

TOWN OF MILFORD, NH OFFICE OF COMMUNITY DEVELOPMENT

1 UNION SQUARE, MILFORD, NH 03055

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STAFF MEMORANDUM

Date: May 18, 2018

To: Town of Milford Planning Board

From: Lincoln Daley, Community Development Director

Project: Jessica Hudson for the properties located at Tax Map 43, Lots 24 and 25, Tonella Road. Public

Hearing for a major subdivision and lot line adjustment application to subdivide said lots into three total lots (Map 43 Lots 24, 25, and 25-1), adjust the common lot lines between the properties, and extend the Right-of-Way for Tonella Road within the Residential B District. Waiver from the Development Regulations, Article VII. Roadway Standards, Section 7.02 for relief from the minimum 50 foot width Right-of-Way requirement for the proposed extension of Tonella Road. Waiver from the Infrastructure Design, Construction & Administration Standards, Milford, NH, Appendix II. Construction Design Details, N. Tomahawk Turn-Around to allow a driveway directly off the end of

turn-around. (Continued from April 24, 2018)

ADDRESS:

Tax Map 43 Lots 24, 61 Tonella Road Tax Map 43 Lots 25, 64 Tonella Road

LOT AREA:

Tax Map 43, Lot 24: ±2.23 acres (±97,138 sf.) Tax Map 43, Lot 25: ±14 acres (±609,840 sf.)

PROPOSAL:

The applicant, Jessica Hudson, is before the Planning Board for a major subdivision application. The proposal entails subdividing portions of Map 43 Lots 24 and 25 to create a third lot Map 43 Lot 25-1 and subsequent adjustments to the common lot lines between the properties. In order to complete the project as presented and provide sufficient frontage for all existing and proposed lots, Tonella Road would be extended by 335 linear feet. The properties lie within the Residential B Zoning District, will be serviced by municipal water and sewer, and will include the installation/construction of stormwater management and drainage structures. The applicant has filed a concurrent Major Site Plan Application to construct twelve (12) townhouse style, multi-family units on Map 43 Lot 25-1.

The proposed acreage is as follows:

	Existing	Proposea
Map 43, Lot 24	14 acres (±609,840 sf.)	12.71 acres (553,691 sq.ft.)
Map 43, Lot 25	2.23 acres (±97,138 sf.)	2.47 acres (107,657 sq.ft.)
Map 43, Lot 25-1		.915 acres (36,860 sq.ft.)

The purpose of this agenda item is for the applicant to continue the formal application before the Board. At the April 24th meeting, the Planning Board formally granted the two waiver request related to the roadway length and the turnaround design for the Tonella Road extension. As the Board is aware, this application has been filed in conjunction with a site plan application to construct 16 town houses for said properties. At the last meeting, the Board discussed a number of issues involving the roadway layout/design, utilities, and the requested waivers.

NOTICES:

Notices were originally sent to property abutters on March 16, 2018 and then resent on April 13, 2018.

APPLICATION STATUS:

The application was accepted as complete on March 27, 2017. At that same meeting, the Board determined that the project did not have a regional impact.

EXISTING USE:

Tax Map 43, Lot 24 consists of approximately 14 acres with no legal frontage on public or private way. The parcel contains two, single-family residences serviced by private well and septic and several accessory structures. Access to the property is from a private driveway. The lot is mostly wooded with the quarry centrally located within the property. Wetlands have been delineated in the northwestern portions of the property primarily north of the existing private driveway.

Tax Map 43, Lot 25 consists of approximately 2.23 acres with 40 feet of legal frontage on Tonella Road. The parcel contains a single-family house. The house is accessed via the shared private driveway off of Tonella Road serving both subject properties. A stone foundation for an abandoned structure can be found on the northern side of the existing driveway. The property slopes from south to north with substantial grade changes located to the south. Located along the northern portion of the property is a delineated wetland resource area connected to the larger system on the abutting properties.

ZONING:

The parcels lie within the Residential "B" zoning district. The intent of the Residence "B" District is to provide areas for increased residential density and other uses which are compatible with these residential densities. With the inclusion of the proposed Tonella Road extension, all three properties meet the minimum lot size of twenty thousand (20,000) square feet in area with one hundred fifty (150) feet of frontage on a Class V or better road and serviced by both municipal sewerage and water systems. Lastly, the properties fall within the Groundwater Protection District 1.

WAIVER REQUEST(S):

The Applicant submitted the following two waivers in association with the subdivision application:

- 1) Waiver from the Development Regulations, Article VII. Roadway Standards, Section 7.02 for relief from the minimum 50 foot width Right-of-Way requirement for the proposed extension of Tonella Road. In order to complete the project as presented and provide sufficient frontage for all existing and proposed lots, the applicant is proposing to extend public 40' right-of-way for Tonella Road by approximately 335 linear feet.
- 2) Waiver from the Infrastructure Design, Construction & Administration Standards, Milford, NH, Appendix II. Construction Design Details, N. Tomahawk Turn-Around to allow a driveway directly off the end of turn-around. The driveway servicing the multiple houses on Map 43 Lot 24 would be located at the end of the proposed turnaround.

Addressed: At the April 24, 2018 Planning Board meeting, the Board granted approval of both waiver requests.

SUBDIVISION DENSITY:

As stated above, the applicant has filed a concurrent Major Site Plan Application to construct twelve (12) townhouse style, multi-family units on Map 43 Lot 25 and four (4) townhouse style, multi-family units on Map 43 Lot 25-1. Density for a multi-family development is determined by Section 5.03.4 of the Zoning Ordinance which states that Multi-family dwellings shall be served by both municipal sewerage and water systems and may have a maximum of five (5) units per acre. The maximum density may be reduced by the Planning Board based on recommendations of other qualified consultants. The discussion involving the determination of density will be part of the major site plan application.

DRAINAGE

A review of the revised stormwater and drainage design has been performed by the Environmental Coordinator as part of the Site Plan application. Please refer to staff memorandum for the Site Plan application for comments.

INTERDEPARTMENTAL REVIEWS:

Ambulance Department: *No concerns with the proposed subdivision.*

Assessing Department:

- 1. Map 43, Lot 24 already has 2 houses (and two outbuildings) located on this parcel. Does this proposal move a 3rd home onto the same single parcel? If this is a subdivision proposal, wouldn't we want to see a separate parcel for the "relocated house"? *Addressed*.
- 2. Is the road intended to be a public road? If two lots are created, that would be my assumption. *Addressed*.

Conservation Commission: Please refer to the attached 4/19/18 updated Conservation Commission Memorandum

- 1. The Commission is concerned about potential erosion of the steep bank into the wetlands delineated on the east side of Tonella Road. We ask that non-disturbance of the vegetation along the top of the bank be a condition of development permission.
 - **Addressed.** A note has been added to the Grading and utility plan (sheet 6) stating no disturbance of the vegetation north of the pond as requested by the Commission.
- 2. The Commission would like the applicant to design and install a physical barrier along the perimeter of the snow storage area to prevent inadvertent snow creep into the wetland as the winter progresses.
 - **Addressed.** This was discussed at the Planning Board meeting and explained that the barrier was not necessary as the snow would drain to the rain garden and not toward the slope.
- **Environmental Programs/Stormwater**: A detailed stormwater management design was submitted a part of the Major Site Plan application for the multi-family units. Please refer to staff memorandum for the Site Plan application and 4/10/18 and 5/15/18 Response Letters from the Applicant for comments.
- **Fire Department**: Proposed Tomahawk turnaround. Persuant to NFPA 1 2009 Ed. Ch. 18 figure 18.6., the turnaround length needs to be 50 feet from the start of the turnaround. The measurement needs to begin at the start of the bump out on both portions. *Addressed*.
- **Heritage Commission.** Please refer to the attached 4/15/18 Heritage Commission Memorandum. No further comments presented.
- **Police Department**: Captain Frye commented that he hopes there is an impact fee for a future light at the intersection of Nashua Street and Tonella Road. No further comments submitted.

Public Works:

- 1. The Director spoke with the owner and has asked for a snow storage area at the southwest corner of the hammer head (private drive).
 - Addressed. Snow storage area was added.
- 2. The owner will be required to install handicap ramps at each side of Ledgewood Drive with the detectable warning mats. In addition, the applicant will be required to stripe the crosswalk across Ledgewood.
 - **Addressed.** The ramps and sidewalk striping has been added to the plans.
- 3. Easement will be required for the drainage line at end of hammer head (on private property)
 - **Partially Addressed.** Maintenance of this culvert will be the responsibility of the landowner and not the town. Note 23 on the site layout plan (sheet 5) clarifies this intent. A utility drainage easement will be required in

order for the property owner to access and maintain the drainage structure and connection under the Tonella Road Extension (to become a public road) from the rain garden to the outlet. Staff recommends that that the applicant submit said easement for review and approval by the Community Development Office and Public Works Department.

4. A drainage culvert will be needed at beginning of road from West side to East side.

Addressed. There is an existing pair of culverts which drains under Ledgewood Drive and discharges runoff to the north. This runoff is eventually directed easterly under Tonella Road to the existing wetlands. The applicant's drainage analysis demonstrates that the project will not increase the runoff to these existing culverts. Due to the existing culverts and no increase in runoff to this area, the applicant states that an additional culvert would not be necessary.

5. Easement will be necessary for access and maintenance for Infiltration pond and gravel road access to discharge point.

Partially Addressed. Maintenance will be the responsibility of the landowner and not the town. Note 23 on the site layout plan (sheet 5) clarifies this intent. A utility drainage easement will be required in order for the property owner to access and maintain the drainage structure and connection under the Tonella Road Extension (to become a public road) from the rain garden to the infiltration pond. Staff recommends that that the applicant submit said easement for review and approval by the Community Development Office and Public Works Department.

Water/Sewer Utilities: All comments addressed.

Zoning Administrator: All comments addressed.

Community Development/Planning Department:

1. Sheet 5 of 9. The applicant should explain how snow will be managed. Given the length of the proposed roadway extension and type of development, it is questionable whether there is sufficient designated snow storage areas shown on the plan. Please explain.

Addressed. The topic of snow management was discussed at the last Board meeting. Based on discussions it appears the Board was content with the feedback provided by the DPW Director and the discussion of how the snow will be managed. Additionally, the snow removal note (Note 10) was clarified on the site plan. Staff finds that the applicant has addressed the concerns raised. However, the applicant should address any/all remaining concerns expressed by the Board.

- 2. **Sheet 5 of 9.** Notes 17 and 22 are the same. Please delete one and renumber accordingly. *Addressed*.
- 3. **General Comment, Turn-around Design and Lot Layout.** Please explain what alternatives were considered regarding the roadway layout and turnaround design and location of the 4 unit multi-family townhouse. More specifically, could the tomahawk design be reversed to provide additional usable outdoor living space/passive recreation areas for the 4 unit multi-family townhouses and/or relocation of the proposed building away from the sloped areas?

Partially Addressed. The applicant states that reversal of the tomahawk would require further encroachment into the Quarry property and does not work well with the existing site grade. The proposed tomahawk location is a significant improvement over the current available gravel turnaround and meets all applicable requirements. Staff finds that the applicant has addressed the concerns raised. However, the applicant should address any/all remaining concerns expressed by the Board.

4. General Comment, Drainage Structures. Please confirm if the intent is for the Town to maintain the drainage and stormwater management structures and facilities shown in the site plan? If yes, the subdivision plan will need to be revised to include the bounds and description of the drainage/access/maintenance easements. In addition, the applicant will be required to submit the associated legal descriptions of said easements for review by Office of Community Development and Town Counsel.

