

B. Eco-Site, Inc. Site Plan & Conditional Use
SP# 01-18 & CU# 01-18

50 Griffin Road
Map 126/ Lot 032

Purpose of Plan: To propose a 155-foot monopole wireless telecommunication tower with antennas, associated 50' x 50' fenced crushed stone or gravel compound with shelter, landscaping, and new driveway. Application Acceptance & Hearing.

- XV. OTHER BUSINESS
- XVI. 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.

George Theborge
Town Planner

POSTED: Town Hall, Library & Post Office – 12-21-17

Establish Surety for Laurel Landing Residential Subdivision – 50 Speare Rd.

Staff Report
January 10, 2018

SITE: 50 Speare Rd. - Map 186/Lot 13 - SB# 7-17

PURPOSE OF PETITION: To establish a surety for the Laurel Landing Subdivision, 50 Speare Rd, Map 186/Lots 13, in the amount of \$446,660.43 for subdivision infrastructure and \$29,789.74 for off-site improvements, per the written recommendation of Town Engineer Elvis Dhima and Road Agent Kevin Burns in emails dated 20 JUN 2017 and Road Guarantee Estimate Form, dated 20 JUN 2017.

APPROVED SUBDIVISION PLAN ENTITLED: Open Space Development “Laurel Landing” (F.K.A. Brookview & Breckenridge Estates), Tax Map 186, Lot 13, 50 Speare Road, Hudson, New Hampshire, prepared by Jones & Beach Engineers, Inc. 85 Portsmouth Ave., PO Box 219, Stratham, NH, dated 7 JUL 2016 and revised thru 13 JUN 2017.

ATTACHMENTS:

- 1) Emails from Elvis Dhima & Kevin Burns dated 20 JUN 17 – Attachment “A”.
- 2) Road Guarantee Estimate Form Revised 20 JUN 17 Project Infrastructure – Attachment “B”.
- 3) Road Guarantee Estimate Form Revised 20 JUN 17 Off-site Improvements – Attachment “C”

EXPLANATION: The developer is starting construction, which involves on-site infrastructure (roads, utilities, fire cistern, and drainage) and off-site road improvements. The developer is currently planning to build much of the project infrastructure and do the off-site road improvements before coming in with a development agreement and performance surety for the remaining improvements. Because the off-site improvements cannot be commenced until a performance guarantee is posted, the surety for those improvements is being set separately.

RECOMMENDATION: Per the recommendation of the Town Engineer Elvis Dhima, the board should vote to establish a maximum for the surety for this subdivision in the recommended amount of \$446,660.43 for subdivision infrastructure and \$29,789.74 for off-site improvements. Staff further recommends that a lesser amount for the on-site infrastructure be accepted by the Town upon certification of the on-site improvements and submittal of a revised Road Guarantee Estimate Form in an amount approved by the Town Engineer. This will allow the developer flexibility to proceed with construction as weather permits while protecting the Town’s interests.

DRAFT MOTION: I move to establish the performance surety for the Laurel Landing Subdivision, 50 Speare Road in the amount of \$446,660.43 for project infrastructure and \$29,789.74 for off-site improvements. The amount to be posted for on-site project infrastructure may be reduced with approval of the Town Engineer based upon certification of completed improvements and submission of a revised Road Guarantee Estimate Form.

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

NAH

Dhima, Elvis

From: Burns, Kevin
Sent: Tuesday, June 20, 2017 3:18 PM
To: Dhima, Elvis; Bradford Jones
Cc: Mike Garrepy; Dana Finn; Joseph Coronati; Katelyn Joyal; Cashell, John; Dubowik, Brooke; Paige Libbey
Subject: Re: Hudson Brookview Subdivision JBE 15031

I'm good.

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: "Dhima, Elvis" <edhima@hudsonnh.gov>
Date: 6/20/17 1:09 PM (GMT-05:00)
To: Bradford Jones <bjones@jonesandbeach.com>
Cc: Mike Garrepy <mgarrepy@gmail.com>, "Burns, Kevin" <kburns@hudsonnh.gov>, Dana Finn <dfinn@lbimail.com>, Joseph Coronati <jcoronati@Jonesandbeach.com>, Katelyn Joyal <kjoyal@jonesandbeach.com>, "Cashell, John" <jcashell@hudsonnh.gov>, "Dubowik, Brooke" <bdubowik@hudsonnh.gov>, Paige Libbey <plibbey@jonesandbeach.com>
Subject: RE: Hudson Brookview Subdivision JBE 15031

Brad

Please add your additional items to the total number for the bond, that's all I got

Kevin, let us know if you are good with it

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



From: Bradford Jones [mailto:bjones@jonesandbeach.com]

Sent: Tuesday, June 20, 2017 12:04 PM

To: Dhima, Elvis <edhima@hudsonnh.gov>

Cc: Mike Garrepy <mgarrepy@gmail.com>; Burns, Kevin <kburns@hudsonnh.gov>; Dana Finn <dfinn@lbimail.com>; Joseph Coronati <jcoronati@Jonesandbeach.com>; Katelyn Joyal <kjoyal@jonesandbeach.com>; Cashell, John <cashell@hudsonnh.gov>; Dubowik, Brooke <bdubowik@hudsonnh.gov>; Paige Libbey <plibbey@jonesandbeach.com>

Subject: RE: Hudson Brookview Subdivision JBE 15031

Elvis,

See attached revised onsite and new offsite construction estimates for the Brookview Subdivision.

Please let me know if you have any comments or questions.

Thanks,

Brad

Bradford A. Jones
Vice President
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
P. O. Box 219
Stratham, N.H. 03885
Phone: (603) 772-4747
Fax: (603) 772-0227

www.jonesandbeach.com
bjones@jonesandbeach.com

14811

**TOWN OF HUDSON, NH
ROAD GUARANTEE ESTIMATE FORM**

I hereby certify that, in addition to any work already completed, the following itemized statement and estimate unit costs will complete all improvements required by the Hudson, NH Planning Board for the following Streets:

Owner/Developer Name: Tuck Realty Corp.

Date: 4/3/17
Revised 6/20/17
Lot: 13

Project Name: "Brookview Subdivision"

Map: 186

Street Name: Speare Road

Street Length: 707 L.F.

					Total	Bond Remaining	Date
Clearing, 50' width	2 A.C.	@	\$ 7,500.00	= \$	15,000.00	_____	_____
Excavation	6606 C.Y.	@	\$ 5.00	= \$	33,030.00	_____	_____
Ledge Removal Mass	1600 C.Y.	@	\$ 25.00	= \$	40,000.00	_____	_____
Trench Ledge	100 C.Y.	@	\$ 50.00	= \$	5,000.00	_____	_____
Drainage Swales	100 L.F.	@	\$ 5.00	= \$	500.00	_____	_____
Drainage Swale w/Riprap	0 L.F.	@	\$ 7.00	= \$	-	_____	_____
Hay Bale Dike	0 EA	@	\$ 4.00	= \$	-	_____	_____
Silt Fence	706 L.F.	@	\$ 4.00	= \$	2,824.00	_____	_____
Storm Drains Size/Type							
12" RCP	0 L.F.	@	\$ 30.00	= \$	-	_____	_____
15" RCP	0 L.F.	@	\$ 34.00	= \$	-	_____	_____
18" RCP	0 L.F.	@	\$ 38.00	= \$	-	_____	_____
21" RCP	0 L.F.	@	\$ 42.00	= \$	-	_____	_____
24" RCP	0 L.F.	@	\$ 46.00	= \$	-	_____	_____
30" RCP	0 L.F.	@	\$ 54.00	= \$	-	_____	_____
36" RCP	0 L.F.	@	\$ 66.00	= \$	-	_____	_____
6" PVC	0 L.F.	@	\$20.00	= \$	-	_____	_____
6" Underdrain	1031 L.F.	@	\$ 15.00	= \$	15,465.00	_____	_____
8" Underdrain	0 L.F.	@	\$ 16.00	= \$	-	_____	_____
Additional Excavation for Structures	0 C.Y.	@	\$ 6.00	= \$	-	_____	_____
4' Catch Basins	34.29 V.F.	@	\$ 250.00	= \$	8,572.50	_____	_____
5' Catch Basins	0 V.F.	@	\$ 275.00	= \$	-	_____	_____
4' Drain Manholes	16.45 V.F.	@	\$ 275.00	= \$	4,523.75	_____	_____
5' Drain Manholes	0 V.F.	@	\$ 310.00	= \$	-	_____	_____
Headwalls	2 EA.	@	\$ 1,300.00	= \$	2,600.00	_____	_____
Rip-Rap	40.5 S.Y.	@	\$ 36.00	= \$	1,458.00	_____	_____

Subdivision Name: "Brookview Subdivision"

						Total	Bond Remaining	Date
Sanitary Sewer Size								
6" PVC Service Connection	0 L.F.	@	\$ 20.00	=	\$ -			
8" PVC								
0' - 12' Depth	0 L.F.	@	\$ 50.00	=	\$ -			
12' - 18' Depth	0 L.F.	@	\$ 75.00	=	\$ -			
10" PVC	0 L.F.	@	\$ 75.00	=	\$ -			
Other	0 L.F.	@		=	\$ -			
Sanitary Sewer Manholes 4' dia.								
Sanitary Sewer Manholes 4' dia.	0 V.F.	@	\$ 300.00	=	\$ -			
Sanitary Sewer Manholes 5' dia.								
Sanitary Sewer Manholes 5' dia.	0 V.F.	@	\$ 325.00	=	\$ -			
Service Cleanout								
Service Cleanout	0 EA.	@	\$ 110.00	=	\$ -			
Water Main Size (valves included)								
4" DIP Class 52	0 L.F.	@	\$ 53.00	=	\$ -			
6" DIP Class 52	0 L.F.	@	\$ 40.00	=	\$ -			
8" DIP Class 52	0 L.F.	@	\$ 47.00	=	\$ -			
10" DIP Class 52	0 L.F.	@	\$ 52.00	=	\$ -			
12" DIP Class 52	0 L.F.	@	\$ 55.00	=	\$ -			
T/S&V	0 L.F.	@	\$3,500.00	=	\$ -			
Hydrants								
Hydrants	0 EA	@	\$ 3,000.00	=	\$ -			
1" Copper Service (stops included)								
1" Copper Service (stops included)	0 EA.	@	\$ 400.00	=	\$ -			
Bank Run Gravel								
Bank Run Gravel	680 C.Y.	@	\$ 14.00	=	\$ 9,520.00			
Crushed Bank Run Gravel								
Crushed Bank Run Gravel	340 C.Y.	@	\$ 18.00	=	\$ 6,120.00			
Sand Cushion								
Sand Cushion	0 C.Y.	@	\$12.00	=	\$ -			
Hot Bituminous Pavement 28' width								
2 1/2" Base Course Type C	212 TONS	@	\$ 85.00	=	\$ 18,020.00			
1 1/2" Wearing Course Type F	106 TONS	@	\$ 85.00	=	\$ 9,010.00			
Other	0	@		=	\$ -			
Tack Coat	1882 S.Y.	@	\$ 0.20	=	\$ 376.40			
Curbing								
Granite	1342 L.F.	@	\$ 22.00	=	\$ 29,524.00			
Cape Cod	0 L.F.	@	\$ 6.00	=	\$ -			
Sidewalks								
5' Wide bituminous	0 S.Y.	@	\$ 30.00	=	\$ -			
Loam and Seed								
Easement areas	0 L.F.	@	\$ 6.00	=	\$ -			
R.O.W. areas	707 L.F.	@	\$ 5.00	=	\$ 3,535.00			

Subdivision Name: "Brookview Subdivision"

					Total	Bond Remaining	Date
Bounds and Pins							
Property Pins	27 EA.	@	\$	175.00 =	\$ 4,725.00	_____	_____
Road Bounds	15 EA.	@	\$	325.00 =	\$ 4,875.00	_____	_____
Stop Signs	1 EA.	@	\$	75.00 =	\$ 75.00	_____	_____
Street Signs	2 EA.	@	\$	85.00 =	\$ 170.00	_____	_____
As-Built Plans	707 L.F.	@	\$	4.00 =	\$ 2,828.00	_____	_____
Landscaping							
Trees	0 EA.	@	\$	375.00 =	\$ -	_____	_____
Bushes	40 EA.	@	\$	200.00 =	\$ 8,000.00	_____	_____
Guard Rails	0 L.F.	@	\$	50.00 =	\$ -	_____	_____
Utility Trench (Elec/Tel/TV)	665 L.F.	@		\$35.00 =	\$ 23,275.00	_____	_____
Other required improvements (itemized on sheet 4)					= \$ 110,314.00	_____	_____
	Subtotal:				359,340.65	_____	_____
	3% Mobilization				10,780.22	_____	_____
	Engineering & Contingencies (10% subtotal):				35,934.07 406,054.93	_____	_____
	10% Maintenance Level:				40,605.49	_____	_____
	Total Estimate:				446,660.43	_____	_____

Preparers Name: Paige Libbey

Date: 6/20/17

rev 3/21/16
 rev 7/9/10
 excel bond form

Subdivision Name: "Brookview Subdivision"

					Total	Bond Remaining	Date
Additional Items Not Included in Town of Hudson Spreadsheet							
Striping	1 LS	@	\$ 1,000.00	= \$	1,000.00	_____	_____
12" ADS N-12 Culvert	40 LF	@	\$ 30.00	= \$	1,200.00	_____	_____
15" ADS N-12 Culvert	551 LF	@	\$ 34.00	= \$	18,734.00	_____	_____
5" End CAP w/ Orifice	1 EA.		\$ 350.00	\$	350.00	_____	_____
15" Flared End Section	3 EA.	@	\$ 400.00	= \$	1,200.00	_____	_____
Detention Pond	1 LS	@	\$ 10,000.00	= \$	10,000.00	_____	_____
Erosion Control Blanket	132 SY	@	\$ 2.50	= \$	330.00	_____	_____
6" Steel Bollards	5 EA.	@	\$ 500.00	= \$	2,500.00	_____	_____
30,000 Gallon Fire Cistern	1 EA.	@	\$ 75,000.00	= \$	75,000.00	_____	_____
Other Required Items Subtotal:					110,314.00	_____	_____

10/11

TOWN OF HUDSON, NH
ROAD GUARANTEE ESTIMATE FORM

I hereby certify that, in addition to any work already completed, the following itemized statement and estimate unit costs will complete all improvements required by the Hudson, NH Planning Board for the following Streets:

Owner/Developer Name: Tuck Realty Corp.

Date: 6/20/17

Project Name: "Brookview Subdivision"

Map: 186

Lot: 13

Street Name: Speare Road

Offsite Improvements

					Total	Bond Remaining	Date
Clearing, 50' width	0.06 A.C.	@	\$ 7,500.00	=	\$ 450.00	_____	_____
Excavation	0 C.Y.	@	\$ 5.00	=	_____	_____	_____
Ledge Removal Mass	0 C.Y.	@	\$ 25.00	=	_____	_____	_____
Trench Ledge	0 C.Y.	@	\$ 50.00	=	_____	_____	_____
Drainage Swales	175 L.F.	@	\$ 5.00	=	\$ 875.00	_____	_____
Drainage Swale w/Riprap	0 L.F.	@	\$ 7.00	=	_____	_____	_____
Hay Bale Dike	0 EA	@	\$ 4.00	=	_____	_____	_____
Silt Fence	0 L.F.	@	\$ 4.00	=	_____	_____	_____
Storm Drains Size/Type							
12" RCP	0 L.F.	@	\$ 30.00	=	_____	_____	_____
15" RCP	0 L.F.	@	\$ 34.00	=	_____	_____	_____
18" RCP	0 L.F.	@	\$ 38.00	=	_____	_____	_____
21" RCP	0 L.F.	@	\$ 42.00	=	_____	_____	_____
24" RCP	0 L.F.	@	\$ 46.00	=	_____	_____	_____
30" RCP	0 L.F.	@	\$ 54.00	=	_____	_____	_____
36" RCP	0 L.F.	@	\$ 66.00	=	_____	_____	_____
6" PVC	0 L.F.	@	\$ 20.00	=	_____	_____	_____
6" Underdrain	0 L.F.	@	\$ 15.00	=	_____	_____	_____
8" Underdrain	0 L.F.	@	\$ 16.00	=	_____	_____	_____
Additional Excavation for Structures	0 C.Y.	@	\$ 6.00	=	_____	_____	_____
4' Catch Basins	0 V.F.	@	\$ 250.00	=	_____	_____	_____
5' Catch Basins	0 V.F.	@	\$ 275.00	=	_____	_____	_____
4' Drain Manholes	0 V.F.	@	\$ 275.00	=	_____	_____	_____
5' Drain Manholes	0 V.F.	@	\$ 310.00	=	_____	_____	_____
Headwalls	0 EA.	@	\$ 1,300.00	=	_____	_____	_____
Rip-Rap	0 S.Y.	@	\$ 36.00	=	_____	_____	_____

Project Name: "Brookview Subdivision" Offsite Improvements

					Total	Bond Remaining	Date
Sanitary Sewer Size							
6" PVC Service Connection	0 L.F.	@	\$ 20.00	=	_____	_____	_____
8" PVC							
0' - 12' Depth	0 L.F.	@	\$ 50.00	=	_____	_____	_____
12' - 18' Depth	0 L.F.	@	\$ 75.00	=	_____	_____	_____
10" PVC	0 L.F.	@	\$ 75.00		_____	_____	_____
Other	0 L.F.	@			_____	_____	_____
Sanitary Sewer Manholes 4' dia.							
Sanitary Sewer Manholes 4' dia.	0 V.F.	@	\$ 300.00	=	_____	_____	_____
Sanitary Sewer Manholes 5' dia.							
Sanitary Sewer Manholes 5' dia.	0 V.F.	@	\$ 325.00	=	_____	_____	_____
Service Cleanout							
Service Cleanout	0 EA.	@	\$ 110.00	=	_____	_____	_____
Water Main Size (valves included)							
4" DIP Class 52	0 L.F.	@	\$ 53.00	=	_____	_____	_____
6" DIP Class 52	0 L.F.	@	\$ 40.00	=	_____	_____	_____
8" DIP Class 52	0 L.F.	@	\$ 47.00	=	_____	_____	_____
10" DIP Class 52	0 L.F.	@	\$ 52.00	=	_____	_____	_____
12" DIP Class 52	0 L.F.	@	\$ 55.00	=	_____	_____	_____
T/S&V	0 L.F.	@	\$3,500.00	=	_____	_____	_____
Hydrants							
Hydrants	0 EA	@	\$ 3,000.00	=	_____	_____	_____
1" Copper Service (stops included)							
1" Copper Service (stops included)	0 EA.	@	\$ 400.00	=	_____	_____	_____
Bank Run Gravel							
Bank Run Gravel	236 C.Y.	@	\$ 14.00	=	\$ 3,304.00	_____	_____
Crushed Bank Run Gravel							
Crushed Bank Run Gravel	118 C.Y.	@	\$ 18.00	=	\$ 2,124.00	_____	_____
Sand Cushion							
Sand Cushion	_____ C.Y.	@	\$12.00	=	_____	_____	_____
Hot Bituminous Pavement 28' width							
2 1/2" Base Course Type C	100 TONS	@	\$ 85.00	=	\$ 8,500.00	_____	_____
1 1/2" Wearing Course Type F	60 TONS	@	\$ 85.00	=	\$ 5,100.00	_____	_____
Other		@		=	_____	_____	_____
Tack Coat	710 S.Y.	@	\$ 0.20	=	\$ 142.00	_____	_____
Curbing							
Granite	0 L.F.	@	\$ 22.00	=	_____	_____	_____
Cape Cod	0 L.F.	@	\$ 6.00	=	_____	_____	_____
Sidewalks							
5' Wide bituminous	0 S.Y.	@	\$ 30.00	=	_____	_____	_____
Loam and Seed							
Easement areas	0 L.F.	@	\$ 6.00	=	_____	_____	_____
R.O.W. areas	160 L.F.	@	\$ 5.00	=	\$ 800.00	_____	_____

Project Name: "Brookview Subdivision" Offsite Improvements

					Total	Bond Remaining	Date
Bounds and Pins							
Property Pins	0 EA.	@	\$ 175.00	=	_____	_____	_____
Road Bounds	0 EA.	@	\$ 325.00	=	_____	_____	_____
Stop Signs							
Stop Signs	0 EA.	@	\$ 75.00	=	_____	_____	_____
Street Signs							
Street Signs	0 EA.	@	\$ 85.00	=	_____	_____	_____
As-Built Plans							
As-Built Plans	0 L.F.	@	\$ 4.00	=	_____	_____	_____
Landscaping							
Trees	0 EA.	@	\$ 375.00	=	_____	_____	_____
Bushes	0 EA.	@	\$ 200.00	=	_____	_____	_____
Guard Rails							
Guard Rails	0 L.F.	@	\$ 50.00	=	_____	_____	_____
Utility Trench (Elec/Tel/TV)							
Utility Trench (Elec/Tel/TV)	0 L.F.	@	\$35.00	=	_____	_____	_____
Other required improvements							
(itemized on sheet 4)				=	\$ 2,671.00	_____	_____
Subtotal:					23,966.00	_____	_____
3% Mobilization					718.98	_____	_____
Engineering & Contingencies					2,396.60	_____	_____
(10% subtotal):					27,081.58	_____	_____
10% Maintenance Level:					2,708.16	_____	_____
Total Estimate:					29,789.74	_____	_____

Prepares Name: Paige Libbey Date: 6/20/17

rev 3/21/16
 rev 7/9/10
 excel bond form

Project Name: "Brookview Subdivision" Offsite Improvements

					Total	Bond Remaining	Date
Additional Items Not Included in Town of Hudson Spreadsheet							
Striping	1 LS	@	\$ 1,000.00	= \$	1,000.00	_____	_____
Pavement Removal	557 S.Y.	@	\$ 3.00	= \$	1,671.00	_____	_____
	Other Required Items Subtotal:				2,671.00	_____	_____

Nellie Court Surety Release

Staff Report
10 January 2018

SITE: Nellie Court, Map 165/Lot 159

PURPOSE OF PETITION: To release the established two-year road maintenance surety of \$19,384.42.

ATTACHMENTS:

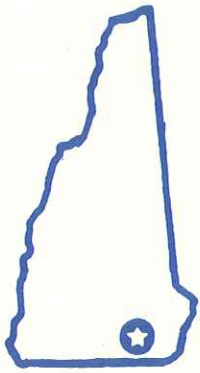
- 1) Memo from Road Agent Kevin Burns dated 18 DEC 17 – Attachment “A”.
- 2) Newburyport Bank Letter of Credit – Attachment “B”.
- 3) Road Guarantee Estimate Form – Attachment “C”.

RECOMMENDATION: Per the written recommendation of the Road Agent, staff recommends release of said road maintenance surety for this road.

DRAFT MOTION:

I move to release the established road maintenance surety of \$19,384.42 for Nellie Court, Map 165/Lot 159; this surety release is in accordance with the written recommendation of Road Agent Kevin Burns dated 18 DEC 2017.

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



TOWN OF HUDSON


Highway Department

ALL



2 Constitution Drive Hudson, New Hampshire 03051 603/886-6018 Fax 603/594-1143

To: George Theborge, Planner

From: Kevin Burns, Road Agent 

Date: December 18, 2017

Re: Nellie Court Bond release



I do not oppose the release of the two maintenance bond being held for Nellie Court.



NEWBURYPORT
FIVE CENTS SAVINGS
BANK

"B"

Credit No. 110215
Irrevocable Standby Letter of Credit
Expiration – October 31, 2017

November 3, 2015

Planning Board
Town of Hudson
12 School Street
Hudson, NH 03051

Account Party
The Derry St Realty Trust

Beneficiary
Town of Hudson
Hudson, NH 03051

Amount
\$19,384.42 USD

RE: Two-Year Maintenance of
Nellie Court, Hudson, NH

Dear Planning Board:

By this document, Newburyport Five Cents Savings Bank hereby issues an irrevocable Letter of Credit in the amount of \$19,384.42 USD to the Town of Hudson on behalf of The Derry St Realty Trust. This irrevocable Letter of Credit is issued as a two-year maintenance surety for Nellie Court, Hudson, NH 03051.

It is agreed and understood that this Letter of Credit is issued with an expiration date of October 31, 2017.

Should this letter of credit be called at the request of the Town of Hudson or its Planning Board the Newburyport Five Cents Savings Bank shall forthwith forward a check in the amount of \$19,384.42 USD to the Treasurer of the Town of Hudson, the funds shall be used exclusively for the purpose of maintenance as is guaranteed by this Letter of Credit. Any funds not needed by the Town to complete the necessary maintenance shall be returned to Newburyport Five Cents Savings Bank.

Sincerely,

Scott Eaton
Senior Vice President
Newburyport Five Cents Savings Bank

I have read this Letter of Credit and agree to its terms:

The Derry St Realty Trust

HCN

**TOWN OF HUDSON, NH
ROAD GUARANTEE ESTIMATE FORM**

I hereby certify that, in addition to any work already completed, the following itemized statement and estimate unit costs will complete all improvements required by the Hudson, NH Planning Board for the following Streets:

Owner/Developer Name: 63 Derry Road Realty Trust

Date: September 1, 2013

Project Name: Nellie Court

Map: 165

Lot: 159

Street Name: Nellie Court

Street Length: 450 LF

				Total	Bond Remaining	Date
Clearing, 50' width	1.25 A.C.	@	\$ 7,500.00 =	\$9,375.00	\$0.00	_____
Excavation	440 C.Y.	@	\$ 5.00 =	\$2,200.00	\$0.00	_____
Ledge Removal Mass	0 C.Y.	@	\$ 25.00 =	\$0.00	\$0.00	_____
Trench Ledge	0 C.Y.	@	\$ 50.00 =	\$0.00	\$0.00	_____
Drainage Swales	0 L.F.	@	\$ 5.00 =	\$0.00	\$0.00	_____
Drainage Swale w/Riprap	0 L.F.	@	\$ 7.00 =	\$0.00	\$0.00	_____
Hay Bale Dike	0 EA	@	\$ 4.00 =	\$0.00	\$0.00	_____
Silt Fence	400 L.F.	@	\$ 4.00 =	\$1,600.00	\$0.00	_____
Storm Drains Size/Type						
12" RCP	46 L.F.	@	\$ 30.00 =	\$1,380.00	\$0.00	_____
15" RCP	409 L.F.	@	\$ 34.00 =	\$13,906.00	\$0.00	_____
18" RCP	0 L.F.	@	\$ 38.00 =	\$0.00	\$0.00	_____
21" RCP	0 L.F.	@	\$ 42.00 =	\$0.00	\$0.00	_____
24" RCP	0 L.F.	@	\$ 46.00 =	\$0.00	\$0.00	_____
30" RCP	0 L.F.	@	\$ 54.00 =	\$0.00	\$0.00	_____
36" RCP	0 L.F.	@	\$ 66.00 =	\$0.00	\$0.00	_____
6" PVC	0 L.F.	@	\$20.00 =	\$0.00	\$0.00	_____
6" Underdrain	0 L.F.	@	\$ 15.00 =	\$0.00	\$0.00	_____
8" Underdrain	0 L.F.	@	\$ 16.00 =	\$0.00	\$0.00	_____
Additional Excavation for Structures	0 C.Y.	@	\$ 6.00 =	\$0.00	\$0.00	_____
4' Catch Basins	44 V.F.	@	\$ 250.00 =	\$11,000.00	\$0.00	_____
5' Catch Basins	0 V.F.	@	\$ 275.00 =	\$0.00	\$0.00	_____
4' Drain Manholes	7 V.F.	@	\$ 275.00 =	\$1,925.00	\$0.00	_____
5' Drain Manholes	0 V.F.	@	\$ 310.00 =	\$0.00	\$0.00	_____
Headwalls	1 EA.	@	\$ 1,300.00 =	\$1,300.00	\$0.00	_____
Rip-Rap	17 S.Y.	@	\$ 36.00 =	\$612.00	\$0.00	_____

Subdivision Name: Nellie Court

				Total	Bond Remaining	Date
Sanitary Sewer Size						
6" PVC Service Connection	290 L.F.	@ \$ 20.00 =		\$5,800.00	\$0.00	_____
8" PVC	0 L.F.			\$0.00	\$0.00	_____
0' - 12' Depth	266 L.F.	@ \$ 50.00 =		\$13,300.00	\$0.00	_____
12' - 18' Depth	0 L.F.	@ \$ 75.00 =		\$0.00	\$0.00	_____
10" PVC	0 L.F.	@ \$ 75.00		\$0.00	\$0.00	_____
Other	0 L.F.	@		\$0.00	\$0.00	_____
Sanitary Sewer Manholes 4' dia.						
	17 V.F.	@ \$ 300.00 =		\$5,100.00	\$0.00	_____
Sanitary Sewer Manholes 5' dia.						
	0 V.F.	@ \$ 325.00 =		\$0.00	\$0.00	_____
Service Cleanout						
	0 EA.	@ \$ 110.00 =		\$0.00	\$0.00	_____
Water Main Size (valves included)						
4" DIP Class 52	0 L.F.	@ \$ 53.00 =		\$0.00	\$0.00	_____
6" DIP Class 52	305 L.F.	@ \$ 40.00 =		\$12,200.00	\$0.00	_____
8" DIP Class 52	0 L.F.	@ \$ 47.00 =		\$0.00	\$0.00	_____
10" DIP Class 52	0 L.F.	@ \$ 52.00 =		\$0.00	\$0.00	_____
12" DIP Class 52	0 L.F.	@ \$ 55.00 =		\$0.00	\$0.00	_____
T/S&V	0 L.F.	@ \$3,500.00 =		\$0.00	\$0.00	_____
Hydrants						
	1 EA	@ \$ 3,000.00 =		\$3,000.00	\$0.00	_____
1" Copper Service (stops included)						
	6 EA.	@ \$ 400.00 =		\$2,400.00	\$0.00	_____
Bank Run Gravel						
	520 C.Y.	@ \$ 14.00 =		\$7,280.00	\$0.00	_____
Crushed Bank Run Gravel						
	278 C.Y.	@ \$ 18.00 =		\$5,004.00	\$0.00	_____
Sand Cushion						
	0 C.Y.	@ \$12.00 =		\$0.00	\$0.00	_____
Hot Bituminous Pavement 28' width						
2 1/2" Base Course Type C	195 TONS	@ \$ 85.00 =		\$16,575.00	\$0.00	_____
1 1/2" Wearing Course Type F	115 TONS	@ \$ 85.00 =		\$9,775.00	\$0.00	_____
Cold Planing	60 S.Y.	@ \$ 4.00 =		\$240.00	\$0.00	_____
Tack Coat	1550 S.Y.	@ \$ 0.20 =		\$310.00	\$0.00	_____
Curbing						
Granite	1290 L.F.	@ \$ 22.00 =		\$28,380.00	\$0.00	_____
Cape Cod	0 L.F.	@ \$ 6.00 =		\$0.00	\$0.00	_____
Sidewalks						
5' Wide bituminous	365 S.Y.	@ \$ 30.00 =		\$10,950.00	\$0.00	_____
Loam and Seed						
Easement areas	0 L.F.	@ \$ 6.00 =		\$0.00	\$0.00	_____
R.O.W. areas	500 L.F.	@ \$ 5.00 =		\$2,500.00	\$0.00	_____

Autumn Circle Subdivision Extension Request

Staff Report
January 10, 2018

SITE: Autumn Circle Subdivision - 300 Webster Street - Map128/Lots 007 & 008 - SB# 01-18

PURPOSE OF PLAN: Pursuant to RSA 674:39, the Applicant requests a one-year extension for the approved Autumn Circle Subdivision Plan of 12/10/14. A previous two-year extension lapsed on December 10, 2017. Application Acceptance & Hearing.

ATTACHMENTS:

- 1) Letter from Project Engineer Patrick Colburn, RE: Ext. Request – Attachment “A”.
- 2) Project Narrative – Attachment “B”.
- 3) Notice of Approval, RE: 11 DEC 14 Autumn Circle Subdivision. – Attachment “C”.
- 4) Notice of Approval, RE: 15 JAN 16 Autumn Circle Subdivision – Attachment “D”.

COMMENTS: In accordance with the attached letter from the project engineer Patrick Colburn, the Applicant requests for the Planning Board to consider granting a 1-year extension for the approved Autumn Circle Subdivision. The project was approved in December of 2014, and the applicant received a subsequent two-year extension that expired on December 10 of 2017. There is some question as to whether an extension is necessary, as the applicant considers that there has been “substantial development” consisting of road work, drainage systems, and some utilities. An email from the applicant’s attorney indicated that the Litchfield Planning Board voted on December 19, 2017 to confirm that the project is “vested” per these improvements (the subdivision straddles the Town line).

Although RSA 674:39 does provide vesting rights for subdivisions based on substantial development, one of the stipulations of that statute is that the subdivision plat “be properly recorded in the registry of deeds.” Because the applicant has not recorded the plat or entered into a development agreement or posted a performance surety for completion of the public improvements, there is an argument that the 5-year exemption rule of RSA 674:39 requirements have not been met for this project.

It is also important to consider that the purpose of RSA 674:39 is to protect developers from enactment of new zoning, subdivision, and other regulations. There is a separate public concern for timely completion of subdivisions under current regulations. Neighbors to development projects have a vested interest in seeing projects completed in a timely manner so that construction activities that affect their peaceful enjoyment of property come to an end. There are also public concerns with partially developed sites lying dormant for extended time frames without monitoring or maintenance.

Establishing reasonable time limits for completion and the need for extensions of those time limits provides opportunity to review the current status of the project and the developer's intent for completion. If there are problems on the site, extension reviews provide opportunity to address those problems.

Town Engineer Elvis Dhima has expressed concern on the need for additional erosion control measures given the length of time the project has sat dormant.

RECOMMENDATION: Staff recommends that the Board review the current project status and accept testimony from the applicant and the public. At the end of that comment period, the Board can deliberate on whether to grant the requested one-year extension request. The Board can also defer making a decision until the next Planning Board meeting if more information is needed.

DRAFT MOTION TO DEFER ACTION ON THE APPLICATION:

I move to defer action on the applicant's request for a one-year extension of the subdivision approval for the Autumn Circle Subdivision, located at 300 Webster Street to the January 24 Planning Board meeting.

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

DRAFT MOTION TO GRANT THE EXTENSION:

I move to grant a one-year extension (i.e., from December 10, 2017 to December 10, 2018) of the subdivision approval for the Autumn Circle Subdivision, located at 300 Webster Street. Said extension is contingent on the applicant submitting an updated plan for erosion and sedimentation controls acceptable to the Town Engineer.

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

November 29, 2017

Mr. George Theborge, Land Use Director
Planning Department
Town of Hudson
12 School Street
Hudson, New Hampshire 03051

**Subject: Autumn Circle Subdivision
Subdivision Approval SP# 11-14
Map 128; Lot 7 and 8
300 Webster Street, Hudson, New Hampshire
KNA Project No. 07-0511-4A**


Dear Mr. Theborge,

As you are aware, our office prepared subdivision plans for the above referenced property in 2014. Further, on December 10, 2014, the Hudson Planning Board granted the Applicant Subdivision Approval. The plan proposed to consolidate two existing lots in Hudson and Litchfield, and re-subdivide the property to create 10-new residential building lots. The plan also includes significant improvements such as onsite stormwater management, a 1,000+/- foot cul-de-sac, onsite septic systems, and connection to municipal water.

Construction onsite is active and substantial but is incomplete to date. As you are aware, the owner has opted to build the project infrastructure to a certain degree prior to submitting a bond amount to the Planning Board for approval. As a result, the plan has not been recorded at the Registry of Deeds. We understand from our conversation with you that since the plan has not yet been recorded it cannot be considered "vested" even though significant work and investment has occurred on the site, which would normally result in project vesting. While we disagree that an extension is required in this case, we cannot risk project expiration. Therefore, we hereby respectfully request, on behalf of our client and without prejudice, that the Hudson Planning Board grant a one-year extension to the previously approved Subdivision plans listed above. The current owner anticipates filing a bond for the remaining improvements and recording the plat in coming weeks, but does not want to risk expiration.

Should you have any questions, or require further information, please do not hesitate to contact me at the office.

Respectfully,


Patrick Colburn, PE
Project Manager

Civil Engineering

Land Surveying

Landscape Architecture



Land of Leonard Vigeant
300 Webster Street
Tax Map 128; Lots 7 & 8
KNA Project No. 07-0511-4A

September 16, 2014

Project Location

The subject properties, situated in both Hudson and Litchfield, are referenced on Hudson Tax Map 128 as Lots 7 & 8 and Litchfield Tax Map 1 as Lots 1 & 2.

Project Intent

The project proposal is for a 10-Lot Residential Subdivision. Access to the site will be provided by a proposed roadway and cul-de-sac running through the Hudson portion of the site. An existing intermittent stream bisects the site making it impossible to access the rear half of the site without impacting the wetland. Substantial stormwater management provisions are also being proposed. Each lot will be serviced by private well and septic systems.

Existing Conditions

The majority of the subject property is currently undeveloped consisting of meadowlands with the exception of a two-story home and detached two-story garage located on Lot 8. Lot 7 is bordered by the Merrimack River to the west. The entire embankment is heavily wooded. The property is bisected at its midpoint by an intermittent stream that runs parallel to the Merrimack River until ultimately discharging into it. A significant portion of the site slopes down toward the wetland.

A Site Specific Soil Survey, performed by Schauer Environmental Consultants, LLC, classifies the predominant on-site soil types as Pootatuck fine sandy loam, 0-8% slopes, Rippowam fine sandy loam, 0-8% slopes, Merrimac fine sandy loam with slopes ranging from 0-25+%, Sudbury fine sandy loam, 0-8% slopes, Udorthents, sandy with slopes from 0-25+%, and Occum fine sandy loam, 0-25+% slopes. Merrimac is a Hydrologic Group 'A' soil, the Pootatuck, Sudbury, and Occum soils are Type 'B' soils, and Rippowam is a Type 'C' soil. The Udorthents soils range from Hydrologic Groups A-C.

Storm Water Management

In general, the 2-year, 10-year, 25-year and 50-year frequency storms will be analyzed as required by the Town of Hudson and the State of New Hampshire design guidelines as well as common engineering practice. Proposed treatment practices will be provided following the recommended design practices outlined in the publication entitled New Hampshire Department of Environmental Services Best Management Practices for Stormwater Management and Erosion and Sediment Control. Two above ground stormwater detention ponds with long, wide, and flat stormwater treatment swales downstream are being proposed to reduce the peak rate of runoff. The swales are located in the buffer

because the natural low points are within the buffer. Proper mitigation and treatment will ensure no adverse downstream impacts to sensitive wetland areas and abutting lands.

Erosion and Sediment Control

As an integral part of the engineering design of this site, an erosion and sedimentation control plan will be developed with the intent of limiting the potential for soil loss and associated receiving water quality degradation, both during and after the construction period. Traditional temporary erosion and sedimentation control devices and practices, such as siltation fencing, check dams, and seeding will be specified. Again, reference is made to the Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire manual to appropriately provide and design for erosion control practices. Also, in an effort to account for abnormal adverse building conditions, common engineering practices attempt to further protect all affected areas through caution to the future contractor that any indicated erosion control practices are a minimum standard and serve as a guide only. Notes to this effect are typically added to the design plans and further state more extensive erosion control measures are, by mention, incorporated as field conditions warrant or as directed by the appropriate Local or State authority.

Finally, efforts protecting all affected areas are provided via site specific construction sequencing sensitive to limiting soil loss due to erosion as well as giving consideration to potential associated water quality degradation. It is important for the contractor to recognize that proper judgment in the implementation of work will be essential if erosion is to be limited and protection of completed work is to be realized. Moreover, any specific changes in sequence and/or field conditions affecting the ability of specific erosion control measures to adequately serve their intended purpose are immediately remedied with alternative means.

Wetland Impacts

Schauer Environmental Consultants, LLC mapped the onsite jurisdictional wetlands in May, 2014 which were field located by this office during on ground survey efforts. The central wetland consists of palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded swamp with a perennial stream classified as riverine, upper perennial, unconsolidated bottom, mud, and semi permanently flooded. The wetland in the northwestern corner consists of palustrine, forested, broad-leaved deciduous, seasonally flooded swamp with an intermittent stream classified as riverine, intermittent, streambed, sand, and seasonally flooded. As the attached Wetland and Wetland Buffer Impact Plans depict, the proposed site improvements require 913 square feet of temporary wetland impact, 2,545 square feet of permanent wetland impact along with 20,868 square feet of permanent buffer impact in Hudson. There will be no buffer impacts within the Town of Litchfield.



TOWN OF HUDSON
PLANNING BOARD

HCN

NOTICE OF APPROVAL

12 School Street

Hudson, New Hampshire 03051

603/886-6005



December 11, 2014

Owner or Applicant: Leonard A. Vigeant, Sr.
5 Mockingbird Lane
Hudson, NH 03051

On Wednesday, December 10, 2014, the Hudson Planning Board heard subject case SP# 11-14 "Autumn Circle Subdivision"

SUBJECT: Purpose of plan: is to consolidate the two subject parcels: Hudson/Litchfield Tax Map and Lot = 128-7/1-2 and Hudson/Litchfield Tax Map and Lot = 128-8/1-1 and subdivide the resulting area into 11 building lots; (one will contain the existing house and garage). Application Acceptance & Hearing. Deferred Date Specific from the 11-12-14 Planning Board Meeting.

LOCATION: 300 Webster Street -- Map 128/Lots 7 & 8

You are hereby notified of the subject plat presented before the Planning Board and the following action:

The Planning Board voted to accept the Subdivision application for 300 Webster Street -- Map 128/Lots 7 & 8, which calls for the construction of a new public street and 11 single-family house lots.

Waivers:

289-6(D) -- Fiscal Impact

The Planning Board voted to grant the requested waiver: HTC 289-6(D) -- Fiscal Impact Study-because said study, in addition to the submitted plans, CAP Fee provisions and other submitted application materials, is not necessary in order to evaluate the fiscal impact of this development, and as such, the granting of this waiver is not contrary to the spirit and intent of the Subdivision Regulations.

289-6(D) – Traffic Study

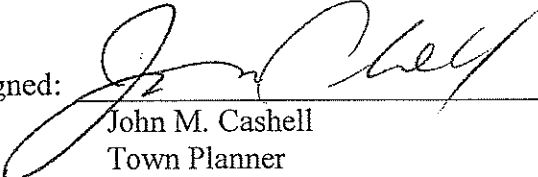
The Planning Board voted to grant the requested waiver: HTC 289-6(D) – Traffic Study- because the traffic volume associated with the addition of 10 new single-family dwellings will not substantially impact the existing traffic conditions along Webster St., and as such, the granting of this waiver is not contrary to the spirit and intent of the Subdivision Regulations.

The Planning Board voted to approve the subdivision plan entitled: Residential Subdivision Land of Leonard Vigeant Map 128; Lots 7 & 8 Hudson, Map B; Lots 1-1 & 1-2 Litchfield 300 Webster Street, Hudson and Litchfield, NH, prepared by Keach-Nordstrom Associates, Inc., dated: 16 Sept 2014, latest revision date: 19 Nov 2014, consisting of Sheets 1 – 23 and Notes 1 – 32, in accordance with the following terms and conditions:

1. All stipulations of approval shall be incorporated into the Development Agreement, which shall be recorded at the HCRD, together with the above Subdivision Plan-of-Record (hereafter referred to as the Plan).
2. Prior to Planning Board endorsement of the Plan, Town Counsel shall favorably recommend on the Development Agreement and Municipal Water and Drain Easement Deeds pertaining to such easements as shown on the Plan.
3. A CAP amount of \$1,554.33, per residential unit, shall be paid prior to the issuance of a Certificate of Occupancy.
4. A public school impact fee in the amount of \$3,578.00, per residential unit, shall be paid prior to the issuance of a Certificate of Occupancy.
5. A recreation contribution in the amount of \$400.00, per residential unit, shall be paid prior to the issuance of a Certificate of Occupancy.
6. This approval is subject to final engineering review.
7. Maintenance of the onsite drainage system shall be constructed and maintained in compliance with local and NHDES requirements for such systems, and the perpetual maintenance of the stormwater treatment structures and treatment and retention basins outside of the ROW, shall be the responsibility of the future homeowner's association comprised of all the homeowners within this subdivision.

8. The number of dwelling lots for this subdivision shall be limited to 11, which includes proposed Lot 1 having an existing two-family dwelling.
9. If lot development involves blasting and/or ramming of bedrock materials, said activities shall be limited to the hours between 7:00 A.M. and 5:00 P.M. Monday through Friday only. Said blasting/ramming activities shall be prohibited on Saturday and Sunday.
10. Construction activities involving the lots shall be limited to the hours between 7:00 A.M. and 6:00 P.M., Monday through Friday. Interior construction activities are allowed on Saturday between 7:00 A.M. and 6:00 P.M. Both interior and exterior construction activities are prohibited on Sunday. Note: this condition shall be properly inscribed on Sheets 3 and 4 of the Plans prior to Planning Board endorsement of same.
11. The developer shall be responsible for the installation of a road status sign at the entrance drive to this subdivision in accordance with Section 289-40 of the Planning Board's Land Use Regulations, and as stated in Note 26, Sheet 1 of the Plan.
12. An offsite traffic improvement fee, in the amount of \$250 shall be paid prior to the issuance of a Certificate of Occupancy for each dwelling within this subdivision built in Hudson, and this fee shall be expended exclusive to traffic improvements implemented within the vicinity of the Webster St./Derry St. (NH Rte. 102) intersection.
13. Prior to Planning Board endorsement of the Plan, the "Heritage Trail Easements", pertaining to Lots 8-7 & 8-8, shall be favorably reviewed by Town Counsel, and said easements shall be recorded at the HCRD, together with the Plan.
14. Conservation signage shall be provided at 50 foot intervals, at the Applicant's expense, along the Merrimack River "no cut, no disturb" zones associated with Lots 8-7 & 8-8.

All representations of fact or intention made by the applicant or any applicant's representative during testimony before the Planning Board relative to the obtaining approval of this plan, shall be considered conditions of this approval regardless of the fact that such fact or intentions were not specifically stated as part of the motion to grant.

Signed:  Date: 12-11-14
John M. Cashell
Town Planner

cc: Keach-Nordstrom Assoc. Inc.



TOWN OF HUDSON
PLANNING BOARD

"DU"

NOTICE OF APPROVAL



12 School Street Hudson, New Hampshire 03051 603/886-6005

January 15, 2016

Owner or Applicant: Autumn Circle Subdivision (Extension)
Leonard A. Vigeant SR.
5 Mockingbird Lane
Hudson, NH 03051

On Wednesday, January 13, 2016, the Hudson Planning Board heard subject case SB# 10-15 "Autumn Circle Subdivision (Extension)"

SUBJECT: PURPOSE OF PLAN: PURSUANT TO RSA 674:39, THE APPLICANT REQUESTS A TWO-YEAR EXTENSION FOR THE APPROVED AUTUMN CIRCLE SUBDIVISION PLAN OF 12/10/14. APPLICATION ACCEPTANCE & HEARING.

LOCATION: 300 WEBSTER STREET- MAP 128/LOTS 007 & 008

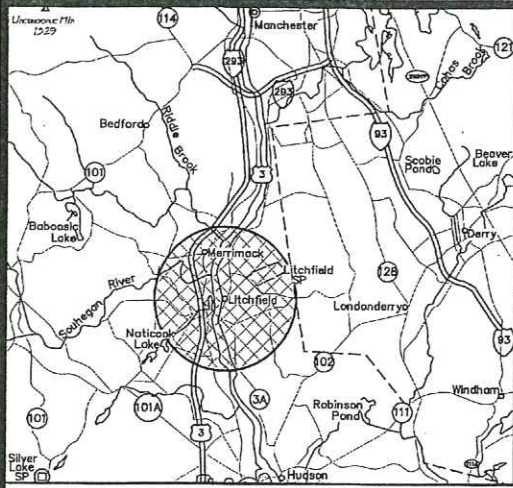
You are hereby notified of the subject plat presented before the Planning Board and the following action:

The Planning Board moved to grant a two-year extension (i.e., from December 10, 2015 to December 10, 2017) for the Autumn Circle Subdivision, located at 300 Webster Street, which calls for the consolidation of the subjects: Hudson/Litchfield Tax Map and Lot = 128-7/1-2 and Hudson-Litchfield Tax Map and Lot = 128-8 / 1-1 and subdivide the resulting area into 10 building lots; 1 containing the existing house and garage.

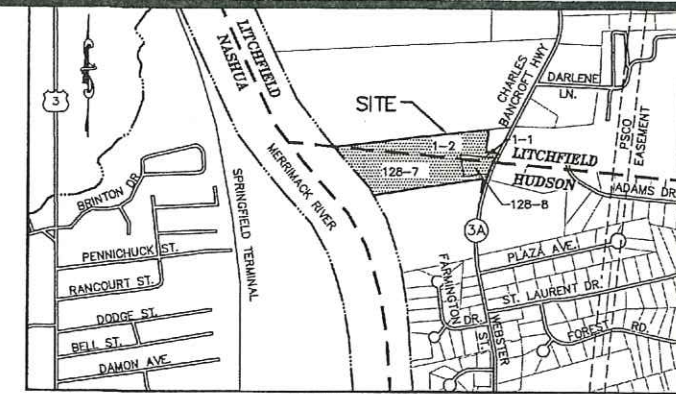
All representations of fact or intention made by the applicant or any applicant's representative during testimony before the Planning Board relative to the obtaining approval of this plan, shall be considered conditions of this approval regardless of the fact that such fact or intentions were not specifically stated as part of the motion to grant.

Signed:  Date: 1-15-16
John M. Cashell
Town Planner

cc: Keach-Nordstrom Associates, Inc.



VICINITY PLAN
NOT TO SCALE



VICINITY MAP
SCALE: 1"=1,000'

RESIDENTIAL SUBDIVISION LAND OF LEONARD VIGEANT

MAP 128; LOTS 7 & 8-HUDSON
MAP B; LOTS 1-1 & 1-2-LITCHFIELD
300 WEBSTER STREET

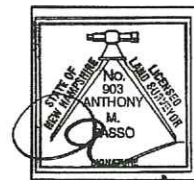
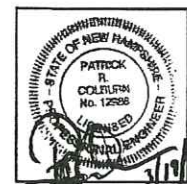
HUDSON & LITCHFIELD, NEW HAMPSHIRE



OWNER/APPLICANT:
LEONARD A. SR. AND JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NEW HAMPSHIRE 03054

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

IN ASSOCIATION WITH:
SCHAUER ENVIRONMENTAL CONSULTANTS, LLC.
722 ROUTE 3A, UNIT #1
BOW, NEW HAMPSHIRE, 03304



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

SEPTEMBER 16, 2014

LAST REVISED: FEBRUARY 11, 2015

PROJECT NO. 07-0511-4A

SHEET TITLE

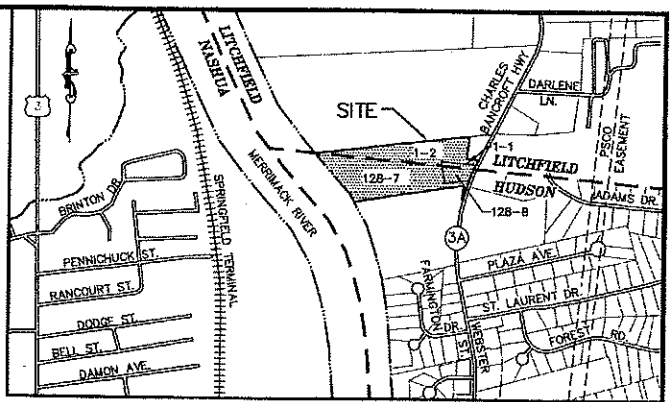
SHEET No.

MASTER PLAN	1
SUBDIVISION PLAN	2 & 3
TOPOGRAPHIC SUBDIVISION PLAN	4 & 5
ROADWAY PLAN	6
ROADWAY PROFILE	7
UTILITY PLAN	8
EASEMENT PLANS	9 & 10
SITE DISTANCE PLAN & PROFILE	11
EROSION CONTROL PLAN	12
WATER MAIN EXTENSION PLAN	13
CONSTRUCTION DETAILS	14 - 22
TEST PIT LOGS	23

ZONING NOTE
 THE ZONING BUILDING SETBACKS DEPICTED ON THIS PLAN ARE THOSE WE HAVE INTERPRETED FROM THE LATEST ZONING ORDINANCE OF THE MUNICIPALITY AND, AS SUCH, ARE ONLY OPINIONS EXPRESSED BY KEACH-NORDSTROM ASSOCIATES, INC. THE FINAL INTERPRETATION OF THE ORDINANCE CAN ONLY BE MADE BY THE APPROPRIATE ZONING AUTHORITY. SINCE BUILDING ORIENTATION, PROPOSED USES, AND OTHER FACTORS CAN AFFECT THE SETBACKS, PRIOR TO ANY DEVELOPMENT OF THIS PROPERTY THE BUILDER/OWNER MUST CONSULT WITH THE TOWN/CITY TO INSURE THE CORRECT APPLICATION OF THE ZONING ORDINANCE.

OWNER/APPLICANT
 SIGNATURE: *Leonard A. Vigeant*
 DATE: 3-30-15

MAP B; LOT 1-4
 STATE OF NEW HAMPSHIRE
 DEPARTMENT OF TRANSPORTATION
 P.O. BOX 483
 1 HAZEN DRIVE, ROOM 204
 CONCORD, NH 03302



VICINITY MAP
 SCALE: 1" = 1,000'

REFERENCE PLANS:

- "CURRENT LAND USE PLAN FOR EUGENE C. FLEURY", WEBSTER STREET, HUDSON & LITCHFIELD, NH, SCALE: 1"=50', DATED FEBRUARY 21, 1982, BY DONALD T. JEAN.
- "LAND OF EUGENE C. FLEURY", FOR EUGENE C. FLEURY, CHARLES BANCROFT HIGHWAY, ROUTE 3A, HUDSON & LITCHFIELD, NH, SCALE: 1"=50', DATED AUGUST 22, 1973, BY ROLAND R. GROUARD, H.C.R.D. PLAN #6896.
- "BOUNDARY PLAN OF LAND BELONGING TO THE ESTATE OF GENIE S. DANFORTH", FOR FRANK B. CLANCY, CHARLES BANCROFT HIGHWAY, ROUTE 3A, LITCHFIELD, NH, SCALE: 1"=100', DATED APRIL 1984, BY MAYNARD & PAQUETTE, INC. H.C.R.D. PLAN #16576.
- "LOT LINE RELOCATION FOR LEO N. FLEURY & EUGENE C. FLEURY", WEBSTER STREET, HUDSON & LITCHFIELD, NH, SCALE: 1"=50', DATED SEPTEMBER 14, 1982, BY DONALD T. JEAN. H.C.R.D. PLAN #15520.

