TOWN OF MILFORD, NH
OFFICE OF COMMUNITY DEVELOPMENT

1 UNION SQUARE, MILFORD, NH 03055 TEL: (603)249-0620 WEB: WWW.MILFORD.NH.GOV

STAFF MEMO

Date: August 16, 2019

To: Planning Board

From: Kellie Shamel, Town Planner

Subject: **Hammond Road, LLC (applicant/owner) –** Review for acceptance and consideration of final approval for a major site plan application to construct a 6,400 square foot office and storage building with associated site improvements. The parcel is located at 0 Nathaniel Drive in the Commercial Zoning District and Groundwater Protection District. Tax Map 43 Lot 69-1

BACKGROUND/PROPOSAL:
The applicant is before the Planning Board for a Major Site Plan application to construct a new building consisting of 4,000 square feet of office space and 2,400 square feet of storage space for a roofing and construction business known as "Vaillancourt Roofing & Construction". In addition to the building there will also be related parking, landscaping, lighting, and drainage improvements to the site.

EXISTING USE/CONDITIONS:
Map 43, Lot 69-1 is located at 0 Nathaniel Drive in the Commercial Zoning District and Groundwater Protection District. The subject property is approximately 5.026 acres in size and is proposed to be serviced by municipal water and sewer. It is abutted by vacant land to the north and east, Contemporary Automotive and JP Pest to the west and Route 101 to the south. The site is currently vacant land.

LOT AREA:
Proposed Tax Map 43, Lot 69-1 = 5.026 acres (218,927 sq.ft.)

APPLICATION STATUS:
The application is complete and ready to be accepted.

NOTICES:
Notices were sent to all property abutters on August 6, 2019.

WAIVERS:
No waivers are being requested.

ZONING DISTRICTS:
The proposed parcel lies within the Commercial 'C' district.
The intent of this District is to provide areas for those businesses, institutional, financial, governmental and compatible residential uses which constitute the commercial requirements of the Town.

The property meets the 20,000 square foot minimum size for lots serviced by municipal water and sewer and contains at least 150 linear feet of frontage on future road Stoneyard Drive (which is proposed to be a class V or better road). A professional office with storage office is a permitted use in the Commercial zoning district.

The property lies within the Groundwater Protection Level 2 District.

TRAFFIC AND ACCESS MANAGEMENT:
Access and egress is from proposed road Stoneyard Drive. Stoneyard Drive is proposed to extend off of existing Nathaniel Drive; Nathaniel Drive is accessed from South Street. The entrance located on the northwest portion of the property and allows for access and egress from the site. The site layout allows for full access to the parking areas and circulation around the building.

PARKING:
The project proposes to provide 22 total parking spaces whereas 15 spaces are required. The calculation is based on the square footage of the office space and square footage of the storage space as noted on sheet 2 of the plan.

4,000 square foot office space = 12 spaces required (3 spaces per 1,000 square feet)
2,400 square foot storage space = 3 spaces required (1 space per 1,000 square feet)
Total spaces required = 15 spaces.

DRAINAGE/STORMWATER MANAGEMENT:
The stormwater and drainage design has been reviewed by the Town Engineering Consultant, KV Partners. See attached review dated 8/12/19.

UTILITES:
The office building will be serviced by municipal water and sewer. Please confirm that Power to the site will be underground.

INTERDEPARTMENTAL REVIEWS:
Ambulance: No comments.

Assessing: Confirm whether the property will be located off of a new road called "Stoneyard Drive" per the plans or off of existing Nathaniel Drive. Will the Stoneyard Drive be paved? ***Addressed.***

Building Department: No comments.

Code Enforcement/ Health: No comments.

Conservation Commission: See letter from Conservation Commission dated 8/15/19.

Environmental Programs/Stormwater: See letter from the Town engineering consultant, KV Partners dated 8/12/19.

Fire Department: No comments.

Heritage Commission: The Heritage Commission met on 8/14/19. There were no serous objections just that we are interested in the stone walls to stay as they are to the best extent possible as this speaks to Milford's early farming/pasture heritage. It's hard to tell these days but Milford was once mostly rolling pasture land dotted with farm houses. The earlier phases of industry took much of the timber for building materials. The lumber industry came back and many farms remain too.

Police Department: No comments.

Public Works: No comments.

Water/Sewer Utilities: No comments.

Community Development / Planning:

1. Sheet 1. Please confirm whether or not Stoneyard Drive & the internal site will be paved.
2. Sheet 2. Parking Requirements Note 7 states the garage/storage area to be 5,100 square feet however the plan indicates the garage area is 2,400 square feet. Please provide clarification on the square footage of the garage/storage area.
3. Sheet 2. If the garage/storage area is in fact 2,400SF please correct the calculation to state 2,400 SF / 1 per 1,000 SF = 2.4 spaces and update the Parking required to 15 spaces.
4. Sheet 2. Please correct Note 10 to state Groundwater Protection level 2 District.
5. Sheet 2. Will any improvements be made to the existing culvert located under existing drive Tote Road? Please explain why or why not.

6. Sheet 3. Please correct the note on the plan that states "Buffer #***". ***Addressed.***
7. Sheet 3. Provide a legend/key to define all symbology on the plan. ***Addressed.***
8. Sheet 4. Pursuant to Section 6.08.8.A of the Development Regulations, please confirm that all plant stock meets the ANSI Z60.1 standard.
9. Please confirm that power on site will be located underground.
10. Please clarify on-site flow of traffic. Add directional arrows or any appropriate signage etc.
11. General Comment – will the general public be frequenting the site?
12. Please add a note detailing applicable Impact Fees.
13. Groundwater Protection District. Zoning Ordinance Section 6.01.3.C.2 - Please confirm the amount of impervious surface that will result from this project.
14. Signage. If a sign is intended to be located on site please provide a Signage Plan per the Development Regulations Section 6.018.

STAFF RECOMMENDATIONS:

The applicant should be prepared to address the comments raised by the Planning Board, Conservation Commission, Heritage Commission, Town Consultants, Staff, and public pertaining to the Site Plan. If the Board is satisfied with the information/responses from the applicant and finds that the remaining concerns can be addressed with staff, staff would recommend a conditional approval.

Aerial Photograph of the Subject Property:

Street Level Photo of Nathaniel Drive from South Street:

KV Partners LLC
P.O. Box 432, New Boston, NH 03070 (603) 413-6650

August 12, 2019

Lincoln Daley, Community Development Director
Town of Milford
1 Union Square
Milford, NH 03055

Re: Adam Vaillancourt Roofing Site Plan (Lot 43-69-1) – Drainage Review

Dear Mr. Daley:

We reviewed a nine-sheet plan set dated July 17, 2019 and the Drainage Report dated July 22, 2019 both prepared by Sandford Surveying and Engineering, Inc. in accordance with our agreement with the Town. As directed by the Town, this review was limited to the drainage elements only. Based on that review we offer the following comments:

1. A test pit location was noted on the plans in the stormwater basin, but the test pit data was not found. Please provide the test pit data so the basin review can be completed.

2. At the top of the treatment swale a symbol with a double circle is shown. Please clarify what is proposed at this location.

3. The stormwater basin detail depicts stone over the entire basin bottom, but the plan only shows stone in limited locations. Please revise the stormwater basin detail or plan to clarify the design intent.

4. The proposed grading shown on the plans for the treatment swales does not match the grades indicated in the calculations. Please clarify.

5. Clarify how the stormwater flow from the pavement will be conveyed from the gutter (formed by the curb) to the treatment swale.

If you have any questions or need any additional information, please feel free to contact me at 603-413-6650 or on my cell phone at 603-731-1562 or by email at MVignale@kvpllc.com.

Sincerely,
KV Partners LLC

Michael S. Vignale, P.E.
Principal Engineer

Town Hall
1 Union Square
Milford, NH 03055-4240
(603) 249-0628
Fax (603) 673-2273
www.milford.nh.gov
conservation@milford.nh.gov

Town of Milford
CONSERVATION COMMISSION

MEMORANDUM

August 15, 2019

To: Milford Planning Board

Re: Interdepartmental Review Map 43 Lot 69-1
Vaillancourt Roofing Site Plan

To the Board,

The Milford Conservation Commission (MCC) reviewed this plan (dated July 17) at their August 8, 2019 meeting. The Commission has some comments.

1. The MCC would like to visit the site. This is a substantial project with long-term impacts to the surrounding landscape.

2. The wetland buffer isn't well marked on the plan. The plan should include better symbology and a legend to identify the symbology.

3. Sheet 3 of 9 appears to have some typos, which lends uncertainty to the remainder of the plan which seems to be missing data and a legend to identify the symbology.

4. It appears to the Commission members that the plan could be altered so that there would be no need for a buffer impact. What alternatives were considered?

5. The project is located in the Level I and Level II Groundwater Protection District. The members couldn't find numbers on the plan to indicate the percentage of impervious surface that will result from this project.

6. Has there been an assessment of invasive species on this site? What plans are there to mitigate/remove the unintentional distribution of invasives as a result of the soil disturbance inherent in this plan.

7. This parcel is part of a remaining pocket of undeveloped land north of the bypass. Would the applicant consider leaving a green corridor across the property to enable wildlife to move more safely across the landscape?

The Commission appreciates the opportunity to review this application. We look forward to seeing a well-designed project that improves the natural resource functionality of the site.

Very Respectfully,

Chris Costantino | Coordinator
Milford Conservation Commission

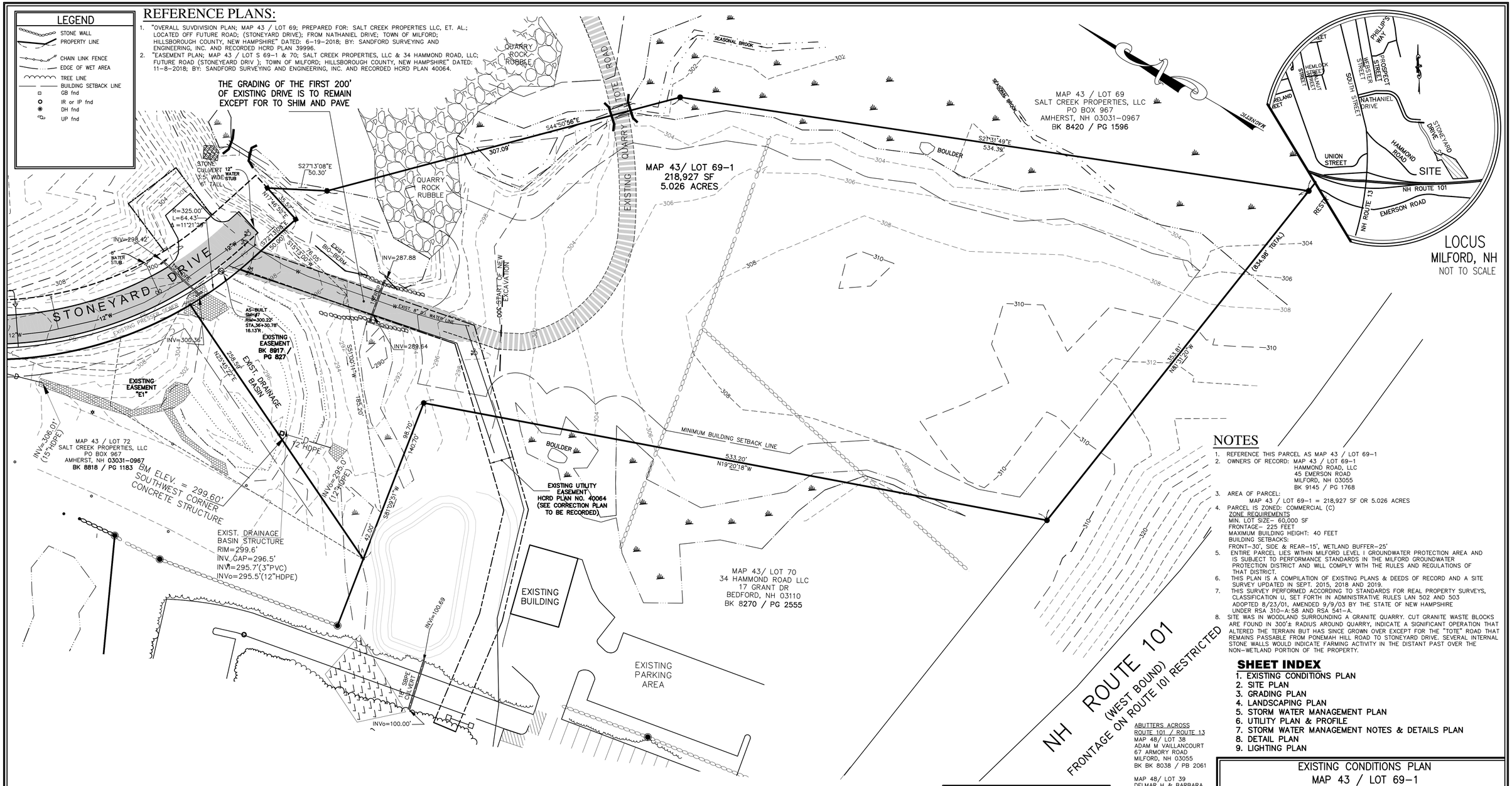
LEGEND

- STONE WALL
- PROPERTY LINE
- CHAIN LINK FENCE
- EDGE OF WET AREA
- TREE LINE
- BUILDING SETBACK LINE
- GB fnd
- IR or IP fnd
- DH fnd
- UP fnd

REFERENCE PLANS:

1. "OVERALL SUVDIVISION PLAN; MAP 43 / LOT 69; PREPARED FOR: SALT CREEK PROPERTIES LLC, ET. AL.; LOCATED OFF FUTURE ROAD; (STONEYARD DRIVE); FROM NATHANIEL DRIVE; TOWN OF MILFORD; HILLSBOROUGH COUNTY, NEW HAMPSHIRE" DATED: 6-19-2018; BY: SANDFORD SURVEYING AND ENGINEERING, INC. AND RECORDED HCRD PLAN 39996.
2. "EASEMENT PLAN; MAP 43 / LOT S 69-1 & 70; SALT CREEK PROPERTIES, LLC & 34 HAMMOND ROAD, LLC; FUTURE ROAD (STONEYEARD DRIV); TOWN OF MILFORD; HILLSBOROUGH COUNTY, NEW HAMPSHIRE" DATED: 11-8-2018; BY: SANDFORD SURVEYING AND ENGINEERING, INC. AND RECORDED HCRD PLAN 40064.

