Design Drawings
for the
October 2017 Storm Damage: Saco River
located in
Bartlett, New Hampshire
prepared for
Town of Bartlett

HEB Project # 2019-064

Issued: September 24, 2019

Revised: July 10, 2020

Applicant: Town of Bartlett
56 Town Hall Road
Intervale, NH 03845

Owners: Blaine & Patricia Rogerson
PO Box 184
Bartlett, NH 03812

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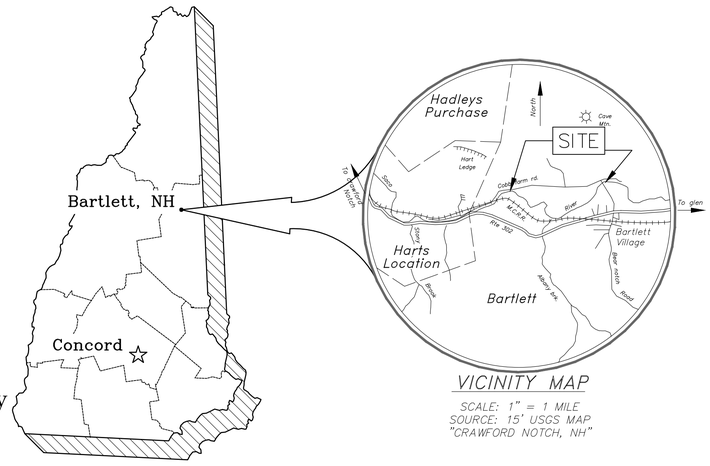

VICINITY MAP
SCALE: 1" = 1 MILE
SOURCE: 15' USGS MAP "CRAWFORD NOTCH, NH"

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13.	C5.11	Construction Details – General	07/10/2020

Engineer/Surveyor

STATE OF NEW HAMPSHIRE · JOSHUA M. McALLISTER No. 12206 · LICENSED PROFESSIONAL ENGINEER

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STATE OF NEW HAMPSHIRE · No. 979 · KEVIN L. TILTON · LICENSED LAND SURVEYOR · SIGNATURE

2019-064
Overall Project Location Plan
October 2017 Storm Damage: Saco River

300 0 300 600 1200 ft
60 0 150 300 m
1 inch = 300 feet
(1 : 3600)

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1	Revised per NRCS, NHDES & LAC comments	07/10/20	TBG/DDD
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SURVEYED BY	MPW/SPP/DWI/JLT
DESIGNED BY	TBG
DRAWN BY	TBG/DDD
CHECKED BY	JMM
FIELD BOOK	359
SCALE	1"=300'
DATE	09/24/2019

Overall Project Location Plan
for the
October 2017 Storm Damage
on the
Saco River
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Town of Bartlett, New Hampshire

2019-064
C1.00
SHEET 2 OF 13

C1.01
SHEET 3 OF 13

2019-064
Erosion & Sediment Control Plan - Cobb Farm Road
October 2017 Storm Damage: Saco River

Control-Point Table				
Point #	Description	Northing	Easting	Elevation
1	MAGNAIL	576799.64	1077602.50	729.03
2	MAGNAIL	576930.48	1077745.03	725.87
3	MAGNAIL	576931.34	1078122.25	721.73
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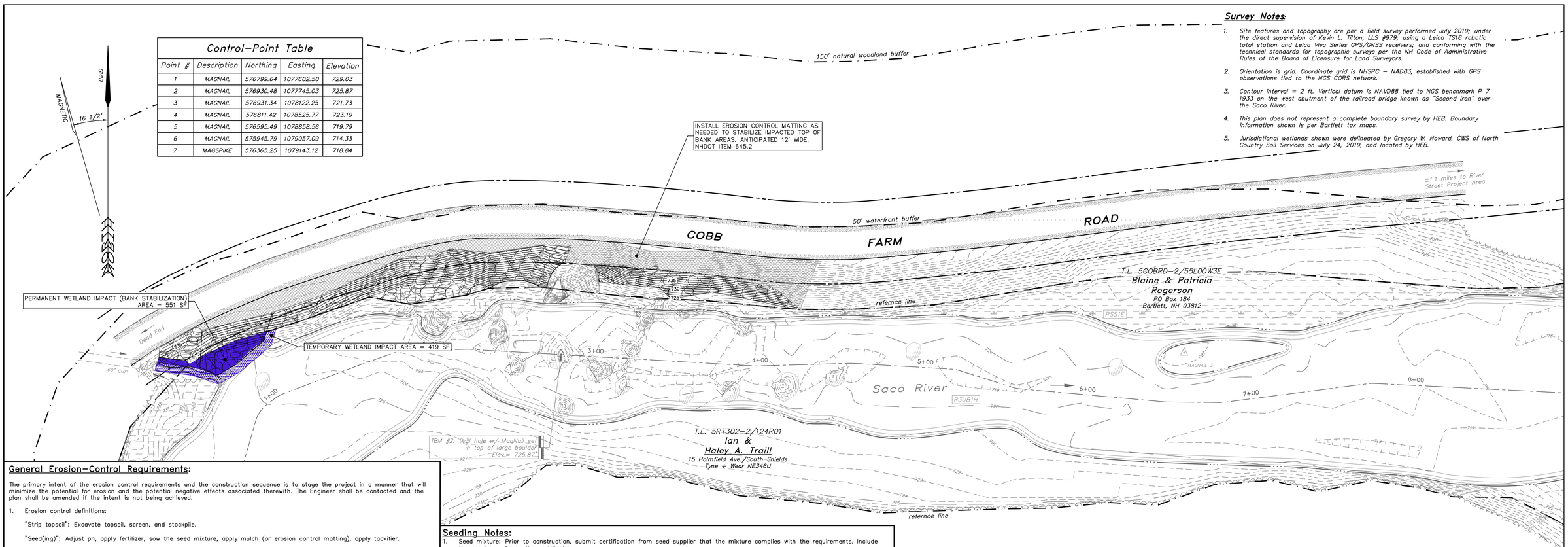
5	MAGNAIL	576595.49	1078858.56	719.79
6	MAGNAIL	575945.79	1079057.09	714.33
7	MAGSPIKE	576365.25	1079143.12	718.84



Survey Notes:

1. Site features and topography are per a field survey performed July 2019; under the direct supervision of Kevin L. Tilton, LLS #979; using a Leica TS16 robotic total station and Leica Viva Series GPS/GNSS receivers; and conforming with the technical standards for topographic surveys per the NH Code of Administrative Rules of the Board of Licensure for Land Surveyors.
2. Orientation is grid. Coordinate grid is NHSPC – NAD83, established with GPS observations tied to the NGS CORS network.
3. Contour interval = 2 ft. Vertical datum is NAVD88 tied to NGS benchmark P 7 1933 on the west abutment of the railroad bridge known as "Second Iron" over the Saco River.
4. This plan does not represent a complete boundary survey by HEB. Boundary information shown is per Bartlett tax maps.
5. Jurisdictional wetlands shown were delineated by Gregory W. Howard, CWS of North Country Soil Services on July 24, 2019, and located by HEB.

General Erosion-Control Requirements:

The primary intent of the erosion control requirements and the construction sequence is to stage the project in a manner that will minimize the potential for erosion and the potential negative effects associated therewith. The Engineer shall be contacted and the plan shall be amended if the intent is not being achieved.

1. Erosion control definitions:

   "Strip topsoil": Excavate topsoil, screen, and stockpile.

   "Seed(ing)": Adjust ph, apply fertilizer, sow the seed mixture, apply mulch (or erosion control matting), apply tackifier.

   "Significant rainfall event": more than ¼-inch of rain.
2. Install all erosion control measures prior to earthwork operation and maintain all erosion control measures and seeded embankments during construction. Erosion control shall be removed only upon the establishment of all vegetated areas.
3. All drainage structure inlets shall be protected using inlet protection or catch basin inserts.
4. Erosion control measures shall be implemented complying with the Best Management Practices (BMPs) of the "New Hampshire Stormwater Management Manual, Volume 2, Post-Construction Best Management Practices Section & Design," by the NHDES, USDA SCS, and Rockingham County Conservation District, latest edition.
5. Do not disturb areas outside the limits of proposed work. Areas disturbed by the Contractor's operations shall be restored to their original condition at the Contractor's expense. All areas disturbed during construction not covered with buildings, structures or pavement shall receive four (4) inches of loam and seed.
6. The downhill side of all stockpiles shall be encircled with silt fence.
7. All ditches, swales, and other areas of concentrated flow shall be stabilized prior to directing flow to them. Inlet protection to be installed prior to directing flow to storm drains.
8. Before weekends, and if a significant rainfall event is anticipated during the construction of the cut/fill embankments, a temporary berm shall be constructed along the top of the fill embankments, and temporary slope drains (pipes) with temporary stone outlet aprons shall be installed at the base of the slopes.
9. The maximum time that any disturbed areas shall be left unstabilized shall be 14 days.
10. The smallest practical area shall be disturbed to complete the required construction, but no more than 5 acres at any one time.
11. Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway and the associated drainage is complete and stable.
12. An area shall be considered stable if one of the following has occurred:
    - A. Base course gravels have been installed in areas to be paved;
    - B. A minimum of 85 percent vegetated growth has been established;
    - C. A minimum of 3 inches of non-erosive material such as stone or riprap has been installed; or
    - D. Erosion control blankets have been properly installed.
13. All erosion control measures shall be inspected weekly, and after every 0.25 inches or greater rainfall within a 24-hour period.
14. All roadways/parking areas and cut and fill slopes shall be stabilized within 72 hours of achieving finished grade.
15. Precaution shall be taken throughout the duration of construction activity to prevent, abate, and control the emission of fugitive dust, including but not limited to, wetting, covering, shielding, or vacuuming.
16. The project must meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.
17. Temporary water diversions (swales, basins, etc.) must be used as necessary until areas are stabilized.
18. Detention basins and swales shall be installed before rough grading at the site.