- **Addressed.** Maintenance will be the responsibility of the landowner and not the town. Note 23 on the site layout plan (sheet 5) clarifies this intent.
- **5. General Comment, Utilities.** Pursuant to Section 6.014.1 of the Development Regulations, all applications which include the creation of a new or upgraded road or a subdivision shall have underground utilities. This would include relocating the overhead lines underground.
 - **Addressed.** The plans have been revised to show the proposed utility lines to be located underground. Existing utility lines will remain above ground as they are currently. This was discussed with the Board and they seemed satisfied with this approach
- **6. General Comment, Monumentation.** A note be added to the plan stating that prior to the signing of the plan, all monumentation shall be set and noted on the plan or a security be provided to the Town to cover the cost of said monumentation.
 - *Addressed.* Note 14 has been added to the subdivision overview plan (sheet 2).
- 7. **Title Sheet.** Please revise the cover sheet to include a Planning Board Signature Block and Owner/Applicant Block. Staff understanding that said sheet will not be recorded at the registry.

Additional comments received will be presented/distributed at the meeting.

STAFF RECOMMENDATIONS:

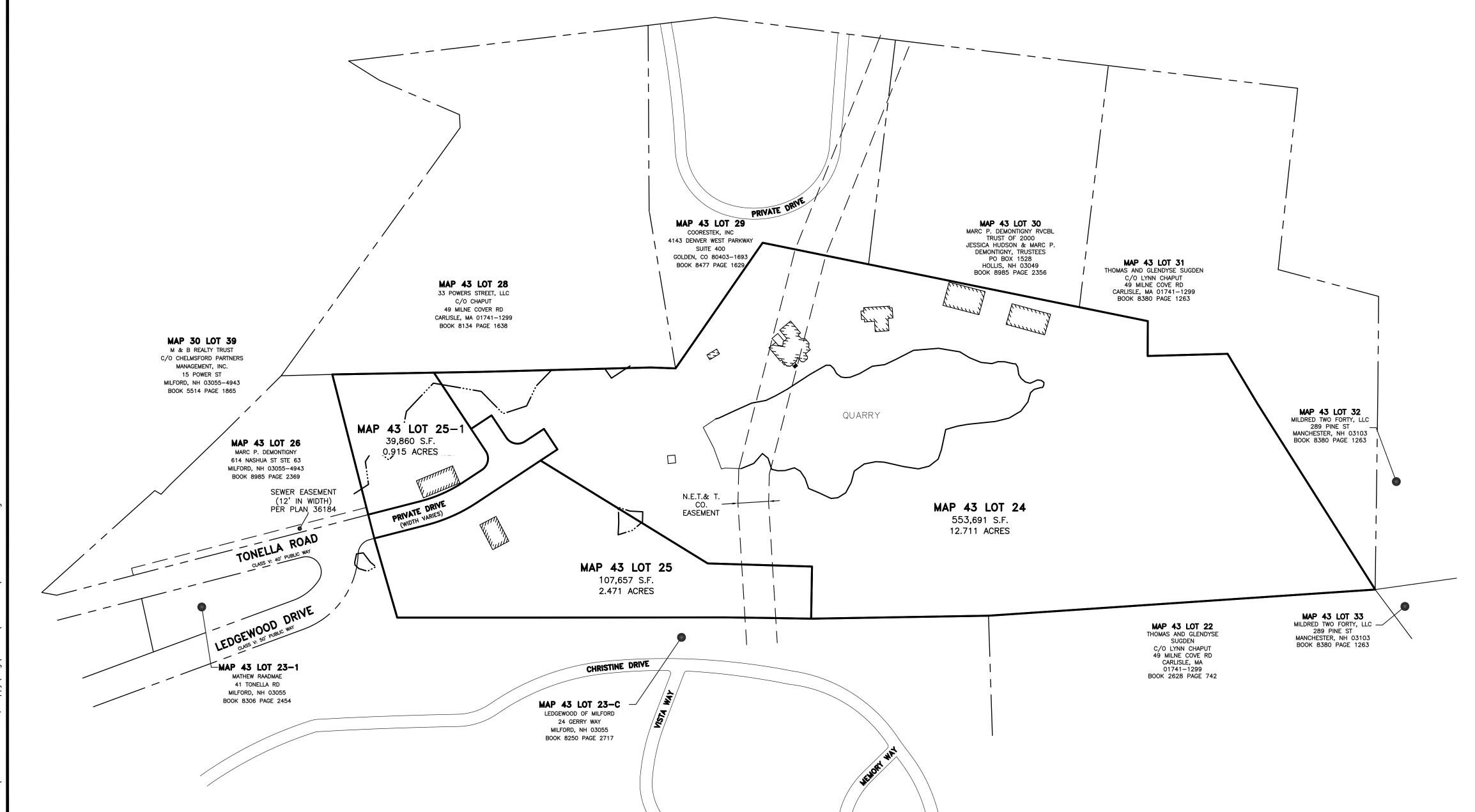
- 1. The applicant should be prepared to address all of the comments raised by the Planning Board, Conservation Commission, Staff, and public pertaining to the subdivision plan and revise/resubmit the plans/information accordingly.
- 2. At this time, Staff recommends conditional approval of the subdivision application based on completion of the following conditions:
 - a. The Applicants shall submit any/all revised plans, reports, and associated information to the Community Development Office for review and approval by the Town and its agents.
 - b. The Applicant shall submit all drainage and utility easement documents to the Office of Community Development for review by all appropriate departments and Town Counsel.
 - c. Shall be subject to the issuance of the Milford Stormwater Permit. A note shall added to the plan stating the date of the issuance of the stormwater permit
 - d. The Applicant shall post a performance guarantee based on its engineer's construction estimate for the construction of the roadway and drainage improvements for review and approval by the Public Works Department and Planning Department.

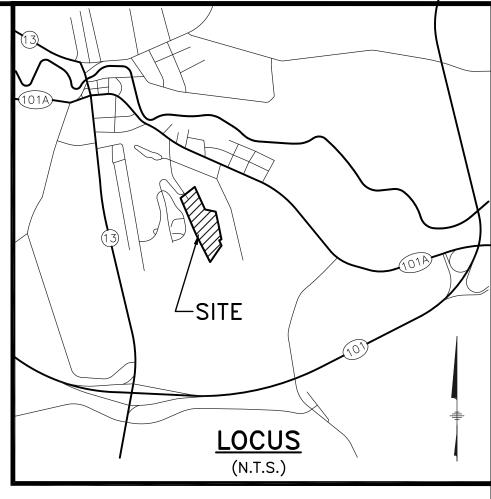
Aerial Photograph of the Map 43, Lots 24 and 25



Subdivision Plan Tonella Hill Townhomes

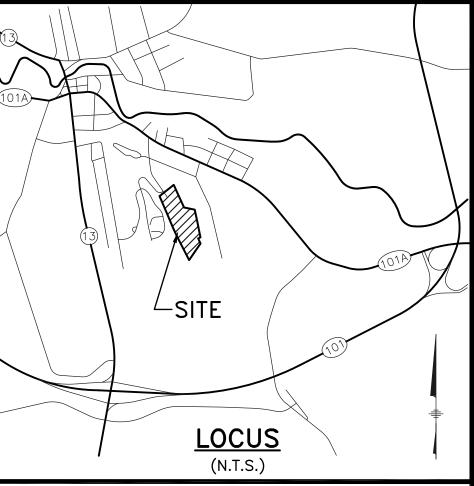
TONELLA ROAD MILFORD, NEW HAMPSHIRE

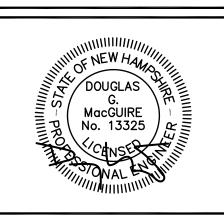




SHEET INDEX:

- Title Sheet
- Subdivision Overview Plan
- Subdivision Plan
- Topographic Subdivision Plan
- Roadway Plan & Profile
- Construction Details





The Dubay Group, Inc 84 Range Road

Planners

TheDubayGroup.com

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<u> </u>	REVISIONS:				
REV:	DATE:	COMMENT:	BY:		
1	4/4/18	REVS. PER TOWN COMMENTS	JMM		
3	4/23/18	REVS PER TOWN COMMENTS	JMM		

DRAWN BY: CHECKED BY: JAN. 29, 2018 1"=100' DATE: SCALE: FILE: 122 Subd Cover DEED REF:

TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055 MAP 43, LOT 24

SUZANNE DEMONTIGNY, TRUSTEE SUZANNE DEMONTIGNY RVCBL

MAP 43 LOT 25 GEORGE DEMARAIS, TRUSTEE C/O SUZANNE DEMONTIGNY THE AMARULAH RVCBL TRUST OF

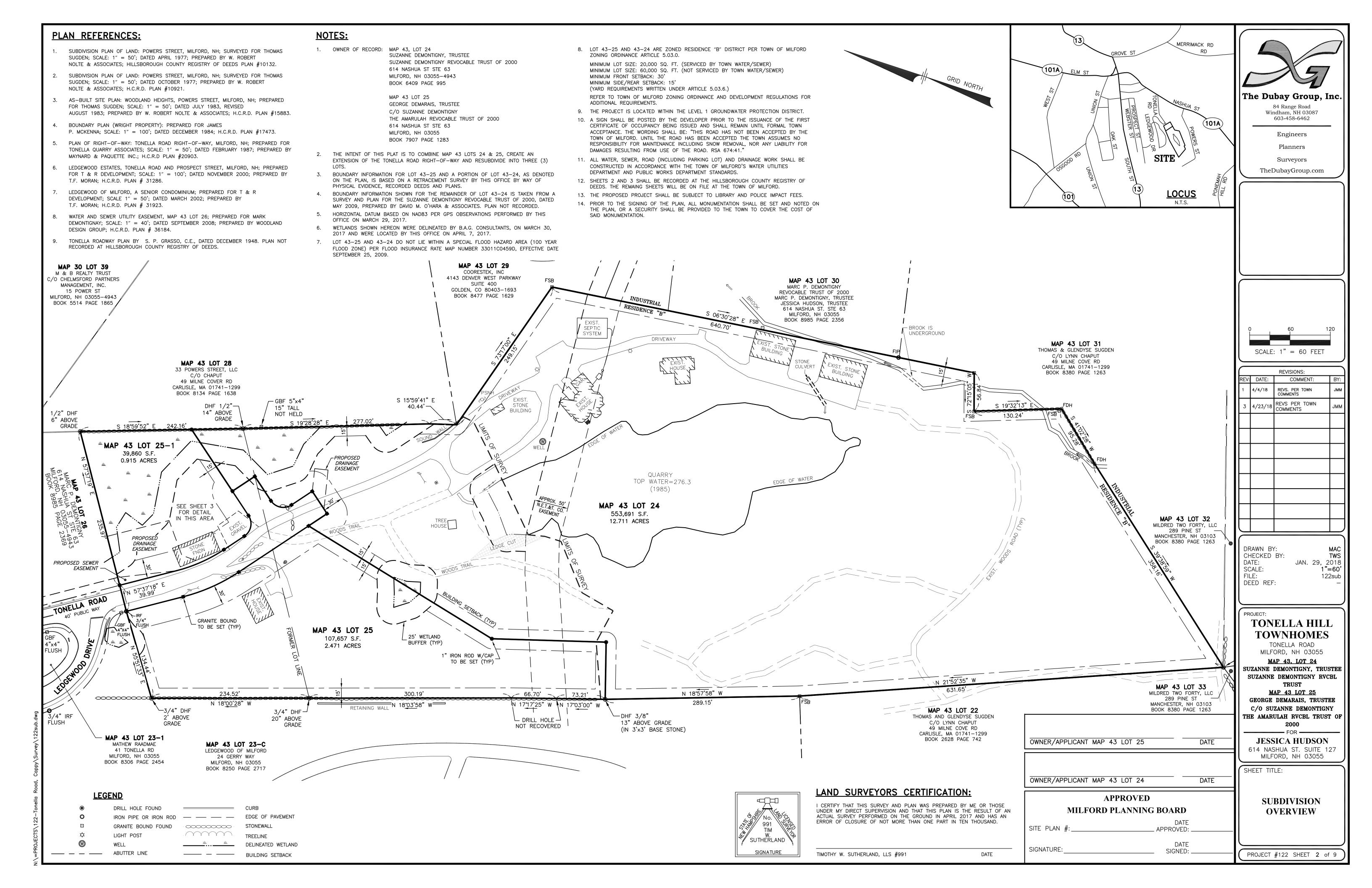
FOR -JESSICA HUDSON 614 NASHUA ST. SUITE 127 MILFORD, NH 03055