THE GRADING OF THE FIRST 200' OF EXISTING DRIVE IS TO REMAIN EXCEPT FOR TO SHIM AND PAVE



LOCUS
MILFORD, NH
NOT TO SCALE

NOTES

1. REFERENCE THIS PARCEL AS MAP 43 / LOT 69-1
2. OWNERS OF RECORD: MAP 43 / LOT 69-1
   HAMMOND ROAD, LLC
   45 EMERSON ROAD
   MILFORD, NH 03055
   BK 9145 / PG 1768
3. AREA OF PARCEL:
   MAP 43 / LOT 69-1 = 218,927 SF OR 5.026 ACRES
4. PARCEL IS ZONED: COMMERCIAL (C)
   ZONE REQUIREMENTS
   MIN. LOT SIZE- 60,000 SF
   FRONTAGE- 225 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   BUILDING SETBACKS:
   FRONT-30', SIDE & REAR-15', WETLAND BUFFER-25'
5. ENTIRE PARCEL LIES WITHIN MILFORD LEVEL I GROUNDWATER PROTECTION AREA AND IS SUBJECT TO PERFORMANCE STANDARDS IN THE MILFORD GROUNDWATER PROTECTION DISTRICT AND WILL COMPLY WITH THE RULES AND REGULATIONS OF THAT DISTRICT.
6. THIS PLAN IS A COMPILATION OF EXISTING PLANS & DEEDS OF RECORD AND A SITE SURVEY UPDATED IN SEPT. 2015, 2018 AND 2019.
7. THIS SURVEY PERFORMED ACCORDING TO STANDARDS FOR REAL PROPERTY SURVEYS, CLASSIFICATION U, SET FORTH IN ADMINISTRATIVE RULES LAN 502 AND 503 ADOPTED 8/23/01, AMENDED 9/9/03 BY THE STATE OF NEW HAMPSHIRE UNDER RSA 310-A:58 AND RSA 541-A.
8. SITE WAS IN WOODLAND SURROUNDING A GRANITE QUARRY. CUT GRANITE WASTE BLOCKS ARE FOUND IN 300'± RADIUS AROUND QUARRY, INDICATE A SIGNIFICANT OPERATION THAT ALTERED THE TERRAIN BUT HAS SINCE GROWN OVER EXCEPT FOR THE "TOTE" ROAD THAT REMAINS PASSABLE FROM PONEMAH HILL ROAD TO STONEYARD DRIVE. SEVERAL INTERNAL STONE WALLS WOULD INDICATE FARMING ACTIVITY IN THE DISTANT PAST OVER THE NON-WETLAND PORTION OF THE PROPERTY.

SHEET INDEX

ABUTTERS ACROSS ROUTE 101 / ROUTE 13
MAP 48/ LOT 38
ADAM M VAILLANCOURT
67 ARMORY ROAD
MILFORD, NH 03055
BK BK 8038 / PB 2061

MAP 48/ LOT 39
DELMAR H & BARBARA PATTON
59 EMERSON ROAD
MILFORD, NHH 03055

WETLAND CERTIFICATION:

EARL J SANDFORD, CERTIFIED WETLAND SCIENTIST #209, OF SANDFORD SURVEYING AND ENGINEERING, INC, 597 NEW BOSTON ROAD, BEDFORD, NH, PERFORMED THE DELINEATION ON APRIL 18, 2019 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987). VEGETATION STATUS DETERMINED FROM THE NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: 1988 NEW HAMPSHIRE, USFWS, 1988. HYDRIC SOILS WERE DETERMINED USING THE CRITERIA IN FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VER. III, APRIL 2004.

STATE OF NEW HAMPSHIRE · EARL SANDFORD · No. 209 · CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE · EARL J. SANDFORD No. 7840 · LICENSED PROFESSIONAL ENGINEER

PLANNING BOARD
TOWN OF MILFORD, NEW HAMPSHIRE

SITE PLAN REVIEW: # _____

APPROVED: DATE: _____

SIGNED _____ CHAIRMAN DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

CERTIFICATION OF BOUNDARY PRECISION

I HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 700 · EARL J. SANDFORD · SIGNATURE

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-8-2019	ADDRESS REVIEW COMMENTS (REV'S ON SUBSEQUENT SHEETS)	EJS

GRAPHIC SCALE

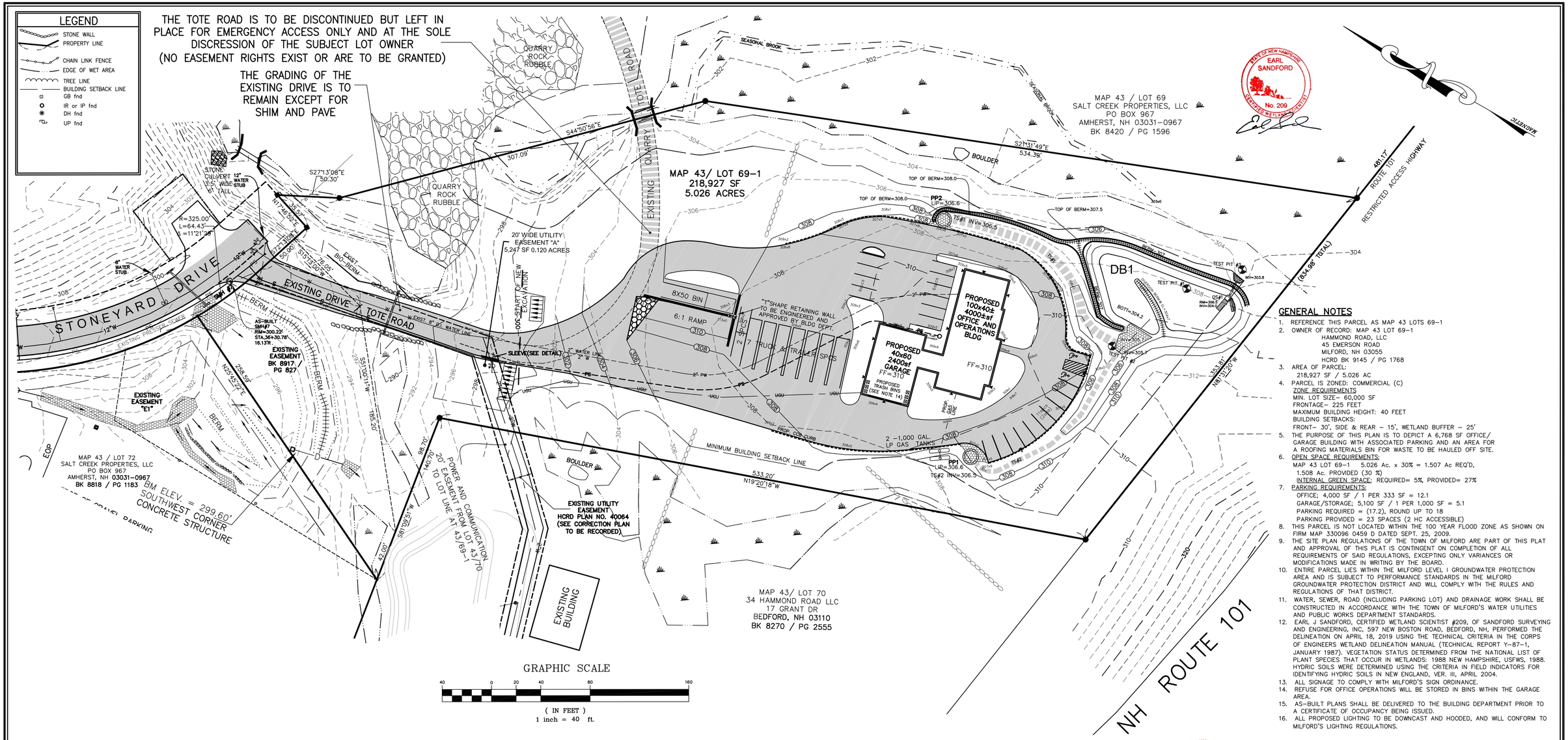
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

EXISTING CONDITIONS PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472-2265 FAX (603) 472-6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 40'	DATE: 7/17/19	SHEET 1 OF 9



GENERAL NOTES

1. REFERENCE THIS PARCEL AS MAP 43 LOTS 69-1
2. OWNER OF RECORD: MAP 43 LOT 69-1
   HAMMOND ROAD, LLC
   45 EMERSON ROAD
   MILFORD, NH 03055
   HCRD BK 9145 / PG 1768
3. AREA OF PARCEL:
   218,927 SF / 5.026 AC
4. PARCEL IS ZONED: COMMERCIAL (C)
   ZONE REQUIREMENTS
   MIN. LOT SIZE- 60,000 SF
   FRONTAGE- 225 FEET
   MAXIMUM BUILDING HEIGHT: 40 FEET
   BUILDING SETBACKS:
   FRONT- 30', SIDE & REAR - 15', WETLAND BUFFER - 25'
5. THE PURPOSE OF THIS PLAN IS TO DEPICT A 6,768 SF OFFICE/ GARAGE BUILDING WITH ASSOCIATED PARKING AND AN AREA FOR A ROOFING MATERIALS BIN FOR WASTE TO BE HAULED OFF SITE.
6. OPEN SPACE REQUIREMENTS:
   MAP 43 LOT 69-1 5.026 Ac. x 30% = 1.507 Ac REQ'D,
   1.508 Ac. PROVIDED (30 %)
   INTERNAL GREEN SPACE: REQUIRED= 5%, PROVIDED= 27%
7. PARKING REQUIREMENTS:
   OFFICE; 4,000 SF / 1 PER 333 SF = 12.1
   GARAGE/STORAGE; 5,100 SF / 1 PER 1,000 SF = 5.1
   PARKING REQUIRED = (17.2), ROUND UP TO 18
   PARKING PROVIDED = 23 SPACES (2 HC ACCESSIBLE)
8. THIS PARCEL IS NOT LOCATED WITHIN THE 100 YEAR FLOOD ZONE AS SHOWN ON FIRM MAP 330096 0459 D DATED SEPT. 25, 2009.
9. THE SITE PLAN REGULATIONS OF THE TOWN OF MILFORD ARE PART OF THIS PLAT AND APPROVAL OF THIS PLAT IS CONTINGENT ON COMPLETION OF ALL REQUIREMENTS OF SAID REGULATIONS, EXCEPTING ONLY VARIANCES OR MODIFICATIONS MADE IN WRITING BY THE BOARD.
10. ENTIRE PARCEL LIES WITHIN THE MILFORD LEVEL I GROUNDWATER PROTECTION AREA AND IS SUBJECT TO PERFORMANCE STANDARDS IN THE MILFORD GROUNDWATER PROTECTION DISTRICT AND WILL COMPLY WITH THE RULES AND REGULATIONS OF THAT DISTRICT.
11. WATER, SEWER, ROAD (INCLUDING PARKING LOT) AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF MILFORD'S WATER UTILITIES AND PUBLIC WORKS DEPARTMENT STANDARDS.
12. EARL J SANDFORD, CERTIFIED WETLAND SCIENTIST #209, OF SANDFORD SURVEYING AND ENGINEERING, INC, 597 NEW BOSTON ROAD, BEDFORD, NH, PERFORMED THE DELINEATION ON APRIL 18, 2019 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987). VEGETATION STATUS DETERMINED FROM THE NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS: 1988 NEW HAMPSHIRE, USFWS, 1988. HYDRIC SOILS WERE DETERMINED USING THE CRITERIA IN FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VER. III, APRIL 2004.
13. ALL SIGNAGE TO COMPLY WITH MILFORD'S SIGN ORDINANCE.
14. REFUSE FOR OFFICE OPERATIONS WILL BE STORED IN BINS WITHIN THE GARAGE AREA.
15. AS-BUILT PLANS SHALL BE DELIVERED TO THE BUILDING DEPARTMENT PRIOR TO A CERTIFICATE OF OCCUPANCY BEING ISSUED.
16. ALL PROPOSED LIGHTING TO BE DOWNCAST AND HOODED, AND WILL CONFORM TO MILFORD'S LIGHTING REGULATIONS.

ABUTTERS ACROSS
ROUTE 101 / ROUTE 13
MAP 48/ LOT 38
ADAM M VAILLANCOURT
67 ARMORY ROAD
MILFORD, NH 03055
BK BK 8038 / PB 2061

MAP 48/ LOT 39
DELMAR H & BARBARA PATTON
59 EMERSON ROAD
MILFORD, NHH 03055

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-8-2019	MOVED DRAINAGE OUT OF 25' BUFFER, ALT O.S.	EJS

OWNERS APPROVAL

I, THE UNDERSIGNED, HAVE REVIEWED THIS PLAN AND DO HEREBY AGREE THAT THIS PLAN REPRESENTS OUR LAND AS WE KNOW IT, AND THAT ALL PROPOSED IMPROVEMENTS SHOWN HEREON MEET MY APPROVAL.

OWNER _____ DATE _____

PLANNING BOARD
TOWN OF MILFORD, NEW HAMPSHIRE

SITE PLAN REVIEW: # _____

APPROVED: DATE: _____

SIGNED _____ CHAIRMAN DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

SIGNED _____ MEMBER DATE

STATE OF NEW HAMPSHIRE · EARL J SANDFORD No. 7840 LICENSED PROFESSIONAL ENGINEER

CERTIFICATION OF BOUNDARY PRECISION

I HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND AND HAS A MAXIMUM ERROR OF CLOSURE OF ONE PART IN TEN THOUSAND ON ALL PROPERTY LINES WITHIN AND BORDERING THE SUBJECT PROPERTY.