Critical Erosion Areas:

Temporary seeding and/or mulching shall be used to protect exposed critical areas during construction. The following areas are particularly susceptible to erosion and shall receive extra attention when being inspected and maintained:

1. The larger cut and fill areas along the road and driveways.
2. Areas not worked or not to be worked for 3 weeks.
3. Areas of concentrated flow such as the ditches, swales, and toe of uphill facing slopes.
4. Stormwater ponds and level spreaders.

Seeding Notes:

1. Seed mixture: Prior to construction, submit certification from seed supplier that the mixture complies with the requirements. Include the requirements on the certification.
2. Prepare subsoil by eliminating uneven areas; removing foreign materials, weeds, and other undesirable plants and their roots; scarifying subsoil to a depth of 3 inches.
3. Spread loam to yield a minimum depth of 4 inches after rolling. Rake smooth to remove stones and roots. Loam shall consist of loose friable topsoil with no admixture of refuse or material toxic to plant growth. Loam shall be generally free from stones, lumps, stumps, subsoil, roots, and weeds or similar objects larger than 2 inches in greatest diameter. The term as used herein shall mean that portion of the soil profile defined technically as the "A" horizon by the Soil Science Society of America. The minimum and maximum pH value shall be from 5.5 to 7.6. Loam shall contain a minimum of 3 percent, and a maximum of 10 percent, of organic matter as determined by loss by ignition. Not more than 65 percent shall pass a No. 200 sieve as determined by the wash test in accordance with ASTM D 1140. In no instance shall more than 20 percent of that material passing the No. 4 sieve consist of clay size particles.
4. Apply agricultural limestone at a rate of 100 lbs, per 1000 sf.
5. Apply commercial grade 10-10-10 fertilizer at a rate of 10 lbs, per 1000 sf.
6. Sow uniformly with last year's crop of the local natural resource conservation service's "conservation mix" at a rate of 0.5lbs/1000 sf. Mixture is to have a germination rate of not less than 80 percent, and a purity of not less than 85 percent.
7. Roll seeded area with hand roller.
8. All ditches shall receive erosion control matting.

Temporary:

1. Bedding: Remove stones and trash that will interfere with seeding the area. Where feasible, till the soil to a depth of about 3 inches to prepare a seedbed and mix fertilizer into the soil. The seedbed should be left in a firm and smooth condition. The last tillage operation should be performed across the slope wherever practical.
2. Fertilizers: Fertilizer should be uniformly spread over the area prior to being incorporated into the soil. A minimum of 300 pounds per acre (7 pounds per 1,000 square feet) of 10-10-10 fertilizer, or its equivalent, should be applied.
3. Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.
4. Seed Mixture: Use any of the following:

Species	Per Acre	Per 1,000 s.f.	Dates	Depth
Winter Rye	112 lbs.	2.5 lbs.	8/15-9/5	1 inch
Oats	80 lbs.	2.0 lbs.	Spring-5/15	1 inch
Annual Ryegrass	40 lbs.	1.0 lb.	4/15-9/15	¼ inch
Perennial Ryegrass	30 lbs.	0.7 lbs.	4/1-6/1 or 8/15-9/15	½ inch

5. Maintenance: If seeding fails to grow, it may need to be re-established to provide adequate erosion control. If weeds become a problem, they may need to be controlled by mowing.

Winter Construction Notes:

1. All proposed vegetated areas which do not exhibit a minimum of 85 percent vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melts.
2. All ditches or swales which do not exhibit 85 percent 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 road or parking surfaces, 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.

Construction Sequence (Bank Stabilization):

NHDES requires that certain steps be taken in order to minimize the erosion of soil within the limits of work. These measures are integral to the successful restoration of the project site. Listed below is a potential construction sequence that would achieve this goal. The specific means and methods are to be determined by the Contractor, but must meet the requirements of the approved Wetlands Permit and supporting Contract Documents. Contractor's proposed construction sequence shall be approved by Engineer prior to construction.

1. Install erosion and sediment control measures prior to any earth moving activity that will influence or affect stormwater runoff.
2. Clear and grub area necessary for construction access.
3. Install temporary siltation measures and cofferdams in the channel.
4. Place new riprap in noted locations and repair existing riprap.
5. Remove water diversion measures.
6. Stabilize site and disturbed areas. Leave erosion and sediment control materials in place until the project area has stabilized.

U.S. Fish and Wildlife Classification:

PSS1E Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated
R3UB1H Riverine, Upper Perennial, Unconsolidated Bottom, Cobble-Gravel, Permanently Flooded

Legend

- Existing major contour (410)
- Existing minor contour (408)
- Proposed major contour (410)
- Proposed minor contour (408)
- Edge of water
- Riprap
- Delineated Wetland
- Existing/Proposed Vegetation Line
- Silt Fence
- Proposed Cofferdam
- Proposed erosion control matting

Wetland Impacts (Bank-Stabilization)

- Permanent Wetland Impact Area (Bank Stabilization) = 551 SF
- Permanent Wetland Impact Area (Cobble Removal) = 0 SF
- Temporary Wetland Impact Area = 419 SF
- Total Wetland Impact Area = 970 SF
- Stream Channel Impact Length = 0 LF
- Stream Bank Impact Length = 44 LF
- Total Stream Impact Length = 44 LF

30 0 30 60 120 ft
6 0 15 30 m
1 inch = 30 feet
(1 : 360)

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DRAWN BY	TBG/DDD
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Erosion & Sediment Control Plan - Cobb Farm Road
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October 2017 Storm Damage
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2019-064
C1.01
SHEET 3 OF 13

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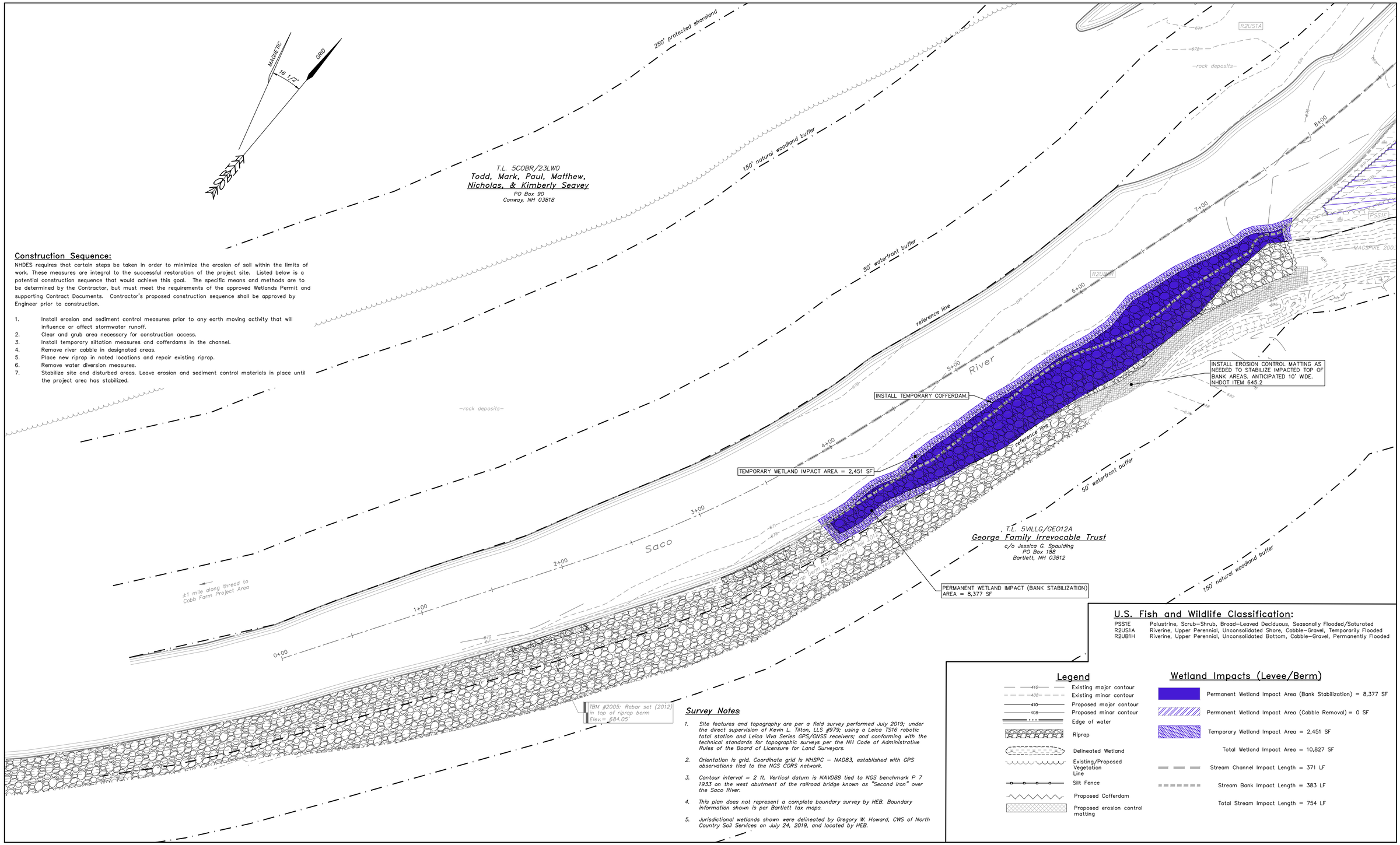
2019-064
Erosion & Sediment Control Plan - River St. Bridge (Area 1)
October 2017 Storm Damage: Saco River



