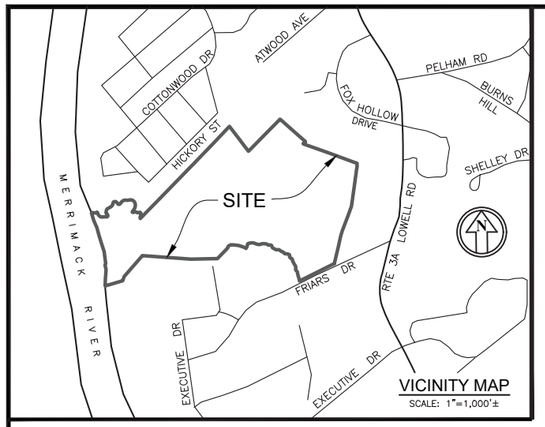

# SITE PLAN

## FRIARS DRIVE

## PARCEL 209-001-000

## @ SAGAMORE INDUSTRIAL PARK

## HUDSON, NEW HAMPSHIRE

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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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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Engineers
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SEAL OF NEW HAMPSHIRE PROFESSIONAL ENGINEER
KARL R. DUBAY
No. 9006
LICENSED

REVISIONS:

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|---|---|---|---|
| | | | |

DRAWN BY: WA
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: SCALE: 1"=140'±
FILE: 475–COVER
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**TITLE SHEET**

PROJECT #475 SHEET 1

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-COVER.dwg

## Zoning Ordinance Compliance Notes

III-334-12 Fencing

F. Fencing is not subject to setback requirements.
**(Fencing locations and details will be finalized with planning board input)**

III-334-14.A Building Height

Measured "from the average elevation of the finished grade within five feet of the structure to the highest point of the roof, excluding accessory, unoccupied protuberances".

Maximum allowed occupiable building height: "shall be 50 feet, for uses of manufacturing, warehouse, distribution and office space ancillary to said principal uses." Location: "Sagamore Industrial Park (IP), located in an Industrial (I) Zoning District, bordered by Sagamore Bridge Road to the south, the Merrimack River to the west, the existing General (G) District to the north and the existing Business (B) District, abutting Lowell Road to the east, and including all parcels located within this I Zoning District." Also included are the properties "The General (G) Zoning District abutting to the north of the above-described Sagamore IP, and known locally as the "Friar Property," having frontage off Friars Drive.
**(Complies for this parcel - refer to prototypical building elevations demonstrating compliance with the 50-ft allowed height requirement)**

III-334-15.A.3 Parking Setbacks - none for nonresidential zones. **(Complies - refer to 276-11.1.B.12 for setback to residential uses))**

IV-334-18.E Industrial (I) District

"The I District is established to provide for industrial development, warehousing, limited business and commercial uses and customary accessory uses and structures. The district is intended to be strictly nonresidential in character." **(Complies - use is warehousing and is allowed by right)**

IV-334-18.F General (G) District

"The G District includes all areas not specifically designated as being within an R-1, R-2, TR, B or I District. The district is designed to permit a wide diversity of land uses. Most uses permitted in the other five districts are permitted in the G District. The G District is intended to allow natural constraints, such as infrastructure development and market forces to determine the most appropriate use of land. It is also intended that the G District will eventually be absorbed by the expansion of other existing districts or replaced by newly created districts. The Planning Board will be responsible for maintaining sound planning concepts in this district and shall ensure that conflicting land uses do not abut each other without appropriate buffers." **(The project is located within the Sagamore Industrial Park which has been master-planned by the Town for decades to allow and foster industrial-based uses such as the warehouse use. The required buffers are provided, and the uses comply)**

V-334-20 Allowed Uses per Table (334 Attachment 1) - for Both G & I Districts

Allowed Uses by right includes: (see table for additional allowed uses):
E.8 Warehousing **(Complies)**

VII-334-27 Dimensional Requirements

Table (334 Attachment 4) (w/ muni sewer & water)

| Item | G Zone | I Zone | Provided |
|---|---|---|---|
| Lot Area, SF **(Complies)** | 43,560 | 30,000 | 3,260,249 |
| Lot Frontage, LF **(Complies)** | 150 | 150 | 468 |
| Building Setbacks : | | | |
| Front/Side/Rear, FT **(Complies)** | 30/15/15 | 50/15/15 | 431/287/246 |
| (Proposed work is within the G Zone) | | | |

VII-334-27.1.B Minimum Buildable Lot Area

Shall not contain wetlands, E-Slopes, and shall be contiguous upland.
**(Complies - refer to existing conditions plans)**

IX-334-35.A Wetlands Conservation Overlay District

Applies to wetlands and surface waters and a 50 FT buffer around them.
**(Refer to plans)**

IX-334-36.C WCOD Conditional Uses Allowed

2. Access Ways, driveways, and Utilities if essential to the productive use of the land beyond the WCOD, utilize least impact design. **(refer to plans, reflecting design intent to avoid work within the WCOD)**
Drainage work for stormwater management if not practicable or possible to be located outside the WCOD. **(refer to plans - reflecting design intent to avoid work within the WCOD)**

IX-334-37 WCOD CUP Criteria
**(Design avoids a WCOD CUP at this time)**

XII-334-57 Signs

334-60.C Business Signage Front Setback
= 50% (min) of Building Front Setback = 30/2 = 15 FT. **(Complies, 85 FT provided)**
334-60.D Business Signage Side & Rear Setback
= associated building setback (min) = 15 FT **(Complies, 202 FT provided)**
334-60.J Business Freestanding Sign Height
= 30 FT (max) **(Will comply at time of sign permit application)**
Street Address shall be shown @ 4 IN lettering height **(Will comply at time of sign permit application)**
334-64 One Freestanding Sign per site:
A.Area (max) = 1 SF per LF of road frontage up to 100 SF max. **(Complies - 468 FT frontage = 100 SF max, will comply at the time of sign permit application)**

XIV Impact Fees
**(To be determined and verified with Town Staff)**

XVI Flood Zones

Per Chapter 218 of Town Code:
**(Complies - no new development is proposed within the Flood Zone)**

## Administrative Requirements Compliance Notes

276-4 Performance Sureties
**(To be determined, will be provided and comply as applicable)**

276-7 Waivers
**(None known at this time but may be coordinated if determined to be required per the design, and coordinated with Town Staff and the Planning Board)**

276-11.1.B General Plan Requirements:

12. Parking / Building Setbacks

No parking is allowed in the building setbacks **(Complies)**

*"(NOTE: For this section, "residential use" shall mean any LOT which either contains a residential dwelling and/or has received SUBDIVISION or SITE PLAN approval for the purpose of constructing residential dwellings.)*

12.a In G Zone, where an industrial use abuts a residential use, there shall be a 200-FT distance from the residential property line to any improved part of the industrial development. **(Complies - see plans)**

12.c In I Zone, where commercial/industrial use or zoning district abuts a residential use or zoning district, there shall be a 100-FT distance between the residential use or zoning district and any improved part of the nonresidential development.
**(Complies - see plans)**

22. Green Area
A green area (grass or landscaping) area is required between the right of way and pavement/structure, excepting driveways - **(Provided - see plans)**

Minimum width = 20 FT (for 30-FT building setbacks) (35 FT @ 50-FT setback).
**(Complies - see plans)**

24.a Open Space
Min 35% required for each lot (for sites located between the Circumferential Highway and the Merrimack River).
Open Space - grass/treed/landscaped or natural growth; there must be reasonable open space near or adjacent to each building or structure, including pavement, as determined by the planning board.
**(Complies - see plans for data)**

25. Parking and Drive Setbacks - Same as building Setbacks.
**(Complies - see plans)**

276-13. A. Utilities - shall be underground **(Complies)**
Provide easements where necessary **(To be provided if necessary)**
D. Utilities Screening - Year-round (other than poles) is required **(Provided)**

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STATE OF NEW HAMPSHIRE
KARL R. DUBAY
No. 9906
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DRAWN BY: JJG
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**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
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OWNER
**5 WAY REALTY TRUST**
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PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:
**ZONING ORDINANCE COMPLIANCE NOTES**

PROJECT #475 SHEET 2

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-NOTES.dwg

## Site Plan Regulations Compliance Notes

275-6.U Development Agreement
Required between "the Applicant and the Town to detail the terms, conditions, and responsibilities of the Applicant and the Town in conjunction with the approved plan."
**(To be determined & provided)**

275-8.C.2 Parking Calculations
Calculation per this section required, OR the Board may reduce the requirements if appropriately demonstrated.
Parking Calculations. The calculations for required off-street spaces shall be computed in accord with the specifications listed
Any use not listed shall provide parking as required by the PLANNING BOARD. The PLANNING BOARD may vary these requirements if the APPLICANT can demonstrate that fewer spaces than required below are consistent with the proposed use:
**(Refer to calculations and plan data provide)**

275-8.C.2.g Industrial Use Parking
The larger of 1:600 GSF, or 0.75 per employee of the combined employment of the two largest successive shifts.
**(Refer to plan data)**

275-8.C.4 Parking Space Dimensions
10x20 FT
**(Complies - all parking spaces are 10x20 FT)**

275-8.C.5.a Parking Aisle Width
24 FT (min) required. **(Complies - all aisles at 24 FT width min)**

275-8-C.6.a Loading Spaces
1 space for first 5 GSF plus 1 space per each additional 10 KGSF.
Building Area = 504 ksf
Total Loading Spaces Required = 51 Loading Spaces
**(Complies - see plan data)**

275-8.C.6.b Loading Space Dimensions
12x60 FT and for shorter trucks, 12x35 FT (min), also required maneuvering/aisle space as appropriate.
**(Complies)**

275-8.C.6.c Loading Space Location
On same lot as the use served.
**(Complies - all loading spaces are located on subject lot)**

275-8.C.6.d Maneuvering Areas
Required within the property lines of the use, shall not hinder sidewalks or vehicles on a road.
**(Complies)**

275-8.C.7.a Parking Lot Landscaping
**(Complies - see plan data)**

275-8.C.7.b Parking Lot Landscaping
The 10% min area is calculated from the total space/aisle area.
**(Complies - see plan data)**

275-8.C.7.c Parking Lot Shade Trees
**(Complies - see plan data)**

275-8.C.7.d Parking Lot Shrubs
**(Complies - see plan data)**

275-8.C.7.e Parking Lot Landscaping
For parking areas consisting of a single access lane, this section (275-8.C.7) shall not apply.
**(Complies - most areas area exempt per this section, although the criteria is demonstrated to be meeting all design intents.)**

275-8.C.8 Screening
Shall be provided for visual separation of incompatible uses. **(provided)**
Shall be required between parking or loading areas and abutting residential zones. May also be required between abutting nonresidential sites. **(provided)**
Where screening is required, provide a reasonable effective visual buffer by:
(a) Use of existing vegetation and terrain where possible **(provided)**; or
(b) New plantings (type, size and spacing to be approved by the Board), grade separations, fences or similar features. **(provided)**
**(Complies - refer to landscape plans)**

275-8-C.9 Parking Space Location
Required spaces to be on same lot as the use served.
**(Complies - parking spaces all on site)**

275-8-C.10 Drive Entrance Design
Shall conform with Chapter 193 (Driveways), except that site plan approval shall constitute the issuance of a driveway permit.
193-4 Permit Required for Town **(will obtain prior to construction)**
193-10 Design Criteria **(complies, refer to plans, details, and traffic study)**
A. Safe Location **(complies)**
B. Drainage & Channelization Design **(Complies)**
C. Grades/Alignment/Drainage **(Complies)**
D. Additional Design Elements **(Provided)**
E. AASHTO Sight/Stopping Distance/Geometries **(Complies)**
F. Widths as Appropriate for Lanes & Islands **(Complies)**
G. One Drive per Parcel Max Allowed (combined to single via Easement) **(Complies)**
H. Drives per Side/Rear Building Setbacks OR per Shared Easements **(Complies)**
I. Shared Drive with Easements per Proper Design Techniques **(Complies)**
J. Pavements **(Complies)**

275-8-C.11 ADA - Accessibility per Federal Guidelines
Plan detailing/data required, note on plan required per ADA requirements and citing regulations referenced.
**(Complies - refer to plans and plan calculations)**

275-9 Information & Studies:

275-9.A Stormwater Management Plan - per Ch 290

290-3.A SMECP Required **(provided)**

290-5.A Basic Standards (1-13)
**(Complies - refer to plans, details, and drainage study)**

290-5.A Basic Standards (1-13)
**(Complies - refer to plans, details, and drainage study)**

290-5.B.1 Enhanced Standards
**(Complies - refer to plans, details, and drainage study)**

290-6.A Stormwater Management Design (1-15) (Temporary & Permanent)
**(Complies - refer to plans, details, and drainage study)**

290-7 SMECP Design Requirements (A-B)
**(Complies - refer to plans, details, and drainage study)**

290-8 Construction Phase Requirements **(Will comply)**
A.4 Bonding/Security **(Will comply)**
A.5 Inspections/Escrows **(Will comply)**
A.6 EPA NPDES Filings/Reports **(Will comply)**
290-9 O&M Plan & Inspections/Reports **(Will comply)**

290-10 A. NHDES AOT Permit **(Required)**
B. EPA CGP/Reporting **(Required)**

275-9.A.1 Pre/Post peak rates and volumes where practicable per AOT permit criteria.
**(Complies per Town, AOT, NHDES, and EPA permitting requirements - refer to drainage report)**

275-9.A.2 Runoff Flow - depict with use of plan arrows.
**(Complies - refer to plans and drainage report)**

275-9.A.3 Details - of all systems required, including soils testing on infiltration systems.
**(Complies - refer to plans and drainage report)**

275-9.A.4 Calculations - 10YR (closed site systems), 25YR (culverts/swales/ponds)
**(Complies - refer to drainage report)**

275-9.B Traffic Study
**(Complies - refer to traffic report, note that the tract was pre-planned within the Sagamore Industrial Park for development of this type, which meets all regulations. Note also that offsite mitigation has been provided via the construction of Friars Drive and looped utilities for the northerly interconnect with Lowell Road, and limited to right-in-right-out at its intersection. Also note that multiple signalized intersections serve the Sagamore Industrial Park and have been master planned to appropriately serve the park development. Additional mitigation, if required, may include a right turn pocket from Lowell Road onto Friars Drive.**

275-9.C Noise Study
**(The uses proposed are allowed by right at this location. A noise study will demonstrate that such normal uses as allowed would not product any more noise than what is reasonably expected and allowed in the Ordinance at this location.**

275-9.D Fiscal Impact Study
**(The project will provide substantial net tax revenues to the Town with no public school costs, and negligible, if any, public safety costs. The project as designed meets all ordinances and regulations, and within the expectations of the underlying zoning master planning for the location.**

275-9.E Utility Plans
**(Provided and compliant with Town and Utility Company and State requirements, see plans)**

275-9.F Proposed/Existing easements, covenants, deed restrictions, etc.
**(Provided as required)**

275-8-C.10 Drive Entrance Design

275-9.G Permits:
1. NHDES Sewer Connection (including Town Chapter 270)

270-15.A-E Flow Content Limits **(will be required to comply)**
270-17.B.3 a. Allocated on a per-acre basis **(will comply)**
a. Area excludes steep slopes (>25%), wetlands, noncontiguous dry land and dedicated public or private rights-of-way. **(refer to plan for calc)**
b. Actual allocation dedication will be flow verification at first year of building occupancy **(will comply)**
c. Flow Allocation Table (Max ADF GPD/Ac):
General Industrial Uses = 500 (domestic)
Process Flow = 2,000 (requires detailed review & agreement review process)
**(refer to sewer plans and application calculations. Flows required are substantially less than allocations allowed)**

3. Town Wetlands Buffer CUP **(Not required at this time)**
Other. NHDES AOT **(Required)**
Other. EPA SWPPP **(Prior to Construction)**
Other. NHDES Shoreland **(No work proposed at this time in shoreland areas.)**

275-9.I Environmental Impact Study
**(NHDES Wildlife Study will be coordinated and will meet the requirements, all systems designed and constructed will meet applicable Town, State, and Federal Environmental Requirements)**

275-10 Escrow Deposit Per 276-12 may be required.
**(To be determined with Town Staff & Planning Board)**

275-12.E Bonding/Security For Site and Offsite work, may be required.
**(To be determined with Town Staff & Planning Board)**

275-15 Waivers May be granted as specified in 276-7.
**(None known at this time but may be coordinated if determined to be required per the design, and coordinated with Town Staff and the Planning Board)**

275-18 Performance Sureties - be required, per 276-4.
**(To be determined with Town Staff & Planning Board)**

275-20 Utilities - All work shall comply with 276-13.**(Complies)**

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SHEET TITLE:
**SITE REGULATIONS COMPLIANCE NOTES**

PROJECT #475 SHEET 3

ABUTTER LIST:

MAP 203/LOT:

10, 11 TOWN OF HUDSON
12 SCHOOL ST
HUDSON, NH 03051

12, 13 TOWN OF HUDSON
12 SCHOOL ST
HUDSON, NH 03051

14 TOWN OF HUDSON
12 SCHOOL ST
HUDSON, NH 03051

27 BRIAN R. BLOCKER
6 HICKORY ST
HUDSON, NH 03051

28 GREGORY & LEE ANN NELSON
8 HICKORY ST
HUDSON, NH 03051

29 PHILIP & JOAN MACSWEENEY
10 HICKORY ST
HUDSON, NH 03051

30 TODD NEWCOMBE
DINA FAGUNDES-NEWCOMBE
12 HICKORY ST
HUDSON, NH 03051

31 TIM & BARBARA COULTER
14 HICKORY ST
HUDSON, NH 03051

32 HULSE JOINT REVOCABLE
TRUST OF 2014
JAMES & DENISE HULSE TRUSTEES
16 HICKORY ST
HUDSON, NH 03051

33 RICHARD & LISA OLSON
18 HICKORY ST
HUDSON, NH 03051

34 CHARLES & MARY BOISSONNEAULT
20 HICKORY ST
HUDSON, NH 03051

35 OUELLETTE FAMILY TRUST
DONALD & DEBORAH OUELLETTE
TRUSTEES
22 HICKORY ST
HUDSON, NH 03051

36 DONALD & PAMELA CHARTRAND
24 HICKORY ST
HUDSON, NH 03051

37 VICTOR GOMEZ
26 HICKORY ST
HUDSON, NH 03051

ABUTTER LIST:

MAP 203/LOT CONT.:

38 JONATHAN & DOROTHY DAVIS
7 JUNIPER ST
HUDSON, NH 03051

39 SEIBERG REV. TRUST AGREEMENT
DALE & SUSAN SEIBERG TRUSTEES
5 JUNIPER ST
HUDSON, NH 03051

40 JAMES & SHEILA QUEENAN
47 COTTONWOOD DR
HUDSON, NH 03051

41 ALAIN DUBE
DIANE ST. PIERRE
45 COTTONWOOD DR
HUDSON, NH 03051

42 EVAN GODUCO
43 COTTONWOOD DR
HUDSON, NH 03051

43 DAVID TAVARES
41 COTTONWOOD DR
HUDSON, NH 03051

55 SCHMITT REVOCABLE TRUST
JOSEPH SCHMITT TRUSTEE
19 HICKORY ST
HUDSON, NH 03051

56 JOSEPH MARTIN
LINDSAY LEMIEUX
17 HICKORY ST
HUDSON, NH 03051

104 KATHLEEN FINN
JESSICA LIBERMAN
15 HICKORY ST
HUDSON, NH 03051

105 JENNIFER GARNEAU
13 HICKORY ST
HUDSON, NH 03051

115 MARK & CAROL SCANLON
11 HICKORY ST
HUDSON, NH 03051

116 MICHAEL RICE
9 HICKORY ST
HUDSON, NH 03051

125 ZACHARY PHILLIPS
7 HICKORY ST
HUDSON, NH 03051

ABUTTER LIST:

MAP 209/LOT:

1-1 FRIARS COURT CONDOMINIUM
1264 MAIN ST
WALTHAM, MA 02451

1-2 5 WAY REALTY TRUST
C/O WALTER FLOWERS
PO BOX 1435
N. HAMPTON, NH 03862

1-1-1 FC OWNER LLC
1264 MAIN ST
WALTHAM, MA 02451

1-1-2 FC2 OWNER LLC
1264 MAIN ST
WALTHAM, MA 02451

2 FARLEY WHITE HUDSON, LLC
1 BEDFORD FARMS DR, STE 200
BEDFORD, NH 03110

4 INTEGRA BIOSCIENCES CORP
2 WENTWORTH DR
HUDSON, NH 03051

5 HARRY HAYTAYAN REV. TRUST
HARRY HAYTAYAN TRUSTEE
17 FRIARS DR
HUDSON, NH 03051

ABUTTER LIST:

MAP 204/LOT:

1 LOWELL ROAD, LLC
PO BOX 1435
NORTH HAMPTON, NH 03862

2 RICHARD GEORGE DEMERS
22 LISA LANE
LOWELL, MA 01854

3 MONUMENT CONSTRUCTION, LLC
21 FACTORY ST, STE 1
NASHUA, NH 03060

4 DBV, INC
C/O WALTER FLOWERS
15 COURT SQ, STE 340
BOSTON, MA 02108

6 FOX HOLLOW CONDOMINIUM
ASSOC
C/O GREAT NORTH PROPERTY
MGMT
636 DANIEL WEBSTER HWY
MERRIMACK, NH 03054

6-421 DAVID J. LAFOND
421 FOX HOLLOW DRIVE
HUDSON, NH 03051

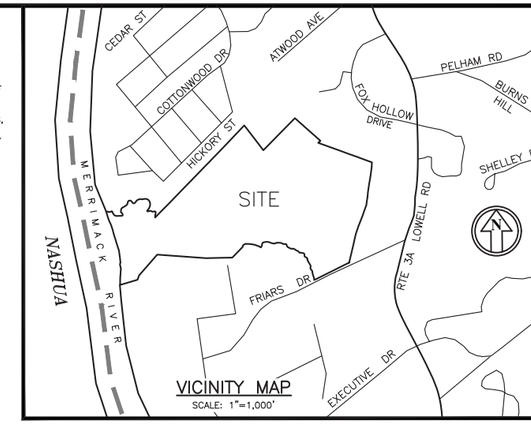
ABUTTER LIST:

MAP 210/LOT:

8 171 JMJ REALTY, LLC
175 LOWELL RD
HUDSON, NH 03051

## PLAN AND DEED REFERENCES:

1. ALTA/NSPS LAND TITLE SURVEY, FRIARS COURT, MAP 209 LOT 1-1, 161 LOWELL ROAD, HUDSON, NH; PREPARED FOR: 5 WAY REALTY TRUST, PETER HORNE, TRUSTEE; SCALE: 1"=50'; DATED JUNE 20, 2020, AND REVISED THROUGH SEPTEMBER 2020; PREPARED BY THE DUBAY GROUP, INC.; PLAN NOT RECORDED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
2. CONDO SITE PLAN OF FRIARS COURT, MAP 209 LOT 1-1; PREPARED FOR DAKOTA PARTNERS, INC.; SCALE: 1"=50'; DATED MARCH 2020, AND REVISED THROUGH SEPTEMBER 2020; PREPARED BY THE DUBAY GROUP, INC.; RECORDED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AS PLAN #40705.
3. H.C.R.D. PLAN #40569.
4. H.C.R.D PLAN #40568.
5. H.C.R.D. PLAN #38615.
6. H.C.R.D. PLAN #38110.
7. H.C.R.D. PLAN #28934.
8. H.C.R.D. PLAN #28866.
9. H.C.R.D. PLAN #28865.
10. H.C.R.D. PLAN #28159.
11. H.C.R.D. PLAN #25519.
12. H.C.R.D. PLAN #22640.
13. H.C.R.D. PLAN #17646.
14. H.C.R.D. PLAN #14556.
15. H.C.R.D. PLAN #13738.
16. H.C.R.D. PLAN #13138.
17. H.C.R.D. PLAN #11071.
18. H.C.R.D. PLAN #11023.
19. H.C.R.D. PLAN #8729.
20. H.C.R.D. PLAN #5475.
21. H.C.R.D. PLAN #4600.
22. H.C.R.D. PLAN #2807.
23. H.C.R.D. PLAN #890.
24. H.C.R.D. PLAN #301.




VICINITY MAP
SCALE: 1"=1,000'

## NOTES:

1. OWNER OF RECORD: (MAP 209 LOT 1)

   5 WAY REALTY TRUST
   PETER HORNE, TRUSTEE
   PO BOX 1435
   N. HAMPTON, NH 03862
   SOURCE OF TITLE: BK. 6046 PG. 1131 (H.C.R.D.)
2. THE BOUNDARY INFORMATION SHOWN HEREON IS BASED ON AN ON-THE-GROUND SURVEY BY THIS OFFICE IN DECEMBER 2020 AND JANUARY 2021, AND INFORMATION TAKEN FROM DEEDS AND PLANS OF RECORD.
3. EXISTING FEATURES AND TOPOGRAPHICAL DATA SHOWING TWO (2) FOOT CONTOUR INTERVALS PROVIDED BY EASTERN TOPOGRAPHICS, INC., WOLFEBORO, NEW HAMPSHIRE.
4. BEARINGS SHOWN ARE BASED ON GRID NORTH VIA GNSS OBSERVATIONS TAKEN DECEMBER 2020; VERTICAL DATUM IS REFERENCED TO NAVD88.
5. LOT 1 IS ZONED GENERAL (G ZONE) AND INDUSTRIAL (I ZONE) PER TOWN OF HUDSON ZONING MAP.

   | | |
   |---|---|
   | MIN. LOT AREA: | 30,000 SF - INDUSTRIAL |
   | MIN. LOT AREA: | 43,560 SF - GENERAL |
   | BUILDING HEIGHT | 50FT MAX |
   | MIN. LOT FRONTAGE: | 150FT |
   | MIN. FRONT YARD: | 50FT |
   | MIN. SIDE YARD: | 15FT |
   | MIN. REAR YARD: | 15FT |
6. LOCATION OF THE 100 YEAR FLOODPLAIN BOUNDARY AT ELEVATION 112', IS SHOWN IN ACCORDANCE TO FEMA FLOOD INSURANCE RATE MAP NUMBER 33015C0339E, WITH AN EFFECTIVE DATE MAY 17, 2005. SAME INFORMATION IS DEPICTED ON FEMA MAP NUMBER 33011C0652E DATED APRIL 18, 2011 AND FEMA MAP NUMBER 33011C0656D DATED SEPTEMBER 25, 2009.
7. FRONTAGE ALONG FRIARS DRIVE IS A TOWN MAINTAINED ROAD (CLASS V). RIGHT OF WAY IS 50 FEET WIDE.
8. REFER TO EASEMENT DEED OF THE PROVINCE OF ST. MARY OF THE CAPUCHIN ORDER TO PSNH DATED MARCH 1954, FILED AT BOOK 2054, PAGE 115. PERMANENT SEWER EASEMENT, THIRTY (30) FEET WIDE, CONVEYED TO THE TOWN OF HUDSON, DATED MARCH 14, 1978, FILED AT BOOK 2594, PAGE 290.
9. THE LOCATION OF ANY UNDERGROUND UTILITIES SERVICING THE SUBJECT PARCEL ARE APPROXIMATE ONLY. PORTION OF FRIARS DRIVE AND AREA ADJACENT TO IS CURRENTLY UNDER CONSTRUCTION AS OBSERVED WHILE CONDUCTING FIELDWORK.
10. THERE IS DIRECT VEHICULAR & PEDESTRIAN ACCESS TO AND FROM LOWELL ROAD (ROUTE 3A) AND EXECUTIVE DRIVE, OVER AND ACROSS FRIARS DRIVE. ALL ARE DEDICATED PUBLIC RIGHTS OF WAY.

## LEGEND

| | | | |
|---|---|---|---|
| GBS | GRANITE BOUND SET | | PROPERTY LINE |
| IRS | IRON REBAR SET | | ABUTTER LINE |
| IRF | IRON REBAR FOUND | | EDGE OF DELINEATED WETLAND |
| GBF | GRANITE BOUND FOUND | | STONE WALL |
| | UTILITY POLE | SSLY | SINGLE SOLID YELLOW LINE |
| | DRAIN MANHOLE | SSLW | SINGLE SOLID WHITE LINE |
| | CATCH BASIN | SBLW | SINGLE BROKEN WHITE LINE |
| | SEWER MANHOLE | VGC | VERTICAL GRANITE CURB |
| | LIGHT POLE | EOP | EDGE OF PAVEMENT |
| | FIRE HYDRANT | | RETAINING WALL |
| | WATER VALVE | | OVERHEAD WIRE |
| | WATER VALVE | | TREE LINE |
| | SIGN | S | SEWER LINE |
| MB | MAILBOX | W | WATER LINE |
| | EXISTING BUILDING | G | GAS LINE |

## WETLAND NOTES

1. WETLANDS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. IN MARCH 2019 AND DECEMBER 2020, AND LOCATED BY THIS OFFICE IN MARCH 2019 AND DECEMBER 2020.
2. WETLAND DELINEATION WAS PERFORMED TO THE STANDARDS OF THE CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1, (JANUARY, 1987).
3. DOMINANT HYDRIC SOIL CONDITIONS WITHIN THE WETLANDS WERE IDENTIFIED BY GOVE ENVIRONMENTAL SERVICES, INC. UTILIZING THE CRITERIA OF FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, 2004.
4. DOMINANCE OF WETLAND VEGETATION WAS ASSESSED BY GOVE ENVIRONMENTAL SERVICES, INC. UTILIZING THE NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: 1988 NORTHEAST (REGION 1) (PORTER B. REED, JR.).
5. THERE IS A TOTAL OF 71,325 SF OF WETLANDS DELINEATED ON THIS SITE.

STATE OF NEW HAMPSHIRE
LUKE HURLEY
7/29/21
No. 232
CERTIFIED WETLAND SCIENTIST

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
|---|---|

STATE OF NEW HAMPSHIRE
No. 991
TIM W. SUTHERLAND
LICENSED LAND SURVEYOR
SIGNATURE

## LAND SURVEYORS CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND IN DECEMBER 2020 AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

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

TIMOTHY W. SUTHERLAND DATE


The Dubay Group, Inc.
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

Engineers
Planners
Surveyors
TheDubayGroup.com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1 INCH = 200FEET

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| CHECKED BY: | TWS |
| DATE: | AUG. 3, 2021 |
| SCALE: | 1"=200' |
| FILE: | 475 ECPOVERVIEW |
| DEED REF: | 6046/1131 |

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

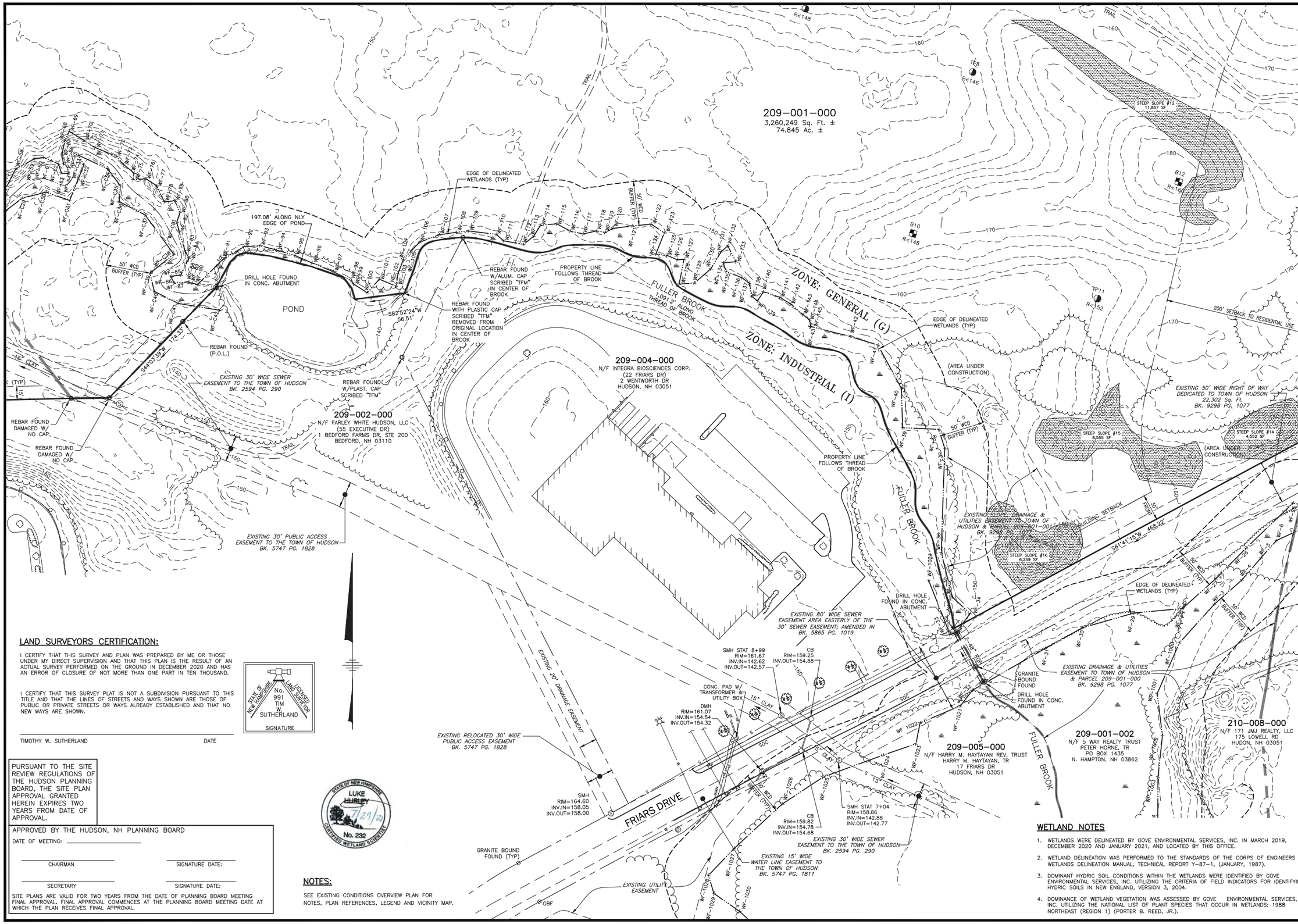
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS OVERVIEW PLAN**

PROJECT #475 SHEET 4

N:\=PROJECTS\475-Five Way Realty, Hudson\Survey\475 ECPOVERVIEW.dwg

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STATE OF NEW HAMPSHIRE No. 991 TIM W. SUTHERLAND LICENSED LAND SURVEYOR

SIGNATURE

TIMOTHY W. SUTHERLAND DATE

STATE OF NEW HAMPSHIRE LUKE HURLEY 7/29/21 No. 232 CERTIFIED WETLAND SCIENTIST

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: _____

CHAIRMAN — SIGNATURE DATE:

SECRETARY — 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.

## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

## WETLAND NOTES

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**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
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| DATE: | AUG. 3, 2021 |
| SCALE: | 1"=50' |
| FILE: | 475 ECP |
| DEED REF: | 6046/1131 |

PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

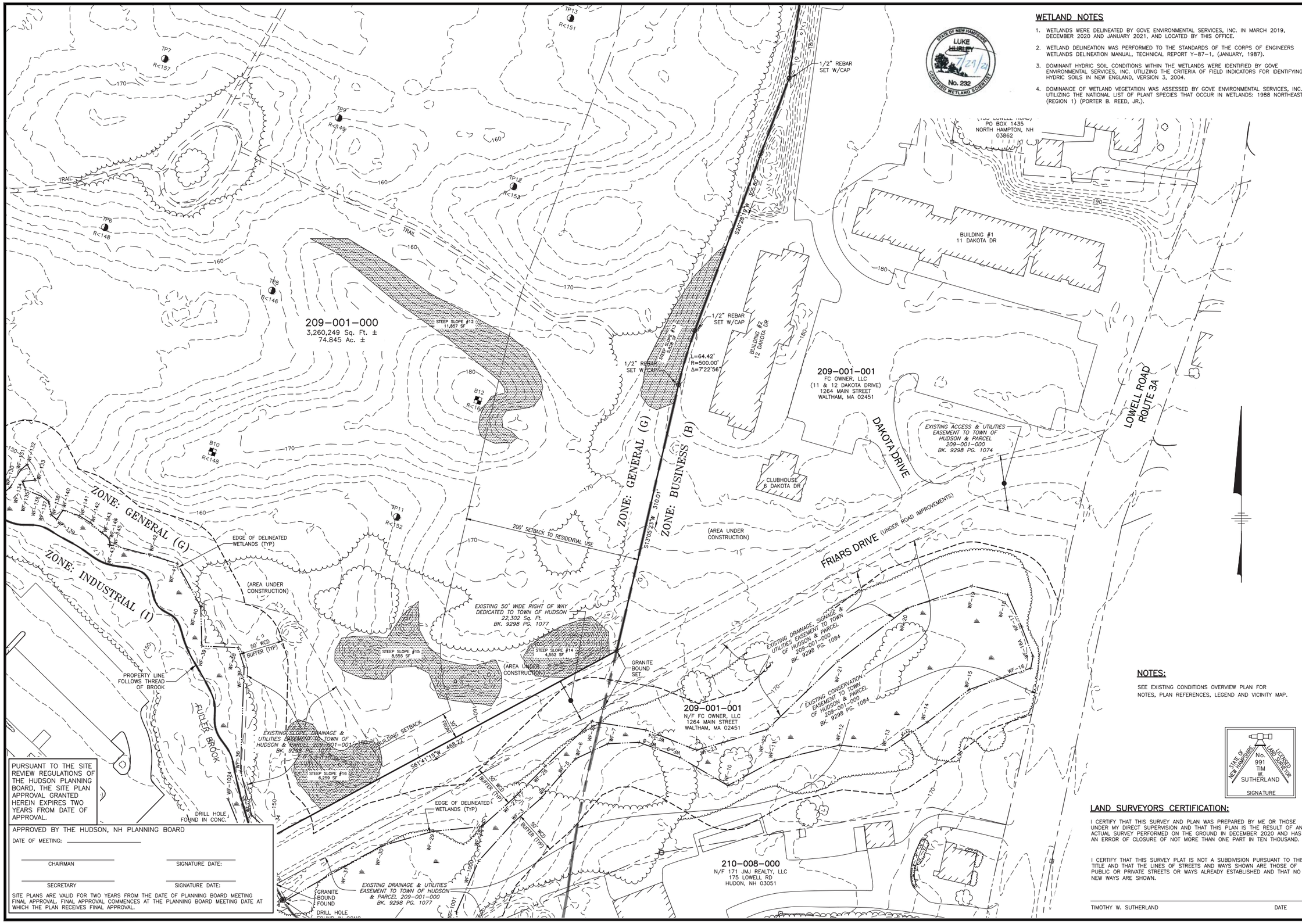
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - A**

PROJECT #475 SHEET 5

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## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

STATE OF NEW HAMPSHIRE
No. 991
TIM W. SUTHERLAND
LICENSED LAND SURVEYOR
SIGNATURE

## LAND SURVEYORS CERTIFICATION:

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TIMOTHY W. SUTHERLAND DATE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

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OWNER

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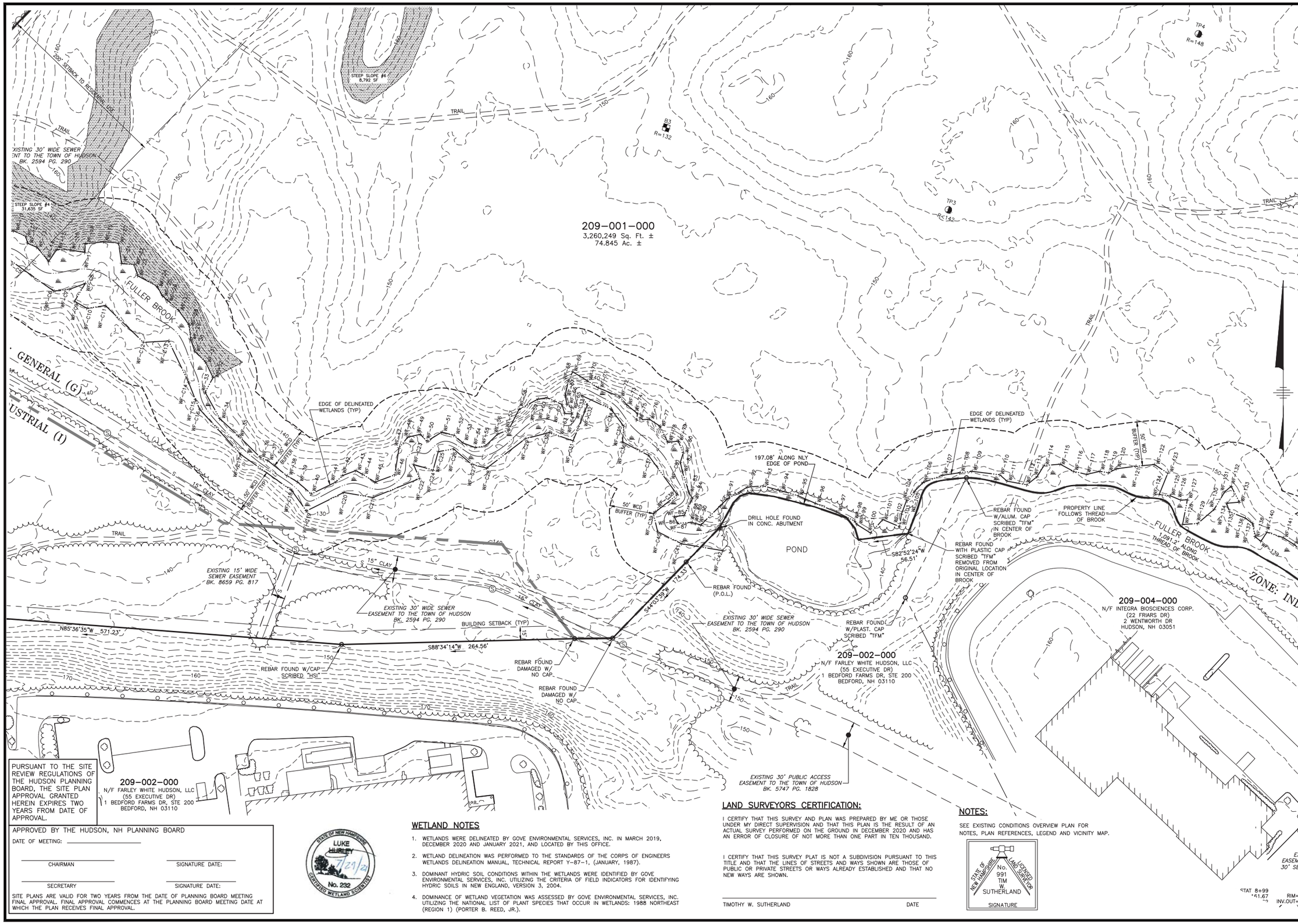
SHEET TITLE:

**EXISTING CONDITIONS PLAN - B**

PROJECT #475 SHEET 6

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STATE OF NEW HAMPSHIRE
LUKE HURLEY
7/21/21
No. 232
CERTIFIED WETLAND SCIENTIST

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TIMOTHY W. SUTHERLAND _____ DATE

## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

STATE OF NEW HAMPSHIRE
LICENSED LAND SURVEYOR
No. 991
TIM W. SUTHERLAND
SIGNATURE


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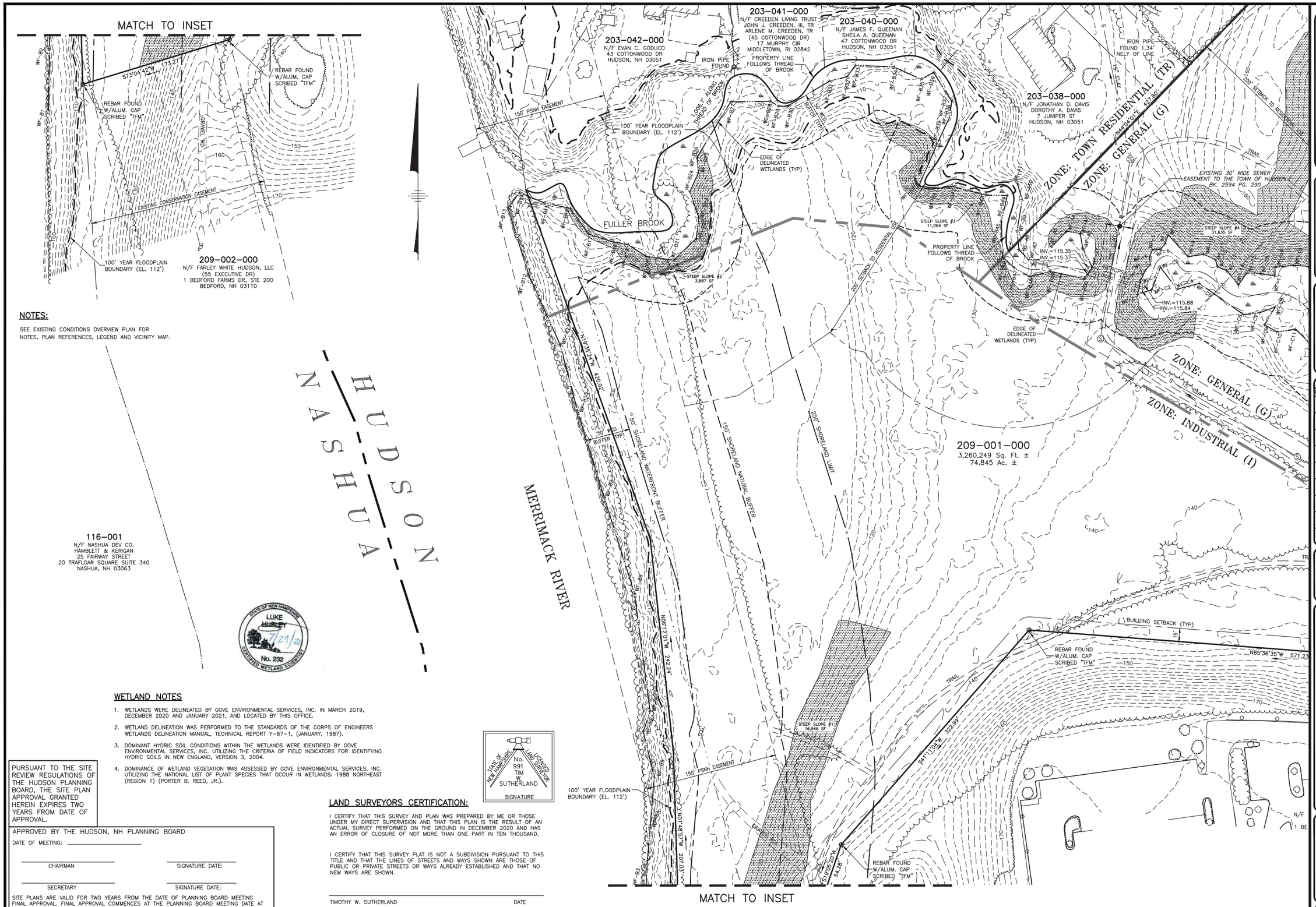
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - C**

PROJECT #475 SHEET 7




## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

STATE OF NEW HAMPSHIRE LUKE HURLEY No. 232 CERTIFIED WETLAND SCIENTIST 7/21/21

## WETLAND NOTES

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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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.

STATE OF NEW HAMPSHIRE No. 991 TIM W. SUTHERLAND LICENSED LAND SURVEYOR

SIGNATURE

## LAND SURVEYORS CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND IN DECEMBER 2020 AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

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TIMOTHY W. SUTHERLAND _____ DATE _____


**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

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Surveyors
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| FILE: | 475 ECP |
| DEED REF: | 6046/1131 |

PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - D**

PROJECT #475 SHEET 8

## WETLAND NOTES

1. WETLANDS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES, INC. IN MARCH 2019, DECEMBER 2020 AND JANUARY 2021, AND LOCATED BY THIS OFFICE.
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STATE OF NEW HAMPSHIRE
LUKE HURLEY
7/29/21
No. 232
CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE
No. 991
TIM W. SUTHERLAND
LICENSED LAND SURVEYOR
SIGNATURE

## LAND SURVEYORS CERTIFICATION:

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TIMOTHY W. SUTHERLAND DATE

## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

THE "WOODS ROAD" AS DEPICTED ON THIS PLAN AND ON PLAN #13738, CIRCA 1954, IS DISCONTINUED FOR VEHICULAR TRAVEL, IF INTENDED FOR THAT USE. CURRENTLY, IT RESEMBLES A MEANDERING FOOT PATH THROUGH THE WOODS. ANY RIGHTS GRANTED IN AND ACROSS SAID WOODS ROAD BASED ON THE 1954 SURVEY PLAN HAVE BEEN RELEASED VIA DEED RECORDED IN BOOK 2819 PAGE 543, DATED JANUARY 1981. ANY INTERESTS IN SAID ROAD FROM ADJOINING PARCELS HAS NOT BEEN FOUND. FOR ADDITIONAL INFORMATION SEE PLAN NO. 28519, AS REFERENCED.

STONE BOUND FOUND 0.4' ABOVE GRADE
N44°45'15"E 179.23'
S48°29'11"E 182.03'
1/2" DHF 8" ABOVE GRADE
S48°22'12"E 316.45'
1/2" DHF 8" ABOVE GRADE
1/2" DHF 6" ABOVE GRADE
S48°08'32"W 35.62'
204-006-000
N/F FOX HOLLOW CONDOMINIUM ASSOC.
C/O GREAT NORTH PROPERTY MGMT
(FOX HOLLOW DR)
636 DANIEL WEBSTER HWY
MERRIMACK, NH 03054
S70°08'52"E 409.99'
1/2" DHF 8" ABOVE GRADE
S70°07'58"E 257.15'
1/2" REBAR SET W/CAP
S01°14'31"E 36.26'
1/2" REBAR SET W/CAP
ZONE: GENERAL (G)
ZONE: BUSINESS (B)
200' SETBACK TO RESIDENTIAL USE
GRANITE BOUND FOUND 0.2' ABOVE GRADE
TRAIL
204-005-000
N/F 143 LOWELL ROAD, LLC
YUE YUN & ZHOU DENG ZHENG
(143 LOWELL ROAD)
4 PAULA CIRCLE
HUDSON, NH 03051
209-001-000
3,260,249 Sq. Ft. ±
74.845 Ac. ±
204-004-000
N/F DBV, INC.
C.O WALTER FLOWERS
145 LOWELL ROAD
15 COURT SQ SUITE 340
BOSTON, MA 02108
209-001-001
N/F 5 WAY REALTY TRUST
PETER HORNE, TR
PO BOX 1435
N. HAMPTON, NH 03862
S07°57'38"W 472.21'
STEEP SLOPE #11
11,004 SF
(AREA UNDER CONSTRUCTION)
204-003-000
N/F MONUMENT CONSTRUCTION, LLC
(149 LOWELL ROAD)
21 FACTORY STREET SUITE 1
NASHUA, NH 03060
B5 R<149
B7 R<156
B6 R<138
B9 R<154
B11 R<144
B13 R<151
B8 R<144
TP14 R<165
TP16 R<170
TP18 R<172
TP5 R<144
TP10 R<154
TP13

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PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - E**

PROJECT #475 SHEET 9

## WETLAND NOTES

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STATE OF NEW HAMPSHIRE LUKE HILBERT 7/21/21 No. 232 CERTIFIED WETLAND SCIENTIST

## LAND SURVEYORS CERTIFICATION:

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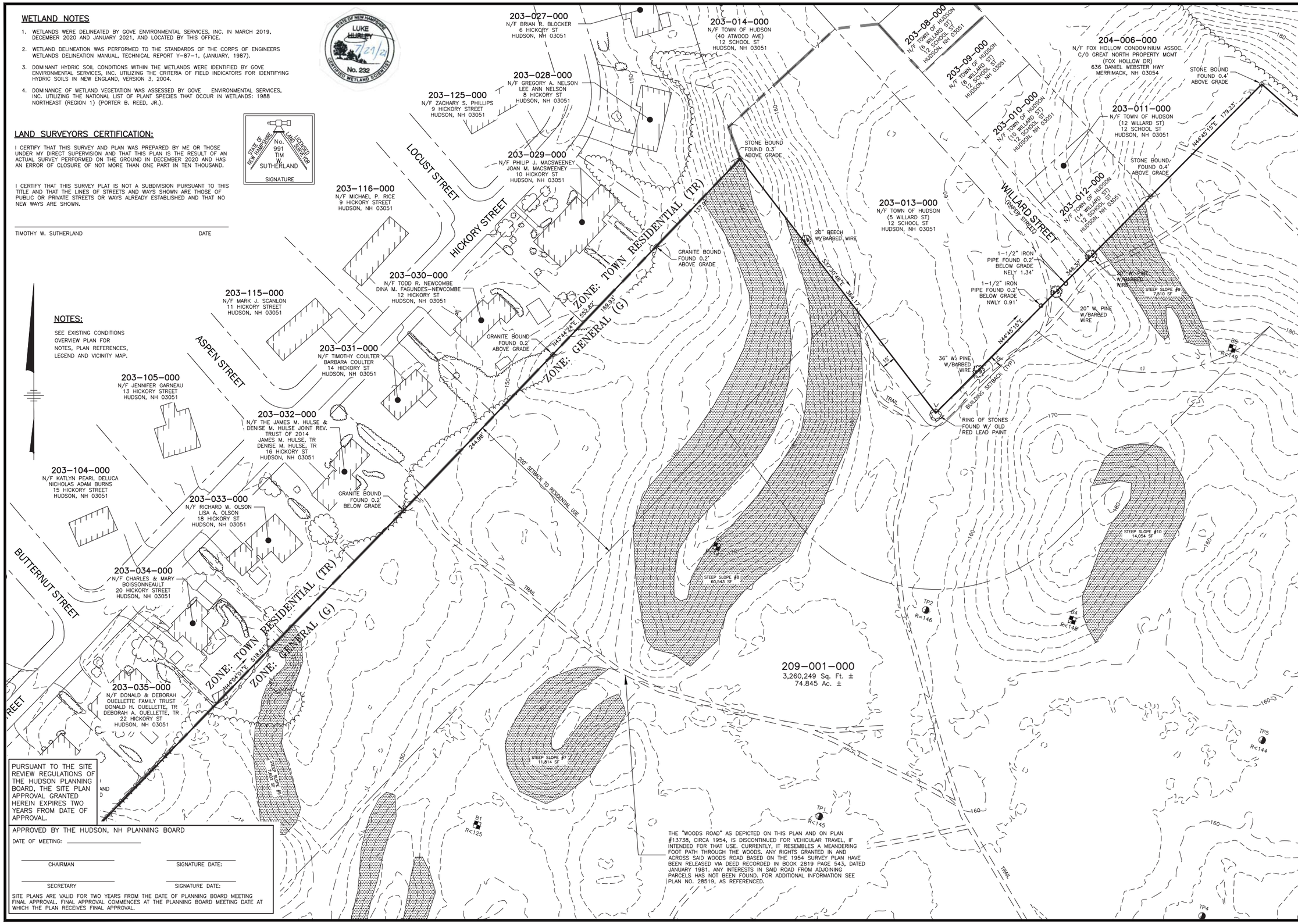
STATE OF NEW HAMPSHIRE No. 991 TIM W. SUTHERLAND LICENSED LAND SURVEYOR SIGNATURE

TIMOTHY W. SUTHERLAND DATE

## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

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**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

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PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - F**

PROJECT #475 SHEET 10

STATE OF NEW HAMPSHIRE
LUKE HURLEY
7/29/21
No. 232
CERTIFIED WETLAND SCIENTIST

## WETLAND NOTES

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STATE OF NEW HAMPSHIRE
No. 991
TIM W. SUTHERLAND
LICENSED LAND SURVEYOR
SIGNATURE

TIMOTHY W. SUTHERLAND DATE

## NOTES:

SEE EXISTING CONDITIONS OVERVIEW PLAN FOR NOTES, PLAN REFERENCES, LEGEND AND VICINITY MAP.

