

## **TOWN OF HUDSON**

# Planning Board



Roger Coutu, Selectmen Liaison



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

#### PUBLIC MEETING TOWN OF HUDSON, NH JUNE 12, 2019

The Town of Hudson Planning Board will hold a regularly scheduled meeting on Wednesday, June 12, 2019 at 7:00 p.m. in the "Buxton Community Development Conference Room" at Town Hall. The following items will be on the agenda:

- I. CALL TO ORDER BY CHAIRPERSON AT 7:00 P.M.
- II. PLEDGE OF ALLEGIANCE
- III. ROLL CALL
- IV. SEATING OF ALTERNATES
- V. MINUTES OF PREVIOUS MEETING(S)
  - 8 MAY 2019 Meeting Minutes Decisions
  - 22 MAY 2019 Meeting Minutes Decisions
- VI. NEW BUSINESS/PUBLIC HEARINGS

A. 161 Lowell Road 2-Lot Subdivision SB# 02-19

161 Lowell Rd Map 209, Lot 001

Purpose of Plan: to depict the subdivision of Map 209, Lot 1, into two separate lots. Application Acceptance & Hearing.

B. Friars Court Site Plan SP# 03-19

161 Lowell Rd Map 209, Lot 001

Purpose of Plan: to develop newly created Map 209, Lot 001-001 into multifamily apartments consisting of 81 units, and a clubhouse. Application Acceptance & Hearing.

VII. OTHER BUSINESS VIII. ADJOURNMENT

All plans and applications are available for review in the Planning Office. Comments may be submitted in writing until 10:00 a.m. on the Tuesday prior to the day of the meeting. The public is invited to attend.

Brian Groth, Town Planner

POSTED: Town Hall, Library & Post Office 05/31/19

# 161 LOWELL ROAD – FRIARS COURT SUBDIVISION & SITE PLAN

#### STAFF REPORT

June 12, 2019

SITE: 161 Lowell Road – Map 209 Lot 1

**ZONING:** Business/General/Industrial

**PURPOSE OF PLANS:** to subdivide Map 209, Lot 1 and to develop multifamily housing on the newly created 11-acre lot that is the Business Zone. Other than the extension of Friars Drive, no development is being proposed on remaining land in the General and Industrial zones

#### PLANS UNDER REVIEW:

SB# 02-19: Conceptual Subdivision Plan Application, prepared by The Dubay Group, Inc., 84 Range Rd., Windham, NH 03087, for Dakota Partners, Inc., 1264 Main St., Waltham, MA 02451, dated April 29, 2019, last revised June 5, 2019, and consisting of 33 sheets.

*SP# 03-19:* Conceptual Site Plan Application, prepared by The Dubay Group, Inc., 84 Range Rd., Windham, NH 03087, for Dakota Partners, Inc., 1264 Main St., Waltham, MA 02451, dated April 29, 2019, last revised June 5, 2019, and consisting of 33 sheets.

#### **ATTACHMENTS:**

- A. Subdivision Application & Plans SB# 02-19 (plans at end of e-packet)
- B. Site Plan Application & Plans SP# 03-19 (plans at end of e-packet)
- C. Department Review Comments (Police, Fire, Assessing, Engineering, Zoning)
- D. Fuss & O'Neill Review Memorandum, received May 30, 2019
- E. The Dubay Group Response to Review Comments, received June 4, 2019
- F. April 24, 2019 Staff Report on Design Review Phase

Note: Attachment F - Please Refer to the April 24, 2019 Staff Report for Preliminary Background, found in the April 24, 2019 Planning Board meeting packet

#### PROJECT TRACKING

- April 2, 2019 Conceptual plans received.
- April 24, 2019 Design Review Phase.
- May 8, 2019 Site Walk.
- May 15, 2019 Site Plan & Subdivision Applications received.
- May 23, 2019 Wetland Special Exception granted by ZBA.
- May 29, 2019 Fuss & O'Neill peer review received.
- June 4, 2019 Dubay Group response and additional materials received.
- June 12, 2019 Public Hearing scheduled.

# **Important Topics**

#### WORKFORCE HOUSING

The applicant before the Planning Board is a developer and manager of Workforce Housing developments. It is understood by Staff and the Board that 50% or more of the units will qualify as Workforce Housing under the program administered by the New Hampshire Housing and Finance Authority (NHHFA). Further, it is understood that the applicant/developer will maintain & manage this development as rental units.

NHHFA determines the housing purchase and rent limits based on the location's HUD Metropolitan Fair Market Rent Area (HMFA). Hudson is in the Nashua, NH HMFA. The pricing of Workforce Housing units are as follows:

- 1. <u>Rental</u>: based on 60% of the HUD Median Area Income adjusted for a family of three. As of 2019, this income figure is \$55,570, imputing a monthly rent limit of \$1,360 including utilities.
- 2. Ownership: does not apply in this application, but it is based on 100% of 2019 HUD Median Area Income adjusted for a family of four. As of 2019, this income figure is \$102,900, imputing a maximum purchase price of \$336,500.

As an incentive for developing Workforce Housing, developers receive a tax credit. Potential tenants are subject to an application process and other lease requirements.

#### PHASING - WHAT ARE WE TALKING ABOUT?

The term "phasing" has be used in several different contexts:

- 1. <u>Site Plan Phasing</u> the building phasing of the apartment construction. The applicant proposes building 47 units in Phase One and 34 units in Phase Two.
- 2. <u>Subdivision or Street Phasing</u> If approved and developed, Friars Drive may be phased in terms of construction and ownership. In the near-term, the portion of Friars Drive on the apartment lot will be a private driveway. The portion outside of the apartment lot is proposed to be constructed to a 24' wide standard. In the long-term, the entirety of Friars Drive is envisioned to be built to full town standards for a commercial street to match the existing portion of Friars Drive.
- 3. Phasing of the Entire Lot There has been concern and speculation over the fate of the remainder of the lot. The remainder of the lot is zoned G (General) and I (Industrial) where **Multi-Family Housing is NOT PERMITTED**. The Planning Department nor the Planning Board has any applications, designs, concepts or otherwise for the remainder of the lot.

#### TRAFFIC IMPACT

Town departments, board members and the general public have expressed concern over the traffic impact of this project. Any and all development has an impact on traffic. Since landowners have a constitutional right to develop their land, the Town cannot prohibit development that meets State and local standards. However, the Town does have the ability to

best manage, or mitigate, the traffic impacts of development. In this proposal, there are essentially three options regarding access & traffic management:

- 1. <u>Full access curb-cut:</u> Allowing for all turns to be made in/out of the development. This was the concept originally proposed. In this configuration, the concept also proposed providing frontage to the remainder of the parcel on Lowell Road. This option would have the greatest impact to traffic and public safety.
- 2. <u>Hybrid, Left/Right-In/Right-Out:</u> This option would allow left turning traffic into the site, but limit exit traffic to right-out. This option might have a lesser impact to traffic & public safety than #1.
- 3. <u>Right-In/Right-Out:</u> This option allows only right turns in and out of the site on Lowell Road, and requires all other turns to be made from the controlled intersection at Executive Drive. This option has the lowest impact to traffic & public safety of #'s 1-3.
- 4. <u>One-Way</u>: This option would designate Friars Drive a one-way private driveway up to the site entrance of the proposed apartment buildings. This would prohibit traffic from exiting Friars Drive onto Lowell Road.

Police, Engineering and Planning have all recommended Option #3, though Option #4 is a concept only recently discussed and worthy of further consideration.

Will people cheat the turning rules? Probably, but consider the following:

- 1. Staff has requested the applicant design a more articulated curbed access on Lowell Road to discourage bad behavior. Revisions are still necessary to satisfy this request.
- 2. Commuting patterns on Lowell Road are heavy southbound in the AM, heavy northbound in the PM. A resident coming from the South (a potential left-turner) will reach Executive Drive well before the site. Given the gridlock condition on Lowell Road Northbound in the evening, turning onto Executive Drive will likely be the quickest way to get home. A resident heading to work in the morning can turn right-out to head south (which is the typical commuter demand). Should they need to head north, a left turn out of the site would take so long, it would be quicker to go to the light at Executive Drive.
- 3. The occupants of the proposed development are residents, a captive audience that can be educated by property management on the "rules of the road." Rule-breaking would likely be more common in a retail condition.
- 4. Of the allowed uses in the Business Zone, multi-family housing has one of the lowest impacts on traffic.

(Continued on next page)

# **Findings**

#### **ZONING & REGULATIONS**

Our peer review consultant has completed its first review of the submissions. The applicant's engineer, The Dubay Group, has submitted an initial response memo. The subdivision and site plan are largely conforming, however they are requesting several waivers. At the time of this report, staff is waiting for revised waiver forms which are required to be in our physical possession in order to accept the application. The applicant will speak to those at the meeting.

#### CONDITIONS OF APPROVAL

If this application is approved, a series of conditions will need to be structured. These conditions would primarily deal with the evolution of construction and ownership of Friars Drive and the creation of "Defacto Parcels."

- 1. <u>Friars Drive</u> the proposal contemplates a phased approach to the construction & ownership of Friars Drive. It is proposed that it evolves from a private driveway to a commercial standard road for the Town's acceptance. In the future, development conditions for the remainder parcel, and other parcels on Lowell Road might require the installation of a traffic light at Friars Drive and Lowell Road. In the event this occurs, the right-in/right-out control curb would be removed and the intersection would be realigned. The proposal shows an easement that sufficiently allows for this condition.
- 2. "<u>Defacto Parcels</u>" If the long-term vision of Friars Drive is achieved, two parcels might be automatically created on the south side of Friars Drive. Regarding the portion that is initially part of the development parcel, a covenant or conservation easement should be constructed to preclude future development. Regarding the other defacto parcel, which is south of Friars drive but part of the remainder parcel, a similar treatment should be applied however Staff notes that much of this piece is undevelopable wetland. The applicant has indicated a no-build covenant as well.

These conditions have not been fully vetted at the time of this report. Moving forward, the conditions are to be drafted and reviewed by Staff and the Town Attorney to ensure Planning Board satisfaction.

#### INPUT OF TOWN DEPARTMENTS

- 1. <u>Police Department</u>: The Police Department has expressed the desire for a well-controlled right-in/right-out access on Lowell Road for public safety purposes. They also expressed concern for the site distance of southbound traffic approaching the site.
- 2. <u>Fire Department</u>: The Fire Chief has met with the applicant to discuss his concerns and needs from a fire safety standpoint. The applicant has agreed to revise the plans to accommodate his recommendations.
- Assessing Department: The Chief Assessor has raised issues regarding the naming of the new parcels. He also raised the question of eventual ownership of the development parcel.

- 4. <u>Engineering Department</u>: The Town Engineer requests a slip lane to accommodate turns into the site. In previous reports, the Town Engineer has also requested a more articulated (defined) curb cut to minimize illegal left turns.
- 5. <u>Zoning Department</u>: The Zoning Administer requested additional information assuring that the building height complies with the zoning maximum of 38'. The building elevations show a height of 37'9.25".
- 6. Department of Public Works: No Comment.
- 7. <u>Planning Department</u>: Comments are encompassed in this staff report and the April 24, 2019 staff report.

# Recommendations

DRAFT MOTIONS

Staff recommends this application be accepted by the Planning Board, but neither approved nor denied at the June 12, 2019 meeting. Staff recommends the Board commence the public hearing on the application, and continue it to the next meeting to accommodate additional revisions and final review by the peer-review consultant, Fuss & O'Neill. Please note the term "public hearing" means the public process in which the Board considers an application for denial/approval, public input is a portion of the public hearing.

DRAFT MOTIONS			
To accept the applic	ation:		
I move to accept the	subdivision and site plan app	plication for 161 Lowell Road, Map 209/Lot 1	
Motion by:	Second:	Carried/Failed:	
To continue the pub	lic hearing to a date certain:		
I move to continue t 26, 2019.	he public hearing for 161 Lov	well Road, Map 209/Lot 1, date certain, to Jun	e
Motion by:	Second:	Carried/Failed:	



# SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW APR 3 0 2019 TOWN OF HUDSON, NEW HAMPSHIRE TOWN OF HUDSON

PLANNING DEPARTMENT
\_\_\_Lot # \_ | \_\_\_\_\_ Tax Map # 209 Date of Application: 4/29/2019 Name of Project: Friars Court Zoning District: \_\_\_\_\_\_\_(For Town Use) General SB# ZBA Action: DEVELOPER: PROPERTY OWNER: Dakota Partners, Inc. (authorized agent) Name: 5 Way Realty Trust, Peter Horne, Trustee 1264 Main Street Address: PO Box 1435 Address: North Hampton, NH 03862 Waltham, MA 02451 781-889-4002 Telephone # (use authorized agent) (use email) Fax # (use email) mpilotte@dakotapartners.net Email: (use authorized agent) PROJECT ENGINEER Telephone # 603-458-6462 Name: Karl Dubay, PE Address: The Dubay Group, Inc. 84 Range Road Fax # (use email) Address: Windham, NH 03087 Email: karl@thedubaygroup.com PURPOSE OF PLAN: Subdivide parent tract into: (1) frontage lot on Lowell Road for apartment site plan & access easements, (2) dedicate town right of way along Friars Drive, (3) creates a non-buildable parcel south of ROW dedication for administrative purposes only, and (4) multiple easements for future planning (FOR TOWN USE) Sub/Site Date: 5/82/9 Plan Routing Date: \_\_\_\_ I have comments (attach to form) I have no comments Title: (Initials) DEPT: Zoning \_\_\_\_ Engineering \_\_\_ Assessor \_\_\_ Police \_\_\_ Fire \_\_\_ Planning \_\_\_\_\_ Highway Department Consultant

### PLANNING BOARD

### NOTICE TO SUBDIVISION APPLICANTS

The following information is required to be filed with the Community Development Department at the time of subdivision application.

Note: An appointment is required to file applications.

- 1. One original and one copy of the completed application.
- 2. Submission of nine (9) full sets of Site Plans (sheet size: 22" x 34") shall be submitted at the time of application filing, followed by the submission of seventeen (17) 11" X 17" plan sets (revised if applicable) to the Community Development Department no later than 10:00 A.M. Tuesday the week prior to the scheduled public hearing/conceptual review date.
- 3. Seventeen copies of the project narrative, describing the project.
- 4. All plans shall be folded and all pertinent data shall be attached to the folded plans with an elastic band.
- 5. All plan revisions and supporting documentation must be submitted to the Community Development Department no later than 10:00 A.M., Tuesday the week prior to the scheduled Planning meeting.
- 6. Five (5) 22" x 34" copies of the plan shall be brought to the Planning Board meeting and distributed to the Planning Board members at the meeting.
- 7. Three sets of mailing labels for abutters notices.

# 2012 SUBDIVISION APPLICATION FEES

LARLY BALL CERACLE	TNIONA	ACCOUNT
Consultant Review	\$1.25 per linear foot of roadway* (including cul-de-sac) \$1,250.00 minimum* *Estimated cost, billing based on actual hours expended multiplied by hourly rates, plus expenses	1350-***
Town General Review Fees/Application Fee Regular Application	\$170.00/lot	GEN 4313
Conceptual Review	\$100.00	GEN 4313
ZBA Input	\$100.00	GEN 4313
Lot Line Relocation	\$340.00 for first two lots \$170.00 for each additional lot	GEN 4313
On Site Signs Advertising	\$15.00 \$40.00 (flat fee)	GEN 4313 GEN 4313
Tax Map Updating	\$30.00/lot + \$25.00 Min. \$85.00 for 2-7 lots Min. \$325.00 for 8 lots or more	1312-505
Postage	USPS Current Rates	GEN 4313
Recording Fees Plan Easements/Agreements	\$24.00/sheet + \$2.00 surcharge \$10.00/first sheet \$4.00 thereafter + \$2.00 surcharge + first class postage (fees dictated by HCRD) \$25.00 Land & Community Heritage Investment Program (LCHIP) fee, please make check payable to HCRD	GEN 4313

## SITE DATA SHEET

Plan Name: Friars Court	
Plan Type: <u>Subdivision Plan</u>	
Legal Description:	Map 209 Lot 1
	Map Lot
Date: 4/29/2019	
Location:	161 Loweli Road
Total Area:	S.F Acres: _88.86
Area in Wetlands:	(see plans)
Zoning:	Business & General
Lots Not Meeting Required Dimensions:	N/A
Required Area:	IAC (GROVE) & par unit Jerrity (BROVE)
Required Frontage:	150 LF
Water and Waste System Proposed:	(municipal water & sewer)
Number of Lots With Existing Buildings:	N/A
Existing Buildings To Be Removed:	N/A
Flood Zone Reference:	N/A (FEMA Map 33011C0656D dated 9/25/2009)
Proposed Linear Feet Of New Roadway:	1,125 (rebuild existing Friars Drive)

(see plans)

FRONTAGE AREA (net contiguous upland useable) BUILDABLE AREA > 25% SLOPE WETLAND AREA TOTAL AREA LOT# 10. ∞ 9; 6 5  $^{\prime}$ 4

LOT AREA CALCULATION TABLE

Page 5 of 16 Rev: Aug 2015

Date:

Data Sheets Checked By:

## SUBDIVISION PLAN DATA SHEET

Dates/Case #/Description/					
Stipulations of ZBA,					
Conservation Commission,					
NH Wetlands Board Action:					
	CONT. CONT.				
(Attach Stipulations on					
Separate Sheet)					
List Permits Required:					
ZBA spe	cial exception for work	within buffe	er	The second secon	
- Address - Addr					
			· · · · · · · · · · · · · · · · · · ·		
	Hudson Tov	vn Code			
*Weiners Degrested	Reference	VII COUC		Regulation Description	
*Waivers Requested:	Keleienee				
	1. 289-17.A		1	lot area Gr. Lote	
	2			(mbildable/admhistrative)	
	2.3-289-28		7	and stos (width 24FT)	
	4-			open draines e	4L 106
	3. 5- 276-11.1		(	Several Existing Conditions	•
	6-			Grear of parent lot	
	7.			portion (undoveloped)	
*(Left Column for Town Use)					
(=3)	<u>Amount</u>			Account	
Impact Fees	(TBD)				
		<del></del>			
	(TDD)				
Cap Fees	(TBD)				
Development Agreement		<del></del>			
Proposed:	□ Yes	□ No	(TBD)	)	
If Yes Endorsed	□ Yes	Date		□ No	

Twenty one (21) days prior to Planning Board Meeting, a complete <u>subdivision plan</u> to include all supporting materials/documents must be submitted in final form. The subdivision plan shall comply with the following specifications/requirements:

Applicant Initials		Staff Initials
_KDa)	Submission of eight (8) full sets of Site Plans (sheet size: 22" x 34") shall be submitted at the time of application filing, followed by the submission of seventeen (17) 11" X 17" plan sets (revised if applicable) to the Community Development Department no later than 10:00 A.M. Tuesday the week prior to the scheduled public hearing/conceptual review date.	
_KD_ <b>b</b> )	Seventeen (17)-subdivision narratives, describing the project.	
<u>KD</u> c)	Plan scale at not less than one inch equals fifty feet (example: 1" = 50' acceptable).	
KD <b>d</b> )	Locus plan with 1,000 minimum radius of site to surrounding area.	
KDe)	Plan dated by day/month/year.	
KD <b>f)</b>	Revision block.	
KDg)	Planning Board approval block.	
KD <b>h</b> )	Title of project inscribed on plan.	
KD i)	Name(s) and address of property owner(s) and signature(s) shall be inscribe on plan.	ed
KDj)	North point shall be inscribed on plan.	
_KD_ <b>k</b> )	Property lines-exact locations and dimensions.	
<u>kd</u> 1)	Acreage/sq. ft. of entire subdivision.	
KDm)	Proposed lots, with lot numbers and area of each lot. Note: each proposed Lot shall be listed on the plan, in chart form, indicating in square feet/acreage the total lot area, wetland, slope area greater than 25% and total net contiguous useable upland area.	
	(Waiver requested for residual area of parent tract)	

Applicant Initials		Staff Initials
<u>KD</u> n)	Certified list of names and addresses of bordering abutters, shown on Tax Assessor's records not more than five (5) days prior to application date to be listed on plan.	
<u>KD</u> o)	Location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve area, floodways/floodplains, driveways, travel areas, parking area natural features within 200 feet of the tract.	s,
KDp)	Locations of existing and proposed permanent monuments and benchmarks within 200 feet of the tract.	
N/Aq)	Pertinent highway projects.	
KDr)	Assessor map and lot number. (Assignment of lot numbers pending)	
KDs)	Waiver application form shall be submitted with subdivision application, Note on plan listing waivers requested/granted; and all waivers granted to the subdivision regulations shall be listed on the final plan.	
KDt)	Delineate zoning.	
KD <b>u)</b>	Storm water drainage plan.	
KDv)	Topographical contours at 2-foot intervals existing and proposed.	
KDw)	Utilities: existing and proposed.	
KD <b>x</b> )	Building and wetland setback lines.	
KDy)	Rights of way, existing and proposed.	
N/A_ z)	Location of dedicated recreational public use land(s) proposed.	
N/A aa)	Detailed designs of bridges and culverts.	
KD ab)	Typical roadway cross-section, road profile, stationing, and curve data, etc.	

Applican Initials	t		Staff Initials
(municipal) a	ŕ	Proposed location of water supply and sewage disposal systems, including perk test data, test-pit logs and locations; wells, (proposed and existing) 75' protective well radii and attached copies of any required well protection easements.	
KD ;	ad)	All notes from plats.	
N/A	ae)	Buffers as required by subdivision regulations.	
<u>KD</u>	af)	Soil types and boundaries, Note: If site contains marginal or questionable soils, a High Intensity Soil Survey (HISS) may be deemed necessary to submit as part of the application. Said HISS, if required, shall be performed by a State of New Hampshire Certified Soil Scientist, who shall affix his/her stamp and signature and this shall be inscribed on the plan.	
KD	ag)	Wetlands (and poorly-drained and very poorly-drained soils), also identified as Class 5 and Class 6 High Intensity Soil Survey (HISS soils), and permanent and seasonal wetlands shall be identified on the plan by a New Hampshire Certified Wetland or Soil Scientist, who shall affix his/her stamp and signature to the respective plan.	
KD	ah)	Easements, existing and proposed.	
<u>KD</u>	ai)	State of New Hampshire Engineer's seal and signature. Surveyor's seal and signature.	
KD	_aj)	Error of closure (1 in 10,000 or better).	
KD	_ak)	Drafting errors/omissions.	
KD	_al)	Note outlining phasing schedule.	
KD	_ am)	Narrative description stating the purpose, location, long range plans impacts on traffic, schools, and utilities.	
(GIS)	_an)	Aerial photograph of site and area within 200 feet of the subdivision parcel.	
N/A	ao)	Fiscal impact study.	
KD	ap)	Traffic study.	<u></u>
N/A	(ne	Drainage calculations and supporting data.	

Applicant Initials		Staff Initials
(TBD) ar)	Copies of any proposed or existing easements, covenants, deed restrictions, right of way agreements or other similar documents.	
KDas)	Copy of applicable town, state, federal approval/permits to include but not limited to the following:	
	<ul> <li>sewer applications -pending via site plan app</li> <li>flood plain permit</li> <li>wetlands special exception -pending</li> <li>variance</li> <li>erosion control permit (149:8a) -see site plans</li> <li>WSPCC subdivision approval (septic)</li> <li>dredge and fill permit</li> <li>eurb cut/driveway permit</li> <li>shore land protection certification in accordance with RSA483-B.</li> <li>if applicable, review application with Lower Merrimack River Local Advisory Committee (LMRLAC) and attach LMRLAC project</li> <li>comments hereto. (all work is &gt;2,000 ft from river)</li> </ul>	
N/A at)	Off-site agreement(s).	
KD au)	Presentation plan (colored, with color-coded bar chart).	
KDav)	Fees paid to clerk.	
<u>N/A</u> aw)	Plans that include relocation of lot lines shall clearly delineate the former (old) lot lines from proposed (new) lot lines.	
• Any or a	all items may be waived under the purview of the Planning Board.	

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

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

ţ.	Signature of Owner:  New Pure 1  If other than an individual indicate napre of organization and its principal owner, partners, or corporate officers.
• <b>*</b> •	Signature of Developer:  The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The Code Enforcement Officer/Building Inspector must be notified within two (2) working days of any change by the individual in charge of the project.
	Technical Review Signature:
	Planner Approval Signature:

## SUBDIVISION/SITE PLAN WAIVER REQUEST FORM

Name of Subdivision/Site Plan:	
Street Address:	
	hereby request that the Planning Board waive
the requirements of item	of the Subdivision/Site Plan Checklist in reference
	(name of surveyor and engineer) dated
	map(s) and lot(s)
provisions set forth in RSA 674-36 II (n) i.e.	knowledge that this waiver is requested in accordance with the without the Planning Board granting said waiver, it would posent), and the granting of this waiver would not be contrary to the gulations.
documentation hereto):	(if additional space is needed please attach the appropriate
Reason(s) for granting this waiver, relative to r	not being contrary to the Spirit and Intent of the Subdivision/Site
	please attach the appropriate documentation hereto):
	Signed:  Applicant or Authorized Agent  DULY ADMORIZED SY PRESER !
Planning Board Action:	
Waiver Granted	
Waiver Not Granted	

## SCHEDULE OF FEES

## A. <u>REVIEW FEES</u>

]	1. $$170.00 \text{ per lot}$ Apartment lot + parent lot + residual nonbuildable lot = 3 x \$170	\$ <u>_</u> 5	10.00
2	2. Consultant review fee:(separate check) Linear feet of roadway (including cul-de-sac). Length of roadway 1,150 feet, @ \$1.25 per linear foot or \$1,250.00, which This is an estimate for the cost of consultant review. The fee is expected to cor A complex project may require additional funds. A simple project may result in the cost of consultant review.	in a r	ic amount.
	<u>Legal Fees.</u> The applicant shall be charged attorney costs billed to the Town for Town's of any application plan set documents.	attor	ney review (TBD)
	3. Conceptual Review Only - \$100.00	\$	N/A
	4. ZBA Input Only - \$100.00	\$	N/A
В.	POSTAGE		
	Current "certified mail" postage rate per abutter to proposed site plan and current first class postage rate per property owner within 200 feet of proposed site plan.  \$6.85  abutters @ \$6.74 (certified mail) \$0.55 property owners within 200 feet @\$.49 (first class)	\$_ \$_	260.30 9.90
C.	ON SITE SIGNS	\$_	15.00
D.	ADVERTISING  (PUBLIC NOTICE) For all subdivisions	\$	40.00
E.	TAX MAP UPDATE FEE		
	2 to 7 lots (# of lots x \$30.00) + \$25.00 (min. \$85.00) (3 x \$30) + \$25 8 lots or more (min. \$325.00)	<b>\$</b> . <b>\$</b> .	115.00 N/A
	TOTAL	\$	2,387. <b>9</b> 0

# SCHEDULE OF FEES (CONTINUED)

**************************************						
****			1 1			
AMOUNT DUE	\$ 338790	DATE RECEIVED	5 219			
AMOUNT RECEIVED	\$2387.90	RECEIPT NO.	549,004 4			
		RECEIVED BY	brookl			
F. RECORDING FEES						
The applicant shall pay th recording, in accordance	e costs of recording the with fees established by	e final plan layout pric y the County.	or to final subdivision			
Recording of Plan	@ \$24.00/sheet		\$			
Land & Community Heritag	+ \$2.00/surcharge/Pl ge Investment Program (I	CHIP) fee \$25.00	\$			
Easements/Agreements (if applicable)	@ \$10.00/first sheet @ 4.00/each sheet th + \$2.00/sucharge/do + first class return pe	nereafter oc.	\$ \$ \$ \$			
TOTAL			\$			

<u>PLEASE NOTE:</u> Recording fees shall be computed when plans are finalized for recording. The applicant must pay recording fees prior to recording.

The applicant shall be responsible for all fees incurred by the Town for processing and review of the applicant's application, plan, and related materials. All such fees must be paid prior to recording.

# G. COST ALLOCATION PROCEDURE AMOUNT CONTRIBUTION AND OTHER IMPACT FEE PAYMENTS

To be determined by vote of the Planning Board and paid by the applicant at the time of submittal of the Certificate of Occupancy Permit request ,subject to annual inflation as permitted by the impact fee methodology.

#### FOOTNOTES:

- 1. In the event of the denial of a plan, the recording fees collected will not be reimbursed, but will instead be used as an additional fee to help defray administrative costs associated with a denial.
- 2. The "Review Fees" are fees (estimated) necessary to offset costs incurred to review and/or compile plans, data, or other information relative to the proposal.
- 3. The "Amount Due" does not include fees for studies or reviews as authorized in Section G-2 of this regulation.
- 4. Fees must be paid in full prior to the commencement of any formal subdivision review performed by the Town of Hudson.

STATUS:		<u>DATE:</u>
1.	Application incomplete	
2.	Application complete. Include any applicable requested waivers, fees paid, routing sheet returned	
3.	Application formally accepted or denied by Planning Board.	
4.	Final approval granted or denied	
5.	Comments	

## LIST OF ABUTTERS (See attached list & labels)

List of all the names and addresses of the owner(s) of record of the property and abutters, as of the time of the last assessment for taxation made by the concerned property by a street(s), public land(s) or stream(s) up to distance of 200 feet from subject tract.

## I. ADJACENT PROPERTY OWNERS

MAP	LOT	NAME	ADDRESS
MAP	LOT	NAME	ADDRESS
MAP	LOT	NAME	ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP	LOT	NAME	ADDRESS
MAP_	LOT _	NAME	ADDRESS
MAP _	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
		OWNERS WIT	
MAP	LOT _	NAME _	ADDRESS
MAP	LOT_	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS
MAP	LOT _	NAME _	ADDRESS

Page 16 of 16 Rev: Aug 2015

## RE: 161 Lowell Road, Hudson, NH/Dakota Partners, LLC

To Whom It May Concern:

l, Peter Horne, am Trustee of the 5 Way Realty Trust which is owner of the above-referenced property. Please accept this letter as written authorization for Dakota Partners, LLC and any of their representatives, including Mark Pilotte and/or Roberto Arista, to sign applications and other documents and otherwise proceed with land use permitting for a multifamily rental project at 161 Lowell Road, Hudson, NH. I will be unavailable for the month of April and wish to authorize Dakota Partners, LLC to sign all applications and proceed as necessary.

Sincerely, Horne

Peter Horne

#### **Abutter Notification Labels**

#### April 30, 2019 161 Lowell Road, Hudson NH 3051 Parcel 209-001

Page 1 of 2

Town of Hudson 12 School Street Hudson, NH 03051 Richard W. Olson Lisa A. Olson 18 Hickory Street Hudson, NH 03051 Pamela M. Chartrand Donald J. Chartrand 24 Hickory Street Hudson, NH 03051

Gregory Al Nelson Lee Ann Nelson 8 Hickory Street Hudson, NH 03051 Charles Boissonneault Mary Boissonneault 20 Hickory Street Hudson, NH 03051

Victor Gomez 26 Hickory Street Hudson, NH 03051

Philip J. MacSweeney Joan M. MacSweeney 10 Hickory Street Hudson, NH 03051 Donald H. Ouellette Deborah Ouellette 22 Hickory Street Hudson, NH 03051 Jonathan D. Davis Dorothy A. Davis 7 Juniper Street Hudson, NH 03051

Todd R. Newcombe
Dina M. Fagundes-Newcombe
12 Hickory Street
Hudson, NH 03051

Thomas J. Leonard, Esq. Welts, White & Fontaine, P.C. 29 Factory Street Nashua, NH 03060 Dale Seiberg Susan Seiberg 5 Juniper Street Hudson, NH 03051

Timothy Coulter Barbara Coulter 14 Hickory Street Hudson, NH 03051

Evan C. Goduco 43 Cottonwood Drive Hudson, NH 03051 James F. Queenan Sheila A. Queenan 47 Cottonwood Drive Hudson, NH 03051

James M. Hulse, Trustee
Denise M. Hulse, Trustee
Hulse Joint Revocable Trust
16 Hickory Street
Hudson, NH 03051
DBV, Inc.
c/o Walter Flowers
15 Court Square, #340

Joseph W. Schmitt, Trustee Schmitt Revocable Trust 19 Hickory Street Hudson, NH 03051 Arlene M. Creeden, Trustee Creeden Living Trust 17 Murphy Circle Middletown, RI 02842

John J. Creeden, III Trustee

Fox Hollow Condo Assoc. c/o Great North Property Mgmt PO Box 65434 Houston, TX 77210-5434

Boston, MA 02108

Michael P. Rice 9 Hickory Street Hudson, NH 03051 Lowell Road, LLC PO Box 1435 North Hampton, NH 03862

Rosemarie J. Boyer Rev. Trust Rosemarie J. Boyer Trustee 65 Plateau Ridge Road Loudon, NH 03307 Zachary S. Phillips 7 Hickory Street Hudson, NH 03051 Patrick I. Cowan 153 Lowell Road Hudson, NH 03051

Rupert & Alice Tate, Trustees
Rupert E. Tate and Alice E. Tate RT
7 Prince Drive
Hudson, NH 03051

Yue Yun Zheng Zhou Deng Zheng 4 Paula Circle Hudson, NH 03051 Boyer Associates 65 Plateau Ridge Road Loudon, NH 03307

Matrix Realty, LLC 9389 Waples Street San Diego, CA 92121

CDC Realty Group, Inc. 175 Lowell Road Hudson, NH 03051

171 JMJ Realty LLC 171 Lowell Road Hudson, NH 03051

Presentation of Mary Convent 182 Lowell Road Hudson, NH 03051

> Cheryl A. Savard Christine M. Savard 6 Hickory Street Hudson, NH 03051

Dakota Partners LLC Mark Pilotte 1264 Main Street Waltham, MA 02451

Luke Hurley, CWS
Gove Environmental Services Inc.
8 Continental Drive, Bldg 2, Unit H
Exeter, NH 03833

David J. Lafond, President Fox Hollow Condo Assoc. 421 Fox Hollow Drive Hudson, NH 03051

Farley White Hudson, LLC 1 Bedford Farms Drive, Suite 200 Bedford, NH 03110

Harry M. Haytayan, Trustee Harry M. Haytayan Revocable Trust 17 Friars Drive Hudson, NH 03051

> Paul E. Gregoire Jean Gregoire 173 Lowell Road Hudson, NH 03051

Mark J. Scanlon Carol A. Scanlon 11 Hickory Street Hudson, NH 03051

Michael Martinez
Great North Property Management
636 DW Highway
Merrimack, NH 03054

Karl Dubay, PE The Dubay Group, Inc. 84 Range Road Windham, NH 03087 Joseph Martin Lindsay Lemieux 17 Hickory Street Hudson, NH 03051

Jennifer Garneau 13 Hickory Street Hudson, NH 03051

Richard H. Charbonneau Mark Charbonneau c/o R and M Realty 1 Continental Drive Londonderry, NH 03053

David Tavares 41 Cottonwood Drive Hudson, NH 03051

Katlyn Pearl Deluca Nicholas Adam Burns 15 Hickory Street Hudson, NH 03051

5 Way Realty Trust
Peter Horne, Trustee
PO Box 1435
North Hampton, NH 03862

Tim Sutherland, LLS
The Dubay Group, Inc.
84 Range Road
Windham, NH 03087

RECEIVED "

## PRELIMINARY & FINAL SITE PLAN APPLICATION FOR PLAN REVIEW (Also for Wireless) TOWN OF HUDSON, NEW HAMPSHIRE

APR 3 0 2019

TOWN OF HUDSON PLANNING DEPARTMENT

Date of Application: 4/29/2019	PLANNING DI Tax Map # Lot #
Name of Project: Friars Court	
	General SP# (For Town Use)
ZBA Action:	
PROPERTY OWNER:	DEVELOPER:
Name: 5 Way Realty Trust, Peter Horne, Trus	stee Dakota Partners, Inc. (authorized agent)
Address: PO Box 1435	1264 Main Street
Address: North Hampton, NH 03862	Waltham, MA 02451
Telephone # (use authorized agent)	781-889-4002
Fax # (use email)	(use email)
Email: (use authorized agent)	mpilotte@dakotapartners.net
PROJECT ENGINEER	SURVEYOR
Name: Karl Dubay, PE	Tim Sutherland, LLS
	pay Group, Inc.
Address: 84 Rang	ge Road, Windham, NH 03087
Telephone # 603-458	8-6462
Fax # (use em	nail)
	hedubaygroup.com
PURI Develop vacant lot into multifamily aparts Phase 1 = 47 unit building Phase 2 = 34 unit building and clubhouse	
Plan Routing Date: 5/2/19	Sub/Site Date: 5/98/19
I have no comments I	have comments (attach to form)
Title:	Date:
DEPT: Zoning Engineering Consultant Highway I  Fees Paid: 14,733.30	_Assessor Police Fire Planning Department

# PLANNING BOARD NOTICE TO SITE PLAN APPLICANTS

The following information is required to be filed with the Community Development Department at the time of site plan application.

Note: An appointment is required to file applications.

- 1. One original and one copy of the completed application.
- 2. Submission of eight (8) full sets of Site Plans (sheet size: 22" x 34") shall be submitted at the time of application filing, followed by the submission of seventeen (17) 11" X 17" plan sets (revised if applicable) to the Community Development Department no later than 10:00 A.M. Tuesday the week prior to the scheduled public hearing.
- 3. One (1) copy of the project narrative, describing the project, shall be attached to each submitted plan set.
- 4. All plans shall be folded and all pertinent data shall be attached to the plans with an elastic band.
- 5. All plan revisions and supporting documentation must be submitted to the Community Development Department no later than 10:00 A.M., Tuesday the week prior to the scheduled Planning meeting.
- 6. Five (5) 22" x 34" copies of the plan shall be brought to the Planning Board meeting and distributed to the Planning Board members at the meeting.
- 7. Three (3) sets of mailing labels for abutter notifications.
- 8. Applications and plans shall be made in writing and by electronic filing (in pdf format).
- 9. Applications shall include the submission of a Zoning Determination prepared by the Zoning Administrator.

# 2012 SITE PLAN APPLICATION FEES

TOAL AID	TAIONA	ACCOUNT
Consultant Review	The second secon	in a superior of the superior
	\$600.00/acre of total lot area* or \$1,250.00 (whichever is greater)* *Estimated cost, billing based on actual hours expended multiplied by hourly rates, plus expenses	1350-**
Town General Review Fees/Application Fee		
Multi-Family	\$105.00/unit for 3-50units;	
Commercial/Semi-Public/Civic/Recreational	\$157.00/1,000 sf. for first 100,000 sf of bldg. area; \$78.50/1,000 sf thereafter	GEN 4313
Industrial	\$150.00/1,000 sf for first 100,000 sf of bldg. area; 78.50/1,000 sf thereafter	
No-Buildings	\$30.00 per 1,000 sf of proposed developed area	
Conceptual Review	\$100.00	GEN 4313
ZBA Input	\$100.00	GEN 4313
On Site Signs	\$15.00	GEN 4313
Advertising	340.00 (nat rec)	CLCT ALL
Tax Map Updating	\$275.00 (flat fee)	1312-505
Postage	USPS Current Rates	GEN 4313
Recording Fees		
Plan	\$24.00/sneet + \$2.00 surchange \$10.00/ first sheet \$4.00 thereafter+ \$2.00 surcharge	
Easements	+ first class postage (fees dictated by HCRD) \$25.00	GEN 4313
	Land & Community Heritage Investment Program	
- Made of the second of the se		

Page 2 of 16 Rev Aug 2015

### SITE DATA SHEET

PLAN NAME: Friars Court	
PLAN TYPE: <u>SITE PLAN</u>	
LEGAL DESCRIPTION: MAP_	209 LOT 1
Location by Street	161 Lowell Road
Zoning:	Business
Proposed Land Use:	Apartment Complex
Existing Use:	N/A
Surrounding Land Use(s):	Mixed
Number of Lots Occupied:	
Existing Area Covered by Building:	N/A
Existing Buildings to be removed:	N/A
Proposed Area Covered by Building:	27,457 SF
Open Space Proposed:	N/A
Open Space Required:	N/A
Total Area:	S.F.: 486,699 Acres: 11.17
Area in Wetland:	35,925 Area Steep Slopes: 2,000
Required Lot Size:	53,560 + (5,000 x 78) = 443,560
Existing Frontage:	758
Required Frontage:	150 LF (min)
Building Setbacks:	Required* Proposed
Front: Side: Rear:	50     61       15     58       15     46

# SITE PLAN DATA SHEET (Continued)

Flood Zone Reference:	N/A FEMA 33011C06	56D 9/25/2009		
Width of Driveways:	24 ft (min)			
Number of Curb Cuts:	I (rebuild existing)			
Proposed Parking Spaces:	162 = 2 per unit. Waiv	ver requested for 1.5 per unit t	o be construct 0.5 per unit t	ted with be predesigned
Required Parking Spaces:	2 per unit @ 81 = 162		•	
Basis of Required Parking (Use):	(apartment unit)			
Dates/Case #/Description/Stipulation of ZBA, Conservation Commission, NH Wetlands Board Actions: (Attach stipulations on separate sheet)	· V			
	on Town Code	Regulation Descriptio	13	
1. 275~ 2. 3. 289 4. 276 5. 6. 7.	8.62.0	Z SPACES PER UM  EONO STEMPERADO  EXISTING CUMOIT	FOR COMMINICAL DATA	
Impact Fees: C.A.P Fee: (to b	e determined)			
Development Agreement Proposed: (ref	er to required legal docum	enls)	ng ar ás á.) 26, de það 114	
and the last that the last the last that had been been that the last last last left per last that the last last last last last last last last	For Town Use			
Data Sheet Checked By:		Date:		

Thirty (30) days prior to Planning Board Meeting, a complete <u>site plan</u> to include all supporting materials/documents must be submitted in final form. The site plan shall comply with the following specifications/requirements:

Applicar Initials	nt		Staff Initials
KÐ	(a)	Submission of nine (9) full sets of Site Plans (sheet size: 22" x 34") shall be submitted at the time of application filing, followed by the submission of seventeen (17) 11" X 17" plan sets (revised if applicable) to the Community Development Department no later than 10:00 A.M., Tuesday the week prior to the scheduled public hearing/conceptual review date.	nt
<u>KD</u>	_b)	A Site Plan narrative, describing the purpose, locations, long-range plans, impacts on traffic, schools, and utilities	
KD	(c)	Plan scale at not less the one inch equals fifty feet $(1" = 50")$	***************************************
<u>KD</u>	d)	Locus plan with 1,000' minimum radius of site to surrounding area	
KD	_e)	Plan date by day/month/year	
KD	_f)	Revision block inscribed on the plan	
KD	_g)	Planning Board approval block inscribed on the plan	
KD	_ h)	Title of project inscribed on the plan	
KD	_ i)	Names and addresses of property owners and their signatures inscribed on the plan	
KD	_j)	North point inscribed on the plan	
KD	_ k)	Property lines: exact locations and dimensions	
KD	_1)	Square feet and acreage of site	***************************************
KD	_ m)	Square feet of each building (existing and proposed)	
KD	_ n)	Names and addresses of bordering abutters, as shown on Tax Assessor's records not more than five (5) days prior to application date to be listed on the plan.	

