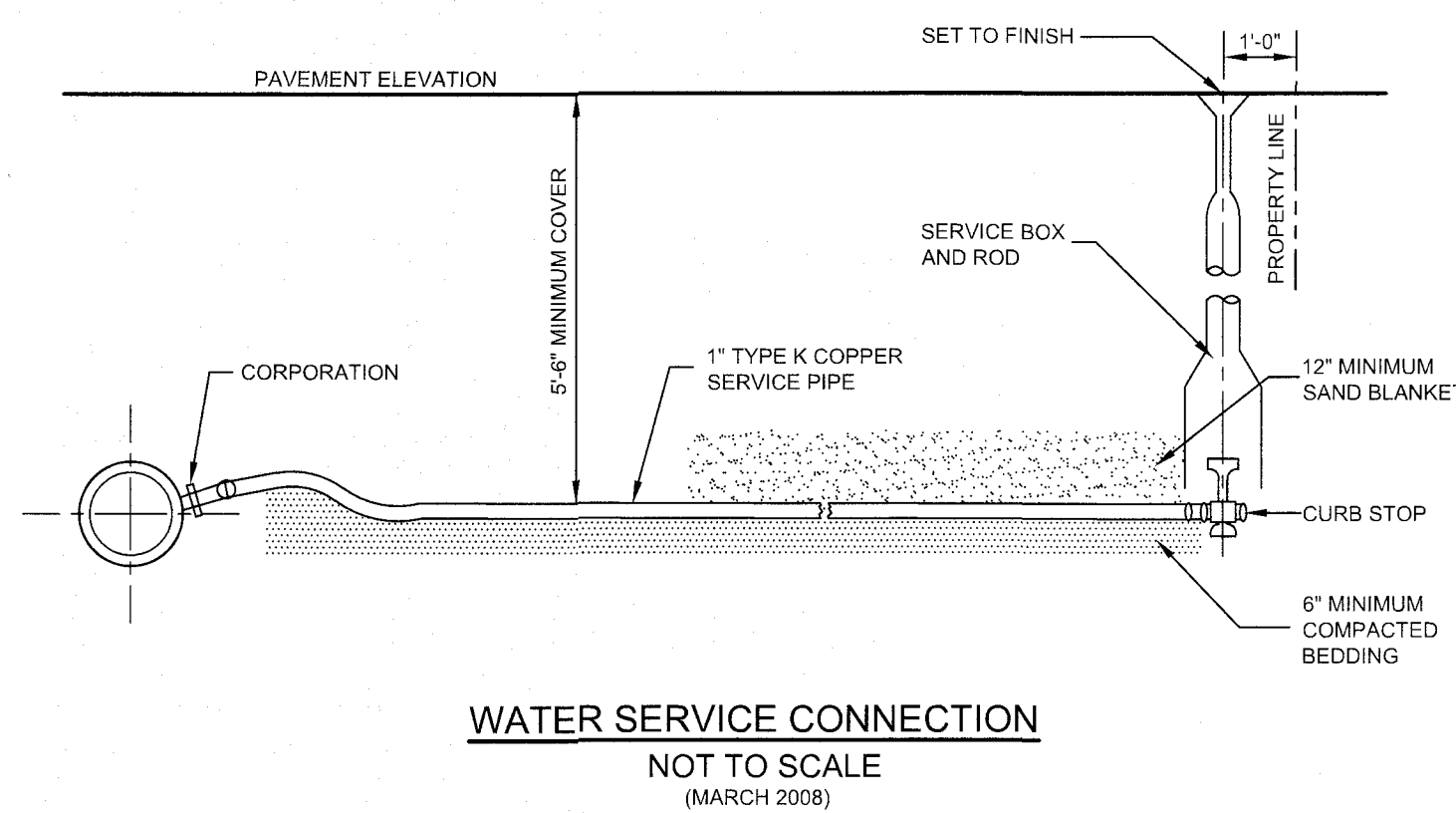
DATE: DECEMBER 20, 2021 SCALE: N.T.S.
PROJECT NO: 21-0709-3 SHEET 21 OF 23



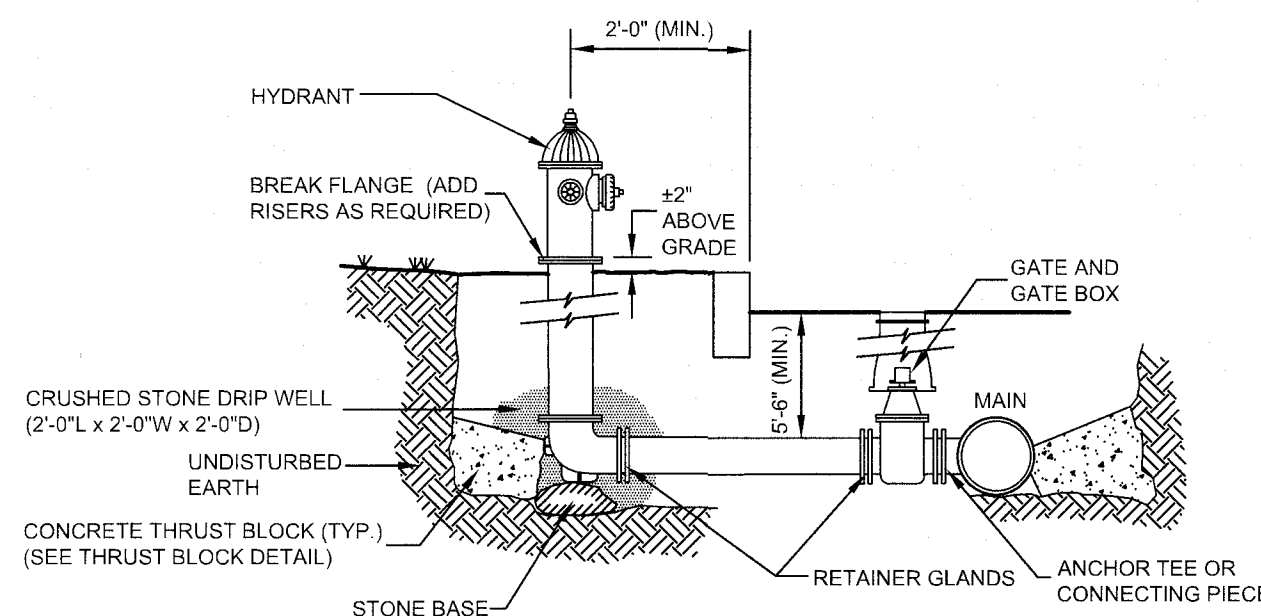
WATER LINE TRENCH DETAIL
NOT TO SCALE
(MARCH 2008)



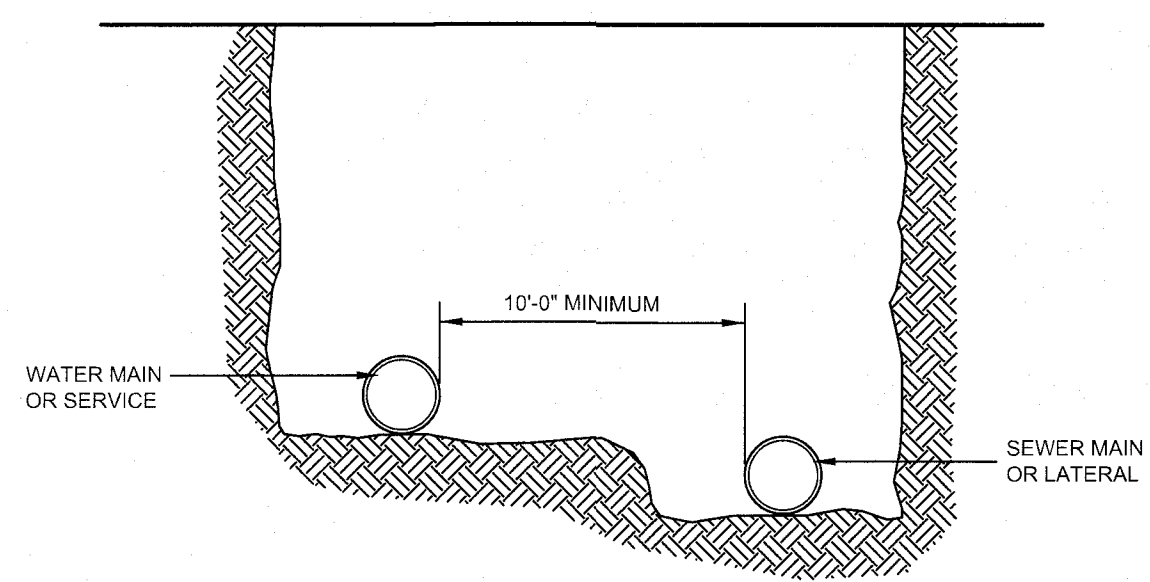
WATER PIPE CROSSING INSULATION DETAIL
NOT TO SCALE
(JUNE 2012)