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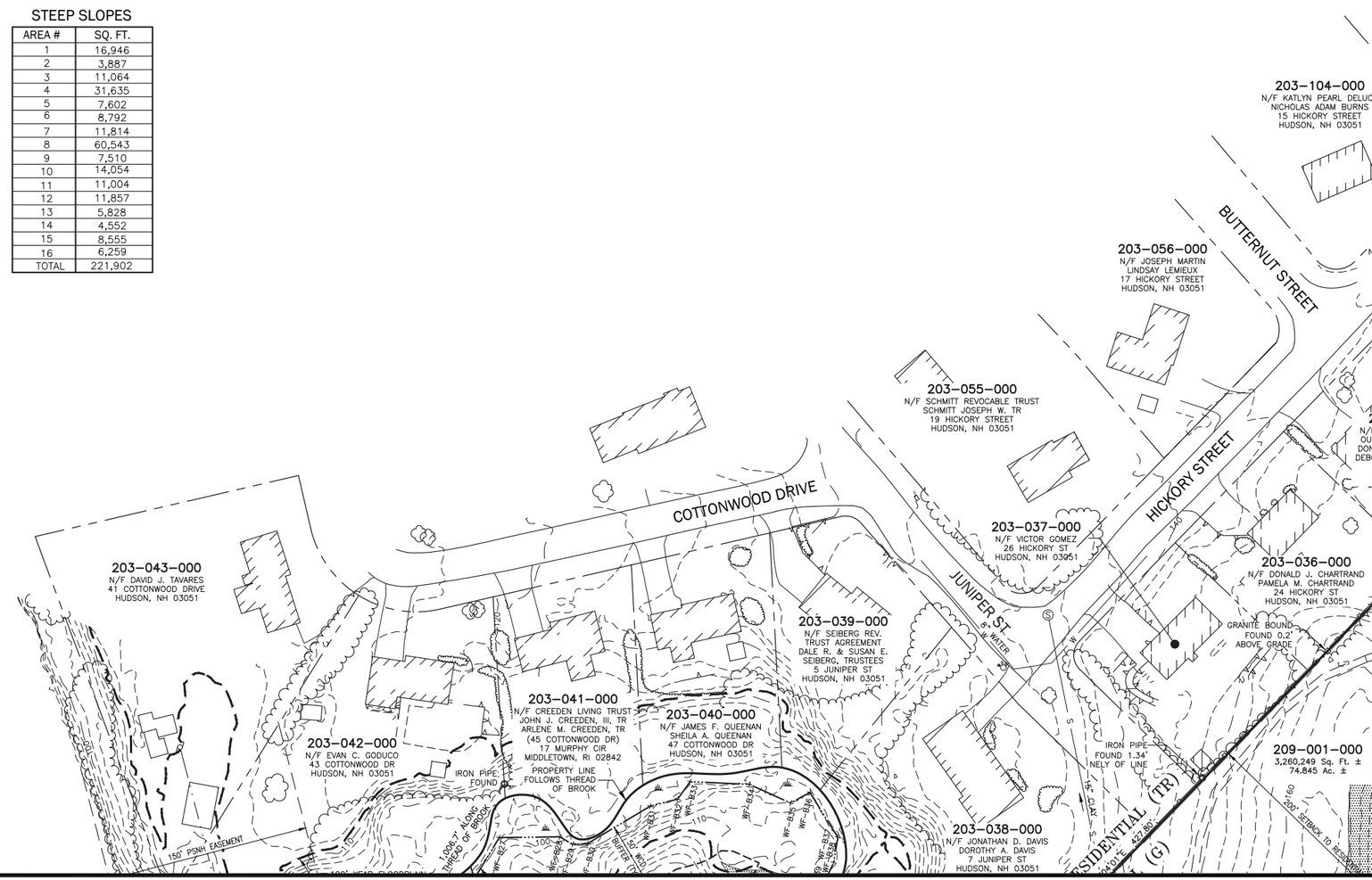
### STEEP SLOPES

| AREA # | SQ. FT. |
|---|---|
| 1 | 16,946 |
| 2 | 3,887 |
| 3 | 11,064 |
| 4 | 31,635 |
| 5 | 7,602 |
| 6 | 8,792 |
| 7 | 11,814 |
| 8 | 60,543 |
| 9 | 7,510 |
| 10 | 14,054 |
| 11 | 11,004 |
| 12 | 11,857 |
| 13 | 5,828 |
| 14 | 4,552 |
| 15 | 8,555 |
| 16 | 6,259 |
| TOTAL | 221,902 |




**The Dubay Group, Inc.**
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PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

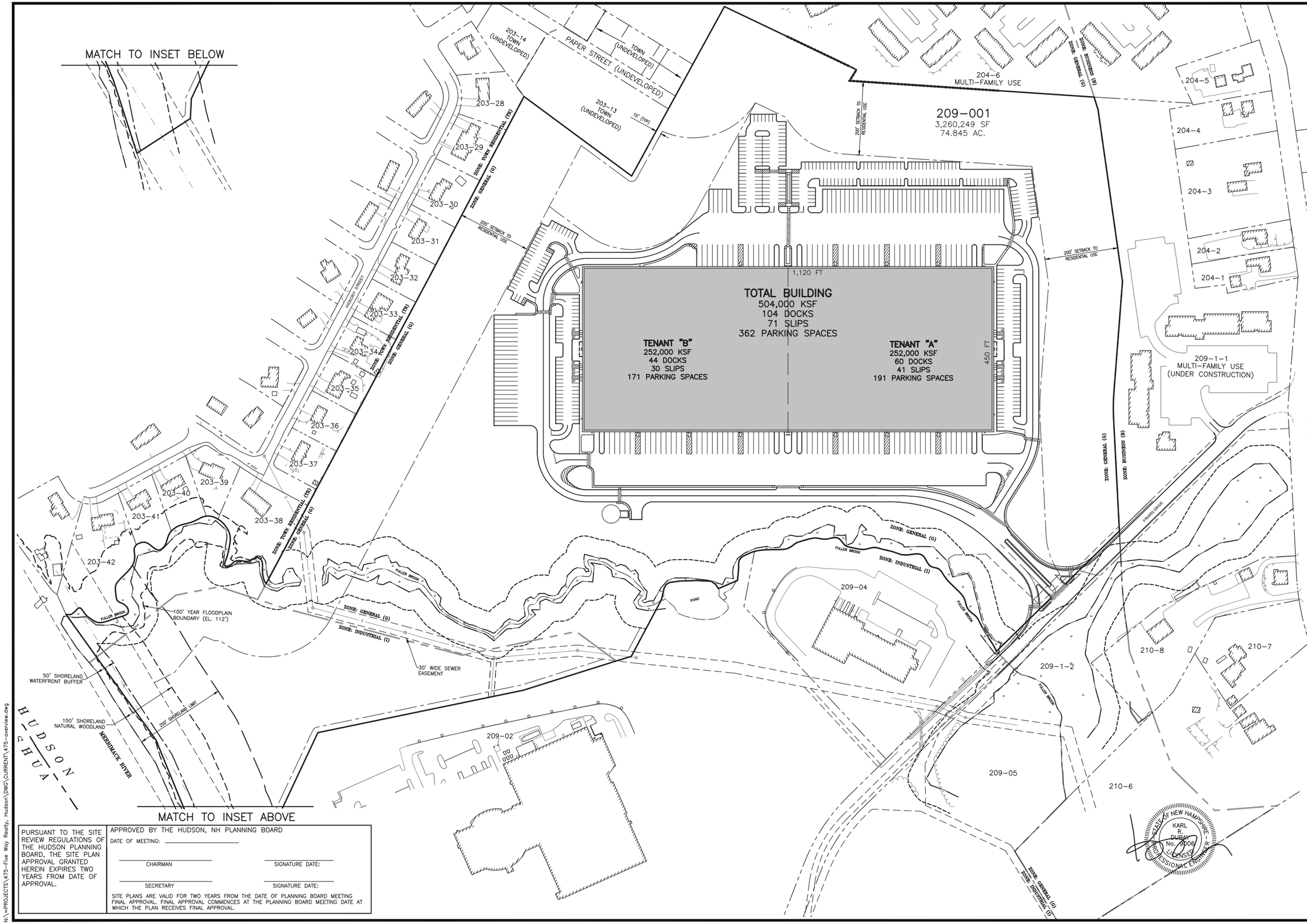
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**EXISTING CONDITIONS PLAN - G**

PROJECT #475 SHEET 11

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N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-overview.dwg


**The Dubay Group, Inc.**
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PROJECT:

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**FRIARS DRIVE**
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PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**TRACT OVERVIEW PLAN**

PROJECT #475 SHEET 13

203-14
TOWN
(UNDEVELOPED)

PAPER STREET (UNDEVELOPED)

TOWN
(UNDEVELOPED)

203-13
TOWN
(UNDEVELOPED)

15' (typ)

203-28

203-29

203-30

203-31

203-32

203-33

203-34

203-35

203-36

-37

HICKORY ST

HICKORY STREET

204-6
MULTI-FAMILY USE

200' SETBACK TO RESIDENTIAL USE

200' SETBACK TO RESIDENTIAL USE

200' SETBACK TO RESIDENTIAL USE

1,120 FT

TOTAL BUILDING
504,000 KSF
104 DOCKS
71 SLIPS
362 PARKING SPACES

TENANT "B"
252,000 KSF
44 DOCKS
30 SLIPS
171 PARKING SPACES

TENANT "A"
252,000 KSF
60 DOCKS
41 SLIPS
191 PARKING SPACES

450 FT

NOTE:
ALL ASPHALT PAVEMENT DEPICTED SHALL BE HEAVY DUTY PER DETAILS EXCEPT FOR EMPLOYEE CAR PARKING LOTS AND SIDEWALKS (SEE DETAILS), TYP.

TANK

WATER BLDG.

FULLER BROOK

POND

209-04

FULLER BROOK

EXISTING DRAINAGE EASEMENT

FRIARS DRIVE

STATE OF NEW HAMPSHIRE
KARL R. DUBAY
No. 9006
LICENSED
PROFESSIONAL ENGINEER

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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N. HAMPTON, NH 03862

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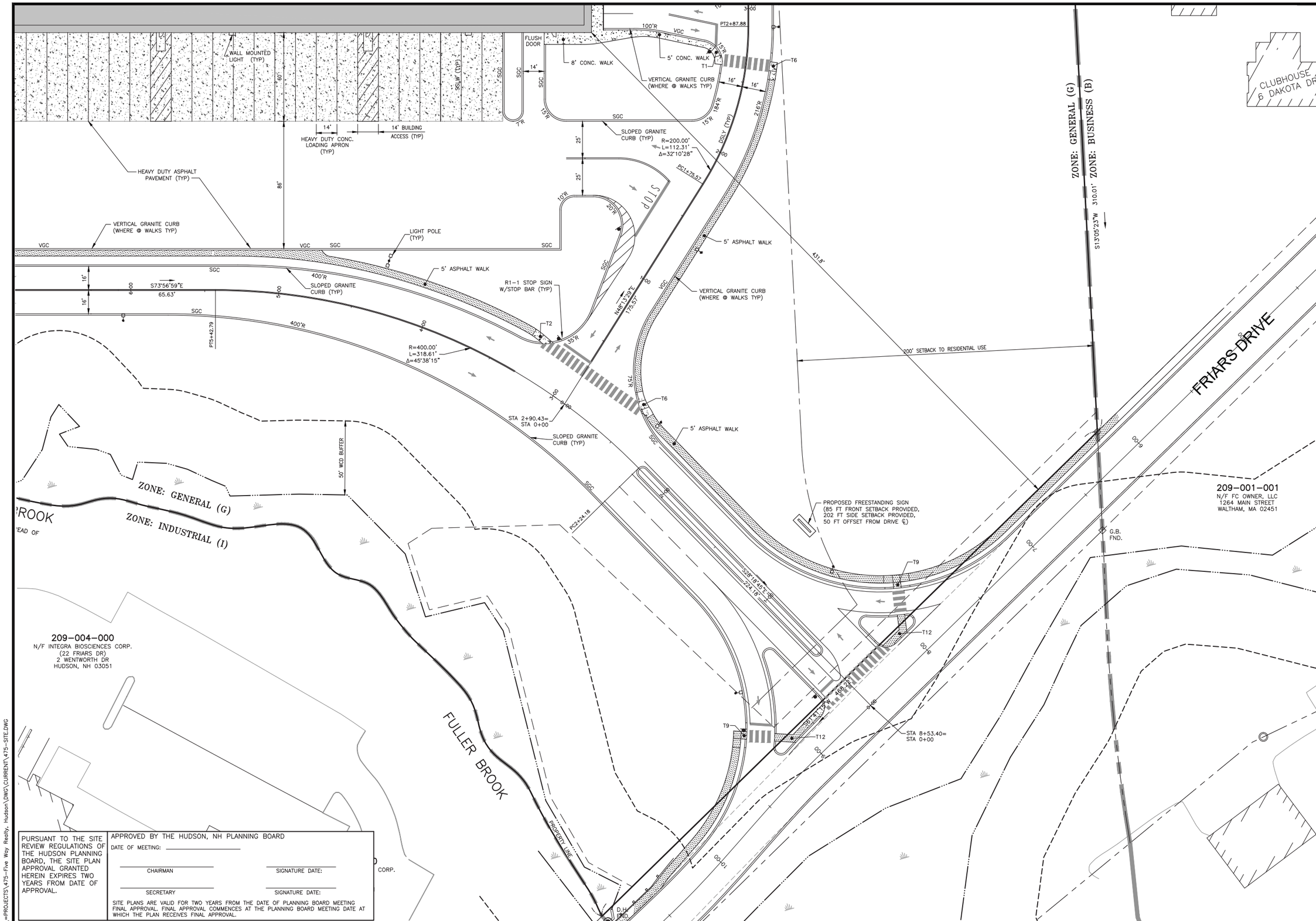
**SITE OVERVIEW PLAN**

PROJECT #475 SHEET 14

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PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

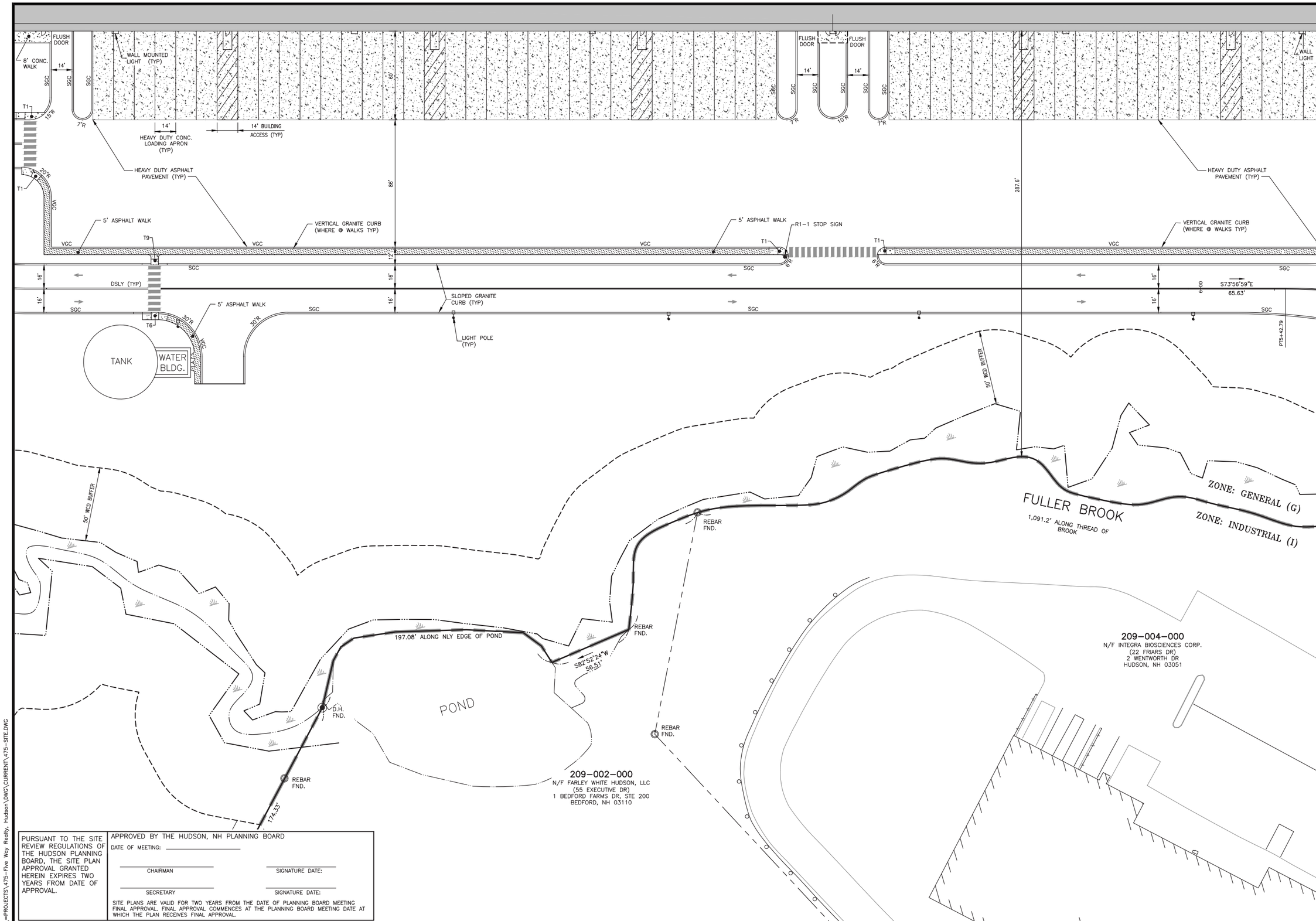
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - A**

PROJECT #475 SHEET 15

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APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-SITE.DWG


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SHEET INDEX

REVISIONS:

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DRAWN BY: WA
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: 1" = 30'
FILE: 475-SITE
DEED REF:

PROJECT:
# SITE PLAN
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
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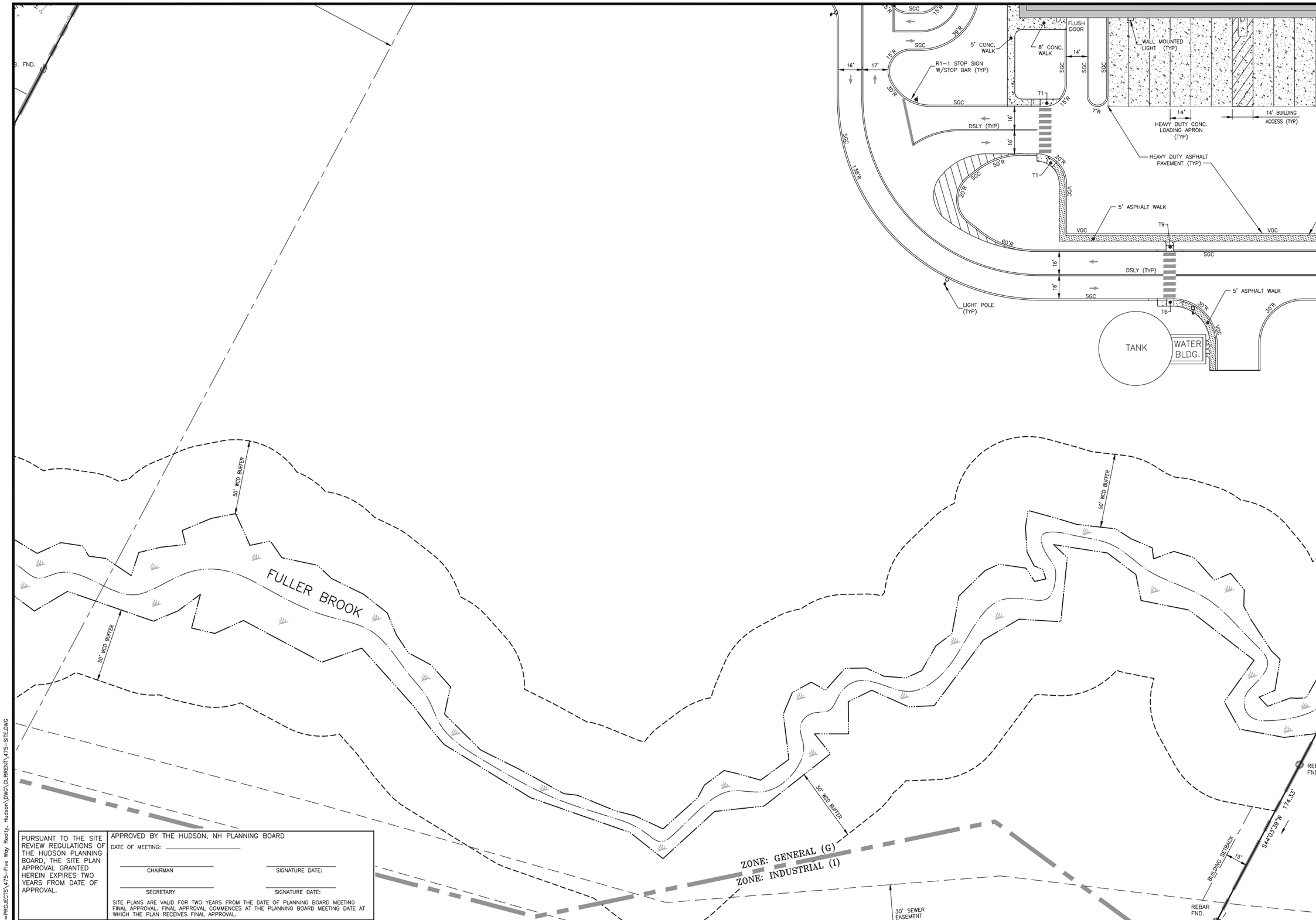
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - B**

PROJECT #475 SHEET 16

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N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-SITE.DWG


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SHEET INDEX

REVISIONS:

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|---|---|---|---|
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PROJECT:
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**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
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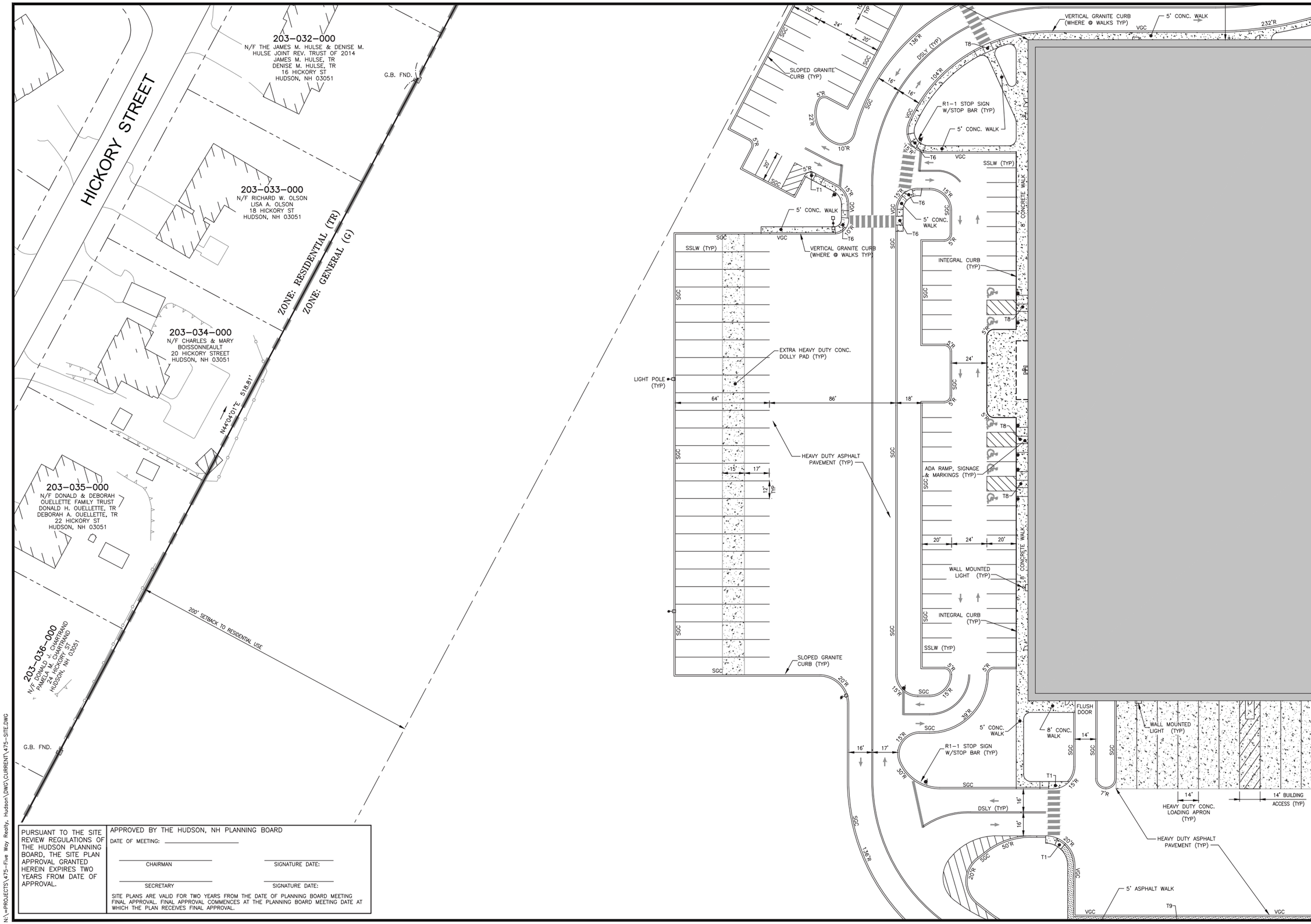
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - C**

PROJECT #475 SHEET 17

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| DATE: | AUG. 3, 2021 |
| SCALE: | 1" = 30' |
| FILE: | 475-SITE |
| DEED REF: | |

PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

**GFI PARTNERS**

**LOWELL ROAD PROPERTY OWNER, LLC**
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BOSTON, MA 02110

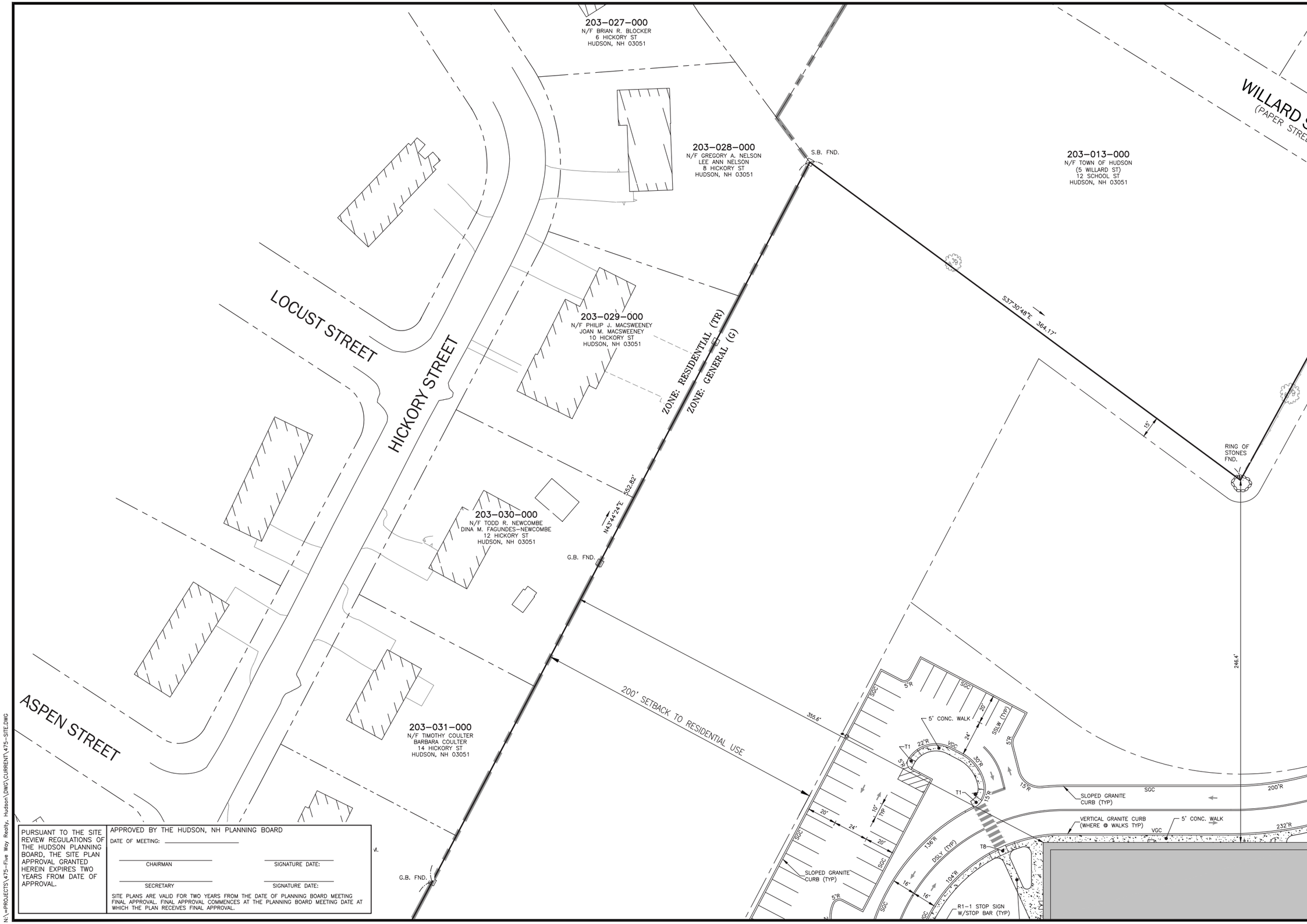
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - D**

PROJECT #475 SHEET 18

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**FRIARS DRIVE**
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**LOT 001-000**
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HUDSON, NH

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BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
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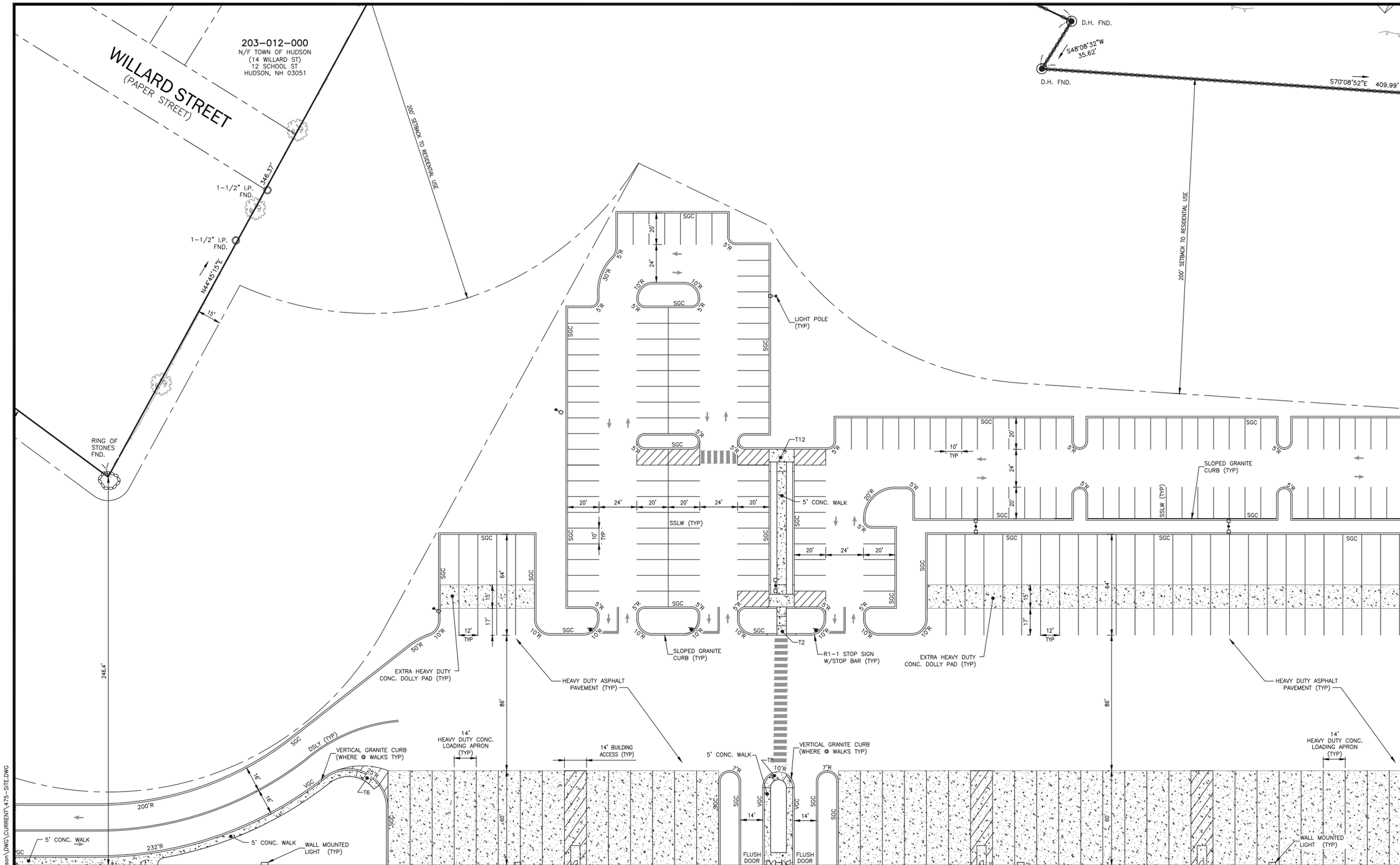
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - E**

PROJECT #475 SHEET 19

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OWNER

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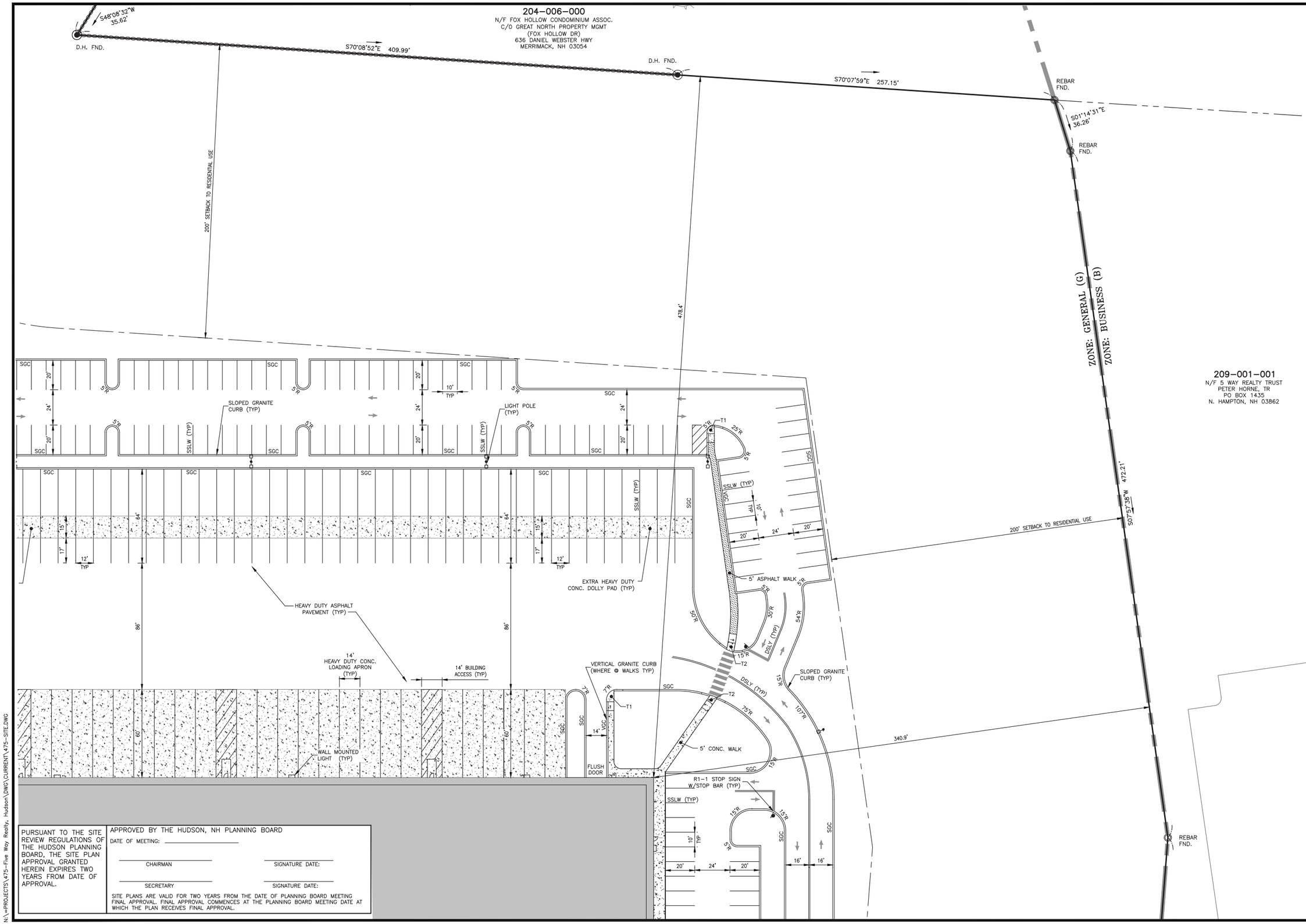
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - F**

PROJECT #475 SHEET 20

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FILE: 475–SITE
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PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
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BOSTON, MA 02110

OWNER

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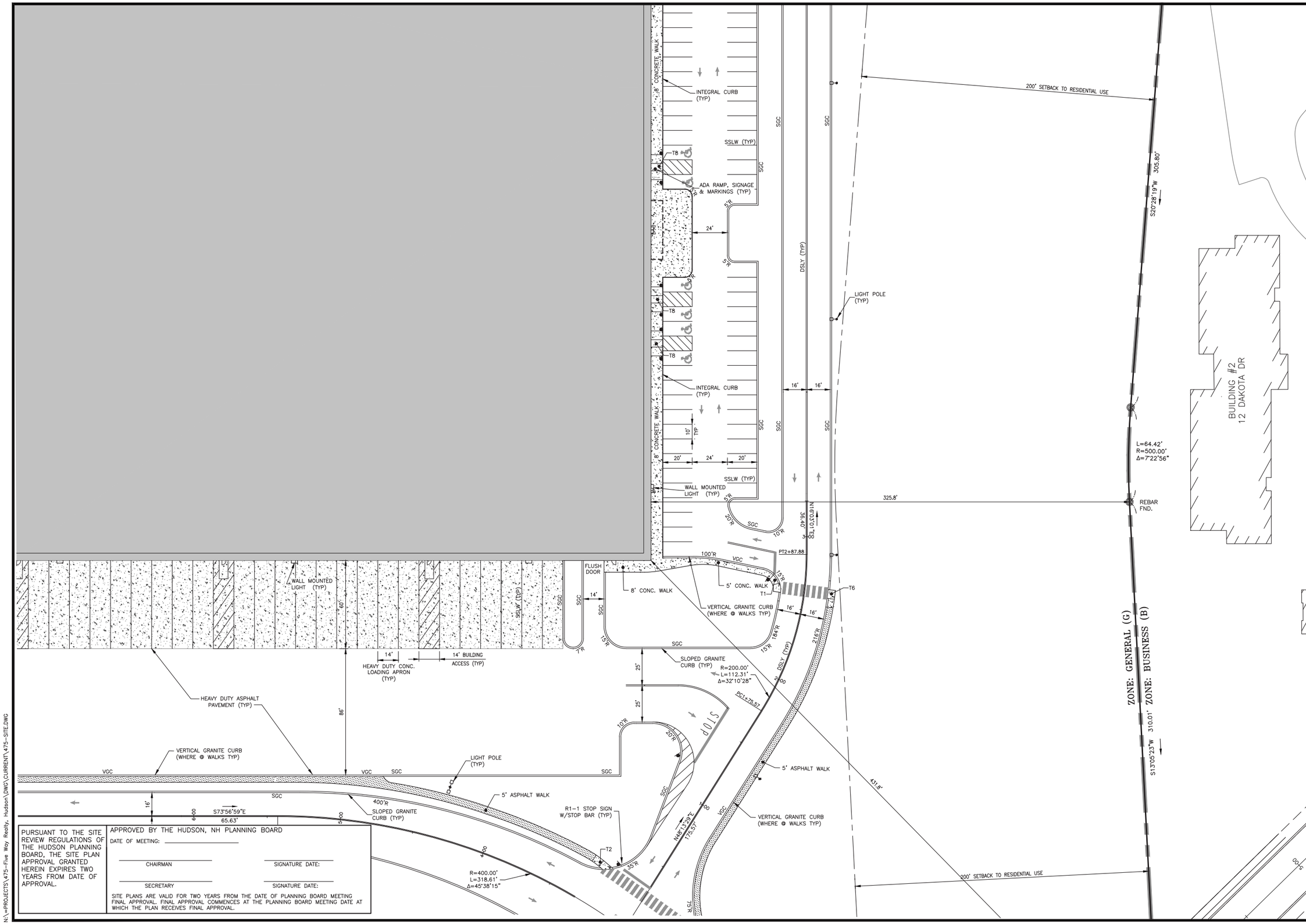
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE PLAN - G**

PROJECT #475 SHEET 21

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SHEET INDEX

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| CHECKED BY: | KRD |
| DATE: | AUG. 3, 2021 |
| SCALE: | 1" = 30' |
| FILE: | 475-SITE |
| DEED REF: | |

PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

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BOSTON, MA 02110

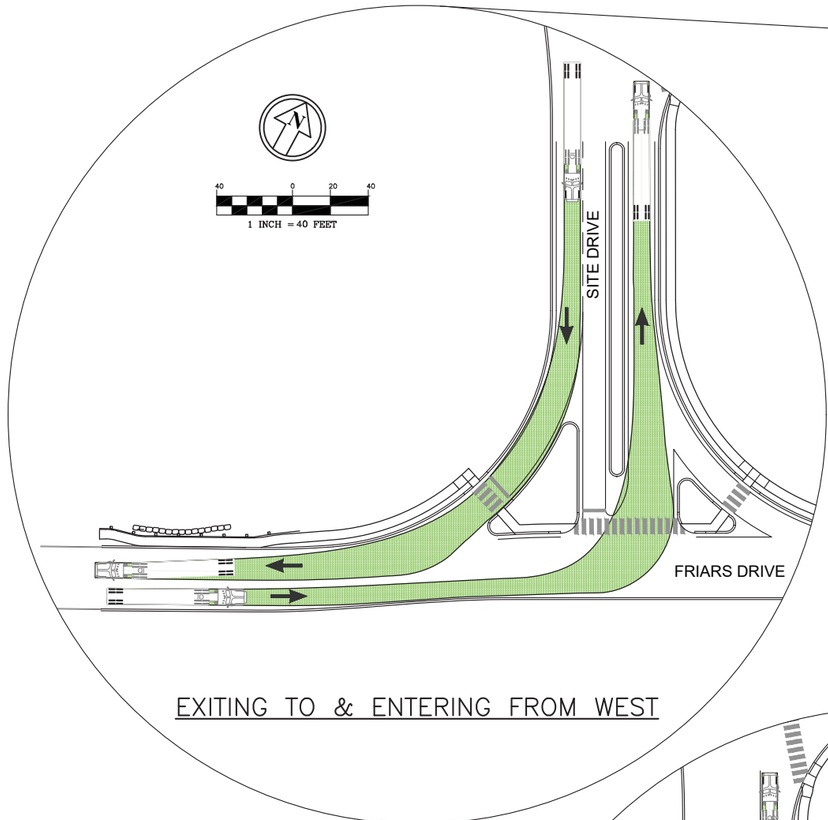
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

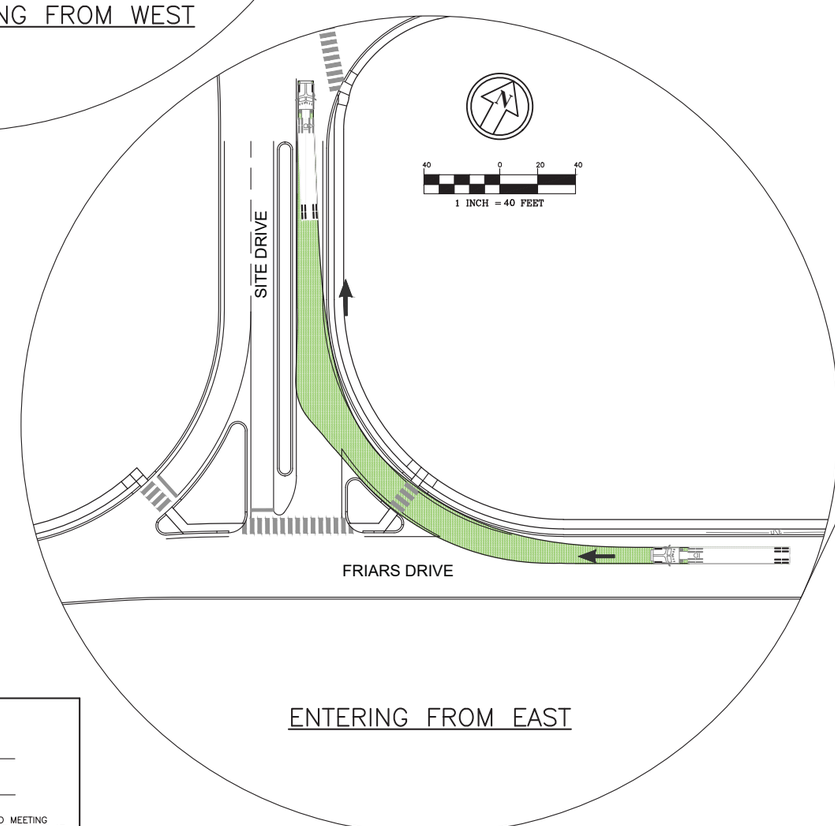
SHEET TITLE:

**SITE PLAN - H**

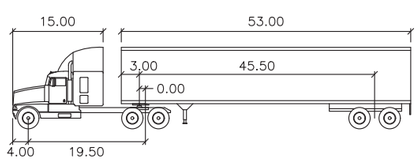
PROJECT #475 SHEET 22




EXITING TO & ENTERING FROM WEST



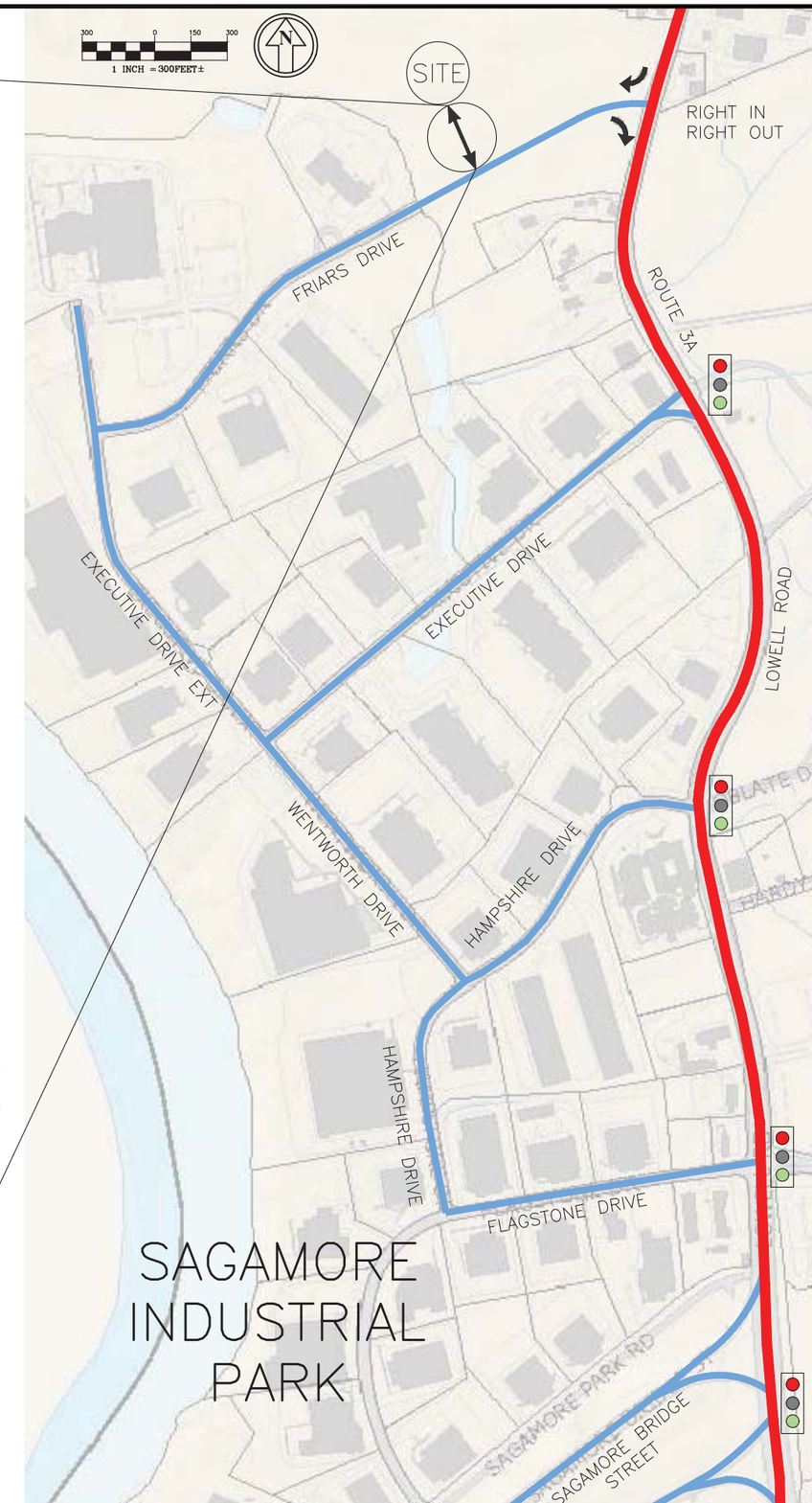

ENTERING FROM EAST




WB-67

feet

| | | | |
|---|---|---|---|
| Tractor Width | : 8.00 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 8.50 | Steering Angle | : 28.4 |
| Tractor Track | : 8.00 | Articulating Angle | : 75.0 |
| Trailer Track | : 8.50 | | |

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CHECKED BY: KRD
DATE: MAR. 31, 2021
SCALE: AS NOTED
FILE: 475-ACCESSSUM
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
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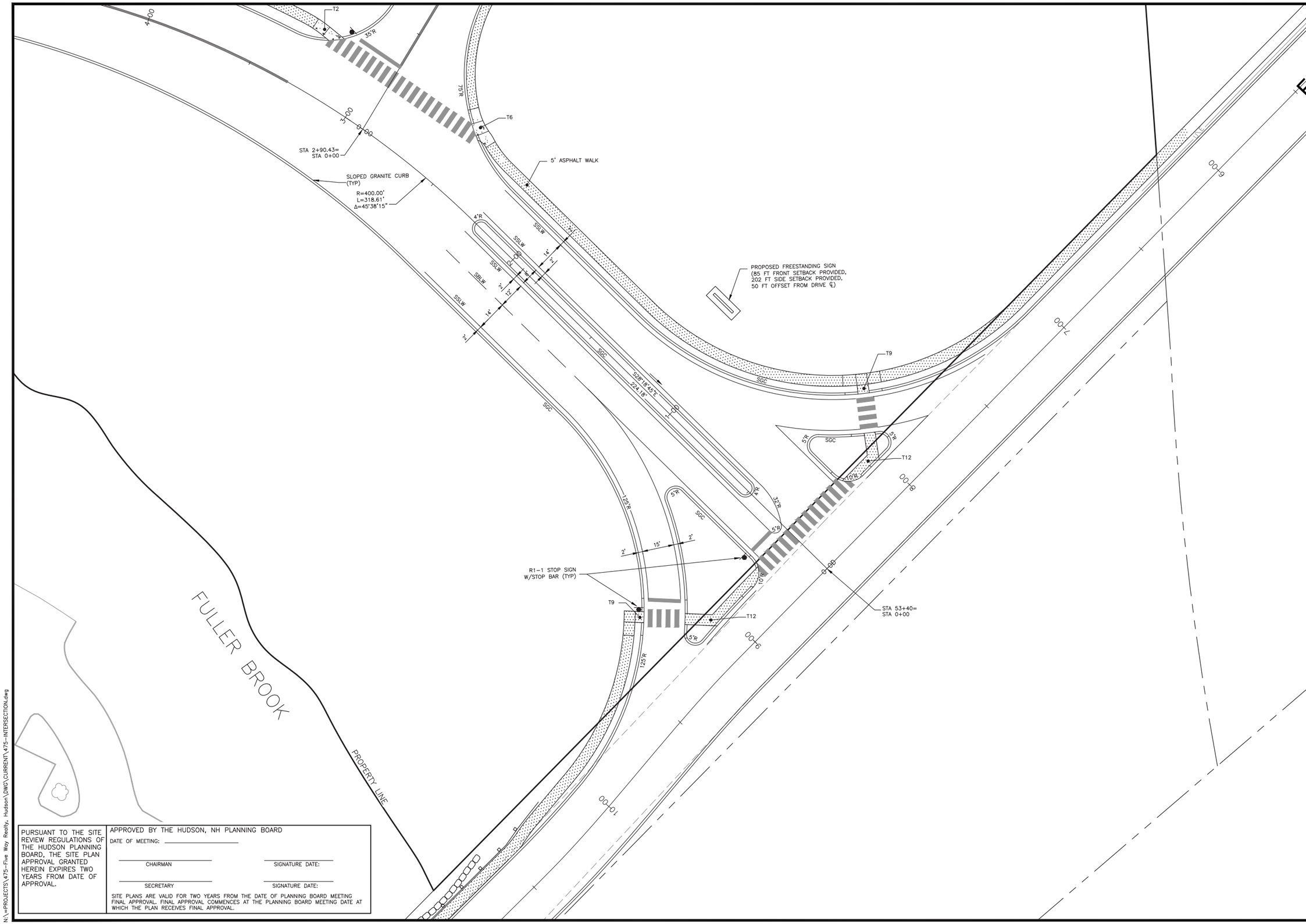
SHEET TITLE:

**ACCESS SUMMARY**

PROJECT #475 SHEET 23

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-ACCESSSUM.dwg

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REVISIONS:

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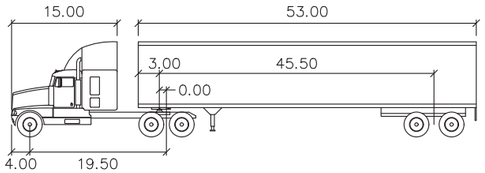
SHEET TITLE:

**MAIN ENTRANCE DETAIL**

PROJECT #475 SHEET 24

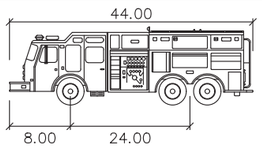



WB-67

| | feet | | |
|---|---|---|---|
| Tractor Width | : 8.00 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 8.50 | Steering Angle | : 28.4 |
| Tractor Track | : 8.00 | Articulating Angle | : 75.0 |
| Trailer Track | : 8.50 | | |

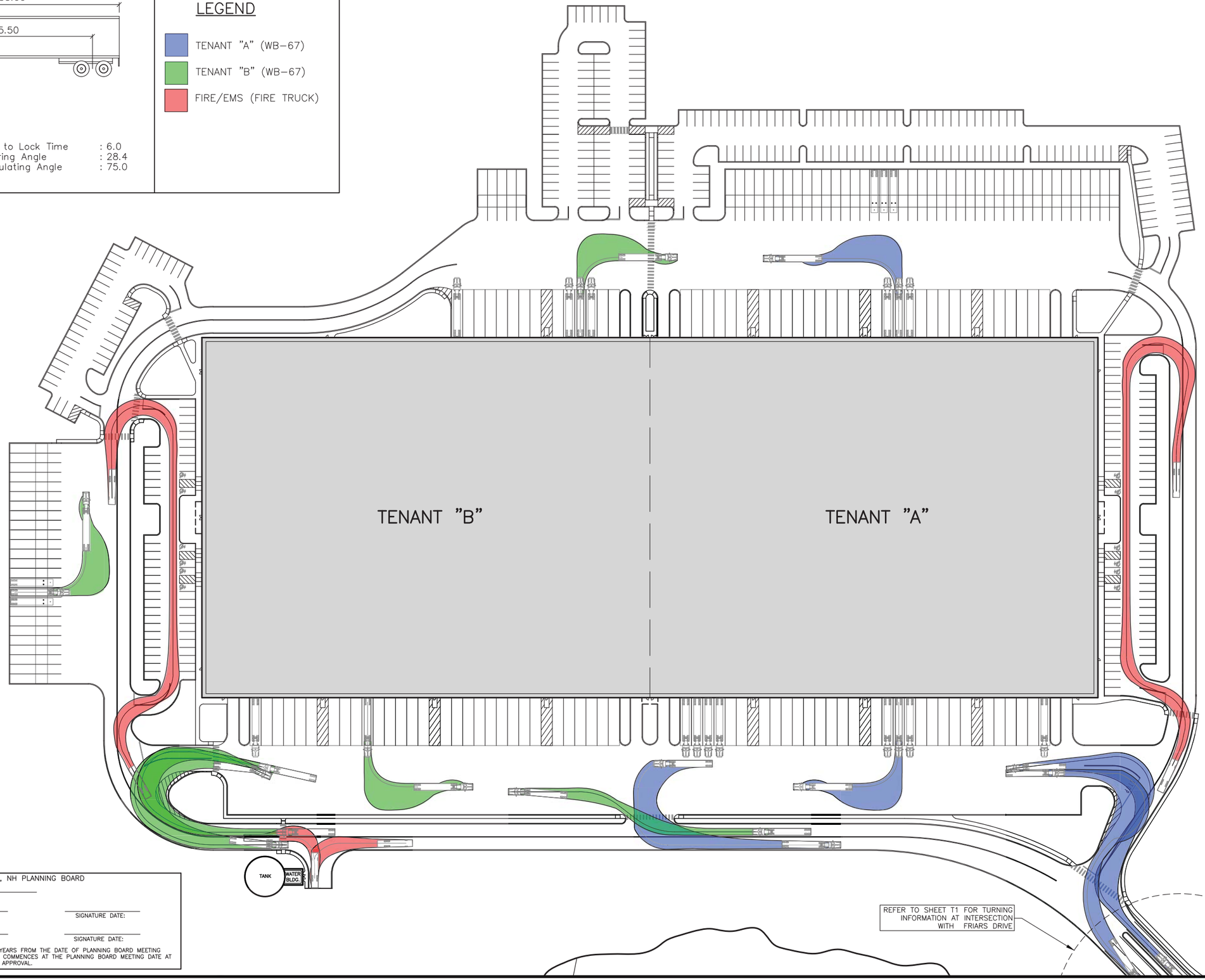
## LEGEND

- TENANT "A" (WB-67)
- TENANT "B" (WB-67)
- FIRE/EMS (FIRE TRUCK)




Pumper Fire Truck

| | feet |
|---|---|
| Width | : 8.50 |
| Track | : 8.50 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 37.8 |

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PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE CIRCULATION PLAN**

PROJECT #475 SHEET 25

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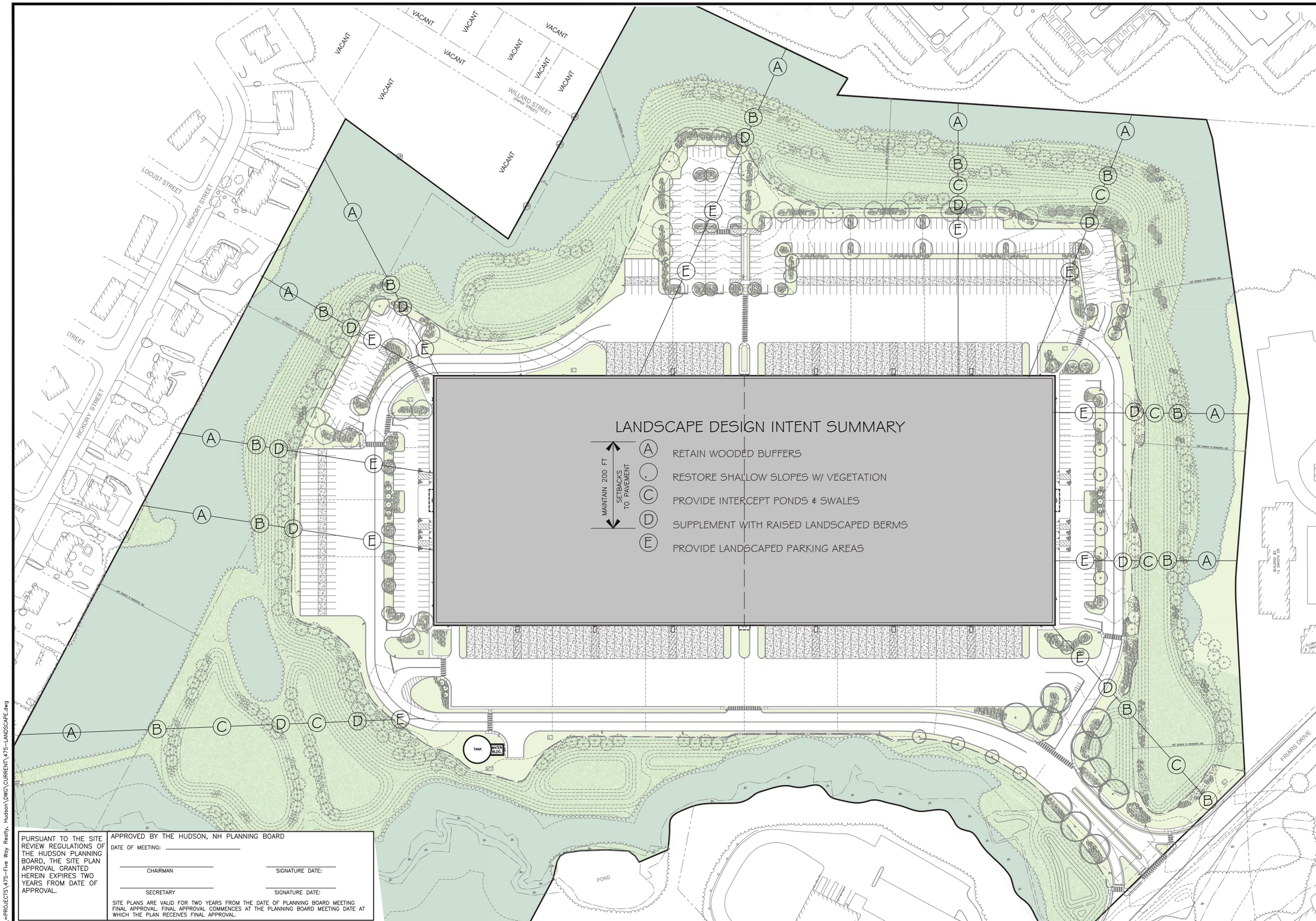


PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD

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SECRETARY _____ SIGNATURE DATE: _____

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PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
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HUDSON, NH

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SHEET TITLE:

**LANDSCAPE OVERVIEW**

PROJECT #475 SHEET 26

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
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PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
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BOSTON, MA 02110

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N. HAMPTON, NH 03862

SHEET TITLE:

**LANDSCAPE PLAN - A**

PROJECT #475 SHEET 27

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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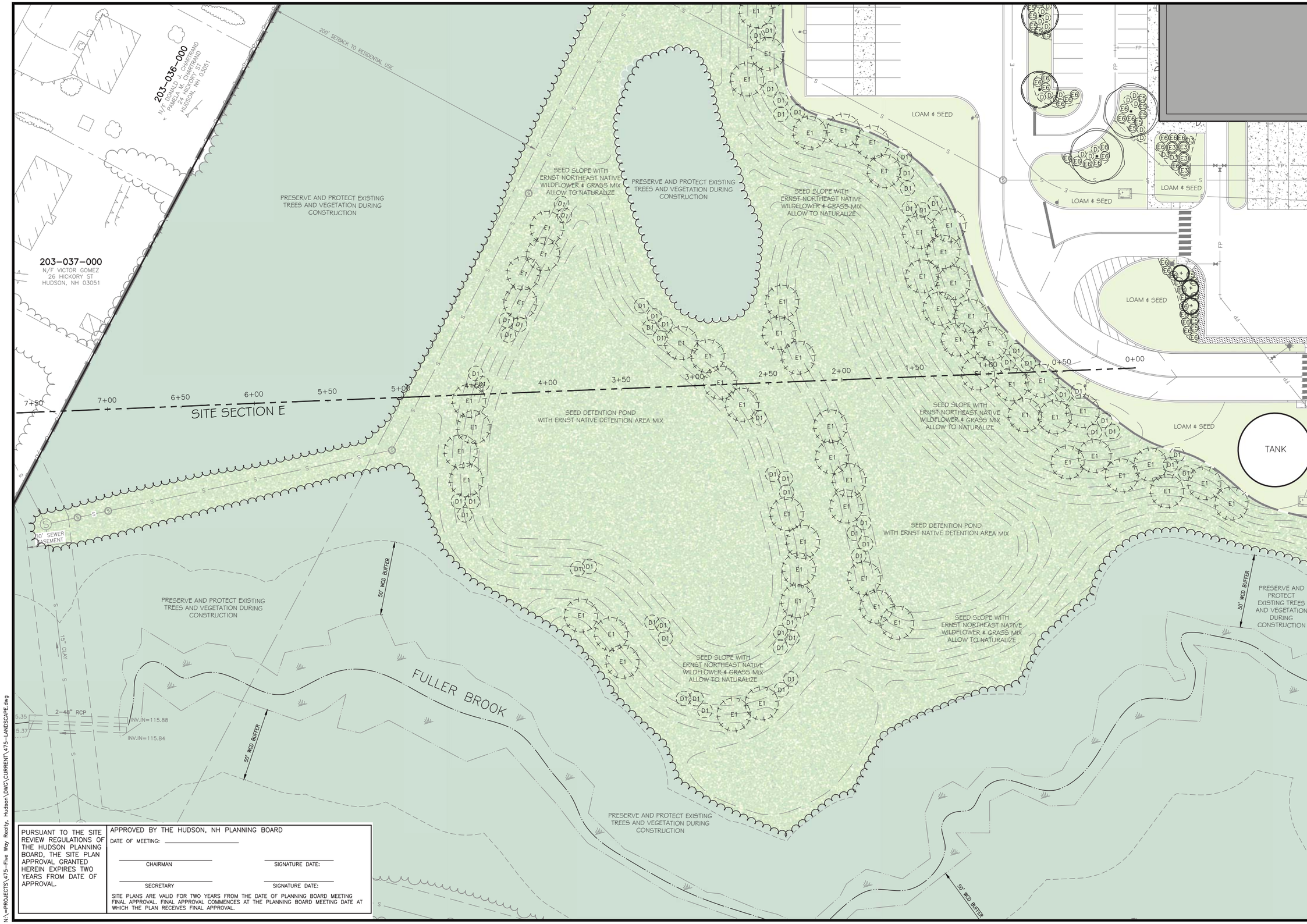
SHEET TITLE:

**LANDSCAPE PLAN - B**

PROJECT #475 SHEET 28

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PO BOX 1435
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SHEET TITLE:

**LANDSCAPE PLAN - C**

PROJECT #475 SHEET 29

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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N. HAMPTON, NH 03862

SHEET TITLE:

**LANDSCAPE PLAN - D**

PROJECT #475 SHEET 30

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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PO BOX 1435
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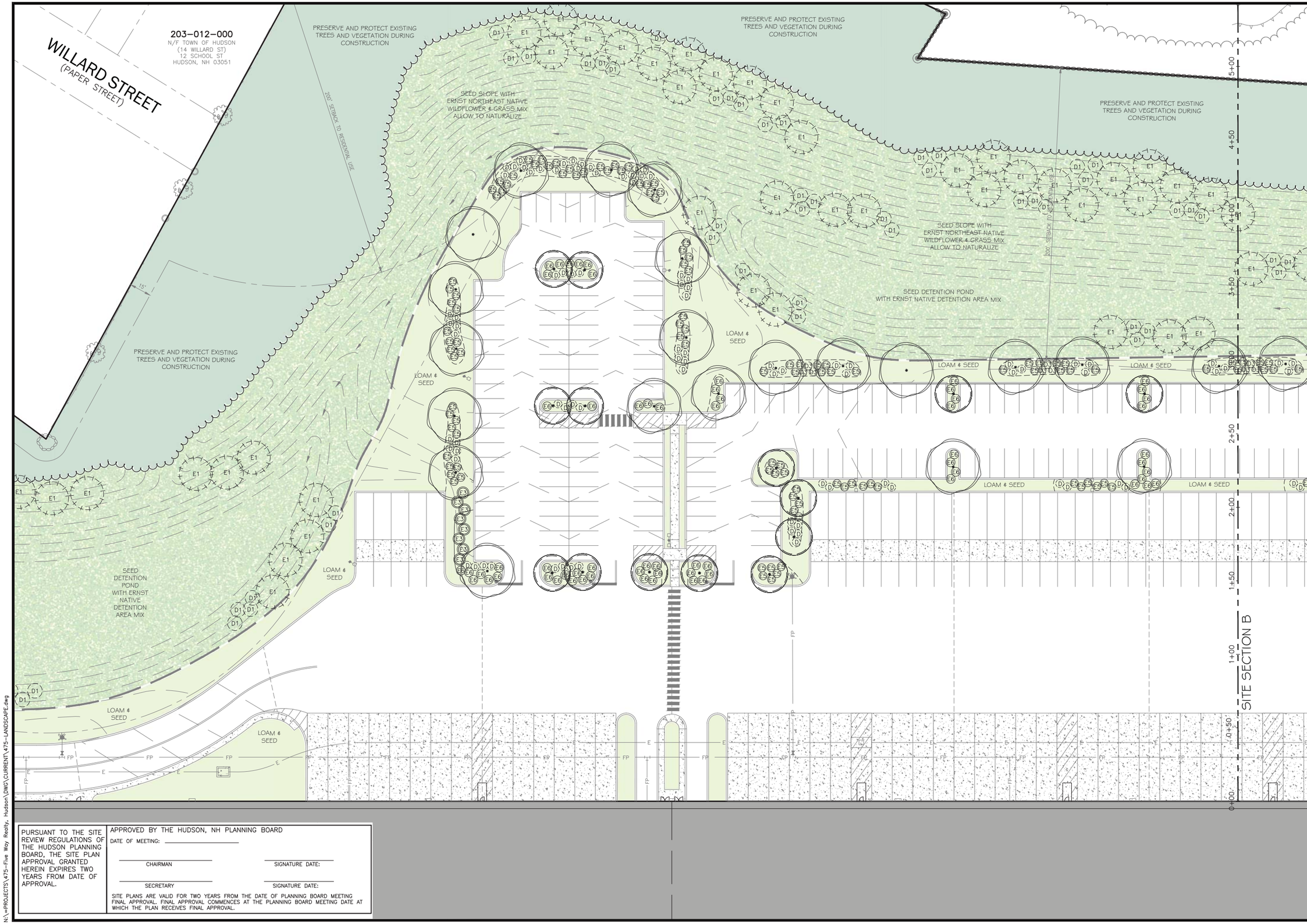
SHEET TITLE:

**LANDSCAPE PLAN - E**

PROJECT #475 SHEET 31

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PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**LANDSCAPE PLAN - F**

PROJECT #475 SHEET 32

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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PROJECT:
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PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**LANDSCAPE PLAN - G**

PROJECT #475 SHEET 33

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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# SITE PLAN

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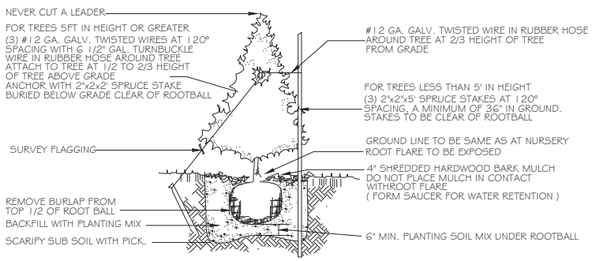
SHEET TITLE:

**LANDSCAPE PLAN - H**

PROJECT #475 SHEET 34




## EVERGREEN PLANTING DETAIL

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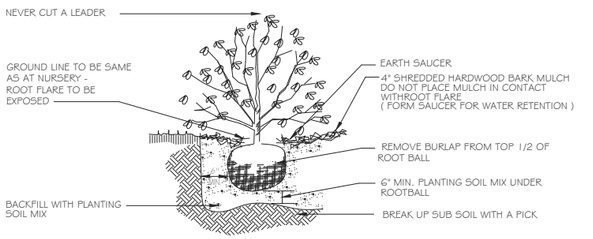


## SHRUB PLANTING DETAIL

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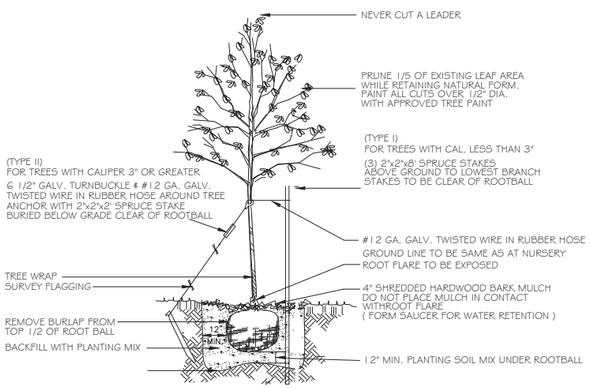
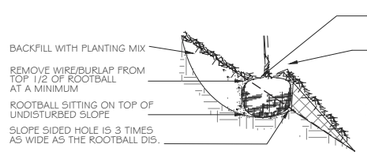



## DECIDUOUS TREE PLANTING DETAIL




## SLOPE PLANTING DETAIL

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## LANDSCAPE NOTES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING AND NEWLY INSTALLED UTILITIES AND SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS.

2. LANDSCAPING SHOWN ON THIS PLAN HAS BEEN DESIGNED TO COMPLY WITH THE TOWN OF HUDSON LANDSCAPE REGULATIONS.

3. WHEREVER POSSIBLE EXISTING TREES SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION.

4. THE PROPOSED DECIDUOUS TREES SHALL BE A MIN. 2.5" CALIPER AND EVERGREEN TREES A MINIMUM OF 6' HIGH AT TIME OF PLANTING.

5. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED WITH A MINIMUM OF 6" SUITABLE LOAM, EXCEPT UNDER THE MULCH BEDS. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.

6. PLANTS SHALL NOT BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED WITHIN THE IMMEDIATE AREA OF THE PLANTING.

7. ALL TREES SHALL BE BALLED AND BURLAP UNLESS OTHERWISE NOTED.

8. ANY PROPOSED PLANT MATERIAL SUBSTITUTIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE, THE TOWN OF HUDSON STAFF AND THE LANDSCAPE ARCHITECT.

9. WHERE APPLICABLE THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING.THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. LAYOUT TO BE APPROVED BY OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

10. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES.

11. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL.

12. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE FOR TREES AND SHRUBS. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.

13. INSOFAR AS IT IS PRACTICABLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD WILL BE REJECTED.

14. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH ANSI Z60 (REV. 1996) "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

15. ALL PLANTS SHALL BE PLANTED IN AMENDED TOP SOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK FILLING PROGRESSES. PLANTING MIX TO BE AS SHOWN ON PLANTING DETAILS. LARGE PLANTING AREAS TO INCORPORATE FERTILIZER AND SOIL CONDITIONERS AS STATED IN PLANTING SPECIFICATIONS.

16. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.

17. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION. ALL PLANT MATERIAL SHALL BE SPRAYED WITH 'WILT-PRUF' OR EQUAL AS PER MANUFACTURER'S INSTRUCTIONS.

18. NO PLANT, EXCEPT GROUND COVERS/PERENNIALS, SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING STRUCTURES AND SIDEWALKS.

19. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT, A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANT IN THE CENTER OF THE PIT.

20. ALL PLANTING BEDS SHALL BE MULCHED WITH 4" LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH.

21. ALL NEW PLANTING AREAS, LAWN AND SOD SHALL BE PROVIDED WITH AN IRRIGATION SYSTEM.

22. THE PURPOSE OF THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.

23. NO SOIL CONTAINING ANY LIVING OR VIABLE PORTION OF PLANTS ON THE NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST (AGR TABLE 3800) SHALL BE TRANSPORTED TO OR FROM CONSTRUCTION SITES WITHOUT NOTIFICATION AND APPROVAL FROM THE NEW HAMPSHIRE DEPT. OF AGRICULTURE PER RSA 430:55.

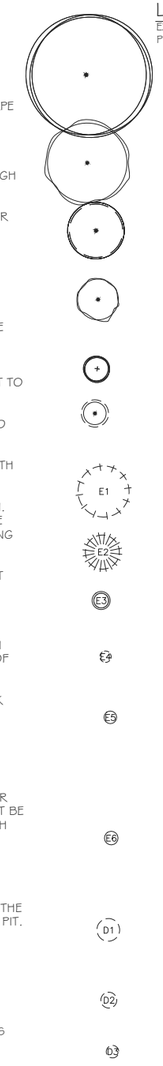
## SEED MIX

SEED DETENTION POND WITH ERNST NATIVE DETENTION AREA MIX -ITEM NUMBER: ERNMX-183
MIX COMPOSITION 26.0% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA), 25.0% PANICUM VIRGATUM, 'SHELTER' (SWITCHGRASS, 'SHELTER'), 20.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE), 20.0% ELYMUS VIRGINICUS, 'MADISON' (VIRGINIA WILDRYE, 'MADISON') 4.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE), 3.0% JUNCUS EFFUSUS (SOFT RUSH), 1.0% JUNCUS TENUIS, PA ECOTYPE (PATH RUSH, PA ECOTYPE), 1.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)
SEEDING RATE: 20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT
MAINTENANCE: ONCE A YEAR, IN LATE FALL WHEN ALL FLOWERS HAVE RIPENED AND DROPPED THEIR SEEDS MOW THE DETENTION/RETENTION AREAS. ONCE-A-YEAR MOWING WILL REMOVE TREE AND BRUSH SEEDLINGS, IF LEFT UN-MOWED, TREES AND BRUSH WILL EVENTUALLY TAKE OVER.

SEED SIDE SLOPES WITH ERNST NORTHEAST NATIVE WILDFLOWER & GRASS - ITEM NUMBER: ERNMX-153
MIX COMPOSITION - 29.7% BOUTELOUA CURTIPENDULA, BUTTE (SIDEOATS GRAMA, BUTTE), 27.2% SCHIZACHYRIUM SCOPARIUM, FORT INDIANTOWN GAP-PA ECOTYPE (LITTLE BLUESTEM, FORT INDIANTOWN GAP-PA ECOTYPE), 15.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE), 7.0% ECHINACEA PURPUREA (PURPLE CONEFLOWER), 3.5% CHAMAECRISTA FASCICULATA, PA ECOTYPE (PARTRIDGE PEA, PA ECOTYPE), 3.0% COREOPSIS LANCEOLATA (LANCELEAF COREOPSIS), 3.0% RUDBECKIA HIRTA (BLACKEYED SUSAN), 2.0% HELIOPSIS HELIANTHOIDES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE), 1.5% LIATRIS SPICATA, PA ECOTYPE (MARSH BLAZING STAR, PA ECOTYPE), 1.2% TRADESCANTIA OHIENSIS, PA ECOTYPE (OHIO SPIDERWORT, PA ECOTYPE), 1.0% PENSTEMON DIGITALIS (TALL WHITE BEARDTONGUE), 0.9% PYCNANTHEMUM TENUIFOLIUM (NARROWLEAF MOUNTAINMINT), 0.7% SENNA HEBECARPA, VA & WV ECOTYPE (WILD SENNA, VA & WV ECOTYPE), 0.5% ASCLEPIAS TUBEROSA (BUTTERFLY MILKWEED), 0.5% BAPTISIA AUSTRALIS, SOUTHERN WV ECOTYPE (BLUE FALSE INDIGO, SOUTHERN WV ECOTYPE), 0.5% ZIZIA AUREA (GOLDEN ALEXANDERS), 0.4% ASTER OBLONGIFOLIUS, PA ECOTYPE (AROMATIC ASTER, PA ECOTYPE), 0.4% ASTER PRENANTHOIDES, PA ECOTYPE (ZIGZAG ASTER, PA ECOTYPE), 0.4% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE), 0.3% ASTER LAEVIS, NY ECOTYPE (SMOOTH BLUE ASTER, NY ECOTYPE), 0.3% ASTER NOVAE-ANGLIAE, PA ECOTYPE (NEW ENGLAND ASTER, PA ECOTYPE), 0.2% COREOPSIS TRIPTERIS, PA ECOTYPE (TALL COREOPSIS, PA ECOTYPE), 0.2% OENOTHERA FRUTICOSA VAR. FRUTICOSA (SUNDROPS), 0.2% SOLIDAGO NEMORALIS, PA ECOTYPE (GRAY GOLDENROD, PA ECOTYPE), 0.1% PENSTEMON HIRSUTUS (HAIRY BEARDTONGUE), 0.1% SENNA MARILANDICA (MARYLAND SENNA), 0.1% SOLIDAGO JUNCEA, PA ECOTYPE (EARLY GOLDENROD, PA ECOTYPE), 0.1% SOLIDAGO ODORA, PA ECOTYPE (LICORICE SCENTED GOLDENROD, PA ECOTYPE)
SEEDING RATE: 20 LBS/ACRE WITH 30 LBS/ACRE OF A COVER CROP. FOR A COVER CROP USE EITHER GRAIN OATS (1 JAN TO 31 JUL) OR GRAIN RYE (1 AUG TO 31 DEC).ALLOW TO NATURALIZE

## LANDSCAPE LEGEND:

EXACT QUANTITIES AND FINAL LAYOUT SHALL BE PROVIDED AND REVIEWED WHEN BUILDING PLAN IS SUBMITTED FOR REVIEW WITH THE PLANNING BOARD.




| | BOTANICAL NAME / COMMON NAME | SIZE | MATURE HT. | MATURE WIDTH | COMMENTS |
|---|---|---|---|---|---|
| TREE 1 | LARGE DECIDUOUS SHADE TREE | | | | |
| | ACER SACCHARUM 'GREEN MOUNTAIN' | 2" CAL.B&B | ..... | 40'-60' | IMPROVED NATIVE |
| | QUERCUS ALBA / WHITE OAK | 2" CAL. B&B | 60' | 60' | NATIVE |
| | ULMUS AMERICANA 'VALLEY FORGE' / VALLEY FORGE AMERICAN ELM | 2" CAL. B&B | 60' | 40'-60' | IMPROVED NATIVE |
| TREE 2 | DECIDUOUS SHADE TREE | | | | |
| | ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE | 2" CAL. B&B | 40'-60' | 30'-40' | IMPROVED NATIVE |
| | ACER SACCHARUM 'LEGACY' / LEGACY SUGAR MAPLE | 2" CAL. B&B | 40'-60' | 30'-40' | IMPROVED NATIVE |
| | ACER SACCHARUM 'COMMEMORATION / COMMEMORATION SUGAR MAPLE | 2" CAL. B&B | 40'-60' | 30'-40' | IMPROVED NATIVE |
| | QUERCUS COCCINEA / SCALET OAK | 2" CAL. B&B | 60' | 30'-40' | NATIVE |
| | QUERCUS PALUSTRIS / PIN OAK | 2" CAL. B&B | 60' | 30'-40' | NATIVE |
| TREE 3 | DECIDUOUS TREE | | | | |
| | CERCIS CANADENSIS / EASTERN REDBUD | 2" CAL. B&B | 20'-30' | 20'-30' | - |
| | CORNUS FLORIDA CHEROKE BRAVE / CHEROKE BRAVE FLOWERING DOGWOOD | 2" CAL. B&B | 20'-30' | 20'-30' | - |
| | BETULA NIGRA HERITAGE / HERITAGE BIRCH | 2" CAL. B&B | 20'-30' | 20'-30' | NATIVE |
| | BETULA NIGRA DURA HEAT / DURA HEAT RIVER BIRCH | 2" CAL. B&B | 40'-60' | 20'-30' | NATIVE |
| | CARPINUS CAROLINIANA / AMERICAN HORNBEAM | 2" CAL. B&B | 20'-30' | 20'-30' | NATIVE - PARTIAL/SHADE |
| TREE 4 | DECIDUOUS UPRIGHT | | | | |
| | ACER RUBRUM 'BOWHALL' / BOWHALL RED MAPLE | 2" CAL. B&B | 40'-60' | 15'-20' | IMPROVED NATIVE |
| | PYRUS CALLERYANNA 'CHANTICLEER' / CHANTICLEER FLOWERING PEAR | 2" CAL. B&B | 30'-40' | 15'-20' | - |
| | PRUNUS CERASIFERA THUNDERCLOUD' / THUNDERCLOUD PLUM | 2" CAL. B&B | 15'-20' | 15'-20' | - |
| | PRUNUS VIRGINIANA SHUBERT / CANADA RED CHERRY | 2" CAL. B&B | 20'-30' | 15'-20' | IMPROVED NATIVE |
| TREE 5 | DECIDUOUS COLUMNAR | | | | |
| | FAGUS SYLVATICA 'FASTIGIATA' / FASTIGIATE BEECH | 2" CAL. B&B | 40'-60' | 8'-10' | END. PLANTING |
| | QUERCUS PALUSTRIS 'GREEN PILLAR' / GREEN PILLAR PIN OAK | 2" CAL. B&B | 40'-60' | 10'-15' | IMPROVED NATIVE |
| TREE 6 | SMALL ORNAMENTAL | | | | |
| | ACER PENNSYLVANICUM / STRIPED MAPLE | 2" CAL. B&B | 15'-20' | 15'-20' | NATIVE-UNDER-STORY/SHADE |
| | CORNUS KOUSA 'SATOMI' / SATOMI KOUSA DOGWOOD | 2" CAL. B&B | 15'-20' | 10'-15' | - |
| | MALUS 'SPRING SNOW / SPRING SNOW CRAB | 2" CAL. B&B | 15'-20' | 10'-15' | - |
| | SYRINGA RETICULATA IVORY SILK' / IVORY SILK JAPANESE LILAC TREE | 2" CAL. B&B | 20'-30' | 10'-15' | - |
| EVERGREEN 1 | LARGE EVERGREEN TREE | | | | |
| | ABIES FRASERI / FRASER FIR | 6' HT. B&B | 30'-40' | 20'-30' | - |
| | PICEA PUNGENS 'GLAUCA' / COLORADO BLUE SPRUCE | 6' HT. B&B | 60' | 20'-30' | - |
| | PINUS STROBUS / EASTERN WHITE PINE | 6' HT. B&B | 60' | 30'-40' | NATIVE |
| | ABIES BALSAMEA / BALSAM FIR | 6' HT. B&B | 30'-40' | 20'-30' | NATIVE - SHADE |
| | TSUGA CANADENSIS / CANADIAN HEMLOCK | 6' HT. B&B | 40'-60' | 20'-30' | NATIVE - PARTIAL/SHADE |
| EVERGREEN 2 | NARROW EVERGREEN | | | | |
| | ABIES CONCOLOR / WHITE FIR | 6' HT. B&B | 30'-40' | 15'-20' | PARTIAL/SHADE |
| | CRYPTOMERIA JAPONICA 'YOSHINO' / YOSHINO JAPANESE CEDAR | 6' HT. B&B | 30'-40' | 15'-20' | - |
| | PICEA PUNGENS 'BABY BLUE' / BABY BLUE SPRUCE | 6' HT. B&B | 20'-30' | 10'-15' | - |
| EVERGREEN 3 | EVERGREEN SHRUB / DWARF | | | | |
| | ILEX MESERVEAE 'BLUE PRINCE' / BLUE PRINCE HOLLY | 4' HT. B&B | 8'-10' | 6'-8' | SUN/SHADE |
| | JUNIPERUS CHINENSIS 'BLUE POINT' / BLUE POINT JUNIPER | 4' HT. B&B | 8'-10' | 8'-10' | - |
| | J. VIRGINIANA 'EMERALD SENTINEL' / EMERALD SENTINEL EASTERN RED CEDAR | 4' HT. B&B | 15'-20' | 8' | IMPROVED NATIVE |
| | RHODODENDRON MAXIMUM / ROSEBAY RHODODENDRON | 4' HT. B&B | 10'-15' | 10'-15' | NATIVE- PARTIAL/SHADE |
| EVERGREEN 4 | EVERGREEN SHRUB TALL | | | | |
| | EUONYMUS KIAUTSCHOVICUS 'MANHATTAN' / MANHATTAN WINTERCREEPER | 3' HT. B&B | 6'-8' | 4'-5' | - |
| | JUNIPERUS CHINENSIS 'HETZII COLUMNARIS' / COLUMNAR HETZ JUNIPER | 3' HT. B&B | 10'-15' | 4'-5' | - |
| | PIERIS JAPONICA 'DOROTHY WYCKOFF' / DOROTHY WYCKOFF ANDROMEDA | 3' HT. B&B | 5'-6' | 5'-6' | SUN/SHADE |
| | THUJA OCCIDENTALIS 'HOLMSTRUP' / HOLMSTRUP ARBORVITAE | 3' HT. B&B | 10'-15' | 4'-5' | IMPROVED NATIVE |
| EVERGREEN 5 | EVERGREEN SHRUB MEDIUM | | | | |
| | ILEX CRENATA 'HETZII' / HETZ JAPANESE HOLLY | 30" B&B | 3'-4' | 3'-4' | SHADE TOLERANT |
| | JUNIPERUS CHINENSIS 'ARMSTRONG AUREA' / OLD GOLD JUNIPER | 30" B&B | 3'-4' | 6'-8' | - |
| | JUNIPERUS CHINENSIS 'GOLD STAR' / GOLD STAR JUNIPER | 30" B&B | 3'-4' | 5'-6' | - |
| | JUNIPERUS VIRGINIANA 'GREY OWL' / GREY OWL JUNIPER | 30" B&B | 2'-3' | 6'-8' | IMPROVED NATIVE |
| | J. CHINENSIS ' PFITZERIANA COMPACTA' / COMPACT PFITZER JUNIPER | 30" B&B | 2'-3' | 5'-6' | - |
| | JUNIPERUS CHINENSIS 'SEAGREEN' / SEAGREEN JUNIPER | 30" B&B | 5'-6' | 4'-5' | - |
| | LEUCOTHOE FONTANESIANA 'GIRARD'S RAINBOW/GIRARD'S RAINBOW LEUCOTHOE | 30" B&B | 3'-4' | 4'-5' | SHADE TOLERANT |
| | PIERIS 'BROUWER'S BEAUTY' / BROUWER'S BEAUTY ANDROMEDA | 30" B&B | 4'-5' | 4'-5' | - |
| | TAXUS MEDIA 'GREENWAVE' / GREENWAVE SPREADING YEW | 30" B&B | 3'-4' | 6'-8' | - |
| | TAXUS MEDI 'TAUTONII' / TAUNTONI YEW | 30" B&B | 3'-4' | 5'-6' | SHADE TOLERANT |
| EVERGREEN 6 | EVERGREEN GROUNDCOVER | | | | |
| | JUNIPERUS CHINENSIS 'SARGENTI' / GREEN SARGENT JUNIPER | 5 GAL. | 12"-24" | 8'-10' | - |
| | JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR JUNIPER | 5 GAL. | 6"-12" | 6'-8' | NATIVE |
| | LEUCOTHOE FONTANESIANA 'COMPACTA' / COMPACT DROOPING LEUCOTHOE | 5 GAL. | 12"-24" | 4'-5' | - |
| | MICROBIOTA DECUSSATA / RUSSIAN CYPRESS | 5 GAL. | 18"-24" | 4'-5' | SHADE TOLERANT |
| | TAXUS MEDIA 'EVER-LOW' / EVER-LOW YEW | 5 GAL. | 12"-24" | 5'-6' | - |
| DECIDUOUS 1 | DECIDUOUS SHRUB LARGE | | | | |
| | CORNUS RACEMOSA / GREY DOGWOOD | 4' HT. B&B | 10'-15' | 10'-15' | NATIVE |
| | HYDRANGEA QUERCIFILIA 'ALICE' / ALICE OAKLEAF HYDRANGEA | 4' HT. B&B | 8'-10' | 8'-10' | SHADE TOLERANT |
| | SYRING VULGARIS / COMMON PURPLE LILAC | 4' HT. B&B | 10'-15' | 8'-10' | - |
| | VIBURNUM TRILOBUM / AMERICAN CRANBERRY VIBURNUM | 4' HT. B&B | 10'-15' | 8'-10' | NATIVE |
| | VIBURNUM DENTANUM / ARROWWOOD VIBURNUM | 4' HT. B&B | 8'-10' | 8'-10' | NATIVE |
| DECIDUOUS 2 | DECIDUOUS SHRUB INTERMEDIATE | | | | |
| | FORSYTHIA 'LYNWOOD GOLD' / LYNNWOOD GOLD FORSYTHIA | 4' HT. B&B | 6'-8' | 6'-8' | - |
| | HYDRANGEA QUERCIFOLIA / OAKLEAF HYDRANGEA | 4' HT. B&B | 6'-8' | 6'-8' | SHADE TOLERANT |
| | SYRINGA PATULA 'MISS KIM' / MISS KIM LILAC | 4' HT. B&B | 8'-10' | 6'-8' | - |
| DECIDUOUS 3 | DECIDUOUS SHRUB MEDIUM | | | | |
| | CARYOPTERIS CLANDONENSIS / BLUE MIST SPIREA | 5 GAL. | 3'-4' | 4'-5' | - |
| | CHAENOMELES SPECIOSA 'CAMEO' /CAMEO QUINCE | 5 GAL. | 4'-5' | 4'-5' | - |
| | GRACILIS 'NIKKO DEUTZIA / NIKKO DEUTZIA | 5 GAL. | 2'-3' | 4'-5' | - |
| | FORSYTHIA 'NEW HAMPSHIRE GOLD' / N.H. GOLD FORSYTHIA | 5 GAL. | 5'-6' | 5'-6' | - |
| | ILEX VERTICILLATA 'MARYLAND BEAUTY' / MARYLAND BEAUTY WINTERBERRY | 5 GAL. | 5'-6' | 5'-6' | IMPROVED NATIVE |
| | SPIRAEA BUMALDA 'ANTHONY WATERER' / ANTHONY WATERER SPIRAEA | 5 GAL. | 5'-6' | 5'-6' | - |
| | WEIGELA 'FLORIDA WINE & ROSES' / WINE & ROSES WEIGELA | 5 GAL. | 4'-5' | 4'-5' | - |
| | AMELANCHIER ALNIFOLIA REGENT / REGENT SERVICE BERRY | 5 GAL. | 5'-6' | 5'-6' | NATIVE - SHADE TOLERANT |
| | VIBURNUM ACERFOLIUM / MAPLE LEAF VIBURNUM | 5 GAL. | 5'-6' | 5'-6' | NATIVE - SHADE TOLERANT |
| DECIDUOUS 4 | DECIDUOUS SHRUB SMALL | | | | |
| | ILEX VERTICILLATA 'RED SPRITE' / RED SPRITE WINTERBERRY | 3 GAL. | 3'-4' | 3'-4' | IMPROVED NATIVE |
| | ITEA VIRGINICA 'LITTLE HENRY' / LITTLE HENRY SWEETSPIRE | 3 GAL. | 18"-24" | 2'-3' | - |
| | POTENTILLA FRUTICOSA ' ABBOTSWOOD' / ABBOTSWOOD POTENTILLA | 3 GAL. | 2'-3' | 2'-3' | IMPROVED NATIVE |
| | POTENTILLA FRUTICOSA ' PINK BEAUTY ' / PINK BEAUTY POTENTILLA | 3 GAL. | 2'-3' | 2'-3' | IMPROVED NATIVE |
| | RHUS AROMATICA 'GROW LOW' / GROW LOW SUMAC | 3 GAL. | 18"-24" | 6'-8' | NATIVE |
| | SPIRAEA JAPONICA 'GOLDMOUND' / GOLDMOUND SPIREA | 3 GAL. | 2'-3' | 3'-4' | - |
| | SPIRAEA JAPONICA 'LEMON PRINCESS' / LEMON PRINCESS SPIREA | 3 GAL. | 12"-24" | 12"-24" | - |
| | SPIRAEA JAPONICA 'MAGIC CARPET' / MAGIC CARPET SPIREA | 3 GAL. | 12" | 2'-3' | - |
| | SYRINGA 'BLOOMERANG' / BLOOMERANG LILAC | 3 GAL. | 4'-5' | 3' | - |
| | WEIGELA FLORIDA 'FINE WINE' / FINE WINE WEIGELA | 3 GAL. | 2'-3' | 2'-3' | - |
| ROSE | CARPET ROSE ROSA CARPET / CARPET ROSE | 3 GAL. | 2'-3' | 3'-4' | - |


**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

Engineers
Planners
Surveyors
TheDubayGroup.com


REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

| | |
|---|---|
| DRAWN BY: | WA |
| CHECKED BY: | KRD |
| DATE: | AUG. 3, 2021 |
| SCALE: | NONE |
| FILE: | 475—LANDSCAPE |
| DEED REF: | |

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

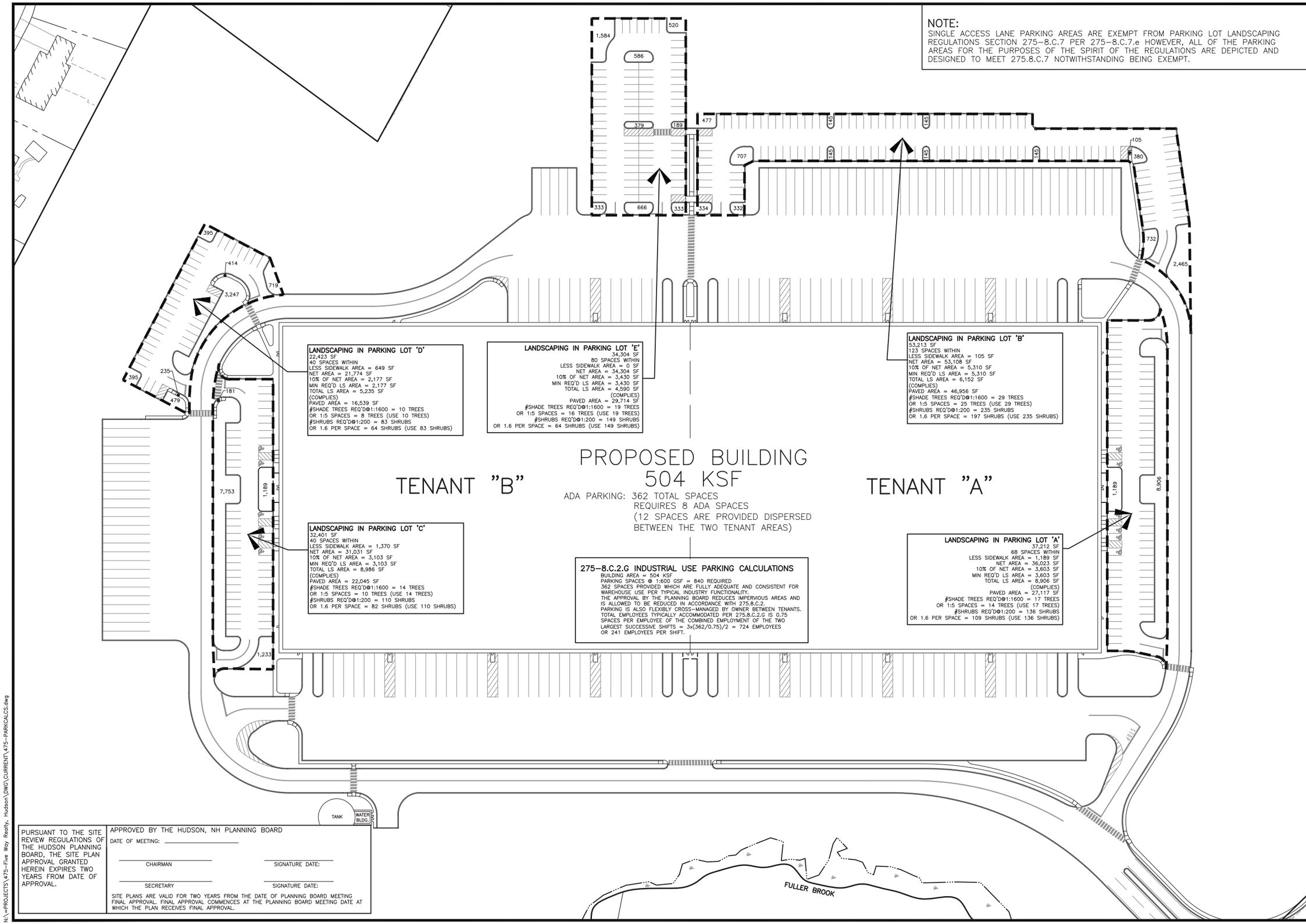
SHEET TITLE:

**LANDSCAPE DETAILS**

PROJECT #475 SHEET 35

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-LANDSCAPE.dwg

NOTE:
SINGLE ACCESS LANE PARKING AREAS ARE EXEMPT FROM PARKING LOT LANDSCAPING REGULATIONS SECTION 275-8.C.7 PER 275-8.C.7.e HOWEVER, ALL OF THE PARKING AREAS FOR THE PURPOSES OF THE SPIRIT OF THE REGULATIONS ARE DEPICTED AND DESIGNED TO MEET 275.8.C.7 NOTWITHSTANDING BEING EXEMPT.




**LANDSCAPING IN PARKING LOT 'D'**
22,423 SF
40 SPACES WITHIN
LESS SIDEWALK AREA = 649 SF
NET AREA = 21,774 SF
10% OF NET AREA = 2,177 SF
MIN REQ'D LS AREA = 2,177 SF
TOTAL LS AREA = 5,235 SF
(COMPLIES)
PAVED AREA = 16,539 SF
#SHADE TREES REQ'D@1:1600 = 10 TREES
OR 1:5 SPACES = 8 TREES (USE 10 TREES)
#SHRUBS REQ'D@1:200 = 83 SHRUBS
OR 1.6 PER SPACE = 64 SHRUBS (USE 83 SHRUBS)

**LANDSCAPING IN PARKING LOT 'E'**
34,304 SF
80 SPACES WITHIN
LESS SIDEWALK AREA = 0 SF
NET AREA = 34,304 SF
10% OF NET AREA = 3,430 SF
MIN REQ'D LS AREA = 3,430 SF
TOTAL LS AREA = 4,590 SF
(COMPLIES)
PAVED AREA = 29,714 SF
#SHADE TREES REQ'D@1:1600 = 19 TREES
OR 1:5 SPACES = 16 TREES (USE 19 TREES)
#SHRUBS REQ'D@1:200 = 149 SHRUBS
OR 1.6 PER SPACE = 64 SHRUBS (USE 149 SHRUBS)

**LANDSCAPING IN PARKING LOT 'B'**
53,213 SF
123 SPACES WITHIN
LESS SIDEWALK AREA = 105 SF
NET AREA = 53,108 SF
10% OF NET AREA = 5,310 SF
MIN REQ'D LS AREA = 5,310 SF
TOTAL LS AREA = 6,152 SF
(COMPLIES)
PAVED AREA = 46,956 SF
#SHADE TREES REQ'D@1:1600 = 29 TREES
OR 1:5 SPACES = 25 TREES (USE 29 TREES)
#SHRUBS REQ'D@1:200 = 235 SHRUBS
OR 1.6 PER SPACE = 197 SHRUBS (USE 235 SHRUBS)

PROPOSED BUILDING
504 KSF

ADA PARKING: 362 TOTAL SPACES
REQUIRES 8 ADA SPACES
(12 SPACES ARE PROVIDED DISPERSED
BETWEEN THE TWO TENANT AREAS)

**LANDSCAPING IN PARKING LOT 'C'**
32,401 SF
40 SPACES WITHIN
LESS SIDEWALK AREA = 1,370 SF
NET AREA = 31,031 SF
10% OF NET AREA = 3,103 SF
MIN REQ'D LS AREA = 3,103 SF
TOTAL LS AREA = 8,986 SF
(COMPLIES)
PAVED AREA = 22,045 SF
#SHADE TREES REQ'D@1:1600 = 14 TREES
OR 1:5 SPACES = 10 TREES (USE 14 TREES)
#SHRUBS REQ'D@1:200 = 110 SHRUBS
OR 1.6 PER SPACE = 82 SHRUBS (USE 110 SHRUBS)

**275-8.C.2.G INDUSTRIAL USE PARKING CALCULATIONS**
BUILDING AREA = 504 KSF
PARKING SPACES @ 1:600 GSF = 840 REQUIRED
362 SPACES PROVIDED WHICH ARE FULLY ADEQUATE AND CONSISTENT FOR WAREHOUSE USE PER TYPICAL INDUSTRY FUNCTIONALITY.
THE APPROVAL BY THE PLANNING BOARD REDUCES IMPERVIOUS AREAS AND IS ALLOWED TO BE REDUCED IN ACCORDANCE WITH 275.8.C.2.
PARKING IS ALSO FLEXIBLY CROSS-MANAGED BY OWNER BETWEEN TENANTS.
TOTAL EMPLOYEES TYPICALLY ACCOMMODATED PER 275.8.C.2.G IS 0.75 SPACES PER EMPLOYEE OF THE COMBINED EMPLOYMENT OF THE TWO LARGEST SUCCESSIVE SHIFTS = 3x(362/0.75)/2 = 724 EMPLOYEES OR 241 EMPLOYEES PER SHIFT.

**LANDSCAPING IN PARKING LOT 'A'**
37,212 SF
68 SPACES WITHIN
LESS SIDEWALK AREA = 1,189 SF
NET AREA = 36,023 SF
10% OF NET AREA = 3,603 SF
MIN REQ'D LS AREA = 3,603 SF
TOTAL LS AREA = 8,906 SF
(COMPLIES)
PAVED AREA = 27,117 SF
#SHADE TREES REQ'D@1:1600 = 17 TREES
OR 1:5 SPACES = 14 TREES (USE 17 TREES)
#SHRUBS REQ'D@1:200 = 136 SHRUBS
OR 1.6 PER SPACE = 109 SHRUBS (USE 136 SHRUBS)

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-PARKCALCS.dwg


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1 INCH = 60 FEET

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DRAWN BY: WA
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: 1" = 60'
FILE: 475-PARKCALCS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

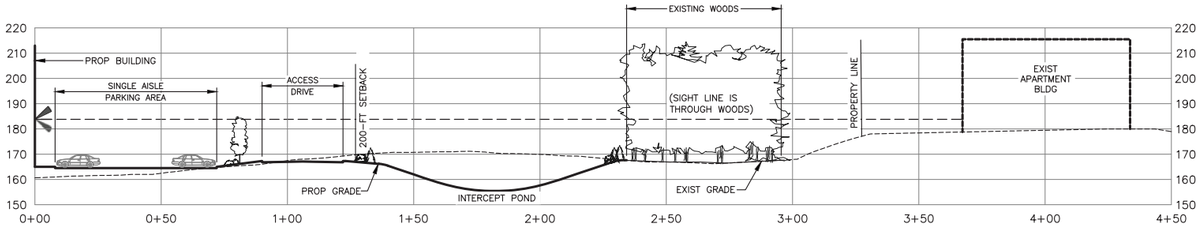
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

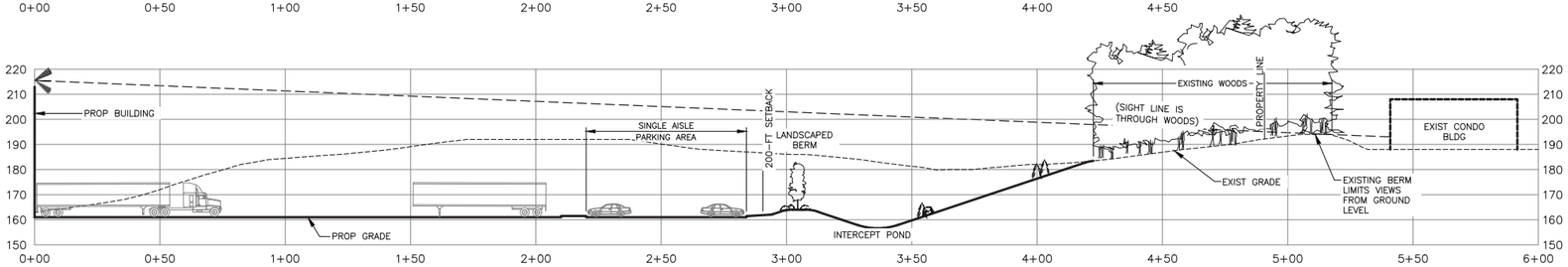
SHEET TITLE:

**PARKING COMPLIANCE & LANDSCAPE SUMMARY**

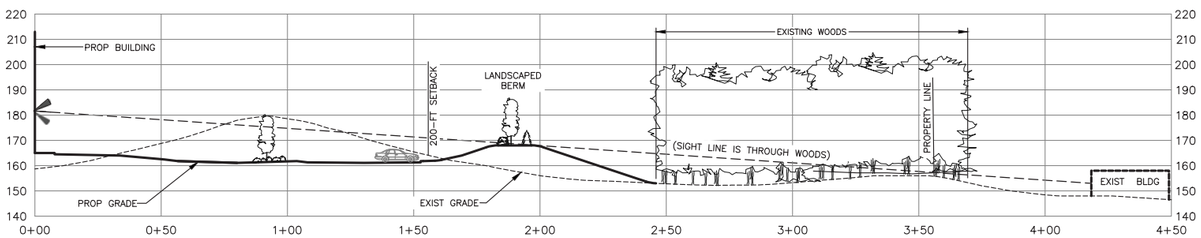
PROJECT #475 SHEET 36



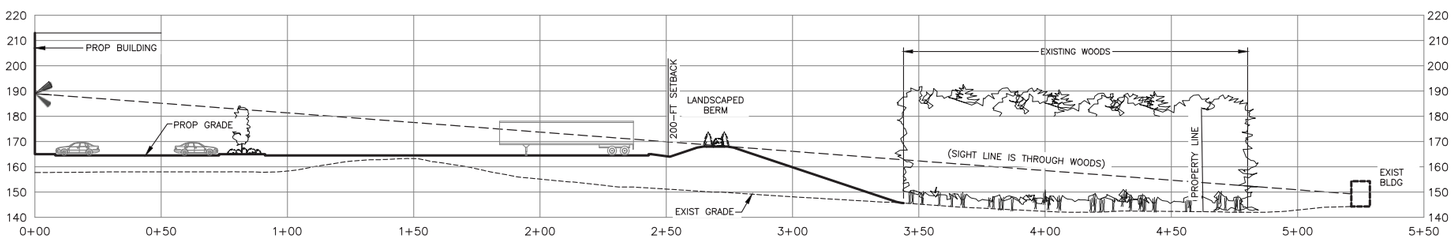

SITE SECTION A




SITE SECTION B

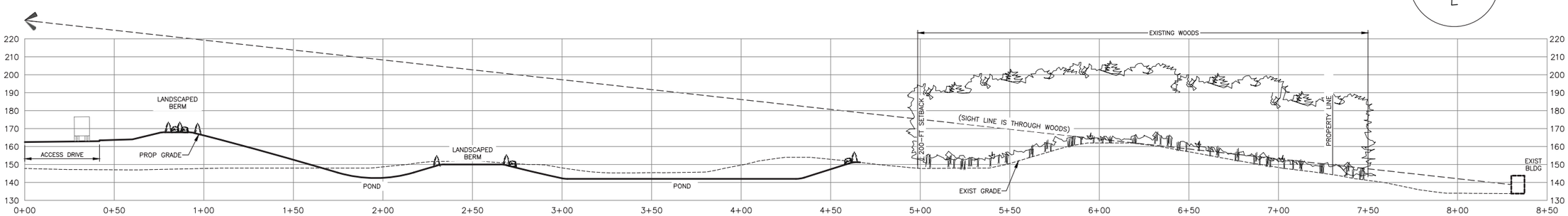



SITE SECTION C




SITE SECTION D

SITE SECTION E

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REFER TO LANDSCAPE & GRADING PLANS FOR PLAN DATA.