Applicant Initials		Staff Initials
<u>KD</u> o)	Location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve areas, floodways/floodplains, driveways, travel areas, parking areas and natural features within 200 feet of the tract	
KDp)	Locations of existing and proposed permanent monuments and bench marks within 200 feet of the development tract	
KDq)	Pertinent highway projects	
KD r)	Assessor's Map and Lot number(s)	
<u>KD</u> s)	Waiver application form shall be submitted with the site plan application, note on plan listing waivers requested/granted; and all waivers granted to the site plan regulations shall be listed on the final plan; waivers to checklist shall be reduced to writing and be signed by the Planning Board Chairman and Planning Board Secretary and recorded with the plan	
KDt)	Delineate zoning district on the plan	
KDu)	Storm water drainage plan	
KDv)	Topographical elevations at 2-foot intervals contours: existing and proposed	
_KD_w)	Utilities: existing and proposed	
KDx)	Parking: existing and proposed	
<u>KD</u> y)	Parking space: length and width	
_KD_z)	Aisle width/maneuvering space	
KD aa)	Landscaping: existing and proposed	
KD ab)	Building and wetland setback lines	, <u>.</u>
KD ac)	Curb cuts	
KD ad)	Rights of way: existing and proposed	
_KD_ ae)	Sidewalks: existing and proposed	
KD af)	Exterior lighting plan	
KD ag)	Sign locations: size and design	
KD ah)	Water mains and sewerage lines	
<u>KD</u> ai)	Location of dumpsters on concrete pads	
_KD_ aj)	All notes from plats	

Applicant Initials		Staff Initials
N/A_ ak)	Buffer as required by site plan regulations	
<u>KD</u> al)	Green and open space requirements met with both types of spaces inscribed on the plan	
KD am)	Soil types and boundaries, Note: If site contains marginal or questionable soils, a High Intensity Soil, Survey (HISS) may be deemed necessary to submit as part of the application. Said HISS, if required, shall be perform by a State of New Hampshire Certified Soil Scientist, who shall affix his her stamp and signature shall be inscribed on the plan.	ned
KD an)	Wetlands (and poorly-drained and very poorly-drained soils, also identified as Class 5 and Class 6 High Intensity Soil Survey (HISS soils), and permanent and seasonal wetlands shall be identified on the plan by a Ne Hampshire certified wetland or soil scientist, who shall affix his/her star and signature to the respective plan.	w
KDao)	"Valid for one year after approval" statement inscribed on the plan.	
N/A_ ap)	Loading bays/docks	
KD aq)	State of New Hampshire engineer's stamp, signature, surveyor's stamp, and signature	
KDar)	Error of closure (1 in 10,000 or better)	
KD_as)	Drafting errors/omissions	
KD at)	Developer names, addresses, telephone numbers and signatures	
(GIS) au)	Photographs, electronic/digital display or video of site and area	
KD av)	Attach one (1) copy of the building elevations	
(TBD) <b>aw)</b>	Fiscal impact study	
KDax)	Traffic study	
N/A_ ay)	Noise study	

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

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

Signature of Owner:

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

Signature of Developer:

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

APPLICATION IS DUE AT NOON 21 days prior to the Planning Board Meeting. (The date the Agenda is <u>CLOSED</u>.) Any applications received after that time will be deferred until the next available meeting.

# SUBDIVISION/SITE PLAN WAIVER REQUEST FORM

Name of Subdivisi	ion/Site Plan: Fclass	(cont				
Street Address:	• · · · · · · · · · · · · · · · · · · ·	- po				
I	KOM DUBAY		hereby reque	st that t	he Planning	Board
waive the requir	ements of item 289-17.	4 4 21	<b>ラーン</b> of th	he Sub	division/Site	e Plan
	ence to a plan presented by					_
		_ (name			engineer)	dated
	for property tax	map(s)	209-1		and	lot(s)
		in	the Town of Hu	dson, N	IH.	
with the provision waiver, it would waiver would not Hardship reason(s	ioned applicant, I, herein, acknown set forth in RSA 674:36, II pose an unnecessary hardship be contrary to the spirit and interest for granting this waiver (if adverteo):	(n), i.e., upon me ent of the S Iditional sp	(the applicant), Subdivision/Site	nning E and the Plan re ease att	ne granting gulations.  ach the appropriate the approximate th	of this
289-17.4	LOT REDVIRGINGUTS	for to	TC - UN	Jane Jan	DAGUE	<u> </u>
	supplemental proper Road width, cur trive cond rec	ity to	be covered	170 d	VE 3	Soler Soler
289-28	Road moth, con	bhy ,	free - br	WE!	0)	II Com
	Drive road Fee	MITHU	MAN TO	W0010	E MECC	11 J.P.(U\
	connectivity pe	- Du	/ Ledas?	)		
Subdivision/Site documentation he	ryplemental resulting	hal space	is needed plea	se atta	ch the app	
Par I am	which peclaim	is ph	ye 1 /2a	6 4	ide ex	it she
dahare)	md warld be for		pandeda	+4	ne thre	of
Etine &	Levelyment.		<b>'</b> 」)		-	•
40	·	Signed:	(TX)	4		
				,		
		Applicat	nt or Authorized	Agent	Kope D	KK
		Applica	at or Authorized	Agent	kope d	MAY
Planning Board		Applicat	nt or Authorized	Agent	kope d	M
Planning Board Waiver Granted Waiver Not Gra			nt or Authorized	Agent	kope d	M

Page 11 of 16 Rev Aug 2015

### **FOOTNOTES:**

- 1. In the event of the denial of a plan, the recording fees collected will not be reimbursed, but will instead be used as an additional fee to help defray administrative costs associated with a denial.
- 2. The "Review Fees" are fees estimated necessary to offset costs incurred to review and/or compile plans, data, or other information relative to the proposal.
- 3. The "Amount Due" does not include fees for studies or reviews as authorized in Section G-2 of this regulation.
- 4. Fees must be paid in full prior to the commencement of any formal review by the Town of Hudson.

STATUS:		DATE:
1.	Application incomplete	
2.	Application complete. Include any applicable requested waivers, fees paid, routing sheet returned	
3.	Application formally accepted or denied by Planning Board (90-day review clock by RSA 674:43 to start upon acceptance granted)	
4.	Final approval granted or denied	
5.	Comments:	

## SCHEDULE OF FEES

A.	Review	Fees

1.	Site Plan Use	<u>Project Size/Fee</u> (\$105 x 50) + (\$78.50 x 31)									
	Multi-Family	sulti-Family \$105/unit for 3-50 units \$78.50/unit for each additional unit over 50									
	Commercial/Semi Public/	Civic or Recreational \$157/1,000 sq. ft. for first 100,000 sq.ft. (bldg area): \$78.50/1,000 sq.ft. thereafter.	\$_N/A								
	Industrial	\$150/1,000 sq.ft for first 100,000 sq.ft. (bldg. area);\$78.50/1,000 sq.ft thereafter	\$ <u>N/A</u>								
	No Buildings	\$30.00 per 1,000 sq.ft. of proposed developed area	\$_ N/A								
	Plus Consultant Review	Fee:									
	Total 11.2 acres (per acre or \$1,250.00, wh	\$6,720									
	is expected to cover the a	st of consultant review. The fee mount. A complex project may A simple project may result in a									
	Legal Fee: The applicant shall be chattorney review of any applicants	arged attorney costs billed to the Town oplication plan set documents. (TBD)	for the Town's								
2.	Conceptual Review Only \$100.00	,	\$N/A								
3.	ZBA Input Only \$100.00		\$ N/A								

# SCHEDULE OF FEES (Continued)

В.	<u>Postage</u>			
	Current "certified mail" posta Site Plan and current first cla Owner within 200 feet of pro	ss postage rate per prope	oposed erty are covered under the Subdivision Application)	
	Abutters @\$6.74 (Ce	ertified Mail)	\$	
	Property owners with @.49 (First class)	nin 200 feet	\$	•
C.	On Site Signs		\$ 15.00 H.D (Short Ke)	4
D.	Advertising (PUBLIC NOT	ICE) For all site plans	\$40.00	
E.	Tax Map Updating Fee	(FLAT FEE)	\$275.00	
		TOTAL	\$14,733 <b>3</b> 0	
	OUNT DUE \$_\frac{1}{4}	For Town Use  133.30 DATE RECEIPT NO RECEIVED F	10. 54 <u>9.004</u> \$	
F.	Recording Fees			
	The applicant shall pay the c site plan approval, in accord	costs of recording the fina ance with fees established	nal site plan layout prior to final ed by the County.	
	Recording of Plan  Land & Community Heritage 1 (LCHIP) fee		\$ an \$ \$	
	Easements/Agreements (if applicable) Thereafter +\$2.00/surcharge +First Class return postage:	@\$10.00/first sheet @\$ 4.00/each sheet e/doc.	\$ \$ \$	
	TOTAL		\$	
	= V 11224			

## SCHEDULE OF FEES (Continued)

<u>PLEASE NOTE:</u> RECORDING FEES SHALL BE COMPUTED WHEN PLANS ARE FINALIZED FOR RECORDING. RECORDING FEES MUST BE PAID BY THE APPLICANT PRIOR TO RECORDING.

THE APPLICANT SHALL BE RESPONSIBLE FOR ALL FEES INCURRED BY THE TOWN FOR PROCESSING AND REVIEW OF THE APPLICANT'S APPLICATION, PLAN AND RELATED MATERIALS. ALL SUCH FEES MUST BE PAID PRIOR TO RECORDING.

## E. <u>COST ALLOCATION PROCEDURE AMOUNT CONTRIBUTION AND</u> OTHER IMPACT FEE PAYMENTS:

TO BE DETERMINED BY VOTE OF THE PLANNING BOARD AND SHALL BE PAID BY THE APPLICANT AT THE TIME OF SUBMITTAL OF CERTIFICATE OF OCCUPANCY PERMIT REQUEST.

## LIST OF ABUTTERS

(See attached list & labels)

List of all the names and addresses of the owner (s) of record of the property and abutters, as of the time of the last assessment for taxation made by the concerned property by a street(s), public land(s) or stream(s) up to distance of 200 feet from subject tract.

## I. ADJACENT PROPERTY OWNERS

II.

MAP _	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
			ADDRESS
MAP _	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
			ADDRESS
			ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
PROPI	ERTY OWNERS	WITHIN 200	FEET
MAP_	LOT	NAME	ADDRESS
MAP_	LOT	NAME	ADDRESS
			ADDRESS
MAP_	LOT	NAME	ADDRESS
			ADDRESS
MAP	LOT	NAME	ADDRESS
			ADDRESS
MAP	LOT	NAME	ADDRESS
MAP	LOT	NAME	ADDRESS

## RE: 161 Lowell Road, Hudson, NH/Dakota Partners, LLC

To Whom It May Concern:

I, Peter Horne, am Trustee of the 5 Way Realty Trust which is owner of the above-referenced property. Please accept this letter as written authorization for Dakota Partners, LLC and any of their representatives, including Mark Pilotte and/or Roberto Arista, to sign applications and other documents and otherwise proceed with land use permitting for a multifamily rental project at 161 Lowell Road, Hudson, NH. I will be unavailable for the month of April and wish to authorize Dakota Partners, LLC to sign all applications and proceed as necessary.

Sincerely, Horne

Peter Horne

#### **Abutter Notification Labels**

## April 30, 2019 161 Lowell Road, Hudson NH 3051 Parcel 209-001

Page 1 of 2

Town of Hudson 12 School Street Hudson, NH 03051

Gregory Al Nelson Lee Ann Nelson 8 Hickory Street Hudson, NH 03051

Philip J. MacSweeney Joan M. MacSweeney 10 Hickory Street Hudson, NH 03051

Todd R. Newcombe
Dina M. Fagundes-Newcombe
12 Hickory Street
Hudson, NH 03051

Timothy Coulter Barbara Coulter 14 Hickory Street Hudson, NH 03051

James M. Hulse, Trustee
Denise M. Hulse, Trustee
Hulse Joint Revocable Trust
16 Hickory Street
Hudson, NH 03051
DBV, Inc.

DBV, Inc. c/o Walter Flowers 15 Court Square, #340 Boston, MA 02108

Fox Hollow Condo Assoc. c/o Great North Property Mgmt PO Box 65434 Houston, TX 77210-5434

Rosemarie J. Boyer Rev. Trust Rosemarie J. Boyer Trustee 65 Plateau Ridge Road Loudon, NH 03307 Richard W. Olson Lisa A. Olson 18 Hickory Street Hudson, NH 03051

Charles Boissonneault Mary Boissonneault 20 Hickory Street Hudson, NH 03051

Donald H. Ouellette Deborah Ouellette 22 Hickory Street Hudson, NH 03051

Thomas J. Leonard, Esq. Welts, White & Fontaine, P.C. 29 Factory Street Nashua, NH 03060

> Evan C. Goduco 43 Cottonwood Drive Hudson, NH 03051

Joseph W. Schmitt, Trustee Schmitt Revocable Trust 19 Hickory Street Hudson, NH 03051

> Michael P. Rice 9 Hickory Street Hudson, NH 03051

Zachary S. Phillips 7 Hickory Street Hudson, NH 03051

Rupert & Alice Tate, Trustees
Rupert E. Tate and Alice E. Tate RT
7 Prince Drive
Hudson, NH 03051

Pamela M. Chartrand Donald J. Chartrand 24 Hickory Street Hudson, NH 03051

Victor Gomez 26 Hickory Street Hudson, NH 03051

Jonathan D. Davis Dorothy A. Davis 7 Juniper Street Hudson, NH 03051

Dale Seiberg Susan Seiberg 5 Juniper Street Hudson, NH 03051

James F. Queenan Sheila A. Queenan 47 Cottonwood Drive Hudson, NH 03051

John J. Creeden, III Trustee Arlene M. Creeden, Trustee Creeden Living Trust 17 Murphy Circle Middletown, RI 02842

Lowell Road, LLC PO Box 1435 North Hampton, NH 03862

> Patrick I. Cowan 153 Lowell Road Hudson, NH 03051

Yue Yun Zheng Zhou Deng Zheng 4 Paula Circle Hudson, NH 03051 Boyer Associates 65 Plateau Ridge Road Loudon, NH 03307

Matrix Realty, LLC 9389 Waples Street San Diego, CA 92121

CDC Realty Group, Inc. 175 Lowell Road Hudson, NH 03051

171 JMJ Realty LLC 171 Lowell Road Hudson, NH 03051

Presentation of Mary Convent 182 Lowell Road Hudson, NH 03051

> Cheryl A. Savard Christine M. Savard 6 Hickory Street Hudson, NH 03051

Dakota Partners LLC Mark Pilotte 1264 Main Street Waltham, MA 02451

Luke Hurley, CWS
Gove Environmental Services Inc.
8 Continental Drive, Bldg 2, Unit H
Exeter, NH 03833

David J. Lafond, President Fox Hollow Condo Assoc. 421 Fox Hollow Drive Hudson, NH 03051

Farley White Hudson, LLC 1 Bedford Farms Drive, Suite 200 Bedford, NH 03110

Harry M. Haytayan, Trustee Harry M. Haytayan Revocable Trust 17 Friars Drive Hudson, NH 03051

> Paul E. Gregoire Jean Gregoire 173 Lowell Road Hudson, NH 03051

Mark J. Scanlon Carol A. Scanlon 11 Hickory Street Hudson, NH 03051

Michael Martinez
Great North Property Management
636 DW Highway
Merrimack, NH 03054

Karl Dubay, PE The Dubay Group, Inc. 84 Range Road Windham, NH 03087 Joseph Martin Lindsay Lemieux 17 Hickory Street Hudson, NH 03051

Jennifer Garneau 13 Hickory Street Hudson, NH 03051

Richard H. Charbonneau Mark Charbonneau c/o R and M Realty 1 Continental Drive Londonderry, NH 03053

David Tavares 41 Cottonwood Drive Hudson, NH 03051

Katlyn Pearl Deluca Nicholas Adam Burns 15 Hickory Street Hudson, NH 03051

5 Way Realty Trust
Peter Horne, Trustee
PO Box 1435
North Hampton, NH 03862

Tim Sutherland, LLS The Dubay Group, Inc. 84 Range Road Windham, NH 03087

" (d)



## FIRE DEPARTMENT

39 FERRY STREET, HUDSON, NEW HAMPSHIRE 03051



Emergency Business Fax 911

603-886-6021 603-594-1164

Robert M. Buxton Chief of Department

TO:

Brian Groth

Town Planner

FR:

Robert M. Buxton 不吃

Fire Chief

DT:

June 6, 2019

RE:

161 Lowell Road (Map 209, Lot 1)

The following is a list of site plan concerns for this project. This review was completed utilizing plans submitted by Dakota Partners Inc, dated April 29, 2019.

 Please provide the markings for fire apparatus access in accordance with NFPA 1. As discussed, the fire department would like to see the spacing between Building 2 and the Club House increased. This will provide better access across the face of Building 2.

After reviewing the project, the proposed right in / right out traffic pattern will not provide an issue to the Fire Department with the improvements proposed to Friar Drive.

We have additionally requested, the removal of one of the proposed trees on Lowell Road to allow ladder truck access from Lowell Road to the end of Building 1.

 Please provide three (3) hydrant maps signed by the Hudson Fire Department, the Hudson Water Company and the property owner. There shall be a hydrant flag and painting acceptable to the current Town of Hudson Engineering Department's specifications provided for all water supply appurtenances.

The Fire Department has requested that the hydrant located on Friars Drive be located closer to Lowell Road prior to the project driveway. The relocation of the hydrant located in the island near Building 2 to the main travel path along the drive. Additionally, we have requested an additional hydrant to the rear parking lot area that is located behind Building 1.

- The common driveway shall have a permanent sign approved by the Hudson Fire Department noting the addresses of the buildings that are accessed from that driveway. These signs shall be approved and installed before issuance of any building permits.
- Please make sure that the proposed snow storage area shown on the plan in the area of the cistern is cut back to make sure access is maintained.

\*\*The following life safety and fire protection concerns provided are for informational purposes to the applicant and Planning Board for this project. Final determinations on these issues occur after further review of the project.

- A. The proposed building may require an approved sprinkler system. The Hudson Fire Department upon review of the building plans makes this determination. This requirement is in accordance with the International Building Code (IBC) and Hudson Town Code (HTC), current revision, Chapter 210, Article VI. It may be possible following the IBC to separate the tenants by providing firewalls in the building. This would eliminate the need to sprinkle the building according to the HTC. Separate occupancies may still require a sprinkler system according to the IBC, State Code, and applicable codes or ordinances. Further plan reviews will uncover those requirements.
- B. Any fire protection system shall be monitored by an approved fire alarm system. The fire alarm system shall be connected to the Hudson Fire Department's municipal fire alarm system or a substantially equivalent system in accordance with the Hudson Town Code, Chapter 210. A site plan detailing the aerial or underground layout to the municipal fire alarm connection must be provided before the utilities are completed for this project. Any required fire alarm system component must remain accessible and visible at all times.
- C. Will there be inside or outside storage above the exempt amounts of hazardous materials, liquids or chemicals presenting a physical or health hazard as listed in the International Building Code, Sections 307, 414 or 415?
- D. A blasting permit will be required for any blasting on the site in accordance with the Hudson Town Code, Chapter 202.
- E. All storage either inside or outside of hazardous materials, liquids or chemicals presenting a physical or health hazard as listed in NFPA 1, Section 20.15.2.2 shall be in accordance with the applicable portions of the following:

NFPA 13, Standard for the Installation of Sprinkler Systems

NFPA 30, Flammable and Combustible Liquids Code

NFPA 30B, Code for the Manufacture and Storage of Aerosol Products

NFPA 230, Standard for the Fire Protection of Storage

NFPA 430, Code for the Storage of Liquid and Solid Oxidizers

NFPA 432, Code for the Storage of Organic Peroxide Formulations

NFPA 434, Code for the Storage of Pesticides

These are all of the Hudson Fire Department's concerns as of this time. If you have any further questions, please call me directly and thank you for your continued cooperation.

cc: Project Engineer File



## TOWN OF HUDSON

### Office of the Assistant Assessor

Jim Michaud Chief Assessor, CAE

email: <u>imichaud@hudsonnh.gov</u> www.hudsonnh.gov SON MAD

12 School Street · Hudson, New Hampshire 03051 · Tel: 603-886-6009 · Fax: 603-594-1160

To: Brian Groth, Town Planner

June 6, 2019

From: Jim Michaud, Chief Assessor

Re: Friars Court Apartments - Tax Map 209 Lot 1

In reviewing the proposed subdivision and subsequent site plan submittals, I offer the following comments;

- On plan, remainder parcel of 74.877 AC's, shown as Map 209 Lot 001 Sublot 00B – keep as Tax Map 209 Lot 001 Sublot 001
- 2. On plan, Map 209 Lot 001 Sublot 00A needs to be shown as Tax Map 209 Lot 001 Sublot 001
- 3. On plan, Map 209 Lot 001 Sublot 00C needs to be shown as Tax Map 209 Lot 001 Sublot 002
- 4. The "condo land area 1 & 2" referenced on the plan, am under the impression that this is apartment property, held in common ownership under 1 owner, that this is not condominiums being proposed. Need written clarification that the land area for the apartment lot, 11.198 AC, on Plan as Lot 1-A, will be held all together in fee simple ownership by the same owners as the apartment buildings, not 1 separate owner, and not 1 separate owner for the buildings. Also would like to see written clarification that this is also not a ground lease situation. It is very unorthodox to see a delineation of "condo land areas" on plans that are not being set up as condos.

## Dhima, Elvis

From:

Dhima, Elvis

Sent:

Wednesday, June 05, 2019 12:19 PM

To:

Groth, Brian Dubowik, Brooke

Cc: Subject:

161 Lowell Road Review

Brian

My only comment is as follows:

 Applicant shall provide a slip lane on Lowell Road to accommodate right turns to the proposed site, without impacting movement on Lowell Road. This will accommodate any addition traffic volume related to all the businesses on Friar & Executive Drive that will use the new access in the AM traffic.

Thank you

E

Elvis Dhima, P.E. Town Engineer

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

Mobile: (603) 318-8286





## TOWN OF HUDSON



## Land Use Division

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

June 6, 2019

Site Plan Review

Zoning Review/Comments

Re:

Case: SP# 02-19

Site development for 2 mutli-family apt buildings and associated improvements

Address: 161 Lowell Rd Map 209 /Lot 001

Zoning district: Business (B)

Based on submitted plan (rev #1 dated 5/6/19)

Verify the heights of the proposed structures don't exceed the height limits in the Zoning Ordinance 334-

Sincerely,

Bruce Buttrick, MCP
Zoning Administrator/Code Enforcement Officer
(603) 816-1275
bbuttrick@hudsonnh.gov

encl:

Rev 1 plan submitted

cc:

Public Folder

B. Groth - Town Planner

file





## MEMORANDUM

TO:

File

FROM:

Steven W. Reichert PE Lul

DATE:

May 29, 2019

RE:

Town of Hudson Planning Board Review

Friars Court Proposed Site Development Plan

Tax Map 209, Lot1; Acct. #1350-928

Fuss & O'Neill Reference No. 20030249.1790

The following list itemizes the set of documents reviewed related to the Friars Court Site Plan, located at 161 Lowell Road, in Hudson, New Hampshire.

- Email communication between the Town of Hudson and Fuss & O'Neill, dated between May 1 and May 22, 2019.
- Plan Review Package received by Fuss & O'Neill, from The Dubay Group, Inc., including the following:
  - Copy of NHDES Alteration of Terrain Permit Application and Drainage Analysis, prepared by The Dubay Group, Inc., dated May 13, 2019, and received on May 16, 2019.
  - Copy of Proposed Site Plans for Friars Court, Map 209, Lot 1, 161 Lowell Road, Hudson, New Hampshire, prepared by The Dubay Group, Inc., dated April 29, 2019 unless otherwise noted, received on May 16, 2019, and including the following:
    - a. Title Sheet, Sheet 1 of 33, revised May 14, 2019.
    - b. Project Compliance Notes, Sheet 2 of 33.
    - c. Tract Overview Plan, Sheet 3 of 33.
    - d. Site Specific Soils, Sheet 4 of 33.
    - e. Existing Conditions Plan, Sheet 5 of 33.
    - f. Subdivision Plan, Sheet 6 of 33, revised May 6, 2019.
    - g. Easement Plan, Sheet 7 of 33, revised May 6, 2019.
    - h. Tract Access & Density Summary Plan, Sheet 8 of 33, revised May 6, 2019.
    - i. Site Layout Plan, Sheet 9 of 33, dated April 25, 2019, revised May 6, 2019.
    - j. Landscape Plan, Sheet 10 of 33, revised May 6, 2019.
    - k. Landscape Notes and Details, Sheet 11 of 33, revised May 6, 2019.
    - 1. Grading and Drainage Plan, Sheet 12 of 33, revised May 14, 2019.
    - m. Utility Plan, Sheet 13 of 33, dated May 13, 2019.
    - n. Lighting Plan, Sheet 14 of 33.
    - o. Erosion Control Plan, Sheet 15 of 33, revised May 14, 2019.
    - p. Truck Circulation Plan, Sheet 16 of 33.
    - q. Site Details 1, Sheet 17 of 33.



Memo to File Fuss & O'Neill Reference No. 20030249.1790 May 29, 2019 Page 2 of 2

- r. Site Details 2, Sheet 18 of 33, dated May 13, 2019, revised May 14, 2019
- s. Site Details 3 and 4, Sheets 19 and 20 of 33.
- t. Site Details 5 and 6, Sheets 21 and 22 of 33, revised May 14, 2019.
- u. Site Details 7, Sheet 23 of 33.
- v. Site Details 8 12, Sheets 24 thru 28 of 33, revised May 14, 2019.
- w. Site Details 13, Sheet 29 of 33.
- x. Impervious Area Summary, Sheet 30 of 33.
- y. Sewer Profiles, Sheet 31 of 33, dated May 13, 2019, revised May 14, 2019.
- z. Pre Development Watershed Plan, Sheet 32 of 33, dated April 25, 2019, revised May 14, 2019.
- aa. Post Development Watershed Plan, Sheet 33 of 33, dated April 25, 2019, revised May 14, 2019.
- bb. Roadway Reconstruction Plan, R1, revised May 14, 2019.
- cc. Road Reconstruction Profile and Typical Section, R2, dated April 24, 2019, revised May 14, 2019.
- dd. Roadway Erosion Control Plan, R3, revised May 14, 2019.
- ee. Road Upgrade Details 1-4, R4 thru R7.
- 3. Copy of Traffic Impact Assessment, prepared by VHB, dated April 23, 2019 and received on May 13, 2019.

#### SWR:mjt

cc: Brian Groth - Town of Hudson Town of Hudson Engineering Division - File



May 29, 2019

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

Re:

Town of Hudson Planning Board Review Friars Court Proposed Site Development Plan Tax Map 29, Lot 1; Acct. #1350-928 Fuss & O'Neill Reference No. 20030249.1790

Dear Mr. Groth:

Fuss & O'Neill, Inc. has reviewed the first submission of the materials received on May 7, May 13, and May 16, 2019, related to the above-referenced project. Authorization to proceed was received on May 7, 2019. A list of items reviewed is enclosed. The scope of our review is based on the Site Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

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

The project would subdivide an existing vacant 88.866 acre lot into three lots of 74.877, 11.198 and 2.279 acres as depicted on the plans. The project would then develop the 11.198 acre lot (Parcel 209-1-A) into a two building, 81 unit multi-family residential development. Proposed improvements to the site include the construction of a driveway off of Friars Drive, a clubhouse, parking areas, drainage improvements, landscaping, and other associated site improvements. The project also includes proposed off-site improvements, namely the reclaiming and paving of a 600+foot section of Friars Drive and providing a connection between Executive Drive and Lowell Road.

540 No Commercial Street
Manchester, NH
03101
1 603.668.8223
800.286.2469
1 603.668.8902

www.fando.com

The following items are noted:

California
Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island

Vermont

## 1. Site Plan Review Codes and Administrative Requirements and Definitions

a. Hudson Regulation (HR) 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the site. The applicant should review with the Hudson Fire Department to confirm that proposed measures are acceptable.



Mr. Brian Groth May 29, 2019 Page 2 of 7

- b. HR 275-6.T.(1). The applicant has proposed improvements to a portion of Friars Drive by reclaiming the existing pavement and re-paving. As discussed at the meeting on May 7, 2019, the Town Engineer does not know the condition of the existing subbase for this portion of the road and will not accept reclaiming and paving of this road without construction of the subbase to meet Town standards. The applicant should continue to coordinate this effort with the Town Engineer.
- c. HR 275-8.C.(2)(o) and ZO 334-15.A. The applicant has provided parking calculations for the proposed use. The applicant has noted on sheet #2 that a waiver is requested for the minimum number of parking spaces to be provided, with an area reserved for future parking should the Code Enforcement Officer determine additional parking is needed. A copy of the waiver request letter was not included in Fuss & O'Neill's review package.
- d. HR 275-8.C.(5). We note that with the layout of parking spaces at the proposed/future boundary line, vehicles parking in the spaces furthest north may have difficulty backing out of those spaces if there is no additional area provided for turning around. The applicant should review this proposed layout.
- e. HR 275-8.C.(6). The applicant has not proposed any loading spaces for the development.
- f. HR 275-8.C.(6)(d). The applicant has noted that maneuvering areas are sufficient to accommodate UPS and moving box trucks, as well as fire trucks. WB-50 trucks appear to be able to maneuver within the site without conflicting with parking spaces or curbed areas, but WB-67 trucks do not. We also note that the truck circulation plan shows fire truck access through the site. The applicant should confirm with the Hudson Fire Department that the truck shown on the circulation plan is the largest that the Fire Department will use at this site.
- g. HR 275-9.D. The applicant has noted that a Fiscal Impact Study will be provided relative to public school statistics. This study was not included in Fuss & O'Neill's review package.
- h. HR 275-9.F. and 276-11.1.B.(20). The applicant has noted that easements, covenants, deed restrictions and other legal documents will be provided. These documents were not included in Fuss & O'Neill's review package. The applicant did provide an Easement Plan detailing the easement areas within the site.
- i. HR 276-7.B & 276-7.C. The applicant has noted waivers from several Regulations on sheet #2. Formal waiver requests were not included in Fuss & O'Neill's review package. All waivers that are granted by the Planning Board should be noted on the plans.
- j. HR 276-11.1.B.(1). We note that several plan sheets are stamped by a professional engineer but most others do not have a stamp affixed to them. The applicant's engineer should stamp all relevant plan sheets.
- k. HR 276-11.1.B.(5). The approval expiration block is located above the approval block on several plan sheets, not adjacent to the block as required by the Regulation.
- 1. HR 276-11.1.B.(6). The Owner's signature is not on the plans.
- m. HR 276-11.1.B.(9). The Land Surveyor's Certification statements on the Existing Conditions plan, Subdivision plan, and Easement plan are not signed and the surveyor's stamp does not appear on those drawings.



Mr. Brian Groth May 29, 2019 Page 3 of 7

- n. HR 276-11.1.B.(12). The applicant has proposed a portion of the building #1 parking area within the building setback. Also, note #4 on plan sheet #9 shows this setback to be 30 feet where 50 feet is required by Ordinance.
- o. HR 276-11.1.B.(13). The applicant should label all proposed signs within the site (stop sign at Friars Court driveway intersection with Friars Drive is not labelled). The applicant should also provide a traffic sign summary table in the plans detailing sign quantities and sizes.
- p. HR 276-11.1.B.(16). The applicant has not shown all roadways, driveways, travel or parking areas within 200 feet of the tract.
- q. HR 276-11.1.B.(17). We were unable to locate any benchmarks within the plan set. We were also unable to locate a USGS benchmark reference in the plans.
- r. HR 276-11.1.B.(18). The applicant has noted the proposed lot numbers for the subdivided lot, along with acreage for each lot. We note that the total acreage of the three subdivided lots does not equal the total original lot size (88.354 vs. 88.866). The applicant should review these areas and correct.
- s. HR 276-11.1.B.(24)(a). The applicant has not provided any open space calculations within the plans.

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

- a. HR 193.10.C. The applicant has proposed a short 15' section of double yellow line striping at the entrance/exit to the site. We recommended extending this striping to be able to accommodate more than one car queueing at the stop sign at this intersection.
- b. HR 193.10.C. The applicant has shown the proposed curb at the driveway terminating at the easement line and not extending around the radius to terminate along the roadway as required by Town of Hudson typical detail R-10, a copy of which is included on plan sheet #19.
- c. HR 193.10.E. The applicant has not shown sight distances for the proposed driveway or for the proposed Friars Drive entrance onto Lowell Road. We note that the Friars Drive sight line onto Lowell Road may be partially obstructed by signs proposed for the island. The applicant should evaluate the impacts of these proposed features to sight lines and address as appropriate.

#### 3. Traffic

Fuss & O'Neill has reviewed the Traffic Impact Assessment memorandum prepared by VHB dated April 23, 2019 in support of this development, and has the following comments:

- a. The study properly describes the proposed roadway connections and the existing sight distance condition.
- b. The report uses traffic counts provided by the Town at the Lowell Road/Pelham Road intersection north of the site to determine existing traffic volume conditions near the site.



Mr. Brian Groth May 29, 2019 Page 4 of 7

Since traffic will be redirected to and from the Executive Drive intersection to the south as a result of the proposed right-turn in/out driveway and the extension of Friars Drive to Executive Drive, it would have been more appropriate to use those intersection counts.

- c. The adjustment factors used to determine the peak month volumes were appropriate for this roadway. It was noted in the report that the traffic volumes are fairly consistent over many hours of the day.
- d. Trip generation estimates were developed based on the 9th edition of the ITE *Trip*Generation publication, while the 10th edition is the current version. Although there may not be substantial differences between the two versions, the more current version should be used. In any event, the trip generation summary in Table 3 is accurate based on the 9th edition.
- e. The report notes that because the site will not generate more than 100 new trips during the peak hour, no analysis is necessary, and comes to the conclusion that the proposed development would 'result in negligible impacts to the adjacent roadway system'. However, the driveway limitations will direct traffic to and from the Executive Drive intersection, including diversions of existing traffic. The report did not examine the distribution of traffic nor the additions/subtractions to various turning movements at Executive Drive as a result of providing a formal extension of Friars Drive to Executive Drive. As such, we do not believe that there is sufficient analysis provided to support the conclusion of no significant impact to adjacent intersections, including Executive Drive.
- f. The right turn in-out driveway is designed to preclude left turn exit and entering maneuvers. While prohibiting left turn exits is reasonable, there is no evaluation of the potential for allowing northbound left turns to enter Friars Drive at this location from the dual use center lane, especially since this roadway will be connected to Executive Drive.

## 4. Utility Design/Conflicts

- a. HR 275-9.E. and 276-13. The applicant has noted that the contractor shall confirm the depth of utilities in Lowell Road prior to performing directional drilling for the sewer main connection, and has noted that shop drawings are required for the direction drilling with casing. The applicant should forward these shop drawings to the Town for their review and records.
- b. HR 275-9.E. and 276-13. The applicant has revised the sewer and water layouts as requested by the Town Engineer in the meeting held on May 7, 2019. The applicant should confirm with the Town that this layout is acceptable, as at Friars Drive west of the proposed easement area there is a 15' water easement on the south side of the road whereas the applicant is proposing sewer on that side of the road.
- c. HR 275-9.E. and 276-13. The applicant should include a water/sewer crossing detail in the plans which shall be implemented at locations where these utilities cross.



Mr. Brian Groth May 29, 2019 Page 5 of 7

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

- a. HR 275-9.A(3). The Alteration of Terrain (AoT) BMP Sheets and HydroCAD analysis illustrate that the Bio-Retention Area utilizes a 5.0 inches per hour rate. The applicant should provide additional data (conversion calculation) to support the use of the infiltration rate. We assume it associated with Env-Wq 1504.14.
- b. HR 290-4.C. We note a rip rap detail shows depths on Detail Sheet 8 that do not coincide with the calculations within the Drainage Analysis. The applicant should coordinate the detail with the dimensions calculated within the Drainage Analysis.
- c. HR 290-5.H. We note the applicants Drainage Report calculations do not account for frozen ground conditions. The applicant should provide additional information on performance of the drainage system during this condition, or request a waiver for this requirement.
- d. HR 290-5.L(1). The applicant should keep the Town informed of all communication with the NHDES in relation to the Alteration of Terrain Permit discussions to ensure NHDES engineering comments do not alter the proposed drainage design/calculations.
- e. HR 290-9.B. The requirement for the preparation of a Stormwater Pollution Prevention Plan (SWPPP) has been noted on the plans.
- f. HR 290-5.L(8). The outlet of Detention Basin 2 within the plan set does not appear to coincide with the Drainage Analysis. The plans illustrate FES-4, while the Drainage Analysis illustrates a 3" vertical orifice. The applicant should review and coordinate the design documents accordingly.
- x. The applicant has shown a foundation drain and noted this as "if required" at each building. The applicant should clarify if these are in fact required for this project.
- x. The applicant has included a detail for underdrain installation. The applicant should clarify the propose location of this drainage feature.

## 6. Zoning (ZO 334)

- a. ZO 334-20. The subdivided lot where the development is proposed is located entirely within the Business (B) zoning district where multi-family dwellings are permitted.
- b. ZO 334.25. The applicant has not provided architectural drawings with the plan set so we are unable to verify if the height of the proposed structures conforms with the Ordinance.
- c. ZO 334.27. The applicant should correct note #4 on sheet #9 which states the front setback to be 30 feet, where 50 feet is required by the Ordinance.
- d. ZO 334.27. The applicant has provided calculations demonstrating that the proposed subdivided lot complies with 334 Attachment 4 Note #2 for buildable lot area.
- e. ZO 334-35.B.(2)(e) and HR-275-9.G(3). The applicant has shown existing wetlands within the subject lot. The applicant has noted that they received a Wetland Special Exception with the Zoning Board of Adjustment to be able to build the extension of Friars Drive across a jurisdictional wetland.



Mr. Brian Groth May 29, 2019 Page 6 of 7

- f. ZO 334-58. The applicant has proposed a project sign at the driveway into the development. The applicant has noted that the sign detail provided is more of a place-holder pending final sign design. The applicant should provide details for the construction of the sign to the Town for their permitting and approval.
- g. ZO 334-60.C & 60.D. If the portion of the site along Friars Drive is considered frontage then the sign needs to be a minimum of 25 feet from the Right-of-Way line per section 60.C. The applicant should review the application of this Ordinance with the Town.
- h. ZO 334-83. The applicant has noted on the plans that the subject parcel does not fall within a special flood hazard area.

## 7. Erosion Control/Wetland Impacts

- a. HR 290-5.K.(16). The applicant has not indicated the proposed method of stump disposal, but has included a detail showing a stump grindings berm. The applicant should show on the plans the proposed location(s) for this berm.
- b. HR 290-5.K.(20). The applicant should review the need for erosion controls outside the limits of construction of the drain line connecting to DMH #6.
- c. HR 290-5.K.(22). The applicant has proposed one snow storage area north of the north parking area. The applicant should review and confirm that this storage area is adequately sized for the anticipated snow clearing volume.
- d. HR 290-5.K.(26). The applicant has proposed a stabilized tracking pad directly abutting Lowell Road. The applicant should consider moving this further back into Friars Drive to avoid traffic conflicts during installation and maintenance of this pad.
- e. HR 290-5.K.(26). The applicant should consider the installation of erosion control measures along the northeast corner of the site near the proposed treeline.
- f. The Town should reserve the right to require additional erosion control measures.
- g. The applicant has noted that EPA/SWPPP permit and monitoring is required.

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

- a. HR 275-8.C.(7)(a). The applicant has noted on sheet #2 that calculations for the 10% minimum landscaping area are on the landscape plans. We are unable to locate these calculations.
- b. HR 276-11.1.B.(14). The applicant has not noted the hours of operation for the site lighting. The means for operation (timer, photocell, etc.) should also be noted on the plans.
- c. HR 276-11.1.B.(14). The applicant has proposed a light pole northeast of the clubhouse that appears to conflict with a proposed tree installation. The applicant should review this layout and revise as appropriate.
- d. HR 276-11.1.B.(14). The applicant has noted to refer to the architectural plans for proposed building lighting. Copies of architectural plans were not included in Fuss & O'Neill's review package.



Mr. Brian Groth May 29, 2019 Page 7 of 7

> The applicant has shown loam and seeding at 4" and 6" depths in various details. The applicant should coordinate the plan details.

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

- HR 275-9.G. No copies of applicable approvals or permits were provided in the package received for review.
- b. HR 275-9.G. The applicant has noted that a New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit is required. The applicant should forward all relevant AoT Permit documentation to the Town for their records.
- c. HR 275-9.G. The applicant has noted that a Sewer Connection Permit is required for this project.
- d. Additional local permitting may be required.

#### 10. Other

- The applicant has not provided any details for construction of any features of the proposed playground or garden plot area.
- b. The applicant has not provided any details for the construction of the dumpster enclosure.
- The applicant has noted that shop drawings will be require for the proposed retaining wall. The applicant should forward a copy of those shop drawings, stamped by a professional engineer licensed in New Hampshire, to the Town for their records.

Please feel free to call if you have any questions.

Very truly yours,

Steven W. Reichert, PE

Paul Koniensku Paul Konieczka, AICP

SWR:PK:mjt

Enclosure

Town of Hudson Engineering Division - File CC: The Dubay Group, Inc. 84 Range Road Windham, NH 03087

(603) 458-6462

Town of Hudson Fuss & O'Neill Reference No. 03-0249.1790 Reviewed May 29, 2019

Friars Court, 161 Lowell Road

Thirty (30) days prior to Planning Board Meeting, a complete site plan to include all supporting materials/documents must be submitted in final form. The site plan shall comply with the following specifications/requirements.

Appicant Initials a)
ь)
c)
d)
e)
f)
h)
(i
<u></u>
[]
m)
n)

ons/requirements.			
,	Staff		
	Initials		
mission of nine (9) full sets of Site Plans		a) .	One full size set and one have size set received by Fuss & O'Neill
eet size: 24" x 34") at the time of application filing, followed the submission of severiteen (17) 11" x 17" plan sets (revised pplicable) to the Community Development Department no ar than 10:00 AM Tuesday of the week prior to the scheduled			
olic hearing/conceptual review date. Size Plan parrative describing the purpose, locations, long range		<b>b</b> )	Traffic study provided. Narrative not provided.
ns, impacts on traffic, schools and utilities. in scale at not less the one inch equals fifly feet (1" == 50') cus plan with 1,000' minimun radius of site to	Fuss & O'Neil/SWR Fuss & O'Neil/SWR		
rrounding area an date by day/month/year	dinate and a	e)	Month/day/year
evision block inscribed on the plan anning Board approval block inscribed on the plan the of project inscribed on the plan	Fliss & O'Neil/SWR Fliss & O'Neil/SWR Fliss & O'Neil/SWR	י	Signatures not provided
ames and addresses of property owners and their gratures inscribed on the plan orth point inscribed on the plan	Fuss & O'Neil/SWR	4	
quare feet and acreage of site	Fuss & O'Neil/SWR Fuss & O'Neil/SWR Fuss & O'Neil/SWR		
quare sector causing (Commission Property)  James and addresses of bordering abutters, as shown	Fuss & O'Neil/SWR	n)	Unable to verify 5-day update criteria.

ah)ai)	ad) ae) af)	x) y) z) aa) ab)	\$ \$ \$ E	q) (1) (2) (3)	Applicant Initials o)
			Planning Board Secretary and recorded with the plant Delineate zoning district on the plan Stormwater drainage plan Topographical elevations at 2-foot intervals contours: existing and proposed Utilities: existing and proposed Park increasiting and proposed	Locations of existing and proposed permanent monuments and benchmarks within 200 feet of the development tract Pertinent highway projects  Assessor's Map and Lot number(s)  Waiver application form shall be submitted with the site plan application, note on plan listing waivers requested/granted; and all waivers granted to the site plan regulations shall be listed on the final plan; waivers to checklist shall be reduced to writing and be signed by the Planning Board Chairman and	Location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve areas, floodways/floodplains, driveways, travel areas, parking areas and natural features within 200 feet of the tract
Fuss & O'Neil/SWR ai)	Fuss & O'Neil/SWR Fuss & O'Neil/SWR af)	1, 1, 1, 1, 1	Fuss & O'Neil/SWR	Fuss & O'Neill/SWR s)	Staff Initials 0)
) Detail for dumpster pad construction not provided. ) See other comments.	Operational details for lighting not provided.  Sign summary table not provided. Sign details for monument sign not provided.	ab) Lines shown. Parking area within front setback	Received. Fuss & O'Neill review comments in letter.	None noted.  Waivers requested. Request forms not included.	Not all driveways within 200 feet of tract shown

						* Under the p					<u>pq</u>	bc)	bb)																ba)			az)	Initials	Applicant
	and the state of t			the state of the s		* Under the purview of the Planning Board any and all items may be waived.	be brought to the meeting for distribution to the boats thempers.	involving revised plans five 22" x 34" copies of said plan shall	members at the meeting. Note: for all subsequent meetings	Planning Roard meeting and distributed to the Planning Board	Five (5) 22" x 34" copies of the plan shall be brought to the	Fees paid to clerk	Presentation plan (colored, with color coded bar chart)	project comments hereto.	LOCAL ACTIONS CONTINUED (LIVINLAC) and author waters as	I coll Advisor: Committee (I MRI AC) and attach I MRI AC	- if applicable, review application with Lower Merrimack River	<ul> <li>shoreland protection certification in accordance with RSA483-B</li> </ul>	- curb cut permit	- dredge and fill permit	- septic construction approval	- erosion control permit (149:8a)	- varance	- wetlands special exception	- flood plain permit	- sewer application	- industrial discharge application	include but not limited to the following:	Copy of applicable Town, State, Federal approva/permits to	similar documents	deed restrictions, right of way agreements or other	Copies of any proposed or existing easements, coverants,		
AAAAAAA	arrest de la constitución de la	!	1		<b>!</b>								and the state of t																				Initials	Staff
											bd)	, S	, oo)	;															ba)			az)		
											Requires Town action.																		None provided. AO I, sewer contection, diveway incerca.			Copy of easements not provided.		