LEGEND

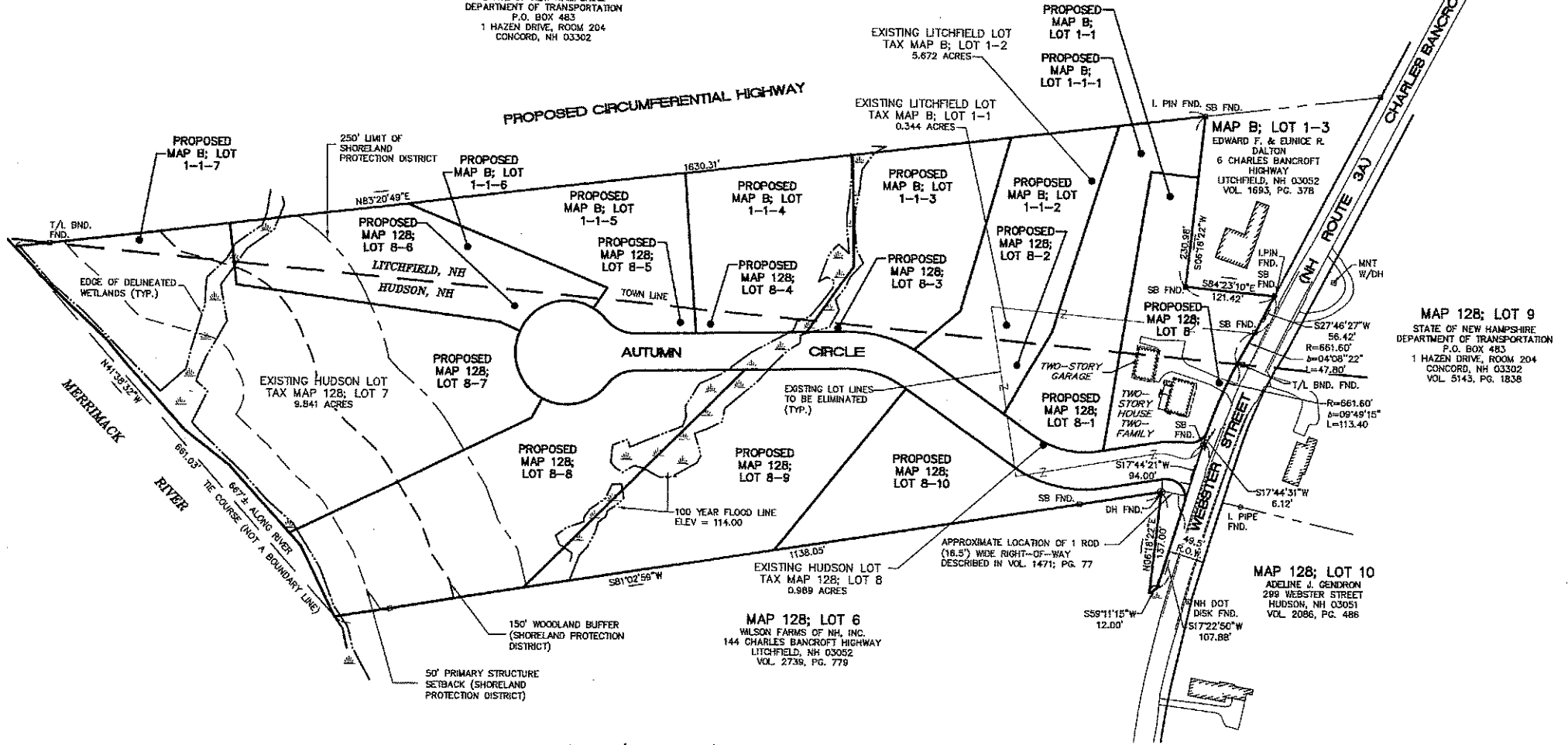
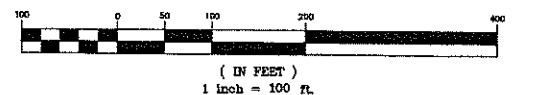
- STONE BOUND FOUND
- IRON PIN FOUND
- DRILL HOLE
- ABUTTER LINE
- PROPERTY LINE
- WETLAND
- RIVER
- EDGE OF PAVEMENT
- EXISTING EASEMENT
- 50' PRIMARY STRUCTURE SETBACK
- 250' SHORELAND PROTECTION DISTRICT
- 150' WOODLAND BUFFER
- TOWN LINE

NPDES NOTE

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



GRAPHIC SCALE



NOTES:

- THE PURPOSE OF THIS PLAN IS TO CONSOLIDATE THE TWO SUBJECT PARCELS: HUDSON/LITCHFIELD TAX MAP AND LOT = 128-7 / B-1-2 AND HUDSON/LITCHFIELD TAX MAP AND LOT = 128-8 / B-1-1 AND SUBDIVIDE THE RESULTING AREA INTO 11 BUILDING LOTS; 1 WILL CONTAIN THE EXISTING HOUSE AND GARAGE. THE PROPOSED DEVELOPMENT WILL ALSO CREATE AN AUTUMN CIRCLE HOME OWNER'S ASSOCIATION, WHOSE PRIMARY FUNCTION IS PRIVATE MAINTENANCE OF THE TWO TREATMENT SWALES AND TWO DETENTION PONDS.
- TOTAL AREA OF SUBJECT PARCELS:
 AREA OF LOT 128-7 WITHIN THE TOWN OF HUDSON = 9.841 ACRES
 AREA OF LOT 128-8 WITHIN THE TOWN OF HUDSON = 5.672 ACRES
 TOTAL AREA OF PARCEL 128-7 / B-1-2 = 15.514 ACRES
 AREA OF LOT 128-8 WITHIN THE TOWN OF HUDSON = 0.989 ACRES
 AREA OF LOT 128-7 WITHIN THE TOWN OF LITCHFIELD = 0.344 ACRES
 TOTAL AREA OF PARCEL 128-8 / B-1-1 = 1.333 ACRES
- THE SUBJECT PARCELS ARE SUBJECT TO THE FOLLOWING ZONING REQUIREMENTS:
TOWN OF HUDSON: (LOTS 128-7 & 128-8)
 RESIDENTIAL (R-2)
 MINIMUM LOT REQUIREMENTS:
 - LOT AREA 43,560 SF
 - LOT FRONTAGE 150 FT LOCAL
 W/OUT TOWN WATER & SEWER
 MINIMUM BUILDING SETBACKS:
 - FRONT 30 FT LOCAL
 - FRONT 50 FT COLLECTOR
 - SIDE 15 FT
 - REAR 15 FT
TOWN OF LITCHFIELD: (LOTS B-1-1 & B-1-2)
 SOUTHWESTERN COMMERCIAL DISTRICT (SEE NOTE 17)
 MINIMUM LOT REQUIREMENTS:
 - LOT AREA PLANNING BOARD APPROVAL, NOT < 1 ACRE
 - LOT FRONTAGE 150 FT, NOT INCLUDING NH ROUTE 3-A
 MINIMUM BUILDING SETBACKS:
 - FRONT, RT. 3A 50 FT LANDSCAPE BUFFER
 - PUBLIC R.O.W. 50 FT EXCEPT NH ROUTE 3-A
 - SIDE 20 FT
 - REAR 20 FT
- OWNER OF RECORD:
 LEONARD A. VIGEANT SR. AND JANE M. VIGEANT
 5 MOCKINGBIRD LANE
 HUDSON, NH 03051
 VOL. 8852, PG. 2427
- EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAPS (FIRM) FOR THE TOWN OF HUDSON, NEW HAMPSHIRE, HILLSBOROUGH COUNTY, MAP NUMBER 330092 0512 D PANEL NUMBER 512 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009 AND FOR THE TOWN OF LITCHFIELD, NEW HAMPSHIRE, HILLSBOROUGH COUNTY, MAP NUMBER 330093 0512 D PANEL NUMBER 512 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009 INDICATE THAT PARCEL 128-7/B-1-2 IS PARTIALLY LOCATED WITHIN THE 100-YEAR HAZARD AREAS AND THAT PARCEL 128-8/B-1-1 IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
- BENCHMARKS SET AS NOTED, BASED ON NGVD 1929.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
- BOUNDARY AND TOPOGRAPHIC INFORMATION IS BASED ON A FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN MAY 2008 AND MAY 2014. HORIZONTAL DATUM IS MAGNETIC 2008. VERTICAL DATUM IS NGVD 1929.
- WETLAND AND SITE SPECIFIC SOIL MAPPING PERFORMED BY SCHAUER ENVIRONMENTAL CONSULTANTS, LLC IN APRIL AND MAY 2014.
- EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED HEREON ARE THOSE FOUND DURING RESEARCH PERFORMED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.

NOTES (CONTINUED):

- LOTS ARE SERVICED BY ON-SITE SEPTIC SYSTEMS AND MUNICIPAL WATER.
- SHEETS 1 THROUGH 3 AND 9-10 SHALL BE RECORDED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS AND A FULL PLAN SET IS LOCATED AT THE HUDSON AND LITCHFIELD PLANNING OFFICES.
- PERMITS REQUIRED:
 - NHDES SUBDIVISION APPROVAL STATUS: 5A2015010636
 - INDIVIDUAL SUBSURFACE SEPTICS REQUIRED PRIOR TO CONSTRUCTION
 - NHDES ALTERATION OF TERRAIN A61-0811
 - NHDES WETLAND MINOR IMPACT 2014-02809
 - NHDES SHORELAND 2014-02812
 - NHDOT DRIVEWAY PENDING
 - NHDES NOTICE OF INTENT REQUIRED PRIOR TO CONSTRUCTION
 - NHDOT EXCAVATION REQUIRED PRIOR TO CONSTRUCTION OF WATER MAIN
- WAIVERS APPROVED:
 TOWN OF HUDSON:
 - HIC 289-6(D) - FISCAL IMPACT STUDY
 - HIC 289-6(D) - TRAFFIC STUDY
- IMPACT FEES IMPOSED PURSUANT TO THE LITCHFIELD ZONING ORDINANCE SECTION 1300, PUBLIC CAPITAL FACILITIES IMPACT FEES AND SECTION 1400, PUBLIC SCHOOLS FACILITIES IMPACT FEE SHALL BE ASSESSED BY THE PLANNING BOARD AT THE TIME OF SUBDIVISION APPROVAL FOR LOTS SITUATED WITHIN TOWN OF LITCHFIELD AND RECORDING AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS (HCRD). APPLICABLE IMPACT FEES SHALL BE STATED IN THE BOARD'S NOTICE OF DECISION. IMPACT FEES ARE PAYABLE AT THE TIME A CERTIFICATE OF OCCUPANCY IS ISSUED BY THE BUILDING DEPARTMENT.
 - PUBLIC SCHOOL FACILITIES IMPACT FEES:
 CAMPBELL HIGH SCHOOL \$1.17/SF
 NEW ELEMENTARY SCHOOL \$2.61/SF
 - PUBLIC CAPITAL FACILITIES IMPACT FEES:
 TOWN HALL ADMINISTRATION \$0.02/SF
 FIRE \$0.43/SF
 POLICE \$0.12/SF
 RECREATION \$0.73/SF
 LIBRARY \$0.06/SF
 - ROAD IMPACT FEES:
 ROAD (SINGLE FAMILY DETACHED) \$1,651.21
- WINTER ROAD MAINTENANCE SHALL BE CONDUCTED WITH LIMITED SALT USE. SNOW STORAGE SHALL BE ALONG BOTH SIDES OF THE ROADWAY AND IN THE MIDDLE OF THE CUL-DE-SAC.
- ON AUGUST 28, 2014, THE HUDSON ZBA GRANTED SPECIAL EXCEPTION FOR WETLAND BUFFER IMPACTS ASSOCIATED WITH ROADWAY CONSTRUCTION AND STORMWATER MANAGEMENT, 25,815 SF FOR BUFFER, 3,450 SF FOR WETLANDS. ON JUNE 11, 2014, THE LITCHFIELD ZBA GRANTED THE APPLICANT A VARIANCE TO ALLOW RESIDENTIAL CONSTRUCTION IN A COMMERCIAL DISTRICT.
- A CAP IN THE AMOUNT OF \$1,554.33, PER RESIDENTIAL UNIT IN HUDSON, SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- A PUBLIC SCHOOL IMPACT FEE IN THE AMOUNT OF \$3,576 IN HUDSON, PER RESIDENTIAL UNIT, SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

NOTES (CONTINUED):

- A RECREATION CONTRIBUTION IN THE AMOUNT OF \$400 IN HUDSON, PER RESIDENTIAL UNIT, SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- ON-SITE DRAINAGE SYSTEM SHALL BE CONSTRUCTED AND MAINTAINED IN COMPLIANCE WITH LOCAL AND NHDES REQUIREMENTS FOR SUCH SYSTEMS, AND THE PERPETUAL MAINTENANCE OF THE STORMWATER TREATMENT STRUCTURES AND RETENTION BASINS OUTSIDE OF THE ROW, SHALL BE THE RESPONSIBILITY OF THE FUTURE HOMEOWNER'S ASSOCIATION COMPRISED OF ALL THE HOMEOWNERS WITHIN THIS SUBDIVISION.
- THE NUMBER OF DWELLING LOTS FOR THIS SUBDIVISION SHALL BE LIMITED TO 11, WHICH INCLUDES PROPOSED LOT 1 HAVING AN EXISTING TWO-FAMILY DWELLING.
- IF LOT DEVELOPMENT INVOLVES BLASTING AND/OR RAMMING OF BEDROCK MATERIALS, SAID ACTIVITIES SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 5:00 P.M. MONDAY THROUGH FRIDAY ONLY. SAID BLASTING /RAMMING ACTIVITIES SHALL BE PROHIBITED ON SATURDAY AND SUNDAY.
- CONSTRUCTION ACTIVITIES INVOLVING THE LOTS SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY. INTERIOR CONSTRUCTION ACTIVITIES ARE ALLOWED ON SATURDAY 7:00 A.M. AND 6:00 P.M. BOTH INTERIOR AND EXTERIOR CONSTRUCTION ACTIVITIES ARE PROHIBITED ON SUNDAYS.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF A ROAD STATUS SIGN AT THE ENTRANCE DRIVES TO THIS SUBDIVISION IN ACCORDANCE WITH SECTION 289-40 OF THE PLANNING BOARD'S LAND USE REGULATIONS, UNTIL SUCH TIME THAT THE ROAD IS ACCEPTED BY THE HUDSON BOARD OF SELECTMAN.
- THE BASEMENT FLOOR SLAB ELEVATION FOR ALL PROPOSED STRUCTURES SHALL BE ONE FOOT ABOVE THE 100 YEAR FLOOD ELEVATIONS OF 114 AND 115, BASED ON DATUM OF MAP REFERENCED IN NOTE 5 ON THIS SHEET, OR 6" ABOVE THE ESTIMATED SEASONAL HIGH WATER TABLE, WHICHEVER IS HIGHER. SHOULD FINISH FLOOR ELEVATIONS FALL BELOW FINISH ROADWAY ELEVATIONS, CONTRACTOR SHALL INSTALL APPROPRIATE PERIMETER DRAINS WITH POSITIVE DISCHARGE TO DAYLIGHT.
- ALL PROPOSED EASEMENTS TO BENEFIT THE TOWN OF HUDSON.
- ALL LOTS WITHIN SHORELAND PROTECTION ZONE WILL REQUIRE SEPARATE SHORELAND PERMITS FROM NHDES FOR ANY DISTURBANCES PROPOSED THAT ARE NOT COVERED UNDER THIS PLAN.
- STONE BOUNDS (4"x4"x30") TO BE SET AT ALL BOUNDARY INTERSECTIONS AND POINTS OF CURVATURE ON THE RIGHT-OF-WAY AND IRON PINS (1/2" x 30") TO BE SET AT ALL OTHER BOUNDARY CORNERS.
- THE LITCHFIELD PARCELS FALL WITHIN THE TOWN'S AQUIFER PROTECTION DISTRICT. IMPERVIOUS SURFACES SHALL BE LIMITED TO 15% OF EACH SUBDIVIDED PARCEL'S AREA.
- ANY NEW DEVELOPMENT LOCATED IN LITCHFIELD WITHIN THE FLOODPLAIN WILL NEED TO COMPLY WITH THE TOWN OF LITCHFIELD FLOODPLAIN CONVERSION ACTS.
- AS A CONDITION OF APPROVAL FOR THE NHDOT PERMIT, THE SECOND DRIVEWAY (GRAVEL) AND DIRECT ACCESS TO NH ROUTE 3A SHALL BE REMOVED FROM MAP 128, LOT B AND REDLOCATED TO AUTUMN CIRCLE.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF A ROAD STATUS SIGN AT THE ENTRANCE DRIVES TO THIS SUBDIVISION IN ACCORDANCE WITH SECTION 289-40 OF THE PLANNING BOARD'S LAND USE REGULATIONS, UNTIL SUCH TIME THAT THE ROAD IS ACCEPTED BY THE HUDSON BOARD OF SELECTMAN.
- PRIOR TO PLANNING BOARD ENDORSEMENT OF THE PLAN, TOWN COUNSEL SHALL FAVORABLY RECOMMEND ON THE DEVELOPMENT AGREEMENT AND MUNICIPAL WATER AND DRAIN EASEMENT DEEDS PERTAINING TO SUCH EASEMENTS AS SHOWN ON THE PLAN.
- AN OFF-SITE TRAFFIC IMPROVEMENT FEE, IN THE AMOUNT OF \$250 SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR EACH DWELLING WITHIN THIS SUBDIVISION BUILT IN HUDSON AND THIS FEE SHALL BE EXPENDED EXCLUSIVE TO TRAFFIC IMPROVEMENTS IMPLEMENTED WITHIN THE VICINITY OF THE WEBSTER STREET/DERRY STREET (NH ROUTE 102) INTERSECTION.

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: _____

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 ACHIEVES FINAL APPROVAL.

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER TOWN & NHDOT COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #48, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH PERFORMED THE WETLAND MAPPING IN MAY 2014 ACCORDING TO THE TECHNICAL CRITERIA OF THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHEASTERN AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.



THIS PLAN AND THE SURVEY UPON WHICH IT IS BASED WAS MADE ON THE GROUND UNDER MY DIRECTION AND SUPERVISION BETWEEN MAY 2008 AND MAY 2014 IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STATE OF NEW HAMPSHIRE AND THE CITY/TOWN WITHIN WHICH IT IS LOCATED WITH A TRAVERSE ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000. THE SURVEY PERFORMED IS CLASSIFIED AS AN STANDARD URBAN PROPERTY SURVEY AS DEFINED IN THE STATE OF NEW HAMPSHIRE ADMINISTRATIVE RULES GOVERNING LAND SURVEYS. (LAN 503).

3/15/15
 DATE



DATE RECORDED: _____ HCRD# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: _____

CERTIFIED BY: *Leonard A. Vigeant*, CHAIRMAN
 _____, VICE CHAIRMAN, OR DESIGNATED MEMBER

MASTER PLAN
LAND OF LEONARD VIGEANT
 300 WEBSTER STREET
 HUDSON, NEW HAMPSHIRE

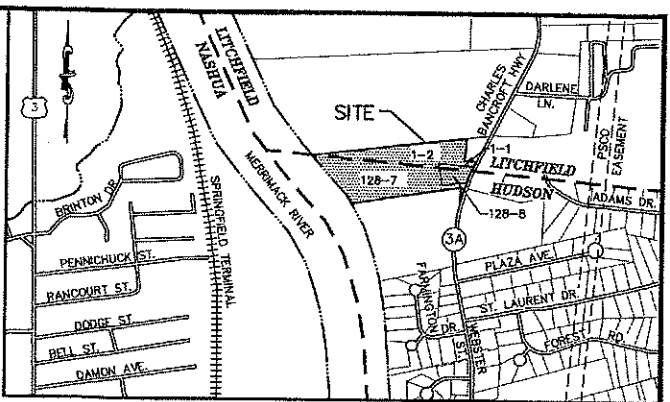
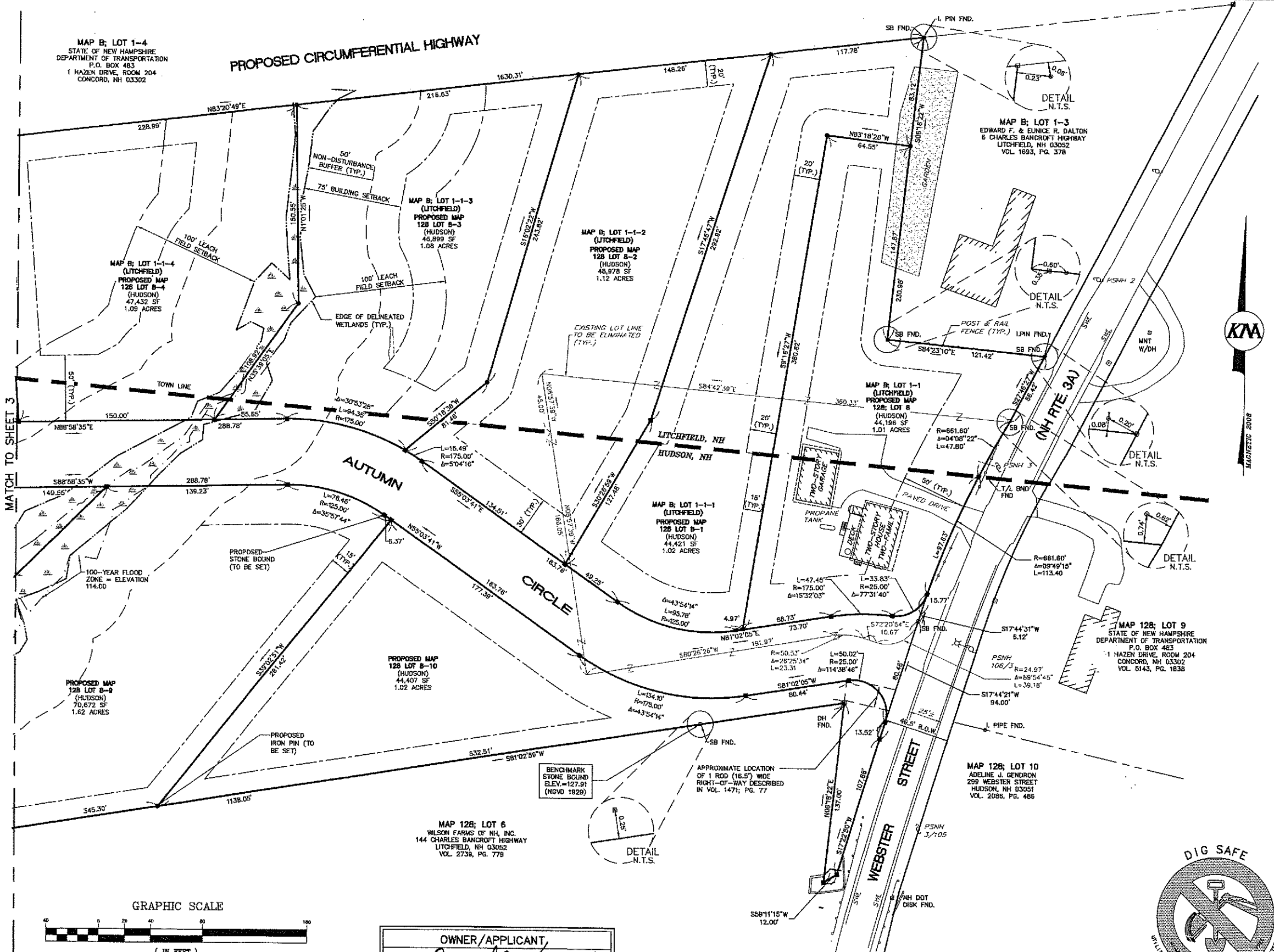
OWNER OF RECORD:
 LEONARD A. SR. & JANE M. VIGEANT
 5 MOCKINGBIRD LANE
 HUDSON, NH 03051
 VOL. 8852, PG. 2427

APPLICANT/SUBDIVIDER:
 LEONARD A. SR. & JANE M. VIGEANT
 5 MOCKINGBIRD LANE
 HUDSON, NH 03051
 DATE: SEPTEMBER 16, 2014

KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881
 SCALE: 1" = 100'
 HUDSON: MAP 128; LOT 7 & 8
 LITCHFIELD: MAP B; LOTS 1-1 & 1-2
 PROJECT NO: 07-0511-4A SHEET 1 OF 23

MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
P.O. BOX 483
1 HAZEN DRIVE, ROOM 204
CONCORD, NH 03302

PROPOSED CIRCUMFERENTIAL HIGHWAY



VICINITY MAP
SCALE: 1" = 1,000'

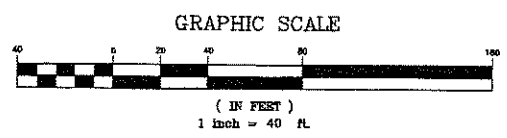
SEE SHEET 1 FOR NOTES AND REFERENCE PLANS

SEE SHEET 3 FOR LOT AREA TABLE & LOT REGULARITY TABLE

LEGEND

- WETLAND SYMBOL
- STONE BOUND FOUND
- IRON PIN FOUND
- DRILL HOLE
- STONE BOUND TO BE SET
- UTILITY POLE
- SIGN
- CATCH BASIN
- ABUTTER LINE
- EXISTING PROPERTY LINE
- PROPERTY LINE TO BE ELIMINATED
- PROPOSED PROPERTY LINE
- WETLAND
- RIVER
- POST & RAIL FENCE
- BARBED WIRE FENCE
- EDGE OF PAVEMENT
- BUILDING SETBACK
- NO DISTURBANCE BUFFER
- EXISTING EASEMENT
- PROPOSED LEACH FIELD SETBACK
- 25' SHORELAND PROTECTION DISTRICT
- 150' WOODLAND BUFFER
- TOWN LINE

MATCH TO SHEET 3



OWNER/APPLICANT
Signature: *Leonard A. Vigeant*
DATE: 3-30-15

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER NHDD COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

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

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
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DATE: 3/15/15



DATE RECORDED: _____ HCRD# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: *3/30/15*

CERTIFIED BY: *John J...* CHAIRMAN
_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

SUBDIVISION PLAN
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

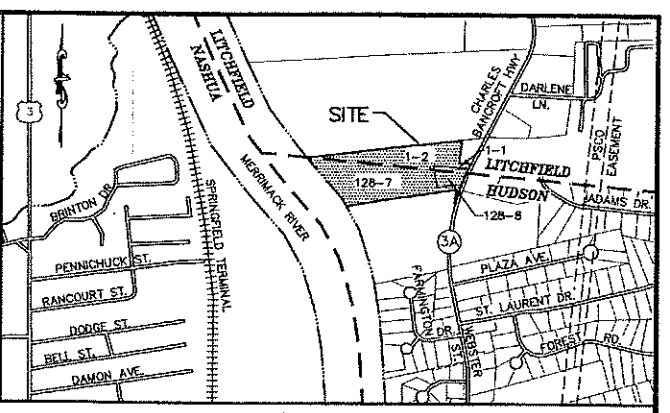
OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
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HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscapes Architecture
10 Commerce Park North, Suite 88, Bedford, NH 03110 Phone (603) 627-8801
SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 2 OF 23

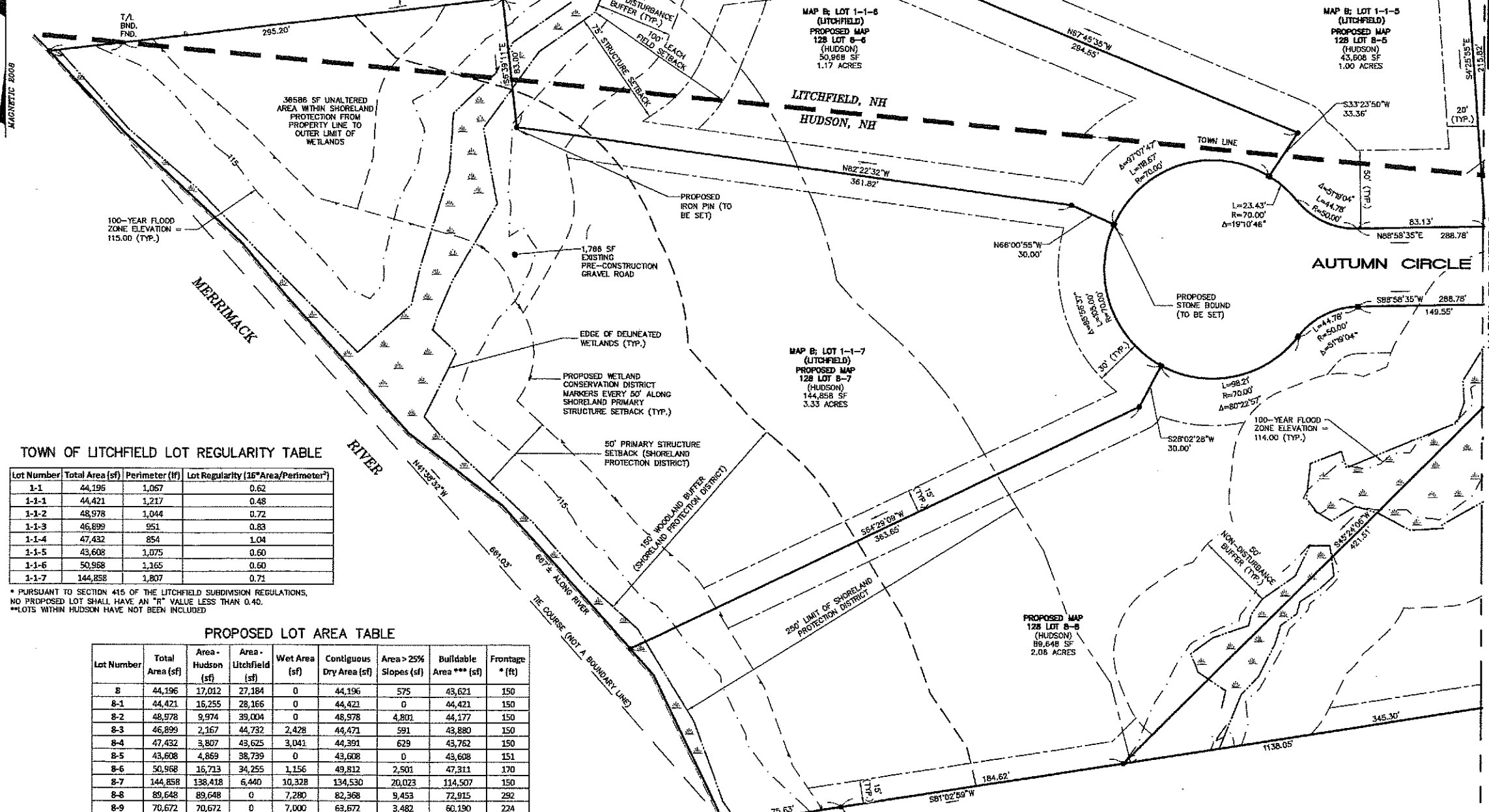
MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
P.O. BOX 483
1 HAZEN DRIVE, ROOM 204
CONCORD, NH 03302

PROPOSED CIRCUMFERENTIAL HIGHWAY



VICINITY MAP
SCALE: 1" = 1,000'

SEE SHEET 1 FOR NOTES AND REFERENCE PLANS



TOWN OF LITCHFIELD LOT REGULARITY TABLE

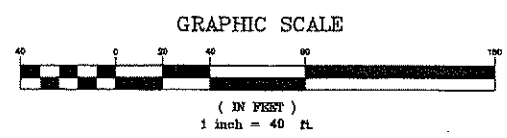
Lot Number	Total Area (sf)	Perimeter (lf)	Lot Regularity (16"Area/Perimeter ²)
1-1	44,196	1,057	0.62
1-1-1	44,421	1,217	0.48
1-1-2	48,978	1,044	0.72
1-1-3	46,899	951	0.83
1-1-4	47,432	854	1.04
1-1-5	43,608	1,075	0.60
1-1-6	50,968	1,165	0.60
1-1-7	144,858	1,807	0.71

* PURSUANT TO SECTION 416 OF THE LITCHFIELD SUBDIVISION REGULATIONS, NO PROPOSED LOT SHALL HAVE AN "R" VALUE LESS THAN 0.40.
**LOTS WITHIN HUDSON HAVE NOT BEEN INCLUDED

PROPOSED LOT AREA TABLE

Lot Number	Total Area (sf)	Area - Hudson (sf)	Area - Litchfield (sf)	Wet Area (sf)	Contiguous Dry Area (sf)	Area > 25% Slopes (sf)	Buildable Area *** (sf)	Frontage * (ft)
8	44,196	17,012	27,184	0	44,196	575	43,621	150
8-1	44,421	16,255	28,166	0	44,421	0	44,421	150
8-2	48,978	9,974	39,004	0	48,978	4,801	44,177	150
8-3	46,899	2,167	44,732	2,428	44,471	591	43,880	150
8-4	47,432	3,807	43,625	3,041	44,391	629	43,762	150
8-5	43,608	4,869	38,739	0	43,608	0	43,608	151
8-6	50,968	16,713	34,255	1,156	49,812	2,501	47,311	170
8-7	144,858	138,418	6,440	10,328	134,530	20,023	114,507	150
8-8	89,648	89,648	0	7,280	82,368	9,453	72,915	292
8-9	70,672	70,672	0	7,000	63,672	3,482	60,190	224
8-10	44,407	44,407	0	59	44,348	0	44,348	442

* LOT 8 CONTAINS 150' FRONTAGE ON AUTUMN CIRCLE AND 202' OF FRONTAGE ON NH ROUTE 3A
***BUILDABLE LOT AREA = TOTAL - WET - 25% SLOPES



OWNER/APPLICANT
SIGNATURE: *Leonard A. Vigeant*
DATE: 3-30-15

No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
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4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

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

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

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DATE: 3/19/15



DATE RECORDED: _____ HCR# _____
APPROVED BY THE LITCHFIELD PLANNING BOARD ON: 3/30/2015
CERTIFIED BY: *[Signature]*, CHAIRMAN
_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

SUBDIVISION PLAN
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. B652, PG. 2427

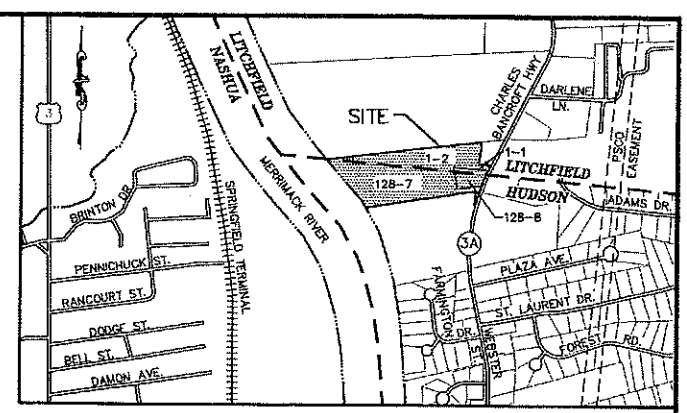
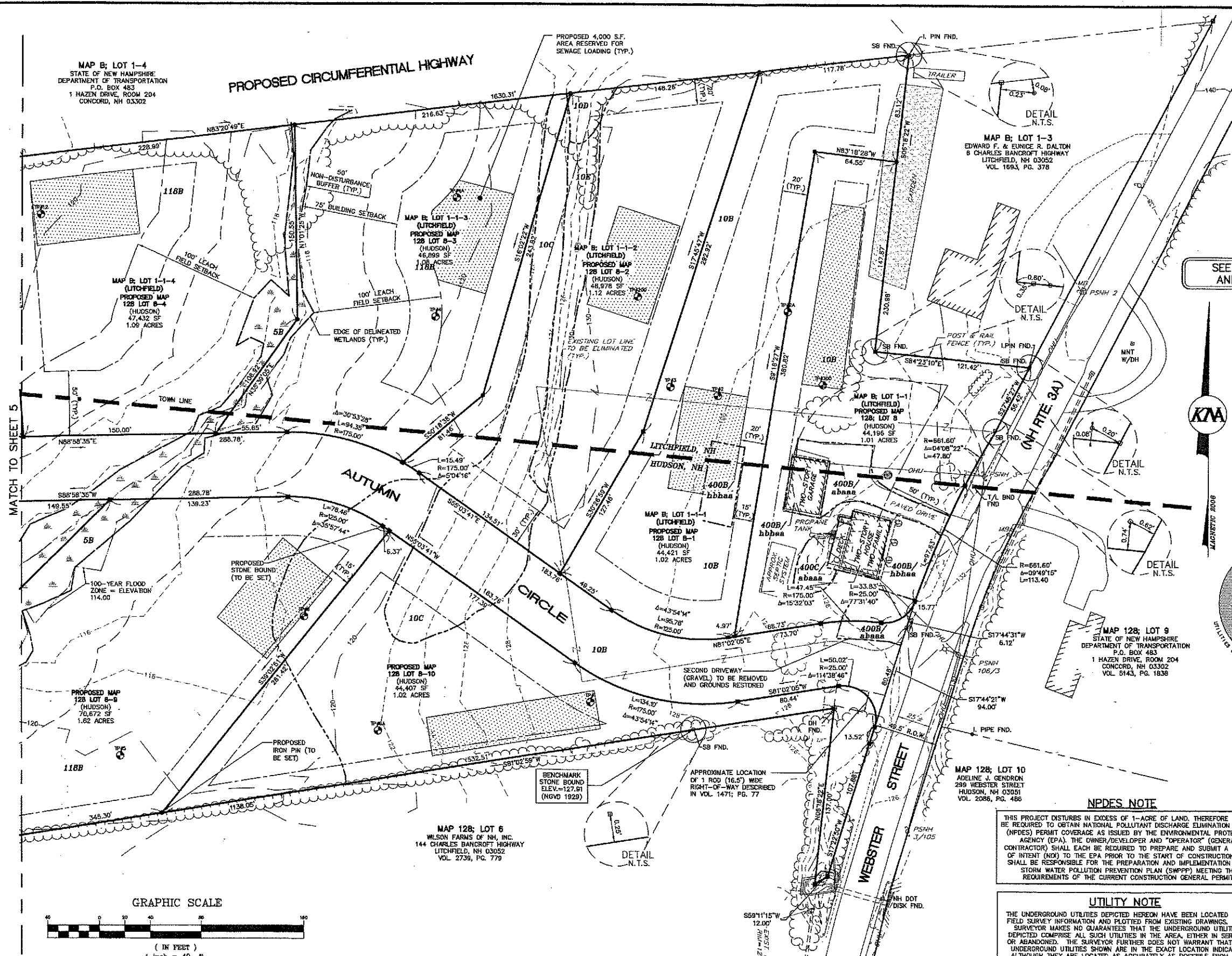
APPLICANT/SUBDIVIDER:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 28, Bedford, NH 03110 Phone (603) 627-2881

SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 3 OF 23

MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
P.O. BOX 483
1 HAZEN DRIVE, ROOM 204
CONCORD, NH 03302

PROPOSED CIRCUMFERENTIAL HIGHWAY



VICINITY MAP
SCALE: 1" = 1,000'

SEE SHEET 1 FOR NOTES AND REFERENCE PLANS

SEE SHEET 5 FOR SITE SPECIFIC SOIL MAP UNIT KEY

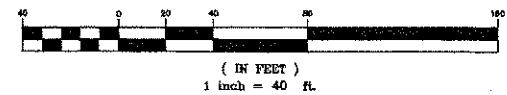
LEGEND

- WETLAND SYMBOL
- STONE BOUND FOUND
- IRON PIN FOUND
- DRILL HOLE
- STONE BOUND TO BE SET
- UTILITY POLE
- SIGN
- CATCH BASIN
- TEST PIT LOCATION
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- BUILDING SETBACK
- NO DISTURBANCE BUFFER
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- PROPOSED LEACH FIELD SETBACK
- 250' SHORELAND PROTECTION DISTRICT
- 150' WOODLAND BUFFER
- TOWN LINE



MATCH TO SHEET 5

GRAPHIC SCALE



DATE RECORDED: _____ HCR# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: 3/30/2015

CERTIFIED BY: [Signature], CHAIRMAN

_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

NPDES NOTE

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

UTILITY NOTE

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

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

SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	DATE ONLY	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #46, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH PERFORMED THE WETLAND MAPPING IN MAY 2014 ACCORDING TO THE TECHNICAL CRITERIA OF THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-57-1, JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHEASTERN AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.



THIS PLAN AND THE SURVEY UPON WHICH IT IS BASED WAS MADE ON THE GROUND UNDER MY DIRECTION AND SUPERVISION BETWEEN MAY 2008 AND MAY 2014 IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STATE OF NEW HAMPSHIRE AND THE CITY/TOWN WITHIN WHICH IT IS LOCATED WITH A TRAVELER ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000. THE SURVEY PERFORMED IS CLASSIFIED AS AN STANDARD URBAN PROPERTY SURVEY AS DEFINED IN THE STATE OF NEW HAMPSHIRE ADMINISTRATIVE RULES GOVERNING LAND SURVEYS. (LAN 503).

3/19/15
DATE

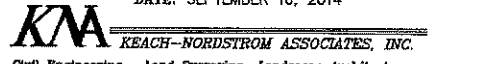


**TOPOGRAPHIC SUBDIVISION PLAN
LAND OF LEONARD VIGEANT**

300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

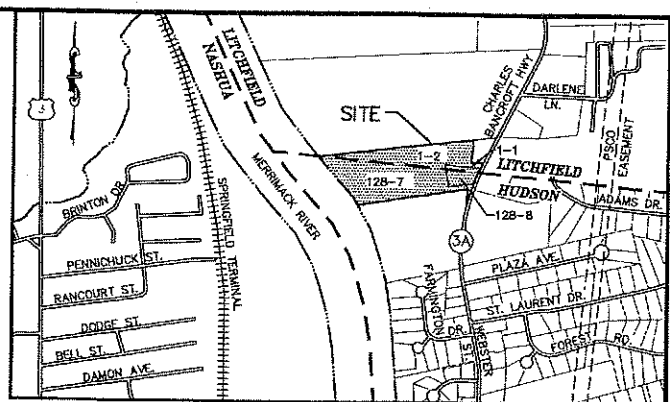
APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014



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

SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2

MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
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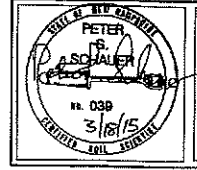
VICINITY MAP
SCALE: 1" = 1,000'

SEE SHEET 1 FOR NOTES AND REFERENCE PLANS

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS
4B	FOOTATUCK FINE SANDY LOAM	0-8%	MODERATELY WELL
5B	RIPPONAM FINE SANDY LOAM, OCC. FLOODED	0-8%	POORLY
10B	MERRIMAC FINE SANDY LOAM	0-8%	SOMEWHAT EXCESSIVELY
10C	MERRIMAC FINE SANDY LOAM	8-15%	SOMEWHAT EXCESSIVELY
10D	MERRIMAC FINE SANDY LOAM	15-25%	SOMEWHAT EXCESSIVELY
10E	MERRIMAC FINE SANDY LOAM	25%+	SOMEWHAT EXCESSIVELY
11B	SUBBURY FINE SANDY LOAM	0-8%	MODERATELY WELL
400B/abaaa	UDORTHENTS, SANDY	0-8%	SOMEWHAT EXCESSIVELY
400B/cggbb	UDORTHENTS, SANDY	25%+	WELL
400B/dbabb	UDORTHENTS, SANDY	0-8%	MODERATELY WELL
400C/dggbb	UDORTHENTS, SANDY	8-15%	MODERATELY WELL
400B/fggbc	UDORTHENTS, SANDY	0-8%	POORLY
400B/hbbaa	UDORTHENTS, SANDY	0-8%	SOMEWHAT EXCESSIVELY
601B	OCUM FINE SANDY LOAM, RARELY FLOODED	0-8%	WELL
601C	OCUM FINE SANDY LOAM, RARELY FLOODED	8-15%	WELL
601E	OCUM FINE SANDY LOAM, RARELY FLOODED	15-25%	WELL
601E	OCUM FINE SANDY LOAM, RARELY FLOODED	25%+	WELL

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



THIS DETAILED SITE-SPECIFIC SOIL MAP, PERFORMED ON 4/16/2014 BY PETER S. SCHAUER, CERTIFIED SOIL SCIENTIST #039 OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. IN BOW, NEW HAMPSHIRE CONFORMS TO THE STANDARDS OF SSRIE PUBLICATION NO. 3, AS AMENDED, "SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT." THIS MAP HAS BEEN PREPARED TO COMPLY WITH SOIL MAPPING REQUIREMENTS OF RSA 485A:17 AND RHDES ENV-WQ 1500, ALTERATION OF TERRAIN.

DATE RECORDED: _____ HCRD# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: 3/30/2015

CERTIFIED BY: [Signature], CHAIRMAN

_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

TOPOGRAPHIC SUBDIVISION PLAN
LAND OF LEONARD VIGEANT

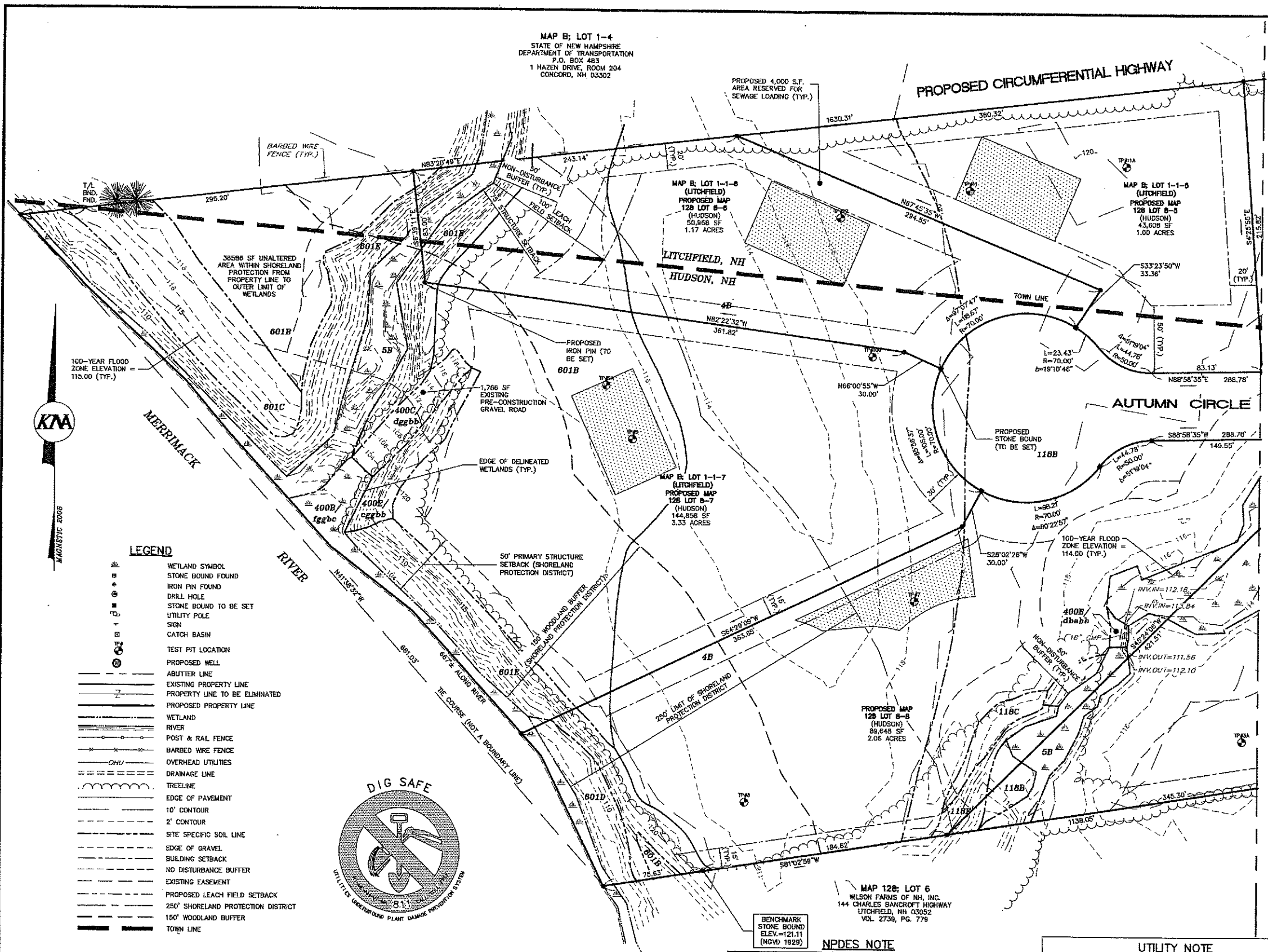
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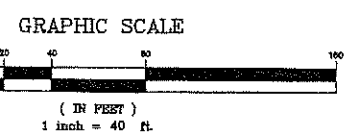
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SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
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PROJECT NO: 07-0511-4A SHEET 5 OF 23



- LEGEND**
- WETLAND SYMBOL
 - STONE BOUND FOUND
 - IRON PIN FOUND
 - DRILL HOLE
 - STONE BOUND TO BE SET
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 - 150' WOODLAND BUFFER
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PETER S. SCHAUER, CERTIFIED WETLAND SCIENTIST #48, OF SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C. OF BOW, NH PERFORMED THE WETLAND MAPPING IN MAY 2014 ACCORDING TO THE TECHNICAL CRITERIA OF THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

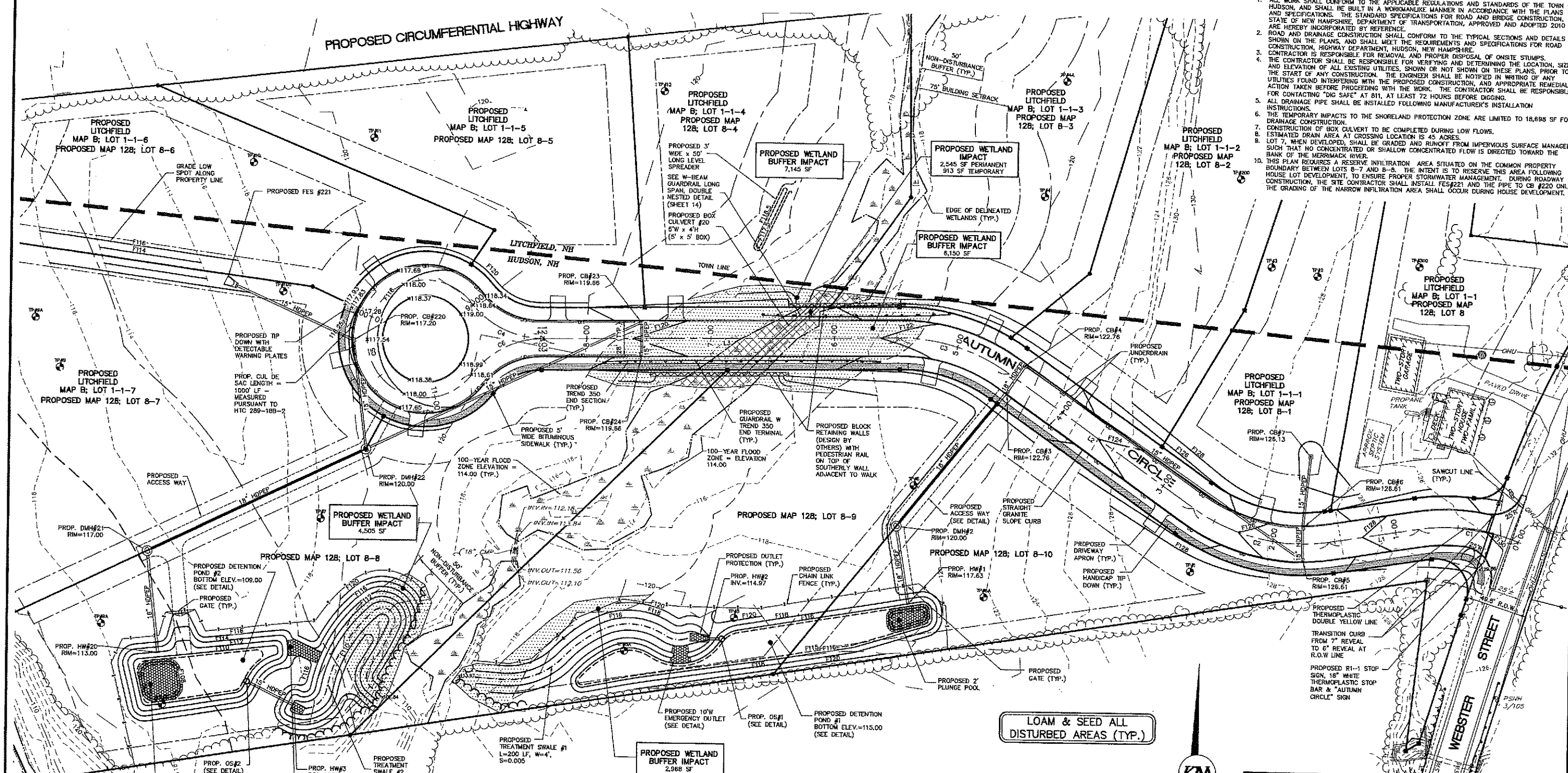


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DATE: 3/19/15



- CONSTRUCTION NOTES:**
1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON, NH AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2010 ARE HEREBY INCORPORATED BY REFERENCE.
 2. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, HIGHWAY DEPARTMENT, HUDSON, NEW HAMPSHIRE.
 3. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND PROPER DISPOSAL OF ON-SITE STUMPS.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES SHOWN OR NOT SHOWN ON THESE PLANS. PRIOR TO THE START OF ANY CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION, AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811, AT LEAST 72 HOURS BEFORE DIGGING.
 5. ALL DRAINAGE PIPE SHALL BE INSTALLED FOLLOWING MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 6. THE TEMPORARY IMPACTS TO THE SHORELAND PROTECTION ZONE ARE LIMITED TO 18,695 SF FOR DRAINAGE CONSTRUCTION.
 7. CONSTRUCTION OF BOX CULVERT TO BE COMPLETED DURING LOW FLOWS.
 8. ESTIMATED DRAIN AREA AT CROSSING LOCATION IS 45 ACRES.
 9. LOT 7, WHEN DEVELOPED, SHALL BE GRADED AND RUNOFF FROM IMPERVIOUS SURFACE MANAGED SUCH THAT NO CONCENTRATED OR SHALLOW CONCENTRATED FLOW IS DIRECTED TOWARD THE BANK OF THE MERRIMACK RIVER.
 10. THIS PLAN REQUIRES A RESERVE INFILTRATION AREA SITUATED ON THE COMMON PROPERTY BOUNDARY BETWEEN LOTS 8-7 AND 8-8. THE INTENT IS TO RESERVE THIS AREA FOLLOWING HOUSE LOT DEVELOPMENT, TO ENSURE PROPER STORMWATER MANAGEMENT. DURING ROADWAY CONSTRUCTION, THE SITE CONTRACTOR SHALL INSTALL FES#221 AND THE PIPE TO CB #220 ONLY. THE GRADING OF THE NARROW INFILTRATION AREA SHALL OCCUR DURING HOUSE DEVELOPMENT.