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-SECTION.dwg


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DATE: AUG. 3, 2021
SCALE: 1" = 30'
FILE: 475-SECTION
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

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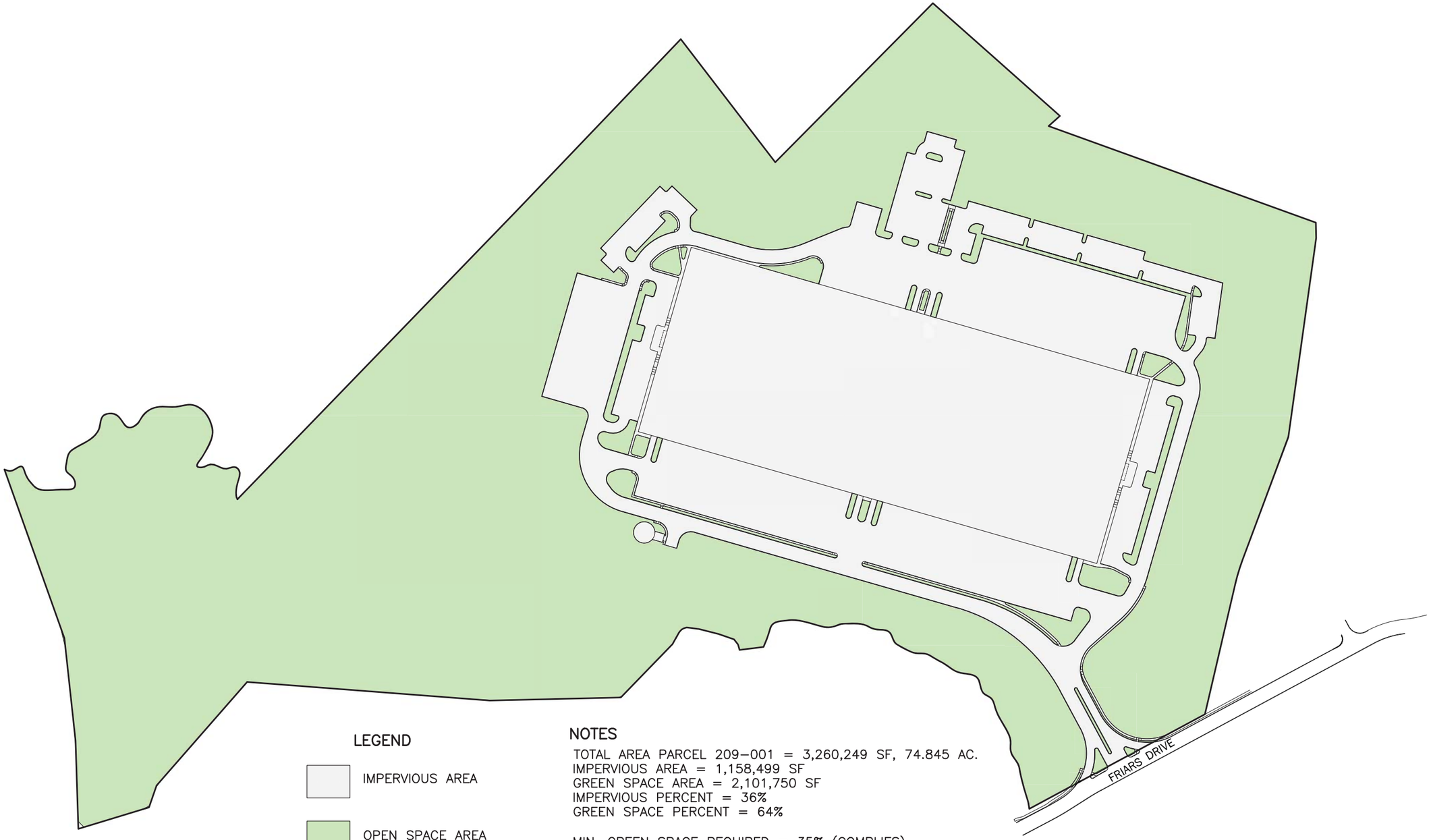
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE SECTIONS**

PROJECT #475 SHEET 37




## LEGEND

IMPERVIOUS AREA

OPEN SPACE AREA

## NOTES

TOTAL AREA PARCEL 209–001 = 3,260,249 SF, 74.845 AC.
IMPERVIOUS AREA = 1,158,499 SF
GREEN SPACE AREA = 2,101,750 SF
IMPERVIOUS PERCENT = 36%
GREEN SPACE PERCENT = 64%

MIN. GREEN SPACE REQUIRED = 35% (COMPLIES)

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CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: 1" = 120'
FILE: 475–OPENSPACE
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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GFI PARTNERS

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BOSTON, MA 02110

OWNER

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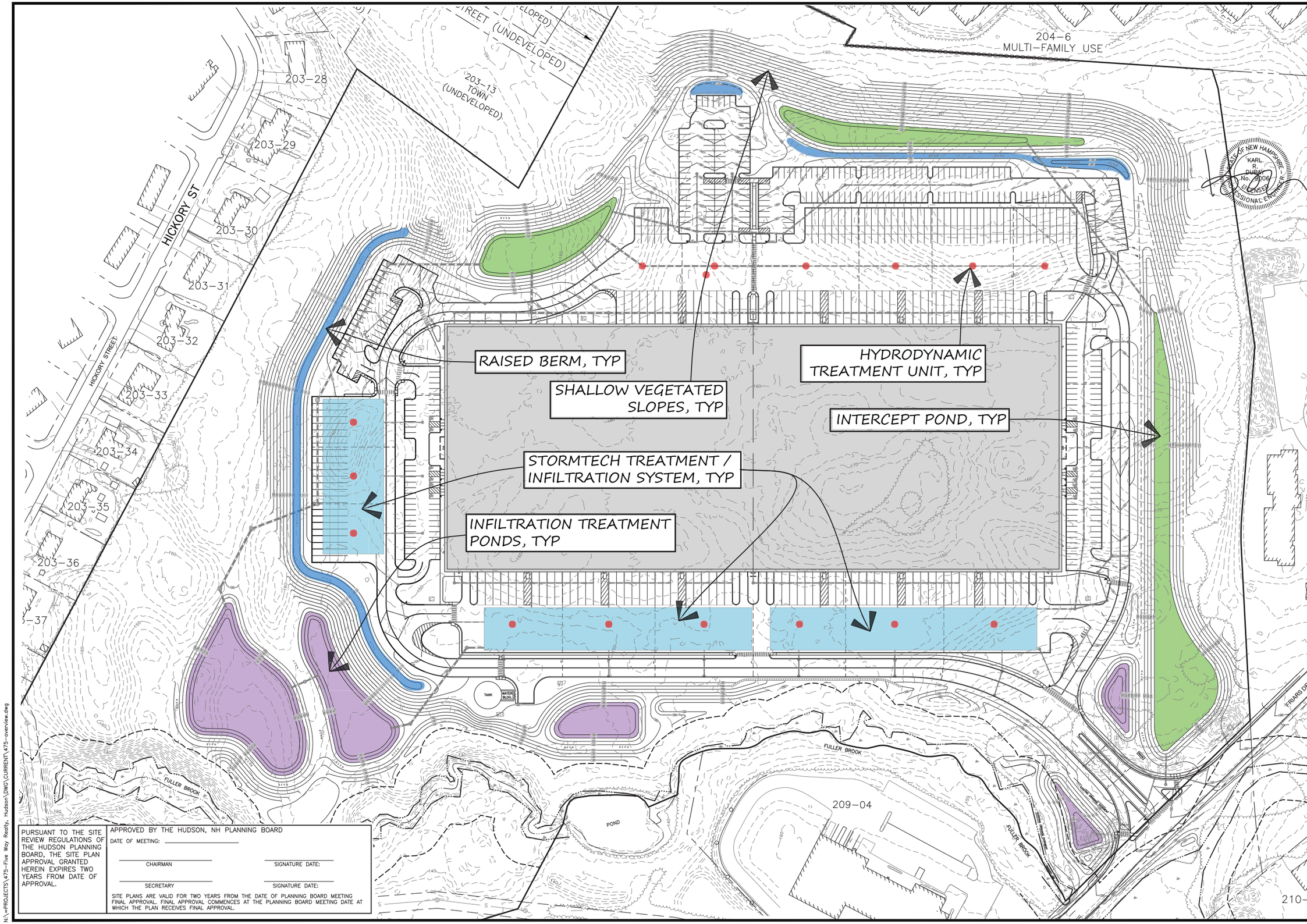
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**GREEN SPACE & IMPERVIOUS AREA SUMMARY**

PROJECT #475 SHEET 38

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CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: 1" = 80'
FILE: 475-overview
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

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BOSTON, MA 02110

OWNER

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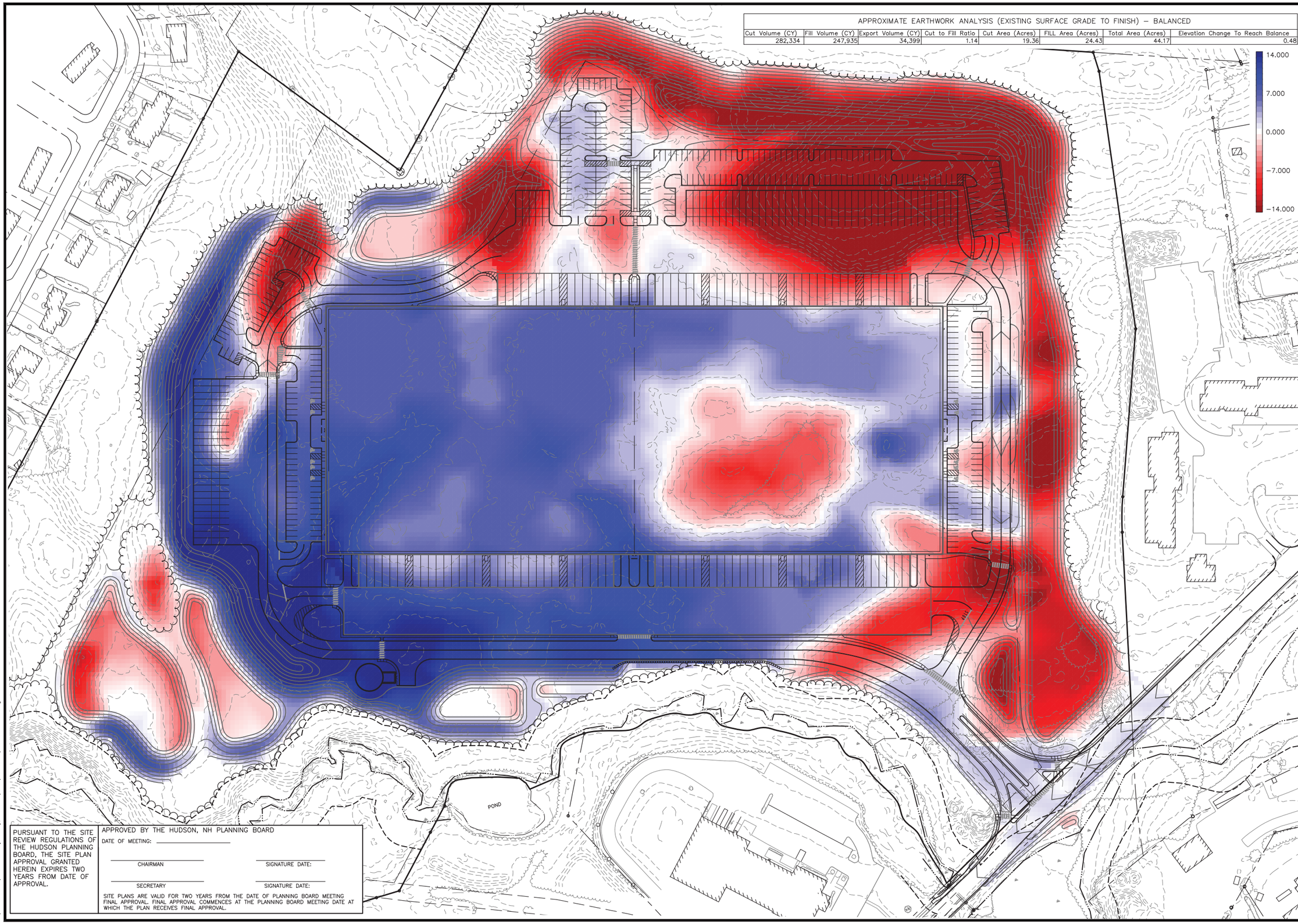
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE OVERVIEW PLAN**

PROJECT #475 SHEET 39

| APPROXIMATE EARTHWORK ANALYSIS (EXISTING SURFACE GRADE TO FINISH) – BALANCED | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cut Volume (CY) | Fill Volume (CY) | Export Volume (CY) | Cut to Fill Ratio | Cut Area (Acres) | FILL Area (Acres) | Total Area (Acres) | Elevation Change To Reach Balance |
| 282,334 | 247,935 | 34,399 | 1.14 | 19.36 | 24.43 | 44.17 | 0.48 |

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SCALE: 1" = 80'
FILE: 475-CUT-FILL
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PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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BOSTON, MA 02110

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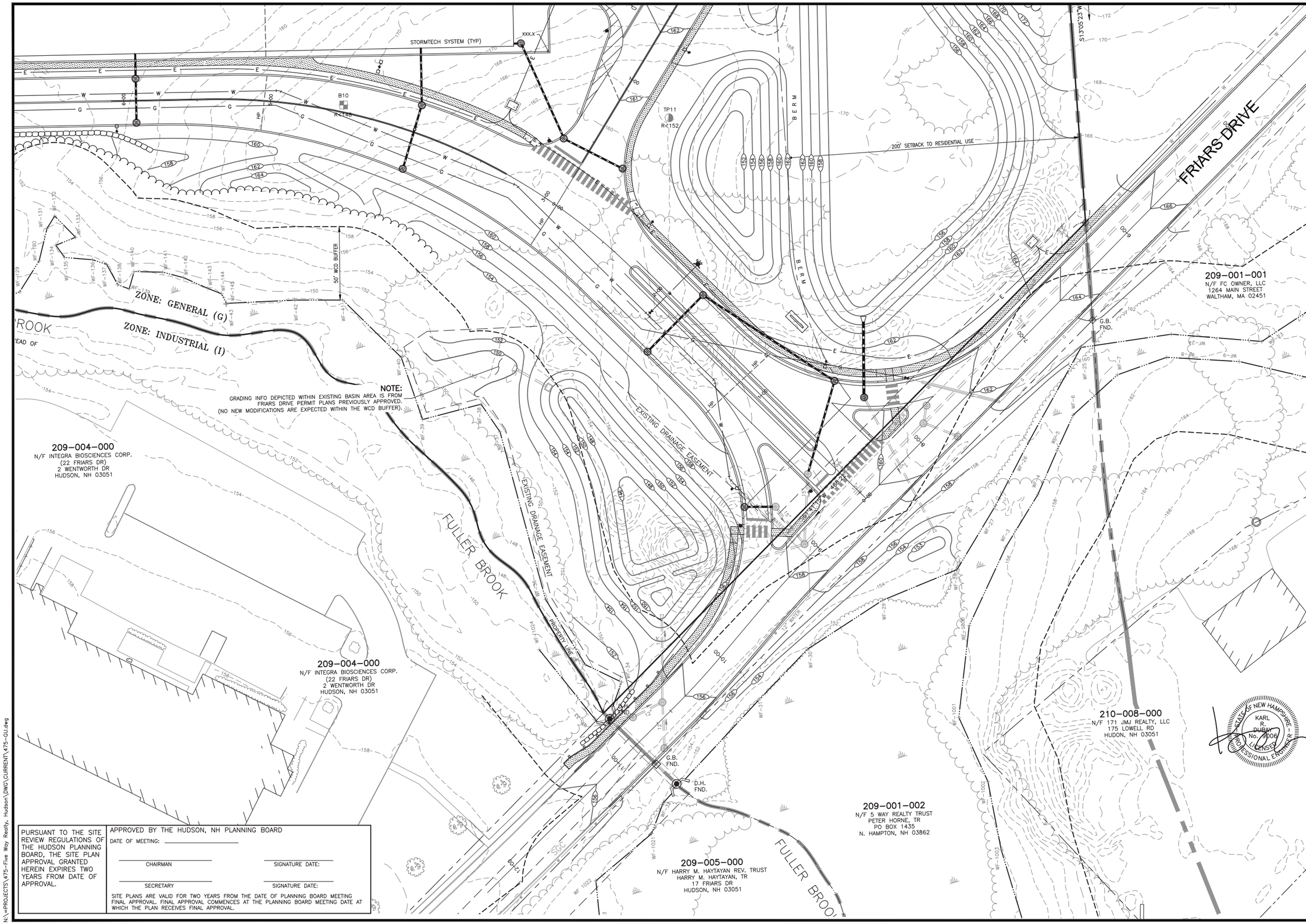
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**CUT / FILL BALANCE PLAN**

PROJECT #475 SHEET 40

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| DATE: | AUG. 3, 2021 |
| SCALE: | 1" = 30' |
| FILE: | 475-GU |
| DEED REF: | |

PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

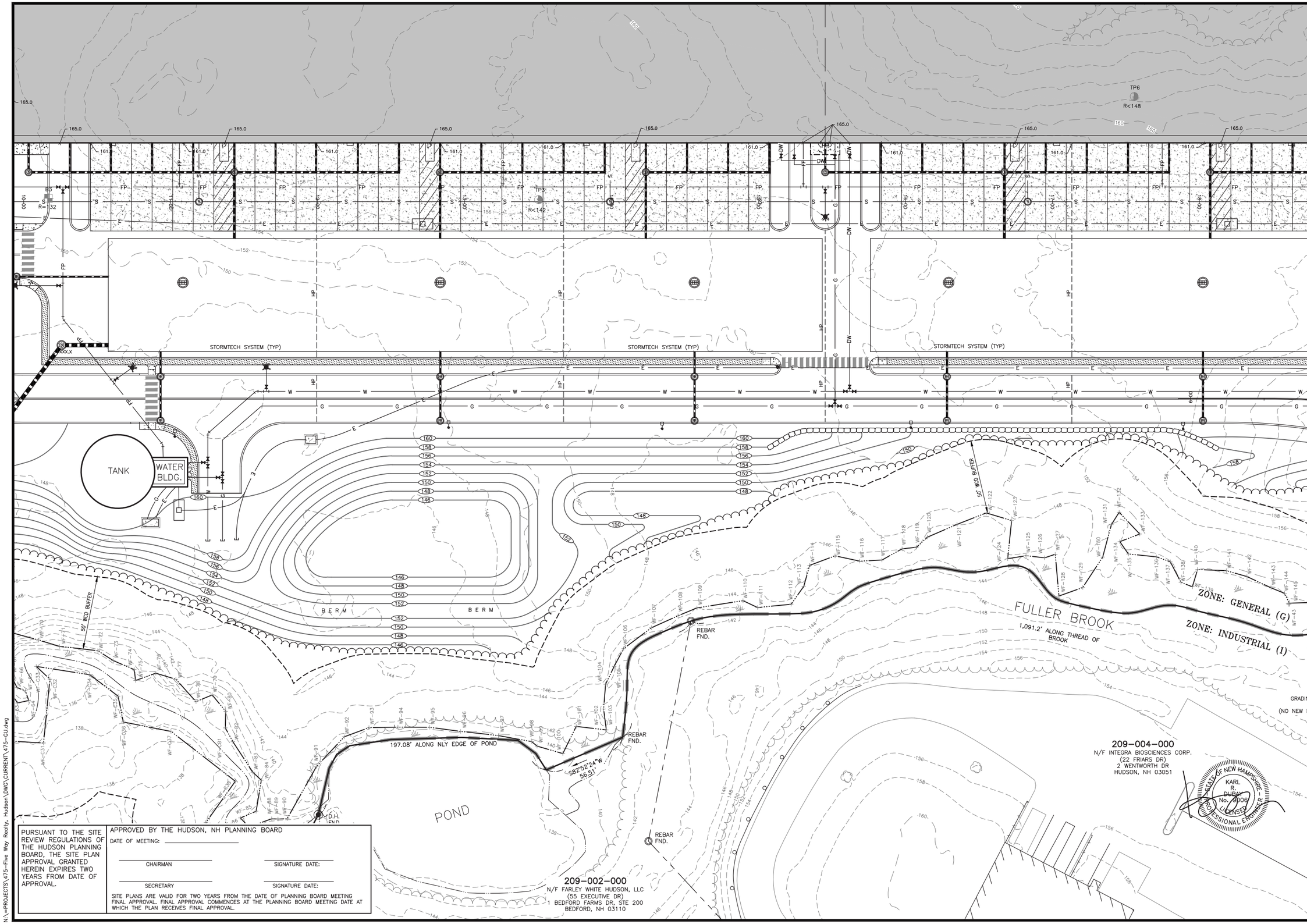
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE PLAN - A**

PROJECT #475 SHEET 41

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| SCALE: | 1" = 30' |
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| DEED REF: | |

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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GFI PARTNERS

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133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
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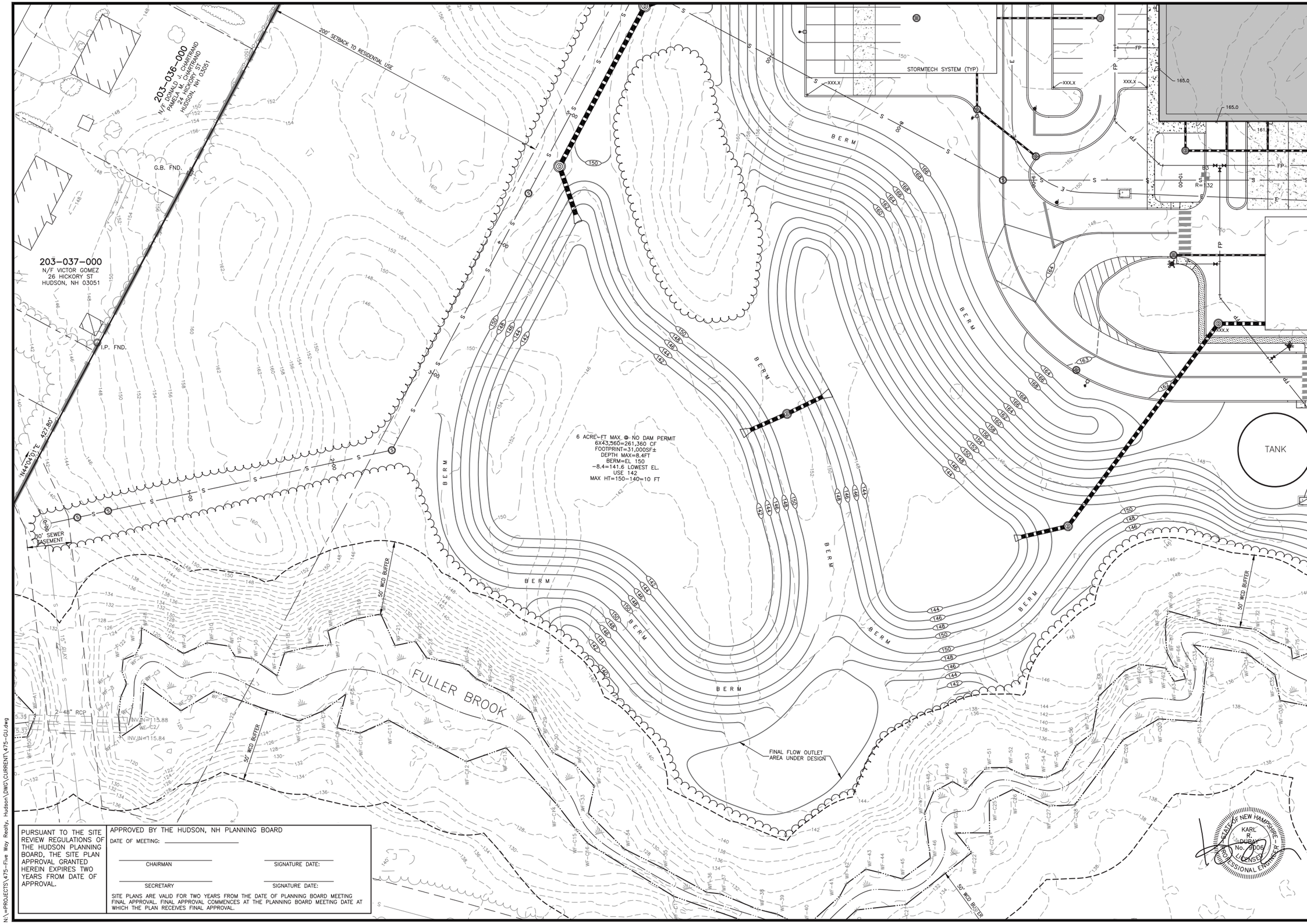
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE PLAN - B**

PROJECT #475 SHEET 42

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PROJECT:
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BOSTON, MA 02110

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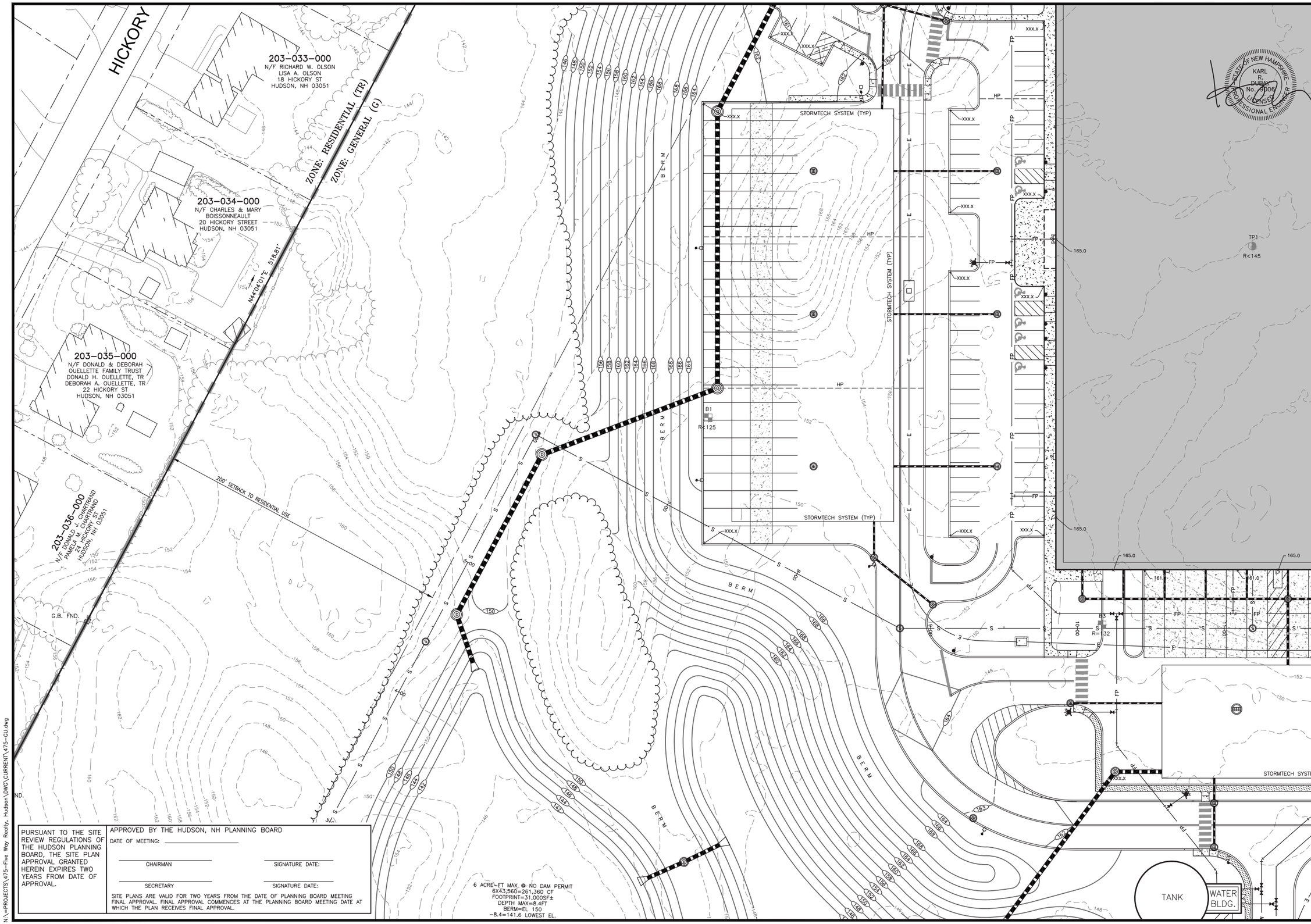
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE PLAN - C**

PROJECT #475 SHEET 43

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PROJECT:

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**FRIARS DRIVE**
**TAX MAP 209**
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OWNER

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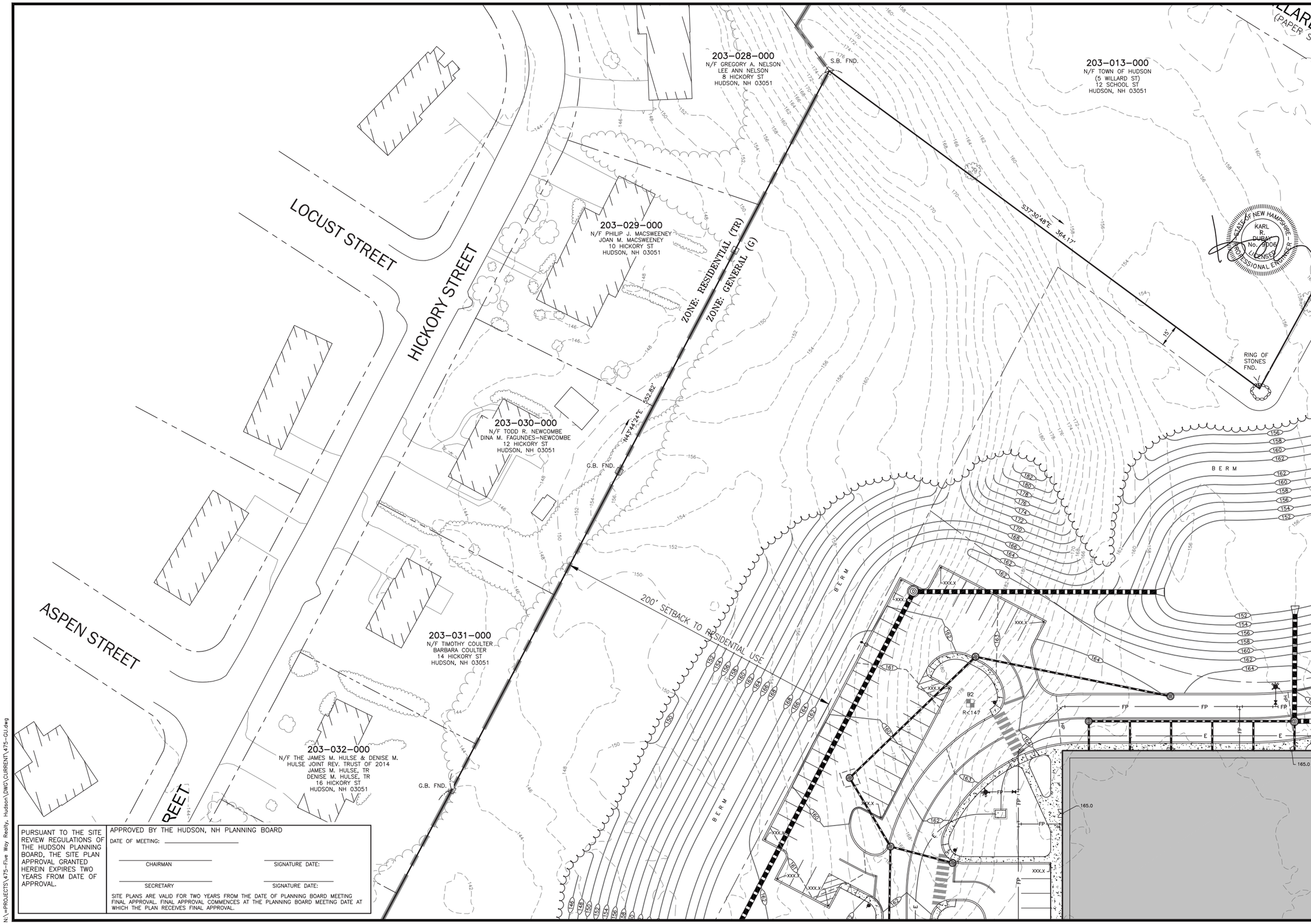
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE PLAN - D**

PROJECT #475 SHEET 44

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PROJECT:

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BOSTON, MA 02110

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PETER HORNE, TRUSTEE
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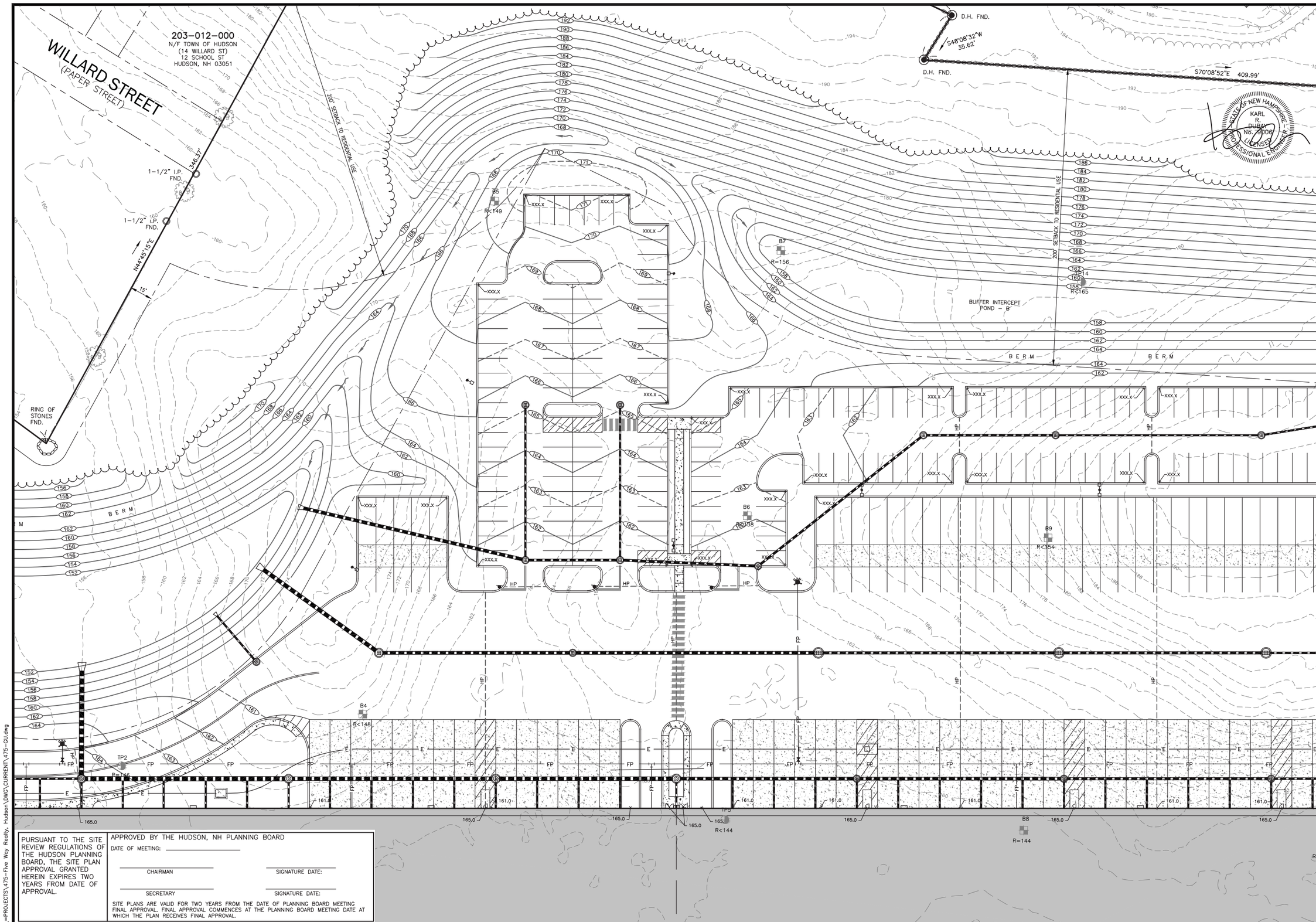
N. HAMPTON, NH 03862

SHEET TITLE:

**GRADING & DRAINAGE PLAN - E**

PROJECT #475 SHEET 45

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No. 20006
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PROFESSIONAL ENGINEER

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PROJECT:
# SITE PLAN
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

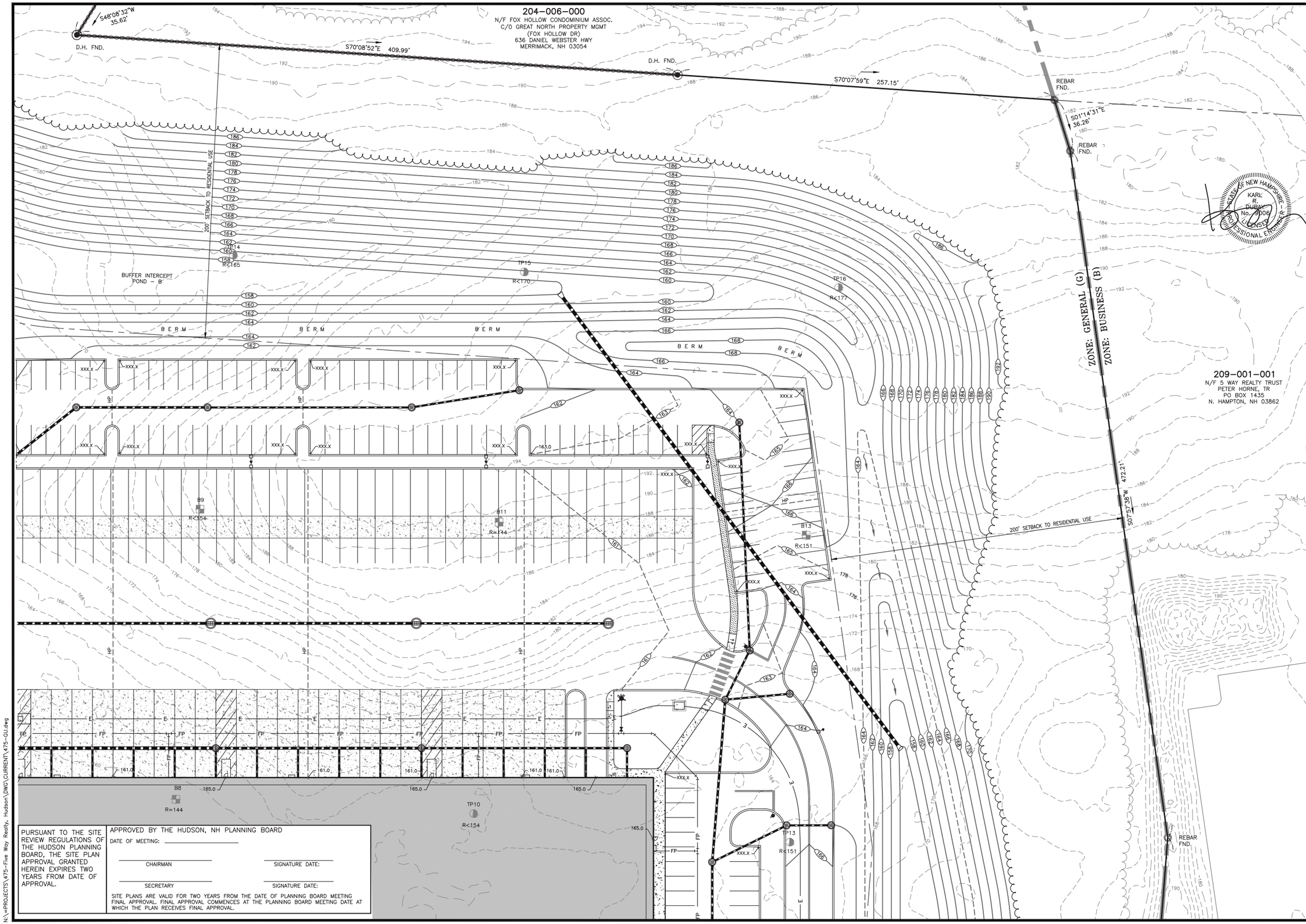
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

## GRADING & DRAINAGE PLAN - F

PROJECT #475 SHEET 46

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# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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BOSTON, MA 02110

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**5 WAY REALTY TRUST**
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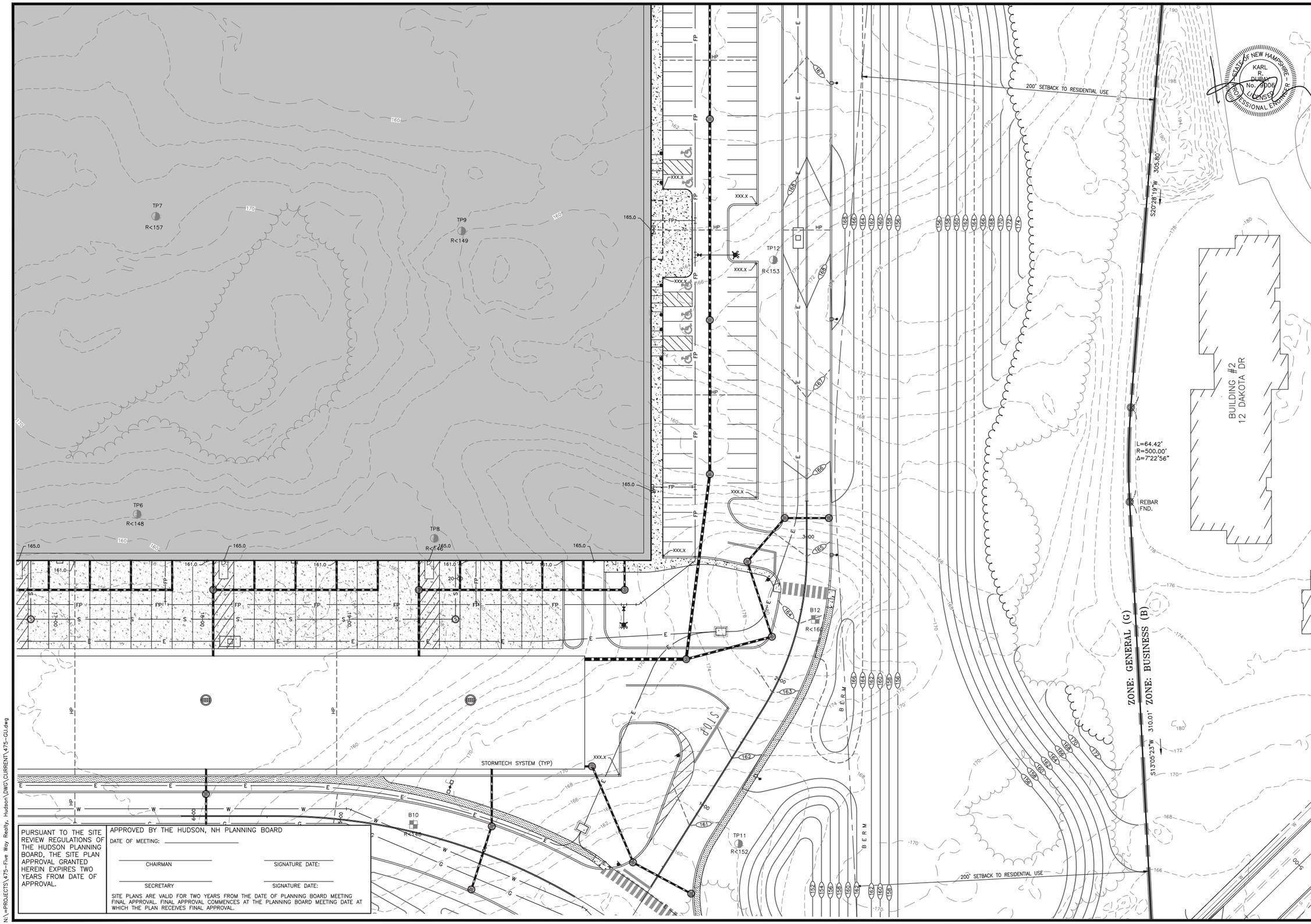
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

## GRADING & DRAINAGE PLAN - G

PROJECT #475 SHEET 47

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# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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133 PEARL STREET #300
BOSTON, MA 02110

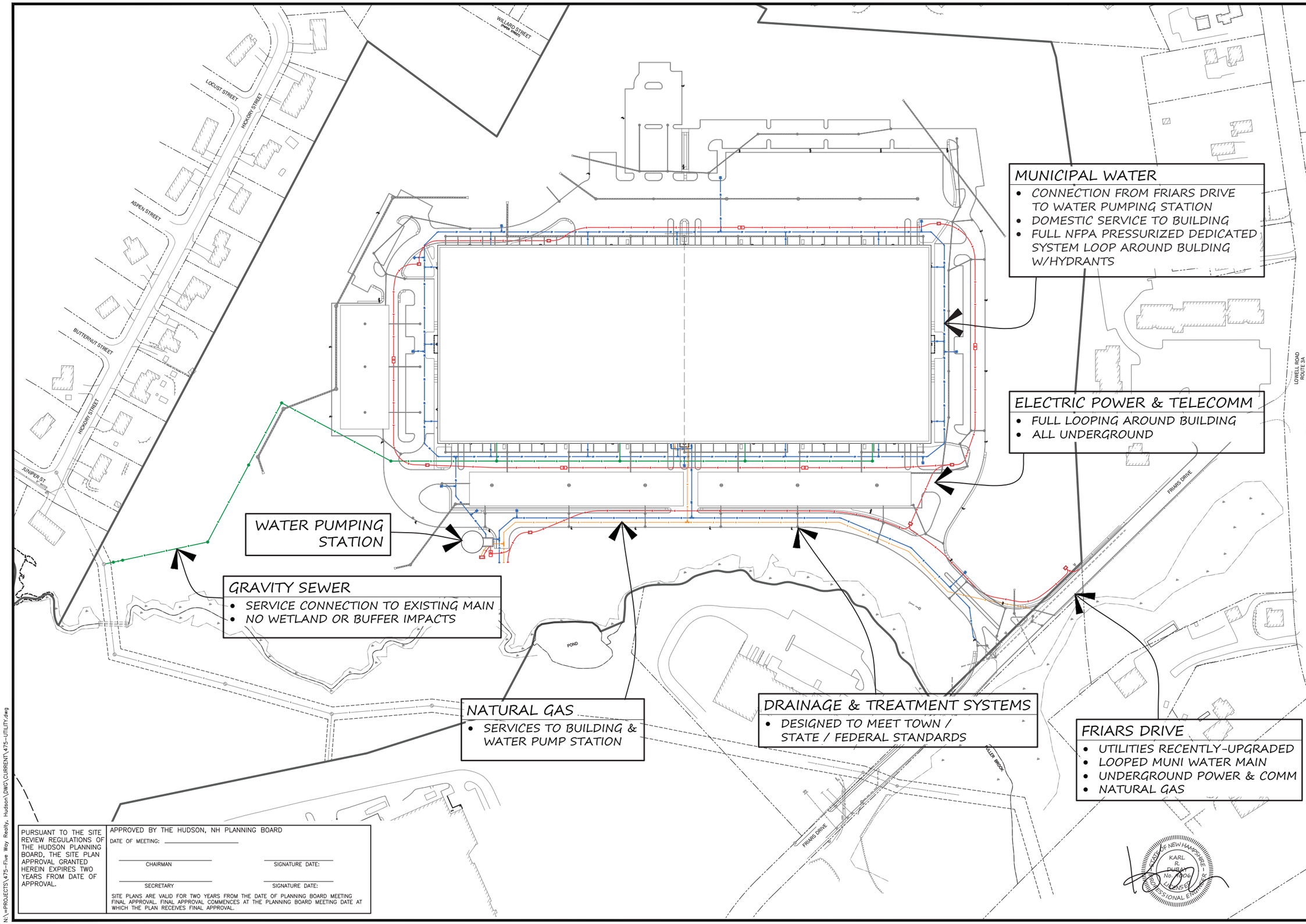
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

## GRADING & DRAINAGE PLAN - H

PROJECT #475 SHEET 48

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**FRIARS DRIVE**
**TAX MAP 209**
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HUDSON, NH

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BOSTON, MA 02110

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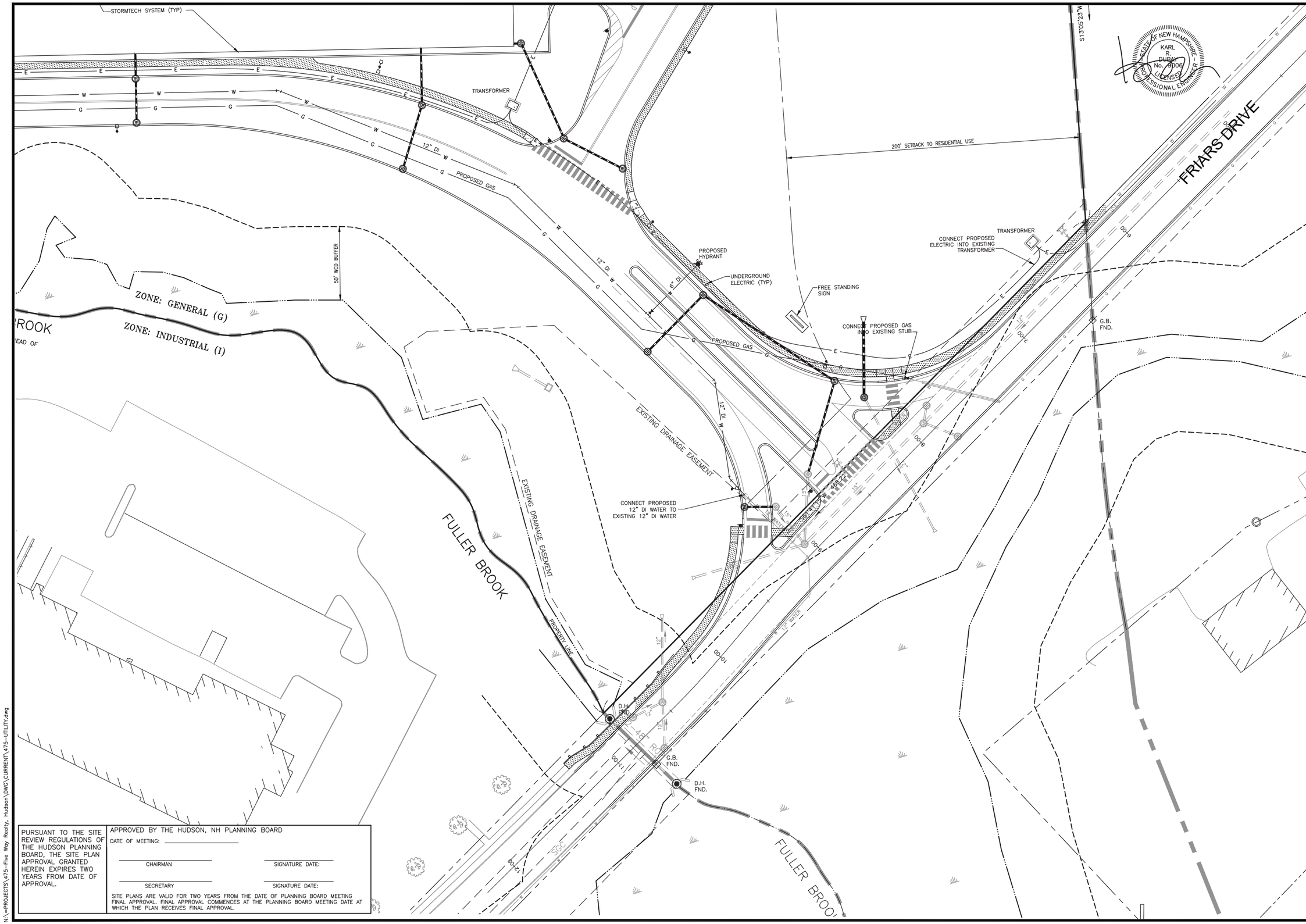
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**UTILITY OVERVIEW PLAN**