JUN 0 4 2019

#### TOWN OF HUDSON MEMORANDUM PLANNING DEPARTMENT

To:

Brian Groth

Date: 03 June 2019

From:

Karl Dubay

Re:

Friars Court – Response to Review Comments

This memo provides confirmation/clarification of the May 29th Fuss & O'Neill Review Comments. Virtually all of the comments pertain to administrative notes, details, and confirmatory additional information—which we can easily and quickly provide.

- HFD We are coordinating work session with you and HFD to verify the fire protection 1.a and design provisions for the site and buildings.
- Friars Drive Base The plans and details reference Hudson Standards including the 1.b selects/base/subbase box to be in compliance under the reclaim and widening. Construction phase processes will also include the required inspections and testing protocol to ensure compliance.
- Parking Calculations The waiver will be discussed with the Planning Board 1.c
- Parking Phase Interface the nine spaces referenced at the center island are screened 1.d and are not included in the 1.5 phase calculations as they would only be painted in the 2.0 phase. Thus, full circulation is provided and there are no conflicts with backing and no dead-ends.
- 1.e/f Loading The regulation involves "acceptance or distribution of materials or merchandise". In this case, the affordable apartments are small and primarily single bedroom in size. The regulation does not require dedicated loading spaces for residential projects. Loading activity will consist of UPS-type deliveries from small urban scaled vehicles and moving in/out. Moving in/out of these small units is typically provided by small rental UHaul type cube trucks and definitely not WB-67 extended semitrailers. Sufficient loading areas in aisles allow for traffic bypass. Smaller trucks are accommodated (even the WB-50) as the controlling geometry is for the larger fire ladder truck depicted in the routing plans (refer to 1.a above). Protected and ramped accesses from aisles onto walkways are provided to all front doors.
- Public School Fiscal Impact The project will provide extensive impact contribution fees 1.g including mitigation for traffic and public education, in accordance with the ordinances and regulations. The project will also provide extensive recurring tax revenues. The project is allowed by right by zoning, with no relief on density or other matters that would subrogate impact fee or tax revenue benefits to the Town.
- Legal Docs Will be provided for review by the Town's legal counsel as part of the 1.h Board's conditional approval, including administrative deeds, easements, arrangements

- on the ROW convertability, and all other expected legal documents.
- 1.i The waivers will be discussed with the Planning Board
- 1.j-m Stamps/Blocks/Signatures All remaining plans will be stamped and signed. The approval expiration block positioning above (instead of beside) the approval block will be moved on certain sheets if that is a relevant item to the Board. All required plans will indeed have the owner's signature, note that the owner's written authorization in duly filed with the Town.
- 1.n Parking Setback HR 276-11.1.B(22) allows for an effective 35-foot setback. Subsection (12) primarily deals with proposed nonresidential uses and a 50-foot setback in this zone. The setback shown is 35 feet to the face of 12-inch cape cod berm curb, or 34 feet. We proposed to revise the plan to provide the additional 12 inches for 35 feet of separation, meeting section (22). If staff and the Board determine that section (12) supercedes the specifics and obvious intent of section (22), then we respectfully request the waiver of (22) in favor of (12), as the intent of (22) as written would not be allowed if interpreted otherwise.
- 1.0 MUTCD Labels The details on Sheet 25 depict MUTCD signage and sizing. We will expand and edit this detail to update the final signage on site (for example, the traffic control island signs). Note that the label set for one stop sign on the site plan is labeled as typical and applies to all stop signs which is detailed.
- 1.p Info within 200 Feet Portions of the tract being subdivided off include areas that are up to ½ mile away from the proposed site development (see Sheet 3). For those areas that are within 200 feet of the site development, the plans generally depict the abutting roads/drives, and for areas immediately adjacent, the detail is indeed provided by survey. We request a waiver of survey-locating every detail of driveway and parking area and road within 200 feet of the tract where that detail has no bearing on the proposed site work area.
- 1.q TBM's & Datum The TBM and datum cadd layers were inadvertently turned off on the submitted plots and we will fix that. Several TBM's were established on the site with the survey, associated with the project at State Plane coordinate system and will include the associated datum notes/annotation.
- 1.r Areas The residual area on the lotting is the area of the dedicated street right of way, which is annotated on Sheet 6 of the plans.
- 1.s Open Space The Drainage Report AOT forms indicate 121KSF of increased impervious area, which yields an open space of approximately 74% for the proposed lot of 487KSF. The minimum required open space for the project tract lots are 35% which obviously comply. We will add a figure to the details depicting the percentages.
- 2.a Centerline Striping Length We will extend one drive paint centerline the additional length along two vehicles.
- 2.b Drive Curb Transition We will extend the interface with the transition in accordance with the Curb End detail R-10 on Sheet 19.
- 2.c Sight Distances All of the drive and road intersections meet the minimum required sight lines. We will depict those on the plans which correspond to the traffic engineer's minimum associated requirements. The thin MUTCD traffic sign posts themselves are not subject to sight distance criteria.
- 3.a-f Traffic The project traffic engineer will be addressing the supplemental information as requested, although we do not expect it would change the overall summary recommendations. We have indeed planned and designed the project to accommodate

- the Town Planning and Engineering staff's suggestions and recommendations.
- 4.a Shop Drawings Shop drawings are indeed required for Town review, including the sewer work, and this requirement is annotated on the plans.
- 4.b Easements The existing sewer and water infrastructure on existing Friars Drive include easements throughout. For future flexibility, we will accommodate new easements flanking the proposed ROW benefitting the Town and development lots that can be used for all utilities, and not necessarily limited to selected utilities. The sewer design has been approved by the Town Engineer and is pending approval by NHDES with the provision of a few details that are supplementary to the Town standard sewer details.
- 4.c Pipe Crossing Detail We will add the standard sewer/water pipe crossing detail, although all of the crossings are planned at 18-inch minimum vertical and 10-foot minimum horizontal separation which technically do not invoke the crossing detail.
- 5.a Infiltration Rate The onsite testing revealed quality sands and gravels that exhibit very high infiltration rates. The regulations require us to very conservatively utilize rates of 5 iph in the calculations.
- 5.b Riprap The riprap detail depths will be revised as necessary to coincide with the calcs.
- 5.c Frozen Ground Conditions Calculations will be accounted for when systems are not functioning at their optimal design.
- 5.d AOT Review Process As suggested, we will keep the town reviewers informed of the AOT review progress.
- 5.e SWPPP Will be required to be in place and monitored in accordance with EPA regulations as notes on the plans.
- 5.f Basin Outlet Detail Will be revised with the calculation to be consistent at Basin 2.
- 5.g Foundation Drains Are shown conservatively if required by the foundation engineer's final design. We will follow up on those details.
- 5.h Underdrain Detail Is provided conservatively if required by the geotechnical engineer's final design, and/or if required by the Town Engineer. We will follow up on this.
- 6.a Zoning Comment verifies use by right in the zone.
- 6.b Building Height Has been provided in the architectural drawings and was verified by the Code Enforcement Officer.
- 6.c Front Setback Typo will be corrected on Note 4 Sheet 9 (plan information complies).
- 6.d Density Calcs Comment verifies buildable lot area calculations.
- 6.e Wetland Special Exception Comment verifies ZBA approval in place.
- 6.f Project Signs The applicant will provide additional details on the project signs.
- 6.g Sign Setback As suggested, we will coordinate with Staff on the applicable setbacks to the signage relative to the future ROW.
- 6.h Flood Zone Comment verifies certs that proposed site is not within flood zone.
- 7.a Stumps/Grindings We will add a plan note prohibiting stump disposal on site. We will remove the grindings berm detail on Sheet 23 as we intend to favor the Filtrexx system detail on Sheet 24.
- 7.b EC @ DMH6 The need for erosion controls outside the limits of construction of the drain line connecting to DMH #6 will be considered with final design.
- 7.c Snow Storage There are perimeter areas for snow storage under normal plowing circumstances, and a large snow storage area platform in the rear of the site for accumulations can be moved. See Snow Storage Areas detail on Sheet 29 for additional areas. Ultimately, Sheet 9 Note 6, and the Sheet 29 notes, require offsite removal of excess snow. The site will be required to be managed by a NH Certified Green SnowPro

contractor per the plan notes.

- 7.d Tracking Pads Are shown on both ends of Friars Drive, and at the site entrance, as would typically be required by the EPA/SWPPP. The SWPPP management will move these pads as road and site construction and stabilization progresses. Part of these pad relocations would indeed involve moving the tracking pad away from Lowell Road adjacency once that entrance area can sufficiently be stabilized and provide protection itself.
- 7.e Erosion Control As suggested, we will add secondary EC measures around the northeast corner of the work site, including intermediary systems to protect the newly-formed slopes drainage towards the building work zone area, and along entire Lowell Road for interception treatment of off-road sheet drainage onto the work area.
- 7.f Additional EC During Work Confirms intent to provide additional EC measures as needed and/or as directed by Town during construction. We will add that plan note.
- 7.g EPA/SWPPP Confirms permit/monitoring requirements as notes on the plans.
- 8.a Landscape Area Calcs Are shown on Sheet 30 (we will revise the reference note on sheet 2).
- 8.b Lighting Control Notes will be added to the plans for timer and photocell control.
- 8.c Light Pole / Tree The plan will be revised to avoid the referenced conflict at that location.
- 8.d Building Lighting Will be added to the architectural plans (e.g., at canopies, code egress locations, any feature lighting, etc.).
- 8.e Loam Depths Will be set to a consistent depth (4 and 6 inches are specified depending on application).
- 9. State Permits NHDES AOT and Sewer permit documentation will be provided (pending).
- 10.a Playground/Garden Descriptions will be provided by Dakota.
- 10.b Dumpster Enclosure Detail is provided on Sheet 30.
- 10.c Retaining Wall Shop Drawings Will be required for review and approval prior to construction, as noted.



May 29, 2019

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

Re:

Town of Hudson Planning Board Review Friars Court Proposed Site Development Plan Tax Map 29, Lot 1; Acct. #1350-928 Fuss & O'Neill Reference No. 20030249.1790

Dear Mr. Groth:

Fuss & O'Neill, Inc. has reviewed the first submission of the materials received on May 7, May 13, and May 16, 2019, related to the above-referenced project. Authorization to proceed was received on May 7, 2019. A list of items reviewed is enclosed. The scope of our review is based on the Site Plan Review Codes, Stormwater Codes, Driveway Review Codes, Sewer Use Ordinance 77, Zoning Regulations, and criteria outlined in the CLD Consulting Engineers Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

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

The project would subdivide an existing vacant 88.866 acre lot into three lots of 74.877, 11.198 and 2.279 acres as depicted on the plans. The project would then develop the 11.198 acre lot (Parcel 209-1-A) into a two building, 81 unit multi-family residential development. Proposed improvements to the site include the construction of a driveway off of Friars Drive, a clubhouse, parking areas, drainage improvements, landscaping, and other associated site improvements. The project also includes proposed off-site improvements, namely the reclaiming and paving of a 600+ foot section of Friars Drive and providing a connection between Executive Drive and Lowell Road.

540 No Commercial Street Manchester, NH 03101 † 603.668.8223 800.286.2469 f 603.668.8802

www.fando.com

The following items are noted:

California Connecticut Maine

Massachusetts New Hampshire

Rhode Island

Vermont

## 1. Site Plan Review Codes and Administrative Requirements and Definitions

Hudson Regulation (HR) 275-6.I. The scope of this review does not include the adequacy of any fire protection provisions for the site. The applicant should review with the Hudson Fire Department to confirm that proposed measures are acceptable.

F:\Proj2003\030249 Hudson\Sec\Phase 1700 - 1799\1790 Friars Court\1790 Friars Court Ltr1 052919.Docx

© 2019 Fuss & O'Neill, Inc



Mr. Brian Groth May 29, 2019 Page 2 of 7

- b. HR 275-6.T.(1). The applicant has proposed improvements to a portion of Friars Drive by reclaiming the existing pavement and re-paving. As discussed at the meeting on May 7, 2019, the Town Engineer does not know the condition of the existing subbase for this portion of the road and will not accept reclaiming and paving of this road without construction of the subbase to meet Town standards. The applicant should continue to coordinate this effort with the Town Engineer.
- c. HR 275-8.C.(2)(o) and ZO 334-15.A. The applicant has provided parking calculations for the proposed use. The applicant has noted on sheet #2 that a waiver is requested for the minimum number of parking spaces to be provided, with an area reserved for future parking should the Code Enforcement Officer determine additional parking is needed. A copy of the waiver request letter was not included in Fuss & O'Neill's review package.
- d. HR 275-8.C.(5). We note that with the layout of parking spaces at the proposed/future boundary line, vehicles parking in the spaces furthest north may have difficulty backing out of those spaces if there is no additional area provided for turning around. The applicant should review this proposed layout.
- e. HR 275-8.C.(6). The applicant has not proposed any loading spaces for the development.
- f. HR 275-8.C.(6)(d). The applicant has noted that maneuvering areas are sufficient to accommodate UPS and moving box trucks, as well as fire trucks. WB-50 trucks appear to be able to maneuver within the site without conflicting with parking spaces or curbed areas, but WB-67 trucks do not. We also note that the truck circulation plan shows fire truck access through the site. The applicant should confirm with the Hudson Fire Department that the truck shown on the circulation plan is the largest that the Fire Department will use at this site.
- g. HR 275-9.D. The applicant has noted that a Fiscal Impact Study will be provided relative to public school statistics. This study was not included in Fuss & O'Neill's review package.
- h. HR 275-9.F. and 276-11.1.B.(20). The applicant has noted that easements, covenants, deed restrictions and other legal documents will be provided. These documents were not included in Fuss & O'Neill's review package. The applicant did provide an Easement Plan detailing the easement areas within the site.
- i. HR 276-7.B & 276-7.C. The applicant has noted waivers from several Regulations on sheet #2. Formal waiver requests were not included in Fuss & O'Neill's review package. All waivers that are granted by the Planning Board should be noted on the plans.
- j. HR 276-11.1.B.(1). We note that several plan sheets are stamped by a professional engineer but most others do not have a stamp affixed to them. The applicant's engineer should stamp all relevant plan sheets.
- k. HR 276-11.1.B.(5). The approval expiration block is located above the approval block on several plan sheets, not adjacent to the block as required by the Regulation.
- 1. HR 276-11.1.B.(6). The Owner's signature is not on the plans.
- m. HR 276-11.1.B.(9). The Land Surveyor's Certification statements on the Existing Conditions plan, Subdivision plan, and Easement plan are not signed and the surveyor's stamp does not appear on those drawings.



Mr. Brian Groth May 29, 2019 Page 3 of 7

- n. HR 276-11.1.B.(12). The applicant has proposed a portion of the building #1 parking area within the building setback. Also, note #4 on plan sheet #9 shows this setback to be 30 feet where 50 feet is required by Ordinance.
- o. HR 276-11.1.B.(13). The applicant should label all proposed signs within the site (stop sign at Friars Court driveway intersection with Friars Drive is not labelled). The applicant should also provide a traffic sign summary table in the plans detailing sign quantities and sizes.
- p. HR 276-11.1.B.(16). The applicant has not shown all roadways, driveways, travel or parking areas within 200 feet of the tract.
- q. HR 276-11.1.B.(17). We were unable to locate any benchmarks within the plan set. We were also unable to locate a USGS benchmark reference in the plans.
- r. HR 276-11.1.B.(18). The applicant has noted the proposed lot numbers for the subdivided lot, along with acreage for each lot. We note that the total acreage of the three subdivided lots does not equal the total original lot size (88.354 vs. 88.866). The applicant should review these areas and correct.
- s. HR 276-11.1.B.(24)(a). The applicant has not provided any open space calculations within the plans.

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

- a. HR 193.10.C. The applicant has proposed a short 15' section of double yellow line striping at the entrance/exit to the site. We recommended extending this striping to be able to accommodate more than one car queueing at the stop sign at this intersection.
- b. HR 193.10.C. The applicant has shown the proposed curb at the driveway terminating at the easement line and not extending around the radius to terminate along the roadway as required by Town of Hudson typical detail R-10, a copy of which is included on plan sheet #19.
- c. HR 193.10.E. The applicant has not shown sight distances for the proposed driveway or for the proposed Friars Drive entrance onto Lowell Road. We note that the Friars Drive sight line onto Lowell Road may be partially obstructed by signs proposed for the island. The applicant should evaluate the impacts of these proposed features to sight lines and address as appropriate.

#### 3. Traffic

Fuss & O'Neill has reviewed the Traffic Impact Assessment memorandum prepared by VHB dated April 23, 2019 in support of this development, and has the following comments:

- a. The study properly describes the proposed roadway connections and the existing sight distance condition.
- b. The report uses traffic counts provided by the Town at the Lowell Road/Pelham Road intersection north of the site to determine existing traffic volume conditions near the site.



Mr. Brian Groth May 29, 2019 Page 4 of 7

Since traffic will be redirected to and from the Executive Drive intersection to the south as a result of the proposed right-turn in/out driveway and the extension of Friars Drive to Executive Drive, it would have been more appropriate to use those intersection counts.

- c. The adjustment factors used to determine the peak month volumes were appropriate for this roadway. It was noted in the report that the traffic volumes are fairly consistent over many hours of the day.
- d. Trip generation estimates were developed based on the 9th edition of the ITE *Trip Generation* publication, while the 10th edition is the current version. Although there may not be substantial differences between the two versions, the more current version should be used. In any event, the trip generation summary in Table 3 is accurate based on the 9th edition.
- the peak hour, no analysis is necessary, and comes to the conclusion that the proposed development would 'result in negligible impacts to the adjacent roadway system'. However, the driveway limitations will direct traffic to and from the Executive Drive intersection, including diversions of existing traffic. The report did not examine the distribution of traffic nor the additions/subtractions to various turning movements at Executive Drive as a result of providing a formal extension of Friars Drive to Executive Drive. As such, we do not believe that there is sufficient analysis provided to support the conclusion of no significant impact to adjacent intersections, including Executive Drive.
- f. The right turn in-out driveway is designed to preclude left turn exit and entering maneuvers. While prohibiting left turn exits is reasonable, there is no evaluation of the potential for allowing northbound left turns to enter Friars Drive at this location from the dual use center lane, especially since this roadway will be connected to Executive Drive.

## 4. Utility Design/Conflicts

- a. HR 275-9.E. and 276-13. The applicant has noted that the contractor shall confirm the depth of utilities in Lowell Road prior to performing directional drilling for the sewer main connection, and has noted that shop drawings are required for the direction drilling with casing. The applicant should forward these shop drawings to the Town for their review and records.
- b. HR 275-9.E. and 276-13. The applicant has revised the sewer and water layouts as requested by the Town Engineer in the meeting held on May 7, 2019. The applicant should confirm with the Town that this layout is acceptable, as at Friars Drive west of the proposed easement area there is a 15' water easement on the south side of the road whereas the applicant is proposing sewer on that side of the road.
- c. HR 275-9.E. and 276-13. The applicant should include a water/sewer crossing detail in the plans which shall be implemented at locations where these utilities cross.



Mr. Brian Groth May 29, 2019 Page 5 of 7

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

- a. HR 275-9.A(3). The Alteration of Terrain (AoT) BMP Sheets and HydroCAD analysis illustrate that the Bio-Retention Area utilizes a 5.0 inches per hour rate. The applicant should provide additional data (conversion calculation) to support the use of the infiltration rate. We assume it associated with Env-Wq 1504.14.
- b. HR 290-4.C. We note a rip rap detail shows depths on Detail Sheet 8 that do not coincide with the calculations within the Drainage Analysis. The applicant should coordinate the detail with the dimensions calculated within the Drainage Analysis.
- c. HR 290-5.H. We note the applicants Drainage Report calculations do not account for frozen ground conditions. The applicant should provide additional information on performance of the drainage system during this condition, or request a waiver for this requirement.
- d. HR 290-5.L(1). The applicant should keep the Town informed of all communication with the NHDES in relation to the Alteration of Terrain Permit discussions to ensure NHDES engineering comments do not alter the proposed drainage design/calculations.
- e. HR 290-9.B. The requirement for the preparation of a Stormwater Pollution Prevention Plan (SWPPP) has been noted on the plans.
- f. HR 290-5.L(8). The outlet of Detention Basin 2 within the plan set does not appear to coincide with the Drainage Analysis. The plans illustrate FES-4, while the Drainage Analysis illustrates a 3" vertical orifice. The applicant should review and coordinate the design documents accordingly.
- x. The applicant has shown a foundation drain and noted this as "if required" at each building. The applicant should clarify if these are in fact required for this project.
- x. The applicant has included a detail for underdrain installation. The applicant should clarify the propose location of this drainage feature.

## 6. Zoning (ZO 334)

- a. ZO 334-20. The subdivided lot where the development is proposed is located entirely within the Business (B) zoning district where multi-family dwellings are permitted.
- b. ZO 334.25. The applicant has not provided architectural drawings with the plan set so we are unable to verify if the height of the proposed structures conforms with the Ordinance.
- c. ZO 334.27. The applicant should correct note #4 on sheet #9 which states the front setback to be 30 feet, where 50 feet is required by the Ordinance.
- d. ZO 334.27. The applicant has provided calculations demonstrating that the proposed subdivided lot complies with 334 Attachment 4 Note #2 for buildable lot area.
- e. ZO 334-35.B.(2)(e) and HR-275-9.G(3). The applicant has shown existing wetlands within the subject lot. The applicant has noted that they received a Wetland Special Exception with the Zoning Board of Adjustment to be able to build the extension of Friars Drive across a jurisdictional wetland.



Mr. Brian Groth May 29, 2019 Page 6 of 7

- f. ZO 334-58. The applicant has proposed a project sign at the driveway into the development. The applicant has noted that the sign detail provided is more of a place-holder pending final sign design. The applicant should provide details for the construction of the sign to the Town for their permitting and approval.
- g. ZO 334-60.C & 60.D. If the portion of the site along Friars Drive is considered frontage then the sign needs to be a minimum of 25 feet from the Right-of-Way line per section 60.C. The applicant should review the application of this Ordinance with the Town.
- h. ZO 334-83. The applicant has noted on the plans that the subject parcel does not fall within a special flood hazard area.

## 7. Erosion Control/Wetland Impacts

- a. HR 290-5.K.(16). The applicant has not indicated the proposed method of stump disposal, but has included a detail showing a stump grindings berm. The applicant should show on the plans the proposed location(s) for this berm.
- b. HR 290-5.K.(20). The applicant should review the need for erosion controls outside the limits of construction of the drain line connecting to DMH #6.
- c. HR 290-5.K.(22). The applicant has proposed one snow storage area north of the north parking area. The applicant should review and confirm that this storage area is adequately sized for the anticipated snow clearing volume.
- d. HR 290-5.K.(26). The applicant has proposed a stabilized tracking pad directly abutting Lowell Road. The applicant should consider moving this further back into Friars Drive to avoid traffic conflicts during installation and maintenance of this pad.
- e. HR 290-5.K.(26). The applicant should consider the installation of erosion control measures along the northeast corner of the site near the proposed treeline.
- f. The Town should reserve the right to require additional erosion control measures.
- g. The applicant has noted that EPA/SWPPP permit and monitoring is required.

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

- a. HR 275-8.C.(7)(a). The applicant has noted on sheet #2 that calculations for the 10% minimum landscaping area are on the landscape plans. We are unable to locate these calculations.
- b. HR 276-11.1.B.(14). The applicant has not noted the hours of operation for the site lighting. The means for operation (timer, photocell, etc.) should also be noted on the plans.
- c. HR 276-11.1.B.(14). The applicant has proposed a light pole northeast of the clubhouse that appears to conflict with a proposed tree installation. The applicant should review this layout and revise as appropriate.
- d. HR 276-11.1.B.(14). The applicant has noted to refer to the architectural plans for proposed building lighting. Copies of architectural plans were not included in Fuss & O'Neill's review package.



Mr. Brian Groth May 29, 2019 Page 7 of 7

e. The applicant has shown loam and seeding at 4" and 6" depths in various details. The applicant should coordinate the plan details.

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

- a. HR 275-9.G. No copies of applicable approvals or permits were provided in the package received for review.
- b. HR 275-9.G. The applicant has noted that a New Hampshire Department of Environmental Services (NHDES) Alteration of Terrain Permit is required. The applicant should forward all relevant AoT Permit documentation to the Town for their records.
- c. HR 275-9.G. The applicant has noted that a Sewer Connection Permit is required for this project.
- d. Additional local permitting may be required.

### 10. Other

- a. The applicant has not provided any details for construction of any features of the proposed playground or garden plot area.
- b. The applicant has not provided any details for the construction of the dumpster enclosure.
- c. The applicant has noted that shop drawings will be require for the proposed retaining wall. The applicant should forward a copy of those shop drawings, stamped by a professional engineer licensed in New Hampshire, to the Town for their records.

Please feel free to call if you have any questions.

Very truly yours,

Steven W. Reichert, PE

Paul Konieczka, AICP

and Konienshir

SWR:PK:mjt

Enclosure

cc: Town of Hudson Engineering Division – File The Dubay Group, Inc. 84 Range Road Windham, NH 03087 (603) 458-6462



June 4, 2019

Ref: 52587.00

Mr. Mark Pilotte Dakota Partners 1264 Main Street Waltham, MA 02451

Re: Response to Comments Multi-Unit Housing Development 161 Lowell Road, Hudson, New Hampshire

Mr. Pilotte,

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this letter to respond to comments provided in a May 29, 2019 letter prepared by the Town of Hudson's peer review consultant, Fuss & O'Neill, Inc., on the proposed residential development to be located at 161 Lowell Road (NH3A) in Hudson, New Hampshire. Access to the site is currently provided by way of a full access driveway on Lowell Road. VHB has reviewed the traffic-related comments and suggestions made by Fuss & O'Neill, Inc. (Comments 3a-f). This letter has been prepared to address any of these outstanding concerns (Comments 3b, e, and f).

Comment 3b: The report uses traffic counts provided by the Town at the Lowell Road/Pelham Road intersection north of the site to determine existing traffic volume conditions near the site. Since traffic will be redirected to and from the Executive Drive intersection to the south as a result of the proposed right-turn in/out driveway and the extension of Friars Drive to Executive Drive, it would have been more appropriate to use those intersection counts.

Response:

Based on coordination efforts with the Hudson Town Engineer, traffic counts at the Lowell Road and Pelham Road intersection were provided to determine traffic volumes adjacent to our site. It should be noted that using the traffic counts along Lowell Road at either the Pelham Road intersection or the Executive Drive intersection are not expected to change the findings of the proposed development (i.e., negligible impacts to the adjacent roadway system).

Comment 3e: The report notes that because the site will not generate more than 100 new trips during the peak hour, no analysis is necessary, and comes to the conclusion that the proposed development would 'result in negligible impacts to the adjacent roadway system'. However, the driveway limitations will direct traffic to and from the Executive Drive intersection, including diversions of existing traffic. The report did not examine the distribution of traffic nor the additions/subtractions to various turning movements at

2 Bedford Farms Drive

Suite 200

Engineers | Scientists | Planners | Designers

Bedford, New Hampshire 03110

P 603,391,3900

F 603.518.7495

Mr. Mark Pilotte Ref: 52587.00 June 4, 2019 Page 2



Executive Drive as a result of providing a formal extension of Friars Drive to Executive Drive. As such, we do not believe that there is sufficient analysis provided to support the conclusion of no significant impact to adjacent intersections, including Executive Drive.

# Response:

The proposed right-turn in/right-turn out only site driveway along Lowell Road was developed per discussions with Town representatives and has been reflected within VHB's April 23, 2019 Traffic Impact Assessment memorandum. In addition, VHB has prepared an April 29, 2019 Supplemental Traffic Assessment letter to determine the traffic impacts of the proposed development assuming left turns entering the proposed site driveway from Lowell Road northbound are allowed by using the existing center-turn lane (i.e., lefts in, rights in, and rights out). The Supplemental Traffic Assessment is enclosed with this response to comments letter.

Under the first driveway configuration scenario (right-turn in/right-turn out only driveway), the left turns from Lowell Road northbound onto Executive Drive (i.e., entering site trips) are estimated to increase by 3, 14, and 10 vehicles per hour during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. These minimal increases represent approximately 1 additional vehicle every 4.3 to 20 minutes during the peak hours.

Under both driveway configuration scenarios, the left turns from Executive Drive onto Lowell Road northbound (i.e., exiting site trips destined for Lowell Road north) are estimated to increase by 7, 9, and 10 vehicles per hour during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. These minimal increases represent approximately 1 additional vehicle every 6 to 8.6 minutes during the peak hours.

These traffic volume increases at the Lowell Road and Executive Drive intersection would be negligible and could be considered to be associated with normal traffic fluctuations (i.e., day of the week, seasonal, or general historical growth). As such, no significant impact is anticipated at the Lowell Road and Executive Drive under either of the site driveway configuration scenarios.

Comment 3f: The right turn in-out driveway is designed to preclude left turn exit and entering maneuvers. While prohibiting left turn exits is reasonable, there is no evaluation of the potential for allowing northbound left turns to enter Friars Drive at this location from the dual use center lane, especially since this roadway will be connected to Executive Drive.

# Response:

As identified in Response to Comment 3e, VHB prepared an April 29, 2019 Supplemental Traffic Assessment letter to summarize the anticipated traffic impacts should the proposed right-turn in/right-turn out only driveway be modified to also allow Lowell Road northbound vehicles to turn left into the site by utilizing the existing center turn lane. The findings show that the presence of the center-turn lane and the low volume of entering site trips traveling northbound along Lowell Road would be expected to result in negligible impacts to traffic operations should the proposed right-turn in/right-turn out only driveway be modified to also allow Lowell Road northbound vehicles to turn left into the site.

Mr. Mark Pilotte Ref: 52587.00 June 4, 2019 Page 3



In summary, VHB has prepared responses to the outstanding traffic-related comments and find that proposed development would have negligible traffic impacts on the adjacent roadway system. The traffic impacts have been evaluated in accordance with applicable local, state, and national guidelines, standards, and regulations. VHB appreciates the Town and Fuss & O'Neill, Inc.'s time and efforts in reviewing the proposed development. Please contact me should you have any questions or require additional information.

Sincerely,

Vanasse Hangen Brustlin, Inc.

Jason R. Plourde, P.E., PTP

Transportation Systems Team Leader JPlourde@vhb.com

Enc. April 29, 2019 Supplemental Traffic Assessment



# ATTACHMENT:

Supplemental Traffic Assessment



April 29, 2019

Ref: 52587.00

Mr. Mark Pilotte Dakota Partners 1264 Main Street Waltham, MA 02451

Re: Supplemental Traffic Assessment Multi-Unit Housing Development 161 Lowell Road, Hudson, New Hampshire

Mr. Pilotte,

Vanasse Hangen Brustlin, Inc. (VHB) has prepared this letter to summarize the anticipated transportation impacts associated with a potential modification to the proposed access associated with the residential development to be located at 161 Lowell Road (NH3A) in Hudson, New Hampshire. Access to the site is currently provided by way of a full access driveway on Lowell Road. As proposed, the driveway would be modified to provide right-turns in/right-turns out only. This supplemental assessment has been conducted to summarize the anticipated traffic impacts should the proposed right-turn in/right-turn out only driveway be modified to also allow Lowell Road northbound vehicles to turn left into the site.

# Mainline Left-Turn Movement Impacts

The subject site is located along the west side of Lowell Road. Adjacent to the site, Lowell Road provides a northbound travel lane and a southbound travel lane with a center-turn lane (Two-Way Left-Turn Lane) striped to separate directional flow. The center-turn lane provides a striped median area to remove mainline left-turning vehicles from the through lanes in order to improve traffic flow and roadway efficiency. Left-turning vehicles traveling northbound and southbound can use this center-turn lane to wait for gaps in the opposing traffic stream before turning left onto side streets or driveways.

As detailed within the April 26, 2019 Traffic Impact Assessment, the proposed residential development is estimated to generate 30 vehicular trips (8 entering and 22 exiting) during the weekday morning commuter peak hour, and 36 vehicular trips (22 entering and 14 exiting) during the weekday afternoon commuter peak hour. These site trips have been distributed along the adjacent roadway system based on existing travel patterns along the Lowell Road corridor adjacent to the site. During the weekday morning peak hour, 32% of the site trips were distributed to and from Lowell Road south and 68% were distributed to and from Lowell Road north. During the weekday afternoon peak hour, 62% of the estimated site trips were distributed to and from Lowell Road north.

2 Bedford Farms Drive

Suite 200

Bedford, New Hampshire 03110

P 603.391.3900

F 603.518.7495

Mr. Mark Pilotte Ref: 52587.00 April 29, 2019 Page 2



Based on these methodologies, 3 vehicles would turn left into the site via Lowell Road northbound during the weekday morning peak hour and 14 vehicles would turn left into the site during the weekday afternoon peak hour. These site trips equate to 1 vehicle per 20 minutes during the weekday morning peak hour and 1 vehicle per 4.3 minutes during the weekday afternoon peak hour. These minimal traffic-volume increases combined with the presence of the center-turn lane along Lowell Road would be expected to result in negligible impacts.

# Mainline Right-Turn Treatment Evaluation

A right-turn lane warrant evaluation was conducted along Lowell Road southbound at the proposed site driveway in accordance with National Cooperative Highway Research Program (NCHRP) Report 457. Based on NCHRP guidelines, the peak-hour traffic volumes on an average day (i.e., weekday morning and weekday afternoon commuter peak hours) would suggest that an exclusive right-turn lane is not justified to be provided along Lowell Road southbound at the proposed site driveway.

In accordance with New Hampshire Department of Transportation (NHDOT) practice, a taper or deceleration area is not generally considered when a right-turn lane is not warranted. The times when a taper may be applicable is when accommodating a design vehicle turning right from the mainline onto a side street or driveway so as not to cross into the opposing traffic stream.

# Conclusion

In summary, the presence of the center-turn lane and the low volume of entering site trips traveling northbound along Lowell Road would be expected to result in negligible impacts to traffic operations should the proposed right-turn in/right-turn out only driveway be modified to also allow Lowell Road northbound vehicles to turn left into the site. In addition, the low volume of entering site trips traveling southbound along Lowell Road would not meet the requirements of right-turn treatment beyond accommodating vehicular movements turning into the site.

Sincerely,

Vanasse Hangen Brustlin, Inc.

Jason R. Plourde, P.E., PTP

Transportation Systems Team Leader JPlourde@vhb.com

awn R. Plom Le

<sup>&</sup>lt;sup>1</sup> Bonneson, James A. and Michael D. Fontaine. Evaluating Intersection Improvements: An Engineering Study Guide. National Cooperative Highway Research Program Report 457. Washington, DC: Transportation Research Board, 2001.



# ATTACHMENTS:

Build Traffic-Volume Networks NCHRP Right-Turn Lane Warrant Calculations

Project Multi-Unit Housing

Location Hudson, NH.

Calculated by JPP

Checked by

52587.00

Sheet

Date

1 of 1 4/29/19

Date

Computations

TITLE Build Networks RIGHT-TURNIN/RIGHT-TURN DUT Weekday Pul Weekday Am NO LEFTS OUT

Weekday AM

Whelday PM

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT		
Roadway geometry:	2-lane roadw ay	adw ay
Variable		Value
Major-road speed, mph:		30
Major-road volume (one direction), veh/h:		1207
Right-turn volume, veh/h:		5

Major-road volume (one direction), veh/h:	1207
Right-turn volume, veh/h:	- 5
OUTPUT	
Variable	Value
Limiting right-tum volume, veh/h:	8
Guidance for determining the need for a major-road	
right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	

bay			-	1400	h/h
Add right - tum bay		- Laboratory of the Control of the C		1200	tion), ve
Adı				1000	Major-Road Volume (one direction), veh/h
111111111111111111111111111111111111111				800	olume (c
	d d ad Attempts & Franchisco			909	r-Road V
		and the state of t		400	Majo
120	8 6	40	20	200	
e' ∧eµ\µ					

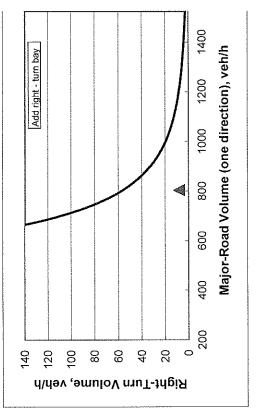
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

۲	
-	1
ā	_
$\equiv$	,

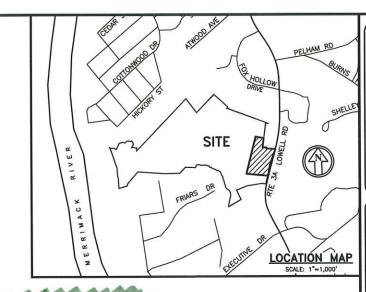
Roadway geometry:	2-lane roadway ▼
Variable	Value
Major-road speed, mph:	30
Major-road volume (one direction), veh/h:	803
Right-turn volume, veh/h:	8

# OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	99
Guidance for determining the need for a major-road	
right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



# Friars Court SITE PLAN





The Dubay Group, Inc 84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors TheDubayGroup.com

RECEIVED

JUN 07 2019

TOWN OF HUDSON PLANNING DEPARTMENT DATE: COMMENT:



5/6/19 MISC. REVS 2 5/14/19 REV. PER DRAINAG GRADING MODIF. 3 5/21/19 MISC. SEWER PER

# SHEET INDEX

- TITLE SHEET PROJECT COMPLIANCE NOTES
- TRACT OVERVIEW PLAN
- SITE SPECIFIC SOILS
- EXISTING CONDITIONS PLAN SUBDIVISION & EASEMENT PLANS
- TRACT ACCESS & DENSITY SUMMARY PLAN
- IRACI ACCESS & DENSITY SU SITE LAYOUT PLAN LANDSCAPE PLAN & DETAILS GRADING & DRAINAGE PLAN UTILITY PLAN LIGHTING PLAN EPOSICIAL CONTROL PLAN

- EROSION CONTROL PLAN
- TRUCK CIRCULATION PLAN SITE DETAILS - 1 THRU 13
- IMPERVIOUS AREA SUMMARY
- SEWER PROFILES
- 32-33 PRE/POST DEVELOPMENT WATERSHED PLAN

- ROADWAY RECONSTRUCTION PLAN
- TYPICAL SECTION
- ROADWAY EROSION CONTROL PLAN

FRIARS ROAD RECONSTRUCTION PLANS

ROAD RECONSTRUCTION PROFILE &

R4-R7 ROAD UPGRADE DETAILS 1-4

SHEET TITLE:

DRAWN BY: CHECKED BY: DATE:

SCALE: FILE: DEED REF:

PROJECT:

TITLE SHEET

FRIARS COURT

**MAP 209 LOT 1** 

161 LOWELL ROAD

DAKOTA

PARTNERS, INC.

1264 MAIN STREET

WALTHAM, MA 02451

PROJECT #357 SHEET 1 of 33

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED

APPROVED BY THE HUDSON, NH PLANNING BOARD

LOWELL ROAD

**ROUTE 3A** 

V-334-(27.2) Lot Requirements for Subdividing

All lots shall meet the minimum lot area, minimum lot frontage, and building setback requirements provided in § 334-27, Table of Minimum Dimensional Requirements. The minimum lot area shall be contiguous land and shall not be separated by a wetland, a waterway, or a right-of-way. The minimum lot area shall not contain wetland, as defined by the Hudson Zoning Ordinance, and shall contain no slopes in excess of 25%. (complies).

Wetland Conservation District -

Permitted Uses by ZBA Special Exception

association with the site plan work.

Required for a specific area of 50-foot upland buffer which is located within the existing Friars Drive roadway which is to be improved/reconstructed. No buffers are proposed to be disturbed in

- (1) Refer to conditions in the ZBA application filing (a) through (e) (see Section 23 above) that are in compliance, with input including concom and planning board)
- (2) Allowed uses include drainage, utilities, access ways, buffer grading related thereto, etc.

XII-334-60

C. Front setback - Not less than 50% of the front building setback. D. Side/Rear setback - Not less than 100% of the associated building

J. E911 - 4 inch B/W lettering for street address required. Refer to ordinances/regulations for sign sizing/design which shall be in compliance in order to issue a sign permit.

Impact Fees

(To Be Determined as required)

WW Flood Hazard Areas

Per FEMA Map 33011C0652E dated 4-18-2011, 100-YR flood Zone along Merrimack River ELEV 112.0. None of the proposed work is located within or near the Flood Zone. The distance to the Merrimack River from the limit of road reconstruction work and proposed site parcel is approximately 2,200 feet and 2,600 feet, respectively.

**Site Plan Regulations Compliance Notes** 

Parking

(7)(d)

(2)(o) Residential Units - 2 spaces per unit. Plans depict 1,5 spaces per unit proposed, and also depict 2.0 spaces per unit to show compliance. A waiver is requested for 1.5 with the 2.0 depicted as "banked" loamed/seeded which could be invoked at any point in the future as determined by the Code Enforcement Officer if a demonstrated need is abvious.

- Spaces 96 units x 2 spaces per unit = 192 spaces required (min). @1.5 factor, 144 spaces are required (see waiver language above).
- Dimensions 10 x 20 FT
- (5)(a) Aisles 24 FT (min) @ 90-degree spaces two way
- (6)(d) Loading Maneuvering Areas Sufficient to accommodate vehicles (UPS and moving box trucks as well as Fire Trucks)
- (7)(a) Interior Area of parking lot (spaces and drive aisles) for landscaping (10% min) - see sheet 30 for calculations.
- (7)(c) Shade Trees: 1:1600 SF pavement or 1:5 parking spaces (greater of) see landscape plan.

Shrubs - 1:200 SF pavement or 1:1.6 parking spaces (greater of) - see landscape plan.

Screening - required between parking or loading areas and, if present, an abutting residential zone. Screening may be required between abutting nonresidential sites. Where screening is required, it shall provide a reasonable effective visual buffer by

Use of existing vegetation and terrain where possible Use of new plantings, grade separations, fences, etc.

(9) Parking shall be on same lot as use served.

(10) Entrance design and construction shall conform with the requirements of Chapter 193 driveways except that site plan approval shall constitute the issuance of a driveway Permit.

(11) ADA per federal regulations - at 192 spaces, 6 spaces to be ADA. Provide 2 additional at club house additional parking area, provide ADA compliant path of travel between buildings and club house and between all ADA parking and entrances/exits.

IJ-275-9.A Stormwater Management

(1) No stormwater runoff in excess of rates existing prior to new construction shall be allowed to be discharged onto a public way or into a grainage system unless there is sufficient capacity to handle the additional runoff. All drainage shall be designed to achieve a zero increase in runoff for both peak and volume where practicable, except where the off-site drainage system has been designed to accommodate the site drainage.

(4a) 10-YR event for closed drainage systems and roadside ditches.

(4b) 25-YR event for culverts, major swales and detention ponds.

Traffic Study - to be provided

II-275-9.B Fiscal Impact Study - to be provided relative to public school statistics II-275-9.E Utility Plan - provided

11-275-9 F Easements, Covenants, Deed Restrictions, Legal Docs - to be provided II-275-9.G Permits as Applicable

(1) Sewer - building connections

(3) Wetlands Ordinance Special Exception - for Friars Drive reconstruction

#### **Driveway Regulations**

193-10.6 Limitations - One driveway maximum per parcel is allowed. Location - Not allowed in side or rear setback areas, unless a shared access is 193-10.H required by Planning Board.

#### Subdivision Regulations

Shared Access Roads - May be required depending on the overall buildout planning provisions.

Sideline Angle at ROW - 45 degrees minimum required.

Streets - Access has been master planned for full development, see plans. III-289-21 Utility Easements - Provided as needed, min width 15 FT (20 FT for drainage

public watercourses).

