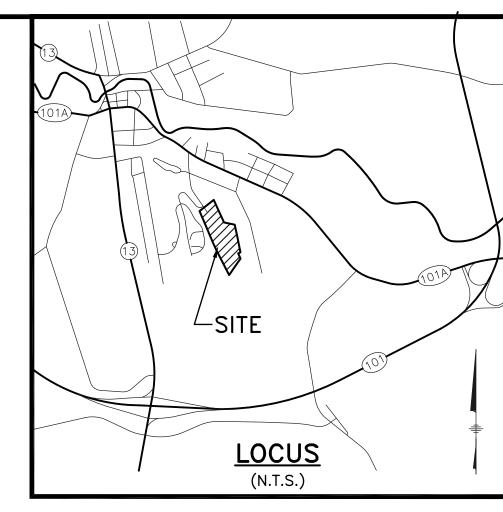
# Site Plan Tonella Hill Townhomes

TONELLA ROAD MILFORD, NEW HAMPSHIRE

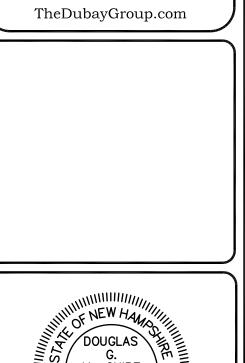




# The Dubay Group, Inc.

#### **SHEET INDEX:**

- Title Sheet
- **Existing Conditions Plan**
- Preparation Plan
- Site Overview Plan
- Site Plan
- Grading, Drainage, & Utility Plan
- Landscape Plan
- Landscape Details
- Erosion Control Plan
- 10-13 Construction Details
- Pre-Development Watershed Plan
- Post Development Watershed Plan



Engineers

Planners

Surveyors

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	4/4/18	REVS PER TOWN COMMENTS	JMM			

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#### TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055

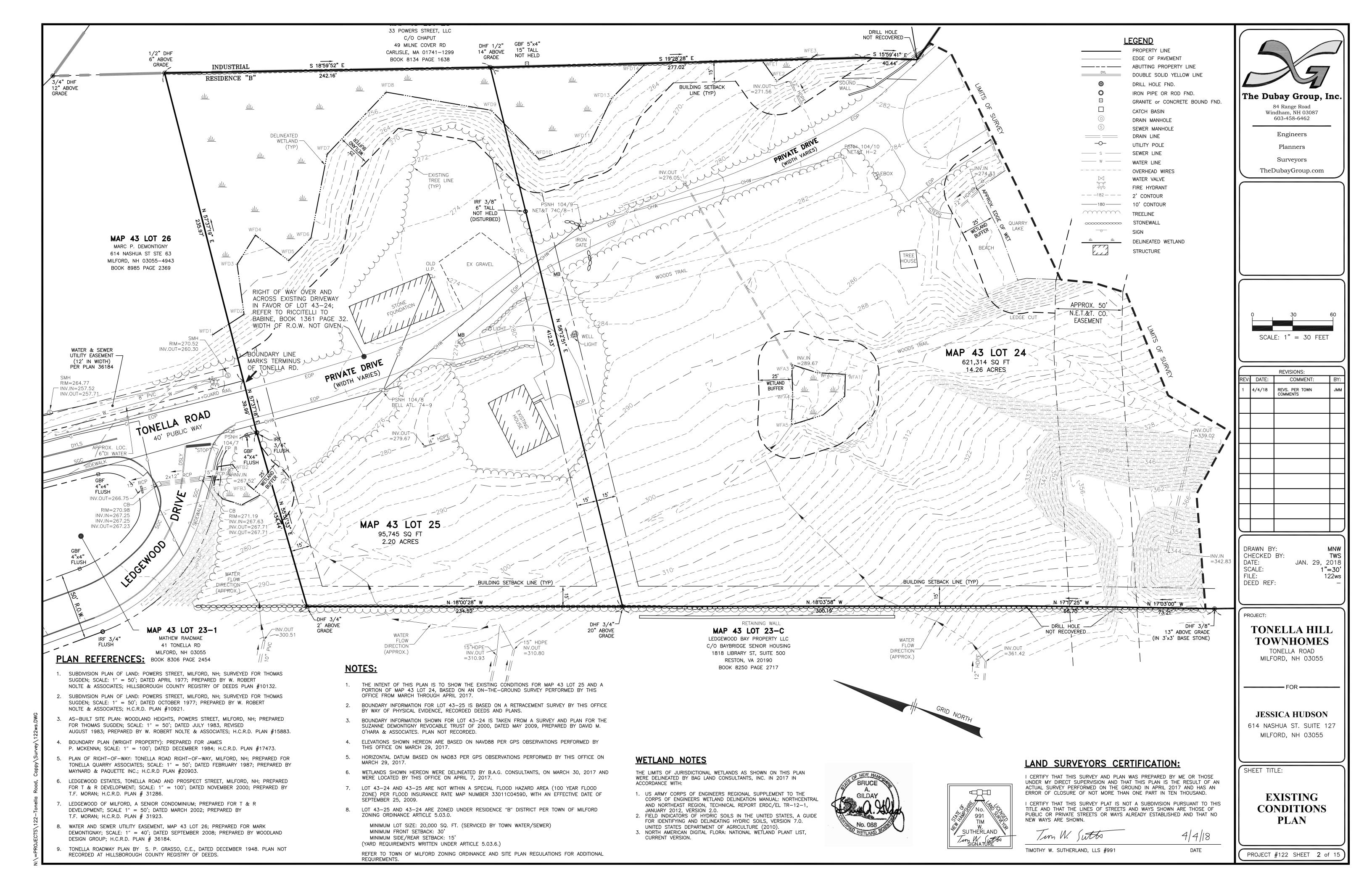
# JESSICA HUDSON

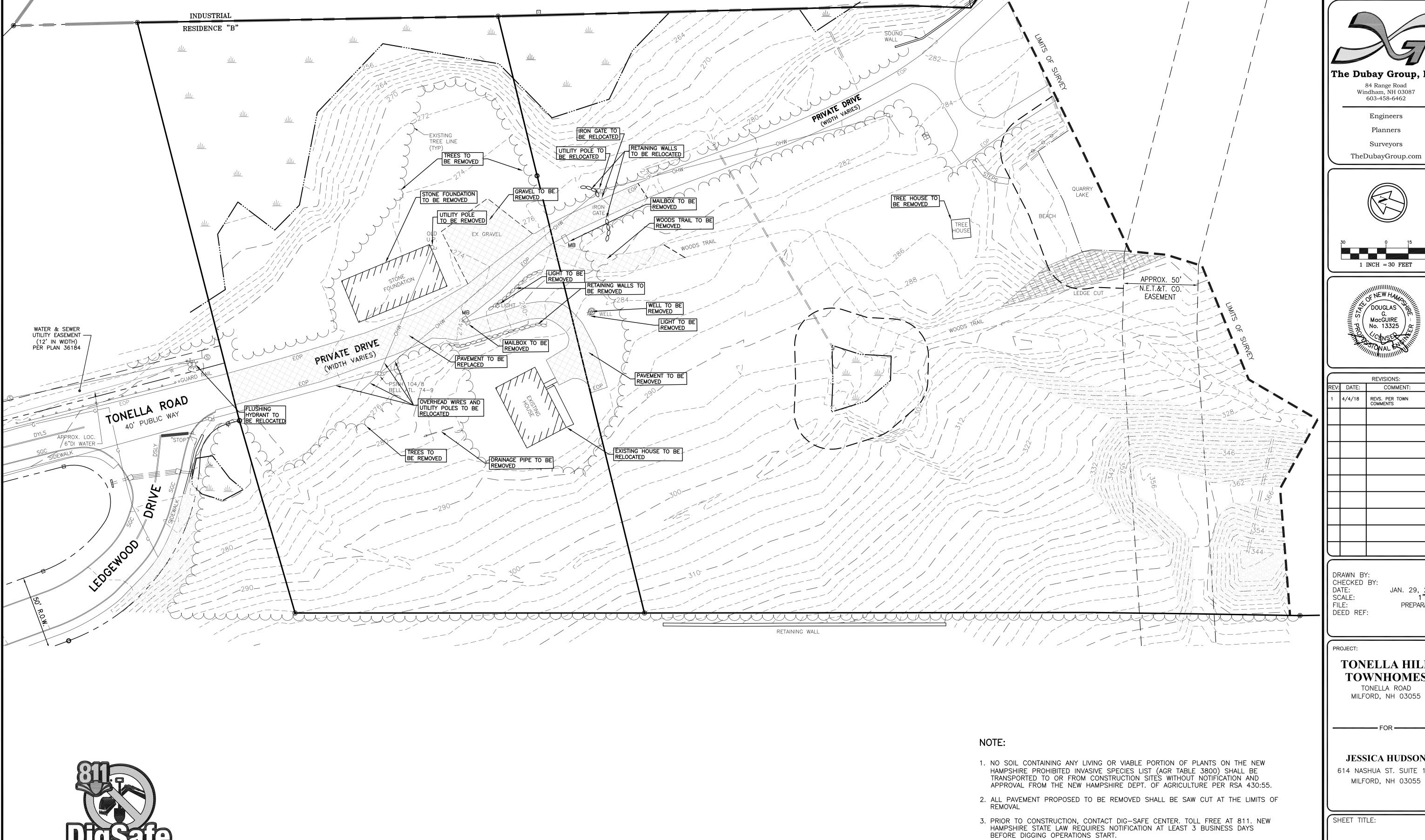
614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

TITLE **SHEET** 

PROJECT #122 SHEET





The Dubay Group, Inc.

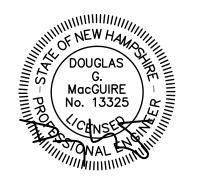
84 Range Road Windham, NH 03087 603-458-6462

> Engineers Planners

Surveyors



1 INCH = 30 FEET



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CHECKED BY: DATE: JAN. 29, 2018 1"=30' PREPARATION