PROJECT #475 SHEET 49

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**TAX MAP 209**
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HUDSON, NH

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GFI PARTNERS

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BOSTON, MA 02110

OWNER

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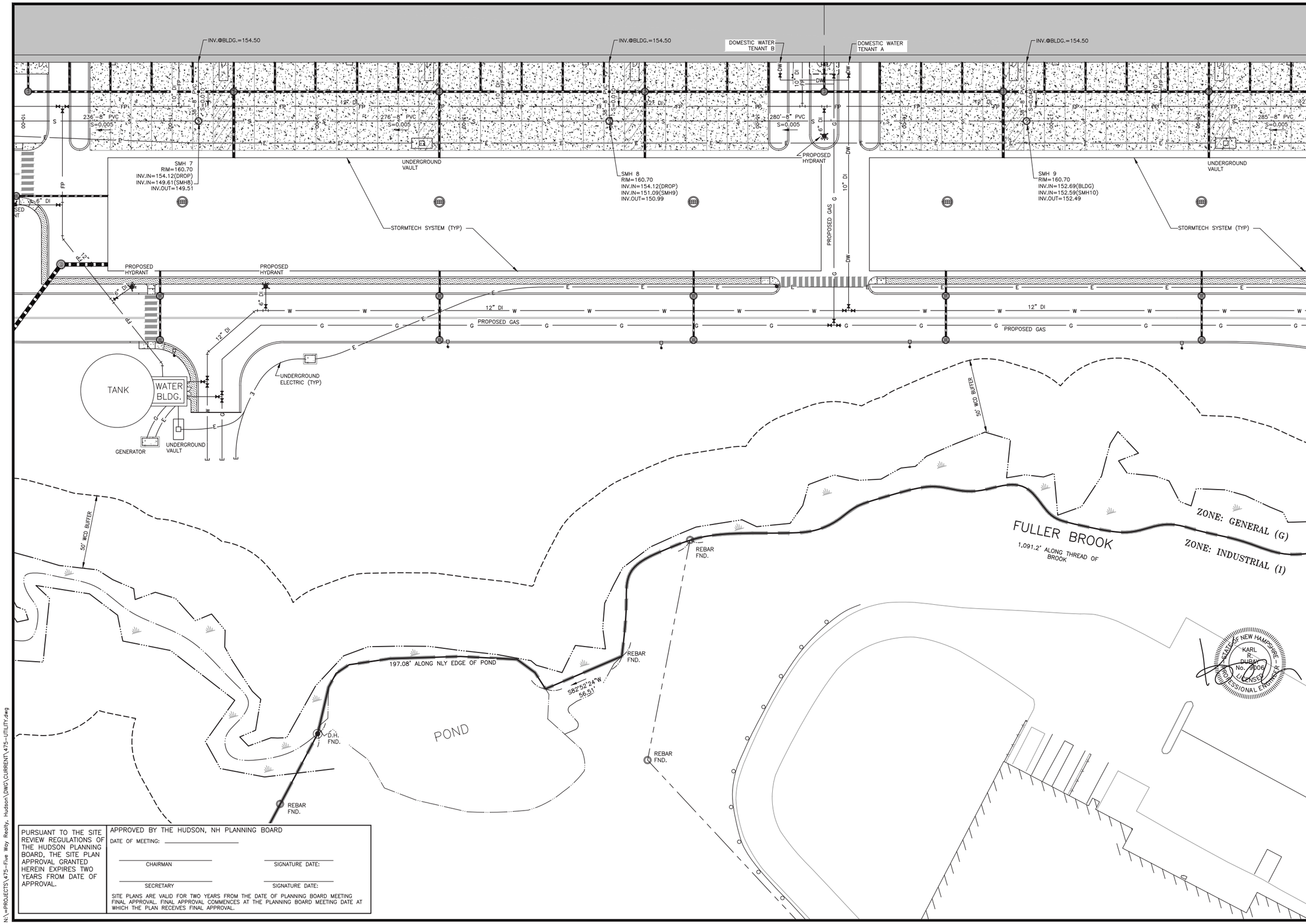
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**UTILITY PLAN - A**

PROJECT #475 SHEET 50

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**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

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PO BOX 1435
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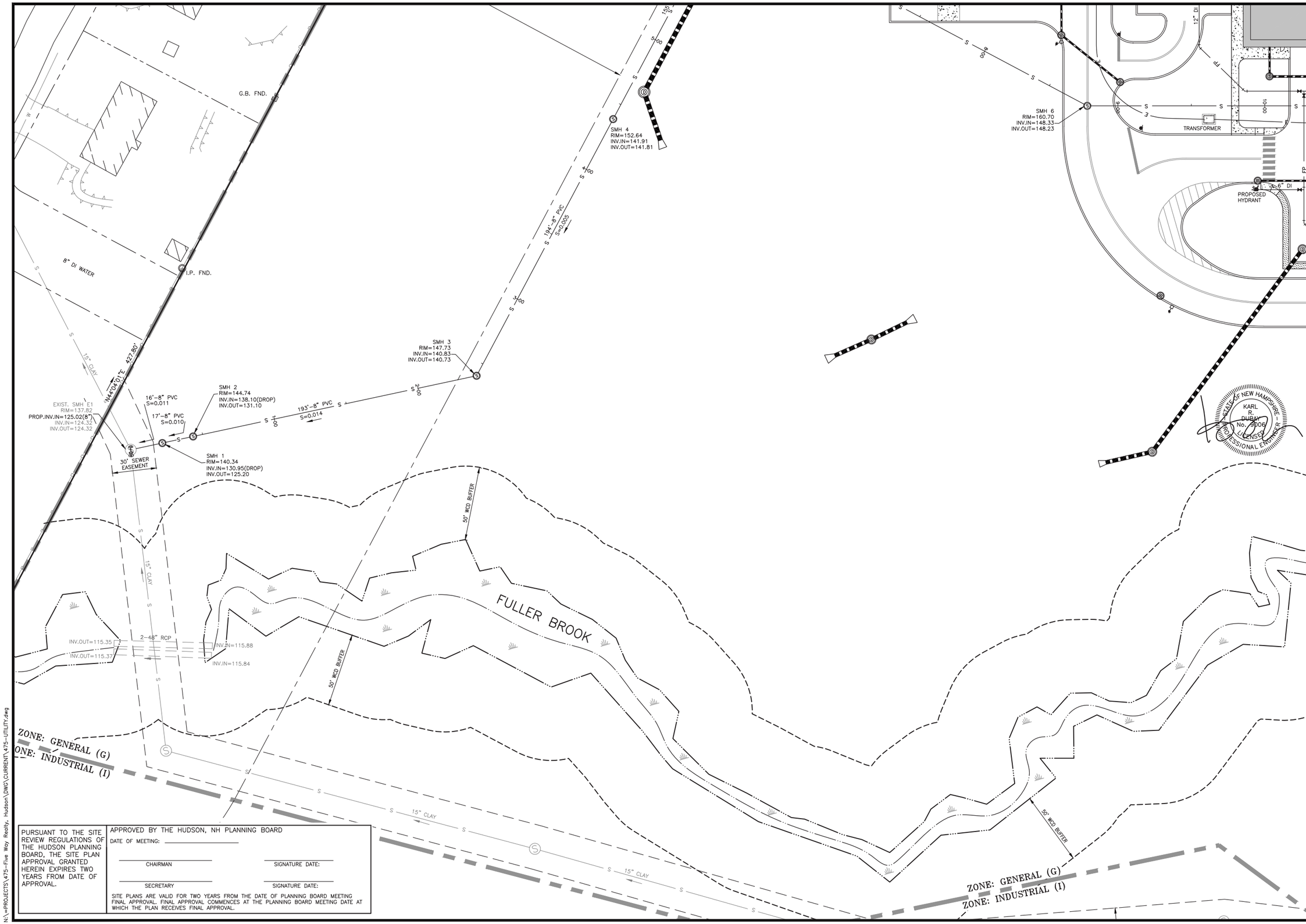
SHEET TITLE:

**UTILITY PLAN - B**

PROJECT #475 SHEET 51

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**SITE PLAN**
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**TAX MAP 209**
**LOT 001-000**
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BOSTON, MA 02110

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**5 WAY REALTY TRUST**
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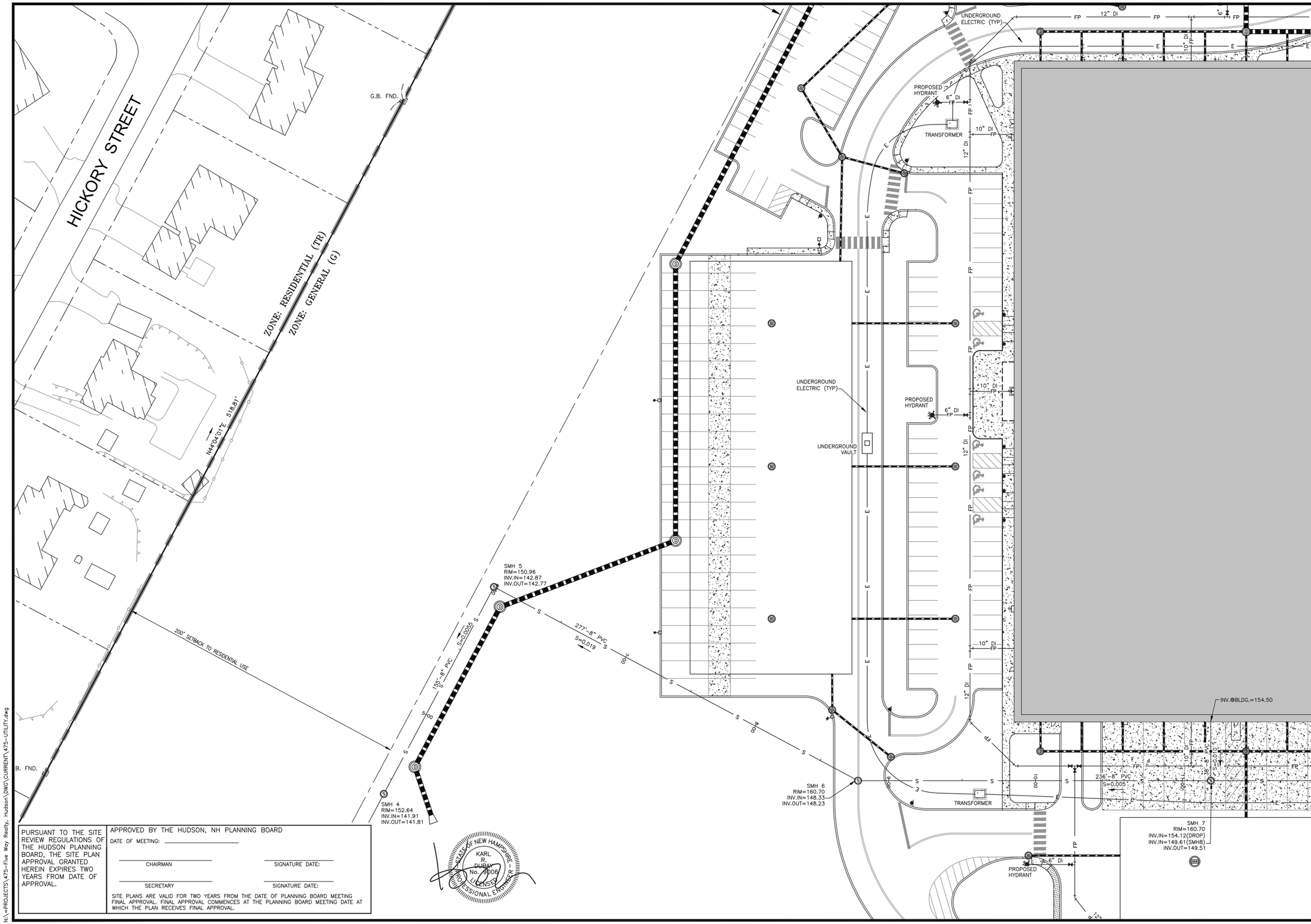
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**UTILITY PLAN - C**

PROJECT #475 SHEET 52

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N. HAMPTON, NH 03862

SHEET TITLE:

**UTILITY PLAN - D**

PROJECT #475 SHEET 53

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BOSTON, MA 02110

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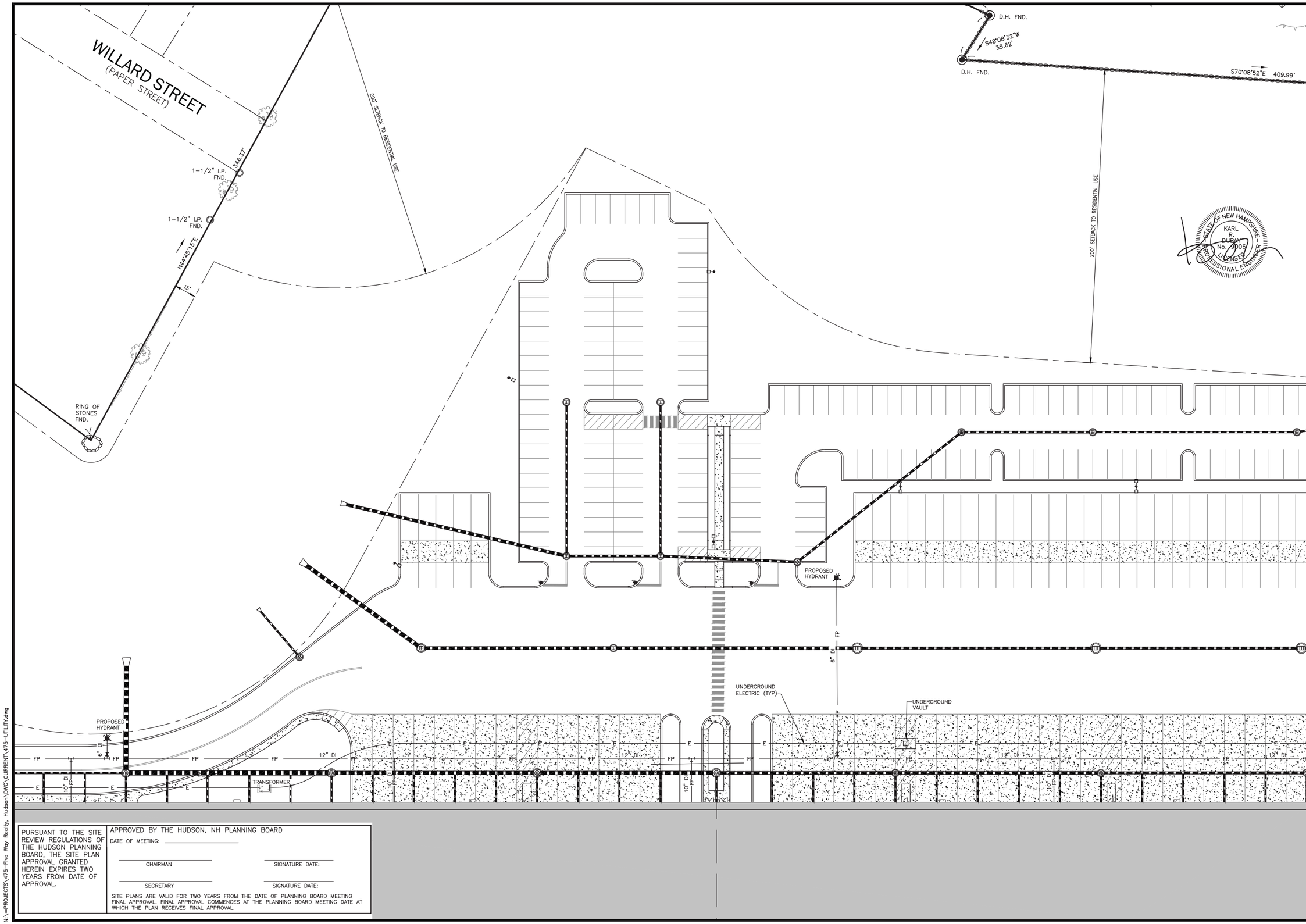
SHEET TITLE:

**UTILITY PLAN - E**

PROJECT #475 SHEET 54

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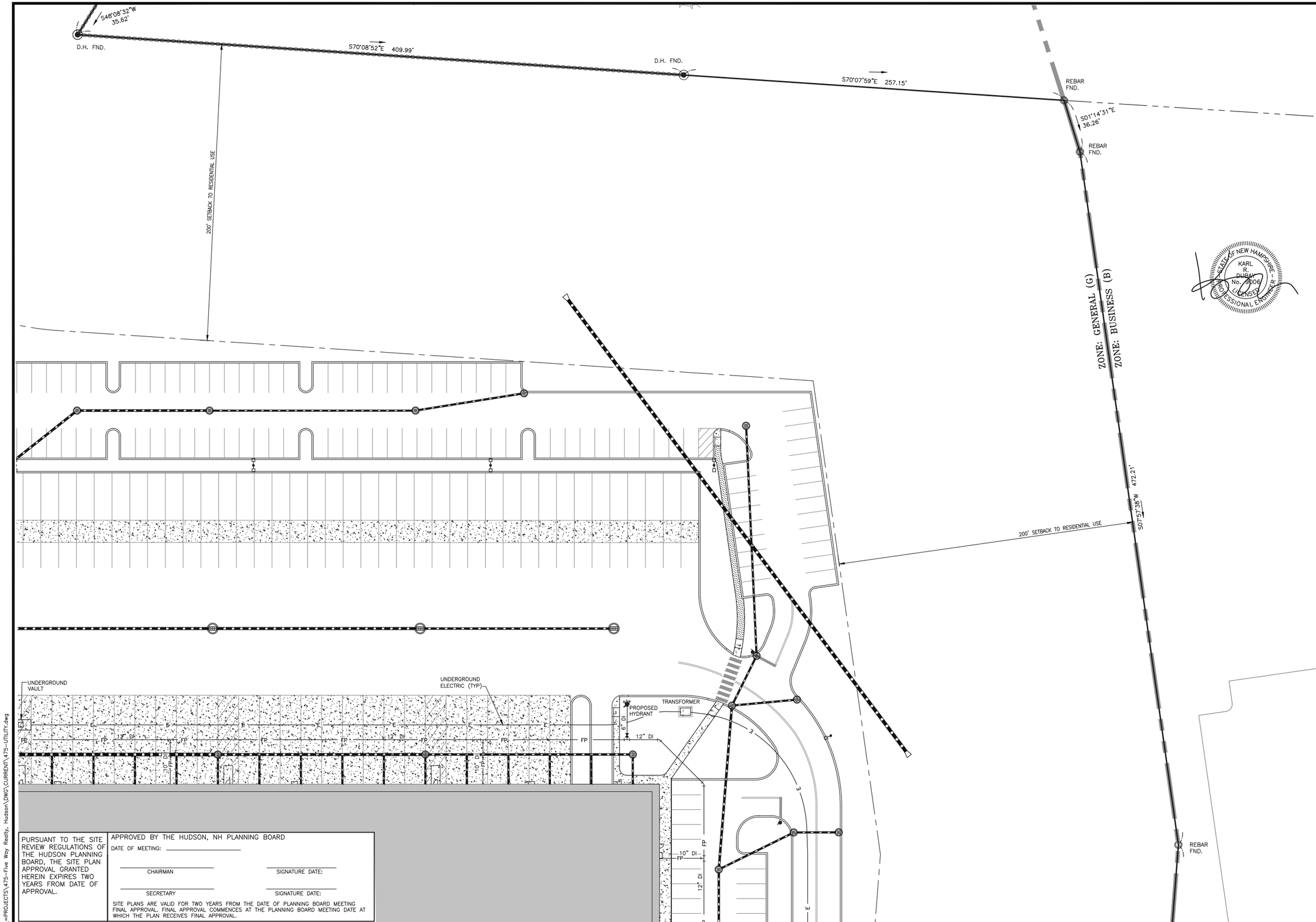
SHEET TITLE:

**UTILITY PLAN - F**

PROJECT #475 SHEET 55

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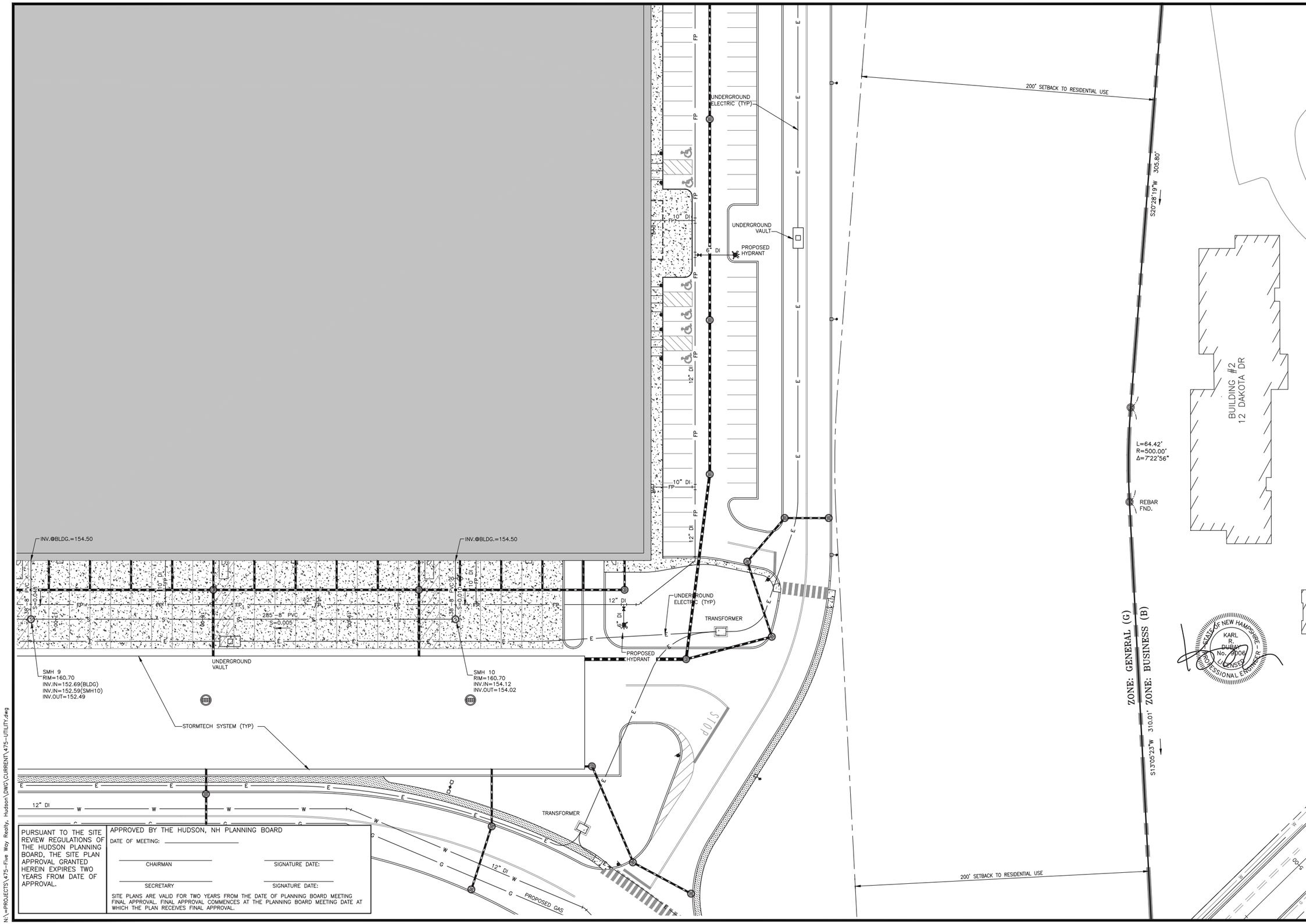
SHEET TITLE:

**UTILITY PLAN - G**

PROJECT #475 SHEET 56

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DATE OF MEETING: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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SHEET INDEX

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CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: 1" = 30'
FILE: 475-UTILITY
DEED REF:

PROJECT:

**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

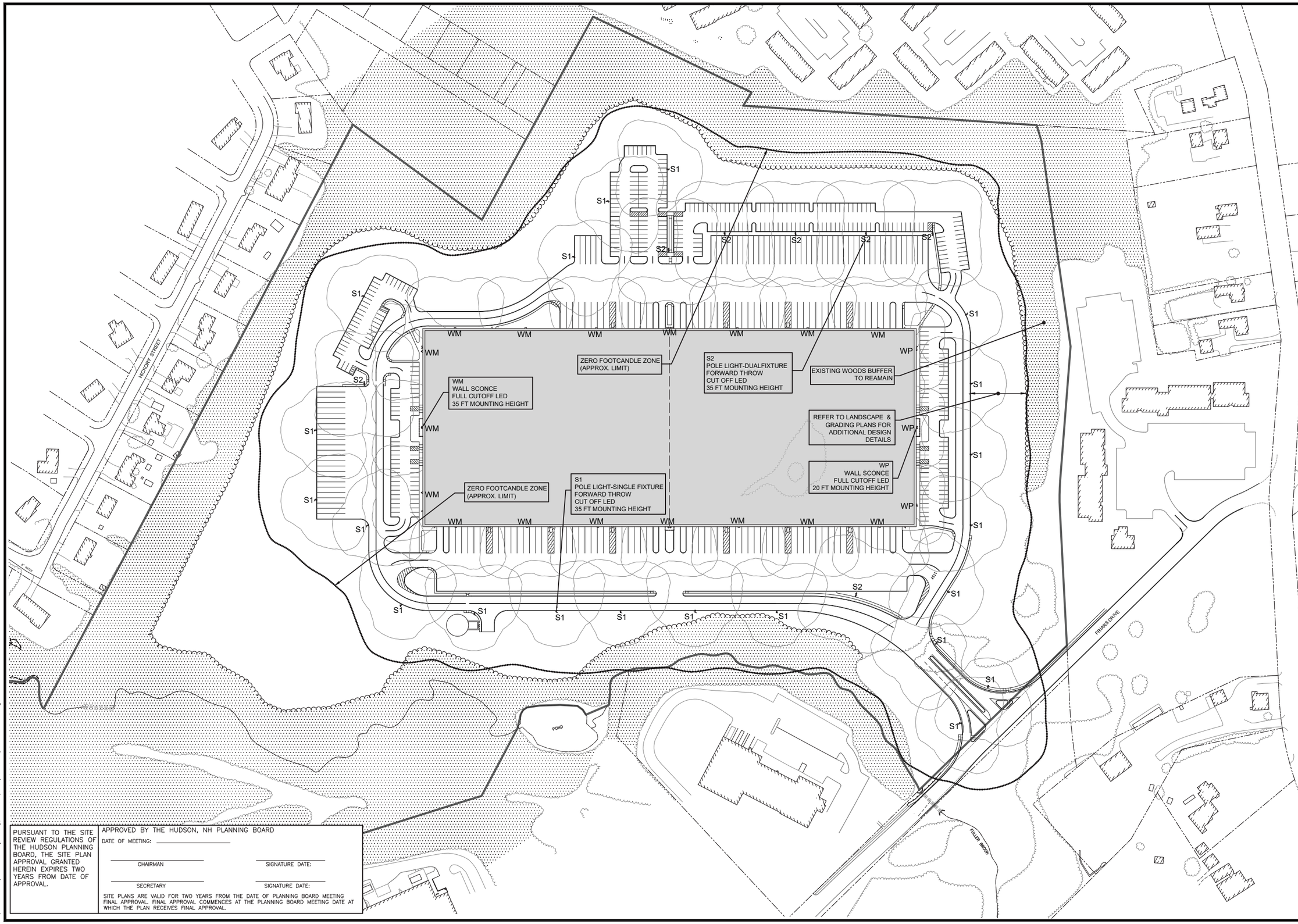
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**UTILITY PLAN - H**

PROJECT #475 SHEET 57

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LIGHTING CONSULTANT
EMAIL: pinfurna@gmail.com


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| DATE: | AUG. 3, 2021 |
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**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
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SHEET TITLE:

**LIGHTING OVERVIEW PLAN**

PROJECT #475 SHEET 58

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| FILE: | 475-LIGHTING |
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**FRIARS DRIVE**
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**LOT 001-000**
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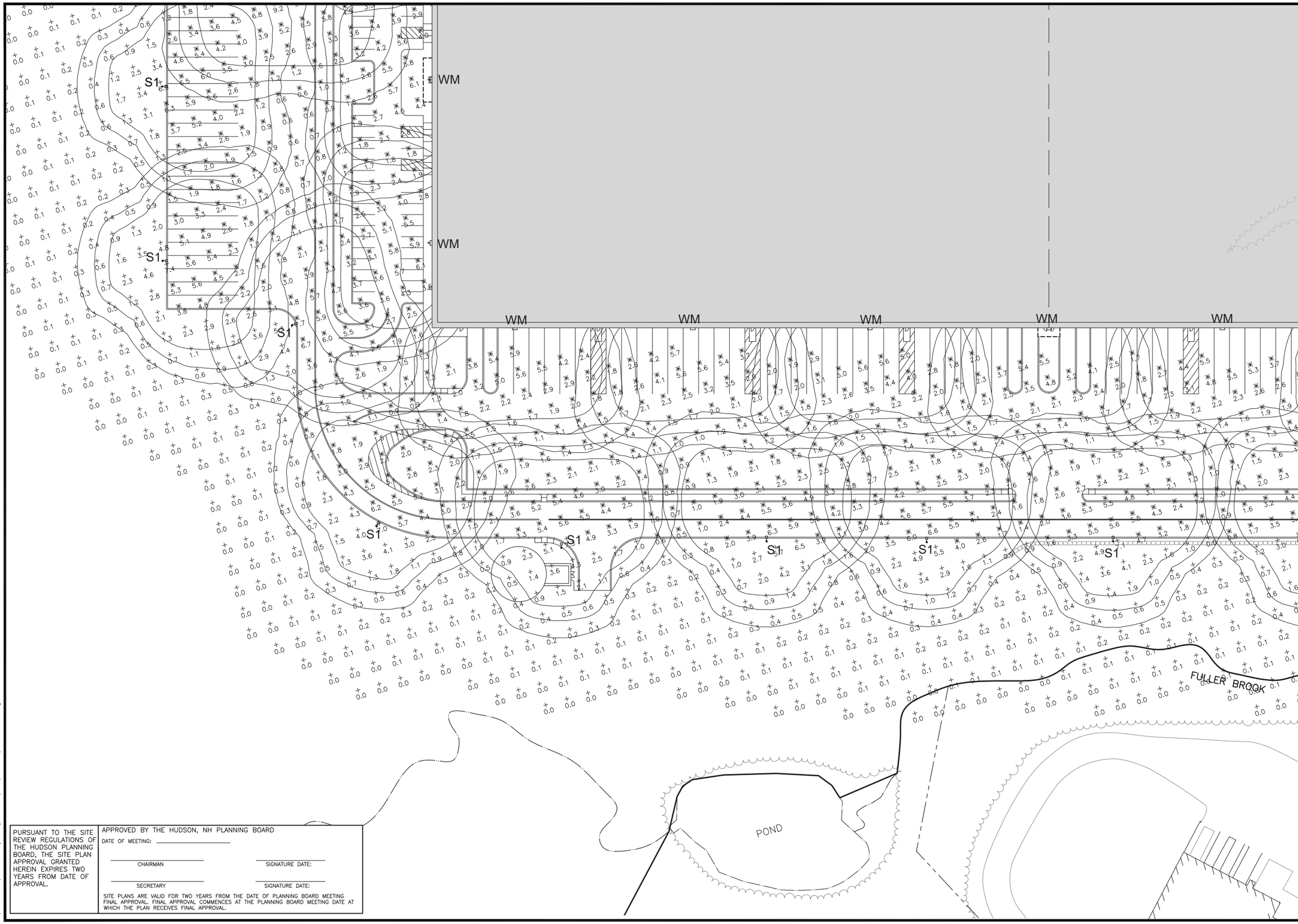
SHEET TITLE:

**LIGHTING PLAN - 1**

PROJECT #475 SHEET 59

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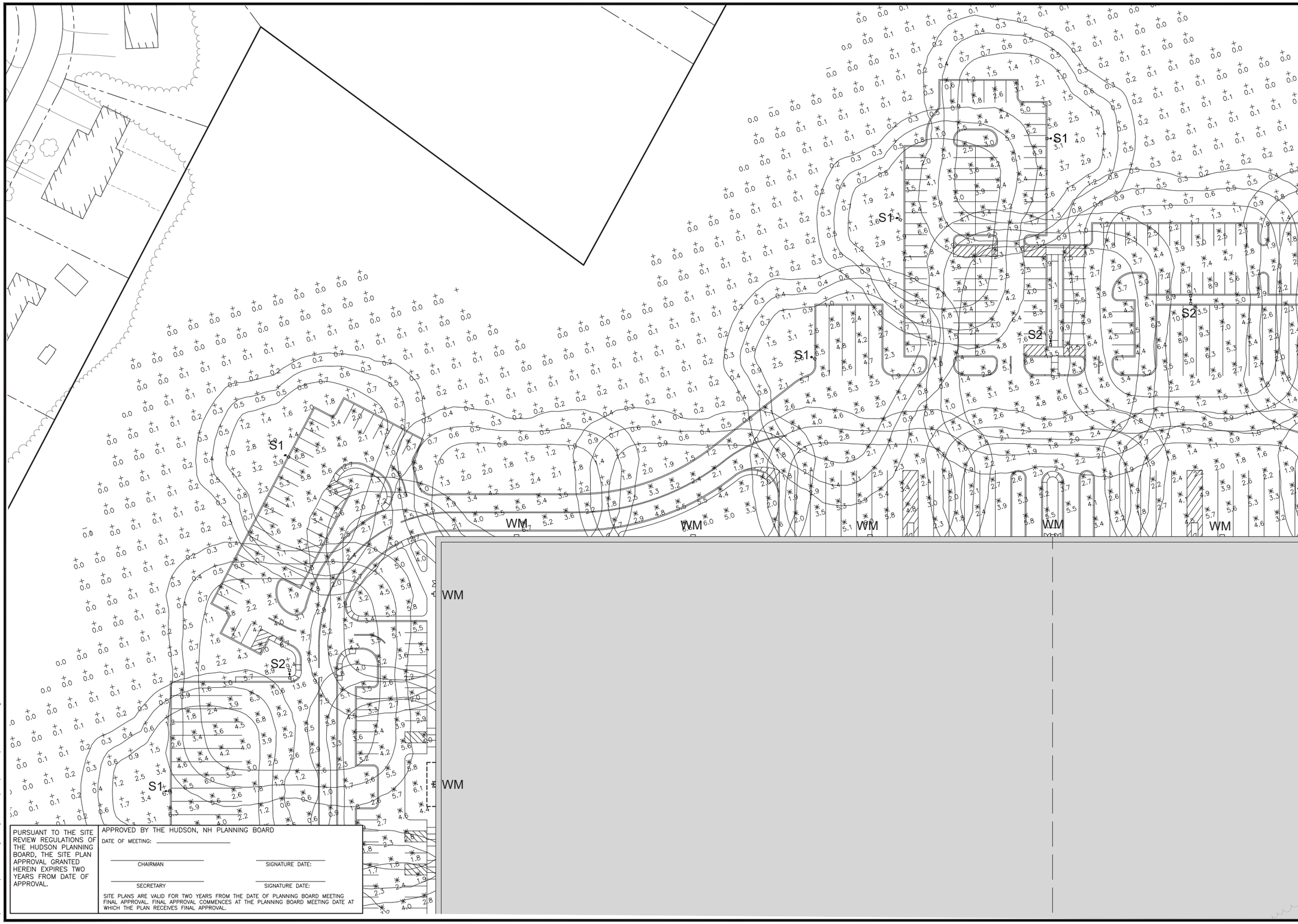
SHEET TITLE:

**LIGHTING PLAN - 2**

PROJECT #475 SHEET 60

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**SITE PLAN**
**FRIARS DRIVE**
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**LOT 001-000**
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SHEET TITLE:

**LIGHTING PLAN - 3**

PROJECT #475 SHEET 61

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| SCALE: | 1" = 40' |
| FILE: | 475-LIGHTING |
| DEED REF: | |

PROJECT:

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**FRIARS DRIVE**
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SHEET TITLE:

**LIGHTING PLAN - 4**

PROJECT #475 SHEET 62

Types "S1", "S2" and "WM"

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

# Mirada Large (MRL)

Outdoor LED Area Light

IP66

| OVERVIEW | |
|---|---|
| Lumen Package | 40,000 - 78,000 |
| Wattage Range | 286 - 648 |
| Efficacy Range (LPW) | 115 - 154 |
| Weight lbs(kg) | 60 (27.2) |

**QUICK LINKS**

Ordering Guide | Performance | Photometrics | Dimensions

## FEATURES & SPECIFICATIONS

### Construction

- Rugged die-cast aluminum housing, optical frame, and driver access cover.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 68 lbs in carton.

### Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated sealed optical chamber in 1 component.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in IES Types 2, 3, 5W, FT, FTA and AM.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377.
- Minimum CRI of 70.
- Integral louver (IL) and house-side shield (IH) options available for improved back-light control without sacrificing street side performance. See page 5 for more details.

### Electrical

- High-performance programmable driver features over-voltage, under-voltage, short-circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L90 Calculated Life: >100k Hours (See Lumen Maintenance on Page 4)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 65L and 78L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.

### Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor (see page 5 for more details). Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7. (see page 8 for more details).

### Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment for installing/servicing.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes both B3 and B5 drill patterns for easy fastening of LSI products. (See drawing on page 8)

### Warranty

- LSI LED Fixtures carry a 5-year warranty.

### Listings

- Listed to UL 1598 and UL 8750.
- State of California Title 24 Compliant; with IMSBT, AL.SC, or AL.SCH Options.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Specifications and dimensions subject to change without notice.

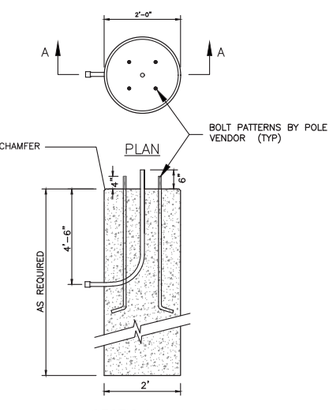


Schedule

| Symbol | Label | Image | Quantity | Manufacturer | Catalog Number | Description | Lamp | Number Lamps | Filename | Lumens Per Lamp | Lumen Multiplier | Light Loss Factor | Wattage | Efficiency | Distribution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S1 | | 21 | LSI Lighting | MRL-LED-65L-SIL-FT-40-70CRI BLK - 6SQ Bx S07G 32 S BLK | Full Cut Off, LED Pole Mounted Luminaire with Forward Throw Distribution and 32 ft. 6"Square Steel Pole on 3 ft. Exposed Base | LED | 1 | MRL-LED-65L-SIL-FT-40-70CRI.ies | 66648 | 1 | 0.9 | 518 | 100% | |
| | S2 | | 7 | LSI Lighting | 2/ MRL-LED-65L-SIL-FT-40-70CRI BLK - 6SQ Bx S07G 32 D180 BLK | Twin / Full Cut Off, LED Pole Mounted Luminaire with Forward Throw Distribution and 32 ft. 6" Square Steel Pole on 3 ft. Exposed Base | LED | 1 | MRL-LED-65L-SIL-FT-40-70CRI.ies | 66648 | 1 | 0.9 | 1036 | 100% | |
| | WM | | 17 | LSI Lighting | MRL-LED-65L-SIL-FT-40-70CRI BLK 382132 BLK | Full Cut Off , LED Building Mounted Luminaire at 35 ft. AFG with Wall Mounting Bracket | LED | 1 | MRL-LED-65L-SIL-FT-40-70CRI.ies | 66648 | 1 | 0.9 | 518 | 100% | |
| | WP | | 3 | LSI Lighting | XDLM-3-LED-HO-NW BLK | Full Cut Off, LED Building Mounted Wall Pack Luminaire at 20 ft. AFG | LED | 1 | XDLM-3-LED-HO-NW.IES | 18069 | 1 | 0.9 | 203.7 | 100% | |

Statistics

| Description | Symbol | Avg | Max | Min | Max/Min | Avg/Min |
|---|---|---|---|---|---|---|
| Entire Calculation Area | + | 1.1 fc | 14.0 fc | 0.0 fc | N/A | N/A |
| Paved Area | X | 3.2 fc | 14.0 fc | 0.5 fc | 28.0:1 | 6.4:1 |




NOTES:
1. CONCRETE MINIMUM STRENGTH 4,000 PSI AFTER 28 DAYS.
2. CONDUIT, ANCHOR BOLTS AND TEMPLATE SUPPLIED BY OTHERS.
3. LIGHT POLE BASE SIZE IS TO BE SPECIFIED BY A QUALIFIED ENGINEER.

WEIGHT: 455LBS/VERTICAL FOOT

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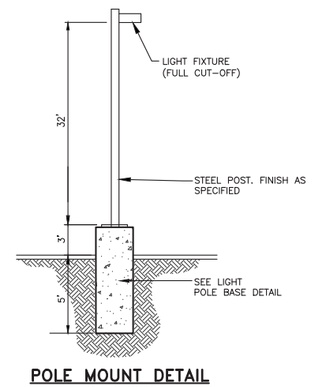
773 Salem Street-Wilmington, MA 153 Cranberry Hwy-Rochester, MA
87 Haverhill Road-Amesbury, MA 160 Old Turnpike Rd-Nottingham, NH
Mail to: PO Box 520-Wilmington, MA 01887

LIGHT POLE BASE
24" DIAMETER
Page: K1.2
lpole24r.dwg 01/01/2013

NPCA

Specifications subject to change without notice

NOTE:
OWNER WILL PROVIDE SUPPLEMENTAL LIGHTING (FOR EXAMPLE, AT ENTRY/EXIST. DOORS, PEDESTRIAN WALKWAY AREAS, BUILDING FACADE) IN ADDITION TO LIGHTING DEPICTED HERE, WHICH ARE INTENDED FOR GENERAL PAVEMENT AREAS ONLY




POLE MOUNT DETAIL
NOT TO SCALE

Type "WP"

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

# Mirada Wall Sconce (XWM)

Outdoor LED Wall Sconce

| OVERVIEW | |
|---|---|
| Lumen Range | 3,000 - 12,000 |
| Wattage Range | 23 - 102 |
| Efficacy Range (LPW) | 107 - 140 |
| Weight lbs(kg) | 30 (13.6) |

**QUICK LINKS**

Ordering Guide | Performance | Photometrics | Dimensions

## FEATURES & SPECIFICATIONS

### Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Hinged die-cast aluminum wiring access door located underneath.
- Galvanized-steel universal wall mount bracket comes standard with hinging mechanism to easily access the junction box wire connections without removing the luminaire.
- Optional pole-mounting bracket (XPMA) permits mounting to standard poles.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 30 lbs in carton.

### Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP65 rated sealed optical chamber in 1 component.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in Types 2, 3, and Forward Throw (FT) distributions.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K and 3000K color temperatures per ANSI C78.377.
- Minimum CRI of 70.

### Electrical

- High-performance programmable driver features over-voltage, under-voltage, short-circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L80 Calculated Life: >100k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: >.90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed via hinged door.
- Optional integral emergency battery pack provides 90-minutes of constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. The fixture delivers 1500 lumens during emergency mode.

### Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor (see page 5 for more details). Fixtures operate independently and can be commissioned via iOS or Android configuration app
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7. (see page 5 for more details).

### Installation

- Universal wall mounting plate easily mounts directly to 4" octagonal or square junction box.
- 2 fasteners secure the hinged door underneath the housing and provide quick & easy access to the electrical compartment for installing/servicing.
- Optional terminal block accepts up to 12 ga wire.

### Warranty

- LSI LED Fixtures carry a 5-year warranty.
- 1 Year warranty on Battery Back-up option.

### Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K or lower color temperature selection.
- State of California Title 24 Compliant
- Suitable for wet Locations.
- IP65 rated luminaire per IEC 60598.
- 3G rated for ANSI C136.31 high vibration applications when pole mounted (using optional XPMA bracket) or wall mounted.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.



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DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

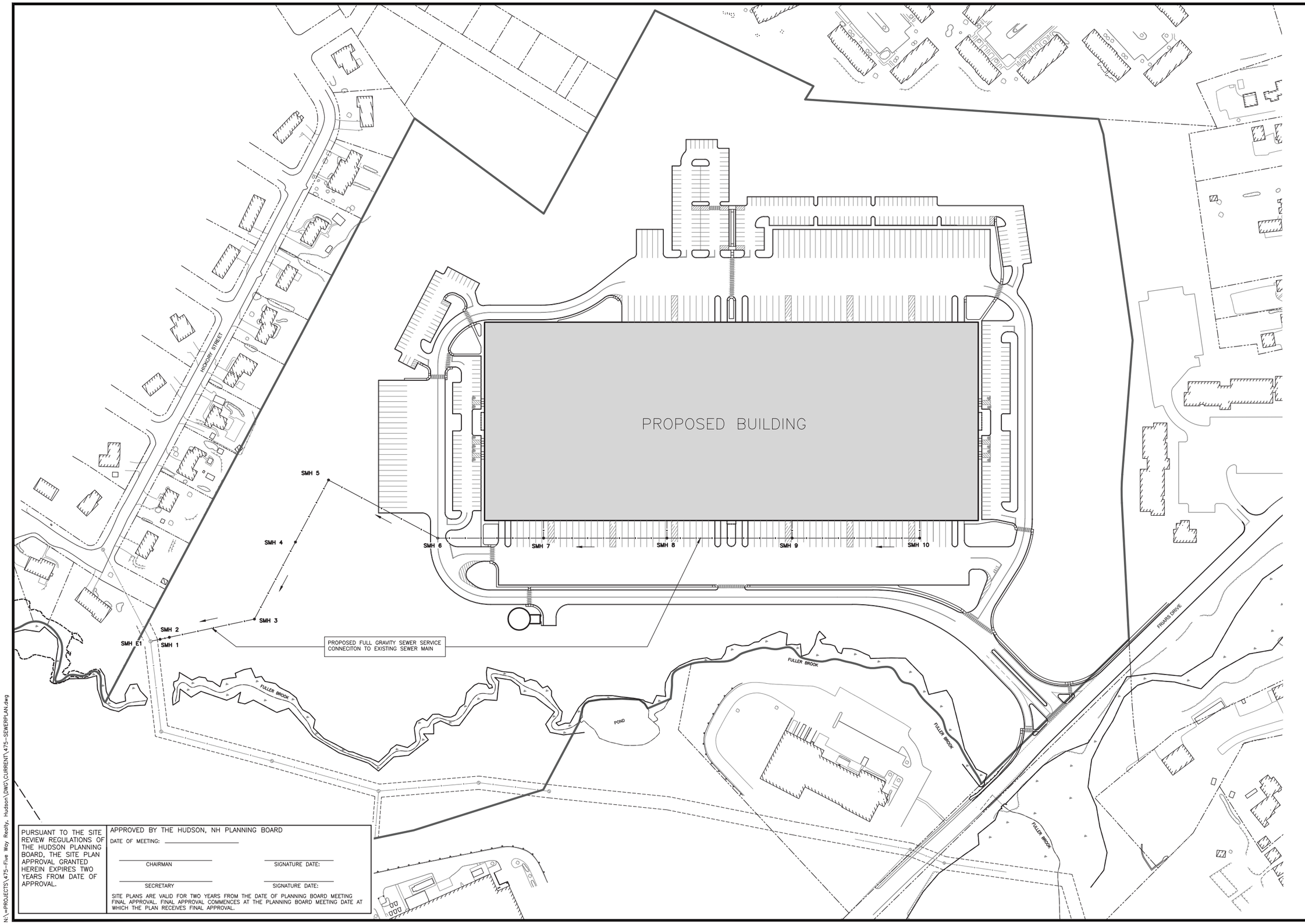
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**LIGHTING DETAILS**

PROJECT #475 SHEET 63

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CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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100 0 50 100
1 INCH = 100 FEET

SITE
A B C
SITE PLANS

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PROJECT:

# SITE PLAN

**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
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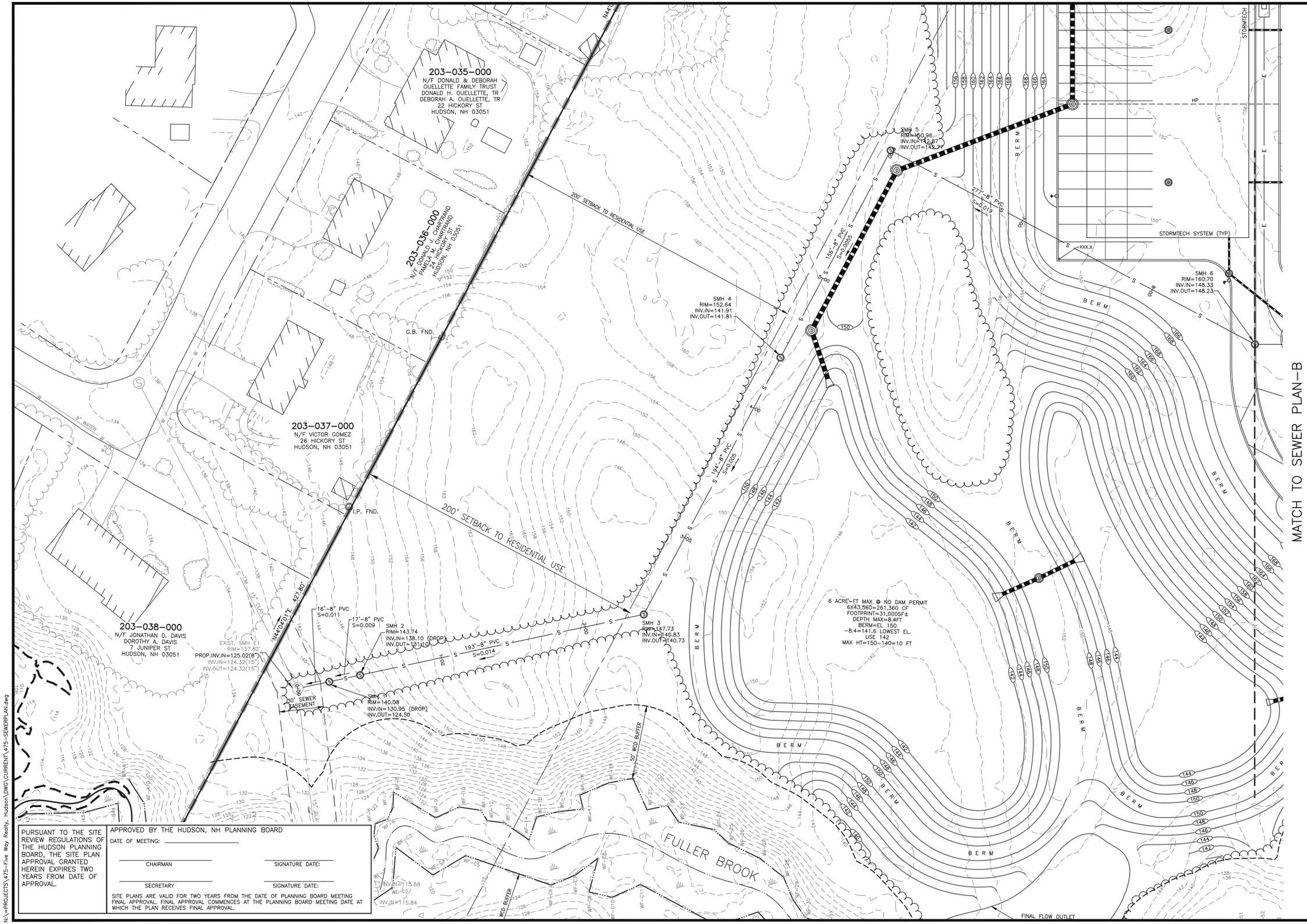
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SEWER SERVICE OVERVIEW PLAN**

PROJECT #475 SHEET 64

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SHEET INDEX

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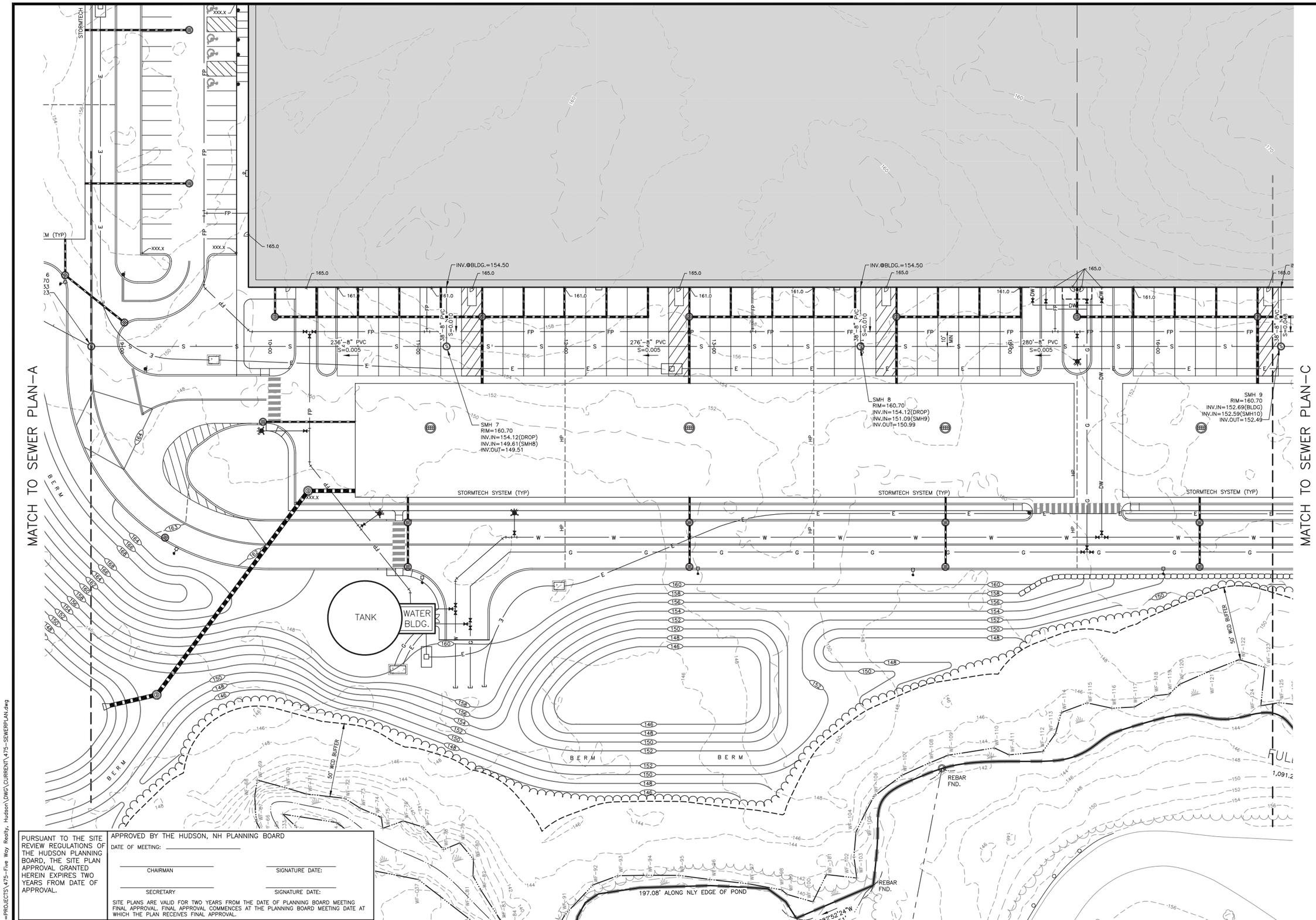
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SEWER PLAN - A**

PROJECT #475 SHEET 65

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| A | B | C |
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SHEET INDEX

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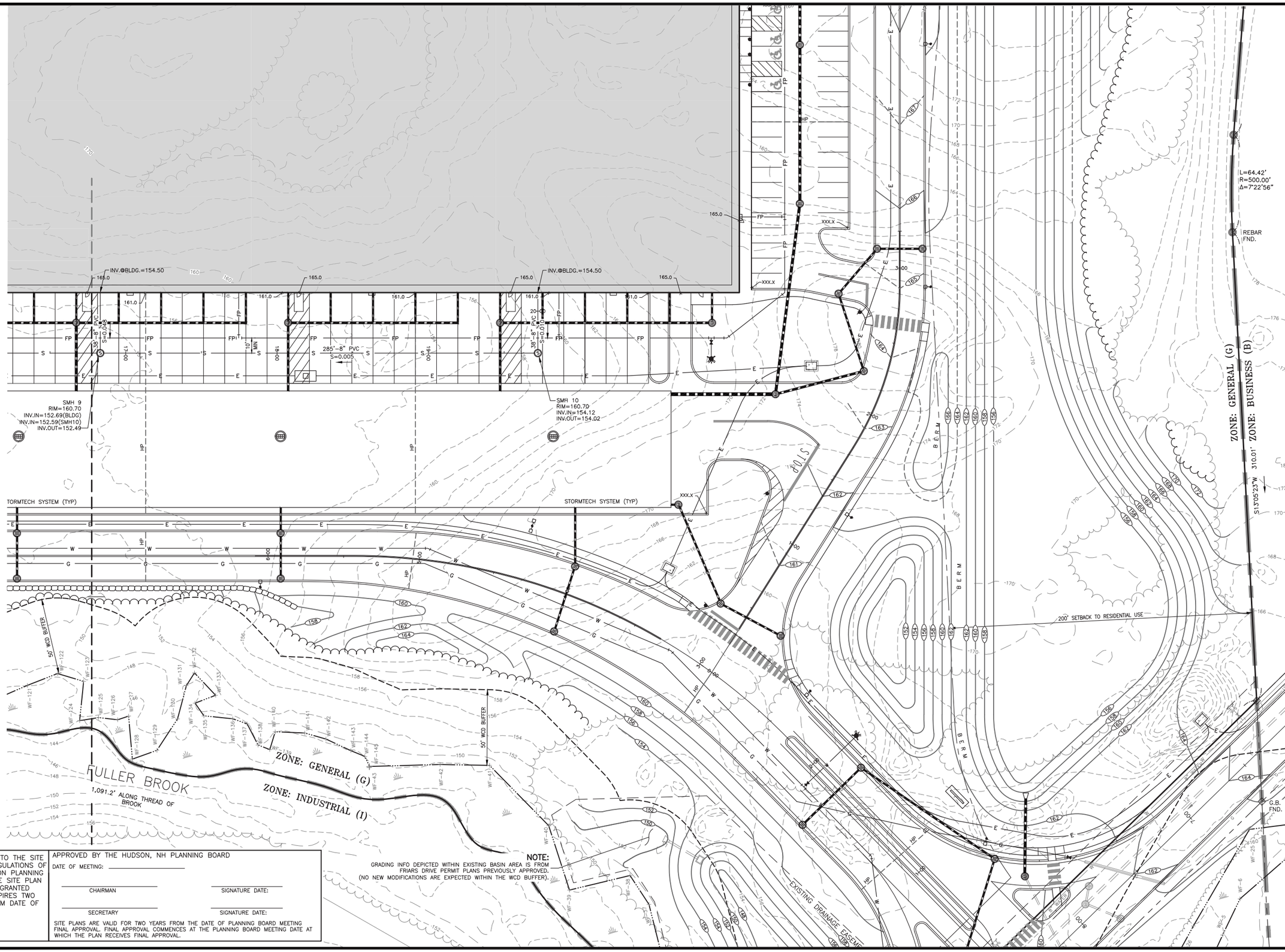
SHEET TITLE:

**SEWER PLAN - B**

PROJECT #475 SHEET 66




NOTE:
GRADING INFO DEPICTED WITHIN EXISTING BASIN AREA IS FROM FRIARS DRIVE PERMIT PLANS PREVIOUSLY APPROVED. (NO NEW MODIFICATIONS ARE EXPECTED WITHIN THE WCD BUFFER).