The Dubay Group, Inc

84 Range Road Indham, NH 03087 603-458-6462

Engineers Planners

Surveyors The Dubay Group.com

REVISIONS: EV: DATE: COMMENT: 6/5/19 REV. PER TOWN COMMENTS

DRAWN BY: CHECKED BY: DATE: KRD APRIL 29, 2019 SCALE NONE FILE: DEED REF: 357-NOTES

FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD

HUDSON, NH

-FOR-

DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

PROJECT COMPLIANCE NOTES

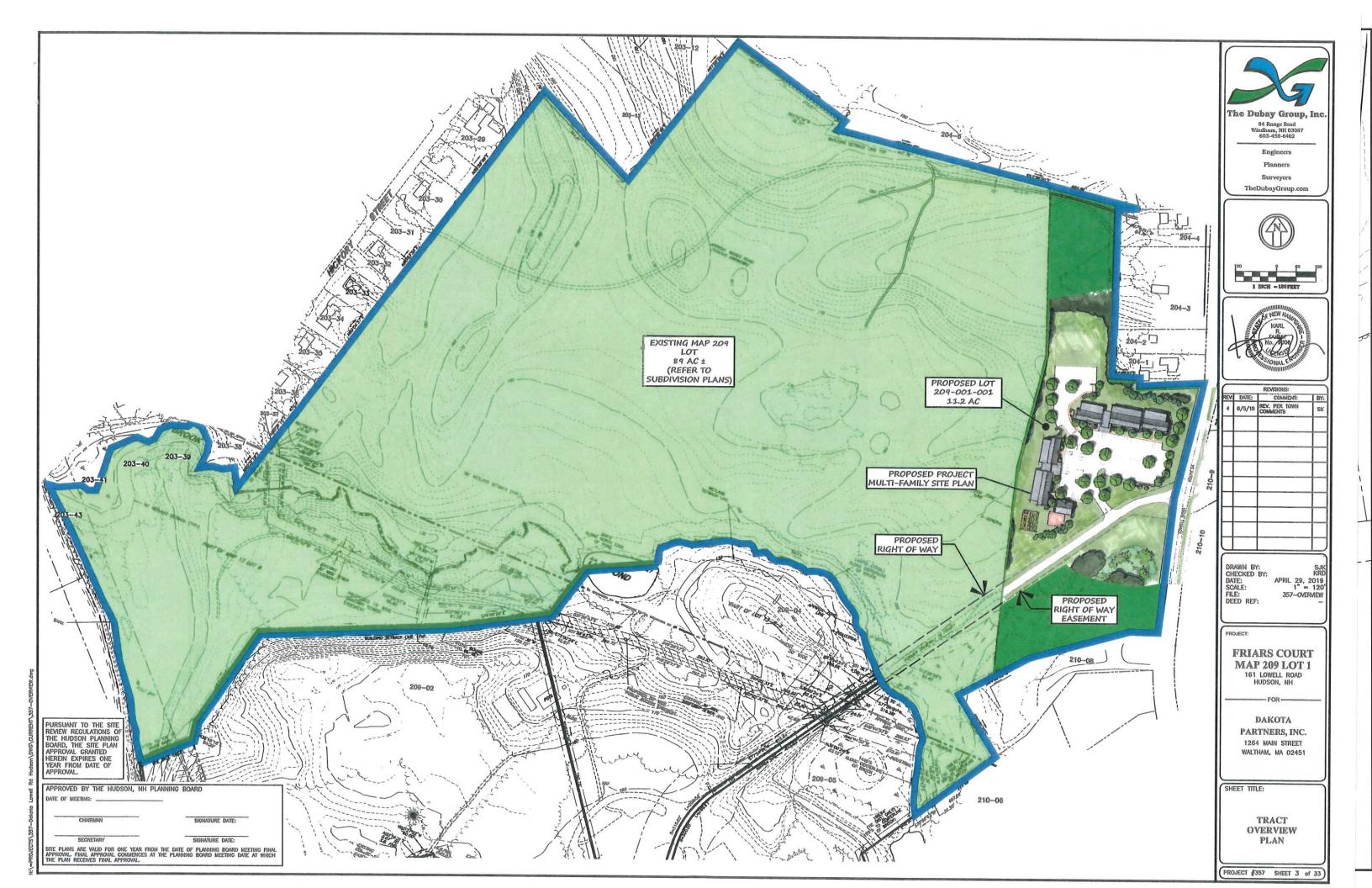
PROJECT #357 SHEET 2 of 33

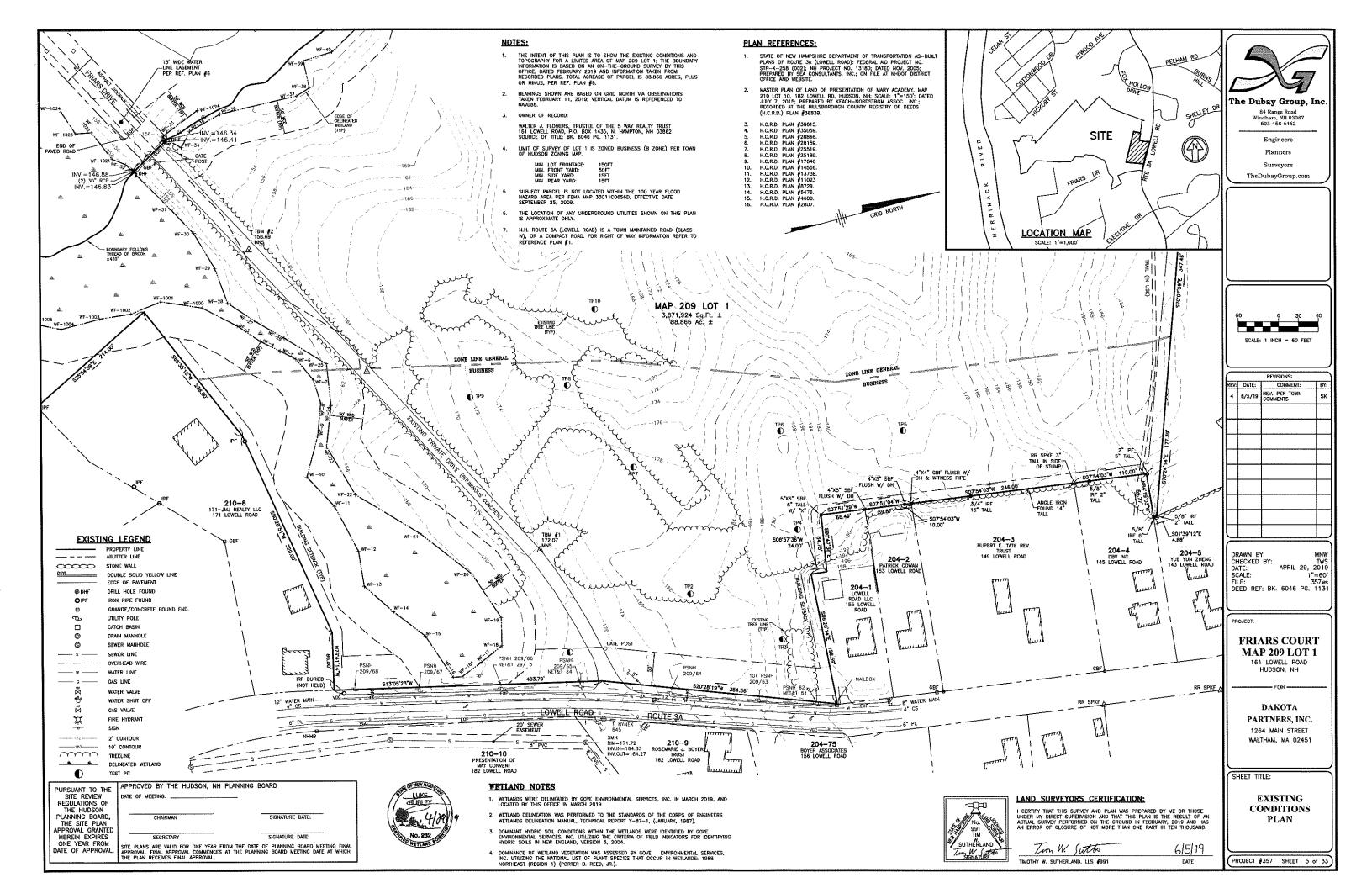
BOARD, THE SITE PLAN PPROVAL GRANTER HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: SECRETARY SIGNATURE DATE: SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE FLAN RECEIVES FINAL APPROVAL.

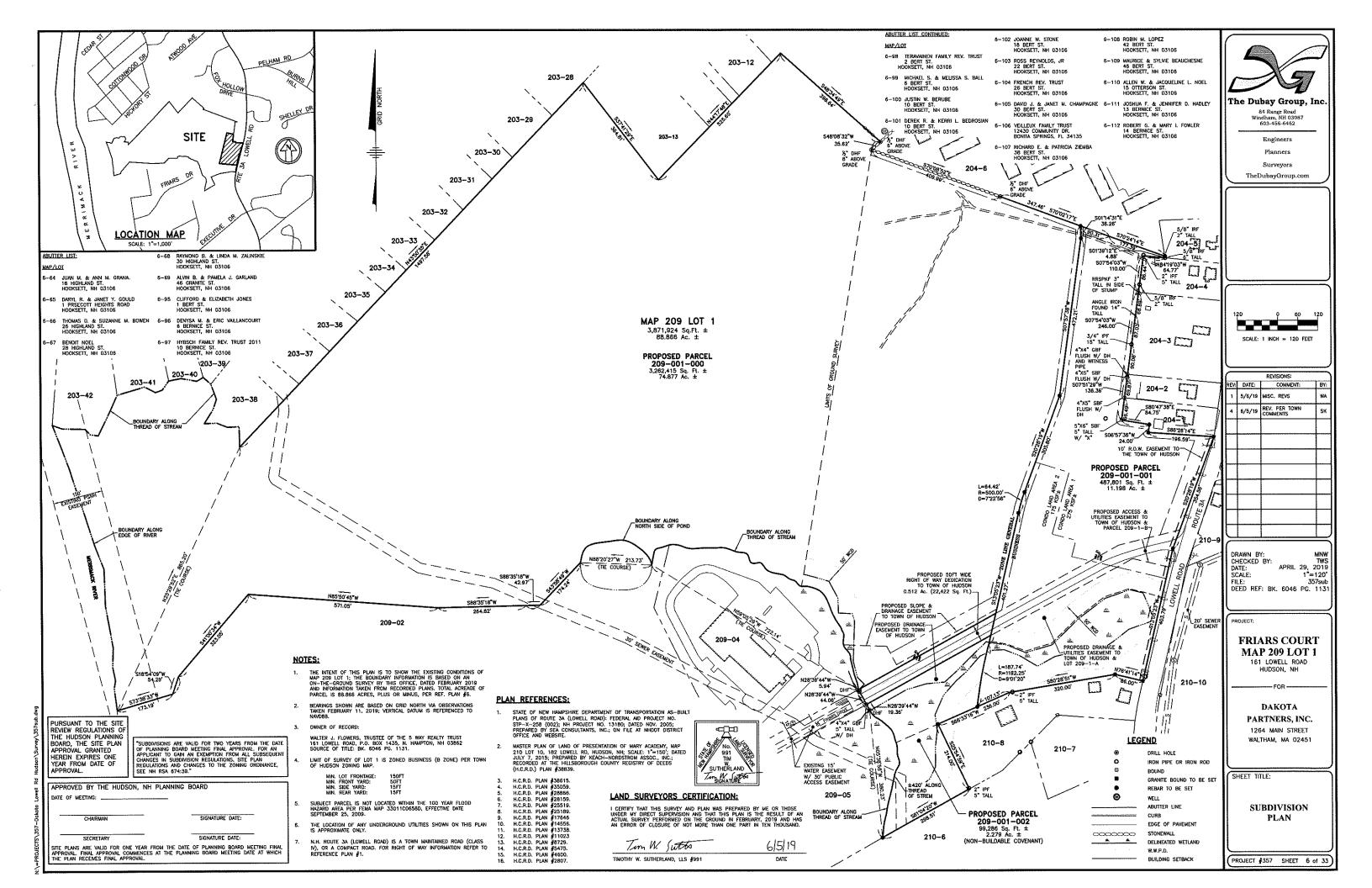
PURSUANT TO THE SITE

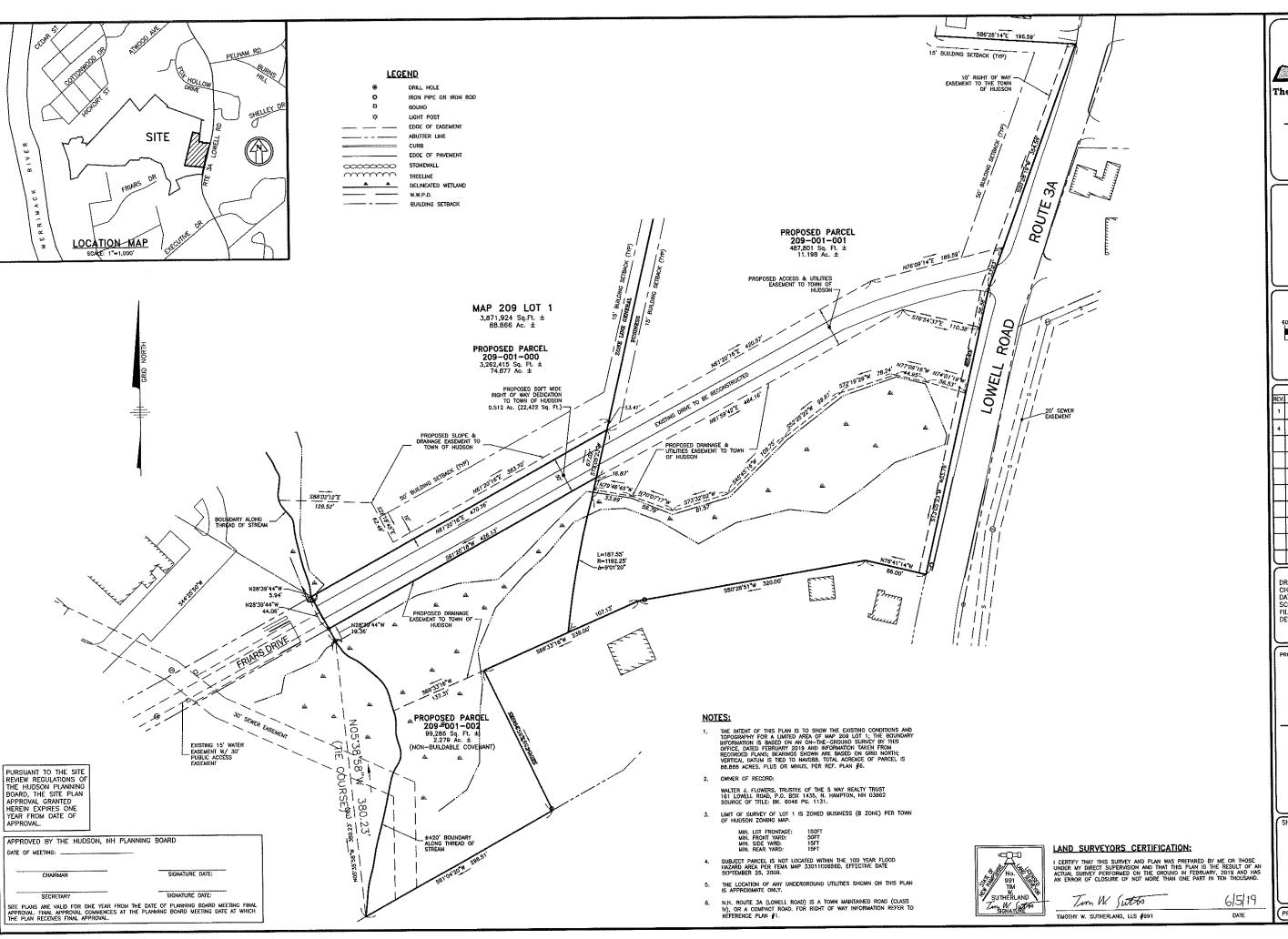
Refer density calculations in plans (complies),

Shall be measured in a continuous line along the sideline of a Class V or better street between the points of intersection of the side lot lines with the street. If a lot has frontage on more than one street, the frontage on one street only may be used to satisfy the minimum lot frontage.









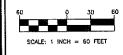
The Dubay Group, Inc.

84 Range Road Windham, NH 03087 603-458-6462

Engineers

Planners

Surveyors TheDubayGroup.com



$\overline{}$		REVISIONS:	
REV:	DATE:	COMMENT:	BY:
1	5/6/19	MISC. REVS	WA
4	6/5/19	REV. PER TOWN COMMENTS	SK
Г			
Γ			
Г	<u> </u>		

DRAWN BY: MNW
CHECKED BY: TWS
DATE: APRIL 29, 2019
SCALE: 1"=60'
FILE: 357-EASEMENTS
DEED REF: -

PROJEC

## FRIARS COURT MAP 209 LOT 1

161 LOWELL ROAD HUDSON, NH

# DAKOTA

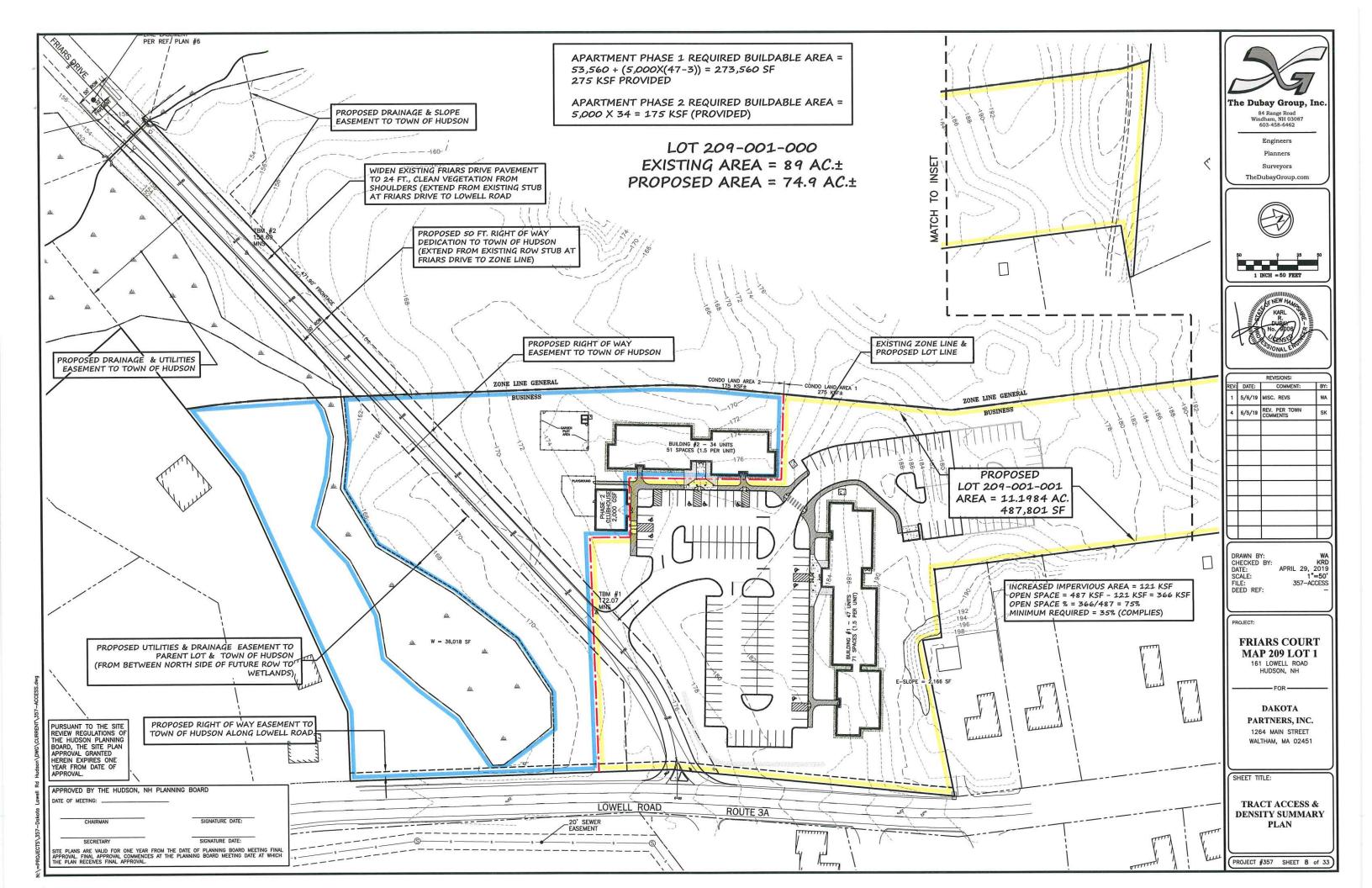
PARTNERS, INC.

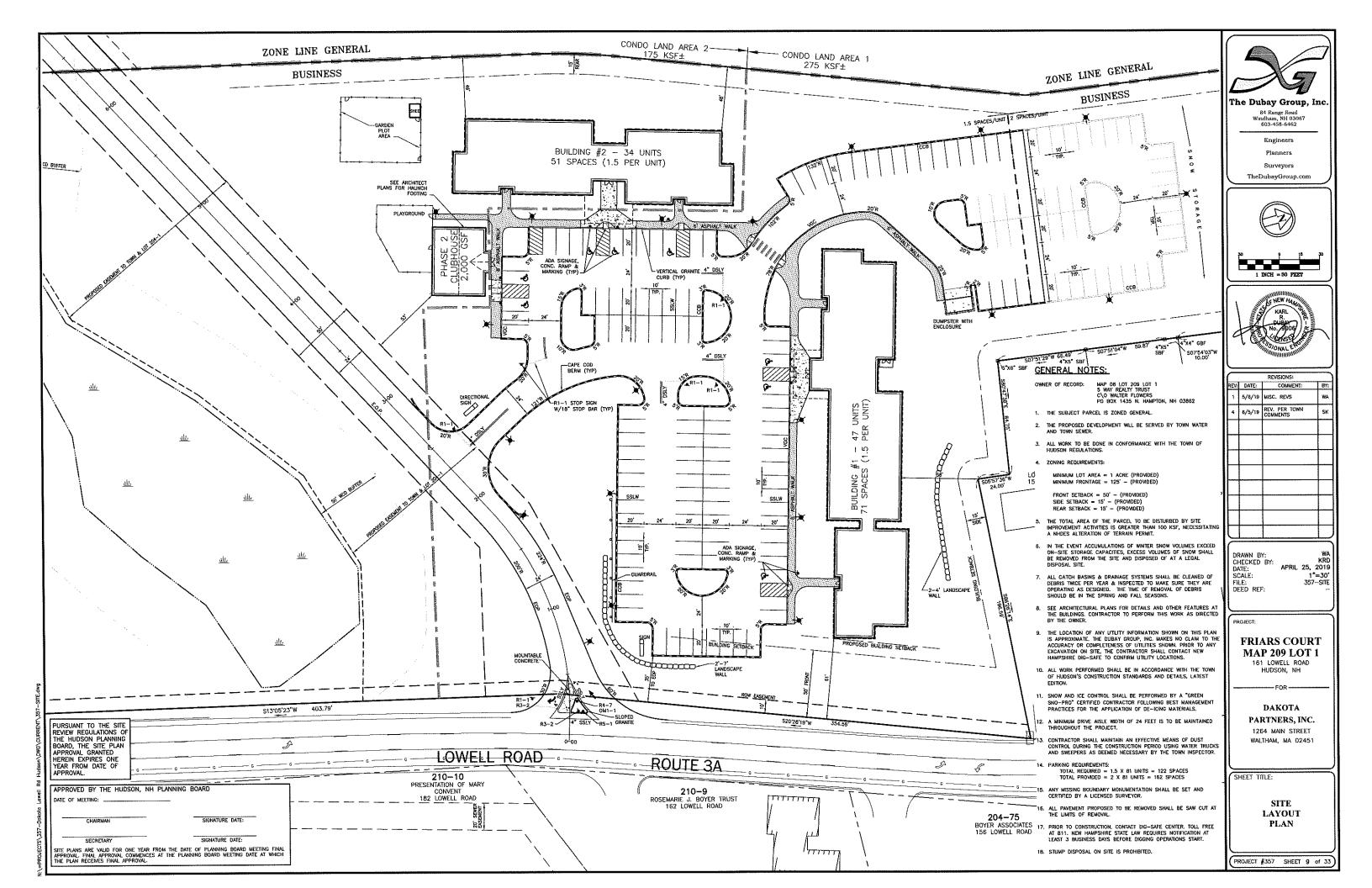
1264 MAIN STREET WALTHAM, MA 02451

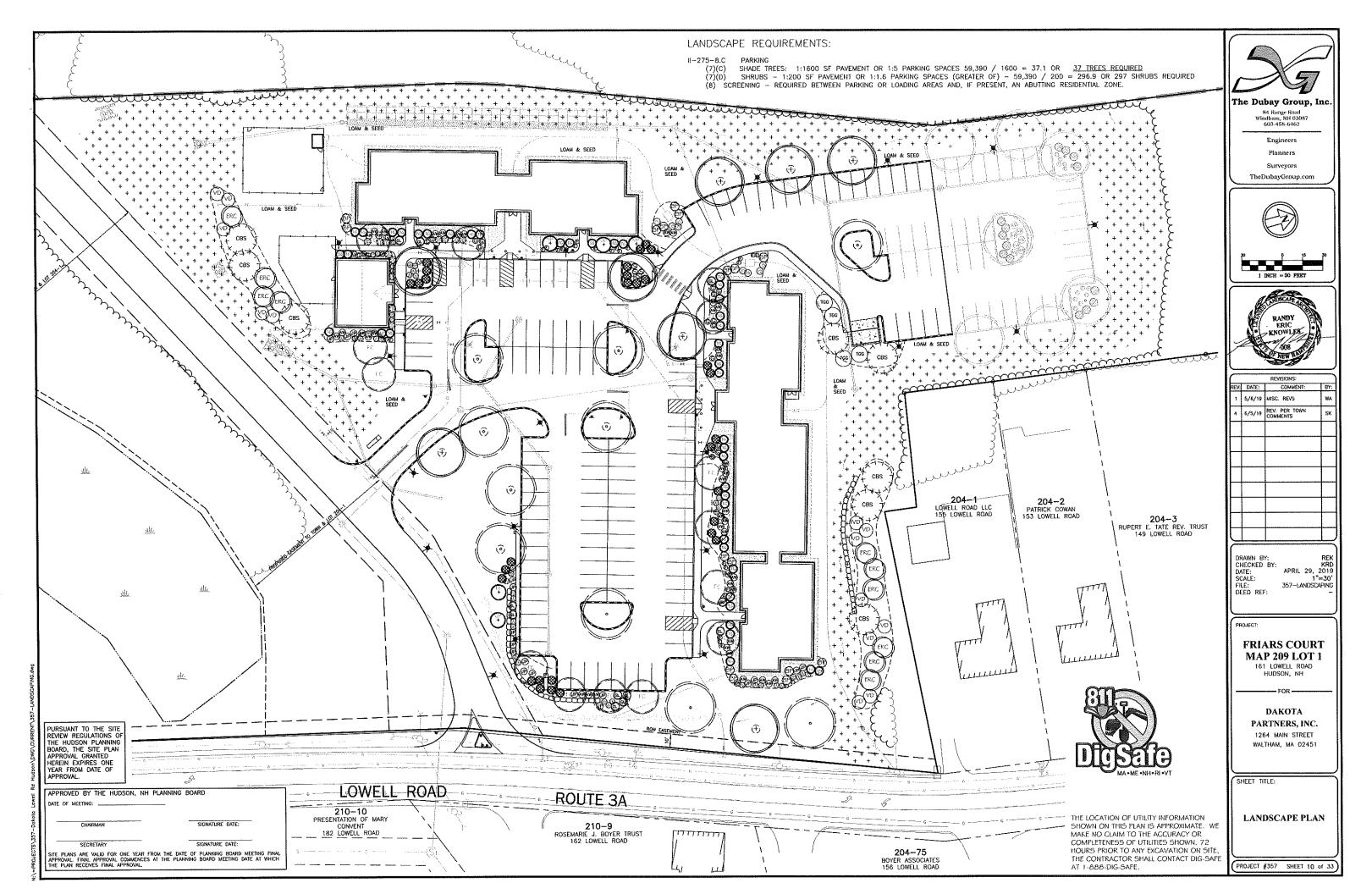
SHEET TITLE:

EASEMENT PLAN

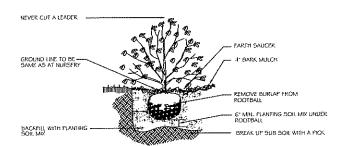
PROJECT #357 SHEET 7 of 33







# DECIDUOUS TREE PLANTING DETAIL



# SHRUB PLANTING DETAIL

NEVER CUT A LEADER

FOR TREES S' IN LIBRIOT OR GREATER
(2) #12 CB ACMV. TWESTED WARES AT 120'
SPACIAIG WITH 6 1/2' GAL JURNBUCKLE
WARE IN KURBER HOPE AROUND TIKE
ATTACH TO TREE AT 1/2 TO 2/3 HEIGHT
OF TREE ATOPS CANDER

FOR TREES LESS THAN 5' IN HEIGHT
(3) 2'> 2'-2' S' SPRUCE STAKES AT 120'
STAKES TO BE CLEAR OF ROOTBALL

SURVEY FLAGGING

GROUND LINE TO BE SAME AS AT NURSERY

4' SHREDDED HARDWOOD BARY MULCH

FORM SAUCER FOR WAIER RETERTION;

REMOVE DURLAP FROM

ROOTBALL

BACKET LEWTH PLANTING MIX

SCARIFY SUSSESSED WITH PICK.

EVERGREEN PLANTING DETAIL NO.

# LANDSCAPE NOTES:

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

2. WHEREVER POSSIBLE EXISTING TREES SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. DISTURBED SIDE SLOPES SHALL BE ALLOWED TO NATURALLY VEGETATE TO SUSTAIN EXISTING WILDLIFE AND PLANT LIFE.

3. THE PROPOSED DECIDUOUS FREES SHALL BE A MIN. 2.5" CALIFER WITH EVERGREENS AT 6" HT.

4. 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.

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

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

7. ANY PROPOSED PLANT MATERIAL SUBSTITUTIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE AND THE LARDSCAIT ARCHITECT.

8. 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 PROOF TO INSTALLATION.

9. 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 DEPECTS AND BUILDING.

10. CONTRACTOR SHALL REPORT ANY 50IL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL.

11. 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.

12. 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 LOWGER THAN A THREE DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURBLY THIS PERIOD WAS BE PERIOTED.

13. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH ANSI 260 (REV. 1996) "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

14. 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.

15. 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.

16. 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 PROZEN CONDITION. ALL FLANT MATERIAL SHALL BE SPRAYED WITH WILT-PRUF OR EQUAL AS PER MANUFACTURERS INSTRUCTIONS.

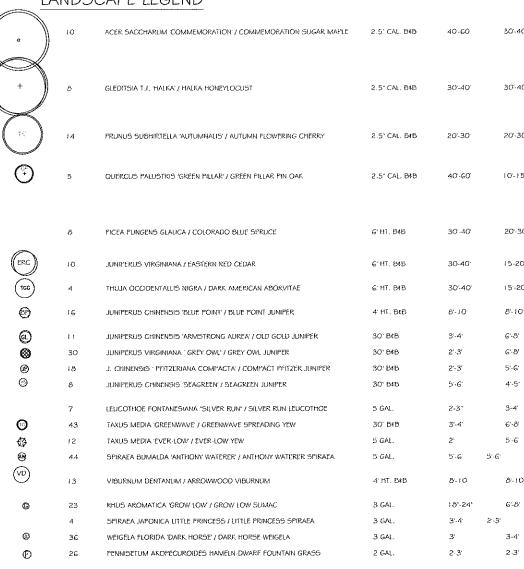
17. NO PLANT, EXCEPT GROUND COVERS. SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING

18. 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.

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

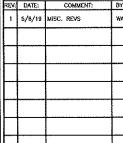
20. NO SOIL CONTAINING ANY LIVING OR VIABLE PORTION OF PLANTS ON THE NEW HAMPSHIRE PROHIBITED INVASIVE SPECIES LIST (AGR TABLE 3800) SHALL BE TRANSPORTED TO OR FROM CONSTRUCTION SITES WITHOUT NOTIFICATION AND APPROVAL FROM THE NEW HAMPSHIRE DEPT. OF AGRICULTURE PER RSA 430:55.

# LANDSCAPE LEGEND





SIDE SLOPE AREAS TO BE SEEDED WITH ERNST SEED - MEADOW MIX (OR EQUIVALENT) - 20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT . MOW ONCE IN THE PALL WHEN SEEDS HAVE DROPPED TO PREVENT SAPLINGS FROM



REVISIONS:

The Dubay Group, Inc 84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors

TheDubayGroup.com

FRIC

DRAWN BY: CHECKED BY: DATE: SCALE:

r: KRD APRIL 29, 2019 357—LANDSCAPING

PROJECT:

FILE: DEED REF:

> FRIARS COURT MAP 209 LOT 1 161 LOWELL ROAD HUDSON, NH

> > ---- FOR ----

# DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

LANDSCAPE NOTES
AND DETAILS

PROJECT #357 SHEET 11 of 33

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

APPROVED BY THE HUDSON,

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING:

CHAIRMAN

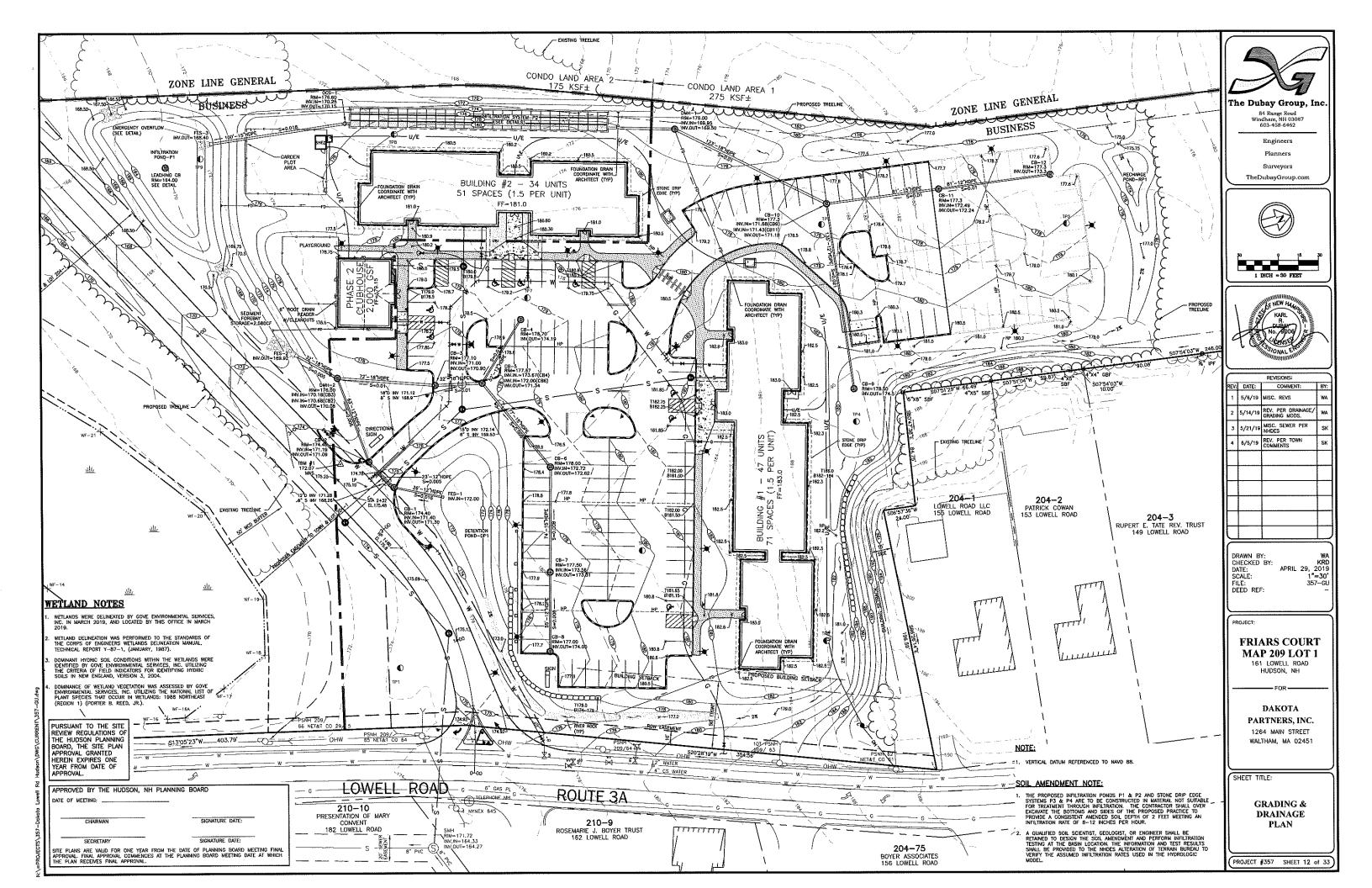
SIGNATURE DATE:

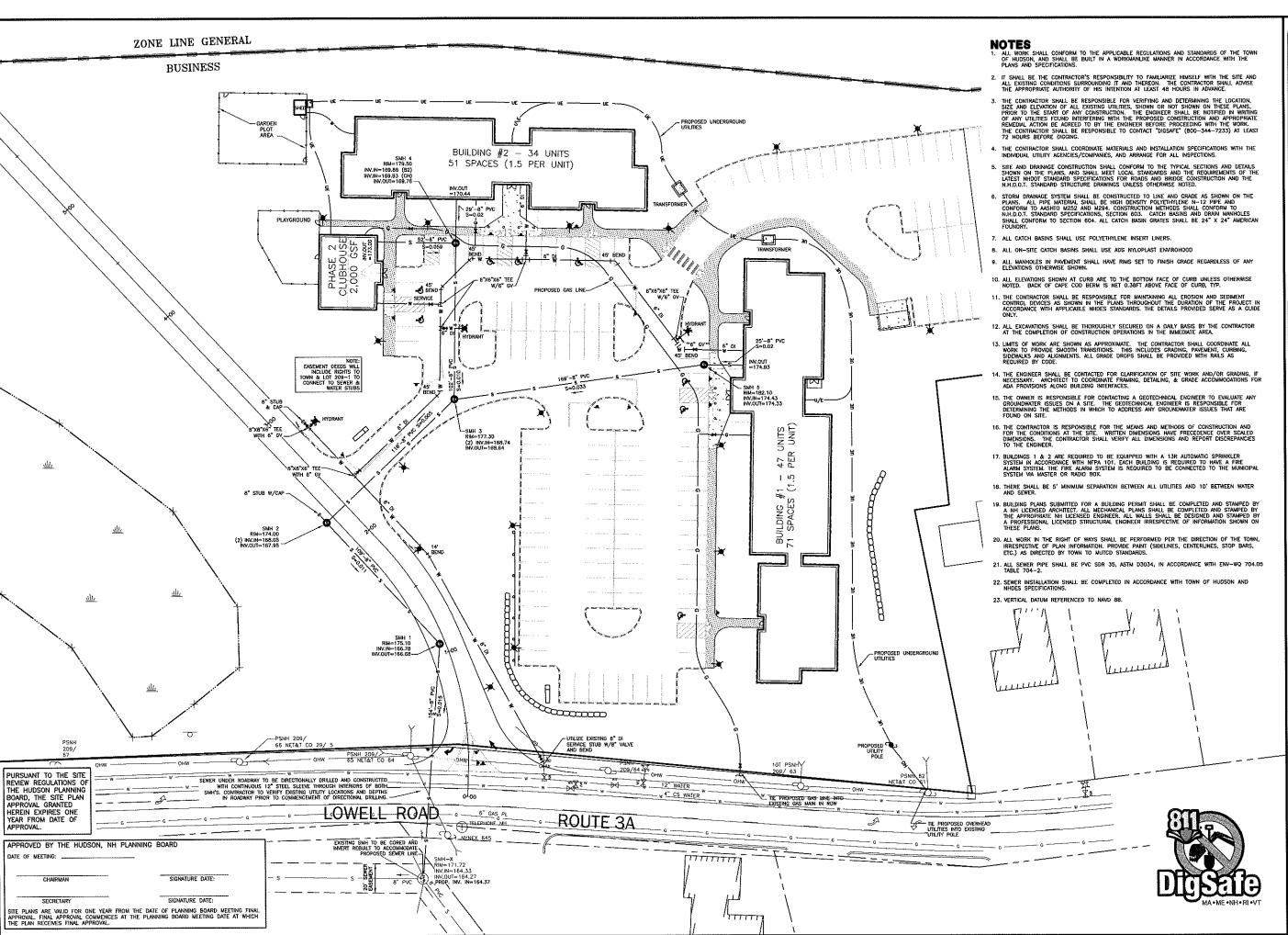
SECRETARY

SIGNATURE DATE:

SITE FLANS ARE WALD FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL

THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. WE MAKE NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. 72 HOURS PRIOR TO ANY EXCAVATION ON SITE, THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 1-898-DIG-SAFE.







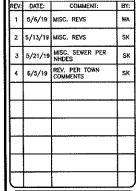
The Dubay Group, Inc

84 Range Road Windham, NH 03087 603-458-6462

Engineers

Planners

Surveyors TheDubayGroup.com



REVISIONS:

CHECKED BY: DATE:

MAY 13, 2019 SCALE: FILE: DEED REF: 1"=30' 357-utility

PROJECT

FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD HUDSON, NH

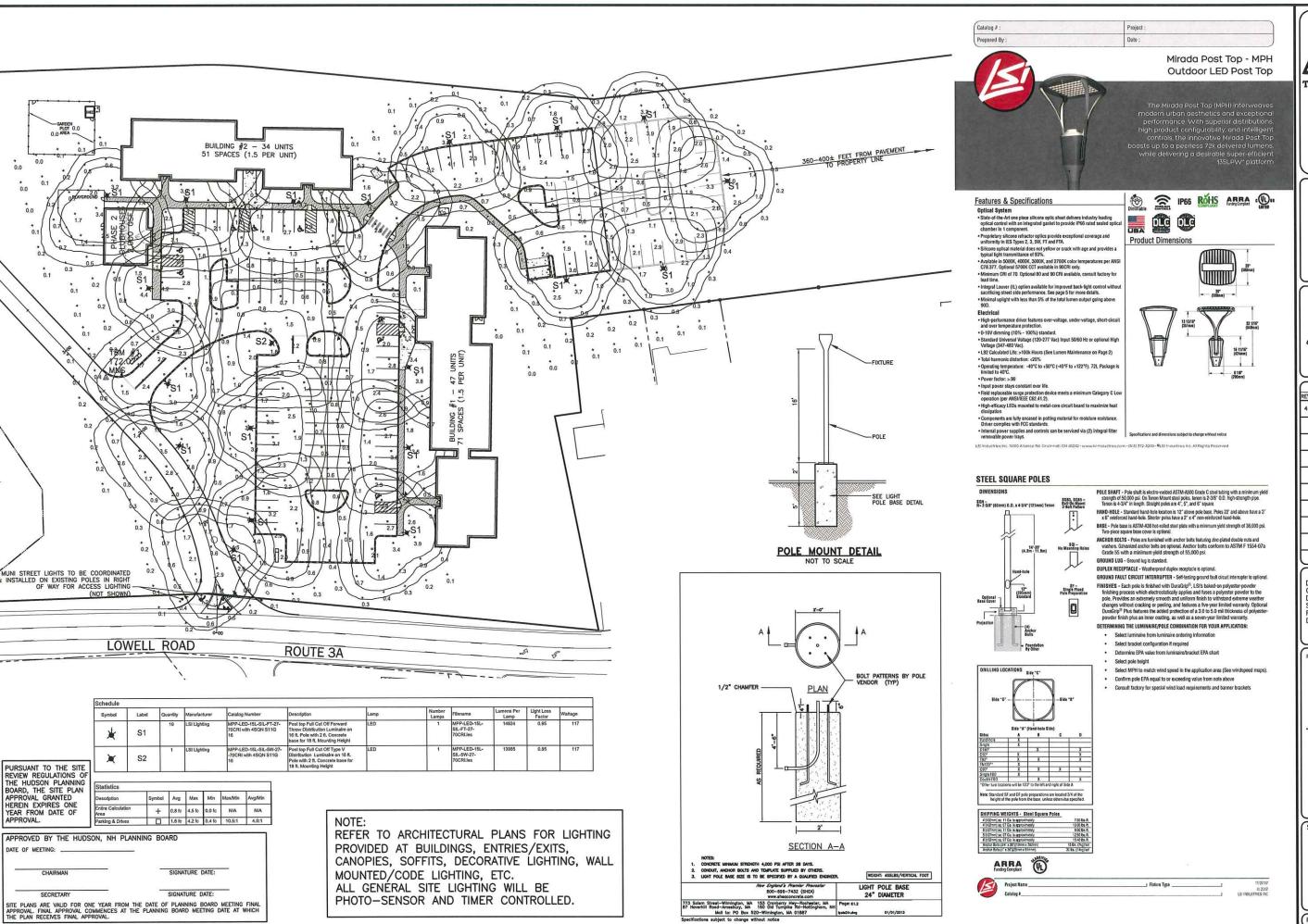
DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

UTILITY PLAN

PROJECT #357 SHEET 13 of 33



The Dubay Group, Inc.