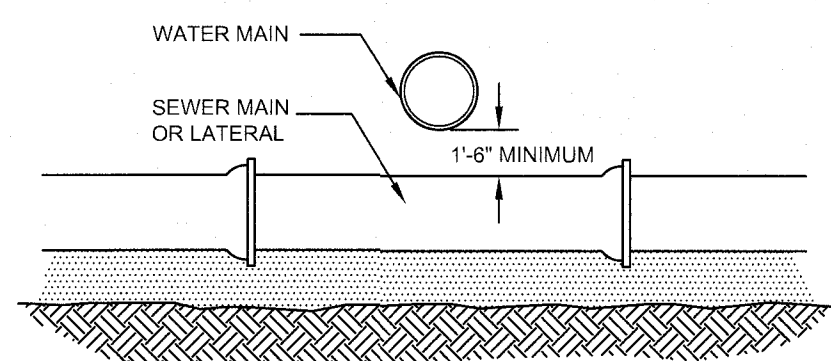
WATER SERVICE CONNECTION
NOT TO SCALE
(MARCH 2008)



HYDRANT INSTALLATION
NOT TO SCALE
(MARCH 2008)

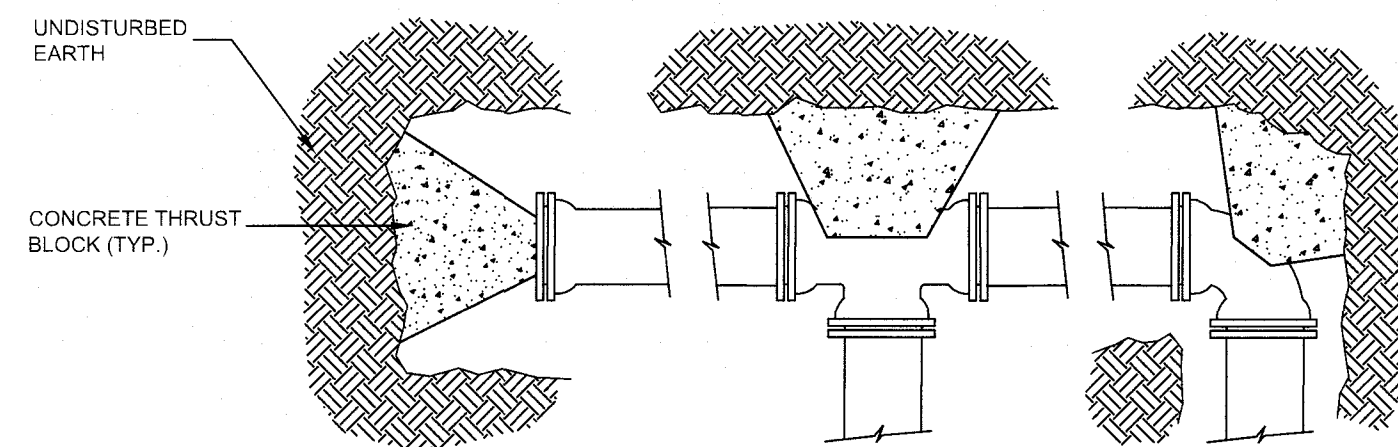


PARALLEL INSTALLATION

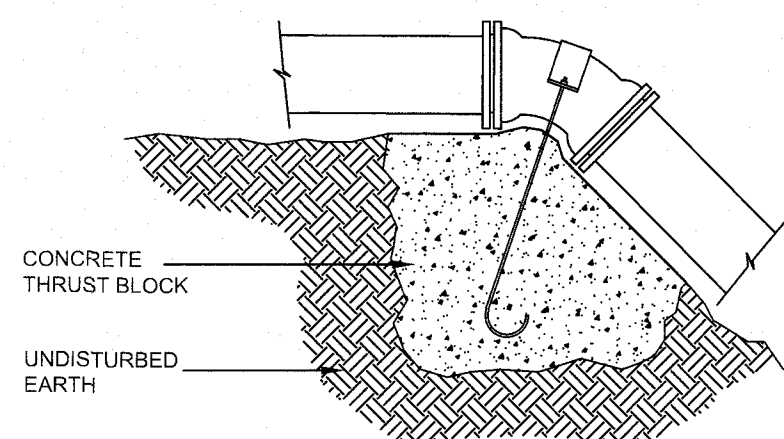


MAIN CROSSINGS

WATER MAIN/SEWER MAIN SEPARATION
NOT TO SCALE
(AUGUST 2011)