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SHEET INDEX

| A | B | C |
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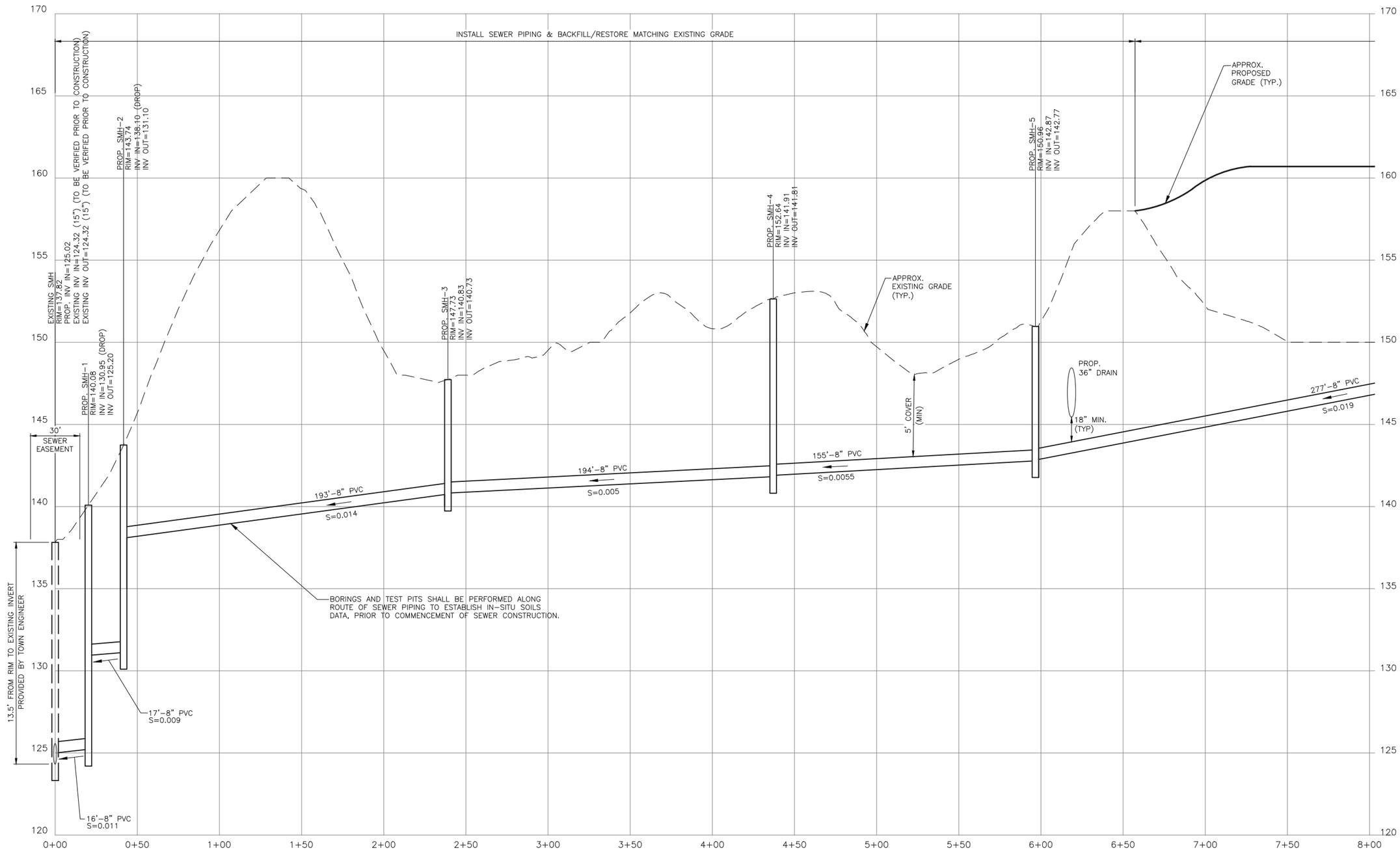
N. HAMPTON, NH 03862

SHEET TITLE:

**SEWER PLAN - C**

PROJECT #475 SHEET 67

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1 INCH = 30 FEET HORIZ.
1 INCH = 3 FEET VERT.

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N. HAMPTON, NH 03862

SHEET TITLE:

**SEWER PROFILE - A**

PROJECT #475 SHEET 68

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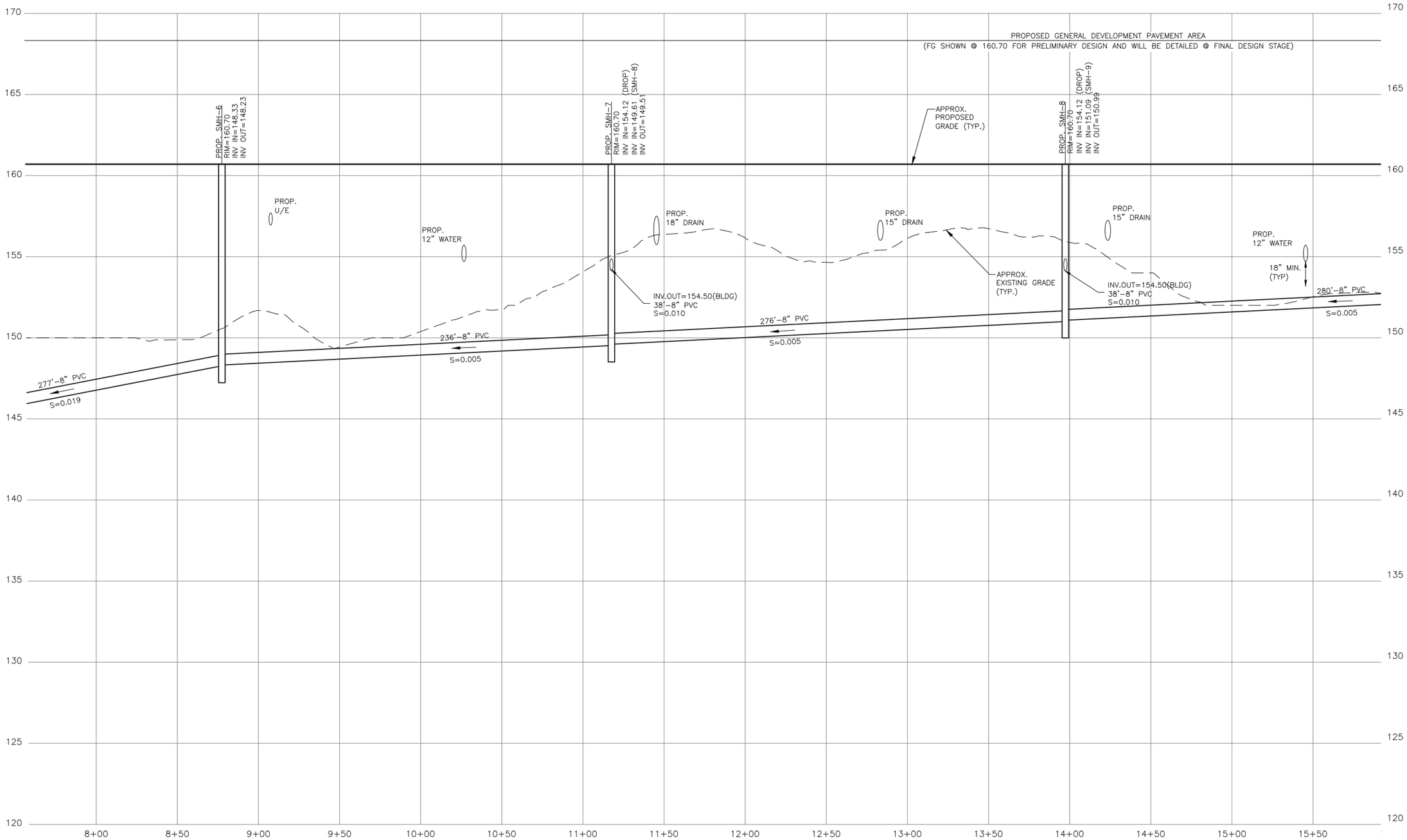


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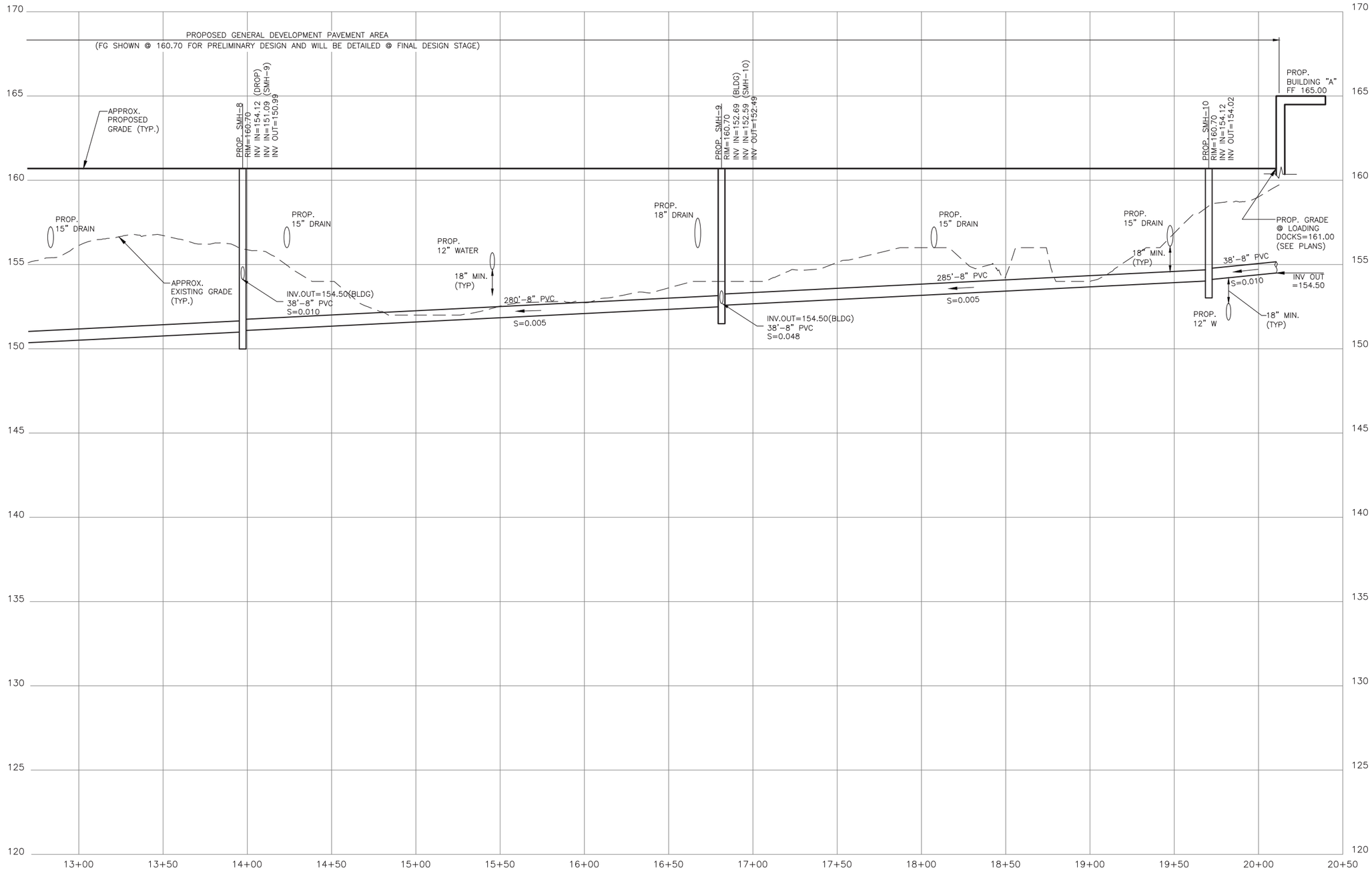
SHEET TITLE:

**SEWER PROFILE - B**

PROJECT #475 SHEET 69

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OWNER

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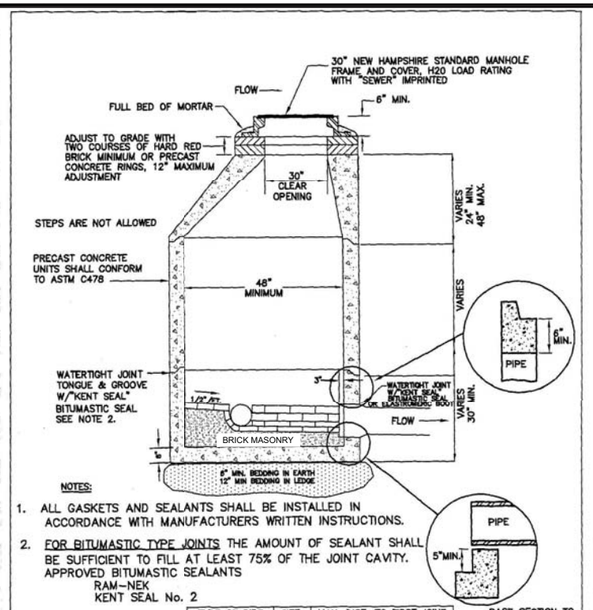
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

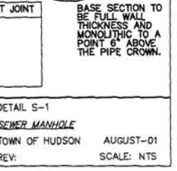
**SEWER PROFILE - C**

PROJECT #475 SHEET 70




NOTES:

1. ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
2. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS
   RAM-NEK
   KENT SEAL No. 2




BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN.

ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD 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.

| TYPE OF PIPE | SIZE | MAX. DIST. TO FIRST JOINT |
|---|---|---|
| R.C.P. & C.I. | ALL | 48" |
| C.I.P. | ALL | 48" |
| P.V.C. | >15" | 48" |
| V.C.P. | 0-12" | 18" |
| V.C.P. | >12" | 36" |

## SEWER MANHOLE
NOT TO SCALE

DETAIL S-1
*SEWER MANHOLE*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS



NHDES REQUIREMENTS:

1. PRECAST CONCRETE MANHOLES SHALL CONFORM WITH ASTM C478 (ENV-WQ 704.13 (A)(3)).
2. MANHOLE CASTINGS SHALL CONFORM WITH ASTM A48/48M ENV-WQ 704.13 (A)(8)).
3. BRICK MASONRY SHALL CONFORM WITH ASTM C32 (ENV-WQ 704.13 (A)(9)).
4. MORTAR USED FOR MANHOLE CONSTRUCTION SHALL CONFORM WITH ENV-WQ 704.13 (C).
5. MANHOLES SHALL BE TESTED IN ACCORDANCE WITH ENV-WQ 704.17
6. UNDERLAYMENT OF MANHOLE INVERT AND SHELF SHALL BE BRICK MASONRY PER ENV-WQ 704.12 (K). CONCRETE UNDERLAYMENT SHOWN.



NOTES

1. ALL MANHOLES, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE ENGINEER FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
2. BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED OR NON-REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED OR NON-REINFORCED CONCRETE.
3. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
5. INVERTS AND SHELVES MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE 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 SLOPE TO DRAIN TOWARD THE FLOW THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
6. FRAMES AND COVERS MANHOLE FRAMES AND COVERS SHALL PROVIDE A 30 INCH CLEAR OPENING. A 3 INCH (MINIMUM HEIGHT) LETTER "S" OR THE WORD "SEWER" SHALL BE CAST INTO THE TOP SURFACE. CASTINGS SHALL BE EVEN-GRAINED CAST IRON AND SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A 48.
7. BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33
   100 PASSING 1 INCH SCREEN
   90-100 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. SCREENED GRAVEL OR CRUSHE STONE 1/2 TO 1-1/2 INCH SHALL BE USED.
8. FLEXIBLE JOINT A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
   RCP & CI PIPE (ALL SIZES): 48"
   AC & VC PIPE (UP THROUGH 12" DIA.):18"
   AC & VC PIPE (LARGER THAN 12" DIA.):36"
9. SHALLOW MANHOLE IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED. IT MUST HAVE AN ECCENTRIC ENTRANCE OPENING AND BE CAPABLE OF SUPPORTING H-20 LOADS.

9a. DI PIPE – NONE REQUIRED
   PVC (ASTM 3034) – UP THROUGH 15: DIA – NONE REQUIRED
   PVC (ASTM F 679) – LARGER THAN 15: DIA – 48" – 60"
   PVC (ASTM F 789) – ALL SIZES – 48" – 60"
   ABS (ASTM D 2680) – ALL SIZES – SAME AS PVC ABOVE

9b. UNDER SEVERE CONDITIONS WHEN DIFFERENTIAL SETTING CANNOT BE CONTROLLED WITHIN NORMAL LIMITS, VARIATIONS IN THE STUB LENGTH MAY BE NECESSARY OTHER PLASTIC PIPES SHALL BE REVIEWED ON A CASE BY CASE BASIS.

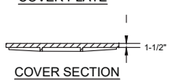
10. MANHOLE STEPS ARE NOT PERMITTED.

NOTE
SEPARATE CONSTRUCTION SPECIFICATIONS MUST BE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.

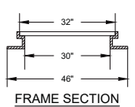
## STANDARD MANHOLE – PART A

DETAIL S-2
*STANDARD MANHOLE – PART A*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS

COVER PLATE

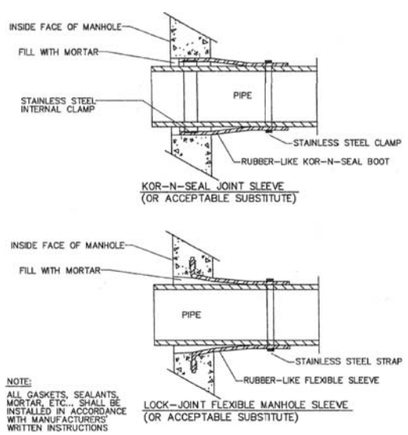



COVER SECTION




FRAME SECTION

## SEWER MANHOLE COVER
NOT TO SCALE

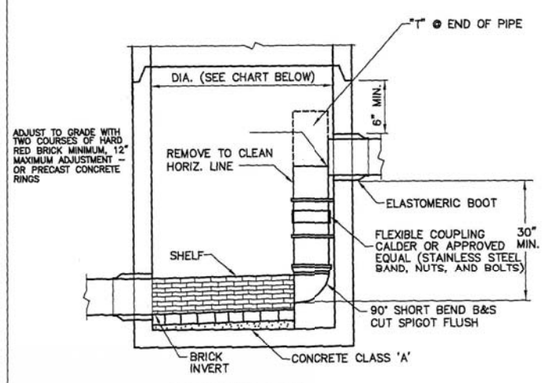



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC.,. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

NOTE:

1. PVC JOINTS SEALS SHALL CONFORM WITH ASTM D3212

## PIPE TO SEWER MANHOLE JOINTS
NOT TO SCALE
EXHIBIT SW4

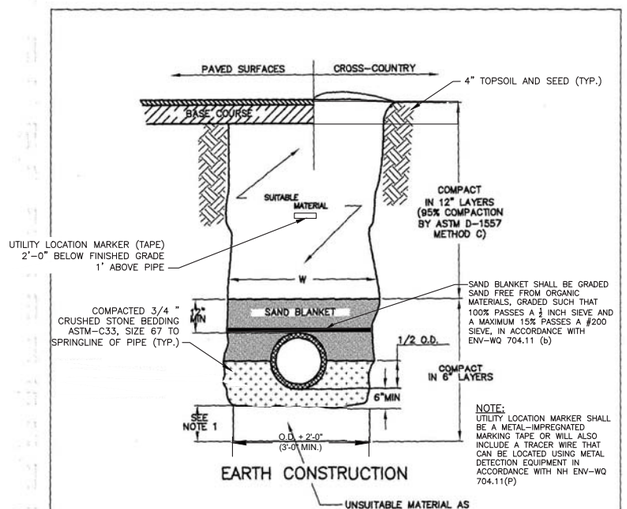



MAN HOLE SIZE CHART
ONE 8" DROP USE 4' DIA.
ONE 10" DROP USE 4' DIA.
TWO 8" DROP USE 5' DIA.
TWO 10" DROP USE 5' DIA.
ONE 12" DROP USE 5' DIA.
ONE 15" DROP USE 5' DIA.
ONE 18" DROP USE 6' DIA.
ONE 24" DROP USE 6' DIA.

## INTERNAL DROP SMH
NOT TO SCALE

DETAIL S-3
*INTERNAL DROP SMH*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS






EARTH CONSTRUCTION

NOTE:
UTILITY LOCATION MARKER SHALL BE A METAL-IMPREGNATED MARKING TAPE OR WILL ALSO INCLUDE A TRACER WIRE THAT CAN BE LOCATED USING METAL DETECTION EQUIPMENT IN ACCORDANCE WITH NH ENV-WQ 704.11(P)

NOTES:

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE, REFILL WITH BEDDING MATERIAL.

NOTES:

1. BACKFILL SHALL BE MOUNDED 6" ABOVE ORIGINAL GROUND IN CROSS COUNTRY LOCATIONS (ENV-WQ 704.05 (J))
2. GRAVITY SEWER PIPE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ENV-WQ 704.06 AND FORCE MAIN/PRESSURE SEWER PIPE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ENV-WQ 704.09
3. TRENCH BACKFILL MATERIAL SHALL CONFORM WITH ENV-WQ 704.11 (H)
4. FOR EXCAVATION IN LEDGE, EXCAVATION SHALL EXTEND AT LEAST 12" BELOW THE BOTTOM OF THE SEWER PIPE PER ENV-WQ 704.11 (O)

## SEWER TRENCH SECTION
NOT TO SCALE

DETAIL S-4
*SEWER TRENCH SECTION*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS



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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-SEWER DETAILS.dwg


**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
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Engineers
Planners
Surveyors
TheDubayGroup.com


STATE OF NEW HAMPSHIRE KARL R. DUBAY No. 9008 LICENSED PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475-SEWER DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

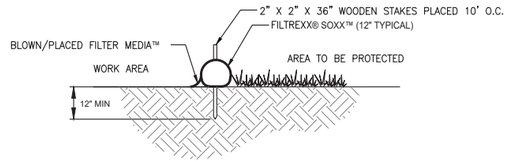
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

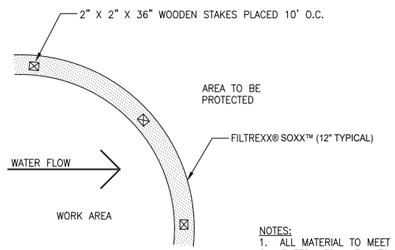
SHEET TITLE:

**SEWER DETAILS**

PROJECT #475 SHEET 71




**SECTION** NTS

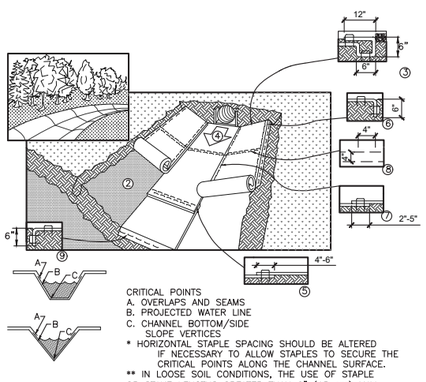



NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

**PLAN** NTS

## FILTREXX® SEDIMENT CONTROL

NTS




CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

CHANNEL INSTALLATION SPECIFICATIONS

1. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED, DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH THE PAPER SIDE DOWN.

3. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6"DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.

4. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

5. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4"(10") ON CENTER TO SECURE BLANKETS.

6. FULL-LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6"DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

7. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.

8. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.

THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6"DEEP X 6"WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

## ROLLED EROSION CONTROL MATTING

NOT TO SCALE

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CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

# EROSION CONTROL NOTES

## CONSTRUCTION SEQUENCE

1. PRIOR TO CONSTRUCTION, AN INITIAL PRE CONSTRUCTION MEETING(S) SHALL TAKE PLACE WITH THE CONTRACTOR, OWNER AND TOWN AGENTS.

2. THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTED IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.

3. INSTALL PERIMETER CONTROLS, I.E SILT FENCE AND/OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATION.

4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.

5. CLEAR AND GRUB WITHIN AREAS OF DISTURBANCE UNLESS OTHERWISE NOTED.

6. REMOVE AND STOCKPILE MATERIALS AS REQUIRED. STOCKPILE SHALL BE SURROUNDED WITH AN EROSION CONTROL DEVICE TO PREVENT EROSION. STOCKPILE AREAS ARE LIMITED AND THUS MANAGEMENT OF MATERIALS WILL BE REQUIRED.

7. SHAPE PROPOSED DRAINAGE PONDS, DITCHES AND/OR SWALES.

8. PERFORM ROUGH SITE GRADING. INSTALL DRAINAGE SYSTEMS AND UTILITIES.

9. INSTALL UNDERGROUND UTILITIES AND PLACE EROSION CONTROL MEASURES AROUND ANY CATCH BASINS PRIOR TO DIRECTING ANY RUNOFF TO THEM. DRAINAGE SYSTEMS SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO DIRECTING ANY FLOW TO THEM. ALL SIDE SLOPES SHALL BE STABILIZED WITHIN 72 HOURS.

10. LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.

11. FINISH GRADE SITE, BACKFILL ROAD SUBBASE GRAVEL IN TWO, COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES WHERE APPLICABLE, IN THE FORM OF MULCHING, JUTE MATTING OR STONE CHECK DAMS.

12. INSTALL EXTERIOR LIGHT POLE BASES, AND MAKE FINAL CONNECTIONS TO CONDUIT.

13. ANY PERMANENT DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

14. PLACE BINDER LAYER OF PAVEMENT, THEN RAISE CATCH BASIN FRAMES TO FINAL GRADE. REINSTALL BASIN INLET PROTECTION.

15. AFTER ALL DRAINAGE AND ROADWAY IMPROVEMENTS (NOT INCLUDING FINAL LAYER OF PAVEMENT) HAVE BEEN COMPLETED, BEGIN CONSTRUCTION OF THE BUILDING FOUNDATIONS AND CONNECT TO SITE UTILITIES. BEGIN BUILDING CONSTRUCTION.

16. PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.

17. AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK.

18. CONSTRUCT ASPHALT WEARING COURSE.

19. REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.

## GENERAL CONSTRUCTION NOTES

1. THE TEMPORARY BMPS ASSOCIATED WITH THIS PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND LANDOWNER, WHO WILL BE RESPONSIBLE FOR INSPECTION, OPERATION, AND MAINTENANCE.

2. EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION OF THE NHDOT". EROSION CONTROL SHALL BE INSTALLED DOWNHILL OF ALL AREAS WHERE WORK WILL EXPOSE UNPROTECTED SOIL TO PREVENT SEDIMENT FROM ENTERING CATCH BASINS, DRAINAGE STRUCTURES AND/OR DRAINAGE WAYS. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO ANY EARTH MOVING OPERATIONS. THE CONTRACTOR SHALL MANAGE THE PROJECT IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

3. EROSION CONTROL DEVICES SHALL BE INSTALLED WHERE REQUIRED PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. EROSION CONTROL MEASURES SHALL BE MAINTAINED DURING DEVELOPMENT AND SHALL BE CHECKED PERIODICALLY AND EXCESS SILT SHALL BE REMOVED.

4. ALL DISTURBED AREAS WHICH ARE FINISH GRADED SHALL BE LOAMED (6" MINIMUM) AND SEEDED. SEE SEEDING AND FERTILIZER SPECIFICATION. SEE SLOPE DESIGN AND/OR LANDSCAPE PLAN FOR ADDITIONAL INFORMATION.

5. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER SHALL BE MACHINED STRAW MULCHED AND SEEDED WITH SLOPE STABILIZATION SEED MIXTURE TO PREVENT EROSION. STRAW MULCH SHALL BE APPLIED AT A RATE OF 2 TONS/ACRE.

6. ALL DRAINAGE SYSTEMS (DITCHES, SWALES, DRAINAGE PONDS/BASINS, ETC.) SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. STORMWATER FLOWS ARE NOT TO BE DIRECTED TO THESE SYSTEMS UNTIL CONTRIBUTING AREAS HAVE ALSO BEEN FULLY STABILIZED.

7. CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES IN ACCORDANCE WITH NHDES, EPA & TOWN REQUIREMENTS FOR THE DURATION OF THE PROJECT. WATER FOR DUST CONTROL SHALL BE PROVIDED ON SITE. FUGITIVE DUST IS CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

8. ALL EROSION CONTROLS ARE TO BE INSPECTED WEEKLY AND AFTER 0.5" OR GREATER OF RAINFALL WITHIN A 24 HOUR PERIOD.

9. ALL FILLS SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC. AND SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.

10. SILT FENCES AND/OR SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND/OR SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURE LOCATION.

11. PAVED AREAS MUST BE KEPT CLEAN AT ALL TIMES.

12. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.

13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING. EXPOSURE OF UNSTABILIZED SOILS SHALL BE TEMPORARILY STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 45 DAYS OF INITIAL DISTURBANCE.

14. WINTERIZATION EFFORTS FOR AREAS NOT STABILIZED BY NOV. 1ST SHALL BE MADE BY THE APPROPRIATE USE OF MATTING, BLANKETS, MULCH AND SEEDING.

15. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAS BEEN INSTALLED IN AREAS TO BE PAVED;
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

16. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO IMMEDIATELY INSTALL AND MAINTAIN THE NECESSARY EROSION PROTECTION.

## SEEDING SPECIFICATION

1. TEMPORARY SEED
   A. TEMPORARY VEGETATIVE COVER SHOULD BE APPLIED WHERE EXPOSED SOIL SURFACES WILL NOT BE FINAL GRADED WITHIN 45 DAYS.
   B. SEED BED PREPARATION SHALL BE IN ACCORDANCE WITH THE NHDES STORMWATER MANAGEMENT MANUAL. VOLUME 3, TEMPORARY VEGETATION SECTION.
   C. SEEDING MIXTURE

| MIXTURE | SPECIES | POUNDS PER ACRE | POUNDS PER 1,000 SQ. FT. |
|---|---|---|---|
| | WINTER RYE | 112 | 2.50 |
| | OATS | 80 | 2.00 |
| | ANNUAL RYEGRASS | 40 | 1.00 |
| | PERENNIAL RYEGRASS | 30 | 0.17 |
| | TOTAL | 262 | 5.67 |

2. SEEDING SCHEDULE
   A. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES.
   B. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST. IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

3. ESTABLISHING A STAND OF GRASS
   A. STONES AND TRASH SHOULD BE REMOVED FROM LOAMED AREAS SO AS NOT TO INTERFERE WITH THE SEEDING PROCESS.
   B. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
   C. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
   D. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER (N-P205-K2O) OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET).
   E. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER

4. SEED SHOULD BE SPREAD UNIFORMLY BY A METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDING HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER.
   A. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANTS.
   B. NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEEDING.
   C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
   D. THE GRADE "A" OF SEEDING MIXTURE HAS BEEN INCREASED FROM THE AOT STANDARDS TO MEET SECTION 704.1.2 OF THE TOWN OF WINDHAM SPECIFICATIONS OF 1 POUND PER 50 SQUARE YARDS (450 SQUARE FEET). THE BREAKDOWN OF THE SEEDING MIXTURE IS SHOWN BELOW

| MIXTURE | SPECIES | POUNDS PER ACRE | POUNDS PER 1,000 SQ. FT. |
|---|---|---|---|
| A | TALL FESCUE | 45 | 1.04 |
| | CREEPING RED FESCUE | 45 | 1.04 |
| | REDTOP | 7 | 0.12 |
| | TOTAL | 97 | 2.22 |

5. ALTERNATE PERMANENT SEEDING FOR AREAS NOT RECEIVING LAWN OR LANDSCAPING SHALL BE AS FOLLOWS:
   A. THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS WHICH DO NOT NORMALLY HOLD STANDING WATER. THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDATION, BUT NOT CONSTANT FLOODING. IN NEW ENGLAND, THE BEST RESULTS ARE OBTAINED WITH A SPRING OR EARLY FALL SEEDING. SUMMER AND FALL SEEDING CAN BE SUCCESSFUL WITH A LIGHT MULCHING OF WEED-FREE STRAW TO CONSERVE MOISTURE. LATE FALL AND WINTER DORMANT SEEDING REQUIRE A SLIGHT INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE.
   B. APPLICATION RATE: 35 LBS/ACRE 1245 SQ FT/LB
   C. SPECIES: SWITCHGRASS (PANICUM VIRGATUM), CREEPING RED FESCUE (FESTUCA RUBRA), VIRGINIA WILD RYE (ELYMUS VIRGINICUS), FOX SEDGE (CAREX VULPINOIDEA), CREEPING BENTGRASS (AGROSTIS STOLONIFERA), SILKY WILD RYE (ELYMUS VILLOSUS), NODDING BUR-MARIGOLD (BIDENS CERNUA), SOFT RUSH (JUNCUS EFFUSUS), GRASS-LEAVED GOLDENROD (SOLIDAGO GRAMINIFOLIA), SENSITIVE FERN (ONOCLEA SENSIBILIS), JOE-PYE WEED (EUPATORIUM MACULATUM), BONESET (EUPATORIUM PERFOLIATUM), FLAT-TOP ASTER (ASTER UMBELLATUS), NEW YORK ASTER (ASTER NOVI-BELGII), BLUE VERVAIN (VERBENA HASTATA).

## WINTER NOTES

1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS;

2. ALL AREAS TO BE PLANTED WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER OCTOBER 15TH, INCOMPLETE SURFACES TO BE PAVED, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3 OR CRUSHED STONE.

## MAINTENANCE AND PROTECTION

1. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT DEVELOPS.

2. TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH A UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.

3. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.

4. THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY, UNTIL ADEQUATE VEGETATION IS ESTABLISHED.

5. THE SILT FENCE AND/OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

6. SILT FENCE AND/OR SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED. AND DISTURBED AREAS RESULTING FROM SLIT FENCE AND/OR SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.


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Engineers
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STATE OF NEW HAMPSHIRE
KARL J. DUBAY
No. 9006
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475-DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

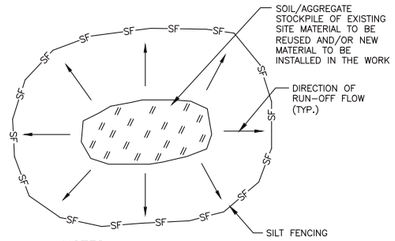
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 1**

PROJECT #475 SHEET D1

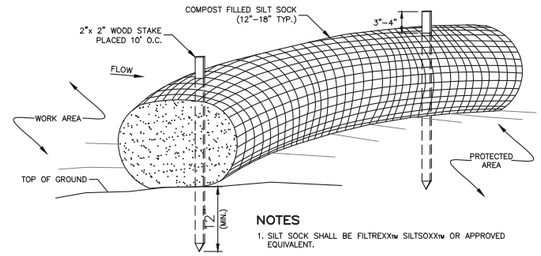



NOTES:

1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

## MATERIALS STOCKPILE DETAIL

NOT TO SCALE

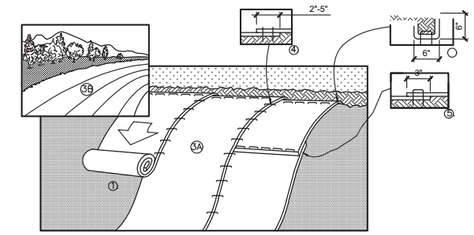



NOTES

1. SILT SOCK SHALL BE FILTREXXtw SILTSOXXtw OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

## SILT SOCK DETAIL

NOT TO SCALE




MATTING INSTALLATION NOTES

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.

3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

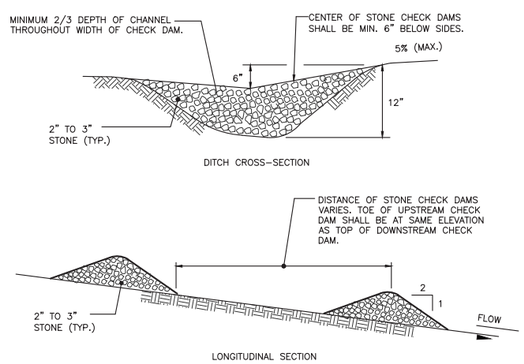
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

7. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

* DUE TO THE POTENTIAL OF ENDANGERED SPECIES ON SITE, CONTRACTORS SHALL USE ROLLMAX BIONET C125BN EROSION CONTROL BLANKET OR EQUIVALENT. BLANKETS ARE MADE OF 100% COCONUT FIBER AND ARE 100% BIODEGRADABLE.

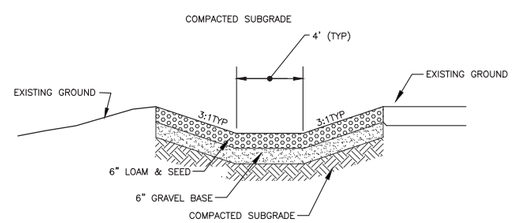
## SLOPE PROTECTION EROSION CONTROL MATTING

NOT TO SCALE



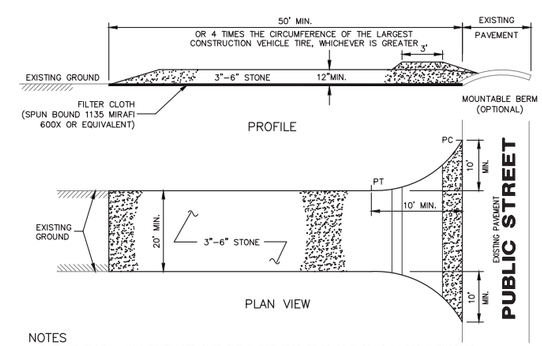

## STONE CHECK DAM DETAILS

NOT TO SCALE




## TYPICAL GRASS LINED SWALE

NOT TO SCALE




NOTES

1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

## USDA-SCS STABILIZED TRACKING PAD

NOT TO SCALE

| | |
|---|---|
| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |


The Dubay Group, Inc.
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462
Engineers
Planners
Surveyors
TheDubayGroup.com


STATE OF NEW HAMPSHIRE KARL S. DUBAY No. 9068 LICENSED PROFESSIONAL ENGINEER

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OWNER

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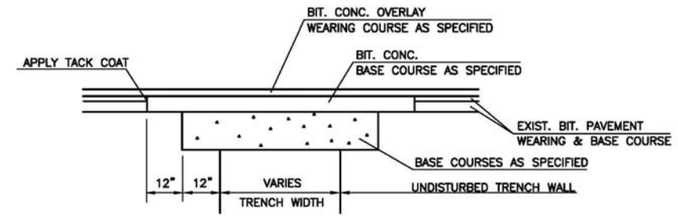
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 2**

PROJECT #475 SHEET D2

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg



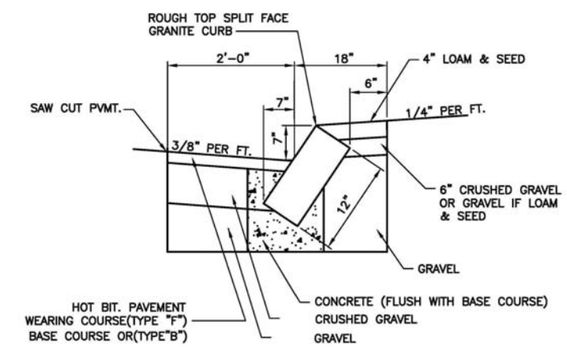

NOTE: AT END OF OVERLAY, SAW CUT AND REMOVE EXISTING PAVEMENT.
BUTT PROPOSED OVERLAY TO EXISTING WEARING COURSE.

## PAVEMENT PATCH WITH OVERLAY

NOT TO SCALE

TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

DETAIL R-5
*PAVEMENT PATCH WITH OVERLAY*
TOWN OF HUDSON AUGUST-01
REV: 8/23/19 SCALE: NTS

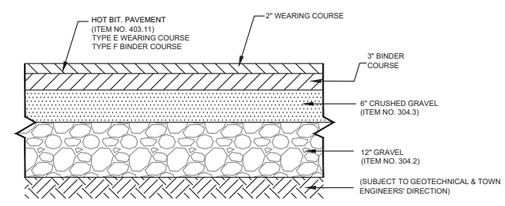



## SLOPED GRANITE CURB REMOVED & RESET OR INSTALLED

NOT TO SCALE

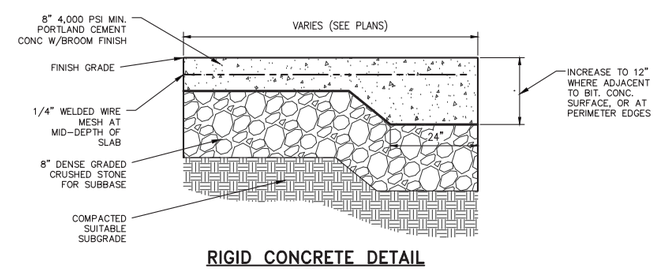
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

DETAIL R-4
*SLOPED GRANITE CURB REMOVED & RESET OR INSTALLED*
TOWN OF HUDSON AUGUST-01
REV: 8/23/19 SCALE: NTS




## TYPICAL PAVEMENT SECTION

NOT TO SCALE




## RIGID CONCRETE DETAIL

NOT TO SCALE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg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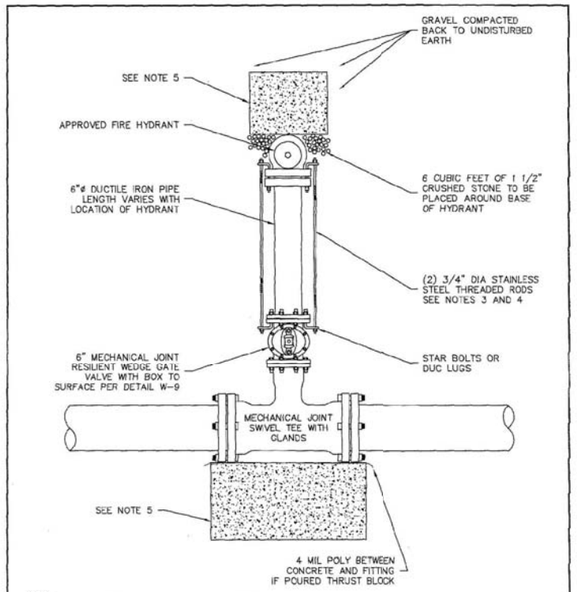
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 3**

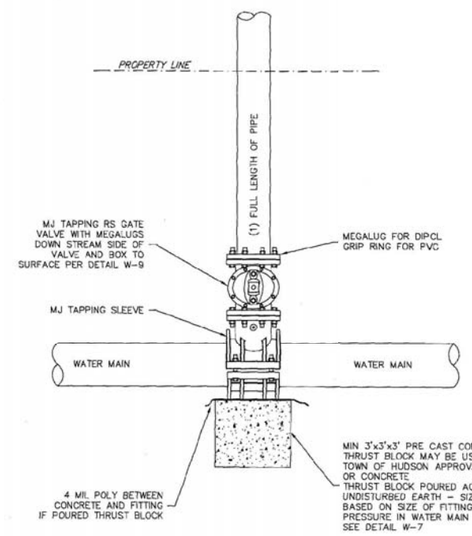
PROJECT #475 SHEET D3




NOTES:
1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. 3/4"ø S.S. RODS SHALL BE USED IN CONJUNCTION WITH REQUIRED S.S. NUTS. RODS ARE TO BE ATTACHED TO FITTINGS WITH EITHER STAR BOLTS OR DUC LUGS.
   10" FITTING OR SMALLER = (2) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
   12" FITTING OR LARGER = (4) 3/4"ø S.S. RODS & ASSOC. HARDWARE.
4. WHEN DISTANCE FROM WATER MAIN TO HYDRANT IS MORE THAN 10' SUBSTITUTE MEGALUGS (OR GRIP RINGS) IN LIEU OF THREADED RODS.
5. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH TOWN OF HUDSON APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN. SEE DETAIL W-7.

DRAWINGS COURTESY OF PENNICHUCK WATER WORKS.

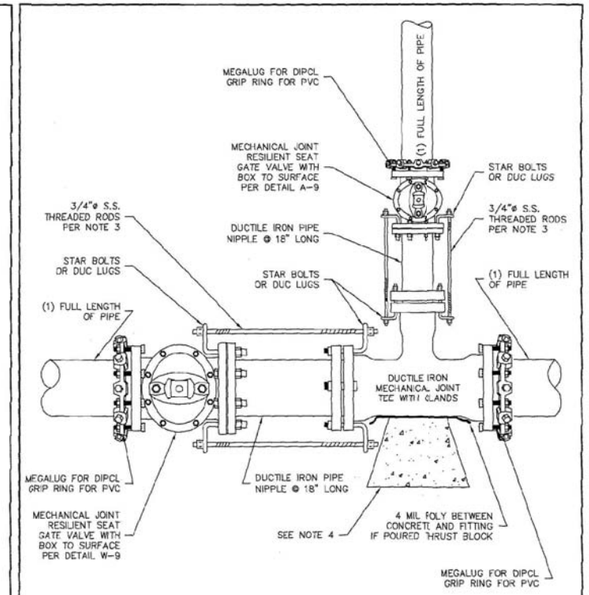
DETAIL W-10
*TYPICAL HYDRANT INSTALLATION*
TOWN OF HUDSON PWW 5-01
REV: 3-07 SCALE: NTS




NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-22 FOR CROSS-SECTIONAL VIEW.

DRAWINGS COURTESY OF PENNICHUCK WATER WORKS.

DETAIL W-21
*TYPICAL LARGE SERVICE AND/OR TAPPING SLEEVE DETAIL*
TOWN OF HUDSON PWW 5-01
REV: 3-07 SCALE: NTS

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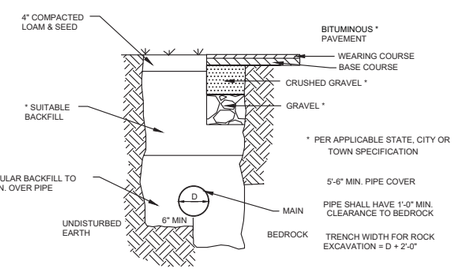
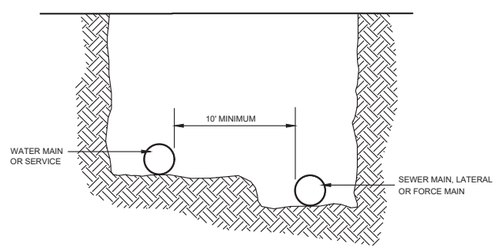
DRAWINGS COURTESY OF PENNICHUCK WATER WORKS.

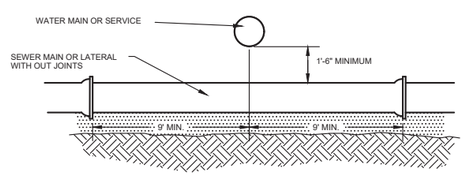
DETAIL W-6
*TYPICAL TEE INSTALLATION*
TOWN OF HUDSON PWW 5-01
REV 3-07 SCALE: NTS




TYPICAL WATER LINE TRENCH DETAIL
NOT TO SCALE

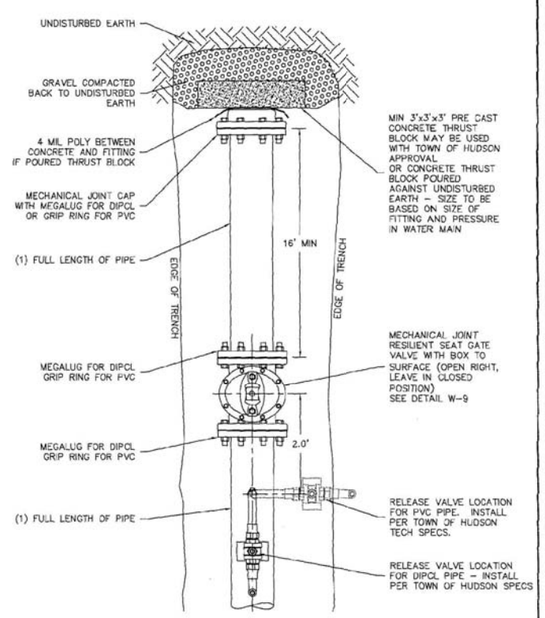



PARALLEL INSTALLATION




MAIN CROSSINGS

WATER PIPE/SEWER PIPE SEPARATION
NOT TO SCALE

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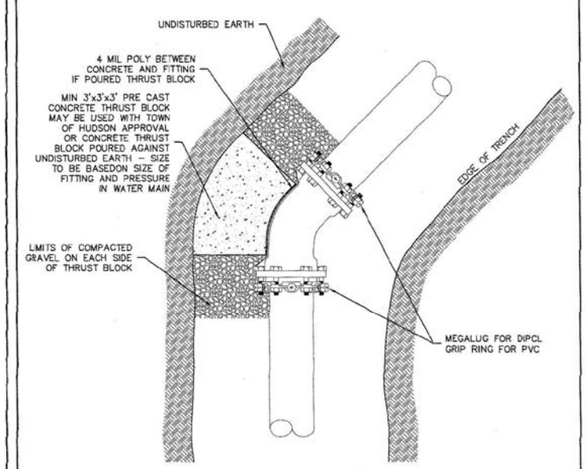
DRAWINGS COURTESY OF PENNICHUCK WATER WORKS.

DETAIL W-8
*TYPICAL END OF MAIN INSTALLATION*
TOWN OF HUDSON PWW 5-01
REV: 3-07 SCALE: NTS

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DRAWINGS COURTESY OF PENNICHUCK WATER WORKS.

DETAIL W-7
*TYPICAL THRUST BLOCK BEHIND FITTINGS INSTALLATION*
TOWN OF HUDSON PWW 5-01
REV: 3-07 SCALE: NTS

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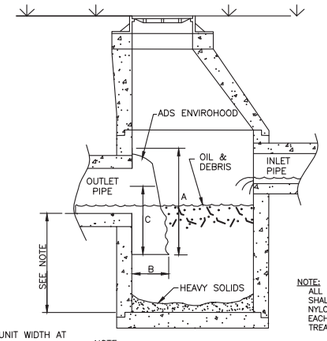
SHEET TITLE:

**SITE DETAILS - 4**

PROJECT #475 SHEET D4




(DIM "D" = UNIT WIDTH AT BASE EXCLUDING SURFACE MOUNTING FLANGE)

NOTE:
SUMP DEPTH OF 36" FOR 12' OR SMALLER DIAM. OUTLET. FOR 15" AND LARGER OUTLETS USE 2.5–3X OUTLET DIAM.