84 Range Road Vindham, NH 03087 603-458-6462

Engineers

Planners Surveyors

TheDubayGroup.com







	REVISIONS:				
REV:	DATE:	COMMENT:	BY:		
4	6/5/19	REV. PER TOWN COMMENTS	SK		
			1		
			$\perp$		
			$\perp$		
			$\top$		

APRIL 29, 2019 1"=40' CHECKED BY: DATE: SCALE: 357-LIGHTING FILE: DEED REF:

ROJECT:

FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD

HUDSON, NH

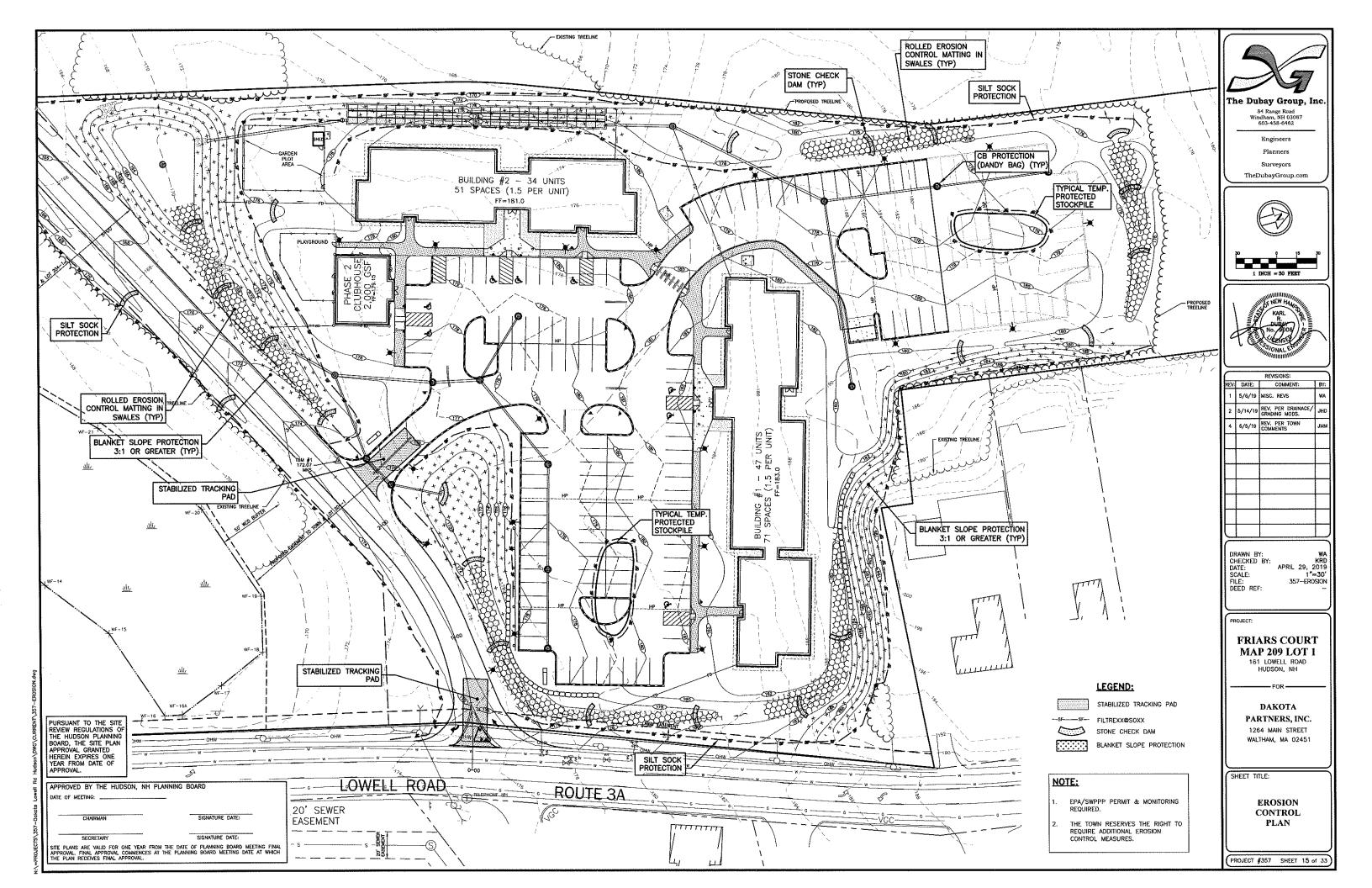
DAKOTA PARTNERS, INC. 1264 MAIN STREET

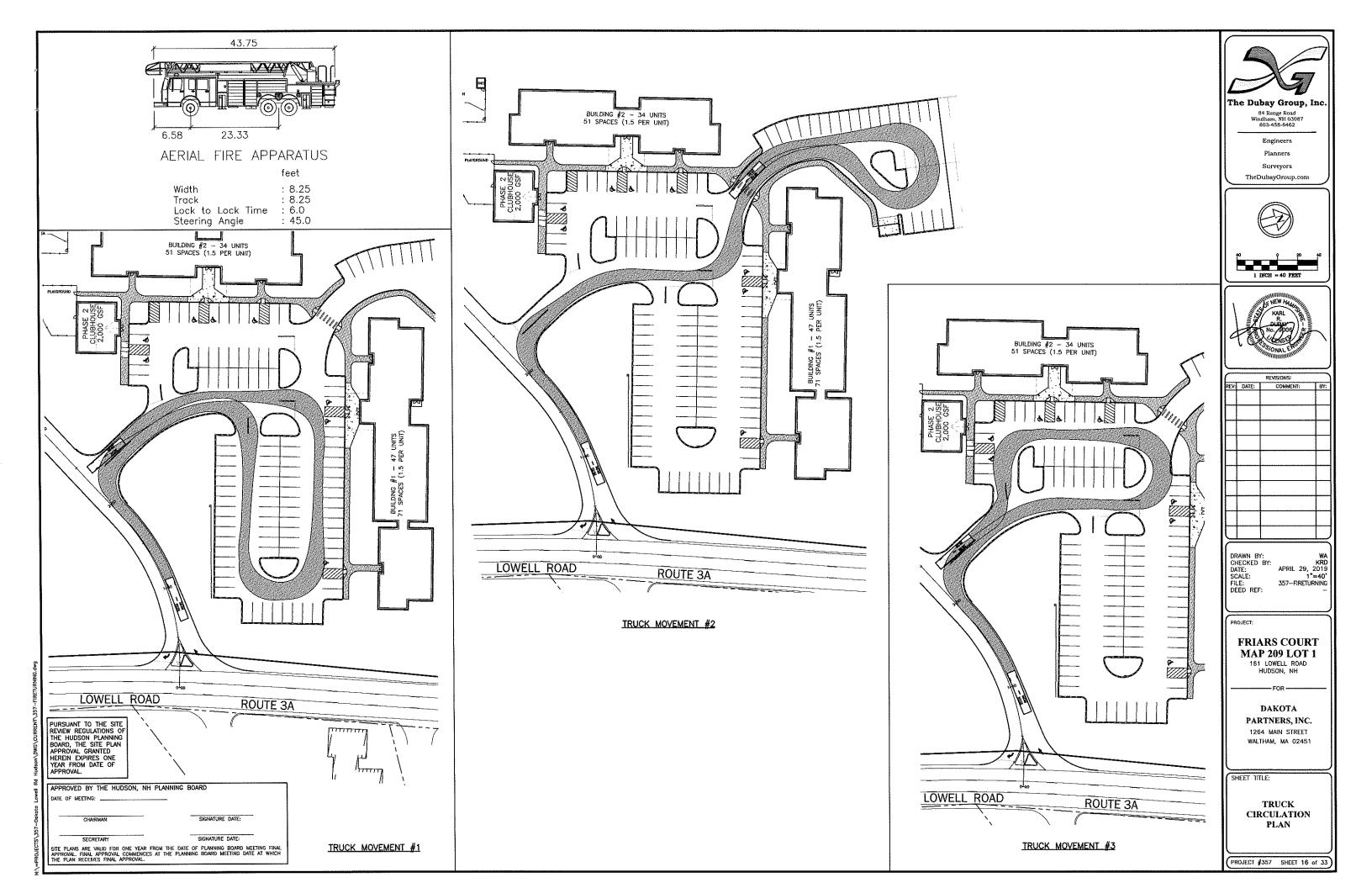
WALTHAM, MA 02451

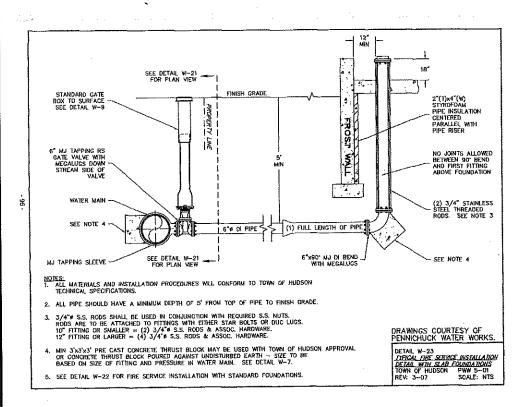
SHEET TITLE:

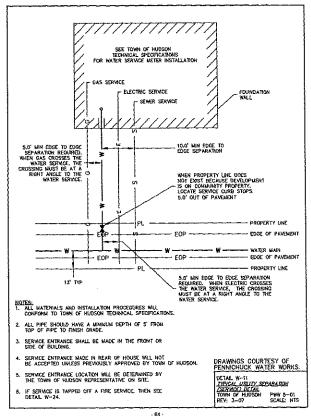
LIGHTING **PLAN** 

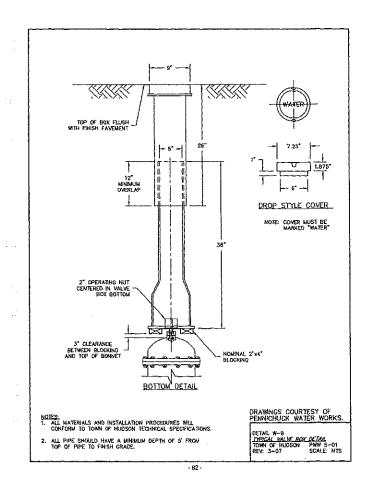
PROJECT #357 SHEET 14 of 33

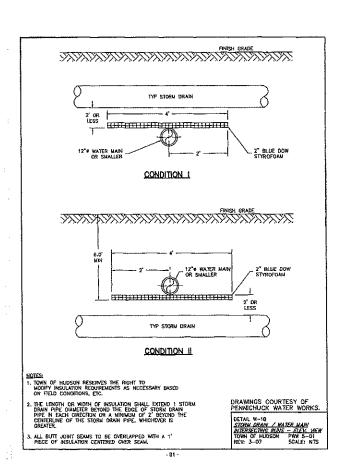


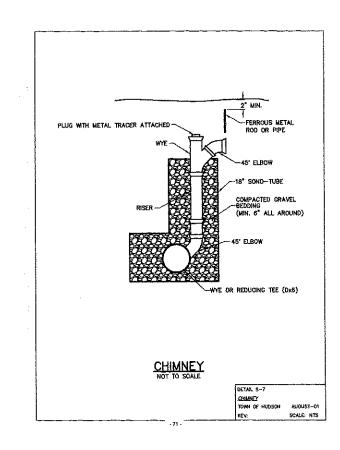


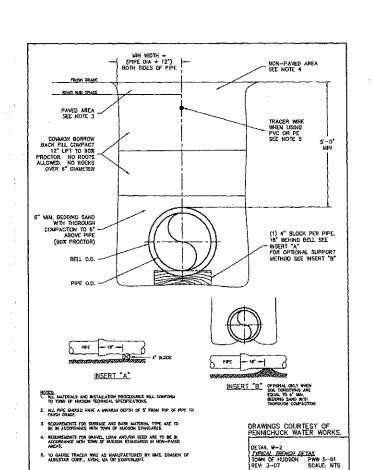














84 Range Road Indham, NH 03087 603-458-6462

Engineers

Planners Surveyors

TheDubayGroup.com



┖					
_	REVISIONS:				
REV:	DATE:	COMMENT:	BY:		
Н		******	+-		
Н					
Ш					
Н			+		
Ш					
Г					

CHECKED BY: DATE: SCALE:

SJK KRD APRIL 29, 2019 AS SHOWN 357-DETALS1-3

PROJECT:

FILE: DEED REF:

FRIARS COURT **MAP 209 LOT 1** 

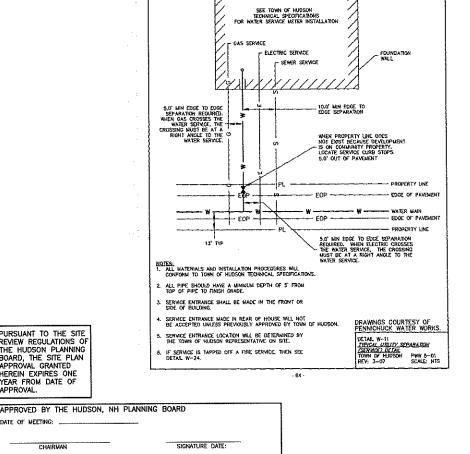
161 LOWELL ROAD HUDSON, NH

DAKOTA PARTNERS, INC. 1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

SITE **DETAILS - 1** 

PROJECT #357 SHEET 17 of 33

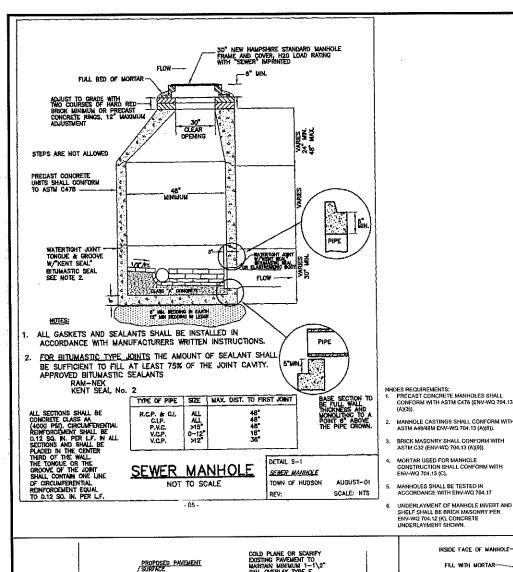


SIGNATURE DATE:

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEMES FINAL APPROVAL.

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

DATE OF MEETING:



SAW CUT - MATCH TO EXIST.

PAVENENT END MATCH

SCALE: NTS

TOWN OF HUDSON

1-1\2\*

PAVEMENT END MATCH

> 5%

10'

20'

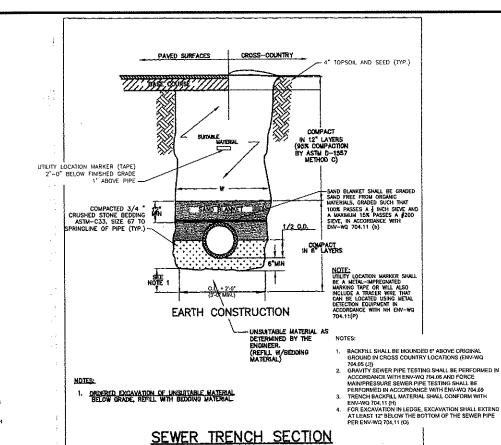
< 5%

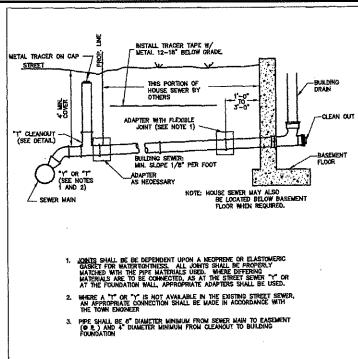
Б,

NEGATIVE SLOPE

POSITIVE SLOPE

APPROVED BY THE HUDSON, NH PLANNING BOARD





BUILDING SERVICE CONNECTION

FLEXIBLE JOINT A FLEQUIE JOINT SHALL GE PROVIDED WITHIN THE FOLLOWING DISTANCES:

ROP & CF PIPE (LL SIZES) 48°

AC & VC PIPE (LP THROUGH 12' DIA): 16°

AC & VC PIPE (LARGER THAN 12' DIA): 36°

SHALLOW MANHOLE IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 8 FEET, A REINTERCE CONCRETE SLAB COVER MAY BE USED. IT MUST HAVE AN ECCENTRIC ENTRANCE OPENING AND BE CAPABLE OF SUPPORTING H-20 LONGS.

PL PIPE - NONE REQUIRED
PIUC (ASTM 3034) - UP THROUGH 15: DIA - NONE REQUIRED
PIUC (ASTM 5676) - LATGER THAN 16: DIA - 48° - 66°
PIUC (ASTM F 789) - ALL SIZES - 48° - 60°
ALL SIZES - SAME AS PVC ABOVE

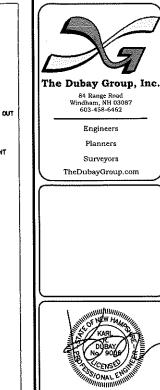
<u>Under severe conditions</u> when differential setting cannot be controlled within mornal limits, variations in the stub length may be necessary other plastic pupes shall be reviewed on a case by case basis.

DETAIL 5-5

BUILDING SERVICE CONNECTION

TOWN OF HUDSON AUGUST-D

SCALE: NTS



COMMENT V: DATE: 2 5/14/19 MISC. REVS 3 5/21/19 MISC. SEWER PER NHDES

CHECKED BY: DATE: SCALE:

SJK KRD MAY 13, 2019 AS SHOWN 357-DETAILS1-3

PROJECT:

FILE: DEED REF:

FRIARS COURT MAP 209 LOT 1

> 161 LOWELL ROAD HUDSON, NH

DAKOTA

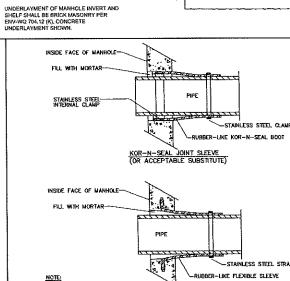
PARTNERS, INC. 1264 MAIN STREET

WALTHAM, MA 02451

SHEET TITLE:

SITE DETAILS - 2

PROJECT #357 SHEET 18 of 33



PIPE TO SEWER MANHOLE JOINTS

COVER PLATE

1-1/2 **COVER SECTION** 

SEWER MANHOLE COVER NOT TO SCALE

1. ALL MANHOLES, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE, STRENGTH AND LEAPPROOF GUALIFIES CONSIDERED HECKSSARY BY THE ENGINEER FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DEARWING, MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STELL REINFORDENT, HATH ADEQUATE, CONTINUE, OR CONCRETE CAST MONOLTHICALLY IN PLACE WITH OR WITHOUT STRUCTURE SHALL BE OF SUCH MATERIAL AND THE CONTINUENT STRUCTURE SHALL BE OF SUCH MATERIAL AND THE CONTINUENT WITHSTAND (H-20 LOADING) WITHOUT FEBRUATION, FOR THE CAST OF MATERIAL PROPERTY LEARNING IN EXCESS OF ONE GALLONED THE STRUCTURE. A PERIOD CENTRALLY, IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

3. PRECAST CONCRETE BARREL SECTIONS. CONES AND BASES SHALL CONFORM TO ASTM C 478.

NOTE:
SEPARATE CONSTRUCTION SPECIFICATIONS MUST BE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS
ARE NOT COMPLETE WINDLY THESE SPECIFICATIONS.

10. MANHOLE STEPS ARE NOT PERMITTED.

STANDARD MANHOLE - PART A

**EXHIBIT SW4** 1. PVC JOINTS SEALS SHALL CONFORM WITH ASTM D3212

NOTES

I FAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE

SPECIFICATIONS.

SHELVE'S MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERTS CONSTRUCTED TO CONFORM TO THE SIZE OF THE SHE AND INVERTS SHALL BE LAD OUT W CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER INVEST OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER INVEST PARTIES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HOVEST PAPE. HOW AND SLOPE TO BRAIN TOWARD HIS CONSTRUCTED BRAIN TOWARD HIS CONSTRUCTED TO SHELVES SHALL BE PLACED AFTER TESTING.

FRAMES AND COVERS MANHOLE FRAMES AND COVERS SHALL PROVIDE A 30 INCH (LEAR DEBNING, A 31 INCH (MINIMUM HEIGHT) LETTER 75 OR THE WORD "SEWER" SHALL BE CAST INTO THE TOP SURFACE. CASTINGS SHALL BE CAST INTO THE TOP SHALL BE CEQUAL TO CLASS 30, CONFORMING CAST IROW AND SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A 46.

BEDDING SCREENED GRAVEL AND/OR CRUSHED STONE FREE
FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33
100 PASSING 1 HOH SCREEN
20-50 PASSING 3/4 HICH SCREEN
20-50 PASSING 3/4 HICH SCREEN
20-50 PASSING 3/4 HICH SCREEN
CO

FRAME SECTION

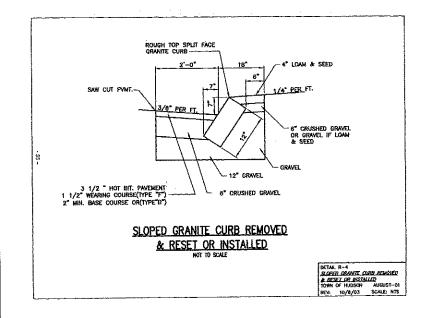
SEWER TRENCH SECTION

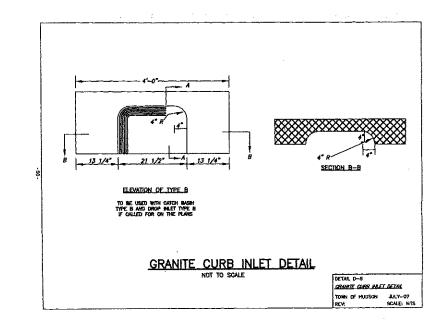
TOWN OF HUDSON

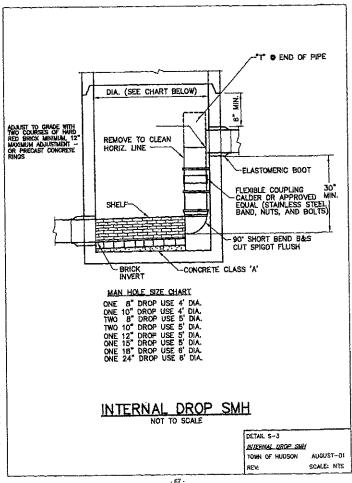
DETAIL S-2 STANDARD MANHOLE -- PART A TOWN OF HUDSON AUGUST-01

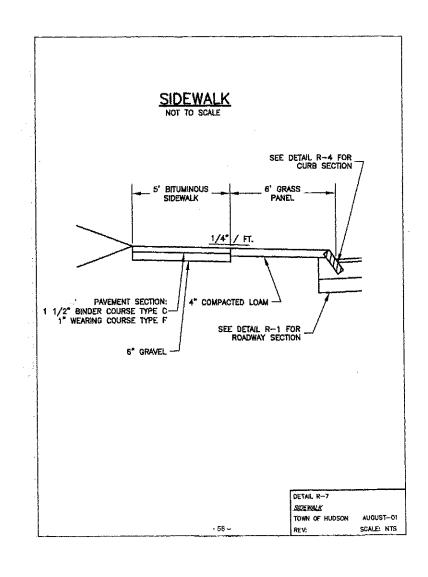
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF

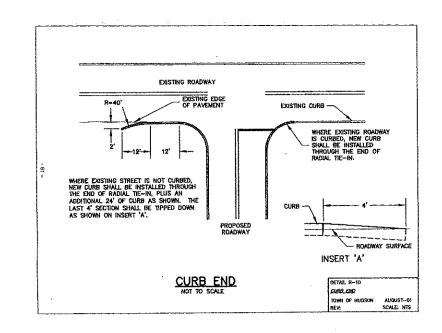
> SIGNATURE DATE: SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL FUNDED THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECENES FINAL APPROVAL.

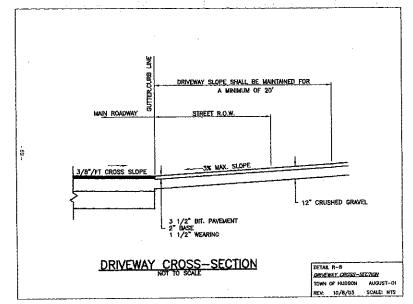


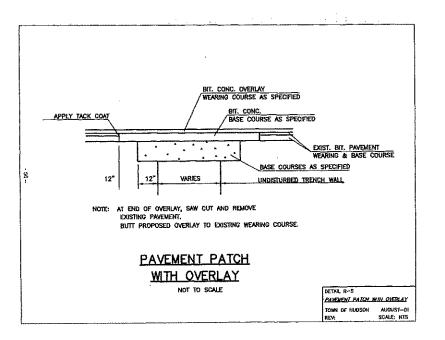






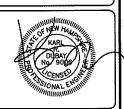












REVISIONS:				
REV:	DATE:	COMMENT:	BY:	
3	5/21/19	MISC. SEWER PER NHDES	SJK	
L				
Γ				
			L	
_			_	

DRAWN BY: CHECKED BY: DATE: SCALE: SJK KRD APRIL 29, 2019 AS SHOWN FILE: DEED REF: 357-DETAILS1-3

PROJECT:

# FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD

HUDSON, NH

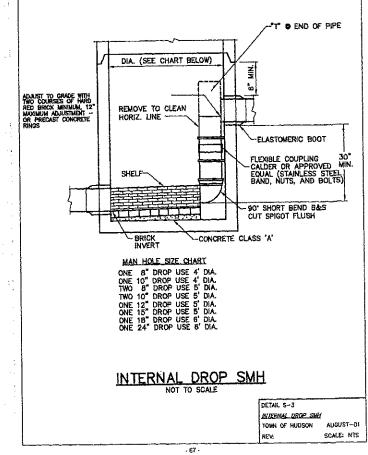
# DAKOTA PARTNERS, INC.

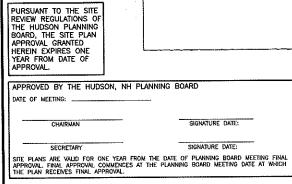
1264 MAIN STREET WALTHAM, MA 02451

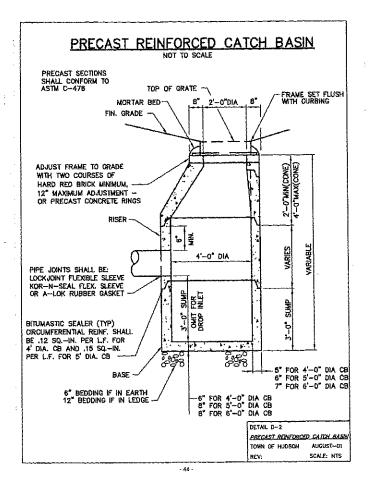
SHEET TITLE:

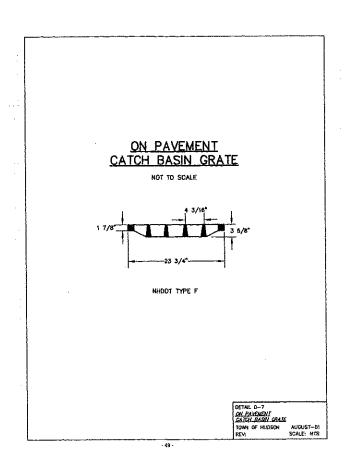
SITE DETAILS - 3

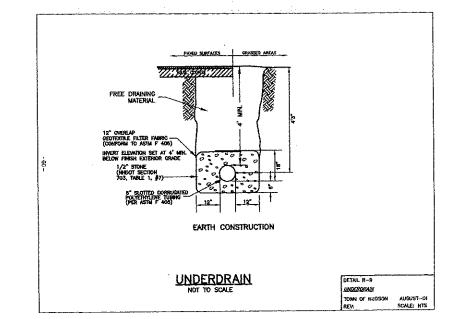
PROJECT #357 SHEET 19 of 33

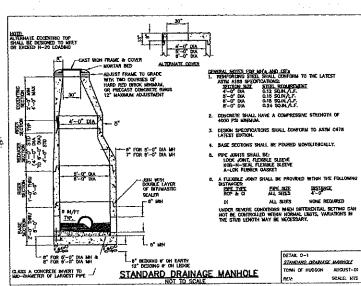






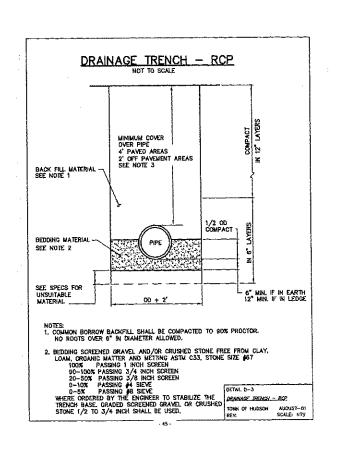


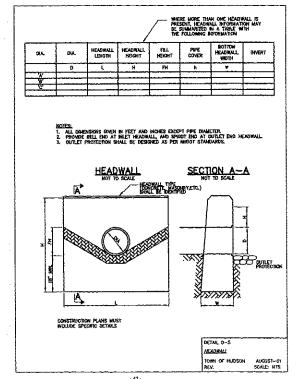


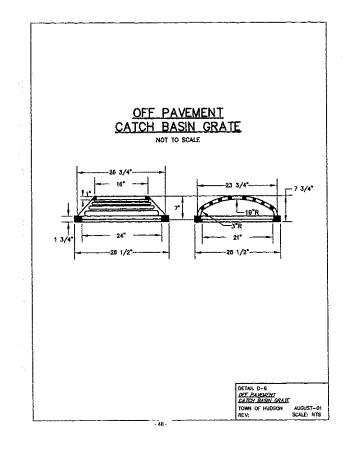


PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.











84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors

TheDubayGroup.com



REVISIONS:				
REV:	DATE:	COMMENT:	BY:	
┡			_	
Г				
Г				
Г				
[ ]				
=				

DRAWN BY: CHECKED BY: DATE: SJK KRD APRIL 29, 2019 SCALE: FILE: DEED REF: 357-DETAILS4-13

PROJECT:

FRIARS COURT MAP 209 LOT 1

AS SHOWN

161 LOWELL ROAD HUDSON, NH

FOR -

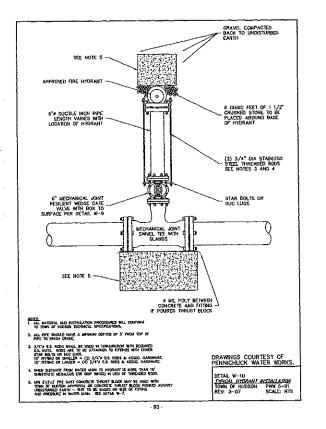
DAKOTA PARTNERS, INC.

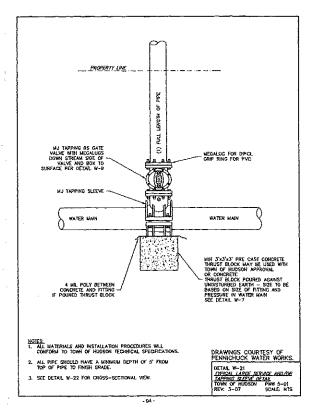
1264 MAIN STREET WALTHAM, MA 02451

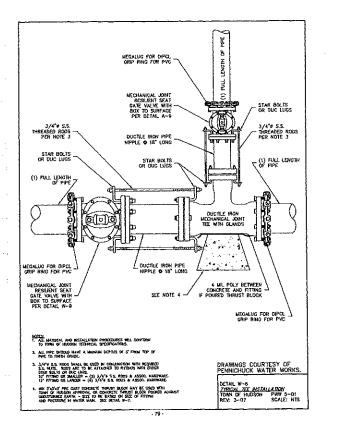
SHEET TITLE:

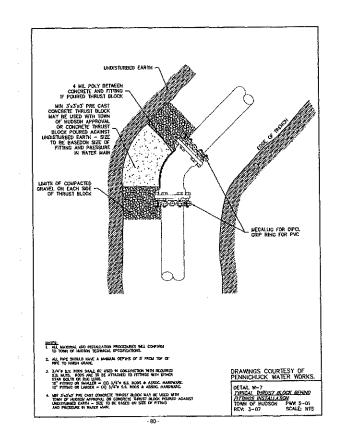
SITE DETAILS - 4

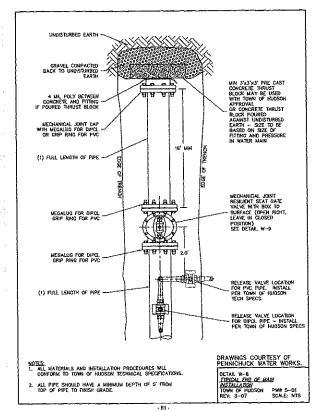
PROJECT #357 SHEET 20 of 33





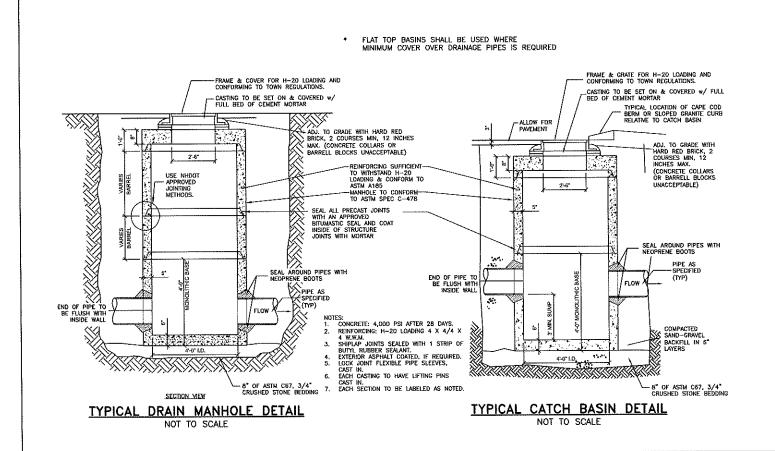






PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF ADDROVALED. APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: CHAIRMAN SIGNATURE DATE: SECRETARY SITE PLANS ARE VALID FOR ONE YEAR FROM THE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

PERSHANT TO THE SITE



The Dubay Group, Inc. 603-458-6462

Engineers Planners Surveyors The Dubay Group.com



REV: DATE: COMMENT: 2 5/14/19 REV. PER DRAINAGE GRADING MODS.

KRD APRIL 29, 2019 AS SHOWN CHECKED BY: DATE: SCALE: FILE: 357-DETAILS4-13 DEED REF:

PROJECT:

FRIARS COURT MAP 209 LOT 1

161 LOWELL ROAD HUDSON, NH

PARTNERS, INC. 1264 MAIN STREET

WALTHAM, MA 02451

SHEET TITLE:

SITE DETAILS - 5

PROJECT #357 SHEET 21 of 33

# **EROSION CONTROL NOTES**

#### CONSTRUCTION SEQUENCE

- 1. AN INITIAL PRE CONSTRUCTION MEETING(S) SHALL TAKE PLACE WITH THE CONTRACTOR, OWNER AND TOWN AGENTS
- 2. THIS STIE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE STIE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION STIE OPERATOR SHALL DEVELOP AND MAPLEMENT A CONSTRUCTION STORM WATER POLILITION PREVENTION PLAN EXPPP), WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOILDWANG CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE STIE FOR WHICH THE PERMITTED IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE STIE THAT HAVE NOT BEEN FINALLY STABILIZED.
- 3. PRIOR TO ANY EARTH MOVING OPERATION INSTALL PERIMETER CONTROLS, LE SILT FENCE AND/OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE OR OTHER EROSION CONTROL DEVICE (SO AS SHOWN ON THE EROSION CONTROL, PLAN, EGGE OF CONSERVATION OVERLAY DISTRICT AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE DELINEATED IN THE FIELD WITH WETLAND MARKERS PRIOR TO CONSTRUCTION.
- 4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT
- 5. CLEAR AND GRUB WITHIN AREAS OF SHOULDER DISTURBANCE UNLESS OTHERWISE DIRECTED.
- 6. REMOVE MATERIALS AS REQUIRED, STUMP DISPOSAL IS PROHIBITED ON SITE.
- 7. PERFORM SHOULDER AREA SHAPING, DITCHES, AND/OR SWALES.
- 8. INSTALL DRAINAGE SYSTEMS.
- DRAINAGE SYSTEMS SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO DIRECTING ANY FLOW TO THEM. ALL SIDE SLOPES SHALL BE STABILIZED WITHIN 72 HOURS.
- 10. RECLAIM EXISTING PAVEMENT, RESHAPE, AND PREPARE SUBBASE, PER DIRECTION OF TOWN ENGINEER.
- 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.
- PAVE BASE COURSE
- 13. ANY PERMANENT DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- 14. PLACE SINDER LAYER OF PAVEMENT.
- 15. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.
- 16. CONSTRUCT ASPHALT WEARING COURSE.
- 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

- 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 NHOOT", EROSION CONTROL SHALL BE INSTALLED DOWNHILL OF ALL AREAS WHERE WORK WILL EXPOSE UNPROTECTED SOIL TO PREVENT SEDIMENT FROM ENTERING CATCH BUSINS, 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.
- EROSION CONTROL DEVICES SHALL BE INSTALLED WHERE REQUIRED PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MAREHALL EROSION CONTROL MESOURES SHALL BE MAINTAINED DURING DEVELOPMENT AND SHALL BE CHECKED PERIODICALLY AND EXCESS SHLT 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.
- 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.
- ALL DRAINAGE SYSTEMS (DITCHES, SWALES, DRAINAGE PONDS/BASINS, ETC.) SHALL BE STABILIZED PRIOR
  TO DIRECTING RUNOFF TO THEM. STORMWARER FLOWS ARE NOT TO BE DIRECTED TO THESE SYSTEMS UNTIL
  CONTRIBUTING AREAS HAVE ALSO BEEN FULLY STABILIZED.
- 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
  SIE. FUGITIVE DUST IS CONTROLLED IN ACCORDANCE WITH ENW-A 1000.
- ALL EROSION CONTROLS ARE TO BE INSPECTED WEEKLY AND AFTER 0.5" OR GREATER OF RAINFALL WITHIN A 24 HOUR PERIOD.
- ALL FILLS SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNILESS OTHERWISE NOTED, FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC. AND SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.
- 10. SET 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 ATTER FINAL GRADING. EXPOSURE OF UNSTRABLED SOLS SHALL BE TEMPORARILY STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 45 DAYS OF INITIAL DISTURBENCE.

- 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 STORMMATER MANAGEMENT MANUAL, VOLUME 3, TEMPORARY VEGETATION SECTION.
- C. SEFONG MIXTURE

IXTURE	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	252	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 FROSION 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.
- 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 THINNG IS CRITICAL, FERTILIZER MAY 86 APPLIED AT THE RATE OF 500 POUNDS PER ACREE OR 13.8 POUNDS PER 1,000 SQUARE FET OF LOW PHOSPHATE FERTILIZER (N-P205-K20) 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 FETT)
- 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 % TO % 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 SHOULD BE USED WITH THE FOLLOWING SEEDING RATES, BASED ON THE SEEDING GUIDE.

MIXTURE	SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL	42	0.95

- 5. ALTERNATE PERMANENT SEEDING FOR AREAS NOT RECEIVING LAWN OR LANDSCAPING SHALL BE AS
- A. THE NEW ENGLAND EROSION CONTROL/FRESTORATION MIX CONTAINS A SELECTION OF NATIVE GRASSES AND MULDFOWERS DESIGNED TO COLONZE GENERALLY MOST RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. THIS MIX IS PARTICULARLY APPROPRIATE FOR DETERTION BASINS WHICH DO NOT HORMALLY HIGH STRANDING WATER. THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INUNDRION, BUT HOT CONSTANT FLODDING. IN NEW ENGLAND, THE BEST RESULTS ARE DETAILED THE STRAND OF THE PLANTS OF THE
- 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 SEOSE (CAREX VILIPINODEA), CREEPING BEATGRASS (AGROSTIS STOLONIFERA), SILYY WILD RYE (ELYMUS VILLOSUS), NODDING BUR-MARGOLD (BIDENS CERNUA), SOFT RUSH (JUNCUS EFFUSUS), GRASS-LEAVED COLDENROD (SOLIDAGO GRAMINIFOLIA), SENSTIME FERN (ONOCLEA SENSIBLIS), 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 CROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILED 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 THAN OR SPRING MELT EVENTS;
- 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.
- AFTER OCTOBER 15TM, INCOMPLETE SURFACES TO BE PAVED, WHERE WORK HAS STOPPED FOR THE WHITER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOI ITEM 304-3 OR CRUSHED STONE.

#### MAINTENANCE AND PROTECTION

- THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT DEVELOPS.
- 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 EPOPT.
- 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
- 5. THE SILT FENCE AND/OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST
- 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.

#### GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- If SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTERTION AT LESST 48 HOURS IN ADVANCE.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800-344-7233) AT LEAST 72 HOURS BEFORE DIGGING.
- THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
- 5. CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NINDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE N.H.D.O.T. STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION AND SECIMENT CONTROL DEVICES AS SHOWN IN THE PLANS THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHIDES STANDARDS. THE DETAILS PROVIDED SERVE AS A GUIDE ONLY.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- 8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SHOOTH TRANSFIONS.
- 9. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
- ALL WORK IN THE RIGHT OF WAYS SHALL BE PERFORMED PER THE DIRECTION OF THE TOWN, IRRESPECTIVE OF PLAN INFORMATION.
- 11. EXISTING UTILITIES TO BE PROTECTED & COORDINATED WITH UTILITY COMPANIES.

NOTE: ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF HUDSON SPECIFICATIONS AND NHOOT/NHOES SPECIFICATIONS, AND AS DIRECTED BY TOWN ENGINEER



The Dubay Group, Inc

603-458-6462

Engineers Planners

Surveyors
TheDubayGroup.com



| REVISIONS: | REVISIONS: | REVISIONS: | REVISIONS: | REVISIONS | REV. PER DIRAINGE/ WAS | REV. PER TOWN | DAME | REV. PER TOWN | REV

DRAWN BY: SJK
CHECKED BY: KRD
DATE: APRIL 29, 2019
SCALE: AS SHOWN
FILE: 357-DETAILS4-13

DEED REF:

PROJECT:

FRIARS COURT
MAP 209 LOT 1
161 LOWELL ROAD

HUDSON, NH

DAKOTA
PARTNERS, INC.
1264 MAIN STREET

WALTHAM, MA 02451

SHEET TITLE:

SITE DETAILS - 6

PROJECT #357 SHEET 22 of 33

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

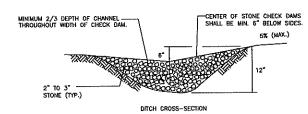
APPROVED BY THE HUDSON, NH PLANNING BOARD

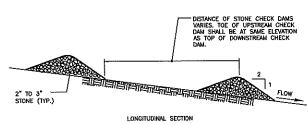
DATE OF MEETING:

CHARMAN

SIGNATURE DATE:

SICHATURE DAT





#### STONE CHECK DAM DETAIL NOT TO SCALE

#### CONSIDERATIONS

THIS PRACTICE IS INTENDED FOR USE IN AREAS WITH CONCENTRATED FLOW BUT MUST NOT BE USED IN STREAM CHANNELS (WHETHER PERENNIAL OR INTERMITTENT).

THE CHECK DAM MAY BE LEFT IN PLACE PERMANENTLY TO AVOID UNNECESSARY DISTURBANCE OF THE SOIL ON REMOVAL, BUT ONLY IF THE PROJECT DESIGN HAS ACCOUNTED FOR THEIR HOMAULIC PERFORMANCE AND CONSTRUCTION PLANS CALL FOR THEM TO BE RETAINED.

IF IT IS NECESSARY TO REMOVE A STONE CHECK DAM FROM A GRASS—LINED CHANNEL THAT WILL BE MOWED, CARE SHOULD BE TAKEN TO ENQUIE THAT ALL STONES ARE REMOVED. THIS INCLUDES STONE THAT HAS WASHED DOWNSTREAM.

#### GENERAL DESCRIPTION

TEMPORARY CHECK DAMS ARE SMALL TEMPORARY DAMS CONSTRUCTED ACROSS A SMALE OR DRAINAGE BTICH. CHECK DAMS ARE USED TO REDUCE THE VELOCITY OF CONCENTRATED STORMHATER FLOWS, THEREBY REDUCING EROSION OF THE SMALE OR DITCH.