#### TONELLA HILL **TOWNHOMES** TONELLA ROAD

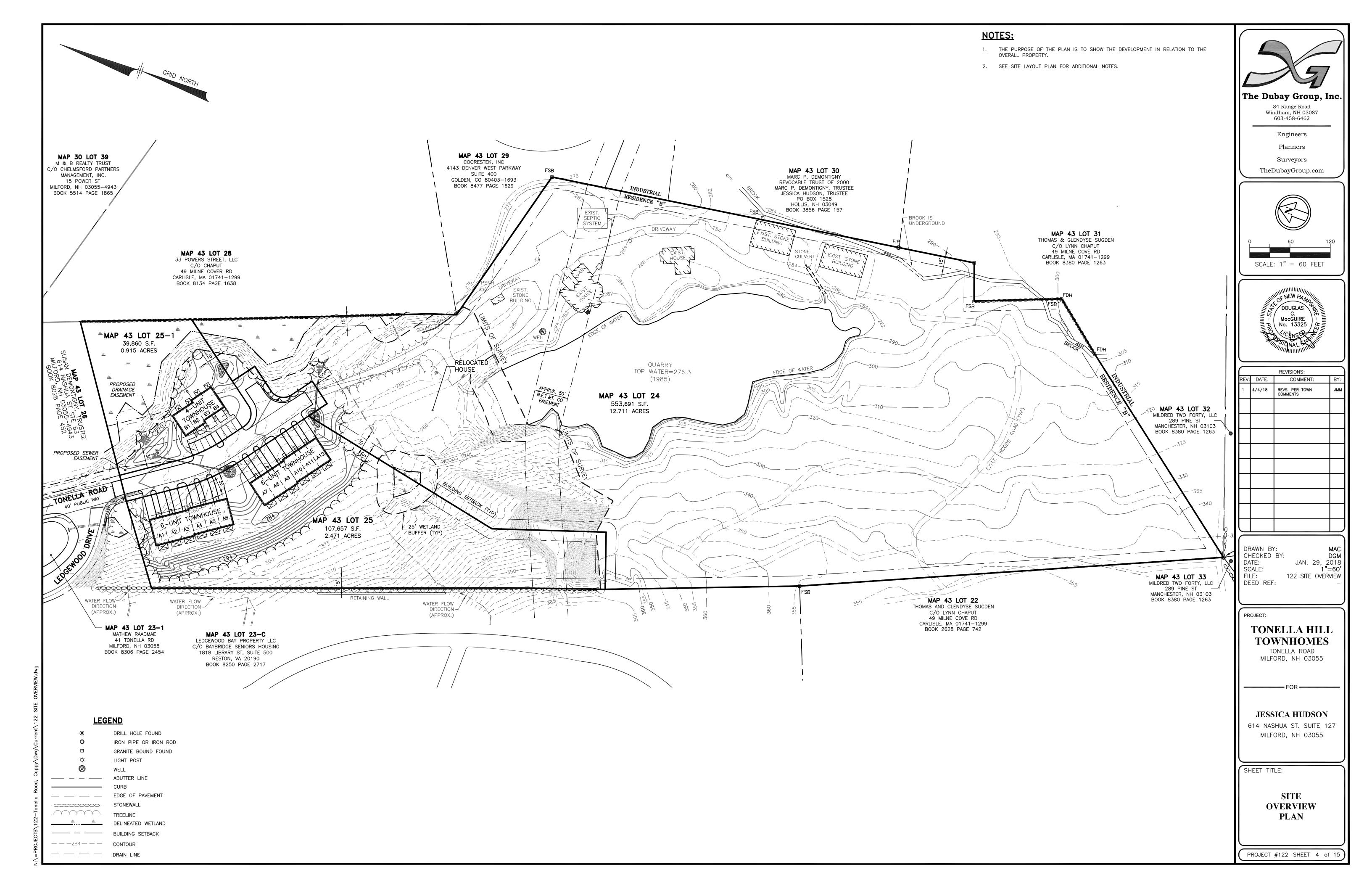
MILFORD, NH 03055

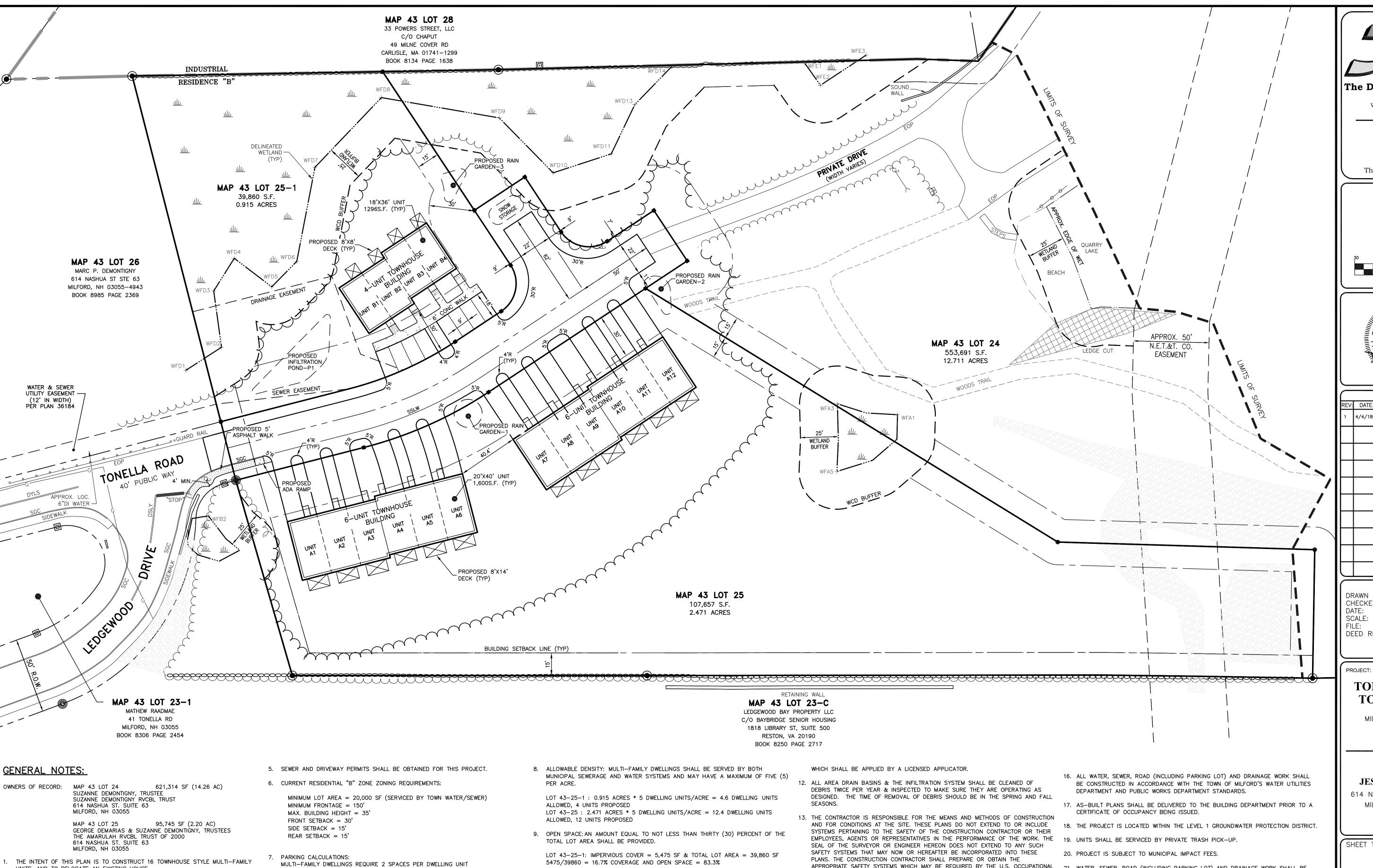
#### JESSICA HUDSON

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**PREPARATION PLAN** 

PROJECT #122 SHEET 3 of 15





LOT 43-25: IMPERVIOUS COVER = 17,937 SF AND TOTAL LOT AREA = 107,637 SF

STORAGE CAPACITIES, EXCESS VOLUMES OF SNOW SHALL BE REMOVED FROM THE

10. IN THE EVENT ACCUMULATIONS OF WINTER SNOW VOLUMES EXCEED ON-SITE

11. ALL GRASS AND LANDSCAPED AREA MAINTENANCE SHALL BE PERFORMED WITH

JUDICIOUS USE OF ORGANIC PESTICIDES, HERBICIDES AND FERTILIZERS, ALL OF

17937/107637 = 14% COVERAGE AND OPEN SPACE = 86.3%

SITE AND DISPOSED OF AT A LEGAL DUMPING SITE.

UNITS, AND TO RELOCATE AN EXISTING HOUSE.

SPECIFICATIONS.

THE SUBJECT PARCELS 43-24 AND 43-25 ARE ZONED AS RESIDENTIAL "B".

REGULATIONS. ALL ROADS, STRUCTURES, AND DRAINAGE TO MEET TOWN OF MILFORD

THE PROJECT WILL BE SERVED BY TOWN WATER AND TOWN SEWER.

ALL WORK TO BE DONE IN CONFORMANCE WITH THE TOWN OF MILFORD

LOT 43-25-1:

LOT 43-25:

SPACES).

TOTAL NUMBER OF DWELLING UNITS = 4

TOTAL NUMBER OF DWELLING UNITS = 12

TOTAL SPACES PROVIDED = 8 SPACES

4 DWELLING UNITS \* 2 SPACES/DWELLING UNIT = 8 SPACES

12 DWELLING UNITS \* 2 SPACES/DWELLING UNIT = 24 SPACES

TOTAL SPACES PROVIDED = 24 SPACES (12 GARAGE SPACES, 12 DRIVEWAY

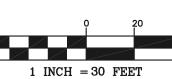
The Dubay Group, Inc.

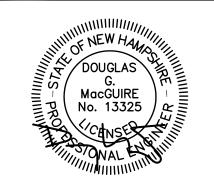
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> Engineers Planners

Surveyors TheDubayGroup.com







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DRAWN BY: CHECKED BY: JAN. 29, 2018 1"=30' SITEPLAN DEED REF:

#### TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055

#### JESSICA HUDSON

614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

SITE LAYOUT **PLAN** 

PROJECT #122 SHEET 5 of 15

PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL 21. WATER, SEWER, ROAD (INCLUDING PARKING LOT) AND DRAINAGE WORK SHALL BE SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

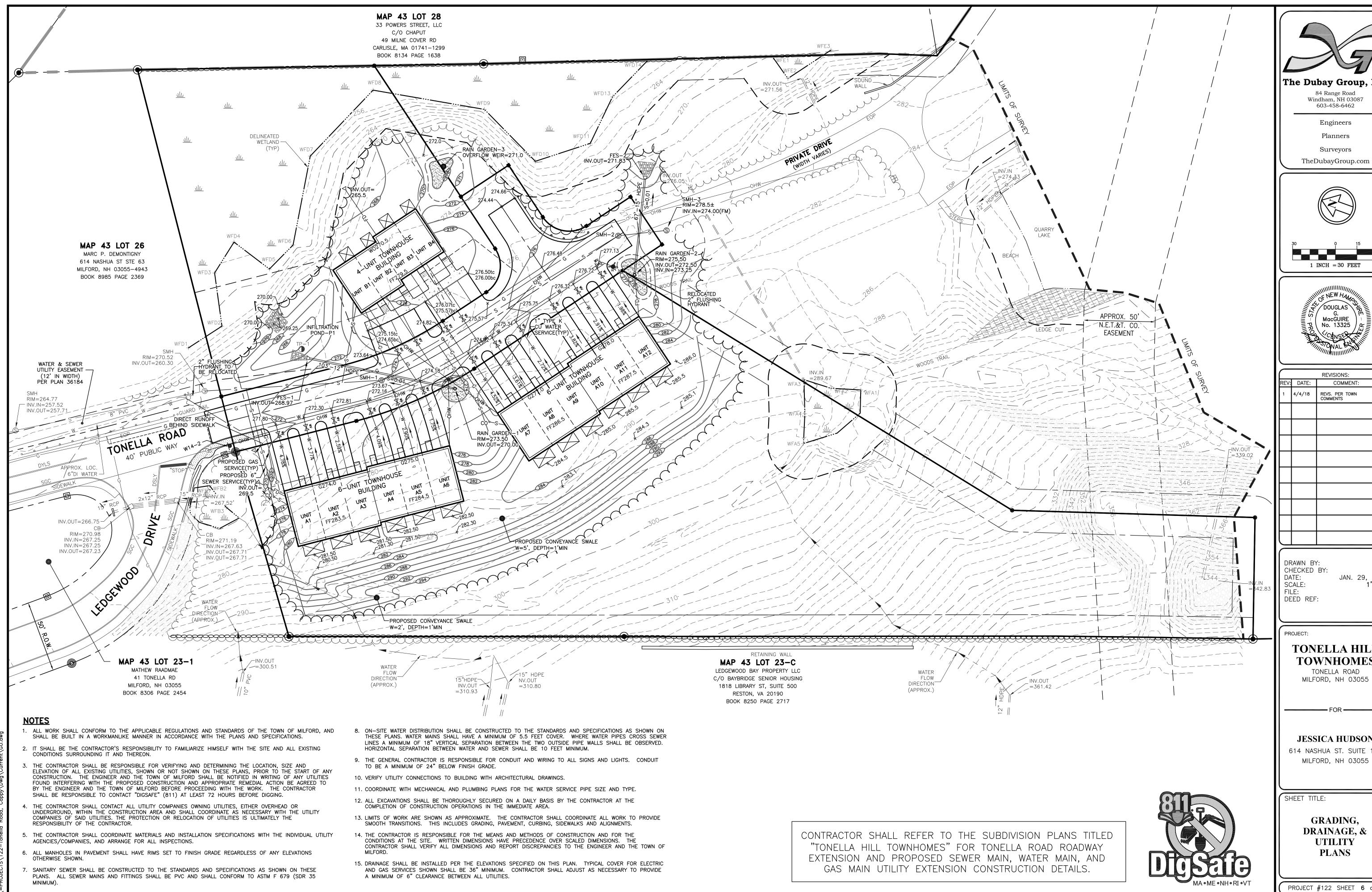
14. CONTRACTOR SHALL MAINTAIN AN EFFECTIVE MEANS OF DUST CONTROL DURING THE CONSTRUCTION PERIOD USING WATER TRUCKS AND SWEEPERS AS DEEMED NECESSARY BY THE TOWN INSPECTOR.