LOAM & SEED ALL DISTURBED AREAS (TYP.)



**ROADWAY PLAN
AUTUMN CIRCLE
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE**

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
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SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 6 OF 23

AUTUMN CIRCLE

NUMBER	RADIUS	LENGTH	LINE/CHORD DIRECTION
C1	150.00	81.00	N83° 29' 43.47"W
C2	150.00	114.94	N77° 00' 47.85"W
C3	150.00	94.15	N73° 02' 32.92"W
C4	74.00	67.54	N64° 52' 30.76"W
C5	47.00	233.45	S1° 01' 25.13"E
C6	74.00	67.54	N62° 49' 40.50"E
L1	73.69	S81° 02' 05.01"W	
L2	183.76	N55° 03' 40.71"W	
L3	286.72	S88° 58' 34.67"W	

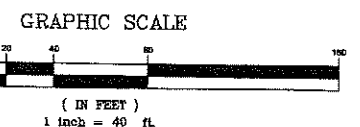
UNDERDRAINS

STA.	RT & LT
14+80 - 4+45	RT & LT
7+60 - 12+03	RT & LT

REVISIONS

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 - TOWN LINE
 - PROPOSED 2' CONTOUR
 - PROPOSED DRAINAGE LINE
 - PROPOSED TREELINE
 - PROPOSED EDGE OF PAVEMENT
 - PROPOSED VERTICAL GRANITE CURB
 - PROPOSED SWALE
 - PROPOSED RETAINING WALL
 - PROPOSED CHAIN LINK FENCE



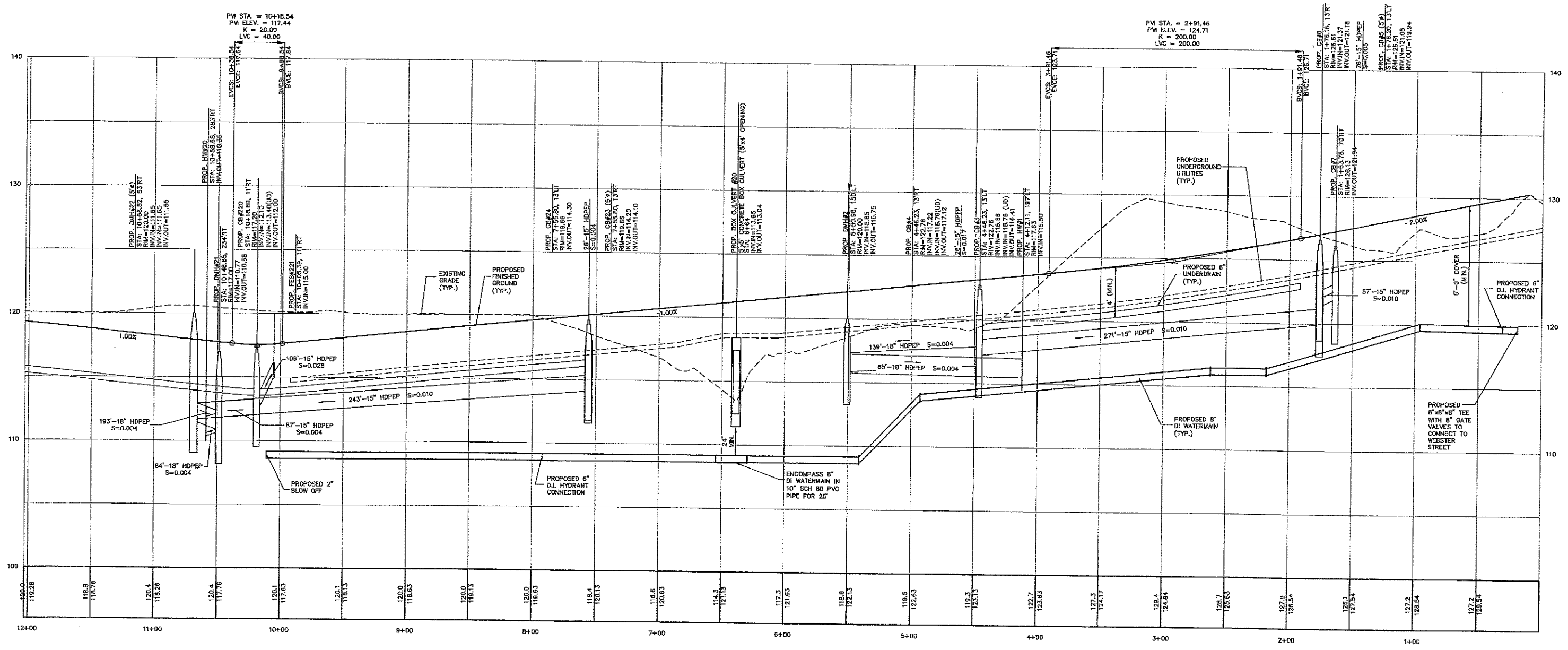
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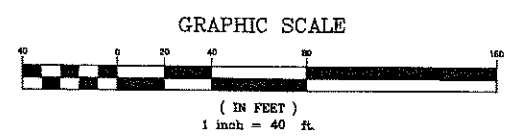
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ROADWAY PROFILE
 SCALE: 1" = 40' (HORIZ.)
 1" = 4' (VERT.)



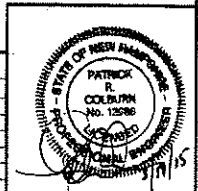
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UNDERDRAINS
 STA. 1+80 - 4+45 RT & LT
 STA. 7+80 - 12+03 RT & LT



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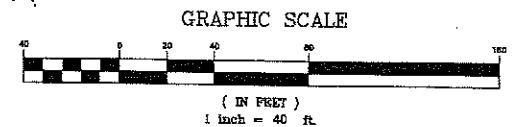
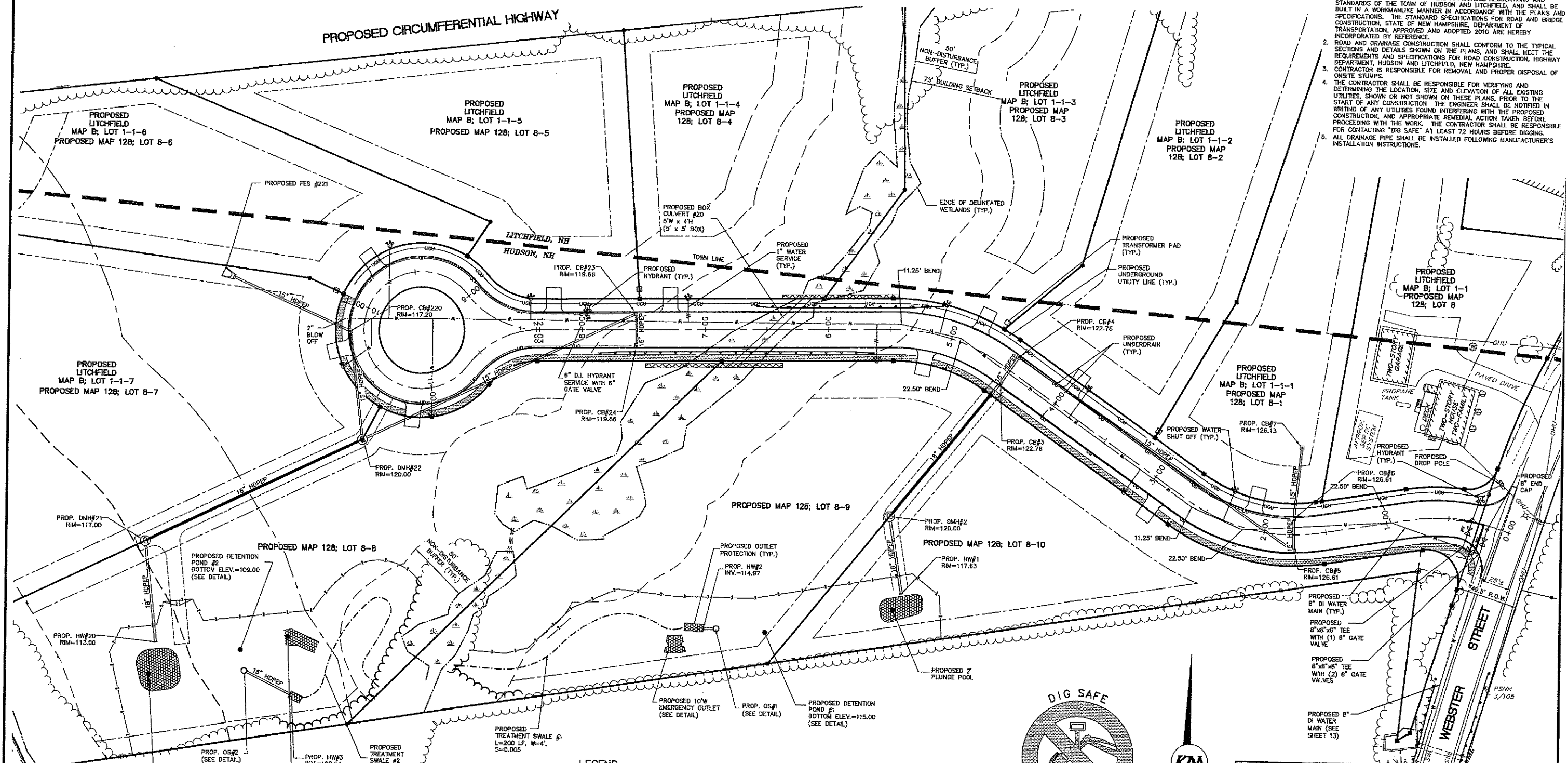
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KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3E, Bedford, NH 03110 Phone (603) 827-2881
 SCALE: AS NOTED
 HUDSON: MAP 128; LOT 7 & 8
 LITCHFIELD: MAP B; LOTS 1-1 & 1-2
 PROJECT NO: 07-0511-4A SHEET 7 OF 23

CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON AND LITCHFIELD, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2010 ARE HEREBY INCORPORATED BY REFERENCE.
2. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, HIGHWAY DEPARTMENT, HUDSON AND LITCHFIELD, NEW HAMPSHIRE.
3. CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND PROPER DISPOSAL OF ON-SITE STUMPS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION, AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT LEAST 72 HOURS BEFORE DIGGING.
5. ALL DRAINAGE PIPE SHALL BE INSTALLED FOLLOWING MANUFACTURER'S INSTALLATION INSTRUCTIONS.



LEGEND

WETLAND SYMBOL	ABUTTER LINE
STONE BOUND FOUND	EDGE OF PAVEMENT
IRON PIN FOUND	EDGE OF GRAVEL
DRILL HOLE	BUILDING SETBACK
STONE BOUND TO BE SET	NO DISTURBANCE BUFFER
UTILITY POLE	EXISTING EASEMENT
SIGN	PROPOSED EASEMENT
CATCH BASIN	250' SHORELAND PROTECTION DISTRICT
TEST FIT LOCATION	150' WOODLAND BUFFER
PROPOSED HEADWALL	TOWN LINE
PROPOSED DRAIN MANHOLE	PROPOSED UNDERGROUND UTILITY LINE
PROPOSED CATCH BASIN	PROPOSED WATER LINE
PROPOSED FLARED END	PROPOSED DRAINAGE LINE
EXISTING PROPERTY LINE	PROPOSED TREETLINE
PROPOSED PROPERTY LINE	PROPOSED EDGE OF PAVEMENT
WETLAND	PROPOSED VERTICAL GRANITE CURB
RIVER	PROPOSED SWALE
POST & RAIL FENCE	PROPOSED RETAINING WALL
BARBED WIRE FENCE	PROPOSED CHAIN LINK FENCE
OVERHEAD UTILITIES	
DRAINAGE LINE	
TREETLINE	



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

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

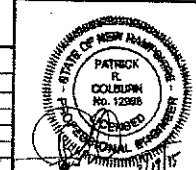
SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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

REVISIONS

No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER TOWN COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC



**UTILITY PLAN
AUTUMN CIRCLE
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE**

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

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

SCALE: 1" = 40'





HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2

PROJECT NO: 07-0511-4A SHEET 8 OF 23

MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
P.O. BOX 483
1 HAZEN DRIVE, ROOM 204
CONCORD, NH 03302

PROPOSED CIRCUMFERENTIAL HIGHWAY
























HATCH LEGEND

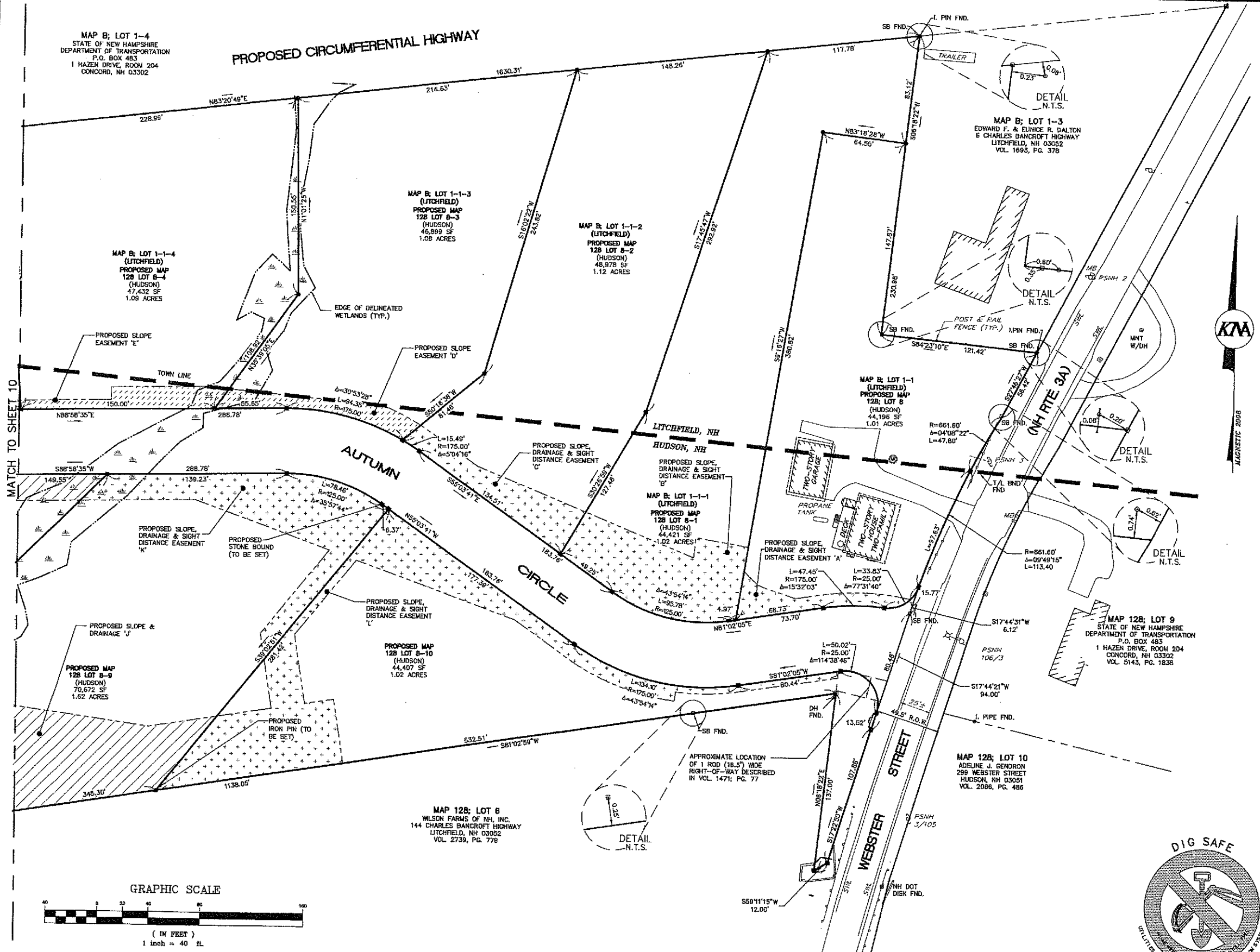
-  PROPOSED SLOPE AND DRAINAGE EASEMENT
-  PROPOSED TRAIL EASEMENT
-  PROPOSED SLOPE EASEMENT
-  PROPOSED SLOPE, DRAINAGE & SITE DISTANCE EASEMENT

SEE SHEET 1 FOR NOTES AND REFERENCE PLANS

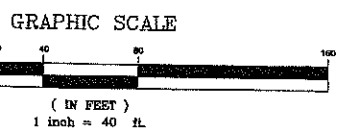
SEE SHEET 3 FOR LOT AREA TABLE & LOT REGULARITY TABLE

LEGEND

-  WETLAND SYMBOL
-  STONE BOUND FOUND
-  IRON PIN FOUND
-  DRILL HOLE
-  STONE BOUND TO BE SET
-  UTILITY POLE
-  SIGN
-  CATCH BASIN
-  ABUTTER LINE
-  EXISTING PROPERTY LINE
-  PROPERTY LINE TO BE ELIMINATED
-  PROPOSED PROPERTY LINE
-  WETLAND RIVER
-  POST & RAIL FENCE
-  BARBED WIRE FENCE
-  OVERHEAD UTILITIES
-  TREELINE
-  EDGE OF PAVEMENT
-  EDGE OF GRAVEL
-  EXISTING EASEMENT
-  PROPOSED DRAINAGE AND SLOPE EASEMENT
-  PROPOSED TRAIL EASEMENT
-  PROPOSED UTILITY EASEMENT



MATCH TO SHEET 10



DATE RECORDED: _____ HCRD# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: 3/31/15

CERTIFIED BY: [Signature], CHAIRMAN

_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

EASEMENT PLAN
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014



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

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

SIGNATURE _____ DATE _____

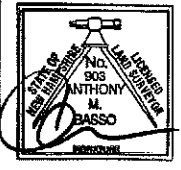
SIGNATURE _____ DATE _____

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

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER NHDDOT COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

THIS PLAN AND THE SURVEY UPON WHICH IT IS BASED WAS MADE ON THE GROUND UNDER MY DIRECTION AND SUPERVISION BETWEEN MAY 2008 AND MAY 2014 IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE STATE OF NEW HAMPSHIRE AND THE CITY/TOWN WITHIN WHICH IT IS LOCATED WITH A TRAVERSE ERROR OF CLOSURE BETTER THAN 1 PART IN 10,000. THE SURVEY PERFORMED IS CLASSIFIED AS AN STANDARD URBAN PROPERTY SURVEY AS DEFINED IN THE STATE OF NEW HAMPSHIRE ADMINISTRATIVE RULES GOVERNING LAND SURVEYS. (LAN 503.)

3/31/15
DATE



KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 88, Bedford, NH 03110 Phone (603) 827-2881

SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 2
PROJECT NO: 07-0511-4A SHEET 9 OF 23

MAP B; LOT 1-4
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
P.O. BOX 483
1 HAZEN DRIVE, ROOM 204
CONCORD, NH 03302

PROPOSED CIRCUMFERENTIAL HIGHWAY

HATCH LEGEND

- PROPOSED SLOPE AND DRAINAGE EASEMENT
- PROPOSED TRAIL EASEMENT
- PROPOSED SLOPE EASEMENT
- PROPOSED SLOPE, DRAINAGE & SITE DISTANCE EASEMENT

SEE SHEET 1 FOR NOTES AND REFERENCE PLANS

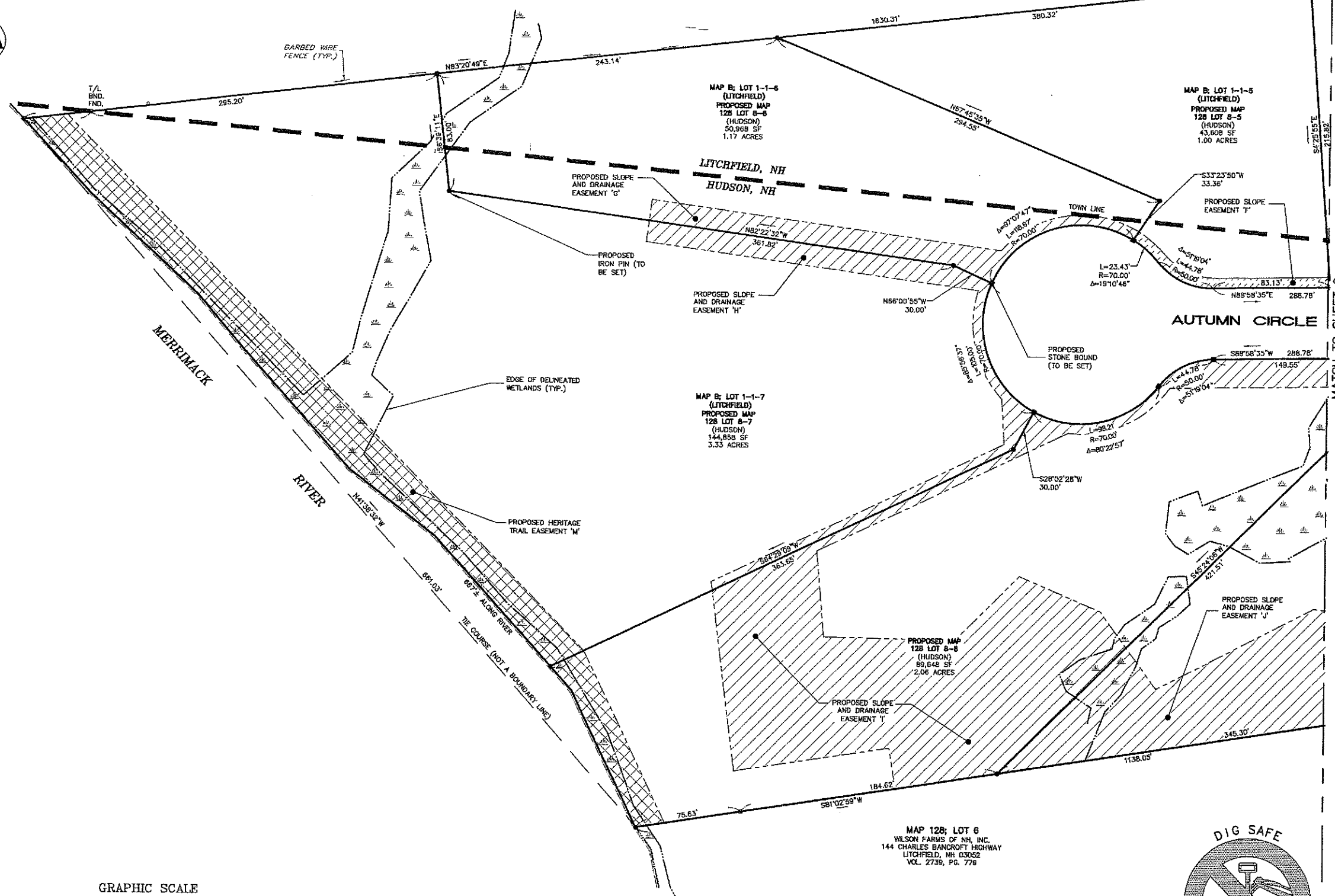
SEE SHEET 3 FOR LOT AREA TABLE & LOT REGULARITY TABLE

LEGEND

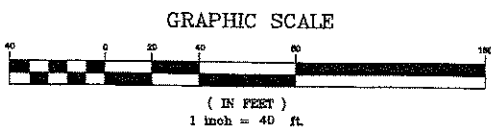
- WETLAND SYMBOL
- STONE BOUND FOUND
- IRON PIN FOUND
- DRILL HOLE
- STONE BOUND TO BE SET
- UTILITY POLE
- SIGN
- CATCH BASIN
- ABUTTER LINE
- EXISTING PROPERTY LINE
- PROPERTY LINE TO BE ELIMINATED
- PROPOSED PROPERTY LINE
- WETLAND
- RIVER
- POST & RAIL FENCE
- BARBED WIRE FENCE
- OVERHEAD UTILITIES
- TREELINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- EXISTING EASEMENT
- PROPOSED DRAINAGE AND SLOPE EASEMENT
- PROPOSED TRAIL EASEMENT
- PROPOSED UTILITY EASEMENT



MAGNETIC 2008



MATCH TO SHEET 9



MAP 128: LOT 6
WILSON FARMS OF NH, INC.
144 CHARLES BANCROFT HIGHWAY
LITCHFIELD, NH 03052
VOL. 2739, PG. 779



DATE RECORDED: _____ HORD# _____

APPROVED BY THE LITCHFIELD PLANNING BOARD ON: 3/29/15

CERTIFIED BY [Signature], CHAIRMAN

_____, VICE CHAIRMAN, OR DESIGNATED MEMBER

EASEMENT PLAN
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881
SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 10 OF 23

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

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

SIGNATURE: _____ DATE: _____

SIGNATURE: _____ DATE: _____

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

OWNER/APPLICANT

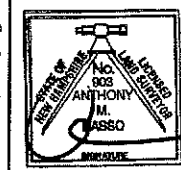
SIGNATURE: Leonard A. Vigeant

DATE: 3-30-15

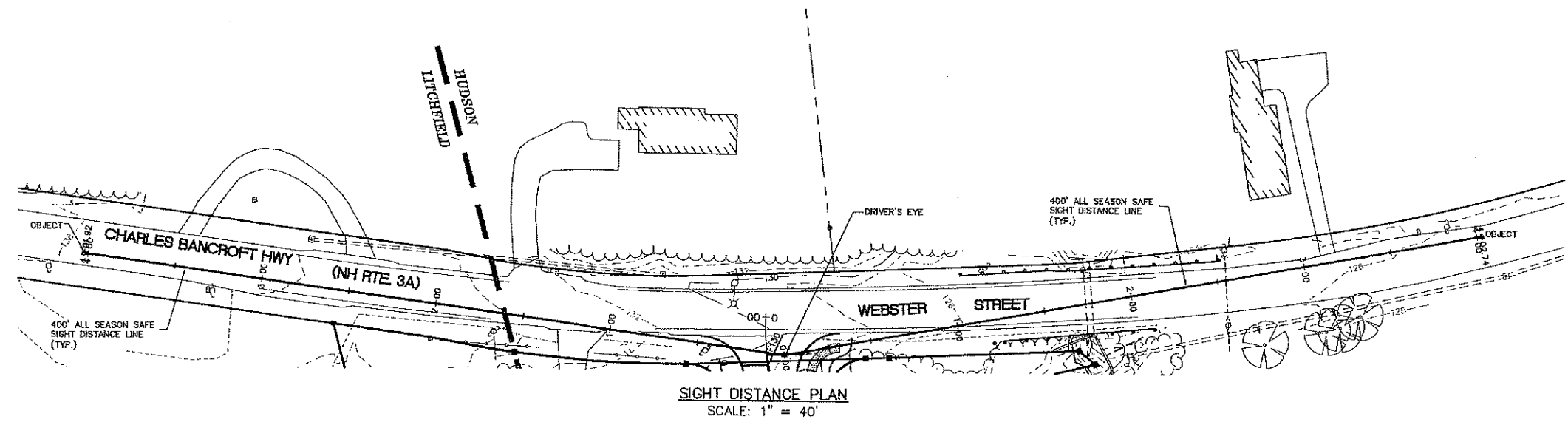
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER HNDOT COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

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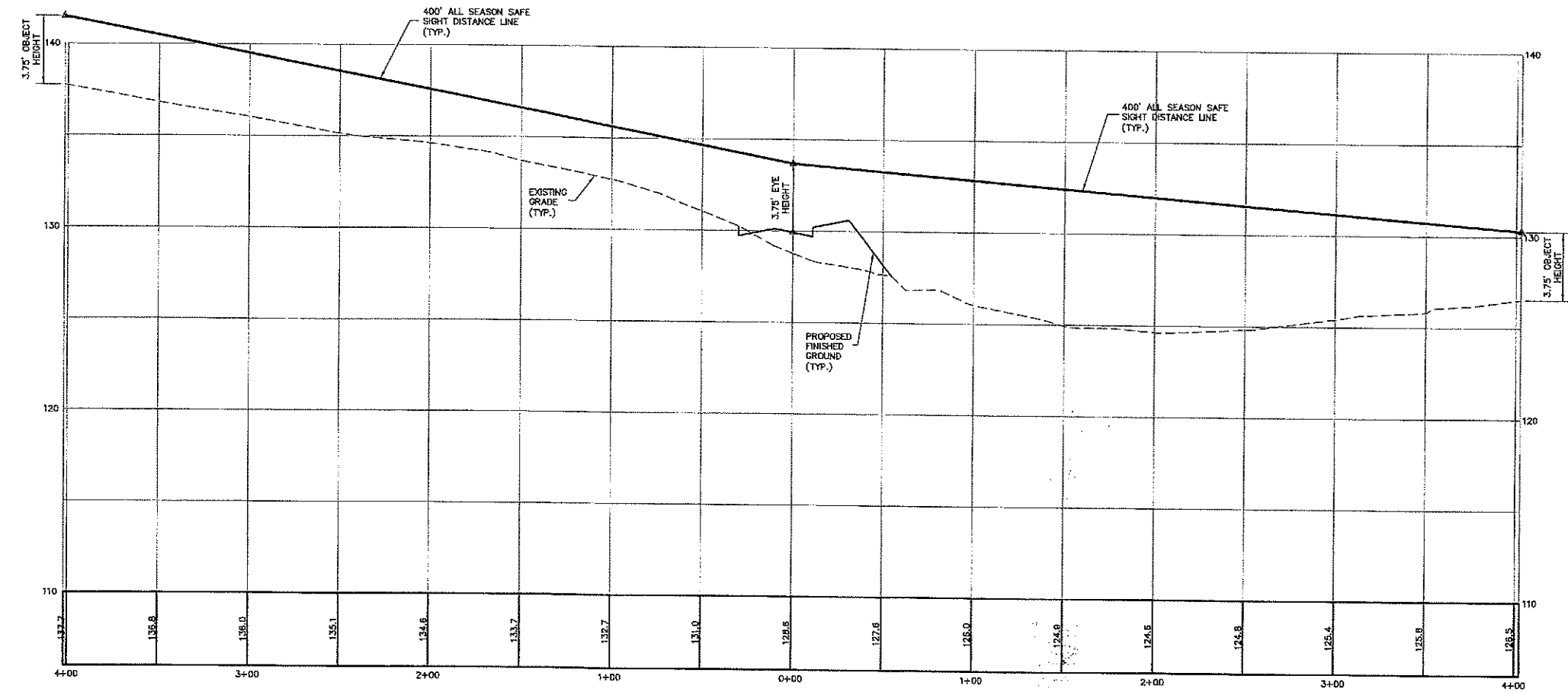
DATE: 3/19/15



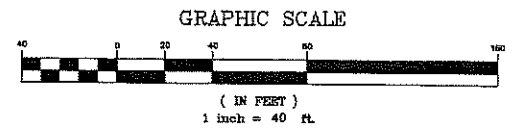
MAGNETIC 2008



SIGHT DISTANCE PLAN
SCALE: 1" = 40'



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



SIGHT DISTANCE PLAN & PROFILE
AUTUMN CIRCLE

300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8852, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 301, Bedford, NH 03110 Phone (603) 827-2801

SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 11 OF 23

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

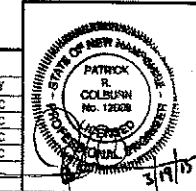
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

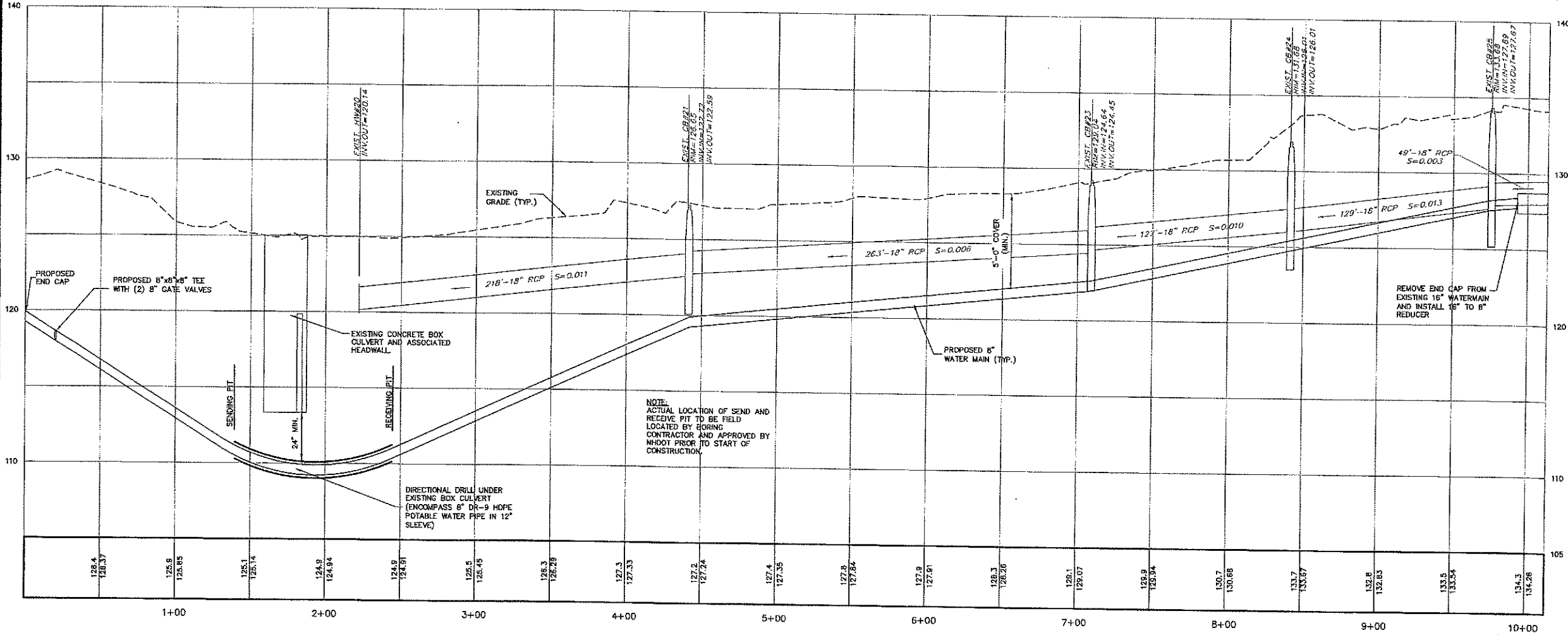
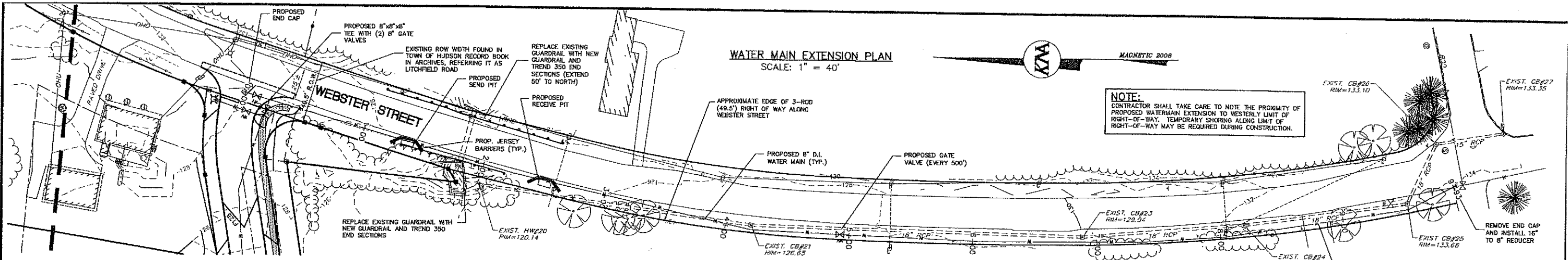
SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	DATE ONLY	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC





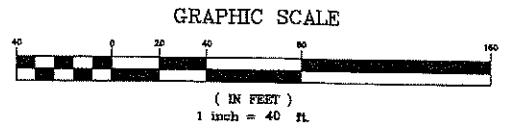
- LEGEND**
- WETLAND SYMBOL
 - STONE BOUND FOUND
 - IRON PIN FOUND
 - DRILL HOLE
 - STONE BOUND TO BE SET
 - UTILITY POLE
 - SIGN
 - CATCH BASIN
 - PROPOSED HEADWALL
 - PROPOSED DRAIN MANHOLE
 - PROPOSED CATCH BASIN
 - PROPOSED FLARED END
 - EXISTING PROPERTY LINE
 - PROPOSED PROPERTY LINE
 - WETLAND
 - RIVER
 - POST & RAIL FENCE
 - BARBED WIRE FENCE
 - OHU
 - OVERHEAD UTILITIES
 - DRAINAGE LINE
 - TREELINE
 - ABUTTER LINE
 - EDGE OF PAVEMENT
 - 10' CONTOUR
 - 2' CONTOUR
 - EDGE OF GRAVEL
 - BUILDING SETBACK
 - TOWN LINE
 - PROPOSED 2' CONTOUR
 - PROPOSED WATER LINE
 - PROPOSED DRAINAGE LINE
 - PROPOSED TREELINE
 - PROPOSED EDGE OF PAVEMENT
 - PROPOSED VERTICAL GRANITE CURB
 - PROPOSED RETAINING WALL

- NOTES:**
- EXCAVATION PERMIT FROM NHDOT, DISTRICT 5 OFFICE (666-3336), IS REQUIRED PRIOR TO ANY WORK WITHIN RIGHT-OF-WAY OF ROUTE 3A REGARDING THE WATERMAIN CONSTRUCTION.
 - CONTRACTOR TO COORDINATE WITH APPROVED UTILITY PROVIDERS PRIOR TO CONSTRUCTION.
 - WATERMAIN EXTENSION RECEIVED APPROVAL FROM THE HUDSON BOARD OF SELECTMAN ON FEBRUARY 10, 2015.

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

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

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LOAM & SEED ALL DISTURBED AREAS (TYP.)

REVISIONS

No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REDUCE ROADWAY LENGTH, ADDITIONAL LOT	PRC
3	12/17/14	REV. PER TOWN COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

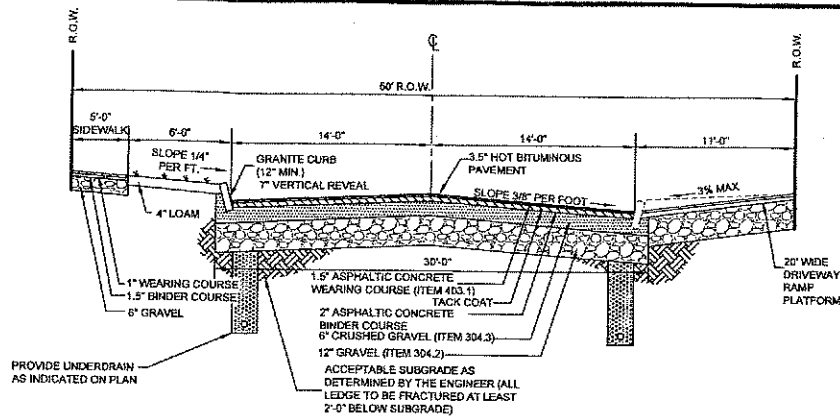


WATER MAIN EXTENSION PLAN & PROFILE
AUTUMN CIRCLE
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

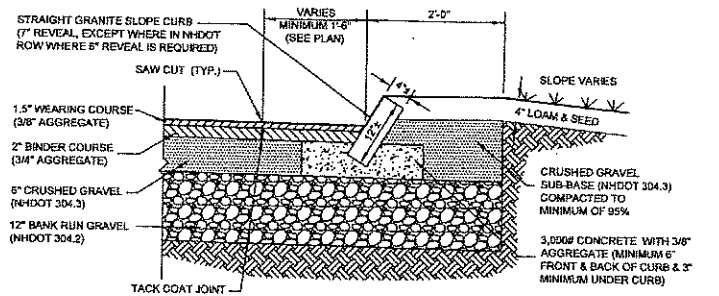
OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: OCTOBER 31, 2014

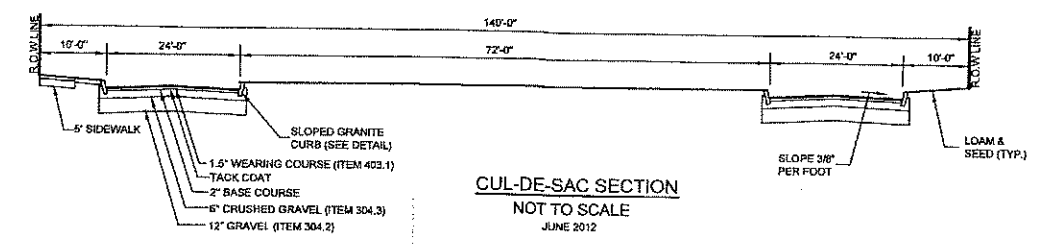
KM KRAICH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 827-2881
SCALE: 1" = 40'
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 13 OF 23



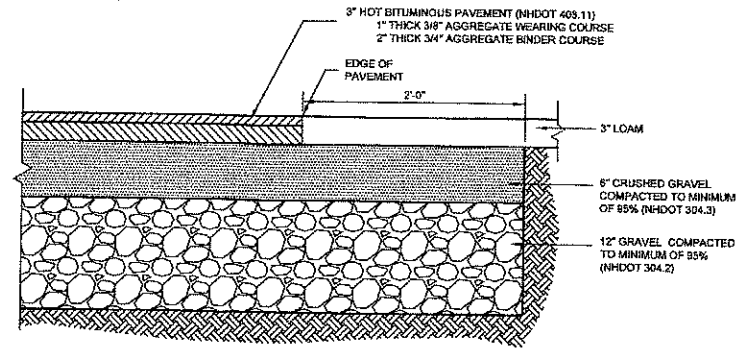
TYPICAL ROADWAY CROSS SECTION
NOT TO SCALE



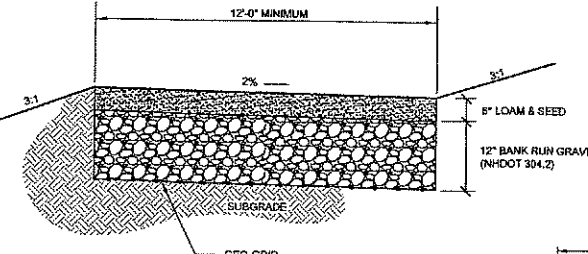
STRAIGHT GRANITE SLOPE CURB DETAIL
NOT TO SCALE
(MARCH 2008)



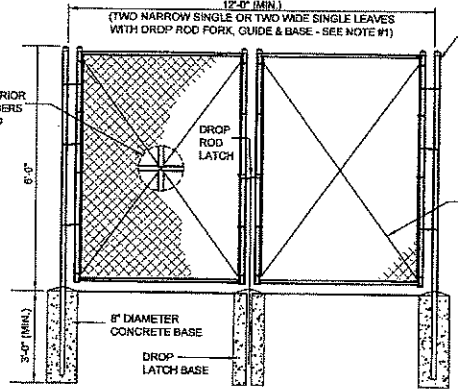
CUL-DE-SAC SECTION
NOT TO SCALE
JUNE 2012



DRIVEWAY APRON SECTION
NOT TO SCALE
(MARCH 2008)

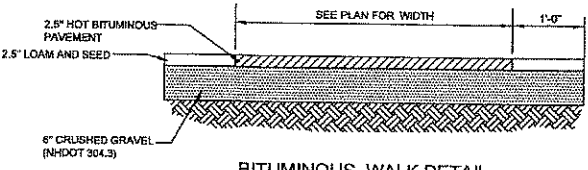


DRAINAGE ACCESS WAY DETAIL
NOT TO SCALE

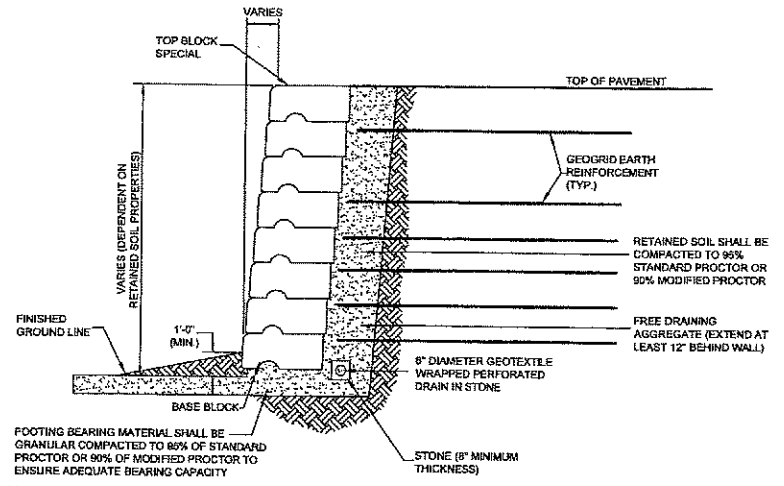


DOUBLE LEAF GATE
NOT TO SCALE
(SEPTEMBER 2010)

- NOTES:
1. REINFORCE THE GATE FRAME CORNERS WITH A MALLEABLE IRON OR PRESSED STEEL FITTING DESIGNED FOR THE PURPOSE OR SHOP WELD THE CORNERS. GRIND SMOOTH ALL WELDS AND PAINT WITH AN APPROVED ZINC RICH PAINT. FURNISH EACH GATE WITH THE NECESSARY HINGES, LATCH AND DROP ROD LOCKING DEVICE DESIGNED FOR THE TYPE OF GATE POSTS AND GATE USED ON THE PROJECT. PROVIDE POSITIVE TYPE LATCHING DEVICES WITH PROVISIONS FOR PAD LOCKING AT ALL GATES. PROVIDE KEEPERS TO RETAIN THE GATE IN THE OPEN POSITION.
 2. APPROVED ALTERNATIVE GATE FRAMES CONSTRUCTED OF STEEL SECTIONS, OTHER THAN PIPE, MAY BE USED.
 3. THE DESIGN OF THE CHAIN LINK HARDWARE MAY VARY FROM THE DETAILS SHOWN, HOWEVER, ALL HARDWARE AND MATERIALS USED IN A SINGLE INSTALLATION SHALL BE UNIFORM AND COMPATIBLE.

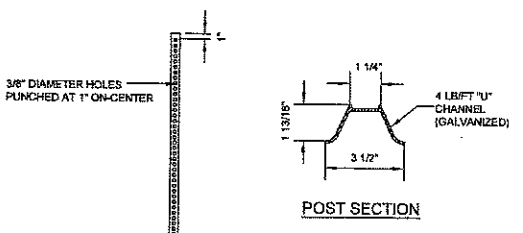


BITUMINOUS WALK DETAIL
NOT TO SCALE
(MARCH 2008)



REDI-ROCK RETAINING WALL WITH GUARDRAIL
(TO BE DESIGNED BY OTHERS)
NOT TO SCALE

- NOTES:
1. AS PERMISSIBLE, THE STRUCTURAL ENGINEER CHARGED WITH RETAINING WALL DESIGN SHALL SPECIFY SALT RESISTANT BLOCK CONSTRUCTION WHERE WALLS ARE TO BE CONSTRUCTED NEAR ROADWAYS OR PARKING AREAS.
 2. RETAINING WALL DRAIN TO "DAYLIGHT" AT LOW POINT OR TIE TO DRAIN STRUCTURE AS SHOWN IN PLAN VIEW.
 3. THE STAMPED SHOP DRAWINGS AND CALCULATIONS FOR THE ACTUAL RETAINING WALL MUST BE PROVIDED FOR REVIEW AND APPROVAL AT OR PRIOR TO THE PROJECT'S REQUIRED PRE CONSTRUCTION MEETING.
 4. THE PROVIDED PLANS AND SUPPORTING CALCULATIONS MUST ADDRESS THE FOLLOWING CRITERIA:
 - a. DESIGN CALCULATIONS STAMPED BY QUALIFIED PE LICENSE IN NH
 - b. STABILITY CALCULATIONS (INCLUDING BEARING CAPACITY, GLOBAL STABILITY, OVERTURNING & SLIDING, IMPACT)
 - c. GEOGRID PULLOUT AND OTHER PERTINENT DATA & ELEVATIONS
 - d. CONSTRUCTION INSTALLATION SPECIFICATION
 - e. LATERAL EARTH PRESSURE COEFFICIENT
 - f. SURCHARGE LOAD, EMBEDMENT DEPTH
 - g. BOTH A PLAN AND PROFILE OF EACH WALL SECTION

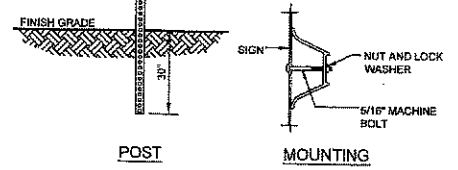
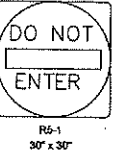


AUTUMN CIRCLE
NOT TO SCALE

TYPICAL SIGN PLATE DETAILS
NOT TO SCALE



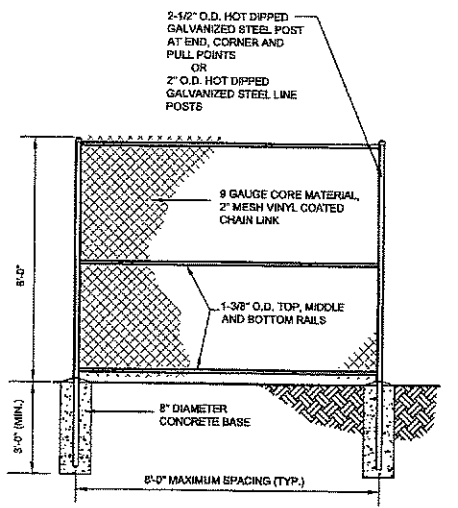
STOP SIGN DETAIL
NOT TO SCALE
(MARCH 2008)



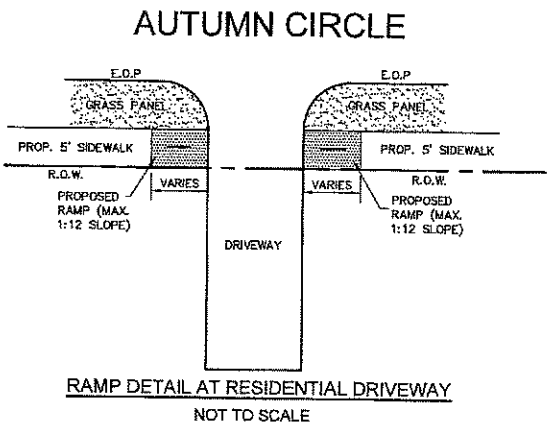
STEEL SIGN POST DETAIL
NOT TO SCALE
(MARCH 2008)

- STRIPING NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND THE CURRENT EDITION OF MUTCD.
 2. WIDTH OF LINES SHALL VARY NO MORE THAN 1/4 INCH FROM THAT SPECIFIED.
 3. THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIMUM OF 15 MILS THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED.
 4. OVERSPRAY SHALL BE KEPT TO AN ABSOLUTE MINIMUM.
 5. ALL PAINT SHALL COMPLY WITH NHDOT SPECIFICATION SECTION 708.

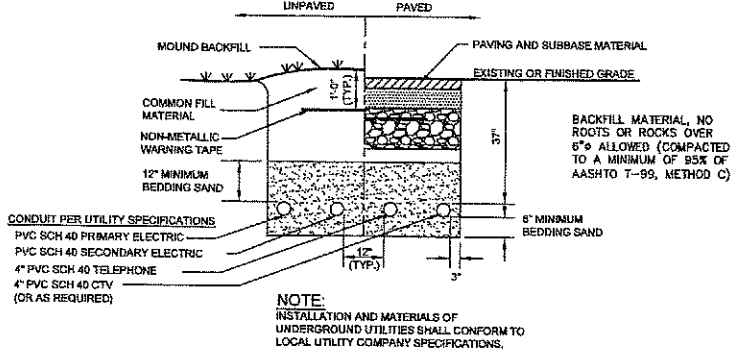
- TRAFFIC SIGN NOTES:
1. ALL TRAFFIC SIGN FACES AND SHAPES SHALL CONFORM WITH THE MUTCD.
 2. ALL SIGN POST MOUNTS SHALL CONFORM WITH THE AASHTO AND NHDOT SPECIFICATIONS.
 3. STREET NAME SIGNS SHALL BE METAL, IN CONFORMITY WITH NEW SIGNS PURCHASED BY THE TOWN, TWO-FACED AND REFLECTORIZED, SIX INCHES HIGH WITH THREE-AND-ONE-HALF-INCH LETTERS EMBOSSED AND REFLECTORIZED WITH GREEN BACKGROUND AND WHITE LETTERS, OF ALUMINUM METAL.
 4. DEAD END SIGN TO BE 18"x18", BLACK LETTERING, YELLOW BACKGROUND, A MINIMUM OF 6" HIGH.
 5. STOP SIGN TO BE WHITE LETTERING ON A RED BACKGROUND.
 6. R6-1 DO NOT ENTER SIGN TO BE RED LETTERING ON A WHITE BACKGROUND.
 7. THE CAUTION SIGN TO BE BLACK LETTERING ON YELLOW BACKGROUND.