STATE OF NEW HAMPSHIRE · No. 700 · EARL J SANDFORD · LAND SURVEYOR · SIGNATURE

SITE PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472-2265 FAX (603) 472-6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 40'	DATE: 7/17/19	SHEET 2 OF 9

STATE OF NEW HAMPSHIRE
EARL SANDFORD
No. 209
CERTIFIED WETLAND SCIENTIST

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-8-2019	MOVED DRAINAGE OUT OF 25' BUFFER, ALT O.S.	EJS
2	8-15-19	COMMENTS PER TOWN AND REVEIW ENGINEER	LPN

STATE OF NEW HAMPSHIRE
EARL J. SANDFORD
No. 7849
LICENSED
PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
No. 700
EARL J. SANDFORD
LICENSED LAND SURVEYOR
SIGNATURE

GRADING PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
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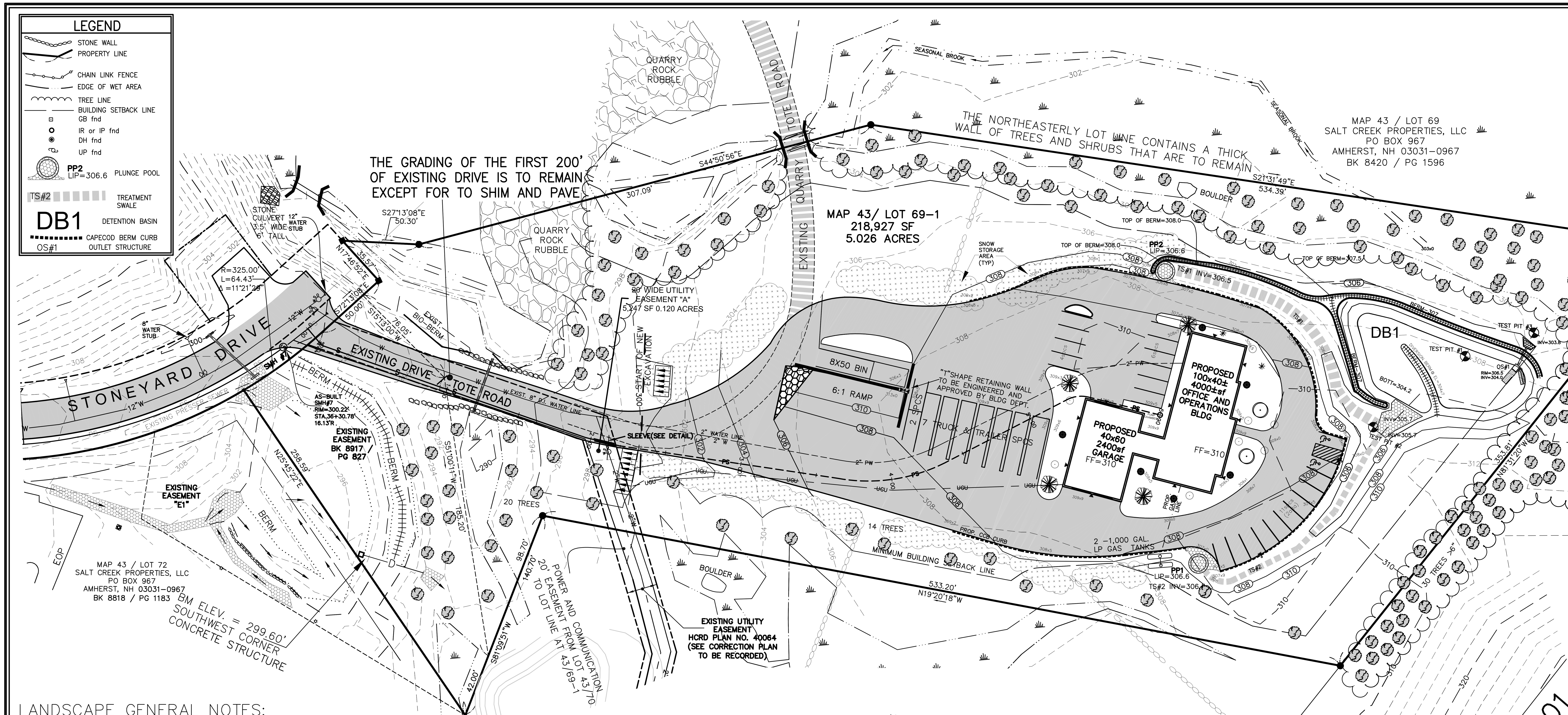
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: PMS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 20'	DATE: 7/17/19	SHEET 3 OF 9



PLANT SCHEDULE

- 19± CONIFEROUS TREE- WHITE PINE (PINUS STROBUS) [OR PURPLE LILAC (PROMOTING THE NH STATE FLOWER AND MATCHING EXISTING LILAC TREES ALONG HAMMOND ROADHEMLOCK OR EQUAL CONIFEROUS TREE]
- 8± CRABAPPLE-AMERICAN CRABAPPLE (MALUS CORONARIA) [OR PURPLE LILAC (PROMOTING THE NH STATE FLOWER AND MATCHING EXISTING LILAC TREES ALONG HAMMOND ROADOR] OR EQUAL
- 9± SHRUB-PJM RHODODENDRON(RHODODENDRON PJM) OR EQUAL
- 7± SHRUB-MISS KIM LILAC (SYRINGA PATULA "MISS KIM") OR EQUAL
- 16± SHRUB-ERIE VIBURNUM (VIBURNUM D. "ERIE") OR EQUAL
- EXISTING TREE > 6" DIA EXISTING TREES SHOWN ARE TO REMAIN. IF A TREE IS TAKEN WHILE UNDER CONSTRUCTION REPLACE THE TREE WITH NEW PLANTING, COMPLIANT WITH 6.08.8c2.

LANDSCAPE GENERAL NOTES:

1.) ALL PLANTING BEDS SHALL BE MULCHED WITH 2"-3" OF SHREDDED, DARK PINE BARK MULCH. SAMPLE OF BARK MULCH SHALL BE PROVIDED AND APPROVED BY LANDSCAPE ARCHITECT.

2.) ALL INDIVIDUALLY PLANTED TREES SHALL BE SURROUNDED WITH 3' DIAMETER MULCH BED.

3.) ALL STRING, TAGS AND FLAGGING ARE TO BE REMOVED FROM PLANT MATERIAL.

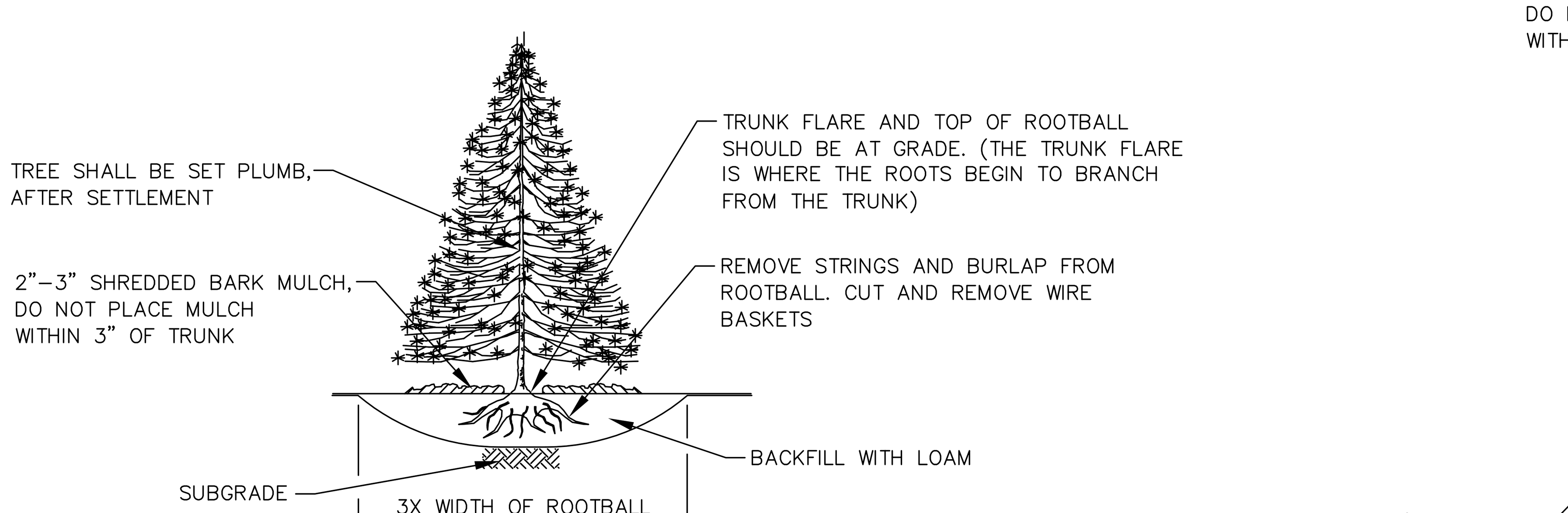
4.) ALL SEEDED TURF AREAS TO HAVE A MINIMUM 4' TOPSOIL BLANKET.

5.) PLANT LOCATIONS ARE TO BE STAKED FOR APPROVAL BY THE LANDSCAPER AND THE ENGINEER PRIOR TO PLANTING. NO SUBSTITUTIONS FOR PLANT MATERIAL ARE TO BE MADE WITHOUT THE CONSENT OF THE LANDSCAPER AND THE ENGINEER.

GRAPHIC SCALE

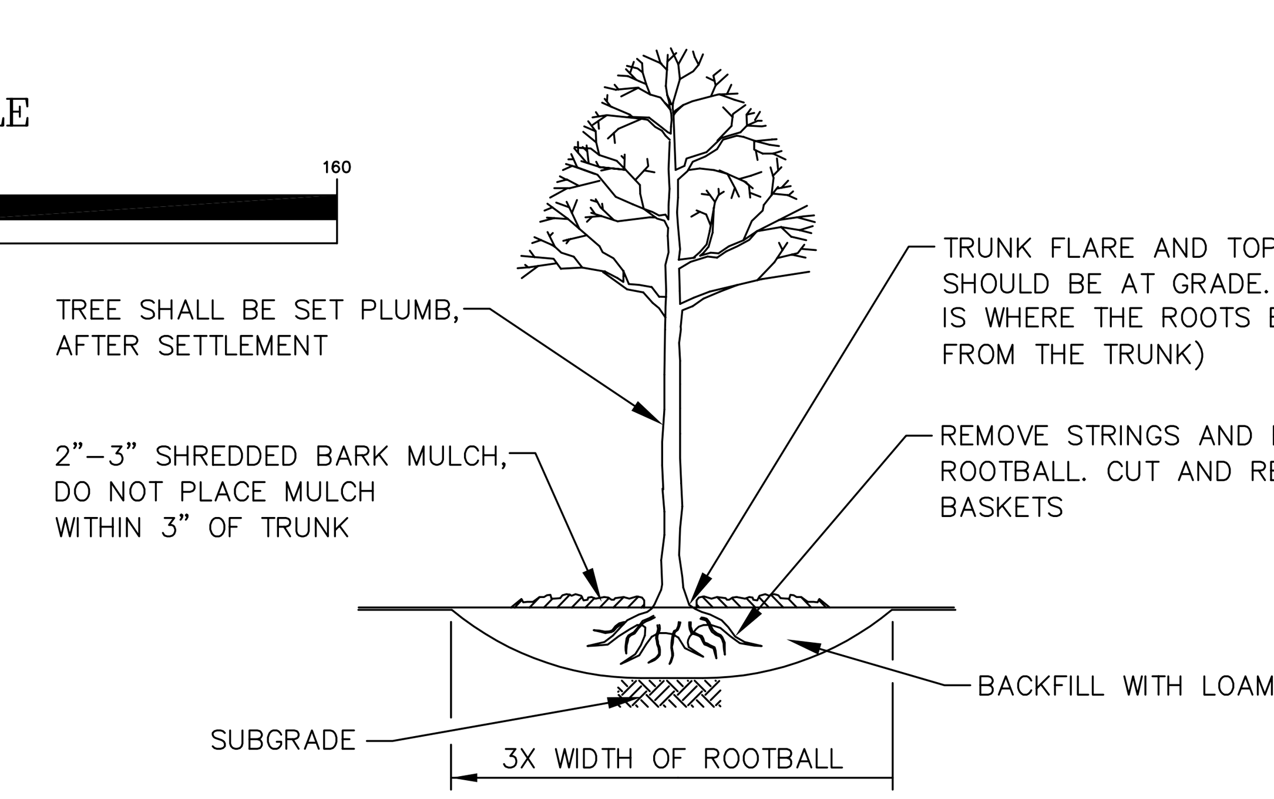
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.



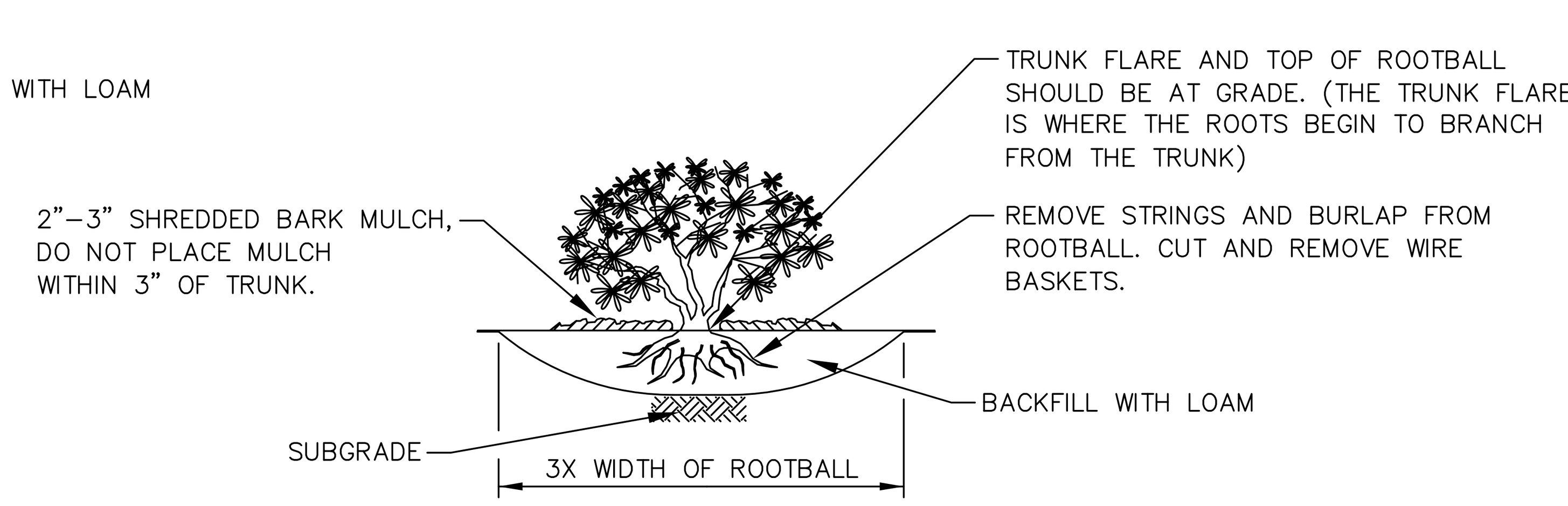
EVERGREEN TREE PLANTING

NTS



TREE PLANTING

NTS



SHRUB PLATING

NTS

PLANTING SCHEDULE

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
4	ABIES FRASERI	FRASER FIR	5-6'	B&B
2	MALUS CORONARIA	AMERICAN CRAB APPLE	2 1/2 - 3" C.	B&B
8	RHODODENDRON PJM	PJM RHODODENDRON	2 - 2 1/2'	B&B
2	VIBURNUM D. "ERIE"	ERIE VIBURNUM	3-4'	B&B
6	SYRINGA PATULA"MISS KIM"	MISS KIM LILAC	2-3'	B&B