PLAN - HORIZONTAL BENDS, TEES AND PLUGS



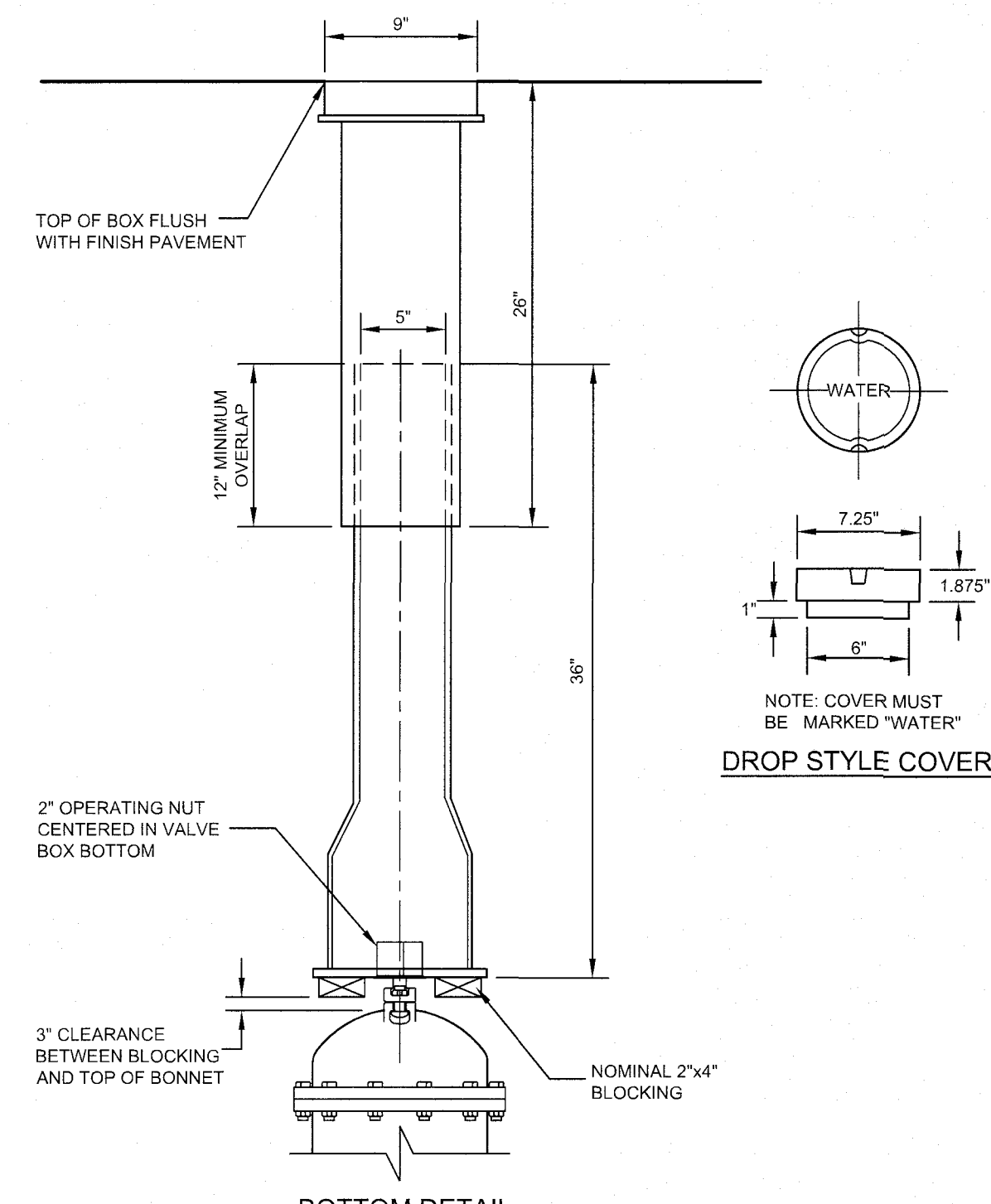
ELEVATION - VERTICAL BENDS

- NOTES:**
- THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE.
 - STONE BACKING MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THE STONE(S) ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH.
 - USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).

THRUST BLOCKS
NOT TO SCALE
(MARCH 2008)

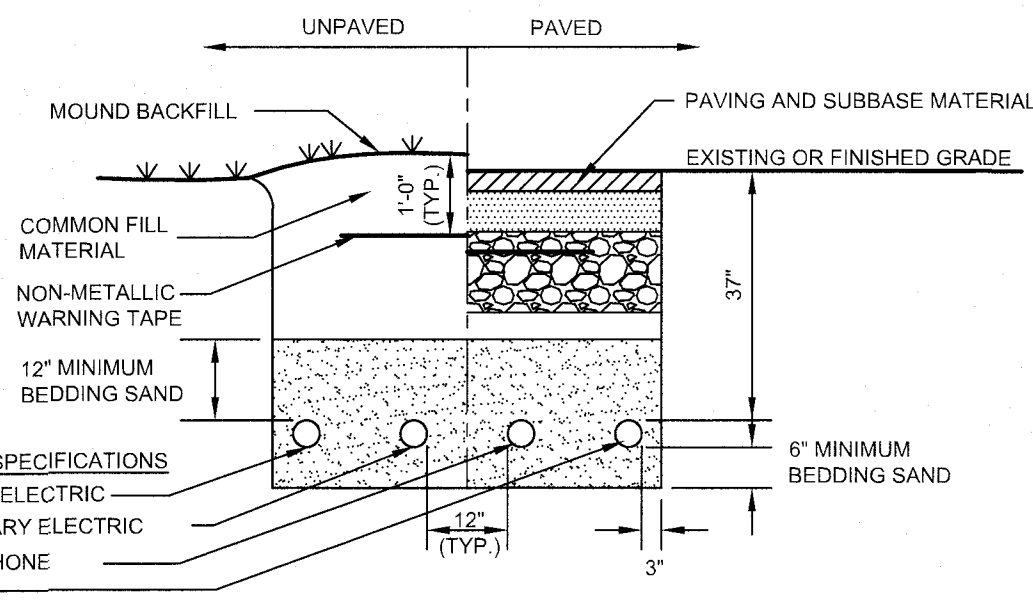
- NOTES:**
- ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO MANCHESTER WATER WORKS, INC. TECHNICAL SPECIFICATIONS.
 - ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
 - SEE DETAIL FOR SERVICE AND VALVE BOX INSTALLATION DETAIL.
 - SEE DETAIL A-11 FOR OUTSIDE SERVICE ENTRANCE PLAN VIEW.

DOMESTIC SERVICE TAPPED OFF FIRE SERVICE
(A-24)
NOT TO SCALE
(MARCH 2008)



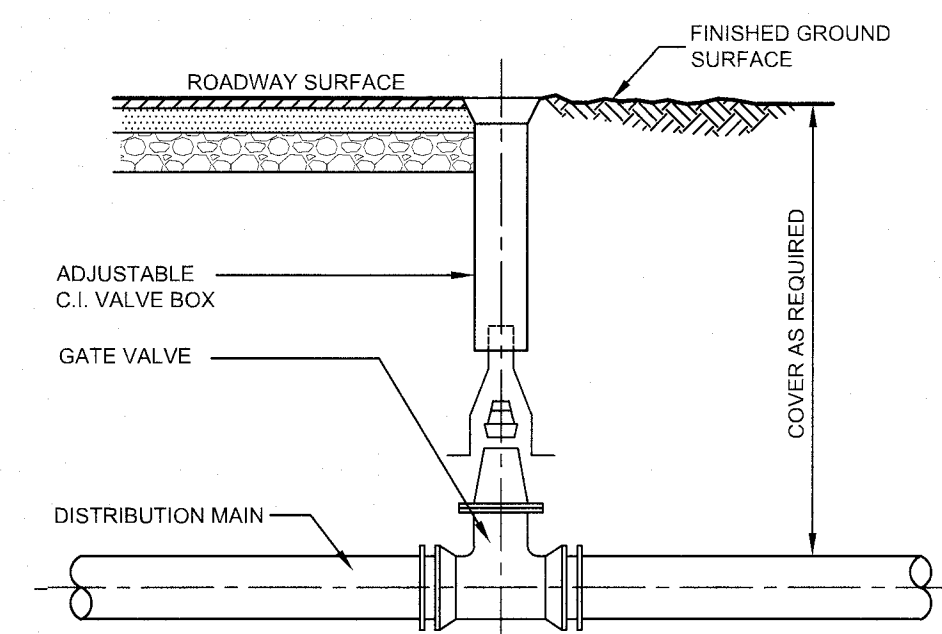
VALVE BOX DETAIL
(A-09)
NOT TO SCALE
(MARCH 2008)

- NOTES:**
- ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO PENNICHUCK WATER WORKS, INC. TECHNICAL SPECIFICATIONS.
 - ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.



- NOTES:**
- INSTALLATION AND MATERIALS OF UNDERGROUND UTILITIES SHALL CONFORM TO LOCAL UTILITY COMPANY SPECIFICATIONS.
 - COORDINATE WITH UTILITY COMPANIES PRIOR TO THE START OF CONSTRUCTION.