15. LOTS 43-25 AND 43-24 ARE NOT WITHIN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP 33011C0459D, AND THE FLOOD INSURANCE STUDY FOR HILLSBOROUGH COUNTY WITH EFFECTIVE DATES OF SEPTEMBER 25, 2009.

CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF MILFORD'S WATER UTILITIES DEPARTMENT AND PUBLIC WORKS DEPARTMENT STANDARDS.

22. AS-BUILT PLANS SHALL BE DELIVERED TO THE BUILDING DEPARTMENT PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED.

23. ALL UNITS ARE REQUIRED TO HAVE SPRINKLERS PER THE INTERNATIONAL RESIDENTIAL CODE SECTION 313.



The Dubay Group, Inc. 84 Range Road

Windham, NH 03087 603-458-6462

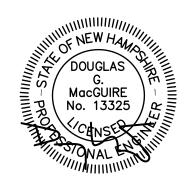
Engineers

Planners

Surveyors



1 INCH = 30 FEET



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DRAWN BY: CHECKED BY: JAN. 29, 2018 SCALE: 1"=30' DEED REF:

#### TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055

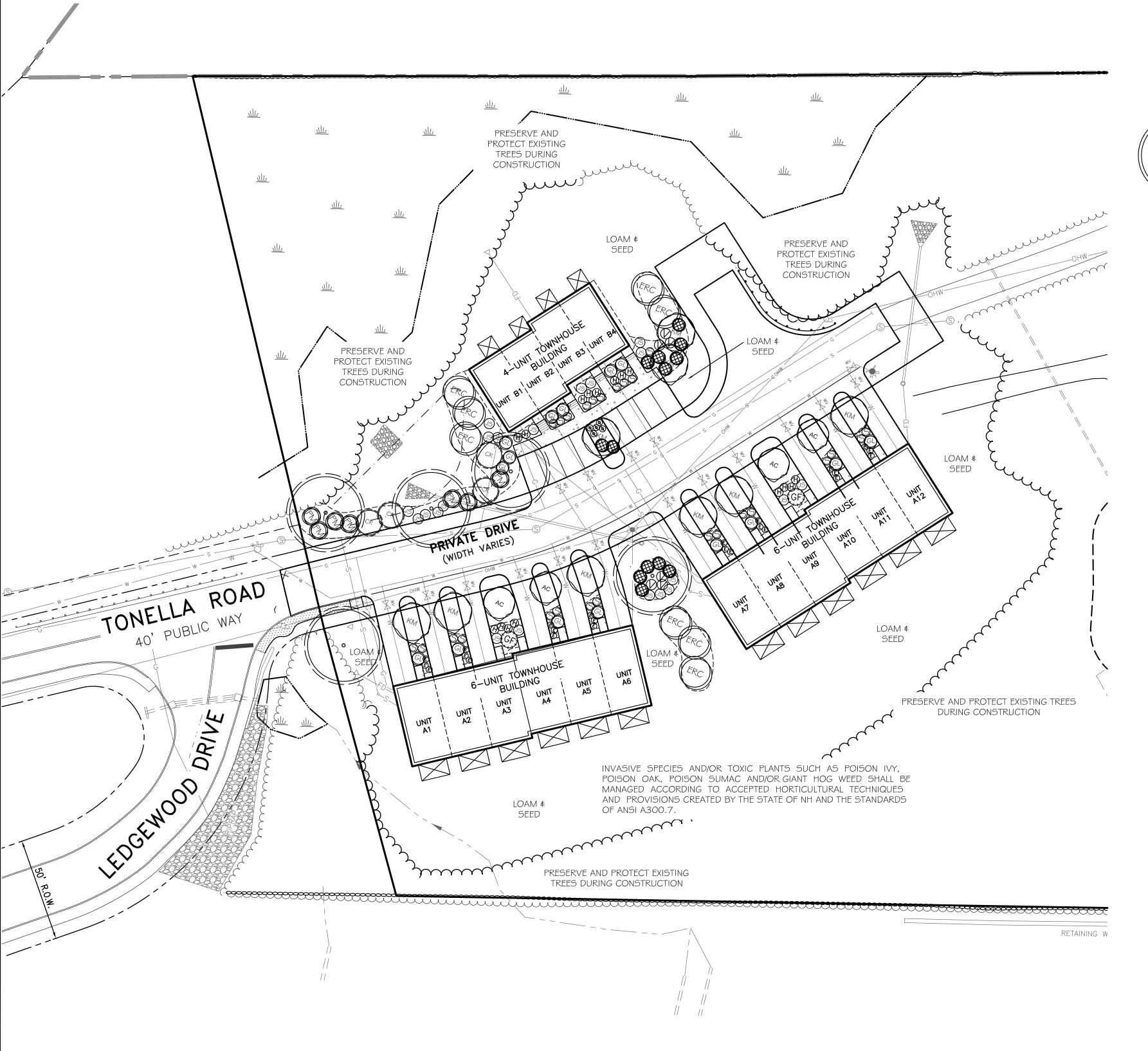
JESSICA HUDSON

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SHEET TITLE:

GRADING, DRAINAGE, & UTILITY **PLANS** 

PROJECT #122 SHEET 6 of 15



# LANDSCAPE LEGEND

		BOTONICAL NAME / COMMON NAME	SIZE & REMARKS	MATURE HT.	MATURE WIDTH
_		DECIDUOUS SHADE TREE			
	•	5 ACER SACCHARUM 'COMMEMORATION' / COMMEMORATION SUGAR MAPLE	2.5" CAL. B≰B	40'-60'	30'-40'
		DECIDUOUS UPRIGHT			
	KM	9 ACER RUBRUM 'KARPICK' / KARPICK RED MAPLE	2.5" CAL. B\$B	40'-60'	15'-20'
	AC	4 AMELANCHIER CANADENSIS / SERVICEBERRY OR SHADBLOW	2.5" CAL. B¢B	20'-30'	10'-15'
		NARROW EVERGREEN			
	(ERC)	8 JUNIPERUS VIRGINIANA / EASTERN RED CEDAR	G' HT. B¢B	30-40'	15-20'
	***	EVERGREEN SHRUB / DWARF			
	(GF)	2 CHAMAECYPARIS OBTUSA 'FERNSPRAY GOLD' / GOLD HINOKI FALSECYPRESS	6 4' HT. B¢B	10'-15'	8'-10'
	PM	EVERGREEN SHRUB TALL 7 PINUS MUGO MUGO - COMPACT MUGO PINE	3' HT. B <b></b> \$B	6-8'	8'-10'
	(GL)	EVERGREEN SHRUB MEDIUM I 5 JUNIPERUS CHINENSIS 'ARMSTRONG AUREA' / OLD GOLD JUNIPER	30" B¢B	3'-4'	6'-8'
		13 JUNIPERUS VIRGINIANA ' GREY OWL' / GREY OWL JUNIPER	30" B\$B	2'-3'	6'-8'
		2 I JUNIPERUS CHINENSIS 'SEAGREEN' / SEAGREEN JUNIPER	30" B <b></b> ₽B	5'-6'	4'-5'
	(E)	EVERGREEN GROUNDCOVER 24 EUONYMUS FORTUNEI COLORATUS / WINTERCREEPER, PURPLELEAF	5 GAL.	2-3"	3-4'
	CR	DECIDUOUS SHRUB LARGE 4 CORNUS RACEMOSA - DOGWOOD, GREY	4' HT. B¢B	8'-10'	8'-10'
	_	DECIDUOUS SHRUB MEDIUM			
	$\textstyle (\!$	I 6 ITEA VIRGINICA 'HENRY'S GARNET' - SWEETSPIRE, HENRY'S GARNET VIRGINIA 6 BLUEBERRY 'BLUECROP' - BLUEBERRY, BLUECROP	5 GAL. MIN. 2' 5 GAL. MIN. 2'	3'-4' 5'-6'	5'-6' 5'-6'
		DECIDUOUS SHRUB SMALL			
	9	26 HYPERICUM KALMIANUM - ST. JOHNSWORT	3 GAL. MIN. 2'	2'-3'	2'-3"
		PERENNIAL/ GRASSES			
	<u>®</u>	5 GRASS HAKONECHELOA MACRA AUREOLA - GOLDEN JAPANESE FOREST GRA	ASS 2 GAL.	2-3'	2-3'

# LANDSCAPE REQUIREMENTS:

LANDSCAPING SHALL BE PROVIDED ALONG ALL BUILDING FRONTAGE. A MINIMUM OF ONE (1) SHRUB FOR EVERY FIVE (5') FEET OF BUILDING FRONTAGE SHALL BE PROVIDED.