LANDSCAPING NOTES

1. PLANTINGS SHALL CONFORM TO THE TOWN OF MILFORD SITE PLAN REGULATIONS AS ADMINISTERED BY PLANNING DIRECTOR/STAFF.
2. PLANTINGS SHOWN HEREON ARE SUBJECT TO REVISIONS UPON MUTUAL CONSENT BETWEEN THE TOWN OF MILFORD CODE ENFORCEMENT OFFICER AND THE DEVELOPER
3. PLANTINGS ALONG THE SOUTHERN LOT LINE ARE TO BE INSTALLED IN SUCH A WAY AS TO BEAUTIFY THE PREMISES RELATIVE TO ADJACENT PARCELS. PLANTINGS ARE TO COMPLIMENT EXISTING PLANTINGS ON ABUTTING PARCELS. COORDINATE TREE DENSITY & LOCATIONS WITH PLANNING DIRECTOR.
4. ALL REGRADED SURFACES SHALL HAVE A MINIMUM OF FOUR (4") INCHES OF LOAM EVENLY DISTRIBUTED TO ALL DISTURBED AREA OF THE DEVELOPMENT AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
5. DECIDUOUS TREES SHALL HAVE AT LEAST A TWO (2") INCH CALIPER AT PLANTING. SIZE OF EVERGREENS AND SHRUBS SHALL BE A MIN. OF 5 GAL. IN SIZE, OR OF COMPARABLE SIZE. ALL TREES, SHRUBS, AND GROUND COVER SHALL BE PLANTED ACCORDING TO ACCEPTED HORTICULTURAL STANDARDS. DEAD AND DYING PLANTS SHALL BE REPLACED BY THE DEVELOPER DURING THE FOLLOWING PLANTING SEASON.
6. THE PLANT SPECIES SELECTED SHOULD BE HARDY FOR THE PARTICULAR AREA IN WHICH IT IS PROPOSED.
7. THE OWNER AND THEIR AGENT SHALL BE RESPONSIBLE FOR PROVIDING, PROTECTING, AND MAINTAINING ALL LANDSCAPING IN HEALTHY AND GROWING CONDITION, REPLACING IT WHEN NECESSARY TO INSURE CONTINUOUS CONFORMANCE WITH THESE GUIDELINES. IN ADDITION, THOSE AREAS SHALL BE KEPT FREE OF ALL DEBRIS, RUBBISH, WEEDS, AND TALL GRASS.
8. GREEN AREA PERCENTAGES PROPOSED ARE GREATER THAN 30% BOTH COLLECTIVELY AND INDIVIDUALLY FOR THE THREE LOTS (SEE TABLE).
9. CONTRACTOR TO STOCKPILE LOAM AND SPREAD TO A MINIMUM THICKNESS OF 6 INCHES IN LANDSCAPED AREAS AND A MINIMUM THICKNESS OF 4 INCHES ON ALL DISTURBED AREAS AND HYDRO SEED OR MULCH.
10. EXISTING TREES ALONG BOUNDARY ARE TO BE RETAINED UNLESS UNSAFE OR NOT VIABLE.
11. 1 TREE / SHRUB / BUSH FOR EVERY 5' OF BUILDING FRONT (20 REQ'D, 20 PROVIDED).
12. INTERIOR LANDSCAPING OR GREEN SPACE ENCOMPASSING NOT LESS THAT 5% OF THE TOTAL PARKING AREA SHALL BE REQUIRED.
13. A MINIMUM OF ONE TREE FOR EVERY FIFTEEN PARKING SPACES SHALL BE PROVIDED.
14. A LANDSCAPED STRIP AT LEAST 6' IN WIDTH SHALL BE LOCATED BETWEEN THE PAVED AREA AND THE ABUTTING PROPERTY LINES OR PUBLIC RIGHT-OF-WAY EXCEPT WHERE DRIVEWAY OR OTHER OPENINGS MAY BE REQUIRED. AT LEAST 1 TREE FOR EACH 30 FEET OF LANDSCAPED STRIP SHALL BE PROVIDED.
15. INTERNAL GREEN SPACE:
    REQUIRED= 5% PROVIDED= 7%

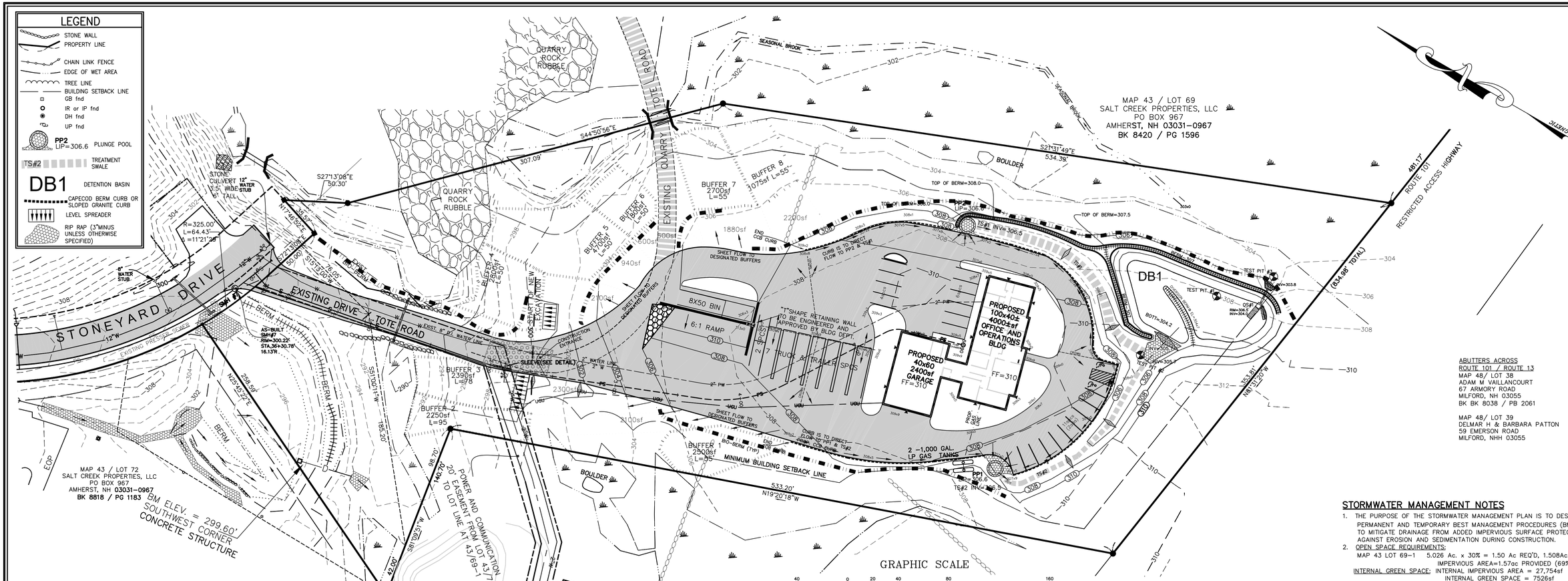
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-8-2019	MOVED DRAINAGE OUT OF 25' BUFFER, ALT O.S.	EJS
2	8-15-19	COMMENTS PER TOWN AND REVEIW ENGINEER	LPN

LANDSCAPE PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472-2265 FAX (603) 472-6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 40'	DATE: 7/17/19	SHEET 4 OF 9



ABUTTERS ACROSS ROUTE 101 / ROUTE 13
MAP 48 / LOT 38
ADAM M VAILLANCOURT
67 ARMORY ROAD
MILFORD, NH 03055
BK BK 8038 / PB 2061

MAP 48/ LOT 39
DELMAR H & BARBARA PATTON
59 EMERSON ROAD
MILFORD, NHH 03055

STORMWATER MANAGEMENT NOTES

1. THE PURPOSE OF THE STORMWATER MANAGEMENT PLAN IS TO DESIGN PERMANENT AND TEMPORARY BEST MANAGEMENT PROCEDURES (BMP'S) TO MITIGATE DRAINAGE FROM ADDED IMPERVIOUS SURFACE PROTECT AGAINST EROSION AND SEDIMENTATION DURING CONSTRUCTION.
2. OPEN SPACE REQUIREMENTS:
   MAP 43 LOT 69-1 5.026 Ac. x 30% = 1.50 Ac REQ'D, 1.508Ac.
   IMPERVIOUS AREA=1.57ac PROVIDED (69%)
   INTERNAL GREEN SPACE: INTERNAL IMPERVIOUS AREA = 27,754sf
   INTERNAL GREEN SPACE = 7526sf
   REQUIRED= 5% PROVIDED= 27%
3. STORMWATER TREATMENT IS PROVIDED BY:
   A. TREATMENTS SWALES TS1 & TS2,
   B. NATURAL BUFFERS WITH GREATER THAN 50' TO WETLAND OR LOT LINES (THESE BUFFERS ARE SUBJECT TO CONVERSION TO SITE EXPANSION IN THE DISTANT FUTURE AND AT THAT TIME ADDITIONAL TREATMENT SWALES OR OTHER ALTERNATIVE MITIGATION WILL BE REQUIRED.
4. STORMWATER DETENTION IS PROVIDED BY THE DETENTION POND DP1
5. EROSION AND SEDIMENTATION PROTECTION IS PROVIDED BY THE BIO-BERM PLACED IN DOWNSLOPE PERIMETER AREAS AND BY STONE CHECK DAMS.
6. PROTECTIONS ARE TO MEET ALL REQUIREMENTS OF THE THE TOWN OF MILFORD AND NHDES-AoT SPECIFICATIONS.
7. THE AREA OF DISTURBANCE IS 97,667sf (JUST BELOW THE 100,000sf NHDES AoT THRESHOLD.

TEST PIT DATA

STONEYARD DRIVE, MILFORD TAX LOT 43/69-1

TEST PIT NO. 1 (DB1) 7/19/2019 BY EARL SANDFORD NH-1203 GROUND ELEV=307
0" – 6" 10YR 3/3 DARK BROWN, FINE SANDY LOAM FILL, TOPSOIL, FRIABLE, GRANULAR
6"– 20" 10YR 6/8 BROWNISH YELLOW, FINE SANDY LOAM, FRIABLE, GRANULAR
20" – 96" 10YR 7/4 VERY PALE BROWN, LOAMY SAND, FIRM IN PLACE FRIABLE IN HAND, MASSIVE
ROOTS TO 60"
HOLE TERMINATED AT 96" = 8' = ELEV 299.0
NO WATER OBSERVED TO 8'
ESHWT: 60" EL 302.0
PERC RATE = 8 MIN/INCH IN NATURAL B AND C HORIZON

TEST PIT NO. 2 (TS1&TS2) 7/19/2019 BY EARL SANDFORD NH-1203 GROUND ELEV=309.5
0" – 6" 10YR 3/3 DARK BROWN, FINE SANDY LOAM FILL, TOPSOIL, FRIABLE, GRANULAR
6"– 22" 10YR 5/8 YELLOWISH BROWN, FINE SANDY LOAM, FRIABLE, GRANULAR
20" – 96" 10YR 7/4 VERY PALE BROWN, LOAMY SAND, FIRM IN PLACE FRIABLE IN HAND, MASSIVE
ROOTS TO 60"
HOLE TERMINATED AT 96" = 8' = ELEV 301.5
NO WATER OBSERVED TO 8'
ESHWT: 60" EL 304.5
PERC RATE = 8 MIN/INCH IN NATURAL B AND C HORIZON

TEST PIT NO. 3 (DB1) 8/14/2019 BY EARL SANDFORD NH-1203 GROUND ELEV=304
0" – 10" 10YR 3/3 DARK BROWN, FINE SANDY LOAM FILL, TOPSOIL, FRIABLE, GRANULAR
10"– 20" 10YR 5/3 BROWN, FINE SANDY LOAM, FRIABLE, GRANULAR
20"– 36" 2.5Y 4/4 OLIVE BROWN (WITH DISTINCT LENSES OF 5YR 5/8 YELLOWISH RED AT 24"), LOAMY SAND, FIRM IN PLACE FRIABLE IN HAND, MASSIVE
36"– 84" 10YR 7/4 VERY PALE BROWN, GRAVELY LOAMY SAND, FRIABLE, SINGLE GRAIN&MASSIVE
ROOTS TO 30"
HOLE TERMINATED AT 84" = 7' = ELEV 297.0
NO WATER OBSERVED, NO LEDGE OBSERVED
ESHWT: 24" EL 302.0 (ESHWT APPEARS AS PERCHED, WELL DRAINING GRAVELEY SOIL BELOW)
PERC RATE = 10 MIN/INCH IN NATURAL B AND 6 MIN/INCH IN C HORIZON

REVISIONS

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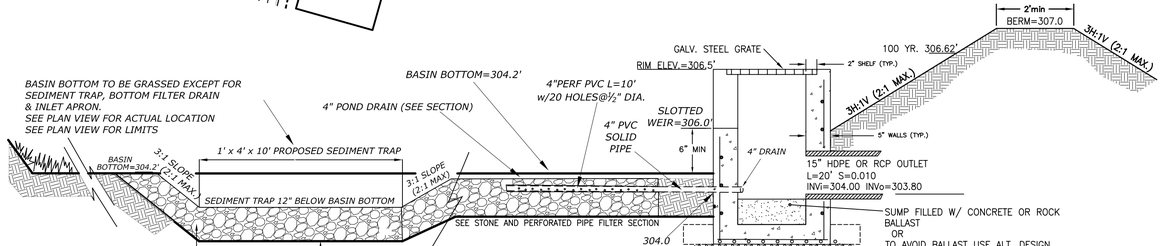
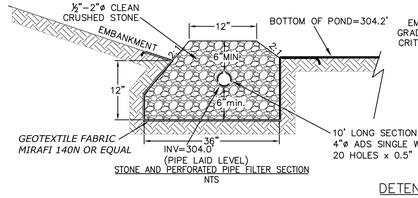
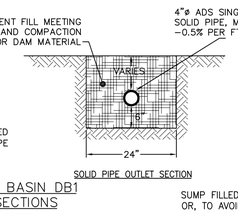


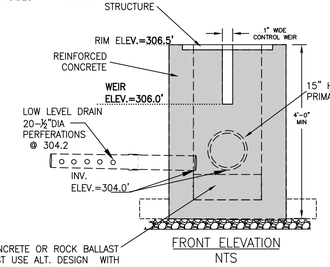
DETENTION BASIN DB1 OUTLET STRUCTURE PROFILE
NOT TO SCALE (NTS)





DETENTION BASIN DB1 DRAIN SECTIONS
SCALE: NONE

PLAN VIEW
NTS



FRONT ELEVATION
NTS

DB1 OUTLET STRUCTURE
SCALE: NONE

SUMP FILLED W/ CONCRETE OR ROCK BALLAST OR, TO AVOID BALLAST USE ALT. DESIGN WITH STRUCTURE BOTTOM EXTENDING OUT 1' FROM WALLS ON ALL 4 SIDES

STATE OF NEW HAMPSHIRE EARL SANDFORD No. 209 CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE EARL J. SANDFORD No. 7940 LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE No. 700 EARL J. SANDFORD LAND SURVEYOR

