C0.01
SHEET 1 OF 12

Construction Drawings

for

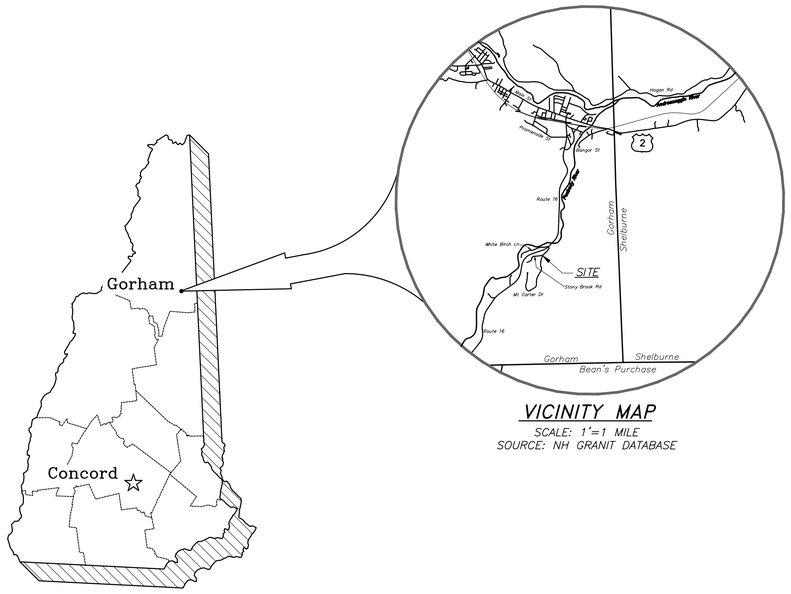
Stony Brook Road Reconstruction

located in and prepared for

Town of Gorham, New Hampshire

HEB Project #2017-110
Issued: May 9, 2019

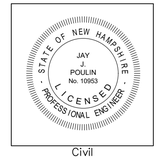
Sheet Index



VICINITY MAP
SCALE: 1"=1 MILE
SOURCE: NH GRANIT DATABASE

Owner: Town of Gorham
20 Park Street
Gorham, NH 03581

Engineer/Surveyor



Civil

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Bridgton, ME 04009

Survey

2017-110
Cover Sheet
Stony Brook Road Reconstruction

C0.02
SHEET 2 OF 12

2017-110
General Notes & Quantities
Stony Brook Road Reconstruction

General Construction Requirements:

1. Contractor is responsible for all work shown on the drawings, unless otherwise noted. Provide and install all materials required to complete project.
2. All work shall conform to the latest edition of the NHDOT Standard Specifications for Road & Bridge Construction, and shall comply with requirements of the NHDOT District Engineer.
3. Perform all work in compliance with federal, state, and local permit approvals. Copies of all permit approvals shall be maintained at the project site.
4. The Contractor shall prepare a NPDES Stormwater Pollution Preventation Plan and submit a Notice of Intent complying with the EPA's requirements.
5. Site security and job safety are the sole responsibility of the Contractor. All construction activities shall comply with OSHA standards and local requirements.
6. The Contractor shall coordinate construction activities, materials storage, and equipment staging areas with the Owner'S Representative..
7. The location of existing utilities are approximate and have not been independently verified. Contact "Dig Safe" 72 hours 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 the failure to locate and preserve any utilities.
8. At least one week prior to site clearing/demolition, request Owner's Representative to identify features to remain.
9. The Contractor shall provide submittals (gradations, proctors, product data, etc.) as directed by the Engineer for all materials to be incorporated into the work.
10. 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.
11. The Contractor shall provide a construction schedule to the Owner prior to commencing work and shall update the schedule as necessary.
12. The Contractor is responsible for repair of all damages caused during construction.
13. The Contractor is responsible for restoration of all disturbed areas outside the limits of work to pre-construction conditions.
14. Field-verify the location, size, inverts and types of existing pipes at all proposed points of connection prior to ordering materials. Where an existing utility is found to be in conflict with the proposed work, the location, elevation and size of the utility shall be accurately determined without delay, and the information furnished in writing to the Owner's Representative for resolution of the conflict.
15. Rim elevations of proposed drainage structures are approximate in paved areas. Final elevations are to be set flush and consistent with the grading plan. Adjust all other rim elevations to finished grade within the limit of work.
16. All traffic control, site signage and pavement markings shall conform to the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD) and NHDOT Standards.
17. Provide traffic control and flaggers (if required), complying with the NHDOT requirements.
18. Contractor shall contact NHDOT District 1 two weeks prior to commencing work in or near Route 16. Contractor shall provide a traffic control plan to the Town and NHDOT for review. Construction equipment and material shall be out of the Route 16 clear zone during non-working hours.
19. Contractor shall review the condition of the Route 16 drainage elements with NHDOT District 1 prior to construction. Contractor shall fix any damage during construction to NHDOT drainage elements to the satisfaction of the NHDOT District 1 Engineer, at the Contractor's expense.
20. Contractor shall remove and dispose of all debris and excess excavated material from within the construction limit of work, to a suitable site provided by the Contractor, in compliance with all state and local regulations. Any excess suitable material may remain on site at the request of the Town.
21. All disturbed areas, which are not covered by structures or paving, shall be properly seeded or replanted by the Contractor (NHDOT Item 646.512).
22. Vehicle access to driveways shall be maintained during construction.
23. Final resolution to conflicts within the specifications or any substitutions shall be determined by the Engineer.
24. The Contractor shall not disturb any existing property corner, monument, survey marker, or benchmark without first making provisions for its replacement or relocation. The cost of protecting existing property corners, monuments, survey markers, or benchmarks is subsidiary to the project.
25. The Contractor shall perform all work within the existing right-of-way and obtained easement areas.
26. Vehicle access to all intersecting roads shall be maintained during construction.
27. Roadway layout is subsidiary, and is the responsibility of the Contractor.

Project Intent Notes:

1. The intent of the project is to construct roadway and drainage improvements to portions of Stony Brook Road and Mount Carter Drive which were damaged due to previous storm events.
2. The roadway repairs will generally include removal of the existing pavement surface and partial roadway reconstruction within the proposed limits of work. Drainage improvements will generally include the construction of improved roadside ditches and replacement of culverts if funding allows.
3. Maintenance of Traffic is required throughout the duration of the construction project. Contractor will be required to maintain vehicle access to all residential driveways throughout construction.
4. At a minimum, one-way traffic shall be maintained at all times during construction work hours. Two-way traffic shall be maintained during non-work hours. Any variation to the traffic requirements shall be requested in writing to the Owner's Representative prior to implementation.

Material Testing:

1. It is anticipated the following material testing program will be implemented and be the responsibility of the Owner.
2. Contractor shall notify Owner's Representative at least 48 hours prior to placement of materials noted below.
3. Contractor is responsible for supplying and installing construction materials that meet NHDOT Specifications.
4. Testing program outlined below assumes phased construction.

NHDOT Item	Description	Test Location & Frequency	
203.6	Embankment-In-Place	Compaction	- In Place 1/2,000 CY
209.1/209.201	Granular Backfill/Granular Backfill (Bridge)	Compaction	- In Place 1/2,000 CY
		Gradation	- 1/4,000 CY
304.2/304.5	Gravel	Compaction	- In Place 1/250 LF of road
		Gradation	- 1/4,000 CY (Minimum 1 per construction phase)
304.3/304.4	Crushed Gravel	Compaction	- In Place 1/250 LF of road
		Gradation	- 1/4,000 CY (Minimum 1 per construction phase)
304.33	Crushed Aggregate for Shoulders	Compaction	- 1/500 LF of road
		Gradation	- 1/4,000 CY
304.67/304.467	Crushed Stone	Gradation	- 1/source
403.11/403.12	Hot Bituminous Pavement	Compaction	- In place 1/500 LF of road (binder & wearing)
		Gradation	- At plant 1/750 Tons (Minimum 1 per construction phase)
		Asphalt Content	- At plant 1/750 Tons (Minimum 1 per construction phase)

Construction Sequence:

In addition to complying with the "General Erosion-Control Requirements", the construction sequence is based on construction beginning in the Summer of 2019 and completed in the Fall of 2019. Should the construction take longer than assumed, the contractor shall stabilize the site in accordance with the Winter Construction Standards at no additional cost to the owner, and the engineer shall be contacted to determine if additional measures are needed.

Summer/Fall 2019:

1. Install erosion and sediment control measures prior to any earth moving activity that will influence or affect stormwater runoff.
2. Cut trees and remove stumps.
3. Install new drainage controls where identified.
4. Excavate roadway to proposed roadway section base.
5. Shape existing base to promote positive drainage.
6. Proof roll and compact existing base.
7. Install 6 inches (min.) of crushed gravel over gravel existing base.
8. Construct ditches and associated drainage measures.
9. Install erosion control measures to stabilize ditches and slopes.
10. Fine grade base gravels and complete installation of bituminous pavement binder course.
11. Loam, seed and mulch all disturbed areas. Install erosion control measures as indicated.
12. Complete the bituminous pavement wearing course once all phases have been completed.
13. Install shoulder gravels along pavement shoulders.
14. After vegetation is sufficiently established in the opinion of the Owners Representative, remove the temporary erosion control measures.
15. Site must be Stabilized prior to October 2019.

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.

General Notes:

1. All temporary mulching is to be included in NHDOT Item 699.1.
2. All work in the stream channel shall occur during periods of low-flow to the greatest extent feasible.