UTILITY TRENCH DETAIL
NOT TO SCALE



WATER AND GAS GATE VALVE
NOT TO SCALE
(MARCH 2008)

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

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

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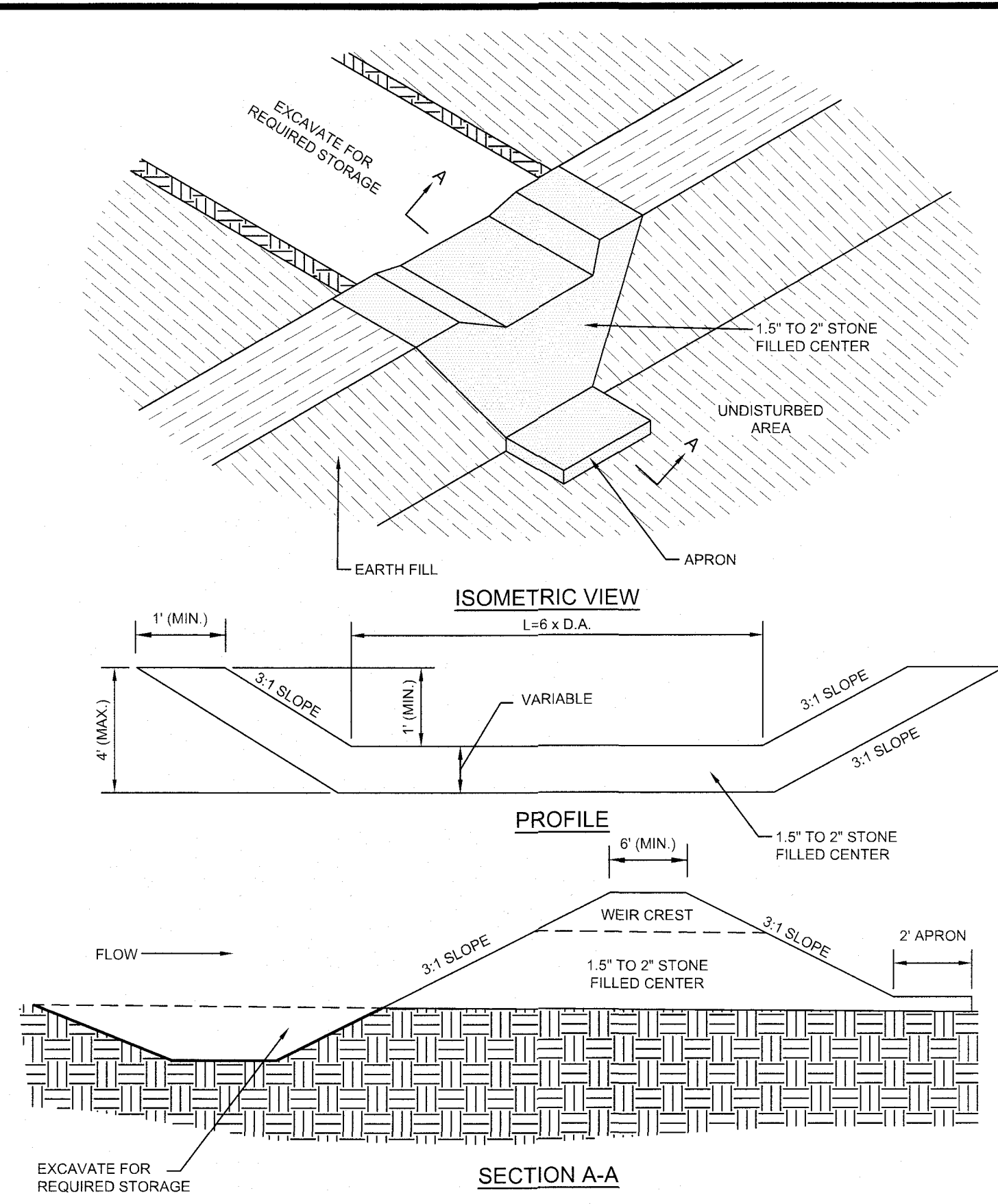
CONSTRUCTION DETAILS
BLUEBIRD SELF STORAGE
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. BK. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
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KM KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

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DATE: DECEMBER 20, 2021 SCALE: N.T.S.
PROJECT NO: 21-0709-3 SHEET 22 OF 23



NOTES:

1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
8. SEDIMENT TRAPS AND/OR BASINS SHOULD BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED.

TEMPORARY SEDIMENT TRAP DETAIL
NOT TO SCALE

TURF ESTABLISHMENT SCHEDULE

PURPOSE:
TO ESTABLISH AND MAINTAIN PERMANENT AND TEMPORARY TURF AREAS, RESTORE GROWTH TO EXISTING TURF AREAS DISTURBED DURING CONSTRUCTION AND CONTROL SOIL EROSION.

PREPARATION AND EXECUTION:

1. RAKE THE SUBGRADE OF ALL AREAS TO BE LOAMED AND SEEDED TO REMOVE RUBBISH, STICKS, ROOTS AND STONES LARGER THAN 1 INCH.
2. PLACE LOAM OVER AREAS TO BE SEEDED AND SPREAD.
3. FINE GRADE SURFACE AND SUPPLEMENT WITH SUITABLE LOAM WHERE NEEDED TO CREATE A UNIFORM SURFACE ACCORDING TO THE FINISH GRADES INDICATED. TOP AND BOTTOM OF SLOPES SHALL BE ROUNDED. NO LOAM SHALL BE SPREAD IF THE SUBGRADE IS EXCESSIVELY WET OR FROZEN.
4. APPLY LIME EVENLY OVER LOAM SURFACE AND THOROUGHLY INCORPORATE LIME INTO THE LOAM BY HEAVY RAKING TO AT LEAST ONE-HALF THE DEPTH OF THE LOAM.
5. APPLY NO PHOSPHATE, SLOW RELEASE FERTILIZER AND MIX WITH THE UPPER 2 INCHES OF LOAM.
6. DETERMINE APPROPRIATE MIXTURE FOR AREA TO BE SEEDED BASED ON EXAMINATION OF PROJECT PLANS. UNIFORMLY SPREAD THE SEED BY BROADCASTING OR HYDROSEEDING. LIGHTLY RAKE INTO THE PREPARED SURFACE AND ROLL. IF HYDROSEEDING, USE 4 TIMES THE RECOMMENDED RATE OF INOCULANT. AFTER SEED IS SPREAD, WATER THOROUGHLY WITH A FINE SPRAY.
7. SEEDING FOR PERMANENT COVER SHALL OCCUR BETWEEN SEPTEMBER 15 AND OCTOBER 15 AND BETWEEN APRIL 15 AND JUNE 15. SEEDING SHALL NOT BE DONE DURING WINDY WEATHER, WHEN THE GROUND IS FROZEN OR EXCESSIVELY WET OR OTHERWISE UNTILLABLE.
8. WITHIN 24 HOURS AFTER SEEDING OPERATION, UNIFORMLY MULCH THE AREA WITH STRAW. ANCHOR MULCH ON ALL SLOPES EXCEEDING 3:1 USING MULCH NETTING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER.
9. PROTECT AND PREVENT AGAINST WASHOUTS. ANY WASHOUTS WHICH OCCUR SHALL BE PROMPTLY REGRADED AND RESEEDED.
10. WHEN IT IS IMPRACTICAL TO ESTABLISH PERMANENT GROWTH ON DISTURBED EARTH BY OCTOBER 15, A TEMPORARY SEED MIXTURE SHALL BE USED. WHEN TEMPORARY SEEDING CANNOT ESTABLISH VISIBLE GROWTH, THE DISTURBED AREA SHALL BE COVERED WITH SIX INCHES OF MULCH FOR THE WINTER.