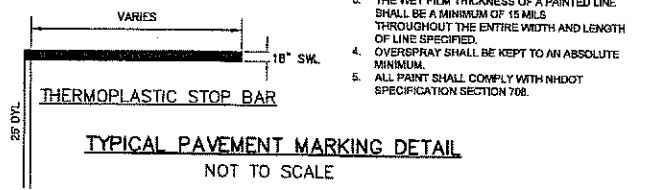
CHAIN LINK FENCE DETAIL
NOT TO SCALE
(MARCH 2008)



RAMP DETAIL AT RESIDENTIAL DRIVEWAY
NOT TO SCALE



UTILITY TRENCH DETAIL
NOT TO SCALE
(MARCH 2008)



THERMOPLASTIC STOP BAR
NOT TO SCALE

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

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

SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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

CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

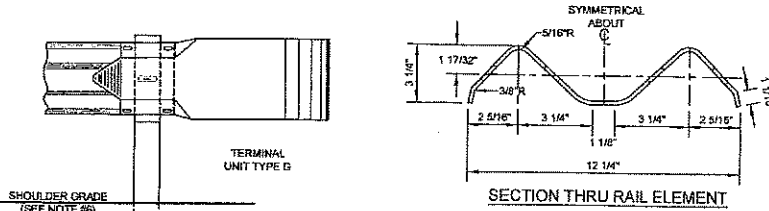
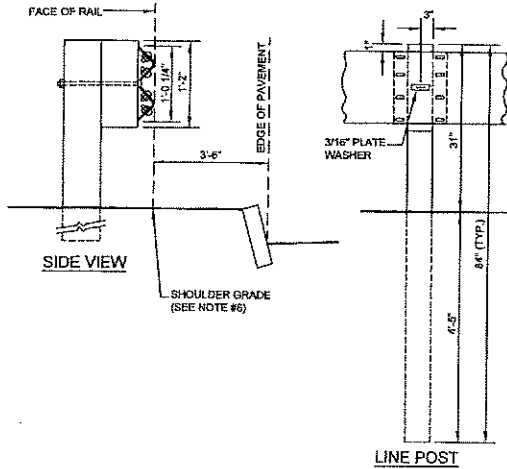
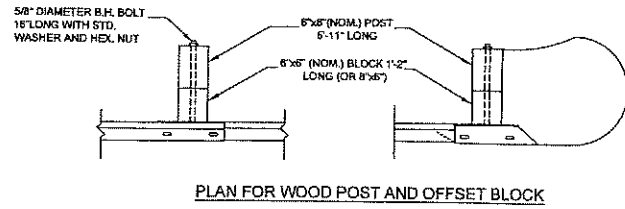
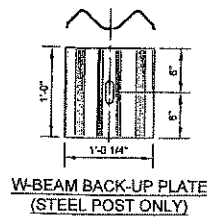
APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014



REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REV. PER SUBDIVISION IMPROVEMENTS	PRC
3	12/17/14	REV. PER TOWN COMMENTS	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

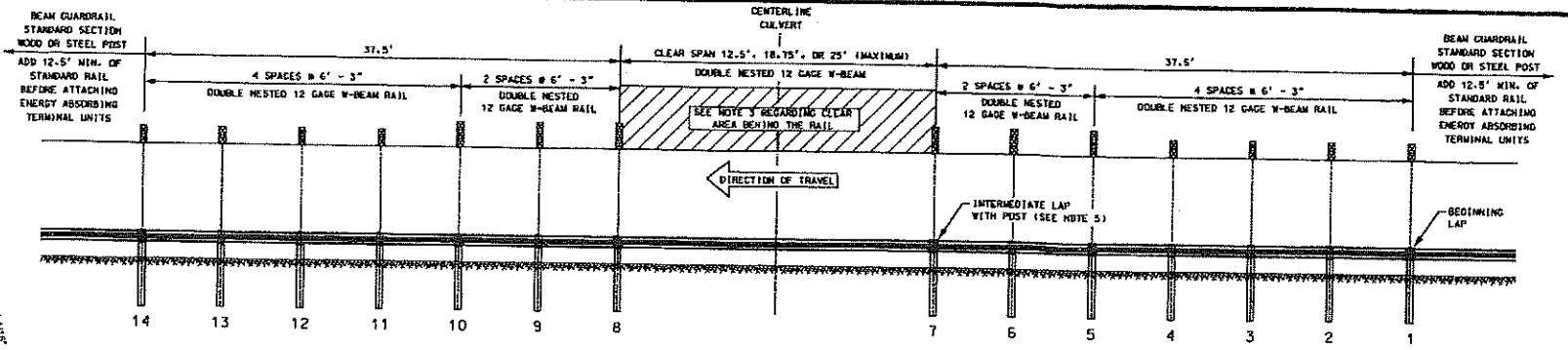
K&A KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 2
PROJECT NO: 07-0511-4A SHEET 14 OF 23



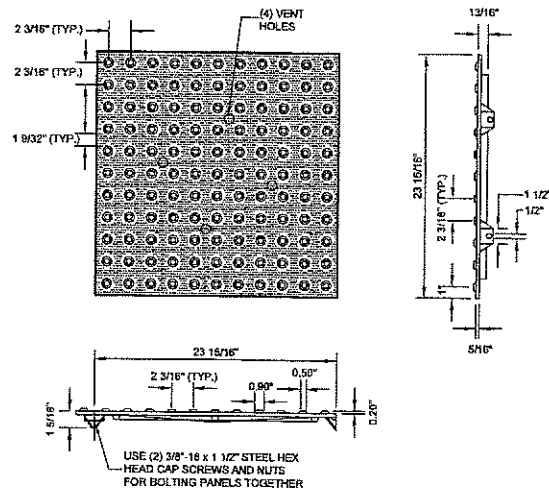
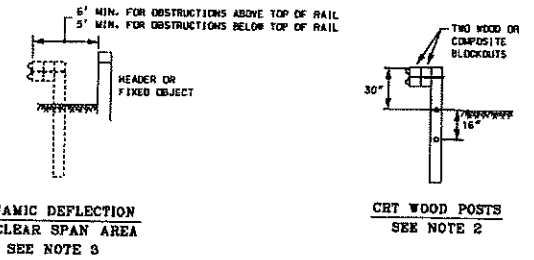
- NOTES:**
- STEEL POSTS, OFFSET BLOCKS, ANCHORS, PLATES AND ALL FITTINGS TO BE GALVANIZED.
 - ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
 - RAIL PANELS AND END SECTIONS TO BE 12 GAUGE STEEL.
 - ALL PARTS SHALL CONFORM TO CURRENT NH DOT STANDARD SPECIFICATIONS.
 - WHEN GUARDRAIL IS CONSTRUCTED AT UP TO FOUR FEET FROM THE EDGE OF PAVEMENT, THE GUARDRAIL HEIGHT WILL BE SET FROM THE GRADE AT THE EDGE OF PAVEMENT. WHEN GUARDRAIL IS CONSTRUCTED MORE THAN FOUR FEET FROM THE EDGE OF PAVEMENT, THE GUARDRAIL WILL BE SET FROM THE GRADE AT FACE OF RAIL.

BEAM GUARDRAIL DETAIL
NOT TO SCALE
(MARCH 2008)



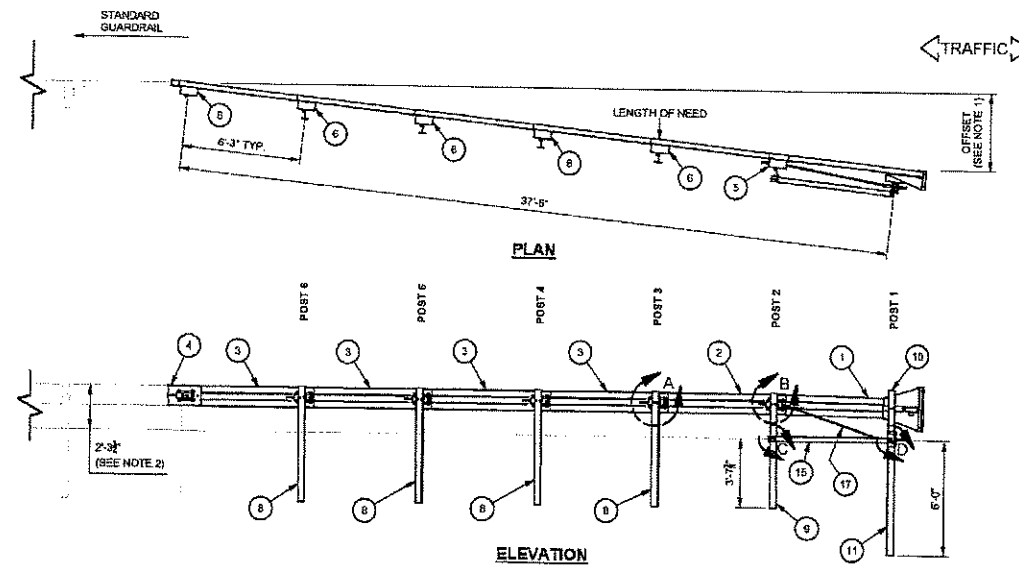
W-BEAM GUARDRAIL
LONG SPAN, DOUBLE NESTED
NOT TO SCALE

- POSTS 1 - 4 AND 11 - 14 STANDARD WOOD OR STEEL POSTS WITH BLOCKOUTS (SEE STANDARD SHEET GR-11)
- POSTS 5 - 10 ARE CRT WOOD POSTS WITH TWO WOOD OR COMPOSITE BLOCKOUTS (ONLY CRT POSTS NEED TO BE WOOD, UNLESS THE REST OF THE RUN IS WOOD POST)
- CLEAR AREA BEHIND BACK OF RAIL SHALL BE: 5 FEET MINIMUM FOR OBSTRUCTIONS LESS THAN OR EQUAL TO THE HEIGHT OF THE TOP OF RAIL, 6 FEET MINIMUM FOR OBSTRUCTIONS TALLER THAN THE TOP OF RAIL.
- LAP SPLICES IN THE DIRECTION OF ADJACENT TRAFFIC.
- 25'-0" RAIL LENGTHS MAY BE USED TO ELIMINATE THE INTERMEDIATE LAP WITHOUT A POST. DO NOT PLACE A LAP WITHOUT A POST UNLESS NEEDED DUE TO THE LENGTH OF GAP.
- DESIGN MEETS NCHRP 350 TEST LEVEL 3 FHWA ACCEPTANCE LETTER HW-85-10/8/1995.



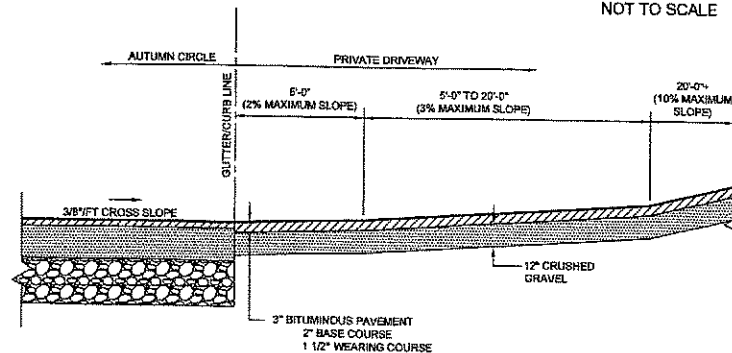
- NOTES:**
- DETECTABLE WARNING PLATE SHALL BE NEEHAH FOUNDRY OR APPROVED EQUAL.
 - THE PLATE MUST COMPLY WITH ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES) AND ARCHITECTURAL BARRIER ACT GUIDELINES.
 - MATERIAL SHALL BE CAST GRAY IRON.
 - FINISH: NO PAINT.
 - THESE PLATES ARE ONLY TO BE USED AT ROADWAY CROSSINGS, NOT DRIVEWAY.

24"x24" DETECTABLE WARNING PLATE DETAIL
NOT TO SCALE
(MARCH 2008)

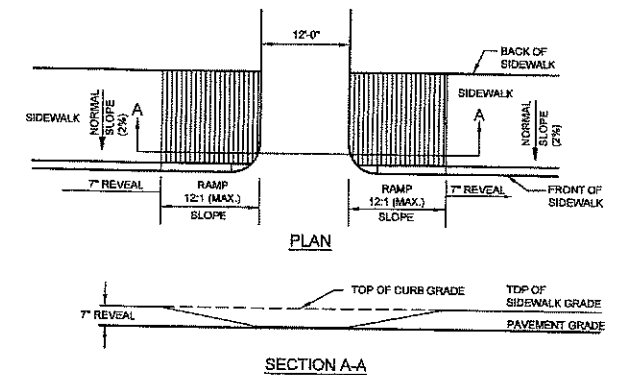
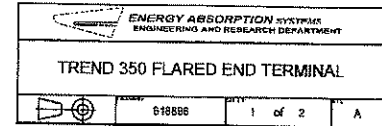


- NOTES:**
- SYSTEM CAN BE FLARED UP TO AN OFFSET OF 4'-0".
 - SYSTEM CAN BE ATTACHED TO DOWNSTREAM GUARDRAIL WITH HEIGHTS UP TO 3'.

TREND 350 FLARED END TERMINAL
NOT TO SCALE



DRIVEWAY CROSS SECTION WITH NO SIDEWALK
NOT TO SCALE



- NOTES:**
- MAINTAIN THE NORMAL PAVEMENT PROFILE THROUGHOUT THE RAMP AREA.

SIDEWALK RAMP
NOT TO SCALE

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

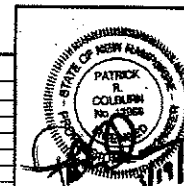
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

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1	10/31/14	REV. PER TOWN COMMENTS	PRC
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3	12/17/14	DATE ONLY	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

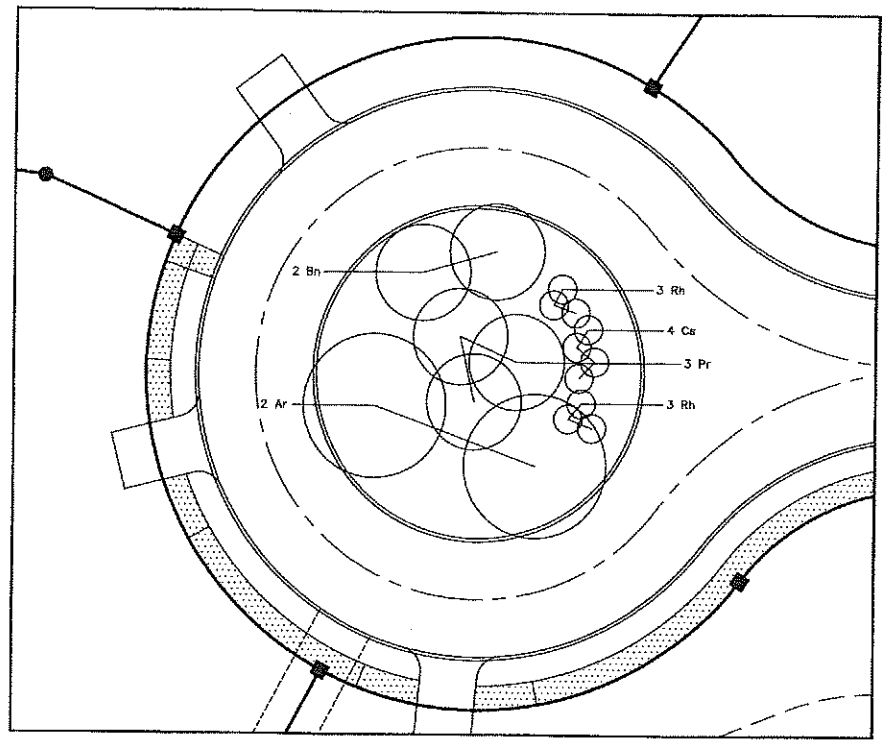


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DATE: SEPTEMBER 16, 2014

KMA
KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 38, Bedford, NH 03110 Phone (603) 627-2881
SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 15 OF 23



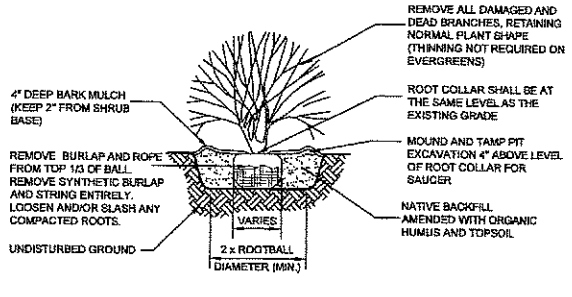
CUL-DE-SAC PLANTING PLAN
SCALE: 1" = 20'

PLANT LIST

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
TREES				
Ar	2	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2"-2.5" CAL.
Bn	2	BETULA NIGRA 'HERITAGE'	HERITAGE RIVER BIRCH	2"-2.5" CAL.
Pr	3	PINUS RESINOSA	RED PINE	5-6" B&B
SHRUBS				
Cs	4	CORNUS SERICEA 'ALLEMAN'S COMPACTA'	ALLEMAN'S COMPACT DOGWOOD	2-2.5'
Rh	6	RHODODENDRON 'HAAGA'	HAAGA RHODODENDRON	2-2.5' B&B

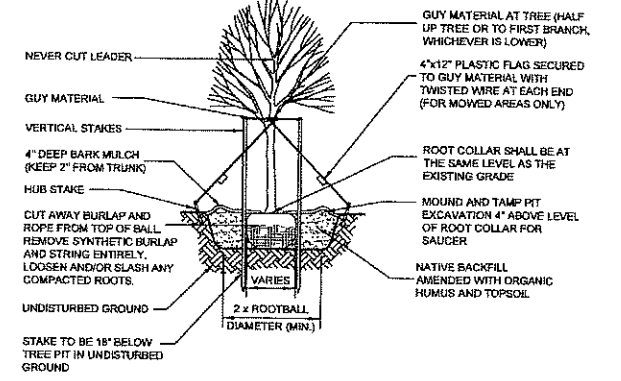
LANDSCAPE NOTES:

- ALL PLANT MATERIALS USED SHALL BE NURSERY STOCK AND SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF INSTALLATION. ANY MATERIAL WHICH DIES OR DOES NOT SHOW HEALTHY APPEARANCE WITHIN THIS TIME SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. WITH SAME WARRANTY REQUIREMENTS AS THE ORIGINAL. WARRANTIES TYPICALLY DO NOT COVER LOSS DUE TO INSECT INFESTATION OR MECHANICAL DAMAGE (I.E. SNOW STORAGE).
- IF THE SOIL CONDITIONS ARE EXTREMELY SANDY, ALL TREES SHALL HAVE A 6" LAYER OF COMPACTED TOPSOIL PLACED IN THE BASE OF THE PLANT PIT AS A MOISTURE RETENTION LAYER. THE PLANT PIT SIDEWALLS SHALL BE OVER EXCAVATED BY AN ADDITIONAL 12" BEYOND THE NORMAL OUTSIDE RADIUS OF THE HOLE. A TOPSOIL MIXTURE SHALL BE USED TO BACKFILL THE HOLE AS FOLLOWS: ORGANIC TOPSOIL, AMENDED WITH 10% WOOD ASH, 10% MANURE, 30% PEATMOSS AND A GRANULAR HYDROGEL TO ABSORB AND RETAIN WATER.
- PLANTING BEDS AND SAUCERS SHALL RECEIVE A 4" MINIMUM THICKNESS OF PINE/HEMLOCK BARK MULCH OVER A 5oz. POLYPROPYLENE WEED CONTROL FABRIC.
- PAVEMENT AND ROAD BASE MATERIAL ENCOUNTERED IN ANY LAWN OR PLANTING BED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SUITABLE AMENDED SOIL INSTALLED AS SPECIFIED IN THE TURF ESTABLISHMENT SCHEDULE.
- ALL STREET TREES SHALL BE PLANTED A MINIMUM OF 5'-0" BEHIND THE EDGE OF THE SIDEWALK.
- ALL LANDSCAPE MATERIAL INSTALLATION, AND MAINTENANCE SHALL BE IN ACCORDANCE WITH SECTION 650 OF THE CITY OF MANCHESTER CONSTRUCTION STANDARDS.



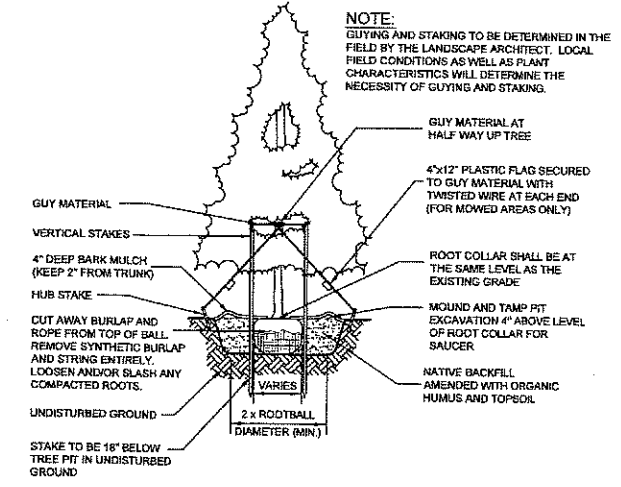
BALLED & BURLAP SHRUB PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)

NOTE:
GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.

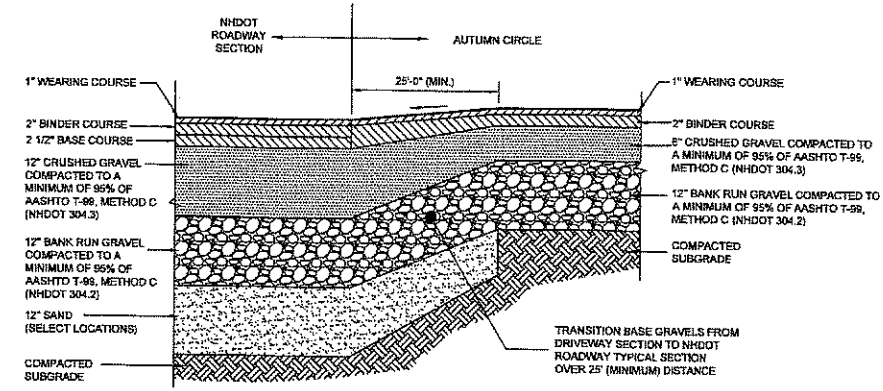


DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)

NOTE:
GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE LANDSCAPE ARCHITECT. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING.



EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)



DRIVEWAY TRANSITION TO STATE RIGHT-OF-WAY DETAIL
NOT TO SCALE

NOTE:
FIELD VERIFY DEPTHS OF EXISTING GRAVELS BENEATH NHDOT ROADWAY AND MATCH ACCORDINGLY.



WETLAND CONSERVATION DISTRICT BOUNDARY MARKER
NOT TO SCALE
(MARCH 2010)

TURF ESTABLISHMENT SCHEDULE

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

PREPARATION AND EXECUTION:

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

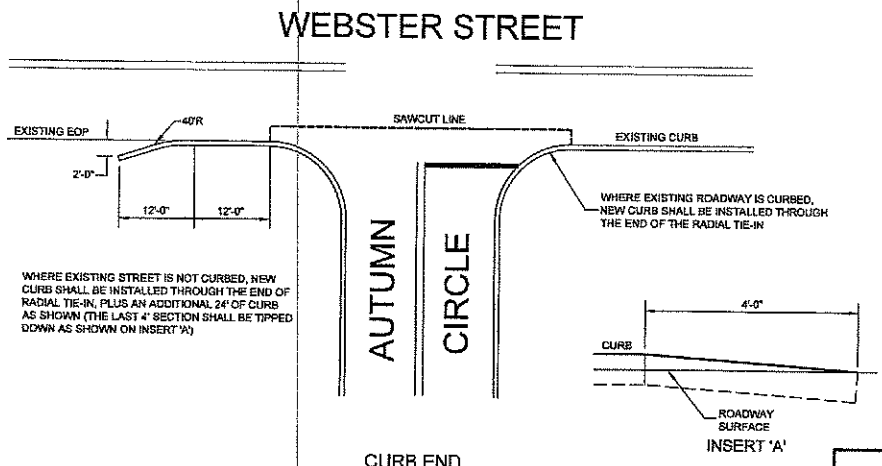
MAINTENANCE:
ALL SEEDED AREAS SHALL BE KEPT WATERED AND IN GOOD CONDITION. RESEED AS NECESSARY TO ESTABLISH HEALTHY UNIFORM GROWTH OVER THE ENTIRE SEEDED AREA. MAINTAIN SEEDED AREAS IN AN APPROVED CONDITION UNTIL FINAL ACCEPTANCE. MAINTENANCE SHALL INCLUDE REPAIRS FOR DAMAGE CAUSED BY EROSION.

APPLICATION RATES:

- LOAM SHALL BE APPLIED AT A MINIMUM COMPACTED THICKNESS OF 4 INCHES.
- LIME SHALL BE APPLIED AT A RATE OF 75 TO 100 POUNDS PER 1,000 S.F.
- FERTILIZER SHALL BE APPLIED AT A RATE OF 30 POUNDS PER 1,000 S.F.
- SEED MIXTURE FOR LAWN AREAS SHALL BE APPLIED AT A RATE OF AT LEAST 80 POUNDS PER ACRE OR 2 POUNDS PER 1,000 S.F.
- TEMPORARY SEED MIXTURE SHALL BE APPLIED AT A RATE OF 2 POUNDS PER 1,000 S.F.
- SEED MIXTURE FOR SLOPE AREAS SHALL BE APPLIED AT A RATE OF 80 POUNDS PER ACRE OR 2 POUNDS PER 1,000 S.F.
- SEED MIXTURE FOR STORMWATER MANAGEMENT AREAS SHALL BE APPLIED AT A RATE OF 70 POUNDS PER ACRE OR 1.5 POUNDS PER 1,000 S.F.
- MULCH SHALL BE APPLIED AT A RATE OF 90 POUNDS PER 1,000 S.F.

MATERIALS:

- LOAM USED FOR TOPSOIL SHALL BE FRIABLE, FERTILE, NATURAL FREE-DRAINING LOAM, FREE OF ROOTS, GRASS, STICKS, WEEDS, CLAY, SOIL LUMPS, DEBRIS AND STONES LARGER THAN 1 INCH IN ANY DIMENSION. SOIL SHALL NOT BE EXCESSIVELY ACID OR ALKALINE AND CONTAIN NO TOXIC MATERIALS.
- LIME SHALL BE GROUND LIMESTONE CONTAINING NO LESS THAN 85% CALCIUM AND MAGNESIUM CARBONATES.
- FERTILIZER SHALL BE 10-20-20 COMMERCIAL GRADE.
- SEED MIXTURE FOR LAWN AREAS SHALL BE 99% PURE LIVE SEED AND CONSIST OF THE FOLLOWING:
25% CREEPING RED FESCUE
25% KENTUCKY BLUEGRASS
25% REDTOP
25% MANHATTAN PERENNIAL RYEGRASS
- TEMPORARY SEEDING MIXTURE SHALL BE AN APPROVED CONSERVATION MIX OR CONSIST OF THE FOLLOWING:
15% BLACKWELL OR SHELTER SWITCHGRASS
30% NIAGRA OR KAW BIG BLUESTEM
30% CAMPER OR BLAZE LITTLESTEM
15% HE-27 OR BLAZE SAND LOVEGRASS
10% WINDING BIRDFOOT TREFLOE
INOCULUM SPECIFIC TO BIRDFOOT TREFLOE MUST BE USED WITH THIS MIXTURE. IF SEEDING BY HAND, A STICKING AGENT SHALL BE USED. IF SEEDING WITH A HYDROSEEDER, USE FOUR TIMES THE RECOMMENDED AMOUNT OF INOCULUM.
- SEED MIXTURE FOR SLOPE AREAS SHALL BE 99% PURE LIVE SEED AND SHALL CONSIST OF THE FOLLOWING:
30% CREEPING RED FESCUE
40% PERENNIAL RYE GRASS
15% REDTOP
15% BIRDFOOT TREFLOE
IN ADDITION TO THE MIX SPECIFIED ABOVE, CROWN VETCH SHALL BE USED ON ALL SLOPES STEEPER THAN 3:1. CROWN VETCH SHALL BE APPLIED AT A RATE OF 10 POUNDS PER ACRE AND INOCULUM SPECIFIC TO CROWN VETCH MUST BE USED.
- SEED MIXTURE FOR STORMWATER MANAGEMENT AREAS, INCLUDING DETENTION BASINS AND VEGETATED TREATMENT SWALES SHALL CONSIST OF THE FOLLOWING:
25% CREEPING RED FESCUE
15% SWITCH GRASS
15% FOX SEDGE
15% CREEPING BENTGRASS
10% FLATPEA
20% WILDFLOWER VARIETY
- HAY USED FOR MULCH SHALL CONSIST OF MOWN AND PROPERLY CURED GRASS OR LEGUME MOWINGS, FREE FROM WEEDS, TWIGS, DEBRIS OR OTHER DELETERIOUS MATERIAL AND ROT OR MOLD.



CURB END
NOT TO SCALE

CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

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



REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REV. PER SUBDIVISION IMPROVEMENTS	PRC
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4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

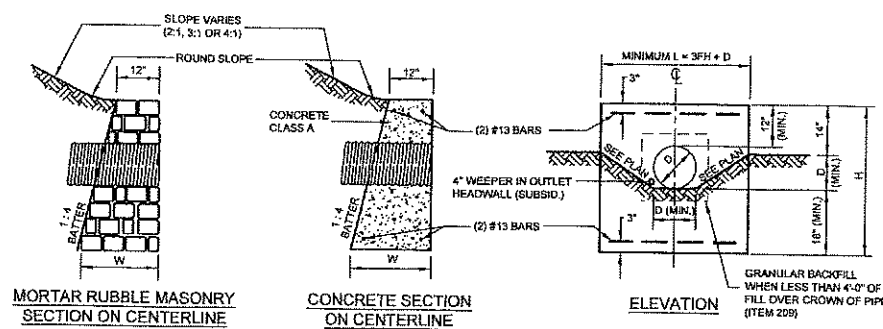
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

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

SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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

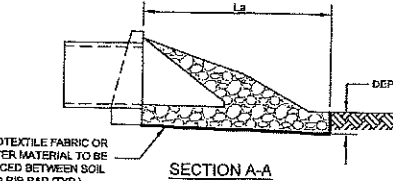
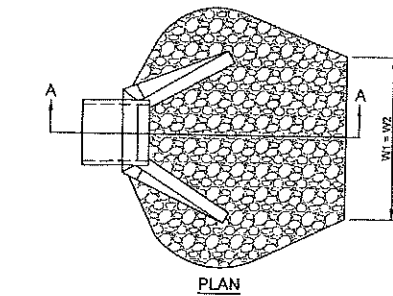


NOTE: DIMENSIONS SHOWN ARE TO PAYMENT LINES. MORTAR RUBBLE MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.

DIAMETER D (INCH)	AREA OF PIPE (SF)	MASONRY PER FOOT OF WALL (CU. YD.)	MASONRY PER HOLE (CU. FT.)	MASONRY PER STANDARD HEADER (CU. YD.)	STEEL PER STANDARD HEADER (LB)	LENGTH OF BARS	PIPE EXC. 1' DEPTH (CU. YD.)	HEADER EXC. PER DEPTH (CU. YD.)	ITEM 209 PER LINEAR FOOT	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	MASONRY IN CORNER FRUSTRUM (CU. YD.)	HEADER EXC. PER DEPTH (CU. YD.)
12"	0.79	0.186	1.08	0.61	9	3'-2"	0.111	0.788	0.30	3'-0"	3'-6"	10"	1'-10 1/2"	0.28	1.067
15"	1.23	0.282	1.73	0.85	11	3'-10"	0.120	0.847	0.35	4'-6"	3'-9"	1'-1"	1'-11 1/4"	0.31	1.232
18"	1.77	0.422	2.32	1.13	14	5'-2"	0.130	1.111	0.36	5'-6"	4'-0"	1'-4"	2'-0"	0.35	1.406
24"	3.14	0.760	4.71	1.78	20	7'-2"	0.148	1.451	0.48	7'-6"	4'-6"	1'-10"	2'-1 1/2"	0.42	1.776
30"	4.91	1.130	7.07	2.58	25	8'-2"	0.165	1.810	0.55	8'-6"	5'-0"	2'-4"	2'-3"	0.51	2.154
36"	7.07	1.644	11.49	3.53	31	11'-2"	0.222	2.167	0.60	11'-6"	5'-6"	3'-4"	2'-4 1/2"	0.61	2.572
42"	9.62	2.168	15.24	4.65	36	13'-2"	0.259	2.581	1.07	13'-6"	6'-0"	4'-4"	2'-7 1/2"	0.72	3.050
48"	12.57	2.928	21.89	6.26	42	15'-2"	0.296	3.000	1.31	15'-6"	6'-6"	5'-0"	2'-7 1/2"	0.84	3.447
54"	15.90	3.885	29.83	8.44	47	17'-2"	0.333	3.432	1.58	17'-6"	7'-0"	5'-6"	2'-7 1/2"	0.98	3.914
60"	19.63	5.038	39.82	11.04	58	19'-2"	0.370	3.882	1.87	19'-6"	7'-6"	6'-0"	2'-7 1/2"	1.12	4.461
66"	23.75	6.402	52.03	14.17	63	21'-2"	0.407	4.350	2.17	21'-6"	8'-0"	6'-6"	2'-7 1/2"	1.26	4.907
72"	28.27	8.048	66.65	17.81	63	23'-2"	0.445	4.838	2.59	23'-6"	8'-6"	7'-0"	3'-11 1/2"	1.46	5.433

NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY.

MORTAR RUBBLE MASONRY AND CONCRETE HEADWALLS NOT TO SCALE (MARCH 2006)



PIPE OUTLET TO WELL DEFINED CHANNEL NOT TO SCALE (MARCH 2006)

LOCATION	L _a	W ₁ =W ₂	d ₅₀	DEPTH
PROP. HW#1	35'	18'	4"	12"
PROP. HW#2	10'	4'	4"	12"
PROP. HW#3	10'	4'	4"	12"
PROP. HW#4	33'	33'	4"	12"

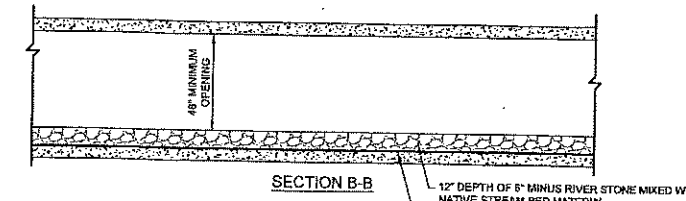
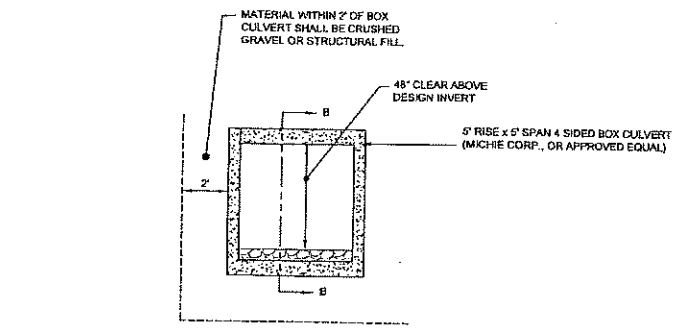
PERCENT OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100%	1.5 TO 2.0 (50)
85%	1.3 TO 1.8 (45)
50%	1.0 TO 1.5 (35)
15%	0.3 TO 0.5 (10)

CONSTRUCTION SPECIFICATIONS:

- THE SURGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

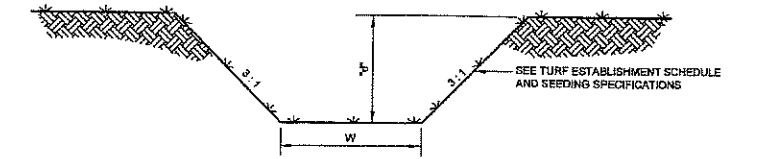
MAINTENANCE:

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



NOTES:
1. THE STAMPED SHOP DRAWINGS AND CALCULATIONS FOR THE ACTUAL CULVERT MUST BE PROVIDED FOR REVIEW AND APPROVAL AT OR PRIOR TO THE PROJECTS REQUIRED PRE CONSTRUCTION MEETING.

CONCRETE BOX CULVERT FOUNDATION AND BACKFILL DETAIL NOT TO SCALE

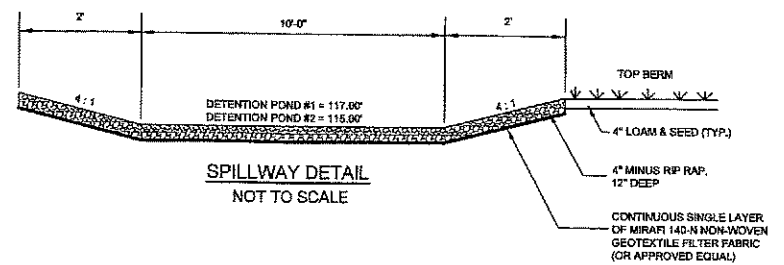


LOCATION	PEAK FLOW	PEAK VELOCITY	SWALE WIDTH "W"	SWALE LENGTH	SWALE SLOPE	DEPTH "D"	PEAK DEPTH OF RUNOFF	HRT
SWALE #1	0.02 CFS	0.10 FPS	4'	200'	0.005	2'	0.05'	33.5 MINUTES
SWALE #2	0.04 CFS	0.12 FPS	4'	200'	0.005	2'	0.08'	27.0 MINUTES

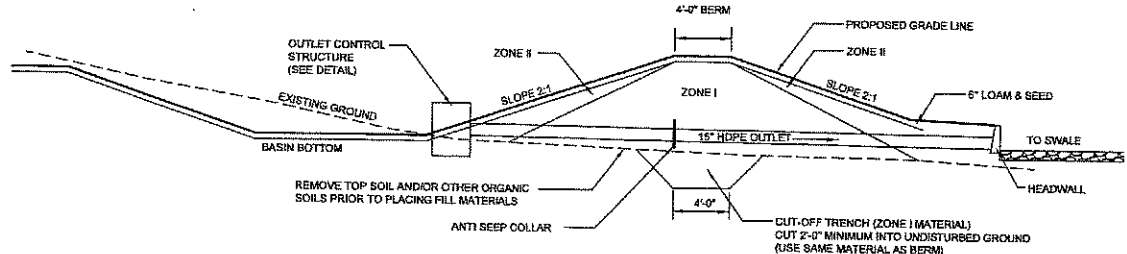
MAINTENANCE

- TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN WOOLY CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION, HOWEVER IT SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE FILTERING EFFECT. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.
- THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.
- SWALE #2 TO BE LINED WITH A 6 MIL. POLYETHYLENE SHEETING ABOVE 4" OF SAND.

TREATMENT SWALE DETAIL NOT TO SCALE (MARCH 2006)



SPILLWAY DETAIL NOT TO SCALE



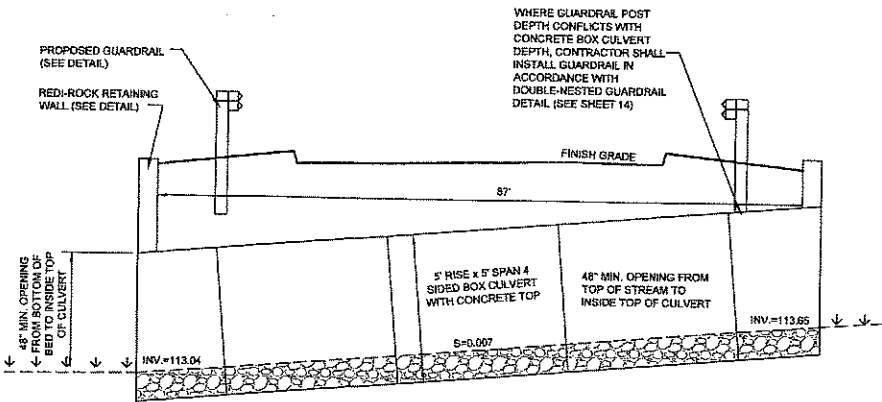
TYPICAL CROSS SECTION DETENTION POND NOT TO SCALE

STORMWATER PONDS CONSTRUCTION SEQUENCE

- CONTRACTOR TO NOTIFY DIO-SAFE 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CUT AND CLEAR TREES AND BRUSH FROM CONSTRUCTION AREAS TO THE EXTENT NECESSARY. ALL BRANCHES, TOPS AND BRUSH TO BE PROPERLY DISPOSED OF BY CONTRACTOR.
- PRIOR TO GRUBBING OF CLEARED AREAS, ALL SILTATION BARRIERS DESIGNED FOR USE AS TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED AS CALLED FOR ON PROJECT PLANS.
- COMPLETE GRUBBING OPERATIONS. ALL STUMPS AND SIMILAR DEBRIS SHALL BE PROPERLY DISPOSED OF BY CONTRACTOR. ORGANIC MATERIAL SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED IN UPLAND AREAS. ALL STOCKPILES SHALL BE SEED WITH WINTER RYE AND, IF NECESSARY, SURROUNDED WITH HAY BALES IN ORDER TO PREVENT LOSS DUE TO EROSION.
- CONSTRUCT TEMPORARY CULVERTS AS NECESSARY TO FACILITATE CONSTRUCTION ACTIVITIES. ALL SUCH CROSSINGS SHALL BE PROTECTED WITH HAY BALE BARRIERS TO LIMIT EROSION.
- CONSTRUCT CUT-OFF TRENCH (PART OF ZONE I).
- CONSTRUCT OUTLET AND OVERFLOW STRUCTURE, CULVERT, ANTI SEEP COLLARS, HEADWALL, AND RIP RAP OUTLET PROTECTION AS SHOWN ON PLANS.
- CONSTRUCT ZONE I PORTION OF EARTH EMBANKMENT.
- CONSTRUCT ZONE II PORTION OF EARTH EMBANKMENT.
- APPLY TOPSOIL TO SLOPES AND OTHER AREAS DISTURBED BY CONSTRUCTION. TOPSOIL USED MAY BE NATIVE ORGANIC MATERIAL SCREENED SO AS TO BE FREE OF ROOTS, BRANCHES, STONES, AND OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL BE APPLIED SO AS TO PROVIDE A MINIMUM OF A 4-INCH COMPACTED THICKNESS. UPON COMPLETION OF TOPSOILING, FINISHED SECTIONS ARE TO BE LINED, SEED AND MULCHED. CONSTRUCTION PERSONNEL SHALL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ANY PROBLEM AREAS UNTIL A HEALTHY STAND OF GRASS HAS BECOME ESTABLISHED.
- MAINTAIN, REPAIR, AND REPLACE AS NECESSARY TEMPORARY EROSION CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE CONSTRUCTION AREA HAS BEEN STABILIZED (A MINIMUM OF ONE WINTER SHALL HAVE PASSED).
- AFTER STABILIZATION, REMOVE AND SUITABLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES.
- MONITOR CONSTRUCTION ACTIVITIES TO INSURE CONSTRUCTION ACTIVITIES ARE BEING PERFORMED IN SUCH A WAY AS NOT TO ENDANGER THE INTEGRITY OF EARTH EMBANKMENTS, STORMWATER CONTROL STRUCTURE, CULVERT AND RIP RAP OUTLET PROTECTION.

MATERIAL TYPE/SPECIFICATIONS

- ZONE I**
WELL GRADED MIXTURE OF GRAVEL, SAND, SILT OR CLAY WITH MAX. 6-INCH SIZE STONE AND DEADENATION AS INDICATED BELOW. PLACE IN MAX. 12-INCH THICK LIFTS TO 95% OF MAX. DRY DENSITY IN ACCORDANCE WITH ASTM D1557. SCARIFY SURFACE PRIOR TO PLACING SUBSEQUENT LIFT. IN ADDITION, REMOVE ORGANIC SOILS.
- | SEIVE SIZE | PERCENT BY WEIGHT PASSING |
|------------|---------------------------|
| 6-INCH | 100 |
| NO. 4 | 50 TO 100 |
| NO. 40 | 30 TO 70 |
| NO. 200 | 20 TO 40 |
- ZONE II**
DRAINAGE LAYER: PLACE IN MAX. 12-INCH THICK LIFTS TO 95% OF MAX. DRY DENSITY IN ACCORDANCE WITH ASTM D1557.
- | SEIVE SIZE | PERCENT BY WEIGHT PASSING |
|------------|-----------------------------|
| 1-INCH | 100 |
| NO. 4 | 70-100 |
| NO. 200 | 0-12 (IN SAND PORTION ONLY) |



CONCRETE BOX CULVERT FOOTING LAYOUT DETAIL NOT TO SCALE

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

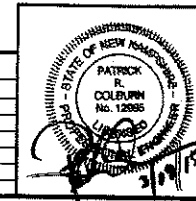
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE _____ DATE _____

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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 ACHIEVES FINAL APPROVAL.

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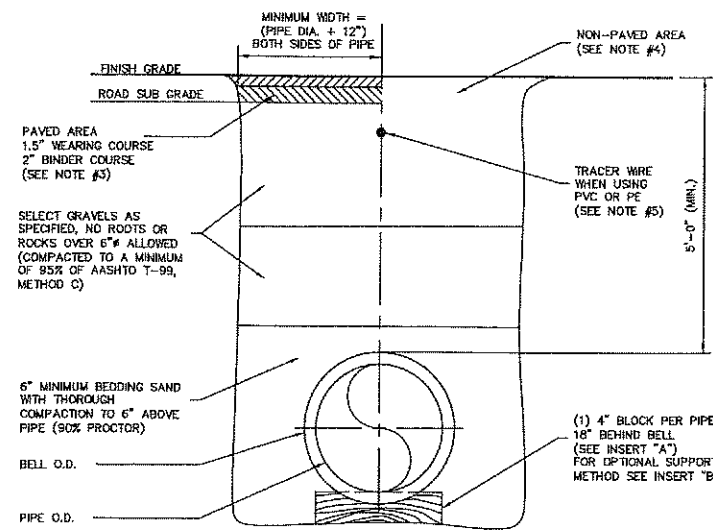
CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
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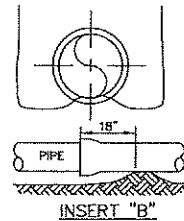
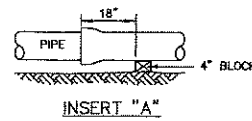
KM KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 2B, Bedford, NH 03110 Phone (603) 627-2881

SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 2
PROJECT NO: 07-0511-4A SHEET 18 OF 23

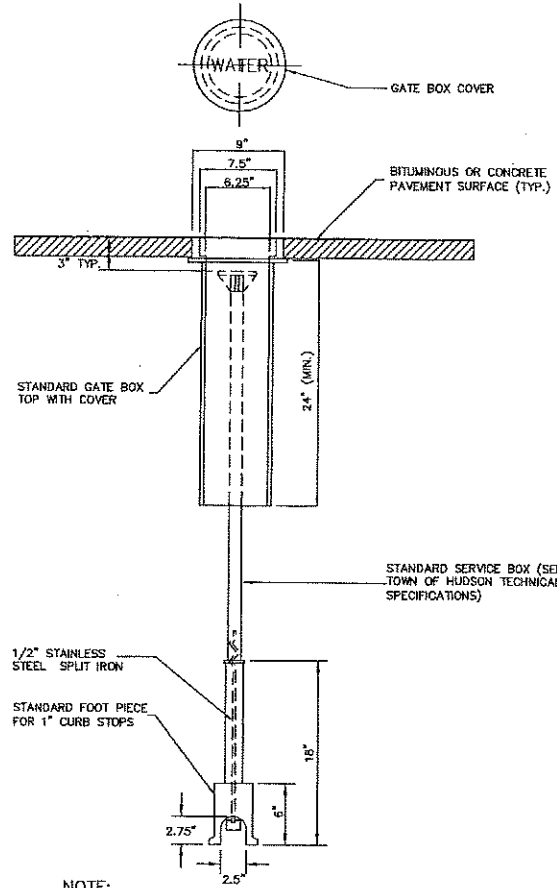


TYPICAL WATER LINE TRENCH DETAIL
NOT TO SCALE

- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE, UNLESS INSULATION IS SPECIFIED.
 3. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
 4. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
 5. 10 GAUGE TRACER WIRE AS MANUFACTURED BY BMS, DIVISION OF ALBESTAR CORP., AVON, MA OR EQUIVALENT.

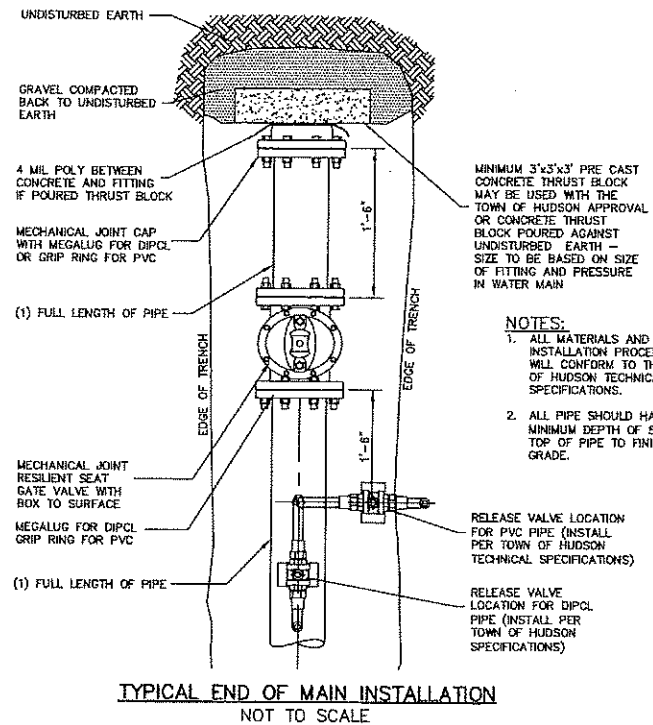


OPTIONAL ONLY WHEN SOIL CONDITIONS ARE EQUAL TO 6\"/>

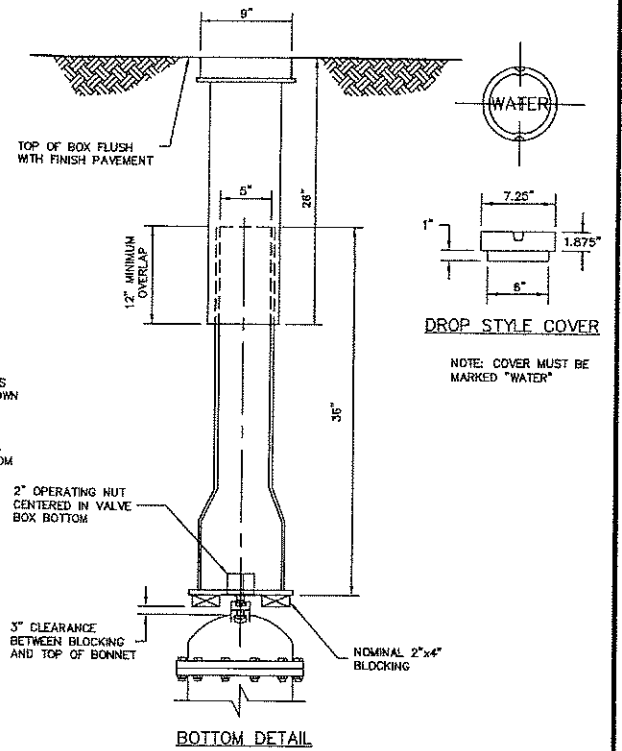


TYPICAL SERVICE BOX DETAIL IN PAVED AREAS
NOT TO SCALE

NOTE:
ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF HUDSON TECHNICAL SPECIFICATIONS.

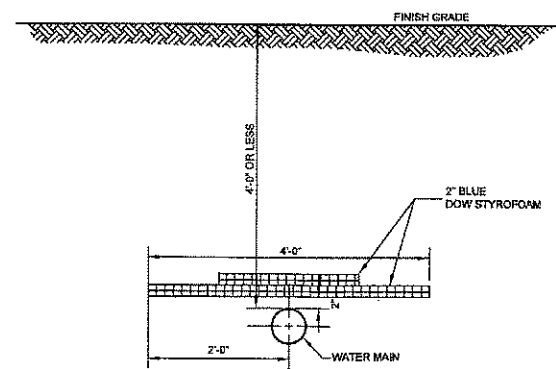


TYPICAL END OF MAIN INSTALLATION
NOT TO SCALE



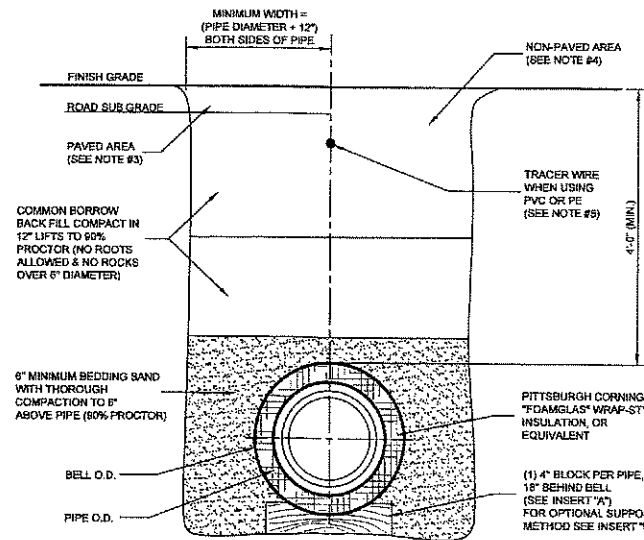
TYPICAL VALVE BOX DETAIL
NOT TO SCALE

- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.