Culvert Removal Notes:

1. The Contractor's method for removal of the existing culvert shall be submitted for documentation, in accordance with the NHDOT Standard Specifications Section 105.02, prior to the commencement of any removal operations.
2. NHDOT Item 202.41, Removal of Existing Pipe 0-24 inch Diameter, shall include the removal of the entire structure, and all fill material above the bottom of structure.

Cofferdam Notes:

1. Control of water within the cofferdams shall be conducted in such a manner as to prevent disturbance of the bearing soil. Pumping areas shall be located outside the footing support limits and properly filtered to prevent the pumping of fines.
2. Any foundation soil weakened as a result of insufficient care taken in maintaining a dewatered condition shall be removed and replaced with NHDOT Item 508.67 at the expense of the Contractor.
3. Dewatering shall be continuous until substructures are backfilled to the elevations of the surrounding water table, unless noted otherwise.
4. All means and methods associated with handling water during construction of foundations shall be located within the limits of work shown on the Wetlands Permit approved for the Project.
5. The cofferdam design shall account for the effects of unbalanced earth pressure on the cofferdam stability.
6. If sheet piles are necessary, it should be noted that in some locations pre-excavation of cobbles and boulders may be required prior to placing steel sheeting. During excavation the Contractor shall disturb the area as little as possible and use necessary precautions to minimize the impacts to the stream. All costs shall be included in NHDOT Item 503.201.
7. Excavation backslopes below in-service roadways that are used in combination with, or in-place of, a cofferdam shall meet the following criteria. The Contractor shall be responsible for the design and maintenance of all excavation backslopes.
   A. The excavation backslope shall be no steeper than 1½H:1V. A flatter backslope shall be used if the Contractor's calculations indicate insufficient slope stability at 1½H:1V.
   B. For cases where the existing guardrail is used for traffic barrier above the excavation, the crest of excavated backslopes shall be offset a minimum of 8 feet from the face of existing guardrail. The existing ground surfaces between the guardrail and the excavated backslopes shall be maintained in its original configuration.
   C. For cases where the concrete traffic barriers are used in place of existing guardrail, the crest of excavated backslopes shall be offset a minimum of 2 feet from the outside edge of the concrete barrier.
8. The Contractor should be prepared to perform any subsurface investigations needed for the cofferdam design. All costs associated with the completion of subsurface investigations, the redesign, or the reinstallation of cofferdams due to subsurface conditions encountered during the cofferdam installation that are different from what the cofferdam designer assumed and/or interpreted from the available subsurface information, shall be subsidiary to the associated cofferdam item. NHDOT Standard Specifications Section 102.05 shall be referenced regarding the subsurface information provided in the contract.

U.S. Fish and Wildlife Classification:

PF04E Palustrine, Forested, Needle-Leaved Evergreen, Seasonally Flood/Saturated
PF01E Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flood/Saturated

Wetland Delineation Certification:

These wetland delineations are a representation of a compilation of field data collected January 15, 2018, by Gregory Howard, Certified Wetland Scientist #078, of North Country Soil Services, Inc.

The delineated wetland areas meet the criteria for freshwater wetlands as noted in the New Hampshire Code of Administrative Rules Chapter Wt 100, Part Wt 101, Section Wt 101.01 "Freshwater Wetlands".

The wetland delineations were conducted in accordance with NH Code of Administrative Rules Chapter Wt 300, Part Wt 301, Section Wt 301.01 "Delineation of Wetland Boundaries" effective April 25, 2005, utilizing the Corps of Engineers Wetlands Delineation Manual, January 1987, Technical Report Y-87-1,

Approvals Received:

NHDES Wetlands Permit: Pending

Summary of Quantities

NHDOT Item #	Description	Unit	Quantity
	Demolition / Earthwork		
201.1	Clearing and Grubbing (F)	AC	1.0
203.1	Common Excavation	CY	400.0
203.2	Rock Excavation	CY	20.0
206.1	Common Structure Excavation	CY	1,050.0
209.1	Granular Backfill	CY	100.0
214	Fine Grading	U	1.0
	Base Courses		
304.3	Crushed gravel (F)	CY	1,050.0
304.33	Crushed Aggregate for Shoulders	CY	60.0
	Pavements		
403.11	Hot Bituminous Pavement, Machine Method	Ton	600.0
403.12	Hot Bituminous Pavement, Hand Method	Ton	40.0
	Incidental Construction		
585.3	Stone Fill, Class C	CY	1,100.0
593.421	Geotextile, Permanent Erosion Control, Class 2, Nonwoven	SY	2,050.0
604.72	Grate and Frame, Type B	EA	1.0
615.023	Removing Traffic Sign, Type B	EA	4.0
615.028	Reset Traffic Sign, Type B	EA	4.0
619.1	Maintenance of Traffic	LS	1.0
628.2	Sawcut Bituminous Pavement	LF	230.0
645.44	Temporary slope stabilization Type D (Wildlife Friendly)	SY	2,169.0
645.531	Silt fence	LF	2,259.0
645.7	Storm water pollution prevention plan (SWPPP)	U	1.0
645.71	Monitoring SWPPP and erosion & sediment controls	HR	40.0
646.512	Turf Establish with mulch, tackifiers, and loam (F)	SY	2,500.0
692	Mobilization	U	1.0
699	Miscellanous temporary erosion and sediment control	U	1.0

Bid Alternate #1 - Mount Carter Drive Intersection Culvert

NHDOT Item #	Description	Unit	Quantity
	Demolition / Earthwork		
202.41	Removal of Existing Pipe 0-24" Diameter	LF	72
206.1	Common Structure Excavation	CY	6
	Structures		
520.1	Concrete Class A	CY	4
544	Reinforcing Steel (F)	LB	30
	Incidental Construction		
603.83218	Storm Drain 18" HDPE Pipe	LF	75

Bid Alternate #2 - Fire Pond Discharge

NHDOT Item #	Description	Unit	Quantity
	Demolition / Earthwork		
202.41	Removal of Existing Pipe 0-24" Diameter	LF	164
206.1	Common Structure Excavation	CY	8
	Structures		
503.2	Cofferdams	U	1
520.1	Concrete Class A	CY	8
544	Reinforcing Steel (F)	LB	185
	Incidental Construction		
603.83224	Storm Drain 24" HDPE Pipe	LF	160

Bid Alternate #3 - Route 16 Intersection Culvert

NHDOT Item #	Description	Unit	Quantity
	Demolition / Earthwork		
202.41	Removal of Existing Pipe 0-24" Diameter	LF	65
206.1	Common Structure Excavation	CY	3
	Structures		
520.1	Concrete Class A	CY	3
544	Reinforcing Steel (F)	LB	15
	Incidental Construction		
603.83218	Storm Drain 18" HDPE Pipe	LF	62

No.	Revision	DATE	BY

JAY J. POULIN No. 10953 - STATE OF NEW HAMPSHIRE - LICENSED PROFESSIONAL ENGINEER

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Bridgton, ME 04009

SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	N/A
DATE	05/09/2019

General Notes & Quantities
for the
Stony Brook Road Reconstruction
located in and prepared for the
Town of Gorham, New Hampshire

2017-110
C0.02
SHEET 2 OF 12

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V1.01
SHEET 3 OF 12

2017-110
Existing-Features Plan
Stony Brook Road Reconstruction

T.L. R1/4
United States of America
White Mountain National Forest
300 Glen Rd.
Gorham, NH 03581

T.L. U28/30
Gorham Land Company
Attn: Howie Wemyss
Po Box 278
Gorham, NH 03581

T.L. U28/31
Gorham Land Company
Attn: Howie Wemyss
Po Box 278
Gorham, NH 03581

T.L. U28/6
Michael A. Cruz
102 Radcliff Drive
East Norwich, NY 11732

T.L. U28/7
Suzanne & Bruce MacDonald
4 Stony Brook Rd.
Gorham, NH 03581

T.L. U29/1
Gorham Land Company
Attn: Howie Wemyss
Po Box 278
Gorham, NH 03581

T.L. U28/33
Gorham Land Company
Attn: Howie Wemyss
Po Box 278
Gorham, NH 03581

TBM #3015: Nail w/ washer set 1.0' up west side of utility pole PSNH 31/2 NETT 2 Elev.= 938.08'

TBM #3014: Nail w/washer set 1.0' up northwest side of utility pole PSNH 31/3 NETT 3 Elev.= 954.91'

TBM #3008: Nail w/washer set 1.0' up east side of utility pole PSNH 31/4 NETT 178/4 Elev.= 963.43'

TBM #3005: Nail found 0.8' up east side of utility pole PSNH 31A/1 NETT 179/1 Elev.= 975.47'

STONY BROOK ROAD

GLEN ROAD

NH ROUTE 16

MOUNT CARTER DRIVE

Stony Brook

Stony Brook Road 50' right-of-way, See E. Libby & Sons Co. to Town of Gorham —June 8, 1987— B.713, P.467; also see Survey Ref. 2

Mount Carter Drive 50' right-of-way per Survey Ref. 3 No record found of transfer to Town

MATCH TO ABOVE

MATCH TO BELOW

GRID 16° 1' MAGNETIC

Survey Reference:

1. Jan. 5–13, 2017 survey of "2017 Stony Brook Road Centerline Survey, Prepared for CMA Engineers" by York Land Services, LLC.
2. Sept. 9, 1983 plan of "E. Libby & Sons Co. Stony Brook Subdivision, Route 16, Gorham, New Hampshire" by York Land Services, Co., recorded at Coos County Registry of Deeds Pocket #9, Folder #3, Plan #20.
3. Sept. 28, 1989 plan of "Plat of Phase I Stony Brook II Subdivision, Gorham, New Hampshire" by York Land Services, Co., recorded at CCRD, Plan#438B.