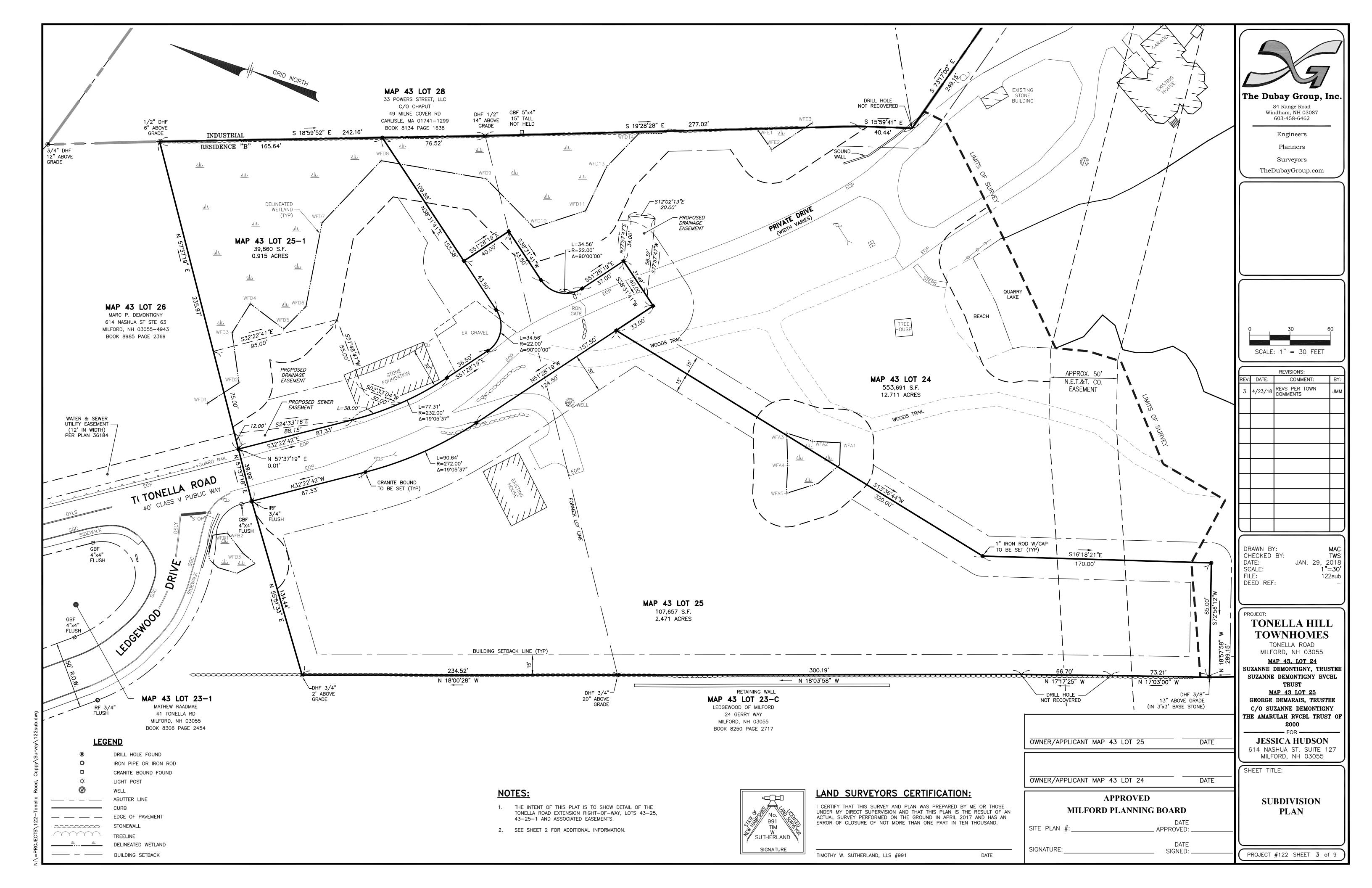
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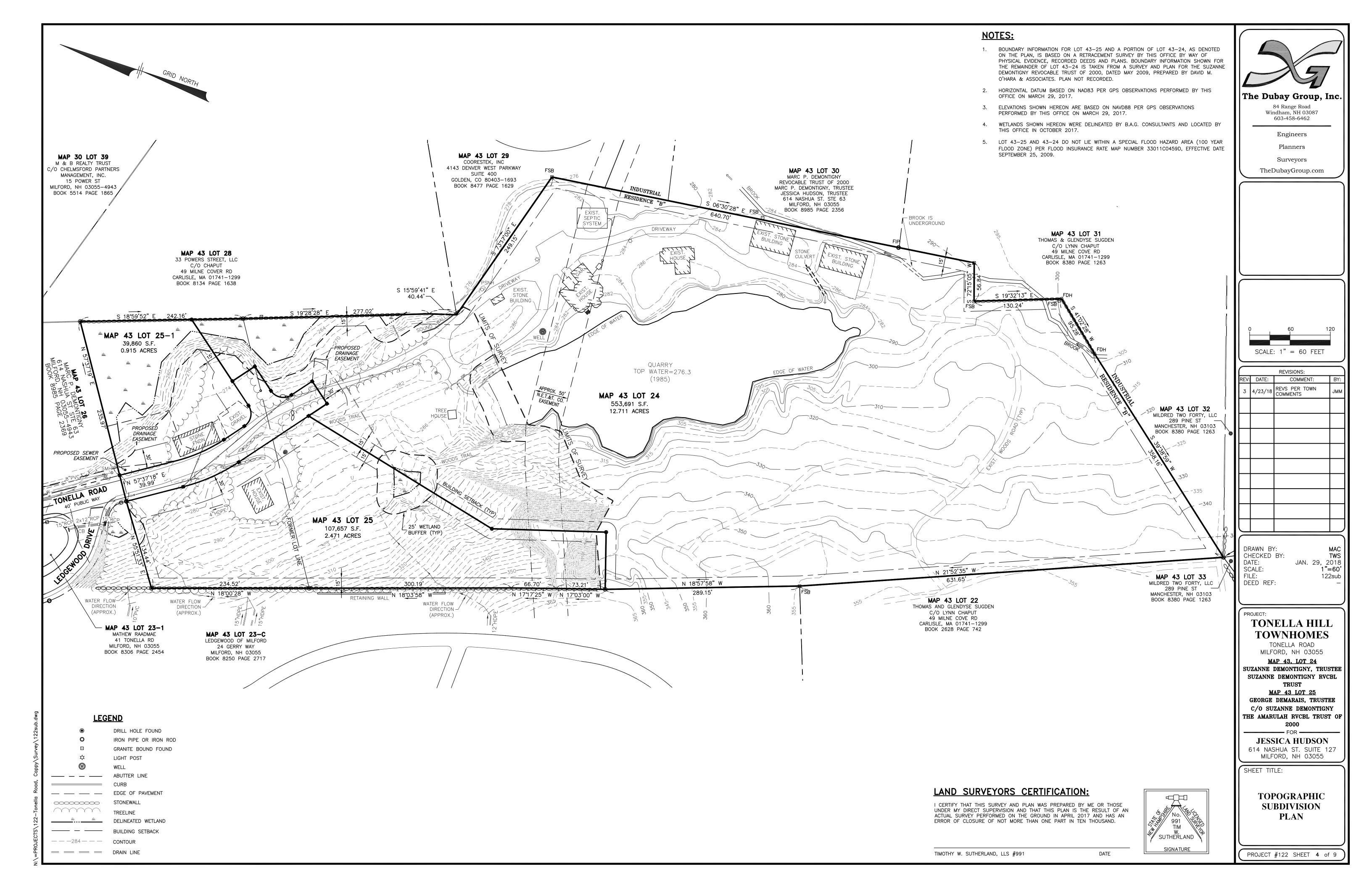
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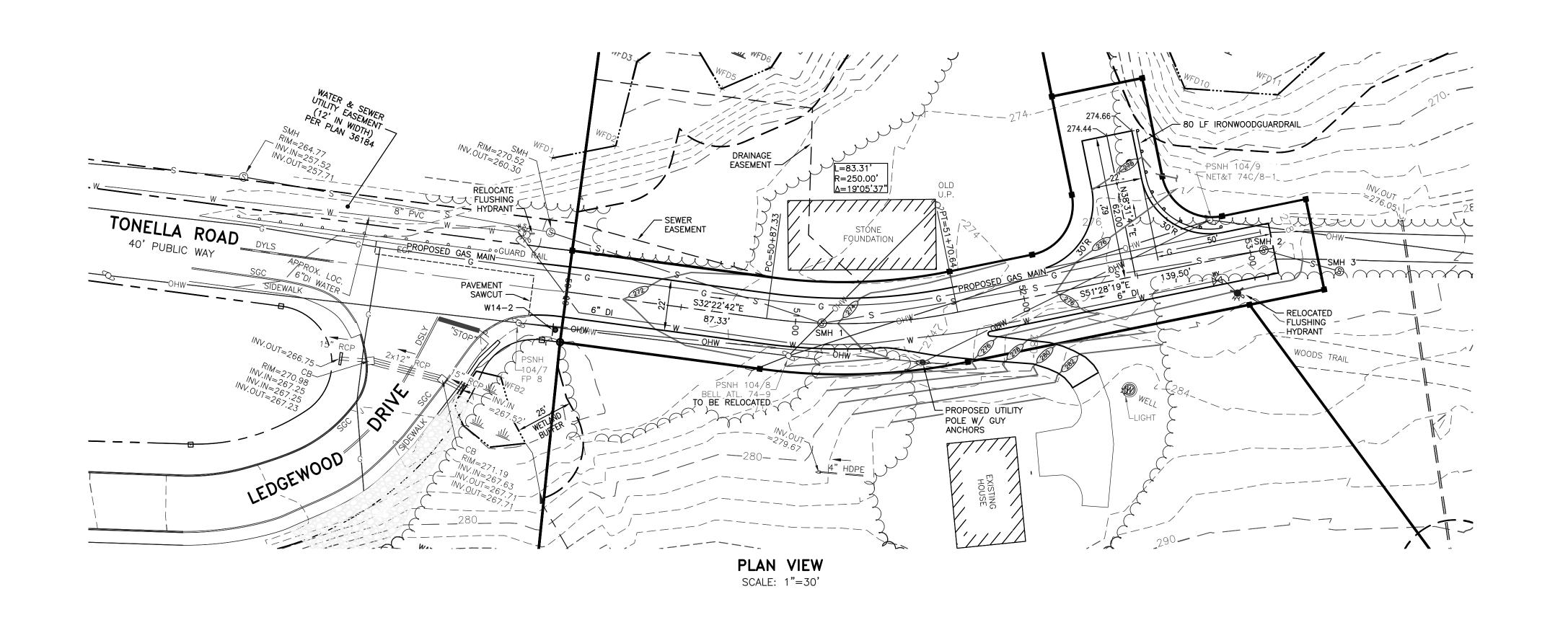
PROJECT #122 SHEET 1 of 9