INSULATION DETAIL FOR LESS THAN 4'-0\"/>

- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0\"/>



WRAP INSULATION DETAIL
(A-16A)
NOT TO SCALE
(JANUARY 2011)

- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO PENNICKUCK WATER WORKS, INC. TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0\"/>

OPTIONAL ONLY WHEN SOIL CONDITIONS ARE EQUAL TO 6\"/>

WATER DISTRIBUTION SYSTEM NOTES

1. ALL DISTRIBUTION MATERIAL INCLUDING MAINS, FITTINGS AND VALVES TO MEET APPLICABLE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES - BUREAU OF WATER SUPPLY ENGINEERING, DRINKING WATER AND GROUNDWATER BUREAU (DWGB), TOWN OF HUDSON WATER DEPARTMENT AND AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS.
2. ALL INSTALLATION OF MATERIAL CONFORMS TO APPLICABLE DWGB, TOWN OF HUDSON AND AWWA STANDARDS AND SPECIFICATIONS FOR WATER SYSTEMS.
3. ALL VALVES, TEES, BENDS AND THEIR RELATED JOINTS ARE PROPERLY RESTRAINED USING APPROVED "MEGA-LUG" OR APPROVED EQUAL, RETAINER KITS AT EACH JOINT.
4. ALL WATER MAIN AND APPURTENANCES SHALL BE APPROVED MATERIALS MANUFACTURED IN ACCORDANCE WITH CURRENT AWWA STANDARDS. ALL 8" AND 12" DIAMETER WATER MAIN AND APPURTENANCES SHALL BE AN APPROVED AWWA CLASS 52 CEMENT LINED DUCTILE IRON PIPE. PIPE SIZING IS AS SHOWN ON THE KEACH-NORDSTROM ASSOCIATES, INC. PLANS APPROVED BY THE TOWN PLANNING BOARD AND NHDWGB. FIRE HYDRANTS MEETING AWWA C-503 STANDARDS, OPEN LEFT AND TO BE INSTALLED AT LOCATIONS AS APPROVED BY THE HUDSON FIRE DEPARTMENT. ALL WATER MAIN AND SERVICE LINES TO BE INSTALLED WITH A MINIMUM OF 60" OF COVER AND SHALL BE PROPERLY SAND BEDDED, COMPACTED AND BACKFILLED WITH SUITABLE MATERIALS.
5. GATE VALVES SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE APPROVED UTILITY PLANS. ALL GATE VALVES SHALL BE AWWA APPROVED, EPOXY COATED, RESILIENT WEDGE TYPE, BEING OPEN LEFT (COUNTER CLOCKWISE). VALVE BOXES SHALL BE AWWA APPROVED, SLIP TYPE WITH 35" BASE, 36" TOP AND COVER ARE A ONE-PIECE CAST COVER LABELED "WATER".
6. FIRE HYDRANTS SHALL BE TOWN OF HUDSON APPROVED, OPEN LEFT (CLOCKWISE) INSTALLED AT LOCATION SHOWN ON THE PROJECT PLANS. DOMESTIC SERVICES SHALL HAVE SERVICE LINE SIZING BEING 2" DIAMETER COPPER TUBING BETWEEN MAIN AND CURB STOP, AND 1" FEETS TUBING SIZE FROM STOP TO INSIDE HOME FOR THE FIRE SPRINKLER SERVICE, AND 1" FEETS TUBING SIZE WITH A TEE FROM 2" FOR DOMESTIC WATER, USING BRASS COMPRESSION JOINTS FOR SERVICE FITTINGS AND CORPORATION STOPS. STAINLESS STEEL INSERTS ON HOPE PIPE, BALL VALVE SHUT OFFS AND ADJUSTABLE ERIE TYPE CURB BOXES. SERVICES SHALL BE RUN INTO EACH OF THE INDIVIDUAL HOMES FROM THE WATER MAINS.
7. SEPARATION OF WATER MAINS AND SEWER ARE IN ACCORDANCE WITH DWGB STANDARDS. ON PARALLEL INSTALLATION, WATER MAINS WERE LAID AT LEAST TEN FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED SEWER. IF LESS THAN TEN FEET, WATER MAIN LAID IN A SEPARATE TRENCH, OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE MAIN IS AT LEAST 18" ABOVE THE TOP OF THE SEWER WITH AT LEAST THREE FEET HORIZONTAL SEPARATION. AT CROSSINGS THERE IS A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN THE WATER MAIN AND SEWER. WATER MAIN WITH A MINIMAL LAYING LENGTH OF 18 FEET IS TO BE USED AT ALL CROSSINGS, WITH BOTH JOINTS BEING LOCATED AS FAR FROM THE SEWER AS POSSIBLE.
8. ALL WATER MAINS SHALL BE FLUSHED, PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AWWA C-500 AND C-651, PRIOR TO ACCEPTANCE. WRITTEN CERTIFICATION OF TESTING AND BACTERIOLOGICAL TEST RESULTS BY A THIRD PARTY CONTRACTOR SHALL BE PROVIDED.
9. A RECORD DRAWING OF WATER MAINS AND APPURTENANCES SHALL BE PROVIDED FOLLOWING INSTALLATION, IN ACCORDANCE WITH NHDWGB AND TOWN OF HUDSON STANDARDS.

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

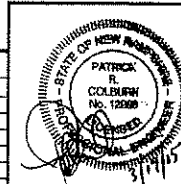
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4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC



CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT

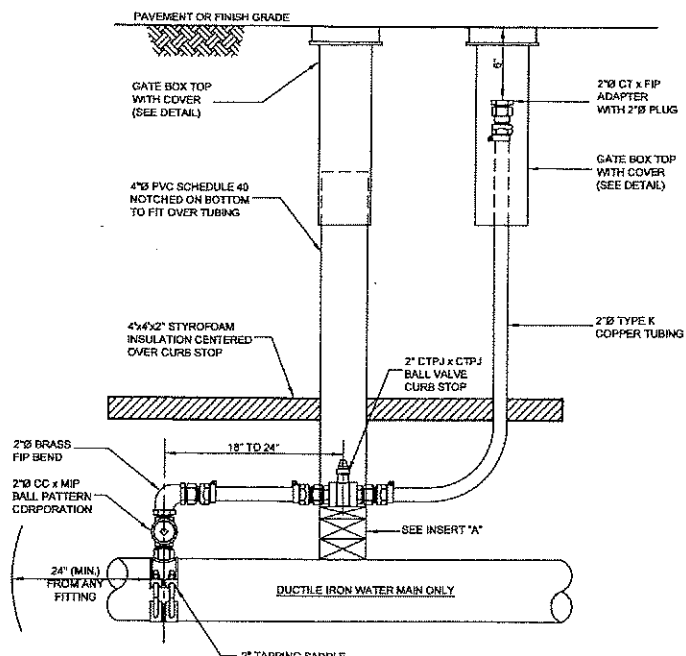
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8852, PG. 2427

APPLICANT/SUBDIVIDER:
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HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

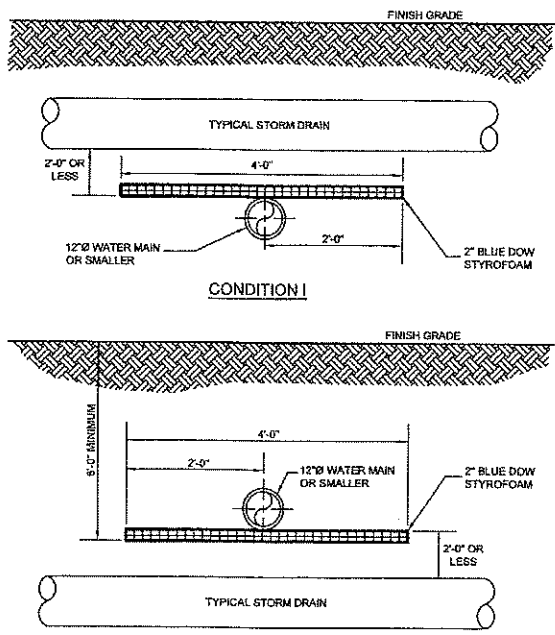
KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 19 OF 23



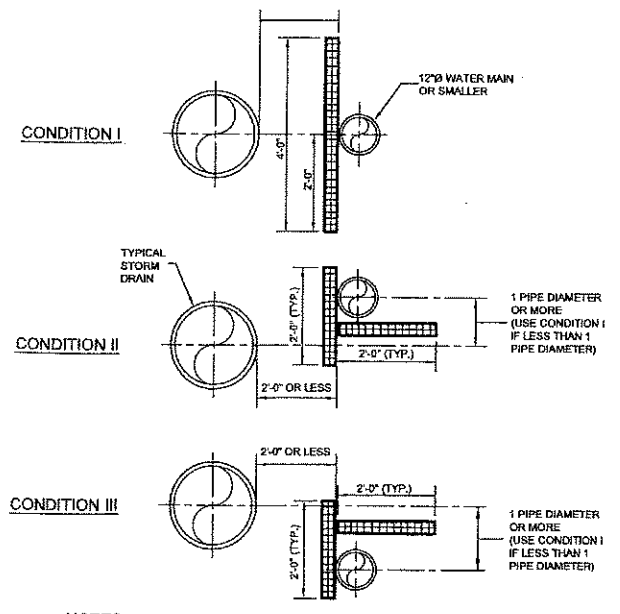
- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO PENNICK WATER WORKS, INC. TECHNICAL SPECIFICATIONS.
 2. WATER MAIN MAY BE DIRECT TAPPED WHEN IT IS 18" OR LARGER DUCTILE IRON.
 3. SEE DETAIL FOR INSTALLATION ON PVC WATER MAINS IF MAIN IS NOT DUCTILE IRON.

2" RELEASE VALVE INSTALLATION ON DUCTILE IRON
(A-04)
NOT TO SCALE
(MARCH 2008)



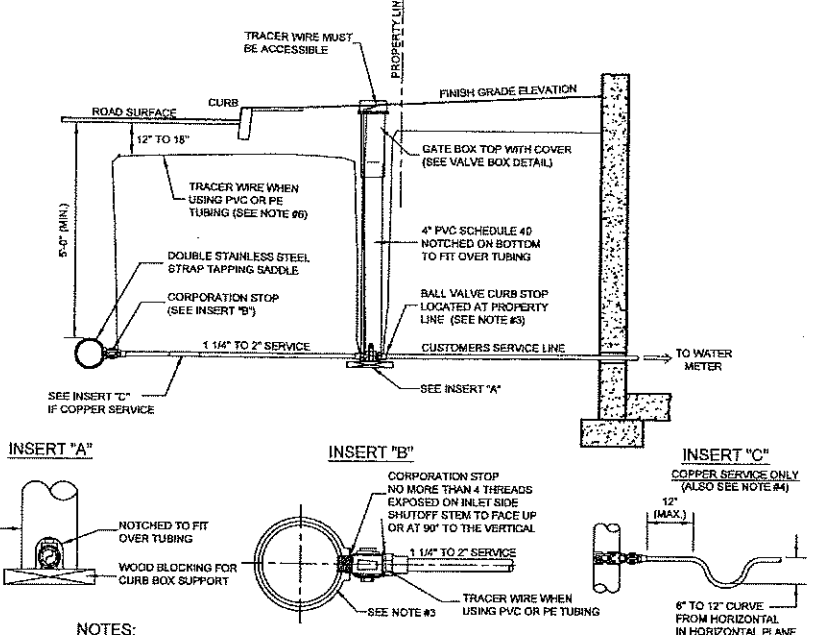
- NOTES:**
1. THE TOWN OF HUDSON RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
 2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2" BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
 3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1" PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN/WATER MAIN INTERSECTION RUNS - ELEVATION VIEW
(A-18)
NOT TO SCALE



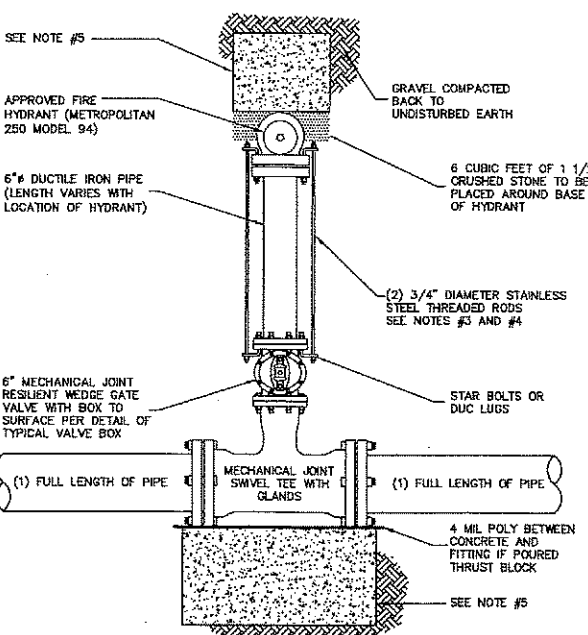
- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6" FROM TOP OF PIPE TO FINISH GRADE.
 3. THE TOWN OF HUDSON RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
 4. INSULATION TO BE RUN HORIZONTALLY AS LONG AS CONDITIONS I, II, OR III ABOVE EXIST. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH 1" PIECE OF INSULATION CENTERED OVER SEAM.
 5. 1.5" (MIN) BLUE DOW STYROFOAM

STORM DRAIN / WATER MAIN PARALLEL RUNS - ELEVATION VIEW
(A-17)
NOT TO SCALE
(MAY 2010)



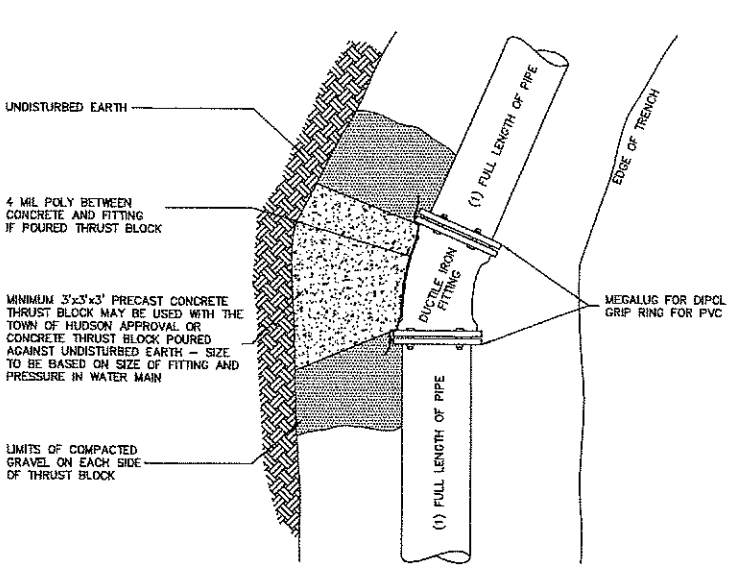
- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO PENNICK WATER WORKS, INC. TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.
 3. IF WATER MAIN IS PVC OR TRANSITE, A DOUBLE STAINLESS STEEL STRAP TAPPING SADDLE MUST BE USED TO CONNECT THE CORPORATION TO THE WATER MAIN.
 4. IF WATER MAIN IS PVC OR TRANSITE, AND THE NEW WATER SERVICE IS COPPER, THEN SEE THE APPROPRIATE DETAIL.
 5. IF WATER MAIN IS A FIRE SERVICE, THEN SEE THE APPROPRIATE DETAIL.
 6. 10 GAUGE TRACER WIRE AS MANUFACTURED BY BMS, DIVISION OF ALBESTAR CORP., AVON, MA OR EQUIVALENT.

1 1/4" TO 2" SERVICE AND VALVE BOX INSTALLATION DETAIL
(A-12)
NOT TO SCALE
(MARCH 2008)



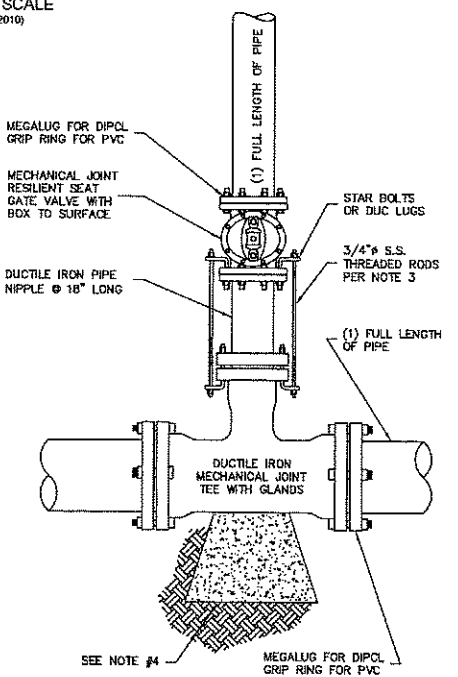
- NOTES:**
1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO THE TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
 3. 3/4" S.S. RODS SHALL BE USED IN CONJUNCTION WITH REQUIRED S.S. NUTS. RODS ARE TO BE ATTACHED TO FITTINGS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

TYPICAL HYDRANT INSTALLATION
NOT TO SCALE



- NOTES:**
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TYPICAL THRUST BLOCK BEHIND FITTINGS INSTALLATION
NOT TO SCALE



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TYPICAL TEE INSTALLATION
NOT TO SCALE

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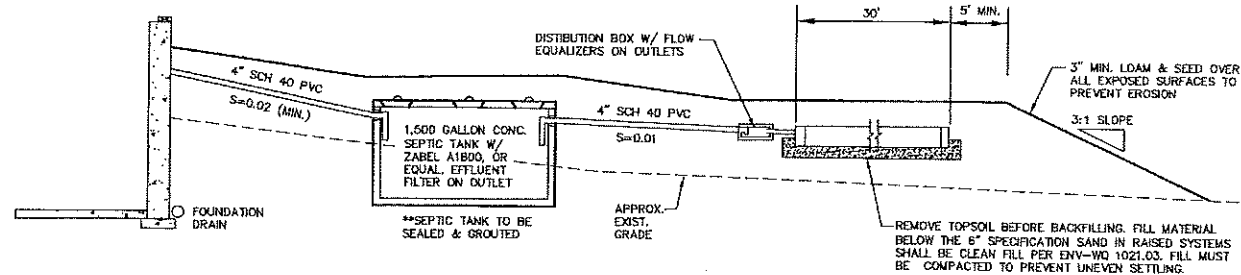
CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
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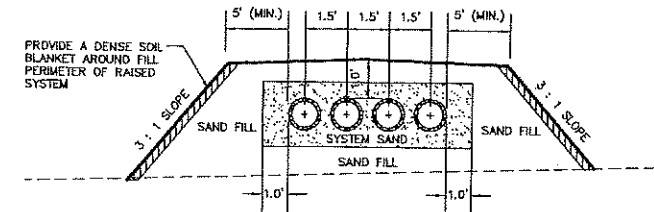
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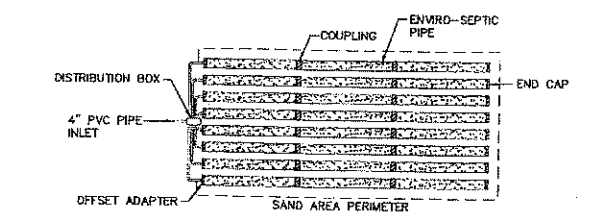
SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT No: 07-0511-4A SHEET 200F 23



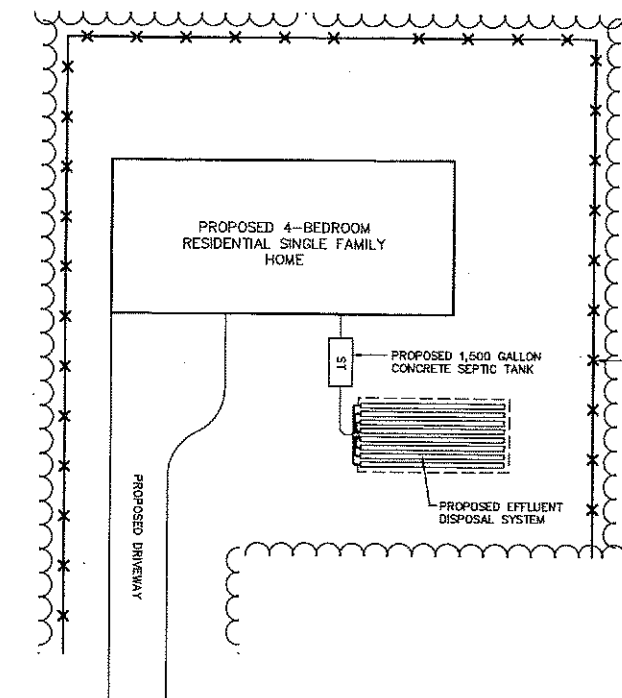
TYPICAL SECTION OF PROPOSED SEPTIC SYSTEM
NOT TO SCALE



TYPICAL ENVIRO-SEPTIC CROSS SECTION
NOT TO SCALE



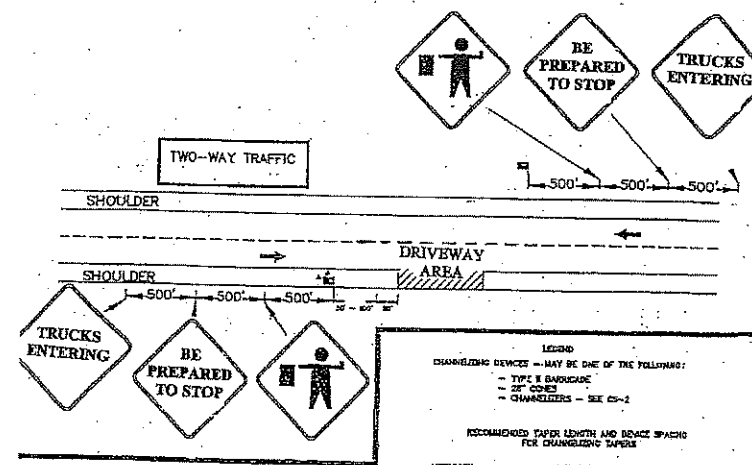
EDA PLAN DETAIL
SCALE: 1" = 10'



TYPICAL SCHEMATIC SEPTIC SYSTEM AND HOUSE LOT EROSION CONTROL PLAN
NOT TO SCALE

TYPICAL SEPTIC SYSTEM NOTE(S):
1. THE PURPOSE OF THESE DETAILS ARE TO ILLUSTRATE A TYPICAL SEPTIC SYSTEM LAYOUT AND THE CONSTRUCTION ASSOCIATED WITH THE SAME.
2. THIS INFORMATION IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. ACTUAL SIZE AND LAYOUT OF PROPOSED SYSTEMS SHALL BE DETERMINED BY THE OWNER AND MAY VARY FROM WHAT IS DEPICTED HEREON.

CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL MEASURES AROUND HOMES AND ALL PROPOSED WORK ADJACENT TO JURISDICTIONAL WETLANDS. SILT FENCE TO BE PLACED PARALLEL WITH CONTOURS AND NOT PERPENDICULAR TO PREVENT RILLING (TYP.)



LEGEND
CHANNELIZING DEVICES - MAY BE ONE OF THE FOLLOWING:
- TYPE B BARRICADE
- 24" CONES
- CHANNELIZERS - SEE DS-2

RECOMMENDED TAPER LENGTH AND DEVICE SPACING FOR CHANNELIZING TAPES

APPROACH SPEED OF TRAFFIC IN MILES/HOUR (S)	MINIMUM TAPER LENGTHS FOR TAPER WIDTHS (FT)	MAXIMUM DEVICE SPACING IN FEET
10 FT	11 FT	12 FT
20	70	80
25	100	110
30	130	140
35	160	170
40	190	200
45	220	230
50	250	260
55	280	290
60	310	320

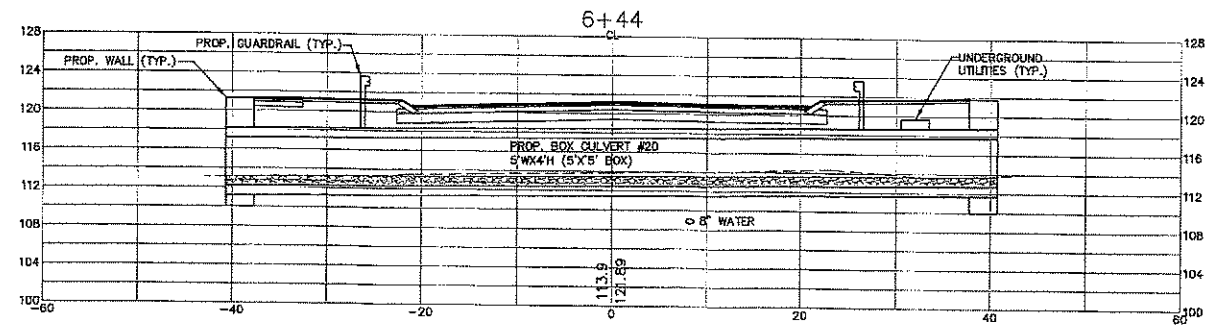
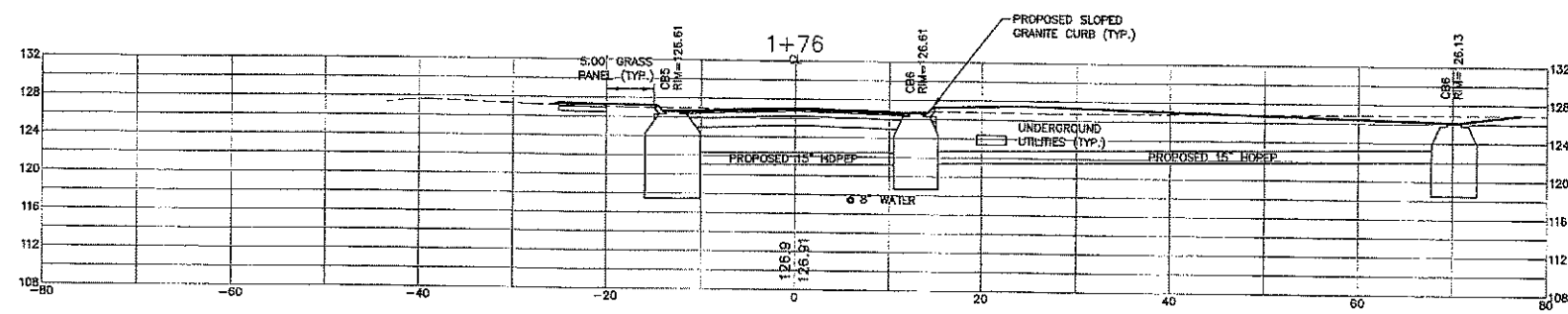
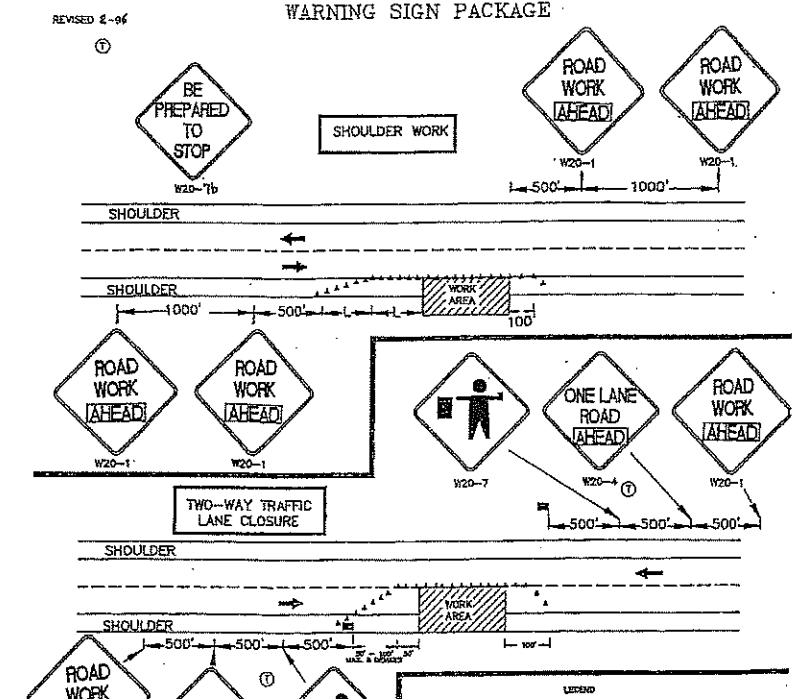
GENERAL NOTES
MATERIALS AND FABRICATION SHALL CONFORM TO CURRENT SDG STANDARD SHEETS AND SECTION 010 OF THE STANDARD SPECIFICATIONS. OPTIONAL SIGN SUPPORT SYSTEMS ARE SUBJECT TO APPROVAL.
FOR DAYTIME USE CHANNELIZING DEVICES MAY BE CONES, CHANNELIZERS, TYPE B BARRICADES OR ALTERNATING CHANNELIZERS AND TYPE B BARRICADES.
WHEN ORDERED, CHANNELIZING DEVICES SHALL BE EQUIPPED WITH TYPE C STEADY BURN LIGHTS. EXCEPTION THAT TYPE A FLASHING LIGHTS SHOULD BE USED AT THE FRONT AND LAST BARRICADES.
CONES SHALL NOT BE PERMITTED FOR PERMANENT NIGHTTIME CLOSURES. CONES USED FOR OPERATIONAL NIGHT CLOSURES WILL BE REPLENISHED.
IT MAY BE REQUIRED TO EXTEND LANE CLOSURE TAPERS TO EFFECT A SMOOTH TRANSITION THROUGH OPERATIONAL NIGHT CLOSURES.
ADDITIONAL SIGNING AS REQUIRED WILL BE AT THE DISCRETION OF THE ENGINEER. APPROX BOARD TO BE USED ON MULTIPLE LANE FACILITIES.

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CRITICAL CROSS SECTIONS
SCALE: 1" = 10'

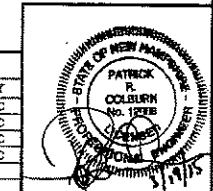
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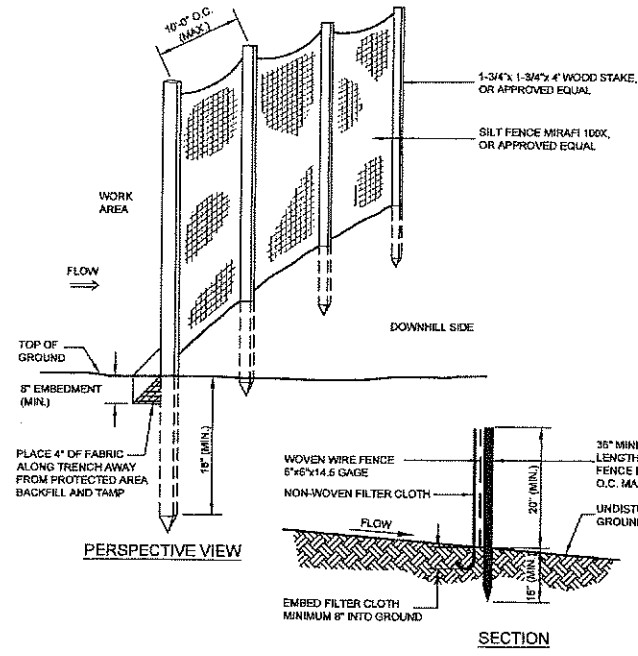


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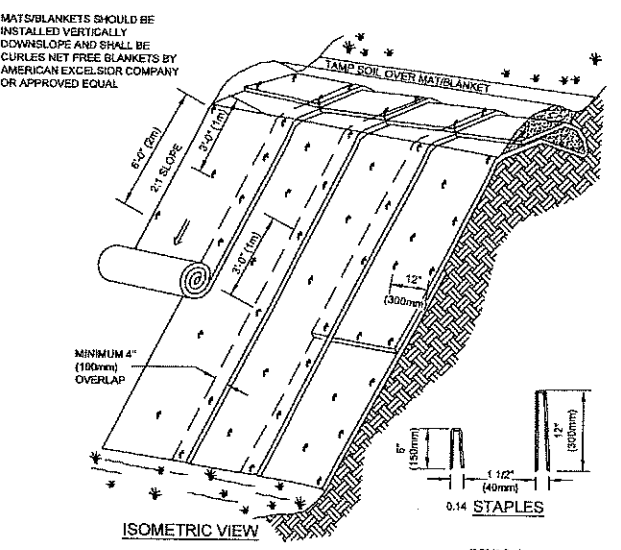
SILT FENCE DETAIL
NOT TO SCALE
(MARCH 2008)

CONSTRUCTION SPECIFICATIONS:

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 6 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE OR STAPLES WHERE NOTED OR AS DIRECTED BY DESIGN ENGINEER.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MIDSECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

MAINTENANCE:

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
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 VEGETATED.



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

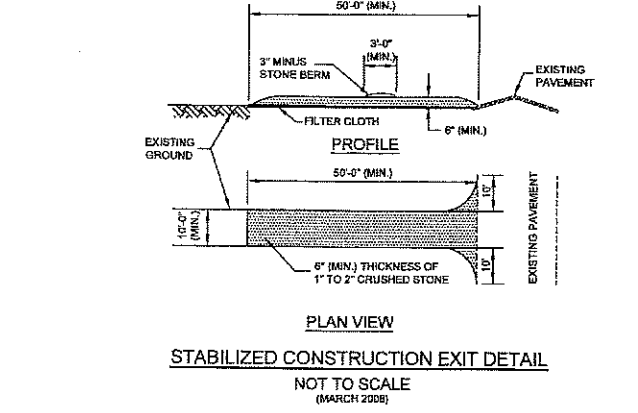
NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION CONTROL BLANKETS - SWALE INSTALLATION
NOT TO SCALE
(MARCH 2008)

WINTER CONSTRUCTION NOTES:

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



STABILIZED CONSTRUCTION EXIT DETAIL
NOT TO SCALE
(MARCH 2008)

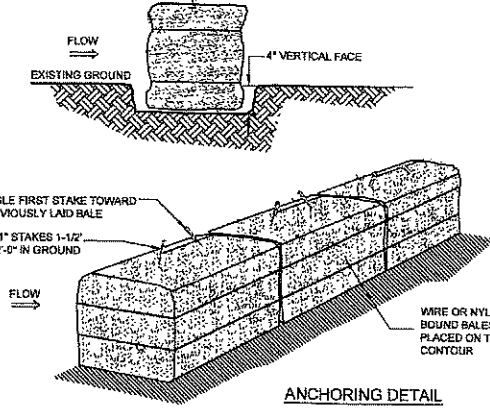
MAINTENANCE:

MUD AND SOIL PARTICLES WILL EVENTUALLY CLOG THE VOIDS IN THE CRUSHED STONE AND THE EFFECTIVENESS OF THE CRUSHED STONE PAD WILL NOT BE SATISFACTORY. WHEN THIS OCCURS, THE PAD SHOULD BE TOPDRESSED WITH NEW CRUSHED STONE OR COMPLETE REPLACEMENT OF THE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.

IF WASHING FACILITIES ARE USED, THE SEDIMENT TRAPS SHOULD BE CLEANED OUT AS OFTEN AS NECESSARY TO ASSURE THAT ADEQUATE TRAPPING EFFICIENCY AND STORAGE VOLUME IS AVAILABLE. VEGETATIVE FILTER STRIPS SHOULD BE MAINTAINED TO INSURE A VIGOROUS STAND OF VEGETATION AT ALL TIMES.

CONSTRUCTION SPECIFICATIONS:

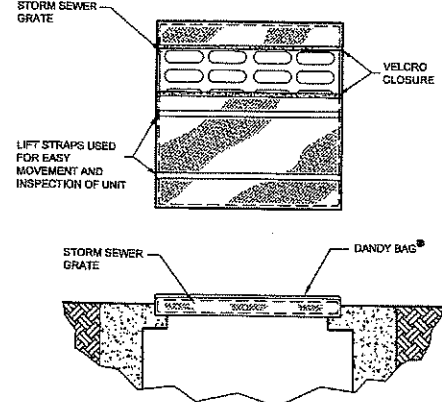
1. STONE FOR A STABILIZED CONSTRUCTION EXIT SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED EXIT SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR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



STRAW BALE BARRIER
NOT TO SCALE
(JULY 2010)

CONSTRUCTION SPECIFICATIONS:

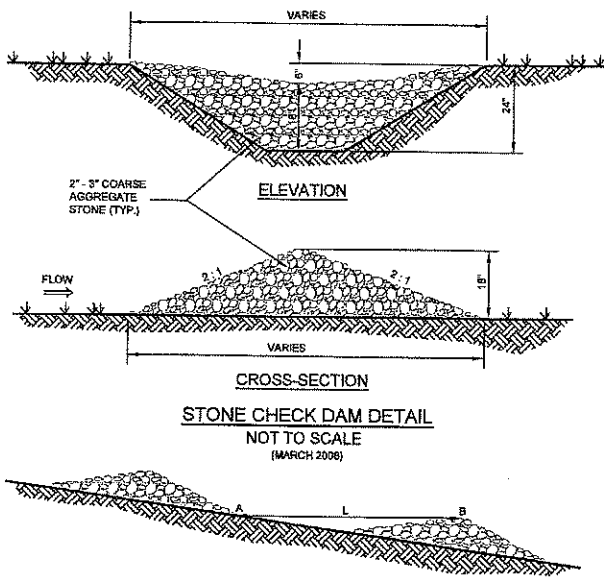
1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
6. BALES SHOULD BE FREE FROM ANY PLANT MATERIAL FOUND ON THE NEW HAMPSHIRE INVASIVE SPECIES LIST.



HI-FLOW DANDY BAG® (SAFETY ORANGE)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARY
GRAB TENSILE STRENGTH	ASTM D 4532	kN (lbf)	1.62 (365) x 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4532	%	24 ± 10
PUNCTURE STRENGTH	ASTM D 4533	kN (lbf)	0.40 (90)
MULLER BURST STRENGTH	ASTM D 3786	kPa (psf)	3087 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbf)	0.51 (115) x 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	mm (US Sieve)	0.425 (40)
FLOW RATE	ASTM D 4491	l/min/m² (gal/min/ft²)	5907 (145)
PERMITTIVITY	ASTM D 4491	Sec⁻¹	2.1

DANDY BAG®
NOT TO SCALE
(APRIL 2010)



STONE CHECK DAM DETAIL
NOT TO SCALE
(MARCH 2008)

STONE CHECK DAM SPACING DETAIL
NOT TO SCALE
(MARCH 2008)

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	REV. PER SUBDIVISION IMPROVEMENTS	PRC
3	12/17/14	DATE ONLY	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

CONSTRUCTION SEQUENCE

1. THE NOTES NOTICE OF INTENT SHALL BE PREPARED AND SUBMITTED PRIOR TO THE START OF CONSTRUCTION.
2. A PRECONSTRUCTION MEETING SHALL BE REQUESTED WITH THE TOWN AND ALL MEETINGS REQUIRED BY THE TOWN.
3. CONTRACTOR TO NOTIFY DIG-SAFE 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. PRIOR TO GRUBBING OF CLEARED AREAS, ALL SILTATION BARRIERS DESIGNED FOR USE AS TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED AS CALLED FOR ON PROJECT PLANS. INSTALL STABILIZED CONSTRUCTION EXIT AT LOCATION OF CONSTRUCTION ACCESS TO THE EXTENT NECESSARY. ALL BRANCHES, TOPS, AND BRUSH TO BE PROPERLY DISPOSED OF BY CONTRACTOR BY HAULING OFF SITE OR CHIPPING AND USED FOR EROSION CONTROL. NO STUMPS SHALL BE BURIED ON SITE. THIS PROJECT IS MANAGED TO MEET THE REQUIREMENTS AND INTENT OF RSA 3683 AND ASR 3600 RELATIVE TO INVASIVE SPECIES.
5. COMPLETE GRUBBING OPERATIONS UNDER THE ROADWAY AND SLOPE SECTIONS. ALL STUMPS AND SIMILAR DEBRIS SHALL BE PROPERLY DISPOSED OF BY CONTRACTOR. ORGANIC MATERIAL SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED IN UPLAND AREAS. ALL STOCKPILES SHALL BE SEEDING WITH WINTER RYE AND, IF NECESSARY, SURROUNDED WITH HAY BALES IN ORDER TO PREVENT LOSS DUE TO EROSION.
6. CONSTRUCT TEMPORARY CULVERTS AS NECESSARY TO FACILITATE CONSTRUCTION ACTIVITIES. ALL SUCH CROSSINGS SHALL BE PROTECTED WITH HAY BALE BARRIERS TO LIMIT EROSION.
7. STABILIZE ALL DITCHES AND PONDS PRIOR TO DIRECTING FLOW INTO THEM, CONSTRUCT SUBSURFACE UTILITIES, WATER, AND UNDERDRAINAGE.
8. COMMENCE CONSTRUCTION OF ROADWAY. PERFORM EXCAVATION ACTIVITIES REQUIRED TO ACHIEVE SUBGRADE ELEVATION. ALL EXCAVATED EMBANKMENTS, DITCHES, SWALES, AND DRIVEWAY CURBSETS SHALL BE INSTALLED AND STABILIZED. ALL SWALES AND DITCHES SHALL BE PROTECTED FROM EROSION BY IMPLEMENTATION OF HAY BALE SILTATION FENCES AS NECESSARY. DIVERT STORMWATER RUNOFF THROUGH THE USE OF TEMPORARY CULVERTS, OR OTHER MEANS NECESSARY PRIOR TO THE COMPLETION OF A FUNCTIONAL STORM DRAINAGE SYSTEM. SLOPES AND EMBANKMENTS SHALL BE STABILIZED BY TRACKING AND TEMPORARY SEEDING WITH WINTER RYE PRIOR TO TURF ESTABLISHMENT. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO HAVING RUNOFF DIRECTED TO THEM.
9. COMPLETE CONSTRUCTION OF ROADWAY EMBANKMENTS BY ADDING APPROPRIATE BASE MATERIALS GRADED TO PROPER ELEVATION.
10. APPLY TOPSOIL TO ROADWAY SLOPES AND OTHER AREAS DISTURBED BY CONSTRUCTION. TOPSOIL USED MAY BE NATIVE ORGANIC MATERIAL SCREENED SO AS TO BE FREE OF ROOTS, BRANCHES, STONES AND OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL BE APPLIED SO AS TO PROVIDE A MINIMUM OF A 4-INCH COMPACTED THICKNESS, UPON COMPLETION OF TOPDRESSING. FINISHED SECTIONS ARE TO BE SEEDING, SEEDING AND MULCHED. CONSTRUCTION PERSONNEL SHALL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ANY PROBLEM AREAS UNTIL A HEALTHY STAND OF GRASS HAS BECOME ESTABLISHED.
11. PERFORM FINE GRADING OF ROADWAY BASE MATERIALS.
12. FURNISH AND INSTALL BINDER COURSE OF PAVEMENT AND COMPLETE GRAVEL SHOULDERS.
13. MAINTAIN, REPAIR AND REPLACE AS NECESSARY TEMPORARY EROSION CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE CONSTRUCTION AREA HAS BEEN STABILIZED (A MINIMUM OF ONE WINTER SHALL HAVE PASSED).
14. AFTER STABILIZATION, REMOVE AND SUITABLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES.
15. MONITOR CONSTRUCTION ACTIVITIES ON INDIVIDUAL LOTS TO INSURE CONSTRUCTION ACTIVITIES ARE BEING PERFORMED IN SUCH A MANNER AS NOT TO ENDANGER THE INTEGRITY OF ROADWAY EMBANKMENTS, STORMWATER SYSTEMS AND UTILITIES. ALL DRIVEWAYS ACROSS DITCHES SHALL HAVE CURBSETS INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS.
16. ALL WORKMANSHIP AND MATERIALS INCORPORATED INTO THE CONSTRUCTION OF ELECTRIC LINES SHALL CONFORM WITH THE STANDARDS OF THE DRIVING UTILITY COMPANY.
17. ALL WORKMANSHIP AND MATERIALS INCORPORATED INTO THE CONSTRUCTION OF TELEPHONE LINES SHALL CONFORM WITH THE STANDARDS OF THE OWNING TELEPHONE COMPANY.
18. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND WITHIN THE CONSTRUCTION AREA. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
19. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES AND ARRANGE FOR ALL INSPECTIONS.
20. UTILITY STUB CONNECTIONS SHOWN TO PROPOSED LOTS ARE APPROXIMATE AND INTENDED TO ILLUSTRATE FEASIBILITY OF CONSTRUCTING CONNECTIONS. THE CONTRACTOR SHALL PROVIDE SERVICE STUBS AS DIRECTED BY THE OWNING UTILITY COMPANY AND LOCAL AUTHORITY.
21. CONTRACTOR SHALL COORDINATE WITH PHONE, CABLE, AND ELECTRIC COMPANIES FOR POTENTIAL NEED OF INDIVIDUAL SECTORS AT EACH LOT SERVICE CONNECTION.
22. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
23. THE CONTRACTOR SHALL VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
24. LOT DISTURBANCE, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.

EROSION CONTROL NOTES

1. EXPOSED EARTHWORK SHALL BE CONFINED TO AS LIMITED AN AREA AS IS PRACTICAL AT ANY GIVEN TIME THROUGHOUT THE CONSTRUCTION SEQUENCE. AT NO TIME SHALL MORE THAN FIVE (5) ACRES OF SITE AREA BE IN AN UNSTABLE CONDITION. NO GIVEN AREA OF THE SITE SHALL BE LEFT IN AN UNSTABILIZED CONDITION FOR A PERIOD OF TIME EXCEEDING THIRY (30) CALENDAR DAYS.
2. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS. IN ADDITION, SIMILAR MEASURES SHALL BE INSTALLED WHERE AND WHEN THE FIELD CONDITION, OR FIELD MEASURES USED SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER 0.25" OF RAINFALL OR MORE. THEY SHALL BE CLEANED AND MAINTAINED AND OTHERWISE KEPT IN AN EFFECTIVE OPERATING MANNER THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL DISTURBED AREAS DESIGNATED TO BE TURF, SHALL RECEIVE A MINIMUM APPLICATION OF 4 INCHES OF LOAM (COMPACTED THICKNESS), PRIOR TO FINAL SEEDING AND MULCHING.
4. ALL SWALES AND DITCHES SHALL BE PERIODICALLY CLEANED OF DEPOSITED SEDIMENT SO AS TO MAINTAIN AN EFFECTIVE GRADE AND CROSS SECTION. ALL SWALES AND DITCHES SHALL BE FULLY STABILIZED PRIOR TO HAVING STORMWATER DIRECTED TOWARDS THEM.
5. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
6. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
 - B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
 - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
7. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD.
8. IN NO WAY ARE THOSE TEMPORARY EROSION CONTROL MEASURES INDICATED ON THESE PLANS TO BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR SHALL USE JUDGEMENT IN INSTALLING SUPPLEMENTARY EROSION CONTROL MEASURES WHERE AND WHEN SPECIFIC SITE CONDITIONS AND/OR CONSTRUCTION METHODOLOGIES MAY WARRANT.
9. AREAS HAVING FINISH GRADE SLOPES OF 3:1 OR STEEPER, SHALL BE STABILIZED WITH JUTE MATTING WHEN AND IF FIELD CONDITIONS WARRANT, OR IF SO ORDERED. JUTE MATTING INSTALLED TO CONFORM WITH THE RECOMMENDED BEST MANAGEMENT PRACTICE OUTLINED IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION."
10. THE TOWN SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.
11. ALL DETENTION PONDS AND TREATMENT SWALES SHALL BE CONSTRUCTED PRIOR TO ANY EARTH MOVING ACTIVITIES IN AREAS THAT DIRECT RUNOFF TO THE STRUCTURES.
12. ALL ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
13. ALL CUT AND FILL SLOPES SHALL BE SEEDING AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

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

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

SIGNATURE _____ DATE _____

SIGNATURE _____ DATE _____

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

CONSTRUCTION DETAILS
LAND OF LEONARD VIGEANT
300 WEBSTER STREET
HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
LEONARD A., SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
LEONARD A. SR. & JANE M. VIGEANT
5 MOCKINGBIRD LANE
HUDSON, NH 03051
DATE: SEPTEMBER 16, 2014

KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 30, Bedford, NH 03110 Phone (603) 627-2881

SCALE: AS NOTED
HUDSON: MAP 128; LOT 7 & 8
LITCHFIELD: MAP B; LOTS 1-1 & 1-2
PROJECT NO: 07-0511-4A SHEET 22OF 23

TP #1
 LOGGED BY JAN
 PERC TEST @ 28"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B	10YR 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	10YR 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW ROOTS, NO E.S.H.W.T. TO 76" FOUND

76" BOTTOM OF HOLE, NO REFUSAL

TP #2
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/6, WEAK GRANULAR, BLOCKY, FINE SANDY LOAM, FEW ROOTS
20"	B-2	2.5Y 7/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 48", MOIST @ 65"

48" E.S.H.W.T.
 76" BOTTOM OF HOLE, NO REFUSAL

TP #2A
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/6, WEAK GRANULAR, BLOCKY, FINE SANDY LOAM, FEW ROOTS
18"	B-2	2.5Y 7/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 48", MOIST @ 65"

48" E.S.H.W.T.
 76" BOTTOM OF HOLE, NO REFUSAL

TP #3
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/6, WEAK GRANULAR, BLOCKY, FINE SANDY LOAM, FEW ROOTS
20"	B-2	2.5Y 7/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 48", MOIST @ 65"

48" E.S.H.W.T.
 86" BOTTOM OF HOLE, NO REFUSAL

TP #4
 LOGGED BY JAN
 PERC TEST @ 18"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: 48"

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B	2.5Y 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
20"	C	2.5Y 7/3, LOOSE, GRANULAR, SANDY LOAM, FEW DIST. FE CONC. (MOTTLES) @ 32", H2O @ 48"

32" E.S.H.W.T.
 55" BOTTOM OF HOLE, NO REFUSAL

TP #4A
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: 48"

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
14"	B	2.5Y 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	2.5Y 7/3, LOOSE, GRANULAR, SANDY LOAM, FEW DIST. FE CONC. (MOTTLES) THROUGHOUT, H2O @ 48"

26" E.S.H.W.T.
 60" BOTTOM OF HOLE, NO REFUSAL

TP #5
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
10"	B-1	2.5Y 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
20"	B-2	2.5Y 7/4, LOOSE, GRAVELLY SAND, 25% GRAVEL
28"	C	2.5Y 8/2, WEAK GRANULAR, FRIABLE, LOAMY SAND, FEW DIST. FE CONC. (MOTTLES) @ 40"

40" E.S.H.W.T.
 72" BOTTOM OF HOLE, NO REFUSAL

TP #5A
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
20"	B-2	2.5Y 7/4, LOOSE, GRAVELLY SAND, 25% GRAVEL
28"	C	2.5Y 5/2, WEAK GRANULAR, FRIABLE, LOAMY SAND, FEW DIST. FE CONC. (MOTTLES) @ 42"

42" E.S.H.W.T.
 72" BOTTOM OF HOLE, NO REFUSAL

TP #6
 LOGGED BY JAN
 PERC TEST @ 28"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
15"	B	10YR 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	10YR 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW ROOTS, FEW DIST. FE CONC. (MOTTLES) @ 40"

40" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #6A
 LOGGED BY JAN
 PERC TEST @ 22"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
15"	B	10YR 6/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	10YR 7/3, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW ROOTS, FEW DIST. FE CONC. (MOTTLES) @ 40"

40" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #7
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B	2.5Y 7/3, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	2.5Y 6/4, BLOCKY, FRIABLE, LOAMY CLAYEY SAND, FEW DIST. FE CONC. (MOTTLES) @ 38"

38" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #8
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
10"	B	2.5Y 7/3, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
22"	C	2.5Y 6/4, BLOCKY, FRIABLE, LOAMY CLAYEY SAND, FEW DIST. FE CONC. (MOTTLES) @ 40"

40" E.S.H.W.T.
 76" BOTTOM OF HOLE, NO REFUSAL

TP #8A
 LOGGED BY JAN
 PERC TEST @ 20"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
10"	B	2.5Y 5/6, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
22"	C	2.5Y 7/4, BLOCKY, FRIABLE, LOAMY CLAYEY SAND, FEW DIST. FE CONC. (MOTTLES) @ 42"

42" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #9
 LOGGED BY JAN
 PERC TEST @ 22"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
12"	B	2.5Y 6/6, BLOCKY, FRIABLE, FINE SANDY LOAM, FEW ROOTS
24"	C	2.5Y 7/6, BLOCKY, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 46", FEW ROOTS TO 44"

46" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #9A
 LOGGED BY JAN
 PERC TEST @ 22"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
12"	B	2.5Y 5/6, BLOCKY, FRIABLE, FINE SANDY LOAM, FEW ROOTS
24"	C	2.5Y 7/8, BLOCKY, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 46", FEW ROOTS TO 44"

46" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #10
 LOGGED BY JAN
 PERC TEST @ 22"
 DATE: 5/21/2014
 PERC RATE: 10 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
12"	B	2.5Y 6/4, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	2.5Y 7/2, BLOCKY, FIRM, CLAYEY, MOIST, COMMON DIST. FE CONC. (MOTTLES) THROUGHOUT

28" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #11
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: 60"

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
15"	B-1	2.5Y 5/4, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
20"	B-2	2.5Y 6/6, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY SAND, FEW DIST. FE CONC. (MOTTLES) @ 38"

38" E.S.H.W.T.
 76" BOTTOM OF HOLE, NO REFUSAL

TP #11A
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: 62"

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
12"	B-1	2.5Y 5/4, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
18"	B-2	2.5Y 6/6, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY SAND, FEW DIST. FE CONC. (MOTTLES) @ 38"

38" E.S.H.W.T.
 72" BOTTOM OF HOLE, NO REFUSAL

TP #12
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 5/21/2014
 PERC RATE: 8 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: 58"

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE TO MED. ROOTS
12"	B-1	2.5Y 5/4, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
18"	B-2	2.5Y 6/6, W. GRAN., FRIABLE, FINE SANDY LOAM, FEW ROOTS
30"	C	2.5Y 7/3, WEAK GRANULAR, FRIABLE, LOAMY SAND, FEW DIST. FE CONC. (MOTTLES) @ 38"

38" E.S.H.W.T.
 72" BOTTOM OF HOLE, NO REFUSAL

TP #100
 LOGGED BY JAN
 PERC TEST @ 24"
 DATE: 11/17/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B	10YR 7/3, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
28"	C	10YR 6/4, BLOCKY, FRIABLE, CLAYEY SAND, FEW DIST. FE CONC. (MOTTLES) @ 40"

40" E.S.H.W.T.
 78" BOTTOM OF HOLE, NO REFUSAL

TP #200
 LOGGED BY JAN
 PERC TEST @ 20"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/6, BLOCKY, FRIABLE, FINE SANDY LOAM, FEW ROOTS
18"	B-2	2.5Y 7/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	2.5Y 7/2, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 50"

50" E.S.H.W.T.
 72" BOTTOM OF HOLE, NO REFUSAL

TP #300
 LOGGED BY JAN
 PERC TEST @ 20"
 DATE: 5/21/2014
 PERC RATE: 6 MIN/INCH
 IMPERVIOUS LAYER: NONE
 WATER ENCOUNTERED: NONE

0"	Ap	FLOWED HORIZON, 10YR 3/4, WEAK GRANULAR, FRIABLE LOAMY, FEW FINE ROOTS
12"	B-1	2.5Y 6/6, BLOCKY, FRIABLE, FINE SANDY LOAM, FEW ROOTS
16"	B-2	2.5Y 7/4, WEAK GRANULAR, FRIABLE, FINE SANDY LOAM, FEW ROOTS
26"	C	2.5Y 7/2, WEAK GRANULAR, FRIABLE, LOAMY FINE SAND, FEW DIST. FE CONC. (MOTTLES) @ 52"

52" E.S.H.W.T.
 76" BOTTOM OF HOLE, NO REFUSAL

TEST PIT LOGS
LAND OF LEONARD VIGEANT
 300 WEBSTER STREET
 HUDSON, NEW HAMPSHIRE

OWNER OF RECORD:
 LEONARD A., SR. & JANE M. VIGEANT
 5 MOCKINGBIRD LANE
 HUDSON, NH 03051
 VOL. 8652, PG. 2427

APPLICANT/SUBDIVIDER:
 LEONARD A. & JANE M. VIGEANT SR.
 5 MOCKINGBIRD LANE
 HUDSON, NH 03051

DATE: SEPTEMBER 16, 2014

KMA
 KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 308, Bedford, NH 03110 Phone (603) 627-2881

SCALE: NONE
 HUDSON: MAP 128; LOT 7 & 8
 LITCHFIELD: MAP B; LOTS 1-1 & 1-2
 PROJECT NO: 07-0511-4A SHEET 23 OF 23

REVISIONS

No.	DATE	DESCRIPTION	BY
1	10/31/14	REV. PER TOWN COMMENTS	PRC
2	11/19/14	ADD TIPS 100, 200 & 300	PRC
3	12/17/14	DATE ONLY	PRC
4	02/11/15	REV. PER CONDITIONS OF APPROVAL	PRC

Eco-Site, Inc. Wireless Communication Site Plan & Conditional Use Permit

Staff Report
10 January 2018

SITE: 50 Griffin Road - Map 126/Lot 032 - SP# 01-18 & CU# 01-18

ZONING: G1

PURPOSE OF PLAN: to construct a 155' monopole wireless telecommunication tower with antennas, associated 50' x 50' fenced crushed stone or gravel compound with shelter, landscaping, and new driveway. Application Acceptance & Hearing for both Site Plan and Conditional Use Permits.