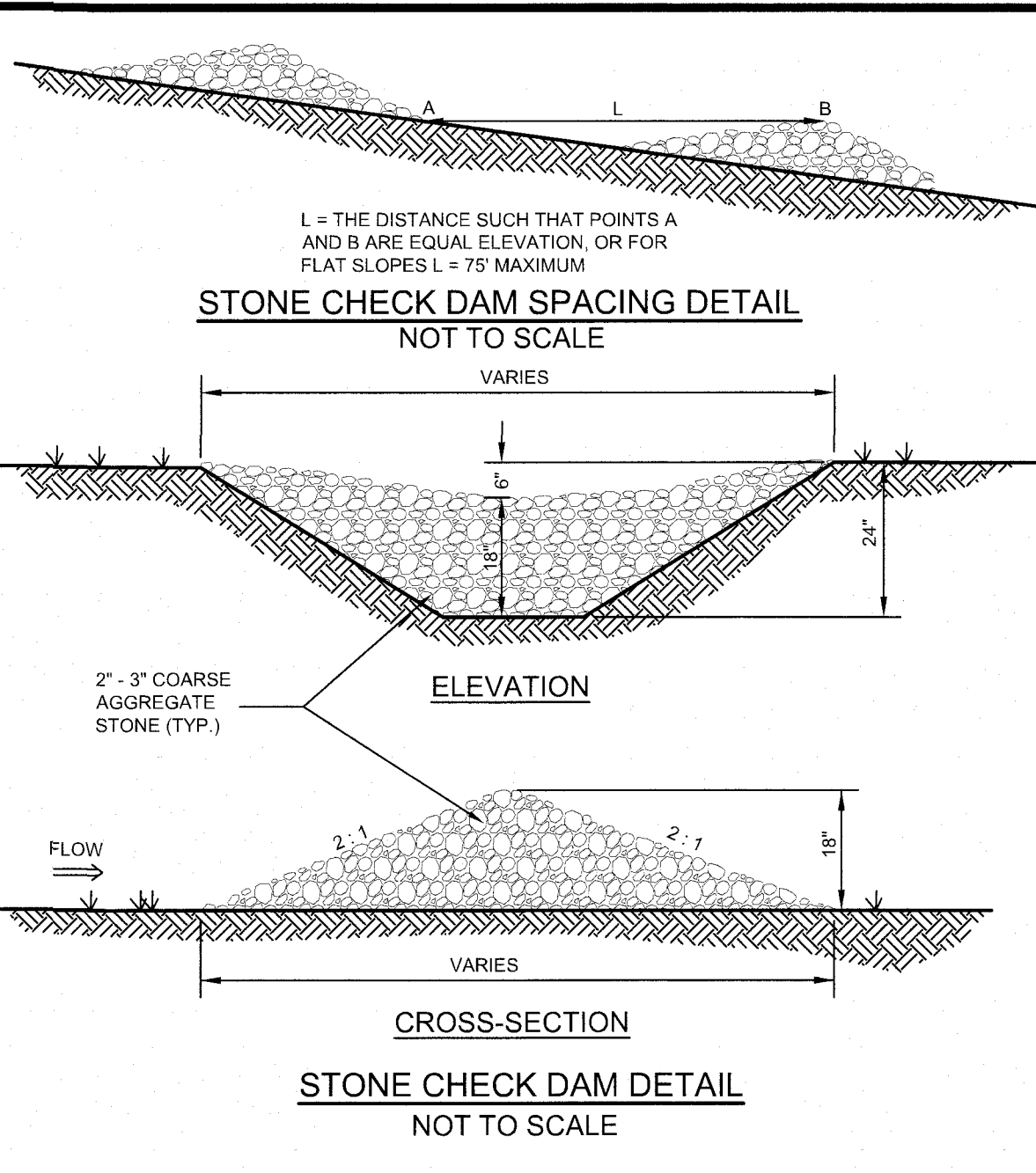
MAINTENANCE:
ALL SEEDED AREAS SHALL BE KEPT WATERED AND IN GOOD CONDITION. RESEED AS NECESSARY TO ESTABLISH HEALTHY UNIFORM GROWTH OVER THE ENTIRE SEEDED AREA. MAINTAIN SEEDED AREAS IN AN APPROVED CONDITION UNTIL FINAL ACCEPTANCE. MAINTENANCE SHALL INCLUDE REPAIRS FOR DAMAGE CAUSED BY EROSION.

APPLICATION RATES:

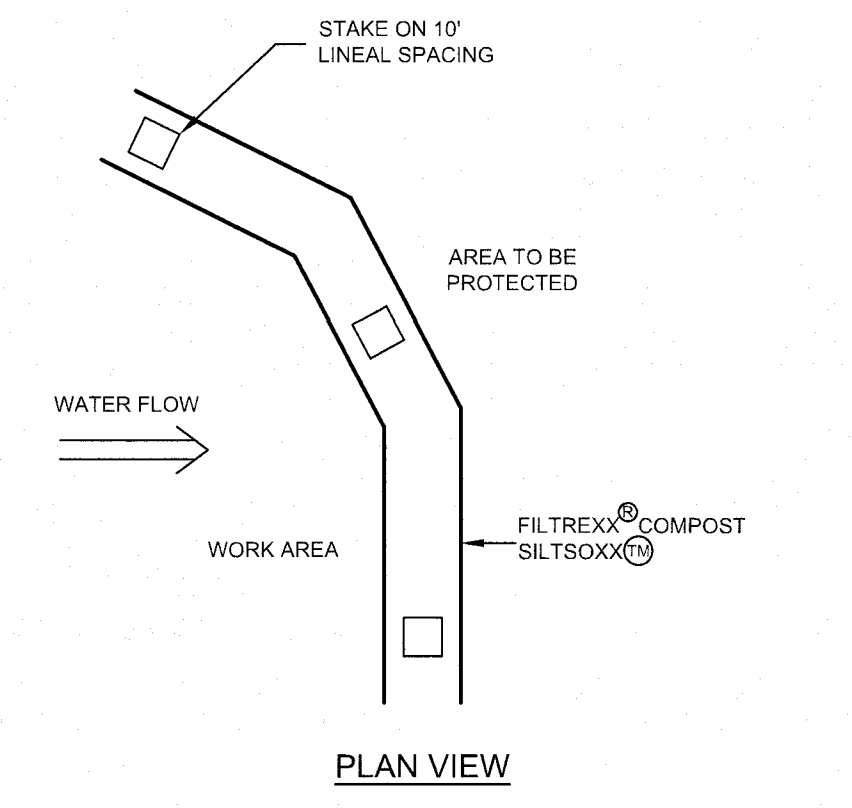
1. LOAM SHALL BE APPLIED AT A MINIMUM COMPACTED THICKNESS OF 4 INCHES.
2. LIME SHALL BE APPLIED AT A RATE OF 75 TO 100 POUNDS PER 1,000 S.F.
3. FERTILIZER SHALL BE APPLIED AT A RATE OF 30 POUNDS PER 1,000 S.F. IT IS RECOMMENDED THAT THE SOIL BE TESTED PRIOR TO APPLYING ANY FERTILIZERS TO DETERMINE WHAT LEVELS AND RATES ARE NECESSARY.
4. SEED MIXTURE FOR LAWN AREAS SHALL BE APPLIED AT A RATE OF AT LEAST 80 POUNDS PER ACRE OR 2 POUNDS PER 1,000 S.F.
5. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT A RATE OF 2 POUNDS PER 1,000 S.F.
6. SEED MIXTURE FOR SLOPE AREAS SHALL BE APPLIED AT A RATE OF 80 POUNDS PER ACRE OR 2 POUNDS PER 1,000 S.F.
7. SEED MIXTURE FOR STORMWATER MANAGEMENT AREAS SHALL BE APPLIED AT A RATE OF 70 POUNDS PER ACRE OR 1.6 POUNDS PER 1,000 S.F.
8. MULCH SHALL BE APPLIED AT A RATE OF 90 POUNDS PER 1,000 S.F.