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1. Install erosion and sediment control measures prior to any earth moving activity that will influence or affect stormwater runoff.
2. Clear and grub area necessary for construction access.
3. Install temporary siltation measures and cofferdams in the channel.
4. Remove river cobble in designated areas.
5. Place new riprap in noted locations and repair existing riprap.
6. Remove water diversion measures.
7. Stabilize site and disturbed areas. Leave erosion and sediment control materials in place until the project area has stabilized.

Survey Notes

1. *Site features and topography are per a field survey performed July 2019; under the direct supervision of Kevin L. Tilton, LLS #979; using a Leica TS16 robotic total station and Leica Viva Series GPS/GNSS receivers; and conforming with the technical standards for topographic surveys per the NH Code of Administrative Rules of the Board of Licensure for Land Surveyors.*
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R2US1A	Riverine, Upper Perennial, Unconsolidated Shore, Cobble–Gravel, Temporarily Flooded
R2UB1H	Riverine, Upper Perennial, Unconsolidated Bottom, Cobble–Gravel, Permanently Flooded

Legend

- Existing major contour (410)
- Existing minor contour (408)
- Proposed major contour (410)
- Proposed minor contour (408)
- Edge of water
- Riprap
- Delineated Wetland
- Existing/Proposed Vegetation Line
- Silt Fence
- Proposed Cofferdam
- Proposed erosion control matting

Wetland Impacts (Levee/Berm)

- Permanent Wetland Impact Area (Bank Stabilization) = 8,377 SF
- Permanent Wetland Impact Area (Cobble Removal) = 0 SF
- Temporary Wetland Impact Area = 2,451 SF
- Total Wetland Impact Area = 10,827 SF
- Stream Channel Impact Length = 371 LF
- Stream Bank Impact Length = 383 LF
- Total Stream Impact Length = 754 LF

30 0 30 60 120 ft
6 0 15 30 m
1 inch = 30 feet
(1 : 360)

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DRAWN BY	TBG/DDD
CHECKED BY	JMM
FIELD BOOK	359
SCALE	1"=30'
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Erosion & Sediment Control Plan - River St. Bridge (Area 1)
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2019-064
C1.11
SHEET 4 OF 13

C1.12
SHEET 5 OF 13

2019-064
Erosion & Sediment Control Plan - River St.Bridge (Area 2)
October 2017 Storm Damage: Saco River

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Intervale, NH 03845

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Intervale, NH 03845

T.L. 5VILLG/RIV560
Laura McGrath & Robert Hajjar
7 Harris Ave.
Wellesley, MA 02481

COBB FARM ROAD
YATES FARM ROAD
STREET
RIVER
Razor Brook
Saco River

INSTALL TEMPORARY COFFERDAM.
PERMANENT WETLAND IMPACT AREA. (RIVER COBBLE REMOVAL) = 48,197 SF
TBM #2006: Drill hole w/ MagNail set in top of small boulder Elev.= 670.89'
TBM #2002: Nail w/ washer set 1.0' in/river side of 16" Oak Elev.= 674.67'
50' waterfront buffer
150' natural woodland buffer
reference line
delineated wetland
rock deposits
gravel parking lot
gravel beach area
washout
MAGSPIKE 2001
MAGSPIKE 2002
MAGSPIKE 2003
MAGNAIL 10
MAGNAIL 2
MAGNAIL 3
PFO1E
PSS1E
R2UB1H
R2US1A
R3US1A
R3UB1H

U.S. Fish and Wildlife Classification:

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PFO1E	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded/Saturated

Legend

- Existing major contour
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- Proposed major contour
- Proposed minor contour
- Edge of water
- Riprap
- Delineated Wetland
- Existing/Proposed Vegetation Line
- Silt Fence
- Proposed Cofferdam
- Proposed erosion control matting

Wetland Impacts (Dredging)

- Permanent Wetland Impact Area (Cobble Removal) = 48,197 SF
- Total Wetland Impact Area = 48,197 SF
- Stream Channel Impact Length = 759 LF
- Stream Bank Impact Length = 911 LF
- Total Stream Impact Length = 1,670 LF

30 0 30 60 120 ft
6 0 15 30 m
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(1 : 360)

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Erosion & Sediment Control Plan - River St. Bridge (Area 2)
for the
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2019-064
C1.12
SHEET 5 OF 13

P:\Jobs\2019\2019-064 Bartlett - October 2017 Storm Damage, Bartlett, NH\Dwg\2020 NRCS Update\Saco River\Sheet Files\2019-064 C1.04 Erosion & Sediment Control Plan - River St.dwg, C1.12, 7/10/2020 3:55:55 PM, dsteigerwa

C1.21
SHEET 6 OF 13

2019-064
Site Plan – Cobb Farm Road
October 2017 Storm Damage: Saco River

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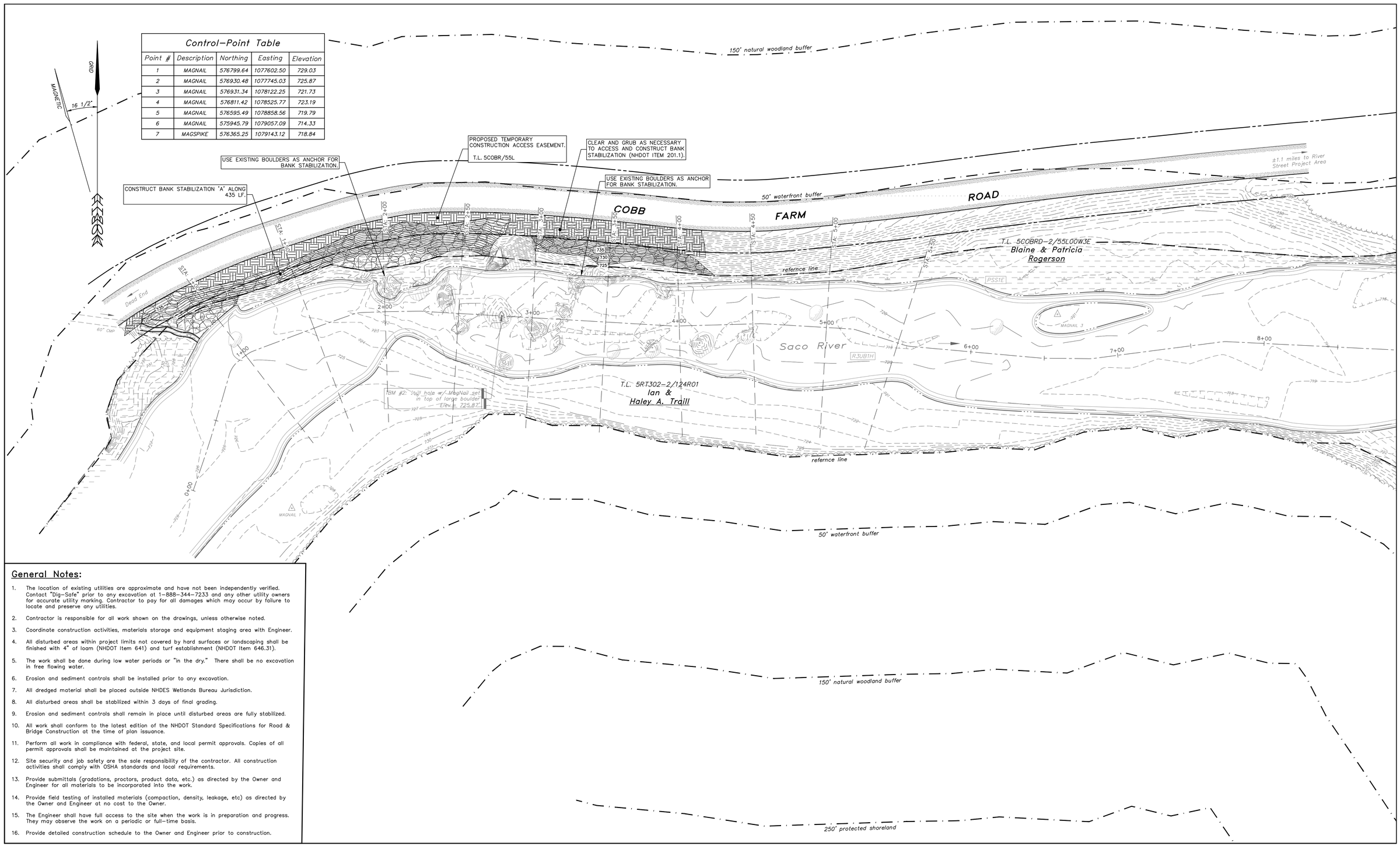