3 | 2' / 5' = 62.4 OR 62 SHRUBS REQUIRED. 79 - (2' MIN. HT.) SHRUBS SHOWN

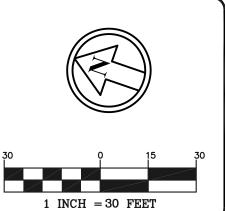


he Dubay Group, In

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

Engineers Planners

Surveyors TheDubayGroup.com



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EV: DATE: COMMENT: BY:

4/4/18 REVS. PER TOWN COMMENTS

JMM

COMMENTS

DRAWN BY: REK
CHECKED BY: DGM
DATE: JAN. 29, 2018
SCALE: 1"=30'
FILE:112-LANDSCAPING 18APRIL05
DEED REF: -

PROJECT:

TONELLA HILL
TOWNHOMES
TONELLA ROAD

MILFORD, NH 03055

**JESSICA HUDSON**614 NASHUA ST. SUITE 127

MILFORD, NH 03055

SHEET TITLE:

LANDSCAPE PLAN

PROJECT #122 SHEET 7 of 15

#### LANDSCAPE MAINTENANCE

#### LAWN

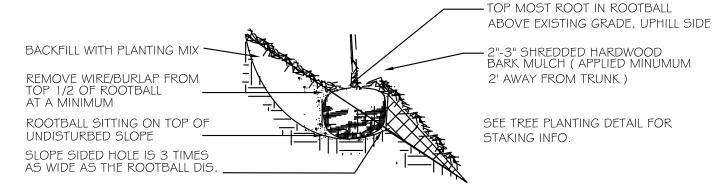
- I. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH AREA IS PLANTED AND SHALL CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED, BUT NOT LESS THAN THE FOLLOWING PERIODS:
- SEEDED LAWNS: 60 DAYS FROM DATE OF SUBSTANTIAL COMPLETION. (WHEN FULL MAINTENANCE PERIOD HAS NOT ELAPSED BEFORE THE END OF PLANTING
- SEASON, OR IF LAWN IS NOT FULLY ESTABLISHED, CONTINUE MAINTENANCE DURING NEXT PLANTING SEASON.)
- SODDED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
- PLUGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
- SPRIGGED LAWNS: 30 DAYS FROM DATE OF SUBSTANTIAL COMPLETION.
  MAINTAIN AND ESTABLISH LAWN BY WATERING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS.
- ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND RE-MULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.

  IN AREAS WHERE MULCH HAS BEEN DISTURBED BY WIND OR MAINTENANCE OPERATIONS, ADD NEW MULCH.

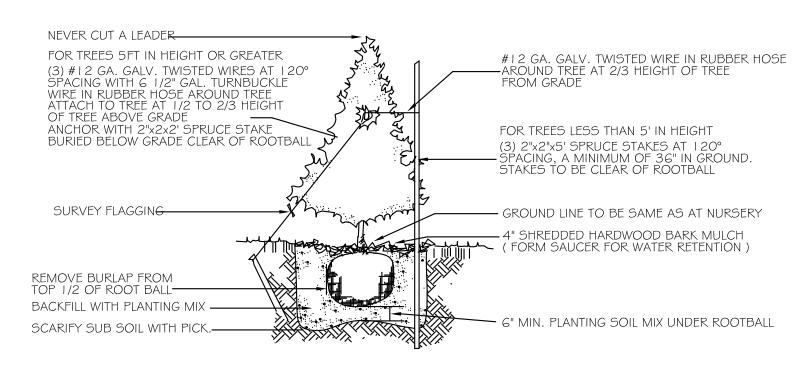
  ANCHOR AS REQUIRED TO PREVENT DISPLACEMENT.
- IRRIGATION: PROVIDE AND MAINTAIN TEMPORARY PIPING, HOSES, AND LAWN-WATERING EQUIPMENT TO CONVEY WATER FROM SOURCES AND KEEP LAWN UNIFORMLY MOIST TO A DEPTH OF FOUR INCHES (100 mm).
- SCHEDULE WATERING TO PREVENT WILTING, PUDDLING, EROSION, AND DISPLACEMENT OF SEED OR MULCH. LAY OUT TEMPORARY WATERING SYSTEM
- TO AVOID WALKING OVER MUDDY OR NEWLY PLANTED AREAS.
- WATER LAWN AT A MINIMUM RATE OF ONE INCH (25 mm) PER WEEK.
  MOW LAWN AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIC HEIGHT
  WITHOUT CUTTING MORE THAN 40 PERCENT OF GRASS HEIGHT. REMOVE NO MORE THAN 40 PERCENT OF GRASS-LEAF
- GROWTH IN INITIAL OR SUBSEQUENT MOWING. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWING TO MAINTAIN GRASS HEIGHT.

#### TREES AND SHRUBS:

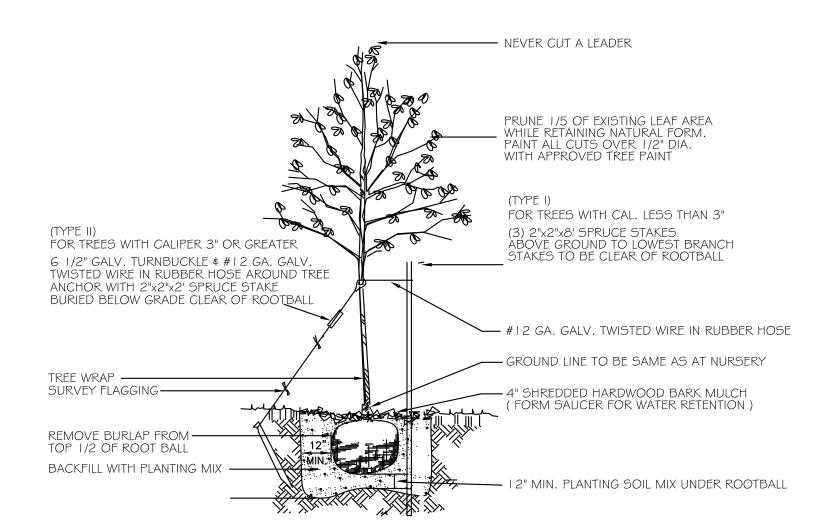
- PRUNING SHOULD BE STARTED EARLY AND KEPT UP AT REGULAR INTERVALS. TREES SHOULD BE PRUNED AND SHAPED TO AVOID SPLITTING LATER IN LIFE. BROKEN TOPS AND BRANCHES SHOULD BE REMOVED AS SOON AS POSSIBLE AFTER INJURY. BROKEN, WEAK OR DISEASED BRANCHES SHOULD BE REMOVED FIRST, DEAD BRANCHES SECOND AND HEALTHY BRANCHES LAST.
- PROTECT TREES AND SHRUBS AGAINST DAMAGE INCURRED WITH LAWN MOWERS AND GARDEN EQUIPMENT. MULCH BEDS SHALL BE INSTALLED AS SHOWN TO KEEP GRASS AWAY FROM TREE TRUNKS.
- THE USE OF ROAD SALT AROUND TREES AND SHRUBS SHOULD BE AVOIDED.
- LANDSCAPED AREAS SHALL BE ROUTINELY MAINTAINED AND KEPT FREE OF DEBRIS AND LITTER. MAINTENANCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.



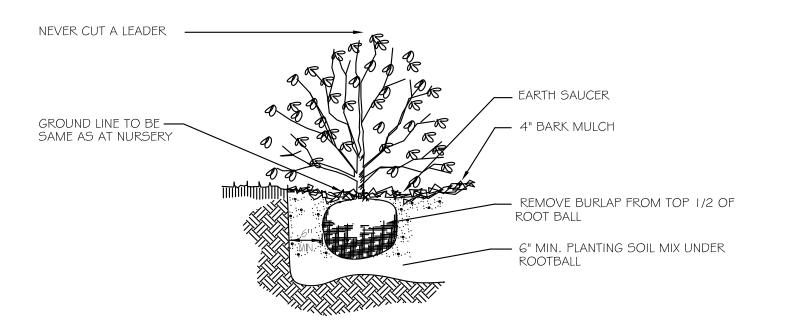
# SLOPE PLANTING DETAIL



# EVERGREEN PLANTING DETAIL NTS



# DECIDUOUS TREE PLANTING DETAIL NO



SHRUB PLANTING DETAIL NTS

#### LANDSCAPE NOTES:

- I. BASE INFORMATION SHOWN ON THIS PLAN IS NOT NECESSARILY CORRECT OR COMPLETE AND WAS TAKEN ENTIRELY FROM BASE PLANS PROVIDED BY THE ENGINEER. PRIOR TO CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL EXISTING AND NEWLY INSTALLED UTILITIES AND SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS.
- 2. LANDSCAPING SHOWN ON THIS PLAN HAS BEEN DESIGNED TO COMPLY WITH THE TOWN OF MILFORD LANDSCAPE REGULATIONS.
- 3. WHEREVER POSSIBLE EXISTING TREES SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION AS SHOWN.
- 4. THE PROPOSED DECIDUOUS TREES SHALL BE A MIN. 2.5"-3.5" CALIPER WITH A MINIMUM HEIGHT OF 12', EVERGREEN TREES A MINIMUM OF 4' HIGH AND SHRUBS 2' AT TIME OF PLANTING.
- 5. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED WITH A MINIMUM OF 6" SUITABLE LOAM, EXCEPT UNDER THE MULCH BEDS. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. (SEE PLANS BY ENGINEER)
- 6. PLANTS SHALL NOT BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED WITHIN THE IMMEDIATE AREA OF THE PLANTING.
- 7. ALL TREES SHALL BE BALLED AND BUR LAPPED UNLESS OTHERWISE NOTED.
- 8. ANY PROPOSED PLANT MATERIAL SUBSTITUTIONS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE, THE TOWN OF MILFORD STAFF AND THE LANDSCAPE ARCHITECT.
- 9. WHERE APPLICABLE THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT. LAYOUT TO BE APPROVED BY OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.
- IO. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES.
- II. CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL.
- I 2. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE FOR TREES AND SHRUBS. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE.
- 13. INSOFAR AS IT IS PRACTICABLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. ANY PLANTS NOT INSTALLED DURING THIS PERIOD WILL BE REJECTED.
- 14. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH ANSI 260 (REV. 1996) "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
- I 5. ALL PLANTS SHALL BE PLANTED IN AMENDED TOP SOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACK FILLING PROGRESSES. PLANTING MIX TO BE AS SHOWN ON PLANTING DETAILS. LARGE PLANTING AREAS TO INCORPORATE FERTILIZER AND SOIL CONDITIONERS AS STATED IN PLANTING SPECIFICATIONS.
- I 6. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.
- I 7. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION. ALL PLANT MATERIAL SHALL BE SPRAYED WITH 'WILT-PRUF' OR EQUAL AS PER MANUFACTURER'S INSTRUCTIONS.
- 18. NO PLANT, EXCEPT GROUND COVERS/PERENNIALS, SHALL BE PLANTED LESS THAN TWO FEET FROM EXISTING STRUCTURES AND SIDEWALKS.
- 19. SET ALL PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT, A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANT IN THE CENTER OF THE PIT.
- 20. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES AS A RESULT OF CONSTRUCTION OPERATIONS. ALL EXISTING TREES SHALL BE FERTILIZED WITH A REGULAR GARDEN FERTILIZER (5-10-5) UPON COMPLETION OF WORK. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE TRUNK. CONTRACTOR TO ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH SHARP TOOLS AND FILLED AROUND WITH TOPSOIL. COMPLETELY SATURATE THESE AREAS WITH WATER. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR IS TO PROTECT ALL EXISTING TREES TO REMAIN BY ERECTING TREE PROTECTION FENCE AT THE DRIP LINE. THIS WILL ENSURE NO COMPACTION OF THE ROOT MASS.
- 2 I . ALL PLANTING BEDS SHALL BE MULCHED WITH 4" LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH. MULCH SHALL NOT COVER ROOT FLARE OF TREES.
- 22. THE PURPOSE OF THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY. FOR SITE DESIGN AND SITE LAYOUT SEE PLANS BY THE DUBAY GROUP, INC.
- 23. THE OWNER AND THEIR REPRESENTATIVE SHALL BE RESPONSIBLE FOR PROVIDING, PROTECTING AND MAINTAINING ALL LANDSCAPING IN HEALTHY AND GROWING CONDITION, AND REPLACING IT WHEN NECESSARY TO INSURE CONTINUOUS CONFORMANCE WITH THESE GUIDELINES. ANY LANDSCAPE ELEMENT THAT DIES, OR IS OTHERWISE REMOVED, SHALL BE PROMPTLY REPLACED WITH THE SAME, IF NOT SIMILAR TO, HEIGHT OR TEXTURE ELEMENT AS ORIGINALLY INTENDED. IN ADDITION, LANDSCAPED AREAS SHALL BE KEPT FREE OF ALL DEBRIS, RUBBISH, WEEDS AND OVERGROWN TURF GRASS. IF THE OWNERSHIP OF A SITE IS CONVEYED TO A NEW PROPERTY OWNER, THE NEW OWNER SHALL BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING IN ACCORDANCE WITH THE APPROVED FINAL LANDSCAPING PLAN.