MATERIALS:

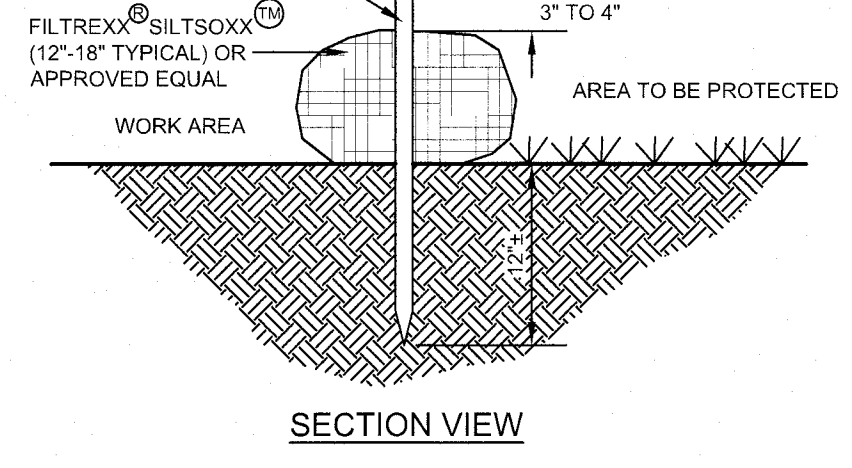
1. LOAM USED FOR TOPSOIL SHALL BE FRIABLE, FERTILE, NATURAL FREE-DRAINING LOAM, FREE OF ROOTS, GRASS, STICKS, WEEDS, CLAY, SOD LUMPS, DEBRIS AND STONES LARGER THAN 1 INCH IN ANY DIMENSION. SOIL SHALL NOT BE EXCESSIVELY ACID OR ALKALINE AND CONTAIN NO TOXIC MATERIALS.
2. LIME SHALL BE GROUND LIMESTONE CONTAINING NO LESS THAN 95% CALCIUM AND MAGNESIUM CARBONATES.
3. FERTILIZER SHALL BE NO PHOSPHORUS, SLOW RELEASE.
4. SEED MIXTURE FOR LAWN AREAS SHALL BE 99% PURE LIVE SEED AND CONSIST OF THE FOLLOWING:
 - 25% CREEPING RED FESCUE
 - 25% KENTUCKY BLUEGRASS
 - 25% REDTOP
 - 25% MANHATTAN PERENNIAL RYEGRASS
5. TEMPORARY SEEDING MIXTURE SHALL BE AN APPROVED CONSERVATION MIX OR CONSIST OF THE FOLLOWING:
 - 15% BLACKWELL OR SHELTER SWITCHGRASS
 - 30% NIAGARA OR KAW BIG BLUESTEM
 - 30% CAMPER OR BLAZE LITTLESTEM
 - 15% NE-27 OR BLAZE SAND LOVEGRASS
 - 10% KING BIRDFOOT TREFLOID
 - INOCULUM SPECIFIC TO BIRDFOOT TREFLOID MUST BE USED WITH THIS MIXTURE. IF SEEDING BY HAND, A STICKING AGENT SHALL BE USED. IF SEEDING WITH A HYDROSEEDER, USE FOUR TIMES THE RECOMMENDED AMOUNT OF INOCULUM.
6. SEED MIXTURE FOR SLOPE AREAS SHALL BE 99% PURE LIVE SEED AND SHALL CONSIST OF THE FOLLOWING:
 - 30% CREEPING RED FESCUE
 - 40% PERENNIAL RYE GRASS
 - 15% REDTOP
 - 15% BIRDFOOT TREFLOID
 - *IN ADDITION TO THE MIX SPECIFIED ABOVE, CROWN VETCH SHALL BE USED ON ALL SLOPES STEEPER THAN 3:1. CROWN VETCH SHALL BE APPLIED AT A RATE OF 10 POUNDS PER ACRE AND INOCULUM SPECIFIC TO CROWN VETCH MUST BE USED.
7. SEED MIXTURE FOR STORMWATER MANAGEMENT AREAS, INCLUDING DETENTION BASINS AND VEGETATED TREATMENT SWALES SHALL CONSIST OF THE FOLLOWING:
 - 25% CREEPING RED FESCUE
 - 15% SWITCH GRASS
 - 15% FOX SEDGE
 - 15% CREEPING BENTGRASS
 - 10% FLATPEA
 - 20% WILDFLOWER VARIETY
8. STRAW USED FOR MULCH SHALL CONSIST OF MOWED AND PROPERLY CURED GRASS OR LEGUMINE MOWINGS, FREE FROM WEEDS, TWIGS, DEBRIS OR OTHER DELETERIOUS MATERIAL AND ROT OR MOLD.
9. NATIVE PLANTINGS SHOULD BE USED FOR ALL NEW GREENSCAPES.
10. ALL WILDFLOWER SEEDING MIXES SHOULD BE FREE OF INVASIVE SPECIES.



STONE CHECK DAM DETAIL
NOT TO SCALE



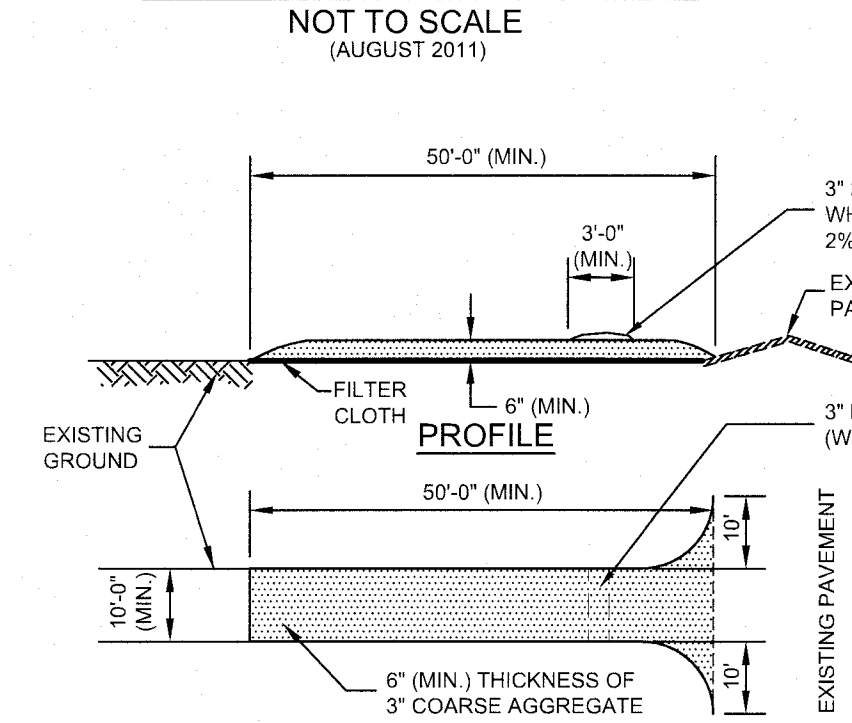
STABILIZED CONSTRUCTION EXIT DETAIL
NOT TO SCALE



NOTES:

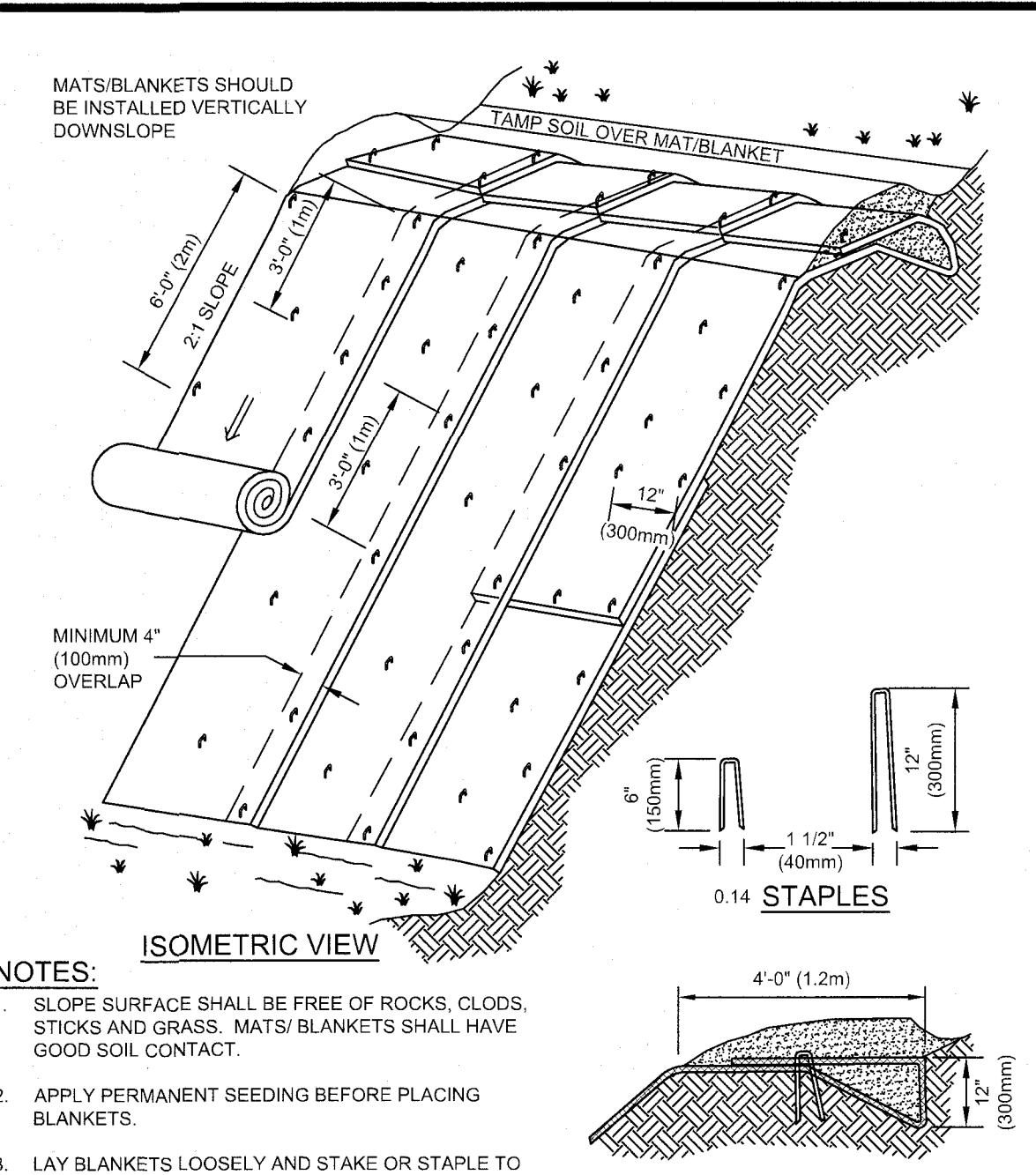
1. ALL MATERIAL TO MEET FILTREXX® SILTISOXX® SPECIFICATIONS.
2. SILTISOXX® COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.
3. SILTISOXX® DEPICTED IS FOR MINIMUM SLOPES. GREAT SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER.
4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

FILTREXX® SILTISOXX® DETAIL
NOT TO SCALE
(AUGUST 2011)

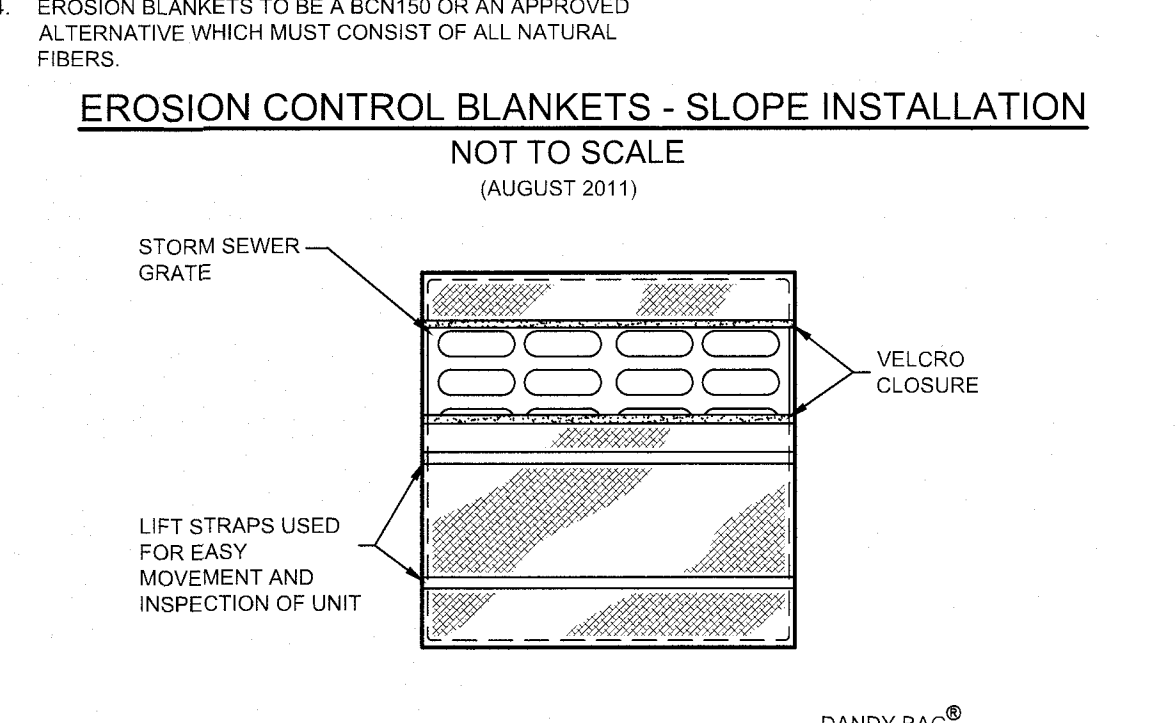


PLAN VIEW

STABILIZED CONSTRUCTION EXIT DETAIL
NOT TO SCALE



EROSION CONTROL BLANKETS - SLOPE INSTALLATION
NOT TO SCALE
(AUGUST 2011)



HI-FLOW DANDY BAG® (SAFETY ORANGE)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 x 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	KPa (psi)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	80
APPARENT OPENING SIZE	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
FLOW RATE	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
PERMITTIVITY	ASTM D 4491	Sec ⁻¹	2.1

DANDY BAG®
NOT TO SCALE

MAINTENANCE:

1. MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE CRUSHED STONE AND THE EFFECTIVENESS OF THE CRUSHED STONE PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOPDRESSED WITH NEW CRUSHED STONE OR COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
2. IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT FILTER TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS:

1. STONE FOR A STABILIZED CONSTRUCTION EXIT SHALL BE 3 INCH MINIMUM STONE, RECLAIMED STONE OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED EXIT SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED EXIT SHALL NOT BE LESS THAN 3 INCHES.
4. THE WIDTH OF THE EXIT SHALL NOT BE LESS THAN THE FULL WIDTH OF THE AREA WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6. IF SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION EXIT SHALL BE PIPED BENEATH THE EXIT. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. THE MOUNTABLE BERM IS REQUIRED FOR 50' LONG EXITS.