CHECK DAMS MY ALSO CATCH SMALL AMOUNTS OF SEDIMENT GENERATED IN THE DITCH TISELF. HOWEVER, THE CHECK DAM IS NOT A SEDIMENT TRAPPING PRACTICE AND SHOULD NOT BE USED AS SUCH

THE PRACTICE IS LIMITED TO USE IN SMALL OPEN CHANNELS THAT DRAIN ONE ACRE OR LESS. IT SHOULD NOT BE USED IN EITHER PERENNIALLY FLOWING STREAMS OR INTERMITTENT STREAM CHANNELS.

CHECK DAMS CAN BE CONSTRUCTED OF STONE. IN LOCATIONS WHERE STONE IS NOT AVAILABLE, TIMBER CHECK DAMS MAY BE CONSIDERED. TYPICAL APPLICATIONS INCLUDE TEMPORARY OR PERMANENT DITCHES OR SWALES, WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF GRASS LININGS.

HAY OR STRAW BALES SHOULD GENERALLY NOT BE USED AS CHECK DAMS, OR IN ANY LOCATION WHERE THERE IS CONCENTRATED FLOW. HOWEVER, THEY MAY BE USED FOR CHECK DAMS IN APPLICATIONS WHERE INSTALLATION ACCESS OR OTHER CONDITIONS PREVENT THE USE OF PREFERRED MATERIALS SUCH AS STONE; IN SUCH CASES, INSTALLATION MUST PROVIDE PROPER EMBEDMENT OF THE STRAW OR HAY BALE BARRIER, LIMIT CONTRIBUTING DRAINAGE AREA TO LESS THAN ONE ACRE, AND PROVIDE FOR FREQUENT MONITORING OF BARRIER.

#### MAINTENANCE REQUIREMENTS

CHECK DAMS SHOULD BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL AND NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY.

INSPECTIONS SHOULD VERIFY THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.

EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM MUST BE CORRECTED IMMEDIATELY.

IF EVIDENCE OF SILTATION IN THE WATER IS APPARENT DOWN STREAM OF THE CHECK DAM, THE CHECK DAM SHOULD BE INSPECTED AND ADJUSTED IMMEDIATELY.

CHECK DAMS SHOULD BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH SIGNIFICANT RAINFALL, SEDIMENT SHOULD BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL HEIGHT OR BEFORE.

#### **SPECIFICATIONS**

TEMPORARY CHECK DAMS SHOULD CONFORM TO THE FOLLOWING REQUIREMENTS:

CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH.

THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM SHOULD BE LESS THAN ONE ACRE.

THE MINIMUM HEIGHT OF THE DAM SHOULD BE ONE FOOT ON SLOPES.

THE MAXIMUM HEIGHT OF THE DAM SHOULD BE TWO FEET.

THE MAXIMUM SPACING BETWEEN THE DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM

THE CHECK DAM SHOULD NOT BE USED IN A FLOWING STREAM

STONE CHECK DAMS SHOULD BE CONSTRUCTED OF A WELL-GRADED ANGULAR 2-INCH TO 3-INCH STONE 3/4-INCH STONE ON THE UPGRADIENT FAGE IS RECOMMENDED FOR BETTER FILTERING.

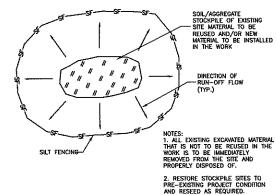
IF CAREFULLY INSTALLED AND MONITORED, TIMBER CHECK DAMS MAY BE USED, AND SHOULD BE CONSTRUCTED OF 4-INCH TO 6-INCH LOGS EMBEDDED AT LEAST 18 INCHES DEEP INTO THE SOIL. HOWEVER, STONE CHECK DAMS ARE GENERALLY PREFERRED. THE STONE HAS THE ABILITY TO CONFORM TO THE CHANNEL AND SETTLE IF SCOUR OCCURS, RENDERING STONE CHECK DAMS LESS SUSCEPTIBLE TO SCOUR AROUND THE ENDS AND DOWNSTREAM OF THE DEWCES.

IF PROVIDED BY DESIGN AND CONSTRUCTION PLANS, LEAVE THE DAM IN PLACE PERMANENTLY.

TEMPORARY STRUCTURES SHOULD BE REMOVED ONCE THE SWALE OR DITCH HAS BEEN STABILIZED:

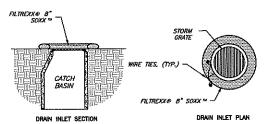
IN TEMPORARY DITCHES AND SWALES, CHECK DAMS SHOULD BE REMOVED AND THE DITCH FILLED WHEN ITS NO LONGER

IN PERMANENT STRUCTURES, CHECK DAMS SHOULD BE REMOVED WHEN A PERMANENT LINING HAS BEEN BESTABLISHED. IF THE PERMANENT LINING IS VEGETATION, THE THE CHECK DAM SHOULD BE RETAINED UNTIL THE GRASS HAS BEEN MATURED TO PROTECT THE DITION OF SWALE. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MULCHED MARDIATELY AFTER REMOVADE.



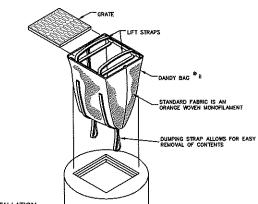
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

# MATERIALS STOCKPILE DETAIL



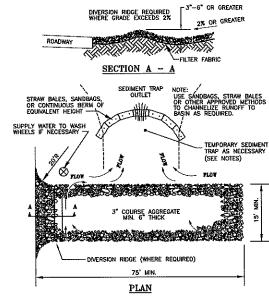
ES. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS. COMPOST MATERIAL TO BE DISPERSED ON STIF. AS DETERMINED BY ENGINEER.

# SILT SOCK INLET PROTECTION DETAIL



INSTALLATION NSTALLATION: PRAGNET THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS: PLACE HABSORBENT PLAUDW IN UNIT. STAND THE GRATE OIL RION. MOVET THE TOP LETHING STRAPS OUT OF TH MAY AND PLACE THE GRATE INTO THE DANDY BAS® 50 THAT THE GRATE IS BELOW THE TOP STRAP HAND ABOUT THE LOWER STRAPS. HOLDING THE LETHING DEVICES, INSERT THE GRATE INTO THE INLET. MAINTENANCE

ABITEMANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF UNIT AFTER EACH TORN EVENT. AFTER EACH STORM EVENT AND AT REQULAR INTERVALS, LOOK INTO THE DANDY BAG. For the containment area is more than 1/3 full of Scolment, the unit must be empired. D empty unit, lift the unit out of the inlet using the lifting straps and remove the RARE. If using opposing a masories, replace absorbed the war are saturation.



# TEMPORARY CONSTRUCTION EXIT

- THE MINIMUM STONE USED SHALL BE 3-INCH CRUSHED STONE.
- 2. THE MINIMUM LENGTH OF THE PAD SHALL BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
- THE PAD SHALL EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 15 FEET, WHICHEVER IS GREATER.
- 4. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
- 5. THE PAD SHALL BE AT LEAST 6 INCHES THICK, A GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
- THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF—SITE.
- A STABILIZED CONSTRUCTION EXIT CONSISTS OF A PAD OF STONE AGGREGATE A STABILIZED CONSTRUCTION EXIT CONSISTS OF A PAD OF STUNE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAVED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORMWATER RUNOFF FROM PUBLIC ROADS.
- 8. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE SHALL TO USE THE TEMPORARY STABILIZED EXIT, CONSIDER PROVIDING A SEPARATE, UNPROTECTED, ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
- 9. LOCATE CONSTRUCTION ENTRANCES AS SHOWN ON THE PLAN.
- 1D. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP
- THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY.
- 12. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL. REGRADED ON SITE. AND STABILIZED. THE ENTRANCE SHALL THEN BE RECONSTRUCTED.
- 13. THE CONTRACTOR SHALL SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
- 14. WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT—TRAPPING DEVICE, ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.
- NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHALL BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.
- 16. THESE REQUIREMENTS MAY BE ADJUSTED TO SPECIFIC SITE CONDITIONS PER THE DIRECTION OF JURISDICTIONAL TOWN AND STATE AUTHORITIES, PER SWPPP INSPECTION/MANAGEMENT PROCESSES, AND PER BEST MANAGEMENT PRACTICES.

TEMPORARY CONSTRUCTION EXIT DETAIL





			REVISIONS:	
J	REV:	DATE:	COMMENT:	BY
	4	6/5/19	REV. PER TOWN COMMENTS	JM
1				
				T
				Т
	$\  \Gamma \ $			
1				

DRAWN BY: CHECKED BY: DATE: APRIL 29, 2019 SCALE: AS SHOWN FILE: DEED REF: 357-DETAILS4-13

ROJECT

FRIARS COURT MAP 209 LOT 1 161 LOWELL ROAD HUDSON, NH

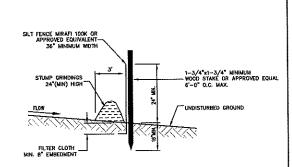
DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TILE:

SITE **DETAILS - 7** 

PROJECT #357 SHEET 23 of 33

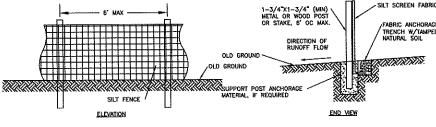


# SILT FENCE WITH MULCH BERM NOT TO SCALE

TO BE USED IN ANY AREAS THAT HAVE DISTURBANCE WITHIN 50-FEET OF A WETLAND.

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

APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: CHAIRMAN SIGNATURE DATE: SECRETARY SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE FLAN RECEIVES FINAL APPROVAL.



CRITERIA FOR SILT FENCES:

1) SILT FENCE FILTER CLOTH: THE FABRIC FOR THE SILT FENCE SHALL MEET THE FOLLOWING SPECIFICATIONS:

FABRIC PROPERTIES	VALUES	TEST_METHOD
GRAB TENSILE STRENGTH (Ibs)	90	ASTM D1682
ELONGATION AT FAILURE (%)	50	ASTM 1682
MULLEN BURST STRENGTH (PSI	190	ASTM D3786
PUNCTURE STRENGTH (Ibs)	40	ASTM D751
FOUNALENT OPENING SIZE	40-80	US STD SIEVE

- 2) FENCE POSTS (FOR FABRICATED UNITS) THE POSTS SHALL BE A MINIHUM OF 36 INCHES LONG AND SPACED A MINIHUM OF 6 FEET, WOOD POSTS WILL BE OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0
- 3) PREFABRICATED UNITS -- PREFABRICATED UNITS MAY BE USED IN LIEU OF THE ABOVE METHOD PROVIDING: (1) THE FILTER CLOTH AND FENCE POSTS MEET THE ABOVE CRITERIA; AND (2) THE UNIT IS INSTALLED ACCORDING TO THE MANUFACTURER'S

- SET FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE.
- 2) IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR SECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED WITHIN 24 HOURS.

- 4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VECETATED.

#### CONSTRUCTION SPECIFICATIONS:

- 1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
- THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
- 3) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOODEN STAKES EVERY 12 INCHES.
- 4) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO WOOD STAKE.
- 5) POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND BRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND, AND OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.

# SILTATION FENCING DETAIL

#### CHANNEL INSTALLATION SPECIFICATIONS

1. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LINE, 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 ADAIST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAP-LES/STANCES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN CUIDE. WHEN USING OPTIONAL DOT SYSTEMS, STAPLES/STANCES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

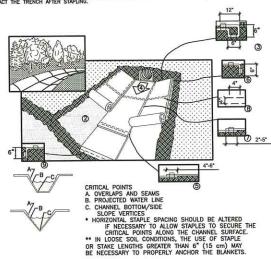
5. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4"(10") ON CENTER TO SECURE BLANKETS.

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.

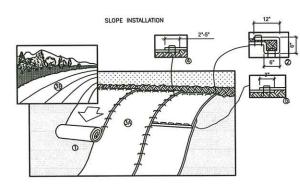
8. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.

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

(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)



#### MATTING INSTALLATION NOTES

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 PAPER SIDE DOWN.

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.

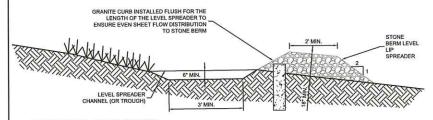
8. MATTING IS REQUIRED ON ALL SLOPES STEEPER THAN 3:1.

THE SUBGRADE, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.

# SLOPE PROTECTION EROSION CONTROL MATTING

NOT TO SCALE

(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)



#### MAINTENANCE REQUIREMENTS:

- 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.
- 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
- 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. GRADAT	ION 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

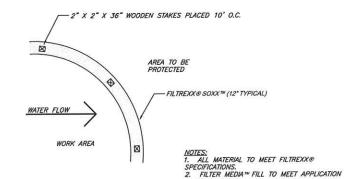
NOT TO SCALE REFERENCE: NH STORMWATER MANUAL, VOLUME 2 SECTION 4-6.2

# THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM WITHIN THE AND AFTER EVERY MAJOR STORM WITHIN THE BOWN AFTER AND AFTER A THE AFTER A THE AFTER A THE BOWN AFTER AND AFTER A THE ATTER A THE ATTER A THE IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE OFFICKED TO SEE THAT ERSOSION IS NOT OCCURRING. THE DOWNSTEAM CHANNEL SHOULD BE KEPT CLEAR OF DESTRUCTIONS SUCH AS FALLET WREES, DEBNIS, AND 2. THE ROCK OR GRAVEL USED FOR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION 2" X 2" X 36" WOODEN STAKES PLACED 10' O.C. — FILTREXX® SOXX™ (12\* TYPICAL) BLOWN/PLACED FILTER MEDIA AREA TO BE PROTECTED WORK AREA 12" MIN 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. DRAINAGE PIPE, FES, HEADWALL OR WEIR - DRAINAGE PIPE, FES, HEADWALL OR WEIR SECTION NTS

# % OF WEIGHT SMALLER THAN THE GIVEN SIZE GEOTEXTILE FABRIC FILTER (MIRAFI 180N OR APPROVED EQUAL) CROSS SECTION

# STONE LINED OUTLET PROTECTION

LOCATION	L	W1	W2	d50	Dt
FES-2	21'	5'	13'	6"	15"
FES-3	9'	4'	7	6"	15"
FES-5	9'	4'	7'	6"	15"



FILTREXX ® SEDIMENT CONTROL

A. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

PLAN MIS



84 Range Road Windham, NH 03087 603-458-6462

Planners Surveyors

TheDubayGroup.com



COMMENT: 2 5/14/19 REV. PER DRAINAGE,

> CHECKED BY: APRIL 29, 2019 AS SHOWN 357-DETAILS4-13 FILE: DEED REF:

PROJECT

FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD

HUDSON, NH

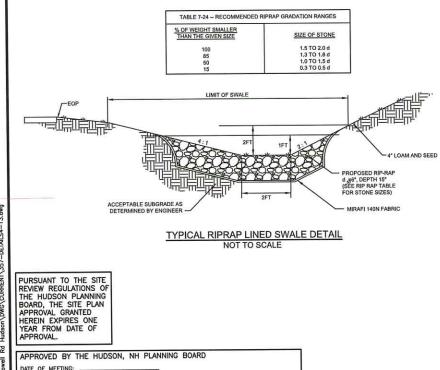
DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

SITE **DETAILS - 8** 

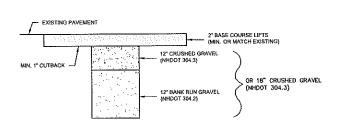
PROJECT #357 SHEET 24 of 33



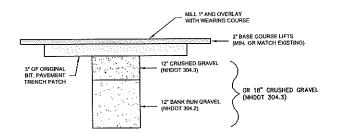
SIGNATURE DATE:

SITE PLANS ARE VALID FOR ONE YEAR 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.

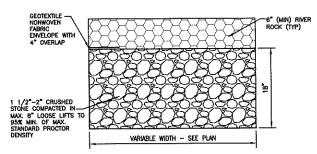
CHAIRMAN SECRETARY



# **BITUMINOUS PAVEMENT TRENCH PATCH**



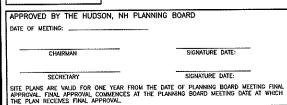
MILL AND TRENCH OVERLAY

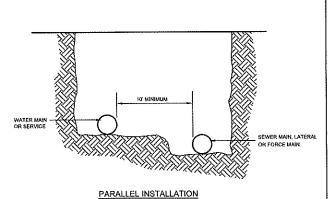


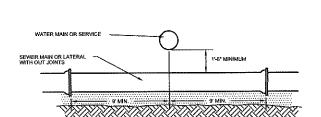
TYPICAL ROOF RECHARGE SECTION (STONE DRIP EDGE)

- RESPECTION OF INFILTRATION COMPONENTS AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 SHCHES IN A 24 HOUR PERSON, WITH MAINTIDIANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.

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

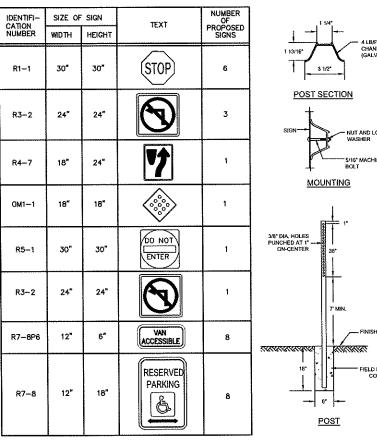






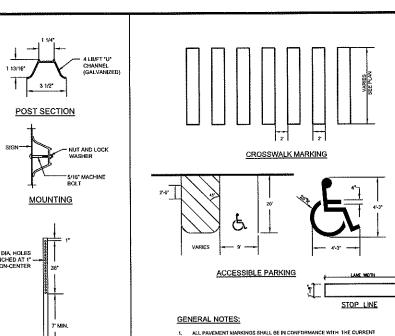
WATER PIPE/SEWER PIPE SEPARATION NOT TO SCALE

MAIN CROSSINGS





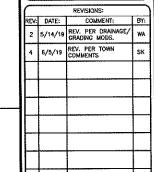




- ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE CURRENT EDITION OF MUTCD.
- WIDTH OF LINES SHALL VARY NO MORE THAN = 1/4 INCH FROM THAT SPECIFIED.
- THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIARUM OF 15 MILS THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED.
- 4. OVERSPRAY SHALL BE KEPT TO AN ABSOLUTE MINIMUM
- 5. STOP LINES & CROSSWALKS SHALL BE WHITE THERMOPLASTIC.
- CROSSWALK BARS SHALL BE 24" WIDTH AND 10" IN LENGTH WITH 24" SPACING.

# TYPICAL PAVEMENT STRIPING DETAILS

NOT TO SCALE



The Dubay Group, Inc. 84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors

The Dubay Group.com

DRAWN RY CHECKED BY: DATE: SCALE:

KRD APRIL 29, 2019 AS SHOWN 357-DETAILS4-13

FILE: DEED REF:

# FRIARS COURT **MAP 209 LOT 1**

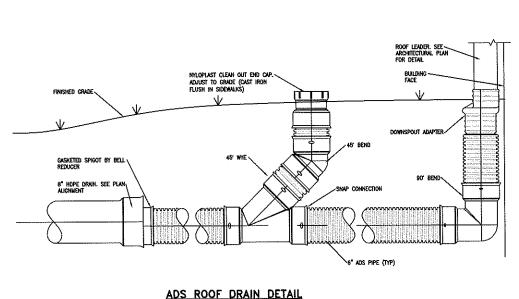
161 LOWELL ROAD HUDSON, NH

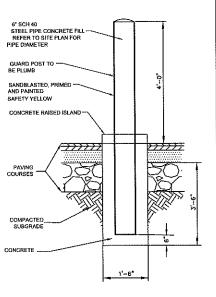
# DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

SITE **DETAILS - 9** 



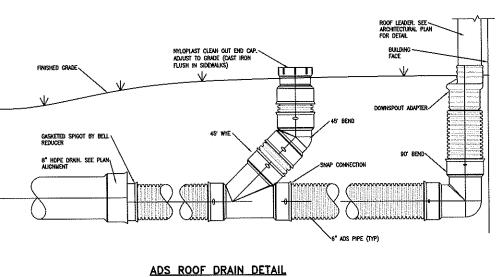


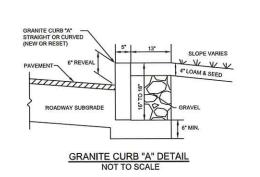
TYPICAL BOLLARD DETAIL NOT TO SCALE

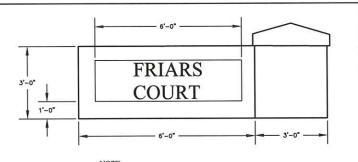
EXISTING OR FINISHED PRIMARY ELECTRIC SECONDARY PLECTRIC-NOTE:
INFORMATION IS APPROXIMATE. CATV
CONTRACTOR SHALL FOLLOW
JURISDICTIONAL UTELTY COMPANY

CONDUIT TRENCH DETAIL

PROJECT #357 SHEET 25 of 33

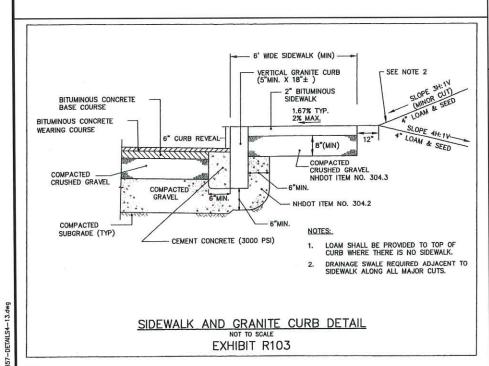






SIGNS SHOULD BE DOUBLE SIDED BOTH LOCATIONS ON THE SITE

#### PROJECT SIGN DETAIL NOT TO SCALE



SIGNATURE DATE:

PURSUANT TO THE SITE REVIEW REGULATIONS OF

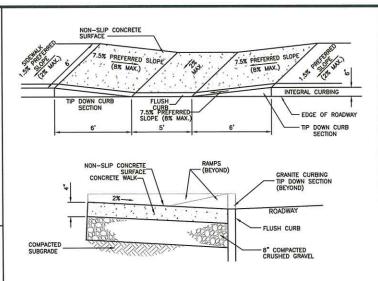
THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED

HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

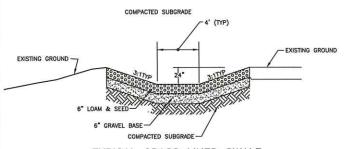
DATE OF MEETING: .

APPROVED BY THE HUDSON, NH PLANNING BOARD

SITE PLANS ARE VALID FOR ONE YEAR 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.



# ACCESSIBLE RAMP RECESSED IN WALK

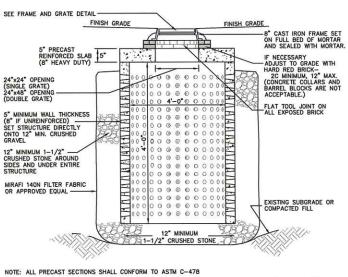


TYPICAL GRASS LINED SWALE



#### LOAM & SEED DETAIL NOT TO SCALE

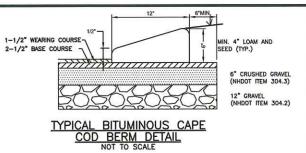
(FOR PERMANENT STABILIZATION OF AREAS, TYPICALLY LOCATED AROUND PERIMETER OF FINAL EXCAVATION WORK LIMITS.)



SUPERIOR CONCRETE CO. CIRCULAR LEACHING CATCH BASIN OR APPROVED EQUAL (H20 LOADING)

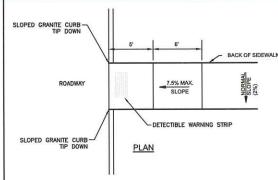
# LEACHING BASIN DETAIL

NOT TO SCALE

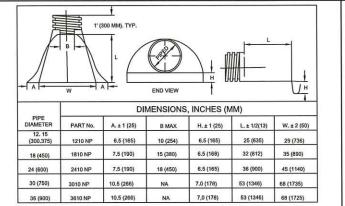


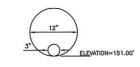
#### NOTES:

- APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
- BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
- CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.



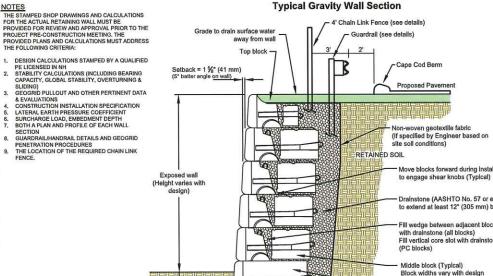
TYPICAL SIDEWALK RAMP @ DRIVEWAY





FES-4 ORIFICE DETAIL

#### ADS END SECTION DETAIL NOT TO SCALE



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed sile.

Typical Gravity Wall Detail (Shop Drawings Required)



The Dubay Group, Inc

84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors

TheDubayGroup.co

EV: DATE: COMMENT 5/6/19 MISC. REVS 5/14/19 REV. PER DRAINAGE/ GRADING MODS. 6/5/19 REV. PER TOWN COMMENTS

DRAWN BY CHECKED BY: DATE: KRD APRIL 29, 2019 SCALE: AS SHOWN FILE: DEED REF: 357-DETAILS4-13

FRIARS COURT **MAP 209 LOT 1** 

161 LOWELL ROAD HUDSON, NH

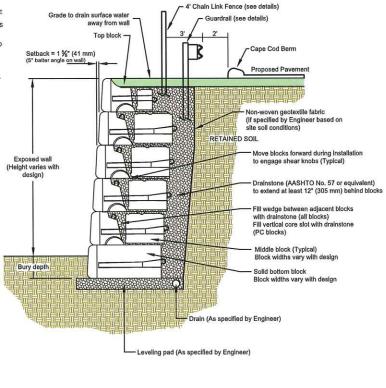
DAKOTA PARTNERS, INC. 1264 MAIN STREET

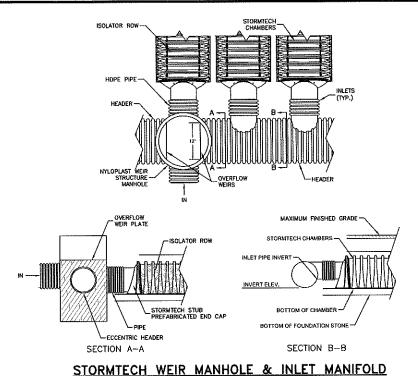
WALTHAM, MA 02451

SHEET TITLE:

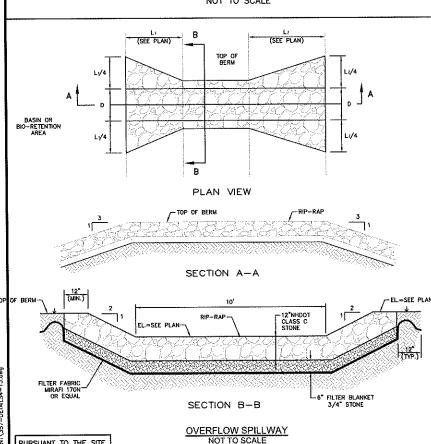
SITE **DETAILS - 10** 

PROJECT #357 SHEET 26 of 33





#### STORMTECH WEIR MANHOLE & INLET MANIFOLD NOT TO SCALE



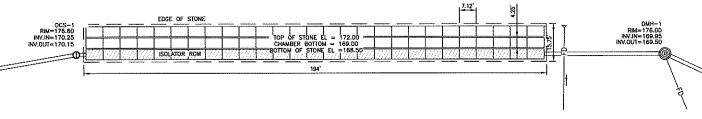
APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: . SIGNATURE DATE: CHAIRMAN SECRETAR SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEMES FINAL APPROVAL.

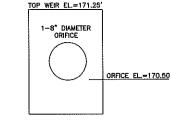
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN

APPROVAL GRANTED

HEREIN EXPIRES ONE YEAR FROM DATE OF

STORMTECH INFILTRATION POND (P2) DETAIL





OCS-1 WEIR PLATE **DETAIL** NOT TO SCALE

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 SCARFIED 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.

EL=170.0

4" LOAM AND SEED WITH JUTE --SLOPE STABILIZATION MATTING. SEE DETAIL.

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, STUNIPS, 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.

CONSTRUCTION CRITERIA:

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

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 REMBANKMENT IN PLACE AND THE EMBANKMENT OF 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, STREAMS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SUBROUNDING MATERIAL IF IT IS INCOSSARY TO USE MATERIALS OF VARTHING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIALS SHALL BE PLACED IN THE CENTER AND UPSITEAM PARTS OF THE FILL IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PLACED TO STREAM PARTS OF THE THE TONES 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.

**INFILTRATION POND (P1)** 

TYPICAL POND SECTION & PRINCIPLE

SPILLWAY PROFILE DETAILS

UNDISTURBED SUBGRADE

SEDIMENT FOREBAY

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 LATER OF FILL TO INSURE THAT THE REQUIRED COMPACTION IS GOTIANED. SPECIAL EQUIPMENT SHALL BE USED IF NEEDED TO OBTION 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 MANULALLY DIRECTED POWER TAMPER OR PLATE VIBINATORS, FILL ADJACENT TO COMCRETE STRUCTURES SHALL NOT BE COMPACTED UNTIL THE CONCRETE IS STROME ENOUGH TO SUPPORT THE LOAD.

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

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

- CONCRETE ALL CONCRETE SHALL MEET SPECIFICATIONS OF NHDOT CLASS 'A' CONCRETE UNLESS OTHERWISE NOTED.
- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO INFETRATION BASINS.
- 8. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCANATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILITATION BASIN.
- 9. AFTER THE BASIN IS EXCAVATED TO FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEPHY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILITRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.

INFILTRATION POND

EMBANKMENT MATERIAL TO BE FREE OF DETRIMENTAL AMOUNTS OF SOD, ROOTS, FROZEN SOBL, STONES MORE THAN 6°, AND OTHER OBJECTIONABLE MATERIAL

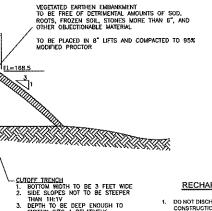
11.DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

#### **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 HOMEOWHERS' 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
- 2. VEGETATION THE VEGETATED AREAS OF THE STRUCTURE SHOULD BE PROTECTED FROM DRAINAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. JIME AND FERTILIZER SHOULD BE APPLED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES AND SHRUBS SHOULD BE KEPT OFF THE EMBANKMENT AND EMERCENCY SPILLWAY AREAS.
- INLETS PIPE INLETS AND SPILLWAY STRUCTURES SHOULD BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM, ACCUMULATED DEBRIS AND SEDMENT 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 INCESSARY. IF EROSION IS TAKING PLACE THEN MEASURES SHOULD BE TAKEN TO STABILIZE AND PROTECT THE AFFECTED AREA OF THE OUTLET.
- SEDIMENT SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACH THE PREDETERMINED DESIGN ELEVATION, THEN THE SEDIMENT SHOULD BE REMOVED AND PROPERTY DISPOSED OF.
- 5. 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 ANNALLY. THE DESIGNATED INDIVIDUAL OR GROUP SHOULD ALSO MAKE INSPECTIONS AFTER EVERY MAJOR STORM EVENT.



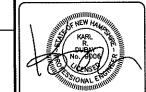
MINIMUM 4' WIDTH

IMPERVIOUS CLAY CORE ON DOWN STREAM SIDE OF PROPOSED FILTRATION BED. CENTER CORE ALONG CENTERLINE OF EMBANKMENT, KEY CORE MEDIA CENTERLY CARDET 24"

INTO EXISTING GRADE 24

#### RECHARGE BASIN NOTES:

- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FRO CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFILTRATION BASIN.
- CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE T LIMITS OF THE INFILTRATION BASIN.
- 3. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN AFTER THE BASIN'S EXCAVATED TO THE HAM. DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATI RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
- DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTI THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.



The Dubay Group, Inc 84 Range Road

Windham, NH 03087 603-458-6462

Engineers

Surveyors

$\cap$	REVISIONS:					
RE	DATE:	COMMENT:	BY:			
2	5/14/19	REV. PER DRAINAGE/ GRADING MODS.	WA			
Г						
Г						

DRAWN BY KRD APRIL 29, 2019 CHECKED BY: DATE: SCALE: AS SHOWN 357-DETAILS4-13 DEED REF:

PROJECT:

FRIARS COURT MAP 209 LOT 1 161 LOWELL ROAD

HUDSON, NH

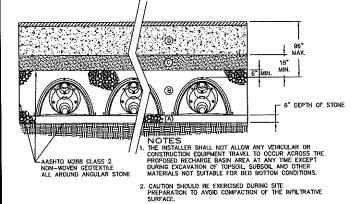
DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

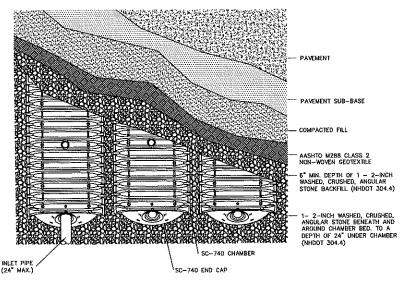
SHEET TITLE:

SITE **DETAILS - 11** 

PROJECT #357 SHEET 27 of 33



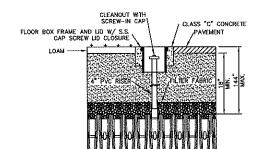
#### ACCEPTABLE FILL MATERIALS STORMTECH SC-740 CHAMBER SYSTEM



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

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

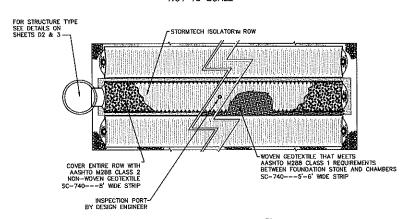
APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: CHAIRMAN SECRETARY SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEPTES FINAL APPROVAL.



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

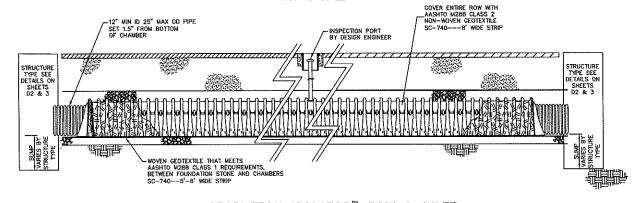
SC-740 END CAP WELL GRADED GRANULAR BACKFILL WHICH CONTAIN AN EVEN DISTRIBUTION OF PARTICLE SIZES WITH NO MORE THAN 12% PASSING THE #200 SIEVE COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR BENSITY PAVEMENT TOR UNPAVED INSTALLATION WHENEVER SEE DETAIL SEE DETAIL SHEETS D2 & D3

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



#### STORMTECH ISOLATOR<sup>™</sup> ROW PLAN VIEW

NOT TO SCALE



## STORMTECH ISOLATOR™ ROW & INLET

- 1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE INFRITRATION SYSTEMS.
- 2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFELTRATION SYSTEMS.

**GENERAL NOTES** 

- 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 INFILITATION 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.

- 1.1 STORMTECH CHAMBERS ARE DESIGNED TO CONTROL STORMWATER RUNOFF. AS A SUBSURFACE RETENTION SYSTEM, STORMTECH CHAMBERS PETAIN AND ALLOW EFFECTIVE 2.10 THE CHAMBER SHALL HAVE 14 CORRUGATIONS. HIFLITRATION OF WATER INTO THE SOIL AS A SUBSURFACE DETENTION SYSTEM, STORMTECH CHAMBERS DETAIN AND ALLOW FOR THE METERED FLOW OF WATER TO AN OUTFALL.

  2.11 THE CHAMBER SHALL HAVE A CIRCULAR, INDENSIFYED SURFACE ON THE TOP OF THE CHAMBER FOR A HINDENSTER OF THE TOP OF THE
- 2.0 CHAMBER PARAMETERS

1.D GENERAL

- 2.1 THE CHAMBER SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CHACKING (ESCR), AND TO MAINTAIN ADEQUATE STRETHESS 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,

#### STORMTECH PRODUCT SPECIFICATIONS

- 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.
- 2.11 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 ASSETS METHODS FOR THERMOPLASTIC CULVERTS CONTAINED IN THE HERD BRIDGE DESIGN SPECIFICATIONS, 2ND EDITION, INCLUDING INTERIM SPECIFICATIONS THROUGH 2001. DESIGN USE LOAD SHALL BE THE AASTO MSZO 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, STREESS 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 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.

#### STORMTECH INSTALLATION NOTES

- 1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
- OUR TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVES 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 STORMETCH CHAUBER SYSTEM AND INFORM THE INSTALLATION CONTRACTOR OF THE MINIMUM INSTALLATION DEPONIBLED. INSTALLATION CONTRACTOR OF THE MINIMOUN INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1—888—892—2894 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORNITECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTION INSTRUCTION.
- 3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT STORMITCH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINHUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER OF INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTHING FROM VEHICLES MAXIMUM COVER IS 96 INCHES.
- 4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO
- AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST DE 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 STORM TECH'S INSTALLATION INSTRUCTIONS.
- BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
- THE CONTRACTOR MUST REFER TO STORMITECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMITECH'S WEBSITE: WYW.STORMITECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEPD STORMITECH'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.
- THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURRING 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 MAINTENANCE, 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 HANGLED AND DISPOSED OF, IN
ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.

- -isolator rows and pipe headers shall be inspected immediately 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
- -MSPECTION OF THE SOCIATOR ROW SPALE, 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 SEDIMENT HAS ACCUMULATED TO AN AVERAGE DEPTH EXCEEDING 3 INCHES, CLEANOUT IS REQUIRED.

  -CLEANOUT OF SEDIMENT WITHIN THE PIPE HEADER IS REQUIRED WHEN THE SEDIMENT VOLUME HAS REQUIRED THE STORAGE AREA BY 25% OR THE DEPTH OF SEDIMENT HAS REACHED APPROXIMATELY 25% OF THE DIAMETER OF THE STRUCTURE.
- STRUCTURE. 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 WHW.STORMTECH.COM.



#### The Dubay Group, Inc 84 Range Road

Windham, NH 030 603-458-6462

Engineers

Planners Surveyors

TheDubayGroup.con



1	(	REVISIONS:						
	REV:	DATE:	COMMENT:	В				
•	2	5/14/19	REV. PER DRAINAGE/ GRADING MODS.	N				
	L							
	L							

SJK KRD APRIL 29, 2019 DRAWN BY CHECKED BY: SCALE: FILE: AS SHOWN 357-DETAILS4-13 DEED REF:

PROJECT

FRIARS COURT **MAP 209 LOT 1** 

161 LOWELL ROAD HUDSON, NH

DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

SITE DETAILS - 12

PROJECT #357 SHEET 28 of 33

PROFILE VIEW NOT TO SCALE

NH Best Management Practice:

Anti-Icing

50% less than reactive deicing.



## 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



#### 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 pe 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 magnes um are also available—consult your supplier for application rates. Anti-icing is not advised prior to freez-

NHDES ANTI-ICING BEST

MANAGEMENT PRACTICES

solved. 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. Adjus the application rates based on your experience Being careful not to over apply and cause a slip-



#### **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 dis-



## ENVIRONMENTAL

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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

WMB-3

LOWELL ROAD

Temp. ("F)

(† \1)

>30 ↑

30 J

25 - 30

25 - 30

20 - 25 1

20 - 25

15 - 20

15 - 20 J

to 15 🖴

<0

ROUTE 3A

Snow

Frz. Rain

Frz. Rali

Frz. Rali

now or frz

now or Fra

Rain

#### Snow Disposal Guidelines

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 contaminants from automonite exhaust. It is one debtis contamined in provided show that makes it megat 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

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-

#### SNOW DISPOSAL **GUIDELINES &** RECOMMENDED PRACTICES

#### Actions eated wit Not Plow, treat 4.5 4.5 Not Apply chemic 5.75 5.25 6.5 Not 6.5

5.25

5.75

5.25

5.75

5.25

6.5

7.5

7.5

7.5

10

23

6.5

6.5

8.25

8.25

9.5

9.5

10

Not

Not

5.75

6.5

5.75

6.5

5.75

5.75

7.5

8.25

Not

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** 

chemical

Apply chemica

Plow and app

chemical

Apply chemica

Plow and apply

chemical

Apply chemic

Plow and Appl

chemical

Plow and appl

chemical

chemical

Plow and apply

chemical

Plow, treat wit

azardous area

blends, sand

Apply chem Plow and appl

#### NOTES:

Not

Not

Not

Not

10.5 for frz.

Rain

Not

10.5

10.5 10.5 for frz.

Rain

13 and spot

13 and spot

reat as ne

Not

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

REFER TO Env-Wq 2203 FOR ADDITIONAL INFORMATION ON THE COMMERCIAL APPLICATORS
CERTIFICATION PROCESS AND PROCEDURES.



NEEDED.

CHISTONAL ENGINE						
$\succeq$		REVISIONS:				
REV:	DATE:	COMMENT:	Bh			
Н			+			
П			T			

The Dubay Group, Inc.

84 Range Road NH 03087

603-458-6462

Engineers

Planners

Surveyors

TheDubayGroup.com

SNOW STORAGE WILL

PARKING LOT ISLANDS.

AND PERIMETER STRIPS

ALONG PARKING AREAS.

EXCESS SNOW WILL BE

TAKEN OFF SITE WHEN

UTILIZE PRIMARY

LOCATIONS SHOWN,

DRAWN BY CHECKED BY: DATE: SCALE: APRIL 29, 2019 AS SHOWN 357-DETAILS4-13 FILE: DEED REF:

KRD

PROJECT:

FRIARS COURT **MAP 209 LOT 1** 

161 LOWELL ROAD HUDSON, NH

DAKOTA PARTNERS, INC. 1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

SCALE: 1"=60

SITE **DETAILS - 13** 

PROJECT #357 SHEET 29 of 33

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

APPROVED BY THE HUDSON, NH PLANNING BOARD DATE OF MEETING: SIGNATURE DATE: CHAIRMAN SECRETAR SITE PLANS ARE VALID FOR ONE YEAR 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.

# ENVIRONMENTAL

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

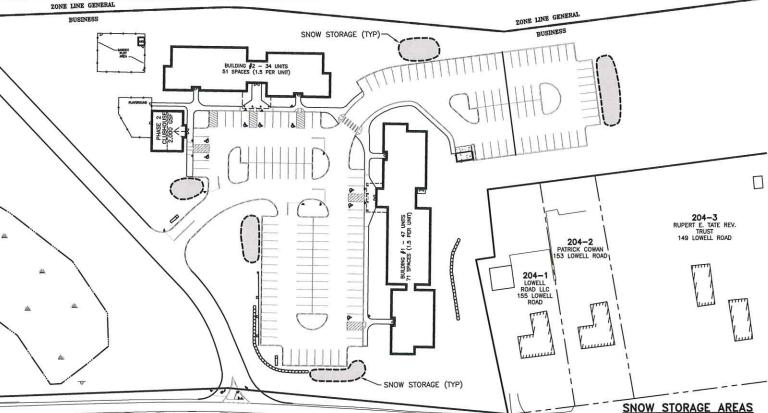
The term "deicing material" used here refers to deicing salts, and may include any of the following in either solid or liquid form: sodium elloride (often called rock salt), potassium ehloride, calcium ehloride, magnesium ehloride, and other mixtures that contain salts (chlorides) including mixtures 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: ater/dwgb/dwspp/bmps/documents/floor drain form.p

- . The facility should be located in an area that is not environmentally sensitive. Avoid
- Site drainage should be designed to direct clean stormwater away from the operations



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

areas where there are wells, reservoirs, or within the footprint of stratified-drift aquifers.