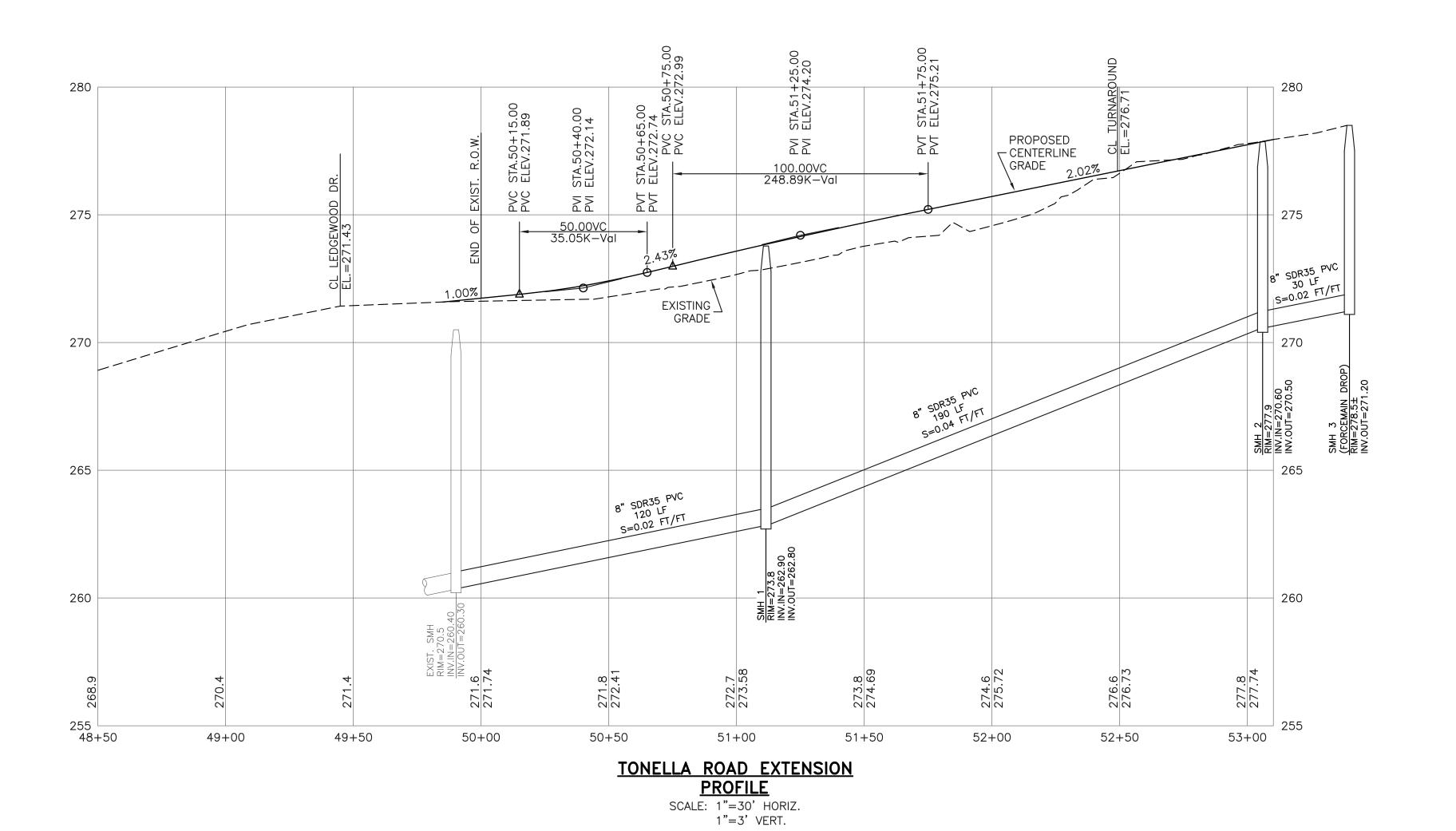
OWNERS OF RECORD: MAP 43, LOT 24 SUZANNE DEMONTIGNY, TRUSTEE SUZANNE DEMONTIGNY REVOCABLE TRUST OF 2000 614 NASHUA ST STE 63 MILFORD, NH 03055-4943 BOOK 6409 PAGE 995 MAP 43 LOT 25 GEORGE DEMARAIS, TRUSTEE C/O SUZANNE DEMONTIGNY THE AMARULAH REVOCABLE TRUST OF 2000 614 NASHUA ST STE 63 MILFORD, NH 03055 BOOK 7907 PAGE 1283

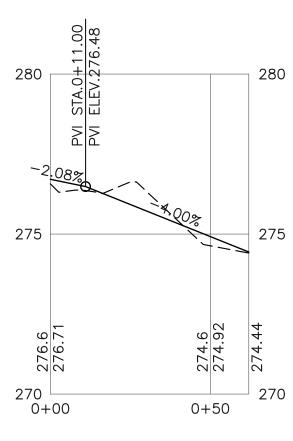












T-TURNAROUND
PROFILE

SCALE: 1"=30' HORIZ.
1"=3' VERT.

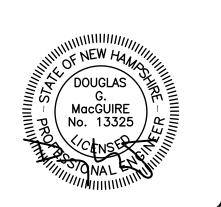


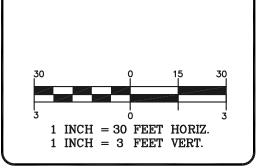
The Dubay Group, Inc.

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

Engineers Planners

Surveyors TheDubayGroup.com





<u>[</u>		REVISIONS:	
REV:	DATE:	COMMENT:	BY:
1	4/4/18	REVS. PER TOWN COMMENTS	JMM

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

MAC
DGM
JAN. 29, 2018
1"=30'H, 3'V
122 Profile

PROJECT:

TONELLA HILL TOWNHOMES

TONELLA ROAD
MILFORD, NH 03055

MAP 43, LOT 24
SUZANNE DEMONTIGNY, TRUSTEE
SUZANNE DEMONTIGNY RVCBL
TRUST

MAP 43 LOT 25
GEORGE DEMARAIS, TRUSTEE
C/O SUZANNE DEMONTIGNY
THE AMARULAH RVCBL TRUST OF

FOR JESSICA HUDSON
614 NASHUA ST. SUITE 127
MILFORD, NH 03055

SHEET TITLE:

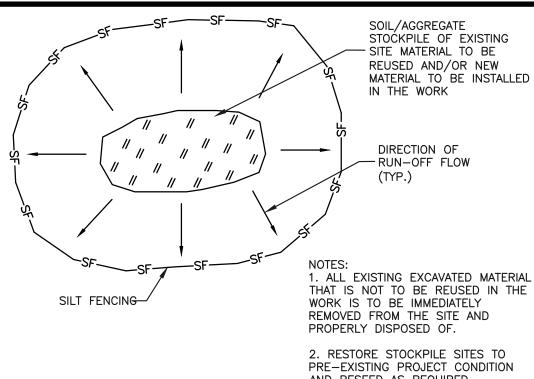
TONELLA ROAD
EXTENSION
PLAN & PROFILE

PROJECT #122 SHEET 5 of 9

TEMPORARY CONSTRUCTION EXIT

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

STABILIZED TRACKING PAD DETAIL NOT TO SCALE

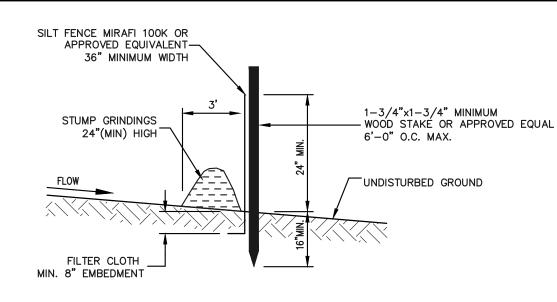


AND RESEED AS REQUIRED. 3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES

MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE DETAIL

NOT TO SCALE



SILT FENCE WITH MULCH BERM

THE STUMP GRINDINGS BERM MUST BE A MINIMUM OF 12" HIGH, AS

MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF

STUMP GRINDINGS BERM MIN VE

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

STONE CHECK DAM DETAIL NOT TO SCALE

LONGITUDINAL SECTION

DITCH CROSS-SECTION

CONSIDERATIONS

SHALL BE MIN. 6" BELOW SIDES.

- DISTANCE OF STONE CHECK DAMS

AS TOP OF DOWNSTREAM CHECK

VARIES. TOE OF UPSTREAM CHECK

DAM SHALL BE AT SAME ELEVATION

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

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

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

GENERAL DESCRIPTION

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

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

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

CHECK DAMS CAN BE CONSTRUCTED OF STONE. IN LOCATIONS WHERE

STONE IS NOT AVAILABLE, TIMBER CHECK DAMS MAY BE CONSIDERED. TYPICAL APPLICATIONS INCLUDE TEMPORARY OR PERMANENT DITCHES OR SWALES, WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF HAY OR STRAW BALES SHOULD GENERALLY NOT BE USED AS CHECK

DAMS, OR IN ANY LOCATION WHERE THERE IS CONCENTRATED FLOW. HOWEVER, THEY MAY BE USED FOR CHECK DAMS IN APPLICATIONS WHERE INSTALLATION ACCESS OR OTHER CONDITIONS PREVENT THE USE OF PREFERRED MATERIALS SUCH AS STONE; IN SUCH CASES, INSTALLATION MUST PROVIDE PROPER EMBEDMENT OF THE STRAW OR HAY BALE BARRIER, LIMIT CONTRIBUTING DRAINAGE AREA TO LESS THAN ONE ACRE, AND PROVIDE FOR FREQUENT MONITORING OF BARRIER.

MAINTENANCE REQUIREMENTS

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

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

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

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

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

SILT FENCE

40

40-80

VALUES TEST METHOD

ASTM D1682

ASTM 1682

ASTM D3786

ASTM D751

US STD SIEVE

ELEVATION

1) SILT FENCE FILTER CLOTH: THE FABRIC FOR THE SILT FENCE

2) FENCE POSTS (FOR FABRICATED UNITS) - THE POSTS SHALL

BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS WILL BE

3) PREFABRICATED UNITS - PREFABRICATED UNITS MAY BE USED

IN LIEU OF THE ABOVE METHOD PROVIDING: (1) THE FILTER

CLOTH AND FENCE POSTS MEET THE ABOVE CRITERIA; AND (2)

THE UNIT IS INSTALLED ACCORDING TO THE MANUFACTURER'S

1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH

RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.

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 WITHIN 24 HOURS.

ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE

OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS

SHALL MEET THE FOLLOWING SPECIFICATIONS:

GRAB TENSILE STRENGTH (lbs) 90

MULLEN BURST STRENGTH (PSI) 190

SECTIONAL AREA OF 3.0 SQUARE INCHES.