General Notes:

1. The location of existing utilities are approximate and have not been independently verified. Contact "Dig–Safe" prior to any excavation at 1–888–344–7233 and any other utility owners for accurate utility marking. Contractor to pay for all damages which may occur by failure to locate and preserve any utilities.
2. Contractor is responsible for all work shown on the drawings, unless otherwise noted.
3. Coordinate construction activities, materials storage and equipment staging area with Engineer.
4. All disturbed areas within project limits not covered by hard surfaces or landscaping shall be finished with 4" of loam (NHDOT Item 641) and turf establishment (NHDOT Item 646.31).
5. The work shall be done during low water periods or "in the dry." There shall be no excavation in free flowing water.
6. Erosion and sediment controls shall be installed prior to any excavation.
7. All dredged material shall be placed outside NHDES Wetlands Bureau Jurisdiction.
8. All disturbed areas shall be stabilized within 3 days of final grading.
9. Erosion and sediment controls shall remain in place until disturbed areas are fully stabilized.
10. All work shall conform to the latest edition of the NHDOT Standard Specifications for Road & Bridge Construction at the time of plan issuance.
11. Perform all work in compliance with federal, state, and local permit approvals. Copies of all permit approvals shall be maintained at the project site.
12. Site security and job safety are the sole responsibility of the contractor. All construction activities shall comply with OSHA standards and local requirements.
13. Provide submittals (gradations, proctors, product data, etc.) as directed by the Owner and Engineer for all materials to be incorporated into the work.
14. Provide field testing of installed materials (compaction, density, leakage, etc) as directed by the Owner and Engineer at no cost to the Owner.
15. The Engineer shall have full access to the site when the work is in preparation and progress. They may observe the work on a periodic or full–time basis.
16. Provide detailed construction schedule to the Owner and Engineer prior to construction.

30 0 30 60 120 ft
6 0 15 30 m
1 inch = 30 feet
(1 : 360)

No.	Revision	DATE	BY
1	Revised per NRCS, NHDES & LAC comments	07/10/20	TBG/DDD

STATE OF NEW HAMPSHIRE
JOSHUA M. McALLISTER
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Bridgton, ME 04009

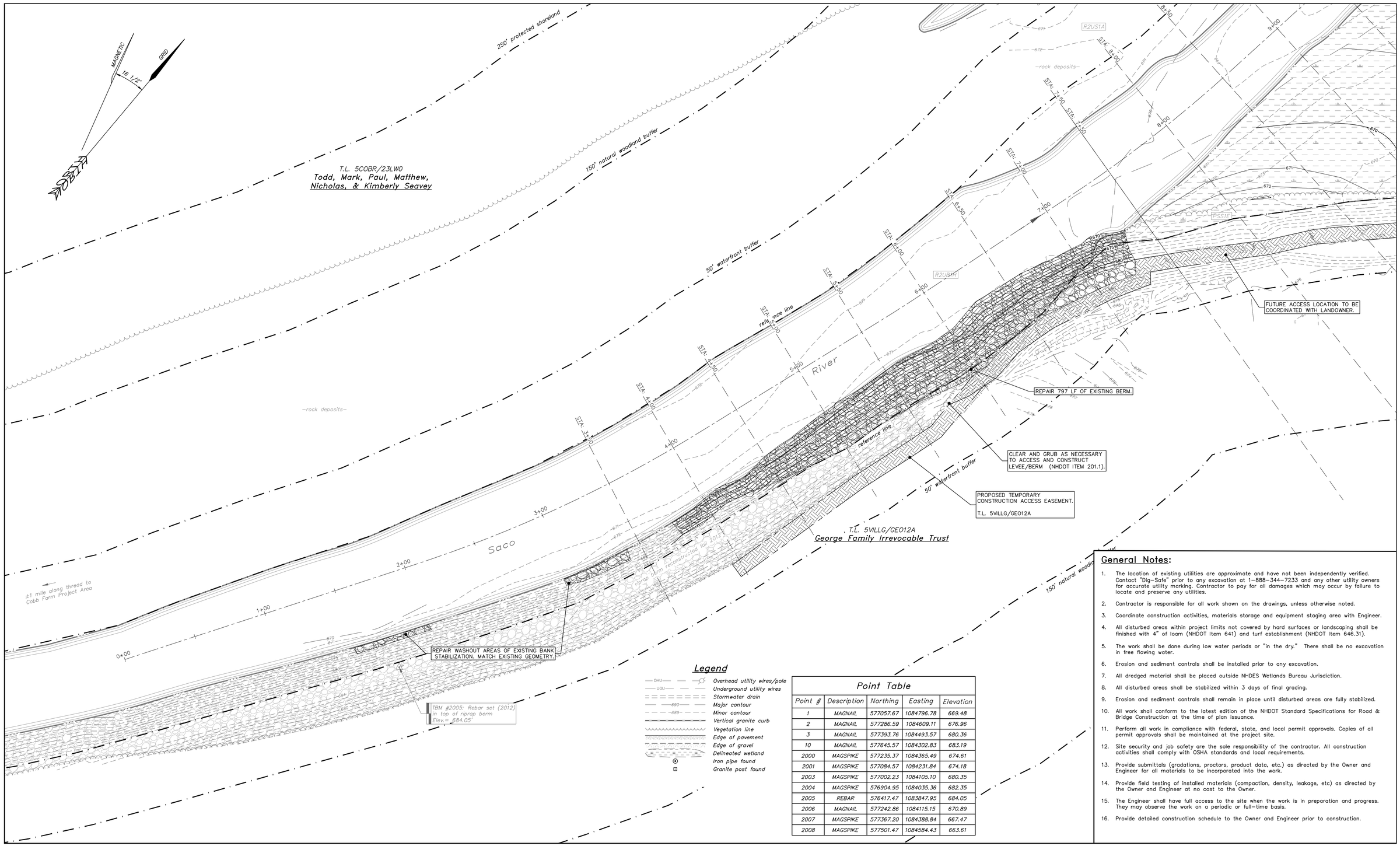
SURVEYED BY	MPW/SPP/DWH/JLT
DESIGNED BY	TBG
DRAWN BY	TBG/DDD
CHECKED BY	JMM
FIELD BOOK	359
SCALE	1"=30'
DATE	09/24/2019

Site Plan – Cobb Farm Road
for the
October 2017 Storm Damage
on the
Saco River
loacted in & prepared for the
Town of Bartlett, New Hampshire

2019-064
C1.21
SHEET 6 OF 13

P:\Jobs\2019\2019-064 Bartlett - October 2017 Storm Damage, Bartlett, NH\Dwg\2020 NRCS Update\Saco River\Sheet Files\2019-064 C1.21 C1.23 Site Plan - Cobb Farm.dwg, C1.21, 7/10/2020 4:00:39 PM, dsteigerwa

2019-064
Site Plan – River St. Bridge (Area 1)
October 2017 Storm Damage: Saco River



Legend

- Overhead utility wires/pole
- Underground utility wires
- Stormwater drain
- Major contour
- Minor contour
- Vertical granite curb
- Vegetation line
- Edge of pavement
- Edge of gravel
- Delineated wetland
- Iron pipe found
- Granite post found

Point Table

Point #	Description	Northing	Easting	Elevation
1	MAGNAIL	577057.67	1084796.78	669.48
2	MAGNAIL	577286.59	1084609.11	676.96
3	MAGNAIL	577393.76	1084493.57	680.36
10	MAGNAIL	577645.57	1084302.83	683.19
2000	MAGSPIKE	577235.37	1084365.49	674.61
2001	MAGSPIKE	577084.57	1084231.84	674.18
2003	MAGSPIKE	577002.23	1084105.10	680.35
2004	MAGSPIKE	576904.95	1084035.36	682.35
2005	REBAR	576417.47	1083847.95	684.05
2006	MAGNAIL	577242.86	1084115.15	670.89
2007	MAGSPIKE	577367.20	1084388.84	667.47
2008	MAGSPIKE	577501.47	1084584.43	663.61