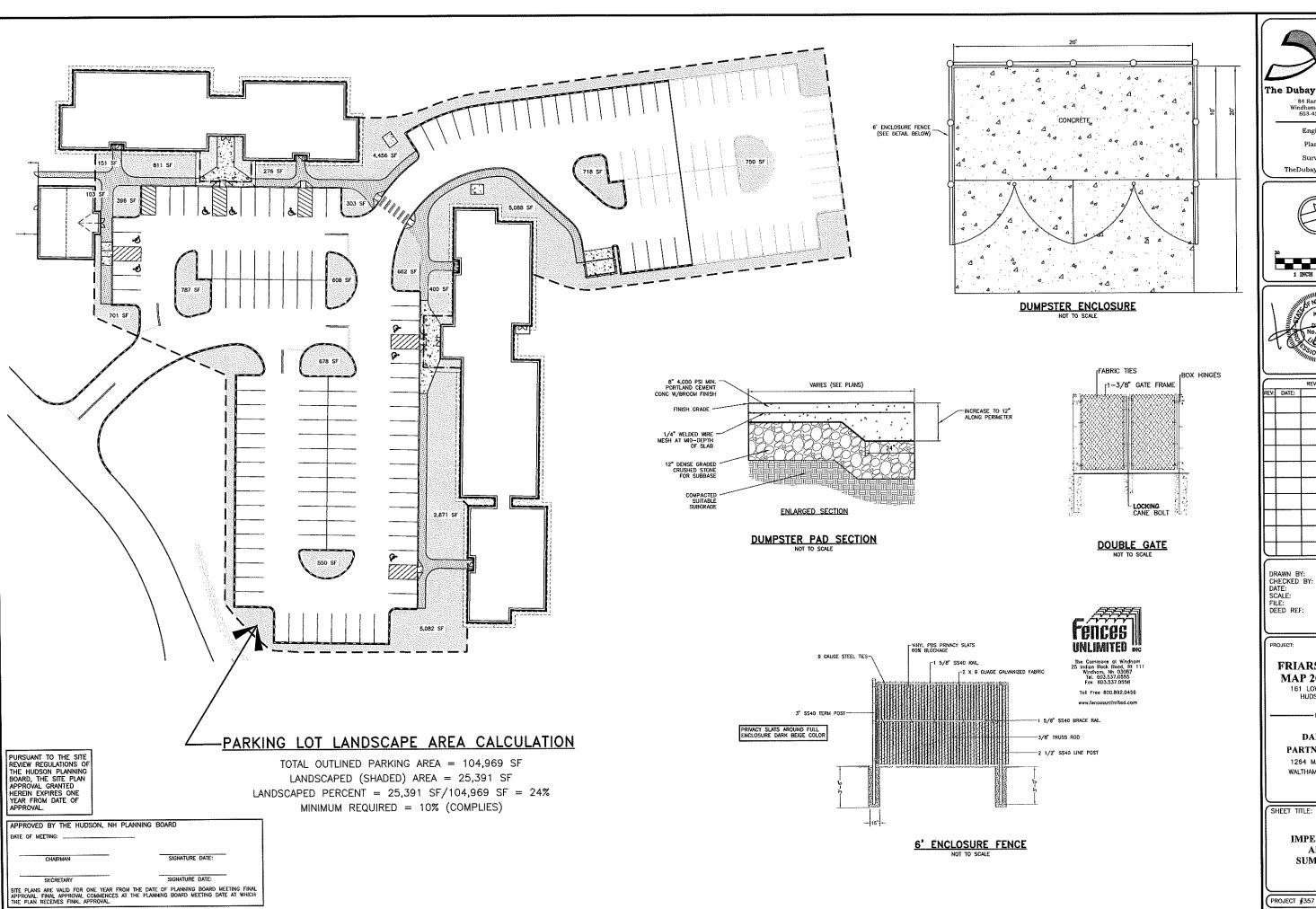
The facility should be located on a flat site away from surface water and wetlands.

and storage areas in order to keep the stockpiles as dry as possible.

DEICING GUIDELINES

New HAMPSHIRE DEPARTMENT OF Environmental

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



The Dubay Group, Inc. 84 Range Road Windham, NH 03087 603-458-6462

Engineers

Planners

The Dubay Group, com





·						
REVISIONS:						
REV:	DATE:	COMMENT:	BY:			
П						
Ш						
			[			
Ш			┷			
l						
ш						
ΙI						
Щ						
$\vdash$			-			
1						
Н						
l			1			
$\vdash$			+-			
l						
$\vdash$			<del>                                     </del>			
1						
			<u> </u>			
╚						

DRAWN BY:

SJK KRD APRIL 29, 2019 1"=30' 357-IMPSUMMARY

FRIARS COURT **MAP 209 LOT 1** 

161 LOWELL ROAD HUDSON, NH

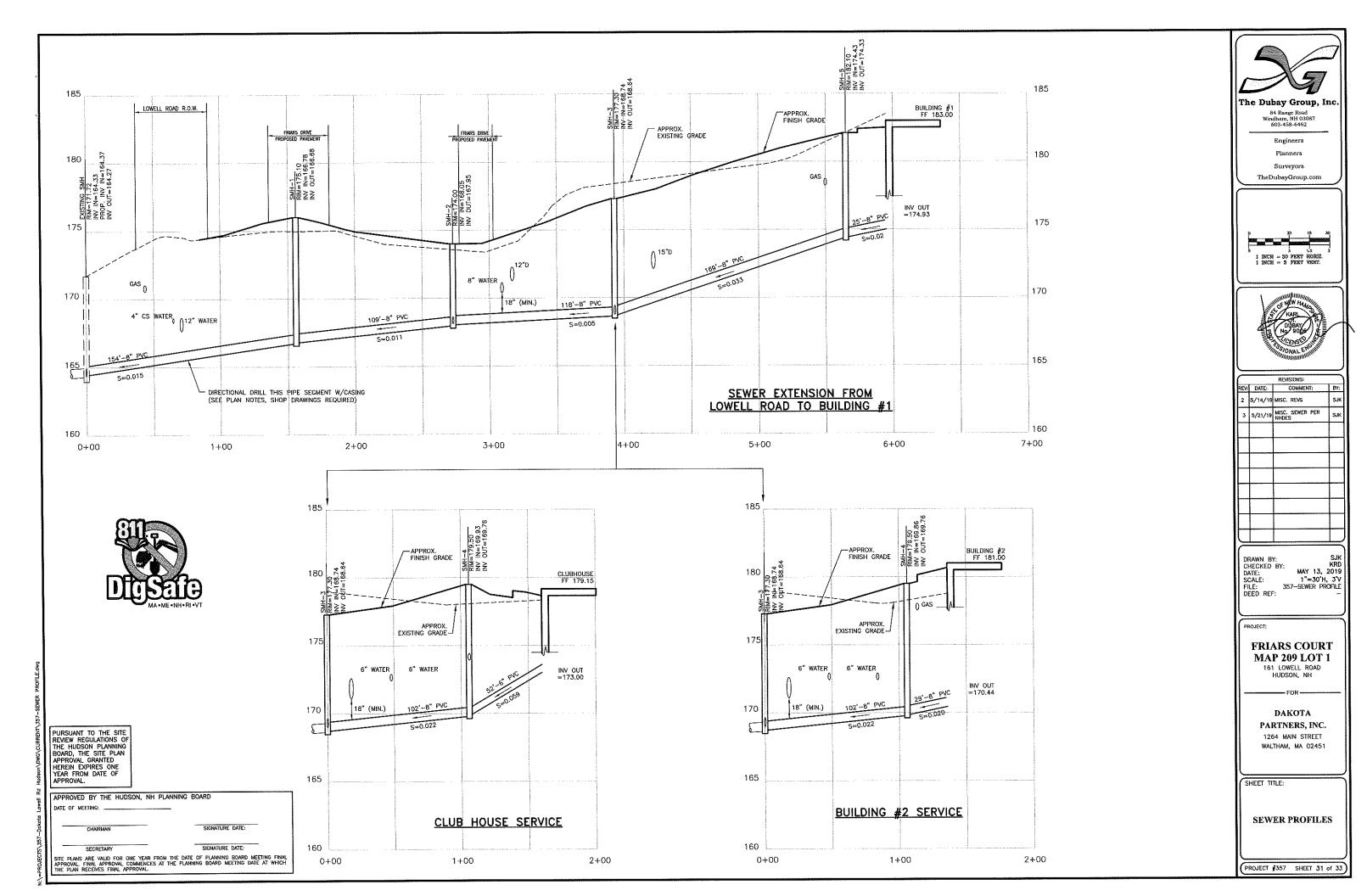
DAKOTA PARTNERS, INC. 1264 MAIN STREET

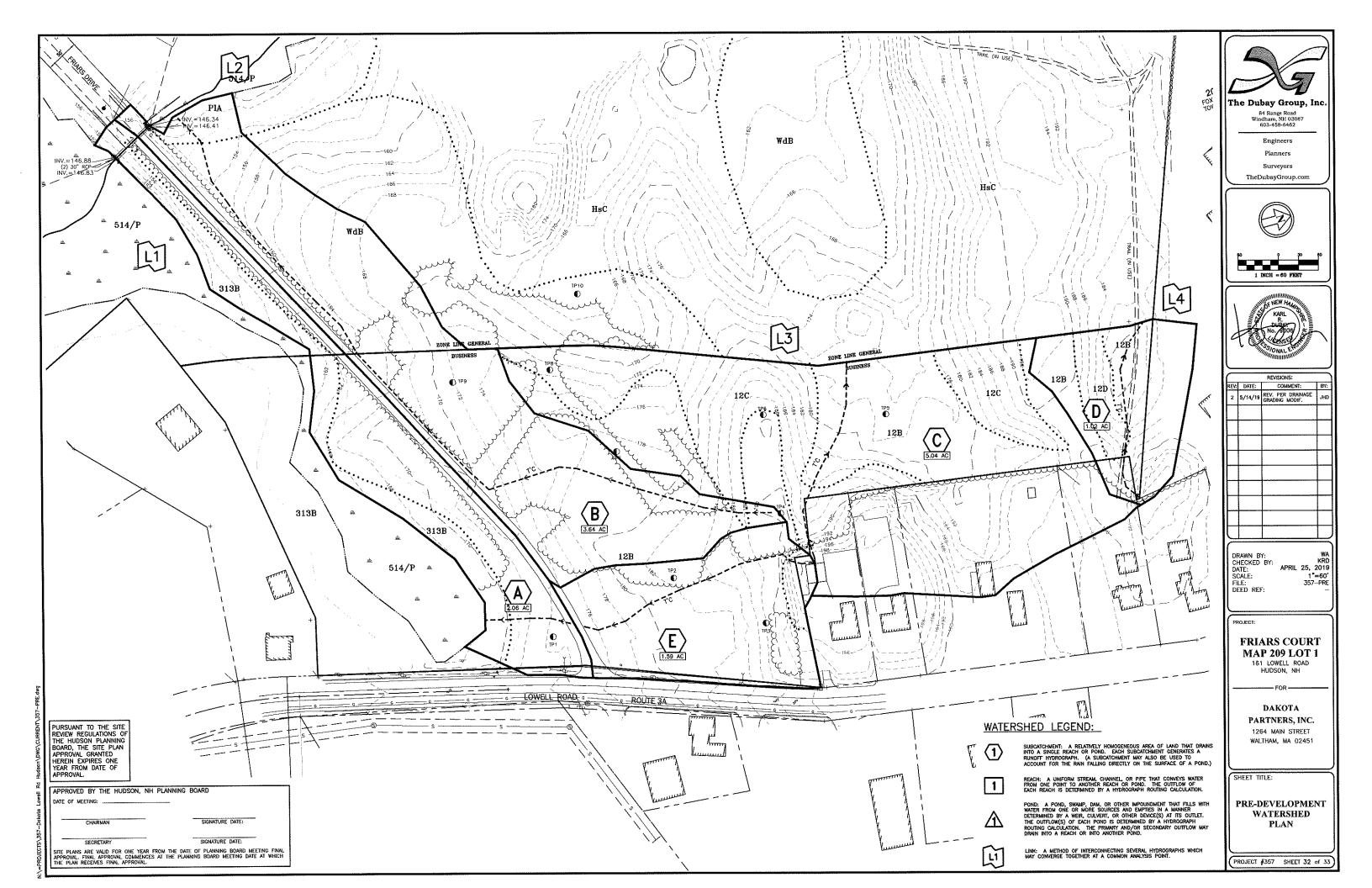
WALTHAM, MA 02451

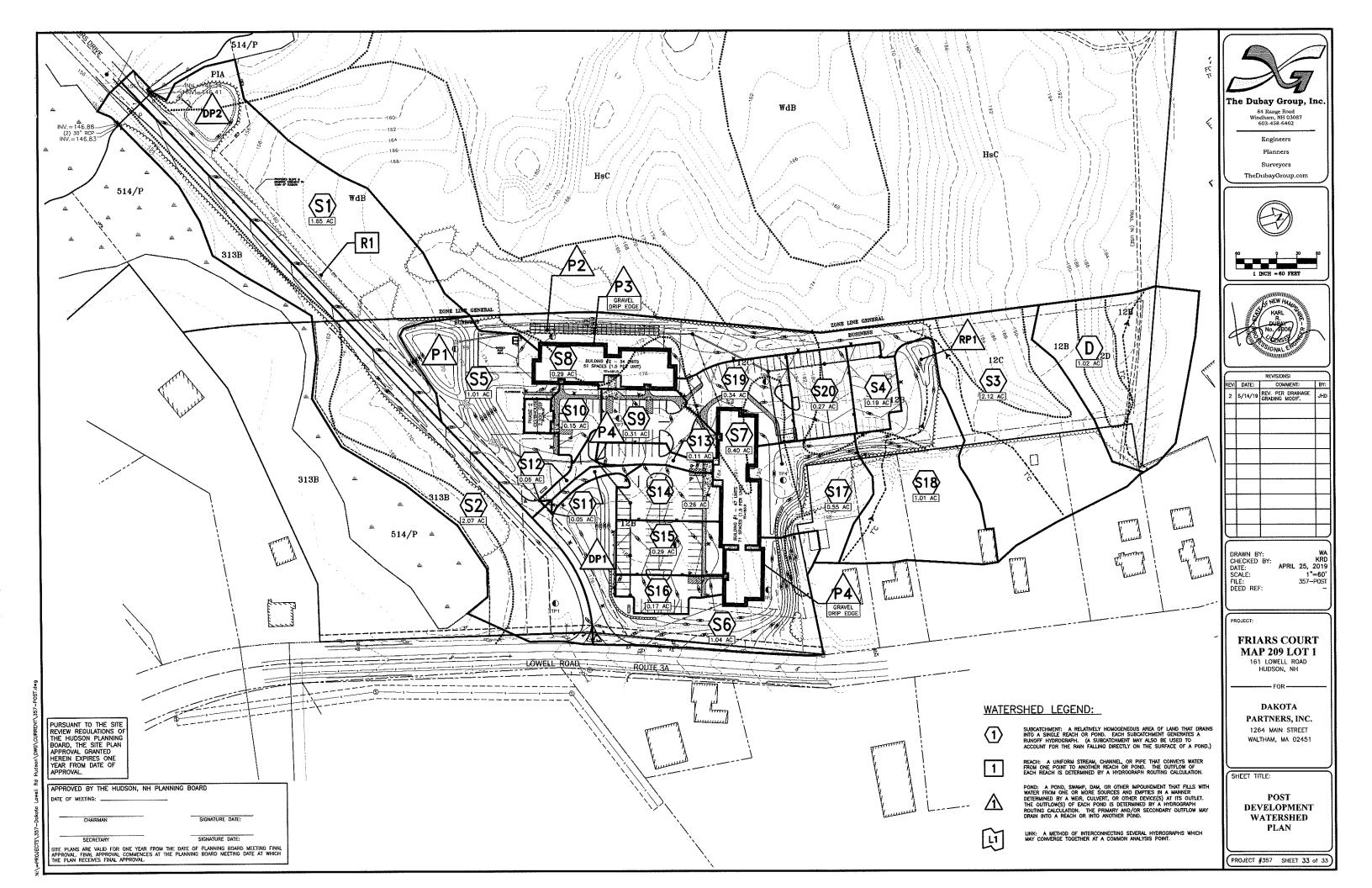
SHEET TITLE:

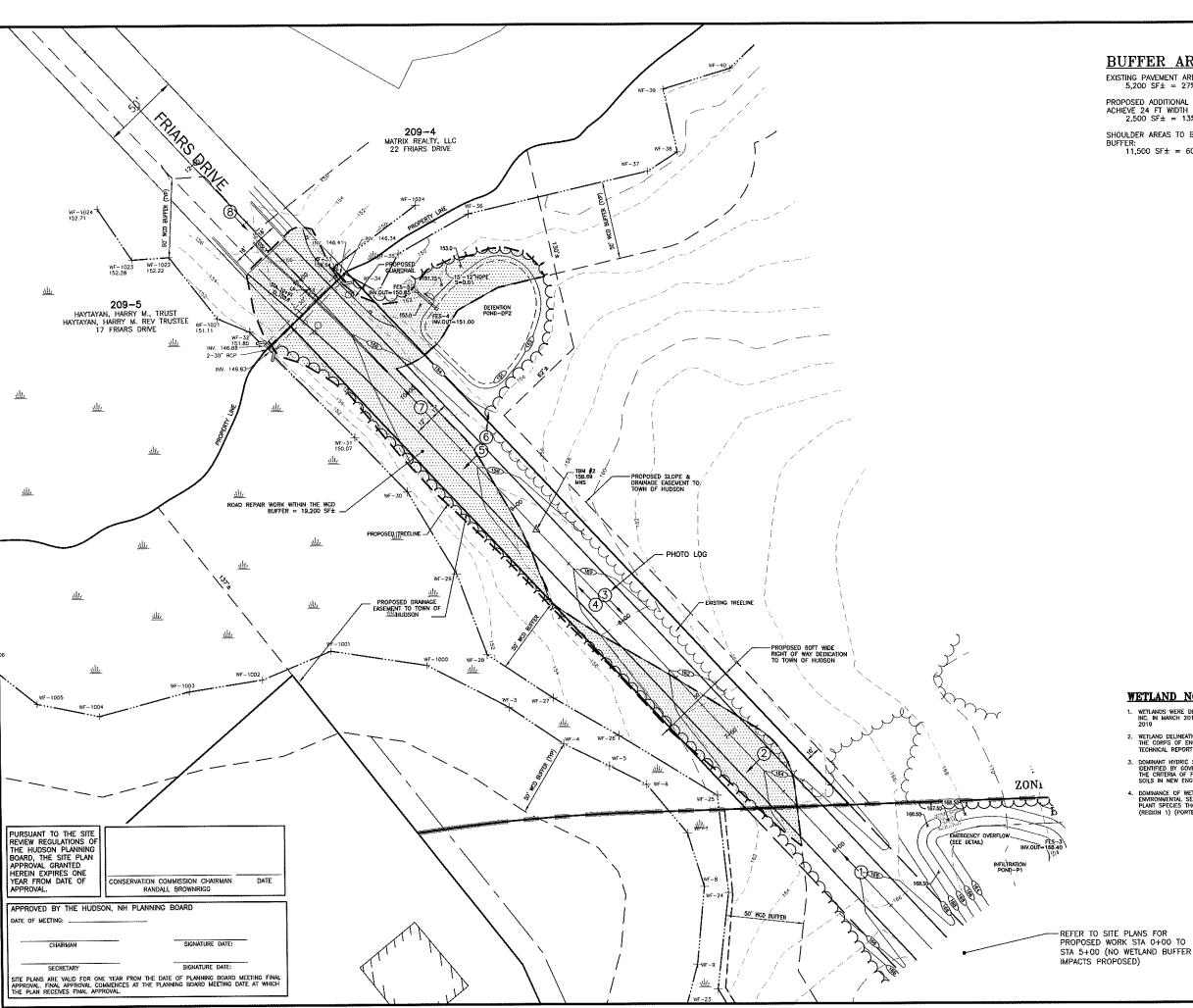
**IMPERVIOUS** AREA SUMMARY

PROJECT #357 SHEET 30 of 33









## **BUFFER AREA SUMMARY**

WETLAND NOTES

DOMINANT HYDRIC SOIL CONDITIONS WITHIN THE WETLANDS WERE IDENTIFIED BY GOVE ENMERNHENTAL SERVICES, INC. UTILIZING THE CRITTERIA OF FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, 2004.

4. DOMINANCE OF WEILAND VEGETATION WAS ASSESSED BY GOVE ENMIRONMENTAL SERVICES, INC. UTILIZING THE NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WEILANDS: 1988 NORTHEAST (REGION 1) (PORTER B. REED, JR.).

EXISTING PAVEMENT AREA WITHIN BUFFER TO BE RECLAIMED:  $5,200 \text{ Sf}\pm=27\%$  OF BUFFER IMPACT AREA

PROPOSED ADDITIONAL PAVEMENT AREA WITHIN BUFFER TO ACHIEVE 24 FT WIDTH PER TOWN STANDARDS: 2,500 SF± = 13% OF BUFFER IMPACT AREA

SHOULDER AREAS TO BE RESTORED & NATURALIZED WITHIN

11,500 SF± = 60% OF BUFFER IMPACT AREA



#### The Dubay Group, Inc.

84 Range Road Windham, NH 03087 603-458-6452

Engineers

Planners

Surveyors TheDubayGroup.com





		REVISIONS:	
REV:	DATE:	COMMENT:	BY:
1	5/6/19	MISC. REVS	WA
2	5/14/19	REV. PER DRAINAGE/ GRADING MODS.	WA
_			
	<b></b>		_

DRAWN BY: WA KRD APRIL 29, 2019 1"=30' 357-GU DRAWN BY: CHECKED BY: DATE: SCALE: FILE: DEED REF;

PROJECT:

#### FRIARS COURT MAP 209 LOT 1

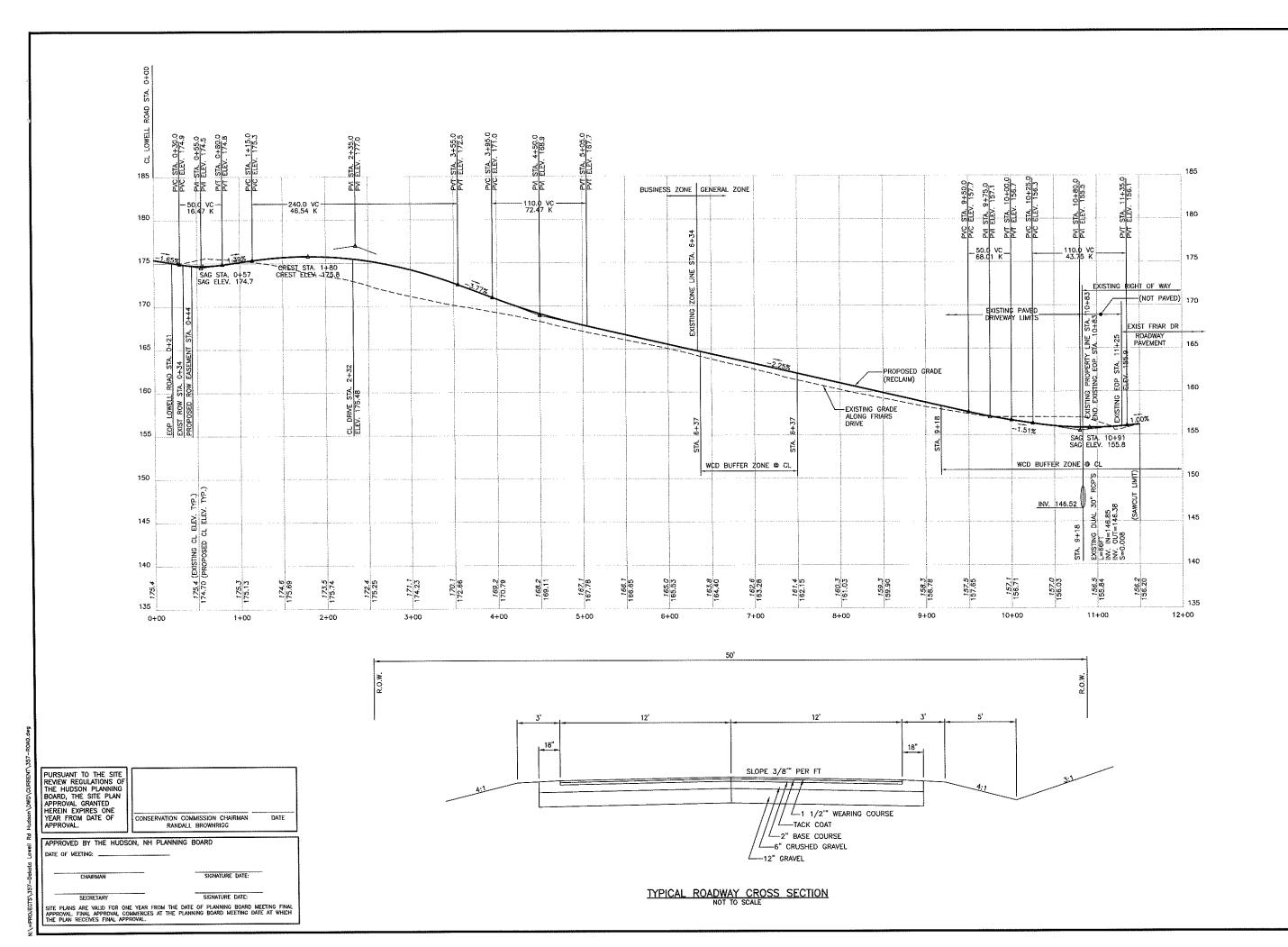
161 LOWELL ROAD HUDSON, NH

DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

ROADWAY RECONSTRUCTION PLAN





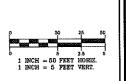
The Dubay Group, Inc

84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors

TheDubayGroup.co





1	REVISIONS:						
Ŀ	₹EV:	DATE:	COMMENT:	BY:			
	1	5/6/19	MISC. REVS	WA			
I	2	5/14/19	REV. PER DRAINAGE/ GRADING MODS.	WA			
ļ							
Į							
١	_						
۱			VIII.				
I							

DRAWN BY: CHECKED BY: DATE: SCALE: FILE: DEED REF:

SJK KRD APRIL 24, 2019 1"=50'H, 5'V 357-ROAD

PROJECT:

FRIARS COURT MAP 209 LOT 1

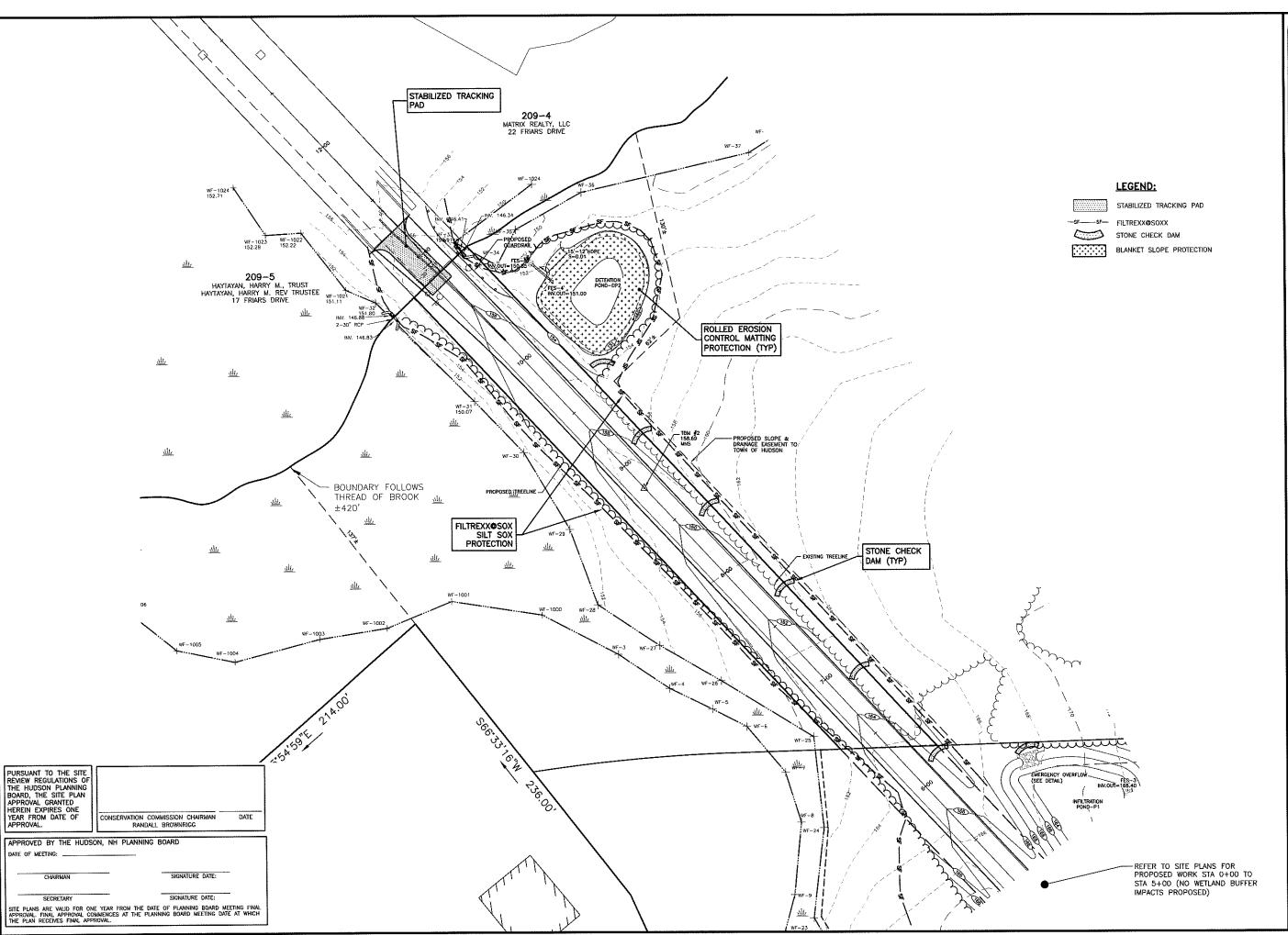
161 LOWELL ROAD HUDSON, NH

DAKOTA
PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

ROAD
RECONSTRUCTION
PROFILE
&
TYPICAL SECTION





The Dubay Group, Inc.

84 Range Road Windham, NH 03087 503-458-6462

> Engineers Planners

Surveyors TheDubayGroup.com







(		REVISIONS:	
REV:	DATE:	COMMENT:	BY:
1		MISC. REVS	W/A
2	5/14/19	REV. PER DRAINAGE GRADING MODIF.	WA
			_
	,		_
L			L
Г			П

DRAWN BY: WA
CHECKED BY: KRD
DATE: APRIL 29, 2019
SCALE: 1"=30"
FILE: 357—EROSIONROAD
DEED REF: —

PROJECT:

## FRIARS COURT MAP 209 LOT 1

HUDSON, NH

- FOR ----

## DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

ROADWAY EROSION CONTROL PLAN

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. MOTE WHEN USING CELL-O-SEED, DO NOT SEED PREPARED AREA. CELL-O-SEED WIST BE INSTALLED WITH THE PAPER SIDE DOWN.

3. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A S"DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED SEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE SOTTION OF THE TRENCH. BACKFLL AND COMPACT THE TRENCH AFTER STAPLING, APPLY SEED TO COMPACTED SOIL. AND FOLD REGINANNEL 12" APART ACROSS THE WIDTH OF THE BLANKET.

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 GLIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

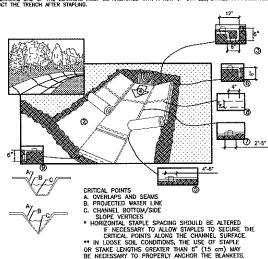
5. PLICE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-5" OVERLAP, USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4"(10") ON CENTER TO SECURE BLANKETS.

6. FULL—LENGTH EDGE OF BLANKETS AT 10P OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXMATELY 12" APART IN A 6"DEEP X 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH ATTER STAPLING.

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

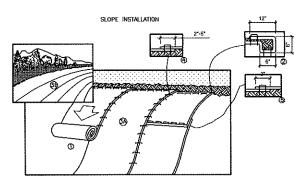
8. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.

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 (THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD

CONDITIONS.)



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

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.

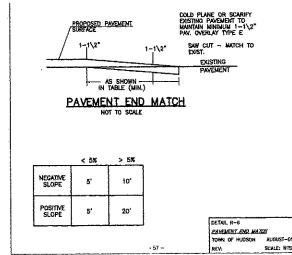
7. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

8. MATTING IS REQUIRED ON ALL SLOPES STEEPER THAN 3:1.

#### SLOPE PROTECTION EROSION CONTROL MATTING

NOT TO SCALE

(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)



BLOWN/PLACED FILTER MEDIA ...

Ø

WATER FLOW

WORK AREA

- 2" X 2" X 36" WOODEN STAKES PLACED 10' O.C.

AREA TO BE PROTECTED

SECTION M

PLAN HTS

-2" X 2" X 36" WOODEN STAKES PLACED 10' O.C.

PROTECTED

FILTREXX® SEDIMENT CONTROL

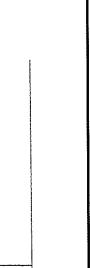
- FILTREXX® SOXX" (12" TYPICAL)

NOTES: 1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.

AS DETERMINED BY ENGINEER.

2. FILTER MEDIA™ FILL TO MEET APPLICATION

3. COMPOST MATERIAL TO BE DISPERSED ON SITE,





The Dubay Group, Inc 84 Range Road Windham, NH 03087 603-458-6462

Engineers

Surveyors TheDubayGroup.com

(	REVISIONS:					
REV:	DATE:	COMMENT:	BY:			
П						
_						
l						
			+			
$\vdash$			+			
			1			
		•	$\top$			
			1			
Ш						
ll						
Н						
1 1						
-						
1						
Н						
Ш						
_						

DRAWN BY: CHECKED BY APRIL 29, 2019 SCALE: AS SHOWN FILE: DEED REF: 357-DETAILSROAD

PROJECT:

#### FRIARS COURT **MAP 209 LOT 1** 161 LOWELL ROAD

HUDSON, NH

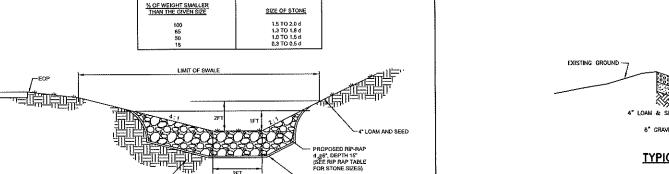
#### DAKOTA PARTNERS, INC. 1264 MAIN STREET

WALTHAM, MA 02451

SHEET TITLE:

ROAD UPGRADE DETAILS - 1

PROJECT #357 SHEET R4



MIRAFI MON FARRIC

#### TYPICAL RIPRAP LINED SWALE DETAIL NOT TO SCALE

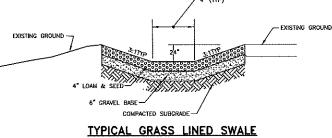
TABLE 7-24 - RECOMMENDED RIPRAP GRADATION RANGES

(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)

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

CONSERVATION COMMISSION CHAIRMAN RANDALL BROWNRIGG

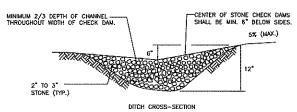
APPROVED BY THE HUDSON, NH PLANNING BOAR DATE OF MEETING: SIGNATURE DATE: SIGNATURE DATE: SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL APPROVAL THE PLAN RECEIVES FINAL APPROVAL.

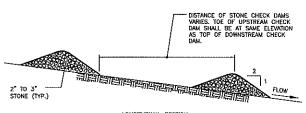




## LOAM & SEED DETAIL

(FOR PERMANENT STABILIZATION OF AREAS, TYPICALLY LOCATED AROUND PERIMETER OF FINAL EXCAVATION WORK LIMITS.)





# STONE CHECK DAM DETAIL NOT TO SCALE

#### CONSIDERATIONS

THIS PRACTICE IS INTENDED FOR USE IN AREAS WITH CONCENTRATED FLOW BUT MUST NOT BE USED IN STREAM CHANNELS (WHETHER PERENNIAL OR INTERMITTENT).

THE CHECK DAM MAY BE LEFT IN PLACE PERMANENTLY TO AVOID UNNECESSARY DISTURBANCE OF THE SOIL ON REMOVAL, BUT ONLY IF THE PROJECT DESIGN HAS ACCOUNTED FOR THEIR HYDRAULIC PERFORMANCE AND CONSTRUCTION PLANS CALL FOR THEM TO BE RETAINED.

IF IT IS NECESSARY TO REMOVE A STONE CHECK DAM FROM A GRASS-LINED CHANNEL THAT WILL BE MOWED, CARE SHOULD BE TAKEN TO ENSURE THAT ALL STONES ARE REMOVED, THIS INCLUDES STONE THAT HAS WASHED DOWNSTREAM.

#### GENERAL DESCRIPTION

TEMPORARY CHECK DAMS ARE SMALL TEMPORARY DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH. CHECK DAMS ARE USED TO REDUCE THE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH.

CHECK DAMS MY ALSO CATCH SMALL AMOUNTS OF SEDIMENT GENERATED IN THE DITCH ITSELF. HOWEVER, THE CHECK DAM IS NOT A SEDIMENT TRAPPING PRACTICE AND SHOULD NOT BE USED AS SUCH.

THE PRACTICE IS LIMITED TO USE IN SMALL OPEN CHANNELS THAT DRAIN ONE ACRE OR LESS. IT SHOULD NOT BE USED IN EITHER PERENNIALLY FLOWING STREAMS OR INTERMITTENT STREAM CHANNELS.

CHECK DAMS CAN BE CONSTRUCTED OF STONE. IN LOCATIONS WHERE STONE IS NOT AVAILABLE, TIMBER CHECK DAMS MAY BE CONSIDERED. TYPICAL APPLICATIONS INCLUDE TEMPORARY OR PERMANENT DITCHES OR SWALES, WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF GRASS LINNICS.

HAY OR STRAW BALES SHOULD GENERALLY NOT BE USED AS CHECK DANS, OR IN ANY LOCATION WHERE THERE IS CONCENTRATED FLOW, HOWEVER, THEY MAY BE USED FOR CHECK DANS IN APPLICATIONS WHERE INSTALLATION ACCESS OR OTHER CONDITIONS PREVENT THE USE OF PREFERRED MATERIALS SUCH AS STORE; IN SUCH CASES, INSTALLATION MUST PROVIDE PROPER EMBEDMENT OF THE STRAW OR HAY BALE BARRIER, LIMIT CONTRIBUTING DRAININGE AREA TO LESS THAN ONE ACRE, AND PROVIDE FOR FREQUENT MONITORING OF BARRIER.

#### MAINTENANCE REQUIREMENTS

CHECK DAMS SHOULD BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DALLY DURING PROLONGED RAINFALL AND NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY.

INSPECTIONS SHOULD VERIFY THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.

EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAI MUST BE CORRECTED IMMEDIATELY.

IF EVIDENCE OF SILTATION IN THE WATER IS APPARENT DOWN STREAM OF THE CHECK DAM, THE CHECK DAM SHOULD BE INSPECTED AND ADJUSTED IMMEDIATELY.

CHECK DAMS SHOULD BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH SIGNIFICANT RAINFALL. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL HEIGHT OR BEFORE.

#### **SPECIFICATIONS**

TEMPORARY CHECK DAMS SHOULD CONFORM TO THE FOLLOWING REQUIREMENTS:

CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE OR DRAINAGE DITCH.

THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM SHOULD BE LESS THAN ONE ACRE.

THE MINIMUM HEIGHT OF THE DAM SHOULD BE ONE FOOT ON SLOPES.

THE MAXIMUM HEIGHT OF THE DAM SHOULD BE TWO FEET.

THE CENTER OF THE DAM SHOULD BE AT LEAST 5 INCHES LOWER THAN THE OUTER EDGES.

THE MAXIMUM SPACING BETWEEN THE DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE OVERFLOW ELEVATION OF THE DOWNSTREAM

THE CHECK DAM SHOULD NOT BE USED IN A FLOWING STREAM.

STONE CHECK DAMS SHOULD BE CONSTRUCTED OF A WELL-GRADED ANGULAR 2-INCH TO 3-INCH STONE, 3/4-INCH STONE ON THE UPGRADIENT FACE IS RECOMMENDED FOR BETTER FILTERING.

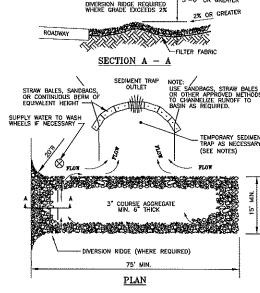
IF CAREFULLY INSTALLED AND MONITORED, TIMBER CHECK DAMS MAY BE USED, AND SHOULD BE CONSTRUCTED OF 4-INCH TO 6-INCH LOSS EMBEDEDS AT LEAST 18 INCHES DEEP INTO THE SOIL HOWEVER, STONE CHECK DAMS ARE GENERALLY PREFERRED. THE STONE HAS THE ABILTY TO CONFORM TO THE CHANNEL AND SETTLE IF SCOUR OCCURS, RENDERING STONE CHECK DAMS LESS SUSCEPTIBLE TO SCOUR AROUND THE ENDS AND DOWNSTREAM OF THE DEVICES.

IF PROVIDED BY DESIGN AND CONSTRUCTION PLANS, LEAVE THE DAM IN PLACE PERMANENTLY.

TEMPORARY STRUCTURES SHOULD BE REMOVED ONCE THE SWALE OR DITCH HAS BEEN STABILIZED:

IN TEMPORARY DITCHES AND SWALES, CHECK DAMS SHOULD BE REMOVED AND THE DITCH FILLED WHEN ITS NO LONGER NEEDED.

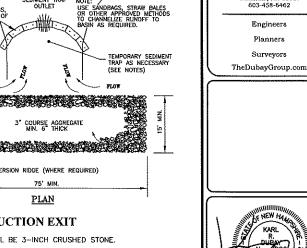
IN PERMANENT STRUCTURES, CHECK DAMS SHOULD BE REMOVED WHEN A PERMANENT LINING HAS BEEN ESTABLISHED. IF THE PERMANENT LINING IS VEGETATION, THE THE CHECK DAM SHOULD BE RETANISED UNIT. THE GRASS HAS BEEN MATURED TO PROTECT THE DITCH OR SWALE. THE AREA BENEATH THE CHECK DAM MUST BE SEEDED AND MUCHED MINEDIATELY AFTER REMOVAL.



#### TEMPORARY CONSTRUCTION EXIT

- THE MINIMUM STONE USED SHALL BE 3-INCH CRUSHED STONE.
- 2. THE MINIMUM LENGTH OF THE PAD SHALL BE 75 FEET, EXCEPT THAT THE MINIMUM LENGTH MAY BE REDUCED TO 50 FEET IF A 3-INCH TO 6-INCH HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE.
- THE PAD SHALL EXTEND THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD OR 15 FEET, WHICHEVER IS GREATER.
- 4. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
- THE PAD SHALL BE AT LEAST 6 INCHES THICK. A GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN THE STONE PAD AND THE EARTH SURFACE BELOW THE PAD.
- THE PAD SHALL BE MAINTAINED OR REPLACED WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE STONE SUCH THAT MUD AND SOIL PARTICLES ARE TRACKED OFF-SITE.
- 7. A STABILIZED CONSTRUCTION EXIT CONSISTS OF A PAD OF STONE AGGREGATE PLACED ON A GEOTEXTILE FILTER FABRIC, LOCATED AT ANY POINT WHERE TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO AN EXISTING ACCESS ROAD WAY OR OTHER PAYED SURFACE. ITS PURPOSE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS BY CONSTRUCTION VEHICLES. THIS HELPS PROTECT RECEIVING WATERS FROM SEDIMENT CARRIED BY STORMWATER RUNDIFF FROM PUBLIC ROADS.
- 8. ONLY CONSTRUCTION TRAFFIC LEAVING THE SITE SHALL TO USE THE TEMPORARY STABILIZED EXIT. CONSIDER PROVIDING A SEPARATE, UNPROTECTED, ENTRANCE FOR TRAFFIC ENTERING THE SITE. THIS WILL INCREASE THE LONGEVITY OF THE STABILIZED EXIT BY ELIMINATING HEAVY LOADS ENTERING THE SITE AND REDUCING THE TOTAL TRAFFIC OVER THE DEVICE.
- 9. LOCATE CONSTRUCTION ENTRANCES AS SHOWN ON THE PLAN.
- 10. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR MAINTENANCE OF ANY MEASURES USED TO TRAP SEDIMENT.
- 11. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY,
- 12. WHEN THE CONTROL PAD BECOMES INEFFECTIVE, THE STONE SHALL BE REMOVED ALONG WITH THE COLLECTED SOIL MATERIAL, REGRADED ON SITE, AND STABILIZED. THE ENTRANCE SHALL THEN BE RECONSTRUCTED.
- 13. THE CONTRACTOR SHALL SWEEP THE PAVEMENT AT EXITS WHENEVER SOIL MATERIALS ARE TRACKED ONTO THE ADJACENT PAVEMENT OR TRAVELED WAY.
- 14. WHEN WHEEL WASHING IS REQUIRED, IT SHALL BE CONDUCTED ON AN AREA STABILIZED WITH AGGREGATE, WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE, ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.
- NATURAL DRAINAGE THAT CROSSES THE LOCATION OF THE STONE PAD SHALL BE INTERCEPTED AND PIPED BENEATH THE PAD, AS NECESSARY, WITH SUITABLE OUTLET PROTECTION.
- 16. THESE REQUIREMENTS MAY BE ADJUSTED TO SPECIFIC SITE CONDITIONS PER THE DIRECTION OF JURISDICTIONAL TOWN AND STATE AUTHORITIES, PER SWPPP INSPECTION/MANAGEMENT PROCESSES, AND PER BEST MANAGEMENT PRACTICES.