STORMWATER MANAGEMENT PLAN
MAP 43 / LOT 69-1
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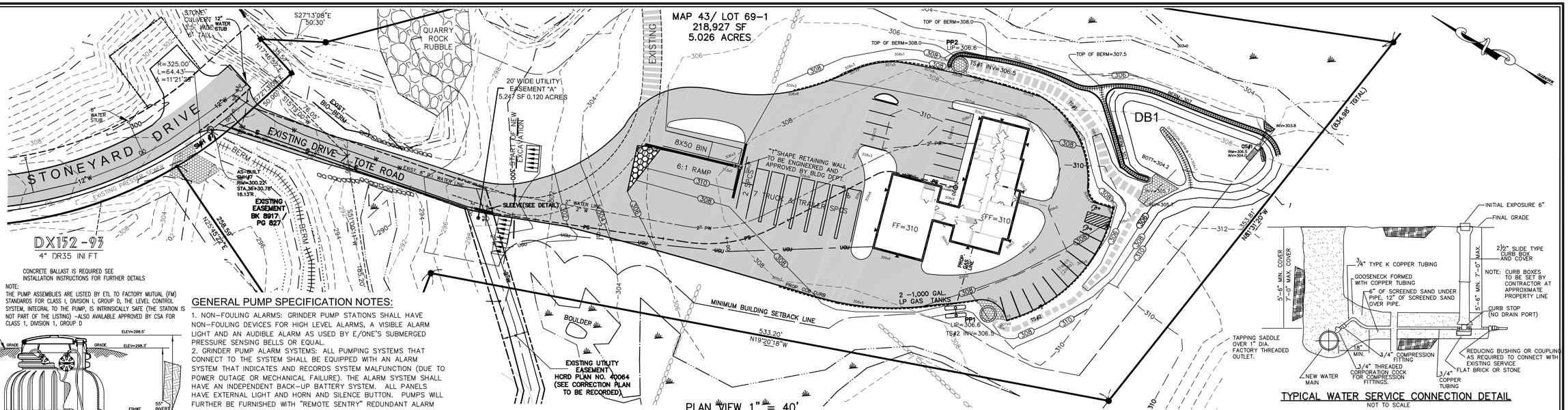
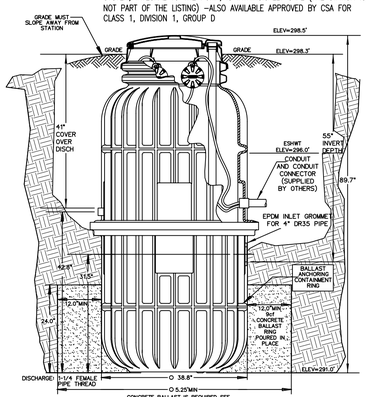
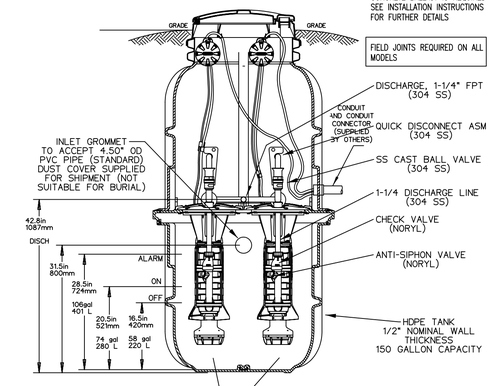






CONCRETE BALLAST IS REQUIRED SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE:
THE PUMP ASSEMBLIES ARE LISTED BY ETL TO FACTORY MUTUAL (FM) STANDARDS FOR CLASS I, DIVISION 1, GROUP D, THE LEVEL CONTROL SYSTEM, INTEGRAL TO THE PUMP, IS INTRINSICALLY SAFE (THE STATION IS NOT PART OF THE LISTING) –ALSO AVAILABLE APPROVED BY CSA FOR CLASS 1, DIVISION 1, GROUP D

GENERAL PUMP SPECIFICATION NOTES:

1. NON–FOULING ALARMS: GRINDER PUMP STATIONS SHALL HAVE NON–FOULING DEVICES FOR HIGH LEVEL ALARMS, A VISIBLE ALARM LIGHT AND AN AUDIBLE ALARM AS USED BY E/ONE'S SUBMERGED PRESSURE SENSING BELLS OR EQUAL.
2. GRINDER PUMP ALARM SYSTEMS: ALL PUMPING SYSTEMS THAT CONNECT TO THE SYSTEM SHALL BE EQUIPPED WITH AN ALARM SYSTEM THAT INDICATES AND RECORDS SYSTEM MALFUNCTION (DUE TO POWER OUTAGE OR MECHANICAL FAILURE). THE ALARM SYSTEM SHALL HAVE AN INDEPENDENT BACK–UP BATTERY SYSTEM. ALL PANELS HAVE EXTERNAL LIGHT AND HORN AND SILENCE BUTTON. PUMPS WILL FURTHER BE FURNISHED WITH "REMOTE SENTRY" REDUNDANT ALARM THAT IS BATTERY POWERED TO INDICATE ALARM CONDITION IN THE ABSENCE OF "LINE POWER" AS WELL AS DURING NORMAL POWER CONDITIONS.
3. FLOW METERING: ALL PUMPING SYSTEMS SHALL RECORD PUMP RUN TIMES, TO ALLOW FOR ESTIMATION OF SYSTEM FLOW RATES AND VOLUMES. ALL ALARM PANELS SHALL BE EQUIPPED WITH A ALARM MONITORING AND REPORTING SYSTEM TO RECORD A CALCULATED FLOW BASED ON PUMP WATTAGE OR AMPERAGE READING. FLOW CALCULATION SHALL BE BASED ON THE DESIGN FLOW CURVE AND OUTPUT FOR EACH CONNECTION. DATA WILL BE RECORDED IN GALLONS PER DAY.
4.. EMERGENCY POWER: ALL PUMPING SYSTEMS THAT CONNECT TO THE SYSTEM SHALL EITHER BE CONSTRUCTED WITH INTEGRAL EMERGENCY BACK–UP POWER OR INCLUDE A RECEPTACLE TO ALLOW HOOK–UP OF PORTABLE GENERATORS IN THE EVENT OF A POWER FAILURE. ALL GRINDER PUMPS WILL BE FURNISHED WITH AN EXTERNAL EMERGENCY GENERATOR CONNECTION POINT WITH NEMA 4 PROTECTIVE COVER. POWER TRANSFER SHALL BE AUTOMATIC WHEN EMERGENCY GENERATOR IS CONNECTED TO THE ALARM PANEL. THE ALARM PANEL SHALL NOT REQUIRE THE MANUAL TRANSFER OF POWER FROM" LINE" TO "LOAD" TO ENGAGE EMERGENCY POWER TO THE GRINDER PUMP.

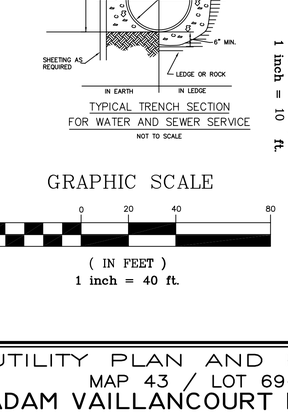
ANTI FLOTATION CALCULATION:
ESHWT = 296.0' TANK DIA = 38.8" (3.23')
AREA TANK FOOTPRINT = 8.2 sf
BOTT. TANK = 291.0' VOL. TANK BELOW ESHWT = 41 cf
FLOTATION FORCE W/ TANK EMPTY = 41 cf x 62.4 lb/cf = 2558 lbs
BALLAST FOR POURED IN PLACE CONC. RING
5.23 ft DIA
21.5 sf – 8.2 sf (HOLE FOR TANK) = 13.3 sf OR 13.3 cf/ ft of ht
h= 2' 13.3x2 = 26.6cf = 1 cy
Submerged Wt of conc. = 86 lb
86 x 26.6 = 2288 lb of conc.
Soil WT (PORTION ABOVE ESHWT)
80 pcf x 2.3 x 13.3 = 2447
TOTAL BALLAST = 2288 + 2447 = 4735 lb
F.S. = 4735 ÷ 2558 = 1.85 > 1.1 SO ADEQUATE

SEE RECORDS HELD BY F.H. MAHONEY FOR ANY CHANGES TO PUMP SYSTEM INSTALLATION

PLAN VIEW 1" = 40'

PROFILE VIEW
HORIZ. 1" = 40'
VERT. 1" = 10'

TYPICAL WATER SERVICE CONNECTION DETAIL
NOT TO SCALE

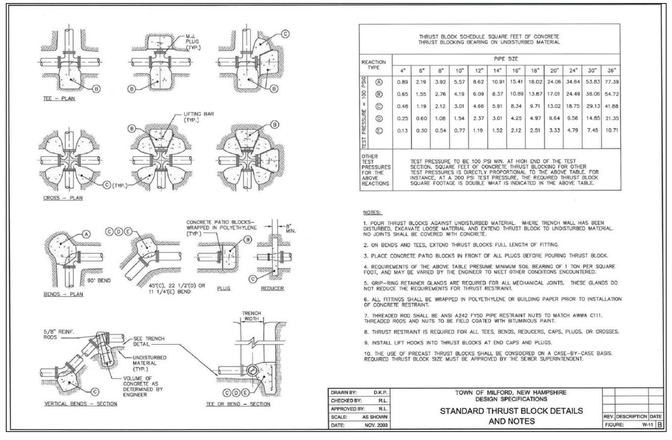


TYPICAL TRENCH SECTION FOR WATER AND SEWER SERVICE
NOT TO SCALE

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

SEWER FLOW NOTES
PROPOSED USE:
18 EXISTING STAFF
+12 FUTURE STAFF
=30 OFFICE & SALES STAFF; 30X15gpd = 450 gpd

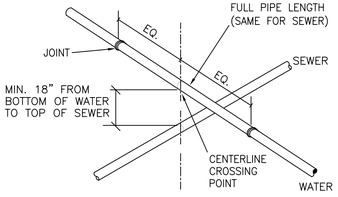


THRUST BLOCK SCHEDULE SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL

REACTION TYPE		PIPE SIZE 4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
150 PSI TEST PRESSURE	A	0.89	2.19	3.92	5.57	8.62	10.91	15.41	18.02	24.06	34.64	53.83	77.39
	B	0.65	1.55	2.76	4.19	6.09	8.37	10.89	13.87	17.01	24.49	38.06	54.72
	C	0.48	1.19	2.12	3.01	4.66	5.91	8.34	9.71	13.02	18.75	29.13	41.88
	D	0.25	0.60	1.08	1.54	2.37	3.01	4.25	4.97	6.64	9.56	14.85	21.35
	E	0.13	0.30	0.54	0.77	1.19	1.52	2.12	2.51	3.33	4.79	7.45	10.71
OTHER TEST PRESSURES FOR THE ABOVE REACTIONS		TEST PRESSURE TO BE 100 PSI MIN. AT HIGH END OF THE TEST SECTION. SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR EXAMPLE, IF THE TEST PRESSURE IS DOUBLE WHAT IS INDICATED IN THE ABOVE TABLE, SQUARE FOOTAGE IS DOUBLE WHAT IS INDICATED IN THE ABOVE TABLE.											

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
5. GRIP–RING RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
6. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
7. THREADED ROD SHALL BE ANSI A242 F1554 PIPE RESTRAINT NUTS TO MATCH AWWA C111. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
8. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES.
9. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.
10. THE USE OF PRECAST THRUST BLOCKS SHALL BE CONSIDERED ON A CASE–BY–CASE BASIS. REQUIRED THRUST BLOCK SIZE MUST BE APPROVED BY THE SEWER SUPERINTENDENT.

DRAWN BY:	D.K.P.	TOWN OF MILFORD, NEW HAMPSHIRE DESIGN SPECIFICATIONS	
CHECKED BY:	R.L.	STANDARD THRUST BLOCK DETAILS AND NOTES	REV. DESCRIPTION DATE
APPROVED BY:	R.L.		FIGURE: W-11 B
SCALE:	AS SHOWN		
DATE:	NOV. 2000		



NOTES:
1. WATER MAINS AND SEWER MAINS SHALL BE LAID WITH AT LEAST 10 FEET SEPARATION WHEN RUNNING PARALLEL AND AT SAME ELEVATION.
2. WHERE A WATER MAIN OR SERVICE LINE CROSSES A SEWER MAIN OR SERVICE LINE THERE SHALL BE A MINIMUM VERTICAL SEPARATION DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER AND OUTSIDE OF THE SEWER PIPES WITH THE WATER LINE BEING ABOVE THE SEWER LINE. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO AS BOTH JOINTS ARE AS FAR FROM THE SEWER AS POSSIBLE.
3. WHERE THE SEWER PIPE HAS LESS THAN 5 FEET OF COVER AT CROSSINGS, PLACE FULL SHEETS OF 2" THICK RIGID FOAM INSULATION OVER SAND BACKFILL.

WATER & SEWER SEPARATION DETAIL

SCALE: NONE

WATERLINE NOTES:

1. THE 8" WATER LINE TO THE PROPOSED BUILDING IS TO PROVIDE WATER SERVICE WITH A CONNECTING 2" TEE AND STUB TO THE ABUTTING SIDE PROPERTY LINE, AS SHOWN ON THE PLAN, BENEFITING TAX LOT 43/70 (34 HAMMOND ROAD), BOTH LOT OWNERS SHARING PROPORTIONATE RESPONSIBILITY OF MAINTENANCE AND UPKEEP ON THE COMMON SECTION.
2. THE 2" WATERLINE SERVING TAX LOT 43–70 IS A DEDICATED SINGLE USER WATERLINE, AND UPON OPERATIONAL ACCEPTANCE, WILL BE THE SOLE RESPONSIBILITY OF THE USER, EXCEPTING THE OBLIGATION OF OTHERS TO HONOR RIGHTS OF ACCESS AND RIGHTS OF MAINTENANCE AND UP KEEP.
3. THE 20' EASEMENT IS INTENDED TO ACCOMMODATE CROSS BENEFITS OF WATER, SEWER, ELECTRIC, AND COMMUNICATIONS BETWEEN THE SUBJECT LOT AND LOT 43/70 FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES. IN THE EVENT THAT THE UTILITY LINES ARE SHIFTED FROM THE DESIGN LOCATION DURING CONSTRUCTION, THE EASEMENT IS TO SHIFT ACCORDINGLY, CONTAINING UTILITIES WITHIN THE EASEMENT.
4. THE UTILITIES HAVE BEEN DESIGNED TO HAVE NO WETLAND IMPACT.