General Notes:

1. The location of existing utilities are approximate and have not been independently verified. Contact "Dig–Safe" prior to any excavation at 1–888–344–7233 and any other utility owners for accurate utility marking. Contractor to pay for all damages which may occur by failure to locate and preserve any utilities.
2. Contractor is responsible for all work shown on the drawings, unless otherwise noted.
3. Coordinate construction activities, materials storage and equipment staging area with Engineer.
4. All disturbed areas within project limits not covered by hard surfaces or landscaping shall be finished with 4" of loam (NHDOT Item 641) and turf establishment (NHDOT Item 646.31).
5. The work shall be done during low water periods or "in the dry." There shall be no excavation in free flowing water.
6. Erosion and sediment controls shall be installed prior to any excavation.
7. All dredged material shall be placed outside NHDES Wetlands Bureau Jurisdiction.
8. All disturbed areas shall be stabilized within 3 days of final grading.
9. Erosion and sediment controls shall remain in place until disturbed areas are fully stabilized.
10. All work shall conform to the latest edition of the NHDOT Standard Specifications for Road & Bridge Construction at the time of plan issuance.
11. Perform all work in compliance with federal, state, and local permit approvals. Copies of all permit approvals shall be maintained at the project site.
12. Site security and job safety are the sole responsibility of the contractor. All construction activities shall comply with OSHA standards and local requirements.
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6 0 15 30 m
1 inch = 30 feet
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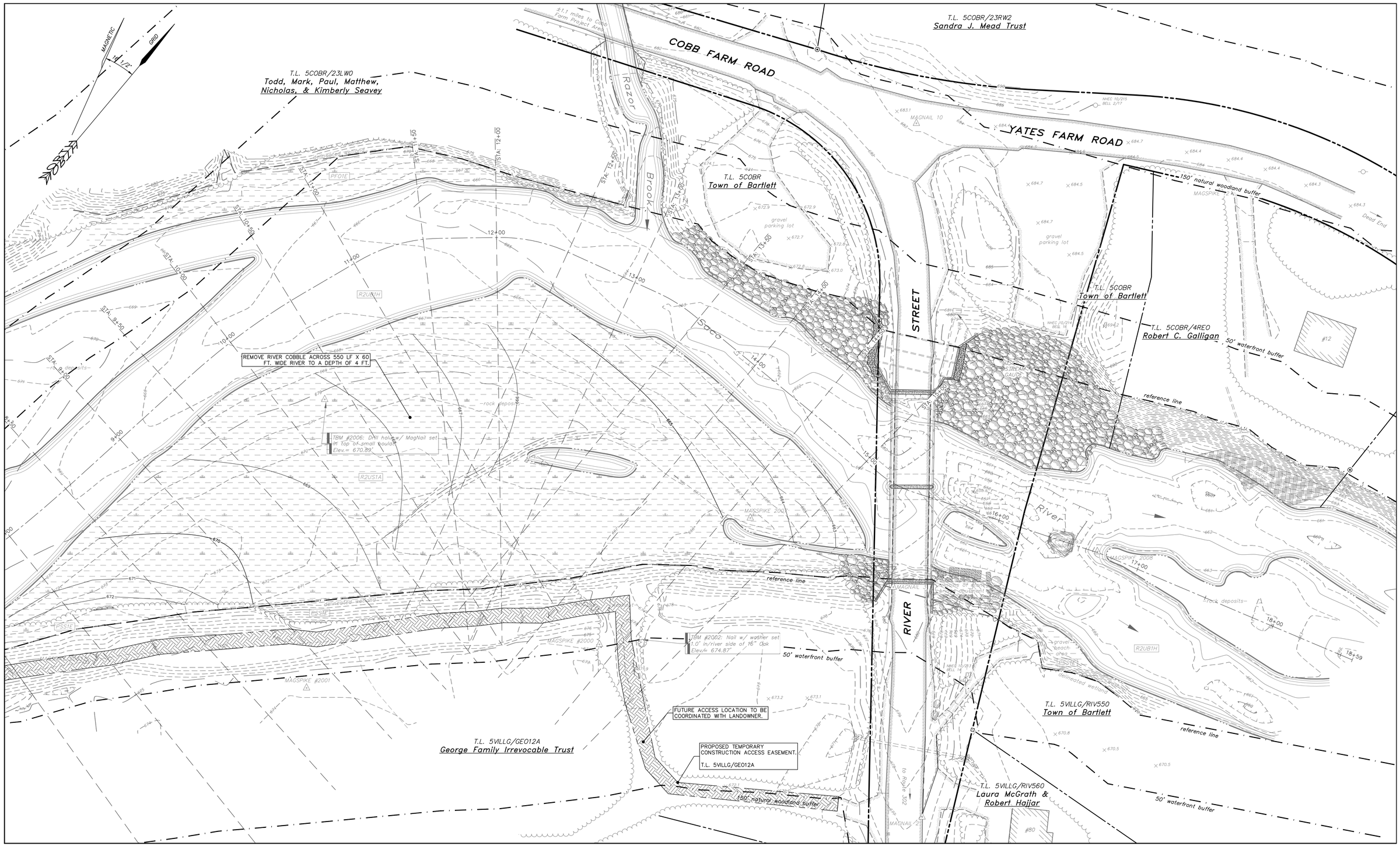
FIELD BOOK	359
SCALE	1"=30'
DATE	09/24/2019

Site Plan – River St. Bridge (Area 1)
for the
October 2017 Storm Damage
on the
Saco River
loacted in & prepared for the
Town of Bartlett, New Hampshire

2019-064
C1.31
SHEET 7 OF 13

C1.32
SHEET 8 OF 13

2019-064
Site Plan – River St Bridge (Area 2)
October 2017 Storm Damage: Saco River



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for the
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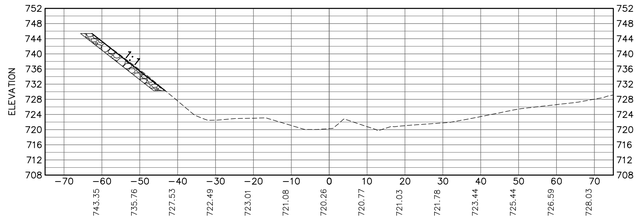
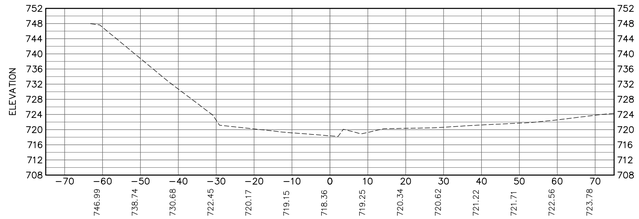
2019-064
C1.32
SHEET 8 OF 13

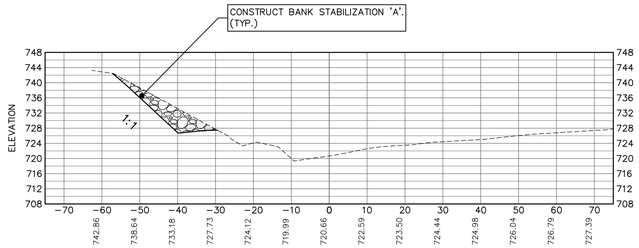
2019-064
Cross Sections: Cobb Farm Road-STA. 1+00-4+50
October 2017 Storm Damage: Saco River



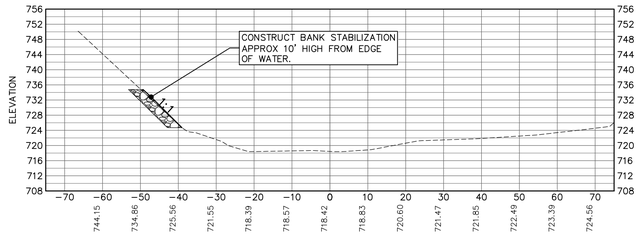
Station 2+50.00



Station 4+50.00



Station 2+00.00



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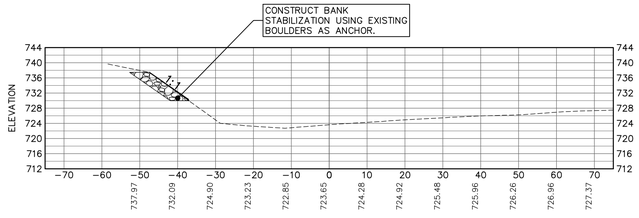
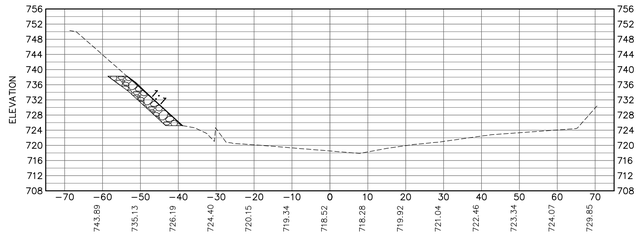