PLAN UNDER REVIEW ENTITLED: Eco-Site, 240 Leigh Farm Rd, Durham , NC, Miller, 50 Griffin Rd, Hudson, NH, Eco-Site #: NH – 0016-B, T-Mobile Site #: 4MNO435-B, prepared by: Chappell Engineering Associates, LLC, RK Executive Centre, 201 Boston Post Road West, Marlborough, MA, dated 01 SEPT 2017 with revisions through 11 NOV 2017 and consisting of Sheets T-1, GN-1, C-1 to C-3, Z-1 to Z-5, and EC-1 (said plans attached hereto).

ATTACHMENTS:

- 1) Conditional Use & Site Plan Application Forms, date stamped 11/20/2017, which include project description, Zoning Determination, photo simulations of tower visual impacts, and RF Plots Facilities Master Plan documenting coverage gaps and need for tower – Attachment “A”.
- 2) Review comments from the Fire Dept., Police Dept., Road Agent, Asst. Assessor and Zoning Admin. with Zoning Determination – Attachment “B”.
- 3) CLD Peer Review Comments letter dated 12/6/2017 – Attachment “C”.
- 4) Applicant response to CLD Review Comments dated 12/29/2017 – Attachment “D”.

REQUESTED WAIVERS:

- 1) HR 276 – 11.1.B. – Submission requirements for (2) scale of plan, (3) title block format, and (9) error of survey closure.
- 2) HR 193 – 10. J. – Restriction on one driveway per parcel.

STAFF COMMENTS/ ISSUES:

- 1) In accordance with §334-96.2 of the Zoning Ordinance, this Site Plan Review application is being reviewed concurrently with the Conditional Use Permit application. The staff report for the Conditional Use Permit application is included in this packet, and includes all attachments and DRAFT MOTIONS, relative to recommended Planning Board action.
- 2) §334-21 Table of Permitted Uses of the Zoning Ordinance lists wireless communications facility as a use allowed by special exception. §334-96.2 specifically authorizes the Planning Board to approve cell towers as a conditional use. The Town has historically approved towers as conditional use permits and not as special exceptions requiring Zoning Board review and approval.

- 3) The conditional use review process for commercial wireless transmission facilities is intended to accomplish the following goals:
 - A. Preserve the authority of Hudson to regulate and to provide for reasonable opportunity for the siting of commercial wireless telecommunication facilities by enhancing the ability of providers of telecommunication services to provide such services to the community quickly, effectively and efficiently;
 - B. Reduce adverse impacts such facilities may create, including, but not limited to, impacts on aesthetics, environmentally sensitive areas, historically significant locations, flight corridors, health and safety by injurious accidents to person and property, and prosperity through protection of property values;
 - C. Provide for co-location and minimal impact siting options through assessment of technology, current location options, future available locations and innovative siting techniques;
 - D. Permit the construction of new towers only where all other reasonable opportunities have been exhausted; and to encourage the users of towers and antennas to configure them in a way that minimizes the adverse visual impact of the towers and antennas;
 - E. Require cooperation and co-location, to the highest extent possible, between competitors in order to reduce cumulative negative visual and property value impacts upon the Town;
 - F. Provide maintenance and safety inspections for any and all facilities;
 - G. Provide for the removal of abandoned facilities that are no longer inspected for safety concerns and Building Code compliance; provide a mechanism for the Town to remove these abandoned facilities to protect the citizens from imminent harm and danger;
 - H. Provide for the removal or upgrade of facilities which are technologically outdated; and
 - I. Provide for the protection of the environment and open space; and preserve community character, scenic vistas and historic heritage.
- 4) Goals C. through E. above, which together seek to limit the proliferation of telecommunications towers in Town, provide the basis for requiring an RF (Radio Frequency) Analysis. The RF Analysis measures the "gaps" in cell phone coverage for this service provider and for other service providers in the region to demonstrate that the proposed tower is needed and that coverage needs cannot be met by co-locating on other existing towers in the region. The application includes an RF analysis documenting a need for the cell tower at this location to effectively provide cell phone service to that part of Hudson. If there are concerns as to the impacts of the proposed tower and/or questions as to the need for another tower at this location, the Board can request a peer review of the RF Analysis by an engineer qualified to do such analyses.
- 5) Goals B. and I. above, which are intended to limit the visual impacts of telecommunications towers on public and private views, provide the basis for the submission of photo-simulations contained in the application. Based on a "viewshed" analysis, the applicant has prepared photo-simulations from various points on area roads with potential views of the proposed tower. There may be individual homes within the viewshed that have unobstructed views that warrant additional photo-simulations. All abutting properties within 300 feet of the tower property have received certified mail notices. The location of the proposed tower in close proximity to an electrical transmission corridor lessens the potential for significant adverse effects on views.
- 6) Goals G. and H. above anticipate the eventual development of new communications technologies that may render the proposed tower installation obsolete. §334-97 requires that the applicant post a bond for removal of the tower in the event of abandonment, and §334-98 requires removal of the tower if it is not operated for a continuous period of one year. Draft stipulations will require the applicant to meet these requirements.

- 7) The fall zone for this 155' monopole meets all side, rear and front setback requirements, as well as all fall zone setbacks. Both the Zoning Administrator and CLD in its peer review noted that the tower fall zone includes a portion of the powerline easement that crosses the subject property. The applicant should address whether this condition could impact the powerline and/or requires permission of the company that operates it.
- 8) Deputy Fire Chief John O'Brien has asked that the Planning Board require the applicant to provide tower and accessory building space for Public Safety communications equipment. There are no specific regulations that address this issue nor is there a conditional use criterion that supports it. The Chief has also indicated a required width of 14 feet with a maximum grade of ten percent for the access drive and a "Knox Box" at the entrances to provide Public Safety with access to the site for emergencies (Attachment "B").
- 9) Town Engineer Elvis Dhima has identified a lack of design details for the proposed driveway access and for stormwater drainage control. The Town Engineer has also pointed out the limitation on the number of driveways per parcel. §334-97 appears to give the Planning Board waiver authority of this driveway limitation (Attachment "B").
- 10) CLD has provided comprehensive review comments addressing requirements of all Hudson Land Use Regulations and the Zoning Ordinance included in this packet (Attachment "C").
- 11) The applicant has prepared a response to the CLD review comments included in this packet as (Attachment "D").
- 12) Based on the Impact Fee Methodology adopted by the Planning Board, a CAP Fee is not required for an unmanned utility.

RECOMMENDATION: For this hearing, staff recommends application acceptance, conduct the public hearing and consider approval of the Site Plan and Conditional Use Permits, i.e., in accordance with the below-cited DRAFT motions. If the Board considers that additional information and/or time is needed to review the application, a motion to defer consideration to the 24 JAN 18 meeting is included.

APPLICATION TRACKING:

- 20 NOV 17 - Application submitted and amendments to this submission resulted in completion of the submission.
- 10 JAN 18 - Public hearing scheduled.

DRAFT MOTIONS:

MOTION TO ACCEPT THE APPLICATION:

I move to accept the Site Plan and Conditional Use Permit applications for the Eco-Site proposed 155' monopole telecommunications tower at 50 Griffin Road, Map 126/Lot 032.

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

MOTION TO DEFER CONSIDERATION OF THE APPLICATION:

I move to defer further review of the Site Plan and Conditional Use Permit applications for the Eco-Site proposed 155' monopole telecommunications tower at 50 Griffin Road, Map 126/Lot 032 until the 24 JAN 18 meeting.

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

WAIVER MOTIONS:

- 1) HR 276 – 11.1.B. – Submission requirements for (2) scale of plan, (3) title block format, and (9) error of survey closure.

I move to grant the requested waiver HR 276 – 11.1.B. (2), (3), and (9) of the submission requirements based on the testimony of the Applicant’s representative here this evening, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

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

- 2) HR 193 – 10. J. – Restriction on one driveway per parcel

I move to grant the requested waiver HR 193 – 10. J. limitation of one driveway per lot based on the testimony of the Applicant’s representative here this evening, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

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

MOTION TO APPROVE:

I move to approve the Site Plan and Conditional Use Plan entitled: Eco-Site, 240 Leigh Farm Rd, Durham , NC, Miller, 50 Griffin Rd, Hudson, NH, Eco-Site #: NH – 0016-B, T-Mobile Site #: 4MNO435-B, prepared by: Chappell Engineering Associates, LLC, RK Executive Centre, 201 Boston Post Road West, Marlborough, MA, dated 01 SEPT 2017 with revisions through 11 NOV 2017 and consisting of Sheets T-1, GN-1, C-1 to C-3, Z-1 to Z-5, and EC-1, in accordance with the following terms and conditions:

- 1) All stipulations of approval for this concurrent Site Plan and Conditional Use Permit shall be incorporated into the Development Agreement, which shall be recorded at the HCRD, together with the above-cited Plan-of-Record (hereinafter referred to as the Plan).
- 2) All improvements shown on the Plan shall be completed in their entirety and at the expense of the Applicant or his assigns.
- 3) Prior to the issuance of a final certificate of occupancy, a L.L.S. certified "As Built" site plan shall be provided to the Town of Hudson Community Development Department, confirming that the site conforms to the Plan.
- 4) Construction activities involving the subject lot shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday.
- 5) Prior to Planning Board endorsement of the plan, it shall be subject to final review by the Town Engineer and CLD.
- 6) The applicant shall schedule a pre-construction meeting with the Town Engineer prior to applying for a building permit.
- 7) The Applicant, as well as all future assigns to the subject wireless tower, shall provide access to the tower for Town emergency service communications needs.

- 8) The Applicant, as well as all future assigns to the subject wireless tower, shall provide access for co-location as availability provides.
- 9) The Applicant shall submit and maintain a performance surety in a form and amount that represents the cost for removal and disposal of the tower in the event that it is abandoned and the tower owner is incapable and/or unwilling to remove the tower. Bonding and surety shall be consistent with the provisions in the Subdivision Regulations. Bonding shall be nonlapsing of not less than five-year intervals.

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

"A"

**CONDITIONAL USE PERMIT APPLICATION
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: November 17, 2017 Tax Map # 126 Lot # 032

Name of Project: Eco-Site - Wireless Telecommunications Facility - Griffin Road

Zoning District: G-1 General CU# 01-18
(For Town Use) (For Town Use)

ZBA Action: N/A

PROPERTY OWNER:

DEVELOPER:

Name: Lavinia Miller Eco-Site, Inc.

Address: 50 Griffin Road 240 Leigh Farm Road, Ste. 415

Address: Hudson, NH 03051 Durham, NC 27707

Telephone # _____ 919-636-6810

Fax # _____

Email: _____

PROJECT ENGINEER

SURVEYOR

Name: Chappell Engineering Associates, LLC

Address: 201 Boston Post Road West, Ste 101

Address: Marlborough, MA 01752

Telephone # 508-481-7400

Fax # _____

Email: _____

PURPOSE OF PLAN:

To construct new 155-foot monopole wireless telecommunication tower with antennas, associated 50' x 50' fenced crushed stone or gravel compound with shelter, landscaping, and new driveway.

(FOR TOWN USE)

Plan Routing Date: _____ Conditional Permit Date: _____

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

(Initials) Title: _____ Date: _____

Department Review:

____ Zoning ____ Engineering ____ Assessor ____ Police ____ Fire ____ Planning

_____ Highway Dept. _____ Consultant

Fees Paid \$ 1632.19

**APPLICATION FOR CONDITIONAL USE PERMIT
TOWN OF HUDSON, NEW HAMPSHIRE**

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

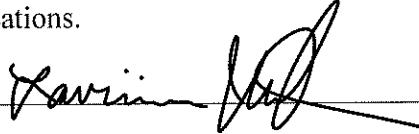
Applicant Initials		Staff Initials
<u> X </u>	a) A site plan application shall be submitted concurrently with the Conditional Use Permit application.	<u> GT </u>
<u> X </u>	b) A conditional use narrative, describing the project.	<u> GT </u>
<u> X </u>	c) Developer names, addresses, telephone, numbers and signatures.	<u> GT </u>
<u> X </u>	d) Fees paid to clerk.	<u> GT </u>

**APPLICATION FOR CONDITIONAL USE PERMIT
TOWN OF HUDSON, NEW HAMPSHIRE**

I hereby apply for a *Conditional Use Permit* 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 *Conditional Use* specifications or Application form are incomplete, the Application will be considered rejected.

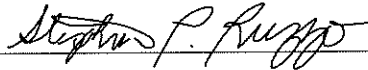
Pursuant to RSA 674:1-IV, the owner(s) by the filing of this application as indicated above, hereby given permission for any member of the Hudson Planning Board, the Town Engineer, the Conservation Commission and such agents or employees of the Town or other persons as the Planning Board may authorize, 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 (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests or inspections conducted on his (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 individual in charge of the project must notify the Code Enforcement Officer/Building Inspector within two (2) working days of any change.

APPLICATION IS DUE AT NOON 30 days prior to the Planning Board Meeting. (The date the Agenda is CLOSED.) Any applications received after that time will be deferred until the next available meeting.



**APPLICATION FOR CONDITIONAL USE PERMIT
AND SITE PLAN APPROVAL
FOR A
WIRELESS COMMUNICATION FACILITY**

Eco-Site, Inc.

**c/o Ricardo M. Sousa, Esq.
Prince Lobel Tye LLP
One International Place, Suite 3700
Boston, MA 02110**

Applicant

**Property Location:
50 Griffin Road
Hudson, NH 03051**

Parcel ID: Map 126 Block 032 Lot 000

**Prepared by: Ricardo M. Sousa, Esq.
Prince Lobel Tye LLP
One International Place, Suite 3700
Boston, MA 02110
Telephone: (617) 456-8123
Facsimile: (617) 456-8100**

November 20, 2017

TABLE OF CONTENTS

**APPLICATION TO THE PLANNING BOARD
For Conditional Use Permit and Site Plan Approval for a
WIRELESS COMMUNICATION FACILITY**

**Property located at:
50 Griffin Road
Hudson, NH 03051**

Parcel ID: Map 126 Block 032 Lot 000

Application Forms	Tab 1
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FAA Certification	Tab 12
Redacted Lease	Tab 13
FCC License	Tab 14
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**PRELIMINARY & FINAL SITE PLAN APPLICATION
FOR PLAN REVIEW (Also for Wireless)
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: November 17, 2017 Tax Map # 126 Lot # 032

Name of Project: Eco-Site - Wireless Telecommunications Facility - Griffin Road

Zoning District: G-1 General SP# 01-18
(For Town Use) (For Town Use)

ZBA Action: N/A

PROPERTY OWNER:

DEVELOPER:

Name: Lavinia Miller

Eco-Site, Inc.

Address: 50 Griffin Road

240 Leigh Farm Road, Ste. 415

Address: Hudson, NH 03051

Durham, NC 27707

Telephone # _____

919-636-6810

Fax # _____

Email: _____

PROJECT ENGINEER

SURVEYOR

Name: Chappell Engineering Associates, LLC

Address: 201 Boston Post Road West, Ste 101

Address: Marlborough, MA 01752

Telephone # 508-481-7400

Fax # _____

Email: _____

PURPOSE OF PLAN:

To construct new 155-foot monopole wireless telecommunication tower with antennas, associated 50' x 50' fenced crushed stone or gravel compound with shelter, landscaping, and new driveway.

For Town Use

Plan Routing Date: _____ Sub/Site Date: _____

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

_____ Title: _____ Date: _____

(Initials)

DEPT:

_____ Zoning _____ Engineering _____ Assessor _____ Police _____ Fire _____ Planning

_____ Consultant _____ Highway Department

Fees Paid: \$ 405

SITE DATA SHEET

PLAN NAME: Eco-Site - Wireless Telecommunications Facility - Griffin Road

PLAN TYPE: SITE PLAN

LEGAL DESCRIPTION: MAP 5927 LOT 1978

DATE: November 17, 2017

Location by Street 50 Griffin Road

Zoning: G-1 (General)

Proposed Land Use: Wireless Telecommunications Facility

Existing Use: Farm

Surrounding Land Use(s): Residential

Number of Lots Occupied: 1

Existing Area Covered by Building: N/A

Existing Buildings to be removed: None

Proposed Area Covered by Building: N/A

Open Space Proposed: N/A

Open Space Required: N/A

Total Area: S.F.: _____ Acres: _____

Area in Wetland: _____ Area Steep Slopes: _____

Required Lot Size: _____

Existing Frontage: No change

Required Frontage: N/A

Building Setbacks:	<u>Required*</u>	<u>Proposed</u>
Front:	<u>30'</u>	<u>189.8'</u>
Side:	<u>15'</u>	<u>613.5'</u>
Rear:	<u>15'</u>	<u>1017.3'</u>

November 17, 2017

Town of Hudson
Planning Board
12 School Street
Hudson, NH 03051

Re: Application for a Conditional Use Permit and Site Plan Approval
Property Address: 50 Griffin Road, Hudson, NH 03051 (the "Property")
Applicant: Eco-Site, Inc. ("Eco-Site") and T-Mobile Northeast LLC ("T-Mobile" and together with Eco-Site, the "Applicants" or "Applicant")

Dear Honorable Members of the Planning Board:

This firm represents the Applicants in connection with an application for a Conditional Use Permit and Site Plan Approval from the Planning Board for the Town of Hudson (the "Board") for the construction of its proposed Commercial Wireless Telecommunication Facility¹ on the Property. Eco-Site is proposing to construct a one hundred and fifty-five foot (155') monopole style wireless tower² (the "Monopole") and T-Mobile proposes to install thereupon, eight (8) wireless communications antennas at a centerline height of one hundred and fifty feet (150') more or less, together with appurtenant equipment at the base of the Monopole (the "T-Mobile Facility"). The Monopole will have the capacity to co-locate an additional three (3) antenna arrays for other wireless telecommunications carriers and will be constructed within a 2500 square foot compound surrounded by an eight (8) foot high chain link fence. The proposed Monopole and T-Mobile Facility (together, the proposed Monopole and T-Mobile Facility may also be referred to as the "Facility") are illustrated on the plans attached hereto, and incorporated herein by reference (the "Plans").

The Property is located in the General 1 ("G-1") zoning district in the Town of Hudson. Pursuant to Article XVIII, Section 334-96.1 and 334-96.2 of the Code of the Town of Hudson, NH (the "Ordinance"), the use of the Property for a wireless communications facility involving the construction of a monopole and operation of a Commercial Wireless Telecommunications Facility, is allowed by Conditional Use Permit and Site Plan Approval from the Board. The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because it satisfies the conditions set forth in Article XVIII of the Ordinance.

¹ Pursuant to Article XVIII, Section 334-93 of the Ordinance, a Commercial Wireless Telecommunication Facility is defined as a "Any structure, antenna, tower or other device used to provide a discrete commercial telecommunication service by a single provider to a broad base of usually unrelated users; generally including, but not limited to, cellular telephone, personal communications services (PCS), specialized mobile radio (SMR), enhanced specialized mobile radio (ESMR) and paging."

² Pursuant to Article XVIII, Section 334-93 of the Ordinance, a Monopole is defined as "A freestanding tower consisting of a single pole, constructed without guy wires or lattice characteristics, which relies solely on self-support (direct attachment to the ground) to remain upright."

Prince Lobel Tye LLP
One International Place
Suite 3700
Boston, MA 02110
TEL: 617 456 8000
FAX: 617 456 8100

Pursuant to the extensive Alternative Site Analysis conducted by the Applicant, a copy of which is attached hereto, T-Mobile is unable to find a suitable existing location to co-locate its proposed Wireless Facility. Without the proposed Facility, T-Mobile cannot provide reliable wireless service to the Town of Hudson, pursuant to the mandate of the Telecommunications Act of 1996 and its license issued by the Federal Communications Commission (the "FCC"). It is impossible for T-Mobile to provide seamless and reliable wireless coverage to the Town of Hudson under the present zoning scheme without obtaining a Conditional Use Permit and Site Plan Approval. Therefore, the Applicant respectfully requests that this Board grant the requested relief pursuant to its authority set forth in Article XVIII of the Ordinance.

A. Background

T-Mobile is licensed by the Federal Communications Commission (the "FCC") to construct and operate a wireless telecommunications network in various markets throughout the country, including the State of New Hampshire and in particular in the Town of Hudson. A copy of the Applicant's FCC license is attached hereto. The Applicant is in the process of designing and constructing a telecommunications system to serve all of the State of New Hampshire. One of the key design objectives of its systems is to provide seamless coverage. Such a system requires a grid of radio transmitting and receiving links located approximately .5 to 2 miles apart, depending on the location of existing and proposed installations in the surrounding area, the existing use of the network and the existing topography. The radio transmitting and receiving facilities operate on a line-of-sight basis, requiring a clear path from the facility to the user on the ground. This dynamic requires the antennas to be located in a location where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

B. RF Coverage Determination

T-Mobile has performed a study of radio frequency coverage for the Town of Hudson and from the Property, the results of which are shown on the coverage maps submitted herewith. It has determined that a telecommunications facility located on the proposed Monopole on the Property will provide adequate coverage to the targeted sections of the Town of Hudson and the immediately surrounding area if T-Mobile's proposed antennas are located at the requested height of one hundred and fifty feet (150').

In connection herewith, T-Mobile has submitted a radio frequency propagation map showing its current coverage and the gap in coverage that the proposed site will fill, and a radio propagation map showing the anticipated coverage from the site.

Additionally, T-Mobile has submitted a report from its radio frequency engineer stating the necessity of this site to provide reliable network service to T-Mobile customers within the Town of Hudson, especially along Griffin Road, Robinson Road, Hazelwood Drive and surrounding areas and neighborhoods.

C. The Facility

As illustrated on the Plans, the Monopole will be 155' in height and will be located within a 50' x 50' fenced compound. T-Mobile's Facility will consist of eight (8) wireless communications panel antennas and a dish antenna at a centerline height of 150' more or less, together with equipment cabinets on a concrete pad, a GPS antenna and Remote Radio Heads (RRH) with accessory junction boxes and surge suppressors mounted alongside the antennas. The antennas will be connected via coaxial cable installed within the Monopole to appurtenant radio equipment. The compound will be surrounded by an eight (8) foot high chain link fence.

Pursuant to FCC mandate, enhanced emergency (E911) service is required to meet nationwide standards for wireless telecommunications systems. To comply with this federal standard, T-Mobile will install one (1) E911 Global Positioning System (GPS)/GSM antenna.

After installation, the T-Mobile Facility will be unmanned and will require only biweekly visits by a single vehicle for routine maintenance. The only utilities required to operate this facility are standard 120-volt electrical power as well as telephone service, which are presently installed on the Property. Finally, the Monopole and the T-Mobile Facility will comply with all applicable local, state and federal safety codes, including FCC regulations related to radio frequency emissions.

D. Legal Argument

1. The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because the proposed Facility satisfies the siting standards set forth in Article XVIII, Section 334-95 of the Ordinance, as follows:

a. Commercial wireless telecommunication facilities may be considered either principal or secondary uses. A different existing use or an existing structure on the same lot shall not preclude the installation of a commercial wireless telecommunication facility on such a lot.

Currently, the Property is utilized as a farm. The proposed Facility will be a secondary use on the Property and as such is in compliance with this provision.

b. For purposes of determining whether the installation of a commercial wireless telecommunication facility complies with district development standards, the dimensions of the entire lot shall control, even though the facility may be located on leased parcels within such lots.

The Property is located within the G-1 zoning district and is a conforming lot for purposes of zoning. As depicted in more detail in the Plans, the proposed Facility complies with all district development standards.

c. A commercial wireless telecommunication facility which is constructed in accordance with the provisions of this article on a nonconforming lot, or in

conjunction with a nonconforming use, shall not be deemed to constitute the expansion of a nonconforming use or structure.

Not Applicable. The Property is a conforming lot.

- d. Towers shall not exceed 180 feet in height above the ground. In all cases, a tower's maximum height shall be the minimum height above the ground necessary to perform or achieve the desired communication(s) or telecommunication service(s). Co-location is considered to be within the definition of a desired communication or telecommunication service.**

The proposed Monopole will be constructed at a height of 155' with the T-Mobile antenna array installed thereupon at an approximate centerline height of 150' and will comply with the maximum height requirement set forth herein. As evidenced by the Radio Frequency Plots and Radio Frequency Affidavit attached hereto, and described in more detail below, the proposed centerline height of 150' feet for the T-Mobile antenna array is the minimum height necessary for T-Mobile to provide adequate coverage to its users in the Town of Hudson.

The Personal Communications Service system being developed by T-Mobile has been designed employing the most sophisticated radio frequency engineering methods available. Radio frequency engineers determine the placement of network points-of-presence using computer engineering models that simultaneously evaluate area topography and population patterns to identify specific geographic areas to be serviced by each antenna facility in the network. As a result of this modeling, combined with actual coverage data provided by existing "on air" facilities, T-Mobile's radio frequency engineers have identified a limited geographic area as a necessary location for a wireless communications facility to remedy an existing gap in reliable service coverage in the general vicinity of the site. Without the requested relief, there would remain a substantial "gap" in reliable service coverage in T-Mobile's network. Radio frequency coverage maps and a Radio Frequency Report, both submitted herewith, confirm that T-Mobile must install its wireless facility on the Property to remedy the existing gap in its network coverage in the area. The requested height has been determined by T-Mobile's engineers to be the minimum height necessary to connect coverage from the proposed facility with coverage from adjacent cell sites in T-Mobile's network (i.e., to remedy the existing "gap" in service and to effect reliable handoffs between adjacent cell sites as a subscriber travels through the area). See the Radio Frequency Report submitted herewith.

Accordingly, the conditional use permit and site plan approval requested are necessary to enable the Applicants use of the Property to provide adequate coverage to this area of the Town of Hudson. The granting of the requested relief will do substantial justice as it is consistent with the TCA (defined herein) and the purpose and intent of the Ordinance.

Furthermore, the proposed Monopole can support up to four (4) antenna arrays and as such satisfies the purpose and intent of this requirement, the definition of Co-Location as set forth in Section 334-92 of the Ordinance, and Article XVIII of the Ordinance.

Eco-Site is in the business of developing telecommunications towers and hereby submits that it has every intention of providing additional space for all other licensed carriers for commercial mobile radio services operating in the Country. As evidenced by its co-applicant's interest in the site, this is an area of Hudson that is in need of additional coverage and capacity for commercial mobile radio service providers.

- e. **An RF Engineering/Facilities Master Plan shall be submitted for review to include present and future network infrastructure in both Hudson and abutting communities. The lay person shall be able to easily understand the Master Plan and supporting documentation. It shall explain sufficiently why the tower must be in this location. With the exceptions of alternative facilities/technologies, which do not have visible outdoor equipment, and telecommunication facilities placed on existing utility poles, site plan approval is required for all commercial wireless telecommunication facilities, including any such facilities situated on residential sites.**

The Applicant has provided an RF Engineering / Facilities Master Plan in connection with this application.

- f. **The FCC regulates radio frequency (RF) emissions, and local jurisdictions are preempted from prohibiting the construction of commercial wireless telecommunication facilities on the basis of exposure to RF emissions. Owners/operators of commercial wireless telecommunications facilities shall construct such facilities in accordance with FCC regulations pertaining to RF emissions.**

The Monopole and the T-Mobile Facility will comply with all applicable local, state and federal safety codes, including FCC regulations related to radio frequency emissions. The proposed Facility will also comply with all applicable health and safety standards.

T-Mobile is licensed and regulated by the Federal Communications Commission (FCC), which imposes strict health and safety standards governing construction requirements, technical standards, interference protection, power and height limitations, and radio frequency standards. These standards are set by independent safety and standard groups such as the American National Standards Institute (ANSI) and the Institute of Electrical Electronics (IEEE). The Applicant will comply with these standards.

2. **The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because the proposed Facility satisfies the dimensional standards set forth in Article XVIII, Sections 334-96.1, 334-102 and 334-105 of the Ordinance, as follows:**
 - a. **Article VIII, Section 334-96.1 of the Ordinance and the Table of Conditionally Permitted Facilities included therein, require that a new Monopole receive a conditional use permit from the Board in certain zoning districts based on their height and distance from residential uses and major corridors in Hudson. The major corridors in Hudson are defined as Route**

3A, 102 and 111. Monopoles that do not meet the required criteria listed in Section 334-96.1 of the Ordinance are not conditionally permitted and would require a variance.

The proposed Facility satisfies the siting and height requirements set forth in Section 334-96.1 as it is proposed within a G-1 Zoning District, at a height of 155' and located a distance greater than five times its proposed height from a major corridor, but less than 5 times its height from a residential use. As such, pursuant to the Table of Conditionally Permitted Facilities, the proposed Facility requires a Conditional Use Permit from the Planning Board.

As described in more detail in the Plans, the proposed Facility will be constructed at a height of 155' and will be located approximately 12,830' from Route 102; 21,710 feet from Route 3A and 3,345; from Route 111.

- b. No antenna and/or mast shall be capable of falling or collapsing beyond the bounds of the property on which it is situated. A fall zone calculation, utilizing graph paper and a drawing compass to plot it, shall be performed for any antenna and/or mast at the time a building permit or special exception application is made to demonstrate compliance with this requirement. (A sample fall zone calculation appears as an exhibit at the end of this chapter). All antennas and/or masts shall be assembled and erected to a manufacturer's standards using sound practices.**

The proposed Monopole complies with the "fall zone" setback requirement as it is set back a distance greater than the height of the tower from the nearest property line. The proposed Monopole will be constructed at a height of 155' and located a minimum of approximately 223.3' feet from the nearest property line. Please see the Plans attached hereto.

- c. No antenna, mast or supporting appurtenant devices are permitted to exist within any yard setback area and, for nonresidential properties, within any green space areas.**

The proposed Facility is not located within any yard setback area or required green space areas. Please see the Plans attached hereto.

- 3. The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because the proposed Facility satisfies the standards set forth in Article XVIII, Sections 334-96.2, 334-97 and 334-98 of the Ordinance, as follows:**

- a. Pursuant to NH RSA 674:21(II), the Hudson Planning Board is hereby authorized to issue a conditional use permit for commercial wireless telecommunication facilities according to the Table of Conditionally Permitted Facilities as set forth in § 334-96.1. Application for a conditional use permit shall be made concurrently with application for subdivision and/or site plan approval. In addition to the application submission**

requirements for subdivision and/or site plan approval, the Planning Board may require the applicant for a conditional use permit to submit an RF Engineering/Facilities Master Plan as provided in § 334-95E. In acting upon any such conditional use permit application the Planning Board shall determine whether the applicant has satisfied the general guidelines set forth in § 334-92 and the siting standards set forth in § 334-95, and the Board may impose such conditions of approval on the conditional use permit as are consistent with this Article XVIII and other provisions of the Hudson Zoning Ordinance. The Planning Board shall hold at least one public hearing on any such conditional use application and, following the public hearing, the Planning Board shall act to approve the application, deny it, or approve it with conditions. Any person aggrieved by a Planning Board decision concerning a conditional use permit may appeal that decision to the Superior Court in the manner provided by RSA 677:15, Court Review. As provided in NH RSA 676:5, III, a Planning Board decision concerning a conditional use permit cannot be appealed to the Hudson Zoning Board of Adjustment.

The Applicant is proposing a Monopole in the General-1 zoning district and as such requires a Conditional Use Permit from the Board. As described in more detail herein, the Applicant complies with the requirements set forth in Article XVIII of the ordinance and as such, is entitled to a Conditional Use Permit from the Board.

In connection with this Application, T-Mobile has performed a study of radio frequency coverage for the Town of Hudson and from the Property, the results of which are shown on the coverage maps submitted herewith. It has determined that a telecommunications facility located on the proposed Monopole on the Property will provide adequate coverage to the targeted sections of the Town of Hudson and the immediately surrounding area if T-Mobile's proposed antennas are located at the requested height of one hundred and fifty feet (150').

In connection herewith, T-Mobile has submitted a radio frequency propagation map showing its current coverage and the gap in coverage that the proposed site will fill, and a radio propagation map showing the anticipated coverage from the site.

Additionally, T-Mobile has submitted a report from its radio frequency engineer stating the necessity of this site to provide reliable network service to T-Mobile customers within the Town of Hudson, especially along Griffin Road, Robinson Road, Hazelwood Drive and surrounding areas and neighborhoods.

Furthermore, the intent of the U.S. Congress, when it enacted the Telecommunications Act of 1996 (the "TCA"), was to institute a framework to promote the competition and innovation within the telecommunications industry. Under its license from the FCC, T-Mobile is obligated to provide a reliable "product" (i.e. wireless communications service) to the population of the Town of Hudson. Likewise, consumer expectations for increasingly robust and reliable service requires competing service providers (including T-Mobile) to identify and remedy existing gaps in reliable network coverage, or gaps that result from increasing subscriber voice and data traffic beyond the limits of existing network

infrastructure. A carrier's failure to remedy network gaps in a timely fashion can result in a significant loss of subscribers to competing telecommunications carriers. As demonstrated in the Radio Frequency Report and Service Coverage maps provided by the Applicant and attached hereto, the proposed Monopole and T-Mobile Wireless Facility and corresponding relief requested are necessary to remedy a gap in reliable service coverage within T-Mobile's existing network infrastructure.

T-Mobile investigated alternative sites in and around the defined geographic area within which its engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within its network of existing and planned facilities. There is no existing location in the Town of Hudson that would provide the necessary coverage to the subject area. Therefore, the proposed Facility is necessary to close the coverage gap that is illustrated on the propagation maps submitted herewith.

Accordingly, in conformity with the intent of the Ordinance and the U.S. Congress in enacting the TCA, the granting of the requested relief is necessary for T-Mobile to eliminate an existing gap in reliable service coverage and effectively compete for subscribers with FCC licensed competitors in the market.

The Telecommunications Act of 1996

As noted in Nextel Communications of the Mid-Atlantic, Inc. v. Town of Wayland, 231 F.Supp. 2d 396, 406-407 (D. Mass. 2002), the "need for closing a significant gap in coverage, in order to avoid an effective prohibition of wireless services, constitutes another unique circumstance when a zoning variance is required." Although a variance is not required in this specific instance, T-Mobile requires a conditional use permit and site plan approval from the Board since it cannot close a significant gap in coverage without installing a facility at the Property.

In a growing number of cases, the federal courts have found that variance denials violate the TCA, even if such denials would be valid under state law. For example, in AT&T Communications v. Town of Lincoln, 107 F. Supp. 2d 108 (D. Mass. 2000), the court found that denial of a variance for a location outside of the town's wireless overlay district violated the TCA and ordered the variance to issue despite a by-law provision prohibiting use variances. Recently, the Wayland Court reached the same result. In that case, the court stated: "Although the Board's statement [regarding its lack of authority to issue a use variance] may be a correct statement in Massachusetts regarding variances, it is not controlling in the special case of wireless communications facilities . . . Under the Telecommunications Act, the Board cannot deny the variance if in so doing it would have the effect of prohibiting wireless services." Wayland at 406-407.

T-Mobile has demonstrated a need for coverage in an area immediately surrounding the Property. The installation proposed by the Applicant is the least intrusive means available to T-Mobile to fill its gap in coverage. Therefore, the need to close this significant gap in coverage

constitutes another unique circumstance which is relevant to the grant of the conditional use permit and site plan approval.

- b. Recognizing the extremely hazardous situation presented by abandoned and unmonitored towers, the Planning Board shall set the form and amount of security that represents the cost for removal and disposal of abandoned towers in the event that the tower is abandoned and the tower owner is incapable and/or unwilling to remove the tower in accordance with § 334-98. Bonding and surety shall be consistent with the provisions in the Subdivision Regulations. Furthermore, the Planning Board shall require submission of proof of adequate insurance covering accident or damage. Bonding shall not be required for alternative facilities/technologies which are an integrated part of an existing structure. Bonding shall be nonlapsing of not less than five-year intervals.**

The Applicant hereby agrees to submit a removal bond to the Town of Hudson in the amount reasonably set forth by the Planning Board and furthermore submits that it will maintain adequate insurance covering accident or damage.

- c. Any commercial wireless telecommunication facility which is not operated for a continuous period of 12 months shall be considered abandoned and hazardous to the public health and safety, unless the owner of said commercial wireless telecommunication facility provides proof of quarterly inspection. The owner shall remove the abandoned structure within 90 days of receipt of a declaration of abandonment from the Town. A declaration of abandonment shall only be issued following a public hearing, noticed according to RSA 676:4, with notice to abutters and the last known owner/operator of the tower. If the abandoned commercial wireless telecommunication facility is not removed within 90 days, the Town may execute the bonding security and have the commercial wireless telecommunication facility removed.**

The Applicant hereby submits that it agrees to this requirement.

- 4. The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because the proposed Facility satisfies the Site Plan Review and Approval requirements set forth in Chapter 275 of the Ordinance.**

Please see the Plans submitted herewith and incorporated by reference herein for confirmation of compliance with the Site Plan Review submittal and approval standards. Furthermore, the Applicant submits that the Plans contain the necessary detail to properly evaluate the proposed Facility. To the extent the Board determines the Plans do not comply with the Site Plan Review submittal and approval standards, the Applicant respectfully requests a waiver therefrom.

5. The Applicant is entitled to a Conditional Use Permit and Site Plan Approval because the proposed Facility will not adversely impact the health, safety, and welfare of the residents of the Town of Hudson, or impair the intent or purpose of the Ordinance, as follows:

The operation of the proposed telecommunications Facility will not adversely impact the health, safety, and the welfare of the residents of the Town of Hudson or impair the intent or purpose of the Ordinance.

Granting the requested relief will benefit the Town and promote the safety and welfare of its residents, businesses and drivers by providing reliable state-of-the-art digital wireless voice and data services. In addition, granting the requested relief will not be contrary to the public interest because:

1. The proposed use complies with the Ordinance to the extent reasonably feasible;
2. The proposed location of the proposed Facility is necessary for the effective deployment of the T-Mobile's network;
3. The proposed Facility will comply in all respects with RF emission standards established by the FCC;
4. The proposed Facility will not have any adverse effect on the value of land and buildings in the neighborhood or on the amenities thereof. The use will be passive and require no employees on the premises. Specifically, the proposed Facility will require approximately two vehicle trips per month by a service technician for routine maintenance and will require no water, septic, or other municipal services;
5. The proposed Facility will promote and conserve the convenience and general welfare of the inhabitants of the Town by enhancing telecommunication services;
6. The proposed Facility will involve no overcrowding of land or undue concentration of population because it is an unmanned facility;
7. The proposed Facility will preserve and increase the amenities of the Town by enhancing telecommunications services;
8. The proposed Facility will lessen the danger from fire and natural disasters by providing increased network access for emergency communications in the event of such fires and natural disasters;

9. The proposed Facility will involve no adverse effects on public and private water supplies and indeed will utilize no water at all;
10. The proposed Facility will facilitate the adequate provision of transportation by improving mobile telecommunications for business, personal, commuters and emergency uses;
11. The proposed Facility will involve no adverse effects on drainage, schools, parks, open space, or other public requirements;
12. The proposed Facility will involve no excessive noise or pollution to the environment;
13. The proposed Facility will involve no adverse effects on historic sites;
14. The proposed Facility will be an appropriate use of land in the Town;
15. The proposed Facility will be a benefit to the community by allowing for more competitive wireless telecommunications services to the residents and businesses of the Town.

Moreover, the proposed Facility will not diminish the value of surrounding properties. The proposed Facility will have a minimal visual impact upon neighboring lots because it is set back from roads and neighborhoods and will be constructed adjacent to large overhead utility lines that currently run across the Property. The Monopole is designed to have as minimal an impact on its surroundings as possible and will be further disguised by the existing tall tree line and vegetation surrounding the Property. Therefore, the visual impact of the proposed Facility will be de minimus.

Furthermore, the Property is located in the G-1 zoning district and within an area in need of additional capacity for telecommunications services. By installing the proposed Monopole and T-Mobile Wireless facility on the Property within the G-1 zoning district T-Mobile will fill a gap in wireless coverage for a large residential population. Thereby providing reliable service with E911 enhanced emergency service and Global Positioning System technology to the area of Hudson where it is most needed.

Finally, the purpose of the Ordinance, as outlined in Article I, will be observed by the granting of the requested relief because the proposed Facility:

1. will not contribute to traffic congestion because the traffic produced thereby will be limited to a single vehicle for biweekly visits for routine maintenance checks;
2. will conserve health by not producing any pollutants or wastes, while being in compliance with all applicable state and federal safety codes;

3. will contribute to securing safety from fire, flood, panic and other dangers by providing more reliable wireless coverage with E911 enhanced emergency service and Global Positioning System technology;
4. will not inhibit adequate light and air;
5. will not contribute to overcrowding of land or the undue concentration of population;
6. will encourage the most appropriate use of land throughout the Town because the Property is currently used for public utilities;
7. will increase the Town's amenities by providing more reliable and competitive wireless coverage to the residents and businesses of Hudson;
and
8. will encourage multiple uses of land thereby providing for orderly expansion and development.

E. Conclusion

The Applicant hereby requests that the Board determine that they have satisfied the requirements for the grant of the requested relief and to further determine that the proposed Monopole and T-Mobile Wireless Facility will not have an adverse impact upon the subject neighborhood and the Town of Hudson. The Property is an appropriate location for the installation and operation of the proposed Monopole and T-Mobile Wireless Facility and the proposal set forth herein represents the least intrusive means through which T-Mobile can close a gap in reliable service coverage under the Ordinance.

For the foregoing reasons, the Applicant respectfully requests that the Board grant the foregoing zoning relief in the form of a conditional use permit and site plan approval, and such other relief as the Board deems necessary in order to allow the installation and operation of the proposed Monopole and T-Mobile Wireless Facility on the Property.

Sincerely,

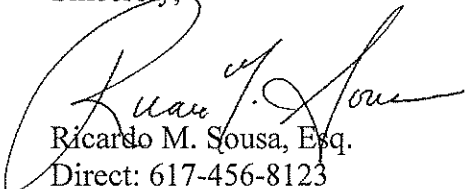

Ricardo M. Sousa, Esq.
Direct: 617-456-8123
Email: rsousa@princelobel.com



PHOTO SIMULATIONS

SITE NAME: MILLER
ECO-SITE NO.: NH-0016-B
T-MOBILE SITE NO.: 4MN0435-B

PROJECT TYPE: RAW LAND - MONOPOLE

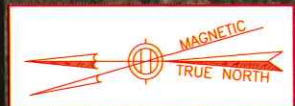
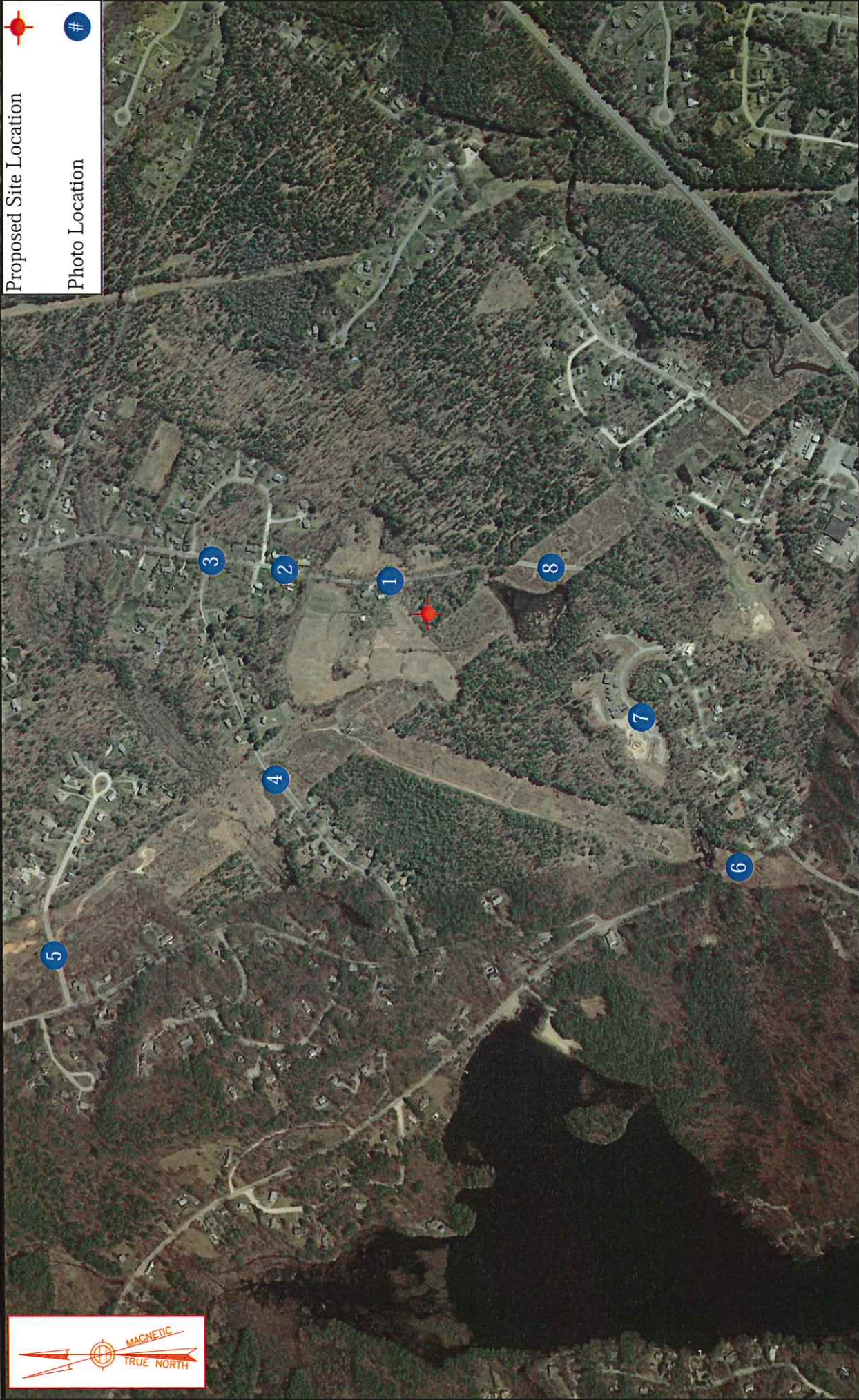
Address:
50 GRIFFIN ROAD
HUDSON, NH 03051

Date:
NOVEMBER 15, 2017

Prepared by:



PHOTO LOCATION MAP



Proposed Site Location 

Photo Location 

...T...Mobile...
Eco-Site

Miller
50 Griffin Road
Hudson, NH 03051

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ASSOCIATES, LLC**
Civil • Structural • Land Surveying
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EXISTING CONDITIONS - PHOTO LOCATION 1



...T...Mobile...
Eco-Site

Miller

50 Griffin Road, Hudson, NH 03051
Photo Taken from 240' +/- Northeast of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 1

Proposed T-Mobile Wireless (8) panel antennas, (1) dish antenna, and (16) RRUs mounted to proposed low-profile mounting platform

Proposed ECO-Site 155' monopole



Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 240' +/- Northeast of the
Proposed Monopole Location

EXISTING CONDITIONS - PHOTO LOCATION 2



•••T•••Mobile•
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 988' +/- North-Northeast of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 2

Proposed T-Mobile Wireless (8) panel antennas, (1) dish antenna, and (16) RRUs mounted to proposed low-profile mounting platform

Proposed ECO-Site 155' monopole



...T...Mobile...
Eco-Site

Miller

50 Griffin Road, Hudson, NH 03051
Photo Simulation from 988' +/- North-Northeast of the
Proposed Monopole Location



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EXISTING CONDITIONS - PHOTO LOCATION 3



...T...Mobile...
Eco-Site

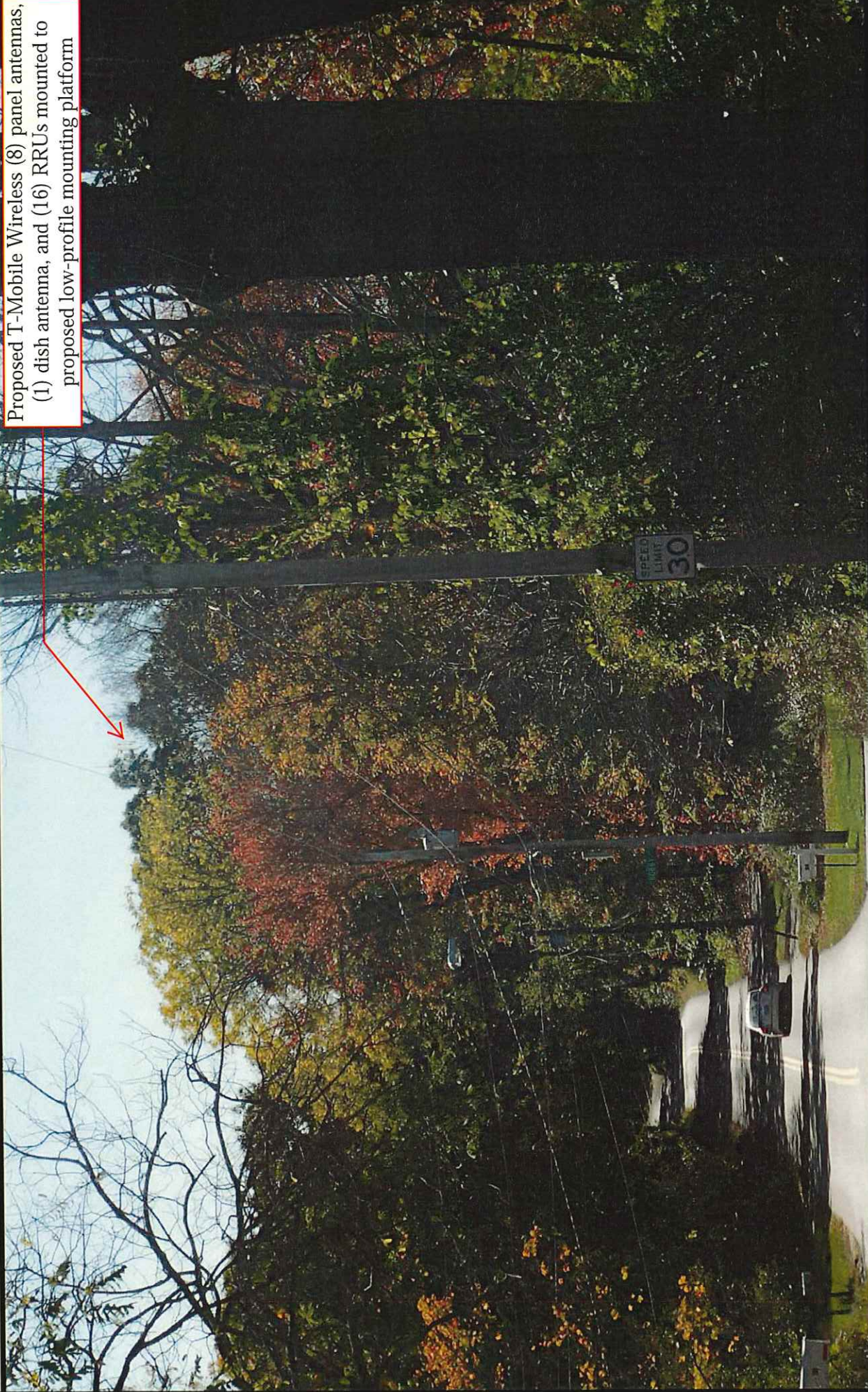
Miller

50 Griffin Road, Hudson, NH 03051
Photo Taken from 1,500' +/- North-Northeast of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 3

Proposed T-Mobile Wireless (8) panel antennas, (1) dish antenna, and (16) RRUs mounted to proposed low-profile mounting platform