Survey Notes:

1. Centerline and edges of pavement shown are per Survey Ref. 1 surveyed prior to the Oct. 30, 2017 storm event. Additional site features and topography shown are per field surveys performed January 2018 using a Leica TCRP1203+ robotic total station and Leica GS15 GPS/GLONASS geodetic receivers, under the direct supervision of Kevin L. Tilton, LLS #979, 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. Bearings are grid and coordinate grid is N.H. State Plane Coordinate System NAD83 datum, per Survey Ref. 1.
3. Contour interval = 2 feet. Vertical datum is per Survey Ref. 1.
4. Jurisdictional wetlands shown were delineated by Gregory Howard, CWS in January 2018 and located by HEB.
5. Street rights-of-way and abutting property lines shown are per Survey Ref. 2 & 3, fit to found monuments.
6. Survey was preformed in winter conditions, additional site features may have been missed due to snow cover. Edge of water along Stony Brook should be considered approximate, it was located on top of thick ice buildup.

Legend

- Overhead utility wires/pole
- Stormwater drain/catchbasin
- Major contour
- Minor contour
- Stone wall
- Vegetation line
- Edge of pavement
- Edge of gravel
- Delineated wetland
- Intersection point
- Iron pipe found

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

No.	Revision	DATE	BY

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

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Post Office Box 343
Bridgton, ME 04009

SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	
DRAWN BY	JLT
CHECKED BY	KLT
FIELD BOOK	354
SCALE	1"=30
DATE	05/09/2019

Existing-Features Plan
for the
Stony Brook Road Reconstruction
located in and prepared for the
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2017-110
V1.01
SHEET 3 OF 12

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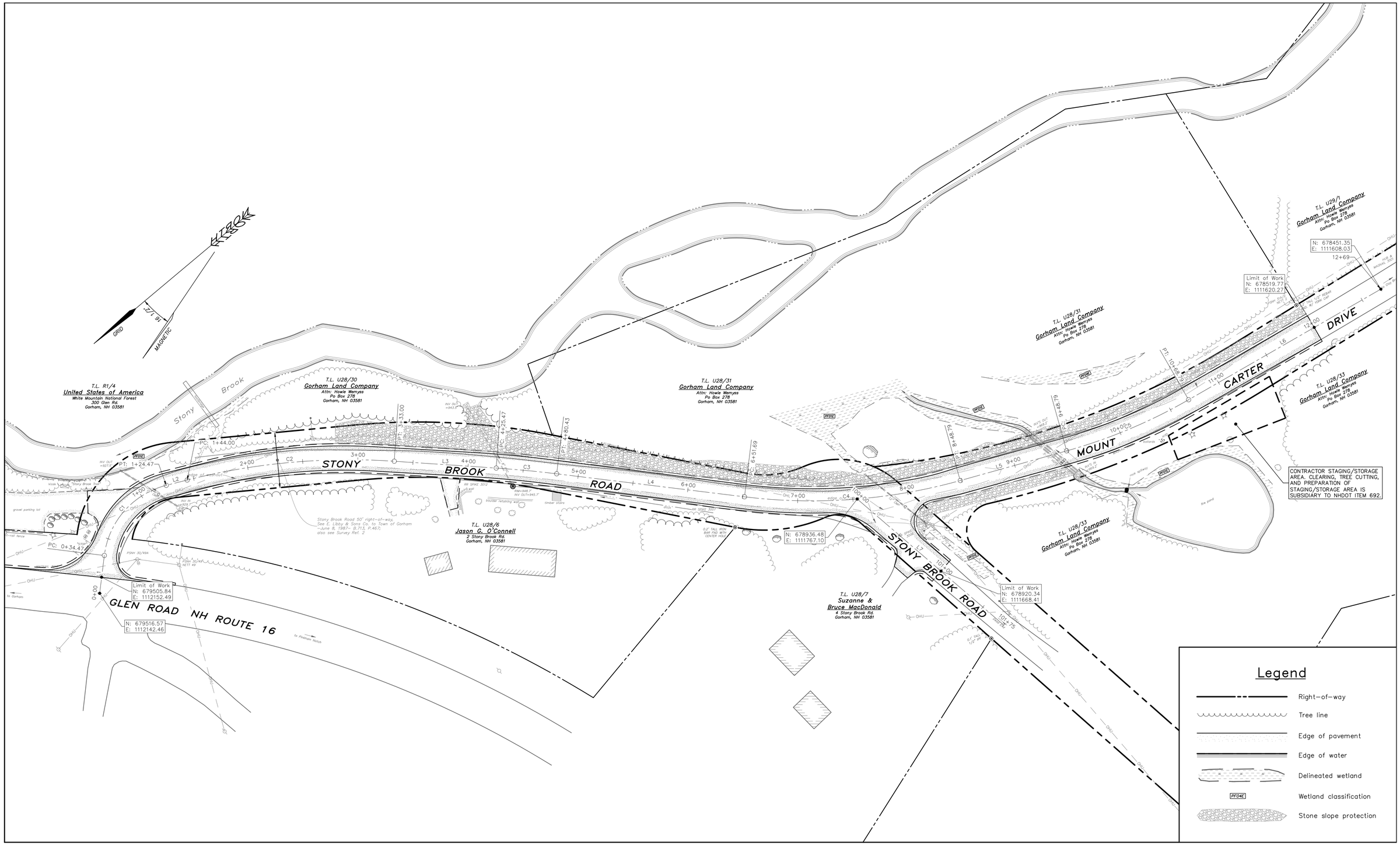
C1.01
SHEET 4 OF 12

2017-110
Overall Site Plan
Stony Brook Road Reconstruction



40 0 40 80 160 ft
8 0 20 40 m
1 inch = 40 feet
(1 : 480)

No.	Revision	DATE	BY

STATE OF NEW HAMPSHIRE
JAY J. POULIN
No. 10953
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Bridgton, ME 04009

SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	1"=40'
DATE	05/09/2019

Overall Site Plan
for the
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Town of Gorham, New Hampshire

2017-110
C1.01
SHEET 4 OF 12

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C1.11
SHEET 5 OF 12

2017-110
Erosion & Sediment Control Plan
Stony Brook Road Reconstruction

T.L. R1/4
United States of America
White Mountain National Forest
300 Glen Rd.
Gorham, NH 03581

T.L. U28/30
Gorham Land Company
Attn: Howie Wemyss
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Gorham, NH 03581

T.L. U28/31
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Michael A. Cruz
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Suzanne & Bruce MacDonald
4 Stony Brook Rd.
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T.L. U29/1
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Po Box 278
Gorham, NH 03581

T.L. U28/33
Gorham Land Company
Attn: Howie Wemyss
Po Box 278
Gorham, NH 03581

Stony Brook

INSTALL INSTREAM SEDIMENTATION BARRIER. SEE SHEET FOR DETAIL. (BID ALTERNATE #3).

INSTALL EROSION CONTROL MATTING (TYP.). NHDOT ITEM 645.44

INSTALL SILT FENCE (TYP.). NHDOT ITEM 645.531

INSTALL TEMPORARY INLET PROTECTION. NHDOT ITEM 699.1

REMOVE TREES WITHIN LIMITS OF WORK (TYP.). NHDOT ITEM 205.1

CONSTRUCT STONE SLOPE (TYP.).

CONSTRUCT STONE LINED DITCH (TYP.)

STONY BROOK ROAD

GLEN ROAD NH ROUTE 16

MOUNT CARTER DRIVE

Stony Brook Road 50' right-of-way, See E. Libby & Sons Co. to Town of Gorham —June 8, 1987— B.713, P.467; also see Survey Ref. 2

PC: 0+34.47
PT: 1+24.47
PC: 1+44.00
PT: 3+33.10
PC: 4+30.43
PT: 5+48.79
PC: 6+51.08
PT: 8+48.79
PC: 10+68.79

Limit of Work
N: 679505.95
E: 1112152.34

N: 679516.57
E: 1112142.46

N: 678936.48
E: 1111767.10

Limit of Work
N: 678920.34
E: 1111668.41

Limit of Work
N: 678519.79
E: 1111620.18

MATCH LINE, SEE BELOW

MATCH LINE, SEE ABOVE

GRID MAGNETIC 16 1/2°

Legend

- Existing Major contour
- Existing Minor contour
- Proposed Major contour
- Proposed Minor contour
- Riprap
- Erosion control matting
- Silt fence
- Proposed Tree line
- Delineated wetland
- Edge of pavement
- PFO4E Wetland classification
- Right-of-way

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

No.	Revision	DATE	BY

STATE OF NEW HAMPSHIRE
JAY J. POULIN
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Bridgton, ME 04009

SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	1"=30'
DATE	05/09/2019

Erosion & Sediment Control Plan
for the
Stony Brook Road Reconstruction
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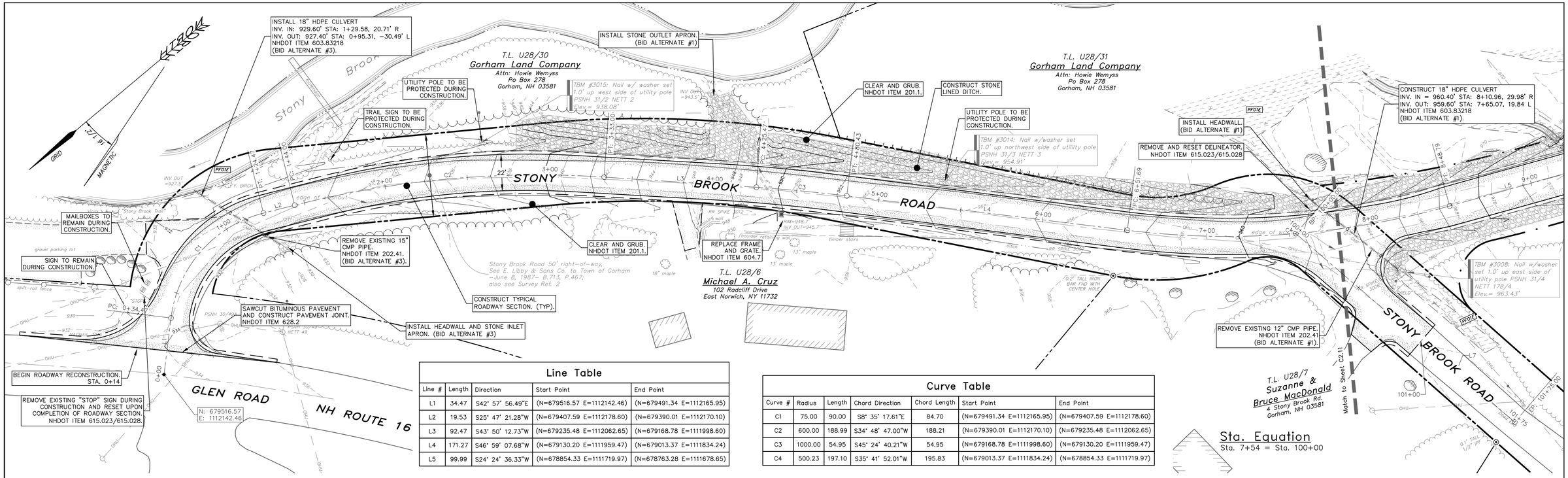
Town of Gorham, New Hampshire

2017-110
C1.11
SHEET 5 OF 12

P:\Jobs\2017\2017-110 Gorham - Stony Brook Road, Gorham, NH\Dwg\Construction Drawings\Sheet Files\2017-110 C1.11 Erosion & Sediment Control Plan.dwg, C1.11, 5/10/2019 8:33:40 AM, kjorston

C2.11
SHEET 6 OF 12

2017-110
Plan & Profile Sta. 0+00 – 8+00
Stony Brook Road Reconstruction

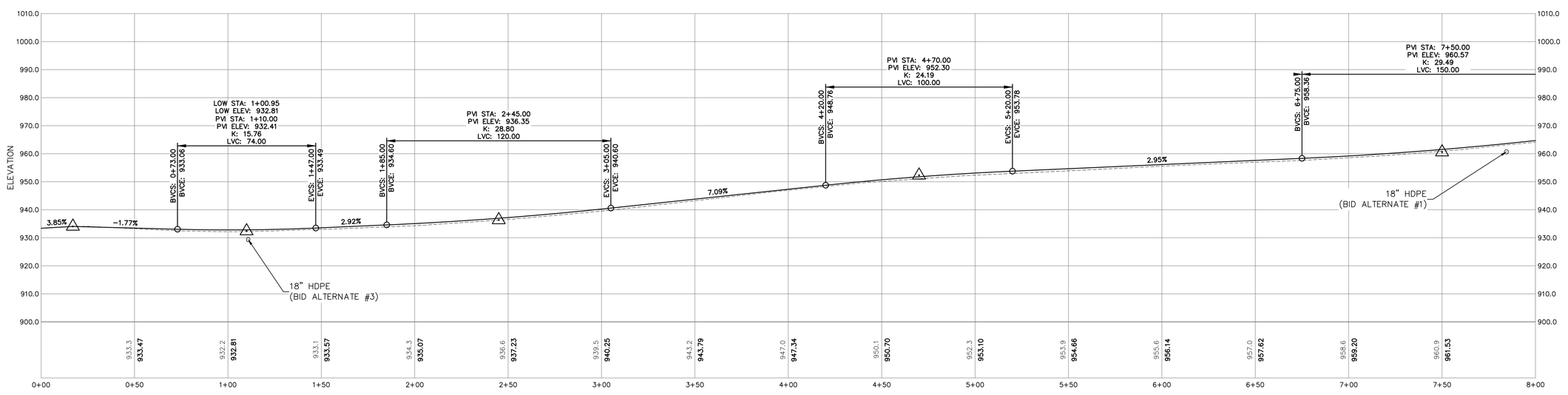


Line Table				
Line #	Length	Direction	Start Point	End Point
L1	34.47	S42° 57' 56.49"E	(N=679516.57 E=1112142.46)	(N=679491.34 E=1112165.95)
L2	19.53	S25° 47' 21.28"W	(N=679407.59 E=1112178.60)	(N=679390.01 E=1112170.10)
L3	92.47	S43° 50' 12.73"W	(N=679235.48 E=1112062.65)	(N=679168.78 E=1111998.60)
L4	171.27	S46° 59' 07.68"W	(N=679130.20 E=1111959.47)	(N=679013.37 E=1111834.24)
L5	99.99	S24° 24' 36.33"W	(N=678854.33 E=1111719.97)	(N=678763.28 E=1111678.65)

Curve Table						
Curve #	Radius	Length	Chord Direction	Chord Length	Start Point	End Point
C1	75.00	90.00	S8° 35' 17.61"E	84.70	(N=679491.34 E=1112165.95)	(N=679407.59 E=1112178.60)
C2	600.00	188.99	S34° 48' 47.00"W	188.21	(N=679390.01 E=1112170.10)	(N=679235.48 E=1112062.65)
C3	1000.00	54.95	S45° 24' 40.21"W	54.95	(N=679168.78 E=1111998.60)	(N=679130.20 E=1111959.47)
C4	500.23	197.10	S35° 41' 52.01"W	195.83	(N=679013.37 E=1111834.24)	(N=678854.33 E=1111719.97)

Sta. Equation
Sta. 7+54 = Sta. 100+00

Plan View
Scale: 1"=30'



Stony Brook Road Sta. 0+00 – 8+00
Scale:
Horizontal: 1"=30'
Vertical: 1"=20'

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

No.	Revision	DATE	BY

STATE OF NEW HAMPSHIRE – JAY J. POULIN No. 10993 – LICENSED PROFESSIONAL ENGINEER

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SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	1"=30
DATE	05/09/2019

Plan & Profile Sta. 0+00 – 8+00
for the
Stony Brook Road Reconstruction
located in and prepared for the
Town of Gorham, New Hampshire

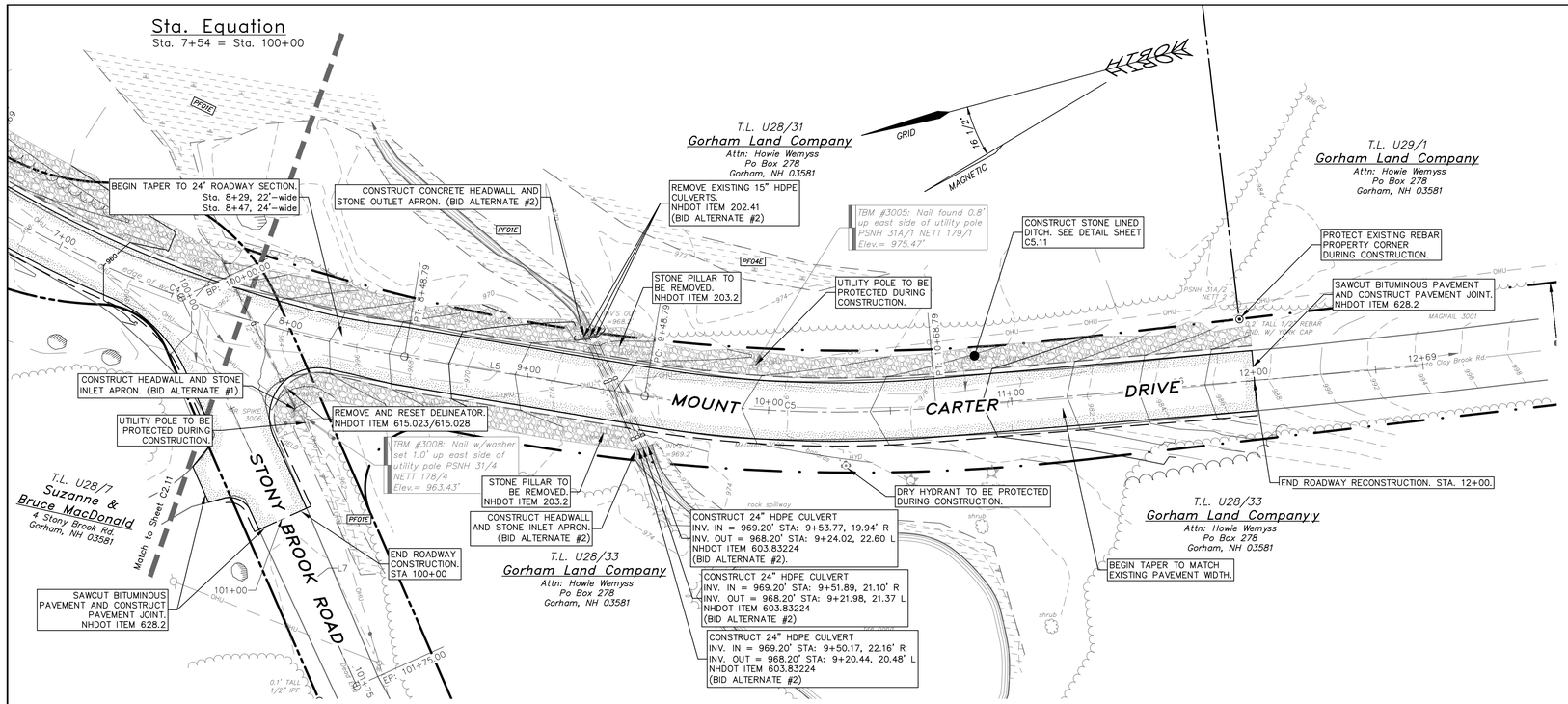
2017-110
C2.11
SHEET 6 OF 12

P:\Jobs\2017\2017-110 Gorham - Stony Brook Road, Gorham, NH\Dwg\Construction Drawings\Sheet Files\2017-110-C2.11 Roadway Plan & Profile.dwg, C2.11, 5/10/2019 8:43:18 AM, tgordon