ELONGATION AT FAILURE (%)

PUNCTURE STRENGTH (lbs)

EQUIVALENT OPENING SIZE

FABRIC PROPERTIES

RECOMMENDATIONS.

MAINTENANCE:

SPECIFICATIONS

TEMPORARY CHECK DAMS SHOULD CONFORM TO THE FOLLOWING REQUIREMENTS:

SHOULD BE LESS THAN ONE ACRE.

LOWER THAN THE OUTER EDGES.

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

THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE DAM

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

THE MAXIMUM HEIGHT OF THE DAM SHOULD BE TWO FEET. THE CENTER OF THE DAM SHOULD BE AT LEAST 6 INCHES

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

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

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

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

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

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

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

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



The Dubay Group, Inc. 84 Range Road

Windham, NH 03087 603-458-6462

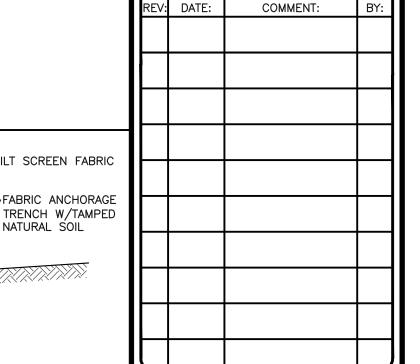
Engineers

Planners

TheDubayGroup.com

Surveyors

E NEW HAN */DOUGLAS MacGUIRE No. 13325



REVISIONS:

DRAWN BY: CHECKED BY: DATE: SCALE:

JAN. 29, 2018 AS NOTED FILE: 122 DETAILS DEED REF:

PROJECT:

SILT SCREEN FABRIC

NATURAL SOIL

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.

3) SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY

STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN

4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE

TO CONFORM WITH THE EXISTING TOPOGRAPHY AND

AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED

THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE

1-3/4"X1-3/4" (MIN)

METÁL OR WOOD POST

DIRECTION OF

RUNOFF FLOW

OR STAKE

SUPPORT POST ANCHORAGE MATERIAL, IF REQUIRED

CONSTRUCTION SPECIFICATIONS:

OLD GROUND

OLD GROUND

2) THE FABRIC SHALL BE <u>EMBEDDED A MINIMUM OF 8 INCHES</u>
<u>INTO THE GROUND</u> AND THE SOIL COMPACTED OVER THE

END VIEW

3) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOODEN STAKES EVERY 12 INCHES.

4) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO WOOD STAKE.

5) POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND, AND OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.

6) MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

SILTATION FENCING DETAIL

TONELLA HILL **TOWNHOMES** TONELLA ROAD MILFORD, NH 03055

MAP 43, LOT 24 SUZANNE DEMONTIGNY, TRUSTEE SUZANNE DEMONTIGNY RVCBL

MAP 43 LOT 25 GEORGE DEMARAIS, TRUSTEE C/O SUZANNE DEMONTIGNY THE AMARULAH RVCBL TRUST OF

FOR = JESSICA HUDSON 614 NASHUA ST. SUITE 127

MILFORD, NH 03055

SHEET TITLE:

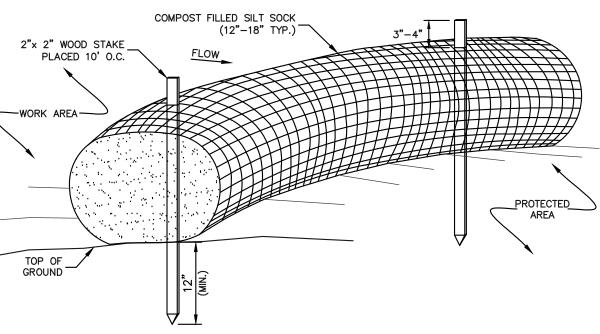
CONSTRUCTION **DETAILS-1**

PROJECT #122 SHEET 6 of 9

YANGARANAN YAN KANARAN ARABAN ARABAN ARABAN KANARAN IN MANAKAN KANARAN KANARAN KANARAN KANARAN KANARAN KANARAN ITEM 641.04 6" ROLLED LOAM & SEED 642. LIMESTONE 643.11 FERTILIZER 645.1 MULCH

LOAM & SEED DETAIL NOT TO SCALE

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

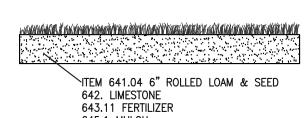


SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL

SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL

COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

<u>SILT SOCK DETAIL</u> NOT TO SCALE



CRITERIA FOR SILT FENCES:

NOTES SILT SOCK SHALL BE FILTREXXTM SILTSOXXTM OR APPROVED

MINIMUM 2/3 DEPTH OF CHANNEL -

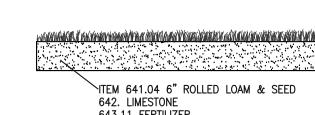
STONE (TYP.)

2" TO 3"

STONE (TYP.)

THROUGHOUT WIDTH OF CHECK DAM.

STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.



1. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

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

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

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

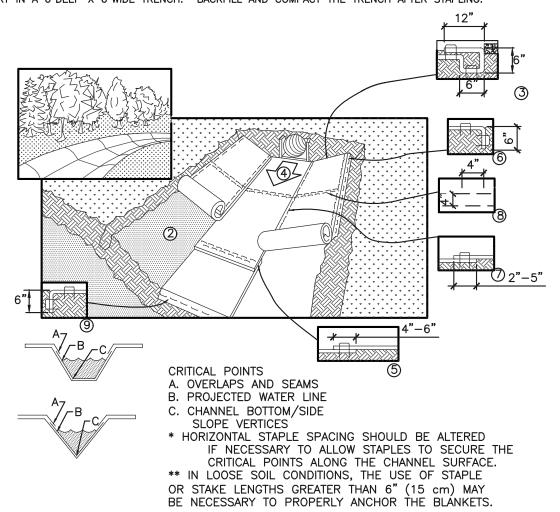
5. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4"(10") ON CENTER TO SECURE BLANKETS.

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

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

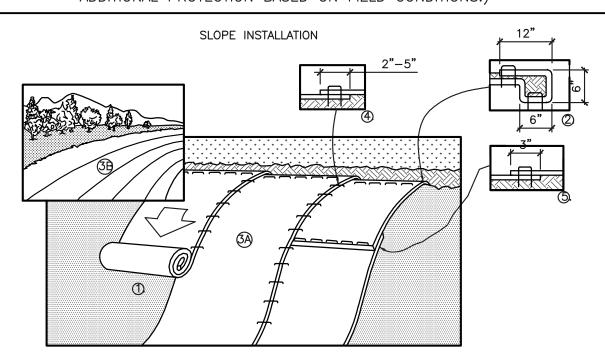
8. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.

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



ROLLED EROSION CONTROL MATTING

NOT TO SCALE (THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)



MATTING INSTALLATION NOTES

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

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

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

ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING

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

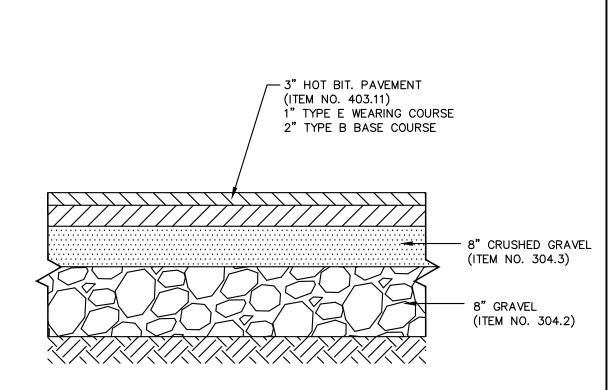
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

7. INSTALL PRODUCT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. 8. MATTING IS REQUIRED ON ALL SLOPES STEEPER THAN 3:1.

SLOPE PROTECTION EROSION CONTROL MATTING

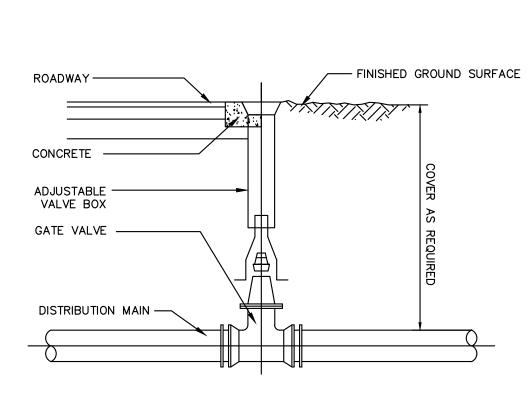
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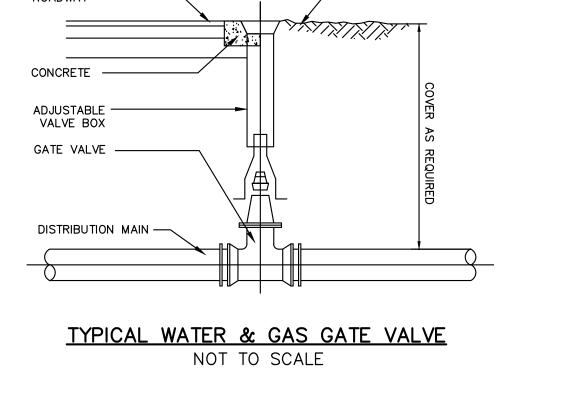
(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)



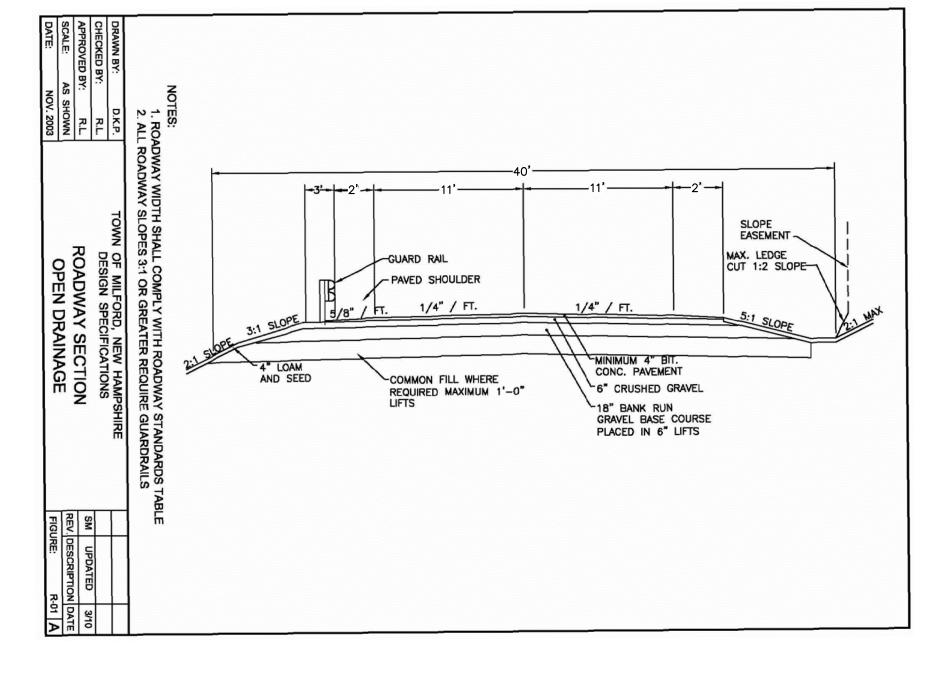
TYPICAL DRIVEWAY AND PARKING LOT SECTION