24. ALL NEW PLANTING AREAS, LAWN AND SOD SHALL BE PROVIDED WITH A TEMPORARY DRIP IRRIGATION SYSTEM. FOR AN ENTIRE GROWING SEASON, ALL PLANTING AREAS, TREES AND SEEDED SIDE SLOPES, SHALL BE IRRIGATED BY THE LANDSCAPE CONTRACTOR UNTIL IRRIGATION SYSTEM IS INSTALLED OR PLANTS ARE ESTABLISHED. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR TRUCKING IN WATER. THE CONTRACTOR SHALL FURNISH HOSE AND OTHER WATERING EQUIPMENT. THIS SHALL BE COORDINATED BETWEEN THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR. IN THE EVENT THAT PLANTINGS AND SEEDING ARE COMPLETED TOO LATE IN THE FALL FOR ADEQUATE GERMINATION AND/OR GROWTH, MAINTENANCE SHALL CONTINUE INTO THE FOLLOWING GROWING SEASON.

25. INVASIVE SPECIES AND/OR TOXIC PLANTS SUCH AS POISON IVY, POISON OAK, POISON SUMAC AND/OR GIANT HOG WEED SHALL BE MANAGED ACCORDING TO ACCEPTED HORTICULTURAL TECHNIQUES AND PROVISIONS CREATED BY THE STATE OF NH AND THE STANDARDS OF ANSI A300.7.



The Dubay Group, Inc.

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Windham, NH 03087

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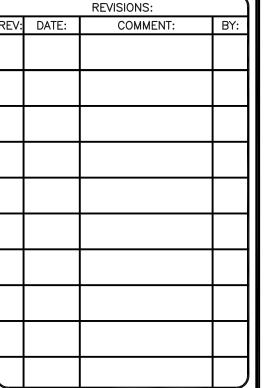
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CHECKED BY:			DGM
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SCALE:		1	"=30
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PROJECT:

#### TONELLA HILL TOWNHOMES

TONELLA ROAD MILFORD, NH 03055

—— FOR —

JESSICA HUDSON

614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

LANDSCAPE DETAILS

PROJECT #122 SHEET 8 of 15

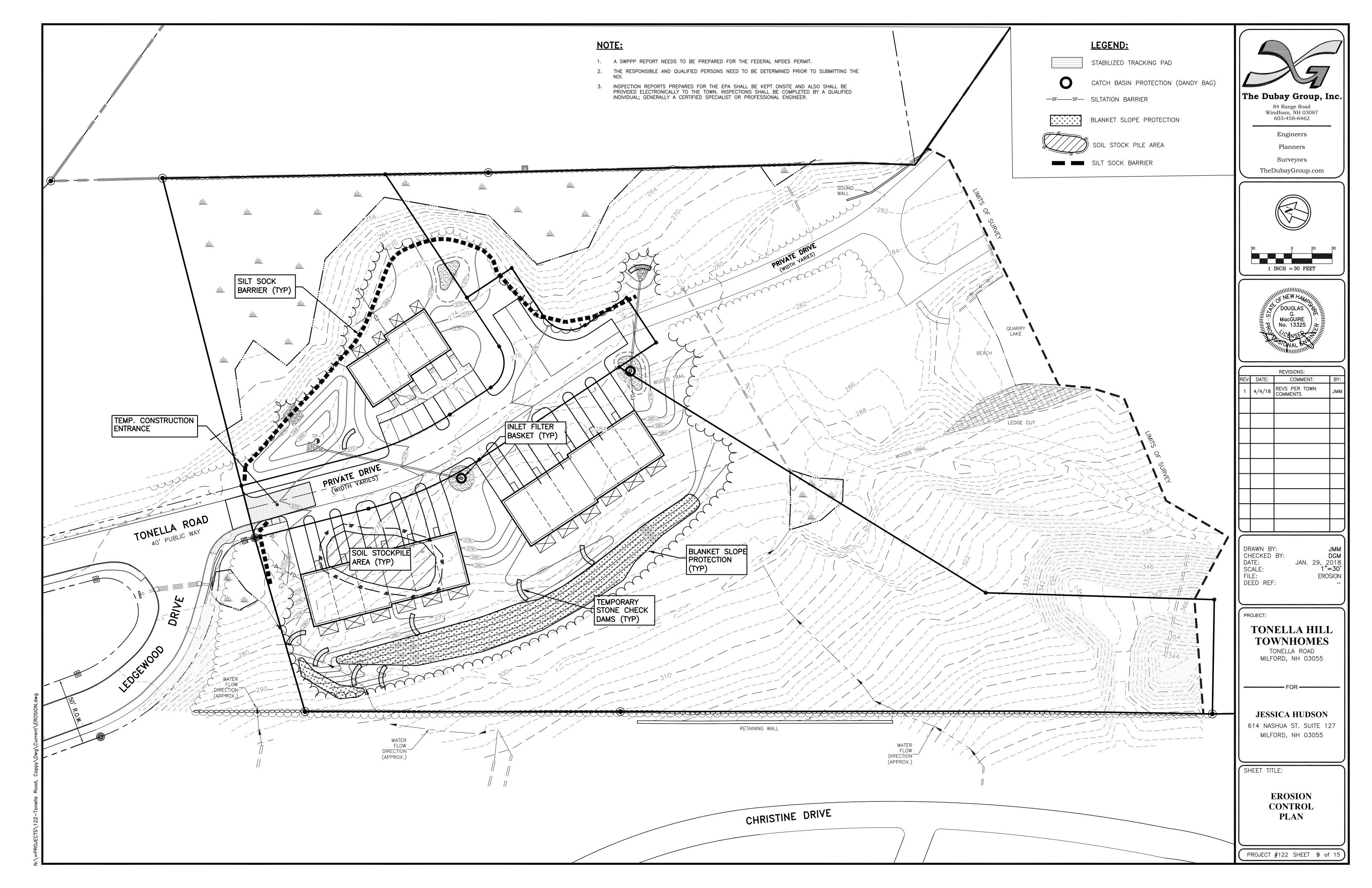


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BY OTHERS. THIS PLAN IS
INTENDED FOR APPROVAL BY
THE TOWN OF WINDHAM FOR
LANDSCAPE PURPOSES ONLY.
FOR SITE DESIGN AND
CONSTRUCTION
SPECIFICATIONS SEE PLAN BY
THE DUBAY GROUP INC.

landscape architecture graphics, renderings & design solutions

73 MAST ROAD, MANCHESTER, NH 03102 603-497-4212

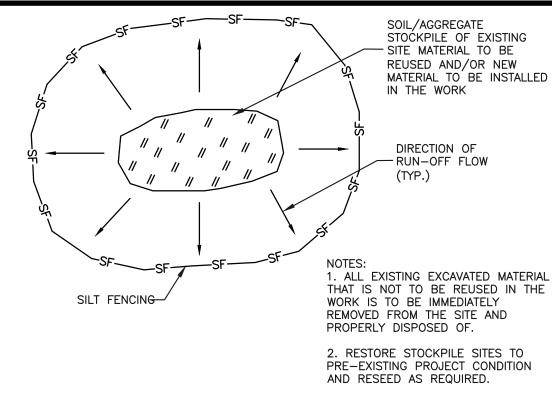
JS\122-Tonella Road, Cappy\Dwg\Current\112-LANDSCAPING 18APRIL05.



#### 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.
- 3. 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



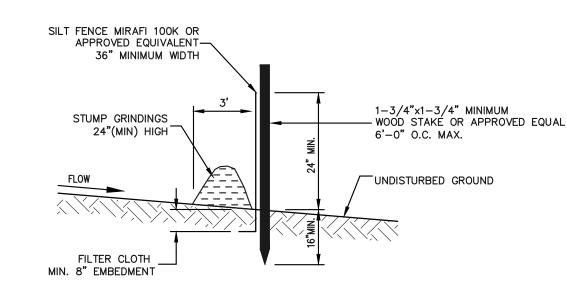
3. STOCKPILE HEIGHTS MUST NOT

EXCEED 35'. STOCKPILE SLOPES

MUST BE 2:1 OR FLATTER.

#### MATERIALS STOCKPILE DETAIL

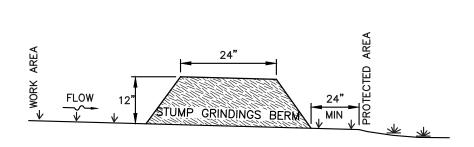
NOT TO SCALE



# SILT FENCE WITH MULCH BERM

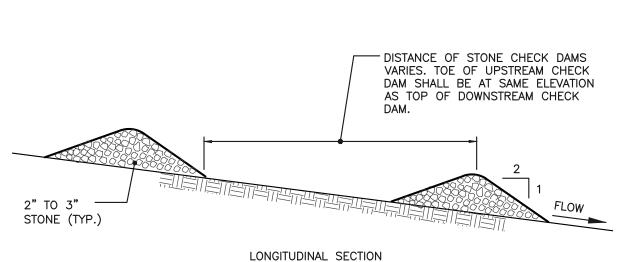
TO BE USED IN ANY AREAS THAT HAVE DISTURBANCE WITHIN 50-FEET OF A WETLAND.

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



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

# MINIMUM 2/3 DEPTH OF CHANNEL -SHALL BE MIN. 6" BELOW SIDES. THROUGHOUT WIDTH OF CHECK DAM. STONE (TYP.) DITCH CROSS-SECTION



STONE CHECK DAM DETAIL NOT TO SCALE

#### **CONSIDERATIONS**

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

ADJUSTED IMMEDIATELY.

CRITERIA FOR SILT FENCES:

FABRIC PROPERTIES

RECOMMENDATIONS.

**MAINTENANCE:** 

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

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

VALUES TEST METHOD

40-80 US STD SIEVE

ASTM D1682

ASTM 1682

ASTM D3786

ASTM D751

**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

OF THE CHECK DAM, THE CHECK DAM SHOULD BE INSPECTED AND

#### **SPECIFICATIONS**

TEMPORARY CHECK DAMS SHOULD CONFORM TO THE FOLLOWING REQUIREMENTS:

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

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

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

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

LOWER THAN THE OUTER EDGES.

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

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

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

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.

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

METAL OR WOOD POST

DIRECTION OF

RUNOFF FLOW

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

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA

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

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

END VIEW

OR STAKE

SUPPORT POST ANCHORAGE MATERIAL, IF REQUIRED

**CONSTRUCTION SPECIFICATIONS:** 

FOR SILT FENCES.

OLD GROUND ~

OLD GROUND



The Dubay Group, Inc.