C2.12
SHEET 7 OF 12

2017-110
Plan & Profile Sta. 8+00-12+00
Stony Brook Road Reconstruction

Sta. Equation
Sta. 7+54 = Sta. 100+00



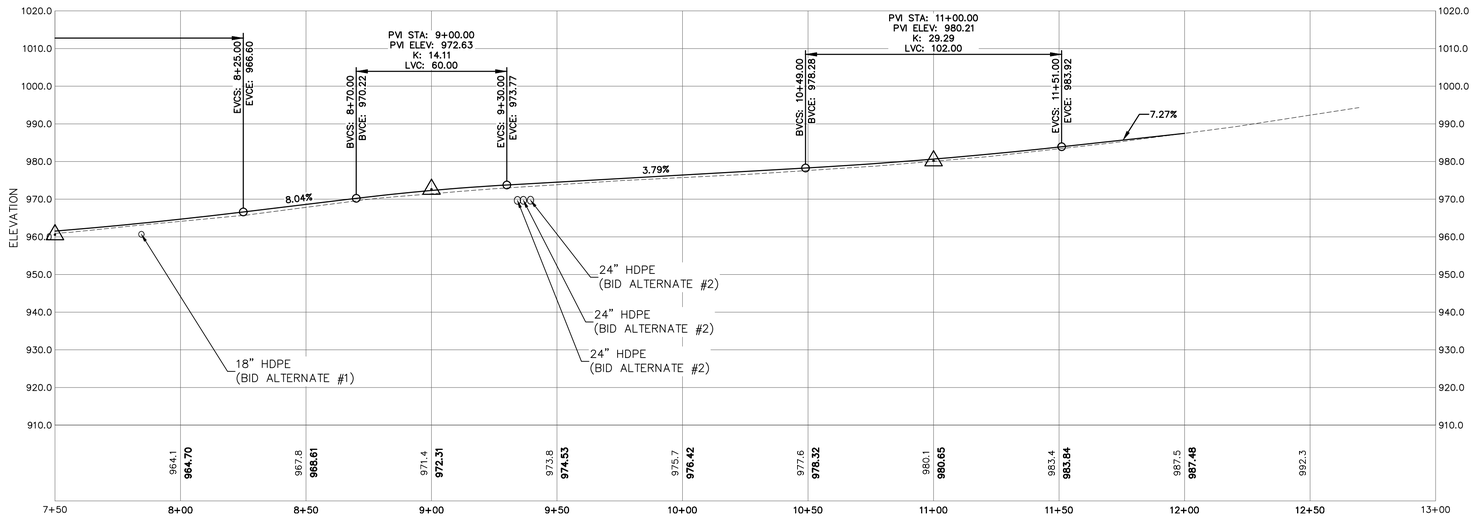
Plan View
Scale: 1"=30'

Line Table

Line #	Length	Direction	Start Point	End Point
L5	99.99	S24° 24' 36.33"W	(N=678854.33 E=1111719.97)	(N=678763.28 E=1111678.65)
L6	200.71	S10° 05' 10.13"W	(N=678648.97 E=1111643.16)	(N=678451.37 E=1111608.01)

Curve Table

Curve #	Radius	Length	Chord Direction	Chord Length	Start Point	End Point
C4	500.23	197.10	S35° 41' 52.01"W	195.83	(N=679013.37 E=1111834.24)	(N=678854.33 E=1111719.97)
C5	480.00	120.00	S17° 14' 53.23"W	119.69	(N=678763.28 E=1111678.65)	(N=678648.97 E=1111643.16)



Stony Brook Road Sta: 8+00 - Sta. 12+70

Scale:
Horizontal: 1"=30'
Vertical: 1"=20'

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

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CHECKED BY	JJP
FIELD BOOK	354
SCALE	1"=30
DATE	05/09/2019

Plan & Profile Sta. 8+00-12+00
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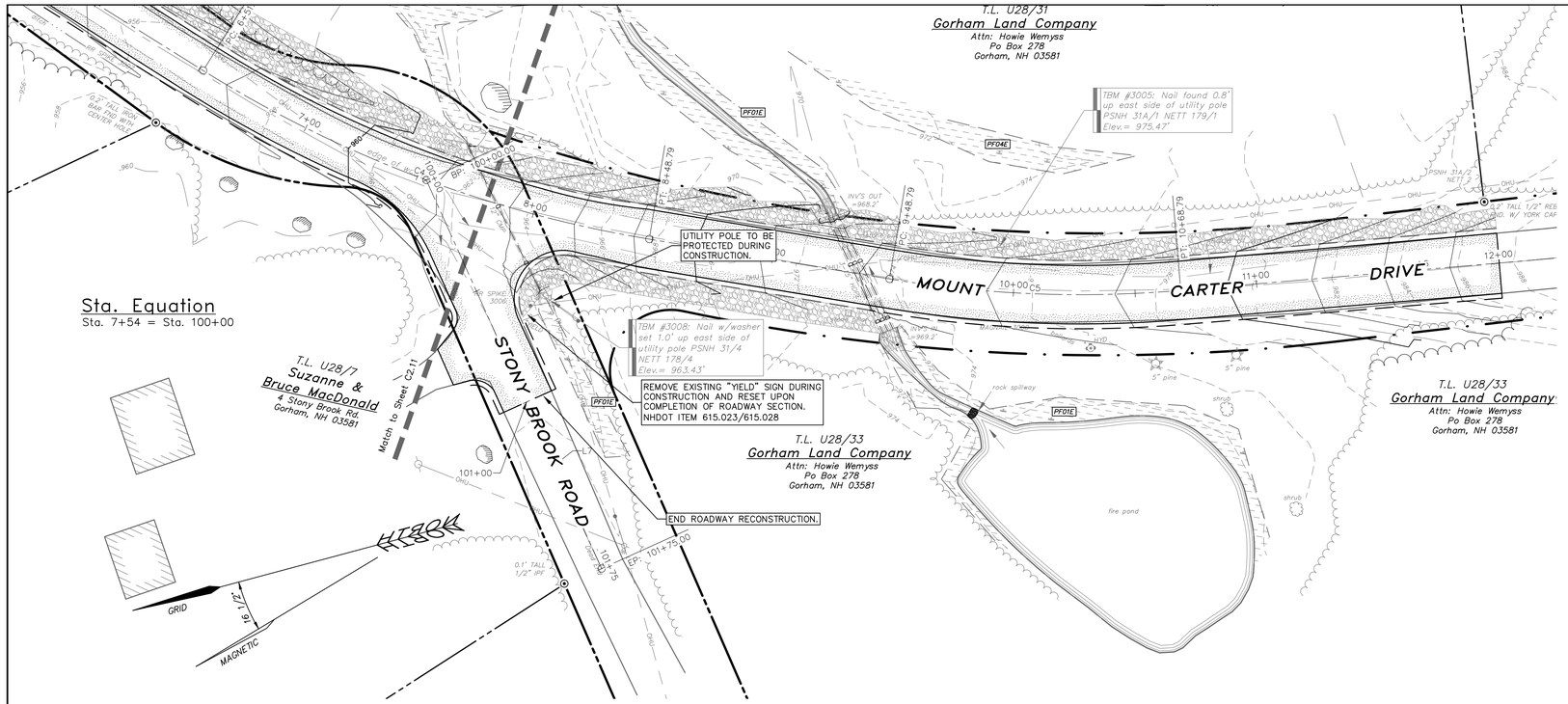
2017-110
C2.12
SHEET 7 OF 12

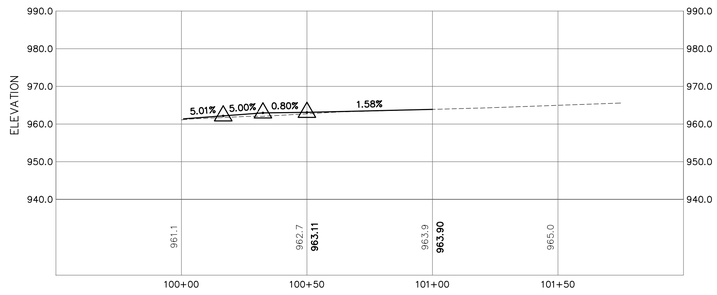
C2.13
SHEET 8 OF 12

2017-110
Plan & Profile Sta. 8+00-12+00
Stony Brook Road Reconstruction



Plan View
Scale: 1"=30'

Line Table				
Line #	Length	Direction	Start Point	End Point
L7	175.00	S80° 42' 43.39"W	(N=678936.48 E=1111767.10)	(N=678908.24 E=1111594.40)



Stony Brook Road Intersection Sta: 100+00 – Sta. 101+75

Scale:
Horizontal: 1"=30'
Vertical: 1"=20'