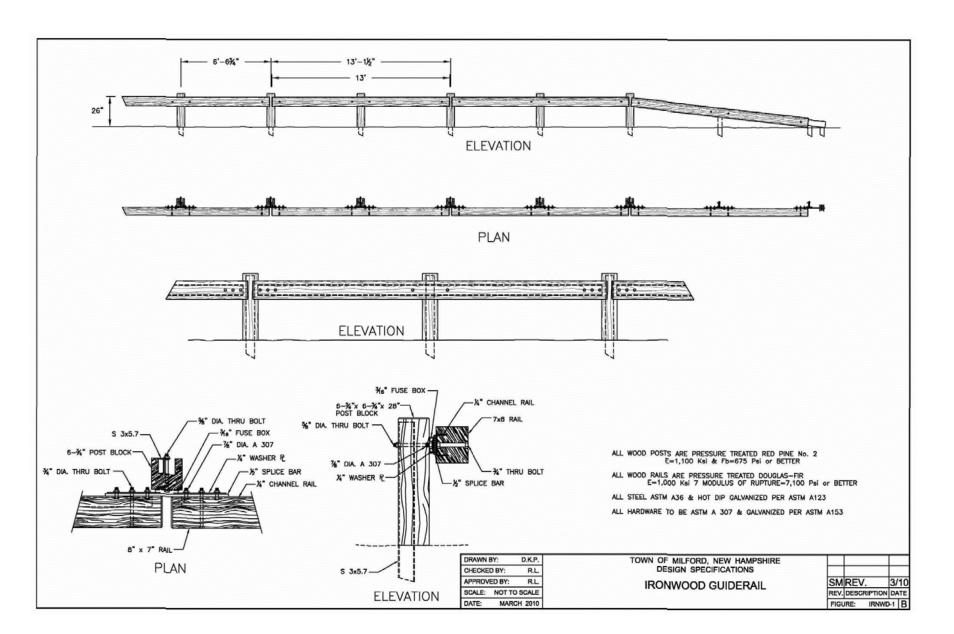
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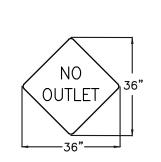




— EXISTING GROUND







NO OUTLET SIGN OR APPROVED **EQUAL**



Windham, NH 03087

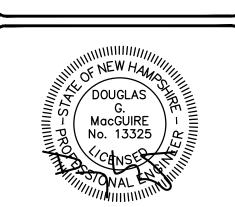
603-458-6462

The Dubay Group, Inc. 84 Range Road

Engineers

Planners

Surveyors TheDubayGroup.com



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DRAWN BY: CHECKED BY: DATE: JAN. 29, 2018 SCALE: AS NOTED FILE: 122 DETAILS DEED REF:

PROJECT:

TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055

MAP 43, LOT 24 SUZANNE DEMONTIGNY, TRUSTEE SUZANNE DEMONTIGNY RVCBL

MAP 43 LOT 25 GEORGE DEMARAIS, TRUSTEE C/O SUZANNE DEMONTIGNY THE AMARULAH RVCBL TRUST OF

JESSICA HUDSON

614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

CONSTRUCTION **DETAILS-3**

PROJECT #122 SHEET 7 of 9

TYPICAL GRASS LINED SWALE

EXISTING GROUND -

4" LOAM & SEED-

6" GRAVEL BASE ---

COMPACTED SUBGRADE ----

CONSTRUCTION SEQUENCE

- 1. PRIOR TO CONSTRUCTION, AN INITIAL PRE CONSTRUCTION MEETING(S) SHALL TAKE PLACE WITH THE CONTRACTOR, OWNER, AND TOWN AGENTS.
- 2. THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE EXCEEDS ONE ACRE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND MADE ACCESSIBLE TO THE PUBLIC. A COMPLETED NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET: FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN
- 3. INSTALL PERIMETER CONTROLS, I.E SILT FENCE AND/OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATION.
- 4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.
- 5. CLEAR AND GRUB WITHIN AREAS OF DISTURBANCE UNLESS OTHERWISE NOTED.
- REMOVE AND STOCKPILE MATERIALS AS REQUIRED. STOCKPILE SHALL BE SURROUNDED WITH AN EROSION CONTROL DEVICE TO PREVENT EROSION. STOCKPILE AREAS ARE LIMITED AND THUS MANAGEMENT OF MATERIALS WILL BE REQUIRED.
- 7. PERFORM ROUGH ROAD GRADING.
- 8. INSTALL UNDERGROUND UTILITIES. ALL SIDE SLOPES SHALL BE STABILIZED WITHIN 72 HOURS.
- 9. LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.
- 10. FINISH GRADE SITE, BACKFILL ROAD SUBBASE GRAVEL IN COMPACTED LIFTS. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES WHERE APPLICABLE, IN THE FORM OF MULCHING, JUTE MATTING OR STONE CHECK DAMS.
- 11. ANY PERMANENT DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- 12. PLACE BINDER LAYER OF PAVEMENT.
- 13. REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.
- 14. 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.

GENERAL CONSTRUCTION NOTES

- 1. THE TEMPORARY BMPS ASSOCIATED WITH THIS PROJECT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND LANDOWNER, WHO WILL BE RESPONSIBLE FOR INSPECTION, OPERATION, AND
- 2. EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION OF THE NHDOT". EROSION CONTROL SHALL BE INSTALLED DOWNHILL OF ALL AREAS WHERE WORK WILL EXPOSE UNPROTECTED SOIL TO PREVENT SEDIMENT FROM ENTERING CATCH BASINS, DRAINAGE STRUCTURES AND/OR DRAINAGE WAYS. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO ANY EARTH MOVING OPERATIONS. THE CONTRACTOR SHALL MANAGE THE PROJECT IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
- EROSION CONTROL DEVICES SHALL BE INSTALLED WHERE REQUIRED PRIOR TO ANY ON-SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. EROSION CONTROL MEASURES SHALL BE MAINTAINED DURING DEVELOPMENT AND SHALL BE CHECKED PERIODICALLY AND EXCESS SILT SHALL BE REMOVED.
- 4. ALL DISTURBED AREAS WHICH ARE FINISH GRADED SHALL BE LOAMED (6" MINIMUM) AND SEEDED. SEE SEEDING AND FERTILIZER SPECIFICATION. SEE SLOPE DESIGN AND/OR LANDSCAPE PLAN FOR ADDITIONAL
- 5. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER SHALL BE MACHINED STRAW MULCHED AND SEEDED WITH SLOPE STABILIZATION SEED MIXTURE TO PREVENT EROSION. STRAW MULCH SHALL BE APPLIED AT A RATE OF 2 TONS/ACRE.
- 6. ALL DRAINAGE SYSTEMS (DITCHES, SWALES, DRAINAGE PONDS/BASINS, ETC.) SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. STORMWATER FLOWS ARE NOT TO BE DIRECTED TO THESE SYSTEMS UNTIL CONTRIBUTING AREAS HAVE ALSO BEEN FULLY STABILIZED.
- 7. CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES IN ACCORDANCE WITH NHDES, EPA & TOWN REQUIREMENTS FOR THE DURATION OF THE PROJECT. WATER FOR DUST CONTROL SHALL BE PROVIDED ON SITE. FUGITIVE DUST IS CONTROLLED IN ACCORDANCE WITH ENV-A 1000.
- 8. ALL EROSION CONTROLS ARE TO BE INSPECTED WEEKLY AND AFTER 0.5" OR GREATER OF RAINFALL WITHIN A 24 HOUR PERIOD.
- 9. ALL FILLS SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC. AND SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.
- 10. SILT FENCES AND/OR SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND/OR SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURE LOCATION.
- 11. PAVED AREAS MUST BE KEPT CLEAN AT ALL TIMES.
- 12. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
- 13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING. EXPOSURE OF UNSTABILIZED SOILS SHALL BE TEMPORARILY STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 45 DAYS OF INITIAL
- 14. WINTERIZATION EFFORTS FOR AREAS NOT STABILIZED BY NOV. 1ST SHALL BE MADE BY THE APPROPRIATE USE OF MATTING, BLANKETS, MULCH AND SEEDING.
- 15. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
- A. BASE COURSE GRAVELS HAS BEEN INSTALLED IN AREAS TO BE PAVED;
- B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
- D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- 16. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO IMMEDIATELY INSTALL AND MAINTAIN THE NECESSARY EROSION PROTECTION.

SEEDING SPECIFICATION

TEMPORARY SEED

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

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

- A. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES.
- B. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST. SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- 3. ESTABLISHING A STAND OF GRASS
 - A. STONES AND TRASH SHOULD BE REMOVED FROM LOAMED AREAS SO AS NOT TO INTERFERE WITH THE SEEDING PROCESS.
- B. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS. LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- C. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING SEASON.
- D. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 600 POUNDS PER ACRE OR 13.8 POUNDS PER 1,000 SQUARE FEET OF LOW PHOSPHATE FERTILIZER (N-P205-K20) OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET).
- E. FERTILIZER SHOULD BE RESTRICTED TO A LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER
- 4. SEED SHOULD BE SPREAD UNIFORMLY BY A METHOD MOST APPROPRIATE FOR THE SITE, METHODS INCLUDING HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER.
- A. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANTS. B. NORMAL SEEDING DEPTH IS FROM ¼ TO ½ INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT
- ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10 % WHEN HYDROSEEDING.
- C. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
- D. THE GRADE "A" OF SEEDING MIXTURE SHOULD BE USED WITH THE FOLLOWING SEEDING RATES, BASED ON THE SEEDING GUIDE.

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

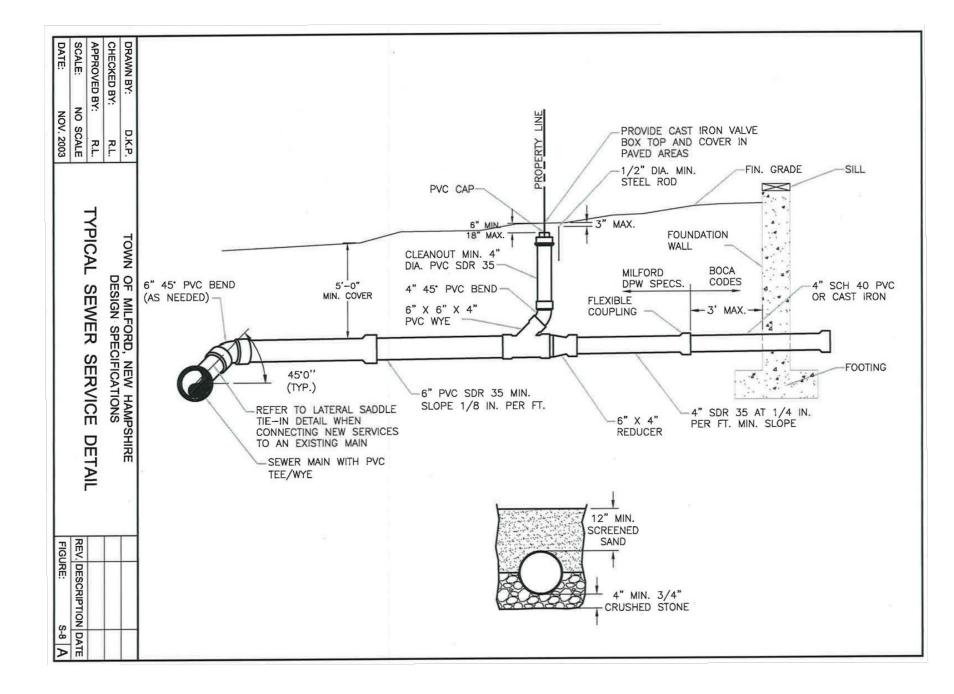
- 5. ALTERNATE PERMANENT SEEDING FOR AREAS NOT RECEIVING LAWN OR LANDSCAPING SHALL BE AS FOLLOWS:
- A. THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION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