NOTE:
ALL PROPOSED CATCH BASINS SHALL BE INSTALLED WITH NYLOPLAST ENVIROHOOD FOR EACH OUTLET FOR ADDITIONAL TREATMENT.

GENERAL DIMENSIONS IN. (cm)

| STRUCTURE TYPE | OUTLET COVERED | PART NUMBER | A | B | C | D |
|---|---|---|---|---|---|---|
| 48" (120 cm) ROUND CONCRETE | UP TO 18" (45 cm) | 5818AGR | 30.2 (75) | 14.9 (35) | 17.2 (45) | 20.5 (50) |
| 48"–54" (120–135 cm) ROUND CONCRETE | UP TO 24" (60 cm) | 5824AGR | 41.7 (105) | 18.0 (45) | 26.9 (70) | 26.9 (70) |
| 54"–60" (135–150 cm) ROUND CONCRETE | UP TO 30" (75 cm) | 5830AGR | 48.7 (120) | 20.5 (50) | 30.5 (75) | 33.1 (85) |
| FLAT CONCRETE | UP TO 18" (45 cm) | 5818AGF | 30.2 (75) | 11.8 (30) | 17.2 (45) | 20.4 (50) |
| FLAT CONCRETE | UP TO 24" (60 cm) | 5824AGF | 41.8 (105) | 15.3 (40) | 26.9 (70) | 27.0 (70) |
| FLAT CONCRETE | UP TO 30" (75 cm) | 5830AGF | 48.8 (120) | 18.3 (45) | 30.5 (75) | 34.0 (85) |
| 18" (45 cm) NYLOPLAST | UP TO 12" (30 cm) | 5818AG0412 | 19.4 (50) | 9.38 (25) | 12.3 (30) | 13.8 (35) |
| 24" (60 cm) NYLOPLAST | UP TO 15" (40 cm) | 5824AG0415 | 26.5 (65) | 12.8 (30) | 14.5 (35) | 20.0 (50) |
| 30" (75 cm) NYLOPLAST | UP TO 18" (45 cm) | 5830AG0418 | 32.8 (85) | 15.4 (40) | 18.7 (45) | 26.0 (65) |

## TYPICAL INSTALLATION

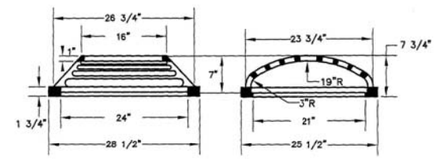
(TO BE INSTALLED IN ALL CATCH BASINS)

## NYLOPLAST ENVIROHOOD DETAIL

NOT TO SCALE

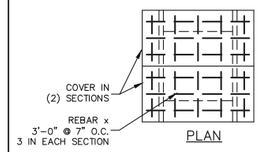
## OFF PAVEMENT CATCH BASIN GRATE

NOT TO SCALE

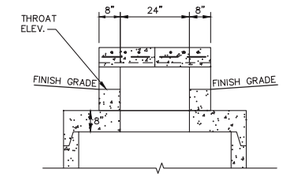



NOTE

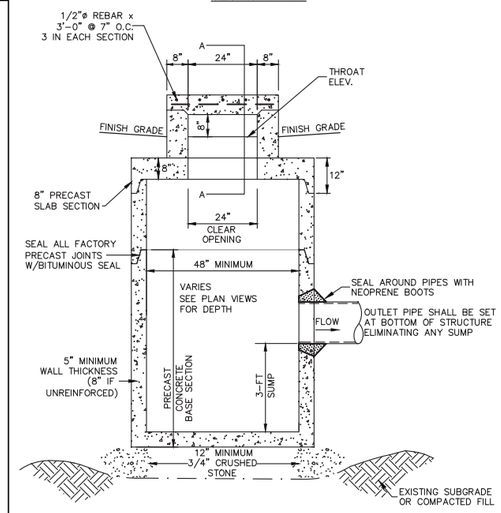
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. ALL PRECAST CONCRETE STRUCTURES ARE TO BE DESIGNED TO MEET H–20 LOADING.
3. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478




PLAN

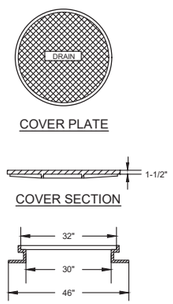



SECTION A–A




## CATCH BASIN WITH DROP INLET DETAIL

NOT TO SCALE




COVER PLATE

COVER SECTION

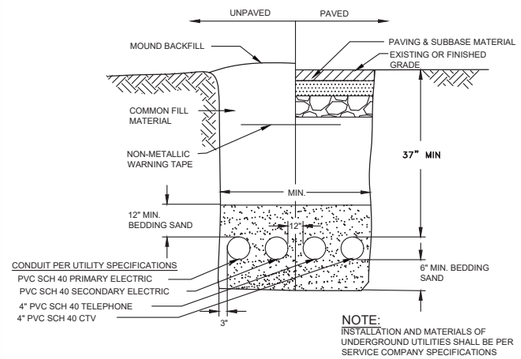
FRAME SECTION

NOTES:

1. CONTACT SUFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
2. CASTINGS SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A48.
3. WHERE MANHOLE TOPS ARE TO BE FLOODED BY WATER THEY WILL HAVE A WATER TIGHT COVER.
4. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH CLEAR OPENING. A 3 INCH (MINIMUM HEIGHT) WORD "SEWER" FOR SEWERS OR "DRAIN" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER. MANHOLE COVERS SHALL HAVE NON-PENETRATION PICK HOLES.

## DRAIN MANHOLE FRAME AND COVER DETAIL

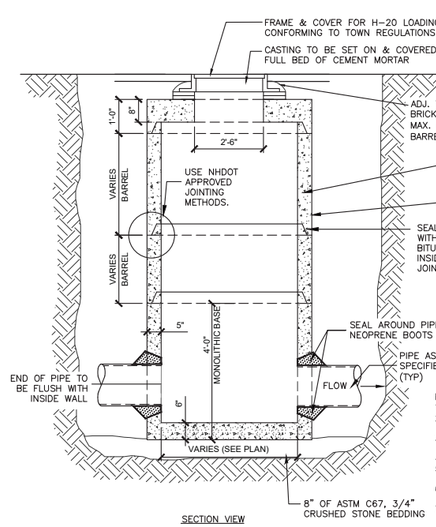
NOT TO SCALE




NOTE:
INSTALLATION AND MATERIALS OF UNDERGROUND UTILITIES SHALL BE PER SERVICE COMPANY SPECIFICATIONS

## UTILITY TRENCH DETAIL

NOT TO SCALE



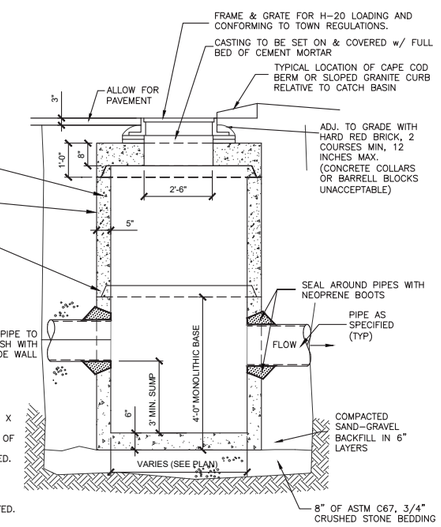

SECTION VIEW

NOTES:

1. CONCRETE: 4,000 PSI AFTER 28 DAYS.
2. REINFORCING: H–20 LOADING 4 X 4/4 X 4 W.W.M.
3. SHIPLAP JOINTS SEALED WITH 1 STRIP OF BUTYL RUBBER SEALANT.
4. EXTERIOR ASPHALT COATED, IF REQUIRED.
5. LOCK JOINT FLEXIBLE PIPE SLEEVES, CAST IN.
6. EACH CASTING TO HAVE LIFTING PINS CAST IN.
7. EACH SECTION TO BE LABELED AS NOTED.

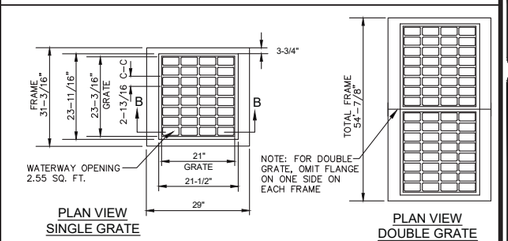
## TYPICAL DRAIN MANHOLE DETAIL

NOT TO SCALE



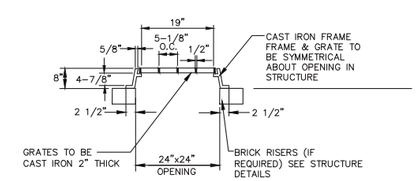

## TYPICAL CATCH BASIN DETAIL

NOT TO SCALE




PLAN VIEW SINGLE GRATE

PLAN VIEW DOUBLE GRATE




SECTION B-B

## CATCH BASIN FRAME AND GRATE

NOT TO SCALE

HS-20LOADING, NHDOT TYPE F (MIN)

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
|---|---|

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg


**The Dubay Group, Inc.**
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Londonderry, NH 03053
603-458-6462

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STATE OF NEW HAMPSHIRE — KARL DUBAY No. 9006 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY:
CHECKED BY:
DATE: AUG. 3, 2021
SCALE:
FILE: 475–DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

**GFI PARTNERS**

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

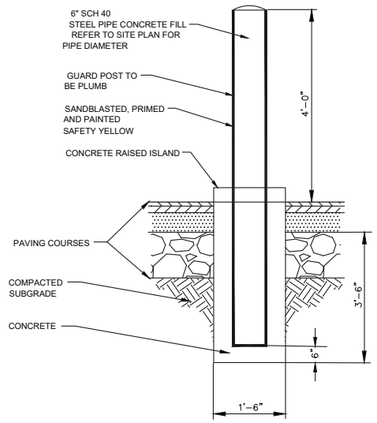
OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

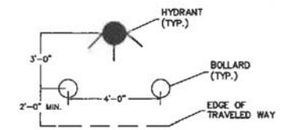
SHEET TITLE:

**SITE DETAILS - 5**

PROJECT #475 SHEET D5



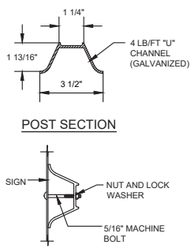

TYPICAL BOLLARD DETAIL
NOT TO SCALE

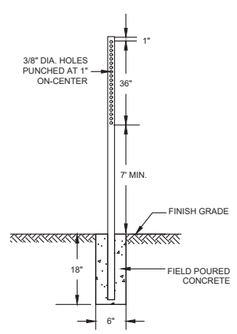



5 HYDRANT BOLLARD LAYOUT
N.T.S.

| IDENTIFI-CATION NUMBER | SIZE OF SIGN | | TEXT | NUMBER OF PROPOSED SIGNS |
|---|---|---|---|---|
| | WIDTH | HEIGHT | | |
| R1-1 | 30" | 30" | STOP | |
| R3-2 | 24" | 24" | | |
| R4-7 | 18" | 24" | | |
| OM1-1 | 18" | 18" | | |
| R5-1 | 30" | 30" | DO NOT ENTER | |
| R3-2 | 24" | 24" | | |
| R7-8P6 | 12" | 6" | VAN ACCESSIBLE | |
| R7-8 | 12" | 18" | RESERVED PARKING | |

PROPOSED TRAFFIC SIGN INVENTORY
NOT TO SCALE




TYPICAL SIGN POST DETAIL
NOT TO SCALE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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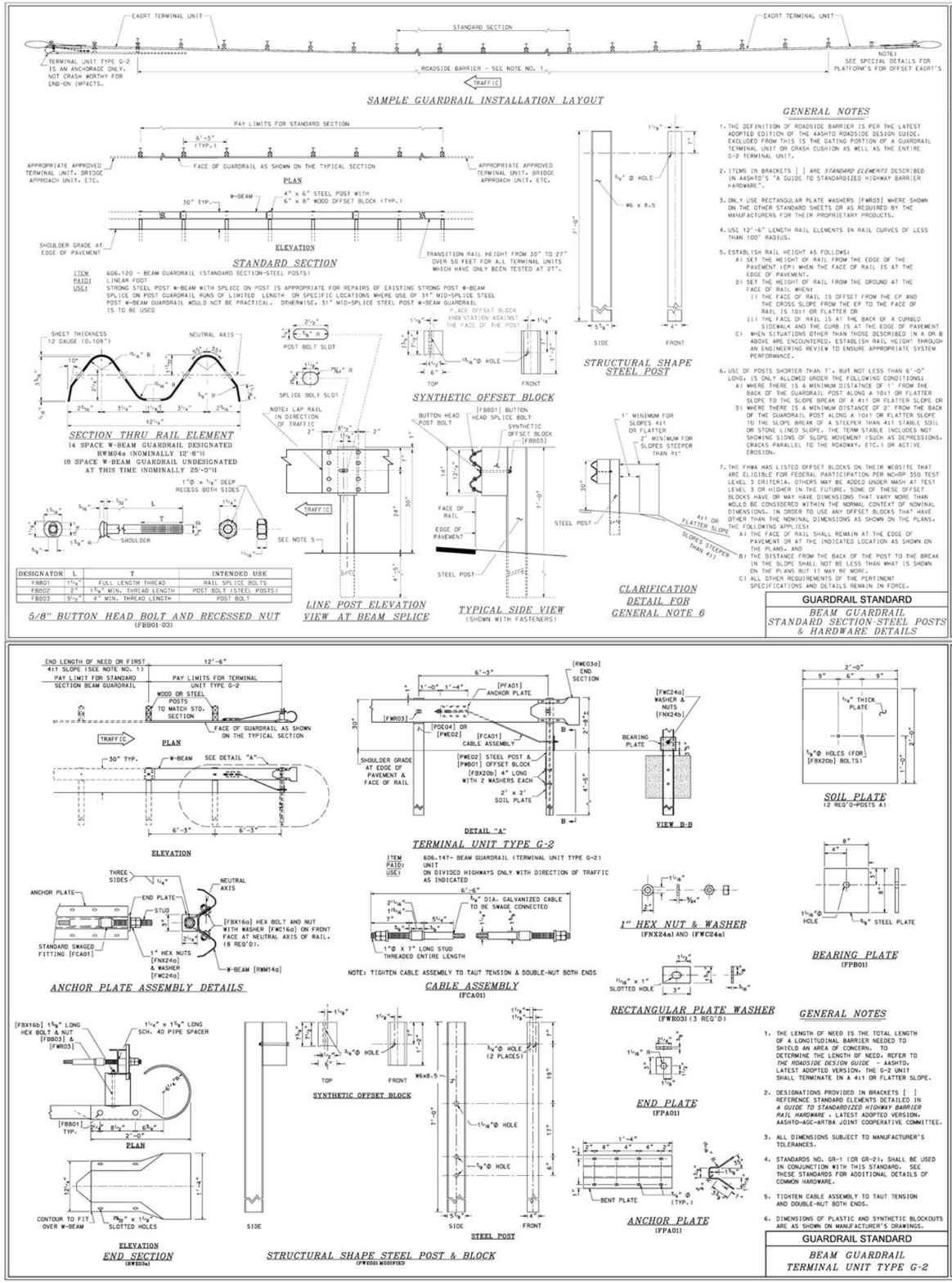



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STATE OF NEW HAMPSHIRE KARL R. DUBAY No. 9006 LICENSED PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475-DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

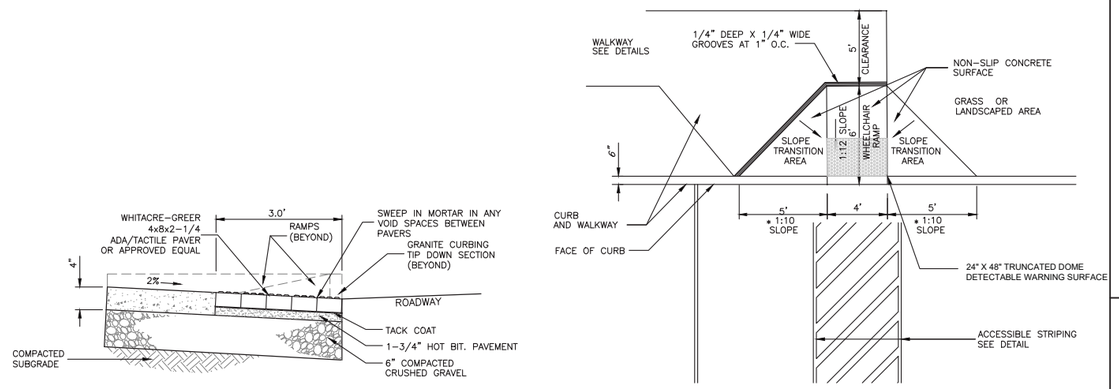
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 6**

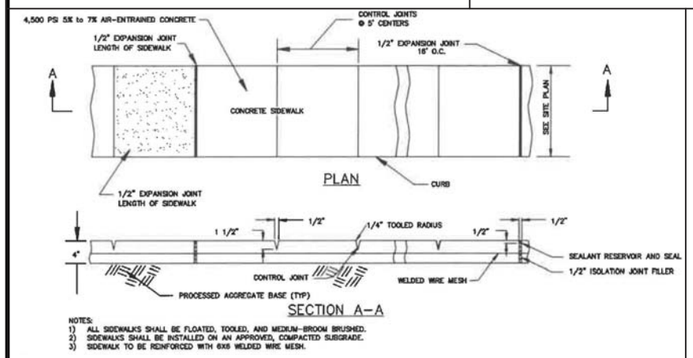
PROJECT #475 SHEET D6

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg



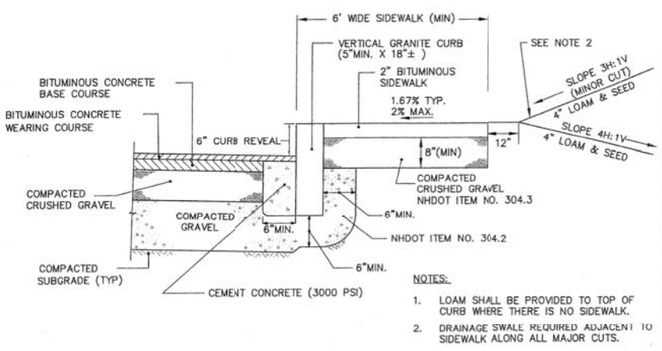

## ACCESSIBLE RAMP DETAIL

NOT TO SCALE




## CONCRETE SIDEWALK DETAIL

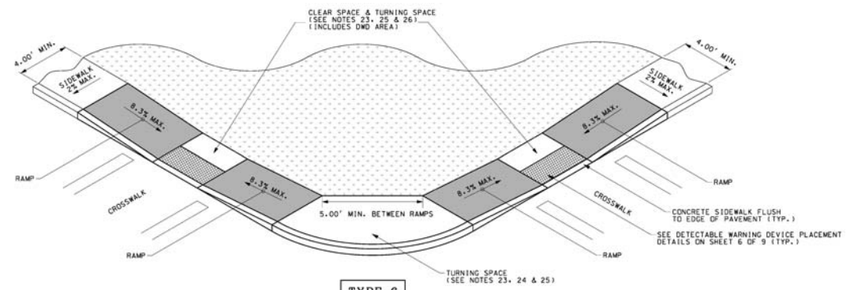
NOT TO SCALE



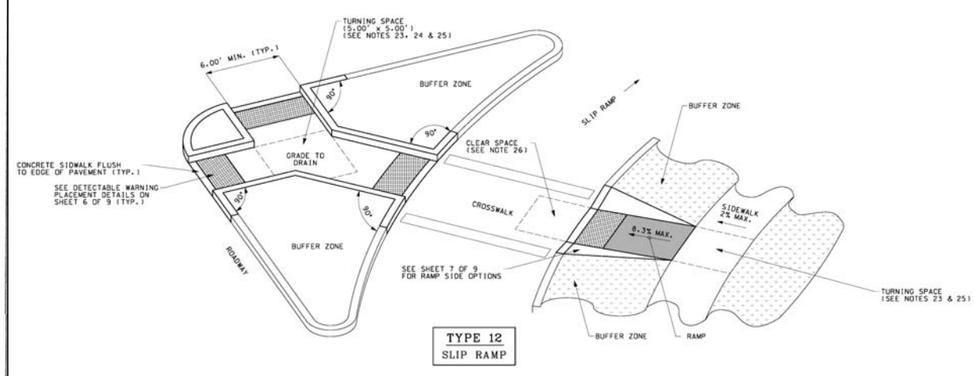

## SIDEWALK AND GRANITE CURB DETAIL

NOT TO SCALE

EXHIBIT R103

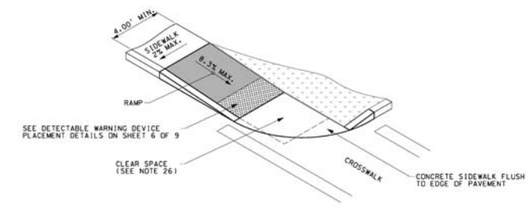



TYPE 6

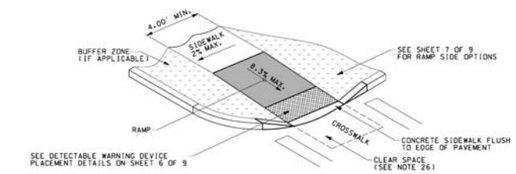



TYPE 12
SLIP RAMP

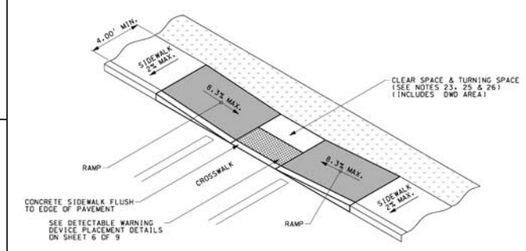
NOTE: DETAILS SHOWN HERE ARE PROTOTYPICAL. REFER TO NHDOT SIDEWALK CURB RAMP DETAILS (9 SHEETS) FOR ADDITIONAL INFORMATION.



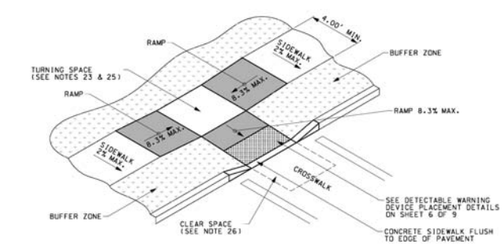

TYPE 1




TYPE 2




TYPE 8
MID BLOCK CROSSING OR T INTERSECTION




TYPE 9
MID BLOCK CROSSING OR T INTERSECTION

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
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DATE: AUG. 3, 2021
SCALE:
FILE: 475-DETAILS
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OWNER

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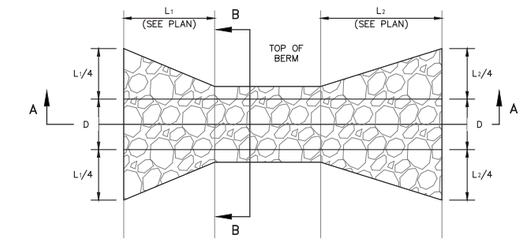
SHEET TITLE:

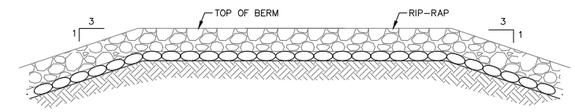
**SITE DETAILS - 7**

PROJECT #475 SHEET D7

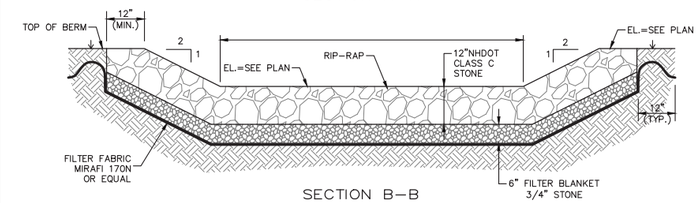
N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg



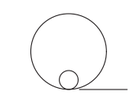

PLAN VIEW




SECTION A–A



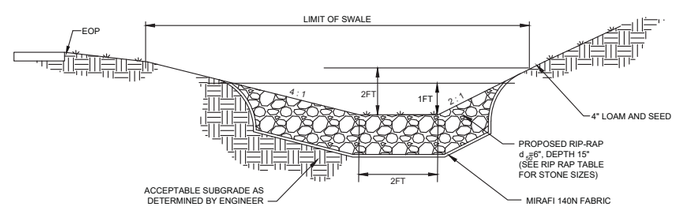

SECTION B–B



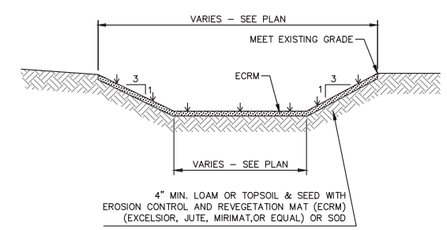
OVERFLOW SPILLWAY
NOT TO SCALE

FES–4 ORIFICE DETAIL
NOT TO SCALE

| TABLE 7-24 -- RECOMMENDED RIPRAP GRADATION RANGES | |
|---|---|
| % OF WEIGHT SMALLER THAN THE GIVEN SIZE | SIZE OF STONE |
| 100 | 1.5 TO 2.0 d |
| 85 | 1.3 TO 1.8 d |
| 50 | 1.0 TO 1.5 d |
| 15 | 0.3 TO 0.5 d |




TYPICAL RIPRAP LINED SWALE DETAIL
NOT TO SCALE




NOTES

1. AT A MINIMUM, SEDIMENT PONDS MUST PROVIDE STORAGE FOR EITHER (1) THE CALCULATED VOLUME OF RUNOFF FROM THE 2–YEAR, 24–HOUR STORM (SEE CGP APP. H), OR (2) 3,600 CUBIC FEET PER ACRE DRAINED.
2. SEDIMENT PONDS MUST ALSO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE, UNLESS INFEASIBLE.
3. REFER TO ENV–WQ 1506.10 FOR GUIDANCE AND DESIGN REQUIREMENTS.

TEMPORARY SEDIMENT TRAP
NOT TO SCALE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

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136 Harvey Rd. Bldg B101
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603-458-6462

Engineers
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STATE OF NEW HAMPSHIRE
KARL R. DUBAY
No. 9006
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
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| DRAWN BY: | JJG |
| CHECKED BY: | KRD |
| DATE: | AUG. 3, 2021 |
| SCALE: | AS SHOWN |
| FILE: | 475–DETAILS |
| DEED REF: | |

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

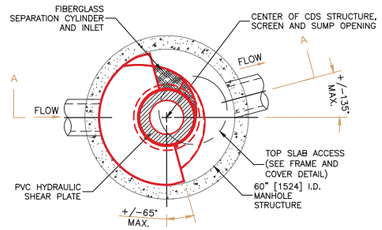
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

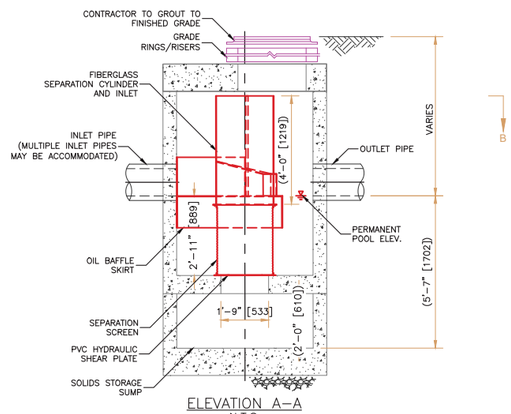
**SITE DETAILS - 8**

PROJECT #475 SHEET D8

N:\=PROJECTS\475–Five Way Realty, Hudson\DWG\CURRENT\475–DETAILS.dwg

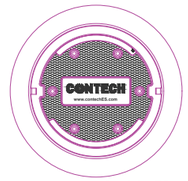



PLAN VIEW B–B
N.T.S.

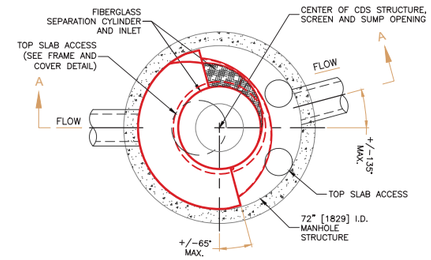



ELEVATION A–A
N.T.S.

**CDS2025-5-C DETAIL**
NOT TO SCALE




FRAME AND COVER
(DIAMETER VARIES)
N.T.S.




PLAN VIEW B–B
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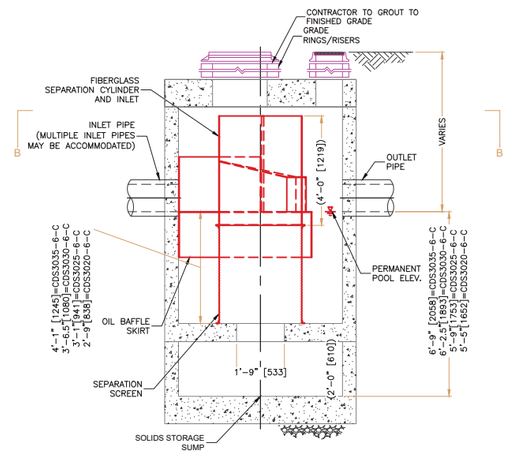


ELEVATION A–A
N.T.S.

**CDS3035-6-C, CDS3025-6-C, CDS3020-6-C, & CDS3030-6-C DETAIL**
NOT TO SCALE

| Contech CDS unit sizing matrix | | | | |
|---|---|---|---|---|
| Unit | WQ Flow (cfs) | Model | Max Treatment Flow (cfs) | Oil Storage Capacity (Gal) |
| Contech 1 | 2.571 | CDS3030 | 3 | 236 |
| Contech 2 | 3.266 | CDS3035 | 3.8 | 377 |
| Contech 3 | 3.218 | CDS3035 | 3.8 | 377 |
| Contech 4 | 1.203 | CDS2025 | 1.6 | 116 |
| Contech 5 | 3.049 | CDS3035 | 3.8 | 377 |
| Contech 6 | 2.458 | CDS3030 | 3 | 236 |
| Contech 7 | 2.399 | CDS3025 | 2.5 | 210 |
| Contech 8 | 1.988 | CDS3020 | 2 | 184 |

## SITE SPECIFIC DATA REQUIREMENTS

| | | | |
|---|---|---|---|
| STRUCTURE ID | | | |
| WATER QUALITY FLOW RATE (CFS OR L/s) | | | * |
| PEAK FLOW RATE (CFS OR L/s) | | | * |
| RETURN PERIOD OF PEAK FLOW (YRS) | | | * |
| SCREEN APERTURE (2400 OR 4700) | | | * |
| PIPE DATA: | I.E. | MATERIAL | DIAMETER |
| INLET PIPE 1 | * | * | * |
| INLET PIPE 2 | * | * | * |
| OUTLET PIPE | * | * | * |
| RIM ELEVATION | | | * |
| ANTI-FLOTATION BALLAST | | WIDTH | HEIGHT |
| | | * | * |
| NOTES/SPECIAL REQUIREMENTS: | | | |
| * PER ENGINEER OF RECORD | | | |

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO..
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Drive, Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.

**The Dubay Group, Inc.**
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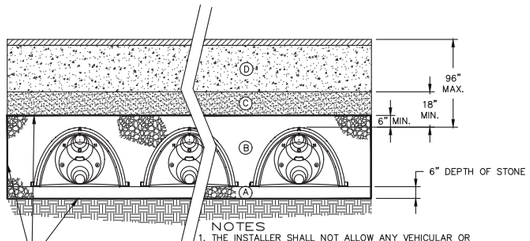
SHEET TITLE:
**SITE DETAILS - 9**

PROJECT #475 SHEET D9

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

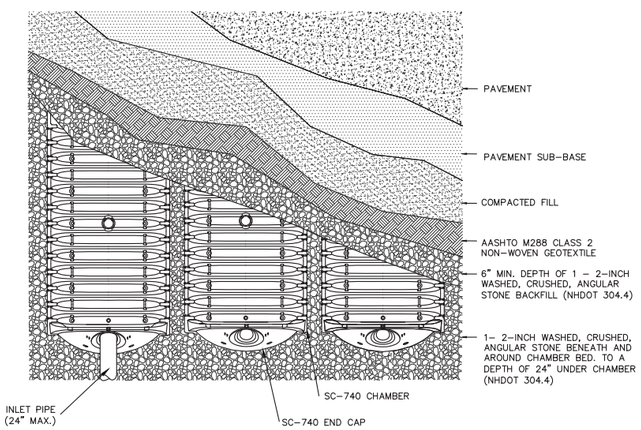
| MATERIAL LOCATION | DESCRIPTION | AASHTO M43 DESIGNATION | AASHTO M145 DESIGNATION | COMPACTION/DENSITY REQUIREMENT |
|---|---|---|---|---|
| Ⓓ FILL MATERIAL FROM 18" TO GRADE ABOVE CHAMBERS | ANY SOIL/ROCK MATERIALS, NATIVE SOILS OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS. | N/A | N/A | PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| Ⓒ FILL MATERIAL FOR 6" TO 18" ELEVATION ABOVE CHAMBERS (24" FOR UNPAVED INSTALLATIONS) | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. | 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | A-1 A-2 A-3 | COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS. |
| Ⓑ EMBEDMENT STONE SURROUNDING AND TO A 6" ELEVATION ABOVE CHAMBERS | DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH | 3, 357, 4, 467, 5, 56, 57 | N/A | NO COMPACTION REQUIRED |
| Ⓐ FOUNDATION STONE BELOW CHAMBERS | DOUBLE WASHED ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH | 3, 357, 4, 467, 5, 56, 57 | N/A | PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY |




NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED RECHARGE BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.

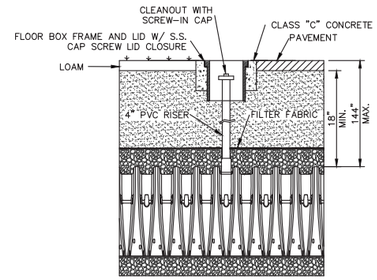
## ACCEPTABLE FILL MATERIALS STORMTECH SC-740 CHAMBER SYSTEM



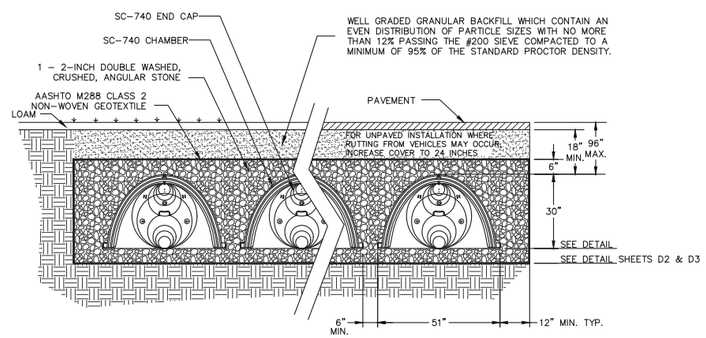

## STORMTECH SC-740 CHAMBER SYSTEM
### PLAN VIEW DETAIL
NOT TO SCALE

## GENERAL NOTES

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION SYSTEMS.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEMS.
3. AFTER THE AREAS ARE EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.




## STORMTECH SC-740 CHAMBER SYSTEM
### INSPECTION PORT DETAIL
NOT TO SCALE




## STORMTECH SC-740 CHAMBER SYSTEM
### TYPICAL CROSS SECTION DETAIL
NOT TO SCALE

## STORMTECH PRODUCT SPECIFICATIONS

1.0 GENERAL

1.1 STORMTECH CHAMBERS ARE DESIGNED TO CONTROL STORMWATER RUNOFF. AS A SUBSURFACE RETENTION SYSTEM, STORMTECH CHAMBERS RETAIN AND ALLOW EFFECTIVE INFILTRATION OF WATER INTO THE SOIL. AS A SUBSURFACE DETENTION SYSTEM, STORMTECH CHAMBERS DETAIN AND ALLOW FOR THE METERED FLOW OF WATER TO AN OUTFALL.

2.0 CHAMBER PARAMETERS

2.1 THE CHAMBER SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING (ESCR), AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

2.2 THE NOMINAL CHAMBER DIMENSIONS OF THE STORMTECH SC-740 SHALL BE 30.0 INCHES TALL, 51.0 INCHES WIDE AND 90.7 INCHES LONG.

2.3 THE CHAMBER SHALL HAVE A CONTINUOUSLY CURVED SECTION PROFILE.

2.4 THE CHAMBER SHALL BE OPEN-BOTTOMED.

2.5 THE CHAMBER SHALL INCORPORATE AN OVERLAPPING CORRUGATION JOINT SYSTEM TO ALLOW CHAMBER ROWS OF ALMOST ANY LENGTH TO BE CREATED. THE OVERLAPPING CORRUGATION JOINT SYSTEM SHALL BE EFFECTIVE WHILE ALLOWING A CHAMBER TO BE TRIMMED TO SHORTEN ITS OVERALL LENGTH.

2.6 THE NOMINAL STORAGE VOLUME OF A JOINED STORMTECH SC-740 CHAMBER SHALL BE 74.9 CUBIC FEET PER CHAMBER WHEN INSTALLED PER STORMTECH'S TYPICAL DETAILS (INCLUDES THE VOLUME OF CRUSHED ANGULAR STONE WITH AN ASSUMED 40% POROSITY). THIS EQUATES TO 2.2 CUBIC FEET OF STORAGE/SQUARE FOOT OF BED.

2.7 THE CHAMBER SHALL HAVE FORTY-EIGHT ORIFICES PENETRATING THE SIDEWALLS TO ALLOW FOR LATERAL CONVEYANCE OF WATER.

2.8 THE CHAMBER SHALL HAVE TWO ORIFICES NEAR ITS TOP TO ALLOW FOR EQUALIZATION OF AIR PRESSURE BETWEEN ITS INTERIOR AND EXTERIOR.

2.9 THE CHAMBER SHALL HAVE BOTH OF ITS ENDS OPEN TO ALLOW FOR UNIMPEDED HYDRAULIC FLOWS AND VISUAL INSPECTIONS DOWN A ROW'S ENTIRE LENGTH.

2.10 THE CHAMBER SHALL HAVE 14 CORRUGATIONS.

2.11 THE CHAMBER SHALL HAVE A CIRCULAR, INDENTED, FLAT SURFACE ON THE TOP OF THE CHAMBER FOR AN OPTIONAL 4-INCH INSPECTION PORT OR CLEAN-OUT.

2.12 THE CHAMBER SHALL BE ANALYZED AND DESIGNED USING AASHTO METHODS FOR THERMOPLASTIC CULVERTS CONTAINED IN THE LRFD BRIDGE DESIGN SPECIFICATIONS, 2ND EDITION, INCLUDING INTERIM SPECIFICATIONS THROUGH 2001. DESIGN LIVE LOAD SHALL BE THE AASHTO HS20 TRUCK. DESIGN SHALL CONSIDER EARTH AND LIVE LOADS AS APPROPRIATE FOR THE MINIMUM TO MAXIMUM SPECIFIED DEPTH OF FILL.

2.13 THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

3.0 END CAP PARAMETERS

3.1 THE END CAP SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING, AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.

3.2 THE END CAP SHALL BE DESIGNED TO FIT INTO ANY CORRUGATION OF A CHAMBER, WHICH ALLOWS: CAPPING A CHAMBER THAT HAS ITS LENGTH TRIMMED; SEGMENTING ROWS INTO STORAGE BASINS OF VARIOUS LENGTHS.

3.3 THE END CAP SHALL HAVE SAW GUIDES TO ALLOW EASY CUTTING FOR VARIOUS DIAMETERS OF PIPE THAT MAY BE USED TO INLET THE SYSTEM.

3.4 THE END CAP SHALL HAVE EXCESS STRUCTURAL ADEQUACIES TO ALLOW CUTTING AN ORIFICE OF ANY SIZE AT ANY INVERT ELEVATION.

3.5 THE PRIMARY FACE OF AN END CAP SHALL BE CURVED OUTWARD TO RESIST HORIZONTAL LOADS GENERATED NEAR THE EDGES OF BEDS.

3.6 THE END CAP SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

## STORMTECH INSTALLATION NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 96 INCHES.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT WWW.STORMTECH.COM.

## OPERATION AND MAINTENANCE PLAN STORMTECH SC-740 CHAMBER SYSTEM

THE OWNER IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF THE PROPOSED STORMWATER COLLECTION SYSTEM INCLUDING ROUTINE INSPECTION, CLEANING AND MAINTENANCE OF MANHOLES, DEEP SUMP HOODED CATCH BASINS, CLEAN OUTS, UNDERGROUND DETENTION SYSTEMS AND REGULAR STREET SWEEPING.

SCHEDULE FOR INSPECTION AND MAINTENANCE AFTER CONSTRUCTION:

STREET SWEEPING

-STREET SWEEPING EFFORTS SHALL BE CONDUCTED AT LEAST ONCE A MONTH OUTSIDE OF WINTER MONTHS.
-SAND SWEPT FROM THE ROADWAYS AND PARKING LOTS WILL BE REMOVED TO AN APPROVED OFF-SITE LOCATION.

DEEP SUMP CATCH BASINS & LEACHING CATCH BASINS

-INLETS SHOULD BE CLEANED ANNUALLY AND INSPECTED SEMI-ANNUALLY.
-ALL SEDIMENTS, FLOATABLES, AND HYDROCARBONS SHOULD BE PROPERLY HANDLED AND DISPOSED OF, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.

UNDERGROUND DETENTION SYSTEMS (STORMTECH ISOLATOR SC-740 CHAMBER OR EQUAL)

-ISOLATOR ROWS AND PIPE HEADERS SHALL BE INSPECTED ON AN ONGOING BASIS THROUGHOUT CONSTRUCTION AND AFTER COMPLETION OF THE SITE'S CONSTRUCTION. THE NORMAL INSPECTION SCHEDULE AFTER CONSTRUCTION FOR ISOLATOR ROWS IS SEMI ANNUAL UNTIL AN UNDERSTANDING OF THE SITE'S CHARACTERISTICS IS DEVELOPED. PIPE HEADERS SHOULD BE INSPECTED QUARTERLY AFTER CONSTRUCTION.
-INSPECTION OF THE ISOLATOR ROW SHALL INVOLVE A VISUAL CHECK USING EITHER THE INSPECTION PORTS OR AN ACCESS MANHOLE.
-IF UPON VISUAL INSPECTION OF THE ISOLATOR ROW, IT IS FOUND THAT ANY ACCUMULATED SEDIMENTS ARE FOUND IN THE SYSTEM, CLEANOUT IS REQUIRED
-CLEANOUT OF SEDIMENT WITHIN THE PIPE HEADER IS REQUIRED WHEN ANY ACCUMULATED SEDIMENT ARE FOUND IN THE SYSTEM.
-CLEANOUT OF THE ACCUMULATED MATERIAL IN THE PIPE HEADER SHOULD BE ACCOMPLISHED BY VACUUM PUMPING. CLEANOUT SHOULD BE PERFORMED DURING DRY WEATHER AND CARE SHOULD BE TAKEN TO AVOID FLUSHING SEDIMENTS OUT THROUGH THE OUTLET PIPES AND INTO THE CHAMBER ROWS.

A SITE MAINTENANCE LOG WILL BE KEPT. THIS LOG WILL RECORD THE DATES WHEN MAINTENANCE TASKS WERE COMPLETED, THE PERSON WHO COMPLETED THE TASK, AND ANY OBSERVATIONS OF MALFUNCTIONS IN COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL REPRESENTATIVE OR VISIT WWW.STORMTECH.COM.

| | |
|---|---|
| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |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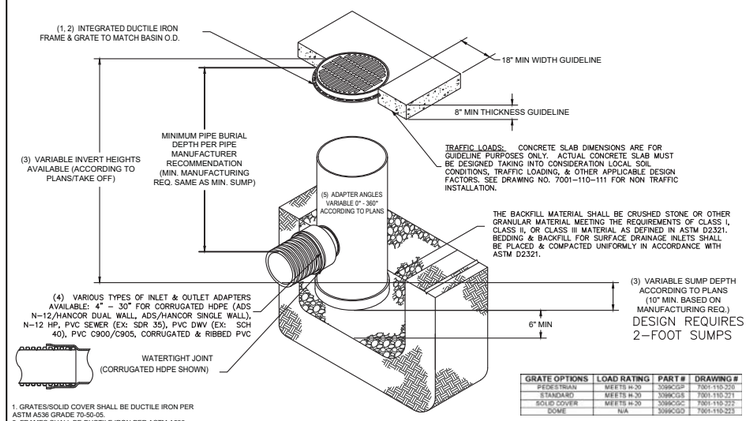
N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

## NYLOPLAST 30" DRAIN BASIN




| GRATE OPTIONS | LOAD RATING | PART # | DRAWING # |
|---|---|---|---|
| PEDESTRIAN | MEETS H-20 | 3099CGP | 7001-110-332 |
| STANDARD | MEETS H-20 | 3099CGS | 7001-110-331 |
| SOLID COVER | MEETS H-20 | 3099CGC | 7001-110-322 |
| DOME | N/A | 3099CGD | 7001-110-223 |

1. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
5. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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2013 NYLOPLAST

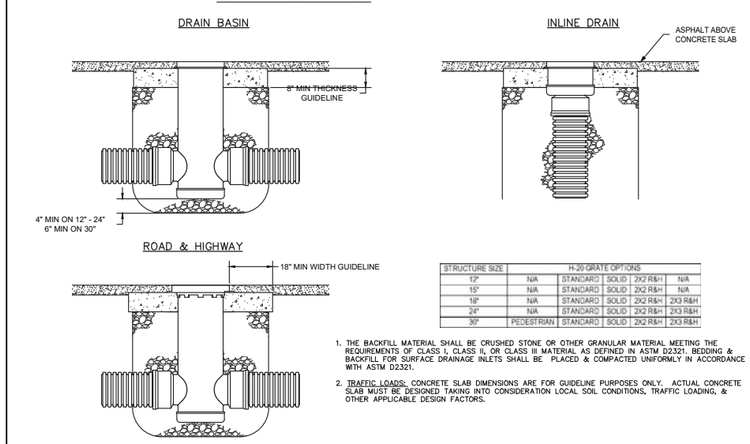
DRAWN BY EBC | DATE 04-03-06 | MATERIAL | REVISED BY NMH | DATE 03-14-16 | PROJECT NO./NAME | DWG SIZE A | SHEET 1 OF 1

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE: 30 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-193 REV G

## ASPHALT INSTALLATION




| STRUCTURE SIZE | H-20 GRATE OPTIONS | | | | |
|---|---|---|---|---|---|
| 12" | N/A | STANDARD | SOLID | 2X2 R&H | N/A |
| 15" | N/A | STANDARD | SOLID | 2X2 R&H | N/A |
| 18" | N/A | STANDARD | SOLID | 2X2 R&H | 2X3 R&H |
| 24" | N/A | STANDARD | SOLID | 2X2 R&H | 2X3 R&H |
| 30" | PEDESTRIAN | STANDARD | SOLID | 2X2 R&H | 2X3 R&H |

1. THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.
2. TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

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2011 NYLOPLAST

DRAWN BY EBC | DATE 4-4-06 | MATERIAL | REVISED BY NMH | DATE 03-14-16 | PROJECT NO./NAME | DWG SIZE A | SHEET 1 OF 1

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
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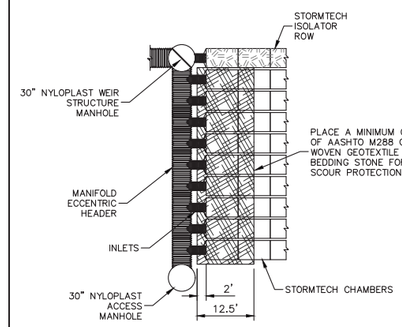
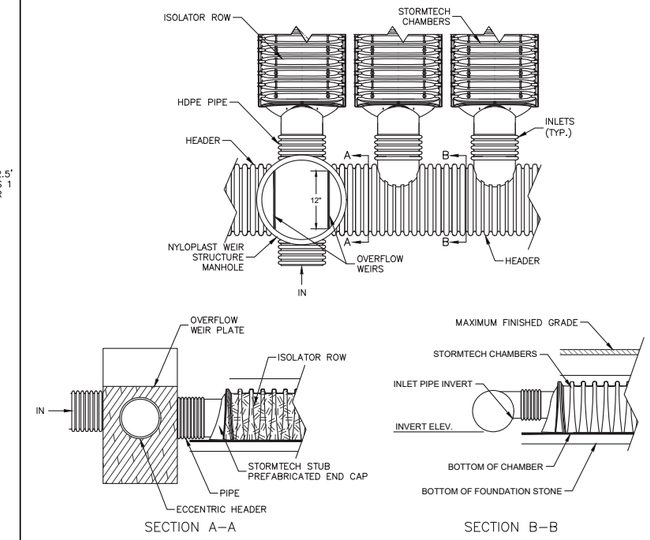
www.nyloplast-us.com

TITLE: DRAIN BASIN, INLINE DRAIN, & ROAD & HIGHWAY (H-20 TRAFFIC LOAD) ASPHALT INSTALLATION DETAIL

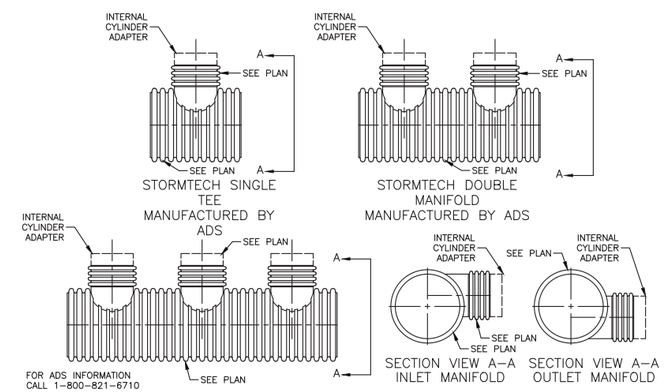
DWG NO. 7001-110-188 REV E



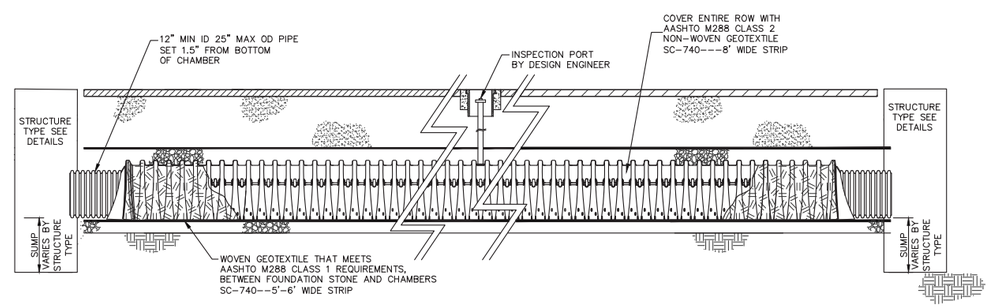

## STORMTECH CHAMBER SYSTEM
### INLET MANIFOLD WITH ISOLATOR ROW
NOT TO SCALE



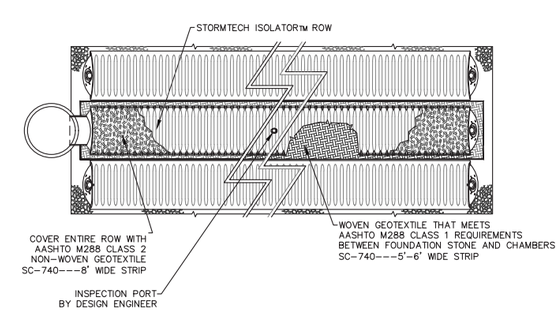

## STORMTECH WEIR MANHOLE & INLET MANIFOLD
NOT TO SCALE




## STORMTECH MANIFOLD ECCENTRIC HEADERS
NOT TO SCALE




## STORMTECH ISOLATOR™ ROW & INLET
### PROFILE VIEW
NOT TO SCALE




## STORMTECH ISOLATOR™ ROW
### PLAN VIEW
NOT TO SCALE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.

**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

Engineers
Planners
Surveyors
TheDubayGroup.com

STATE OF NEW HAMPSHIRE — KARL R. DUBAY No. 9008 — LICENSED PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475–DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR
GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:
**SITE DETAILS - 11**

PROJECT #475 SHEET D11

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

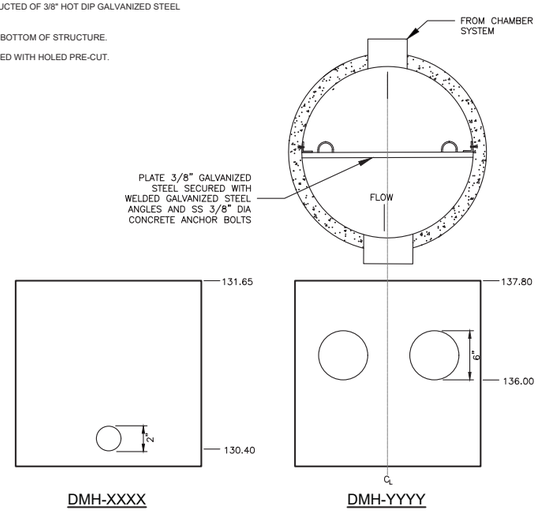
NOTES

1. WEIR PLATE SHALL BE INSTALLED IN DMH SEPARATING INLET AND OUTLET PIPES.

2. WEIR PLATE SHALL BE CONSTRUCTED OF 3/8" HOT DIP GALVANIZED STEEL PLATE

3. PLATE SHALL BE EXTENDED TO BOTTOM OF STRUCTURE.

4. PLATE SHALL BE PRE-FABRICATED WITH HOLED PRE-CUT.




FABRICATED WEIR PLATE DETAIL

NOT TO SCALE

(PLACE VIEWPORT HERE)

STORMTECH CHAMBER SUBSURFACE INFILTRATION SYSTEM XXX DETAIL

SCALE: 1"=20'

NOTES

1. CLEANOUT ACCESS IS PROVIDED VIA THE SYSTEM DMH'S & NYLOPLAST UNITS

(PLACE VIEWPORT HERE)

STORMTECH CHAMBER SUBSURFACE INFILTRATION SYSTEM XXX DETAIL

SCALE: 1"=20'

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
|---|---|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STATE OF NEW HAMPSHIRE
KARL R. DUBAY
No. 9008
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
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DATE: AUG. 3, 2021
SCALE: AS SHOWN
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PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
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BOSTON, MA 02110

OWNER

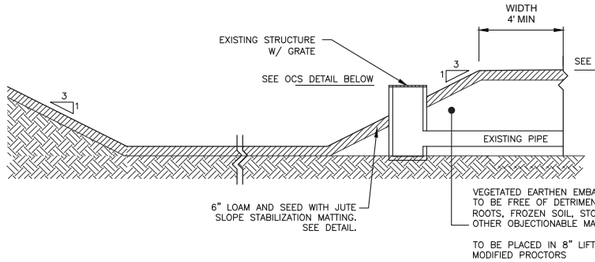
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 12**

PROJECT #475 SHEET D12

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

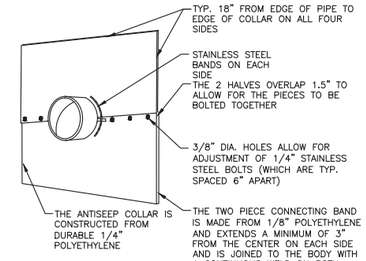



## POND PROFILE DETAIL

NOT TO SCALE

### INFILTRATION BASIN NOTES (PONDS B & E):

1. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.
3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
5. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
6. AMENDED SOIL SHALL BE PLACED BELOW THE BED OF THE BASINS FOR 2 FT IN HEIGHT ACCORDING TO THE INFILTRATION FEASIBILITY REPORT. REQUIRED TESTING SHALL OCCUR, AS THE REPORT DEPICTS, TO MEET THE INFILTRATION RATE OF 10 IN/HR YIELDING THE DESIGN RATE OF 5 IN/HR.