Station 1+50.00



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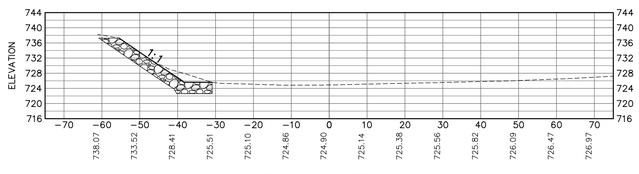

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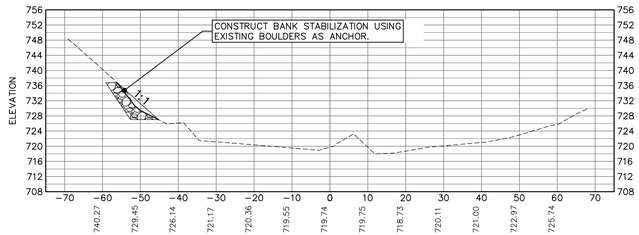

Station 3+00.00

20 0 20 40 80 ft
4 0 10 20 m
1 inch = 20 feet
(1 : 240)

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SCALE	1"=20'
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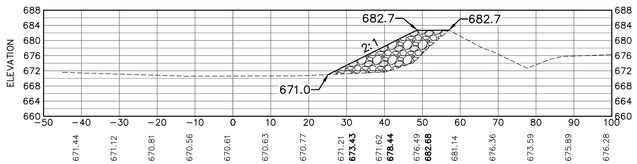
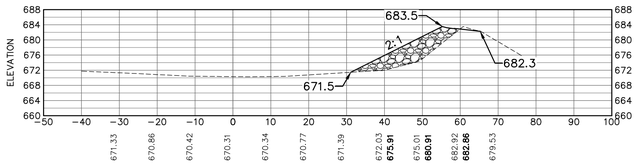
2019-064
C3.11
SHEET 9 OF 13

2019-064
Cross Sections: River St. Bridge-STA. 3+50-7+50
October 2017 Storm Damage: Saco River



Station 6+50.00



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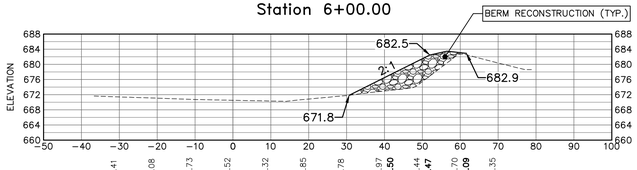

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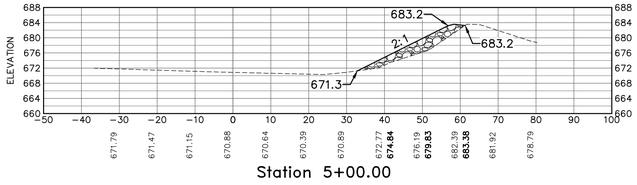
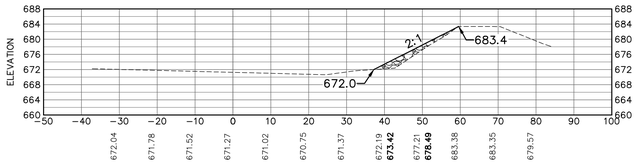
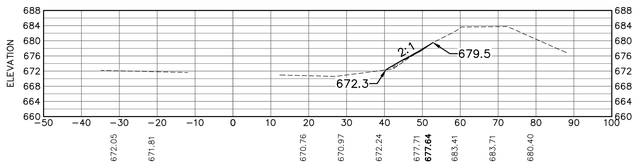


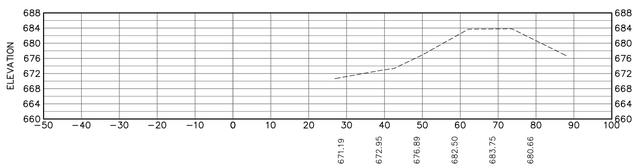
Station 5+00.00



Station 4+50.00



Station 4+00.00



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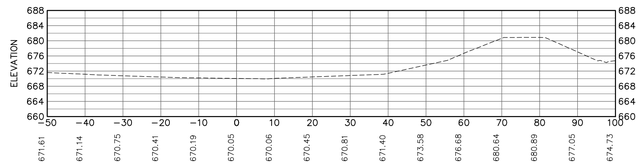
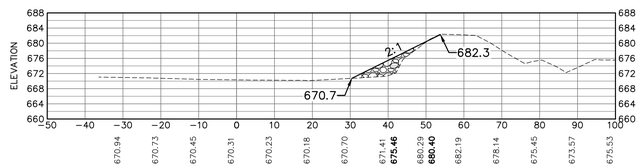
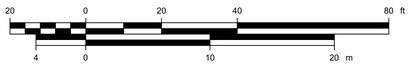


Station 7+50.00



Station 7+00.00



1 inch = 20 feet
(1 : 240)

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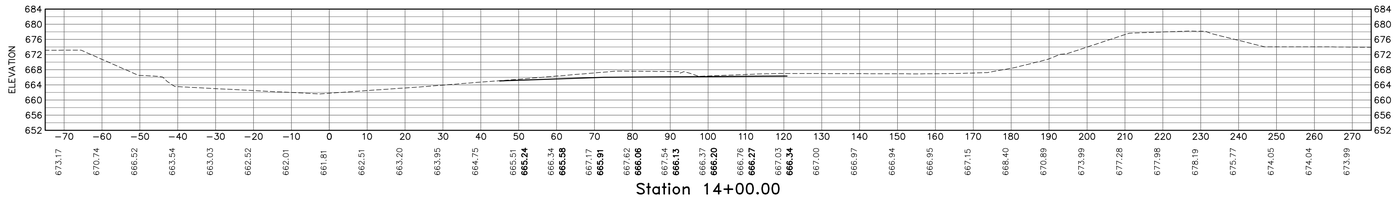
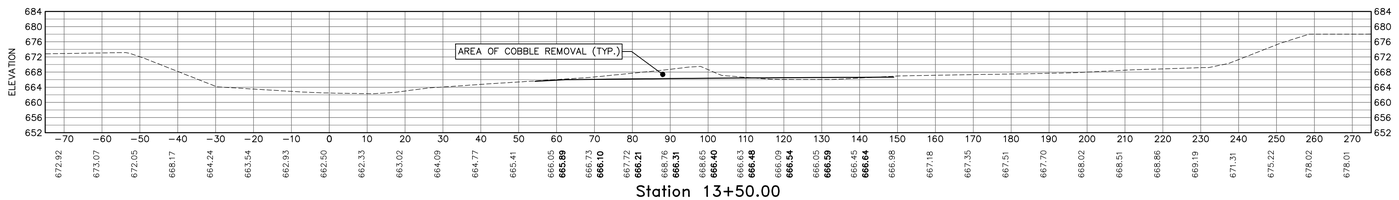
2019-064
C3.21
SHEET 10 OF 13

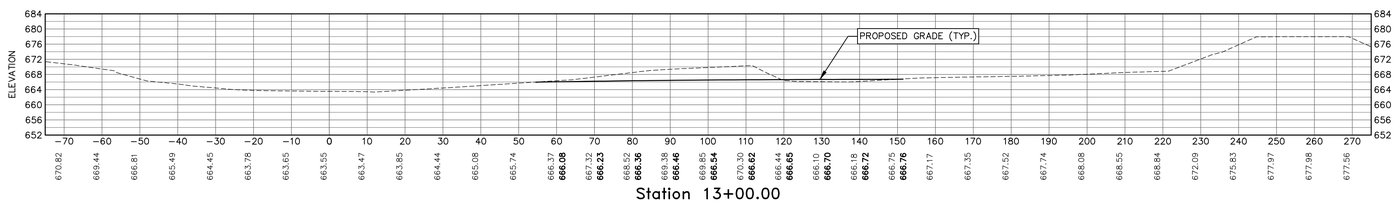
2019-064
Cross Sections: River St. Bridge-STA. 11+00-14+00
October 2017 Storm Damage: Saco River