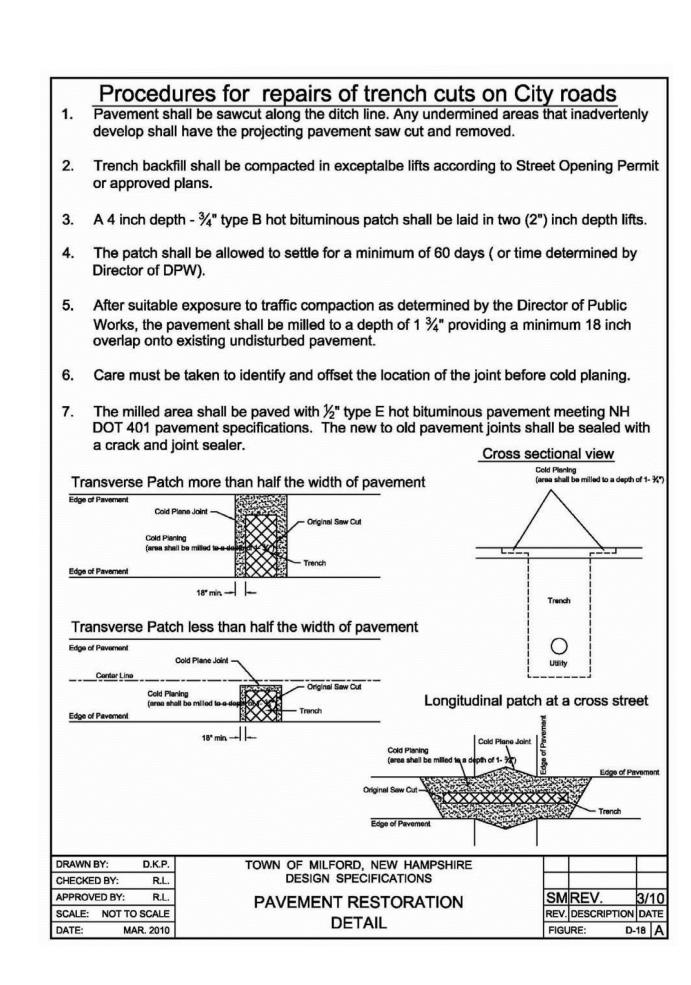
WINTER NOTES

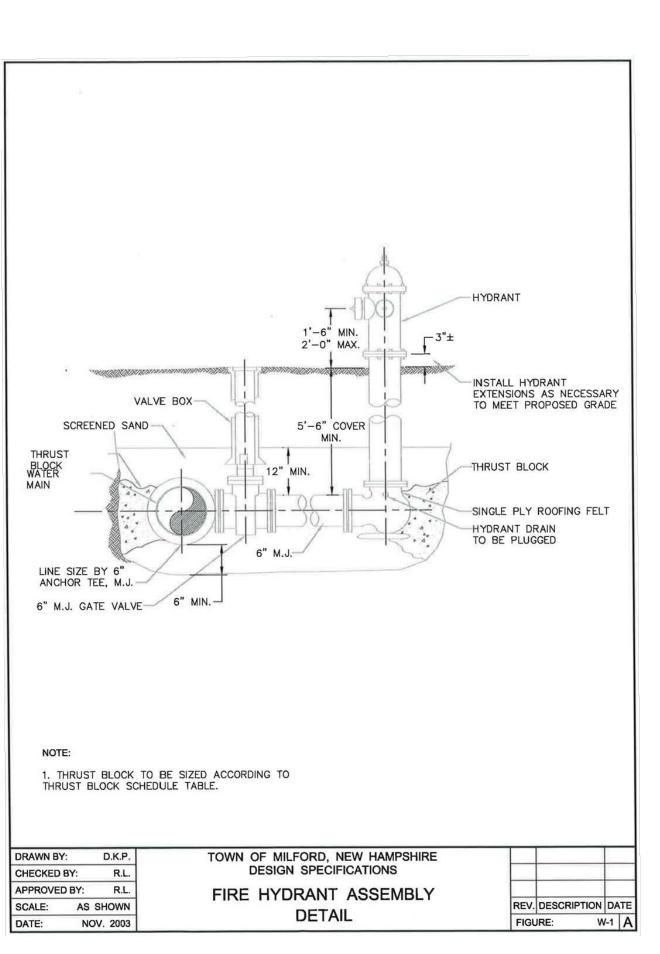
- 1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS:
- 2. ALL AREAS TO BE PLANTED WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
- 3. AFTER NOVEMBER 15TH, INCOMPLETE SURFACES TO BE PAVED, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3 OR CRUSHED STONE.

MAINTENANCE AND PROTECTION

- 1. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT DEVELOPS.
- 2. TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH A UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.
- 3. SEEDED AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.
- 4. THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY, UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
- 5. THE SILT FENCE AND/OR SILTSOXX BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- 6. SILT FENCE AND/OR SILTSOXX SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SLIT FENCE AND/OR SILTSOXX REMOVAL SHALL BE PERMANENTLY SEEDED.



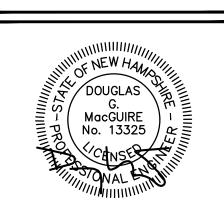






Engineers Planners

Surveyors TheDubayGroup.com



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REV:	DATE:	COMMENT:	E

DRAWN BY: CHECKED BY: DATE: JAN. 29, 2018 SCALE: AS NOTED FILE: 122 DETAILS DEED REF:

PROJECT:

TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055 MAP 43, LOT 24 SUZANNE DEMONTIGNY, TRUSTEE

SUZANNE DEMONTIGNY RVCBL MAP 43 LOT 25 GEORGE DEMARAIS, TRUSTEE C/O SUZANNE DEMONTIGNY

JESSICA HUDSON

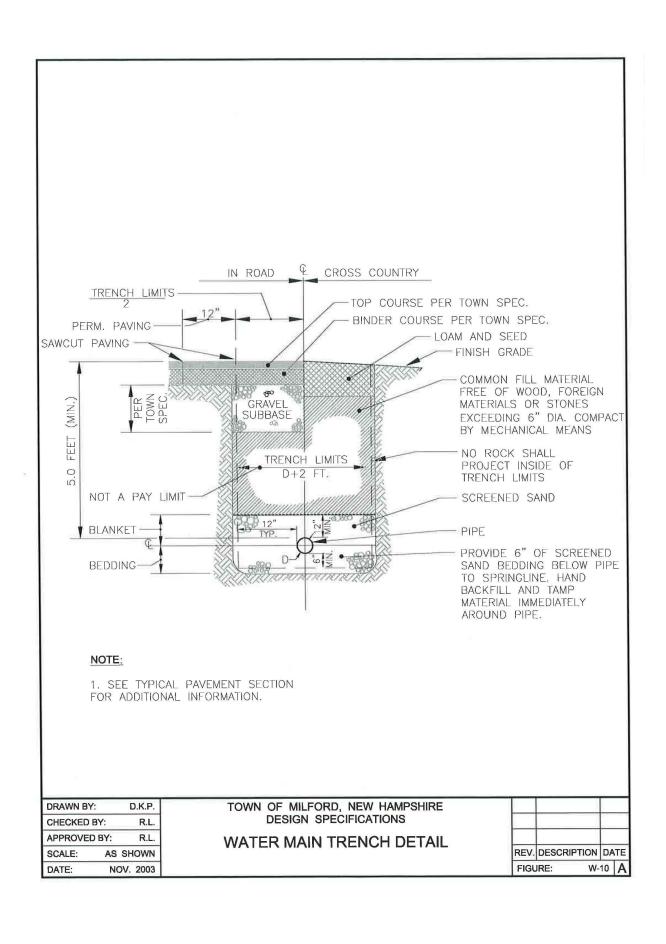
THE AMARULAH RVCBL TRUST OF

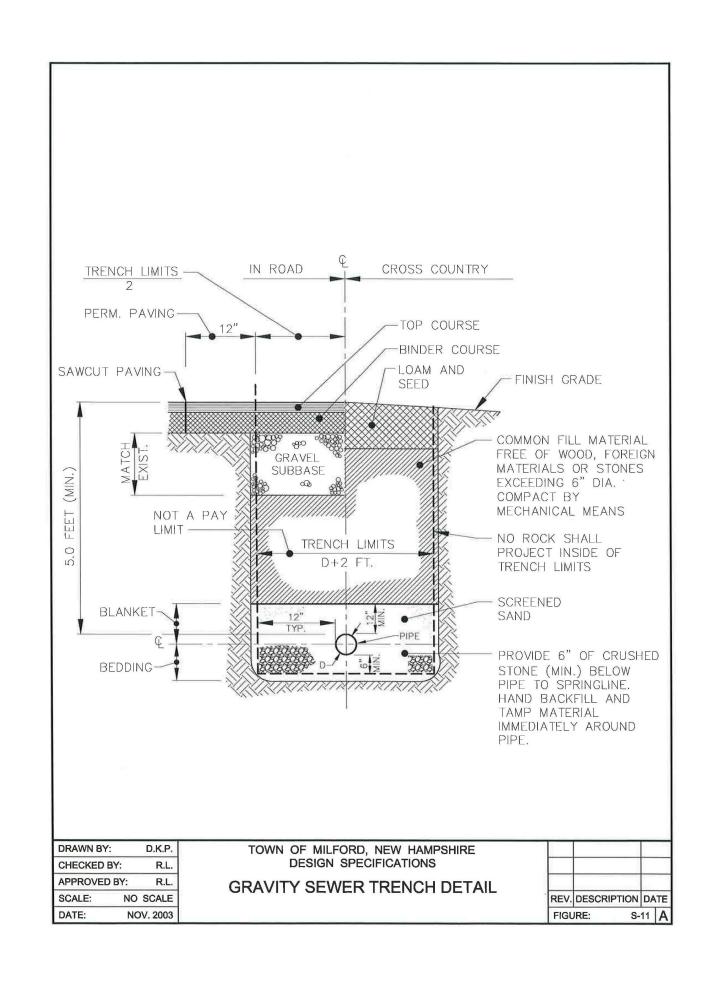
614 NASHUA ST. SUITE 127 MILFORD, NH 03055