NOTE:

1. WATER AND SEWER LINES SUBJECT TO RELOCATION AT THE DIRECTION OF THE MILFORD FIRE, SEWER AND WATER DEPARTMENTS.

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8–8–2019	MOVED DRAINAGE OUT OF 25' BUFFER, ALT O.S.	EJS

STATE OF NEW HAMPSHIRE EARL J. SANDFORD No. 7940 LICENSED PROFESSIONAL ENGINEER

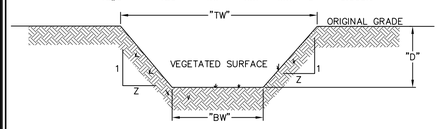
UTILITY PLAN AND PROFILE
MAP 43 / LOT 69–1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472–2265 FAX (603) 472–6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/PMS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: AS SHOWN	DATE: 7/17/19	SHEET 6 OF 9

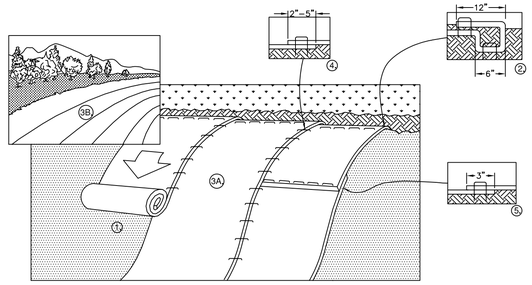
DIMENSIONAL DATA TABLE

SWALE	LENGTH	BW	TW	D	Z	SLOPE
TS#1	225'	8.0'	14'	1.0'	3	0.006%
TS#1A	190'	4.0'	10.0'	1.0'	3	0.006%
TS#2	200'	8.0'	12.8'	0.8'	3	0.0084%
TS#3	120'	4.0'	8.8'	0.8'	3	0.005%



TREATMENT SWALE TYPICAL SECTION

NOT TO SCALE



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" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) 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" (5cm-12.5cm) 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" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL MATTING
TYPICAL SLOPE DETAIL

NOT TO SCALE

SEEDING SPECIFICATIONS

(1) ALL TEMPORARY AND PERMANENT SEEDING SHALL BE DONE IN ACCORDANCE WITH "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE", AUGUST 1992, BY THE USDA-SCS. (SECTION 7-243 AND 7-247).

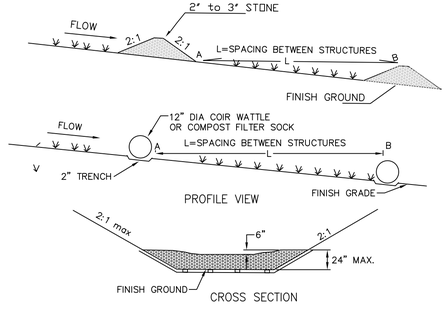
(2) ALL DISTURBED AREAS TO BE SEEDED SHALL BE TREATED AS FOLLOWS:
- WATER TO BE DIVERTED FROM SITE TO PREVENT KILLING PLANTS
- ALL STONES AND TRASH LARGER THAN 4" TO BE REMOVED
- WHERE FEASIBLE, TILL SOIL TO 4" DEPTH
- A MINIMUM OF 4" TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS
- 10-20-20 FERTILIZER SHALL BE PLACED AT A RATE OF 500 LBS PER ACRE.
- THE FOLLOWING SEED MIXTURE SHALL BE SPREAD EVENLY OVER THE TOPSOIL AT THE RATES SHOWN (FOR LONG TERM COVER)

MIXTURE	LBS/ACRE	LBS/1,000 SQ.FT.
TALL FESCUE	20	0.45
CREEPING RED FESCUE	30	0.75
TOTAL	50	1.20

- THE FOLLOWING SEEDING SHALL BE SPREAD EVENLY OVER THE TOPSOIL AT THE RATES SHOWN (FOR TEMPORARY PROTECTION DURING THE SPRING)

MIXTURE	LBS/ACRE	LBS/1,000 SQ.FT.
OATS	80	2

- HAY, STRAW OR OTHER MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING IN ACCORDANCE WITH THE ABOVE REFERENCED MANUAL.
- ALL SEEDING SHALL BE COMPLETED BEFORE JUNE 1ST IN THE SPRING OR BETWEEN AUGUST 15TH AND EARLY OCTOBER IN THE FALL. SEEDING MAY EXTEND INTO JUNE AND JULY IF CONSIDERATIONS ARE MADE FOR WATERING.

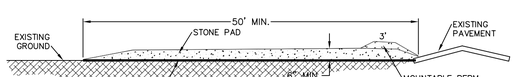


TEMPORARY OR PERMANENT CHECK DAM DETAIL

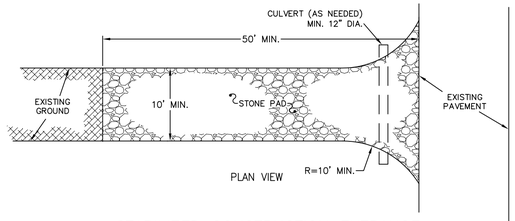
NOT TO SCALE

CHECK DAM NOTES:

1. THE CONTRIBUTING DRAINAGE AREA TO THE CHANNEL OR SWALE BEING PROTECTED SHOULD NOT EXCEED 1 ACRE.
2. THE MAXIMUM HEIGHT OF THE STRUCTURE SHOULD BE 2 FEET.
3. THE CENTER OF THE STRUCTURE SHOULD BE 6 INCHES LOWER THAN THE OUTER EDGES.
4. THE MAXIMUM SPACING BETWEEN STRUCTURES SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM STRUCTURE IS THE SAME ELEVATION AS THE LOWEST OUTFLOW ELEVATION OF THE DOWNSTREAM STRUCTURE.
5. STONE STRUCTURES SHOULD BE CONSTRUCTED OF 2 TO 3 INCH STONE, PLACED IN ACCORDANCE WITH THE ABOVE FIGURE. COIR WATTLES SHALL BE MIN. 12" DIA. AS MANUFACTRED BY ROLANKA INTERNATIONAL OR EQUAL. COMPOST FILTER BERMS AND SOCKS SHALL BE MIN. 12" DIA. OR HEIGHT AS SUPPLIED BY LANDSCAPE SUPPORT SERVICES (GOFFSTOWN, NH) OR EQUAL.
6. SEEDING, FERTILIZING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPROPRIATE VEGETATIVE BMP.
7. STRUCTURES SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED STORMS. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHALL BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE.
8. STRUCTURES SHALL BE REMOVED WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED. WHERE CHECK DAMS ARE PLACED IN GRASS LINED SWALES OR CHANNELS, CARE SHOULD BE TAKEN TO REMOVE THE ENTIRE CHECK DAM WHEN THE VEGETATION IS ESTABLISHED AND THE STRUCTURE IS NO LONGER NEEDED.
9. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHALL BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED.



PROFILE



PLAN VIEW

STABILIZED CONSTRUCTION ENTRANCE

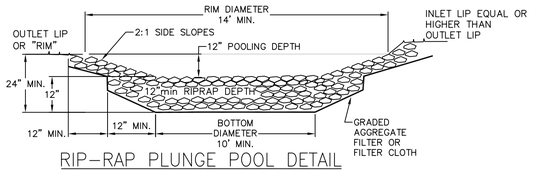
NOT TO SCALE

MAINTENANCE

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

CONSTRUCTION SPECIFICATIONS

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH CRUSHED STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 75 FEET, UNLESS A 3"-6" HIGH BERM IS INSTALLED AT THE ENTRANCE OF THE PROJECT SITE, ALLOWING A 50 FOOT MINIMUM.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICHEVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENCE LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. 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 TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. 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.
10. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.



RIP-RAP PLUNGE POOL DETAIL

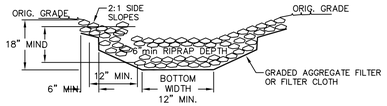
CROSS SECTIONAL VIEW ~ NOT TO SCALE

WINTER CONSTRUCTION NOTES

(1) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED 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 BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

(2) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED 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 ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.



RIP-RAP OUTLET APRON DETAIL

NOT TO SCALE
CROSS SECTIONAL VIEW

STANDARD AoT NOTES

(1) THIS PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.
(2) THE PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
(3) ALL PONDS AND SWALES AND RAIN GARDENS (BIO-RETENTION AREAS) SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE)
(4) ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
(5) ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
(6) ALL CUT AND FILL SLOPES SHALL BE LOAMED, SEEDED, AND MULCHED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
(7) ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY 0.5" RAINFALL.
(8) 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.
(9) AN AREA SHALL BE CONSIDERED "STABLE" IF ONE OF THE FOLLOWING OCCURS:
- ~ BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
- ~ A MINIMUM 85% VEGETATED GROWTH LEVEL HAS BEEN ESTABLISHED.
- ~ A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED.
- ~ EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

(10) ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
(11) ELIMINATE CANARY GRASS FROM ANY SEED MIX.

EROSION CONTROL NOTES

(1) THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE NHDPW&H".
(2) DURING CONSTRUCTION AND THEREAFTER EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
(3) HAY BALE BARRIERS AND SILTATION FENCING SHALL BE INSTALLED WHERE SHOWN PRIOR TO ANY ON SITE GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL. IT SHOULD BE MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE NATURAL DRAINAGE-WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE EXCESS SURFACE WATER.
(4) ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISH GRADED WITH NO FURTHER CONSTRUCTION TO TAKE PLACE SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4" OF LOAM SHALL BE INSTALLED. A SEED, LIME AND FERTILIZER PROGRAM SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE NHDPW&H".
(5) ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION. HAY OR STRAW MULCH SHALL BE APPLIED TO ALL FRESHLY SEEDED AREAS AT A RATE OF 2 TONS PER ACRE. BALES SHALL BE UNSPOILED, AIR-DRIED, AND FREE FROM WEED, SEEDS AND ANY COARSE MATERIAL.
(6) MAJOR HAUL ROUTES AND AREAS OF SOIL DISTURBANCE SHALL BE WATERED AS NECESSARY TO MINIMIZE DUST NUISANCE. WHERE PRACTICAL, THEY SHOULD BE STABILIZED (COMPACTED, RIPRAP, ETC.) TO REDUCE OFF-SITE TRANSPORT OF SOIL AND OTHER MATERIAL. IF SEDIMENT SHOULD ACCUMULATE ON SURROUNDING PAVEMENT, REGULAR SWEEPING SHALL BE CONDUCTED.
(7) DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
(8) DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
(9) DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

CONSTRUCTION SEQUENCE

(1) PRIOR TO ANY OTHER SITE WORK, HAY BARRIERS AND SILTATION FENCING ARE TO BE CONSTRUCTED AS SHOWN, AND ARE TO BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL COMPLETION AND VEGETATION IN DISTURBED AREAS IS WELL ESTABLISHED.
(2) THE PERMANENT STORM WATER TREATMENT SYSTEMS ARE TO BE CONSTRUCTED AND SEEDED AS SOON AS PRACTICAL SO THAT VEGETATION MAY BE ESTABLISHED PRIOR TO COMPLETION OF THE UPSTREAM DRAINAGE SYSTEMS.
(3) SITE CLEARING OF A WORK AREA (SEE EROSION CONTROL NOTE 2) SHALL BE CARRIED OUT AT ONE TIME, AND TOPSOIL STRIPPED AND STOCKPILED. ALL EARTH STOCKPILES ARE TO BE STABILIZED WITH HAY MULCH AND SEEDED WITH RYE GRASS. SILTATION FENCING TO BE PLACED AROUND THE BASE OF ALL STOCKPILES WHEREVER PRACTICAL.
(4) GRADING OPERATIONS FOR AREAS TO BE PAVED OR OTHERWISE DISTURBED WILL THEN BE COMPLETED AND UNDERGROUND UTILITIES INSTALLED. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED DURING CONSTRUCTION UNTIL ALL AREAS ARE STABILIZED.
(5) DURING CONSTRUCTION, THE CATCH BASIN STRUCTURES SHALL BE SET TO A GRADE SUCH THAT STORM WATER RUNOFF, ACCUMULATED SILT, OR OTHER ERODED MATERIAL FROM THE CONSTRUCTION SITE WILL NOT ENTER THE STRUCTURE AND SHORT CIRCUIT THE TEMPORARY EROSION CONTROL SYSTEMS.
(6) AFTER CONSTRUCTION IS COMPLETED AND VEGETATION IS ESTABLISHED IN THE DISTURBED AREAS, THE AREAS IN AND AROUND THE TEMPORARY EROSION CONTROL SYSTEM SHALL BE CLEANED UP, CARE BEING TAKEN NOT TO ALLOW THE ACCUMULATION SILT TO RUN INTO THE WETLANDS AND/OR PROTECTED AREAS. THEN THE TEMPORARY CONTROL SYSTEMS SHALL BE REMOVED AND THE AREA RETURNED AS NEAR AS POSSIBLE TO ITS NATURAL STATE.
(7) INFILTRATION TESTING OF THE BIO-RETENTION AREA MUST BE COMPLETED FOLLOWING CONSTRUCTION AND SUBMITTED TO THE TOWN FOR APPROVAL TO ENSURE THAT THE APPROPRIATE INFILTRATION RATE HAS BEEN ACHIEVED.
(8) 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. THIS APPLIES FOR ANY LOT DEVELOPMENT THAT IS NOT EXPLICITLY PART OF THE PERMIT SUCH AS ADDITIONAL HOUSE DEVELOPMENT (NONE ANTICIPATED AS PART OF THIS SITE DEVELOPMENT).
(9) UPON STABILIZATION, ALL EROSION CONTROL MEASURES SHALL BE REMOVED.

LONG TERM INSPECTION & MAINTENANCE NOTES

(FOR LONG TERM MAINTENANCE OF STORMWATER TREATMENT PRACTICES)

RESPONSIBLE PARTIES:
OWNER: HAMMOND ROAD, LLC
45 EMERSON ROAD
MILFORD, NH 03055
CONTACT: SCOTT BURROWS
PHONE: (603) 673-0006

FREQUENCY OF INSPECTIONS
INSPECTIONS SHALL BE CONDUCTED QUARTERLY AND WITHIN 24 HOURS AFTER RAINFALL EVENTS EXCEEDING 2.5 INCHES WITHIN A 24 HOUR PERIOD.

INSPECTION CHECKLIST
1.DRIVEWAY ENTRANCE EMBANKMENTS TO WETLAND AND PERIMETER EMBANKMENTS: INSPECT FOR ACCUMULATION OF SEDIMENT OR DEBRIS AND FOR EROSION. REMOVE DEBRIS WHENEVER OBSERVED. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 3". MOW AT LEAST ANNUALLY TO CONTROL WOODY GROWTH WITHIN EMBANKMENTS. NO RILLS OR GULLYING SHOULD BE LEFT UNREPAIRED.