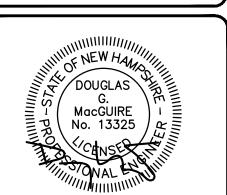
84 Range Road Windham, NH 03087 603-458-6462

Engineers

Planners

TheDubayGroup.com

Surveyors



REVISIONS:

COMMENT:

DRAWN BY: CHECKED BY: DATE: JAN. 29, 2018 AS NOTED DETAILS

SCALE: FILE: DEED REF:

# TOWNHOMES

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

SILT SCREEN FABRIC

FABRIC ANCHORAGE

TRENCH W/TAMPED

NATURAL SOIL

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

PROJECT: TONELLA HILL

> TONELLA ROAD MILFORD, NH 03055

JESSICA HUDSON 614 NASHUA ST. SUITE 127

MILFORD, NH 03055

SHEET TITLE:

SITE **DETAILS-1** 

PROJECT #122 SHEET 10 of 19

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.)

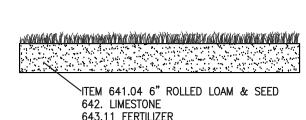
COMPOST FILLED SILT SOCK 2"x 2" WOOD STAKE PLACED 10' O.C. -WORK AREA-PROTECTED AREA TOP OF \_ GROUND

NOTES SILT SOCK SHALL BE FILTREXXTM SILTSOXXTM OR APPROVED

SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE

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

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



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.

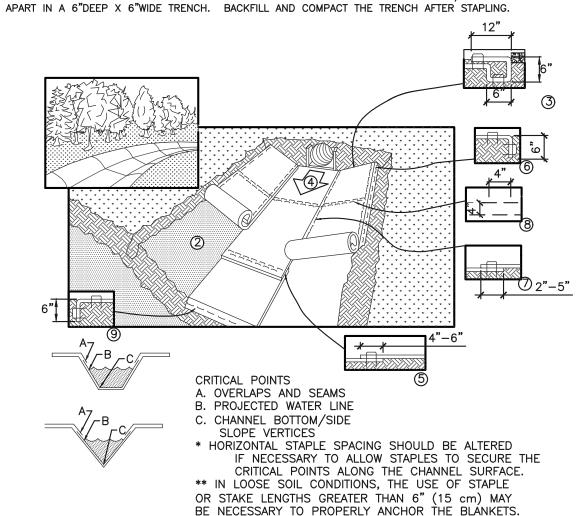
5. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4"(10") ON CENTER TO SECURE BLANKETS.

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.

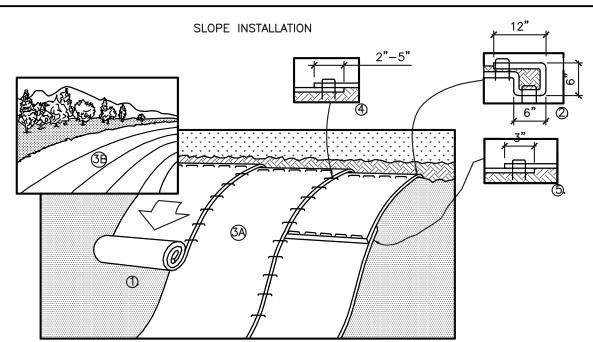
8. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.

THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12"



#### 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.

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

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

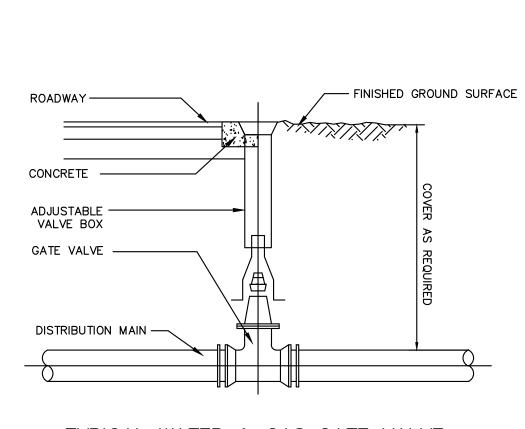
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

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

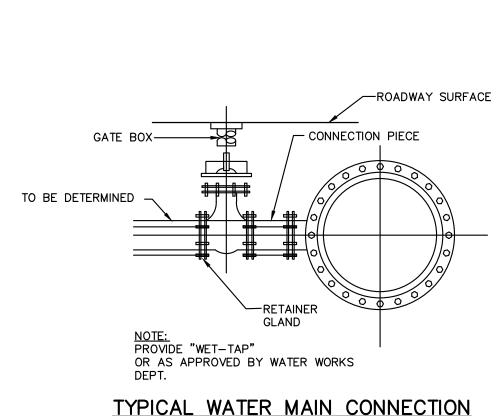
#### SLOPE PROTECTION EROSION CONTROL MATTING

NOT TO SCALE

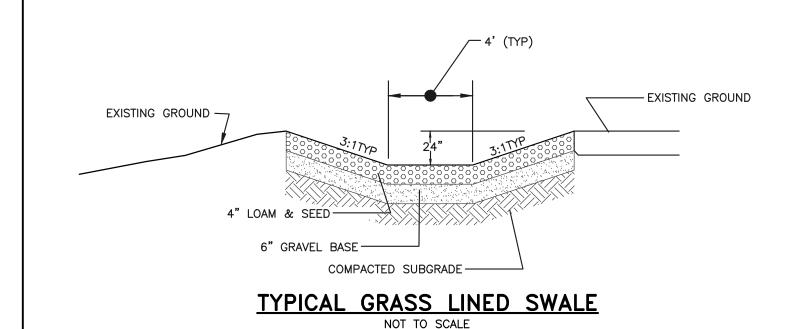
(THIS DETAIL IS PROVIDED FOR AREAS THAT MAY REQUIRE ADDITIONAL PROTECTION BASED ON FIELD CONDITIONS.)

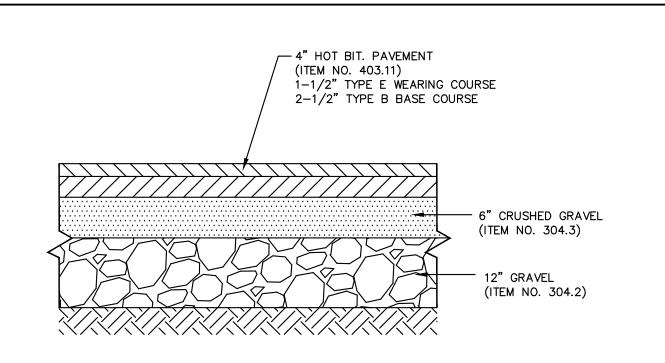


TYPICAL WATER & GAS GATE VALVE NOT TO SCALE



TYPICAL WATER MAIN CONNECTION NOT TO SCALE





Model IH091

INSTALLED IN A SLAB

pg.

Drawn by: MAC

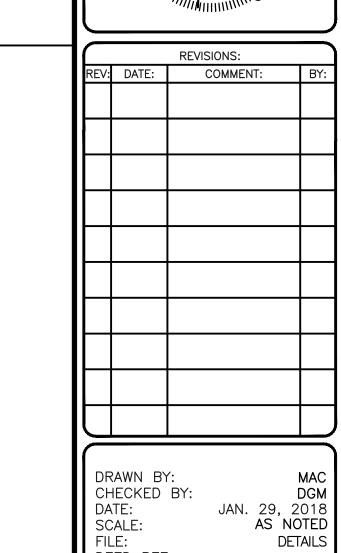
E M AHONY

273 Weymouth Street, Rockland, Massachusetts 02370

& associates, inc. Water Supply & Pollution Control Equipment

12/14/2015

TYPICAL DRIVEWAY AND PARKING LOT SECTION NOT TO SCALE



The Dubay Group, Inc.

84 Range Road

Windham, NH 03087

603-458-6462

Engineers

Planners

Surveyors

TheDubayGroup.com

\*/DOUGLAS

MacGUIRE No. 13325

DEED REF:

PROJECT:

### TONELLA HILL **TOWNHOMES**

TONELLA ROAD MILFORD, NH 03055

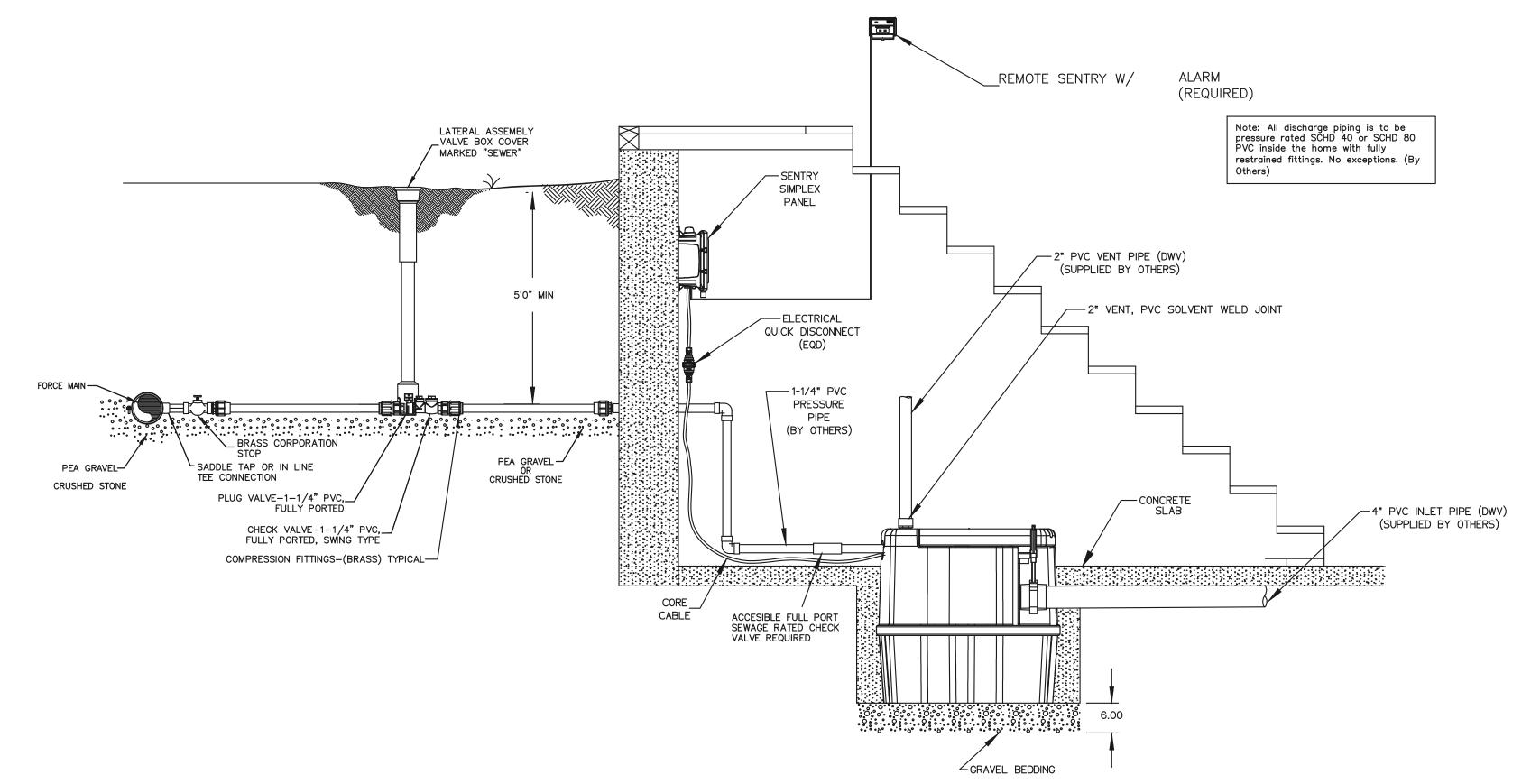
**JESSICA HUDSON** 

614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

**SITE DETAILS-3** 

PROJECT #122 SHEET 11 of 15



#### NOTE:

REVIEWED FOR COMPLIANCE WITH APPLICABLE REQUIREMENTS OF ENV-WQ 700, IN APPLICATION FOR SEWER CONNECTION PERMIT.