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

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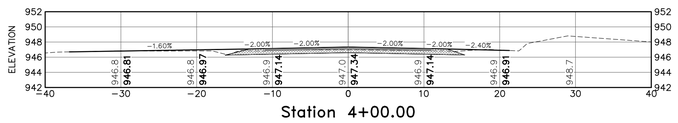
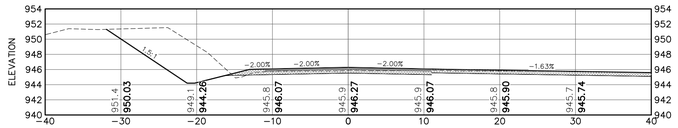
2017-110
C2.13
SHEET 8 OF 12

2017-110
Cross Sections - Sta. 0+50 - 11+00
Stony Brook Road Reconstruction



Station 4+00.00



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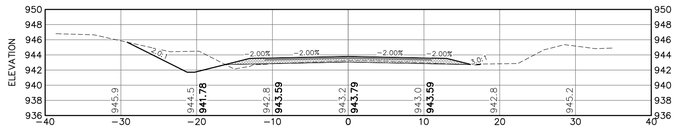

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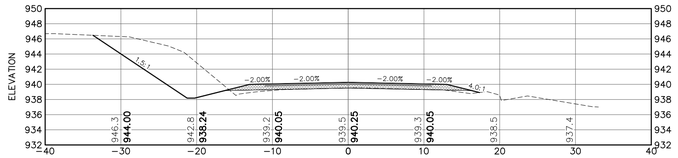

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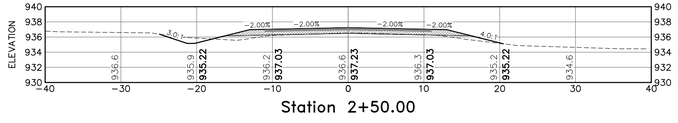

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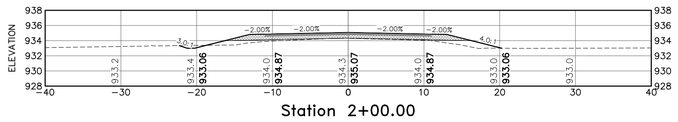

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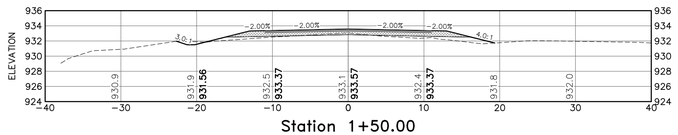
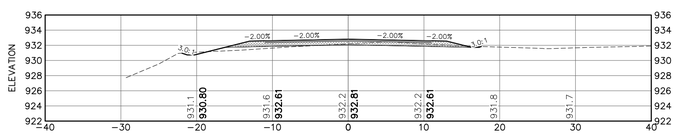


Station 1+50.00



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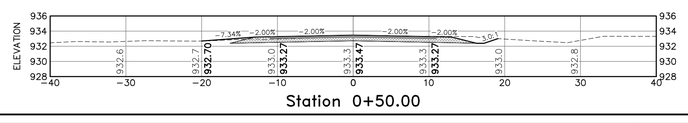

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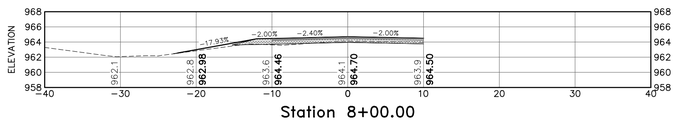
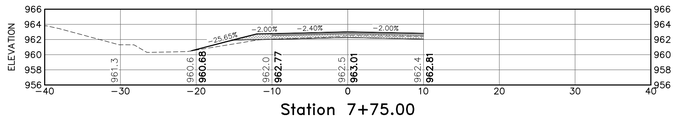


Station 8+00.00



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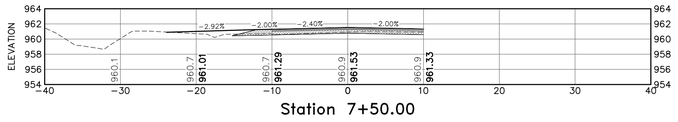

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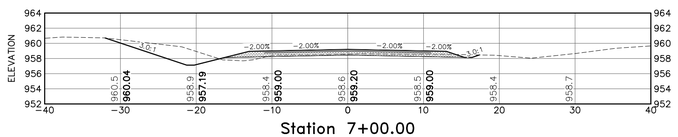

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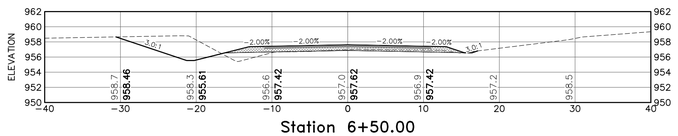

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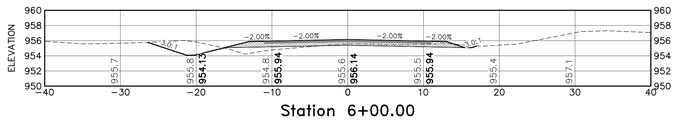

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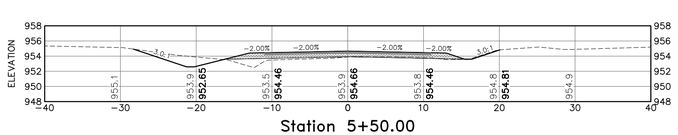

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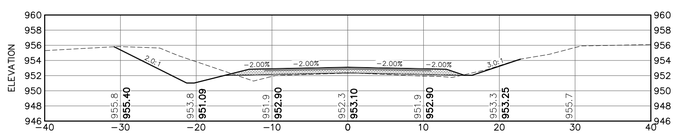

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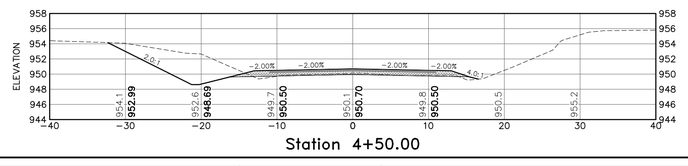
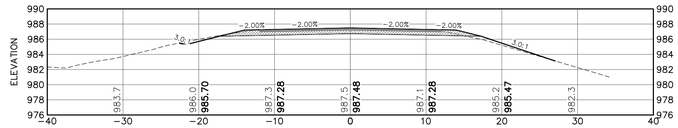


Station 4+50.00



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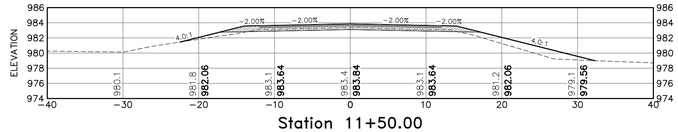
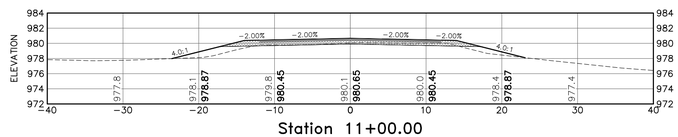


Station 11+50.00



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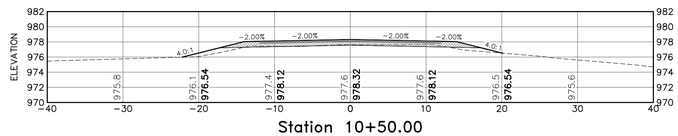

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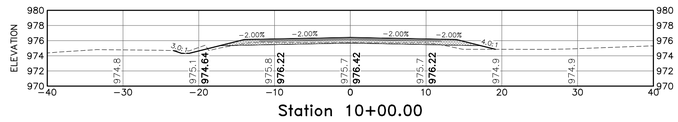

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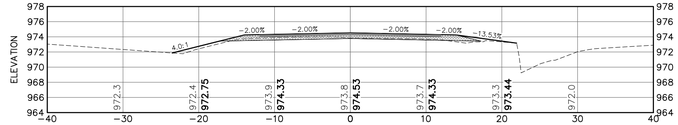

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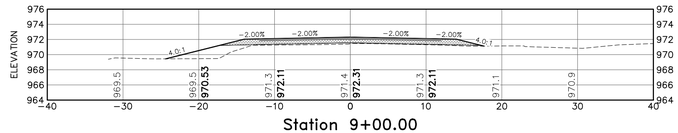

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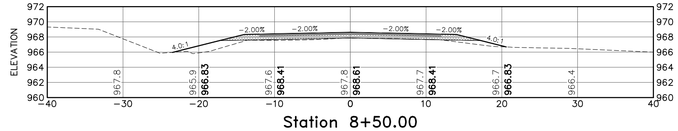

Station 8+50.00

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DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	1"=10'
DATE	05/09/2019

Cross Sections - Sta. 0+50 - 11+00
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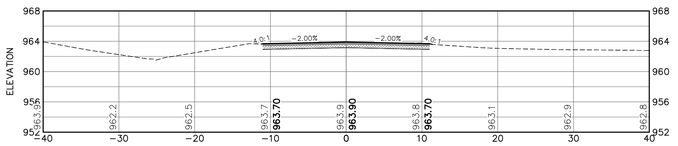
2017-110
C3.11
SHEET 9 OF 12

C3.12
SHEET 10 OF 12

2017-110
Cross Sections - Sta. 100+50 - 101+00
Stony Brook Road Reconstruction



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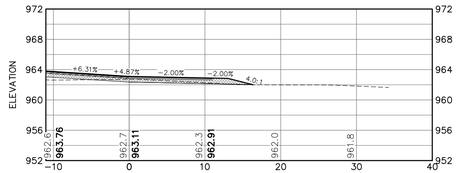