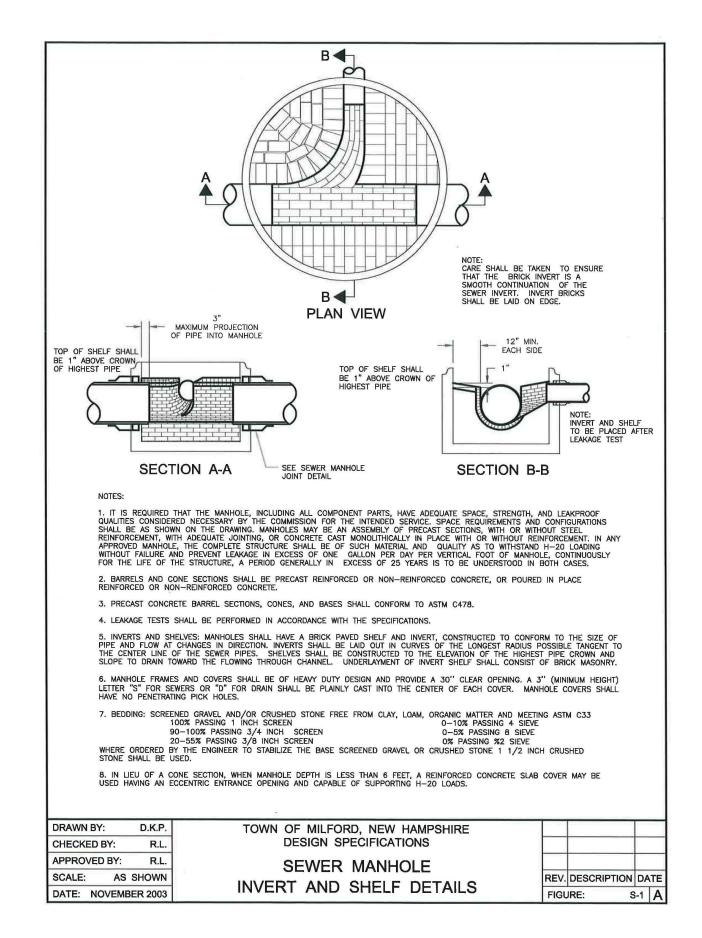
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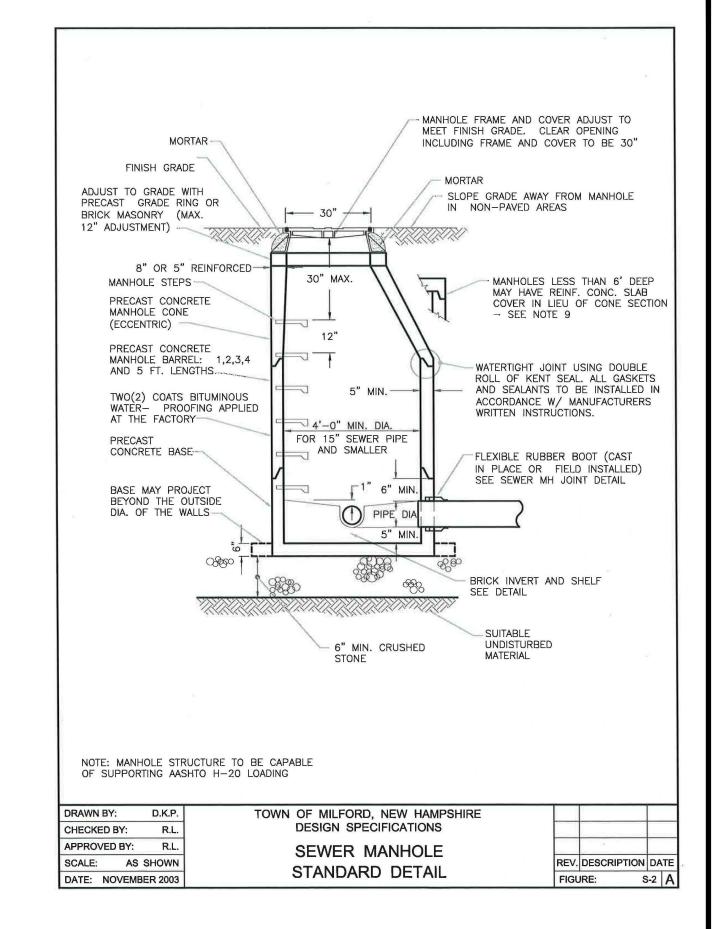
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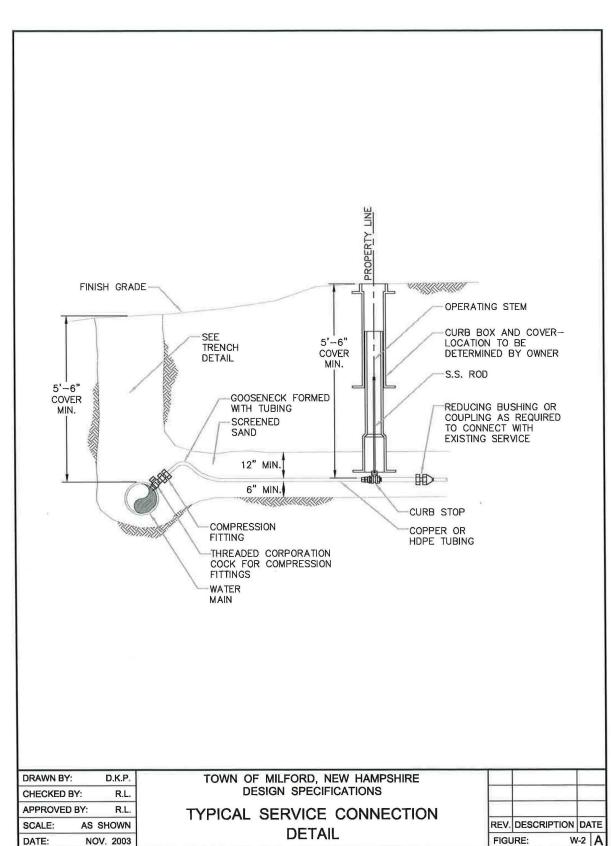
PROJECT #122 SHEET 8 of 9

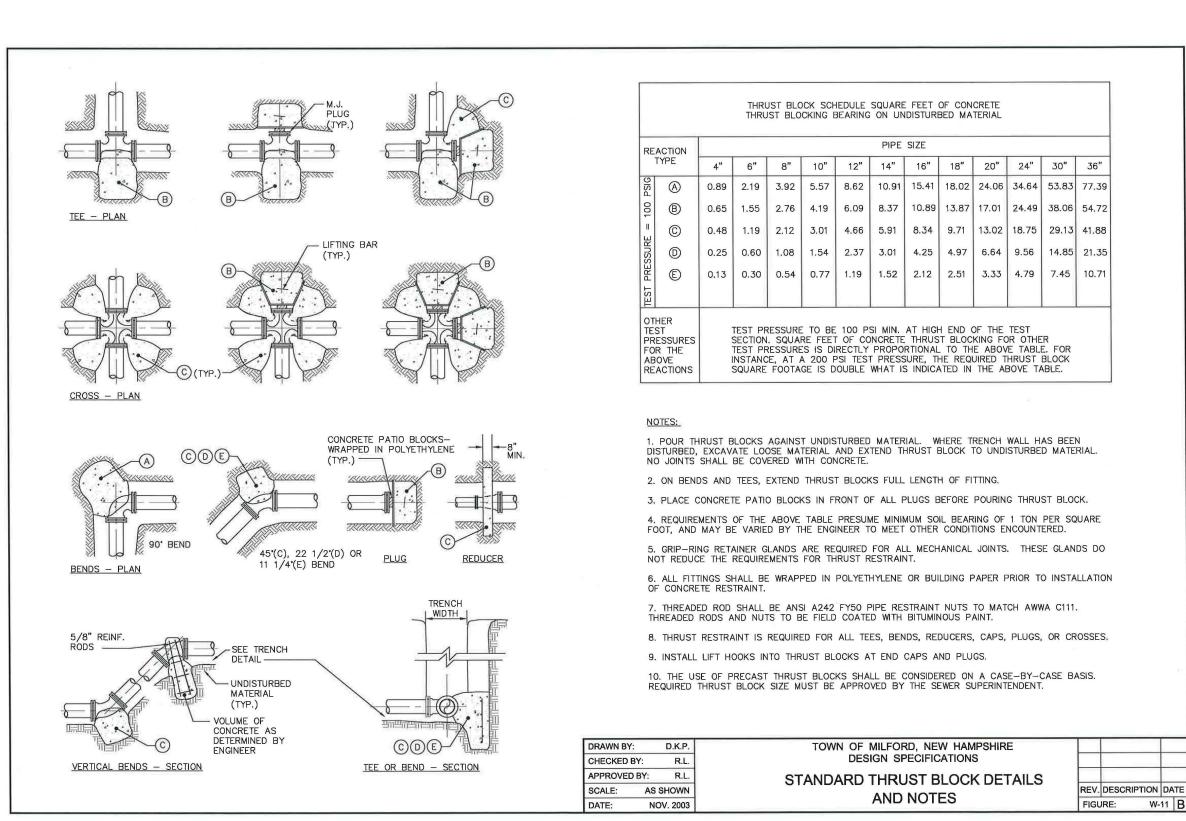


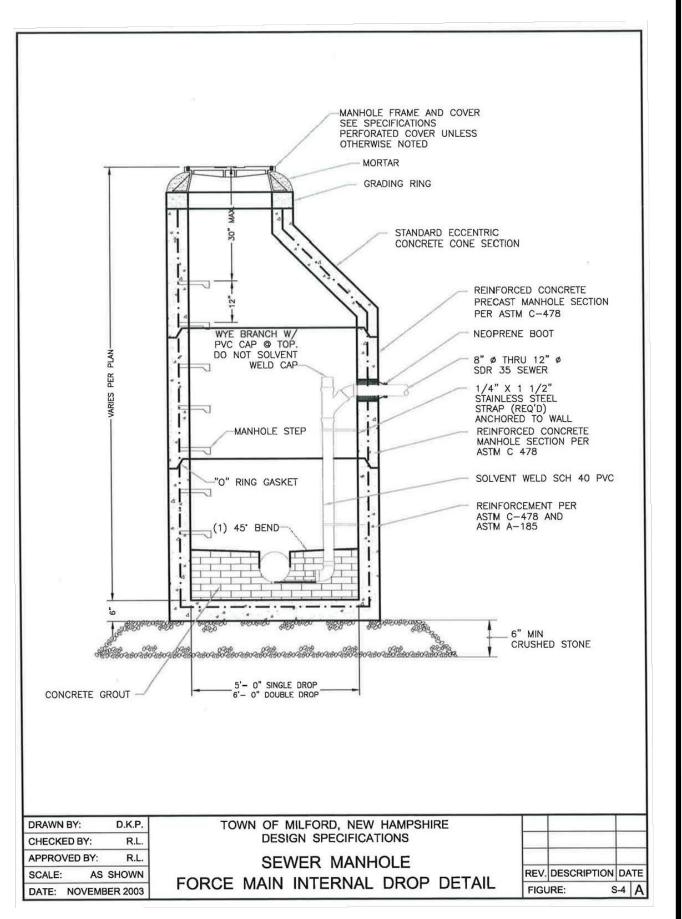














Engineers

Planners

Surveyors TheDubayGroup.com

DOUGLAS HAMONING NEW HAMONING NO. 13325

MacGUIRE No. 13325

CANSE

CANSE

MILLIAN

REVISIONS:

V: DATE: COMMENT: BY:

DRAWN BY: MAC
CHECKED BY: DGM
DATE: JAN. 29, 2018
SCALE: AS NOTED
FILE: 122 DETAILS
DEED REF: –

PROJECT:

TONELLA HILL TOWNHOMES

TONELLA ROAD
MILFORD, NH 03055

MAP 43, LOT 24
SUZANNE DEMONTIGNY, TRUSTEE

SUZANNE DEMONTIGNY RVCBL
TRUST

<u>MAP 43 LOT 25</u>
GEORGE DEMARAIS, TRUSTEE

GEORGE DEMARAIS, TRUSTEE
C/O SUZANNE DEMONTIGNY
THE AMARULAH RVCBL TRUST OF
2000

JESSICA HUDSON
614 NASHUA ST. SUITE 127
MILFORD, NH 03055

SHEET TITLE:

CONSTRUCTION DETAILS-4

PROJECT #122 SHEET 9 of 9