#### TRENCH NOTE:

FORCE MAINS AND PRESSURE SEWER SHALL BE TREATED AND CONSTRUCTED AS GRAVITY SEWER FOR PURPOSES OF FOUNDATION BEDDING AND BACKFILL.







FRMA Drawing No. EO XXXXX

eOne Drawing No. ESD 08-0008

1/16

#### **EROSION CONTROL NOTES**

#### CONSTRUCTION SEQUENCE

- 1. PRIOR TO CONSTRUCTION, AN INITIAL PRE CONSTRUCTION MEETING(S) SHALL TAKE PLACE WITH THE CONTRACTOR, OWNER, TOWN AGENTS, AND NHDOT DISTRICT 5 OFFICE (666-3336).
- 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 FINALLY STABILIZED.
- 3. INSTALL PERIMETER CONTROLS, I.E SILT FENCE AND/OR SILTSOXX AROUND THE LIMITS OF DISTURBANCE BEFORE ANY EARTH MOVING OPERATION.
- 4. CONSTRUCT TEMPORARY CONSTRUCTION EXIT.
- 5. CLEAR AND GRUB WITHIN AREAS OF DISTURBANCE UNLESS OTHERWISE NOTED.
- 6. REMOVE AND STOCKPILE MATERIALS AS REQUIRED. STOCKPILE SHALL BE SURROUNDED WITH AN EROSION CONTROL DEVICE TO PREVENT EROSION. STOCKPILE AREAS ARE LIMITED AND THUS MANAGEMENT OF MATERIALS WILL BE REQUIRED.
- 7. SHAPE PROPOSED DRAINAGE PONDS, DITCHES AND/OR SWALES.
- 8. PERFORM ROUGH SITE GRADING, INSTALL DRAINAGE SYSTEMS AND UTILITIES.
- 9. INSTALL UNDERGROUND UTILITIES AND PLACE EROSION CONTROL MEASURES AROUND ANY CATCH BASINS PRIOR TO DIRECTING ANY RUNOFF TO THEM. DRAINAGE SYSTEMS SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO DIRECTING ANY FLOW TO THEM. ALL SIDE SLOPES SHALL BE STABILIZED WITHIN 72 HOURS.
- 10. LAYOUT AND INSTALL ALL BURIED UTILITIES AND SERVICES UP TO 10' OF THE PROPOSED BUILDING FOUNDATIONS. CAP AND MARK TERMINATIONS OR LOG SWING TIES.
- 11. FINISH GRADE SITE, BACKFILL ROAD SUBBASE GRAVEL IN. PROVIDE TEMPORARY EROSION PROTECTION TO DITCHES AND SWALES WHERE APPLICABLE, IN THE FORM OF MULCHING, JUTE MATTING OR STONE CHECK
- 12. ANY PERMANENT DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- 13. PLACE BINDER LAYER OF PAVEMENT.
- 14. AFTER ALL DRAINAGE AND ROADWAY IMPROVEMENTS (NOT INCLUDING FINAL LAYER OF PAVEMENT) HAVE BEEN COMPLETED, BEGIN CONSTRUCTION OF THE BUILDING FOUNDATIONS AND CONNECT TO SITE UTILITIES.
- 15. PLANT LANDSCAPING IN AREAS OUT OF WAY OF BUILDING CONSTRUCTION. PREPARE AND STABILIZE FINAL SITE GRADING BY ADDING TOPSOIL, SEED, MULCH AND FERTILIZER.
- 16. AFTER BUILDINGS ARE COMPLETED, FINISH ALL REMAINING LANDSCAPED WORK
- 17. CONSTRUCT ASPHALT WEARING COURSE.
- 18. REMOVE TRAPPED SEDIMENTS FROM COLLECTION DEVICES AS APPROPRIATE, AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF FINAL STABILIZATION OF THE SITE.
- 19. 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 MAINTENANCE.
- 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 INFORMATION.
- 5. ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER SHALL BE MACHINED STRAW MULCHED AND SEEDED WITH SLOPE STABILIZATION SEED MIXTURE TO PREVENT EROSION. STRAW MULCH SHALL BE APPLIED AT A RATE OF 2 TONS/ACRE.
- 6. ALL DRAINAGE SYSTEMS (DITCHES, SWALES, DRAINAGE PONDS/BASINS, ETC.) SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. STORMWATER FLOWS ARE NOT TO BE DIRECTED TO THESE SYSTEMS UNTIL CONTRIBUTING AREAS HAVE ALSO BEEN FULLY STABILIZED.
- 7. CONTRACTOR SHALL PROVIDE DUST CONTROL MEASURES IN ACCORDANCE WITH NHDES, EPA & TOWN REQUIREMENTS FOR THE DURATION OF THE PROJECT. WATER FOR DUST CONTROL SHALL BE PROVIDED ON SITE. FUGITIVE DUST IS CONTROLLED IN ACCORDANCE WITH ENV-A 1000.
- 8. ALL EROSION CONTROLS ARE TO BE INSPECTED WEEKLY AND AFTER 0.5" OR GREATER OF RAINFALL WITHIN A 24 HOUR PERIOD.
- 9. ALL FILLS SHALL BE PLACED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY IN LAYERS NOT EXCEEDING 18 INCHES IN THICKNESS UNLESS OTHERWISE NOTED. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC. AND SHALL NOT BE PLACED ON FROZEN FOUNDATION SUBGRADE.
- 10. SILT FENCES AND/OR SILTSOXX SHALL BE PERIODICALLY INSPECTED DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM. ALL DAMAGED SILT FENCES AND/OR SILTSOXX SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURE LOCATION.
- 11. PAVED AREAS MUST BE KEPT CLEAN AT ALL TIMES.
- 12. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
- 13. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING. EXPOSURE OF UNSTABILIZED SOILS SHALL BE TEMPORARILY STABILIZED AS SOON AS POSSIBLE BUT NO LATER THAN 45 DAYS OF INITIAL DISTURBANCE.
- 14. WINTERIZATION EFFORTS FOR AREAS NOT STABILIZED BY NOV. 1ST SHALL BE MADE BY THE APPROPRIATE USE OF MATTING, BLANKETS, MULCH AND SEEDING.
- 15. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- A. BASE COURSE GRAVELS HAS BEEN INSTALLED IN AREAS TO BE PAVED;
- B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
- D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- 16. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE CONTRACTOR SHALL BE REQUIRED TO IMMEDIATELY INSTALL AND MAINTAIN THE NECESSARY EROSION

#### 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

- 2. SEEDING SCHEDULE
- A. SPRING SEEDING USUALLY GIVES THE BEST RESULTS FOR ALL SEED MIXES OR WITH LEGUMES. B. PERMANENT SEEDING SHOULD BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST. IF SEEDING CANNOT BE DONE WITHIN THE SPECIFIED SEEDING DATES, MULCH ACCORDING TO THE NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 3, CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- 3. ESTABLISHING A STAND OF GRASS
- A. STONES AND TRASH SHOULD BE REMOVED FROM LOAMED AREAS SO AS NOT TO INTERFERE WITH THE
- B. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
- C. IF APPLICABLE, FERTILIZER AND ORGANIC SOIL AMENDMENTS SHOULD BE APPLIED DURING THE GROWING
- D. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR 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 FITHER 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. 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).

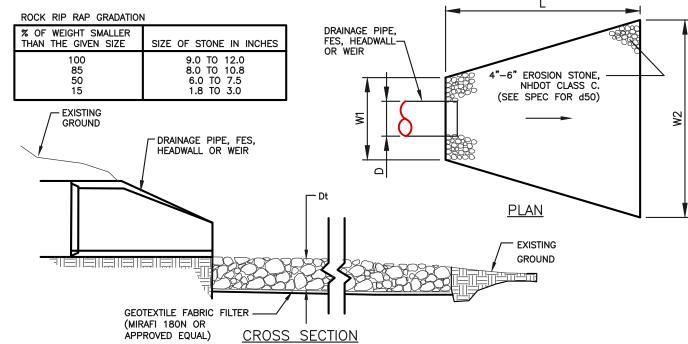
#### WINTER NOTES

- 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 FROSION 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
- 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.

LOCATION	L	W1	W2	d50	Dt
FES-1	11'	3'	8'	3"	9"
FES-2	10'	3'	13'	3"	9"



#### **CONSTRUCTION NOTES:**

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

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

STONE LINED OUTLET PROTECTION



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Engineers

Planners

Surveyors

TheDubayGroup.com

Y/DOUGLAS

MacGUIRE

REVISIONS:

No. 13325

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

PROJECT:

TONELLA HILL TOWNHOMES TONELLA ROAD

MILFORD, NH 03055

**JESSICA HUDSON** 614 NASHUA ST. SUITE 127

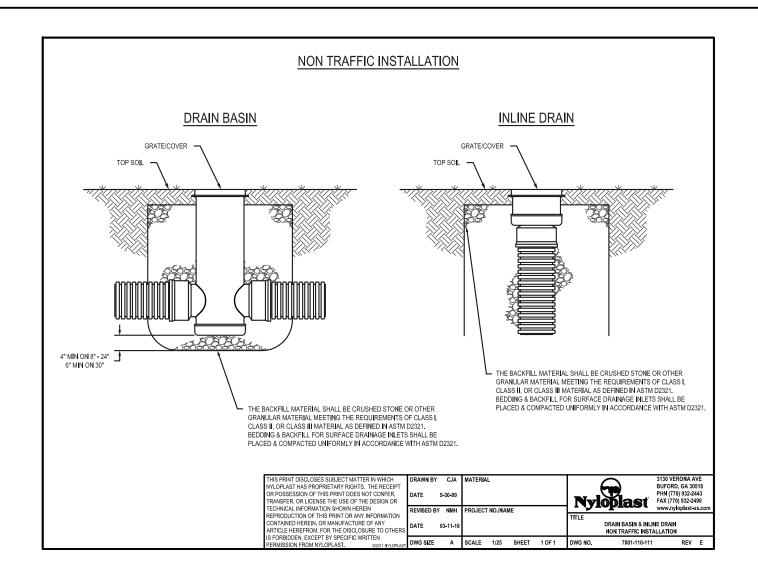
MILFORD, NH 03055

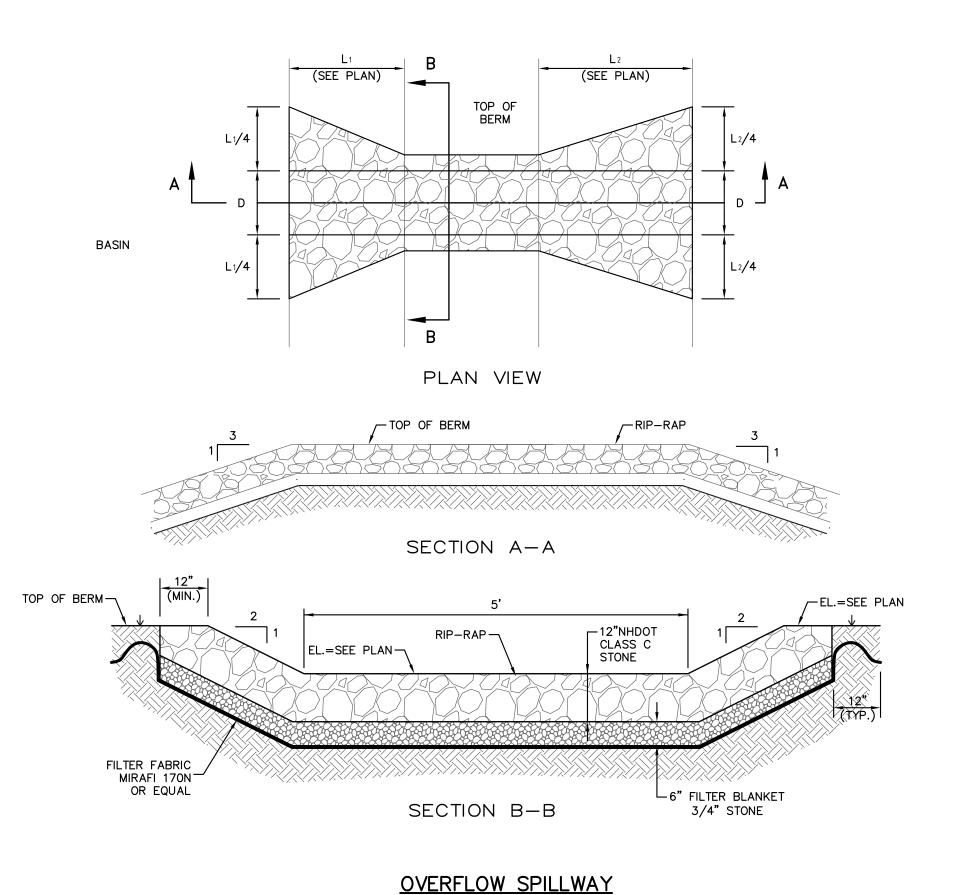
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SITE **DETAILS-2** 

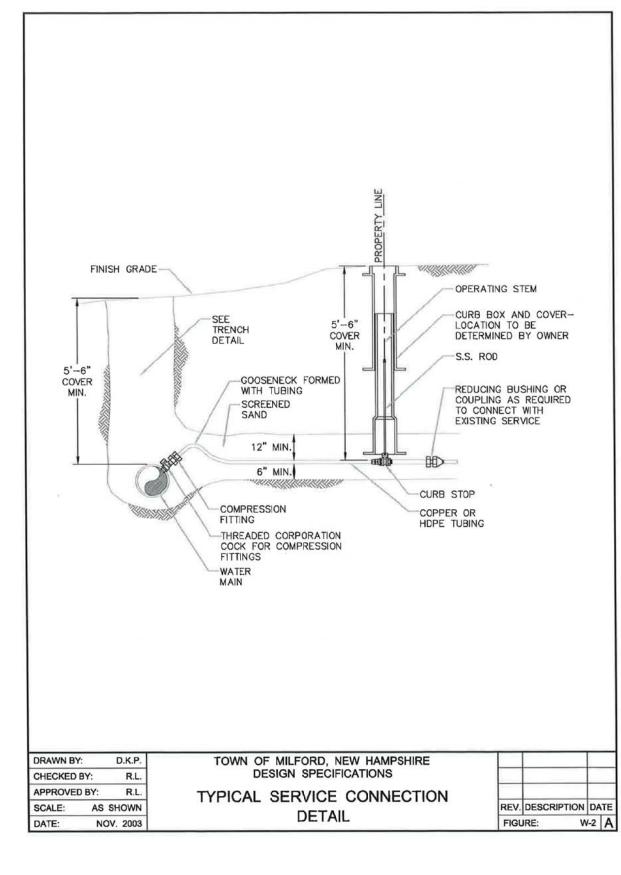
PROJECT #122 SHEET 12 of

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NOT TO SCALE



# DOUGLAS MacGUIRE

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Engineers

Planners

Surveyors TheDubayGroup.com

	REVISIONS:				
REV:	DATE:	COMMENT:	BY:		
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DRAWN BY: CHECKED BY: DATE: JAN. 29, 2018 SCALE: AS NOTED **DETAILS** DEED REF:

PROJECT:

#### TONELLA HILL **TOWNHOMES**

TONELLA ROAD

MILFORD, NH 03055

## **JESSICA HUDSON**

614 NASHUA ST. SUITE 127 MILFORD, NH 03055

SHEET TITLE:

SITE **DETAILS-4** 

PROJECT #122 SHEET 13 of 15

1. MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 6 INCHES. MINIMUM SIZE FOR STREET SEWER LINES SHALL BE 8 INCHES. 2. PIPE AND JOINT MATERIALS A. PVC SEWER PIPE AND FITTINGS USED FOR GRAVITY SYSTEMS SHALL CONFORM TO ASTM D-3034 OR ASTM F679

(SDR 35 MINIMUM). JOINTS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212, TYPE SHALL BE PUSH-ON, BELL AND SPIGOT. PVC PIPE USED FOR SEWER FORCEMAINS SHALL CONFORM TO ASTM D2241 OR D1784. FORCEMAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2 1/2 TIMES

B. PIPE AND JOINT MATERIALS

THE DESIGN TOTAL DYNAMIC HEAD.

1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:

A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS

A21.51 DUCTILE IRON PIPE, CENTRIFUGAL CAST IN METAL MOLDS OR SAND MOLDS FOR WATER OR OTHER LIQUIDS.

2. JOINTS SHALL BE OF MECHANICAL TYPE. JOINTS AND GASKETS SHALL CONFORM TO THE FOLLOWIGN STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUE:

A21.11 RUBBER GASKET JOINTS FOR CAST IRON PRESSURE PIPE FITTINGS.

3. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROMTHE JOB SITE. 4. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR FROM ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5. WHERE WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS INSTRUCTIONS USING A BOLTED, CLAMPED, OR EPOXY—CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE 6. PIPE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES.

THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7. TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECTED TO A LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

A. AN OBSERVATION TEE SHALL BE INSTALLED AS SHOWN AND, WHEN READY FOR TESTING, AN INFLATABLE BLADDER OR PLUG SHALL BE INSERTED JUST UPSTREAM FROM THE OPENING IN THE TEE. AFTER INFLATION, WATER SHALL BE INTRODUCED INTO THE SYSTEM ABOVE THE PLUG TO A HEIGHT OF 5 FEET ABOVE THE LEVEL OF THE PLUG.

B. THE PIPE SHALL BE LEFT EXPOSED AND LIBERALLY HOSED WITH WATER TO SIMULATE, AS NEARLY AS POSSIBLE, WET TRENCH CONDITIONS OR, IF THE TRENCH IS WET, THE GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. INSPECTIONS FOR LEAKS SHALL BE MADE THROUGH THE CLEAN OUT WITH A FLASHLIGHT.

C. DRY FLUORESCENCE DYE SHALL BE SPRINKLED INTO THE TRENCH OVER THE PIPE. IF THE TRENCH IS DRY, THE PIPE SHALL BE LIBERALLY HOSED WITH WATER, OR IF THE TRENCH IS WET, GROUND WATER SHALL BE PERMITTED TO RISE IN THE TRENCH OVER THE PIPE. OBSERVATION FOR LEAKS SHALL BE MADE IN THE FIRST DOWNSTREAM MANHOLE. LEAKAGE OBSERVED IN ANY OF THE ABOVE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE

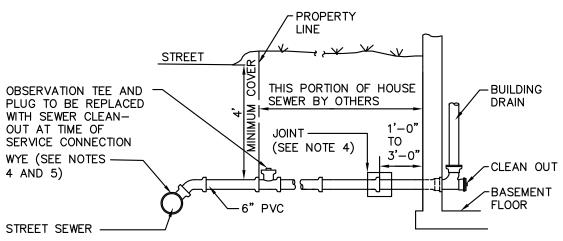
8. ILLEGAL CONNECTION: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS OR SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE, OR GROUND WATER, SHALL NOT BE PERMITTED.

9. WATER SERVICE SHOULD NOT BE LAID IN SAME TRENCH AS SEWER SERVICE. BUT WHEN NECESSARY, SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE SEWER AS SHOWN.

10. LOCATION: THE LOCATION OF THE TEE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS MATERIAL ROD OR PIPE SHALL BE PLACED OVER THE WYE TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

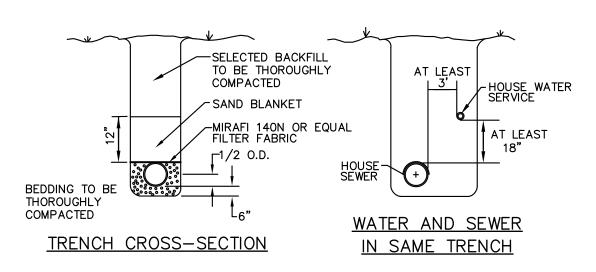
11. CHIMNEYS: NOT PERMITTED

12. UNLESS OTHERWISE NOTED ALL GRANULAR MATERIAL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 92% OF THE MODIFIED PROCTOR TEST.



APPROVED BACKFLOW PREVENTER TO BE INSTALLED HOUSE SEWER: 6" PVC SDR 35 MINIMUM SLOPE 1/8" PER FOOT

NOTE: HOUSE SEWER MAY ALSO BE LOCATED BELOW BASEMENT FLOOR WHEN REQUIRED.



SANITARY SEWER SERVICE DETAIL NOT TO SCALE

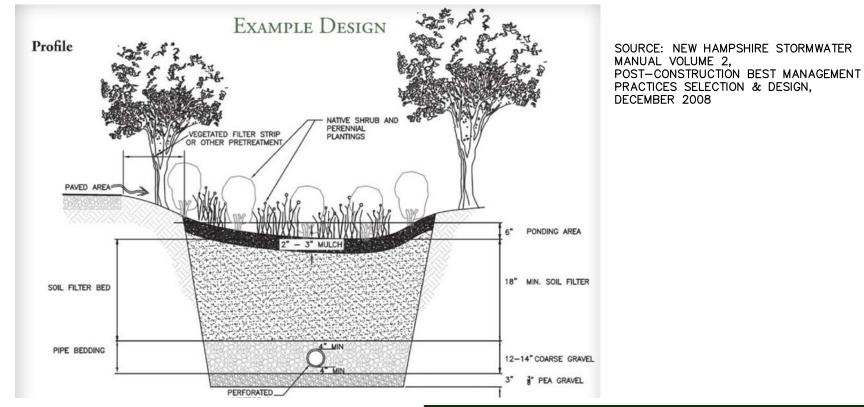


Table 4-4. Bioretention Filter Media **Gradation of Material** Component Material Percent by Weight Passing by Volume Standard Sieve Filter Media Option A ASTM C-33 concrete sand 50 to 55 Loamy sand topsoil, with fines 20 to 30 200 15 to 25 as indicated Moderately fine shredded bark or wood fiber mulch, with fines 20 to 30 200 < 5 as indicated Filter Media Option B Moderately fine shredded bark or wood fiber mulch, with fines 20 to 30 200 < 5 as indicated 70 to 80 85 to 100 70 to 100 oamy coarse sand 15 to 40 200 8 to 15

BIORETENTION SYSTEM — "RAIN GARDEN" DETAIL
NOT TO SCALE