Station 100+50.00

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Cross Sections - Sta. 100+50 - 101+00
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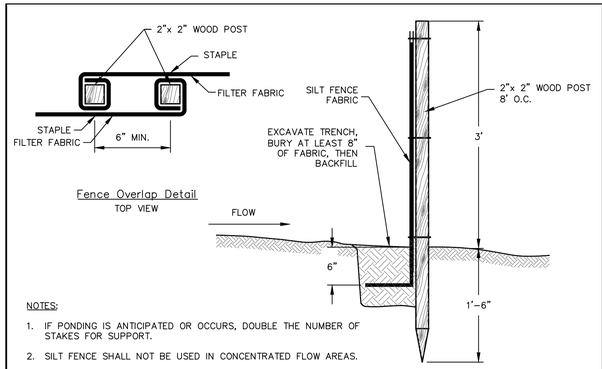
2017-110
C3.12
SHEET 10 OF 12

P:\Jobs\2017\2017-110 Gorham - Stony Brook Road, Gorham, NH\Dwg\Construction Drawings\Sheet Files\2017-110 C3.11 Cross Sections.dwg, C3.12, 5/10/2019 8:48:07 AM, tgruton



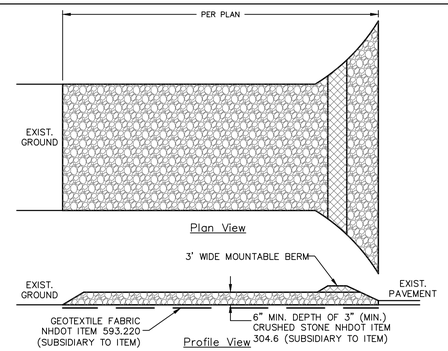
NOTES:

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'

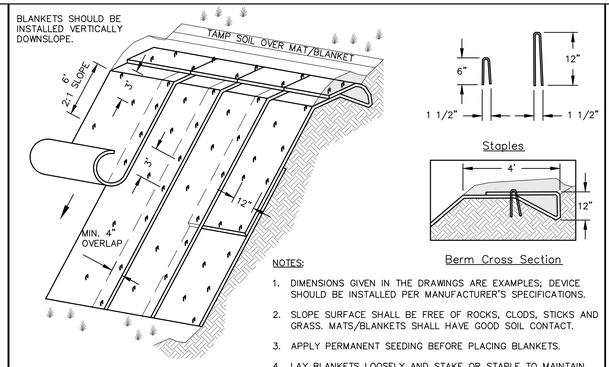


NOTES:

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.
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'



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.

TYPICAL SLOPE SOIL STABILIZATION

NHDOT Item 645.42/645.44

Erosion Blankets Slope Installation

N.T.S.

General Erosion-Control Requirements:

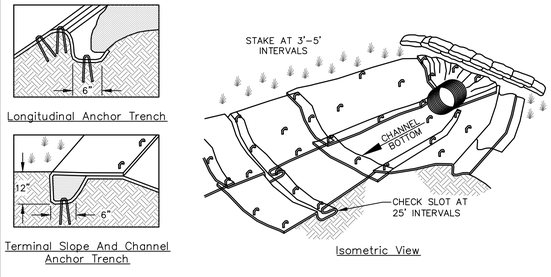
The primary intent of the erosion control requirements and the construction sequence is to stage the project in a manner that will minimize the potential for erosion and the potential negative effects associated therewith. The Engineer shall be contacted and the plan shall be amended if the intent is 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.



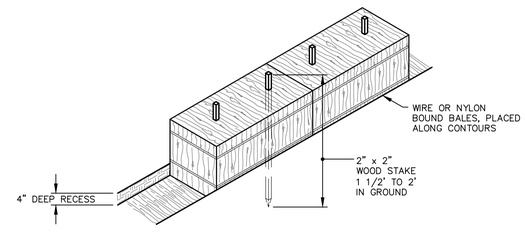
NOTES:

1. DIMENSIONS GIVEN IN THE DRAWINGS ARE EXAMPLES; DEVICE SHOULD BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURER'S SPECIFICATIONS.
3. STAKING OR STAPLING LAYOUT PER MANUFACTURER'S SPECIFICATIONS.

NHDOT Item 645.46

Erosion Blankets Channel Installation

N.T.S.



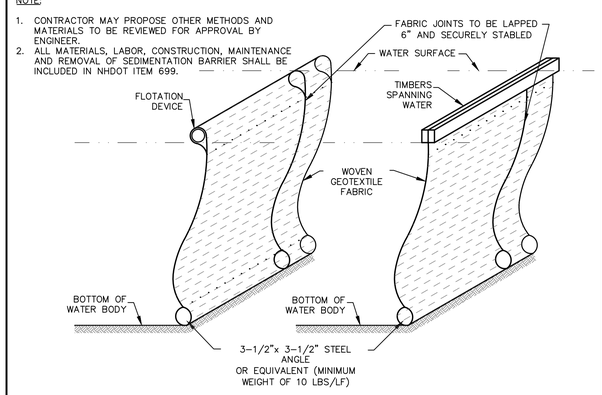
NOTES:

1. ADJACENT BALES SHALL BE TIGHTLY BUTTED.
2. SPOILS FROM RECESS SHALL BE PLACED ALONG THE UPSTREAM SIDE OF THE BALES.
3. INSPECT BALES WEEKLY AND AFTER EACH RAIN. REPAIR IF DAMAGED AND REMOVE EXCESS SEDIMENT.
4. REMOVE BARRIER ONLY AFTER UPSTREAM WORK AREA IS REVEGETATED.
5. INSTALLATION OF HAY BALES FOR EROSION AND SEDIMENT CONTROL SHALL BE INCLUDED IN NHDOT ITEM 699.

NHDOT Item 645.51

Hay Bale Installation

N.T.S. (Isometric)



Sedimentation Barrier

Scale: (Isometric)

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:

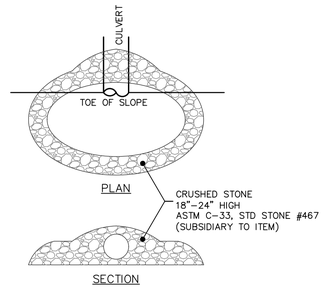
Species	Per Acre	Per 1,000 s.f.	Dates	Depth
Winter Rye	112 lbs.	2.5 lbs.	8/15-9/5	1 inch
Oats	80 lbs.	2.0 lbs.	Spring-5/15	1 inch
Annual Ryegrass	40 lbs.	1.0 lb.	4/15-9/15	½ inch
Perennial Ryegrass	30 lbs.	0.7 lbs.	4/1-6/1 or 8/15-9/15	½ inch

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.

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.



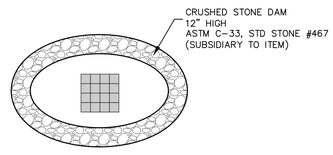
NOTE:

ALL MATERIALS, LABOR, CONSTRUCTION, MAINTENANCE AND REMOVAL OF THE INLET PROTECTION SHALL BE INCLUDED IN NHDOT ITEM 699.

NHDOT Item 699.1

Inlet Protection Detail

N.T.S.



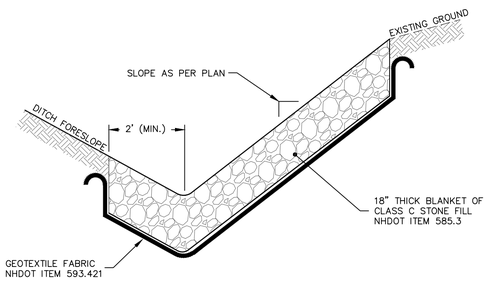
NOTE:

ALL MATERIALS, LABOR, CONSTRUCTION, MAINTENANCE AND REMOVAL OF THE BASIN INLET PROTECTION SHALL BE INCLUDED IN NHDOT ITEM 699.

NHDOT Item 699.1

Basin Inlet Protection Detail

N.T.S.



Stone Lined Slope/Ditch

Scale: 1" = 2'

No.	Revision	DATE	BY

JAY J. POULIN No. 10953 - LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE

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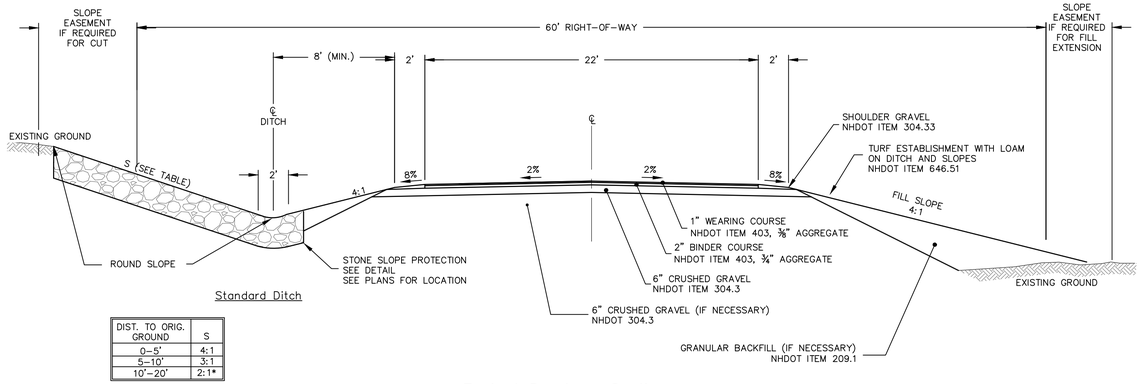
SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	AS NOTED
DATE	05/09/2019

Construction Details - Erosion & Sediment Control
for the
Stony Brook Road Reconstruction
located in and prepared for the
Town of Gorham, New Hampshire