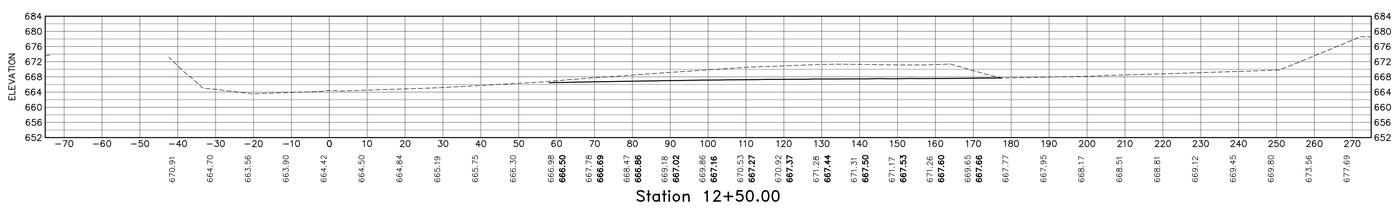
Station 14+00.00



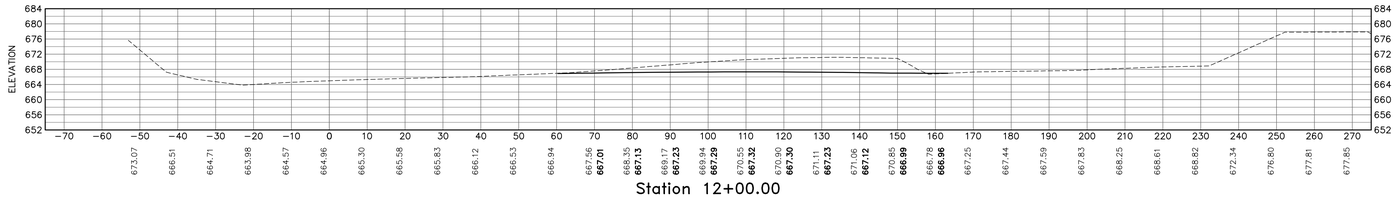
Station 13+50.00



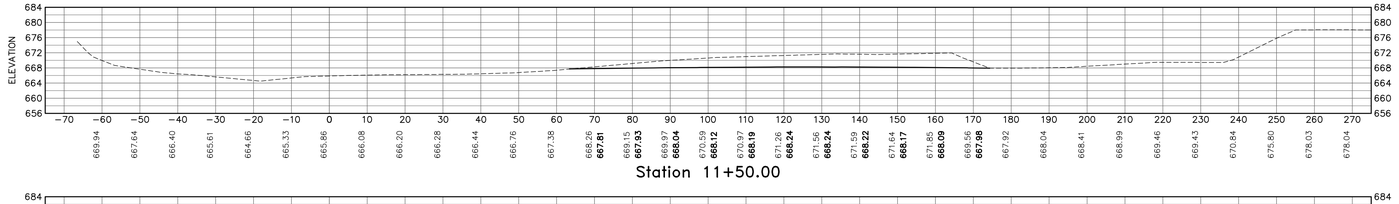
Station 13+00.00



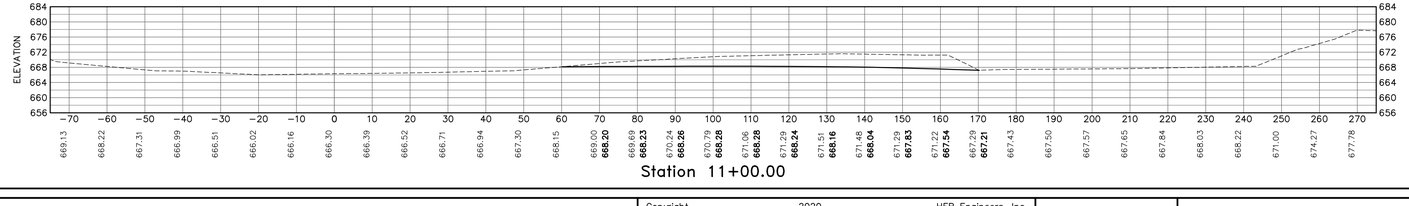
Station 12+50.00



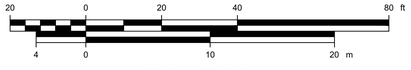
Station 12+00.00



Station 11+50.00



Station 11+00.00



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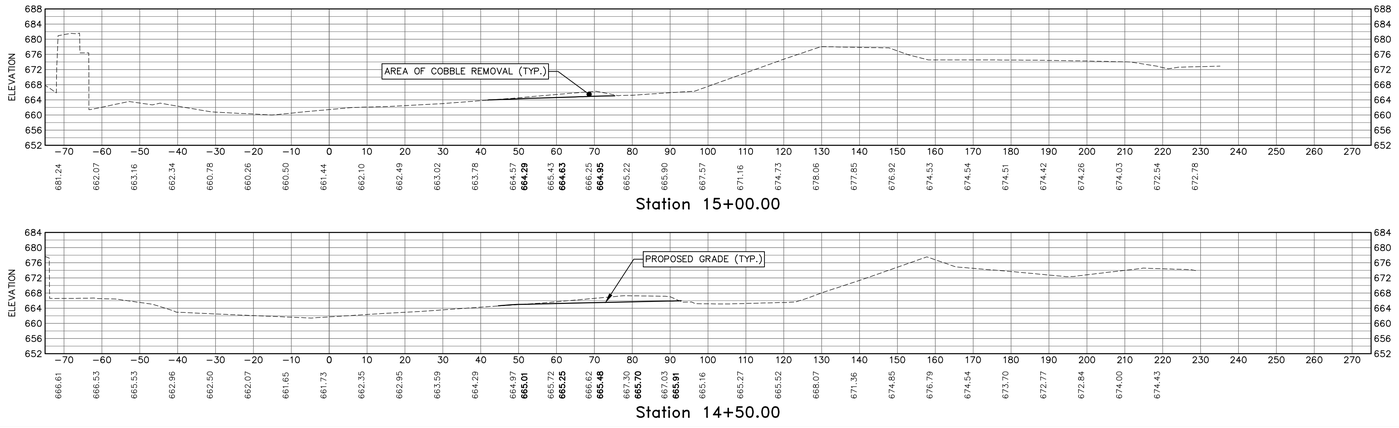
2019-064
C3.22
SHEET 11 OF 13

2019-064
Cross Sections: River St. Bridge-STA. 14+50-15+00
October 2017 Storm Damage: Saco River



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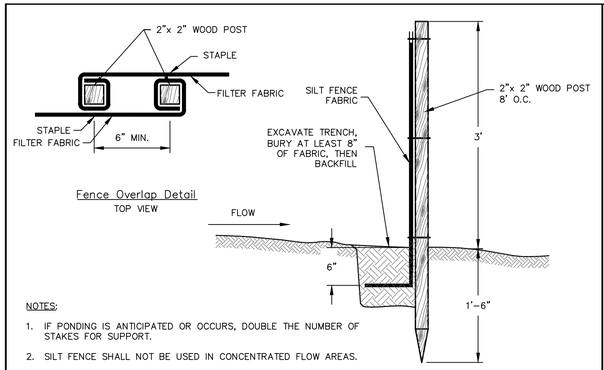
2019-064
C3.23
SHEET 12 OF 13



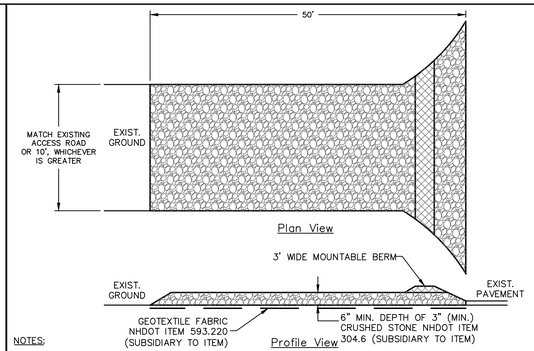
NOTES:

1. IF PONDING IS ANTICIPATED OR OCCURS, DOUBLE THE NUMBER OF STAKES FOR SUPPORT.
2. SILT FENCE SHALL NOT BE USED IN CONCENTRATED FLOW AREAS.
3. SEDIMENT DEPOSITS SHALL BE INSPECTED AFTER EVERY STORM EVENT AND REMOVED WHEN DEPOSITS REACH APPROXIMATELY 1/3 THE HEIGHT OF THE SILT FENCE, OR WHEN "BULGES" DEVELOP IN THE SILT FENCE.

NHDOT Item 645.531

Silt Fence Installation

Scale: 1" = 1'

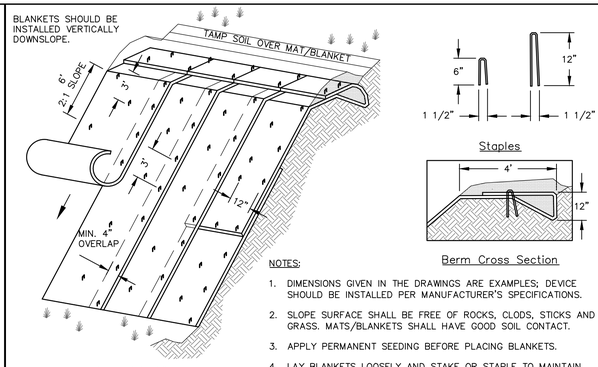


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. THE PAD SHALL SLOPE AWAY FROM THE EXISTING ROADWAY.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ALL MATERIALS, LABOR, CONSTRUCTION, MAINTENANCE AND REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE INCLUDED IN NHDOT ITEM 699. NHDOT Item 699.1

Stabilized Construction Entrance

Scale: 1" = 10'



TYPICAL SLOPE SOIL STABILIZATION

NOTES:

1. DIMENSIONS GIVEN IN THE DRAWINGS ARE EXAMPLES; DEVICE SHOULD BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
3. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
4. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. SLOPES OF 3:1 OR FLATTER SHALL MEET NHDOT ITEM 645.42. SLOPES OF 1.5:1 OR FLATTER SHALL MEET NHDOT ITEM 645.44.