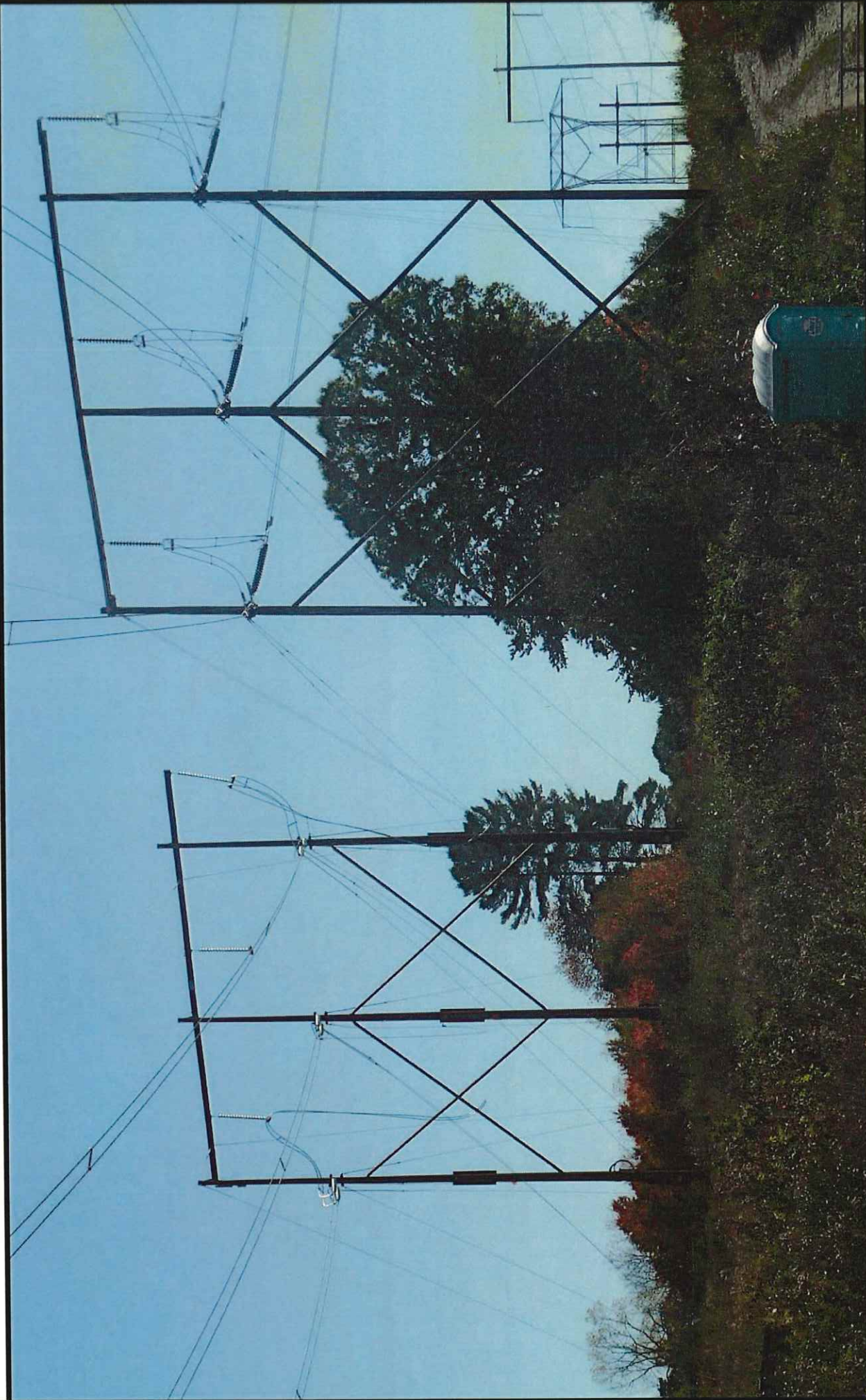


T-Mobile
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Simulation from 1,500' +/- North-Northeast of the
Proposed Monopole Location

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EXISTING CONDITIONS - PHOTO LOCATION 4



...T...Mobile-
Eco-Site

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50 Griffin Road, Hudson, NH 03051
Photo Taken from 1,530' +/- Northwest of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 4



Proposed T-Mobile Wireless (8) panel antennas, (1) dish antenna, and (16) RRUs mounted to proposed low-profile mounting platform

Proposed ECO-Site 155' monopole



Miller
50 Griffin Road, Hudson, NH 03051
Photo Simulation from 1,530' +/- Northwest of the
Proposed Monopole Location



EXISTING CONDITIONS - PHOTO LOCATION 5

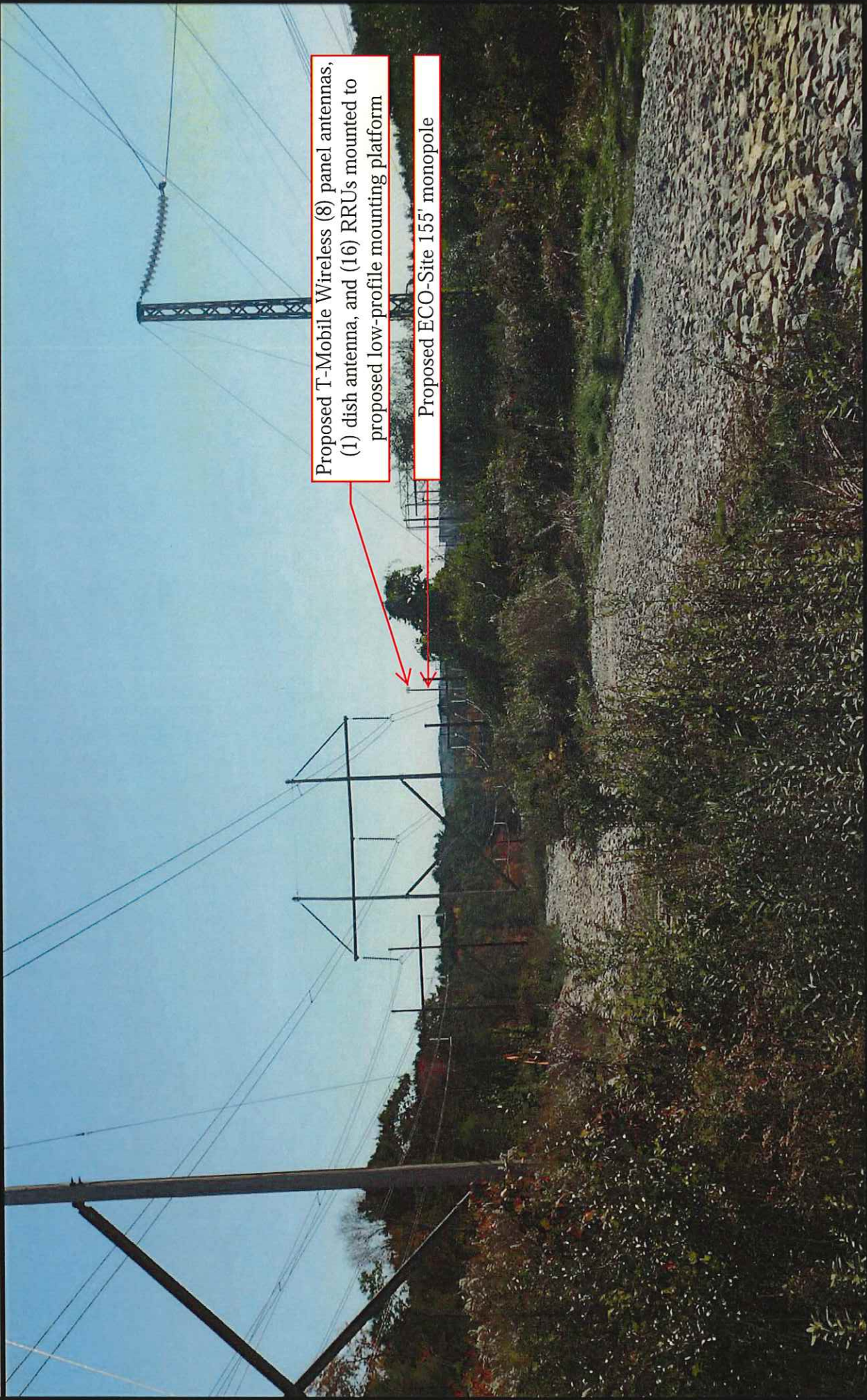


...T...Mobile...
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 3,490' +/- Northwest of the
Proposed Monopole Location

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ASSOCIATES, LLC**
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PROPOSED CONDITIONS - PHOTO LOCATION 5



Miller
50 Griffin Road, Hudson, NH 03051
Photo Simulation from 3,490' +/- Northwest of the
Proposed Monopole Location



EXISTING CONDITIONS - PHOTO LOCATION 6



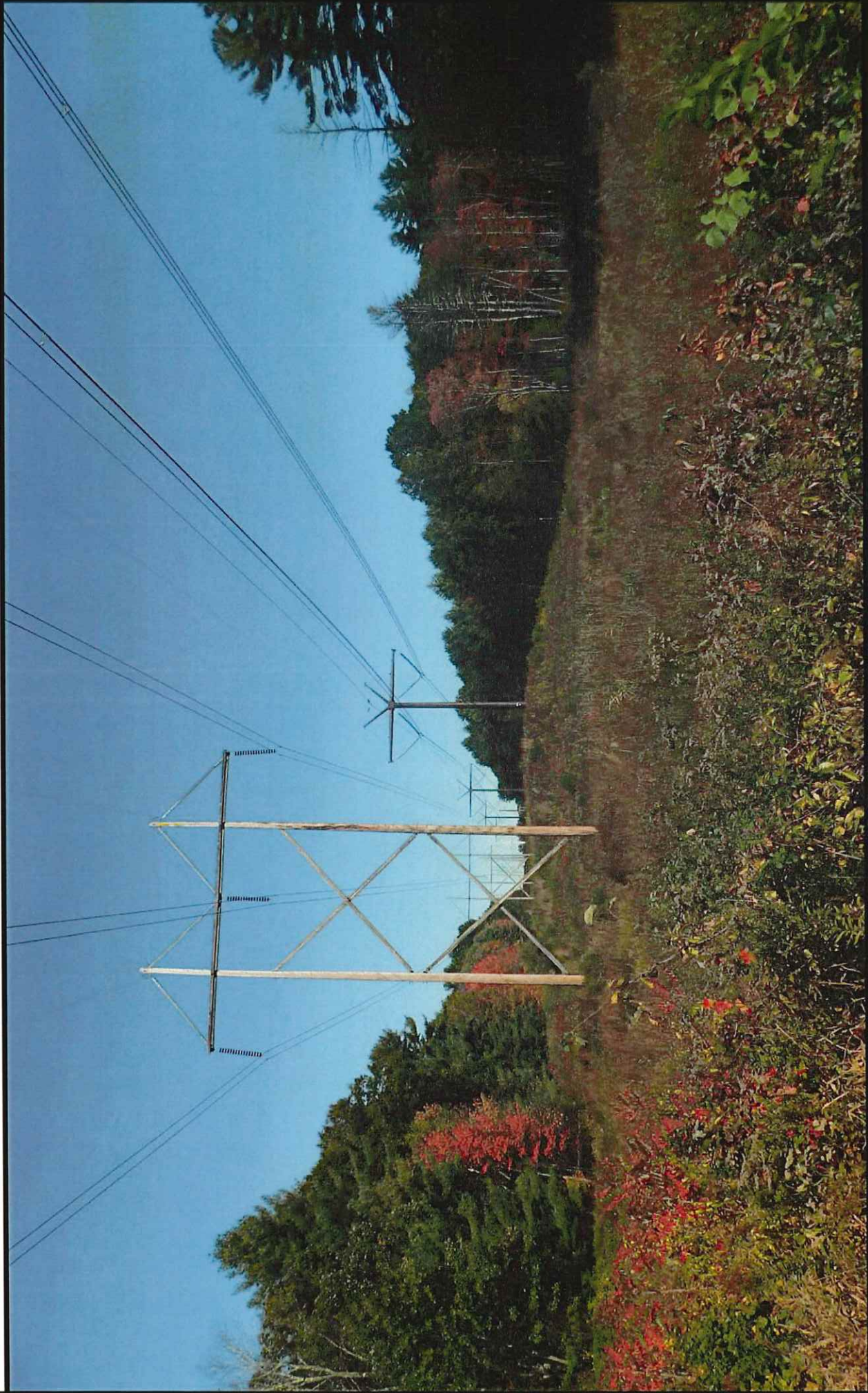
••T••Mobile•
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 2,830' +/- Southwest of the
Proposed Monopole Location

**CHAPPELL
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ASSOCIATES, LLC**
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PROPOSED CONDITIONS - PHOTO LOCATION 6

(No Proposed Installation Features Visible From This Location)



...T...Mobile.
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 2,830' +/- Southwest of the
Proposed Monopole Location

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ASSOCIATES, LLC**
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EXISTING CONDITIONS - PHOTO LOCATION 7



...T...Mobile-
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 1,810' +/- South-Southwest of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 7

(No Proposed Installation Features Visible From This Location)



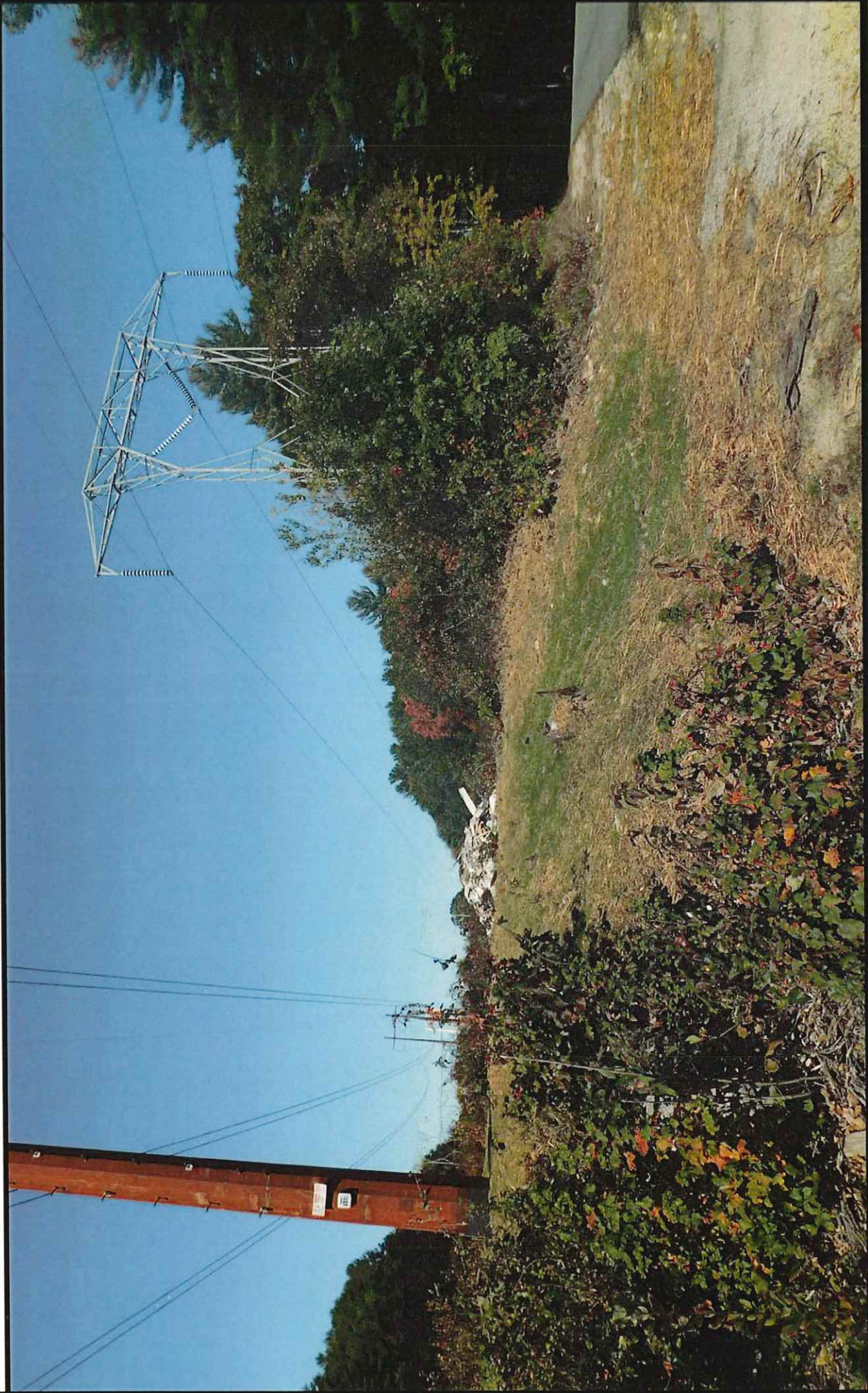
...T...Mobile...
Eco-Site

Miller

50 Griffin Road, Hudson, NH 03051
Photo Taken from 1,810' +/- South-Southwest of the
Proposed Monopole Location

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EXISTING CONDITIONS - PHOTO LOCATION 8

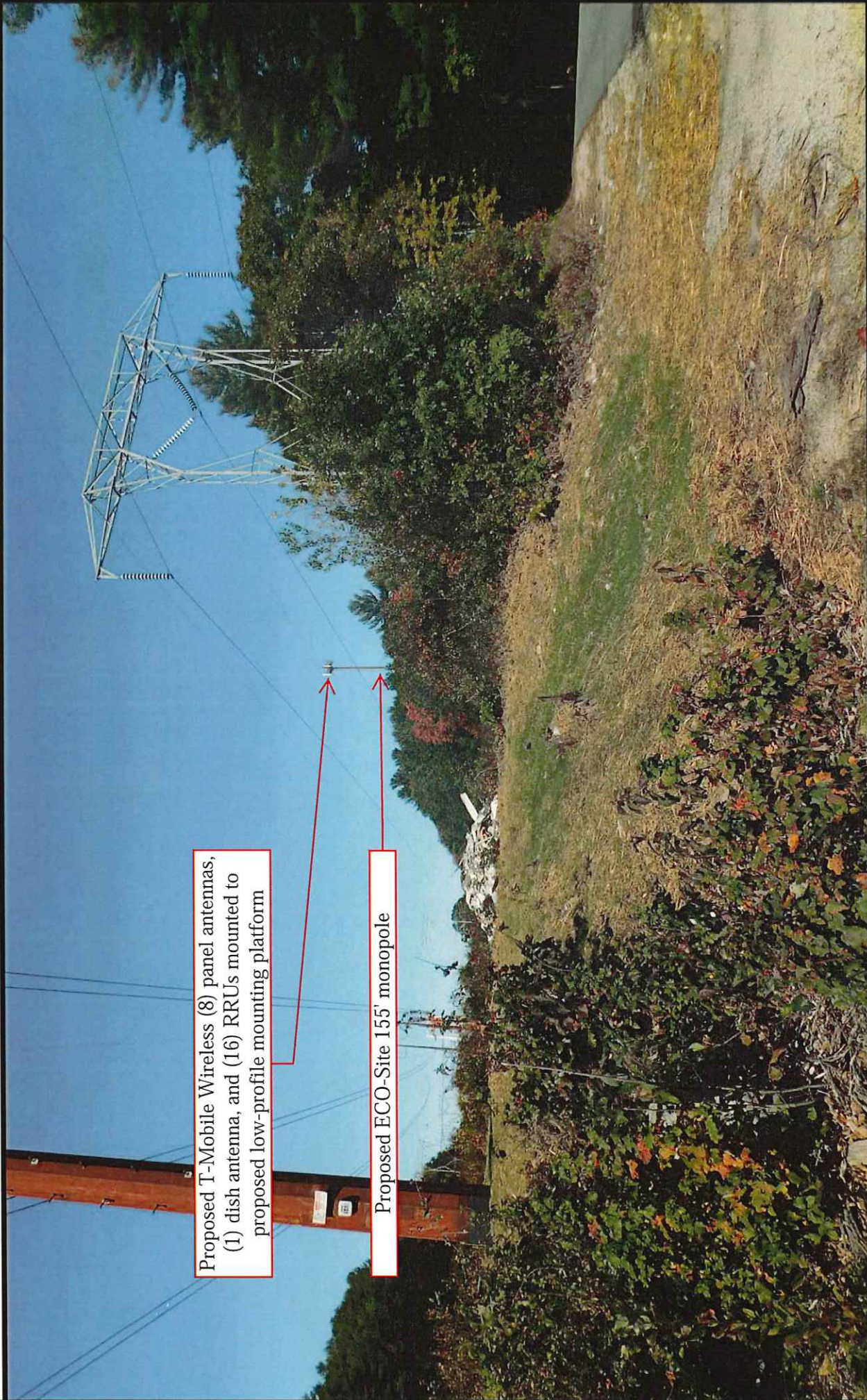


...T...Mobile-
Eco-Site

Miller
50 Griffin Road, Hudson, NH 03051
Photo Taken from 160' +/- South-Southeast of the
Proposed Monopole Location

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PROPOSED CONDITIONS - PHOTO LOCATION 8



Proposed T-Mobile Wireless (8) panel antennas, (1) dish antenna, and (16) RRUs mounted to proposed low-profile mounting platform

Proposed ECO-Site 155' monopole



Miller

50 Griffin Road, Hudson, NH 03051
Photo Simulation from 160' +/- South-Southeast of the
Proposed Monopole Location



WWW.CHAPPELLENGINEERING.COM

October 30, 2017

Eco-Site[®]
240 Leigh Farm Road
Suite 415
Durham, NC 27707

RE:

Site Name	Miller
Site Address	50 Griffin Road, Hudson, NH 03051

Dear Members of the Board:

This letter has been prepared to inform the Board on the structural design standards and capacity and potential failure mechanism for communications monopoles.

Eco-Site proposes to install a 155ft tall monopole at the above referenced location. Upon approval, the proposed structure will be designed to accommodate the full loading associated with the proposed Eco-Site antenna array as well as potential future additional wireless carriers. Both the pole and the foundation will be designed in accordance with current state and national codes and standards.

Telecommunications towers and monopoles are designed and fabricated in accordance with ANSI/TIA/EIA-222-G, a national code that is referenced in the NH State Building Code, (2009 International Building Code), Section 3108. "Telecommunications and Broadcast Towers". ANSI/TIA/EIA-222-G represents the latest refinement of a national tower code which establishes standards for tower engineers and manufacturers to follow for the design, fabrication and erection of tower structures and foundations. As a result of these national standards, industry statistics indicate that the failure of towers, especially self-supported monopoles, is exceptionally rare.

The G revision is based upon the 'limit-states design' approach. The structures are checked for two major limit states:

- (1) *Strength Limit States* ensure that the structures are safe under extreme loading conditions. A Load Factor of 1.6 is applied to nominal wind loads, and a directionality factor is applied to the factored wind loads to account for the probability of the wind occurring from the worst-case direction.
- (2) *Serviceability Limit States* verify that structures are capable of providing service under normal conditions.

Eco-Site[®]
240 Leigh Farm Road
Suite 415
Durham, NC 27707

The new standards account for site-specific conditions more accurately and in more detail and include:

- **Classification** of the importance category of the structure based upon location and use
- **Wind Exposure** categories to reflect surface irregularities
- **Topographic Effects** such as hills, ridges and escarpments
- **Ice Thickness** by county location

In Hillsborough County, the maximum 'No Ice' wind speed is 100mph. Under 'Iced' conditions (1" radial ice), the wind speed is 40mph. Because monopoles do not have complex surfaces on which massive quantities of ice can accumulate, the high wind speed loading alone (with no ice accumulation) is usually the controlling factor in any catastrophic weather-related failure.

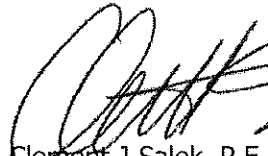
The resultant base reactions on a monopole in a high speed wind condition is prevented by the base foundation. The foundation design for the proposed monopole will be determined from geotechnical soil data obtained from field investigations. The foundation is designed to resist overturning or toppling of the monopole with a typical safety factor of approximately two (2). This means that the monopole foundation can resist approximately two (2) times the maximum forces generated by the full high-speed wind loading before overturning would occur.

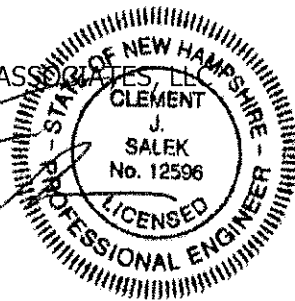
In conclusion, industry statistics indicate that monopole failures are extremely rare with structures that are designed and constructed in accordance with ANSI/TIA/EIA-222-G standards. Based on building code requirements and industry design standards, it is my opinion that a properly constructed 155-foot monopole in Hillsborough County, NH can survive wind speeds in excess of approximately 100mph.

If you have any questions regarding this matter, please do not hesitate to call.

Very truly yours,

CHAPPELL ENGINEERING ASSOCIATES, LLC


Clement J Salek, P.E.
CJS/cjs

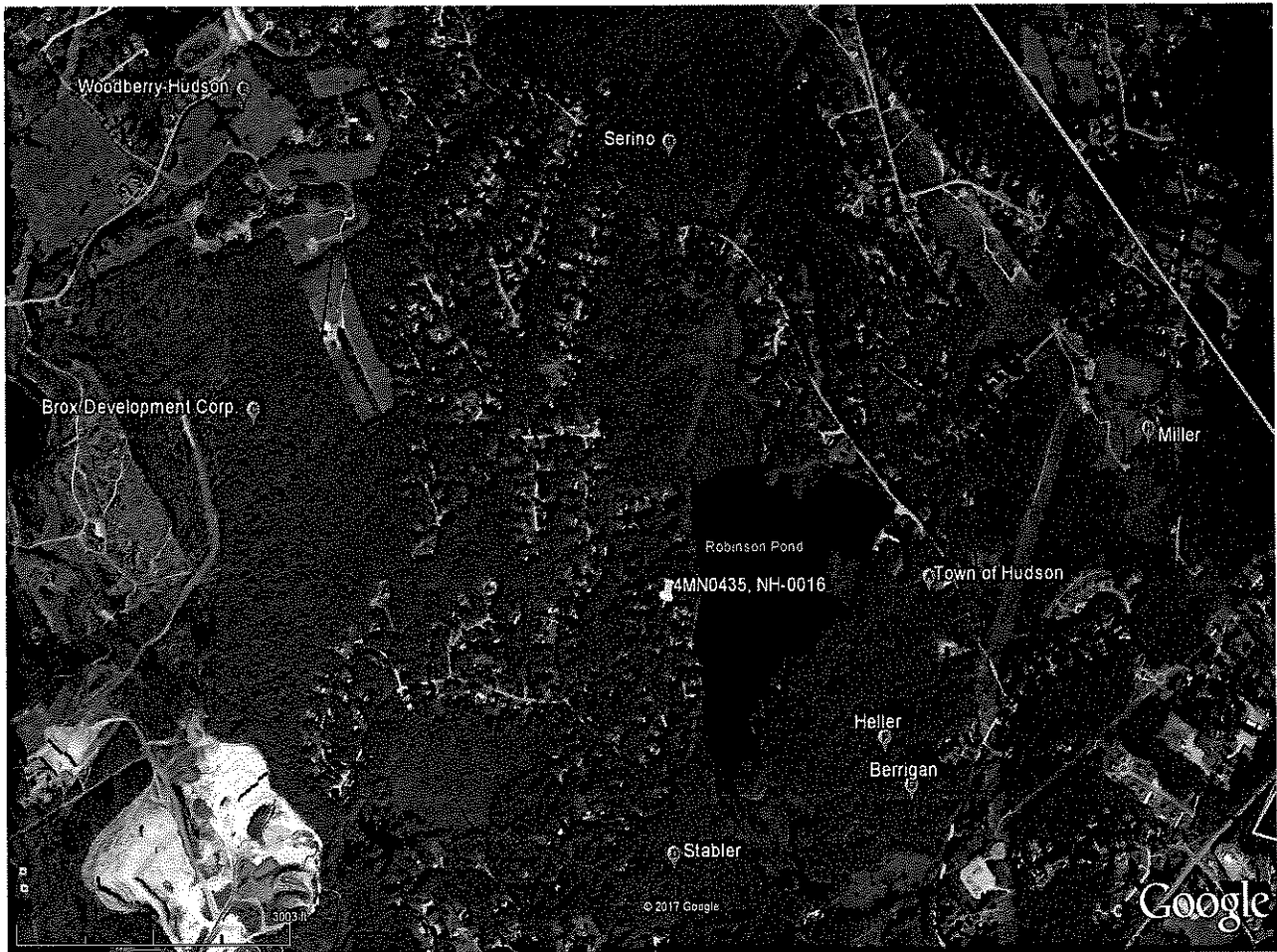


AFFIDAVIT
OF
SITE ACQUISITION SPECIALIST

The undersigned hereby states the following in support of the application by Eco-Site Inc. a Delaware corporation, located at 240 Leigh Farm Rd., Suite 415, Durham, NC 27707 and T-Mobile Northeast LLC a wholly owned subsidiary of T-Mobile USA, Inc. ("T-Mobile") to construct and operate a wireless communications facility at 50 Griffin Rd, Hudson, NH 03051 (the "Site").

1. My name is Jon Terry and I am a Site Acquisition Specialist for Airosmith Development. I have been retained by Eco-Site, to provide services for the purpose of obtaining approvals, leases, and licenses as well as performing other site acquisition and development tasks involved in building and installing wireless communication facilities. I have performed, and am performing, such services in connection with Eco-Site's proposed wireless communications facility located at the Site.
2. I have participated directly or through my present and past employment in the development of such facilities, including wireless communication towers such as the facility proposed for the Site. I have personally visited the Site and the area surrounding the Site on numerous occasions. I submit this affidavit based on my personal knowledge of the Site and the surrounding area and based on my professional experience in the development of wireless communication facilities.
3. When T-Mobile's radio frequency experts identify an area within which a wireless communications installation is required to provide coverage to a significant gap in its coverage network, the area is illustrated on a map and issued to the Site Acquisition Specialist. In this instance, the illustrated area is centered upon latitude 42.7980745°, longitude -71.3907998°, in the vicinity Robinson Pond in Hudson, NH. The radius of the coverage area is approximately 1.35 miles.

4. Part of my site acquisition and development duties include identifying potential candidates within the area identified by T-Mobile's radio frequency experts. The candidate identification process includes reviewing the applicable zoning ordinance to identify areas within which the proposed use is allowed. Viable candidates consist of existing structures of sufficient height from which an antenna installation can provide sufficient coverage, or lacking such a structure, parcels located within the narrowly defined search area upon which a tower may be constructed to a sufficient height. In order to be viable, a candidate must provide adequate coverage to the significant gap in T-Mobile's network. In addition, all viable candidates must have a willing landowner with whom commercially reasonable lease terms may be negotiated. Preference is given to locations that closely comply with local zoning ordinances, or in the event no viable candidates are determined to be located within such areas, to identify other potentially suitable candidates beyond the targeted area, with preference given to existing structures in accordance with Hudson, NH regulations.
5. In connection with this site, I have provided site acquisition services, including researching the area, identifying potential alternative candidates, and lease negotiations for the Site.
6. The geographic area defined by T-Mobile's radio frequency experts consists of mostly single-family homes in the areas around Robinson Pond. Existing utility uses are present in the southern and eastern sections of the search area. Wetlands and rolling topography are also present within and surrounding the search area. There are no existing structures in the area with the height necessary to provide the needed coverage.
7. In searching the area defined by the radio frequency expert, the following potential locations were identified, considered, and rejected for the reasons stated below:



a. Town of Hudson – Raw Land

Proposed new Monopole. The property is located at 52 Robinson Rd. Hudson, NH 03051 and is zoned G-1. This candidate is where the Town of Hudson Fire House is located consisting of mainly vacant wooded land.

Rejected – After attempts were made to negotiate a lease with the Town, the project was halted when the Town decided not to proceed.

b. Jean Serino – Raw Land

Proposed new Monopole. This property is located at 115 Robinson Rd. Hudson, NH 03051 and is zoned G-1. The property is an entirely vacant wooded with varying topography and wetlands.

Rejected – Owner not interested after contacting via certified mail.

c. Brox Development Corp. – Raw land.

Proposed new Monopole. This property is located at 39 Old Derry Rd. Hudson, NH 03051 in the G-1 zoning district. The property is vacant and wooded. Properties adjacent to this site to the east are also owned by the same entity, used for quarry purposes.

Rejected- T-Mobile RF rejected candidate due to lack of coverage in the target area.

d. Helen Stabler – Raw land.

Proposed new Monopole. This property is located at 13 Tiger Rd. Hudson, NH 03051 and is zoned G-1. This property is vacant and wooded. Wetlands are also located on the property with Robinson Pond bordering to the east.

Rejected - Owner not interested after contacting via certified mail.

- e. Woodberry-Hudson Investments – Raw Land.

Proposed new Monopole. This property is located at 6 Senter Farm Rd.

Hudson, NH 03051 and is zoned G-1. The parcel is vacant and cleared with a few patches of dense forest.

Rejected – T-Mobile RF rejected candidate due to lack of coverage in the target area.

- f. Peter Heller - Raw Land

Proposed new Monopole. This property is located at 20 Robinson Rd. Hudson, NH 03051 and is zoned G-1. The parcel is vacant and wooded with patches of wetlands and varying topography. Frontage on both Robinson Rd. and Robinson Pond Rd.

Rejected – Owner not interested in moving forward with tower proposal.

- g. Mark Berrigan – Raw Land

Proposed new Monopole. The property address is 16 Robinson Rd. Hudson, NH 03051 and is zoned G-1. The property is vacant and wooded with patches of wetlands and varying topography. Robinson Pond borders the property to the west.

Rejected – Owner not interested in moving forward with tower proposal at the time of discussions.

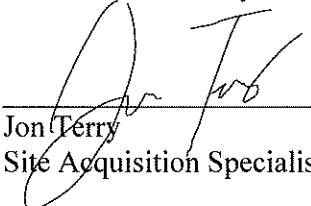
h. Lavinia Miller – Raw Land (The Site)

Proposed new 160' Monopole. The property address is 50 Griffin Rd. Hudson, NH 03051. The property consists of a residence, mainly open fields and wooded areas. Two (2) existing overhead utility easements are located on this property.

Accepted

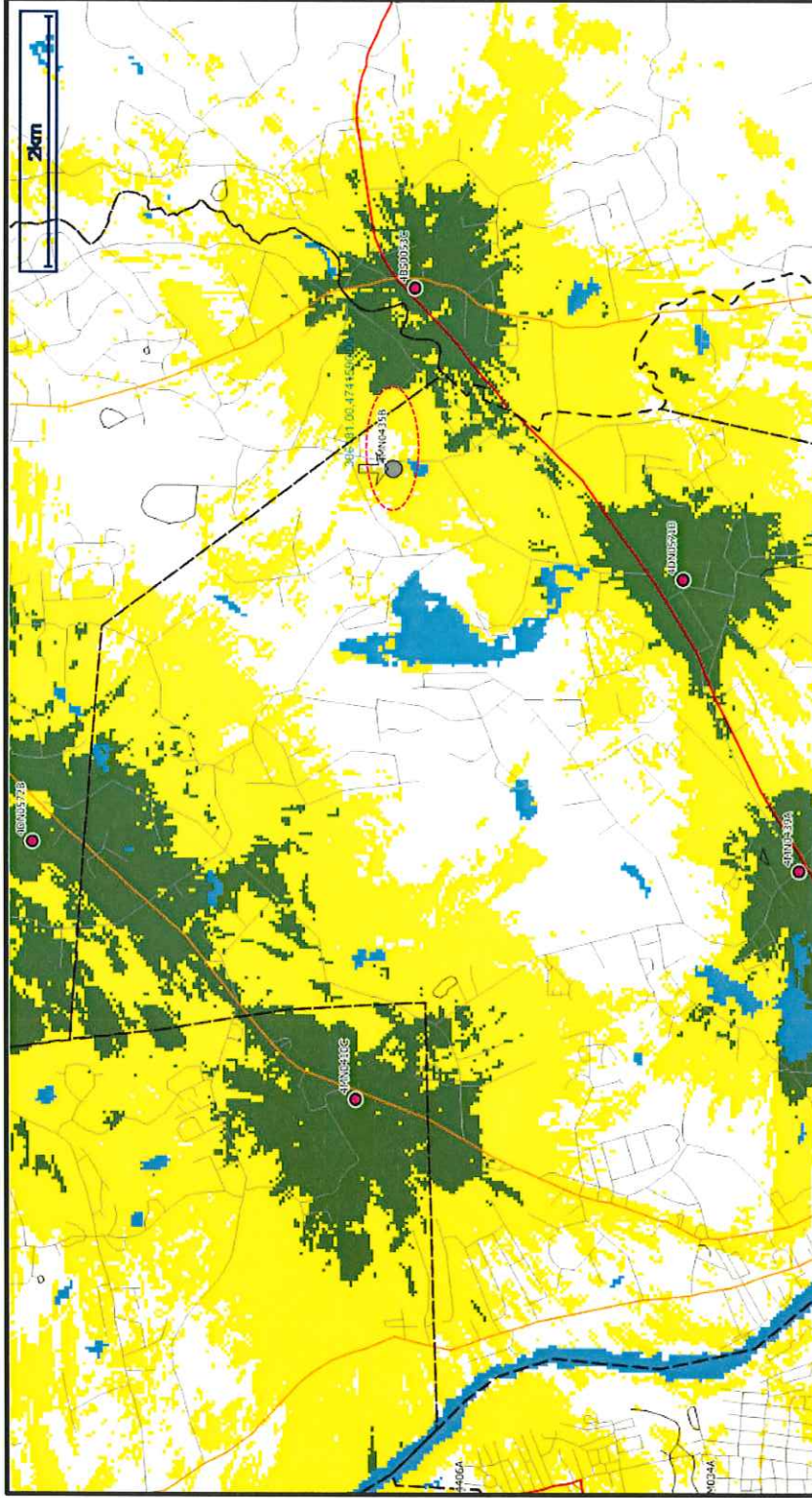
8. Based on my review of the zoning ordinance, my personal knowledge of the area, the location of T-Mobile's existing facilities, and analysis provided by T-Mobile's radio frequency expert, none of the potential alternative candidates located within allowed zoning districts are reasonably feasible alternatives to the proposed Site. In addition, based on my experience, in my professional opinion, the Site is the least intrusive solution to provide adequate coverage to this significant gap in T-Mobile's network coverage.

Executed this 1st day of November 2017.



Jon Terry
Site Acquisition Specialist

Existing LTE 2100 MHz Coverage in Hudson, NH



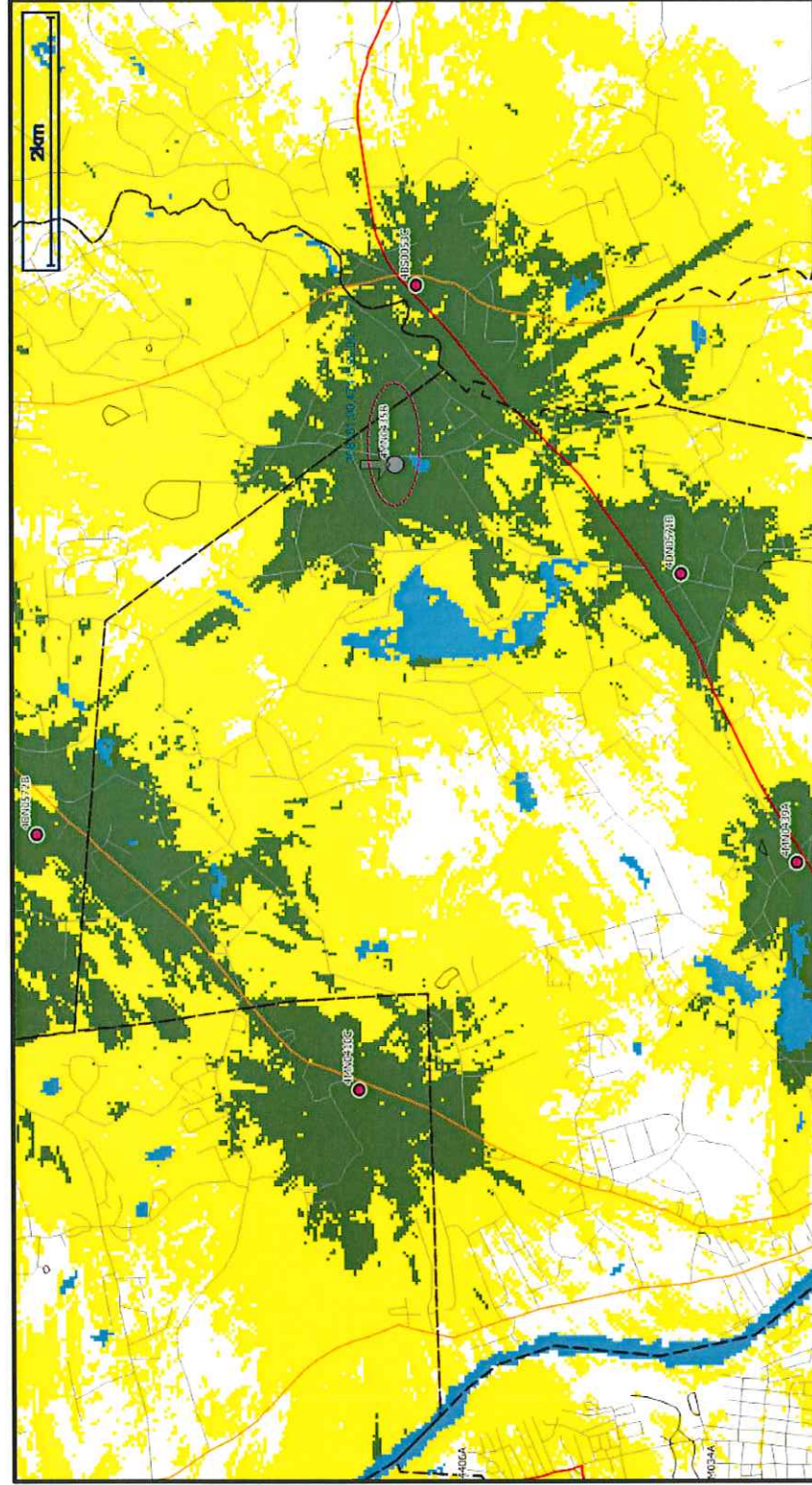
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road Line 1
- Primary_Road Line 1
- Secondary_Road Line 1
- Neighborhood_Road Line 1

Ranges

Minimum	Maximum	Label	Colour
-114	-87	In-Vehicle	Yellow
-97	0	In-Building	Green

Propose LTE 2100MHz Coverage with Candidate 4MN0435B (50 Griffin Road, Hudson, NH) at 150 feet



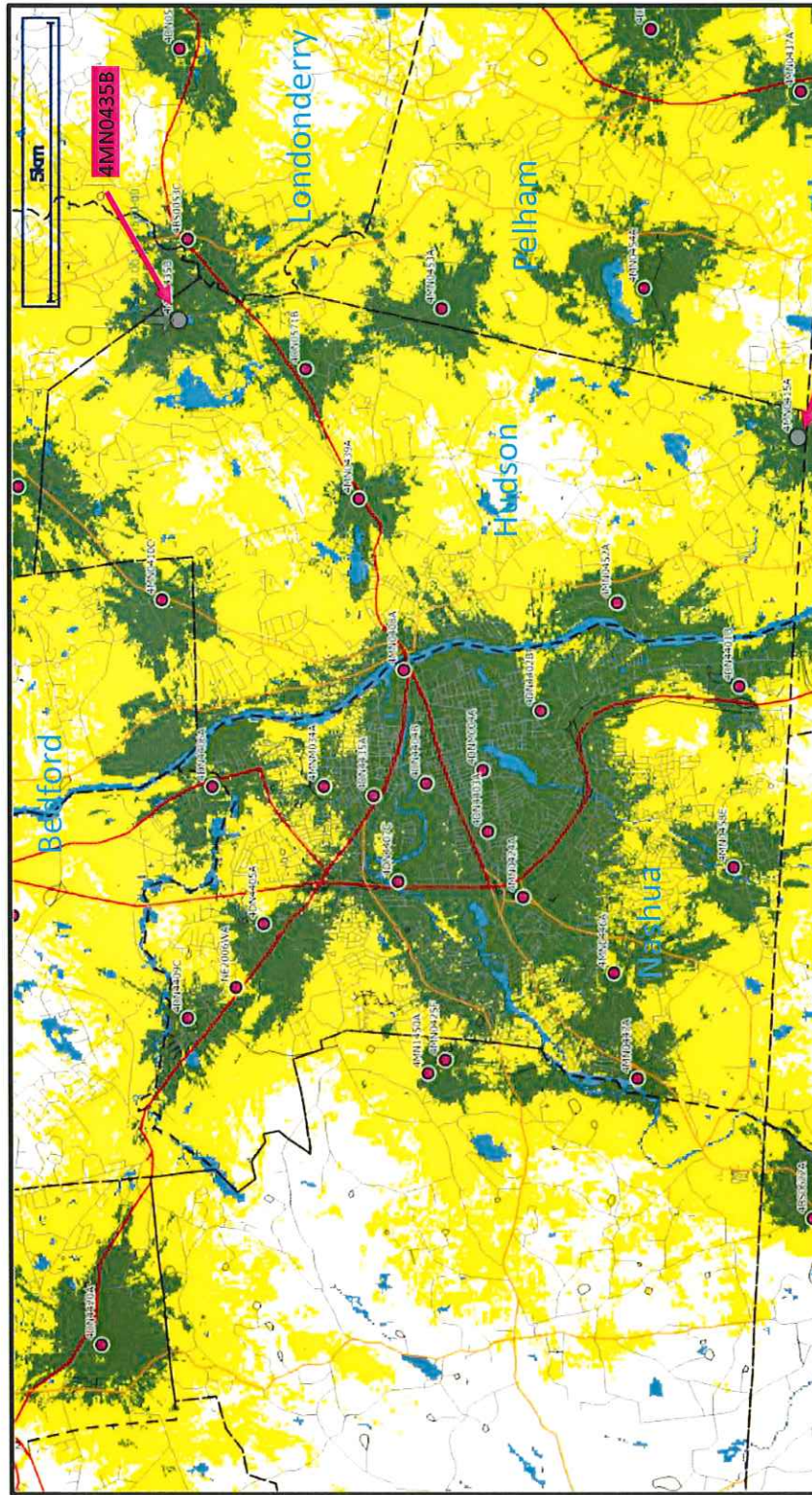
- Existing T-Mobile On-Air Site
- Propose T-Mobile Site

- Other_Road Line Line 1
- Primary_Road Line Line 1
- Secondary_Road Line Line 1
- Neighborhood_Road Line Line 1

Ranges

Minimum	Maximum	Label	Colour
-114	-57	n-Vehicle	Yellow
-37	0	n-Building	Green

Propose LTE 2100MHz Coverage with Candidate 4MN0435B (50 Griffin Road, Hudson, NH) and Recently Approve Site 4MN0415A (143 Dracut Road, Hudson, NH)



- Existing T-Mobile On-Air Sites
- Propose T-Mobile Sites

- Other_Road
- Primary_Road
- Secondary_Road
- Neighborhood_Road

Minimum	Maximum	Label	Color
-114	-87	In-Vehicle	Yellow
-97	0	In-Building	Green

Propose LTE 2100MHz Coverage with Candidate 4MN0435B (50 Griffin Road, Hudson, NH) and Recently Approve Site 4MN0415A (143 Dracut Road, Hudson, NH)

Site Code	Site Status	Site Type	Latitude	Longitude	Rad Center	Address	County	City	State
4MN0415A	Approved	Monopole	42.700286	-71.392169	170	143 Dracut Road	Hillsborough	Hudson	NH
4MN0435B	Primary	Monopole	42.80234167	-71.37026112	150	50 Griffin Rd	Hillsborough	Hudson	NH
4MN0439A	ON-AIR	Flag Pole	42.772203	-71.408402	87	234 Central Street	Hillsborough	Hudson	NH
4DN0571B	ON-AIR	Monopole	42.781113	-71.380276	136	10 Park Ave.	Hillsborough	Hudson	NH
4MN0452A	ON-AIR	Monopole	42.7292	-71.4297	90	24 Flagstone Drive	Hillsborough	Hudson	NH
4DN4420A	ON-AIR	Watertank	42.81055579	-71.59555593	98	3 Northern Blvd.	Hillsborough	Amherst	NH
4MN0425F	ON-AIR	Self Support Tower	42.753374	-71.530881	110	43 Howe Lane	Hillsborough	Hollis	NH
4MN0410C	ON-AIR	Flag Pole	42.80388951	-71.4319481	137	242 Derry Road	Hillsborough	Litchfield	NH
4DN0572B	ON-AIR	Monopole	42.8280554	-71.4077788	157	314 Nashua Rd. (Rt. 102)	Rockingham	Londonberry	NH
4DN4406A	ON-AIR	Monopole	42.7947	-71.4725	183	30 DW Highway (Rt. 3)	Hillsborough	Merrimack	NH
4DN4405A	ON-AIR	Roof Top Mount	42.78572	-71.50232	95	20 Trafalgar Square	Hillsborough	Nashua	NH
4DN4403A	ON-AIR	Roof Top Mount	42.749448	-71.480548	85	172 Kinsley Street	Hillsborough	Nashua	NH
4DN4404B	ON-AIR	Roof Top Mount	42.759714	-71.470558	104	One Chestnut Street	Hillsborough	Nashua	NH
4DN4401B	ON-AIR	Roof Top Mount	42.70893	-71.44724	69	61 Spit Brook Road	Hillsborough	Nashua	NH
4MN0408A	ON-AIR	Flag Pole	42.76384	-71.44577	98	70 Bridge Street	Hillsborough	Nashua	NH
4DN4435A	ON-AIR	Light Pole	42.768328	-71.473601	110	67 Amherst Street	Hillsborough	Nashua	NH
4MN0424A	ON-AIR	Monopole	42.74337	-71.49462	170	237 Main Dunstable Road	Hillsborough	Nashua	NH
4MN0446A	ON-AIR	Monopole	42.72814	-71.5106	169	830 West Hollis Street	Hillsborough	Nashua	NH
4DN4407C	ON-AIR	Monopole	42.76389	-71.492221	180	10 Whipple St.	Hillsborough	Nashua	NH
4DN4402B	ON-AIR	Self Support Tower	42.74125	-71.453833	165	39 Orchard Ave.	Hillsborough	Nashua	NH
4DN4409C	ON-AIR	Self Support Tower	42.797691	-71.52344	120	505 Amherst Street	Hillsborough	Nashua	NH
4MN0447A	ON-AIR	Tree	42.7238905	-71.5336696	123	1015 West Hollis St	Hillsborough	Nashua	NH
4MN0458E	ON-AIR	Monopole	42.70905278	-71.48685834	155	124 Ridge Road	Hillsborough	Nashua	NH
4DNM004A	ON-AIR	Roof Top Mount	42.750561	-71.467207	70	55 Lake Street	Hillsborough	Nashua	NH
4MNM034A	ON-AIR	Utility Lattice Tower	42.77640152	-71.4719009	84	75 Columbia Avenue	Hillsborough	Nashua	NH
4MN0437A	ON-AIR	Monopole	42.7014	-71.31646	134	60 Pulpit Rock Rd.	Hillsborough	Peiham	NH
4DN0576A	ON-AIR	Self Support Tower	42.726136	-71.303704	169	27 Old Lawrence Rd.	Hillsborough	Peiham	NH
4MN0454A	ON-AIR	Monopole	42.726197	-71.360358	135	22 Gumpas Hill Rd	Hillsborough	Peiham	NH
4MN0453A	ON-AIR	Self Support Tower	42.759363	-71.366308	135	53 Gibbon Rd	Hillsborough	Peiham	NH
4BS0622A	ON-AIR	Monopole	42.69444769	-71.5630559	66	2-22 Dow Street	Middlesex	Pepperell	MA
4BS0053C	ON-AIR	Flag Pole	42.80113889	-71.3525361	132	18 Mammoth Road	Rockingham	Windham	NH
4DN0577A	ON-AIR	Tree	42.803335	-71.310834	130	14 Haverhill Rd.	Rockingham	Windham	NH

REPORT OF
RADIO FREQUENCY ENGINEER

The undersigned hereby states the following in support of the application by Eco-site Corporation ("*Eco-site Tower*") and T-Mobile Northeast LLC ("*T-Mobile*") (together, the "*Applicants*") to construct a 150' above ground level (hereafter "AGL") monopole-style tower (the "Monopole"), install panel antennas at the 145' AGL antenna centerline mark on the Monopole, together with related amplifiers, cables, fiber and other associated antenna equipment, including remote radio heads, surge arrestors, and global positioning system antennas with associated electronic equipment, emergency backup power generator and other appurtenances located on the proposed concrete equipment pad located within a compound enclosed by a chain link fence (the "Facility") located 50 Griffin Road, Hudson, New Hampshire (the "Site").

1. I am a Radio Frequency Engineer working on behalf of T-Mobile, with an office located at 15 Commerce Way, Suite B, Norton, Massachusetts. Attached is a copy of my qualifications.
2. My primary responsibilities include radio frequency design and planning in the State of New Hampshire, including the Town of Hudson and surrounding communities.
3. As enabled under its Federal Communications Commission ("FCC") License, T-Mobile seeks to design its wireless network to provide reliable and adequate wireless services to its customers, whether those customers are on the street, in a vehicle, or in a building. Providing reliable and adequate service to its customers in each context is critical for T-Mobile to provide the quality of wireless service that customers demand, and to meet the objectives of Congress that a robust, competitive and low cost wireless communications capacity be developed to serve the entire nation.
4. T-Mobile is also designing its network to provide enhanced high speed data services commonly referred to as LTE - "long term evolution" service. LTE will be incorporated into this Facility.
5. T-Mobile is using its best efforts, to the maximum extent possible, to install its wireless communications services facilities network utilizing existing structures to avoid the need to construct new towers.
6. I have thoroughly reviewed the radio frequency engineering studies, reports and computer models prepared by T-Mobile with respect to the Facility.
7. In order to build out its network and meet customer demand for voice and data services, as well as enhance its network to improve high speed data services, T-Mobile must have in place a system of low power 'cell sites' to serve mobile devices. A typical cell site, such as the one proposed, consists of antennas mounted to a building, tower, church or other structure. The antennas are connected to radio operating equipment housed at or near the structure.
8. To maintain effective, reliable and uninterrupted service, there must be a continuous series of cell sites located within close proximity to each other so as to overlap in a system comparable to a honeycomb pattern. If there is no cell site available to accept/receive the signal, network service to the mobile device, will terminate involuntarily. Accordingly, the overlap of coverage is necessary for the signal to transfer from one cell site to another cell site seamlessly and without involuntary termination.

9. A number of factors determine the distance between cell sites, including, but not limited to, topography, physical obstructions, foliage, antenna height, operating frequency and line-of-sight.
10. Based on the radio frequency studies, reports and computer models prepared in connection with this project, it is my professional assertion that there is inadequate network service available to existing and potential T-Mobile customers within the Town of Hudson, especially along Griffin Road, Robinson Road, Hazelwood Drive and surrounding neighborhoods.
11. Based on the radio frequency studies, reports and computer models prepared in connection with this Facility, it is my further professional opinion that T-Mobile would be able to achieve the coverage objective by filling these significant gaps in coverage through the installation of the Facility at the Site.
12. Based on the above-mentioned studies, an installation located on the Site at the proposed height would provide adequate coverage for T-Mobile.
13. The Facility will enhance T-Mobile's ability to provide adequate coverage in the area and will increase its capacity to better serve the residents and businesses around these areas of Hudson and to individuals traveling through these areas.
14. The Facility will be in compliance with the FCC Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation.
15. The Facility will be installed, erected, maintained and used in compliance with all applicable Federal, State and local regulations, including, but not limited to applicable regulations administered by the Federal Aviation Administration, Massachusetts Aeronautics Commission and the FCC.
16. T-Mobile is assigned specific frequencies within which it must operate its facilities. The proposed Facility will not interfere with existing public safety communications systems, television or radio signals.
17. Based upon the best radio frequency technology available at this time, it is my professional opinion that the Facility is at the height necessary to ensure adequate service to area residents and businesses and those traveling within the geographic area described above.