2017-110
C5.11
SHEET 11 OF 12

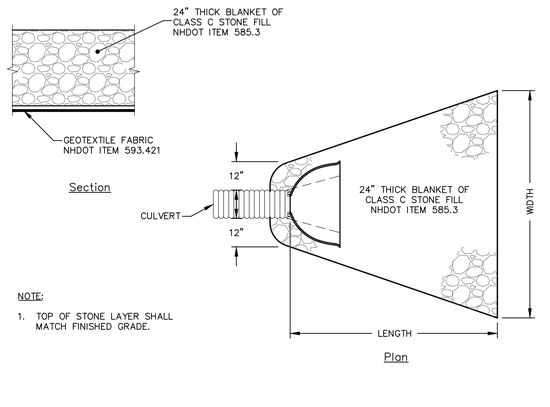


Standard Ditch

DIST. TO ORIG. GROUND	S
0–5'	4:1
5–10'	3:1
10'–20'	2:1*

*STONE SLOPE PROTECTION REQUIRED

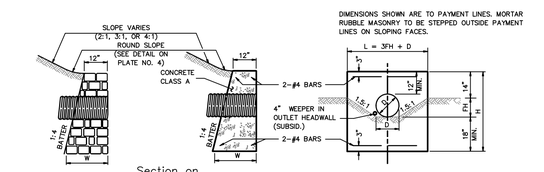
Typical Roadway Section
Scale: 1" = 5'



NOTE:

1. TOP OF STONE LAYER SHALL MATCH FINISHED GRADE.

Stone Outlet Apron
N.T.S.

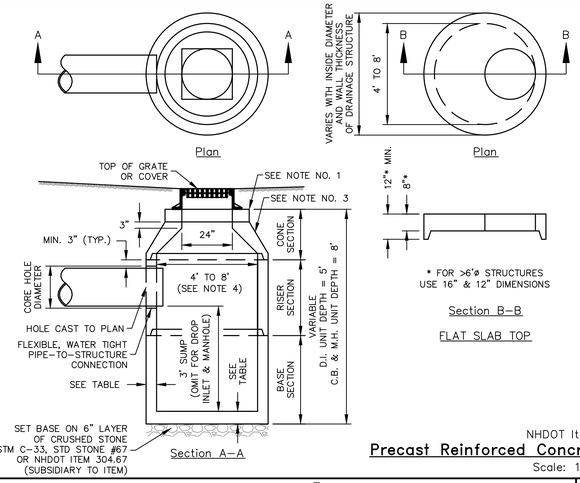


NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY.

DIAMETER D INCHES	MASONRY PER FOOT OF WALL CU. YD	MASONRY PER STANDARD HEADER CU. YD.	STEEL PER STANDARD HEADER LB.	LENGTH OF BARS	EXC. FOR 1" DEPTH CU. YD.	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	"L" HEADWALL MASONRY IN CORNER FRUSTUM CU. YD.	"L" HEADWALL EXC. FOR 1" DEPTH CU. YD.
12	0.186	0.61	9	3'–2"	0.789	3'–6"	3'–6"	0'–10"	5'–101/2"	0.28	1.057
15	0.202	0.85	11	3'–10"	0.947	4'–6"	3'–9"	1'–1"	1'–111/4"	0.31	1.232
18	0.222	1.13	14	5'–2"	1.111	5'–6"	4'–0"	1'–4"	2'–0"	0.35	1.406
24	0.260	1.78	20	7'–2"	1.451	7'–6"	4'–6"	1'–10"	2'–11/2"	0.42	1.776
30	0.301	2.58	25	9'–2"	1.810	9'–6"	5'–0"	2'–4"	2'–3"	0.51	2.164
36	0.344	3.53	31	11'–2"	2.187	11'–6"	5'–6"	2'–10"	2'–41/2"	0.61	2.572
42	0.389	4.65	36	13'–2"	2.581	13'–6"	6'–0"	3'–4"	2'–6"	0.72	3.000
48	0.436	5.93	42	15'–2"	3.000	15'–6"	6'–6"	3'–10"	2'–71/2"	0.84	3.447
54	0.486	7.44	47	17'–2"	3.432	17'–6"	7'–0"	4'–4"	2'–9"	0.98	3.914
60	0.538	9.13	52	19'–2"	3.882	19'–6"	7'–6"	4'–10"	2'–101/2"	1.12	4.401
66	0.593	11.04	58	21'–2"	4.350	21'–6"	8'–0"	5'–4"	3'–0"	1.28	4.907
72	0.649	13.17	63	23'–2"	4.638	23'–6"	8'–6"	5'–10"	3'–11/2"	1.46	5.433

NOTE: FOR PLAN OF "L" HEADWALL SEE PLATE NO. 1 OF STD. NO. HW-2

Culvert Headwall
N.T.S.



DIAMETER (MIN.)	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

PIPE SIZE	CORE HOLE SIZE RCP CORE HOLE DIA.		PLASTIC CORE HOLE DIA.	
INCHES	INCHES	FEET	INCHES	FEET
6			7	0.6
12	18	1.5	18	1.5
15	22	1.8	20	1.7
18	26	2.2	24	2.0
24	34	2.8	32	2.7
30	42	3.5	42	3.5
36	48	4.0	48	4.0
42	54	4.5	54	4.5
48	64	5.3	64	5.3
54	72	6.0		
60	78	6.5		

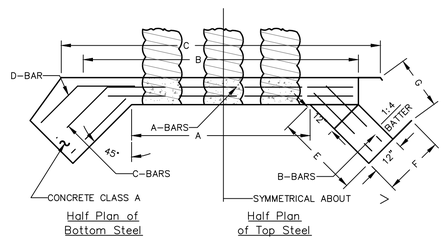
GENERAL NOTES:

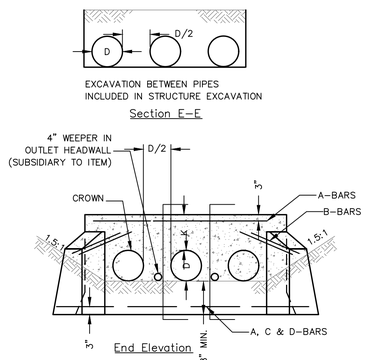
1. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX).
2. CATCH BASIN GRATES IN PAVED AREAS SHALL BE SET ACCORDING TO THE PAVEMENT DEPRESSION DETAIL FOR BASINS INSTALLED ALONG ROADWAY CURBLINES.
3. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
4. FOR STRUCTURES WITH DIAMETERS GREATER THAN 4 FEET, THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT SLAB TOP, OR A RISER SECTION THAT TRANSITIONS FROM A STANDARD 4 FOOT CONE SECTION TO THE LARGER DIAMETER RISER, OR BASE SECTION MAY BE USED.
5. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
6. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3 INCHES BEYOND INSIDE WALL OF STRUCTURE.
7. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4 INCHES HIGH, AT AN 11 DEGREE ANGLE CENTERED IN THE WIDTH OF THE WALL, AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
8. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12 INCHES OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75 PERCENT OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3 INCHES TO JOINTS.

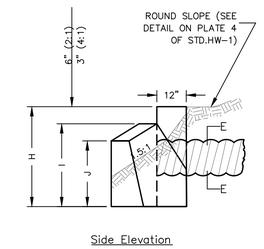
NHDOT Item 604

Precast Reinforced Concrete Drainage Structures
Scale: 1" = 3'

NOTE:
ALL LIKE BARS IN EACH HEADWALL ARE THE SAME SIZE. EACH STD. HEADER HAS 4 A, B & C-BARS, AND 2 D-BARS.



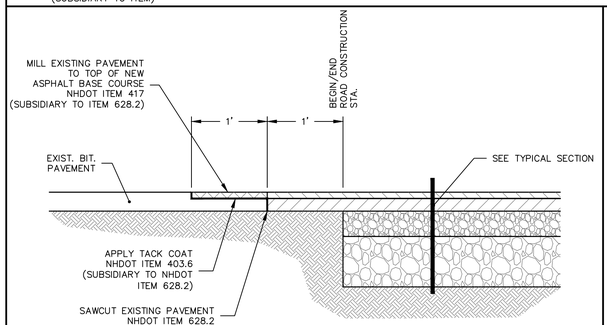




DIA. D INCHES	QUANTITIES PER HEADER CONC. CU. YD.	STEEL LB.	EXC. FOR 1" DEPTH CU. YD.	DIMENSIONS A	B	C	E	F	G	H	I	J	K	D/2	REINFORCING STEEL SIZE	LENGTH A BARS	B BARS	C BARS	D BARS	D-BARS a	D-BARS b
24	3.00	88	2.52	9'–0"	11'–4"	13'–0"	3'–0"	1'–11"	2'–6"	5'–0"	4'–6"	3'–10"	1'–6"	1'–0"	#4	11'–0"	3'–2"	3'–0"	4'–8"	2'–5"	2'–3"

2:1 SLOPE

Triple Headwall
N.T.S.



Pavement Joint
Scale: 1" = 1'

No.	Revision	DATE	BY

JAY J. POULIN No. 10953 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

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SURVEYED BY	JLT/MPM/KLT
DESIGNED BY	TBG
DRAWN BY	TBG
CHECKED BY	JJP
FIELD BOOK	354
SCALE	AS NOTED
DATE	05/09/2019

Construction Details – General
for the
Stony Brook Road Reconstruction
located in and prepared for the
Town of Gorham, New Hampshire

2017–110
C5.12
SHEET 12 OF 12

2017–110
Construction Details – General
Stony Brook Road Reconstruction