THE 35' WETLAND BUFFER AREA SHOULD BE MAINTAINED IN AN UNDISTURBED CONDITION, EXCEPT WHERE DISTURBANCE IS APPROVED BY ZBA. IF EROSION OCCURS, FILL AND SEED ANY RILLS OR OTHER ERODED AREAS ON THE BUFFER SLOPE WITH VEGETATION SIMILAR TO THE REMAINING BUFFER. DETERMINE THE CAUSE(S) OF EROSION AND REPAIR AS NECESSARY.

2.CATCH BASIN AND DROP INLET SUMPS: CHECK THAT GRATE IS CLEAR AND SEDIMENT DEPTH IS LESS THAN 1 FOOT. CATCH BASIN CLEANING IS REQUIRED WHEN SEDIMENT DEPTH EXCEEDS HALF THE SUMP DEPTH. IF FLOATING HYDROCARBONS ARE OBSERVED, THEY SHOULD BE REMOVED IMMEDIATELY BY EITHER SKIMMING, ABSORBANT MATERIALS, OR OTHER METHODS, AND DISPOSED OF IN CONFORMANCE TO STATE AND FEDERAL REGULATIONS.

3.STORM WATER BASINS AND RAIN GARDEN BASINS: INSPECT BASIN BOTTOM FOR ACCUMULATION OF SEDIMENT OR DEBRIS, AND FOR EROSION WITHIN THE BASIN, ESPECIALLY JUST BELOW THE OUTLET CULVERT OUTLETS AND AROUND OUTLET STRUCTURE. REMOVE DEBRIS WHENEVER OBSERVED. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF BASIN DEPTH. NO RILLS OR GULLYING SHOULD OCCUR WITHIN THE BASIN. REPAIR ANY ERODED SOIL IN THE BASIN AS NECESSARY. RECONSTRUCT THE BASIN IF GULLEYS DEVELOP WITHIN THE BASIN TO THE EXTENT THAT MINOR REPAIRS ARE INSUFFICIENT TO CORRECT THE PROBLEM. MOW AT LEAST ANNUALLY TO CONTROL UNINTENDED WOODY GROWTH WITHIN THE SWALE. SNOW SHOULD NOT BE STORED WITHIN THE BASIN.

4.OUTLET STRUCTURE: CLEAN SLOTTED WEIRS FROM ALL DEBRIS. IF DEBRIS IS A CONSISTENT PROBLEM, ADD A WIRE SCREEN IN FRONT OF THE WEIR. REMOVE ALL DEBRIS FROM TOP GRATE AND REAR WEIR BEHIND THE PLUNGE POOL/SUMP.

5.TREATMENT SWALES: INSPECT FOR ACCUMULATION OF SEDIMENT OR DEBRIS, AND FOR EROSION WITHIN THE CHANNEL, ESPECIALLY JUST BELOW THE OUTLET STRUCTURE. REMOVE DEBRIS WHENEVER OBSERVED. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF TREATMENT SWALE CHANNEL DEPTH. THE FLAT BOTTOM SHAPE IS TO BE MAINTAINED AND NO RILLS OR GULLYING SHOULD OCCUR WITHIN THE TREATMENT SWALE. REPAIR ANY ERODED SOIL IN THE SWALE AS NECESSARY. RECONSTRUCT THE SWALE IS GULLEYS DEVELOP WITHIN THE FLAT BOTTOM TO THE EXTENT THAT MINOR REPAIRS ARE INSUFFICIENT TO CORRECT THE PROBLEM. MOW AT LEAST ANNUALLY TO CONTROL WOODY GROWTH WITHIN THE SWALE. SNOW SHOULD NOT BE STORED WITHIN THE TREATMENT SWALE.

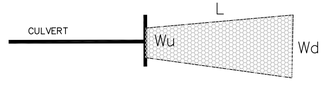
6.RIP RAP APRONS AT PIPE OUTLET FROM STORMWATER BASINS: INSPECT FOR ACCUMULATION OF SEDIMENT OR DEBRIS AND FOR EROSION WITHIN THE APPROACH CHANNEL TO THE LOT LINE. REMOVE DEBRIS WHENEVER OBSERVED. REMOVE SEDIMENT WHEN ACCUMULATION EXCEEDS 25% OF RIP RAP APRON DEPTH. MOW AT LEAST ANNUALLY TO CONTROL WOODY GROWTH. SNOW SHOULD NOT BE STORED WITHIN THE LEVEL SPREADER OR ITS APPROACH CHANNEL.

CHECK THAT APRON LIP REMAINS LEVEL AND DISTRIBUTION OF STORM FLOW IS EVEN ALONG LENGTH OF APRON. NO RILLS OR GULLYING SHOULD TRANSITION TO THE LOT LINE DOWN-SLOPE. REPAIR STONE IN APRONS AS NECESSARY. RECONSTRUCT THE APRON IF DOWN-SLOPE CHANNELIZATION INDICATES FLOW HAS BECOME CONCENTRATED AND MINOR REPAIRS ARE INSUFFICIENT TO CORRECT THE PROBLEM.

THE TRANSITION ACROSS THE LOT LINE SHOULD BE MAINTAINED IN AN UNDISTURBED CONDITION. IF EROSION OCCURS, FILL AND SEED ANY RILLS OR OTHER ERODED AREAS ON THE TRANSITIONING SLOPE WITH VEGETATION SIMILAR TO THE REMAINING TRANSITIONAL AREA. DETERMINE THE CAUSE(S) OF EROSION AND REPAIR AS NECESSARY.

INVASIVE SPECIES: INSPECTION OF STORMWATER TREATMENT PRACTICES INCLUDES OBSERVATION OF PLANT SPECIES BECOMING ESTABLISHED WITHIN AND AROUND THE PRACTICES. INVASIVE SPECIES CAN EASILY SPREAD DOWNSTREAM, OVERWHELMING NATIVE VEGETATION AND EVENTUALLY DOMINATING WHOLE ECOSYSTEMS. A LIST OF SPECIES THAT ARE CONSIDERED INVASIVE IN NEW HAMPSHIRE IS AVAILABLE FROM THE NH DEPT OF AGRICULTURE (WWW.NH.GOV/AGRIC).

THE MONITOR SHOULD BECOME FAMILIAR WITH PROBLEM PLANT SPECIES AND CONTACT THE HILLSBOROUGH COUNTY EXTENSION OFFICE IN MILFORD, OR OTHER PLANT SPECIALIST, FOR UP-TO-DATE CONTROL PRACTICES FOR INVASIVE SPECIES THAT APPEAR WITHIN OR NEARBY THE STORMWATER TREATMENT PRACTICES.



RIP-RAP APRON

NOTE: ANY BOULDERS SPECIFIED TO DIRECT FLOW SHALL BE MIN. 2' / MAX. 5' DIAMETER AND SHALL HAVE NHDOT CLASS C GRADATION.

RIP-RAP TO BE EMBEDDED IN TRANSITION SECTIONS

RIP-RAP CULVERT OUTLET APRONS
DIMENSIONAL DATA

OUTLET APRON	Qpa.cs	(L) LENGTH	(Wu) UP WIDTH	(Wd) DN WIDTH	d50	dMAX	(D) MIN DEPTH	NOTE
TS1	2.18	20'	10'	22'*	4"	6"	9"	COMBINED W/ TS2
TS2	2.37	20'	10'	22'*	4"	6"	9"	JOINS TS1
OS1	0.12	15'	5'	20'*	3"	4"	9"	

*DIMENSIONS CONTROLLED BY WIDTH OF DOWN SLOPE SWALE OR PLUNGE POOL (SEE DETAIL).

RIP-RAP APRON AND DRAINAGE NOTES:
1) MOST APRONS HAVE BEEN UPSIZED TO REMAIN CONSERVATIVE. RIP RAP MAY BE FURTHER UPSIZED AS DEEMED PRUDENT.

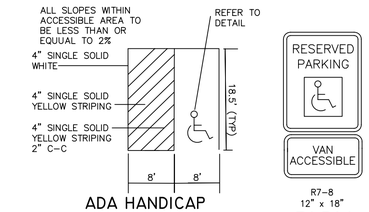
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	8-15-19	PLUNGE POOL REVISED	LPN

STORMWATER MANAGEMENT DETAILS
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472-2265 FAX (603) 472-6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: AS SHOWN	DATE: 7/17/19	SHEET 7 OF 9



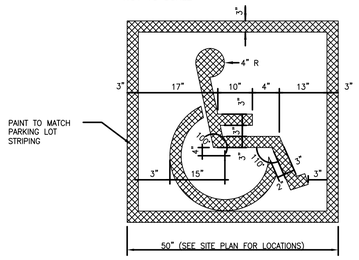
ADA HANDICAP ACCESSIBLE PARKING PAVEMENT DETAIL

NOT TO SCALE

R7-8
12" x 18"

SIGN

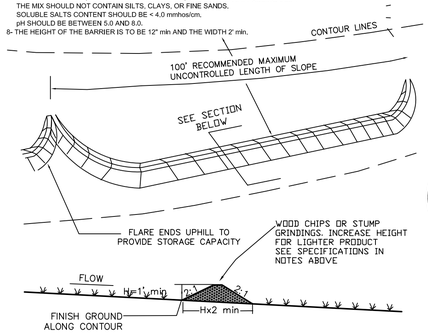
NOT TO SCALE



PAINTED ACCESSIBLE SYMBOL

NOT TO SCALE

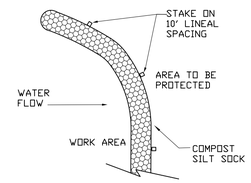
NOTES:
1- DO NOT USE IN AREAS OF CONCENTRATED FLOWS.
2- THE BERM MUST BE INSTALLED AND MAINTAINED PROPERLY TO BE EFFECTIVE.
3- USE OTHER BMP'S SUCH AS CHECK DAMS AND SILTATION BASINS AT THE LOW POINTS.
4- CONSTRAINTS: CONTRIBUTING AREA SHOULD BE LESS THAN 1/4 ACRE PER 100 FEET OF BARRIER. LENGTH OF SLOPE SHOULD BE LESS THAN 100 FEET ABOVE BARRIER AND MAXIMUM GRADE SHOULD BE 5% BEHIND BARRIER.
5- FILTER BERMS ARE TO BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. REPLACE IMMEDIATELY IF BREACHED.
6- TRAPPED SEDIMENT SHOULD BE REMOVED AFTER EACH RAINFALL, AND IN NO CASE THE SEDIMENT BE ALLOWED TO BUILT TO A HEIGHT OF 1/3rd THE HEIGHT OF THE BARRIER.
7- MATERIAL SPECIFICATIONS: NO STONES OVER 4", NO GROUND CONSTRUCTION DEBRIS, ORGANIC MATTER IS TO BE FIBROUS AND ELONGATED AND COMPOSE BETWEEN 25 % AND 65%, DRY WEIGHT BASIS, PARTICLE SIZE BY WEIGHT SHOULD BE 100 % PASSING 3", 90% TO 100% PASSING 1", 70% TO 100% PASSING 0.75", AND 30% TO 75% PASSING 0.25". THE MIX SHOULD NOT CONTAIN SILTS, CLAYS, OR FINE SANDS. SOLUBLE SALTS CONTENT SHOULD BE < 4.0 mmhos/cm. pH SHOULD BE BETWEEN 5.0 AND 8.0.
8- THE HEIGHT OF THE BARRIER IS TO BE 12" min AND THE WIDTH 2' min.



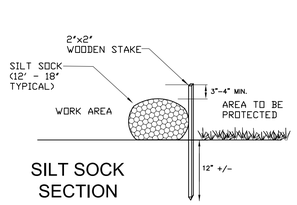
SIMPLE EROSION CONTROL MIX BIO-BERM DETAIL
USING WOOD CHIPS OR STUMP GRINDINGS

MAY BE USED AS SUBSTITUTION FOR PROPOSED TRADITIONAL SILT FENCE
RE: NEW HAMPSHIRE STORMWATER MANUAL: VOLUME 3 SECT 4.2

NOT TO SCALE

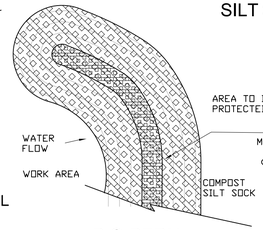


SILT SOCK PLAN VIEW

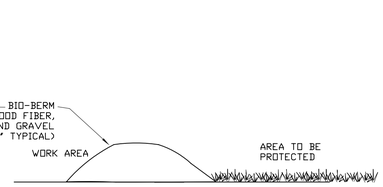


SILT SOCK SECTION

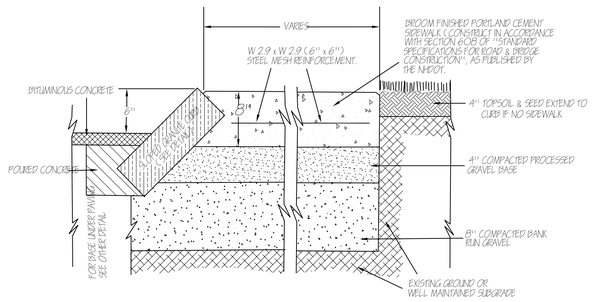
SILT SOCK EROSION CONTROL



BIO-BERM PLAN VIEW

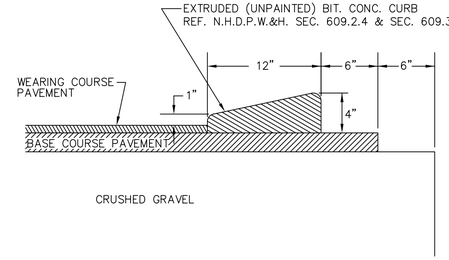


BIO-BERM SECTION



SLOPED CURB/ CONCRETE WALKWAY PAVING / EDGING DETAIL

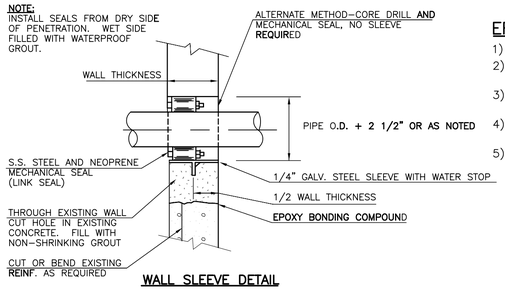
N.T.S.



BIT. CONC. CURB DETAIL

NOT TO SCALE

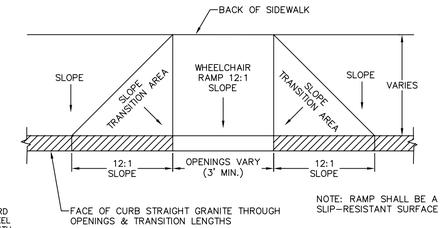
NOTE:
INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF GROUT.