Executed this 13th day of November, 2017.

Ryan Monte de Ramos

Ryan Monte De Ramos, Radio Frequency Engineer for T-Mobile



A BUSINESS OF FDH VELOCITEL

200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 703.276.1169 fax
FAA@sitesafe.com www.sitesafe.com

FAA Aeronautical Evaluation

Miller
NH0016

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For more information contact:
faa@sitesafe.com
770.532.3255 phone
703.276.1169 fax



**SITE SPECIFIC EVALUATION
FOR**

Client Site Name: Miller
Client Site Number: NH0016
Client Site Location: Hudson, NH.

Client/Requestor Name: Judiann Norris
Company Name: Eco-Site
Address: 240 Leigh Farm Road, Suite 415
Address: Durham, NC. 27707

Date: 10/5/17

This is an evaluation based on application of surfaces identified in Federal Aviation Regulation (FAR) Part 77 and Federal Communication Commission (FCC) Rules Part 17.

EXECUTIVE SUMMARY OF FINDINGS

- **The maximum height that can be built at this site without notice to the FAA is 200 feet AGL or 488 feet AMSL.**
- Maximum No Extended Study height at this site is 499 AGL, or 787 AMSL.
- Maximum No Hazard height at this site is 499 AGL, or 787 AMSL.
- Maximum no marking and lighting height at this site is 200 AGL, or 488 AMSL.

SITE DATA SUBMITTED FOR STUDY

Type of Structure:	Antenna
Coordinates of site:	Lat: 42° 48' 8.43"
	Long: 71° 22' 12.94"
	Datum: NAD 83
Site Ground Elevation:	288
Total Height above the ground of the entire structure (AGL):	160
Overall height of structure above mean sea level (AMSL):	448

Note: This report is for planning purposes only. If notification to the FAA or FCC is submitted on a site (whether it is, or is not required), a determination of no hazard or an approval letter should be received prior to any actions taken at this site.

AIRPORT AND HELIPAD INFORMATION

Nearest public use or Government Use (DOD) facility is Boire Field.

This structure would be located 6.4 NM or 39300 FT from the airport on a bearing of 259 degrees true to the airport.

Nearest private use facility is Granite.

This structure would be located .5 NM from the helipad on a bearing of 167 degrees true to the helipad.

FINDINGS

AM Facilities:

(The FCC protects AM transmission stations from possible electro magnetic interference for a distance of 3.0 km for directional facilities, and 1.0 km for non-directional facilities. Any antenna structures within these distances will most likely require a detuning evaluation of the site) (Sitesafe offers a full range of detuning services)

For a free analysis of this site against the most current FCC data, go to our AM evaluation web site at <http://sitesafe.com>. A negative certificate can be generated, (on-line) if no conflict is found. If a conflict is found, our AM Detune will contact you to review the findings.

This site was evaluated against the FCC's AM antenna database, and is not within an AM transmission area.

FCC Notice Requirements:

(FCC Rules, Part 17)

This structure does not require notification to the FAA or FCC based on these rules.

FAA EMI:

(The FAA protects certain air navigational aids and radio transmitters from possible electro-magnetic interference. The distance and direction are dependent on the type of facility be evaluated. Most of these transmission and receiver facilities are listed in the National Flight Data Center (NFDC) database.)

This site would not affect any FAA air navigational aids or transmitters listed in the NFDC database.

Military Airspace:

This structure will not affect this airspace.

Note: This report is for planning purposes only. If notification to the FAA or FCC is submitted on a site (whether it is, or is not required), a determination of no hazard or an approval letter should be received prior to any actions taken at this site.

FAA Evaluation:

FAR Part 77 paragraph 9 (FAR 77.9). Construction or Alteration requiring notice:
(These are the imaginary surfaces that the FAA has implemented to provide general criteria for notification purposes only.)

This structure does not require notification to the FAA.

FAR Part 77 paragraph 17(FAR 77.17). Standards for Determining Obstructions:
(These are the imaginary surfaces that the FAA has implemented to protect aircraft safety. If any of these surfaces are penetrated, the structure may pose a Hazard to Air Navigation.)

This structure does not exceed these surfaces.

MARKING AND LIGHTING

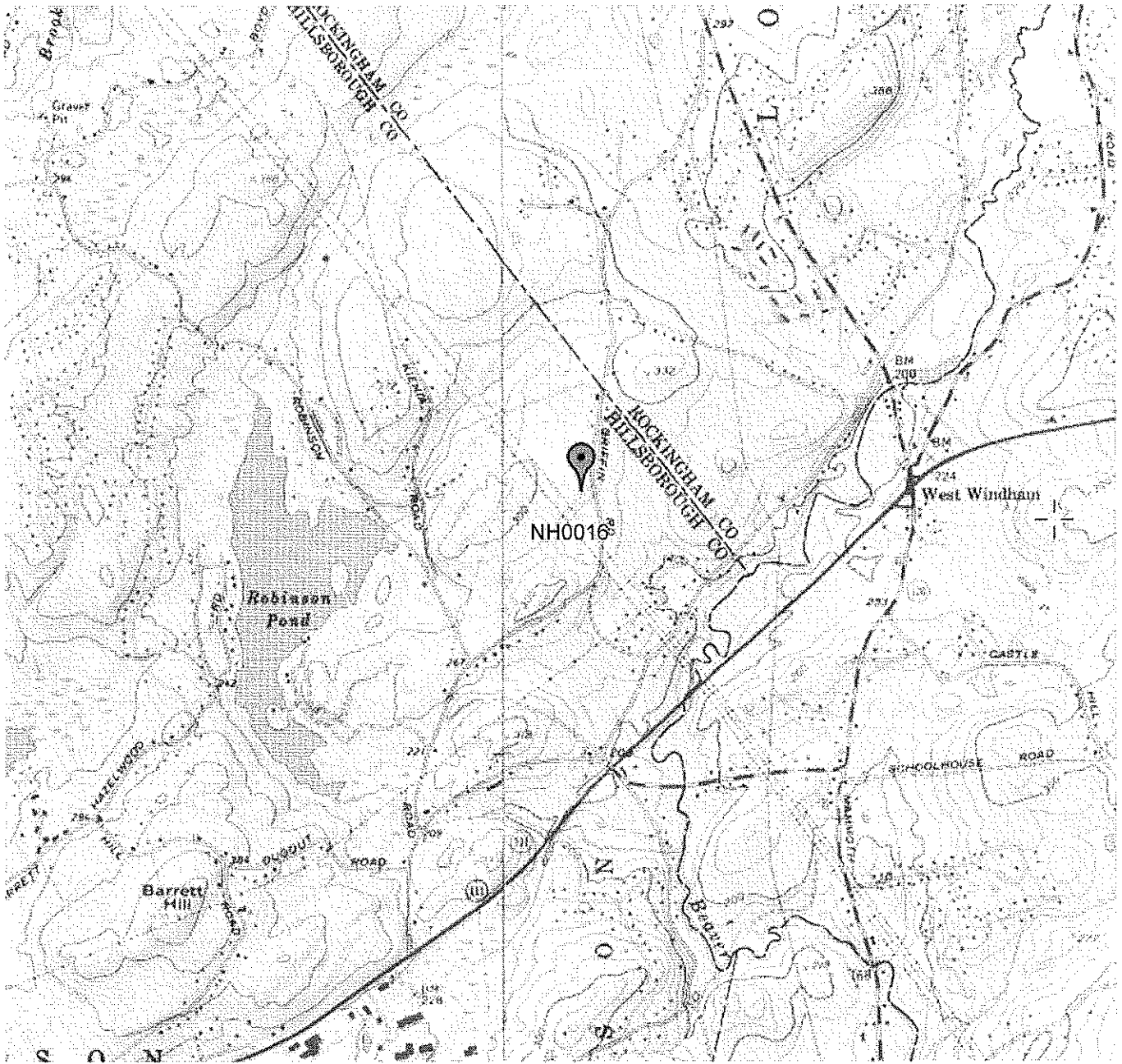
FAA Advisory Circular 70/7460-1

Marking and lighting is not required for this structure.

RECOMMENDATIONS OR ACTIONS

SiteSafe does not consider this site to be a Hazard to Air Navigation as specified in FAR part 77.

Note: This report is for planning purposes only. If notification to the FAA or FCC is submitted on a site (whether it is, or is not required), a determination of no hazard or an approval letter should be received prior to any actions taken at this site.



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4B



TOWN OF HUDSON

FIRE DEPARTMENT

INSPECTIONAL SERVICES DIVISION



12 SCHOOL STREET, HUDSON, NEW HAMPSHIRE 03051

Emergency 911
Business 603-886-6005
Fax 603-594-1142

Robert M. Buxton
Chief of Department

29 November, 2017

To: George Theborge
Land Use Director

Fr: John J. O'Brien *Job*
Deputy Fire Chief

Re: Non Residential Site Plan review LLC Map 126 Lot 032

For: Wireless telecommunication tower at 50 Griffin Rd.

A Site plan review was conducted by this office for the above proposed development. Fire Department requirements are listed below.

Addressing

Prior to the issuance of any building permits a proper street address must be assigned by the Hudson Fire Department.

Access/ Security

The proposed 12 foot wide gravel road shall be widened to 14 feet. This bare minimum is for fire apparatus and ambulance access.

Road grade shall not exceed ten per cent Per NFPA 1

Entrance gate at Griffin Rd and at site shall be Knox box equipped per Hudson Fire Dept. Guidelines.

Telecommunication Space

Space shall be provided by T Mobile on the proposed tower and in accessory building for use by the public safety agencies of the Town of Hudson in perpetuity. This shall be at no cost to town. Said space shall be reserved as follows:

Shall be able to accommodate a single sector frame within the top five (5) feet of the tower

The second space shall be in the vicinity of seventy five (75) foot area of the tower. This would be another sector mount for receiving radio traffic.

Space shall be made available in the accessory building for associated radio equipment.

This will enhance public safety for the citizens and the public safety agencies of the Town of Hudson.

If you have questions feel free to email jobrien@hudsonnh.gov or call 603-886-6021

John J.O'Brien
Deputy Fire Chief
Town of Hudson N.H

Thebarga, George

From: Dhima, Elvis
Sent: Thursday, November 30, 2017 8:39 AM
To: Thebarga, George
Cc: Dubowik, Brooke; Goodwyn, Tracy; Bruce Buttrick
Subject: 50 Griffin Road Technical Review

George

Below are my comments related to this project:

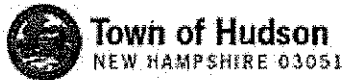
1. The proposed plan shows a second driveway for this lot, one driveway per lot allowed.
2. Applicant shall provide proposed grading for the entire site.
3. Applicant shall provide a profile for the driveway, not to exceed 10 %.
4. Applicant will provide a sign distance plan and profile for the proposed driveway entrance.
5. Application must add a note station driveway permit to be pulled at the time for the building permit.
6. Applicant appears not to meet pre versus post drainage requirements due to lack of drainage treatment swales or detention basins.

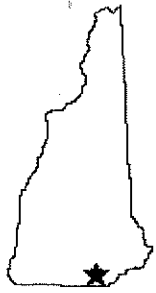
Thank you

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

November 28, 2017

Site Plan and Conditional Use Permit Review Zoning Review/Comments

Re: Case: SP #16-17 & CU #02-17
Address: 50 Griffin Road
Zoning district: General One (G-1)

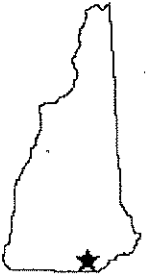
Comment:

On Drawing Z-1 (rev #4 11/15/17) I note the fall zone of tower occurs onto utility easement. This is not a zoning violation as §334-102 A, only prohibits "falling beyond the bounds of the property where located".

Sincerely,

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

cc: George Thebargé – Dir Land Use
File



TOWN OF HUDSON

Land Use Division



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

Zoning Determination #17-110

November 22, 2017

Ricardo M. Sousa, Esq
Suite 3700
1 International Place
Boston MA 02110

Re: **50 Griffin Road 126/032-000**
District: General One (G-1)

Dear Atty Sousa,

Your request for zoning review and determination about locating a Commercial Wireless Telecommunication Facility on this site has been completed.

Zoning Review / Determination:

Our research indicates that this lot is a legal conforming lot with regards to the area and frontage requirements. The proposed use is allowed as secondary use per §334-95 A, as there is currently single family use on this property.

This proposed use will require a conditional use permit per the Table of Conditionally Permitted Facilities §334-96.1.

This development is subject to a conditional use permit and concurrent site plan approval per §334-96.2, by the Planning Board which will require a submission of an RF Engineering/Facilities Master Plan per §334-95 E.

I also note that the proposed site plan (Z-1 rev 3) indicates the fall zone of the proposed tower to "fall" within a utility easement.

All other requirements for building permit approval such as: driveway permits, setbacks for: building, driveway, wetland, etc, would need to be met.

Please feel free to contact me if you have any further questions regarding this matter.

NOTE: this determination may be appealed to the Hudson Zoning Board of Adjustment within 30 days of the receipt of this letter.

Sincerely,



Bruce Buttrick, MCP

Zoning Administrator/Code Enforcement Officer

(603) 816-1275

bbuttrick@hudsonnh.gov

cc: Zoning Board of Adjustment
J. Michaud, Town Assessor
G. Thebarger, Land Use Dir.
Selectmen: M. McGrath and D. Morin
File



COMMUNITY DEVELOPMENT DEPARTMENT
 12 School Street
 Hudson, NH 03051
 (603)886-6005
www.hudsonnh.gov



Town of Hudson

REQUEST FOR ZONING and/or PLANNING INFORMATION / DETERMINATION

Date of request 11/14/2017

Property Location 50 Griffin Road, Hudson, NH 03051

Map 126 Lot 32

Zoning District if known General 1 (G-1)

Type of Request

Zoning District Determination Use Determination Set-Back Requirements
 Process for Subdivision/ Site Plan if required
 Other

Description of request / determination: (Please attach all relevant documentation)

The Applicant, Eco-Site LLC ("Eco-Site") and its co-applicant T-Mobile Northeast LLC ("T-Mobile" and together with Eco-Site the "Applicants"), respectfully requests a zoning determination for its proposed monopole style wireless telecommunications tower located at 50 Griffin Road (the "Property"). The Applicant is proposing a 155' monopole style telecommunications tower at the Property that will be accessed from Griffin Road by new 20' wide access road. Please see the attached zoning drawings for a more detailed description of the proposed tower.

Applicant Contact Information:

Name: Ricardo M. Sousa, Esq.
 Address: 1 International Place Suite 3700, Boston, MA
 Phone Number: 617-456-8123

#17-110

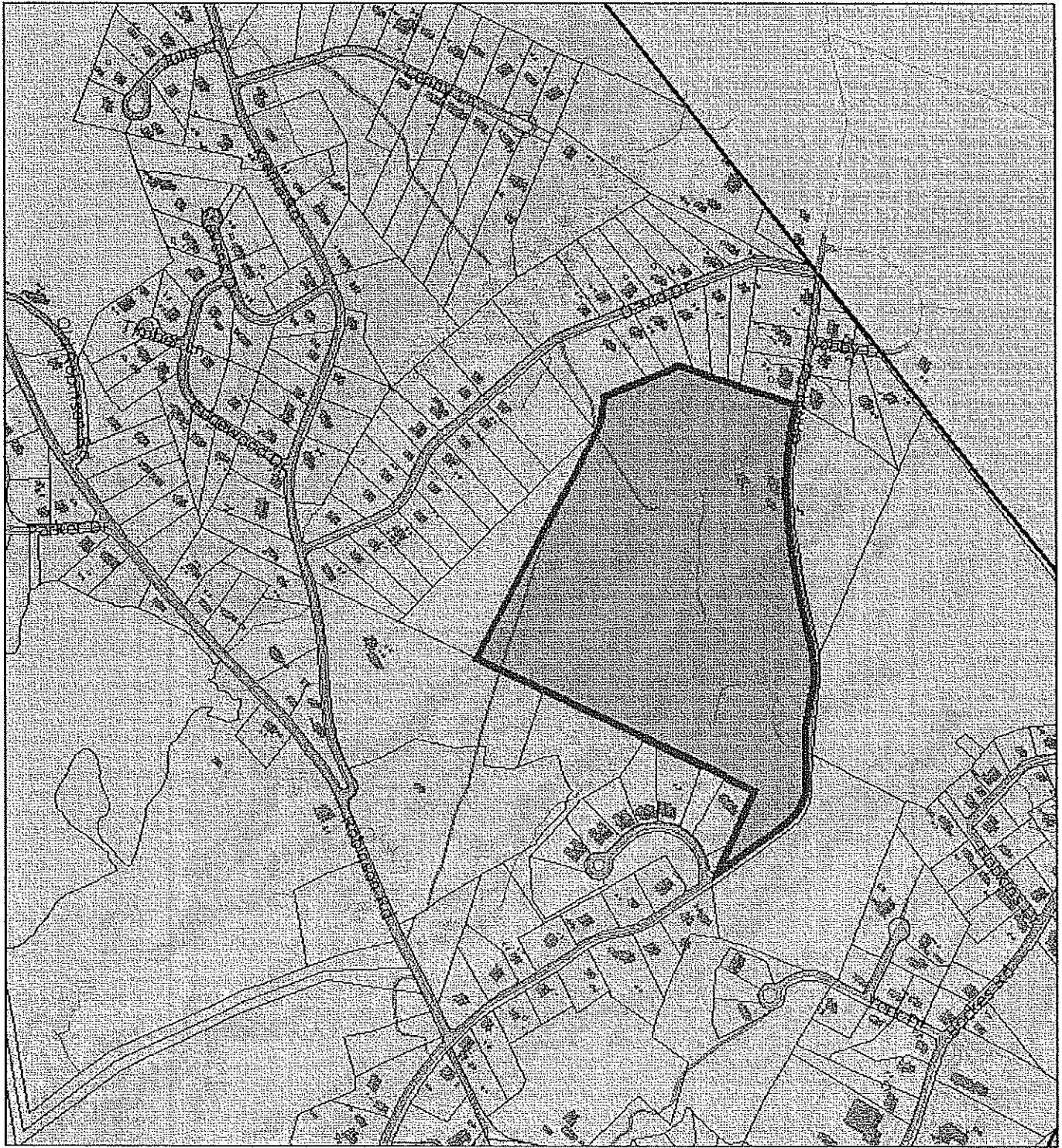
For Office use

ATTACHMENTS: TAX CARD GIS Side plan

NOTES: _____

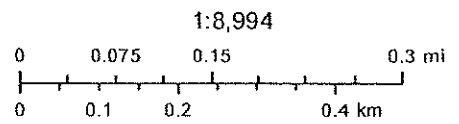
ZONING DETERMINATION LETTER SENT BY DATE: 11-22-17

50 Griffin Road



November 22, 2017

Legend
[] Parcels



December 6, 2017

Mr. George Theborge
Land Use Director
Town of Hudson
12 School Street
Hudson, NH 03051

Re: Town of Hudson Planning Board Review
Eco-Site Wireless Telecommunications Facility Site Plan, 50 Griffin Road
Tax Map 126, Lot 32; Acct. #1350-905
CLD | Fuss & O'Neill Reference No. 03-0249.1660

Dear Mr. Theborge:

CLD | Fuss & O'Neill has reviewed the first submission of the materials received on November 28, 2017, related to the above-referenced project. Authorization to proceed was received on November 27, 2017. 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 | Fuss & O'Neill Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

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

The project appears to consist of the construction of a telecommunications tower, a gravel access drive, equipment and underground utilities to service the proposed tower, and other associated site improvements. It is not noted whether the existing buildings on the site are serviced by Town water and sewer. The plan does not show proposed water or sewer services for the tower compound.

The following items are noted:

1. Site Plan Review Codes and Administrative Requirements and Definitions

- a. HR 275-8.C.(1) and (6). The applicant has noted that the facility will be unmanned with approximately biweekly site visits for inspections and maintenance. The applicant has provided one parking space outside the fenced compound area. No specific off-street loading area is indicated on the plans. The applicant has shown a propane tank within the compound and should verify that the propane delivery truck has adequate space to turn around during deliveries. (We note that the turnaround appears only to be useful if the fence gate is opened.) The applicant should provide additional details for the proposed surface treatment within the fenced area such that we can confirm that the surface will support vehicle traffic for the purpose of turning around/vehicle maneuverability.
- b. HR 275-8.C.(11). The applicant has not noted any provisions for handicapped access to the site nor if any is required.

- c. HR 275-9.B. The applicant did not provide a Traffic Study but has noted within the Conditional Use Permit Application that the facility will not contribute to traffic congestion because traffic will be limited to a single vehicle making biweekly visits to the site for maintenance checks. The applicant should note the estimated frequency for propane deliveries.
- d. HR 275-9.C. The applicant did not provide a Noise Study but has noted within the Conditional Use Permit Application that the facility will not involve excessive noise.
- e. HR 275-9.D. The applicant did not provide a Fiscal Impact Study but has noted within the Conditional Use Permit Application that the facility "will not have any adverse effect on the value of land and buildings in the neighborhood or on the amenities thereof".
- f. HR 275-9.F. and 276-11.1.B.(20). The applicant included a "Legal Descriptions" plan sheet and a copy of the proposed lease for the compound area in the Conditional Use Permit Application. Copies of the existing NEPCO and PSCONH easements were not included in the review package.
- g. HR 275-9.G. No copies of applicable approvals or permits were provided in the review package.
- h. HR 275-9.I. The applicant did not provide an Environmental Impact Study but has noted within the Conditional Use Permit Application that the facility will not produce any pollutants or wastes and "will not inhibit adequate light and air".
- i. HR 276-11.1.B.(1). The applicant has provided a 24"x36" plan set versus the required 22"x34" set.
- j. HR 276-11.1.B.(2). The applicant has provided some plan sheets that do not meet the Regulation for scale.
- k. HR 276-11.1.B.(3). The title block provided on the plans does not meet the Regulation.
- l. HR 276-11.1.B.(4)(b). The approval block on the plans does not meet the Regulation for location and is only provided on the cover sheet, not each plan sheet as required by the Regulation.
- m. HR 276-11.1.B.(5). The applicant's block does not exactly match the size requirements.
- n. HR 276-11.1.B.(6). The Owner's signature is not included on the plan set.
- o. HR 276-11.1.B.(9). The applicant has not stated the error of closure on the plans.
- p. HR 276-11.1.B.(12). The applicant has not shown any building setback lines on the plans.
- q. HR 276-11.1.B.(13). The applicant has not shown any proposed signage on the plans, nor provided the note from the Regulation.
- r. HR 276-11.1.B.(16). The applicant has not shown all driveways within 200 feet of the tract.
- s. HR 276-11.1.B.(17). The applicant has not shown permanent monuments for the parcel boundaries on the plan set.
- t. HR 276-11.1.B.(20). The applicant has not shown the height of existing buildings on the plan set.

- u. HR 276-11.1.B.(23). The applicant has not noted any pertinent highway projects.
- v. HR 276-11.1.B.(24)(b). Although the plan appears to meet the requirement, the applicant has not shown the lot coverage calculation on the plan set.
- w. 290.5.K.(22). Snow storage areas are not noted on the plans.

2. Driveway Review Codes (Chapter 193)

- a. HR 193.10.G. The applicant is proposing construction of a second driveway for the parcel where the Regulation only allows one. We did not find a waiver request in the package received for review.
- b. HR 193.10.J. The applicant is proposing construction of a gravel driveway connecting to Griffin Road. The Regulation requires all driveway surface materials to be bituminous concrete within the Town-owned Right-of-Way.

3. Utility Design/Conflicts

- a. HR 276.13.A. The applicant is proposing underground utilities to connect to the tower compound area from Griffin Road. The applicant should provide an installation detail for the underground utilities.

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

- a. HR 290-5.L. and HR 275-9.A. The applicant did not include a Stormwater Management Plan or Report with the review package, nor was a waiver request included in the package received for review. No new drainage features are proposed as a part of this project.
- b. The applicant has not provided coverage information for the fenced area, so coverage and stormwater impacts cannot be evaluated.

5. Erosion Control/Wetland Impacts

- a. HR 290-5.K.(14). The applicant has not shown a staging or stockpile area. Associated erosion control measures should be indicated for these locations.
- b. HR 290-5.K.(20). The applicant has proposed silt fence to be installed perpendicular to grading contours. The applicant should consider installation parallel to grading contours to better control erosion and sediment during construction.
- c. HR 290-5.K.(20). The applicant has not proposed any erosion control measures along the site access road.
- d. HR 290-5.K.(20). The applicant has not proposed a stabilized construction exit/entrance for the site nor provided a detail for its construction.

6. Zoning (ZO 334)

- a. ZO 334-17, 334-20 and 334-23. The applicant has noted that the site is located within the General-1 (G-1) District. The proposed use requires a Special Exception in the G-1 district according to 334 Attachment 1.
- b. ZO 334-27.1. The applicant has not shown frontage or setback lines on the plans. The applicant has noted zoning dimensions in a table on sheet C-3, which conform to the Ordinance.
- c. ZO 334-39.A.(1). The applicant has shown existing wetlands within the subject site on the plans. Soil boundaries are not shown for the parcel, and the plans do not note that the wetlands were delineated by a certified soils scientist.
- d. ZO 334-39.A.(1). The applicant has shown what appears to be a wetlands boundary west of the tower compound. The applicant should clarify the limits of this wetland area as it is a single line that does not close or encircle a particular area.
- e. ZO 334-57. The applicant has not proposed any signage for this facility.
- f. ZO 334-83. The applicant has noted that the site is located in a zone X flood hazard area.
- g. ZO 334-92.I. The applicant has not noted how the siting of the proposed telecommunications tower will provide for the protection of the environment and open space, and preserve community character, scenic vistas, and historic heritage.
- h. ZO 334-96.1. The proposed tower location is greater than five times its proposed height from any of the corridors noted in the Ordinance, but is within five times its height from a residential use. Based on the table in the Ordinance, for the G-1 zoning district a Conditional Use permit is required. The applicant has included a copy of their Application for Conditional Use Permit with the Site Plan review package.
- i. ZO 334-102. The applicant has not provided a fall zone calculation with the review package as required by the Ordinance. We also note that the fall zone shown on the plans encroaches into the adjacent utility easement area, and that the fall zone radius of 155 feet does not take into account the five foot lightning rod detailed on the top of the tower. The applicant should clarify the potential to impact the overhead utility lines within the utility easement.

7. Landscaping (HR 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(8). The applicant is using existing vegetation for screening.
- b. HR 276-11.1.B.(14). The applicant has not shown any proposed exterior lighting on the plans, nor provided the required note from the Regulation. The Conditional Use Permit Application notes that no tower lighting is required for this facility.
- c. HR 276-11.1.B.(20). The applicant has not proposed any new landscaping to be installed for this facility.

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

- a. The applicant should forward copies of all documentation related to any permitting for the facility to the Town for their records.
- b. Additional local permitting may be required.

9. Other

- a. The applicant is proposing a lockable site access gate to be installed near Griffin Road and a chain link fence with access gate around the tower compound. The applicant should coordinate with the Town of Hudson for acceptable emergency access provisions.

Please feel free to call if you have any questions.

Very truly yours,



Heidi J. Marshall, P.E.



Paul Konieczka, AICP

HJM:PK:mjt

Enclosure


cc: Brooke Dubowik – Town of Hudson
Town of Hudson Engineering Division – File
Prince Lobel Tye LLP
One International Place, Suite 3700
Boston, MA 02110
Fax: (617) 456-8100

CLD | Fuss & O'Neill

540 Commercial Street • Manchester, NH 03101
ph: 603.668.8223 • fx: 603.668.8802
cld@cldengineers.com • www.cldengineers.com

Connecticut | Maine | Massachusetts | New Hampshire | New York | Rhode Island | Vermont

TO: File

FROM: Steven W. Reichert, PE 

DATE: December 6, 2017

RE: Town of Hudson Planning Board Review
Eco-Site, 50 Griffin Road
Tax Map 126, Block 032, Lot 0; Acct. #1350-903
CLD | Fuss & O'Neill Reference No. 03-0249.1660

The following list itemizes the set of documents reviewed related to the Eco-Site, Inc. Non-Residential Site Plan at 50 Griffin Road, Hudson, New Hampshire.

- Correspondence between CLD | Fuss & O'Neill, Inc. and the Town of Hudson between November 20, 2017 and November 30, 2017.
- Submittal received by CLD | Fuss & O'Neill on November 28, 2017, including the following:
 1. Copy of *Application for Conditional Use Permit and Site Plan Approval*, Town of Hudson, New Hampshire for Map 126, Block 032, Lot 0, dated November 20, 2017.
 - Copy of Application Forms, dated November 17, 2017.
 - Copy of Supporting Statement, prepared by Prince Lobel Tye LLP, dated November 17, 2017.
 - Copy of Abutter's List, dated November 16, 2017.
 - Copy of 20-Mile Town Radius, not dated.
 - Copy of *Zoning Determination*, dated November 22, 2017.
 - Copy of Plan Set, dated November 15, 2017.
 - Copy of *Photo Simulations*, prepared by Chappell Engineering Associates, dated November 15, 2017.
 - Copy of Structural Report, prepared by Chappell Engineering Associates, dated October 30, 2017.
 - Copy of *Affidavit of Site Acquisition Specialist*, dated November 1, 2017.
 - Copy of RF Plots and Master Plan, not dated.
 - Copy of *Report of Radio Frequency Engineer*, dated November 13, 2017.
 - Copy of *FAA Aeronautical Evaluation*, prepared by Site Safe, dated October 5, 2017.
 - Copy of *Lease Agreement*, dated October 31, 2017.
 - Copy of FCC License, not dated.

2. Copy of *Eco-Site, Map 126, Block 023, Lot 0, 50 Griffin Road, Hudson, New Hampshire* Plan Set, prepared by Chappell Engineering Associates, LLC, with initial issue date of 9/1/17, with latest revision of 11/15/17, unless otherwise noted, and including the following:
 - a. *Title Sheet, T-1.*
 - b. *General Notes, GN-1.*
 - c. *Site Survey Plan, C-1*, with latest revision of 10/19/17.
 - d. *Legal Descriptions, C-2*, with latest revision of 10/19/17.
 - e. *Abutters Plan, C-3.*
 - f. *Proposed Site Plan, Z-1.*
 - g. *Compound Plan, Z-2.*
 - h. *Elevation, Antenna Plan & Detail.*
 - i. *Site Details, Z-4.*
 - j. *Equipment Details, Z-5.*
 - k. *Grading/Erosion Control Plan & Details, EC-1.*
- Electronic submission of above, emailed November 21, 2017.

SWR:mjt

cc: George Thebarger – Town of Hudson
Brooke Dubowik – Town of Hudson
Town of Hudson Engineering Division – File

"D"

ECO-SITE RESPONSE TO
CLD Fuss & O'Neill Review Comments

January 2, 2018

(Responses in Black Bold Test following comments)

December 6, 2017

Mr. George Theborge
Land Use
Director
Town of
Hudson
12 School
Street
Hudson,
NH
03051

Re: Town of Hudson Planning Board Review
Eco-Site Wireless Telecommunications Facility Site Plan, 50
Griffin Road Tax Map 126, Lot 32; Acct. #1350-905
CLD I Fuss & O'Neill Reference No. 03-0249.1660

Dear Mr. Theborge:

CLD I Fuss & O'Neill has reviewed the first submission of the materials received on November 28, 2017, related to the above-referenced project. Authorization to proceed was received on November 27, 2017. 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 I Fuss & O'Neill Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007, September 3, 2008, and October 2015.

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

The project appears to consist of the construction of a telecommunications tower, a gravel access drive, equipment and underground utilities to service the proposed tower, and other associated site improvements. It is not noted whether the existing buildings on the site are serviced by Town water and sewer. The plan does not show proposed water or sewer services for the tower compound.

The following items are noted:

1. Site Plan Review Codes and Administrative Requirements and Definitions
 - a. HR 275-8.C.(1) and (6). The applicant has noted that the facility will be unmanned with approximately biweekly site visits for inspections and maintenance. The applicant has provided one parking space outside the fenced compound area. No specific off-street loading area is indicated on the plans. The applicant has shown a propane tank within the compound and should verify that the propane delivery truck has adequate space to turn around during deliveries. (We note that the turnaround appears only to be useful if the fence gate is opened.) The applicant should provide additional details for the proposed surface treatment within the fenced area such that we can confirm that the surface will support vehicle traffic for the purpose of turning around/vehicle maneuverability. **Access road increased to 14' and turnaround area size increased**
 - b. HR 275-8.C.(11). The applicant has not noted any provisions for handicapped access to the site nor if any is required. **No handicapped access required.**
 - c. HR 275-9.B. The applicant did not provide a Traffic Study but has noted within the Conditional Use Permit Application that the facility will not contribute to traffic congestion because traffic will be limited to a single vehicle making biweekly visits to the site for maintenance checks. The applicant should note the estimated frequency for propane deliveries. **Propane delivery frequency to be noted on plans.**
 - d. HR 275-9.C. The applicant did not provide a Noise Study but has noted within the Conditional Use Permit Application that the facility will not involve excessive noise. **Noise Affidavit to be submitted with plans.**
 - e. HR 275-9.D. The applicant did not provide a Fiscal Impact Study but has noted within the Conditional Use Permit Application that the facility "will not have any adverse effect on the value of land and buildings in the neighborhood or on the amenities thereof". **Not an A&E req**
 - f. HR 275-9.F. and 276-11.1.B.(20). The applicant included a "Legal Descriptions" plan sheet and a copy of the proposed lease for the compound area in the Conditional Use Permit Application. Copies of the existing NEPCO and PSCONH easements were not included in the review package. **Copies of the easements will be submitted.**
 - g. HR 275-9.G. No copies of applicable approvals or permits were provided in the review package. **Not an A&E req.**
 - h. HR 275-9.1. The applicant did not provide an Environmental Impact Study but has noted within the Conditional Use Permit Application that the facility will not produce any pollutants or wastes and "will not inhibit adequate light and air". **Not an A&E req.**

- i. HR 276-11.1.B.(1). The applicant has provided a 24"x36" plan set versus the required 22"x34" set. **Plans have been formatted for 22"x34". Initial plans will be submitted 24"x36" through final approval. Final plans will be submitted on 22"x34" per bylaw.**
- j. HR 276-11.1.B.(2). The applicant has provided some plan sheets that do not meet the Regulation for scale. **I suggest a waiver on this requirement as the scales shown on the plans provide the best visibility.**
- k. HR 276-11.1.B.(3). The title block provided on the plans does not meet the Regulation. **I suggest a waiver on the title block as the format of the title block is standard for all wireless communication carriers.**
- l. HR 276-11.1.B.(4)(b). The approval block on the plans does not meet the Regulation for location and is only provided on the cover sheet, not each plan sheet as required by the Regulation. **Approval block is shown in lower left of each sheet in the set.**
- m. HR 276-11.1.B.(5). The applicant's block does not exactly match the size requirements. **The block matches the size requirements on the new plans.**
- n. HR 276-11.1.B.(6). The Owner's signature is not included on the plan set. **Not an A&E req.**
- o. HR 276-11.1.B.(9). The applicant has not stated the error of closure on the plans. **We suggest a waiver as there are no plans available of Griffin Road. The frontage along the property is observed along the existing stone wall per the deed.**
- p. HR 276-11.1.B.(12). The applicant has not shown any building setback lines on the plans. **Building setback lines have been added to the plans.**
- q. HR 276-11.1.B.(13). The applicant has not shown any proposed signage on the plans, nor provided the note from the Regulation. **We will/can add a note to the plans specifying signage on the entrance gate and compound gate.**
- r. HR 276-11.1.B.(16). The applicant has not shown all driveways within 200 feet of the tract. **Aerial photo has been added to the plans to show all driveways within 200' per the bylaw.**
- s. HR 276-11.1.B.(17). The applicant has not shown permanent monuments for the parcel boundaries on the plan set. **Permanent monuments have been called out on the plans (Sheet C-1).**
- t. HR 276-11.1.B.(20). The applicant has not shown the height of existing buildings on the plan set **Approximate heights of building shown on plans (Sheet C-1).**
- u. HR 276-11.1.B.(23). The applicant has not noted any pertinent highway projects. **No highway projects are known within the immediate area.**
- v. HR 276-11.1.B.(24)(b). Although the plan appears to meet the requirement, the applicant has not shown the lot coverage calculation on the plan set. **Lot coverage has been added to the Zoning Information chart on sheet C-3**
- w. 290.5.K.(22). Snow storage areas are not noted on the plans. **Snow storage area shown at end of parking space.**

2. Driveway Review Codes (Chapter 193)

- a. HR 193.10.G. The applicant is proposing construction of a second driveway for the parcel where the Regulation only allows one. We did not find a waiver request in the package received for review. **A waiver request will be required.**
- b. HR 193.10.J. The applicant is proposing construction of a gravel driveway connecting to Griffin Road. The Regulation requires all driveway surface materials to be bituminous concrete within the Town-owned Right-of-Way. **The first 20' of the proposed access drive will be paved with bit. concrete.**

3. Utility Design/Conflicts

- a. HR 276.13.A. The applicant is proposing underground utilities to connect to the tower compound area from Griffin Road. The applicant should provide an installation detail for the underground utilities. **Typical buried conduit detail added to the plans.**

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

- a. HR 290-5.L. and HR 275-9.A. The applicant did not include a Stormwater Management Plan or Report with the review package, nor was a waiver request included in the package received for review. No new drainage features are proposed as a part of this project. **A 2' deep infiltration trench is proposed along the south and east side of the access drive. A SMP can be prepared if required.**
- b. The applicant has not provided coverage information for the fenced area, so coverage and stormwater impacts cannot be evaluated. **The size of the compound is shown on the plans. Additional the 6" crushed stone surfacing area provides infiltration for any additional impervious are within the compound.**

5. Erosion Control/Wetland Impacts

- a. HR 290-5.K.(14). The applicant has not shown a staging or stockpile area. Associated erosion control measures should be indicated for these locations. **Stockpile area is shown within the fenced compound.**
- b. HR 290-5.K.(20). The applicant has proposed silt fence to be installed perpendicular to grading contours. The applicant should consider installation parallel to grading contours to better control erosion and sediment during construction. **The silt fence is shown as best as possible parallel to the contours. Additionally, the entire limit of work is ringed with silt fence.**
- c. HR 290-5.K.(20). The applicant has not proposed any erosion control measures along the site access road. **See above**
- d. HR 290-5.K.(20). The applicant has not proposed a stabilized construction exit/entrance for the site nor provided a detail for its construction. **As noted above, the first 20' of the driveway will be paved. Additional a temporary construction access detail will be added to the plans if req'd.**

6. Zoning (ZO 334)

- a. ZO 334-17, 334-20 and 334-23. The applicant has noted that the site is located within the General-1 (G-1) District. The proposed use requires a Special Exception in the G-1 district according to 334 Attachment 1. **Not an A&E req**
- b. ZO 334-27.1. The applicant has not shown frontage or setback lines on the plans. The applicant has noted zoning dimensions in a table on sheet C-3, which conform to the Ordinance. **Setback lines have been added to the plans.**
- c. ZO 334-39.A.(1). The applicant has shown existing wetlands within the subject site on the plans. Soil boundaries are not shown for the parcel, and the plans do not note that the wetlands were delineated by a certified soils scientist. **A Soil Survey Map overlay has been added to the plans. The wetlands shown on the plans were included based on the Town of Hudson GIS system. The closest wetland boundary is over 200' away from the site.**
- d. ZO 334-39.A.(1). The applicant has shown what appears to be a wetlands boundary west of the tower compound. The applicant should clarify the limits of this wetland area as it is a single line that does not close or encircle a particular area. **Wetland lines shown on the plan are referenced from the Town of Hudson GIS system and are over 200' away from the site.**
- e. ZO 334-57. The applicant has not proposed any signage for this facility. **We will/can add a note to the plans specifying signage on the entrance gate and compound gate.**
- f. ZO 334-83. The applicant has noted that the site is located in a zone X flood hazard area. **Correct.**
- g. ZO 334-921 The applicant has not noted how the siting of the proposed telecommunications tower will provide for the protection of the environment and open space, and preserve community character, scenic vistas, and historic heritage. **Not an A&E req.**
- h. ZO 334-96.1. The proposed tower location is greater than five times its proposed height from any of the corridors noted in the Ordinance, but is within five times its height from a residential use. Based on the table in the Ordinance, for the G-1 zoning district a Conditional Use permit is required. The applicant has included a copy of their Application for Conditional Use Permit with the Site Plan review package. **Correct.**
- i. ZO 334-102. The applicant has not provided a fall zone calculation with the review package as required by the Ordinance. We also note that the fall zone shown on the plans encroaches into the adjacent utility easement area, and that the fall zone radius of 155 feet does not take into account the five foot lightning rod detailed on the top of the tower. The applicant should clarify the potential to impact the overhead utility lines within the utility easement. **The distance from the tower to the existing utility lines is shown on the plans.**

7. Landscaping (HR 276-11.1.B.(20)) and Lighting (HR 276-11.1.B.(14))

- a. HR 275-8.C.(8). The applicant is using existing vegetation for screening. **Correct.**
- b. HR 276-11.1.B.(14). The applicant has not shown any proposed exterior lighting on the plans, nor provided the required note from the Regulation. The

Conditional Use Permit Application notes that no tower lighting is required for this facility. **A note has been added to the plans stating "No tower lighting is required. Additionally no exterior lighting is proposed for the T-Mobile equipment area"**

- c. HR 276-11.1.B.(20). The applicant has not proposed any new landscaping to be installed for this facility. **Correct.**

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

- a. The applicant should forward copies of all documentation related to any permitting for the facility to the Town for their records. **Not an A&E req.**
- b. Additional local permitting may be required. **Not an A&E req.**

9. Other

- a. The applicant is proposing a lockable site access gate to be installed near Griffin Road and a chain link fence with access gate around the tower compound. The applicant should coordinate with the Town of Hudson for acceptable emergency access provisions. **A knox box will be added to the access gate for Town of Hudson emergency access.**

Please feel free to call if you have any questions

Very truly yours,

Paul Konieczka, AICP

Heidi J. Marshall, P.E.

HJM:PK:mjt

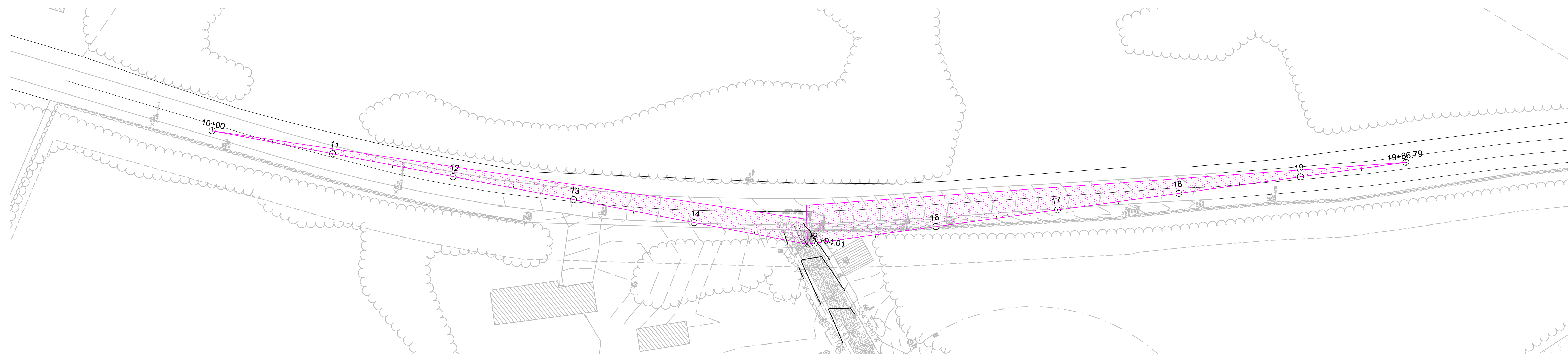
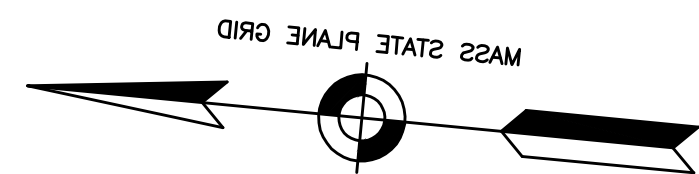
Enclosure

cc: Brooke Dubowik — Town of Hudson
Town of Hudson Engineering Division — File Prince Lobel Tye LLP
One International Place, Suite 3700
Boston, MA 02110
Fax: (617) 456-8100

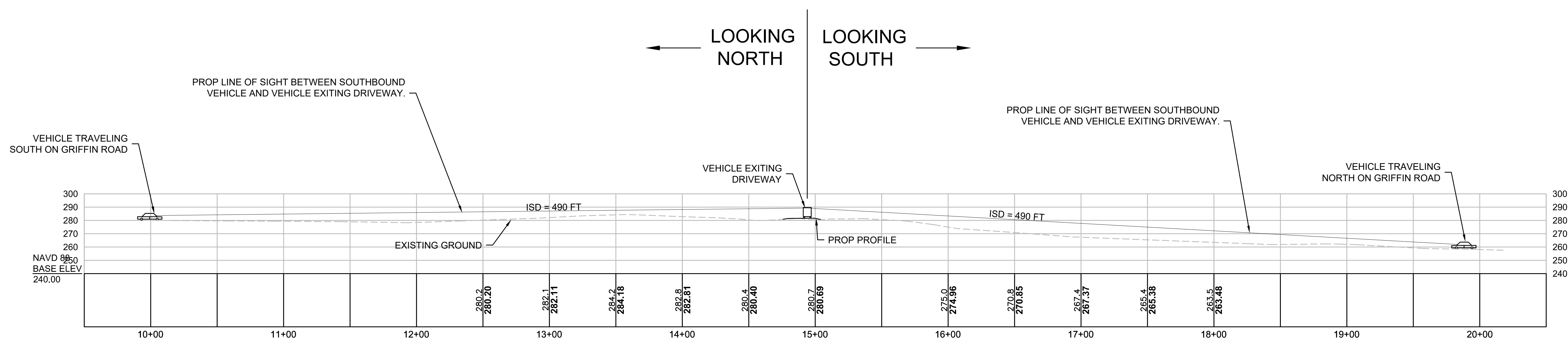
HUDSON, NH
GRIFFIN ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
NH	-	1	2

SIGHT LINE ANALYSIS

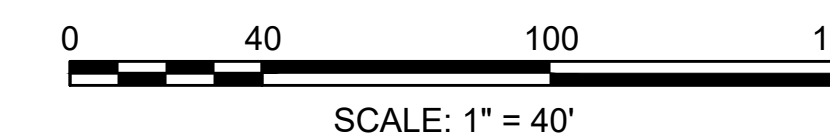


PLAN
SCALE: 1" = 40'



SIGHT LINE PROFILE - SINGLE UNIT TRUCK
Required Sight Line Distance = 490'

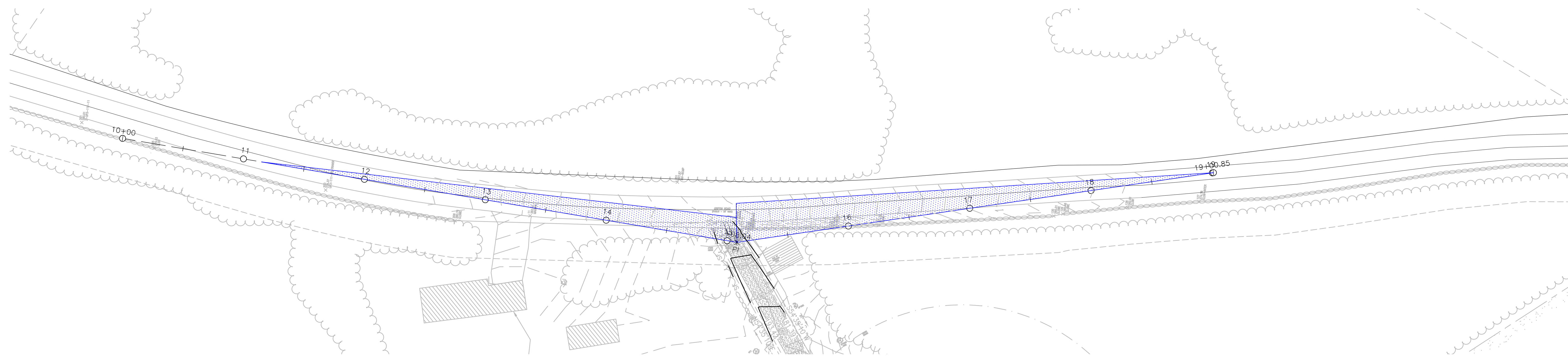
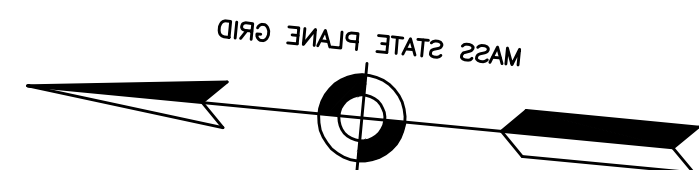
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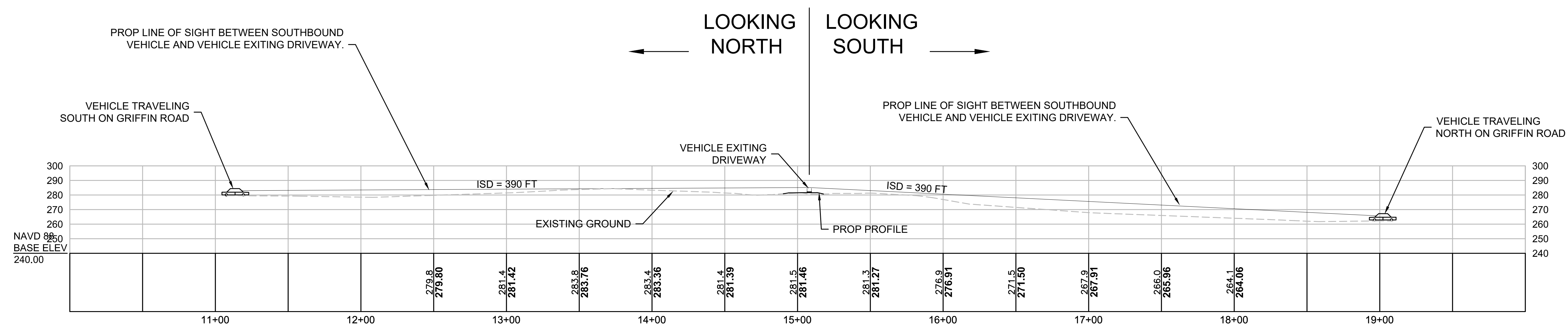
HUDSON, NH
GRIFFIN ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
NH	-	2	2

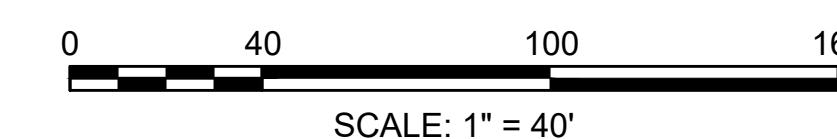
SIGHT LINE ANALYSIS



PLAN
SCALE: 1" = 40'



SIGHT LINE PROFILE - PASSENGER CAR
Required Sight Line Distance = 390'
SCALE: 1" = 40'



December 27, 2017

Daniel Glissman
Prince Lobel Tye, LLP
One International Place, Suite 3700
Boston, MA 02110

Reference: Removal Bond: Miller
50 Griffin Road, Hudson, NH 03051

To Whom It May Concern:

As requested, Chappell Engineering Associates has prepared an estimate for the removal costs at the above-mentioned site. The estimated cost to remove the installation and associated costs to restore the site to its original condition has been prepared using data from the Building Construction Cost Data, by R.S. Means and from standard industry data.

Description	Unit	Quantity	Unit Cost	Total Cost
Mobilization and Demobilization	Ea.	1	\$393.50	\$393.50
Dumpster Rental	Per wk.	2	\$850.00	\$1,700.00
Crane Rental, Truck Mounted, Hydraulic, 55-ton	Ea.	2	\$2435.00	\$4,870.00
Remove Antennas (8), RRH Units (16), Fiber Junction Box (1) and All Mounts	Ea.	1	\$2,500.00	\$2,500.00
Remove Signal Cables	L.F.	130	\$5.00	\$650.00
Remove Cable Ice Bridge	All	1	\$500.00	\$500.00
Remove Overhead Ice Shield	All	1	\$750.00	\$750.00
Remove Equipment Cabinets & Generator	Ea.	7	\$500.00	\$3,500.00
Remove Propane Tank	Ea.	1	\$500.00	\$500.00
Remove 80 S.F. Equipment Pad	CY	3	\$180.00	\$1,080.00
Remove 9 S.F. Propane Tank Pad	CY	1	\$180.00	\$360.00
Remove Electric Meter Bank	Ea.	1	\$500.00	\$500.00
Remove Transformer	Ea.	1	\$500.00	\$500.00
Remove Mesa Telco Cabinet	Ea.	1	\$500.00	\$500.00
Remove Chain Link Fence	L.F.	200	\$3.78	\$756.00
Remove Underground Utility Conduits	L.F.	380	\$3.00	\$1,140.00
Remove 155' Monopole	Ea.	1	\$5,000.00	\$5,000.00
Remove Monopole Foundation to 2'-0" Below Grade Level	Ea.	1	\$2,000.00	\$2,000.00
Remove Gravel Cover in Compound (6" Depth)	C.Y.	46	\$8.00	\$368.00
Haul & Dump Removed Gravel/Material	C.Y.	46	\$50.00	\$2,300.00
Final Site Clean-Up Operations	Ea.	1	\$750.00	\$1000.00
Transport Salvage to Warehouse	Ea.	1	\$600.00	\$1000.00
Subtotal	Ea.			\$31,867.50
Contingencies			5%	\$1,593.38
Grand Total				\$33,460.88
Regional Adjustment (Nashua, NH)			.945%	-\$316.21

Present Value Total (P): \$33,144.67

If you have any questions regarding this matter, please do not hesitate to call.

Very truly yours,

Chappell Engineering Associates, LLC

A handwritten signature in black ink that reads "David A. Chappell". The signature is written in a cursive style with a large initial 'D' and 'C'.

David A. Chappell, P.E.