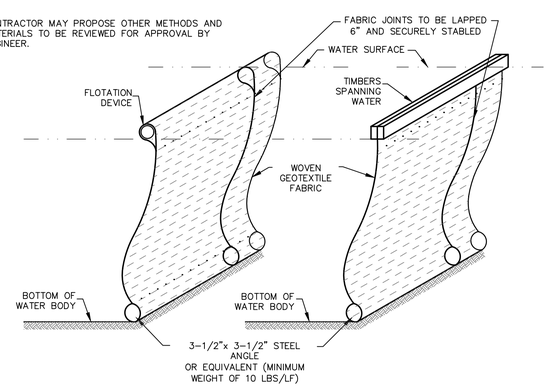
NHDOT Item 645.42/645.44

Erosion Blankets Slope Installation

N.T.S.

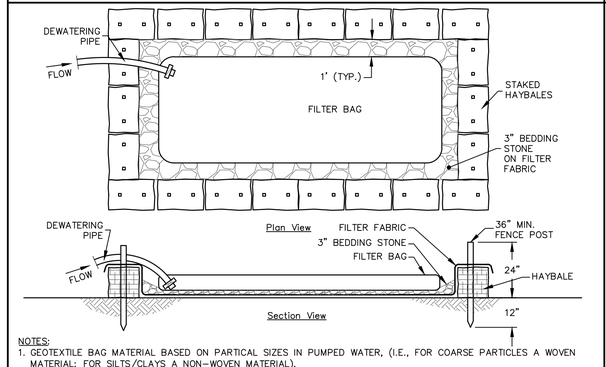
NOTE:

1. CONTRACTOR MAY PROPOSE OTHER METHODS AND MATERIALS TO BE REVIEWED FOR APPROVAL BY ENGINEER.



Sedimentation Barrier

Scale: (Isometric)

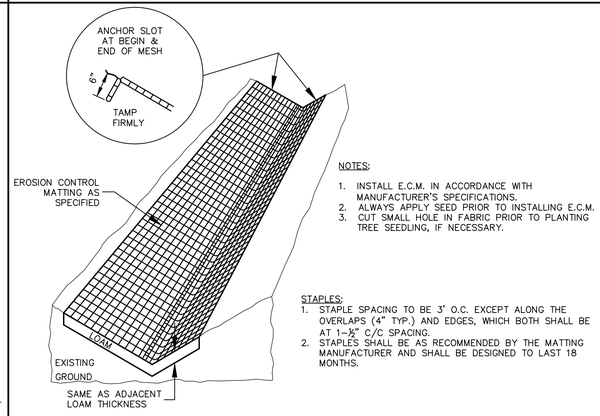


NOTES:

1. GEOTEXTILE BAG MATERIAL BASED ON PARTICAL SIZES IN PUMPED WATER, (I.E., FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON-WOVEN MATERIAL).
2. DO NOT OVER PRESSURIZE BAG OR USE BEYOND CAPACITY.
3. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
4. DOWNGRADIENT FROM RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, (I.E., FOREST FLOOR OR COARSE GRAVEL/STONE).
5. DISCHARGE LOCATION SHALL MEET ALL REGULATORY SETBACKS FROM WETLANDS AND OTHER WATER COURSES.
6. ALL MATERIALS, LABOR, CONSTRUCTION, MAINTENANCE AND REMOVAL OF THE SEDIMENTATION BASIN, AND RESTORATION OF THE AREA SHALL BE INCLUDED IN NHDOT ITEM 699. DISPOSE OF FILTER BAGS WHEN FULL AND REPLACE.

Sedimentation Basin Details

N.T.S.



NOTES:

1. INSTALL E.C.M. IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. ALWAYS APPLY SEED PRIOR TO INSTALLING E.C.M.
3. CUT SMALL HOLE IN FABRIC PRIOR TO PLANTING TREE SEEDLING, IF NECESSARY.

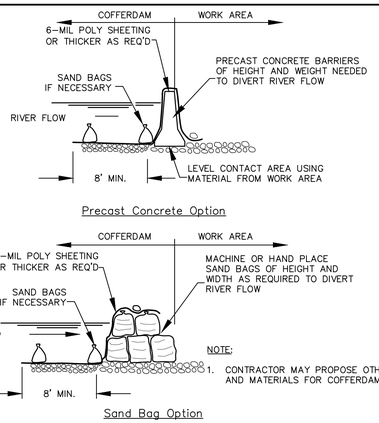
STAPLES:

1. STAPLE SPACING TO BE 3' O.C. EXCEPT ALONG THE OVERLAPS (4" TYP.) AND EDGES, WHICH BOTH SHALL BE AT 1-½" C/C SPACING.
2. STAPLES SHALL BE AS RECOMMENDED BY THE MATTING MANUFACTURER AND SHALL BE DESIGNED TO LAST 18 MONTHS.

Item 62901

Erosion-Control Matting

N.T.S. (Isometric)



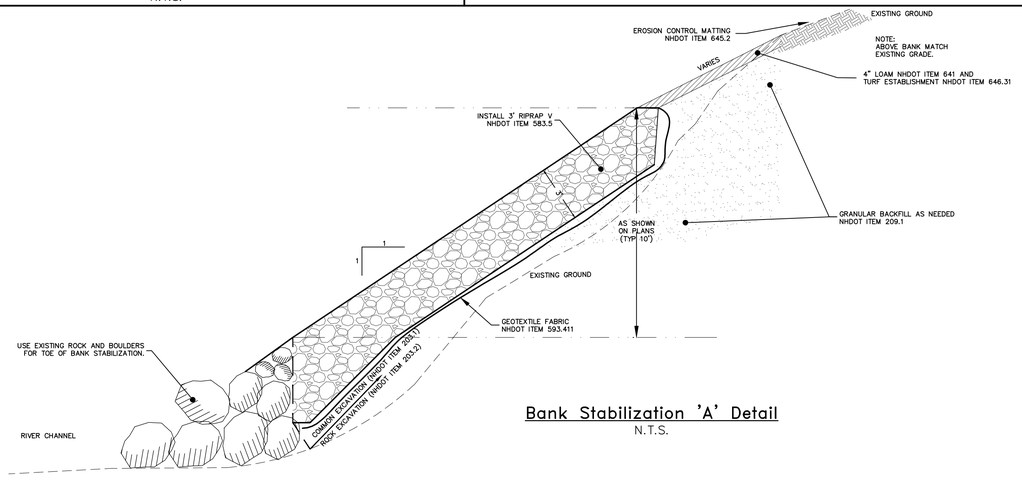
NOTE:

1. CONTRACTOR MAY PROPOSE OTHER METHODS AND MATERIALS FOR COFFERDAMS.

Item 20805

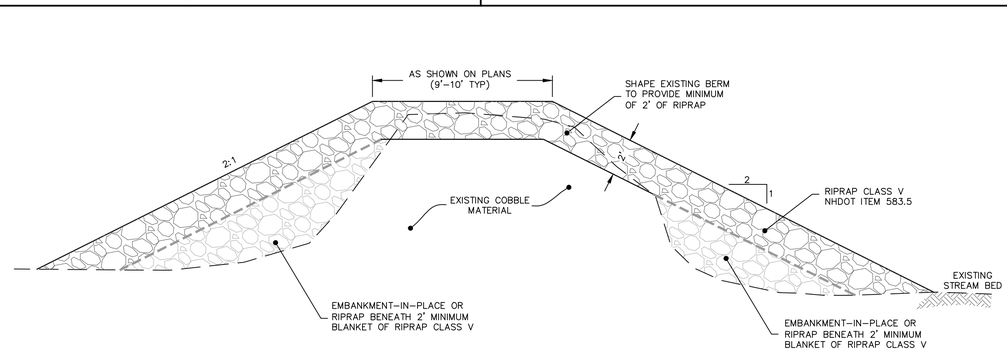
Temporary Cofferdams

N.T.S.



Bank Stabilization 'A' Detail

N.T.S.



River Street Berm Detail

Scale: 1" = 4'

No.	Revision	DATE	BY
1	Revised per NRCS, NHDES & LAC comments	07/10/20	TBG/DDD

STATE OF NEW HAMPSHIRE – JOSHUA M. McALLISTER No. 12206 – LICENSED PROFESSIONAL ENGINEER

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SURVEYED BY	MPM/SPP/DVM/JLT
DESIGNED BY	TBG
DRAWN BY	TBG/DDD
CHECKED BY	JMM
FIELD BOOK	359
SCALE	AS NOTED
DATE	09/24/2019

Construction Details – General
for the
October 2017 Storm Damage
on the
Saco River
loacted in & prepared for the
Town of Bartlett, New Hampshire

2019-064
C5.11
SHEET 13 OF 13