- CONSTRUCTION SEQUENCE**
1. THE CONTRACTOR WILL ENSURE THAT NO MORE THAN 5 ACRES IS DISTURBED AT ANY ONE TIME.
 2. FIRST CUT AND CLEAR TREES AND BRUSH ONLY WITHIN DESIGNATED LIMITS OF CLEARING AS NECESSARY TO FACILITATE PROPOSED CONSTRUCTION. ALL TREES, BRANCHES AND OTHER VEGETATIVE MATERIALS SHALL BE PROPERLY DISPOSED OF OFF SITE BY THE CONTRACTOR. THIS PROJECT IS MANAGED TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
 3. PRIOR TO COMMENCEMENT OF ANY EARTHMOVING OPERATIONS, ALL APPLICABLE TEMPORARY EROSION CONTROL MEASURES, INCLUDING SPECIFIED PERIMETER SILTATION FENCING AND STABILIZED CONSTRUCTION EXIT SHALL BE IN PLACE AS SHOWN ON THE PROJECT PLANS.
 4. COMPLETE GRUBBING OPERATIONS. ALL STUMPS AND SIMILAR ORGANIC DEBRIS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR. NATIVE ORGANIC SOIL MATERIALS SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED WITHIN AREAS OUT OF THE WAY OF OTHER CONSTRUCTION ACTIVITIES AND DRAINAGE FLOW. STOCKPILES SHALL BE TEMPORARILY SEEDED WITH WINTER SEED AND BE SURROUNDED WITH STRAW BALES AND/OR FABRIC SILTATION FENCE IN ORDER TO PREVENT LOSS DUE TO EROSION.
 5. BEGIN EARTHMOVING OPERATIONS, COMMENCING WITH WORK NEEDED TO BALANCE SITE AND FACILITATE BUILDING FOUNDATION AND RETAINING WALL CONSTRUCTION. PERMANENT DOWNSLOPE WORK SHALL BE PROTECTED FROM UPDRAINAGE STORMWATER FLOW BY THE CONSTRUCTION OF TEMPORARY EARTHEN DIKES OR EXCAVATED SWALES.
 6. ONCE BUILDING FOUNDATION WORK IS UNDERWAY, CONTINUE EARTHMOVING OPERATIONS UNTIL DESIGN SUBGRADE IS ACHIEVED.
 7. DETENTION BASINS/SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
 8. DITCHES/SWALES/BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
 9. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL SOILS ARE STABILIZED.
 10. INSTALL DRAINAGE SWALE SYSTEMS AND OTHER UTILITIES WORKING FROM LOW TO HIGH. INCOMPLETE WORK SHALL BE PROTECTED FROM SILTATION BY THE USE OF SILTATION BARRIERS AROUND SWALES UNTIL THE SITE HAS BECOME FULLY STABILIZED.
 11. DETENTION BASINS/SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
 12. PLACE GRAVEL AND CRUSHED GRAVEL OVER PROPOSED DRIVEWAY, WALKS AND PARKING AREAS AND COMPACT IN SPECIFIED LIFT THICKNESSES.
 13. COMPLETE EXCAVATION/STABILIZATION GRADING ACTIVITIES. WHEN COMPLETE, IMMEDIATELY BEGIN TOPSOILING PROPOSED TURF AREAS USING STOCKPILED LOAM SUPPLEMENTED WITH BORROW LOAM, IF NECESSARY, TO LEAVE A THICKNESS OF 4 INCHES OF FRIABLE LOAM.
 14. FINE GRADE ALL FUTURE TURF AREAS AND HYDROSEED WITH THE SPECIFIED SEED MIXTURE IMMEDIATELY AFTER FINE GRADING IS COMPLETED. ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
 15. INSTALL THE BINDER COURSE OF PAVEMENT OVER ALL DESIGNATED AREAS.
 16. CONTINUE TO MONITOR AND RECTIFY MINOR SITE AND SLOPE EROSION UNTIL ENTIRE SITE APPEARS TO BE COMPLETELY STABILIZED AND VEGETATED WITH A HEALTHY STAND OF TURF OR GROUND COVER. MAINTAIN SPECIFIED SILTATION CONTROL MEASURES THROUGH ONE WINTER.
 17. INSTALL THE SPECIFIED WEARING COURSE OF PAVEMENT OVER THE BINDER COURSE.
 18. COMPLETE INSTALLATION OF LANDSCAPING, SIGNAGE AND OTHER SITE AMENITIES.

EROSION CONTROL NOTES

1. EXPOSED EARTHWORK SHALL BE CONFINED TO AS LIMITED AN AREA AS IS PRACTICAL AT ANY GIVEN TIME THROUGHOUT THE CONSTRUCTION SEQUENCE. AT NO TIME SHALL MORE THAN FIVE (5) ACRES OF SITE AREA BE IN AN UNSTABLE CONDITION UNLESS AN ENVIRONMENTAL MONITOR EMPLOYED THROUGHOUT THE DURATION OF CONSTRUCTION. NO GIVEN AREA OF THE SITE SHALL BE LEFT IN AN UNSTABILIZED CONDITION FOR A PERIOD OF TIME EXCEEDING FORTY-FIVE (45) CALENDAR DAYS.
2. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS. IN ADDITION, SIMILAR MEASURES SHALL BE INSTALLED WHEN THE FIELD CONDITION OR FIELD OPERATION OF THE INDIVIDUAL SITE CONTRACTOR MAY WARRANT. ALL TEMPORARY EROSION CONTROL MEASURES USED SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER 0.25" OF RAINFALL OR MORE. THEY SHALL BE CLEANED AND MAINTAINED AND OTHERWISE KEPT IN AN EFFECTIVE OPERATING MANNER THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL DISTURBED AREAS DESIGNATED TO BE TURF SHALL RECEIVE A MINIMUM APPLICATION OF 4 INCHES OF LOAM (COMPACTED THICKNESS) PRIOR TO FINAL SEEDING AND MULCHING.
4. EROSION CONTROL AND STABILIZATION SHALL BE IN ACCORDANCE WITH HILLSBOROUGH COUNTY CONSERVATION DISTRICT-VEGETATIVE STANDARD AND SPECIFICATIONS FOR SEEDING GRASSES AND LEGUMES FOR LONG-TERM COVER ON EXCAVATED AREAS.
5. ALL SWALES AND DITCHLINES SHALL BE PERIODICALLY CLEANED OF DEPOSITED SEDIMENT SO AS TO MAINTAIN AN EFFECTIVE GRADE AND CROSS SECTION. ALL SWALES AND DITCHLINES SHALL BE FULLY STABILIZED PRIOR TO HAVING STORMWATER DIRECTED TOWARDS THEM.
6. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
7. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
 - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
 - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
8. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH EN-A-1000.
9. IN NO WAY ARE THESE TEMPORARY EROSION CONTROL MEASURES INDICATED ON THESE PLANS TO BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGEMENT IN INSTALLING SUPPLEMENTARY EROSION CONTROL MEASURES WHERE AND WHEN SPECIFIC SITE CONDITIONS AND/OR CONSTRUCTION METHODOLOGIES MAY WARRANT.
10. THE TOWN RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES DURING CONSTRUCTION.
11. AREAS HAVING FINISH GRADE SLOPES OF 3:1 OR STEEPER, SHALL BE STABILIZED WITH LITE MATTING WHEN AND IF FIELD CONDITIONS WARRANT, OR IF SO ORDERED. LITE MATTING INSTALLED TO CONFORM WITH THE RECOMMENDED BEST MANAGEMENT PRACTICE OUTLINED IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION".
12. DETENTION BASINS/SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
13. DITCHES/SWALES/BASINS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
14. TEMPORARY WATER DIVERSION (SWALES, BASINS, ETC.) MUST BE USED AS NECESSARY UNTIL SOILS ARE STABILIZED.
15. ALL ROADWAYS AND PARKING AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
16. ALL CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

WINTER CONSTRUCTION NOTES:

1. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 4:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE PLACEMENT OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
3. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3 OR, IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON, BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.
4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
 - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
 - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

CONSTRUCTION DETAILS
BLUEBIRD SELF STORAGE
MAP 176 LOTS 21, 22 & 23
196-202 CENTRAL STREET
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: RONALD CRAVEN TRUST c/o NANCY CRAVEN TRUST 88 SPEARE ROAD HUDSON, NH 03051 H.C.R.D. Bk. 6079 PG. 1294	APPLICANT: BLUEBIRD SELF STORAGE LLC. 125 OCEAN ROAD GREENLAND, NH 03840
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KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	01-21-2022	REVISED GRADING/DRAINAGE PER CLIENT	BES
2	02-14-2022	REVISED PER REVIEW COMMENTS	BES
DATE: DECEMBER 20, 2021 SCALE: N.T.S.			
PROJECT NO: 21-0709-3 SHEET 23 OF 23			

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

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

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.