WALL SLEEVE DETAIL

EROSION CONTROL BARRIER NOTES:

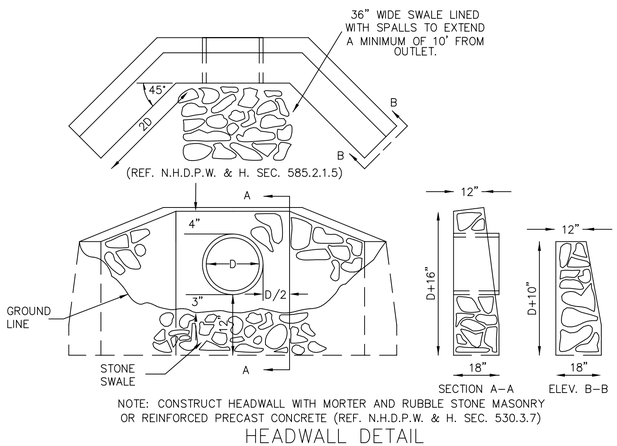
1) ALL MATERIAL TO MEET FILTER SOCK SPECIFICATIONS.
2) SILT SOCK COMPOST/JSOIL/COCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.
3) SILT SOCKS TO BE UPSIZED AS NEEDED FOR STEEP SLOPES PER MANUFACTURERS REQUIREMENTS OR THE SITE ENGINEER.
4) COMPOST MATERIAL TO BE DISPERSED ON SITE AS DETERMINED BY THE SITE ENGINEER.
5) A BIO-BERM COMPOSED OF WOODY FIBERS (GROUND ON SITE) MIXED WITH LOAM AND GRAVEL IS AN ACCEPTABLE SUBSTITUTE FOR THE SILT SOCK IF PRE-APPROVED BY THE SITE ENGINEER AND THE TOWN OF MILFORD PLANNING DEPARTMENTD ENVIRONMENTAL STAFF PERSON.



NOTE: RAMP SHALL BE A SLIP-RESISTANT SURFACE

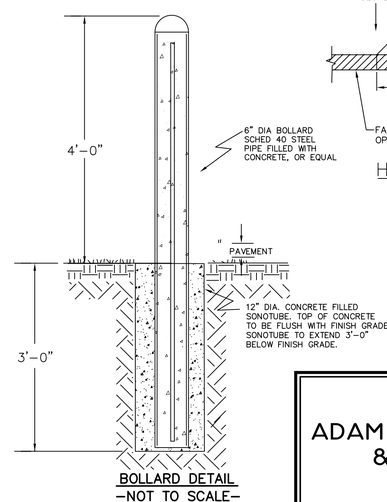
HANDICAPPED SIDEWALK RAMP

NOT TO SCALE

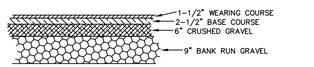


NOTE: CONSTRUCT HEADWALL WITH MORTER AND RUBBLE STONE MASONRY OR REINFORCED PRECAST CONCRETE (REF. N.H.D.P.W. & H. SEC. 530.3.7)

HEADWALL DETAIL



BOLLARD DETAIL
-NOT TO SCALE-



TYPICAL PAVEMENT SECTION
DRIVE & CAR PARKING AREAS

SCALE: NONE

NOTE: PAVEMENT SECTION MATERIALS SHALL CONFORM TO CURRENT N.H.D.O.T. SPECIFICATIONS FOR BITUMINOUS CONCRETE PAVEMENT AND SUBGRADE.

EXCAVATORS
DIG SAFE
Telephone 1-800-225-4977

DIG SAFE
~EXCAVATORS~

BEFORE YOU DIG CONTACT DIG SAFE CENTER, TO PREVENT DAMAGE TO TELEPHONE, GAS OR ELECTRIC UNDERGROUND FACILITIES OF MEMBER UTILITIES, CALL TOLL FREE 1-800-225-4977. NEW HAMPSHIRE STATE LAW REQUIRES NOTIFICATION AT LEAST THREE BUSINESS DAYS BEFORE YOU START DIGGING OPERATIONS. IN AN EMERGENCY, CALL IMMEDIATELY.

REVISIONS

NO.	DATE	DESCRIPTION	BY

DETAIL PLAN
MAP 43 / LOT 69-1

ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC

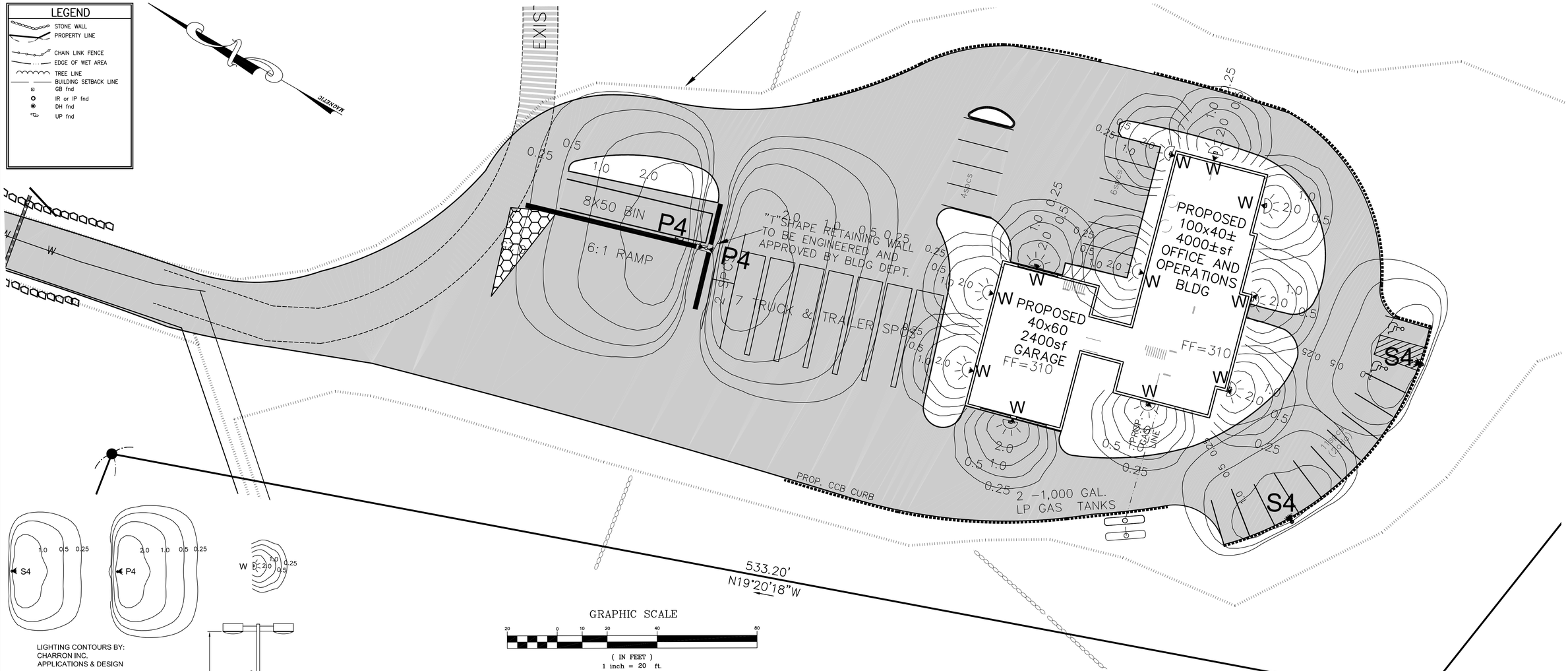
STONEYARD DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

SANDFORD
SURVEYING AND ENGINEERING
TEL (603) 472-2265 FAX (603) 472-6604
597 NEW BOSTON ROAD, BEDFORD, NH 03110
BOUNDARY SURVEYS ~ SUBDIVISIONS ~ SITE PLANS ~ STRUCTURAL ~ SEPTIC DESIGNS

PROJ. MAN.: EJS	CADD: EJS/LPN	PROJ: VAI02M19052
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 40'	DATE: 7/17/19	SHEET 8 OF 9

LEGEND

- STONE WALL
- PROPERTY LINE
- CHAIN LINK FENCE
- EDGE OF WET AREA
- TREE LINE
- BUILDING SETBACK LINE
- GB fnd
- IR or IP fnd
- DH fnd
- UP fnd

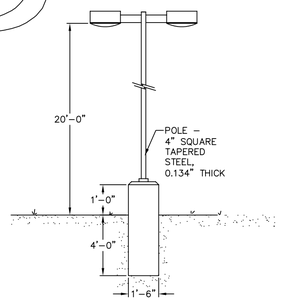


GRAPHIC SCALE

20 0 10 20 40 80

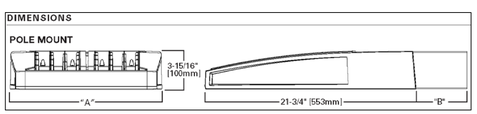
(IN FEET)
1 inch = 20 ft.

LIGHTING CONTOURS BY:
CHARRON INC.
APPLICATIONS & DESIGN



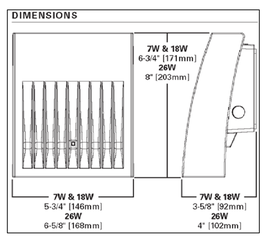
LIGHT POLE DETAIL

NOT TO SCALE



LIGHT POLE DETAIL
P4 & S4=POLE MOUNT

NOT TO SCALE



WALL MOUNTED LIGHT DETAIL
W=WALL MOUNT

NOT TO SCALE

LIGHTING NOTES:

1. ALL WALLPACKS AND POLE MOUNTED LIGHT FIXTURES SHALL BE FULL CUT OFF FIXTURES. LIGHTED AREAS SHALL HAVE A UNIFORMITY RATIO OF NO LESS THAN 4.
2. LIGHTING SHOWN IS TO BE VERIFIED WITH THE FIXTURE MANUFACTURER SPECIFICATIONS PRIOR TO INSTALLATION.

REVISIONS

NO.	DATE	DESCRIPTION	BY

LIGHTING PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING & CONSTRUCTION, LLC
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CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE: 1" = 20'	DATE: 7/17/19	SHEET 9 OF 9

JAD DESIGN GROUP INC.	Adam Vaillancourt Roofing	Office and Warehouse	A 1.0
	Milford, NH	Stoneyard Road	

ELEVATION VIEWS PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING
& CONSTRUCTION, LLC
LOCATED OFF FUTURE ROAD (STONEYARD DRIVE)
FROM NATHANIEL DRIVE
TOWN OF MILFORD
HILLSBOROUGH COUNTY, NEW HAMPSHIRE

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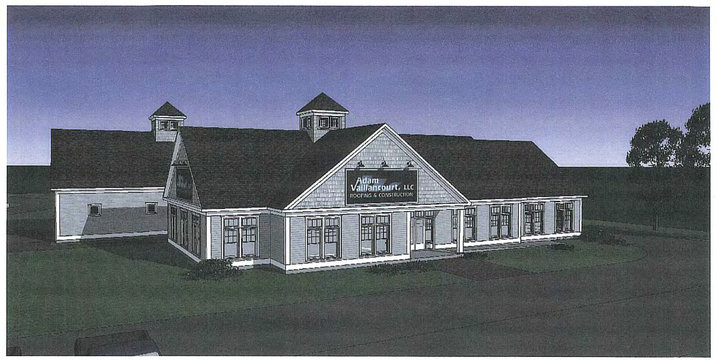
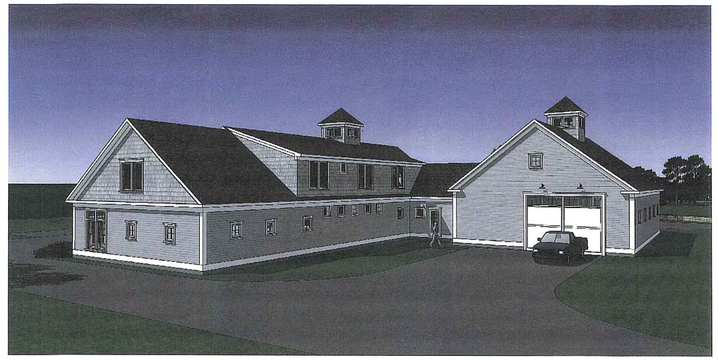
CONTACT: S. BURROWS	CHK BY: EJS	DWG#: ELEVATION-VIEW
SCALE: N.T.S.	DATE: 7/17/19	SHEET 1 OF 2



JAD DESIGN GROUP INC.	Adam Vaillancourt Roofing Milford, NH	Office and Warehouse Stoneyard Road	A 1.0



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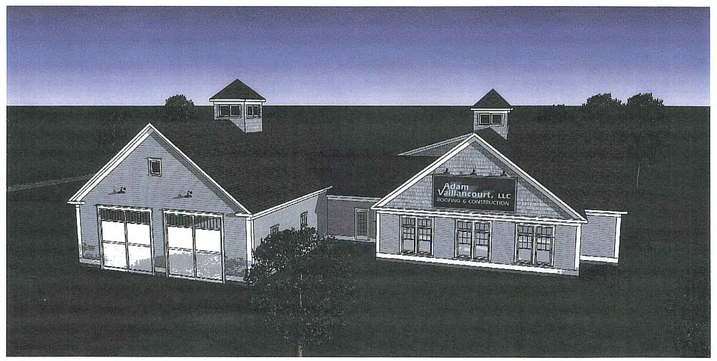
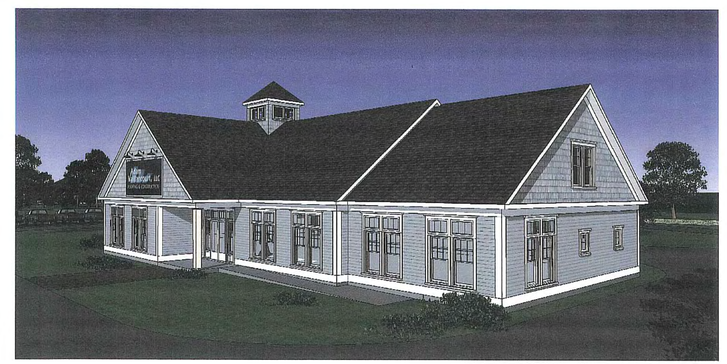


JAD DESIGN GROUP INC.	Adam Vaillancourt Roofing Milford, NH	Office and Warehouse Stoneyard Road	A 1.0



JAD DESIGN GROUP INC.	Adam Vaillancourt Roofing Milford, NH	Office and Warehouse Stoneyard Road	A 1.0

ELEVATION VIEWS PLAN
MAP 43 / LOT 69-1
ADAM VAILLANCOURT ROOFING
& CONSTRUCTION, LLC
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CONTACT: S. BURROWS	CHK BY: EJS	DWG#: VAI02M19052
SCALE:	DATE: 7/17/19	SHEET 2 OF 2