TEMPORARY CONSTRUCTION EXIT DETAIL
NOT TO SCALE



_						
	REVISIONS:					
REV:	DATE:	COMMENT:	BY:			
Ш						
Ш			<u> </u>			
			l			
			⊢			
			$\vdash$			
li I						
			<u> </u>			
ш			<u> </u>			
11						
II—			├-			
11						
			⊢			
IL I						

The Dubay Group, Inc

84 Range Road indham, NH 03087

DRAWN BY: CHECKED BY: DATE: SCALE: FILE: DEED REF:	SJ KR APRIL 29, 201 AS SHOW 357-DETAILSROA

PROJECT

#### FRIARS COURT MAP 209 LOT 1

161 LOWELL ROAD HUDSON, NH

---- FOR ---

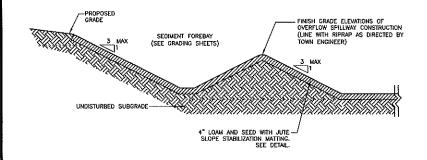
DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

ROAD UPGRADE DETAILS - 2

PROJECT #357 SHEET R5



## TYPICAL POND SECTION & PRINCIPLE SPILLWAY PROFILE DETAIL

#### 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 INDIPULAL MUST BE ASSIGNED RESPONSIBILITY FOR MAINTAINING THE STRUCTURES AND THE BASIN AREA. A MAINTENANCE PLAN SHOULD BE DEVELOPED THAT OUTLINES THE MAINTENANCE OPPERATIONS AND A SCHEDULE FOR CARRYING OUT THE PROCEDURES.

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

- EMBANKMENT THE EMBANKMENT SHOULD BE INSPECTED ANNUALLY TO DETERMINE IF RODENT BURROWS, WET AREAS, OR EROSION OF THE FILL IS TAKING PLACE.
- VECETATION 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 EMBANKHENT AND EMPCRENCY SPILLWAY AREAS.
- 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.
- 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 WHER IS A POTENTIAL FOR SIGNIFICANT DIMAGE OR LOSS OF LIFE DOWNSINEAM, 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 STOCED NO STEEPER THAN 1:1. THE FOUNDATION AREA SHALL BE THOROUGHLY SCARRIFED 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 RELD. 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 STRANDING 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 SECTIONALZED 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 STEEP 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 COOD BOND WITH THE NEW FILL.

THE DISTRIBUTION AND GRADATION OF MATERIALS SHALL BE SUCH THAT NO LENSES, PORKETS, STREAKS, OR LAYERS OF MATERIAL DIFFER SUBSTANTIALLY IN TEXTURE OF GRADATION FROM THE SURROUNDING MATERIAL IF IT IS INCCESSARY TO USE MATERIALS OF VARIENT STYLE AND GRADATION. THE MODE IMPERIOUS MATERIAL SHALL BE FAUGUED IN THE CENTER AND UPSTREAM PARTS OF THE FILL IF ZONED FILLS OF SUBSTANTIALLY DIFFERING MATERIALS ARE SPECIFIED, THE ZONES SHALL BE PRACED ACCORDING TO THE LINES AND GRADES SHOWN ON THE DRAWNINGS. THE COMPLETE WORK SHALL CONFORM TO THE LINES, GRADES, AND ELECTRONS SHOWN ON THE DRAWNINGS OF ALS STAKED IN THE

- 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 UNITL THE CONCRETE IS STRONG ENDUGH TO SUPPORT LE CADD.
- 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 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. CONGRETE THE MIX DESIGN AND TESTING OF CONGRETE SHALL BE CONSISTENT WITH THE STRENGTH REQUIREMENTS OF THE JOB, MIX REQUIREMENTS OR NECESSARY STRENGTH SHALL BE SPECIFED. THE TYPE OF CEMENT, ARE ENTRANMENT, SLUMP, ACGREGATE, OR OTHER PROPERTIES SHALL BE SPECIFED IN ENCESSARY ALL CONGRETE IS TO CONSIST OF A WORKING HAX THAT CAM BE PLACED AND FINISHED IN AN ACCEPTABLE MANHER. NECESSARY CURING SHALL BE SPECIFIED, REINFORGING STEEL SHALL BE PLACED AS INDICATED ON THE PLANS AND SHALL BE HELD SECURILLY IN PLACE DURING CONCRETE PLACEMENT. SUBGRADES AND FORMS SHALL BE INSTALLED TO LINE AND GRADE, AND THE FORMS SHALL BE MORTAR TIGHT AND UNYTELDING AS THE CONCRETE IS PLACED.
- 7. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO INFILTRATION BASINS.
- . DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILITRATION BASIN.
- 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.
- ). VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
- 11. DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

# PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL. CONSERVATION COMMISSION CHAIRMAN DATE CONSERVATION COMMISSION CHAIRMAN DATE RANDALL BROWNRIGG CHAIRMAN SIGNATURE DATE: SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL, FINAL APPROVAL, COMMENCES AT THE PLANNING BOARD MEETING PINAL APPROVAL FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING PINAL APPROVAL FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING PINAL APPROVAL FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL

#### **EROSION CONTROL NOTES**

#### CONSTRUCTION SEQUENCE

- 1. AN INITIAL PRE CONSTRUCTION MEETING(S) SHALL TAKE PLACE WITH THE CONTRACTOR, OWNER AND TOWN
- 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 STORM WATER POLIUTION PREVENTION PLAN (APPP), 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. PRIOR TO ANY EARTH MOVING OPERATION INSTALL PERIMETER CONTROLS. LE SILT FENCE AND/OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE OR OTHER EROSION CONTROL DEVICE (SO AS SHOWN ON THE EROSION CONTROL PLAN. EDGE OF CONSERVATION OVERLAY DISTRICT AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE DELINEATED IN THE FIELD WITH WEITHAND MARKETS PRIOR TO CONSTRUCTION.
- 4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.
- 5. CLEAR AND GRUB WITHIN AREAS OF SHOULDER DISTURBANCE UNLESS OTHERWISE DIRECTED.
- 6. REMOVE MATERIALS AS REQUIRED.
- 7. PERFORM SHOULDER AREA SHAPING, DITCHES, AND/OR SWALES.
- 8. INSTALL DRAINAGE SYSTEMS.
- DRAINAGE SYSTEMS SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO DIRECTING ANY FLOW TO THEM. ALL SIDE SLOPES SHALL BE STABILIZED WITHIN 72 HOURS,
- 10. RECLAIM EXISTING PAVEMENT, RESHAPE, AND PREPARE SUBBASE, PER DIRECTION OF TOWN ENGINEER.
- 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
- 13. ANY PERMANENT DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- 14. PLACE BINDER LAYER OF PAVEMENT
- 15. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSON, SEED, MULCH AND FERTILIZER,
- 16. CONSTRUCT ASPHALT WEARING COURSE
- 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

- 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 ENOSION CONTROL PROJECTIONES SHALL CONFORM TO SECURITOR 695 OF THE STANDARD SPECIFICATION THE ROAD AND BRIDGE CONSTRUCTION OF THE NIHOOT. 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 ADEROSION CONTROL MEASURES PRIOR TO ANY EARTH MOVING OPPRATIONS, THE CONTRACTOR SHALL MANAGE THE PROJECT IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 330.0 BETATING TO MASSAGE SEPCIFICATION.
- 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
- 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.
- 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.
- CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES IN ACCORDANCE WITH NHDES, EPA & TOWN
  REQUIREMENTS FOR THE DURATION OF THE PROJECT. WAITER FOR DUST CONTROL SHALL BE PROVIDED ON
  STE. 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
- 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 STILMPS, WOOD, ROOTS, ETC. AND SHALL NOT BE PLACED ON FROZEN FOUNDATION SUGGRADE.
- 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.

- 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.
- IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SHE 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 SE APPLIED WHERE EXPOSED SOIL SURFACES WILL NOT BE FINAL GRADED WITHIN 45 DAYS.
- B. SEED BED PREPARATION SHALL BE IN ACCORDANCE WITH THE NHOES STORMWATER MANAGEMENT MANUAL. VOLUME 3, TEMPORARY VEGETATION SECTION.
- C. SEEDING MIXTURE

 00200	WINTER CO.		
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 STORMWARTE 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
- D. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIBBLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 POUNDS PER ACTE OR 13.8 POUNDS PER JODO SQUARE FET OF LOW PHOSPHATE FERTILIZER (N-P205-K20) 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
- E. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER
- 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 % TO 1/2 INCH. HYDROSEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEDING.
- 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 SHOULD BE USED WITH THE FOLLOWING SEEDING RATES, BASED ON THE SEEDING GUIDE.

MIXTURE	SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. F
A	TALL FESCUE	20	0.45
	CREEPING RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL	42	0.95

- 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 STABILZE THE SOIL SUFFACE. THIS WIX IS PARTICULARLY APPROPRIATE FOR DETENTION BASINS WHICH DO NOT NORMALLY HOLD STANDING WATER. THE PLANTS IN THIS MIX CAN TOLERATE INFREQUENT INJUDICATION, BUT NOT CONSTANT FLODOING. IN NEW ENCLAND, IT HE BEST RESULTS ARE DISTANCE 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 DOTMANT SEEDING REQUIRE A SLIGHT INCREASE IN THE SEEDING FATE. FERTILIZATION IS NOT REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE.
- B. APPLICATION RATE: 35 LBS/ACRE 1245 SO 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), SILXY 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 PERFOLATUM), FLAT-TOP ASTER (ASTER UMBELLATUS), NEW YORK ASTER (ASTER NOVI-BELGII), BLUE VERVAIN

#### WINTER NOTES

- 1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE CROWTH 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 SHOW OR ONLY REPORT OF THAT OF SPRING MET FERTS. GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS:
- 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.
- AFTER NOVEMBER 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
- 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
- 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.

#### GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL EXISTING CONDITIONS SURROUNDING IT AND THEREON. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTERTION AT LEAST 40 HOURS IN ADVANCE.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE RESIDERE SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOR INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (800–344–7233) AT LEAST 72 HOURS BEFORE DIGGING.
- THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
- CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET LOCAL STANDARDS AND THE RECOURSEMENTS OF THE LATEST NIBOUT STANDARD SHORE FOR ROADS AND BRIDGE CONSTRUCTION AND THE N.H.D.C.T. STANDARDS SHITCHTE DRAWINGS UNLESS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN IN THE PLANS THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE WHOES STANDARDS. THE DETAILS PROVIDED SERVE AS A GUIDE ONLY.
- ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
- 8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS.
- 9. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS AT THE SITE. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT DISCREPANCIES TO THE ENGINEER.
- ALL WORK IN THE RIGHT OF WAYS SHALL BE PERFORMED PER THE DIRECTION OF THE TOWN, IRRESPECTIVE OF PLAN INFORMATION.
- 11. EXISTING UTILITIES TO BE PROTECTED & COORDINATED WITH UTILITY COMPANIES.

NOTE: ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH TOWN OF HUDSON SPECIFICATIONS, AND AS DIRECTED BY TOWN ENGINEER.



The Dubay Group, Inc

84 Range Road 603-458-6462

Engineers

Planners

Surveyors TheDubayGroup.com



REVISIONS

REV:	DATE:	COMMENT:	Ó
			Г
			Г
Ш			-

DRAWN BY: CHECKED BY: DATE: SCALE: FILE: DEED REF:	SJK KRD APRIL 29, 2019 AS SHOWN 357-DETAILSROAD
DEED REF:	

PROJECT:

#### FRIARS COURT MAP 209 LOT 1 161 LOWELL ROAD

HUDSON, NR

DAKOTA PARTNERS, INC. 1264 MAIN STREET

WALTHAM, MA 02451

SHEET TITLE:

ROAD UPGRADE **DETAILS - 3** 

PROJECT #357 SHEET RE

YEAR FROM DATE OF APPROVAL. DATE OF MEETING: ..... CHAIRMAN

PURSUANT TO THE SITE

REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED

HEREIN EXPIRES ONE

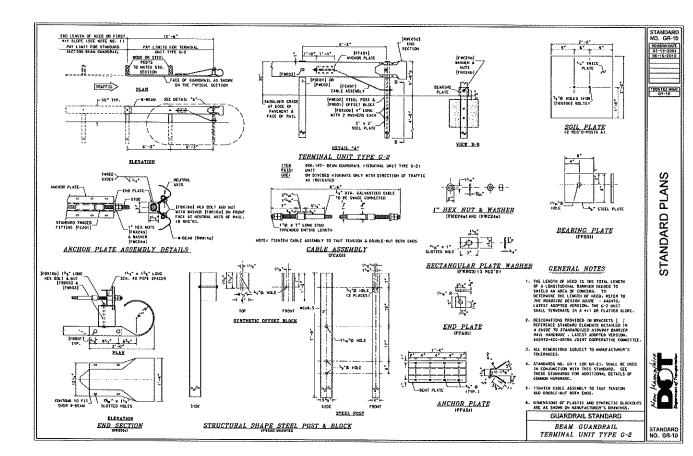
SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FOR APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

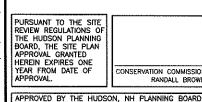
CONSERVATION COMMISSION CHAIRMAN DATE RANDALL BROWNRIGG APPROVED BY THE HUDSON, NH PLANNING BOARD

SIGNATURE DATE:

EAGNT TERMINAL WATE STANDARD NO. GR-2 ACIADS DE BARRIER - SEE MOTE MO. 1. (IRB) [E] SAMPLE GUARDRAIL INSTALLATION LAYOUT DON FLE NAME CR-2 CENERAL NOTES PAY LIMITS FOR STANDARD SECTION The Defentilen is shapping behavior to see the Latest appread bettien or the Adviso production detects count.
 Executed Proporties to the Datasto Restrict of a Queboard in Winnel Latiful of Robbin cubiton as hell as the Entire Collection and Collection as hell as the Entire I 111P. I RAAS 4. USC 12' 6' LENSTH RAIL EXTURNES IN RAIL CURRES OF 1055 SHEEL 103' REDILL. PLANS THE FOR AND THE PROPERTY OF TH ELEVATION STANDARD SECTION STANDARD 19-4 - 10a ,27.1 SICE FECAT STRUCTURAL SHAPE STEEL POST indensity. ХФ., . SYNTHETIC OFFSET BLOCK 23s 4 2s 4rd 194 25c SECTION THRU RAIL ELEMENT
14 SPACE V-BEAN GUARDRAIL BESIGNATED
RWMO46 (NOMINALLY 12"-0")
18 SPACE V-BEAN GUARDRAIL UNDESIGNATED
AT THIS TIME GROMINALLY 25"-0") 1. THE FRANCE CONTROLLED CONTROLLED CONTROLLED WEBSITE THAT ARE ELICIBLE FOR ESPERAL PRINTEDPATTON PER PAGES 350 TEST.

1. THE FRANCE CONTROLLED WEST ACCOUNTS AND ACCOUNTS AS THE PAGE TO SERVICE AS THE PAGE 14 TRUFFIC FACE DF ..... FORE U/ D. Kir CLARIFICATION PETAIL FOR GENERAL NOTE 6 GUARDRAIL STANDARD TYPICAL SIDE VIEW BEAM GUARDRAIL STANDARD SECTION STEEL F & HARDWARE DETAILS 5/8" BUTTON HEAD BOLT AND RECESSED NUT VIEW AT BEAM SPLICE





CONSERVATION COMMISSION CHAIRMAN RANDALL BROWNRIGG

DATE OF MEETING:	
CHAIRMAN	SIGNATURE DATE:
SECRETARY	SIGNATURE DATE:
SITE PLANS ARE VALID FOR ONE YEAR FROM THE D APPROVAL, FINAL APPROVAL COMMENCES AT THE PL	

The Dubay Group, Inc.

84 Range Road Windham, NH 03087 603-458-6462

Engineers

Planners Surveyors

TheDubayGroup.com



_			
		REVISIONS:	
REV:	DATE:	COMMENT:	BY:
RE.V:	DAIL:	COMMENS:	137:
1 1			- 1
			1
П			
1 1			- 1
1			+-
1			1
⊢			-
1			1
$\sqcup$			
			1
1			1
1 1			Ì
⊢			<del></del>
1			- 1
1			1
1 1			ı
П			
1 1			-
$\vdash$			+
ιl			- [
_			

DRAWN BY: CHECKED BY: SJK KRD APRIL 29, 2019 SCALE: 357-DETAILSROAD DEED REF

PROJECT:

#### FRIARS COURT MAP 209 LOT 1

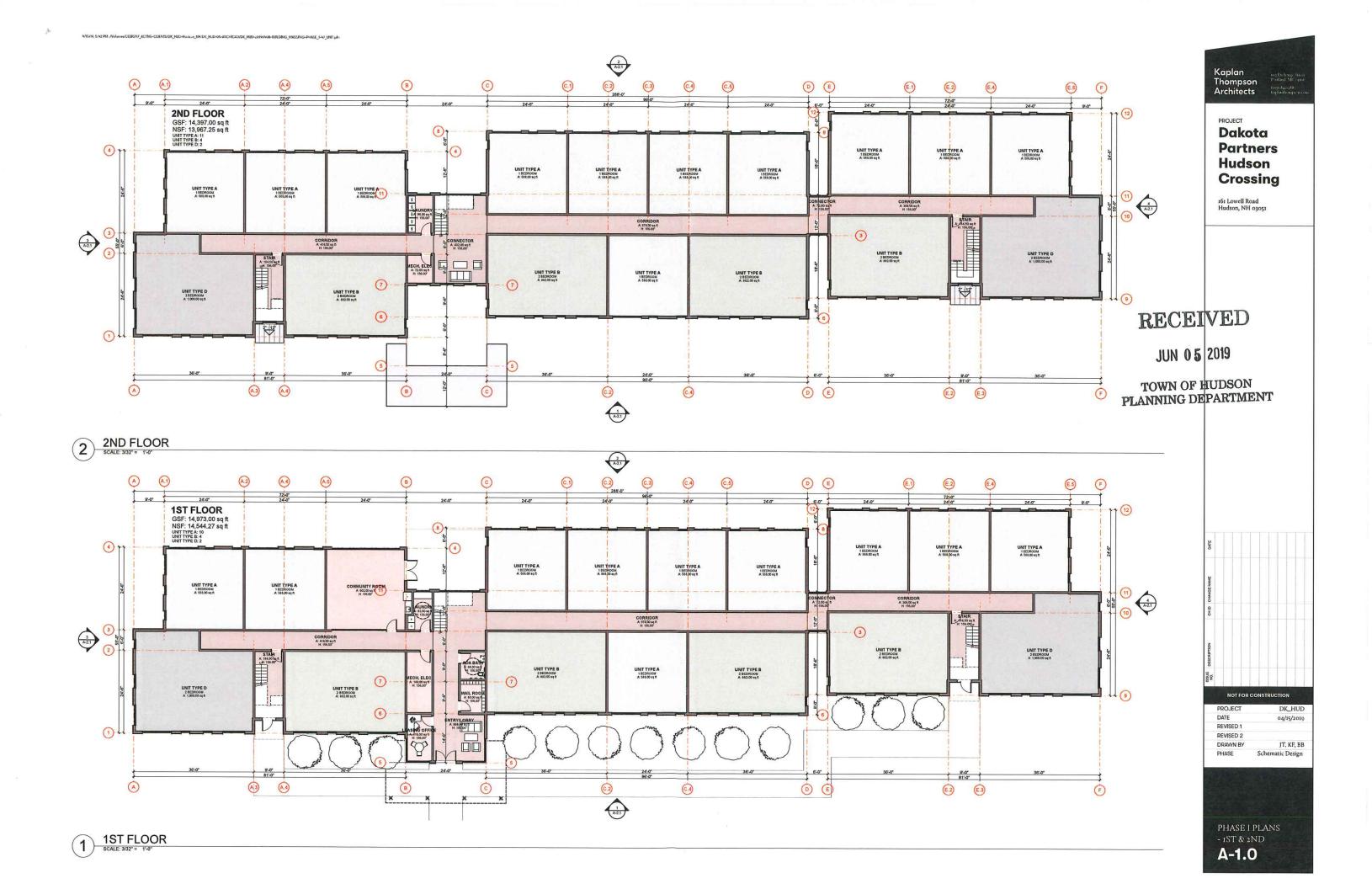
161 LOWELL ROAD HUDSON, NH

DAKOTA PARTNERS, INC.

1264 MAIN STREET WALTHAM, MA 02451

SHEET TITLE:

ROAD UPGRADE DETAILS - 4







2 VIEW 2



## PROJECT **Dakota Partners** Hudson Crossing

161 Lowell Road Hudson, NH 03051

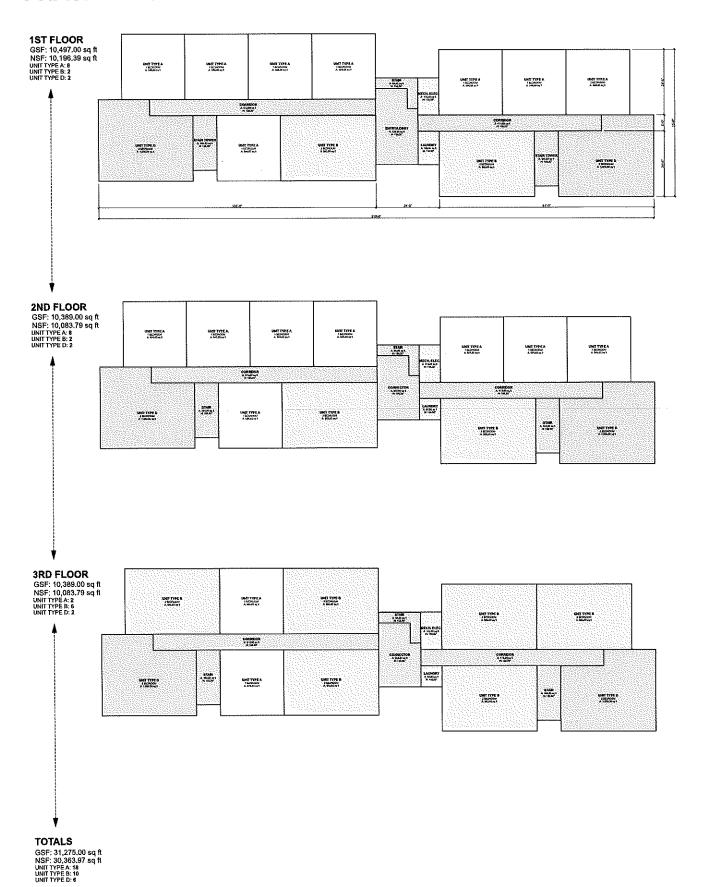


04/15/2019



## **PHASE 2: BUILDING LAYOUT - 34 UNIT**

WFEATS, NOT PART, AND PART, AND PART OF THE CONTROL OF THE PARTY OF TH



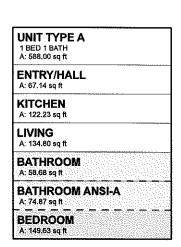
PROJECT

## Dakota **Partners** Hudson Crossing

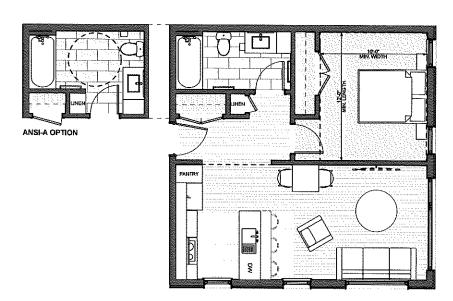
161 Lowell Road Hudson, NH 03051

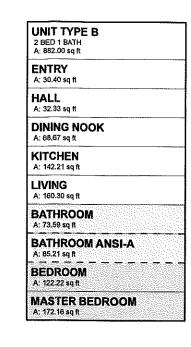
PROJECT DK\_HUD DATE 04/15/2019 REVISED 1 REVISED 2 JT, KF, BB DRAWN BY PHASE Schematic Design

PHASE II BUILDING LAYOUT A-1.0



MULTIN 8 37 BK WYFAR NOW PROCESSON VOCAME CONTINUES WERE MULTIPLES WITH A MARKET MAN WAS MADER OF A MAN



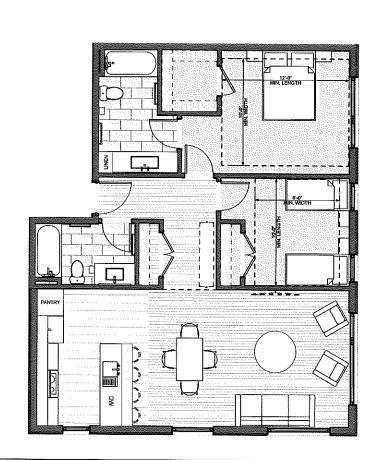




UNIT TYPE A

2 UNIT TYPE B

UNIT TYPE D 2 BED 2 BATH A: 1,000,00 sq ft **ENTRY** A: 37.98 sq ft HALL. A: 52.67 sq ft KITCHEN A: 134,09 sq ft DINING A: 82.08 sq ft LIVING A: 160,30 sq ft BATHROOM A: 53,62 sq ft MASTER BATH A: 73.59 sq ft BEDROOM A: 122.22 sq ft MASTER BEDROOM A: 193,86 sq ft



4) UNIT TYPE D

Kaplan
Thompson
Architects

Kaplan

Architects

PROJECT

Dakota

Partners

Hudson

Crossing

161 Lowell Road Hudson, NH 03051

TO, IDECEMBION CHB CHANGE NAME

NOT FOR CONSTRUCTION

PROJECT DK\_HUD

DATE 04/15/2019

REVISED 1

REVISED 2

DRAWN BY JT, KF, BB

PHASE Schematic Design

UNIT PLANS
A-1.5

# MINUTES/DECISIONS OF THE PLANNING BOARD MEETING DATE: MAY 8, 2019

In attendance $= X;$	Alternates Seated = S	; Partial Attendance =	P; Excused Absence = E
	Jordan Ulery Vice-Chair <u>X</u>		
	Ed Van der Veen Member <u>X</u>		
_	Marilyn McGrath Alt. Select. Rep. <u>X</u>		
I. II. III.	CALL TO ORDER E PLEDGE OF ALLEC ROLL CALL	BY CHAIRPERSON A	AT 7:00 P.M.
IV.	SEATING OF ALTE	ERNATES	
	None		
V.	MINUTES OF PREV	JIOUS MEETING(S)	

- 24 April 19 Meeting Minutes Decisions.
  - Mr. Coutu moved to approve the 24 April 19 Meeting Minutes (as written/amended).

Motion seconded by Mr. Brackett. All in favor - Motion carried.

- VI. CASES REQUESTED FOR DEFERRAL
- VII. CORRESPONDENCE
- A. Request to release Corridor Impact Funds in the amount of \$37,850.00 from Impact Fee Account 2070-000-702, Corridor Zone 2 Traffic Improvements for Lowell Road and Wason Road Intersection Project in accordance with the

written request for same from the Town Engineer (please see attached memo from Town Engineer, Elvis Dhima, dated 30 April 2019).

Town Planner Groth provided some details as to the request by Town Engineer Dhima for release of impact fees. He stated the monies would be used for continued traffic light upgrades along Lowell Road. Mr. Van der Veen asked if there would be a need for future impact fee allocations or was this the last set of traffic lights to be upgraded. Mr. Groth explained that there were at least four more lights that could be potentially upgraded in the future. With no other discussion on the matter.

Mr. Dumont moved to recommend to the Board of Selectmen the release of \$37,850.00 from Impact Fee Account 2070-000-702, Corridor – Zone 2 Traffic Improvements for Lowell Road and Wason Road Intersection Project in accordance with the written request for same from the Town Engineer (please see attached memo from Town Engineer, Elvis Dhima, dated 30 April 2019).

Motion seconded by Mr. Van der Veen. All in favor – Motion carried.

VIII. PERFORMANCE SURETIES

IX. ZBA INPUT ONLY

A. ZBA Input Application #01-19, Wetland Special Exception, 161 Lowell Road.

The Chairman opened discussion on the matter of the Wetland Special Exception sought by the applicant as part of the proposed Friars Drive to Lowell Road roadway improvement. He asked if members present where ready to make a determination or offer any additional input on the matter. There was minimal discussion between board members as to the possibility of waiting until the Conservation Commission had a chance to provide input but in the end planning board members decided to forward the board's recommendation on to the ZBA for considerations.

Mr. Ulery moved to forward the following "ZBA Input Only" recommendation to the ZBA concerning the wetland buffer impact associated with the extension of Friars Drive for Map 209 Lot 1. The PB recommended that the WSE be granted provided the applicant follow Best Management Practices.

Motion seconded by Mr. Dumont. Motion carried -6/0/1 (Coutu abstained)

- X. PUBLIC HEARINGS
- XI. OLD BUSINESS/PUBLIC HEARINGS
- XII. DESIGN REVIEW PHASE
- XIII. NEW BUSINESS/PUBLIC HEARINGS

# A. Proposed Building Addition Presentation 200 Derry Road Palmer Career & Technical Education Center, Alvirne HS Map 130 Lot 3

Purpose of Plan: to build a 35,500 sf addition and 75 space parking lot.

The applicant's representative, James Petropulos, came forward and presented a site plan proposed by the Hudson School Board for the renovations and improvement to the current Center for Technical Excellence at Alvirne High School. Mr. Petropulos reviewed current conditions, abutters to the property along with some of the historical aspects of the current Palmer CTE agricultural facility. After a brief overview of existing conditions Mr. Petropulos stated that approximately 12,000 square feet of the old building would be coming down to make way for a new two story building addition which totals about 35,000 square feet of new structure. The improvements will meet the needs of the school today. Mr. Petropulos added that additional parking would also be added to the front and rear of the building for staff. He also pointed out that a new storage building and greenhouse were part of the new site improvements. Mr. Petropulos reviewed the storm water plan and how storm water would be handle and what traffic problems might be encountered and how they could be addressed. Lastly Mr. Petropulos went over what the final landscape would possibly be and added that overall the project would take about twenty-four months to complete.

Alvirne Principle Steven Beals added to the presentation by providing graphical slides showing what the new CTE center would look like from different prospective. Mr. Beals reiterated some of the history behind the existing facility and what was being envisioned for today's student body. Utilizing the slide presentation Mr. Beals went on to discuss the new facility, parking, security and various aspects of the new facility from inside and outside perspectives. Mr. Beals also described the benefits of the new access for the adult day program and the inner court yard. Lastly Mr. Beals strongly emphasized how security and the student experience would be greatly enhanced. With his presentation completed Mr. Beals answered questions from the board.

Selectmen Coutu asked what the capacity of the renovated restaurant would be. Mr. Beals replied that seating would probably accommodate 75 guests in a traditional fashion but that there was a possibility that a higher capacity could be reached if configured as an evening meeting space.

Mr. Collins asked if current programs being offered would be expanded to better utilize the new space. Mr. Beals replied that the welding program would be greatly expanded. He added that the Building Trades and Heavy Equipment programs along with Health Sciences and the restaurant would also benefit from the new square footage.

Mr. Collins asked if a closer relationship with business could be fostered in the forms of internships to promote real life skills for the technical students. Mr. Beals replied that the school has current programs and strong support by local business but did add that rules and regulations were ever changing and that other challenges to provide a strong ethical and dependable works force would be an ongoing issue.

Mr. Ulery stated that he had heard that newer welding techniques were being taught. Mr. Beals answered that the goal of the new welding lab was to offer state of the art technology and that all resources would be in place to make that happen. He also added that every aspect of the renovations were to address today's demand by industry for a better trained and highly educated work force.

Selectmen McGrath inquired as to the security between the new CTE building and the existing building. Mr. Beals answered that the buildings was interconnected and opened to the students. He stated that security would be achieved by the way students of the school. Mr. Beals also added that cameras both inside and outside of the building added an additional layer of security to the campus.

Selectman McGrath asked if the current security was vetted by the Hudson Police Department. Mr. Beals replied that both Police and Fire agencies have weighed in on matters concerning safety and security and that they would continue to work with the school during construction.

Selectmen McGrath then turned to questions regarding construction time line, parking space size lighting in the rear parking lot. Mr. Beals answered that the summer month would see an increase in construction activities to reduce build time. Mr. Beals deferred the parking and lighting questions to Mr. Petropulos. Mr. Petropulos answered that the front parking lot spaces would conform to town standards. He stated that the rear lot space size would be a foot narrower to get an additional three spaces. Mr. Petropulos stated that these spaces would be utilized by school staff so it be unlikely that cars would be coming and going.

Selectman McGrath voiced concern over a lack of additional lighting in the rear parking lot. Both Mr. Beals and Mr. Petropulos stated that the issue was reviewed and the consensus was that the tennis court lighting would provide enough spill over to illuminate the parking area but that another look at the issue would be considered.

Mr. Van der Veen stated that winter months had shorter daylight hours and if this parking was for employee's they may be leaving in the dark. Mr. Beals pointed out that primary staff parking was in the southern parking lot and that these spots would mostly be used by the paraprofessional staff whom work shorter hours.'

Mr. Beals did add that it might be worth another consultation with the electrical and lighting engineer to evaluate site requirements moving forward.

Chairman Malley mentioned that the parking lot in question already exists. Mr. Beals acknowledge that it did and said that it would just be rejuvenated with new asphalt.

With no other questions by board members the Chairman opened the public hearing at 7:49 p.m. and promptly closed the hearing at 7:49 p.m. as no member of the public came forward to provide comments or input.

Town Planner Groth stated that part of RSA 674:54 allows the Planning Board may submit nonbinding comments as to conformity of the project with local regulations. Mr. Groth added that he had met with the Zoning Administrator and the staff report he had prepared addressed most of the issues discussed tonight. Lastly Mr. Groth added that board could make a motion to forward these comments on to the school district for consideration.

Selectman McGrath asked if there should be review of the wetland impacts by the Conservation Commission. Town Planner Groth replied that the applicant did not need review of the impacts at the local level but did need and was working on the necessary permitting at the state level.

Chairman Malley added that by right the applicant did not even require Planning Board approval but was willing to provide a public review of the project. Mr. Groth interjected that the RSA concerning government projects stated the Select Board and Planning Board had the option of having the project presented in a public format and that this option was not extended to other municipal boards.

Selectman McGrath stated that she was satisfied with the report written by Town Planner Groth and supported the document being forwarded for consideration by the applicant as it reflected the concerns of the Planning Board.

Mr. Brackett asked if the parking concerns should be addressed by the board as they did not seem to be addressed in the report. Mr. Dumont stated that the reduced parking space width and narrower isles ways were noted on page 2 of the report. Mr. Groth added that purview of the review was to add comments and concerns over the conformity or nonconformity of the project.

Selectman Coutu moved to forward the Town Staff Report dated May 8, 2019 represents the Planning Board comments and recommendations concerning the Alvirne High School, Palmer CTE Building Addition to the Hudson School Board for consideration.

Motion seconded by Mr. Van der Veen. All in favor – Motion carried.

#### XIV. OTHER BUSINESS

#### A. Report on NHDOT pedestrian safety workshop, Bill Collins

Mr. Collins gave a brief presentation on information he obtained while attending the STEP (Safe Transportation for Every Pedestrian) workshop in Manchester recently. He stated that the workshop was informative and while not every topic directly related to Hudson, enough of the material presented could be used to evaluate and help improve pedestrian safety in town. Some of the points made during his presentation concerned crosswalk marking, distance between crosswalk along the busier Central Street and Lowell Road corridors and the lack of pedestrian traffic controls at key intersections such as Greely Street and Rt. 111. Lastly, Mr. Collins added that this topic should be a part of the Master Plan in general and that more people within the community might consider walking and biking if the town provided a safe environment for them to do so.

B. Discussion of CMAQ grant opportunities (Congestion Mitigation and Air Quality Control).

Town Planner Groth reviewed information about CMAQ grants stating that these grants could be used for traffic improvements at heavily congested intersections within the community. Mr. Groth added that the deadline for the grant application was June 7, 2019.

#### C. Census Boundary Update

Town Planner Groth discussed the 2020 Census Tracts and Block Group updates proposed for the town of Hudson by the U.S. Census Bureau. Mr. Groth stated that the Census Bureau is considering splitting the current Block Groups and Tracts into two where the population has grown to exceed size limits and that is looking for town input. Mr. Groth added that there are 10 Block Groups of which two of them would be split, the location of the splits would be at the northern end of town along Derry Road and at the west side of town along Kimball Hill Road. He also stated that the current Tracts would be split in half resulting in six Tracts within the town. Census Blocks are Statistical areas bounded by visible features such as roads, streams, and railroad tracks, and by nonvisible boundaries such as property lines, city, township, school district, county limits and short line-of-sight extensions of

roads. Census tracts are Area that is small and relatively stable. Census tracts usually have a population between 2,500 and 8,000 persons.

## XV. ADJOURNMENT

Motion to adjourn by Mr. Coutu. Seconded by Mr. Van der Veen. All in favor – motion carried.

Meeting adjourned at 8:41 p.m.

William Collins
Secretary

# MINUTES/DECISIONS OF THE PLANNING BOARD MEETING DATE: MAY 22, 2019

In attendance $= X;$	Alternates Seated = S	; Partial Attendance = I	P; Excused Absence = E
Timothy Malley	Jordan Ulery	William Collins	Charlie Brackett MemberX
Chairman <u>X</u>	Vice-Chair <u>E</u>	Secretary <u>X</u>	
Dillon Dumont	Ed Van der Veen	Elliott Veloso	
Member <u>E</u>	Member <u>E</u>	Alternate <u>S</u>	
Roger Coutu Select. Rep. <u>X</u>	Marilyn McGrath Alt. Select. Rep. <u>E</u>		

- I. CALL TO ORDER BY CHAIRPERSON AT 7:00 P.M.
- II. PLEDGE OF ALLEGIANCE
- III. ROLL CALL
- IV. SEATING OF ALTERNATES

Mr. Veloso seated for Mr. Van der Veen.

- V. MINUTES OF PREVIOUS MEETING(S)
  - 08 May 19 Meeting Minutes Decisions.

Mr. Coutu moved to approve the 08 May 19 Meeting Minutes (as written/amended).

Motion seconded by Mr. Brackett. All in favor - Motion carried.

• 08 May 19 Sitewalk Minutes – Decisions.

Mr. Veloso moved to approve the 08 May 19 Sitewalk Minutes (as written/amended).

Motion seconded by Mr. Coutu. All in favor – Motion carried.

#### VI. OTHER BUSINESS

#### A. CMAQ Grant Opportunities

The purpose of the Congestion Mitigation and Air Quality (CMAQ) grant program is to provide assisted funding for road projects that will help reduce vehicle emission in local communities.

The conversation on this matter initially started with Town Planner Groth stating that after conferring with the Town Administrator it was deemed that there were no projects currently proposed in town that would meet the threshold of funding required to make applying for such a grant worth wild. Mr. Groth added that there were projects such as completing sidewalks along Rt. 102 going towards Alvirne but funding for this could come from other sources.

Mr. Veloso asked if there might future projects that would be applicable to this type of grant funding. Town Planner Groth replied that there is already a CMAQ project taking place where an additional traffic lane will be added to Lowell Road at the Sagamore Bridge on ramp to get a better flow of traffic onto the bridge. Mr. Groth added that other projects considered such as improvements at the intersection of Wason Road and Lowell Rd would not be taken up this year. Lastly he added that a slip lane proposed by for the Town Engineer for traffic entering the new CTE addition at Alvirne High School could be paid for with impact fees.

Chairman Malley asked if the improvements to Lowell Road near Birch Street could be considered. Mr. Groth said that the improvement to that area were more for infrastructure improvements. He stated that the CMAQ grant program addressed issues more related to traffic flow and pedestrian safety.

Selectman Coutu pointed out that the Lowell Road and Birch Street project might be applicable as any improvement made there would help move traffic off of County Road. He added that in regards to Wason and Lowell Road, Market Basket was still planning on expanding and it might be prudent to wait on making improvements at this intersection until a time frame for work could be established. Selectman Coutu stated that if the work could be coordinated in this area it would help minimize disruptions during construction.

Town Planner Groth said he would review the Lowell Road and Birch Street financing idea with the Town Engineer and Town Administrator and that he would be willing to submit a letter of intent to CMAQ if the board pleased.

With no objections by board members, Selectman Coutu moved to authorize the Chairman of the Planning Board, with the assistance of the Planning Department, to send a Letter of Intent to the NHDOT by June 7, 2019 as discussed at this meeting, to be considered for the 2019 CMAO funding

**Motion by:** R. Coutu **Second:** E. Veloso

Mr. Veloso asked if the motion should be amended to include that the letter of intent was to address issue at Lowell Road and Birch Street. The Chairman pointed out that including such wording may limit town staff to change the use of possible funding to a more urgent and costlier project. Mr. Veloso then withdrew his suggestion to amend the motion.

With no other discussion on the matter the Chairman poled board members on the motion. The motion to file a Letter of Intent made by Selectman Coutu carried: 5/0/0

#### B. CIP Update

Town Planner Groth provided an update as to the progress of the Capital Improvement Committee (CIC) stating the committee has met twice and has now heard all suggestions made by town departments heads, boards and committees for addition to the 2019 Capital Improvement Plan (CIP). Mr. Groth said that there were a few submission made by the Engineer Department but that some of these had already be addressed through the use of impact fees. He added that there was a total of 17 project submissions and that the next step would be for the committee to organize and prioritize the projects in terms of importance to the community.

Mr. Collins asked what were some of the bigger projects submitted by department heads. Town Planner Groth answered that the Police Department was in need of space and looking into expanding its current facility. The other major project was submitted by town staff for possibly expanding town hall. Mr. Groth went on to mention that the schools submissions included improvements and repairs to building roofs, football field and tennis courts. Lastly, Mr. Groth said the Benson Park Committee had proposed repairs to the Hazelton Barn, Kitchen Building and Sustainability Committee wants to initiate establish a fund to finance energy saving projects in various town facilities.

Selectman Coutu discussed the Town Hall expansion proposal stating that preliminary costs could be under \$1,000,000 dollars. He stated that adding an addition to the existing building rather than razing and building a new facility would be more cost efficient and cause less problems. Selectmen Coutu went on to add that spending money on the Hazelton Barn was not a practical use of town funds and the Board of Selectmen would be looking to see if NHDOT would be willing to remove the building from the state historical records thus relieving the town of its responsibility to repair and maintain the building. Selectman Coutu added the improvements to the Office Building and kitchen addition made sense and would provide a source of revenue to the park through the sales of snack foods.

Mr. Collins asked if any of the quotes to Town Hall included improvements to the existing building. Town Planner Groth and Selectman Coutu stated that they did not believe so and that initial cost estimates were based on a \$300 per square foot price. Mr. Groth did add that these existing HVAC system would have to be

considered for an upgrade as part of the addition. Mr. Collins asked if building a New Town Hall building now would be more prudent then simply adding on to the existing building pointing out that any addition might reach capacity in a short time and that town would be again in the same position within 5 or 6 years. Town Planner Groth stated that no one suggested the idea so it was not added to the 2019 CIP update.

Town Planner Groth spoke on the issue of Storm Water Management stating that the town was in the process of updating the plan to reflect compliance with state regulations. He said the goal is to better manage storm water runoff by applying better construction management practices and tailoring land use regulations towards the practices.

Mr. Veloso asked if there was a time frame for submission of the MS4 plan updates and if any of the changes to the plan required approval of the Planning Board. Town Planner Groth replied that he was not sure but would look into the matter.

Selectman Coutu stated that he had heard other communities were discussing implementing fees for this program and was wondering if this was a requirement. Mr. Groth he did know of any regulation coming from the state that would force local government to institute a fee schedule. He did add that he will research the matter for clarification.

Lastly, Town Planner Groth mentioned that he was in the process of reviewing the Land Use Regulations and would be bringing his suggestions to the board for review. He also mentioned that the town was in the process of instituting a new I.D. badging program for all employee and committee members starting July 1, 2019.

Mr. Collins asked if committee and board members would be getting assigned email addresses as part of this new program. Selectman Coutu suggested that Chairman Malley send a list of current board members to the IT Department so that email addresses could be provided.

#### VII. ADJOURNMENT

Motion to adjourn by Mr. Collins. Se carried.	conded by Mr. Veloso. All in favor – motion
Meeting adjourned at 7:41 p.m.	
	William Collins
	Secretary