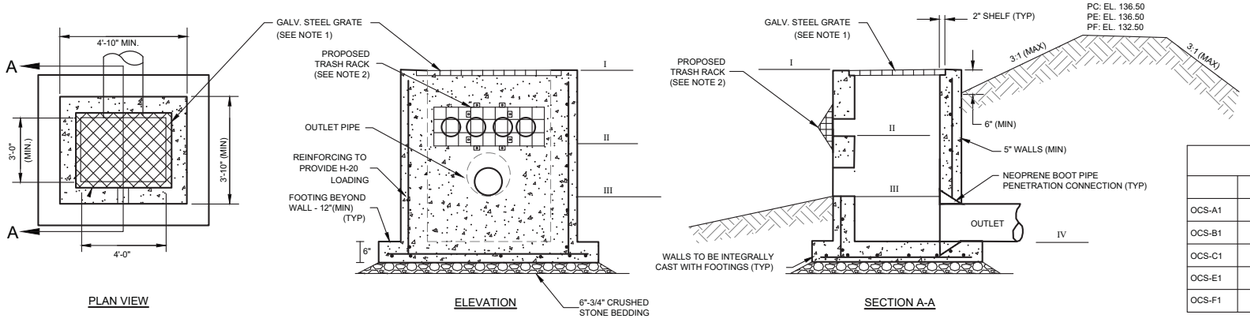

INSTALLATION INSTRUCTIONS:

APPLY TAR OR MASTIC TO COLLAR AND LAY TUBE ON COLLAR. APPLY MASTIC TO HALF OF COLLAR AND SET IN PLACE LINING UP RED STRIPES ND BOLT TWO HALVES TOGETHER. INSTALL METAL BANDS ON SPLIT HALVES OF COLLAR. TIGHTEN BOLTS AND BANDS. APPLY MASTIC AS NEEDED TO INSURE A GOOD SEAL. BACKFILL AND HAND TAMP.

NOTE:
1. ANTISEEP COLLAR SHALL BE MANUFACTURED BY SCHEIB DRAINAGE PRODUCTS OR EQUAL.

## ANTI–SEEP COLLAR

SCALE: NONE




PLAN VIEW

ELEVATION

SECTION A-A

NOTES:

1. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE WITH 1/2" STAINLESS STEEL BOLTS WITH THREADED INSERTS.
2. PROPOSED TRASH RACK SHALL BE $\frac{1}{2}$" HOT DIPPED GALVANIZED ROUND BAR @ 4" SPACING. RACK SHALL BE BOLTED TO STRUCTURE WITH $\frac{1}{2}$" STAINLESS STEEL HILTIS. SHOP DRAWINGS TO BE PROVIDED TO THE TOWN FOR APPROVAL PRIOR TO INSTALLATION.

ELEVATIONS

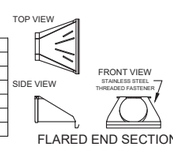
| | I | II | III | IV |
|---|---|---|---|---|
| OCS-A1 | | | | |
| OCS-B1 | | | | |
| OCS-C1 | | | | |
| OCS-E1 | | | | |
| OCS-F1 | | | | |

## OUTLET CONTROL STRUCTURE DETAIL

NOT TO SCALE

FLARED END SECTIONS

| SIZE | PRODUCT CODE |
|---|---|
| 10"(250mm) | 1015NP |
| 12"(300mm)/15"(375mm) | 1210NP |
| 18"(450mm) | 1810NP |
| 24"(600mm) | 2410NP |
| 30"(750mm) | 3015NP |
| 36"(900mm) | 3615NP |




FLARED END SECTION

METAL TRASH GUARDS*

| DIAMETER | DESCRIPTON | PRODUCT CODE |
|---|---|---|
| 12"(300mm) | GALVANIZED STEEL | 1290DA |
| 15"(375mm) | GALVANIZED STEEL | 1590DA |
| 18"(450mm) | GALVANIZED STEEL | 1890DA |
| 24"(600mm) | GALVANIZED STEEL | 2490DA |
| 30"(750mm) | GALVANIZED STEEL | 3090DA |
| 36"(900mm) | GALVANIZED STEEL | 3690DA |

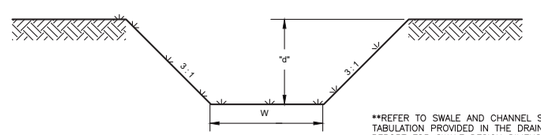
*GRATE IS SIZED TO FIT FLARED END SECTIONS ONLY.

METAL TRASH GUARD

## FLARED END SECTION TRASH GUARD DETAIL

NOT TO SCALE

| | |
|---|---|
| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |




**REFER TO SWALE AND CHANNEL SUMMARY TABULATION PROVIDED IN THE DRAINAGE REPORT FOR SWALE DESIGN DIMENSIONS

### MAINTENANCE

- INSPECT ANNUALLY FOR EROSION, SEDIMENT ACCUMULATION, VEGETATION LOSS, AND PRESENCE OF INVASIVE SPECIES.
- PERFORM PERIODIC MOWING: FREQUENCY DEPENDS ON LOCATION AND TYPE OF GRASS. DO NOT CUT SHORTER THAN WATER QUALITY FLOW DEPTH (MAXIMUM 4-INCHES)
- REMOVE DEBRIS AND ACCUMULATED SEDIMENT, BASED ON INSPECTION
- REPAIR ERODED AREAS, REMOVE INVASIVE SPECIES AND DEAD VEGETATION, AND RESEED WITH APPLICABLE GRASS MIX AS WARRANTED BY INSPECTION.

## TYPICAL TREATMENT OR CONVEYANCE SWALE DETAIL

NOT TO SCALE

## MAINTENANCE:

MAINTENANCE IS NECESSARY IF DETENTION/RETENTION BASINS ARE TO CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. A LOCAL GOVERNMENT, A DESIGNATED GROUP SUCH AS A HOMEOWNERS' ASSOCIATION OR SOME INDIVIDUAL MUST BE ASSIGNED RESPONSIBILITY FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA. A MAINTENANCE PLAN SHOULD BE DEVELOPED THAT OUTLINES THE MAINTENANCE OPERATIONS AND A SCHEDULE FOR CARRYING OUT THE PROCEDURES.

THE FOLLOWING ARE SOME ITEMS WHICH SHOULD BE CONSIDERED IN FORMULATING A MAINTENANCE PLAN.

1. EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE.
2. VEGETATION – THE VEGETATED AREAS OF THE STRUCTURE SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES AND SHRUBS SHOULD BE KEPT OFF THE EMBANKMENT AND EMERGENCY SPILLWAY AREAS.
3. INLETS – PIPE INLETS AND SPILLWAY STRUCTURES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED. IF PIPES ARE COATED, THE COATING SHOULD BE CHECKED AND REPAIRED AS NECESSARY.
4. OUTLETS – PIPE OUTLETS SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. THE CONDITION OF THE PIPES SHOULD BE NOTED AND REPAIRS MADE AS NECESSARY. IF EROSION IS TAKING PLACE THEN MEASURES SHOULD BE TAKEN TO STABILIZE AND PROTECT THE AFFECTED AREA OF THE OUTLET.
5. SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE PREDETERMINED DESIGN ELEVATION, THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.
6. SAFETY INSPECTIONS – ALL PERMANENT IMPOUNDMENTS SHOULD BE INSPECTED BY A QUALIFIED PROFESSIONAL ENGINEER ON A PERIODIC BASIS. IF THERE IS A POTENTIAL FOR SIGNIFICANT DAMAGE OR LOSS OF LIFE DOWNSTREAM, THEN THE INSPECTION SHOULD BE CARRIED OUT ANNUALLY. THE DESIGNATED INDIVIDUAL OR GROUP SHOULD ALSO MAKE INSPECTIONS AFTER EVERY MAJOR STORM EVENT.

## CONSTRUCTION CRITERIA:

1. FOUNDATION PREPARATION – THE FOUNDATION AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED DAM AND SPILLWAYS. FOUNDATION SURFACES SHALL BE SLOPED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE MATERIAL. THE SURFACE SHALL HAVE MOISTURE ADDED OR IT SHALL BE COMPACTED IF NECESSARY SO THAT THE FIRST LAYER OF FILL MATERIAL CAN BE COMPACTED AND BONDED TO THE FOUNDATIONS.

   THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE DUG TO THE LINES AND GRADES SHOWN ON THE PLANS OR AS STAKED IN THE FIELD. IF THEY ARE SUITABLE, EXCAVATED MATERIALS SHALL BE USED IN THE PERMANENT FILL.

   EXISTING STREAM CHANNELS IN THE FOUNDATION AREA SHALL BE SLOPED NO STEEPER THAN 1:1 AND DEEPENED AND WIDENED AS NECESSARY TO REMOVE ALL STONES, GRAVEL, SAND, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND TO ACCOMMODATE COMPACTION EQUIPMENT.

   FOUNDATION AREAS SHALL BE KEPT FREE OF STANDING WATER WHEN FILL IS BEING PLACED ON THEM.

2. FILL PLACEMENT – THE MATERIAL PLACED IN THE FILL SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.

   SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

   THE PLACING AND SPREADING OF FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL BROUGHT UP IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED. THE FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. THE BONDING SURFACE SHALL BE TREATED THE SAME AS THAT SPECIFIED FOR THE FOUNDATION SO AS TO INSURE A GOOD BOND WITH THE NEW FILL.

   THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SURROUNDING MATERIAL. IF IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE CENTER AND UPSTREAM PARTS OF THE FILL. IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE DRAWINGS OR AS STAKED IN THE FIELD.

3. MOISTURE CONTROL – THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.
4. COMPACTION – CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREAS OR EACH LAYER OF FILL TO INSURE THAT THE REQUIRED COMPACTION IS OBTAINED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTAIN THE REQUIRED COMPACTION.

   IF A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY.

   FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS. FILL ADJACENT TO CONCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE LOAD.

5. PROTECTION – A PROTECTIVE COVER OF VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, AND BORROW AREA IF SOIL AND CLIMATIC CONDITIONS PERMIT. IF SOIL OR CLIMATIC CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NON–VEGETATIVE MEANS, SUCH AS MULCHES OR GRAVEL, MAY BE USED. IN SOME PLACES, TEMPORARY VEGETATION MAY BE USED UNTIL CONDITIONS PERMIT ESTABLISHMENT OF PERMANENT VEGETATION. THE EMBANKMENT AND SPILLWAY SHALL BE FENCED IF NECESSARY TO PROTECT THE VEGETATION.

   SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING SHALL COMPLY WITH THE APPROPRIATE VEGETATIVE BMPS.

6. CONCRETE – THE MIX DESIGN AND TESTING OF CONCRETE SHALL BE CONSISTENT WITH THE STRENGTH REQUIREMENTS OF THE JOB. MIX REQUIREMENTS OR NECESSARY STRENGTH SHALL BE SPECIFIED. THE TYPE OF CEMENT, AIR ENTRAINMENT, SLUMP, AGGREGATE, OR OTHER PROPERTIES SHALL BE SPECIFIED IF NECESSARY. ALL CONCRETE IS TO CONSIST OF A WORKABLE MIX THAT CAN BE PLACED AND FINISHED IN AN ACCEPTABLE MANNER. NECESSARY CURING SHALL BE SPECIFIED. REINFORCING STEEL SHALL BE PLACED AS INDICATED ON THE PLANS AND SHALL BE HELD SECURELY IN PLACE DURING CONCRETE PLACEMENT. SUBGRADES AND FORMS SHALL BE INSTALLED TO LINE AND GRADE, AND THE FORMS SHALL BE MORTAR TIGHT AND UNYIELDING AS THE CONCRETE IS PLACED.
7. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO INFILTRATION BASINS.
8. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.
9. AFTER THE BASIN IS EXCAVATED TO FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
10. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
11. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.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Planners
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STATE OF NEW HAMPSHIRE
KARL R. DUBAY
No. 9008
LICENSED
PROFESSIONAL ENGINEER

REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
|---|---|---|---|
| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475–DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 13**

PROJECT #475 SHEET D13

N:\=PROJECTS\475–Five Way Realty, Hudson\DWG\CURRENT\475–DETAILS.dwg

## CONSTRUCTION CRITERIA:

1. FOUNDATION PREPARATION – THE FOUNDATION AREA SHALL BE CLEARED OF TREES, LOGS, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND RUBBISH. IF NEEDED TO ESTABLISH VEGETATION, THE TOPSOIL AND SOD SHALL BE STOCKPILED AND SPREAD ON THE COMPLETED DAM AND SPILLWAYS. FOUNDATION SURFACES SHALL BE SLOPED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE MATERIAL. THE SURFACE SHALL HAVE MOISTURE ADDED OR IT SHALL BE COMPACTED IF NECESSARY SO THAT THE FIRST LAYER OF FILL MATERIAL CAN BE COMPACTED AND BONDED TO THE FOUNDATIONS.

   THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE DUG TO THE LINES AND GRADES SHOWN ON THE PLANS OR AS STAKED IN THE FIELD. IF THEY ARE SUITABLE, EXCAVATED MATERIALS SHALL BE USED IN THE PERMANENT FILL.

   EXISTING STREAM CHANNELS IN THE FOUNDATION AREA SHALL BE SLOPED NO STEEPER THAN 1:1 AND DEEPENED AND WIDENED AS NECESSARY TO REMOVE ALL STONES, GRAVEL, SAND, STUMPS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND TO ACCOMMODATE COMPACTION EQUIPMENT.

   FOUNDATION AREAS SHALL BE KEPT FREE OF STANDING WATER WHEN FILL IS BEING PLACED ON THEM.

2. FILL PLACEMENT – THE MATERIAL PLACED IN THE FILL SHALL BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOIL, STONES MORE THAN 6 INCHES IN DIAMETER (EXCEPT FOR ROCK FILLS), AND OTHER OBJECTIONABLE MATERIAL.

   SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS AT ABOUT THE SAME RATE ON ALL SIDES TO PREVENT DAMAGE FROM UNEQUAL LOADING.

   THE PLACING AND SPREADING OF FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL BROUGHT UP IN HORIZONTAL LAYERS OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED. THE FILL SHALL BE CONSTRUCTED IN CONTINUOUS HORIZONTAL LAYERS EXCEPT WHERE OPENINGS OR SECTIONALIZED FILLS ARE REQUIRED. IN THOSE CASES, THE SLOPE OF THE BONDING SURFACES BETWEEN THE EMBANKMENT IN PLACE AND THE EMBANKMENT TO BE PLACED SHALL NOT BE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. THE BONDING SURFACE SHALL BE TREATED THE SAME AS THAT SPECIFIED FOR THE FOUNDATION SO AS TO INSURE A GOOD BOND WITH THE NEW FILL.

   THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SURROUNDING MATERIAL. IF IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE CENTER AND UPSTREAM PARTS OF THE FILL. IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE DRAWINGS OR AS STAKED IN THE FIELD.

3. MOISTURE CONTROL – THE MOISTURE CONTENT OF THE FILL MATERIAL SHALL BE ADEQUATE FOR OBTAINING THE REQUIRED COMPACTION. MATERIAL THAT IS TOO WET SHALL BE DRIED TO MEET THIS REQUIREMENT, AND MATERIAL THAT IS TOO DRY SHALL HAVE WATER ADDED AND MIXED UNTIL THE REQUIREMENT IS MET.

4. COMPACTION – CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREAS OR EACH LAYER OF FILL TO INSURE THAT THE REQUIRED COMPACTION IS OBTAINED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTAIN THE REQUIRED COMPACTION.

   IF A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY.

   FILL ADJACENT TO STRUCTURES, PIPE CONDUITS, AND ANTISEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPING OR MANUALLY DIRECTED POWER TAMPER OR PLATE VIBRATORS. FILL ADJACENT TO CONCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STRONG ENOUGH TO SUPPORT THE LOAD.

5. PROTECTION – A PROTECTIVE COVER OF VEGETATION SHALL BE ESTABLISHED ON ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, AND BORROW AREA IF SOIL AND CLIMATIC CONDITIONS PERMIT. IF SOIL OR CLIMATIC CONDITIONS PRECLUDE THE USE OF VEGETATION AND PROTECTION IS NEEDED, NON-VEGETATIVE MEANS, SUCH AS MULCHES OR GRAVEL, MAY BE USED. IN SOME PLACES, TEMPORARY VEGETATION MAY BE USED UNTIL CONDITIONS PERMIT ESTABLISHMENT OF PERMANENT VEGETATION. THE EMBANKMENT AND SPILLWAY SHALL BE FENCED IF NECESSARY TO PROTECT THE VEGETATION.

   SEEDBED PREPARATION, SEEDING, FERTILIZING, AND MULCHING SHALL COMPLY WITH THE APPROPRIATE VEGETATIVE BMPS.

6. CONCRETE – ALL CONCRETE SHALL MEET SPECIFICATIONS OF NHDOT CLASS 'A' CONCRETE UNLESS OTHERWISE NOTED.

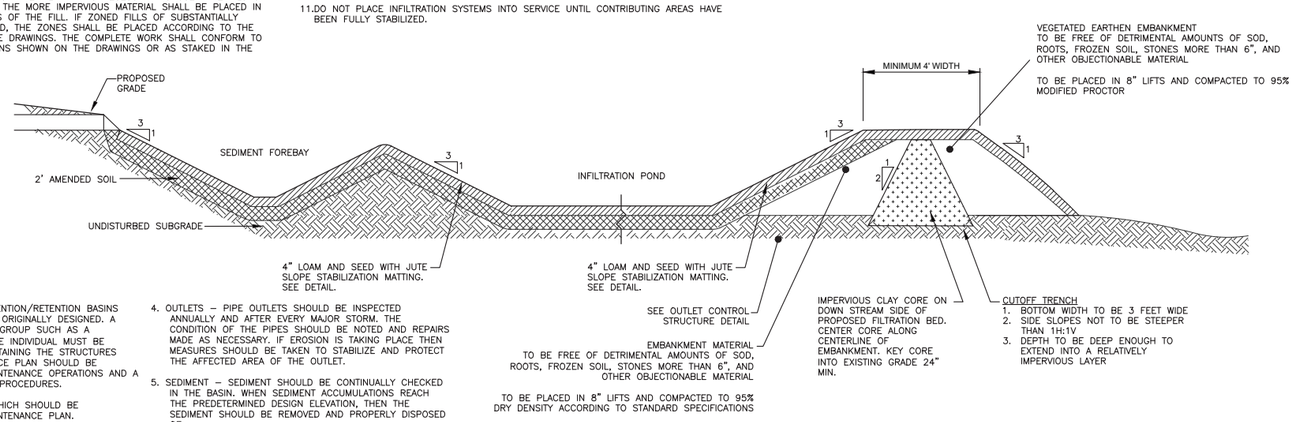
7. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO INFILTRATION BASINS.

8. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.

9. AFTER THE BASIN IS EXCAVATED TO FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

10. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.

11. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.




## INFILTRATION POND TYPICAL POND SECTION & PRINCIPLE SPILLWAY PROFILE DETAILS

NOT TO SCALE

## MAINTENANCE:

MAINTENANCE IS NECESSARY IF DETENTION/RETENTION BASINS ARE TO CONTINUE TO FUNCTION AS ORIGINALLY DESIGNED. A LOCAL GOVERNMENT, A DESIGNATED GROUP SUCH AS A HOMEOWNERS' ASSOCIATION OR SOME INDIVIDUAL MUST BE ASSIGNED RESPONSIBILITY FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA. A MAINTENANCE PLAN SHOULD BE DEVELOPED THAT OUTLINES THE MAINTENANCE OPERATIONS AND A SCHEDULE FOR CARRYING OUT THE PROCEDURES.

THE FOLLOWING ARE SOME ITEMS WHICH SHOULD BE CONSIDERED IN FORMULATING A MAINTENANCE PLAN.

1. EMBANKMENT – THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE.

2. VEGETATION – THE VEGETATED AREAS OF THE STRUCTURE SHOULD BE PROTECTED FROM DRAINAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES AND SHRUBS SHOULD BE KEPT OFF THE EMBANKMENT AND EMERGENCY SPILLWAY AREAS.

3. INLETS – PIPE INLETS AND SPILLWAY STRUCTURES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED. IF PIPES ARE COATED, THE COATING SHOULD BE CHECKED AND REPAIRED AS NECESSARY.

4. OUTLETS – PIPE OUTLETS SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. THE CONDITION OF THE PIPES SHOULD BE NOTED AND REPAIRS MADE AS NECESSARY. IF EROSION IS TAKING PLACE THEN MEASURES SHOULD BE TAKEN TO STABILIZE AND PROTECT THE AFFECTED AREA OF THE OUTLET.

5. SEDIMENT – SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE PREDETERMINED DESIGN ELEVATION, THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERLY DISPOSED OF.

6. SAFETY INSPECTIONS – ALL PERMANENT IMPOUNDMENTS SHOULD BE INSPECTED BY A QUALIFIED PROFESSIONAL ENGINEER ON A PERIODIC BASIS. IF THERE IS A POTENTIAL FOR SIGNIFICANT DAMAGE OR LOSS OF LIFE DOWNSTREAM, THEN THE INSPECTION SHOULD BE CARRIED OUT ANNUALLY. THE DESIGNATED INDIVIDUAL OR GROUP SHOULD ALSO MAKE INSPECTIONS AFTER EVERY MAJOR STORM EVENT.

## SOIL AMENDMENT NOTE:

1. THE PROPOSED INFILTRATION PONDS P1 & P2 AND STONE DRIP EDGE SYSTEMS P3 & P4 ARE TO BE CONSTRUCTED IN MATERIAL NOT SUITABLE FOR TREATMENT THROUGH INFILTRATION. THE CONTRACTOR SHALL OVER EXCAVATE THE BOTTOMS AND SIDES OF THE PROPOSED PRACTICE TO PROVIDE A CONSISTENT AMENDED SOIL DEPTH OF 2 FEET MEETING AN INFILTRATION RATE OF 8–12 INCHES PER HOUR.

2. A QUALIFIED SOIL SCIENTIST, GEOLOGIST, OR ENGINEER SHALL BE RETAINED TO DESIGN THE SOIL AMENDMENT AND PERFORM INFILTRATION TESTING AT THE BASIN LOCATION. THE INFORMATION AND TEST RESULTS SHALL BE PROVIDED TO THE NHDES ALTERATION OF TERRAIN BUREAU TO VERIFY THE ASSUMED INFILTRATION RATES USED IN THE HYDROLOGIC MODEL.

## RECHARGE BASIN NOTES:

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.

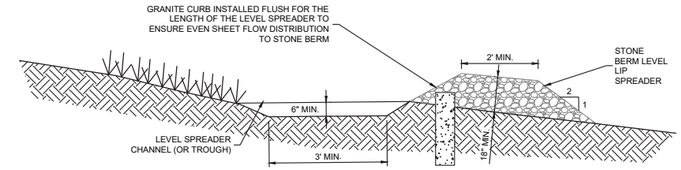
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION BASIN.

3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

4. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.

5. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

| 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<br>DATE OF MEETING: _____<br>CHAIRMAN _____ SIGNATURE DATE: _____<br>SECRETARY _____ SIGNATURE DATE: _____<br>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. |
|---|---|




## MAINTENANCE REQUIREMENTS:

1. INSPECT AT LEAST ONCE ANNUALLY FOR ACCUMULATION OF SEDIMENT AND DEBRIS AND FOR SIGNS OF EROSION WITHIN APPROACH CHANNEL, SPREADER CHANNEL OR DOWN–SLOPE OF THE SPREADER.

2. REMOVE DEBRIS WHENEVER OBSERVED DURING INSPECTION.

3. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF SPREADER CHANNEL DEPTH.

4. MOW AS REQUIRED BY LANDSCAPING DESIGN. AT A MINIMUM, MOW ANNUALLY TO CONTROL WOODY VEGETATION WITHIN THE SPREADER.

5. SNOW SHOULD NOT BE STORED WITHIN OR DOWN–SLOPE OF THE LEVEL SPREADER OR ITS APPROACH CHANNEL.

6. REPAIR ANY EROSION AND RE–GRADE OR REPLACE BERM MATERIAL, AS WARRANTED BY INSPECTION.

7. RECONSTRUCT THE SPREADER IF DOWN–SLOPE CHANNELIZATION INDICATES THAT THE SPREADER IS NOT LEVEL OR THAT DISCHARGE HAS BECOME CONCENTRATED, AND CORRECTIONS CANNOT BE MADE THROUGH MINOR RE–GRADING.

| DESIGN PARAMETER | CRITERIA |
|---|---|
| SLOPE OF RECEIVING AREA | < 15% (ALONG FLOW PATH) |
| LEVEL SPREADER GUIDE | BOTTOM OF SPREADER CHANNEL, AND BASE AND TOP OF BERM SHOULD BE 0% GRADE |
| SPREADER CHANNEL CROSS SECTION | 6–INCH DEEP TRAPEZOIDAL TROUGH |
| SPREADER CHANNEL BOTTOM WIDTH | ≥ 3 FEET |
| SIDE SLOPES | 2:1 OR FLATTER (LEVEL SPREADER CHANNEL AND BERM) |
| BERM TO WIDTH | ≥ 2 FEET |
| BERM HEIGHT | ≥ 18 INCHES |
| STONE GRADATION | SEE TABLE 4–13 |
| LENGTH OF LEVEL SPREADER | WHEN PART OF A TREATMENT PRACTICE, THE LENGTH SHOULD BE AS REQUIRED FOR THAT PRACTICE. IF NOT, THE LENGTH SHOULD BE NO LESS THAN 5 FEET. |

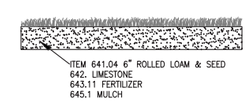
### TABLE 4–13. GRADATION OF STONE FOR LEVEL SPREADER BERM

| SIEVE DESIGNATION | PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE |
|---|---|
| 12–INCH | 100% |
| 6–INCH | 84% – 100% |
| 3–INCH | 68% – 83% |
| 1–INCH | 42% – 55% |
| NO. 4 | 8% – 12% |

## STONE BERM LEVEL SPREADER DETAIL

NOT TO SCALE

REFERENCE: NH STORMWATER MANUAL, VOLUME 2 SECTION 4–6.2




## LOAM & SEED DETAIL

NOT TO SCALE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Engineers
Planners
Surveyors
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REVISIONS:

| REV: | DATE: | COMMENT: | BY: |
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DRAWN BY:
CHECKED BY:
DATE: AUG. 3, 2021
SCALE:
FILE: 475–DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 14**

PROJECT #475 SHEET D14

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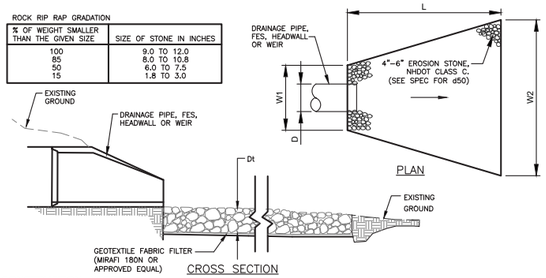
ROCK RIP RAP GRADATION

| % OF WEIGHT SMALLER THAN THE GIVEN SIZE | SIZE OF STONE IN INCHES |
|---|---|
| 100 | 9.0 TO 12.0 |
| 85 | 8.0 TO 10.8 |
| 50 | 6.0 TO 7.5 |
| 15 | 1.8 TO 3.0 |




**CONSTRUCTION NOTES:**

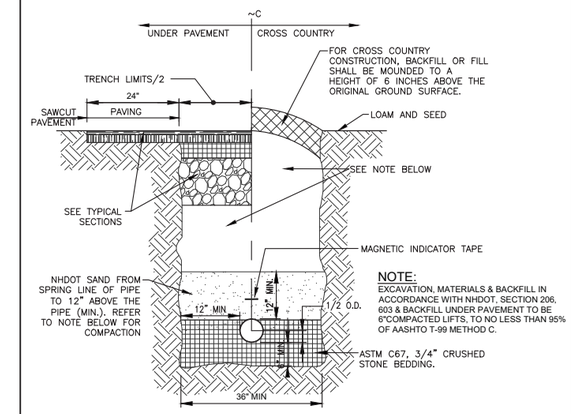
1. THE SUBGRADE, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK OR GRAVEL USED FOR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIPRAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. THE MEDIAN STONE DIAMETER FOR THE RIPRAP APRON IS d50. FIFTY PERCENT BY WEIGHT OF THE RIPRAP MIXTURE SHALL BE SMALLER THAN THE MEDIAN STONE SIZE. THE LARGEST STONE SIZE IN THE MIXTURE SHALL BE 1.5 TIMES THE d50.

**MAINTENANCE**

1. THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM WITHIN THE GROWING STABILIZATION PERIOD. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

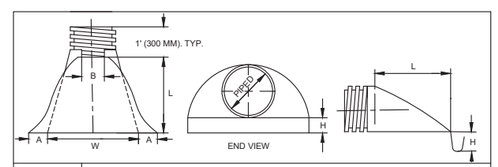
## STONE LINED OUTLET PROTECTION
NOT TO SCALE

| LOCATION | La | W1 | W2 | d50 | DEPTH |
|---|---|---|---|---|---|
| FES-A1 | | | | | |
| FES-A2 | | | | | |
| FES-A3 | | | | | |
| FES-A4 | | | | | |
| FES-A5 | | | | | |
| FES-B1 | | | | | |
| FES-B2 | | | | | |
| FES-B3 | | | | | |
| FES-C1 | | | | | |
| FES-C2 | | | | | |
| FES-C3 | | | | | |
| FES-C4 | | | | | |
| FES-C9 | | | | | |
| FES-E1 | | | | | |
| FES-E2 | | | | | |
| FES-E3 | | | | | |
| FES-E4 | | | | | |
| FES-E5 | | | | | |
| FES-E6 | | | | | |
| FES-F1 | | | | | |
| FES-F2 | | | | | |
| FES-F3 | | | | | |
| FES-F4 | | | | | |
| FES-F5 | | | | | |
| FES-F6 | | | | | |
| HW-C1 | | | | | |
| HW-D1 | | | | | |



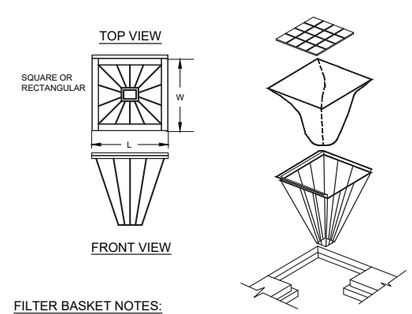

**NOTE:**
EXCAVATION, MATERIALS & BACKFILL IN ACCORDANCE WITH NHDOT, SECTION 206, 603 & BACKFILL UNDER PAVEMENT TO BE 6"COMPACTED LIFTS, TO NO LESS THAN 95% OF AASHTO T-99 METHOD C.

## TYPICAL TRENCH DETAIL
NOT TO SCALE
(TYPICAL TO ALL NON-INFILTRATION PIPES)




| PIPE DIAMETER | DIMENSIONS, INCHES (MM) | | | | | |
|---|---|---|---|---|---|---|
| | PART No. | A. ± 1 (25) | B MAX | H. ± 1 (25) | L. ± 1/2(13) | W. ± 2 (50) |
| 12, 15 (300.375) | 1210 NP | 6.5 (165) | 10 (254) | 6.5 (165) | 25 (635) | 29 (736) |
| 18 (450) | 1810 NP | 7.5 (190) | 15 (380) | 6.5 (168) | 32 (812) | 35 (890) |
| 24 (600) | 2410 NP | 7.5 (190) | 18 (450) | 6.5 (165) | 36 (900) | 45 (1140) |
| 30 (750) | 3010 NP | 10.5 (266) | NA | 7.0 (178) | 53 (1346) | 68 (1735) |
| 36 (900) | 3610 NP | 10.5 (266) | NA | 7.0 (178) | 53 (1346) | 68 (1725) |

## ADS END SECTION DETAIL
NOT TO SCALE




**FILTER BASKET NOTES:**

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS DURING CONSTRUCTION. INLET BASKETS SHALL BE "METAL-ERA" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:

   GRAB STRENGTH: 45 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682).
   MULLEN BURST STRENGTH: MINIMUM 60 psi (ASTM D774).

4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 120 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKET SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

## INLET FILTER BASKET
NOT TO SCALE

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ 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.


**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
Londonderry, NH 03053
603-458-6462

Engineers
Planners
Surveyors
TheDubayGroup.com


STATE OF NEW HAMPSHIRE KARL R. DUBAY No. 9006 LICENSED PROFESSIONAL ENGINEER

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| | | | |

DRAWN BY: JJG
CHECKED BY: KRD
DATE: AUG. 3, 2021
SCALE: AS SHOWN
FILE: 475-DETAILS
DEED REF:

PROJECT:
**SITE PLAN**
**FRIARS DRIVE**
**TAX MAP 209**
**LOT 001-000**
161 LOWELL ROAD
HUDSON, NH

PREPARED FOR

GFI PARTNERS

**LOWELL ROAD PROPERTY OWNER, LLC**
133 PEARL STREET #300
BOSTON, MA 02110

OWNER

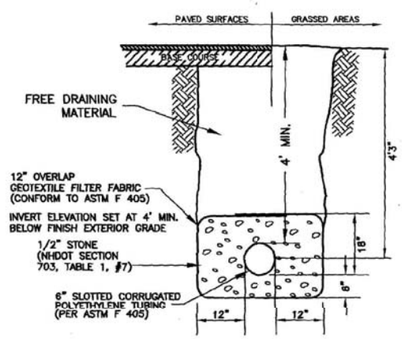
**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 15**

PROJECT #475 SHEET D15

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg




EARTH CONSTRUCTION

## UNDERDRAIN

NOT TO SCALE

DETAIL R-9
*UNDERDRAIN*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS

WHERE MORE THAN ONE HEADWALL IS PRESENT, HEADWALL INFORMATION MAY BE SUMMARIZED IN A TABLE WITH THE FOLLOWING INFORMATION

| DIA. | DIA. | HEADWALL LENGTH | HEADWALL HEIGHT | FILL HEIGHT | PIPE COVER | BOTTOM HEADWALL WIDTH | INVERT |
|---|---|---|---|---|---|---|---|
| | D | L | H | FH | h | W | |
| "A" | | | | | | | |
| "B" | | | | | | | |
| "C" | | | | | | | |

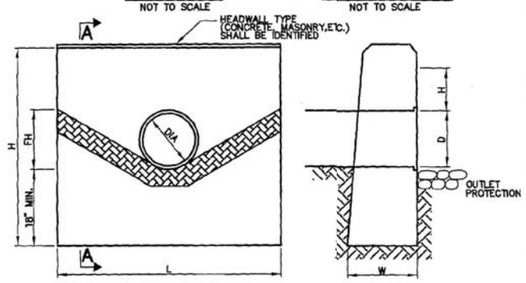
NOTES:
1. ALL DIMENSIONS GIVEN IN FEET AND INCHES EXCEPT PIPE DIAMETER.
2. PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
3. OUTLET PROTECTION SHALL BE DESIGNED AS PER NHDO' STANDARDS.

## HEADWALL

NOT TO SCALE

## SECTION A-A

NOT TO SCALE




CONSTRUCTION PLANS MUST INCLUDE SPECIFIC DETAILS

DETAIL D-5
*HEADWALL*
TOWN OF HUDSON AUGUST-01
REV: SCALE: NTS

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APPROVED BY THE HUDSON, NH PLANNING BOARD

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CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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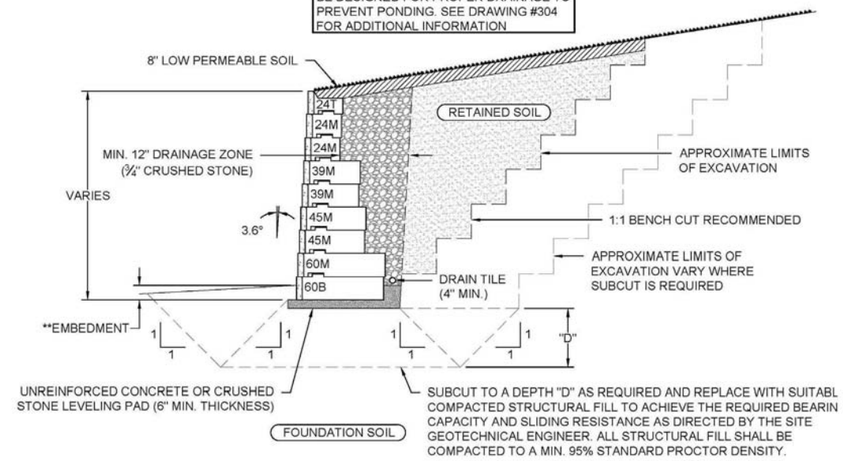
FINISHED GRADE AT TOP OF WALL SHALL BE DESIGNED FOR PROPER DRAINAGE TO PREVENT PONDING. SEE DRAWING #304 FOR ADDITIONAL INFORMATION




**EMBEDMENT SHOULD BE THE GREATER OF 6" OR H/20 FOR WALLS WITH LEVEL GRADE AT THE TOE. REFER TO RECON'S EMBEDMENT RECOMMENDATION DOCUMENT FOR ADDITIONAL INFORMATION FOR WALLS WITH A TOE SLOPE CONDITION.

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Disclaimer: This drawing has been prepared by ReCon Wall Systems, Inc. and to the best of its knowledge, accurately represents the product use in the application that it is illustrated. This drawing is intended for conceptual purposes only. Anyone making use of this drawing does so at their own risk and assumes all liability for such use. Final design for construction purposes must be completed by a Registered Professional Engineer who is familiar with the product and who has taken into account specific site conditions.

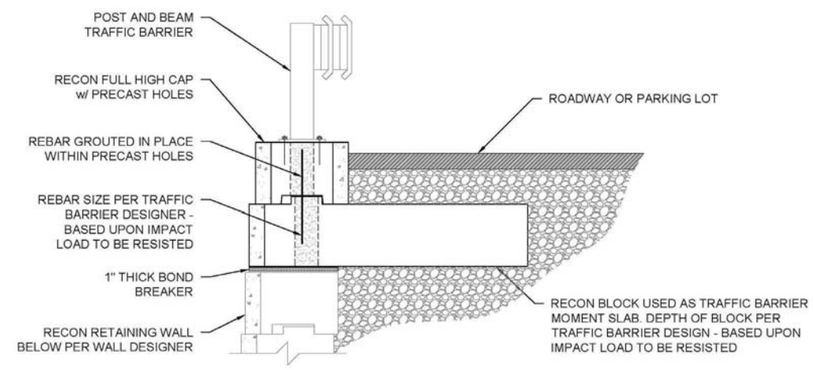
ReCon™ Retaining Walls

DRAWING #103

## TYPICAL GRAVITY WALL CROSS SECTION

RECON WALL SYSTEMS, INC.
7600 W. 27th STREET, #229
ST. LOUIS PARK, MN 55426
952-922-0027
www.reconwalls.com

**NOTE:**
WITH PROPER REINFORCING AND MOMENT SLAB BLOCK DEPTHS, A POST AND BEAM TRAFFIC BARRIER CAN BE ATTACHED TO THE TOP OF RECON'S FULL HIGH CAP CREATING A TRAFFIC BARRIER CAPABLE OF RESISTING LOADS AS HIGH AS AASHTO's TL-1 (13,500 LBS). THIS DETAIL IS INTENDED TO REPRESENT THE GENERAL CONFIGURATION OF THE BLOCK AND THE LOCATION OF THE REBAR REINFORCEMENT. FINAL DESIGN AND LAYOUT OF THE REBAR, MOMENT SLAB BLOCK DEPTH AND ALL CONNECTIONS IS BY OTHERS. CONTACT RECON TO OBTAIN AN EXAMPLE COPY OF THE SUPPORTING CALCULATIONS FOR THE BLOCK PORTION OF THE TRAFFIC BARRIER SYSTEM. ALL CALCULATIONS SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER PRIOR TO USE IN FINAL DESIGN.

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ReCon™ Retaining Walls

DRAWING #507

## INTEGRAL POST AND BEAM TRAFFIC BARRIER

RECON WALL SYSTEMS, INC.
7600 W. 27th STREET, #229
ST. LOUIS PARK, MN 55426
952-922-0027
www.reconwalls.com

**The Dubay Group, Inc.**
136 Harvey Rd. Bldg B101
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Engineers
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BOSTON, MA 02110

OWNER

**5 WAY REALTY TRUST**
PETER HORNE, TRUSTEE
PO BOX 1435
N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 16**

PROJECT #475 SHEET D16

N:\=PROJECTS\475-Five Way Realty, Hudson\DWG\CURRENT\475-DETAILS.dwg

# Anti-Icing

NH Best Management Practices

## GET OUT EARLY

Typically anti-icing is most effective if applied 1-2 hours before the precipitation begins however it can be applied up to 24 hours in advance.

## TRY IT FIRST

Trying anti-icing for the first time? Make a 23.3% brine solution and before a storm spray pavement on your own property using a masonry/plant sprayer. Use this experiment to determine how best to use it with your clients.

## LEAVE SOME PAVEMENT BARE

It's always best to use stream nozzles instead of fan tip to avoid creating a slippery condition. If the anti-icing liquid freezes the bare pavement will still provide a traction surface.

## USE A FILTER

Having a filter in your liquid dispensing system will reduce clogs in your nozzle. Automotive in line fuel filters work quiet well. If your liquid dispenser is not functioning properly be sure to check the filter first.

## A Proactive Treatment

Anti-Icing before a storm is very similar to using a non-stick spray on a pan before cooking. Just like a non-stick spray prevents food from bonding to the pan, anti-icing prevents snow and ice from bonding to the pavement so that it can be plowed away. Anti-icing can save you money as it costs 50% less than reactive deicing.

## Make Your Own Salt Brine

When making brine it is important to add enough salt to produce a 23.3% solution which freezes around 0°F. Roughly 2.5lb per gallon of water will produce a 23.3% solution. You can verify using a salometer (~$20) a 23.3% solution will have a specific gravity of 1.176, or 85% salinity. Consult the Brine Making BMP sheet for more info.

## How Much Should I Use and When?

You can apply brine up to 24 hours in advance of the storm. Typical application rates range from 0.5 to 0.75 gallon per 1000 sq.ft. (10' x 100' area). Other chemicals such as magnesium are also available—consult your supplier for application rates. Anti-icing is not advised prior to freezing rain events.

## Getting Started

Try making your own salt brine by putting 13 lb of salt in 5 gallons of water to get a 23.3% salt brine solution. Mix the brine until all of the salt is dissolved. Using a masonry sprayer apply the liquid several hours before a storm. Start by applying about 0.25—0.5 gallons to a 10' x 50' area. Adjust the application rates based on your experience. Being careful not to over apply and cause a slippery condition.

Produced in partnership with:

Environmental Services · New Hampshire DOT · Technology Transfer Center, New Hampshire LTAP at UNH

NHDES ANTI-ICING BEST MANAGEMENT PRACTICES

NOT TO SCALE

# ENVIRONMENTAL Fact Sheet

New Hampshire Department of Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WMB-3 2007

## Snow Disposal Guidelines

**Introduction**

During each snowfall season from November to April, the Department of Environmental Services receives many complaints related to snow disposal into and/or near surface water. There are several different concerns regarding disposal of snow cleared from streets and parking lots. These can be initially categorized as aesthetic concerns, such as minimizing the visibility of debris and huge snow piles, and environmental concerns, such as protection of groundwater quality, surface water quality, and aquatic life.

The environmental effects of disposed snow result from high levels of sodium chloride, sand, debris and contaminants from automobile exhaust. It is the debris contained in plowed snow that makes it illegal to dump snow directly in water bodies. RSA 485-A:13,I(a) prohibits discharging wastes to surface waters without a permit. Groundwater is sensitive to snow dumping due to the high levels of sodium chloride in plowed snow. RSA 485-C:12 prohibits the siting or operation of snow dumps within classified wellhead protection areas.

Refer to the following guidelines for siting legal snow dumps and protecting the environment.

**Recommended Guidelines for Snow Disposal**

By following these guidelines you will find a safe place to dump plowed snow. Please note that snow dumps are kept out of water bodies due to litter and debris. Litter and debris do not belong on the land surface either; after the snow melts, all litter and debris must be collected and disposed of properly.

- Disposed snow should be stored near flowing surface waters, but at least 25 feet from the high water mark of the surface water.
- A silt fence or equivalent barrier should be securely placed between the snow storage area and the high water mark.
- The snow storage area should be at least 75 feet from any private water supply wells, at least 200 feet from any community water supply wells, and at least 400 feet from any municipal wells. (Note: Snow storage areas are prohibited in wellhead protection areas [class GAA groundwater].)
- All debris in the snow storage area should be cleared from the site prior to snow storage.
- All debris in the snow storage area should be cleared from the site and properly disposed of no later than May 15 of each year the area is used for snow storage.

For more information about snow storage contact DES Watershed Management Bureau at (603) 271-2457.

SNOW DISPOSAL GUIDELINES & RECOMMENDED PRACTICES

NOT TO SCALE

| Pavement Temp. (°F) and Trend (↑ ↓) | Weather Condition | Maintenance Actions | Application Rate (lbs/per 1000 sq.ft.) | | | |
|---|---|---|---|---|---|---|
| | | | Salt Prewetted/Pretreated with salt brine | Salt Prewetted/Pretreated with other blends | Dry salt | Winter sand |
| >30 ↑ | Snow | Plow, treat intersections only | 4.5 | 4 | 4.5 | Not recommended |
| | Frz. Rain | Apply chemical | 5.75 | 5.25 | 6.5 | Not recommended |
| 30 ↓ | Snow | Plow and apply chemical | 5.75 | 5.25 | 6.5 | Not recommended |
| | Frz. Rain | Apply chemical | 6.5 | 5.75 | 7 | Not recommended |
| 25 - 30 ↑ | Snow | Plow and apply chemical | 5.75 | 5.25 | 6.5 | Not recommended |
| | Frz. Rain | Apply chemical | 6.5 | 5.75 | 7 | Not recommended |
| 25 - 30 ↓ | Snow | Plow and apply chemical | 5.75 | 5.25 | 6.5 | Not recommended |
| | Frz. Rain | Apply chemical | 7 | 6.5 | 8.25 | 10.5 |
| 20 - 25 ↑ | Snow or frz. Rain | Plow and Apply chemical | 7 | 6.5 | 8.25 | 10.5 for frz. Rain |
| 20 - 25 ↓ | Snow | Plow and apply chemical | 5.75 | 7.5 | 9.5 | Not recommended |
| | Frz. Rain | Apply chemical | 7 | 7.5 | 10 | 10.5 |
| 15 - 20 ↑ | Snow | Plow and apply chemical | 7.5 | 7.5 | 9.5 | Not recommended |
| | Frz. Rain | Apply chemical | 8.75 | 7.5 | 10 | 10.5 |
| 15 - 20 ↓ | Snow or Frz. Rain | Plow and apply chemical | 8.25 | 7.5 | 10 | 10.5 for frz. Rain |
| 0 to 15 ↑↓ | Snow | Plow, treat with blends, sand hazardous areas | Not recommended | 10 | Not recommended | 13 and spot-treat as needed |
| < 0 | Snow | Plow, treat with blends, sand hazardous areas | Not recommended | 23 | Not recommended | 13 and spot-treat as needed |

**Table 19. Application Rates for Deicing**

The format and methodology are based on (Mn Snow & Ice Control Field Handbook, Manual 2005-1). Develop your own application rates by adjusting your current rates incrementally downward toward these guidelines. Where temperature categories overlap, select the rate most applicable to your situation.

DEICING APPLICATION RATES

NOT TO SCALE

# ENVIRONMENTAL Fact Sheet

New Hampshire Department of Environmental Services

29 Hazen Drive, Concord, New Hampshire 03301 • (603) 271-3503 • www.des.nh.gov

WD-DWGB-22-30 2011

## Storage and Management of Deicing Materials

Storage and management of deicing material can be a source of contamination of surface water and groundwater, causing a violation of state water quality standards. These salt-based products dissolve in precipitation and either infiltrate though the ground surface to groundwater, or run off into surface water. Salt that infiltrates the subsurface at significant concentrations can also react with the soils and release metals into groundwater and surface water at concentrations that exceed water quality standards.

The term "deicing material" used here refers to deicing salts, and may include any of the following in either solid or liquid form: sodium chloride (often called rock salt), potassium chloride, calcium chloride, magnesium chloride, and other mixtures that contain salts (chlorides) including mixtures with abrasives, such as sand, cinder, slag, etc.

**Need for Proper Management**

Due to their high potential for causing groundwater and surface water pollution, salt storage facilities should not be placed in environmentally sensitive areas. The best strategy to prevent pollution from deicing materials and the associated liability is to use and store these materials responsibly. Facilities should develop good housekeeping practices to minimize loss and waste during the delivery, storage, loading and management of deicing materials.

Existing and new facilities that operate without impermeable surfaces and infiltrate brine to the ground or groundwater need to register with DES under Env-Wq 402 Groundwater Discharge Permit and Registration Rules. This is a free registration and is a method of tracking potential contaminant sources. If there are sensitive receptors nearby, some sites may be required to monitor drinking water wells and/or the groundwater. The registration form can be found at: http://des.nh.gov/organization/divisions/water/dwgb/dwspp/bmps/documents/floor_drain_form.pdf.

Best management practices (BMPs) for locating a new deicing materials storage facility should include the following:

- The facility should be located in an area that is not environmentally sensitive. Avoid areas where there are wells, reservoirs, or within the footprint of stratified-drift aquifers.
- The facility should be located on a flat site away from surface water and wetlands.
- Site drainage should be designed to direct clean stormwater away from the operations and storage areas in order to keep the stockpiles as dry as possible.

DEICING GUIDELINES

NOT TO SCALE

GREEN SnowPro

## NOTES:

1. THE SITE SNOW MANAGEMENT VENDOR SHALL BE A NH CERTIFIED GREEN SNOW PRO APPLICATOR AND BE PROPERLY TRAINED IN ACCORDANCE WITH RSA 489-C AND Env-Wq 2200 PRIOR TO COMMENCING ANY SNOW MANAGEMENT OR DEICING PRACTICES.
2. REFER TO Env-Wq 2203 FOR ADDITIONAL INFORMATION ON THE COMMERCIAL APPLICATORS CERTIFICATION PROCESS AND PROCEDURES.

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: _____

CHAIRMAN _____ SIGNATURE DATE: _____

SECRETARY _____ SIGNATURE DATE: _____

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N. HAMPTON, NH 03862

SHEET TITLE:

**SITE DETAILS - 17**

PROJECT #475 SHEET D17

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1 Proposed East Elevation
1" = 20'-0"

2 Proposed West Elevation
1" = 20'-0"

aF+S
applied Form + Space

Architects
Construction Managers

3 Dundee Park
Suite B02
Andover MA
01810

978.474.1945

www.afsarch.com

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Prepared For

GFI Partners

133 Pearl Street
Boston MA 02110

Project

Friars Drive

161 Lowell Road
Hudson NH

| No. | Date | Revision/Issue |
|---|---|---|
| | | |

Date
8.2.2021

Scale
1" = 20'-0"

aF+S Job No.
Project Number

Proposed East and West Elevations

A101



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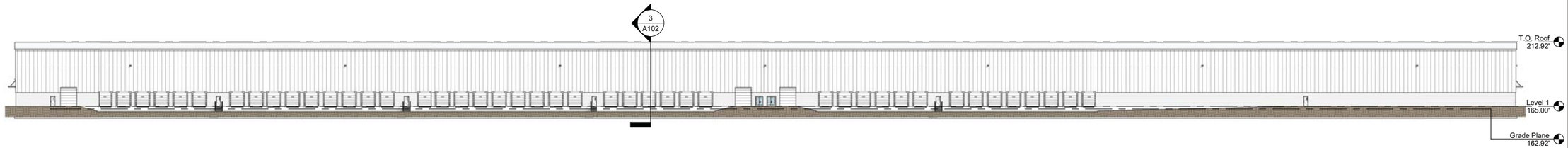
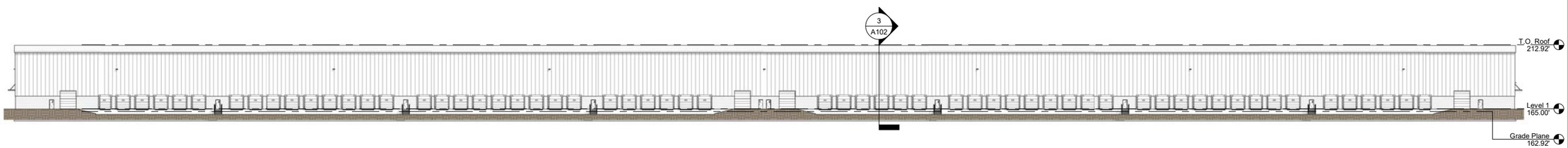
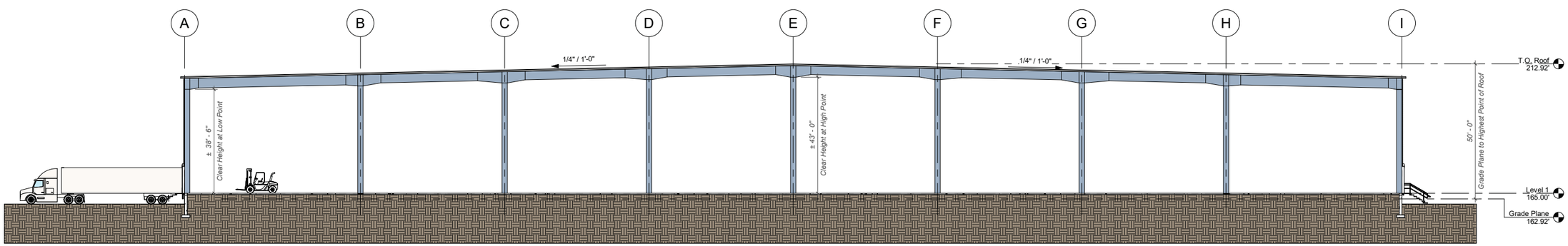



1 Proposed North Elevation
1" = 40'-0"




2 Proposed South Elevation
1" = 40'-0"




3 Building Section
1" = 20'-0"

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01810

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| | | |

Date
8.2.2021

Scale
As indicated

aF+S Job No.
Project Number

Proposed North and South Elevations
Building Section

A102



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